

# IEI and IEI Worldwide

IEI Technology Corp., a leading industrial computing service provider, integrates computing platforms and customization services. IEI supplies hundreds of industrial computer boards, systems and peripherals for various customer applications, in addition to supporting OEM/ODM services. By reducing customers' design time and accelerating product development, IEI helps customers advance beyond their market competition. IEI has an innovative R&D team, effective management system, quality assurance and over 400 products passing through more than 100 distributors in order to provide customers with the fastest time-to-market services all over the world.



## China

### IEI Technology (Shanghai) Co., Ltd.

515, Shen Fu Rd., Xin Zuang Industrial Develop Zone, Shanghai, 201108, China  
<http://www.ieiworld.com.cn>



## United States

### IEI Technology USA Corp.

138 University Parkway, Pomona, CA 91768  
<http://www.usa.ieiworld.com>



## Headquarters

### IEI Technology Corp.

No. 29, Zhongxing Rd., Xizhi Dist.,  
 New Taipei City 221, Taiwan  
<http://www.ieiworld.com>

## RoHS Compliance



IEI is committed to complying with applicable laws and regulations, including the European Union Restriction of Hazardous Substances (RoHS) in electrical and electronic products. IEI's goal is to exceed compliance obligations by meeting the requirements of the RoHS Directive on a worldwide basis. With IEI's new lead free production, customers can start working on long term projects without worrying about RoHS regulations.

## IEI Product Applications



### ■ Military

- Police and Security
- Guidance & Control Systems
- Communications Control
- Fire Control



### ■ Infotainment

- Kiosk
- Digital Signage
- Outdoor Displays



### ■ Mobile

- Warehouse Management
- Multimedia Control Center
- Order Entry PDA
- Vehicle Information System
- Diagnostics



### ■ Security

- Information Security
- Network Storage
- Building Security Control
- Blade Servers



### ■ Medical

- Image Processing
- Instrumentation Processors
- Database Servers
- Diagnostics



### ■ Automation

- Factory Automation
- Guidance & Control Systems
- Communications Control
- Environmental Monitoring

# Best-in-Class Design and Service

## ■ Custom engineering

IEI has extended its system assembly line to provide solutions that best fit customers' needs. Our assembly lines and logistics services have the flexibility to fulfill a wide variety of customer specifications and requirements.

All IEI staff devote themselves to providing the highest quality service. Being the top brand in the IPC industry, IEI employees devote themselves to improving quality through global management and advanced technology.

## ■ Design

IEI's R&D team utilizes professional software, hardware, mechanical and system integration capabilities. Our extensive experience covers nearly every product line in the IPC field and enables us to provide outstanding OEM/ODM services. We guarantee a successful and timely product development experience. The research and development team at IEI is focused on bringing successful products to our clients.

### Successful projects include:

- Mobile PCs for police car video recording applications
- Networking platforms for VPN and load balance services
- Video capture for surveillance applications



## ■ Global service

As a leading IPC provider, IEI offers prompt, localized services to customers worldwide. IEI utilizes a global network of over 100 distributors in Europe, Asia and North America which means quick service and fast response time. From new sales inquiries to ongoing tech support, IEI's localization strategy is backed by our strong technical and logistical support team. Having forged strong relationships with our distributors, their support expertise and technical knowledge of IEI products are readily accessible to IEI customers worldwide. IEI has warehouses in Shanghai and the US which offer comprehensive system integration hardware, software, customer-driven services and global logistics support.



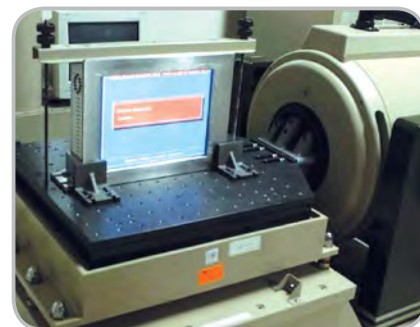
## 1. IEI Quality Assurance



All IEI embedded industrial appliances have been rigorously tested in the quality assurance and compliance laboratory at IEI headquarters. To provide the customer with peace of mind, IEI has invested over two million dollars into developing state of the art quality assurance and compliance testing facilities. IEI products are put through ten different quality assurance and compliance tests to ensure that our embedded industrial appliances can withstand a variety of harsh operational environments.

Direct customer benefits of our comprehensive quality assurance and compliance testing procedures include:

- High quality products and customer peace of mind
- Maximum product durability
- Long term product reliability
- Less downtime due to failed components



## 2. Thermal Testing

Infrared thermography detects infrared energy emitted from an object, converts it in to a temperature, and displays an image of the temperature distribution.

### ■ Testing results

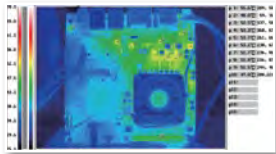
IEI SBCs operate with minimum difference in surface temperatures on separate sections of the board. Better temperature control guarantees more reliable long term system operation.



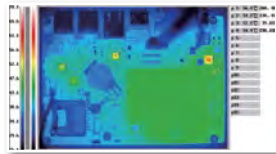
NIPPON  
Neo Thermo TVS-700



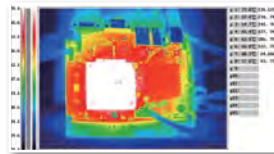
Better temperature control guarantees more reliable system operation in the long run.



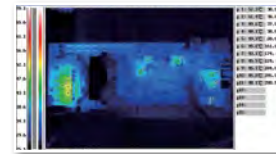
KINO-QM670



WAFER-OT-Z650



WAFER-PV-D5251



PCIE-Q670



## 3. All New Heat Sink Design

Heat sink design and selection are critical. Heat sink performance depends on many variables including air temperature and air flow rate in the immediate vicinity of the heat sink, the strength of other heat conduction paths through components and the board, the contact resistance between the heat sink and the component it is attached to and the radiation path from the heat sink to a cooler surface, among other things. Heat sinks can also have a significant effect on electromagnetic fields. A heat sink that works well in one application may be virtually useless in another.

### ■ IEI Heat sink features



#### 1. Good aerodynamics

IEI heat sinks allow air to flow easily and rapidly through the cooler and reach all the cooling fins. This feature is important for heat sinks with many thin fins.

#### 3. Good mounting method

For good thermal transfer, the pressure between the heat sink and the heat source must be high. IEI heat sink clips provide increased pressure at the heat sink's contact area and are easy to install.



#### 2. Perfect flatness of the contact area with IEI new close flatness technology

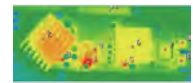
A heat sink's contact area must be perfectly flat. A flat contact area allows the use of a thinner layer of thermal compound that reduces the thermal resistance between the heat sink and the heat source.



IEI P/N:34000-000357-RS

#### 4. Good thermal transfer within the heatsink

IEI heat sinks are designed for efficient thermal transfer from the heat source to the fins.



## 4. Reliability Always Matters

Comprehensive quality assurance tests are performed on all IEI products throughout the product development cycle. Quality assurance tests are initiated in the research and development phase of a product and continued all the way through to the manufacturing phase. Quality assurance testing throughout the product development cycle ensures that IEI products are able to provide stable performance in the industrial environments they are used.



Temperature Testing



ESD Testing



Vibration Testing



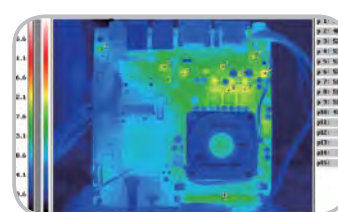
Power Consumption Testing



IP 65 Testing



Drop Testing



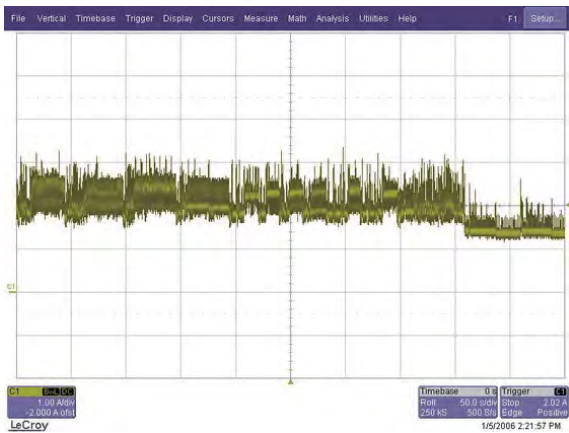
Thermal Testing



Safety Testing

# 5. Real-Time Power Consumption Test

Meeting stringent power budgets is essential for attaining system performance and cost goals. Low power enables higher clock frequency, higher reliability, better noise margins and reduced operational costs. All IEI products have passed strict power consumption tests. Complete power consumption details are listed on the product datasheets.



Single Board Computer Industrial motherboard [www.ieiworld.com](http://www.ieiworld.com)

**WAFER-CV-D25501-N26001** 3.5" SBC with Intel® Atom™ D2550/D2600 Processor, DDR3, VGA, Dual LVDS, Dual QoS, USB 2.0, SATA, VGA, Audio and Board

**Features**

- 1. 3.5" SBC with Intel® Atom™ D2550/D2600 dual-core processor supporting 32MB/64MB
- 2. 2GB DDR3 memory (up to 8GB)
- 3. 12.1" LCD display (up to 15.5" LCD)
- 4. 2x SATA 3.0Gb/s
- 5. 2x USB 2.0
- 6. 1x VGA (up to 15.5" LCD)
- 7. 1x LVDS (up to 15.5" LCD)
- 8. 1x QoS (up to 15.5" LCD)
- 9. 1x Audio (up to 15.5" LCD)
- 10. 1x Board (up to 15.5" LCD)

**Specifications**

- 1. Processor: Intel® Atom™ D2550/D2600
- 2. Memory: 2GB DDR3 (up to 8GB)
- 3. Display: 12.1" LCD (up to 15.5" LCD)
- 4. Storage: 2x SATA 3.0Gb/s
- 5. I/O: 2x USB 2.0, 1x VGA (up to 15.5" LCD), 1x LVDS (up to 15.5" LCD), 1x QoS (up to 15.5" LCD), 1x Audio (up to 15.5" LCD), 1x Board (up to 15.5" LCD)

**Dimensions (Unit: mm)**

**Packing List**

- 1. 1x SBC
- 2. 1x LCD
- 3. 1x SATA
- 4. 1x USB
- 5. 1x VGA
- 6. 1x LVDS
- 7. 1x QoS
- 8. 1x Audio
- 9. 1x Board

◆ **Power Consumption**

- 12V @ 1.53A (Intel® D2550 1.86GHz CPU with 1GB DDR3 1066MHz memory)
- 12V @ 1.15A (Intel® N2600 1.6GHz CPU with 1GB DDR3 1066MHz memory)

WAFER-CV-D25501-N26001-2013-V10

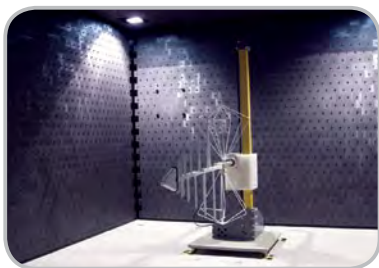
(+5V) 10minutes in 25°C

Test Sample		Unit
Ampere	2.02	A

Install OS: Windows 2000			
3D Mark 2001			
VGA Type	S3-VIA Twister™ T	DirectX	9.0b
Resolution	800 X 600	Color Pixel	32
VGA Memory	8M	Score	365

# 6. Product Compliance Testing

IEI has more than 400 products used in a wide variety of applications and environments worldwide. In order to develop time-to-market products that comply with safety, EMC certification and environmental directives across the globe, IEI has three certification-compliant labs including an EMI/RF chamber, EMI chamber and semi-anechoic room. IEI's new IEC 651 class 0 level semi-anechoic room can perform ISO 3745 and ISO 7779 standard acoustics experiments. These labs are essential to helping ensure the safety of our products as well as reducing costs and improving the quality of our products and services.



EMI Chamber



Semi-anechoic Room

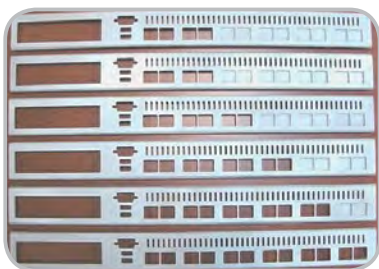


EMI / RF Chamber

# 7. Flexibility Customization Service

## Example:

Front panel customization according to expansion adaptor selections



Front panel sample by in-house CNC in 2 days



# Total Platform Solutions

## IEI SBC Products

Product Line	Specifications		Product Name
Full-Size SBC	PICMG 1.3	PCI + PCI-E	SPCIE-xxxx (Server Grade) PCIE-xxxx (Graphic Grade)
	PICMG 1.0	PCI + ISA	WSB-xxxx ROCKY-xxxx
Half-Size SBC		PCI + ISA	PCISA-xxxx
		Pure-ISA	IOWA-xxxx
Motherboard		PCI + PCI-E	PICOe-xxxx
	ATX		IMBA-xxxx
	Micro ATX		IMB-xxxx
Embedded SBC	Mini-ITX		KINO-xxxx
	5.25"		NOVA-xxxx
	EPIC		EPIC NANO-xxxx
	3.5"		WAFER-xxxx
	ETX	ETX 2.8 Non-SATA, ETX 3.0 SATA	IEM-xxxx
	Qseven		IQ7-xxx
	Com Express		ICE-xxxx
	PC104/PCI 104	PM-xxxx	

## Intel® Solutions

Innovation fulfills many different needs. Customers can easily select products by form factor, platform, or even main chipset provider. Meet market demands with our large selection of products.



Segment	Chipset	Full Size		Half-Size			Server Board	Main Board		Embedded Board				CPU Module			
		PICMG 1.3	PICMG 1.0	PCI/PCIExpress	PCI/ISA	PCI/ISA	EATX	ATX	Micro ATX	Mini ITX	5.25" NOVA	EPIC NANO	3.5" WAFER	ETX	COM Express	PC 104	Q7
Server	C604							IMBA-C604EP IMBA-C604EN									
	C216							IMBA-C2160	IMB-C2160								
	C206		SPCIE-C2060					IMBA-C2060	IMB-C2060								
	5100P		SPCIE-5100DX														
Desktop	Q77							IMBA-Q770	IMB-Q770								
	Q67		PCIE-Q670					IMBA-Q670	IMB-Q670	KINO-AQ670							
	B65					PICOe-B650											
	H61		PCIE-H610	WSB-H610				IMBA-H610	IMB-H610	KINO-DH610 KINO-AH611 KINO-AH612							
	Q57		PCIE-Q57A														
	Q45							IMBA-Q454									
	G45/ ICH10																
	G41/ ICH7(R)		PCIE-G41A2	WSB-G41A				IMBA-G410 IMBA-G412ISA	IMB-G41A	KINO-G410							
	Q35		PCIE-Q350	WSB-Q354				IMBA-XQ354	IMB-Q354								
	945G/ ICH7			WSB-9454				IMBA-9454	IMB-9454								
Mobile	QM77									KINO-QM770		NANO-QM770			ICE-QM770		
	NM70													WAFER-NM701-847			
	QM67									KINO-QM670							
	HM65					PICOe-HM650								NANO-HM650 NANO-HM651			
	QM57									KINO-QM57A				NANO-QM57A			
	HM55									KINO-HM551	NOVA-HM551						
	GM45/ ICH9M					PICOe-GM45A									ICE-GM45A		
	GME965/ ICH8M-E 945GME/ ICH7M 852GM/ ICH4					PCISA-9652											
Atom	D2550/ NM10 (ICH10R)									KINO-CV-R-D25502 KINO-CV-D25501		NANO-CV-D25501 NANO-CV-D25502	WAFER-CV-D25501 WAFER-CV-D25502		ICE-CV-D25501 ICE-CV-D25502	PM-CV-D25501	
	D525/ ICH8M		WSB-PV-D5251	PICOe-PV-D5251	PCISA-PV-D5251					KINO-PVN-D5251 KINO-PV-D5252 KINO-PV-D5253	NOVA-PV-D5251	NANO-PV-D5251 NANO-PV-D5252	WAFER-PV-D5251 WAFER-PV-D5252 WAFER-PV-D5253		ICE-PV-D5251	PM-PV-D5251	
	N270/ 945GSE		WSB-945GSE	PICOe-945GSE	PCISA-945GSE					KINO-945GSE eKINO-945GSE	NOVA-945GSE	NANO-945GSE NANO-945GSE2	WAFER-945GSE WAFER-945SELVDS2 WAFER-945GSE2	IEM-945GSE	ICE-945GSE	PM-945GSE	
	US15W																IQ7-US15W

## AMD Solutions



Chipset	Full Size	Half-Size ISA	Main Board	Mini ITX	5.25" NOVA	EPIC NANO	3.5" WAFER	ETX	COM Express	PC 104	Q7
LX		IOWA-LX				NANO-LX	WAFER-LX WAFER-LX2	IEM-LX		PM-LX PM-LX2	
Base Board Solution								IEM-DB-7S	ICE-DB-T6 ICE-DB-9S		IQ7-DB-MITX

New Products in Red

# 3rd Generation Intel® i7/i5/i3 Processors & Chipsets

## ◆ Ivy Bridge Platform

22nm delivers balance between performance and power efficiency

Next generation graphics, media and display features deliver outstanding visual computing experience

Next generation of technologies and IO features for next generation of embedded needs

22nm delivers balance between performance and power efficiency

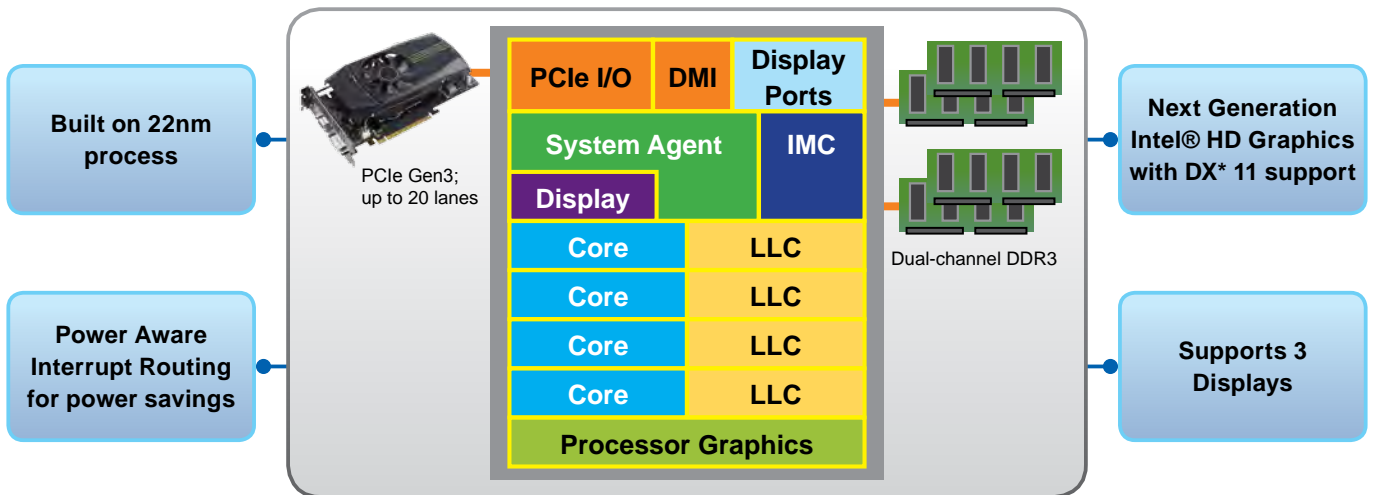


- Drop-in compatible with SNB
- up to 20% performance gain over Sandy Bridge
- >30% 3D graphics performance over SNB; faster media processing
- Up to 3 independent displays
- Proactive management of embedded devices with AMT 8.0
- Improved IO bandwidth and flexibility with Gen 3 of PCIe and USB

3rd Gen Intel® Core™ Processors

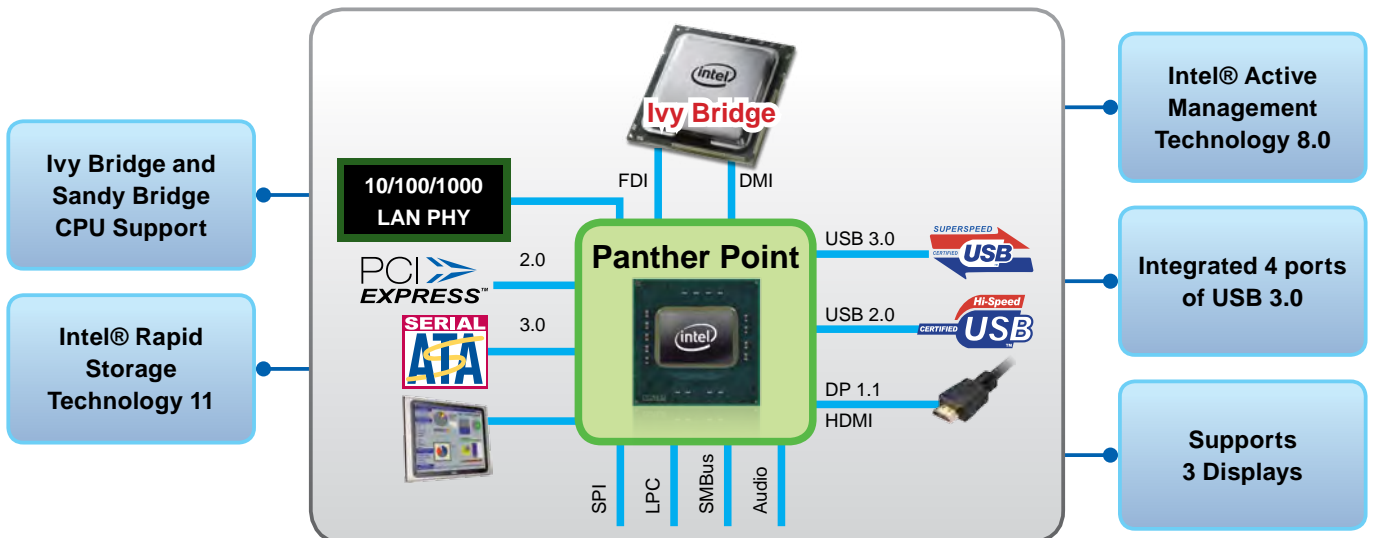
Intel® 7 Series Chipsets

## ■ Ivy Bridge: 3rd Generation Intel® Core™ Processor



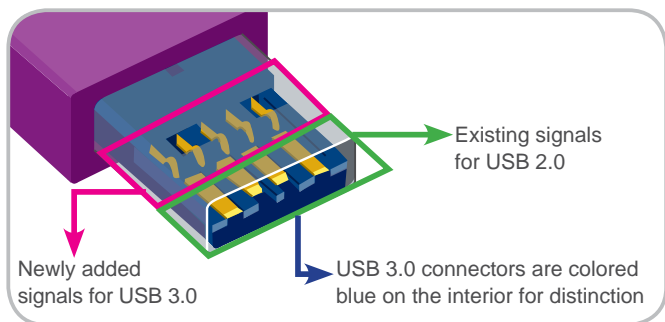
3 independent display support under Win 7 only

## ■ Ivy Bridge: Workstation (C2160) / Desktop (Q77) / Mobile (QM77) Overview



Intel® 7 Series chipset based platforms enable new platform capabilities

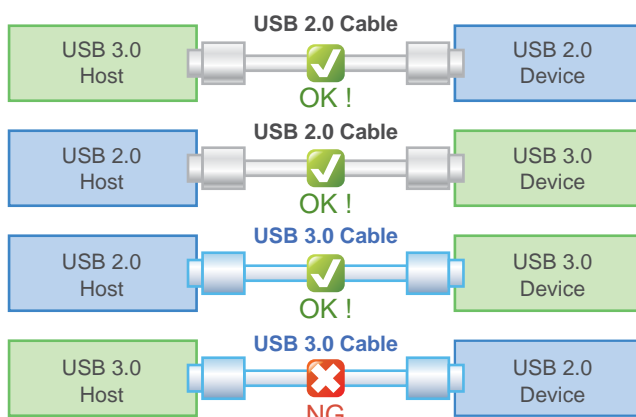
## ■ USB 3.0 & 2.0 connector definition



## ■ Growing demand for faster data transfer

Generation	Speed	Data Rate
USB 1.0/1.1	Low Speed	1.5Mbps
USB 1.0/1.1	Full Speed	12Mbps
USB 2.0	High Speed	480Mbps
<b>USB 3.0</b>	<b>Super High Speed</b>	<b>5Gbps</b>

## ■ USB 3.0 vs. 2.0 cable combination



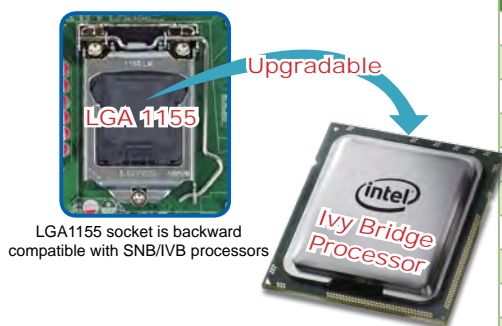
## ■ SVB vs. IVB Graphics Comparison

Features	2nd Generation	3rd Generation
Graphics	Intel® HD Graphics (Gen 6, DX 10.1) 2 independent displays	Intel® HD Graphics (Gen 7, DX 11, OCL 1.1) 3 independent displays
Video Playability	Good	Best
DirectX 11	No	Yes ★
HTML5	Yes	Yes
OpenCL 1.1	CPU	CPU/GPU
OpenGL	3.0	3.1 ★
Independent Digital Display Support	2	3 ★
eDP	1.1	1.1

## ■ IVB & SNB Chipset Key Feature Comparison

Chipset Features	Workstation / Desktop		Mobile	
Chipset (PCH)	Intel® C216/Q77	Intel® C206/Q67/B65	Intel® QM77	Intel® QM67/HM65
DMI Gen 2	DMI x4 (5GT/s)	DMI x4 (5GT/s)	DMI x4 (5GT/s)	DMI x4 (5GT/s)
Integrated Graphics Support	Yes	Yes	Yes	Yes
USB 3.0	Yes	No	Yes	No
SATA 6Gb/s	Yes	Yes	Yes	Yes
Intel® Rapid Storage Technology	11	10	11	10
Intel® AMT	8.0	7.0	8.0	7.0

## ■ SNB vs IVB Cross Compatibility



Processor	Sandy Bridge	Ivy Bridge	Sandy Bridge	Ivy Bridge
Chipset	6 Series	7 Series	7 Series	6 Series
Firmware	ME7	ME8	ME8	ME8
Intel® AMT	Intel® AMT 7	Intel® AMT 8	Intel® AMT 8	Intel® AMT 7
DDR3	1333	1600	1333	1600
DDR3L	No	Mobile Only	No	Mobile Only
Independent Display Support	2	3	2	2
PCIe	Gen 2	Gen 3	Gen 2	Gen 3
USB Support	2.0	2.0/3.0	2.0/3.0	2.0
Graphics	DX10.1	DX11/OCL1.1	DX10.1	DX11/OCL1.1
DirectX	10.1	11	10.1	11
OpenGL	3.0	3.1	3.0	3.1
OpenCL	-	1.1	-	1.1

## ■ IEI Solutions Check List

Platform	Features							
	PCIe x16	PCIe x4	PCIe x1	PCIe Mini Card	PCI	SATA 6Gb/s & USB 3.0	Intel® Ethernet	Display
IMBA-C2160	2 (1 x share with x8 signal)	2			2	v	v	VGA
IMBA-Q770	1	1	2		3	v	v	DVI-I/Dual HDMI
IMB-C2160	2 (1 x share with x8 signal)	2				v	v	VGA
IMB-Q770	1	1	1		1	v	v	DVI-I/Dual HDMI
KINO-QM770	1	1				v	v	DVI-I/Dual HDMI
NANO-QM770						v	v	DVI-I/Dual HDMI/LVDS

# Fast forward to the future with Intel® Technology

## Intel® WiDi

With Intel® WiDi, user can play all of the personal or online content on a big screen with a simple connection.



### Intel® WiDi Requirement

- Intel® Core™ processors with Intel® HD Graphics
- Intel® Centrino wireless
- Intel® WiDi v3.x or above version (Software Pre-loaded on the PC)
- Intel® ME Firmware with MEI Driver installed
- Microsoft® Windows® 7/8 OS

### Intel® WiDi Feature

- Allows user to extend their computer screen to their high resolution display — **no cable required.**
- Supports up to **1080p** high resolution, **5.1 multi-channel audio** and **HDCP** over the air.



## Intel® Smart Connect

With Intel® Smart Connect Technology in your computer, your email, favorite apps, and social networks are automatically updated even the system is asleep.

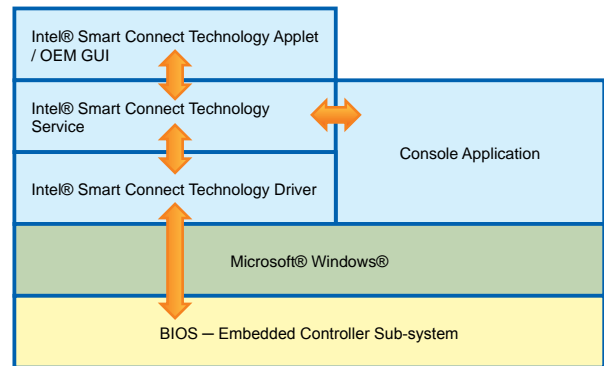


### Intel® Smart Connect Feature

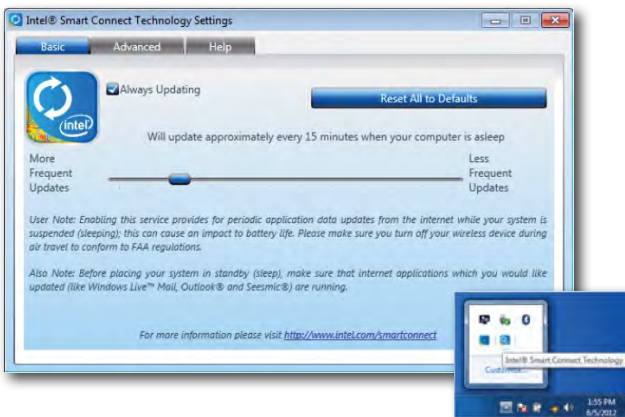
- **Auto Sync with Cloud**  
The application looks for updates automatically or in a short time period (e.g., every 10 minutes) when connected to a network.
- **Data Ready**  
Email, social media, and cloud apps always updated and available at power on
- **Smart System Energy Management**  
Auto-on for quick data pull at low power state and auto-off when complete.

### Intel® Smart Connect Requirement

- Smart Connect UEFI BIOS driver module
- Intel® WLAN NIC with NetDetect software
- 3rd party software needed, and desktop applications must store offline content and sync when network connection present



### Intel® Smart Connect GUI



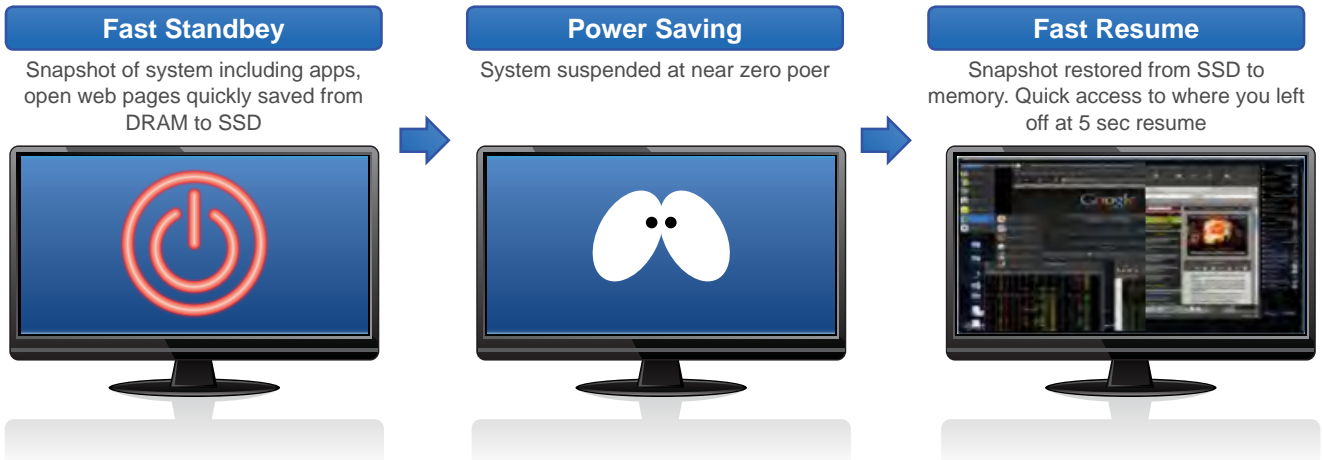
### Intel® Smart Connect GUI (cont.)





# Intel® Rapid Start Technology

With Intel® RST, user can bring the computer from zero power to fully operational in just seconds, saving time and battery life.

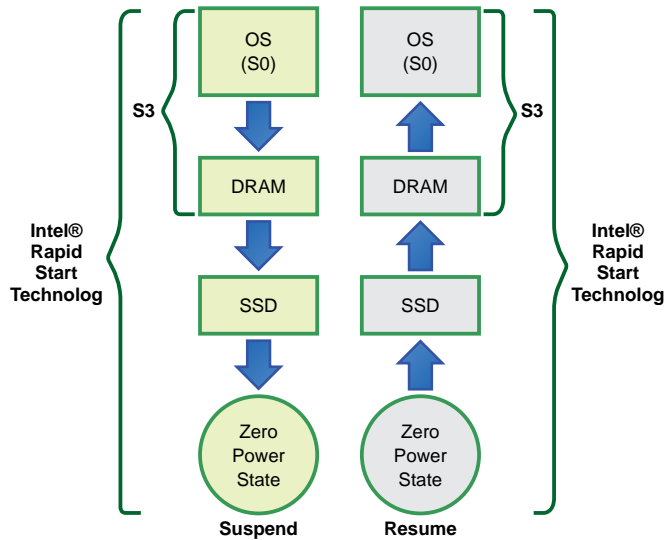
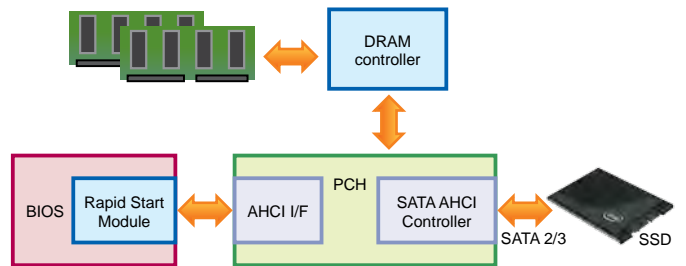


## Intel® Rapid Start Feature

- Works around a basic principle of moving data between system DRAM and SATA SSD.
  - » RTC timer or Critical Battery Event triggers BIOS to save active OS memory content to disk and places platform in S4
  - » Upon power button press, BIOS restores memory image from disk and executes quick S3 resume path of OS.
- Longer battery life (S4 power state)
- Quicker access to internet, data and applications

## Intel® Rapid Start Requirement



- Rapid Start Technology UEFI BIOS driver module
- PCH with Intel® ME8.0 or above version
- The volume of corresponding SSD must be equal to the amount of RAM
- Microsoft® Windows® 7/8 OS



## Intel® Rapid Start Technology GUI



## Intel® Feature Dependencies

	Intel® Rapid Start	Intel® Smart Connect	Intel® WiDi
<b>Chipset</b> 	PCH (SNB or above)	Intel® Centrino wireless module	Intel® Core™ i CPU & Intel® Centrino wireless module
<b>Storage</b> 	SSD or small flash module, Combo	SSD recommended	N/A
<b>BIOS supported</b>	Required	Required	N/A
<b>3rd party software supported</b>	N/A	Required	N/A

# Low Power Sandy Bridge with H61 Chipset

## ◆ IEI Power-Optimized & Cost-Optimized Performance Platforms

Traditional embedded systems which adopt mobile solutions are easier to design as low power while avoiding thermal issues. Mobile solutions were designed to be high-performance and low power. Unfortunately, mobile CPU and chipsets are more expensive than their desktop counterparts. Now IEI utilizes these two advantages from a 35W desktop CPU & H61 chipset to provide power-optimized and cost-optimized performance platforms.



Intel® Core™ 35W TDP CPU  
Power-Optimized performance



H61 Express Chipset  
Cost-Optimized performance

In IEI's roadmap, the Intel® Core™ 35W desktop processors and Intel® H61 chipset are applied to CPU boards, embedded chassis, industrial Panel PCs & embedded systems.



H61 CPU Boards		H61 Embedded System		H61 Panel PC	
Form Factor	Model Name	Form Factor	Model Name	Form Factor	Model Name
PICMG 1.3	PCIE-H610	Embedded System	TANK-820-H61	Panel PC	AFL2-1XA-H61 (15", 17" LCD)
PICMG 1.0	WSB-H610		ECN-680A-H61		AFL2-W15B-H61 (15", 19" Wide LCD)
ATX	IMBA-H610		IDS-H61-R10		PPC-51X0A-H61 (15", 17", 19" LCD)
Micro ATX	IMB-H610 IMB-H612		IOPS-H61		WIDS-51XA-H61 (15", 17" LCD)
Mini ITX	KINO-DH610 KINO-AH611 KINO-AH612				

## ◆ Power-Optimized Performance - Intel® Core™ 35W Desktop CPU

Fanless embedded systems with low power desktop processors are a leading-edge technology with an eco-friendly design that provides one of the most flexible solutions for a smaller carbon footprint. It's the best balance between performance and energy-efficient computing.



**35W Intel® Core™ processors**

Brand	Core	CPU No.	Clock speed	Smart cache	TDP
Core i5	Dual	i5-2390T	2.7G	3M	35W
Core i3	Dual	i3-2120T	2.6G	3M	35W
Pentium	Dual	G630T	2.3G	3M	35W
	Dual	G530T	2.0GHz	2M	35W
Celeron	Single	G460	1.6GHz	1.5M	35W
		G440	1.6GHz	1M	35W

\*IEI recommended low power processors (long-term support)

### Low power cooler for 1U chassis

Desktop Core™ CPU Cooler	
Model Name	CF-1156C-RS
Description	Low power LGA1155/LGA1156 Cooler kit for Intel® CPU, 45W, 1U chassis compatible, 90 x 90 x 33mm, CCL, RoHS
CPU Solution	Core™ i5/i3/Pentium®/Celeron®
Socket Solution	LGA1155/LGA1156
Dimensions	90 x 90 x 33mm
Material	Al
Bearing Type	Two Ball
Capability (Watt)	45W
Fan Speed (RPM)	3000
Noise Level (dBA)	33.4
Life Expectancy (hrs)	50000
Weight (g)	192

## ◆ 35W desktop CPU performance comparison and mapping

	Mobile Core™ i5 V.S. Desktop Core™ i5		Mobile Core™ i3 V.S. Desktop Pentium® & Core™ i3			Mobile Celeron® V.S. Desktop Celeron®	
<b>Product Name</b>	<b>Mobile 35W</b> Intel® Core™ i5-2520M Processor (3M Cache, 2.50 GHz)	<b>Desktop 35W</b> Intel® Core™ i5-2390T Processor (3M Cache, 2.70 GHz)	<b>Mobile 35W</b> Intel® Core™ i3-2330E Processor (3M Cache, 2.20 GHz)	<b>Desktop 35W</b> Intel® Pentium® Processor G630T (3M Cache, 2.30 GHz)	<b>Desktop 35W</b> Intel® Core™ i3-2120T Processor (3M Cache, 2.60 GHz)	<b>Mobile 35W</b> Intel® Celeron® Processor B810 (2M Cache, 1.60 GHz)	<b>Desktop 35W</b> Intel® Celeron® Processor G530T (2M Cache, 2.00 GHz)
<b>Graphics Model</b>	Intel® HD Graphics 3000	Intel® HD Graphics 2000	Intel® HD Graphics 3000	Intel® HD Graphics	Intel® HD Graphics 2000	Intel® HD Graphics	Intel® HD Graphics
<b>Graphics Base Frequency</b>	650 MHz	650 MHz	650 MHz	650 MHz	650 MHz	650 MHz	650 MHz
<b>Graphics Max Dynamic Frequency</b>	1.3 GHz	1.1 GHz	1.05 GHz	1.1 GHz	1.1 GHz	950 MHz	1 GHz
<b>Intel® InTru™ 3D Technology</b>	✓	✓	✓	✗	✓	✗	✗
<b>Intel® Flexible Display Interface (Intel® FDI)</b>	✓	✓	✓	✓	✓	✓	✓
<b>Intel® Clear Video HD Technology</b>	✓	✓	✓	✗	✓	✗	✗

- Intel® HD Graphics**
- Dual independent display
  - Supports HDMI 1.4, DisplayPort 1.1, eDP, DVI, VGA
  - Supports DX 10.1 and OGL3.0
  - Supports H.264, MPEG2 encode
  - Supports H.264, MPEG2, or VC1 DVD, Blu-ray and streaming content decode
  - Dual Video Decode

## ◆ Intel® Core processor + H61 Express chipset

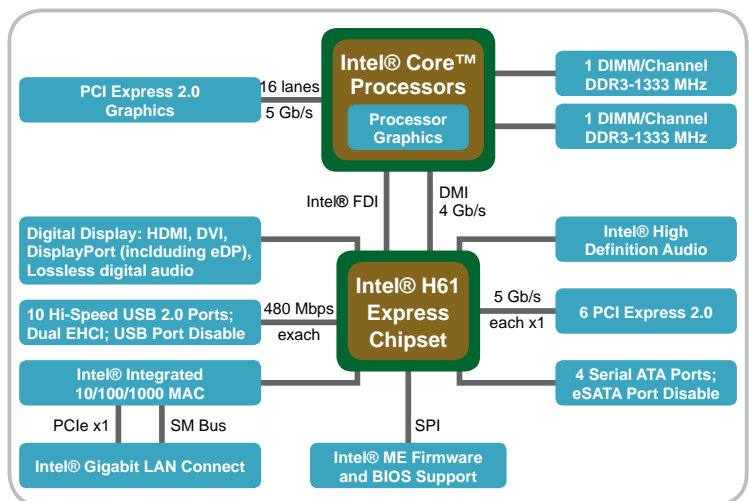
### ■ Scalability for cost-optimized performance platforms

Desktop PC platforms based on the Intel® H61 Express Chipset and 2nd generation Intel® Core™ processor family, including Intel® Core™ i7 and Intel® Core™ i5 processors and other Intel® processors in the LGA1155 package, deliver new technologies and innovating capabilities for all consumers.

The Intel® H61 Express Chipset enables a balanced platform for everyday computing needs.

#### Features and benefits of H61

<b>Support for 2nd and 3rd generation Intel® Core™ processor family</b>	Supports 2nd & 3rd generation Intel® Core™ processor family with Intel® Turbo Boost Technology 2.0, Intel® Pentium® processor, and Intel® Celeron® processor.
<b>Serial ATA (SATA) 3Gb/s</b>	High-speed storage interface supporting up to four SATA ports.
<b>PCI Express 2.0 Interface</b>	Offers up to 5 GT/s for fast access to peripheral devices and networking with up to eight PCI Express 2.0 x1 ports, configurable as x2 and x4 depending on motherboard designs.
<b>Others</b>	Built-in Visuals support. Integrated Audio Codec supports dual stream HDMI & DP audio. Intel® Rapid Storage Technology 10. Integrated Gigabit Ethernet MAC.



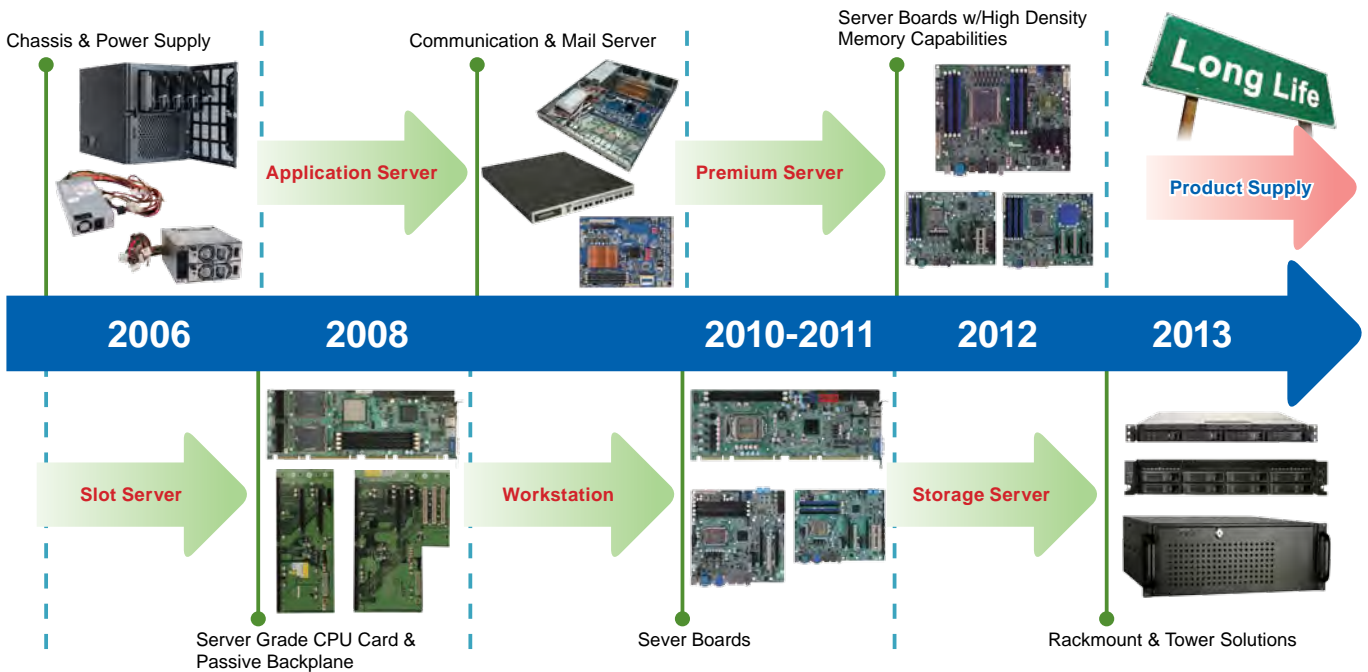
## ◆ Intel® 6 series chipset SKU comparison (Embedded)

Segment Chipset	Desktop B65	Desktop Value H61	Mobile HM65
<b>Processor Support</b>	LGA 1155	LGA 1155	PGA988B, BGA1023
<b>Intel® Active Management Technology 7.0</b>	✗	✗	✗
<b>Intel® Rapid Storage Technology 10</b>	AHCI only	N/A	AHCI only
<b>PCI Express Configurations</b>	1 x 16	1 x 16	1 x 16, 2 x 8, 1 x 8 + 2 x 4
<b>Memory Ch/DIMM per Ch</b>	2 / 2	2 / 1	2 / 1
<b>Intel® HD 3000/2000 Graphics Support</b>	✓	✓	✓
<b>Graphics Output</b>	HDMI/DP/eDP, DVI/VGA	HDMI/DP/eDP, DVI/VGA	HDMI/DP/eDP, DVI/VGA/LVDS
<b>USB 2.0 Ports</b>	12	10	12
<b>PCI Express 2.0 (5 GT/s)</b>	8	6	6
<b>SATA Ports (3Gb/s / 6Gb/s)</b>	6/1	4/0	4/2
<b>Legacy PCI.</b>	✓	✗	✗

# IEI Industrial Server

## About IEI Server

IEI has provided intelligent solutions including embedded boards, industrial systems and functional add-in cards. IEI is now focusing on designing industrial server platforms by integrating high-performance and high-efficiency computing, various expansion cards, rugged design and long product lifespan. IEI is not only offering ODM/OEM capabilities for customized products, but also providing standard server baseboards and server barebones for your applications like communication infrastructure, surveillance security, manufactory automation, storage, military simulator, etc.



## IEI Industrial Server Overview

Chipset	C604	C216	C206	5100
Server Board	ATX: <b>IMBA-C604EP</b> ATX: <b>IMBA-C604EN</b>	ATX: <b>IMBA-C2160</b> uATX: <b>IMB-C2160</b>	ATX: <b>IMBA-C2060</b> uATX: <b>IMB-C2060</b> PICMG: <b>SPCIE-C2060</b>	PICMG: <b>SPCIE-5100DX</b> PICMG: <b>SPCIE-5100P</b>
Processor	Xeon® E5-26xx, E5-24xx	Xeon® E3-12xx, E3-12xxV2, <b>Core™ i3-2120, Cleron® G540</b>		Xeon® E5xxx, L5xxx, 51xx
Memory	DDR3 1600MHz <b>up to 256GB</b>	DDR3 1600MHz up to 32GB	DDR3 1333MHz up to 32GB	DDR2 667MHz up to 32GB
SATA RAID Ports (0, 1, 10, 5)	<b>6 (IMBA-C604EP)</b>		6	
SAS RAID Ports (0, 1, 10)	<b>4 (IMBA-C604EN)</b>		0	
CPU PCIe Lanes	<b>40 (IMBA-C604EP)</b> <b>24 (IMBA-C604EN)</b>		20	

■ Enterprise Server ■ Premium Server ■ Slot Server

### Xeon® CPU Performance

- CPU bandwidth improvement
- Higher memory bandwidth
- LGA1356 & LGA2011 socket
- Primarily targeted for Entry 2S and Premium 1S servers
- Up to 8 cores/20MB cache



### Security Technologies

- Enhanced Trusted Executed Technology (TXT)
- Enhanced AES new instructions
- Execute Disable (XD)
- Multi-threads
- Multi-cores

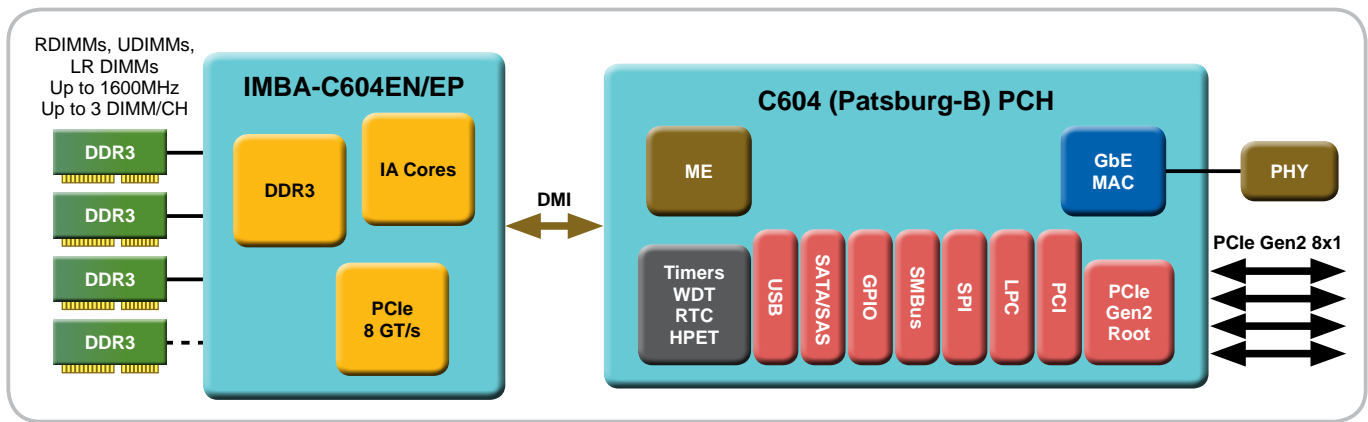


# Romley Platform Overview

## Two Chip Solution - IMBA-C604EN/EP

- Processors (E5-26xx or E5-24xx)
  - Up to 8 Cores/20MB Cache
  - SMT 2T/Core
  - DDR3/L w/ECC/RAS
  - 192GB to 256GB
  - 24/40 PCIe Gen 3 lanes
- LGA Sockets
  - LGA1356 or LGA2011
- Virtualization
  - VT-x and VT-d
- C604 (Patsburg-B) PCH
  - 8 x1 PCIe Gen2
  - 14 USB 2.0
  - 6 SATA (4x3Gb/s, 2x6Gb/s)
  - 4 SAS (3Gb/s)

IEI Romley Server Board	IMBA-C604EP	IMBA-C604EN
Socket	LGA2011	LGA1356
Cores / Cache	8 / 20M	8 / 20M
DIMMs	8	6
Max Memory (GB)	64GB w/ UDIMMs 128GB w/ RDIMMs 256GB w/ LRDIMMs	48GB w/ UDIMMs 96GB w/ RDIMMs 192GB w/ LRDIMMs
SAS 3Gb/s	4	4
SATA 6Gb/s	2	2
SATA 3Gb/s	4	2
USB 3.0	2	2
PCIe x8 slots	4	3
PCI slots	N/A	2



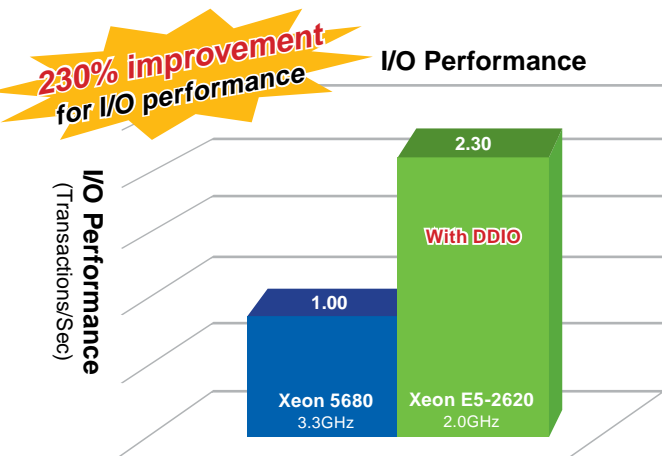
## Intel® Data Direct I/O Technology (DDIO)

### DDIO: Innovation of I/O Access Technology

- Romley I/O architecture that leverages Intel® Integrated I/O
  - PCIe lanes on the CPU
- Reduces memory accesses from I/O on local socket
  - Speed up processor data transfer
  - Accelerates inbound & outbound flows

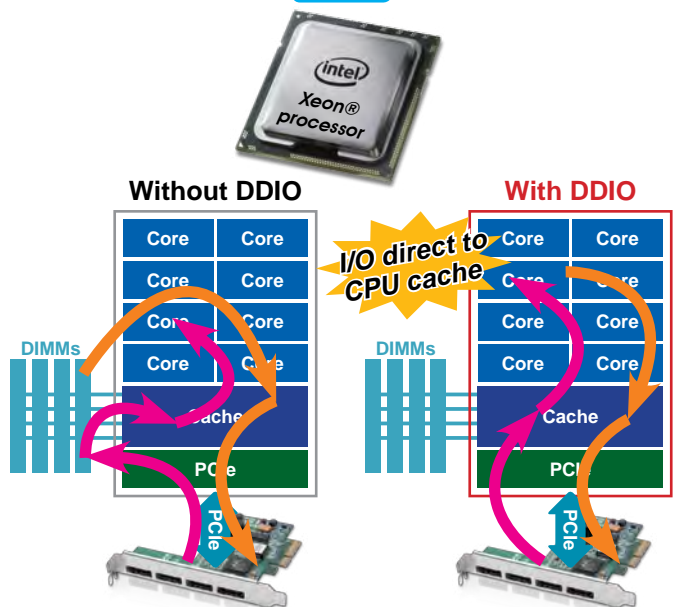
### DDIO Workflow Chart & Benefit

Accelerate local I/O by reducing I/O memory access



### Romley Platform Ingredients

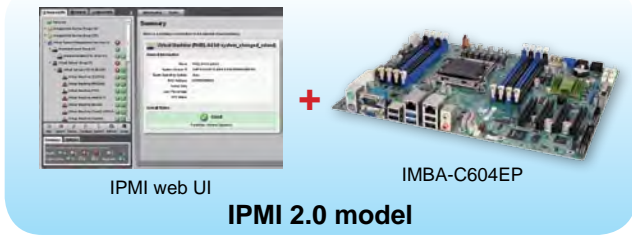
- Intel® Xeon® E5-26xx or E5-24xx processors (LGA2011 or LGA1356)
- Intel® Ethernet, PCIe I/O devices



# Server Management

## ■ Server management protocol for PC monitoring and remote control

IPMI 2.0 protocol allow ITs to easily monitor and control servers located in different places. Companies can reduce human resources and costs associated with inspection and repair. The IPMI 2.0 protocol is used in sever application fields.



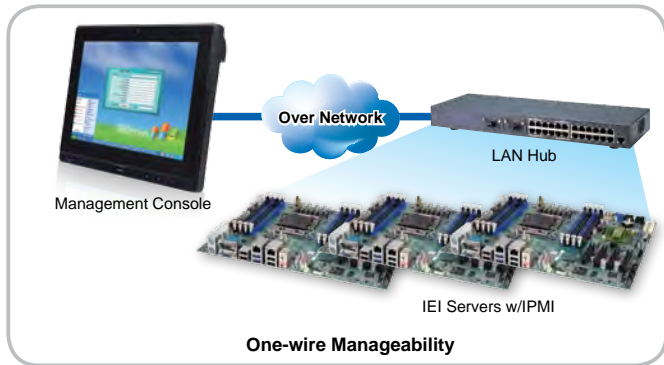
### Server Management Brief Introduction

Server Management	IEI Utility	Application Field	IEI Support Product
IPMI 2.0	via Web UI	High level server	IMBA-C604EP

## IPMI 2.0

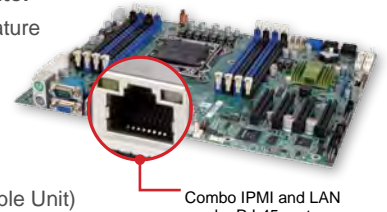
### ■ IPMI (Intelligent Platform Management Interface) 2.0 Overview

- SOL-Serial redirection over LAN
- Management of servers and systems in a remote environment over LAN connections
- Allow ITs manager to manage their servers and systems, regardless of system health and power state
- Backwards compatible with existing IPMI v1.0/1.5 commands



### ■ IPMI 2.0 Features

- IPMI over LAN
  - » Ability to send and receive IPMI messages directly to Baseboard Management controller (BMC) via LAN
- LAN Alerting
  - » Via PET (Platform Event Trap/SNMP trap)
- Event Log
  - » BIOS event
  - » Hardware health monitor event
  - » System operation event
- OS Platform Independent
- Hardware Health Monitor
  - » System/CPU temperature
  - » Fan speeds
  - » Voltage
  - » Chassis intrusion
  - » Power supply failed
  - » FRU (Field Replaceable Unit)



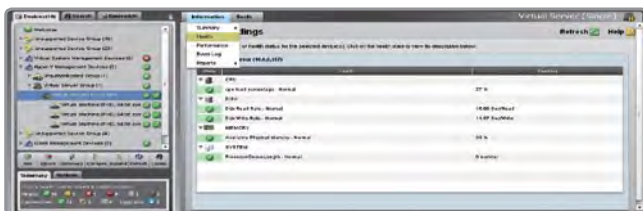
IMBA-C604EP supports IPMI 2.0

### ■ IEI IPMI 2.0 support list table

Category	SOL (Text Console Redirection)	Event Log & Alerting	Sophisticated User Management	Remote Server Power Control	VLAN
Function/Features	To remotely access BIOS and text console	1. Read log events 2. FAN control 3. SNMP traps (version 1) 4. E-Mail alerts (including multiple E-Mail format) 5. Circular SEL support	1. IPMI based user management 2. Security with SSL (Https) 3. Multiple user permission level 4. Extended security support	1. Power status report 2. Power-cycle 3. Power-down 4. Power-up 5. Reset server	VLAN configuration and be configurable
Category	DCMI 1.0	Node Management	IPv6	Hardware Watchdog	KVM
Function/Features	1. Mandatory compliance requirements met 2. Optional requirements can be met 3. Platform specific porting required for actual power function	Optional IPMI commands support as per NM2.0 requirements	1. Kernel, Application level 2. DHCP, DNS clients 3. DoD "Simple Server" classification compliant	System reset	1. Java-based remote console 2. Faster speed 3. Mac, Linux, Windows OS support 4. Completely secured remote access 5. Sharing support

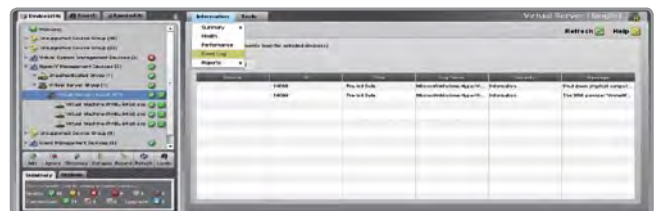
## IPMI 2.0 via Web UI

### ■ Hardware Health Monitor



Check servers summary of CPU load percentage, disk read/write rate, available physical memory and Processor Queue Length.

### ■ Event Log



Check servers BIOS, hardware health and system events.

## ■ Server Power Control



Remote to control the system power of servers as shutdown or reset.

## ■ Performance Chart

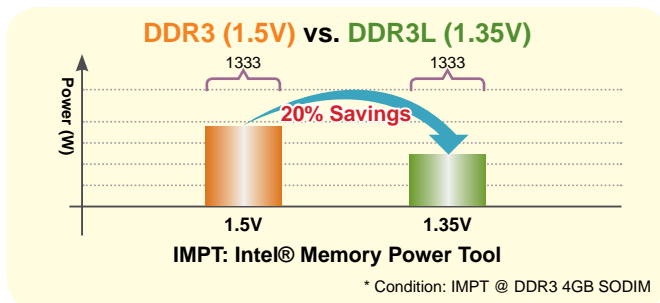


Check servers BIOS, hardware health and system events.

# Green Memory: Low Voltage DDR3 (DDR3L)

## ■ Optimized exceptional performance & energy saving

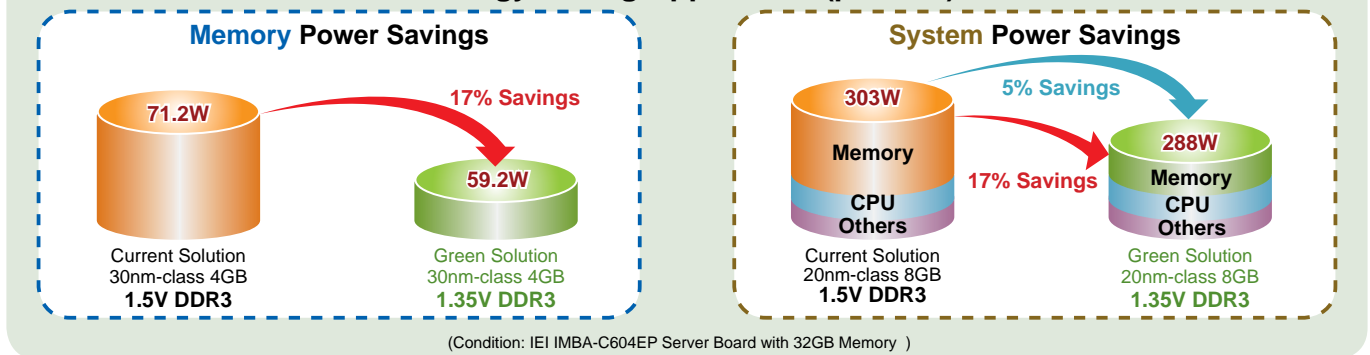
Memory plays a critical role in maximizing server efficiency, so it's extremely important to determine the optimal type of memory DDR3L delivers better bandwidth, consumes significantly less power than DDR2 and operates with voltages as low as 1.35V. This option provides the best performance-to-power efficiency ratio on the market.



## IEI server boards with DDR3L solution list

Chipset	ATX	uATX
C604	IMBA-C604EP IMBA-C604EN	N/A
C216	IMBA-C2160	IMB-C2160

## Energy Saving Application (per unit)



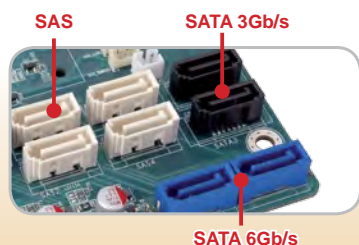
# IEI Server Feature Check List

IEI Innovative products have full server functionality support for your purchasing strategy.

Platform	IPMI 2.0 iKVM	Intel® DDIO	SAS 3Gb/s (port)	External GPU (IC)	PCIe Gen3 (lane)	PCIe x8 slot (Gen3+Gen2)	PCIe x4 slot (Gen3+Gen2)	PCIe x1 slot (Gen3+Gen2)	PCI (slot)	SATA port (6Gb/s+3Gb/s)	USB 3.0 (port)	COMs (port)	Flexible Slots via BP (type)
IMBA-C604EP	COMBO RJ-45	DDIO	4	AST2300	40	4 (4+0)				6 (2+4)	2	1	
IMBA-C604EN		DDIO	4	AST1300	24	3 (3+0)	1 (0+1)		2	4 (2+2)	2	10	
IMBA-C2160					20	2 (0+2)	2 (1+1)	1 (0+1)	2	6 (2+4)	4	6	
IMB-C2160					20	2 (0+2)	2 (1+1)			6 (2+4)	4	10	
IMBA-C2060						2 (0+2)	2 (0+1)		3	6 (2+4)	2	6	
IMB-C2060						2 (0+2)	1 (0+1)		1	6 (2+4)	2	10	
SPCIE-C2060										6 (2+4)		3	5
SPCIE-5100DX				Z9s						6 (0+6)		2	5

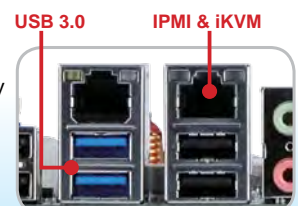
## ■ SAS/ SATA RAID

- RAID On Load
- RAID 0/1/10/5
- SAS expander support
- SGPIO
- SMART alerts
- System Management (CIM)



## ■ Integrated I/O

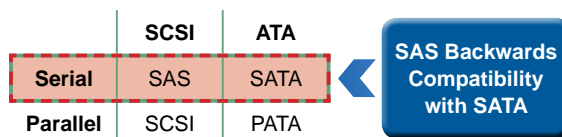
- PCIe generation 3 with 8GT/s
- DATA Direct I/O (DDIO) technology
- DDR3L support
- SATA 6Gb/s
- SAS 2.0 / SATA 3Gb/s



# SAS & SATA Compatibility

## Hard drive interface

- **ATA**
  - » Parallel ATA for PATA interface
  - » Serial ATA for SATA interface
- **SCSI**
  - » Parallel SCSI for SCSI interface
  - » Serial Attached SCSI for SAS interface



## SAS as SATA interface and RAID function

SAS 2.0 (3Gb/s) not only supports SATA and SAS interface, it's also compatible with SAS RAID functions. It can be configured to RAID function as RAID 0/1/5/10 while system do the SAS RAID mode installation.

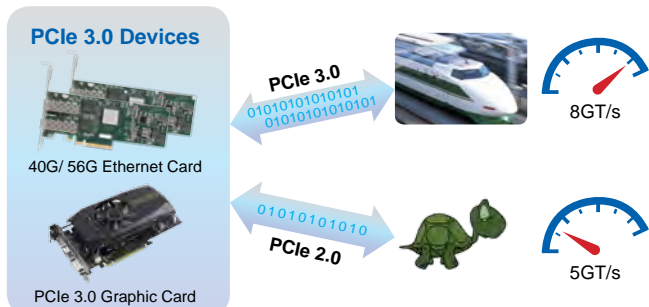
SAS & SATA RAID function Table

System Installation	Configuration 1	Configuration 2	Configuration 2
<b>SAS RAID Mode</b>	It's Not Available for the combine SAS and SATA as RAID function		SAS 3Gb/s Only (RAID speed: 3Gb/s)
<b>SATA RAID Mode</b>	SATA 3Gb/s + SATA 6Gb/s (RAID speed: 3Gb/s)	SATA 6Gb/s Only (RAID speed: 6Gb/s)	SATA 3Gb/s Only (RAID speed: 3Gb/s)

# PCI Express 3.0 Applications

## Breaking the PCI Express bandwidth bottleneck

Powerful Ethernet card and high performance graphic card can reach maximum speed via PCI Express 3.0 at 8 GT/s



PCI Express bandwidth

PCIe architecture	Raw bit rate	Interconnect bandwidth	Bandwidth per lane per direction	Total bandwidth for x16 link
PCIe 1.x	2.5 GT/s	2 Gbps	~250 MB/s	~8 GB/s
PCIe 2.x	5.0 GT/s	4 Gbps	~500 MB/s	~16 GB/s
PCIe 3.0	8.0 GT/s	8 Gbps	~1 GB/s	~32 GB/s

# Barebone Solution

## Total Barebone Solutions

- 1U and 2U rackmount barebone are within the server boards including 4-bay or 8-bay for storage applications.
2. The universal processor type is recommended for cost-efficient computing model.

## Advantage of IEI's barebone solutions

Features	IEI	Consumer	Why IEI
Operating Temperature	0°C ~ 40°C	10°C ~ 35°C	Providing the system stable operation under critical temperature even in no air condition environment
Anti-shock	1G	0.25 ~ 0.5G	Preventing the system influence by the violent vibration over 0.5G situation
Industrial Interface	Serial ports/ PCI slots	N/A	Providing the legacy interfaces for customers' existing applications
Technical Support	High	Medium to Low	Reducing customers' development time and cost does by fully technical support form IEI
Longevity	5~7 years	2~3 years	Providing the long term support to improve customers' products value
Version Control	Yes	No	Providing the compatible products by each generation

## Features Highlight

- 1U/2U rackmount barebone
- Highly density memory capacities
- 4/8-bay hot-swap 3.5" SAS/SATA drive
- IPMI & iKVM (optional)
- UP server board



## Barebone Spec.

Family	SNB-EP		SNB-EN	
Model Name	ISRA-C604EP1	ISRA-C604EP2	ISRA-C604EN1	ISRA-C604EN2
Size	1U	2U	1U	2U
Processor	E5-26xx & E5-26xxV2		E5-24xx & E5-24xxV2	
Memory	Slots	8 DIMMs	6 DIMMs	
	Max. Size	256GB	192GB	
HDDs	3.5" x 4	3.5" x 8	3.5" x 4	3.5" x 8
LAN	Dual LAN		Dual LAN	
IPMI 2.0	Yes		N/A	
PSU	Watts	500W	510W	510W
	Type	Single		Single



# 3rd Generation Intel® Atom™ Introduction

## Low Power Dual Core Cedarview

### ◆ 2012 New Atom Dual Core Platform

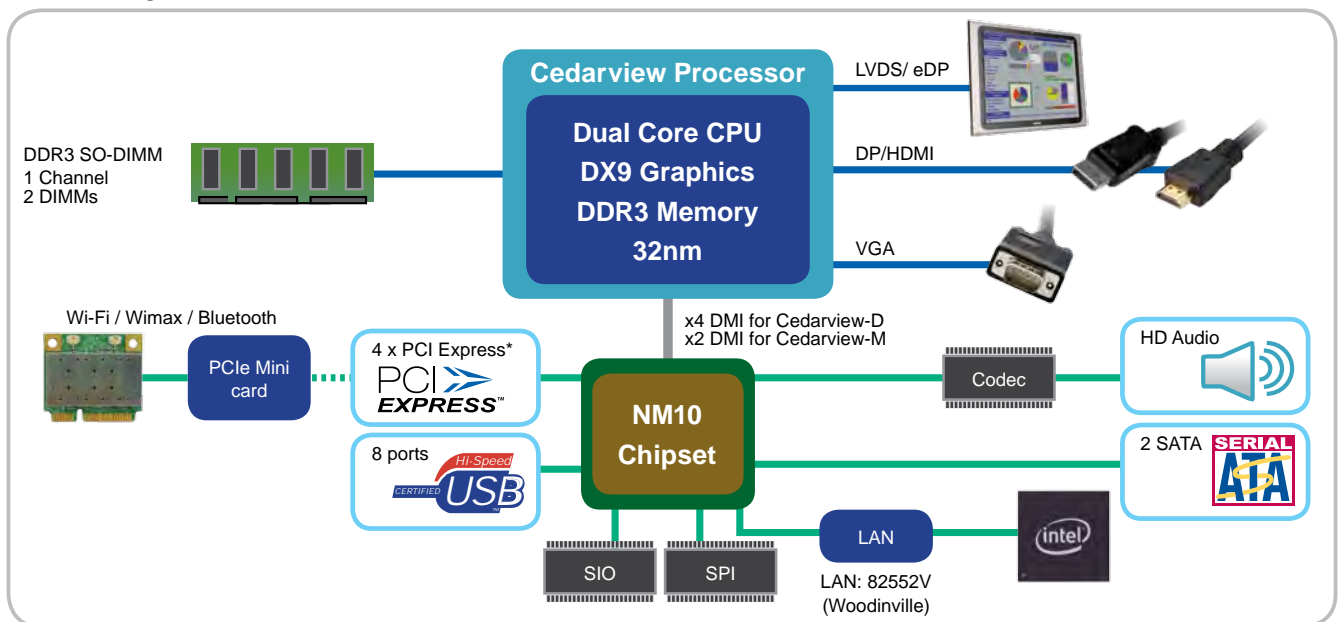
#### ■ Benefits

- CPU TDP (3.5/6.5/10W) & Average Power lower than Pine Trail (6.5/10/13W)
- Display Options include two digital ports for extra LVDS/HDMI/VGA options
- Two times Improved Graphics with two HD video support
- Faster memory up to 1066MHz DDR3
- HD Decode with Blu-Ray support

#### ■ Specification comparison

	Navy Pier (N270)	Pine Trail (D525/D425/N455)	Cedar Trail (D2550/N2800/N2600)
<b>Process</b>	45nm	45nm	32nm
<b>Processor Frequency</b>	N270: 1.6GHz	D525/D425: 1.8GHz N455: 1.66GHz	D2550: 1.86GHz N2800: 1.86GHz N2600: 1.6GHz
<b>CPU TDP</b>	N270: 2.5W	D525: 13W D425: 10W N455: 6.5W	D2550: 10W N2800: 6.5W N2600: 3.5W
<b>Chipset/ PCH TDP</b>	945GSE: 5.5W ICH7M: 1.9W	ICH8M: 2W	Intel® NM10: 1.5W
<b>Memory</b>	DDR2 400/533MHz (2G max.)	DDR2/3 up to 667 for N455 800 MHz D525/D425 (4G max.)	DDR3 1066 for D2550/N2800 (4G max.) DDR3 800MHz for N2600 (2G max.)
<b>Graphics</b>	DX9, OGL 1.4	DX9, OGL 1.5	DX9, OGL 3.0
	Gfx @ 133 MHz	Gfx @ 200 MHz (N455) Gfx @ 400MHz (D525/D425)	Gfx @ 400 MHz (N2600) Gfx @ 640MHz (D2550/N2800)
<b>Video Decode</b>	MPEG2	Discrete 3rd part decoder	MPEG2, h.264, VC-1/WMV9 Up to 1080p decode

#### ■ Block diagram



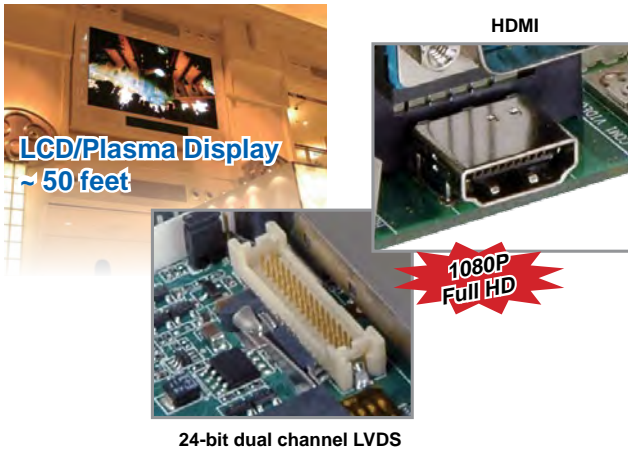
#### ■ IEI CV features matrix table

Model	Display interface	Power input	Expansion slot	mSATA	microSD	USB 3.0
KINO-CVR-D25502	VGA + HDMI	ATX power	PCIe x 4	V	V	V
KINO-CV-D25501	18+48bits LVDS + VGA + HDMI	9~28V	PCI / PCIe mini	V	V	V
NANO-CV-D25501	18+48bits LVDS + VGA + HDMI	9~28V	PCI-104+ / PCIe mini	V	V	V
NANO-CV-D25502	18/24 bits LVDS + Dual VGA	9~28V	Dual PCIe mini	V		
WAFER-CV-D25501	18+48bits LVDS + VGA	12V	Dual PCIe mini	V		
WAFER-CV-D25502	18/24bits LVDS + VGA	12V	PCI-104+ / PCIe mini	V		

## ◆ IEI Cedartrail Solutions Feature Upgrade

### ■ Complete display interface supported

HDMI supports up to 1080p and 5.7"~42" LCD panel supported by on-board 24-bit dual channel LVDS for the digital signage market



### ■ High speed USB 3.0

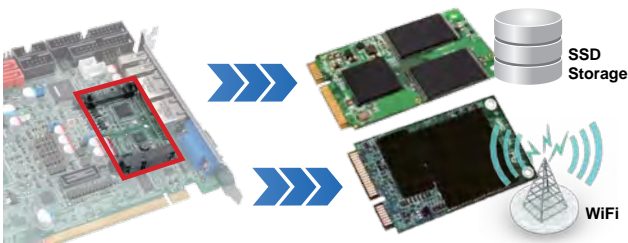
USB 3.0 interface delivers 5Gbps data transfer rate backwards compatible with USB 2.0 devices



### ■ Industrial storage option

#### A. Flexible PCIe Mini card Solution

Support mSATA SSD or wireless device connection



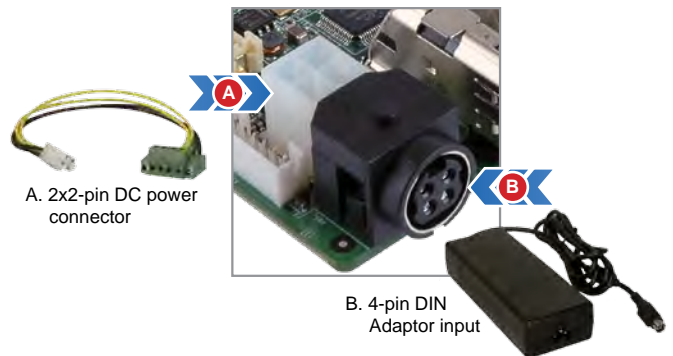
#### B. Bootable microSD design

The SLC flash delivers the most reliable microSD card with outstanding performance and excellent endurance



### ■ Wide range 9~28VDC input on board

IEI offers two DC input options without an extra power module

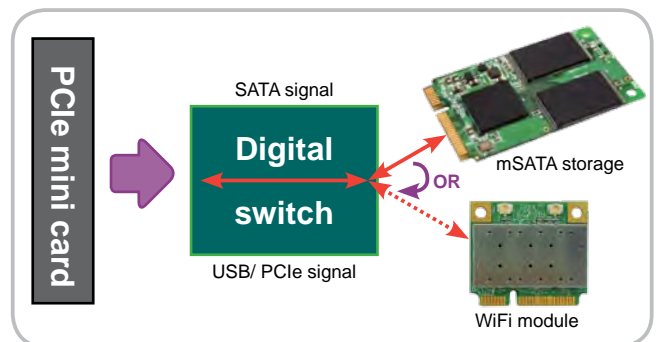


## Industrial Storage Solution

### ■ mSATA introduction

Mini-SATA, or mSATA, is a low-profile interface connector that enables enhanced Serial ATA (SATA) integration in small form-factor drives roughly the size of a business card, such as solid state disks (SSDs). mSATA supports data transfer rates of 1.5 Gb/s and 3.0 Gb/s, providing compact integration and high performance in a wide variety of HDDs and SSDs used in ultraportable laptops, netbooks, and other mobile devices.

The Serial ATA International Organization (SATA-IO), the same organization responsible for the SATA, SATA II, and SATA III (SATA 6 Gb/s) specifications, released the mSATA specification in September 2009. mSATA drives are now available from a variety of manufacturers.



Item	mSATA
Form Factor	Mini PCIe slot
Transfer Protocol	SATA II
Data Transfer Rate (Max.)	600 MB/sec 
Compatible with Mini PCIe pin out	By mSATA digital switch support as figure 1
Pin definition	Pin 23/25 -- TX+ / TX- Pin 31/33 -- RX- / RX+

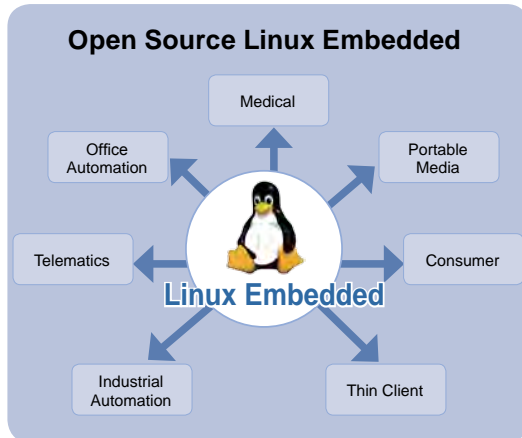
### ■ mSATA support list

KINO-CV-D25501	KINO-CVR-D25502
NANO-CV-D25501	NANO-CV-D25502
WAFER-CV-D25501	WAFER-CV-D25502
KINO-QM770	NANO-QM770

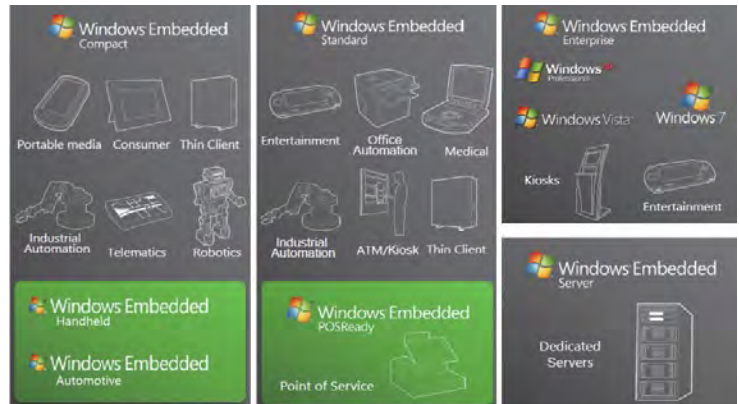
# Complete Embedded OS Support

IEI embedded systems offer customer the turnkey OS solution to reduce OS platform design efforts and accelerate the product time to market. IEI product development focus on consistently offering customers the leading and innovative industrial computing products, therefore IEI support Linux Embedded and the complete range of Microsoft Windows Embedded solutions to the embedded computing market. This support optionally includes the licensed embedded OS, and the CD pack contains all necessary SDK (Software Development Kit) materials and user manuals.

## 1. IEI Linux Embedded



## 2. Microsoft Windows® Embedded Family



Flexibility, Source Level Control, Multiple CPU Architectures | Fixed Features, Express Development, Windows Desktop Compatibility

## 3. Windows® Embedded Categories

	Windows® Embedded Enterprise	Windows® Embedded Standard 7	Windows® Embedded Compact 7
<b>On-device ROM</b>	XP Pro: 128 MB RAM; 1.5 GB Hard Drive Vista: 1 GB RAM; 40 GB Hard Drive Windows 7: 1GB RAM (32Bit) 2GB RAM Windows 7: 1GB (64Bit), 16GB Hard Drive	Reduced Footprint 12,000 Individual Components 560MB at smallest	700 components, 500KB at smallest
<b>Supported Processors</b>	XP Pro: 300 MHz 32-bit (X86) Vista: 1 GHz 32-bit (X86)/64-bit(X64) Windows 7: 1GHz 32Bit (X86)/ 64-Bit (X64)	X86, X64	ARM MIPS SH4 X86
<b>Real-Time OS</b>	Yes, Via Third Party Plug-in	Yes, Via Third Party Plug-in	32-bit Native Real-Time Support, Unified Kernel
<b>Embedded Device Management</b>	No	Yes, with Windows Embedded Device Manager 2011	No
<b>Application Support</b>	Existent or Customized Win 32 Applications or Win 64 Applications (on 64-bit editions of Vista and Windows® 7)	Full Win 32 Application compatibility	Customized Win 32 Applications
<b>Application</b>	Control, Automation, ATM	Bulletin, Automation, Surveillance, Networked Media Devices	Digital Media Adapter, GPS navigation, terminal client device
<b>Function</b>	<b>XP Professional</b> Full XP Professional	<b>XP Professional for Embedded Systems</b> Full XP Professional	
<b>Authorization Type</b>	PC OEM	<b>Embedded Channels</b>	
<b>Life Cycle (end date)</b>	2009/1/31	2016/12/31	
<b>Technical Support</b>	No	Yes	
<b>Recovery CD</b>	Only OS Recovery	Total Recovery (Include AP,OS, Driver)	

## 4. Windows® Embedded Standard 7

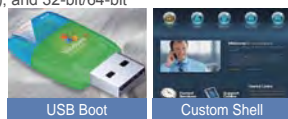
**Features:** \* Features will all comply in Windows Embedded 8.

### Componentized version of Windows 7 Ultimate for embedded systems

- Reduced BOM cost: Reduced image size using components (Minimum Footprint > 400MB, Minimum RAM > 512 MB)
- Processor Supports: Insert space between (x86), and 32-bit/64-bit
- Multi-Language Packages Multi-touch Support

### Embedded enabling features

- Enhanced Write Filter & File Based Write Filter
- USB Boot
- Hibernate Once Resume Many
- Custom Shell



### System protection with file or OS read only set up function to prevent improper operation

Functionality	EWF(RAM Mode)	FBWF
Write Through Capability	None	File and Folder Write Through
Commit	Commit Whole Overlay	File Commit Only
HORM	Yes	No
Relative Protection	Higher Protection (Lower in I/O stack)	Less Protection (Higher in I/O stack)

### Componentized version of Windows® 7 Ultimate for embedded systems

#### Componentization Technical Concepts

- Embedded Core
- Feature Sets
- Drivers
- Languages



#### Image configuration editor



# IEI Easy Manager (iEZman) *iEZman*

- IEI iEZman is compact server management that provides the essential control and management capabilities built in IEI computers, and supports Intel® Active Management Technology (Intel® AMT) which is built in Intel® vPro™ Technology chipset. iEZman turns management simple and easy use for users.
- IEI iEZman supports Microsoft® Windows® platform and provides user one-glance graphic user-interface for local and remote control management.
- IEI iEZman API is available for 3rd ISV and System Integrators.

## Remotely Discover, Recover, Protect and Manage Server Systems

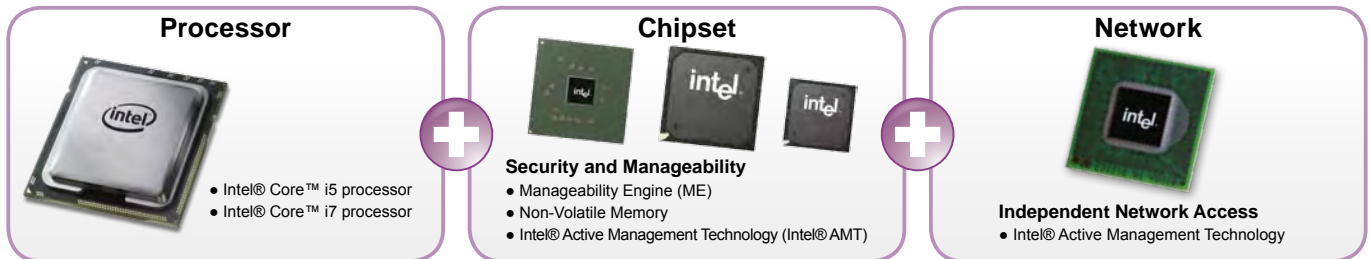


1. Inventory assets regardless of power state.
2. Save energy cost with scheduled power management.
3. Reduce unplanned system downtime by proactive alerts.
4. Reduce administrator's on-site visit.
5. Keep remote/local systems and applications up to date.

## iEZman comply Intel® Active Management Technology

Improve managing and securing networked computing resources.  
 Inventory assets, even while systems are powered off.  
 Upgrade/Repair systems using out-of-band (OOB) management capabilities.  
 Push software updates while system is powered up or down.

## iEZman activate Intel® vPro™ Technology



### Processor



- Intel® Core™ i5 processor
- Intel® Core™ i7 processor

### Chipset



#### Security and Manageability

- Manageability Engine (ME)
- Non-Volatile Memory
- Intel® Active Management Technology (Intel® AMT)

### Network



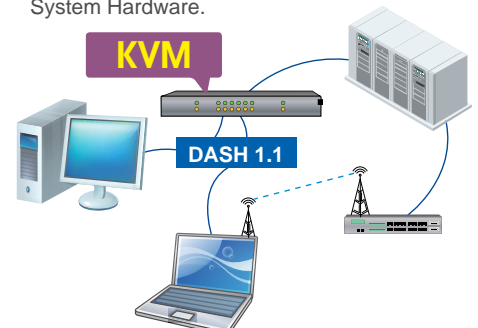
- Independent Network Access
- Intel® Active Management Technology

## Intel® AMT Feature List

Intel® Product Name	Intel® Core™ 2 Processor (2008)	Intel® Core™ 2 Processor (2008)	Clarkdale & Arrandale Processors (2010)	Sandy/Ivy Bridge Processors (2011/2012)
Chipset	GM45	Q45	Q57/QM57	C206/Q67/QM67 C216/Q77/QM77
Intel® AMT Version	AMT 4.0	AMT 5.0	AMT 6.0	AMT 7.0/8.0
Boot Control	✓	✓	✓	✓
Power State Management	✓	✓	✓	✓
HW Inventory	✓	✓	✓	✓
SW Inventory	✓	✓	✓	✓
HW Alerting	✓	✓	✓	✓
Serial Over LAN	✓	✓	✓	✓
IDE Redirect	✓	✓	✓	✓
Agent Presence	✓	✓	✓	✓
System Defense Filters	✓	✓	✓	✓
ME Wake on LAN	✓	✓	✓	✓
Remote Configuration	✓	✓	✓	✓
Access Monitor Operation	✓	✓	✓	✓
Fast Call for Help, Remote Scheduled Maintenance, and Remote Alerts from outside corporate firewall via Wired LAN	✓	✓	✓	✓
Enhanced system defense filters		✓	✓	✓
KVM Redirection			✓	✓
IPv6 and SHA-2 support			✓	✓
DASH 1.1 with KVM Support				✓

### Addition of DASH 1.1 with KVM Support

**DASH** (Desktop and mobile Architecture for System Hardware) is a **DMTF** (Desktop Management Task Force) standard which outlines the implementation requirements of the Desktop and Mobile Architecture for System Hardware.



# iEZman Support IEI product models

Intel® AMT 4.0		Intel® AMT 5.0		Intel® AMT 6.0		Intel® AMT 7.0/8.0		
Industrial Computing solution	Industrial Computing solution	Embedded Computing solution	Industrial Computing solution	Embedded Computing solution	Industrial Computing solution		Embedded Computing solution	
PCIE-Q350	IMBA-Q454	TANK-GM45A	PCIE-Q57A	ECN-581A-QM57	IMBA-C604EN	IMBA-C2160	TANK-720-Q67	
IMBA-XQ354			KINO-QM57A	EBC-3680	SPCIE-C2060	IMB-C2160	TANK-700-QM67	
IMB-Q354			NANO-QM57A		IMBA-C2060	IMBA-Q770	ECN-780-Q67	
					IMB-C2060	IMB-Q770		
					PCIE-Q670	KINO-QM770		
					IMBA-Q670	NANO-QM770		
					IMB-Q670	ICE-QM770		
					KINO-AQ670			
					KINO-QM670			

\* Require Intel® Core™ i5 Processor or Intel® Core™ i7 Processor for Intel® KVM remote control management.

# iEZman Support IEI product models

IEI iEZman specializes on iAMT out-of-band client management. The efficient capabilities include remotely deploying an OS image, diagnosing hardware or software problems with KVM solution and controlling the remote computers regardless the OS or system power state.

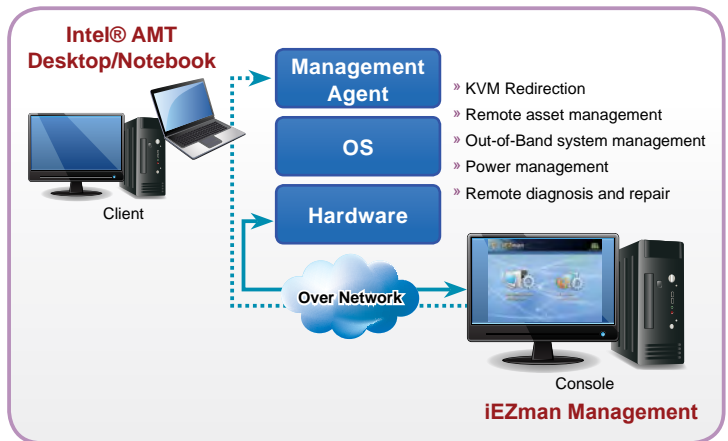
## ■ Integrate VNC® on Windows Interface

(\*VNC® License is required.)

Provides PC diagnosis, repair and maintenance with graphical support through redirection of Keyboard/Video/Mouse/Storage (KVMs) to IT management.

## ■ User Friendly Interface

IEI iEZman illustrates all management functions in one simple and straightforward user interface.



# IEI Easy Manager



IEI Easy Manager allows a remote user, such as a support person, to remotely control and perform administrative tasks through a graphical user interface in Windows. You can manage all functions through this single interface.



**Power Management**  
Control the power status of system for power on/off/reset



**Schedule Power Management**  
Schedule the system(s) to wake from a sleep state or turn off at a particular time



**Remote Access**  
Boot the remote PC from a local CD-ROM, floppy drive or ISO image. Or boot into the BIOS



**Group Management**  
Sort remote PCs into groups for easy monitoring and control



**Patch Management**  
Apply patches to the remote PC



**Alert and Events**  
Issues an alert when the system encounters an issue



**Alarm Clock**  
Sets an alarm to wake the system even under unconnected status



**KVM Remote Control (optional)**  
Allow a remote system to control the keyboard, video and mouse with a secure password  
*\*VNC license is required*

# IEI One Key Recovery Solution



IEI's unique One Key Recovery solution allows you to recover and backup your operating system without a lot of complicated settings. One Key Recovery comes bundled with every IEI SBC, embedded system, and all-in-one panel PC product.

## Recovery Tool for IEI Products Only

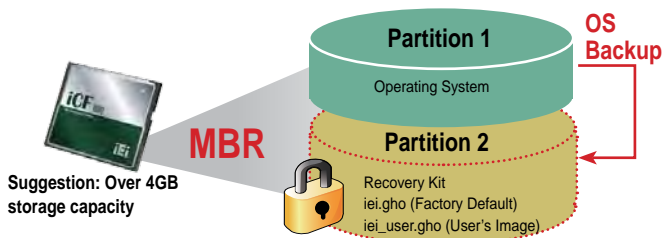
**Supports Auto Recovery Mode!**

The IEI recovery CD was developed exclusively by IEI using Windows PE 2.0. It allows users to do a full system backup and restore from system failures. One Key Recovery keeps costs low, because it eliminates the need to buy additional system backup and recovery tools.



### Recovery Partition

A hidden partition is a logical section of a disk which is not accessible to the operating system. After building partitions for OS and one key recovery, and execute one key recovery set up process, the partition for one key recovery will be hidden. It may be used to protect confidential data or store backup of the system.



### IEI Recovery Solution Advantages:

- No need to make recovery discs by yourself or follow trivial imaging procedures
- Simple steps to backup or restore the system. No IT personnel required.
- Backup/Restore system easily through unique multi-menu
- One key to make recovery disc
- One key to restore system

### IEI Products Only



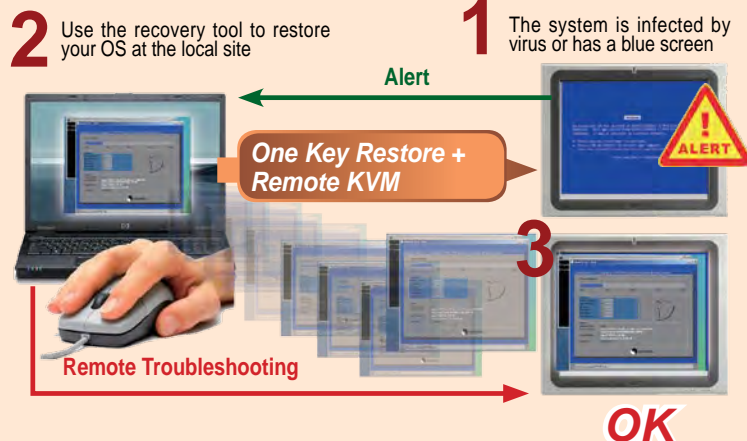
#### IEI Certified Sticker

The IEI recovery CD is only for IEI products. A message will show to warn "you are an illegal user" if using the CD for non-IEI products. This protection is detected through the BIOS of the IEI boards.

## Benefits

### Remote maintenance reduces the cost of IT infrastructure

All migration tasks can be performed remotely from a central management console. This saves cost by reducing physical visits.



# Rapid Recovery and Restoration Ensures Seamless Workflow

## A. Local operation:

Fix problems at your finger tips via hot key

By pressing F3, users can access the backup/recovery process easily. One Key Recovery simplifies the imaging and migration process, increasing efficiency in system maintenance.

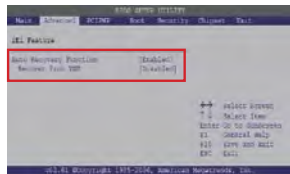


Support OS List	
Windows® XP	Windows® Vista
Windows® 7	Windows® CE 5.0
Windows® CE 6.0	Windows® XP Embedded
Linux OS	
1. RedHat 9	4. Ubuntu 6.10, 7.10 , 8.10
2. RedHat RHEL- 5.4	5. Debian 4.0, 5.0
3. Fedora Core 7, 8, 10, 11, 12	6. SuSe 10.3, 11.2

- One-Key Recovery**
  - Factory restore: restore your system to default setting (iei.gho)
  - Restore your last backup: recover the last system configuration (iei\_user.gho)
- One-Key Backup**

Backup your operating system to the secure hidden partition. You can create your own ghost image as "iei\_user.gho" including your application programs set-ups.

## B. Auto scheduling: Instant problem solving from auto recovery **New**

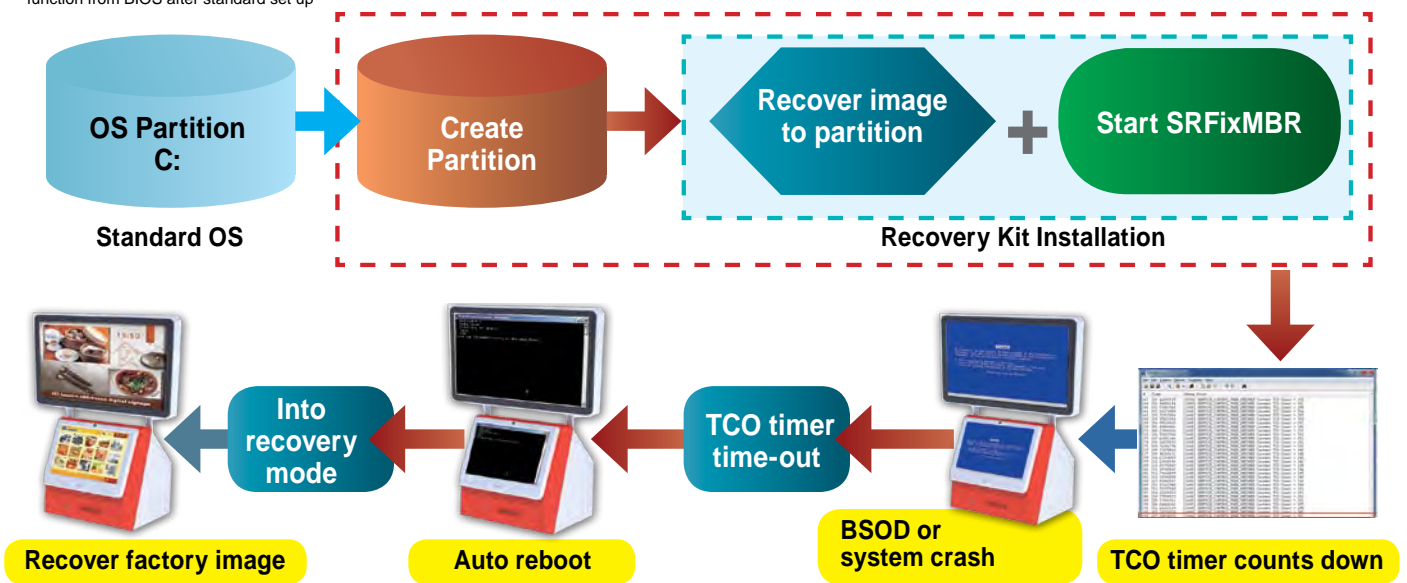


Make sure to enable auto recovery function from BIOS after standard set up

When the system encounters a Blue Screen of Death (BSoD) or hangs for 10 minutes [Default setting is 10 minutes , If want to change the time setting please contact us], the auto recovery function enables the factory default image automatically. This function shortens repair downtime, ensuring continuous work.

Supported OS List	
Windows® 2000	Windows® XP Embedded
Windows® XP	Windows® Embedded Standard 7
Windows® Vista	

Optional function, support by request.



## C. Network: Remote recovery through LAN **New**

One key Recovery also provides a remote recovery function. IT professionals can easily maintain client device through the network. When the system has a Blue Screen of Death (BSoD) or hangs for 10 minutes [Default setting is 10 minutes , If want to change the time setting please contact us], the default factory system image can be restored from server to ensure seamless workflow.

RECOVERY10.TAR.B22  
tar2 Archive  
197,416 KB

**Install utility from One Key Recover CD for server**

AUTORECOVERY-SETUP.EXE  
Setup Launcher  
IEI

**Install setup from One Key Recover CD for client device**

**Restart client through LAN**

Server requirement	
Linux server with DHCP, TFTP and HTTP function	

Client Operation System support	
Windows® 2000	Windows® 7
Windows® XP	Windows® Embedded
Windows® Vista	Windows® Embedded Standard 7

Optional function, support by request.

# IEI Intelligent System Management Module

## What is the IEI Intelligent System Management Module (iSMM)?

IEI iSMM is a system health supervision API which utilizes sensor chips on IEI motherboards to track system and CPU temperatures, voltages, cooling fan speed., WDT and Digital I/O set up status. By quickly capturing and reporting system health data, users can prevent disasters such as system instability or damage.

# iSMM

### Features

- External and on-chip voltages data feedback
- CPU and system temperature data feedback
- Cooling fan speed data feedback
- Cooling fan speed controlled by PWM/On-Off/Automatic Mode
- Warning signals by beeper and sound effect
- WDT Test
- Programmable Digital I/O
- System health configurations save and load

### Available models

#### iSMM support below super I/O:

1. Winbond W83627
2. Winbond W83697
3. ITE IT8712
4. ITE IT8718
5. ITE IT8783F
6. Fintek F81216D
7. Fintek F81865
8. SMSC SCH311x

### Available operation system

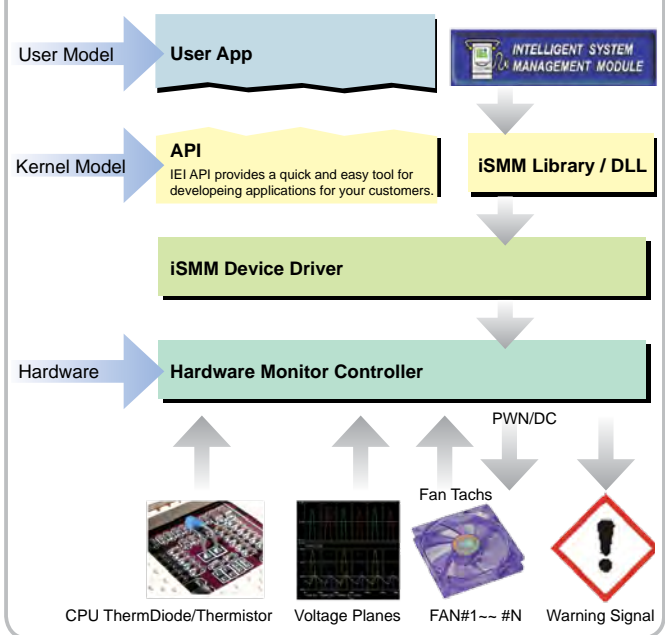
- a. Windows® XP
- b. Windows® Vista
- c. Windows® 7

Note: Please disable the UAC function before installing iSMM software under Windows® Vista and Windows® 7.

### Advantages

Know that your system is running within safe limits  
Prevent disasters such as system instability or damage.

### Architecture



## IEI Exclusive Diagnosis Software

Full Graphic User Interface  
Real-time access system  
Efficient API functions

INTELLIGENT SYSTEM  
MANAGEMENT MODULE

IEI Solutions  
Compliance Only

### Functions



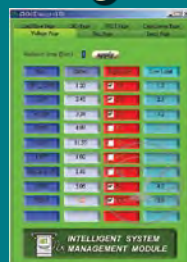
#### Temp.

CPU + System temperature monitoring



#### Fan

Dynamic fan speed control



#### Voltage

Real time voltage alarm



#### DIO

Easy Digital I/O configuration



#### WDT

Trouble free watch dog timer testing



#### Save/Load

Flexible user profile retrieval



# Intel® CPU and Chipset Matrix Table

## Server E5/ Workstation E3 CPU List

CPU Socket	Brand	Process	Core/Threads	CPU No.	Clock speed	Smart cache	TDP	Int. GFX Speed	Max Memory Speed (DDR3)	AMT	Chipset
LGA2011	Xeon® E5 Sandy Bridge-EP	32nm Sandy Bridge	4/4	E5-2603	1.8 GHz	10 MB	80 W	-	DDR3-800/1066	AMT 7.0	C604
			4/4	E5-2609	2.4 GHz	10 MB	80 W	-	DDR3-800/1066		
			6/12	E5-2620	2 GHz	15 MB	95 W	-	DDR3-800/1066/1333		
			6/12	E5-2630	2.3 GHz	15 MB	95 W	-	DDR3-800/1066/1333		
			6/12	E5-2630L	2 GHz	15 MB	60 W	-	DDR3-800/1066/1333		
			2/4	E5-2637	3 GHz	5 MB	80 W	-	DDR3-800/1066/1333/1600		
			6/12	E5-2640	2.5 GHz	15 MB	95 W	-	DDR3-800/1066/1333		
			4/8	E5-2643	3.3 GHz	10 MB	130 W	-	DDR3-800/1066/1333/1600		
			8/16	E5-2650	2 GHz	20 MB	95 W	-	DDR3-800/1066/1333/1600		
			8/16	E5-2650L	1.8 GHz	20 MB	70 W	-	DDR3-800/1066/1333/1600		
			8/16	E5-2660	2.2 GHz	20 MB	95 W	-	DDR3-800/1066/1333/1600		
			8/16	E5-2665	2.4 GHz	20 MB	115 W	-	DDR3-800/1066/1333/1600		
			6/12	E5-2667	2.9 GHz	15 MB	130 W	-	DDR3-800/1066/1333/1600		
			8/16	E5-2670	2.6 GHz	20 MB	115 W	-	DDR3-800/1066/1333/1600		
			8/16	E5-2680	2.7 GHz	20 MB	130 W	-	DDR3-800/1066/1333/1600		
			8/16	E5-2690	2.9 GHz	20 MB	135 W	-	DDR3-800/1066/1333/1600		
			4/8	E5-4603	2 GHz	10 MB	95 W	-	DDR3-800/1066		
			6/12	E5-4607	2.2 GHz	12 MB	95 W	-	DDR3-800/1066		
			6/12	E5-4610	2.4 GHz	15 MB	95 W	-	DDR3-800/1066/1333		
			6/6	E5-4617	2.9 GHz	15 MB	130 W	-	DDR3-800/1066/1333/1600		
8/16	E5-4620	2.2 GHz	16 MB	95 W	-	DDR3-800/1066/1333					
8/16	E5-4640	2.4 GHz	20 MB	95 W	-	DDR3-800/1066/1333/1600					
8/16	E5-4650	2.7 GHz	20 MB	130 W	-	DDR3-800/1066/1333/1600					
8/16	E5-4650L	2.6 GHz	20 MB	115 W	-	DDR3-800/1066/1333/1600					
LGA1356	Xeon® E5 Sandy Bridge-EN	32nm Sandy Bridge	8/16	E5-2470	2.3 GHz	20 MB	95 W	-	DDR3-800/1066/1333/1600	AMT 7.0	C604
			8/16	E5-2450L	1.8 GHz	20 MB	70 W	1.9 GHz	DDR3-800/1066/1333/1600		
			8/16	E5-2450	2.1 GHz	20 MB	95 W	-	DDR3-800/1066/1333/1600		
			6/12	E5-2440	2.4 GHz	15 MB	95 W	-	DDR3-800/1066/1333		
			6/12	E5-2430L	2 GHz	15 MB	60 W	2 GHz	DDR3-800/1066/1333		
			6/12	E5-2430	2.2 GHz	15 MB	95 W	-	DDR3-800/1066/1333		
			6/12	E5-2420	1.9 GHz	15 MB	95 W	-	DDR3-800/1066/1333		
			4/4	E5-2407	2.2 GHz	10 MB	80 W	2.1 GHz	DDR3-800/1066		
			4/4	E5-2403	1.8 GHz	10 MB	80 W	-	DDR3-800/1066		
			6/12	E5-1428L	1.8 GHz	15 MB	60 W	-	DDR3-800/1066/1333		
LGA1155	Xeon® E3	22nm Ivy Bridge	4/8	E3-1290V2	3.7 GHz	8 MB	87 W	-	DDR3-1333/1600	AMT 8.0	C206/ C216
			4/8	E3-1280V2	3.6 GHz	8 MB	69 W	-			
			4/8	E3-1275V2	3.5 GHz	8 MB	77 W	1.25 GHz			
			4/8	E3-1270V2	3.5 GHz	8 MB	69 W	-			
			4/8	E3-1265LV2	2.5 GHz	8 MB	45 W	1.15 GHz			
			4/8	E3-1245V2	3.4 GHz	8 MB	77 W	1.25 GHz			
			4/8	E3-1240V2	3.4 GHz	8 MB	69 W	-			
			4/8	E3-1230V2	3.3 GHz	8 MB	69 W	-			
			4/4	E3-1225V2	3.2 GHz	8 MB	77 W	1.25 GHz			
			4/4	E3-1220V2	3.1 GHz	8 MB	69 W	-			
	4/2	E3-1220LV2	2.3 GHz	3 MB	17 W	-					
	Xeon® E3	32nm Sandy Bridge	4/8	E3-1290	3.6 GHz	8 MB	95 W	-	DDR3-1066/1333	AMT 7.0	
			4/8	E3-1280	3.5 GHz	8 MB	95 W	-			
			4/8	E3-1275	3.4 GHz	8 MB	95 W	1.35 GHz			
			4/8	E3-1270	3.4 GHz	8 MB	80 W	-			
			4/8	E3-1260L	2.4 GHz	8 MB	45 W	1.25 GHz			
			4/8	E3-1245	3.3 GHz	8 MB	95 W	1.35 GHz			
			4/8	E3-1240	3.3 GHz	8 MB	80 W	-			
			4/8	E3-1235	3.2 GHz	8 MB	95 W	1.35 GHz			
			4/8	E3-1230	3.2 GHz	8 MB	80 W	-			
4/4			E3-1225	3.1 GHz	6 MB	95 W	1.35 GHz				
4/2	E3-1220L	2.2 GHz	3 MB	20 W	-						
4/4	E3-1220	3.1 GHz	8 MB	80 W	-						

Yellow means long-term support

# Desktop Core™ i7/i5/i3/Pentium®/Celeron® CPU List

CPU Socket	Brand	Process	Core/Threads	CPU No.	Clock speed	Smart cache	TDP	Int. GFX Speed	Max Memory Speed (DDR3)	AMT	Chipset			
LGA1155	Core™ i7	22nm Ivy Bridge	4/8	i7-3770T	2.5 GHz	8 MB	45 W	1.15 GHz	DDR3-1333/1600	AMT 8.0	Q77/Q67/B65/H61			
			4/8	i7-3770S	3.1 GHz	8 MB	65 W	1.15 GHz		-				
			4/8	i7-3770K	3.5 GHz	8 MB	77 W	1.15 GHz		-				
			4/8	i7-3770	3.4 GHz	8 MB	77 W	1.15 GHz		AMT 8.0				
	Core™ i7	32nm Sandy Bridge	4/8	i7-2700K	3.5 GHz	8 MB	95 W	1.35 GHz	DDR3-1066/1333	-				
			4/8	i7-2600S	2.8 GHz	8 MB	65 W	1.35 GHz		AMT 7.0				
			4/8	i7-2600K	3.4 GHz	8 MB	95 W	1.35 GHz		-				
			4/8	i7-2600	3.4 GHz	8 MB	95 W	1.35 GHz		AMT 7.0				
	Core™ i5	22nm Ivy Bridge	4/4	i5-3570T	2.3 GHz	6 MB	45 W	1.15 GHz	DDR3-1333/1600	AMT 8.0				
			4/4	i5-3570S	3.1 GHz	6 MB	65 W	1.15 GHz		-				
			4/4	i5-3570K	3.4 GHz	6 MB	77 W	1.15 GHz		-				
			4/4	i5-3570	3.4 GHz	6 MB	77 W	1.15 GHz		-				
			4/4	i5-3550S	3 GHz	6 MB	65 W	1.15 GHz		-				
			4/4	i5-3550	3.3 GHz	6 MB	77 W	1.15 GHz		-				
			4/4	i5-3475S	2.9 GHz	6 MB	65 W	1.1 GHz		-				
			2/4	i5-3470T	2.9 GHz	3 MB	35 W	1.1 GHz		-				
			4/4	i5-3470S	2.9 GHz	6 MB	65 W	1.1 GHz		-				
			4/4	i5-3470	3.2 GHz	6 MB	77 W	1.1 GHz		-				
			4/4	i5-3450S	2.8 GHz	6 MB	65 W	1.1 GHz		-				
			4/4	i5-3450	3.1 GHz	6 MB	77 W	1.1 GHz		-				
			4/4	i5-3350P	3.1 GHz	6 MB	69 W	1.05 GHz		-				
			4/4	i5-3330S	2.7 GHz	6 MB	65 W	1.05 GHz		-				
			4/4	i5-3330	3 GHz	6 MB	77 W	1.05 GHz		-				
			Core™ i5	32nm Sandy Bridge	4/4	i5-2550K	3.4 GHz	6 MB		95 W		1.25 GHz	DDR3-1066/1333	-
	4/4	i5-2500T			2.3 GHz	6 MB	45 W	1.25 GHz	AMT 7.0					
	4/4	i5-2500S			2.7 GHz	6 MB	65 W	1.1 GHz	-					
	4/4	i5-2500K			3.3 GHz	6 MB	95 W	1.1 GHz	-					
	4/4	i5-2500			3.3 GHz	6 MB	95 W	1.1 GHz	AMT 7.0					
	4/4	i5-2450P			3.2 GHz	6 MB	95 W	1.1 GHz	-					
	4/4	i5-2405S			2.5 GHz	6 MB	65 W	1.1 GHz	-					
	4/4	i5-2400S			2.5 GHz	6 MB	65 W	1.1 GHz	-					
	4/4	i5-2400			3.1 GHz	6 MB	95 W	1.1 GHz	AMT 7.0					
	2/4	i5-2390T			2.7 GHz	3 MB	35 W	1.1 GHz	-					
	4/4	i5-2380P			3.1 GHz	6 MB	95 W	1.1 GHz	-					
	4/4	i5-2320			3 GHz	6 MB	95 W	1.1 GHz	-					
	4/4	i5-2310			2.9 GHz	6 MB	95 W	1.1 GHz	-					
	4/4	i5-2300			2.8 GHz	6 MB	95 W	1.1 GHz	-					
	Core™ i3	22nm Ivy Bridge			2/4	i3-3240T	2.9 GHz	3 MB	35 W	1.05 GHz		DDR3-1333/1600		-
					2/4	i3-3240	3.4 GHz	3 MB	55 W	1.05 GHz				-
			2/4	i3-3225	3.3 GHz	3 MB	55 W	1.05 GHz	-					
			2/4	i3-3220T	2.8 GHz	3 MB	35 W	1.05 GHz	-					
	Core™ i3	32nm Sandy Bridge	2/4	i3-3220	3.3 GHz	3 MB	55 W	1.05 GHz	DDR3-1066/1333	-				
			2/4	i3-2130	3.4 GHz	3 MB	65 W	1.1 GHz		-				
			2/4	i3-2125	3.3 GHz	3 MB	65 W	1.1 GHz		-				
			2/4	i3-2120T	2.6 GHz	3 MB	35 W	1.1 GHz		-				
			2/4	i3-2120	3.3 GHz	3 MB	65 W	1.1 GHz		-				
			2/4	i3-2105	3.1 GHz	3 MB	65 W	1.1 GHz		-				
			2/4	i3-2102	3.1 GHz	3 MB	65 W	1.1 GHz		-				
			2/4	i3-2100T	2.5 GHz	3 MB	35 W	1.1 GHz		-				
	Pentium®	22nm Ivy Bridge	2/2	i3-2100	3.1 GHz	3 MB	65 W	1.1 GHz	DDR3-1333/1600	-				
			2/2	G2120	3.1 GHz	3 MB	55 W	1.05 GHz		-				
	Pentium®	32nm Sandy Bridge	2/2	G2100T	2.6 GHz	3 MB	35 W	1.05 GHz	DDR3-1066/1333	-				
2/2			G870	3.1 GHz	3 MB	65 W	1.1 GHz	-						
2/2			G860T	2.6 GHz	3 MB	35 W	1.1 GHz	-						
2/2			G860	3 GHz	3 MB	65 W	1.1 GHz	-						
2/2			G850	2.9 GHz	3 MB	65 W	1.1 GHz	-						
2/2			G840	2.8 GHz	3 MB	65 W	1.1 GHz	-						
2/2			G645T	2.5 GHz	3 MB	35 W	1.1 GHz	-						
2/2			G645	2.9 GHz	3 MB	65 W	1.1 GHz	-						
2/2			G640T	2.4 GHz	3 MB	35 W	1.1 GHz	-						
2/2			G640	2.8 GHz	3 MB	65 W	1.1 GHz	-						
2/2			G632	2.7 GHz	3 MB	65 W	1.1 GHz	-						
2/2			G630T	2.3 GHz	3 MB	35 W	1.1 GHz	-						
2/2			G630	2.7 GHz	3 MB	65 W	1.1 GHz	-						
2/2			G622	2.6 GHz	3 MB	65 W	1.1 GHz	-						
Celeron®			32nm Sandy Bridge	2/2	G620T	2.2 GHz	3 MB	35 W		1.1 GHz	DDR3-1066	-		
				2/2	G620	2.6 GHz	3 MB	65 W		1.1 GHz		-		
	2/2	G555		2.7 GHz	2 MB	65 W	1 GHz	-						
	2/2	G550T		2.2 GHz	2 MB	35 W	1 GHz	-						
	2/2	G550		2.6 GHz	2 MB	65 W	1 GHz	-						
	2/2	G540T		2.1 GHz	2 MB	35 W	1 GHz	-						
	2/2	G540		2.5 GHz	2 MB	65 W	1 GHz	-						
	2/2	G530T		2 GHz	2 MB	35 W	1 GHz	-						
	2/2	G530		2.4 GHz	2 MB	65 W	1 GHz	-						
	1/2	G465		1.9 GHz	1.5 MB	35 W	1 GHz	-						
1/2	G460	1.8 GHz	1.5 MB	35 W	1 GHz	-								
1/1	G440	1.6 GHz	1 MB	35 W	1 GHz	-								

IEI recommended low power processors

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\*B65/H61 chipset doesn't support Intel® AMT feature

# Desktop Core™ i7/i5/i3/Pentium®/Celeron® CPU List

CPU Socket	Brand	Process	Core/Threads	CPU No.	Clock speed	Smart cache	TDP	Int. GFX Speed	Max Memory Speed (DDR3)	AMT	Chipset	
LGA1156	Core™ i7	45nm	Quad Core	i7-880	2.93G	8M	95W	-	DDR3-1333/1600	AMT6.0	Q57	
				i7-875K	2.93G	8M	95W	-				
				i7-870S	2.66G	8M	82W	-				
				<b>i7-870</b>	2.93G	8M	95W	-				
				i7-860S	2.53G	8M	82W	-				
	Core™ i5			45nm	Quad Core	i5-760	2.8G	8M		95W		-
						i5-750S	2.4G	8M		82W		-
						<b>i5-750</b>	2.66G	8M		95W		-
						i5-680	3.6G	4M		73W		733MHz
						i5-670	3.46G	4M		73W		733MHz
	Core™ i5	32nm	Dual Core	i5-661	3.33G	4M	87W	900MHz				
				<b>i5-660</b>	3.33G	4M	73W	733MHz				
				i5-665K	3.2G	4M	73W	733MHz				
				i5-650	3.2G	4M	73W	733MHz				
				i3-560	3.33G	4M	73W	733MHz				
				i3-550	3.2G	4M	73W	733MHz				
				<b>i3-540</b>	3.06G	4M	73W	733MHz				
				i3-530	2.93G	4M	73W	733MHz				
	Pentium®	32nm	Dual Core	G6960	2.933G	3M	73W	533MHz				
				<b>G6950</b>	2.8G	3M	73W	533MHz				

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# Desktop LGA775 CPU List

CPU Socket	Process	Brand Name	CPU Code	CPU No.	Clock speed	FSB	L2 cache	TDP	Chipset
LGA775	45nm	Core 2 Extreme	Yorkfield	QX9770	3.2G	1600	12M	136W	X48
				QX9650	3.0G	1333	12M	130W	Q45/Q35/G45/G41
				Q9650	2.83G		12M	95W	
				Q9450	2.66G		12M	95W	
				<b>Q9400</b>	2.66G	1333	6M	95W	Q45/Q35/G45/G41
		Core 2 Quad	Yorkfield	Q9300	2.5G		6M	95W	
				Q8300	2.5G		4M	95W	
				Q8200	2.33G		4M	95W	
				E8600	3.33G		6M	65W	
				E8500	3.16G		6M	65W	
				<b>E8400</b>	3.0G	1333	6M	65W	Q45/G45/G41/Q35
				E8300	2.83G		6M	65W	
				E8200	2.66G		6M	65W	
				E8190	2.66G		6M	65W	
				E7500	2.93G		3M	65W	Q45/Q35/G45/G41
		Core 2 Duo	Wolfdale	<b>E7400</b>	2.8G	1066	3M	65W	iEj 945G/Q965 Prodcut with special BIOS to support E7400
				E7300	2.66G		3M	65W	
				E7200	2.53G		3M	65W	
				E6500	2.93G	1066	2M	65W	Q45/G45/G41/Q35
				E6300	2.8G		2M	65W	
	<b>E5300</b>			2.6G	800	2M	65W		
	E5200			2.5G		2M	65W		
	Pentium D Dual Core	Wolfdale	<b>E3400</b>	2.6G		1M	65W	Q45/G45/G41/Q35	
			E3300	2.5G	800	1M	65W		
			E3200	2.4G		1M	65W		
	Core 2 Extreme	Kentfield	QX6850	3.0G	1333	8M	130W	Q45/Q35	
			X6800	2.93G		8M	130W		
			QX6700	2.66G	1066	8M	130W	Q45/G45/G41/Q35/Q965	
			Q6700	2.66G		8M	95W		
			Q6600	2.4G	1066	8M	95W/130W		
		Core 2 Quad	Kentfield	E6850	3.0G		4M	65W	
				E6750	2.66G		4M	65W	
				E6650	2.33G	1333	4M	65W	Q45/G45/G41/Q35
				E6550	2.33G				
				E6540	2.33G		4M	65W	
	E6700			2.66G		4M	65W		
	E6600			2.4G		4M	65W		
	E6420			2.13G		4M	65W		
	<b>E6400</b>			2.13G	1066	2M	65W	Q45/G45/G41/Q35/Q965/945G	
	E6320			1.86G		4M	65W		
	Core 2 Duo	Conroe	E6300	1.86G		2M	65W		
			E4700	2.6G		2M	65W		
			E4600	2.4G		2M	65W		
			E4500	2.2G	800	2M	65W	Q45/G45/G41/Q35/Q965/945G	
			E4400	2G		2M	65W		
<b>E4300</b>			1.8G		2M	65W			
E2220			2.4G		1M	65W			
E2200			2.2G		1M	65W			
E2180			2.0G	800	1M	65W			
<b>E2160</b>			1.8G		1M	65W	Q45/G45/G41/Q35/Q965/945G		
Pentium D Dual Core	Conroe	E2140	1.6G		1M	65W			
		E1600	2.4G		512K	65W			
		<b>E1500</b>	2.2G	800	512K	65W			
		E1400	2.0G		512K	65W			
		E1200	1.6G		512K	65W			

CPU Socket	Process	Brand Name	CPU Code	CPU No.	Clock speed	FSB	L2 cache	TDP	Chipset	
LGA775	65nm	Celeron	Conroe L	450	2.20G			35W	Q45/G45/G41/Q35/Q965/945G	
				<b>440</b>	2.00G	800	512K	35W		
				430	1.8G			35W		
				420	1.6G			35W		
				960	3.6G			95W/130W		
	65nm	Pentium D	Presler		950	3.4G			95W	Q965/945G
					945	3.4G			95W	
					940	3.2G			95W/130W	
					935	3.2G	800	4M	95W	
					930	3G			95W/130W	
					925	3G			95W	
					920	2.8G			95W/130W	
					915	2.8G			95W	
					840	3.2G			130W	
					830	3G	800	2X1M	130W	
	90nm	Smithfield			820	2.8G			95W	Q965/945G
					805	2.66G	533	2X1M	95W	
					661	3.6G			86W	
					641	3.2G	800	2M	65W/86W	
					631	3G			65W/86W	
	65nm	Cedar Mill			<b>651</b>	3.4G	800	2M	65W/86W	Q965/945G/915GV
					641	3.2G			65W/86W	
					631	3G			65W/86W	
					EX	3.73G	1066		115W	
					672	3.8G			115W	
					670	3.8G			115W	
					662	3.6G			84W/115W	
					660	3.6G		2M	115W	
					650	3.4G			84W	
					640	3.2G			84W	
	90nm	Pentium 4	Prescott		571	3.8G			115W	945G/915GV/865G
					570	3.8G			115W	
					561	3.6G	800		84W	
					560				115W	
					<b>551</b>	3.4G			84W	
					550	3.4G			115W	
					541	3.2G			84W	
					540				84W	
					<b>531</b>	3G		1M	84W	
					530	3G			84W	
	65nm	Celeron	Cedar Mill		520	2.8G			84W	945G/3010/915GV
					505				84W	
					524	3.0G			84W	
					519				84W	
					517				84W	
516					2.9G	533		84W		
515								84W		
511					2.8G			84W		
550					2.00G			NA		
540					1.86G	533	1MB	27W-31W		
65nm	Celeron D			530	1.73G			NA	945G/3010/915GV	
				365	3.6G			65W		
				360	3.46G			65W		
				356	3.33G	533	512K	86W		
				<b>352</b>	3.2G			65W/86W		
				347	3.06G			65W/86W		

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# Mobile Core™ i7/i5/i3/Celeron® CPU List

CPU Socket	Brand	Process	Core/Threads	Package Type	CPU No.	Clock speed	Smart cache	TDP	Int. GFX Speed	Max Memory Speed (DDR3)	AMT	Chipset	
rPGA988B	Core™ i7 Extreme Edition	22nm Ivy Bridge	4/8		i7-3940XM	3 GHz	8 MB	55 W	1.35 GHz	DDR3/L-RS 1333/1600	AMT 8.0	QM77/QM67	
			4/8		i7-3920XM	2.9 GHz	8 MB	55 W	1.3 GHz	DDR3/L-RS 1333/1600	AMT 8.0		
	Core™ i7 Extreme Edition	32nm Sandy Bridge	4/8		i7-2960XM	2.7 GHz	8 MB	55 W	1.3 GHz	DDR3-1066/1333/1600	AMT 7.0		
			4/8		i7-2920XM	2.5 GHz	8 MB	55 W	1.3 GHz	DDR3-1066/1333/1600	AMT 7.0		
	Core™ i7	22nm Ivy Bridge		4/8		i7-3840QM	2.8 GHz	8 MB	45 W	1.3 GHz	DDR3/L-RS 1333/1600	AMT 8.0	QM77/QM67/HM65
				4/8		i7-3820QM	2.7 GHz	8 MB	45 W	1.25 GHz	DDR3/L-RS 1333/1600	AMT 8.0	
				4/8		i7-3740QM	2.7 GHz	6 MB	45 W	1.3 GHz	DDR3/L-RS 1333/1600	AMT 8.0	
				4/8		i7-3720QM	2.6 GHz	6 MB	45 W	1.25 GHz	DDR3/L-RS 1333/1600	AMT 8.0	
				4/8		i7-3632QM	2.2 GHz	6 MB	35 W	1.15 GHz	DDR3/L-RS 1333/1600	-	
				4/8		i7-3630QM	2.4 GHz	6 MB	45 W	1.15 GHz	DDR3/L-RS 1333/1600	-	
				4/8		i7-3612QM	2.1 GHz	6 MB	35 W	1.1 GHz	DDR3/L-RS 1333/1600	-	
				4/8		i7-3610QM	2.3 GHz	6 MB	45 W	1.1 GHz	DDR3/L-RS 1333/1600	-	
				4/8		i7-3610QE	2.3 GHz	6 MB	45 W	1.0 GHz	DDR3/L 1333/1600	AMT 8.0	
				2/4		i7-3520M	2.9 GHz	4 MB	35 W	1.25 GHz	DDR3/L-RS 1333/1600	AMT 8.0	
				4/8		i7-2860QM	2.5 GHz	8 MB	45 W	1.3 GHz	DDR3-1066/1333/1600	AMT 7.0	
				4/8		i7-2820QM	2.3 GHz	8 MB	45 W	1.3 GHz	DDR3-1066/1333/1600	AMT 7.0	
				4/8		i7-2760QM	2.4 GHz	6 MB	45 W	1.3 GHz	DDR3-1066/1333/1600	AMT 7.0	
				4/8		i7-2720QM	2.2 GHz	6 MB	45 W	1.3 GHz	DDR3-1066/1333/1600	AMT 7.0	
	Core™ i7	32nm Sandy Bridge		4/8		i7-2710QE	2.1 GHz	6 MB	45 W	1.2 GHz	DDR3-1066/1333/1600	AMT 7.0	
				4/8		i7-2670QM	2.2 GHz	6 MB	45 W	1.1 GHz	DDR3-1066/1333	-	
				2/4		i7-2640M	2.8 GHz	4 MB	35 W	1.3 GHz	DDR3-1066/1333	AMT 7.0	
				4/8		i7-2630QM	2 GHz	6 MB	45 W	1.1 GHz	DDR3-1066/1333	-	
				2/4		i7-2620M	2.7 GHz	4 MB	35 W	1.3 GHz	DDR3-1066/1333	AMT 7.0	
				2/4		i5-3610ME	2.7 GHz	3 MB	35 W	950 MHz	DDR3/L 1333/1600	AMT 8.0	
				2/4		i5-3360M	2.8 GHz	3 MB	35 W	1.2 GHz	DDR3/L-RS 1333/1600	AMT 8.0	
				2/4		i5-3320M	2.6 GHz	3 MB	35 W	1.2 GHz	DDR3/L-RS 1333/1600	AMT 8.0	
				2/4		i5-3210M	2.5 GHz	3 MB	35 W	1.1 GHz	DDR3/L-RS 1333/1600	-	
				2/4		i5-2540M	2.6 GHz	3 MB	35 W	1.3 GHz	DDR3-1066/1333	AMT 7.0	
	Core™ i5	32nm Sandy Bridge		2/4		i5-2520M	2.5 GHz	3 MB	35 W	1.3 GHz	DDR3-1066/1333	AMT 7.0	
				2/4		i5-2510E	2.5 GHz	3 MB	35 W	1.1 GHz	DDR3-1066/1333	AMT 7.0	
				2/4		i5-2450M	2.5 GHz	3 MB	35 W	1.3 GHz	DDR3-1066/1333	-	
				2/4		i5-2435M	2.4 GHz	3 MB	35 W	1.3 GHz	DDR3-1066/1333	-	
				2/4		i5-2430M	2.4 GHz	3 MB	35 W	1.2 GHz	DDR3-1066/1333	-	
				2/4		i5-2410M	2.3 GHz	3 MB	35 W	1.2 GHz	DDR3-1066/1333	-	
				2/4		i3-3120M	2.5 GHz	3 MB	35 W	1.1 GHz	DDR3/L-RS 1333/1600	-	
				2/4		i3-3110M	2.4 GHz	3 MB	35 W	1 GHz	DDR3/L-RS 1333/1600	-	
	Core™ i3	32nm Sandy Bridge		2/4		i3-2370M	2.4 GHz	3 MB	35 W	1.15 GHz	DDR3-1066/1333	-	
				2/4		i3-2350M	2.3 GHz	3 MB	35 W	1.15 GHz	DDR3-1066/1333	-	
				2/4		i3-2330M	2.2 GHz	3 MB	35 W	1.1 GHz	DDR3-1066/1333	-	
				2/4		i3-2330E	2.2 GHz	3 MB	35 W	1.05 GHz	DDR3-1066/1333	-	
				2/4		i3-2328M	2.2 GHz	3 MB	35 W	1.1 GHz	DDR3-1066/1333	-	
				2/4		i3-2312M	2.1 GHz	3 MB	35 W	1.1 GHz	DDR3-1066/1333	-	
	Core™ i3	32nm Sandy Bridge		2/4		i3-2310M	2.1 GHz	3 MB	35 W	1.1 GHz	DDR3-1066/1333	-	
				2/2		B840	1.9 GHz	2 MB	35 W	1 GHz	DDR3-1066/1333	-	
				2/2		B830	1.8 GHz	2 MB	35 W	1.05 GHz	DDR3-1066/1333	-	
				2/2		B820	1.7 GHz	2 MB	35 W	1.05 GHz	DDR3-1066/1333	-	
				2/2		B815	1.6 GHz	2 MB	35 W	1.05 GHz	DDR3-1066/1333	-	
2/2					B810	1.6 GHz	2 MB	35 W	950 MHz	DDR3-1066/1333	-		
2/2					B800	1.5 GHz	2 MB	35 W	1 GHz	DDR3-1066/1333	-		
1/1					B720	1.7 GHz	2 MB	35 W	1 GHz	DDR3-1066/1333	-		
1/1		B710	1.6 GHz	1.5 MB	35 W	1 GHz	DDR3-1066/1333	-					
Socket988A	Core i7 Extreme Edition		Quad		i7-940XM	2.13G	8M	55W	-	1333 MHz 1066 MHz	-	QM57/HM55	
					i7-920XM	2.0G	8M	55W	-		-		
					i7-840QM	1.86G	8M	45W	-		-		
					i7-820QM	1.73G	8M	45W	-		-		
	Core i7					i7-740QM	1.73G	6M	45W	-	-		AMT6.0
						i7-720QM	1.6G	6M	45W	-	-		-
						i7-640M	2.8G	4M	35W	-	-		-
						i7-620M	2.66G	4M	35W	-	-		-
	Core i5				PGA w/o ECC	i5-580M	2.66G	3M	35W	-	-		AMT6.0
						i5-560M	2.66G	3M	35W	-	-		-
						i5-540M	2.53G	3M	35W	-	-		-
						i5-520M	2.4G	3M	35W	-	-		-
						i5-480M	2.66G	3M	35W	-	-		-
						i5-460M	2.53G	3M	35W	-	-		-
						i5-450M	2.4G	3M	35W	500MHz	1066 MHz 800 MHz		-
						i5-430M	2.26G	3M	35W	-	-		-
	Core i3					i3-390M	2.66G	3M	35W	-	-		-
						i3-380M	2.53G	3M	35W	-	-		-
						i3-370M	2.4G	3M	35W	-	-		-
						i3-350M	2.26G	3M	35W	-	-		-
						i3-330M	2.13G	3M	35W	-	-		-
						P4600	2.0G	2M	35W	-	-		-
	Celeron					P4500	1.86G	2M	35W	-	-		-

Yellow means long-term support

\*HM65/HM55 chipset doesn't support Intel® AMT feature

# Mobile Socket P/M/479 CPU List

Package Type	Brand Name	Code Name	Package Size	CPU No.	Clock Speed	FSB (MHz)	L2	TDP	Chipset						
Socket P	45nm	Core 2 Extreme	Penryn (Montevina)	35x35mm	QX9300	2.53G	12M	45W	GM45						
					X9100	3.06G	6M	44W							
					Q9100	2.26G	12M	45W							
					Q9000	2.0G	6M	45W							
		Core 2 Duo	Penryn (Montevina)	35x35mm	1066	T9900 (PGA/BGA)	3.06G	6M	35W	GM45/5100					
						T9800 (PGA/BGA)	2.93G	6M	35W						
						T9600 (PGA/BGA)	2.8G	6M	35W						
						T9550 (PGA/BGA)	2.66G	6M	35W						
						T9400 (PGA/BGA)	2.53G	6M	35W						
						P9700	2.8G	6M	28W						
						P9600	2.66G	6M	25W						
						P9500 (PGA/BGA)	2.53G	6M	25W						
						P8800 (PGA/BGA)	2.66G	3M	25W						
						P8700 (PGA/BGA)	2.53G	3M	25W						
						P8600 (PGA/BGA)	2.4G	3M	25W						
						P8400 (PGA/BGA)	2.26G	3M	25W						
						P7570	2.26G	3M	25W						
						P7550	2.26G	3M	25W						
						P7450	2.13G	3M	25W						
						P7375	2.0G	3M	25W						
						P7370 (BGA)	2.0G	3M	25W						
						T6670	2.2G	2M	N/A						
						T6600	2.2G	2M	35W						
						T6500	2.1G	2M	35W						
						T6400	2.0G	2M	35W						
						T4400	2.2G	800	1M 35W						
						Celeron Mobile	Penryn (Montevina)	35x35mm	800		900	2.2G	1M	35W	GM45/GL40
											T3300	2G	1M	35W	
											T3100 (PGA/BGA)	1.9G	1M	35W	
											T4300	2.1G	1M	35W	
						Pentium Dual Core Mobile			800		T4200	2.0G	1M	35W	
		Core 2 Duo	Penryn (Santa Rosa Reflash)	35x35mm	800	X9000	2.8G	6M	44W	GM45/GL40/GME965					
						T9500 (PGA/BGA)	2.6G	6M	35W						
						T9300 (PGA/BGA)	2.5G	6M	35W						
						T8300 (PGA/BGA)	2.4G	3M	35W						
						T8100 (PGA/BGA)	2.1G	3M	35W						

Package Type	Brand Name	Code Name	Package Size	CPU No.	Clock Speed	FSB (MHz)	L2	TDP	Chipset							
Socket P (HDI-956pin)	45nm	Core 2 Solo	Penryn (Montevina)	22x22mm BGA	SU3500	1.3G	3M	5.5W	GS45							
					SU3300	1.2G	3M	5.5W								
		Celeron M	Penryn (Montevina)	22x22mm BGA	SU2300	1.2G	1M	10W								
					ULV 743	1.3G	1M	10W								
					ULV 723	1.2G	1M	10W								
					ULV 722	1.2G	1M	5.5W								
Socket P	65nm	Core 2 Extreme	Merom (Santa Rosa)	35x35mm	X7900	2.8G	4M	44W	GM45/GL40/GME965							
					X7800	2.6G	4M	44W								
					T7800	2.6G	4M	35W								
					T7700	2.4G	4M	35W								
		Core 2 Duo	Merom (Santa Rosa)	35x35mm	800	T7500 (PGA/BGA)	2.2G	4M	35W	GM45/GL40/GME965						
						T7300	2.0G	4M	35W							
						T7250	2.0G	2M	35W							
						T7100	1.8G	2M	35W							
						T5870	2.0G	2M	N/A							
						T5800	2.0G	2M	35W							
						T5670	1.8G	2M	35W							
						T5470	1.6G	2M	35W							
						T5270	1.4G	2M	35W							
						T5750	2.0G	2M	35W							
						T5550	1.83G	2M	35W							
						T5450	1.66G	2M	35W							
						T5250	1.5G	2M	35W							
						Merom (Santa Rosa Reflash)	35x35mm	800	533		L7700 (BGA)	1.8G	4M	17W	GME965/GLE960	
											L7500 (BGA)	1.6G	4M	17W		
											L7300 (BGA)	1.4G	4M	17W		
											U7700 (BGA)	1.33G	2M	10W		
											U7600 (BGA)	1.2G	2M	10W		
											U7500 (BGA)	1.06G	2M	10W		
						Pentium Dual Core Mobile	Merom	35x35mm	667		T3200	2.0G	1M	35W	GME965/GLE960	
											T3400	2.16G	1M	35W		
						Celeron Mobile	Merom (Montevina)	35x35mm	667		T1700	1.83G	1M	35W	GM45	
											T1600	1.66G	1M	35W		
											585	2.16G	1M	31W		
											575	2.0G	1M	31W		
											573	1.0G	512K	10W		
		570	2.26G	1M	31W											
		Merom (Santa Rosa)	35x35mm	533	533		560	2.13G	1M	31W	GME965/GLE960					
							550 (PGA/BGA)	2.00G	1M	31W						
							540	1.86G	1M	30W						
							530 (PGA/BGA)	1.73G	1M	27W						
							T2390	1.86G	1M	31W						
							T2370	1.73G	1M	35W						
		Pentium Dual Core Mobile	Merom	35x35mm	533	T2330	1.6G	1M	35W							
T2310	1.46G					1M	35W									
Socket M	65nm	Core 2 Duo	Merom (Napa Refresh)	35x35mm	T7600	2.33G	4M	34W	945GME							
					T7400 (PGA/BGA)	2.16G	4M	34W								
					T7200	2.0G	4M	34W								
					T5600	1.83G	2M	34W								
					T5500	1.66G	2M	34W								
					L7400 (BGA)	1.5G	4M	17W								
					L7200	1.33G	4M	17W								
					T2450	2.0G	2M	31W								
					T5300	1.73G	2M	34W								
					T5200	1.6G	2M	34W								

# Mobile Socket P/M/479 CPU List

Package Type	Brand Name	Code Name	Package Size	CPU No.	Clock Speed	FSB (MHz)	L2	TDP	Chipset					
Socket M	65nm	Core 2 Duo	Merom (Santa Rosa Reflash)	35x35mm	U7700 (BGA)	1.33G	533	2M	10W	945GME				
					U7600 (BGA)	1.2G		2M	10W					
					U7500 (BGA)	1.06G		2M	10W					
	Celeron M	Merom (Santa Rosa Reflash)	35x35mm	ULV 530 (PGA/BGA)	1.73G	533	1M	30W						
				520	1.6G		1M	30W						
				ULV 523 (BGA)	930MHz		1M	5.5W						
Socket M	65nm	Core Duo	Yonah	35x35mm	T2700	2.33G	667	2M	31W	945GME				
					T2600	2.16G		2M	31W					
					T2500 (PGA/BGA)	2G		2M	31W					
					T2400	1.83G		2M	31W					
					T2300E	1.66G		2M	31W					
					T2300	1.66G		2M	31W					
					L2500 (BGA)	1.83G		2M	15W					
					L2400 (BGA)	1.66G		2M	17W					
					L2300 (BGA)	1.5G		2M	15W					
					T2450	2.0G		2M	31W					
					T2350	1.86G		2M	31W					
					T2250	1.73G		2M	31W					
					T2050	1.6G		533	2M		31W			
					U2500 (BGA)	1.2G		2M	9W					
					U2400 (BGA)	1.06G		2M	9W					
					Core 2 Solo	Merom (Napa Reflash)		35x35mm	U2200 (BGA)		1.2G	533	1M	5.5W
									U2100 (BGA)		1.06G		1M	5.5W
									Core Solo		Yonah		35x35mm	T1400
	T1300	1.66G	2M	27W										
	U1500	1.33G	2M	6W										
	U1400	1.2G	2M	6W										
	U1300	1.06G	2M	6W										
	T1350	1.86G	2M	31W										
	T1250	1.73G	533	2M	31W									
	Pentium Dual Core Mobile	Yonah	35x35mm	T2130	1.86G	533	1M	31W						
				T2080	1.73G		1M	31W						
				T2060	1.6G		1M	31W						
450				2.0G	1M		27W							
Socket M	65nm	Celeron M	Yonah	35x35mm	440 (PGA/BGA)	1.86G	533	1M	27W	915GME/855GME/852GME				
					430	1.73G		1M	27W					
					420	1.6G		1M	27W					
					410	1.46G		1M	27W					
					ULV 443 (BGA)	1.2G		1M	5.5W					
					ULV 423 (BGA)	1.06G		1M	5.5W					
Socket 479	90nm	Pentium M	Dothan	35x35mm	780 (PGA/BGA)	2.26G	533	2M	27W	915GME				
					770 (PGA/BGA)	2.13G		2M	27W					
					760 (PGA/BGA)	2G		2M	27W					
					750 (PGA/BGA)	1.86G		2M	27W					
					740 (PGA/BGA)	1.73G		2M	27W					
					730 (PGA/BGA)	1.6G		2M	27W					

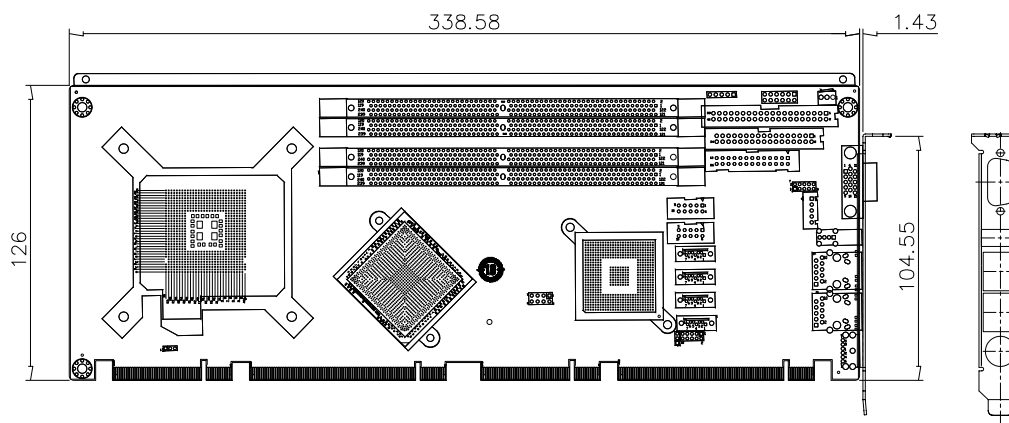
Package Type	Brand Name	Code Name	Package Size	CPU No.	Clock Speed	FSB (MHz)	L2	TDP	Chipset		
Socket 479	90nm	Pentium M Celeron M	Dothan	35x35mm	765 (PGA/BGA)	2.1G	400	2M	21W	915GME/855GME/852GME	
					778 (BGA)	1.6G		2M	7.5W		
					773 (BGA)	1.3G		2M	5.5W		
					758 (BGA)	1.5G		2M	7.5W		
					753 (BGA)	1.2G		2M	5.5W		
					755 (PGA/BGA)	2.0G		2M	21W		
					745A	1.8G		2MB	NA		
					745 (PGA/BGA)	1.8G		2M	21W		
					725	1.6G		2M	21W		
					723 (BGA)	1.0G		2M	5W		
					715	1.5G		2M	21W		
					LV 738 (BGA)	1.4G		2M	10W		
					735	1.7G		2M	21W		
					733 (BGA)	1.1G		2M	5W		
					390 (PGA/BGA)	1.7G		1M	27W		
	380 (PGA/BGA)	1.6G	1M	21W							
	370 (PGA/BGA)	1.5G	1M	21W							
	360 (PGA/BGA)	1.4G	1M	21W							
	350 (PGA/BGA)	1.3G	1M	21W							
	ULV 383 (BGA)	1G	1M	5.5W							
	ULV 373 (BGA)	1G	512K	5.5W							
	ULV 353 (BGA)	900MHz	512K	5W							
	130nm	Pentium M	Banias	35x35mm	Celeron M	NA	1.6G	400	1M	24W	915GME/855GME/852GME
						705 (PGA/BGA)	1.5G		1M	24.5W	
						LV 718	1.3G		1M	12W	
						713 (BGA)	1.1G		1M	7W	
						NA	1.7G		1M	24.5W	
						NA	1.6G		1M	24.5W	
						NA	1.5G		1M	24.5W	
						NA	1.4G		1M	10W	
NA						1.3G	1M		22W		
NA (BGA)						1.2G	1M		12W		
NA (BGA)						1.1G	1M		12W		
NA (BGA)						1.0G	1M		7W		
NA (BGA)						900MHz	1M		7W		
340						1.5G	512K		24.5W		
ULV 333						900MHz	512K		7W		
330	1.4G	512K	24.5W								
320 (PGA/BGA)	1.3G	512K	24.5W								
310	1.2G	512K	24.5W								
NA (BGA)	800Mhz	512K	7W								
NA (BGA)	600MHz	512K	7W								

Yellow means long-term support.

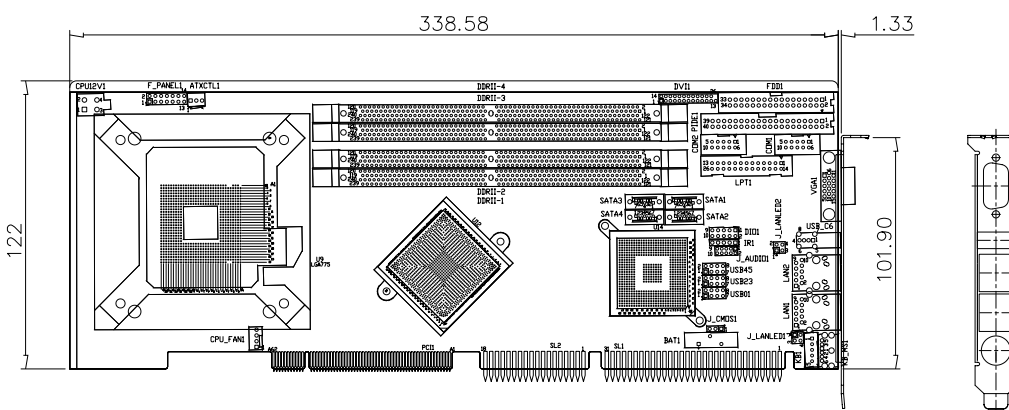
Note: 45nm Penryn Core 2 Extreme/Core 2 Quad core CPU support by project.

# IEI SBC Dimensions (mm)

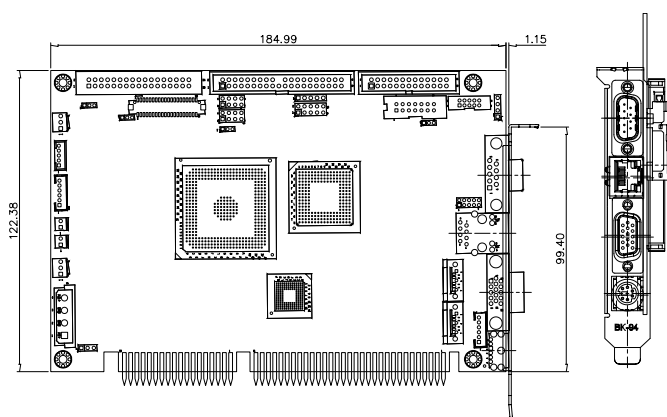
## ■ PICMG 1.3 full-size SBC



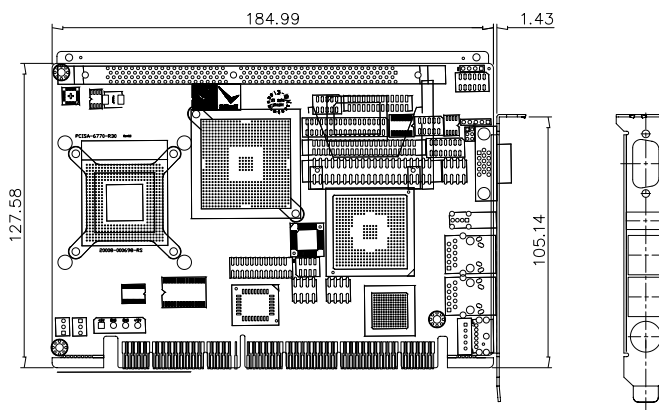
## ■ PICMG 1.0 full-size SBC



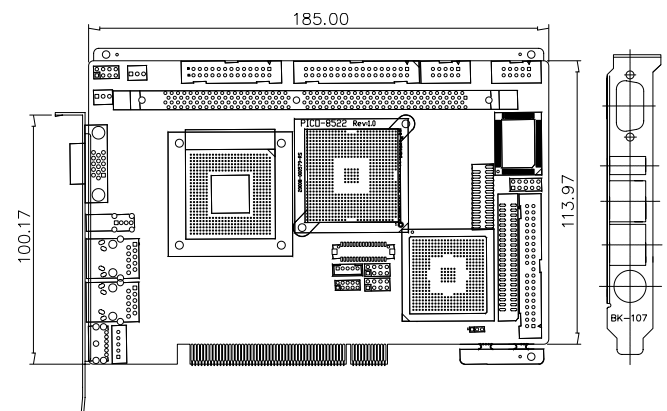
## ■ ISA half-size SBC



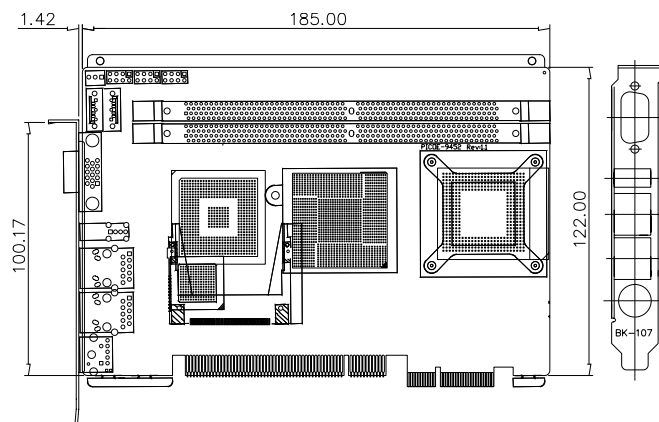
## ■ PCI & ISA half-size SBC



## ■ PCI half-size SBC



## ■ PCI+PCIe half-size SBC



www.ieiworld.com

# PICMG 1.3

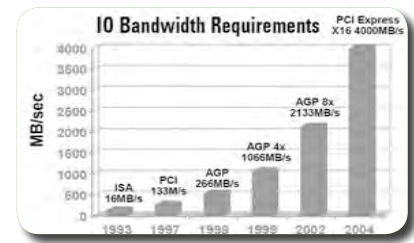
Allows users to protect their investment in PCI (PCI-X) technology while taking advantage of the speed and increased bandwidth of PCI Express

## What is PICMG 1.3 ?

- Bringing PCI Express to your SBC increased speed and bandwidth**  
 Designed to interface with PCI Express peripherals on a backplane. The PCI Express interconnects with the backplane and can operate at x1, x4, x8, x16, and more depending on the capabilities of both the SHB and the backplane.
- Support PCI (PCI-X) on board with flexibility**  
 The optional PCI (-X) portion of the SHB interconnect with the backplane allows for 32-bit operation. The clock rate can be 33MHz, 66MHz, 100MHz, and 133MHz, depending on how the backplane and SHB are designed.
- Miscellaneous IO**  
 SATA, USB, IPMB, SMBUS, Geographic Addressing, and PCI Wake Up to the backplane is specified. Simplified the cabling on SHB for the system.

## PICMG 1.3 Key Features

- PCI Express**  
 20 PCI Express lanes including x16, x4 and x1 PCI Express configuration are supported.
- ATX power signals are supported**  
 AUX voltages for stand-by power and sleep states (Soft starts, wake-on-LAN). Supports PSON#, PWRGD, PWRRBT#, and ACPI states.



## Why PICMG 1.3?

- This new technology is expected to allow PCIe transmission rates to keep pace with processor and I/O advances for the next 10 years or more.
- Same basic mechanical dimensions are maintained to minimize chassis redesign expense
- Better host board power management and simplified I/O cabling
- Supports PCI Express and PCI option cards without driver changing

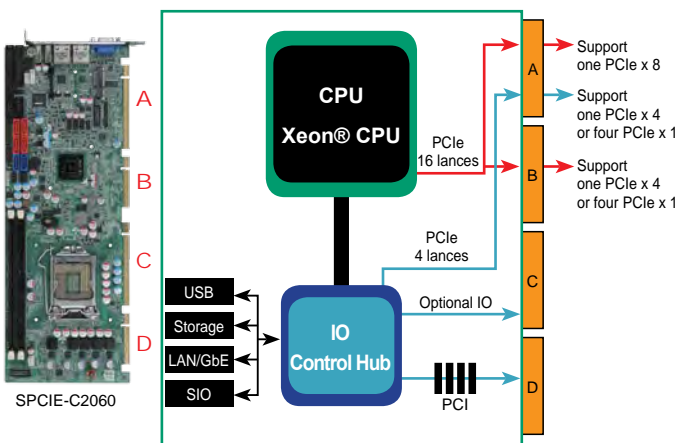
The Future will be.... Chipsets no longer offer native support for ISA

- Faster chipsets & system busses
- Faster CPU
- Chipsets are migrating toward PCI Express

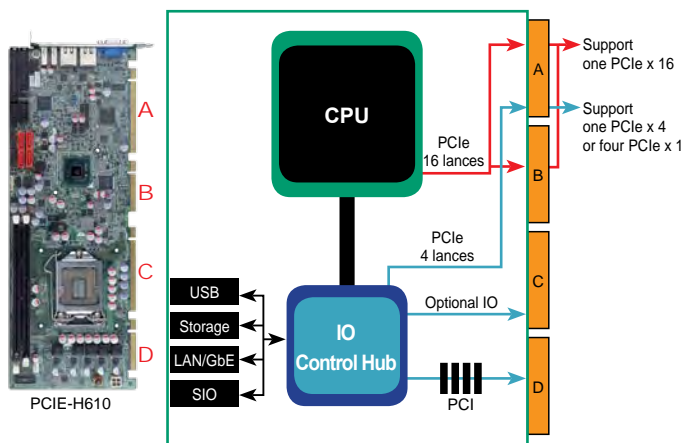


## Graphic & Server Grade PICMG 1.3 Solutions

### Type 1: Server Grade SBC



### Type 2: Graphic Grade SBC



Server Grade SBC can support PCIe x16 (graphic mode) with IEI PE/PXE backplanes

## PICMG 1.3 PCIe Slots Configuration

SBC Type	SBC Type	Server Grade			Server & Graphic Grade	
		A	B	C	A	B
PCIe Slots Available (Non-switch)	x16				1	1
	x8	2	2	1	-	-
	x4	1	1	3	1	-
	x1	-	-	-	-	4
Backplane Solution		IEI SPE/SPXE series			IEI PE/PXE series	

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

4 ORing Network Communication

5 Power Supply/Peripherals

6 Panel Solutions Introduction



# Full-size PICMG 1.3 Selection Guide






Model Name	SPCIE-C2060-R21	SPCIE-5100DX	PCIE-Q670-R20	PCIE-H610
<b>CPU Socket</b>	Intel® LGA1155	LGA 771	Intel® LGA1155	Intel® LGA1155
<b>CPU Type</b>	2nd Generation Intel® Xeon® E3/Core™ i3/Pentium®/Celeron® processor	Intel® Xeon® Processor	2nd Generation Intel® Core™ i7/i5/i3/Pentium®/Celeron®	2nd Generation Intel® Core™ i7/i5/i3/Pentium®/Celeron®
<b>FSB</b>	NA	1066/1333MHz	NA	NA
<b>Chipset</b>	Intel® C206	Intel® 5100 MCH + ICH9R	Intel® Q67	Intel® H61
<b>Memory</b>	Two 240-pin 1066/1333MHz dual-channel ECC and non-ECC unbuffered DDR3 SDRAM DIMMs (system max. 16GB)	Four 240-pin 533/667MHz dual-channel DDR2 SDRAM ECC DIMMs (system max. 32GB)	Two 240-pin 1066/1333MHz dual-channel DDR3 SDRAM DIMMs (system max. 16GB)	Two 240-pin 1066/1333MHz dual-channel DDR3/DDR3L (1.35V) SDRAM DIMMs (system max. 16GB)
<b>Display Interface</b>	1 x VGA 1 x DVI-D (via header to IO-KIT-001-R20 DVI-D/USB module) (optional)	1 x VGA	1 x VGA 1 x DVI-D (via header to IO-KIT-001-R20 DVI-D/USB module) (optional)	1 x VGA 1 x DVI-D (via header to IO-KIT-001-R20 DVI-D/USB module) (optional)
<b>Ethernet</b>	LAN1: Intel® 82574L PCIe controller LAN2: Intel® 82579 PHY with Intel® AMT 7.0 support	Dual Intel® 82547L GbE controller	LAN1: Intel® 82574L PCIe controller LAN2: Intel® 82579 PHY with Intel® AMT 7.0 support	Dual Realtek RTL8111E PCIe GbE controller, LAN1 with ASF 2.0 supported
<b>I/O Interface</b>	4 x RS-232 1 x RS-422/485 8 x USB 2.0 1 x LPT 1 x 6-pin wafer for KB/MS	2 x RS-232 12 x USB 2.0 1 x LPT 1 x Infrared Interface 2 x 5-pin wafer for PS/2 KB & MS	4 x RS-232 1 x RS-422/485 8 x USB 2.0 1 x LPT 1 x 6-pin wafer for KB/MS	2 x RS-232 1 x RS-422/485 10 x USB 2.0 1 x LPT 1 x FDD 1 x 6-pin wafer for KB/MS
<b>Driver Interface</b>	4 x SATA 3Gb/s 2 x SATA 6Gb/s with with raid 0/1/5/10 support	6 x SATA II (RAID 0/1/10/5) 1 x FDD	4 x SATA 3Gb/s 2 x SATA 6Gb/s with with raid 0/1/5/10 support	4 x SATA 3Gb/s
<b>Audio</b>	Supports by IEI AC-KIT-888HD audio kit	IEI AC-KIT-888HD-R10 7.1 channel HD audio kit via the on-board 10-pin header connector	Supports by IEI AC-KIT-888HD audio kit	Supports by IEI AC-KIT-888HD audio kit
<b>Digital I/O</b>	8-bit Digital I/O	8-bit Digital I/O (4-bit input/4-bit output)	8-bit Digital I/O	
<b>Power Consumption</b>	5V@3.98A, 12V@0.38A, Vcore_12V@7.81A, 3.3V@1.61A, 5VSB@0.15A (3.4GHz Intel® Core™ i7-2600K with two 2GB 1333MHz DDR3 memory)	3.3V@0.62A, 5V@4.69A, 12V@2.23A (Dual Intel® Xeon® L5138 1.60GHz CPU at 1066MHz FSB with 4GB 667MHz DDR2 memory)	5V@3.98A, 12V@0.38A, Vcore_12V@7.81A, 3.3V@1.61A, 5VSB@0.15A (3.4GHz Intel® Core™ i7-2600K with two 2GB 1333MHz DDR3 memory)	5V@4.41A, 12V@0.21A, Vcore_12V@7.72A, 3.3V@1.71A, 5VSB@0.16A (3.4GHz Intel® Core™ i7-2600K with two 2GB 1333MHz DDR3 memory)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset			
<b>Operation Environment</b>	Temperature range: -10°C ~ 60°C Relative humidity: 5% ~ 95%, non-condensing	Temperature range: 0°C ~ 60°C (32°F~140°F) Relative humidity: 5% ~ 95%, non-condensing	Temperature range: -10°C ~ 60°C Relative humidity: 5% ~ 95%, non-condensing	
<b>Expansion Slot</b>	PCIe mini	N/A	PCIe mini	NA
<b>CPU Cooler</b>	CF-1156A/B/C/D-RS	2 x 19100-000110-00-RS	CF-1156A/B/C/D-RS	CF-1156A/B/C/D-RS

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# Full-size PICMG 1.3 Selection Guide



Model Name	PCIE-Q57A	PCIE-G41A2	PCIE-Q350-R11
<b>CPU Socket</b>	LGA 1156	LGA 775	LGA 775
<b>CPU Type</b>	Intel® Core™ i7/i5/i3/Pentium®	Intel® Core™2 Quad/Duo	Intel® Core™2 Quad/Duo
<b>FSB</b>	N/A	800/1066/1333MHz	800/1066/1333MHz
<b>Chipset</b>	Intel® Q57	Intel® G41 + ICH7R	Intel® Q35 + ICH9DO
<b>Memory</b>	Two 240-pin 1066/1333MHz dual-channel DDR3 SDRAM DIMMs (system max. 8GB)	Two 240-pin 800/1066MHz dual-channel DDR3 SDRAM DIMMs (system max. 8GB)	Four 240-pin 667/800MHz dual-channel DDR2 SDRAM DIMMs (system max. 8GB)
<b>Display Interface</b>	1 x VGA	1 x VGA	1 x VGA SDVO output for dual display application (by IEI PCIe x16 SDVO add-on card)
<b>Ethernet</b>	Intel® 82583V PCIe GbE controller Intel® 82878DM PHY with Intel® iAMT 6.0 supported	Dual Realtek RTL8111E PCIe GbE controller	Dual Intel® collection LAN1: Intel® 82566DM GbE controller LAN2: Intel® 82573L GbE controller
<b>I/O Interface</b>	2 x RS-232 14 x USB 2.0 1 x LPT 1 x Infrared Interface 1 x PS/2 KB & MS	2 x RS-232 8 x USB 2.0 1 x LPT 1 x Infrared Interface 1 x PS/2 KB & MS	2 x RS-232 12 x USB 2.0 1 x LPT 1 x Infrared Interface 1 x TPM 1 x PS/2 KB & MS
<b>Driver Interface</b>	6 x SATA II (RAID 0/1/10/5) 1 x FDD	4 x SATA II (RAID 0/1/10/5) 1 x IDE 1 x FDD	6 x SATA II (RAID 0/1/10/5)
<b>Audio</b>	IEI AC-KIT-888HD-R10 7.1 channel HD audio kit via the on-board 10-pin header connector	AC-KIT08R-R10 5.1 channel AC'97 audio kit and IEI AC-KIT-888HD-R10 7.1 channel HD audio kit via the on-board 10-pin header connector	IEI AC-KIT-888HD-R10 7.1 channel HD audio kit via the on-board 10-pin header connector
<b>Digital I/O</b>	8-bit Digital I/O (4-bit input/4-bit output)		
<b>Power Consumption</b>	3.3V@0.89A, 5V@4.62A, 12V@4.35A, 5Vsb@0.14A (Intel® Core™ i5 660 3.3GHz CPU with two 2GB 1066 MHz DDR3 memory)	3.3V@0.53A, 5V@6.2A, 12V@1.91A (Intel® Core™2 Duo E8500 3.16GHz at FSB 1333MHz with two 2GB 800MHz DDR3 memory)	3.3V@0.3A, 5V@5.1A, 12V@4.23A, 5Vsb@0.28A (Intel® Core™2 Duo E6700 2.66GHz at 1066MHz FSB with four 2GB 667MHz DDR2 memory)
<b>Watchdog Timer</b>	Software programmable supports 1~255 sec. system reset		
<b>Operation Environment</b>	Temperature range: 0°C ~ 60°C (32°F~140°F) Relative humidity: 5% ~ 95%, non-condensing		
<b>Expansion Slot</b>	N/A		
<b>CPU Cooler</b>	CF-1156A-RS, CF-1156B-RS-R11	CF-775A-RS, CF-520-RS-R11	CF-775A-RS, CF-520-RS-R11

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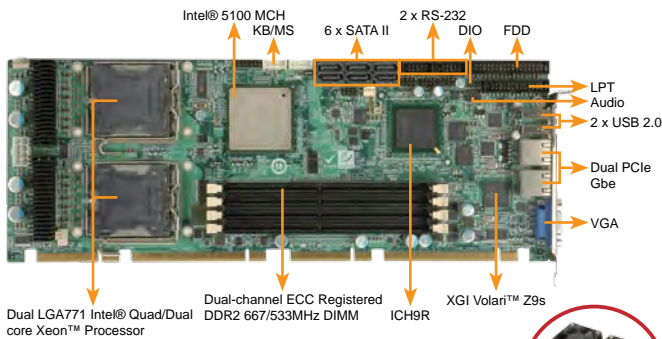
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# SPCIE-5100DX

Full-size PICMG 1.3 CPU card supports dual socket LGA 771 Intel® Xeon® processors and comes with VGA, Dual GbE, SATA II with RAID function, USB 2.0



CPU Cooler (P/N: 19100-000110-00-RS)



## Features

1. Full-size PICMG 1.3 CPU card with Intel® 5100 server grade chipset solution
2. Dual LGA 771 Intel® Quad/Dual core Xeon® processor with a 1333MHz FSB
3. Intel® 5100 server-grade platform supports six PCIe x4 lanes for flexible PCIe application
4. ULV XGI Volari Z9s Graphics controller supports VGA output
5. Four 240-pin DDR2 ECC Registered DIMM supported up to 32GB
6. Six SATA II with RAID function improved performance and reliability for systems
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU
  - Dual-Core Intel® Xeon® 5100/5200 series CPU with a 1333/1066MHz FSB
  - Quad-Core Intel® Xeon® 5300/5400 series CPU with a 1333/1066MHz FSB
- ◆ System Chipset
  - Intel® 5100 MCH (San Clemente) + ICH9R chipsets
- ◆ BIOS
  - AMI BIOS
- ◆ System Memory
  - Four 240-pin 667/533 MHz dual-channel DDR2 ECC Registered DIMMs supported (system max. 32GB)
- ◆ Ethernet
  - Dual PCIe Ethernet support by Intel® 82574L GbE
- ◆ I/O Interface
  - 2 x RS-232 1 x LPT
  - 1 x FDD 2 x 5-pin headers for KB/MS
  - 6 x SATA II with RAID 0, 1, 5 and 10
  - 12 x USB 2.0 (Two on the bracket, six on board and four on backplane by pin header)
- ◆ Digital I/O
  - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared
  - 1 x Infrared by pin header
- ◆ Super I/O: ITE IT8718F
- ◆ Display Interface
  - D-sub analog output via XGI Volari™ Z9s
- ◆ PCI graphics controller integrated 64MB DDR memory
- ◆ Supports resolution up to UXGA (1600x1200) and CRT hot plug
- ◆ Audio
  - 7.1 channel HD audio kit with Realtek ALC888 codec supports dual audio streams
- ◆ Watchdog Timer
  - Software programmable supports 1 ~ 255 sec. system reset
- ◆ Power Supply
  - ATX Power
- ◆ Power Consumption
  - 3.3V@1.07A, 5V@5.55A, 12V@12.3A (Dual Intel® Xeon® 5110 1.6GHz processor with 8GB DDR2 667MHz)
- ◆ Temperature
  - Operation: 0°C ~ 60°C (32°F~140°F)
  - Operation: 0°C ~ 55°C (For 80W CPU limitation)
- ◆ Humidity
  - Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 338 mm x 126 mm
- ◆ Weight: GW: 1500 g/NW: 1200 g

## Packing List

1 x SPCIE-5100DX single board computer	
1 x ATX 12V power cable (P/N: 32102-008000-100-RS)	
2 x LGA771 CPU cooler (P/N: 19100-000110-00-RS)	
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	1 x SBC support bracket
6 x SATA cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x Dual USB cable (P/N: 19800-003100-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

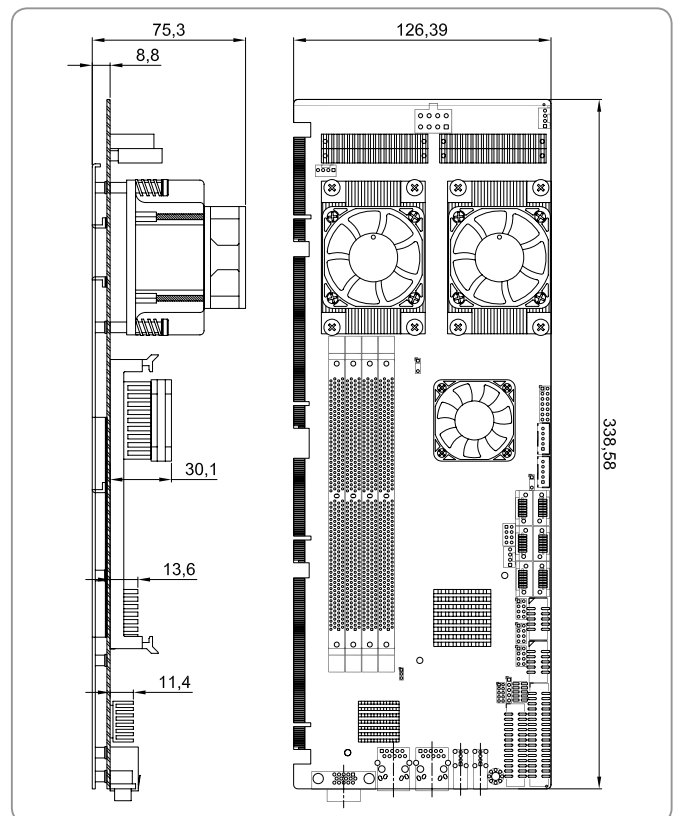
Part No.	Description
SPCIE-5100DX-R10	Full-size PICMG 1.3 Server Grade CPU card supports Dual Intel® Xeon Dual/Quad core processors, Intel® 5100 and ICH9R with VGA, Dual GbE, USB and SATA RAID
AC-KIT-888HD-R10	7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
32229-000100-100-RS	FDD cable
19800-000400-100-RS	LPT cable
19800-000066-RS	KB/MS cable with bracket
32102-000100-200-RS	SATA power cable

## Intel® Xeon® Processor Suggestion Table

Processor Number	Process	Clock Speed (GHz)	FSB (MHz)	L2 Cache	TDP	Cores
L5430	45nm	2.66GHz	1333MHz	12MB	50W	4
L5420	45nm	2.5GHz	1333MHz	12MB	50W	4
L5410	45nm	2.33GHz	1333MHz	12MB	50W	4
L5408	45nm	2.13GHz	1066MHz	12MB	40W	4
L5320	65nm	1.86GHz	1066MHz	8MB	50W	4
L5318	65nm	1.6GHz	1066MHz	8MB	45W	4
L5310	65nm	1.6GHz	1066MHz	8MB	50W	4
L5248	45nm	3.0GHz	1333MHz	6MB	55W	2
L5240	45nm	3.0GHz	1333MHz	6MB	40W	2
L5238	45nm	2.66GHz	1333MHz	6MB	35W	2
L5215	45nm	1.86GHz	1066MHz	6MB	20W	2
E5450	45nm	3.0GHz	1333MHz	12MB	80W	4
E5440	45nm	2.83GHz	1333MHz	12MB	80W	4
E5410	45nm	2.33GHz	1333MHz	12MB	80W	4
E5405	45nm	2.0GHz	1333MHz	12MB	80W	4
E5345	65nm	2.33GHz	1333MHz	8MB	80W	4
E5335	65nm	2.0GHz	1333MHz	8MB	80W	4
E5320	65nm	1.86GHz	1066MHz	8MB	80W	4
E5310	65nm	1.6GHz	1066MHz	8MB	80W	4
E5240	45nm	3.0GHz	1333MHz	6MB	40W	2
E5220	45nm	2.33GHz	1333MHz	6MB	65W	2
E5205	65nm	1.86GHz	1066MHz	6MB	65W	2
E5160	65nm	3.0GHz	1333MHz	4MB	80W	2
E5150	65nm	2.66GHz	1333MHz	4MB	65W	2
5148	65nm	2.33GHz	1333MHz	4MB	40W	2
5140	65nm	2.33GHz	1333MHz	4MB	65W	2
5138	65nm	2.13GHz	1066MHz	4MB	35W	2
5130	65nm	2.0GHz	1333MHz	4MB	65W	2
5128	65nm	1.86GHz	1066MHz	4MB	40W	2
5120	65nm	1.86GHz	1066MHz	4MB	40W	2
5110	65nm	1.8GHz	1066MHz	4MB	65W	2

"Yellow" means long-term support

## Dimensions (mm)



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# PICMG 1.3 Backplane

## Selection Guide

PAC series wall-mount chassis

4U rack-mount chassis

Backplane		SPE-4S	SPE-6S	SPE-9S	SPXE-9S	SPXE-14S
Total	Slot	4	6	7	7	14
PCIe	x16					
	x8	2 (x16 connector)		1 (x16 connector)	1 (x16 connector)	1 (x16 connector)
	x4	1	5	3	2	
	x1					12
	PCI-X				2	
	PCI			3	2	
PSU Type		24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+8-pin ATX
Chassis Option		PAC-106G PAC-107G PAC-1000G	PAC-106G PAC-107G PAC-1000G	PAC-125G	PAC-125G	RACK-305G RACK-360G RACK-3000G

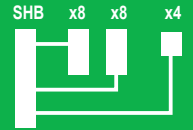

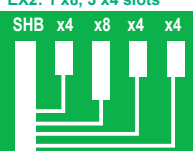


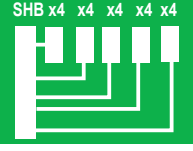

# IEI Server Grade Backplane Solution

**Server grade backplane** accommodates PCIe x8 and multiple PCIe x4 add-on cards. It is specially designed for intensive data transfer applications such as server data storage and any application that requires more than one PCIe x4 or four PCIe x1 cards. Given the multiple PCIe x4 and x1 support, it provides a more cost effective solution for end-users by reducing the number of systems required.

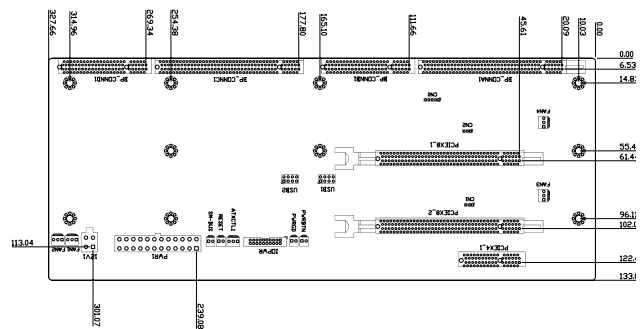
## System Solution for options

Backplane	Total	PCIe						PSU Type	Chassis Option
	Slot	x16	x8	x4	x1	PCI-X	PCI		
SPE-4S	4	-	2 (x16 connector)	1	-	-	24+4-pin ATX	PAC-106G, PAC-1000G	
SPE-6S	6	-		5	-	-	24+4-pin ATX	PAC-106G, PAC-1000G	
SPE-9S	7	-	1 (x16 connector)	3		3	24+4-pin ATX	PAC-125G	
SPXE-9S	7	-	1 (x16 connector)	2		2	24+4-pin ATX	PAC-125G	
SPXE-14S	14	-	1 (x16 connector)	-	12	-	24+4-pin ATX	RACK-305G, RACK-360G, RACK-3000G	

### Server Grade Backplane

Example	Corresponding Model
<p><b>EX1: 2 x8 &amp; 1 x4 slots</b></p> 	<p><b>SPE-4S</b></p> 
<p><b>EX2: 1 x8, 3 x4 slots</b></p> 	<p><b>SPE-9S</b>      <b>SPXE-9S</b></p>  
<p><b>EX3: 5 x4 slots</b></p> 	<p><b>SPE-6S</b></p> 

## SPE-4S-R10



### Ordering Information

SPE-4S-R10	4-slot PICMG 1.3 backplane with 2 PCIe x16 (x8 signal) and 1 PCIe x4 slots
PAC-106G	6-slot full-size compact chassis
PAC-107G	6-slot full-size compact chassis
PAC-1000G	6-slot full-size compact chassis

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2 Video Capture Solutions

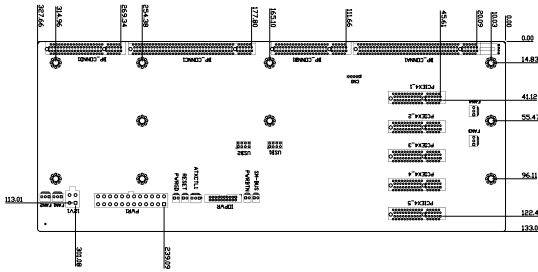
3 Embedded Computing Solutions

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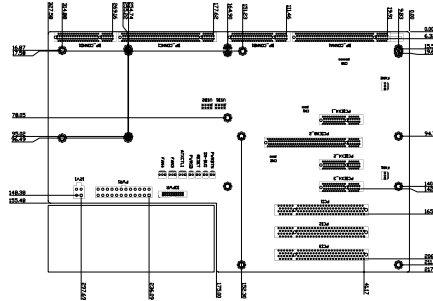
# SPE-6S-R10



Ordering Information	
SPE-6S-R10	6-slot PICMG 1.3 backplane with 5 PCIe x4 slots
PAC-106G	6-slot full-size compact chassis
PAC-107G	6-slot full-size compact chassis
PAC-1000G	6-slot full-size compact chassis

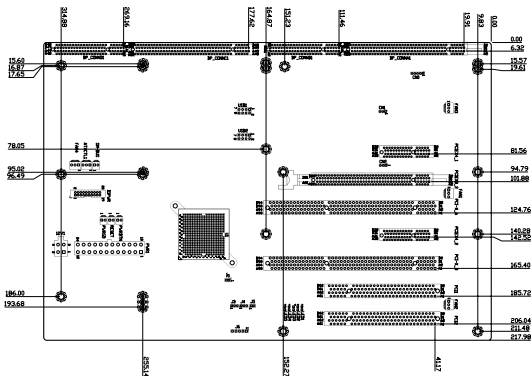
Note: PCIeX4\_3 can't not work with SPICIE-C2060

# SPE-9S-R11



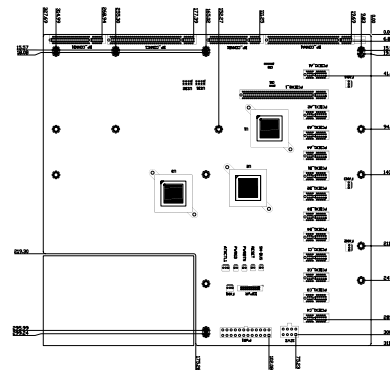
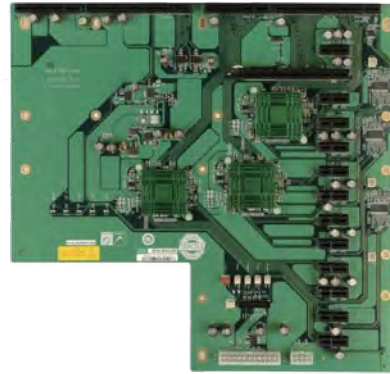
Ordering Information	
SPE-9S-R11	7-slot PICMG 1.3 backplane with 1 PCIe x16 (x8 signal), 3 PCIe x4, and 3 PCI
PAC-125G	10-slot full-size compact chassis

# SPXE-9S-R11



Ordering Information	
SPXE-9S-R11	7-slot PICMG 1.3 backplane with 1 PCIe x16 (x8 signal), 2 PCIe x4, 2 PCI-X and 2 PCI
PAC-125G	10-slot full-size compact chassis

# SPXE-14S-R10



Ordering Information	
SPXE-14S-R10	14-slot PICMG 1.3 backplane with 1 PCIe x16 (x8 signal) and 12 PCIe x1
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis

1 Industrial Computing Solutions

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3 Embedded Computing Solutions

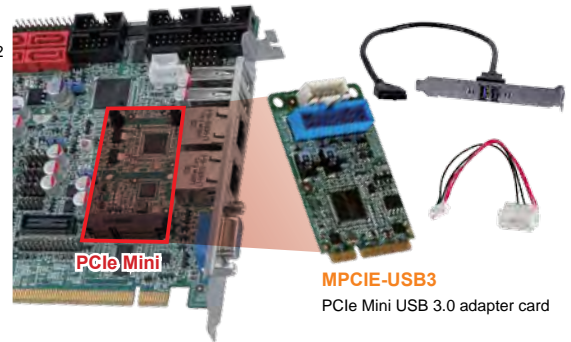
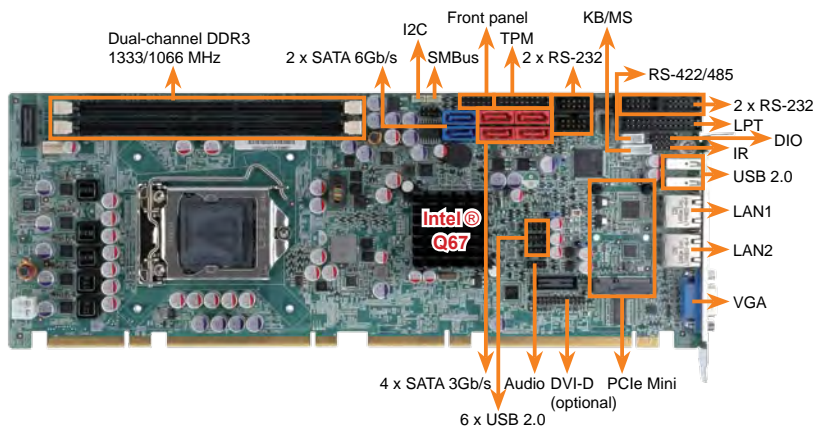
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# PCIE-Q670-R20

Full-size PICMG 1.3 CPU card Supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® Q67, DDR3, VGA/DVI-D, Dual Intel® PCIe GbE, SATA 6Gb/s, PCIe Mini, HD Audio and RoHS



The PCIe Mini interface provides PCIe x1 and USB 1.1/2.0 signal for full-size or half-size devices such as PCIe Mini USB 3.0 adapter card (MPCIE-USB3) or wireless LAN cards.



IO-KIT-001  
DVI cable included in DVI model

## Specifications

- ◆ CPU  
LGA1155 socket supports Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor
- ◆ PCH  
Intel® Q67
- ◆ Memory  
Two 240-pin 1066/1333MHz dual-channel unbuffered DDR3 SDRAM DIMMs supported (system max. 16GB)
- ◆ BIOS  
UEFI BIOS
- ◆ Graphics Engine  
Intel® HD Graphics Gen 6 supports for DX10.1 and OpenGL 3.0  
Full MPEG2, VC1, AVC Decode
- ◆ Display Output  
1 x VGA  
1 x DVI-D (via header to IO-KIT-001-R20 DVI-D/USB module) (optional)
- ◆ Ethernet  
LAN1: Intel® 82583V PCIe controller  
LAN2: Intel® 82579 PHY with Intel® AMT 7.0 support
- ◆ Super I/O  
Fintek F81866
- ◆ I/O Interface  
4 x RS-232 1 x RS-422/485  
1 x LPT 1 x 6-pin wafer for KB/MS  
8 x USB 2.0 (2 by rear IO, 6 by on-board pin header)  
4 x SATA 3Gb/s (RAID 0/1/5/10 supported)  
2 x SATA 6Gb/s (RAID 0/1/5/10 supported)
- ◆ Front Panel  
1 x Front panel connector (power LED, HDD LED, speaker, power button, reset button)
- ◆ Audio  
Supported by IEI AC-KIT-888HD audio kit
- ◆ TPM  
1 x 20-pin header
- ◆ SMBus  
1 x 4-pin wafer
- ◆ Infrared Interface  
1 x 5-pin header
- ◆ Expansions  
PCIe signal and PCI signal via golden finger  
1 x PCIe Mini slot (with USB 1.1/2.0 signal)
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O  
8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Fan Connector  
1 x 4-pin smart Fan Connector
- ◆ Power Supply  
AT/ATX power supply supported
- ◆ Power Consumption  
5V@3.45A, 12V@0.32A, Vcore\_12V@5.24A, 3.3V@1.69A, 5VSB@0.17A  
(3.4GHz Intel® Core™ i7-2600K with two 2GB 1333MHz DDR3 memory)
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~95%, non-condensing
- ◆ Dimensions  
338 mm x 126 mm
- ◆ Weight  
GW: 1200g/NW: 420g

## Features

1. PICMG 1.3 full-size graphics grade solution
2. LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® processors supported
3. Up to 16 GB 1333 MHz dual-channel DDR3 SDRAM
4. Supports dual independent display by VGA and DVI-D (DVI model)
5. Supports PCIe Mini expansion
6. Intel® PCIe GbE with Intel® AMT 7.0 support
7. Supports SATA 6Gb/s
8. Supports RAID function via SATA 6Gb/s and SATA 3Gb/s
9. TPM V1.2 hardware security provided by the TPM module
10. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

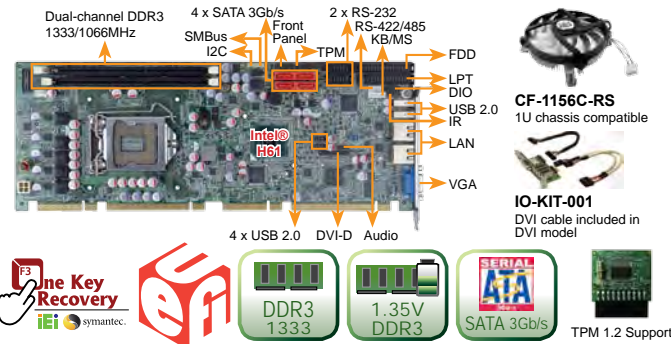
1 x PCIE-Q670 Single Board Computer	
1 x Dual RS-232 Cable (P/N: 19800-000051-RS)	
4 x SATA Cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x USB Cable (P/N: 19800-003100-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
PCIE-Q670-R20	Full-size PICMG 1.3 CPU card supports LGA1155 32nm Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® Q67, DDR3, VGA, dual Intel® PCIe GbE, SATA 6Gb/s, PCIe Mini, HD Audio and RoHS
PCIE-Q670-DVI-R20	Full-size PICMG 1.3 CPU card supports LGA1155 32nm Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® Q67, DDR3, DVI-D, dual Intel® PCIe GbE, SATA 6Gb/s, PCIe Mini, HD Audio and RoHS
32205-003800-100-RS	RS-422/485 cable, 200mm
19800-000075-RS	KB/MS cable with bracket
SAIDE-KIT01-R10	SATA to IDE/CF converter board
32102-000100-200-RS	SATA power cable
19800-000400-100-RS	LPT cable
AC-KIT-888HD-R10	7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2120T	Intel® Core™ i3-2120T processor, LGA1155, dual core 2.6GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G630T	Intel® Pentium® G630T processor, LGA1155, dual core 2.3GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS-R11	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W

## PCIE-H610

Full-size PICMG 1.3 CPU Card Supports 32nm LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® H61, DDR3, VGA, USB 2.0, SATA 3Gb/s, Dual Realtek PCIe GbE, HD Audio and RoHS



### Features

1. Full-size PICMG 1.3 graphics grade solution
2. LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor supported
3. Dual-channel 1333/1066MHz DDR3/DDR3L SDRAM supported up to 16GB
4. Intel® HD Graphics technology integrates high-performance graphics and media processing
5. TPM V1.2 hardware security function supported by TPM module
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

### Specifications

- ◆ CPU: LGA1155 socket supports Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor
- ◆ PCH: Intel® H61
- ◆ Memory: Two 240-pin 1333/1066MHz dual-channel DDR3 & DDR3L (1.35V) DIMMs supported (system max. 16GB)
- ◆ BIOS: UEFI BIOS
- ◆ Graphics Engine: Intel® HD Graphics Gen 6 supports DX10.1 and OpenGL 3.0, Full MPEG2, VC1, AVC Decode
- ◆ Display Output: 1 x VGA (up to 2048 x 1536 @75Hz), 1 x DVI-D (up to 1920 x 1200 @60Hz) (via header to IO-KIT-001-R20 DVI-D/USB module) (optional)
- ◆ Ethernet: Dual Realtek RTL8111E PCIe GbE controller (LAN1 with ASF 2.0 support)
- ◆ I/O Interface: 2 x RS-232, 1 x RS-422/485, 1 x LPT, 4 x SATA 3Gb/s, 1 x FDD, 1 x 6-pin wafer for KB/MS, 6 x USB 2.0 (2 by rear IO, 4 by on-board pin header), 4 x USB 2.0 (4 by backplane pin header via golden finger)
- ◆ Super I/O: Fintek F81866
- ◆ PCIe Switch: TI XIO3130
- ◆ PCIe-PCI Bridge: ITE IT8892E
- ◆ TPM: 2 x 10-pin headers
- ◆ SMBus: 1 x 4-pin wafer
- ◆ I2C: 1 x 4-pin wafer
- ◆ Front Panel: 1 x Front panel (power LED, HDD LED, speaker, power button, reset button)
- ◆ Audio: Supports by IEI AC-KIT-888HD audio kit
- ◆ Infrared Interface: 1 x 5-pin header
- ◆ Expansions: PCIe signal and PCI signal via golden finger
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O: 8-bit programmable I/O
- ◆ Fan Connector: 1 x 4-pin smart fan connector
- ◆ Power Supply: 5V/12V, AT/ATX support
- ◆ Power Consumption: 5V@4.41A, 12V@0.21A, Vcore\_12V@7.72A, 3.3V@1.71A, 5VSB@0.16A (3.4GHz Intel® Core™ i7-2600K with two 2GB 1333MHz DDR3 memory)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 338 mm x 126 mm
- ◆ Weight: GW: 1200g/NW: 420g

### Packing List

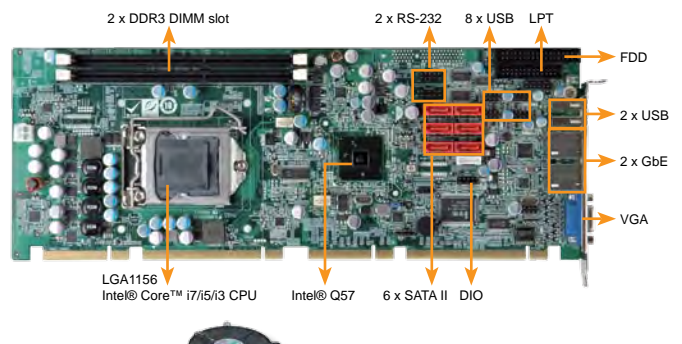
1 x PCIE-H610 single board computer	
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	
1 x USB cable (P/N: 19800-003100-200-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG (Quick Installation Guide)

### Ordering Information

Part No.	Description
PCIE-H610-R10	Full-size PICMG 1.3 CPU card supports 32nm LGA1155 Intel® Core™ i7/i5/i3 CPU with Intel® H61, DDR3, VGA, Dual Realtek PCIe GbE, USB 2.0, SATA 3Gb/s, HD Audio and RoHS
PCIE-H610-DVI-R10	Full-size PICMG 1.3 CPU card supports 32nm LGA1155 Intel® Core™ i7/i5/i3 CPU with Intel® H61, DDR3, VGA/DVI-D, Dual Realtek PCIe GbE, USB 2.0, SATA 3Gb/s, HD Audio and RoHS
32205-003800-100-RS	RS-422/485 cable, 200mm
19800-000075-RS	KB/MS cable with bracket
SAIDE-KIT01-R10	SATA to IDE/CF converter board
32102-000100-200-RS	SATA power cable
32229-000100-100-RS	FDD flat cable
19800-000400-100-RS	LPT cable
AC-KIT-888HD-R10	7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2120T	Intel® Core™ i3-2120T processor, LGA1155, dual core 2.6GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G630T	Intel® Pentium® G630T processor, LGA1155, dual core 2.3GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS-R10	High performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS-R11	High performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

## PCIE-Q57A

PICMG 1.3 with LGA1156 socket for Intel® Core™ i7/i5/i3/Pentium® CPU with VGA, Dual Intel® GbE, SATA 3Gb/s, COM, USB 2.0 and Audio, RoHS



### Features

1. PICMG 1.3 with LGA1156 socket for Intel® Core™ i7/i5/i3/Pentium® processor
2. Supports dual-channel 8GB (max.) 800/1066/1333 MHz DDR3 SDRAM
3. Intel® GbE LAN controller with Intel® AMT 6.0 support
4. Fourteen USB 2.0 ports and two COM ports
5. Six SATA ports with RAID function
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

### Specifications

- ◆ CPU: LGA1156 socket supports Intel® Core™ i7/i5/i3/Pentium® processor
- ◆ System Chipset: Intel® Q57
- ◆ BIOS: AMI BIOS
- ◆ Memory: 2 x 240-pin dual-channel DDR3 1333/1066/800 MHz up to 8GB
- ◆ Display Output: 1 x VGA
- Note: The Intel® quad-core processor (e.g., i7-860 and i5-750) is a discrete processor which does not integrate a graphics engine. If a quad-core processor is used on the motherboard, an additional graphics card must be installed in order to support display output. Otherwise, the display will show "No display output" when connected to the on-board VGA port.
- ◆ Ethernet: Intel® 82583V PCIe controller, Intel® 82578DM with Intel® AMT 6.0 supported by IEI software UI
- ◆ I/O Interfaces: 2 x RS-232, 1 x FDD, 1 x LPT, 1 x 6-pin wafer on board for KB/MS, 14 x USB 2.0 (2 on rear side, 12 on board by pin-header), 6 x SATA II (RAID 0, 1, 5 and 10)
- ◆ Super I/O: ITE IT8718F
- ◆ Infrared Interface: 1 x 5-pin infrared connector
- ◆ Digital I/O: 8-bit Digital I/O (4-bit input/4-bit output)
- ◆ Audio: 7.1 channel supports dual audio streams via Realtek ALC888 audio kit
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Fan Connector: 1 x 4-pin CPU fan connector, 1 x 4-pin PCH fan connector
- ◆ Power Supply: ATX Power (Supports AT/ATX mode)
- ◆ Power Consumption: 3.3V@0.89A, 5V@4.62A, 12V@0.51A, Vcore\_12V@4.35A, 5VSB@0.14A (Intel® Core™ i5 660 3.3GHz CPU with two 2GB 1066MHz DDR3 memory)
- ◆ Temperature Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 338 mm x 126 mm
- ◆ Weight: GW: 1.1kg

### Packing List

1 x PCIE-Q57A single board computer	1 x One Key Recovery CD
6 x SATA cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	1 x Utility CD
1 x USB cable (P/N: 19800-003100-200-RS)	1 x QIG

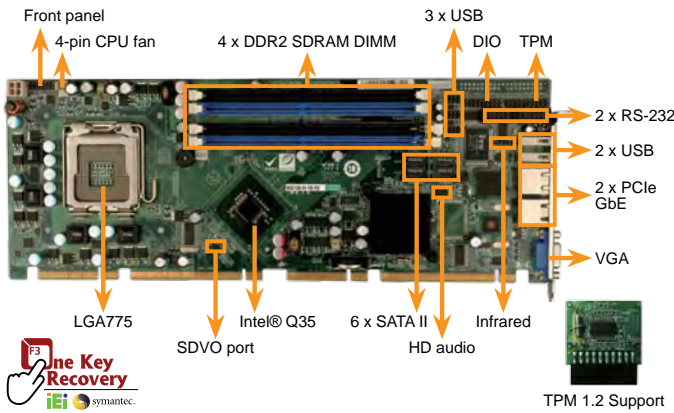
### Ordering Information

Part No.	Description
PCIE-Q57A-R10	PICMG 1.3 with LGA1156 socket for Intel® Core™ processor with VGA, dual Intel® GbE, SATA II, COM, USB 2.0 and Audio, RoHS
AC-KIT-888HD-R10	7.1 channel HD audio kit with realtek ALC888 codec and dual audio streams
32102-000100-200-RS	SATA power cable
19800-000075-RS	KB/MS cable with bracket
32229-000100-100-RS	FDD flat cable
19800-000400-100-RS	LPT cable
19800-000100-200-RS	4-port USB cable
CF-1156A-RS	High performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS-R11	High performance LGA1155/LGA1156 cooler kit, 95W



# PCIE-Q350-R12

Full-size PICMG 1.3 CPU card supports 45 nm LGA 775 Intel® Core™2 Duo and Core™2 Quad processors with an 800 MHz, 1066 MHz or 1333 MHz FSB including Intel® Q35 GMCH, ICH9DO I/O controller hub, dual Intel® GbE, SATA II with RAID and USB 2.0



One Key Recovery  
FSB 1333, Dual DDR2 800, SATA II, USB 2.0, Gigabit Ethernet, RAID, TPM 1.2 Support

## Features

1. PICMG 1.3 and RoHS compliant
2. Intel® Q35 & ICH9-DO platform
3. Supports 45nm LGA775 Intel® Core™2 Duo and Core™2 Quad processors
4. Six SATA II ports with Intel® Matrix Storage Technology supported
5. Dual Intel® PCIe GbE
6. TPM 1.2 IT security solution supported
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: LGA 775 Intel® Core™2 Quad, Core™2 Duo, Celeron® processors with an 800 MHz, 1066MHz and 1333MHz FSB
- ◆ System Chipset: Intel® Q35 & ICH9-DO
- ◆ BIOS: AMI BIOS
- ◆ System Memory: Four 240-pin 2GB (max.) 800 MHz, 667 MHz dual-channel DDR2 SDRAM DIMMs supported (system max. 8GB)
- ◆ Ethernet: Dual GbE LAN1: Intel® 82566DM GbE controller with iAMT support LAN2: Intel® 82573L GbE controller
- ◆ IO Interface: 2 x RS-232, 6 x SATA II (RAID 0, 1, 5 and 10), 1 x Keyboard and mouse connector, 12 x USB 2.0 (2 on bracket, six on SBC, four on backplane by pin header)
- ◆ Super IO: ITE 8718F
- ◆ Digital I/O: 16-bit Digital I/O, 8-bit input/8-bit output
- ◆ Infrared interface: 1 x Infrared by pin header
- ◆ Audio: 10-pin on-board header connects to the IEI AC-KIT-888HD 7.1 channel HD audio kit
- ◆ Graphics: Analog VGA output
- ◆ TPM 1.2: 1 x 20-pin on-board header for TPM (Trusted Platform Module)
- ◆ Watchdog Timer: Software programmable supports 1~255sec. system reset
- ◆ Power Supply: ATX
- ◆ Power Consumption: 3.3V@3.0A, 5V@5.1A, 5Vsb@0.28A, 12@4.23A (Intel® Core™2 Duo E6700), 2.66 GHz at FSB 1066 MHz, 8 GB 667 MHz DDR2, 3DMark 2001)
- ◆ Temperature: Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity: Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 338 mm x 126 mm
- ◆ Weight: GW: 1.1 kg

## Packing List

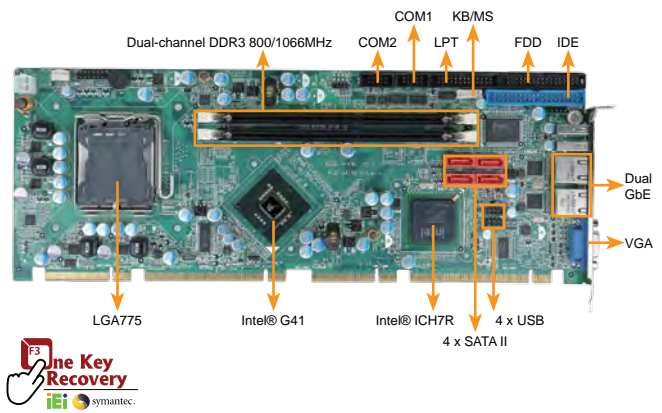
1 x PCIE-Q350 single board computer	1 x One Key Recovery CD
3 x SATA power cable (P/N: 32102-000100-200-RS)	1 x Mini jumper pack
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	1 x Utility CD
6 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG
1 x USB cable (P/N: 19800-003100-200-RS)	

## Ordering Information

Part No.	Description
PCIE-Q350-R12	PICMG 1.3 CPU card supports Intel® 45nm LGA 775 Core™2 Duo/Quad CPU at FSB 800/1066/1333 MHz, Intel® Q35 & ICH9DO platform, dual Intel® GbE, SATA II with RAID, USB
AC-KIT-888HD-R10	7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
CF-520-RS-R11	High performance CPU cooler (115 mm x 115 mm x 67 mm, 115W)
CF-775A-RS	High performance CPU cooler (92 mm x 92 mm x 73 mm, 130W)
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
SDVO-100VGA-R10	PCIe x16 VGA output SDVO card supports dual display (IEI CPU board only)
SDVO-100DVI-R10	PCIe x16 DVI output SDVO card supports dual display (IEI CPU board only)
19800-000075-RS	KB/MS cable with bracket

# PCIE-G41A2

Full-size PICMG 1.3 CPU card supports LGA775 Intel® Core™2 Quad processor, DDR3 with VGA, Dual PCIe GbE, SATA II, Audio, COM and USB 2.0, RoHS



One Key Recovery  
RAID, FSB 1333, DDR3 1066, SATA II, Hi-Speed USB, Gigabit Ethernet, PCIe GbE

## Features

1. PICMG 1.3 form factor
2. LGA775 Intel® Core™2 Extreme/Quad/Duo and Celeron® processor supports up to 1333 MHz FSB
3. Dual-channel DDR3 800/1066MHz supports up to 8 GB
4. High performance PCI Express Gigabit Ethernet controller
5. Four SATA II with Intel® Matrix Storage Manager support Raid 0, 1, 5 and 10
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: LGA775 45nm Intel® Core™2 Quad, Core™2 Duo, Pentium® D, Celeron® processors with 800/1066/1333MHz FSB
- ◆ System Chipset: Intel® G41+ ICH7R
- ◆ BIOS: AMI BIOS
- ◆ System Memory: Two 240-pin 4GB (max.) 800/1066MHz dual-channel DDR3 SDRAM DIMMs supported (System max. 8GB)
- ◆ Ethernet: Dual PCIe Realtek 8111CP GbE controller
- ◆ I/O Interface: 2 x RS-232, 1 x IDE, 1 x LPT, 1 x FDD, 1 x KB/MS by 6-pin header, 4 x SATA II with Intel® RAID 0, 1, 5 and 10, 8 x USB 2.0 (2 on bracket, 4 by pin header, 2 to backplane via golden finger)
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface: 1 x Infrared by 5-pin pin header
- ◆ Super I/O: ITE IT8718F
- ◆ Display Interface: Intel® GMA X4500, VGA display output up to 2048x1536
- ◆ Audio: 5.1 channel audio kit with Realtek ALC655 AC'97 codec, 7.1 channel HD audio kit with Realtek ALC888 codec supports dual audio streams
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: ATX Power, Power Consumption: 3.3V@0.53A, 5V@6.2A, 12V@0.11A, Vcore\_12V@2.91A (Intel® Core™2 Duo E8500 3.16GHz at FSB 1333MHz CPU with two 2GB 1333MHz DDR3 memory)
- ◆ Temperature Operation: -10°C ~ 60°C
- ◆ Humidity: Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 338 mm x 126 mm
- ◆ Weight: GW: 1100g

## Packing List

1 x PCIE-G41A2 single board computer	1 x One Key Recovery CD
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	1 x Utility CD
1 x USB cable (P/N: 19800-003100-200-RS)	1 x QIG

## Ordering Information

Part No.	Description
PCIE-G41A2-R10	Full-size PICMG 1.3 CPU card supports LGA775 Intel® Core™2 Quad processor, DDR3 with VGA, Dual PCIe GbE, SATA II, Audio, COM and USB 2.0, RoHS
AC-KIT-888HD-R10	7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
AC-KIT08R-R10	5.1 channel AC'97 audio kit with Realtek ALC655
19800-000075-RS	6-pin wafer to PS/2 connector cable for keyboard and mouse
19800-000100-200-RS	4 ports USB cable with bracket
CF-775A-RS	CPU cooler for 130 W
CF-520-RS-R11	CPU cooler for 115 W
CF-775B-RS	1U CPU cooler for 90 W
32102-000100-200-RS	SATA power cable
32229-000100-100-RS	FDD cable
19800-000400-100-RS	LPT cable
32200-000052-RS	ATA66 IDE flat cable

1

Industrial Computing Solutions

2

Video Capture Solutions

3

Embedded Computing Solutions

4

ORing Network Communication

5

Power Supply/Peripherals

6

Panel Solutions Introduction

# PICMG 1.3 Passive Backplane

## Selection Guide

PAC series wall-mount chassis

4U/5U rack-mount chassis

1U/2U rack-mount chassis

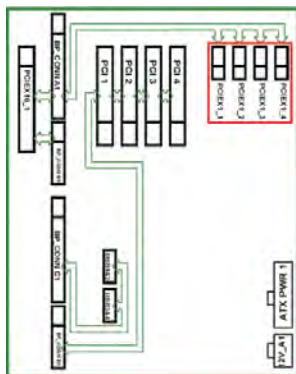
PICMG 1.3 (PCIe+PCI)	Model	PE-2SD1	PE-2SD2	PE-4S	PE-4S2	PE-4S3	PE-5S	PE-5S2	PE-6S	PE-6S2	PE-6S3	PE-6SD	PE-6SD2	PE-6SD3
<b>Total Slot</b>		2	2	4	4	4	5	5	6	6	6	5	5	5
<b>Expansion Slots</b>	<b>PCIe Slots</b>	x16 *	1		1	1	1	1	1	1	1	1	1	1
		x4			1			1		1				1
	<b>PCI-X Slots</b>	x1					2		3	2		3	3	2
<b>USB Connectors by Pin Header</b>		4	4	4	4	4	4	4	4	4	4	4	4	4
<b>PSU Type</b>		24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX
<b>Chassis</b>		RACK-1150-PE RACP-1151-PE	RACK-1150-PE RACP-1151-PE	N/A	N/A	N/A	RACK-500G	RACK-500G	RACK-305G RACK-360G RACK-3000G PAC-1700G PAC-125	PAC-106G x 1 PAC-107G x 1 PAC-1000G	PAC-106G x 1 PAC-107G x 1 PAC-1000G	N/A	N/A	N/A
<b>Note</b>		1U Type	1U Type									2U Type	2U Type	2U Type

PICMG 1.3 (PCIe+PCI)	Model	PE-7S	PE-7S2	PE-8S	PE-9S	PE-10S	PE-10S2	PE-13SD	PE-16SQ	PXE-12S	PXE-13S	PXE-19S	PXE-19S2
<b>Total Slot</b>		7	7	8	9	10	10	13	16	12	13	19	19
<b>Expansion Slots</b>	<b>PCIe Slots</b>	x16 *	1	1	1	1	1	1/1	1/1/1/1	1	1	1	1
		x4							1/0	1/1/1/1			
	<b>PCI-X Slots</b>	x1	2	4	3	4	4	4	0/4			3	1
											6		
<b>USB Connectors by Pin Header</b>		4	4	4	4	4	4	8	4/4/4/4	4	4	4	4
<b>PSU Type</b>		24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	Dual 24+4-pin ATX	Three 20+4-pin ATX One 24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX
<b>Chassis</b>		PAC-1700G	PAC-1700G	PAC-125G	N/A	RACK-305G RACK-360G RACK-3000G	RACK-3000G RACK-305G RACK-360G	RACK-3000G RACK-305G RACK-360G	N/A	RACK-3000G RACK-305G RACK-360G	RACK-3000G RACK-305G RACK-360G	N/A	N/A
<b>Note</b>								Dual System Backplane	Quad System Backplane	PCIe to PCI-X Bridge backplane	PCIe to PCI Bridge backplane		

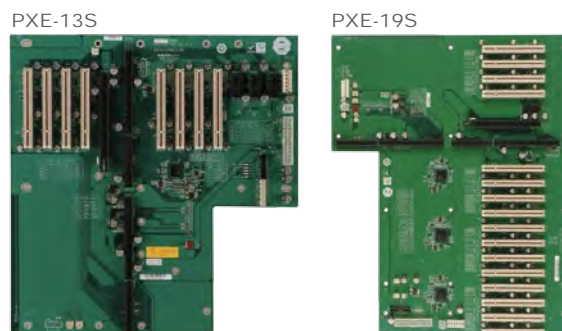
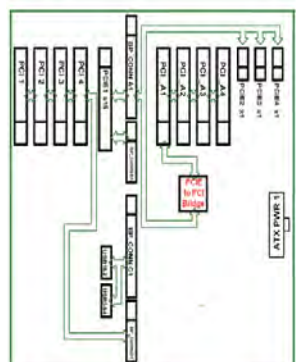
\*When using a PCIe x16 add-on card, the length of the card must not exceed 167mm or 6.57 inches.

## IEI Graphics Grade Backplane Solution

Graphic centric backplane targets applications which concern system speed and performance. It has higher performance over cost ratio than the previous PICMG 1.0 solution.



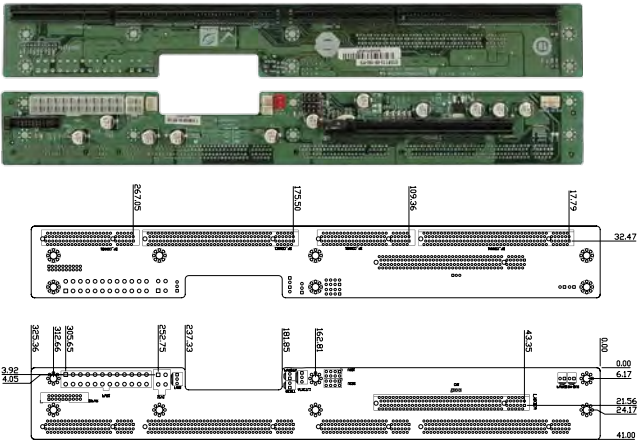
- Twenty PCIe lanes total
- One PCIe x16 slot
- Up to four PCIe x1 or one PCIe x4 slot
- Up to four local PCI slots (w/o bridge)



- Twenty PCIe lanes total
- One PCIe x16 slot
- Up to four PCIe x1 slots
- PCI slots expandable via PCIe to PCI bridge

## PE-2SD1-R10

For 1U system!

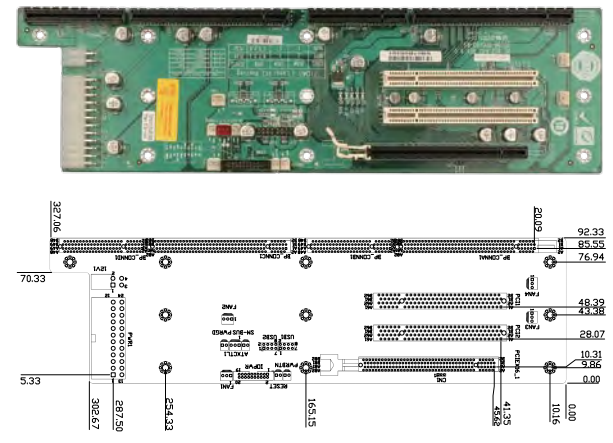


**Ordering Information**

PE-2SD1-R10 2-slot backplane with one PCIe slot  
 RACK-1150G-PE 1U full-size rack-mount chassis

## PE-4S2-R40

Mounting holes compatible with PCI-4S

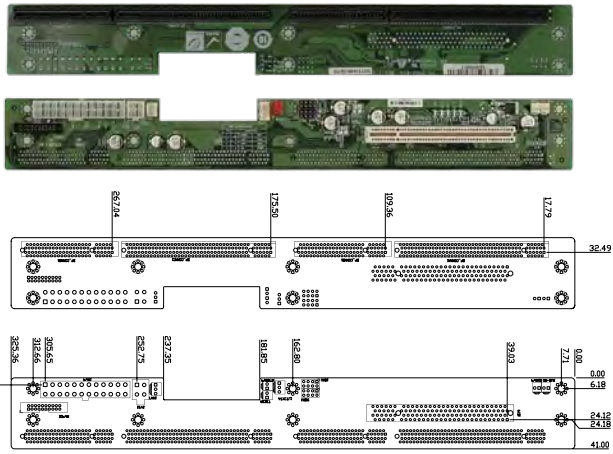


**Ordering Information**

PE-4S2-R40 4-slot backplane with one PCIe x16 slot and two PCI slots

## PE-2SD2-R10

For 1U system!

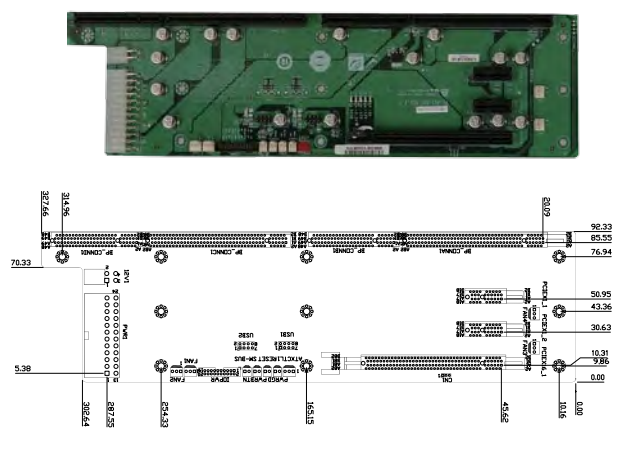


**Ordering Information**

PE-2SD2-R10 2-slot backplane with one PCI slot  
 RACK-1150G-PE 1U full-size rack-mount chassis

## PE-4S3-R40

Mounting holes compatible with PCI-4S

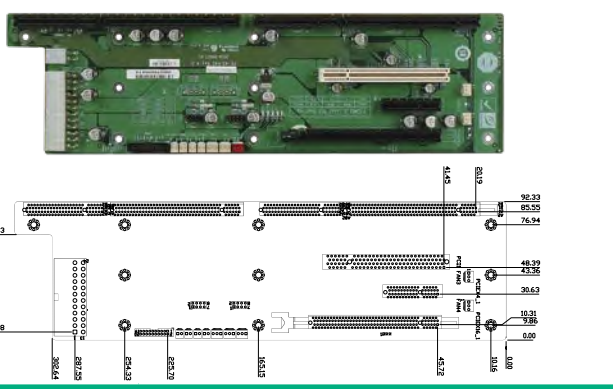


**Ordering Information**

PE-4S3-R40 4-slot backplane with one PCIe x16 slot and two PCIe x1 slots

## PE-4S-R40

Mounting holes compatible with PCI-4S

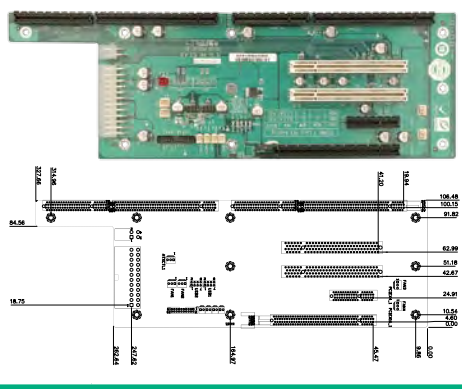


**Ordering Information**

PE-4S-R40 4-slot backplane with one PCIe x16 slot, one PCIe x4 slot and one PCI slot

## PE-5S-R40

Mounting holes compatible with PCI-5S



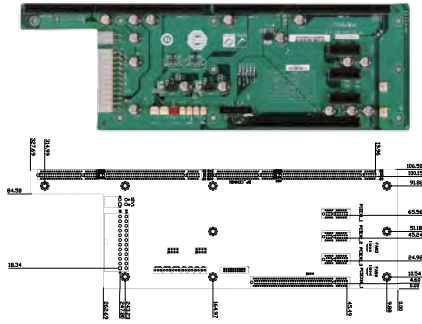
**Ordering Information**

PE-5S-R40 5-slot backplane with one PCIe x16 slot, one PCIe x4 slot and two PCI slots  
 RACK-500G 5U 5-slot full-size rack-mount chassis

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## PE-5S2-R40

Mounting holes compatible with PCI-5S

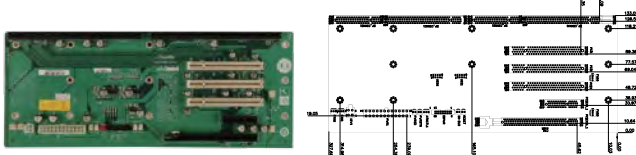


### Ordering Information

PE-5S2-R40	5-slot backplane with one PCIe x16 slot and three PCIe x1 slots
RACK-500G	5U 5-slot full-size rack-mount chassis

## PE-6S2-R40

Mounting holes compatible with PCI-6S



### Ordering Information

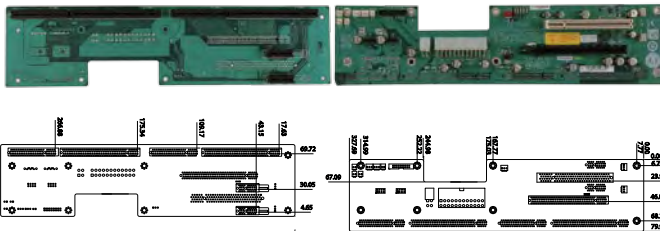
PE-6S2-R40	6-slot backplane with one PCIe x16 slot, one PCIe x4 slot and three PCI slots
PAC-106G *	6-slot full-size compact chassis
PAC-107G *	6-slot full-size compact chassis
PAC-1000G	6-slot full-size compact chassis

\* When using a PCIe x16 add-on card, the length of the card must not exceed 167mm or 6.57 inches.

## PE-6SD2-R40

Mounting holes compatible with PCI-6SD

2U Type

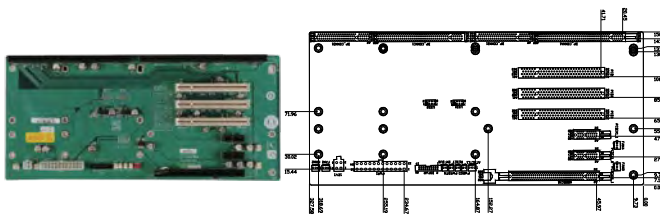


### Ordering Information

PE-6SD2-R40	5-slot backplane with one PCIe x16 slot, two PCIe x1 slots and one PCI slot
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## PE-7S-R40

Mounting holes compatible with PCI-7S

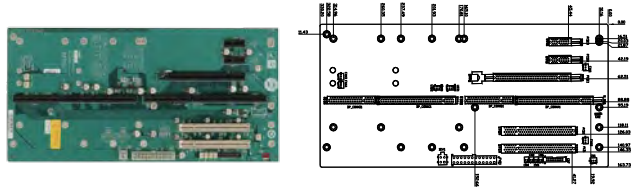


### Ordering Information

PE-7S-R40	7-slot backplane with one PCIe x16 slot, two PCIe x1 slots and three PCI slots
PAC-1700G	7-slot full-size compact chassis

## PE-6S-R41

Mounting holes compatible with PCI-7S



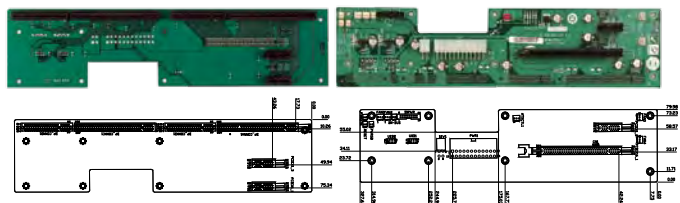
### Ordering Information

PE-6S-R41	6-slot backplane with one PCIe x16 slot, two PCIe x1 slots and two PCI slots
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis
PAC-1700G	7-slot full-size compact chassis
PAC-125G	10-slot full-size compact chassis

## PE-6SD-R40

Mounting holes compatible with PCI-6SD

2U Type



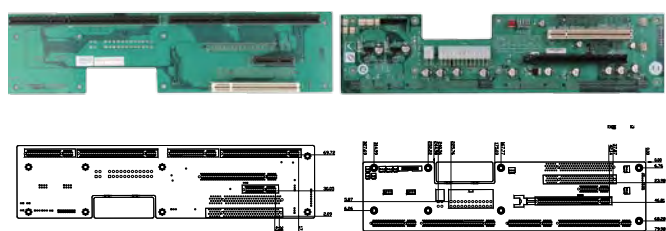
### Ordering Information

PE-6SD-R40	5-slot backplane with one PCIe x16 slot and three PCIe x1 slots
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## PE-6SD3-R40

Mounting holes compatible with PCI-6SD

2U Type

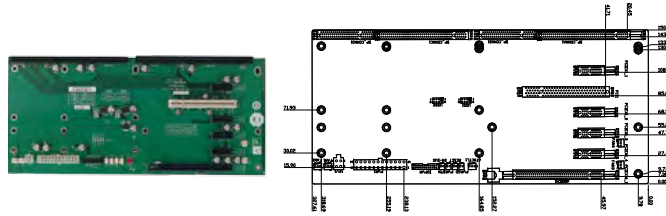


### Ordering Information

PE-6SD3-R40	5-slot backplane with one PCIe x16 slot, one PCIe x4 slot and two PCI slots
-------------	---

## PE-7S2-R40

Mounting holes compatible with PCI-7S



### Ordering Information

PE-7S2-R40	7-slot backplane with one PCIe x16 slot, four PCIe x1 slots and one PCI slot
PAC-1700G	7-slot full-size compact chassis

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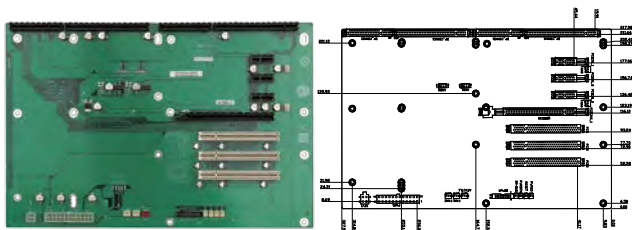
3 Embedded Computing Solutions

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## PE-8S-R40

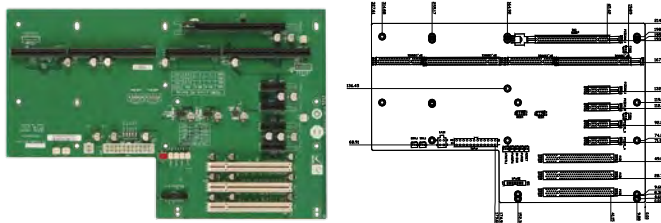


### Ordering Information

PE-8S-R40	8-slot backplane with one PCIe x16 slots, three PCIe x1 slots and three PCI slots
PAC-125G	10-slot full-size compact chassis

## PE-9S-R40

Mounting holes compatible with PCI-10S2

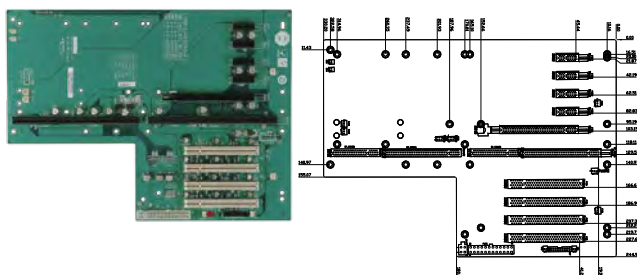


### Ordering Information

PE-9S-R40	9-slot backplane with one PCIe x16 slot, four PCIe x1 slots and three PCI slots
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## PE-10S-R40

Mounting holes compatible with PCI-14S

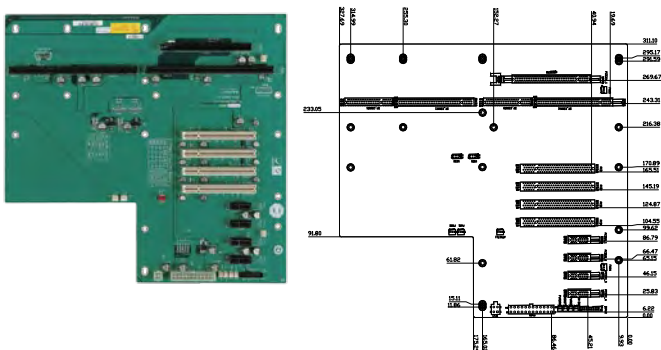


### Ordering Information

PE-10S-R40	10-slot backplane with one PCIe x16 slot, four PCIe x1 slots and four PCI slots
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis

## PE-10S2-R40

Mounting holes compatible with PCI-14S



### Ordering Information

PE-10S2-R40	10-slot backplane with one PCIe x16 slot, four PCIe x1 slots and four PCI slots
RACK-3000G	4U 14-slot full-size rack-mount chassis
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis

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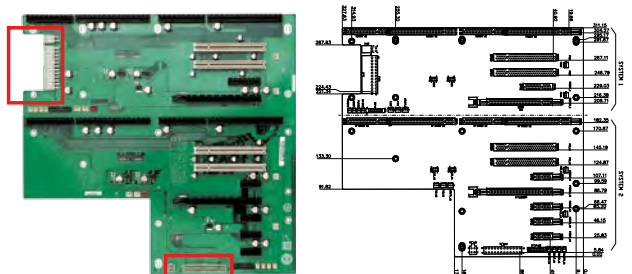
6

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## PE-13SD-R40

Mounting holes compatible with PCI-14S

Dual system



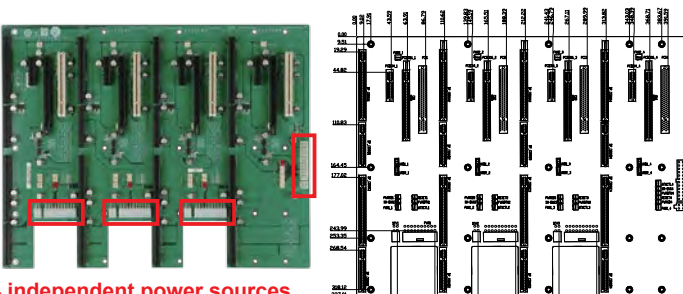
2 independent power resources

### Ordering Information

PE-13SD-R40	13-slot backplane with two PCIe x16 and one PCIe x4 and four PCIe x1 and four PCI slot
RACK-3000G	4U 14-slot full-size rack-mount chassis
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis

## PE-16SQ-R10

Quad system



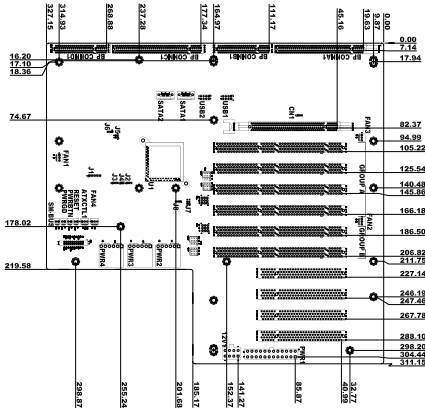
4 independent power sources

### Ordering Information

PE-16SQ-R10	4-system backplane with each system having one PCIe x16 slot, one PCIe x4 slot and one PCI slot
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## PXE-12S-R10

Mounting holes compatible with PCI-14S  
(PCIe to PCI-X Bridge)

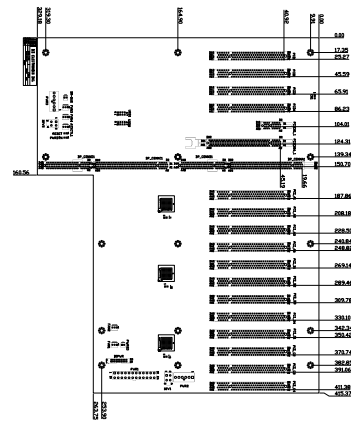


### Ordering Information

PXE-12S-R10	12-slot backplane with one PCIe x16 slot, six PCI-X slots and four PCI slots
RACK-3000G	4U 14-slot full-size rack-mount chassis
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis

## PXE-19S-R40

Mounting holes compatible with PCI-19S  
(PCIe to PCI Bridge)

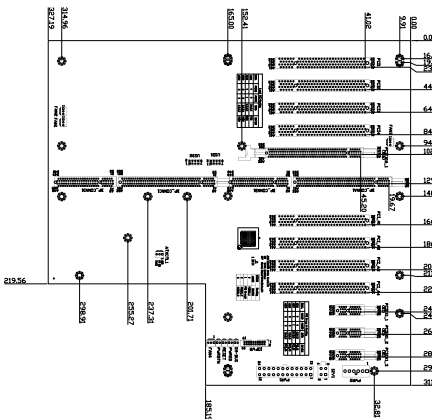


### Ordering Information

PXE-19S-R40	19-slot backplane with one PCIe x16 slot, one PCIe x1 slot and sixteen PCI slots
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## PXE-13S-R50

Mounting holes compatible with PCI-14S  
(PCIe to PCI Bridge)

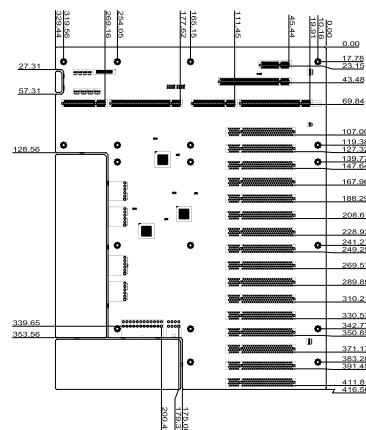
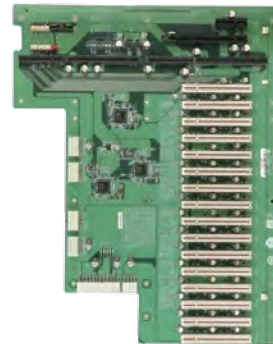


### Ordering Information

PXE-13S-R50	13-slot backplane with one PCIe x16 slot, three PCIe x1 slots and eight PCI slots
RACK-3000G	4U 14-slot full-size rack-mount chassis
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis

## PXE-19S2-R10

Mounting holes compatible with PCI-19S  
(PCIe to PCI Bridge)



### Ordering Information

PXE-19S2-R10	19-slot backplane with one PCIe x16 slot, one PCIe x1 slot and sixteen PCI slots
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# Full-size PICMG 1.0 Selection Guide



Model Name	WSB-H610	WSB-G41A	WSB-PV-D4251/D5251	WSB-Q354-R41
<b>CPU Socket</b>	Intel® LGA1155	LGA 775	On board	LGA 775
<b>CPU Type</b>	2nd Generation Intel® Core™ i7/i5/i3/Pentium®/Celeron®	Intel® Core™2 Quad/Duo, Pentium® D/4, Celeron® D	Intel® Atom™ D525 dual-core 1.8GHz Intel® Atom™ D425 single-core 1.8GHz	Intel® Core™2 Quad/Duo, Pentium® D/4, Celeron® D
<b>FSB</b>	NA	800/1066/1333MHz	N/A	800/1066/1333MHz
<b>Chipset</b>	Intel® H61	Intel® G41 + ICH7	Intel® ICH8M	Intel® Q35 + ICH9R
<b>Memory</b>	Two 240-pin 1333/1066MHz dual-channel DDR3 & DDR3L (1.35V) DIMMs supported (system max. 16GB)	Two 240-pin 800/1066MHz dual-channel DDR3 SDRAM DIMMs (system max. 8GB)	Two 204-pin 800MHz DDR3 SDRAM SO-DIMMs (system max. 4GB)	Four 240-pin 667/800MHz dual-channel DDR2 SDRAM DIMMs (system max. 8GB)
<b>Display Interface</b>	1 x VGA 1 x DVI-D (via header to IO-KIT-001-R20 DVI-D/USB module) (optional)	1 x VGA 1 x DVI-D (via header to IO-KIT-001-R20 DVI-D/USB module) (optional)	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS	1 x VGA
<b>Ethernet</b>	Dual Realtek RTL8111E PCIe GbE controllers (LAN1 with ASF 2.0 supported)	Dual Intel® 82583V PCIe GbE controller	Dual Realtek RTL8111E PCIe GbE controller	Dual Realtek RTL8111E PCIe GbE controller
<b>I/O Interface</b>	2 x RS-232 1 x RS-422/485 7 x USB 2.0 1 x LPT 1 x FDD 1 x PS/2 KB/MS 1 x 6-pin wafer for KB & MS	2 x RS-232 7 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS 1 x 6-pin wafer for PS/2 KB/MS	4 x RS-232 7 x USB 2.0 1 x LPT 1 x PS/2 KB & MS 1 x 6-pin wafer for PS/2 KB/MS	2 x RS-232 7 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS 1 x 5-pin wafer for PS/2 KB 1 x TPM
<b>Driver Interface</b>	4 x SATA 3Gb/s	4 x SATA II 1 x IDE 1 x FDD	3 x SATA II 1 x IDE 1 x FDD 1 x CF Type II	6 x SATA II (RAID 0/1/10/5) 1 x IDE 1 x FDD
<b>Audio</b>	Supports by IEI AC-KIT-888HD audio kit	AC-KIT08R-R10 5.1 channel AC'97 audio kit and IEI AC-KIT-888HD-R10 7.1 channel HD audio kit via the on-board 10-pin header connector	IEI AC-KIT-888HD-R10 7.1 channel HD audio kit via the on-board 10-pin header connector	
<b>Digital I/O</b>	8-bit Digital I/O	8-bit Digital I/O (4-bit input/4-bit output)		
<b>Power Consumption</b>	5V@4.53A, 12V@0.19A, Vcore_12V@7.81A, 5VSB@0.18A (3.4GHz Intel® Core™ i7-2600K with two 2GB 1333MHz DDR3 memory)	5V@7.13A, +12V@0.27A, 5Vsb@0.11A, Vcore@3.02A (Intel® Core™2 Duo E8500 3.16GHz at FSB 1333MHz with two 2GB DDR3 800MHz memory)	5V@ 5.16A, 12@ 0.55A (Intel® Dual Core Atom™ D525 1.80GHz with two 2GB 1066MHz DDR3 memory)	5V@5.97A, 5Vsb@0.07A, 12V@0.29A, Vcore@2.97A (Intel® Core™2 Duo E8500 3.16GHz CPU with four 2GB 800MHz DDR2 memory)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset			
<b>Operation Environment</b>	Temperature range: -10°C ~ 60°C Relative humidity: 5% ~ 95%, non-condensing	Temperature range: -10°C ~ 60°C (14°F~140°F) Relative humidity: 5% ~ 95%, non-condensing	Temperature range: -20°C ~ 65°C (-4°F~149°F) with free air for D425 CPU -20°C ~ 60°C (-4°F~140°F) with free air for D525 CPU -20°C ~ 70°C (-4°F~158°F) with force air for D425/D525 CPU Relative humidity: 5% ~ 95%, non-condensing	Temperature range: 0°C ~ 60°C (32°F~140°F) Relative humidity: 5% ~ 95%, non-condensing
<b>Expansion Slot</b>	PCIe Mini	N/A		
<b>CPU Cooler</b>	CF-1156A/B/C/D-RS	CF-775A-RS, CF-775B-RS, CF-520-RS-R11	Heatsink (fanless) (optional CPU fan by 31100-000327-RS)	CF-775A-RS, CF-520-RS-R11

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# Full-size PICMG 1.0 Selection Guide



Model Name	WSB-9454-R40	WSB-9452-R40	WSB-945GSE
<b>CPU Socket</b>	LGA 775	Socket M	On board
<b>CPU Type</b>	Intel® Core™2 Duo, Pentium® D/4, Celeron® D	Intel® Core™2 Duo, Core Duo/Solo, Celeron® M	Intel® Atom™ Processor N270 1.6GHz
<b>FSB</b>	533/800/1066MHz	533/667MHz	533MHz
<b>Chipset</b>	Intel® 945G + ICH7	Intel® 945GME + ICH7M	Intel® 945GME + ICH7M
<b>Memory</b>	Four 240-pin 400/533/667MHz dual-channel DDR2 SDRAM DIMMs (system max. 4GB)	Two 240-pin 400/533/667MHz dual-channel DDR2 SDRAM DIMMs (system max. 4GB)	One 240-pin 533/667MHz dual-channel DDR2 SDRAM DIMM (system max. 2GB)
<b>Display Interface</b>	1 x VGA	Dual display supported 1 x VGA 1 x 18/24-bit dual-channel LVDS	1 x VGA
<b>Ethernet</b>	Dual Realtek RTL8111E PCIe GbE controller	Dual Realtek RTL8111E PCIe GbE controller	Dual Realtek RTL8111CP PCIe GbE controller
<b>I/O Interface</b>	2 x RS-232 7 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS 1 x 5-pin wafer for PS/2 KB	2 x RS-232 7 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS 1 x 5-pin wafer for PS/2 KB 1 x TPM	2 x RS-232 7 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS
<b>Driver Interface</b>	4 x SATA II 1 x IDE 1 x FDD	2 x SATA II 4 x SATA II (optional by WSB-9452S-R40 & WSB-9452SDVI-R40) 1 x IDE 2 x IDE (optional by WSB-9452S-R40 & WSB-9452SDVI-R40)	2 x SATA 1 x IDE 1 x CF Type II
<b>Audio</b>	AC-KIT08R-R10 5.1 channel AC'97 audio kit and IEI AC-KIT-888HD-R10 7.1 channel HD audio kit via the on-board 10-pin header connector		
<b>Digital I/O</b>	8-bit Digital I/O (4-bit input/4-bit output)		
<b>Power Consumption</b>	5V@7.68A, 12V@0.15A, Vcore@ 2.26A (Intel® Core™2 Duo E7400 2.8GHz CPU at FSB 1066MHz with four 1GB 800MHz DDR2 memory)	5V@4.15A, 12V@0.17A, 3.3V@0.01A, Vcore@1.46A (Intel® Core™ Duo T2400 1.83 GHz CPU with two 2GB 800MHz DDR2 memory)	5V@2.55A, 12V@0.23A (Intel® Atom™ N270 1.6GHz at FSB 533MHz with 1GB 533MHz DDR2 memory)
<b>Watchdog Timer</b>	Software programmable supports 1~255 sec. system reset		
<b>Operation Environment</b>	Temperature range: 0°C ~ 60°C (32°F~140°F) Relative humidity: 5% ~ 95%, non-condensing		
<b>Expansion Slot</b>	N/A	1 x PCIe Mini card slot	N/A
<b>CPU Cooler</b>	CF-775A-RS, CF-520-RS-R11	CF-479B-RS-R11	Heatsink (fanless)

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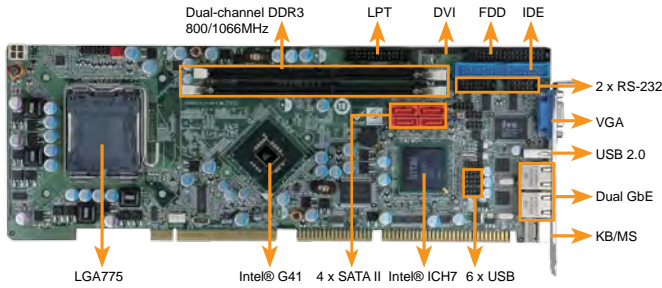
Panel Solutions Introduction





# WSB-G41A

PICMG 1.0 CPU card with Intel® G41 supports LGA775 Intel® Core™2 Quad, VGA, DDR3, Dual PCIe GbE, SATA II, COM, USB 2.0, Audio and RoHS



## Features

1. PICMG 1.0 form factor
2. Supports Intel® LGA775 Core™2 Quad processor up to 1333 MHz FSB
3. Dual-channel 800/1066MHz DDR3 SDRAM supports up to 8 GB
4. Dual Intel® GbE Ethernet, four SATA II, and two RS-232 serial port connectors
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: LGA775 45nm Intel® Core™2 Quad, Core™2 Duo, Pentium® D, Celeron® processors at FSB 800/1066/1333MHz
- ◆ System Chipset: Intel® G41 + ICH7
- ◆ BIOS: AMI BIOS
- ◆ System Memory: Two 240-pin 4GB (max.) 800/1066MHz dual-channel DDR3 SDRAM DIMMs supported (system max. 8GB)
- ◆ Ethernet: Dual PCIe Intel® 82583V GbE controller
- ◆ I/O Interface: 2 x RS-232, 1 x IDE, 1 x LPT, 1 x 5-pin on-board header for KB, 7 x USB 2.0 (1 on bracket, 6 on board by pin header)
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface: 1 x Infrared by pin header
- ◆ Super I/O: ITE IT8718F
- ◆ Display Interface: VGA integrated in Intel® G41, DVI by Silicon Image SIL1362 (WSB-G41A-DVI only)
- ◆ Audio: 10-pin on-board header connects to the IEI audio kit
- ◆ Watchdog Timer: Software programmable supports 1 ~255 sec. system reset
- ◆ Power Supply: AT/ATX power
- ◆ Power Consumption: 5 V @ 7.13A, 12 V @ 0.27A, 5VBS@0.11A, Vcore@3.02A running 3D Mark2001SE with Intel® Core™2 Duo E8500 3.16GHz, two 2GB DDR3
- ◆ Temperature Operation: -10°C ~ 60°C
- ◆ Humidity: Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 338 mm x 122 mm
- ◆ Weight: GW: 1100g

## Packing List

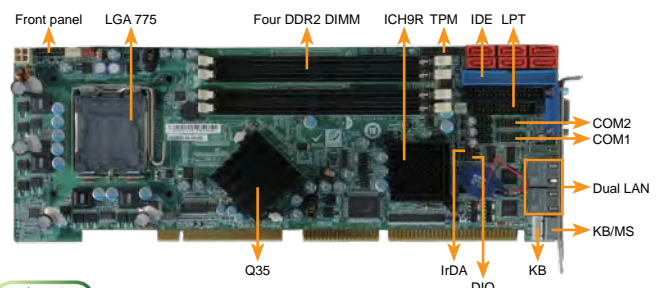
1 x WSB-G41A single board computer	
4 x SATA cable (P/N: 32801-000703-200-RS)	
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	
1 x KB/MS Y cable (P/N: 32006-000300-100-RS)	
1 x IO-KIT-001-R20 (For WSB-G41A-DVI-R10)	1 x Mini jumper pack
1 x USB cable (P/N: 19800-003100-200-RS)	1 x QIG
1 x One Key Recovery CD	1 x Utility CD

## Ordering Information

Part No.	Description
WSB-G41A-R11	PICMG 1.0 CPU card with Intel® G41 supports LGA775 Intel® Core™2 Quad CPU, VGA, DDR3, dual PCIe GbE, SATA II, COM, USB 2.0 and RoHS
WSB-G41A-DVI-R11	PICMG 1.0 CPU card with Intel® G41 supports LGA775 Intel® Core™2 Quad CPU, VGA/DVI, DDR3, dual PCIe GbE, SATA II, COM, USB 2.0 and RoHS
AC-KIT-888HD-R10	7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
AC-KIT08R-R10	5.1 channel AC'97 audio kit with Realtek ALC655
19800-000100-200-RS	4-port USB cable with bracket
CF-775A-RS	CPU cooler for 130W
CF-520-RS-R11	CPU cooler for 115W
CF-775B-RS	1U CPU cooler for 90W
32200-000052-RS	ATA 66 flat cable
32102-000100-200-RS	SATA power cable
19800-000400-100-RS	LPT cable
32229-000100-100-RS	FDD cable

# WSB-Q354-R41

PICMG 1.0 CPU card supports Intel® LGA 775 Core 2 Duo CPU in 45nm process at FSB 800/1066/1333MHz, Intel® Q35 & ICH9R, VGA, dual PCIe GbE, Six SATA II with RAID, IDE, FDD, LPT, USB 2.0



TPM 1.2 Support



## Features

1. PICMG 1.0 and RoHS compliant
2. Supports Intel® LGA775 Core™2 Duo processor in 45 nm Process (Wofdale) 1333/1066/800MHz FSB
3. Intel® Q35 & ICH9R platform
4. 6 SATA II with Intel® Matrix Storage Technology supported
5. Dual Realtek RTL8111E GbE with ASF 2.0
6. TPM 1.2 IT security solution supported
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: LGA775 45nm Intel® Core™2 Quad (Yorkfield), Core™2 Duo (Wofdale), Celeron® at FSB 800/1066/1333MHz processors
- ◆ System Chipset: Intel® Q35 + ICH9R
- ◆ BIOS: AMI BIOS
- ◆ System Memory: 4 x 240-pin 800/667MHz dual-channel DDR2 SDRAM (system max. 8 GB)
- ◆ Ethernet: Dual Realtek RTL8111E GbE with ASF 2.0
- ◆ IO Interface: 2 x RS-232, 7 x USB 2.0 (1 on bracket, 6 on board by pin header), 6 x SATA II support RAID 0, 1, 10, 5, 1 x IDE, 1 x FDD, 1 x LPT, 1 x Keyboard and mouse (PS/2), 1 x 5-pin on-board header for KB
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface: 1 x Infrared by pin header
- ◆ Audio: 10-pin on-board header supports 7.1 channel HD audio by IEI AC-KIT-888HD-R10
- ◆ Graphics: Analog VGA output
- ◆ TPM 1.2: 1 x 20-pin on-board header for TPM (Trusted Platform Module)
- ◆ Watchdog Timer: Software programmable supports 1~255sec. system reset
- ◆ Power Supply: ATX
- ◆ Power Consumption: 5V@5.97A, 5Vsb@0.07A, 12V@0.29A, Vcore@2.97A (Intel® Core™2 Duo E8500 3.16 GHz, four 2GB 800MHz DDR2 running 3DMark 2001SE)
- ◆ Temperature: Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity: Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 338 mm x 122 mm
- ◆ Weight: GW:1.1 kg

## Packing List

1 x WSB-Q354 single board computer	
1 x ATA 66 flat cable (P/N: 32225-002000-100-RS)	
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	
1 x KB/MS Y-cable (P/N: 32006-000300-100-RS)	
3 x SATA power cable (P/N: 32102-000100-200-RS)	
6 x SATA cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 19800-003100-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
WSB-Q354-R41	PICMG 1.0 CPU card supports Intel® LGA 775 Core™2 Duo CPU in 45nm process at 800/1066/1333MHz FSB, Intel® Q35 & ICH9R, VGA, dual PCIe GbE, six SATA II with RAID, IDE, FDD, LPT, USB 2.0
AC-KIT-888HD-R10	7.1 Channel HD audio kit with Realtek ALC888 supports dual audio streams
CF-775A-RS	High performance CPU cooler (92 mm x 92 mm x 73 mm, 130W)
CF-520-RS-R11	High performance CPU cooler (115 mm x 115 mm x 67 mm, 115W)
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
32225-002000-100-RS	IDE flat cable

1 Industrial Computing Solutions

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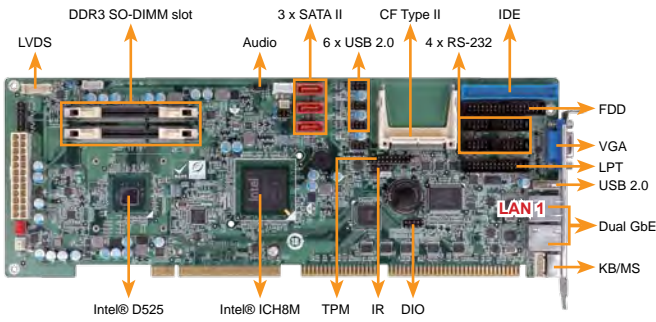
4 ORing Network Communication

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# WSB-PV-D4251/D5251

Full-size PICMG 1.0 CPU card with Intel® Atom™ D425/D525, DDR3, VGA/LVDS, Dual PCIe GbE, SATA II, COM, USB 2.0, Audio and RoHS



## Features

1. PICMG 1.0 form factor and RoHS compliant
2. Support Intel® Atom™ D425/D525 1.80GHz processor
3. Supports 800MHz DDR3 SDRAM SO-DIMM up to 4GB
4. Dual PCIe Ethernet, three SATA II, and four RS-232 serial port connectors
5. VGA and 18-bit single-channel LVDS for dual independent display support
6. TPM V1.2 hardware security function supported by TPM module
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU
  - Intel® Atom™ D525 dual-core processor (1.80GHz/1MB L2 cache)
  - Intel® Atom™ D425 single-core processor (1.80GHz/512KB L2 cache)
- ◆ System Chipset: ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ System Memory
  - Two 204-pin 800MHz DDR3 SDRAM SO-DIMMs supported (system max. 4GB) for D525/D425
- ◆ Graphics Engine
  - GMA 3150
  - Gen3.5 DX9, 400MHz for D525/D425
- ◆ Ethernet
  - Dual Realtek RTL8111E PCIe GbE controller (LAN1 with ASF 2.0 support)
- ◆ Display Interface
  - Analog CRT up to 2048x1536 for D525/D425
  - Supports CRT hot plug
  - 18-bit single-channel LVDS, resolution support up to WXGA 1366x768 or XGA 1024x768
- ◆ I/O Interface
  - 4 x RS-232
  - 1 x IDE
  - 1 x CF Type II
  - 1 x LPT
  - 7 x USB 2.0 (1 on bracket, 6 on board by pin header)
- ◆ TPM: 2 x 10-pin header
- ◆ SMBus: 1 x 4-pin wafer connector
- ◆ Digital I/O
  - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface
  - 1 x 5-pin infrared by pin header
- ◆ Super I/O: Fintek F81865
- ◆ Audio
  - 1 x 10-pin on-board header connected to the IEI audio kit
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: AT/ATX power
- ◆ Power Consumption
  - 5V @ 5.16A, 12 @ 0.55A (Intel® dual core Atom™ D525 1.80GHz with two 2GB 1066MHz DDR3 memory)
- ◆ Temperature
  - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor
  - 20°C ~ 65°C with free air, -20°C ~ 70°C with force air for D425 processor
- ◆ Humidity
  - Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 338 mm x 122 mm
- ◆ Weight: GW: 1100g

## Packing List

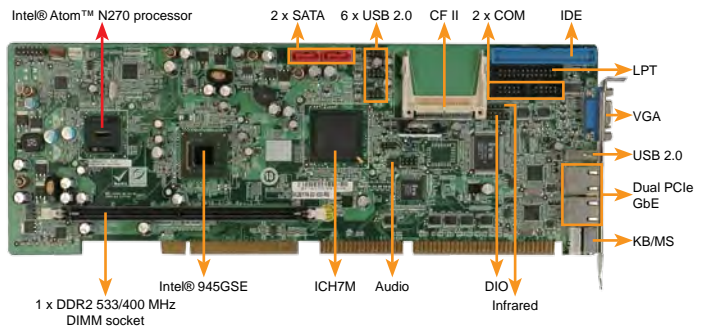
1 x WSB-PV-D4251/D5251 single board computer	
2 x SATA cable (P/N: 32801-000703-200-RS)	
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 19800-003100-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
WSB-PV-D5251-R10	Full-size PICMG 1.0 CPU card with Intel® dual-core Atom™ D525 1.80GHz/1MB L2 cache, DDR3, VGA/LVDS, dual PCIe GbE, SATA II, COM, USB 2.0, audio, RoHS
WSB-PV-D4251-R10	Full-size PICMG 1.0 CPU card with Intel® single-core Atom™ D425 1.80GHz/512KB L2 cache, DDR3, VGA/LVDS, dual PCIe GbE, SATA II, COM, USB 2.0, audio, RoHS
AC-KIT-888HD-R10	7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
CB-USB14-RS	4 ports USB cable
32006-000300-100-RS	KB/MS Y cable
32200-000052-RS	ATA 66 flat cable
32102-000100-200-RS	SATA power cable
19800-000400-100-RS	LPT cable
2200-000017-RS	FDD cable
31100-000327-RS	CPU fan
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

# WSB-945GSE

Full-size PICMG 1.0 CPU card supports Intel® Atom™ processor and comes with VGA, Dual PCIe GbE, USB 2.0, SATA and Audio



## Features

1. PICMG 1.0 and RoHS compliant
2. Intel® Atom™ processor N270 at 1.6GHz core speed with a 533MHz FSB and 512KB L2 cache
3. Enhanced technology for lower power consumption
4. Two SATA and CF type I/II for data storage
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU
  - On-board Intel® Atom™ N270 processor, 1.6GHz
  - 512KB L2 cache with a 533MHz FSB
- ◆ System Chipset
  - Intel® 945GSE + ICH7M
- ◆ BIOS
  - AMI BIOS
- ◆ System Memory
  - One 240-pin 533/400 MHz DDR2 SDRAM DIMM supported (system max. 2GB)
- ◆ Ethernet
  - Dual Realtek 8111CP PCIe GbE controllers
- ◆ I/O Interface
  - 2 x RS-232
  - 1 x IDE
  - 7 x USB 2.0 (1 on bracket, 6 on board by pin header)
  - 1 x PS/2 connector for KB/MS
- ◆ Digital I/O
  - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface
  - 1 x Infrared by pin header
- ◆ Super I/O
  - ITE IT8718F
- ◆ Display Interface
  - VGA integrated in Intel® 945GSE
- ◆ Audio
  - Support 7.1 channel HD audio or 5.1 channel AC-97 audio by IEI audio kits
- ◆ SSD
  - CF type I/II
- ◆ Watchdog Timer
  - Software programmable supports 1 ~255 sec. system reset
- ◆ Power Supply
  - AT/ATX power
- ◆ Power Consumption
  - 5V @ 2.55A, 12V @ 0.23A (Intel® Atom™ N270 1.6GHz/533MHz CPU with 1GB 533MHz DDR2)
- ◆ Temperature
  - Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity
  - Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions
  - 338 mm x 122 mm
- ◆ Weight
  - GW: 1.0 kg/NW: 0.25 kg

## Packing List

1 x WSB-945GSE single board computer	
1 x KB/MS Y-cable (P/N: 32006-000300-100-RS)	
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 19800-003100-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG (quick installation guide)

## Ordering Information

Part No.	Description
WSB-945GSE-N270-R10	PICMG 1.0 with Intel® Atom™ processor N270 1.6GHz processor, VGA, dual PCIe GbE, USB 2.0, SATA
AC-KIT-888HD-R10	7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
AC-KIT08R-R10	5.1 channel AC'97 audio kit with Realtek ALC655
32200-000052-RS	ATA 66 flat cable
32102-000100-200-RS	SATA power cable
19800-000400-100-RS	LPT cable

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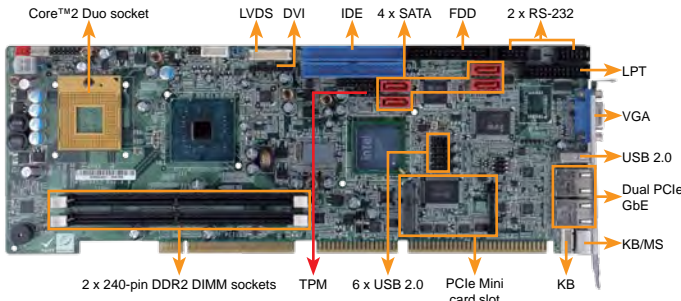
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# WSB-9452-R40

Full-size PICMG 1.0 CPU card supports Socket M Intel® Core™2 Duo processors and comes with VGA, DVI, HDTV, dual PCIe GbE LAN and SATA, SATAII interfaces



## Features

1. PICMG 1.0 and RoHS compliant
2. Socket M Intel® Core™2 Duo, Core™ Duo, Core™ Solo and Celeron® M mobile processors with a 533 MHz or 667 MHz FSB
3. Four 240-pin 1 GB (max.) 667/533/400 MHz dual-channel DDR2 SDRAM DIMM supported (system max. 4 GB)
4. Two PCIe GbE controllers
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
Socket M Intel® Core™2 Duo, Core™ Duo, Core™ Solo and Celeron® M mobile processors with a 533 MHz or 667MHz FSB
- ◆ System Chipset: Intel® 945GM + ICH7M
- ◆ BIOS: AMI BIOS
- ◆ System Memory  
Two 240-pin 2 GB (max.) 667 MHz, 533 MHz or 400 MHz dual-channel DDR2 SDRAM DIMMs supported (system max. 4 GB)
- ◆ Ethernet  
Dual Realtek RTL8111E PCIe GbE chipset with ASF 2.0
- ◆ I/O Interface  
2 x RS-232 1 x 20-pin LPC (TPM module)  
1 x FDD 1 X LPT  
1 x Infrared 1 x PCIe Mini card slot  
7 x USB 2.0 (1 on bracket, 6 on board)  
1 x IDE (2 x IDE, WSB-9452S/WSB-9452SDVI only)  
2 x SATA  
(4 x SATA by JMB363, WSB-9452S/9452SDVI only)  
1 x Keyboard and mouse (PS/2)  
1 x 5-pin header for keyboard
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Display Interface  
VGA/HDTV out integrated in Intel® 945GM DVI (WSB-9452SDVI)  
18-bit dual-channel LVDS
- ◆ Audio  
5.1 channel AC'97 audio kit with Realtek ALC655 codec  
7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: AT/ATX Power
- ◆ Power Consumption  
5V@4.15A, 12V@0.17A, 3.3V@0.01A, Vcore@1.46A (Intel® Core™ Duo T2400 1.83 GHz, two 2GB 800MHz DDR2)
- ◆ Temperature:  
Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity:  
Operating: 5% ~ 95%, non-condensing
- ◆ Dimensions (LxW): 338 mm x 122 mm
- ◆ Weight (GW): 1.2 kg

## Packing List

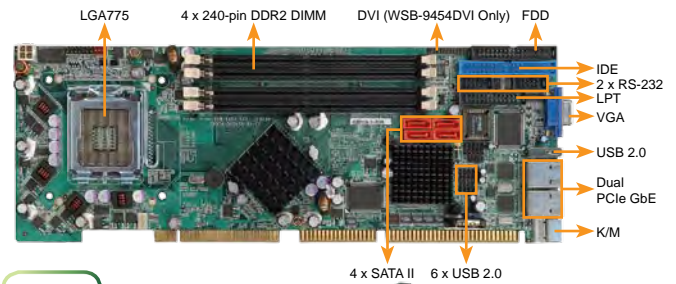
1 x WSB-9452 single board computer	
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	
1 x KB/MS Y-cable (P/N: 32006-000300-100-RS)	
1 x SATA power cable (P/N: 32102-000100-200-RS)	
2 x SATA power cable (P/N: 32102-000100-200-RS) for WSB-9452S/9452SDVI	
4 x SATA cable (P/N: 32801-000703-200-RS) for WSB-9452S/9452SDVI	
1 x ATA 66 flat cable (P/N: 32200-000052-RS)	1 x One Key Recovery CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x IO-KIT-001-R20 (DVI model only)	1 x Utility CD
1 x USB cable (P/N: 19800-003100-200-RS)	1 x QIG

## Ordering Information

Part No.	Description
WSB-9452-R40	PICMG 1.0 Intel® Core™2 Duo 533/667 MHz processor, VGA/LVDS/HDTV, dual PCIe GbE, and 2 x SATA
WSB-9452S-R40	PICMG 1.0 Intel® Core™2 Duo 533/667 MHz processor, VGA/LVDS/HDTV, dual PCIe GbE, and 4 x SATA.
WSB-9452SDVI-R40	PICMG 1.0 Intel® Core™2 Duo 533/667 MHz processor, VGA/LVDS/HDTV/DVI, dual PCIe GbE, and 4 x SATA.
CF-479B-RS-R11	CPU cooler
AC-KIT08R-R10	5.1 channel audio kit with realtek ALC655
AC-KIT-888HD-R10	7.1 channel HD audio kit with realtek ALC888 supports dual audio streams
32229-000100-100-RS	FDD cable
19800-000400-100-RS	LPT cable

# WSB-9454-R40

Full-size PICMG 1.0 CPU card supports LGA775 Intel® Core™2 Duo, Pentium® D, Pentium® 4 and Celeron® D processors and comes with VGA or DVI, dual PCIe GbE LAN and 3.0 Gbps SATA II interfaces



## Features

1. Supports LGA775 Intel® Core™2 Duo, Pentium® 4, Pentium® D and Celeron® D processors with a 533 MHz, an 800 MHz or a 1066 MHz FSB
2. Dual core processors combined physically
3. Enhanced technology for better power consumption
4. Intel® EMT64 Technology supports future 64-bit OS appliance
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
LGA775 Intel® Core™2 Duo, Pentium® D, Pentium® 4, and Celeron® D desktop processors with a 533 MHz, 800 MHz or 1066MHz FSB
- ◆ System Chipset  
Intel® 945G+ ICH7
- ◆ BIOS  
AMI BIOS
- ◆ System Memory  
Four 240-pin 1 GB (max.) 667 MHz, 533 MHz or 400 MHz dual-channel DDR2 SDRAM DIMMs supported (system max. 4 GB)
- ◆ Ethernet  
Dual Realtek RTL8111E PCIe GbE chipset with ASF 2.0
- ◆ I/O Interface  
2 x RS-232  
7 x USB 2.0 (1 on bracket, 6 on board)  
1 x IDE  
1 x FDD  
1 X LPT  
4 x SATA II  
1 x Infrared  
1 x Keyboard and mouse (PS/2)  
1 x 5-pin header for keyboard
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input/4-bit output
- ◆ Display Interface  
VGA integrated in Intel® 945G DVI by Silicon Image SIL1362 (WSB-9454DVI only)
- ◆ Audio  
5.1 channel AC'97 audio kit with Realtek ALC655 codec  
7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Power Supply  
AT/ATX power
- ◆ Power Consumption  
5V@7.68A, 12V@0.15A, Vcore@2.26A (Intel® Core™2 Duo E7400 2.8 GHz/1066 MHz CPU with four 1GB 800 MHz DDR2)
- ◆ Temperature  
Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity  
Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions  
338 mm x 122 mm
- ◆ Weight  
GW:1.2 Kg

## Packing List

1 x WSB-9454 single board computer	
1 x ATA 66 flat cable (P/N: 32225-002000-100-RS)	
1 x KB/MS Y-cable (P/N: 32006-000300-100-RS)	
1 x SATA power cable (P/N: 32102-000100-200-RS)	
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	1 x One Key Recovery CD
1 x IO-KIT-001-R20 (DVI model only)	1 x Mini jumper pack
1 x USB cable (P/N: 19800-003100-200-RS)	1 x Utility CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

## Ordering Information

Part No.	Description
WSB-9454-R40	PICMG 1.0 CPU card supports Intel® Core™2 Duo, Pentium® 4/D, Celeron® D 1066 MHz processors, VGA, dual PCIe GbE and SATA II
WSB-9454DVI-R40	PICMG 1.0 CPU card supports Intel® Core™2 Duo, Pentium® 4/D, Celeron® D 1066 MHz processors, VGA/DVI, Dual PCIe GbE and SATA II
AC-KIT-888HD-R10	7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
AC-KIT08R-R10	5.1 channel AC'97 audio kit with Realtek ALC655 code
CF-775A-RS	High performance CPU cooler (92mm x 92mm x 73mm, 130W)
CF-520-RS-R11	High performance CPU cooler (115mm x 115mm x 67mm, 115W)
32229-000100-100-RS	FDD cable
19800-000400-100-RS	LPT cable

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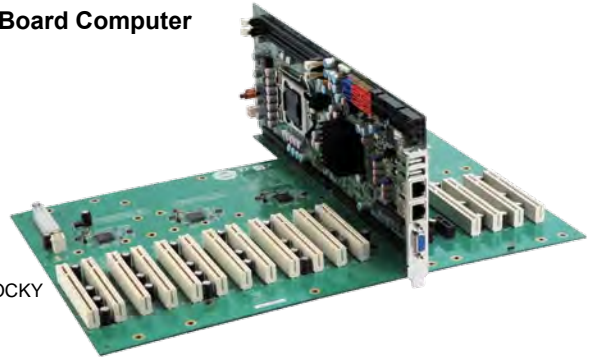
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# PCI/PX Backplane

Supports PCI and ISA slot on one backplane! For PICMG 1.0 Single Board Computer



The advantages of using the PICMG 1.0 card series are numerous:

1. Supports standard PICMG version 1.0 slot on the PCI/PX series passive backplane.
2. Compatible with all available PCI/ISA cards. PCI/PX backplane is also integrated with the ROCKY series card slot.

## Selection Guide

PAC series wall-mount chassis

4U/5U rack-mount chassis

1U/2U rack-mount chassis

RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



Model	PCI-4S-RS-R40	PCI-5S-RS-R40	PCI-5S2A-RS-R40 PCI-5S2-RS-R40	PCI-6S-RS-R40	PCI-7S-RS-R41	PCI-8S-RS-R40	PX-8S-RS-R41
Total Slot	4	5	5	6	7	8	8
PCI Slot	3	3	4	4	4	4	6
ISA Slot	1	2	1	2	3	4	2
PSU Type	ATX/AT	ATX/AT	ATX/AT	ATX/AT	ATX/AT	ATX/AT	ATX/AT
Chassis	N/A	PAC-1000G	RACK-500G	PAC-106G PAC-107G PAC-1000G	PAC-1700G	N/A	N/A

RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



Dual System

Model	PCI-10S-RS-R41	PCI-10S2-RS-R41	PX-10S-RS-R50	PCI-12S-RS-R40	PCI-13SD-RS-R40	PCI-14S-RS-R40	PCI-14S2-RS-R40
Total Slot	10	10	10	12	13	14	14
PCI Slot	4	4	7	4	3+4	4	4
ISA Slot	5	5	3	7	3+3	9	8
PSU Type	ATX/AT	ATX/AT	ATX/AT	ATX/AT	ATX/AT	ATX/AT	ATX/AT
Chassis	PAC-125G	N/A	PAC-125G	RACK-3000G	RACK-305G RACK-360G RACK-3000G	N/A	RACK-305G RACK-360G RACK-3000G
Note					for Dual System		

RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



Model	PCI-14S3-RS-R41	PX-14S2-RS-R41	PX-14S3-RS-R50	PX-14S5-RS-R50	PCI-19S-RS-R40	PX-20S2-RS-R40	PX-20S3-RS-R40
Total Slot	14	14	14	14	19	20	20
PCI Slot	4	7	12	7	4	17	18
ISA Slot	9	6	2	6	14	3	1
PSU Type	ATX/AT	ATX/AT	ATX/AT	ATX/AT	ATX/AT	ATX/AT	ATX/AT
Chassis	RACK-305G RACK-360G RACK-3000G	RACK-3000G	RACK-305G RACK-360G RACK-3000G	RACK-305G RACK-360G RACK-3000G	N/A	N/A	N/A

RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



Model	PCI-2SD2-RS-R41	PCI-5SD5-RS-R40	PCI-5SD6-RS-R40	PCI-5SDA-RS-R40	PCI-6SD-RS-R40/PCI-6SR-RS-R40
Total Slot	2	6	6	6	6
PCI Slot	R2	L2+R2	L2+R2	L2+R2	L1+R1
ISA Slot					L1+R1
PSU Type	ATX/AT	AT	ATX	ATX/AT	ATX
Chassis	RACK-1150G	RACK-220G	RACK-220G	RACK-220G	RACK-220G

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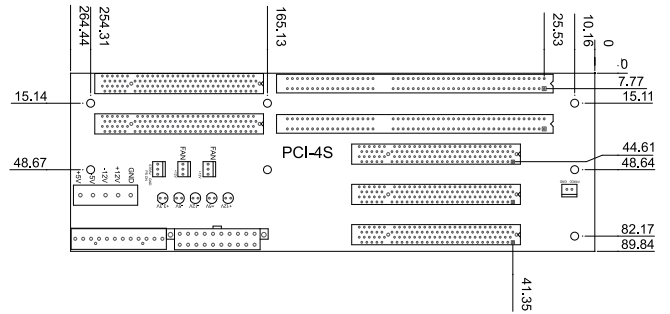
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## PCI-4S-RS-R40



### Ordering Information

PCI-4S-RS-R40 4-slot backplane with three PCI slots and one ISA slot



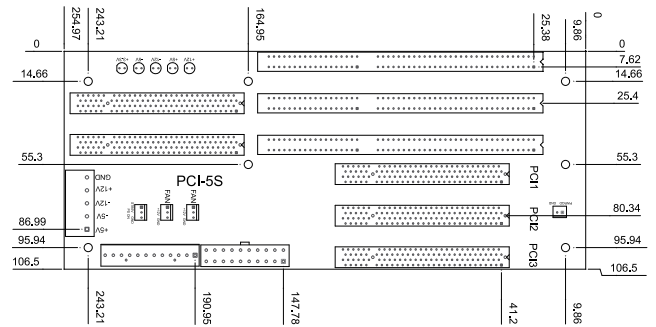
## PCI-5S-RS-R40



### Ordering Information

PCI-5S-RS-R40 5-slot backplane with three PCI slots and two ISA slots

PAC-1000G 6-slot full-size compact chassis



## PCI-5S2-RS-R40/PCI-5S2A-RS-R40

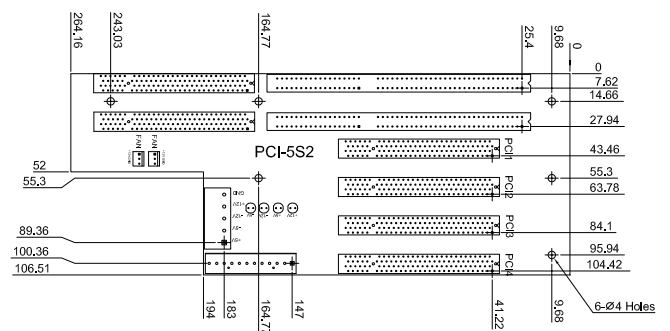


### Ordering Information

PCI-5S2-RS-R40 5-slot AT power backplane with four PCI slots and one ISA slot

PCI-5S2A-RS-R40 5-slot ATX power backplane with four PCI slots and one ISA slot

RACK-500G 5-slot full-size compact chassis



## PCI-6S-RS-R40



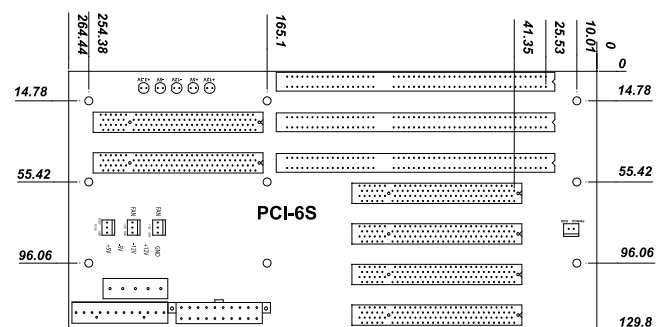
### Ordering Information

PCI-6S-RS-R40 6-slot backplane with four PCI slots and two ISA slots

PAC-106G 6-slot full-size compact chassis

PAC-107G 6-slot full-size compact chassis

PAC-1000G 6-slot full-size compact chassis



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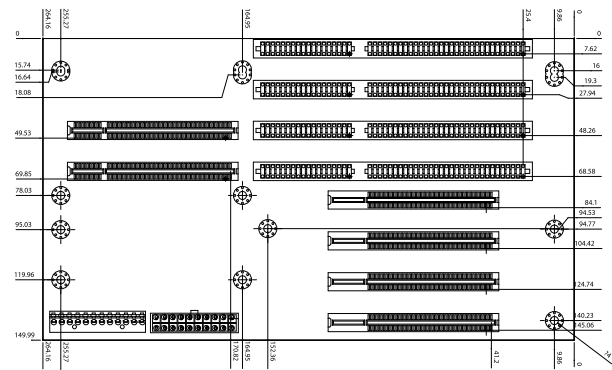
Panel Solutions Introduction

## PCI-7S-RS-R41



### Ordering Information

PCI-7S-RS-R41	7-slot backplane with four PCI slots and three ISA slots
PAC-1700G	7-slot full-size compact chassis

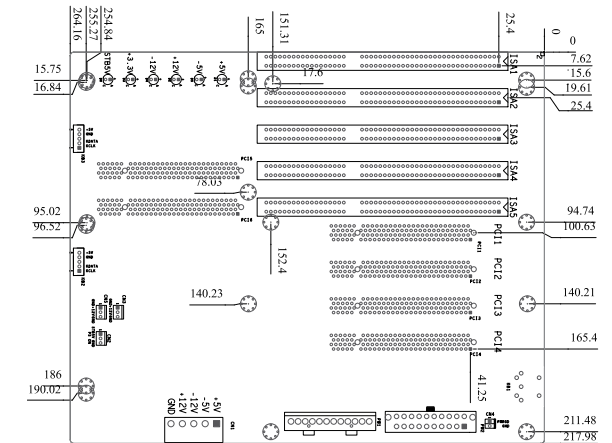


## PCI-8S-RS-R40



### Ordering Information

PCI-8S-RS-R40	8-slot backplane with four PCI slots and four ISA slots
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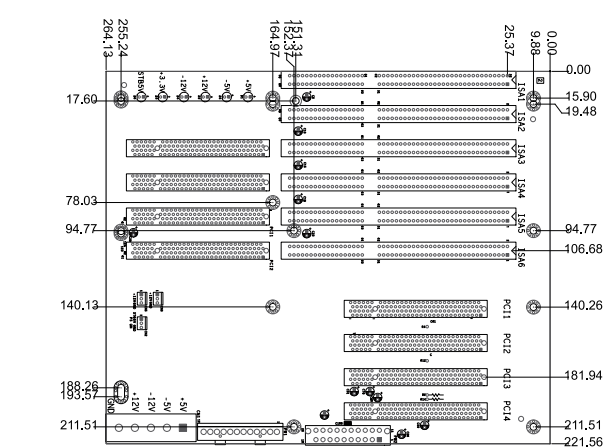


## PCI-10S-RS-R41



### Ordering Information

PCI-10S-RS-R41	10-slot backplane with four PCI slots and five ISA slots
PAC-125G	10-slot full-size compact chassis

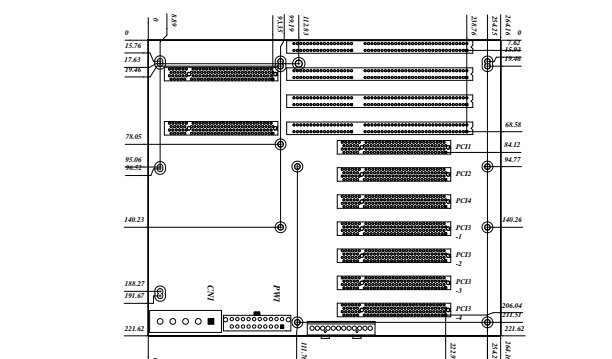


## PX-10S-RS-R50



### Ordering Information

PX-10S-RS-R50	10-slot backplane with seven PCI slots and three ISA slots
PAC-125G	10-slot full-size compact chassis



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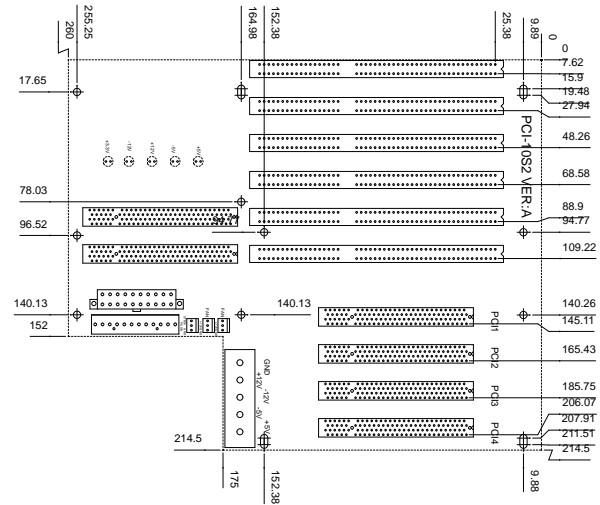
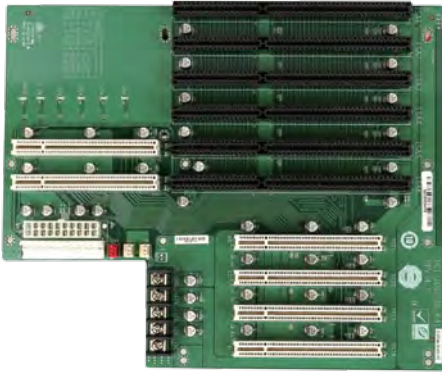
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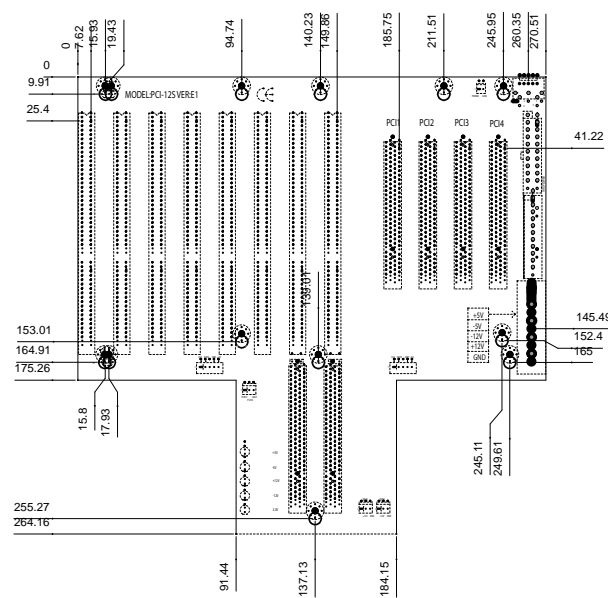
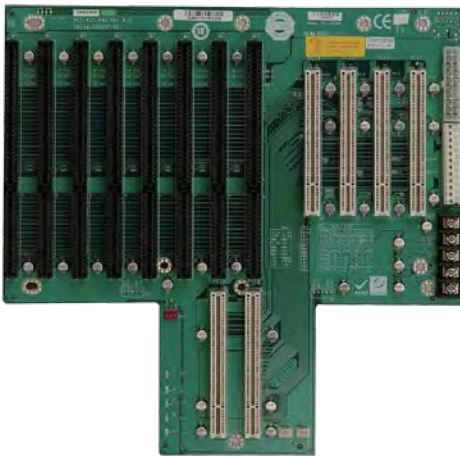
## PCI-10S2-RS-R41



### Ordering Information

PCI-10S2-RS-R41 10-slot backplane with four PCI slots and five ISA slots

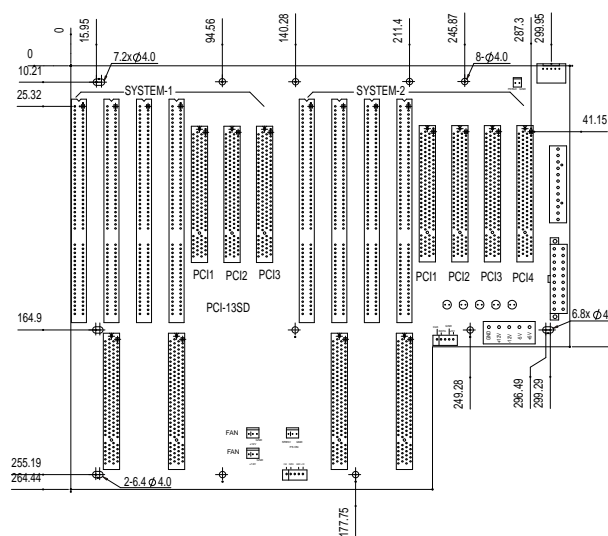
## PCI-12S-RS-R40



### Ordering Information

PCI-12S-RS-R40 12-slot backplane with four PCI slots and seven ISA slots  
 RACK-3000G 4U 14-slot full-size rack-mount chassis

## PCI-13SD-RS-R40 Dual System



### Ordering Information

PCI-13SD-RS-R40 13-slot dual-system backplane with system 1 having 3 PCI slots and three ISA slots and system 2 having four PCI slots and three ISA slots  
 RACK-305G 4U 14-slot full-size rack-mount chassis  
 RACK-360G 4U 14-slot full-size rack-mount chassis  
 RACK-3000G 4U 14-slot full-size rack-mount chassis

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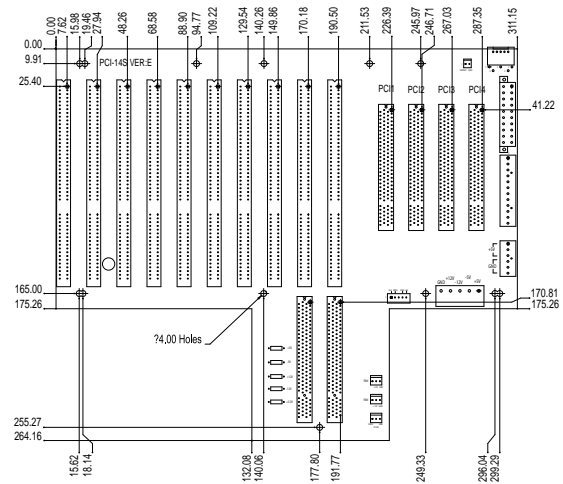
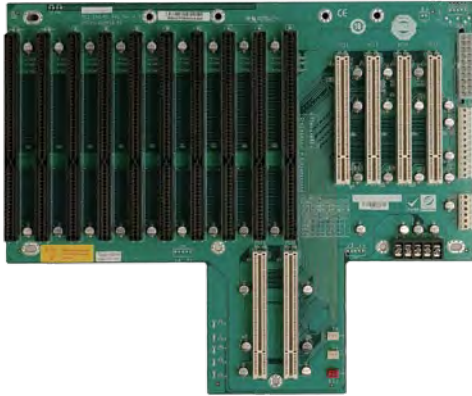
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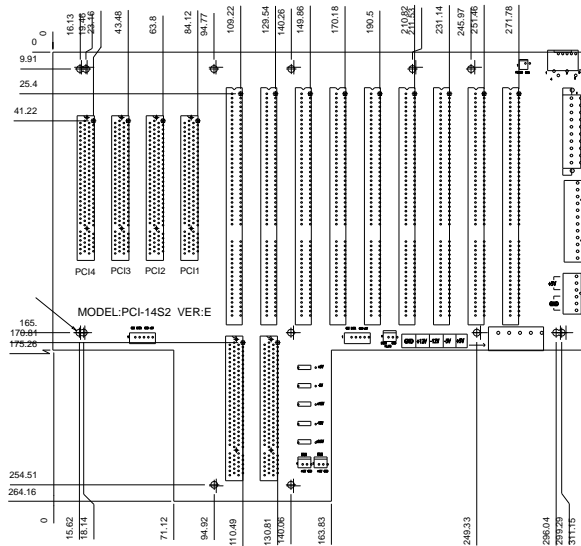
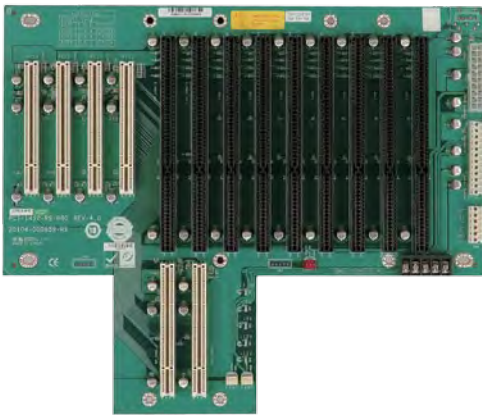
## PCI-14S-RS-R40



### Ordering Information

PCI-14S-RS-R40 14-slot backplane with 4 PCI slots and 9 ISA slots

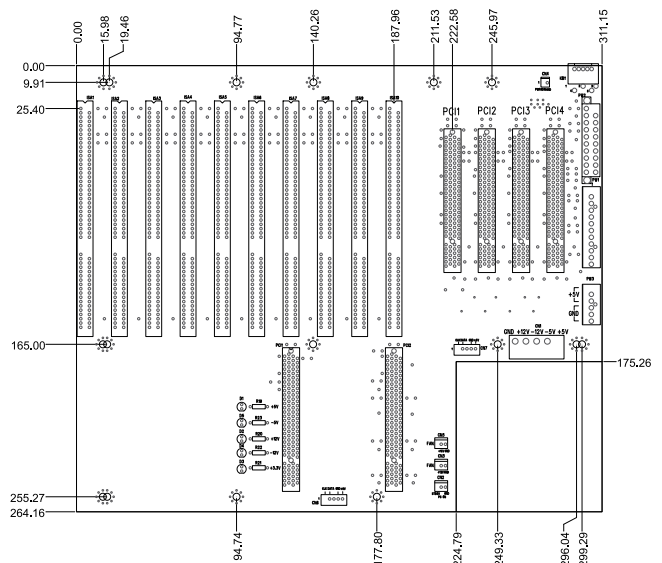
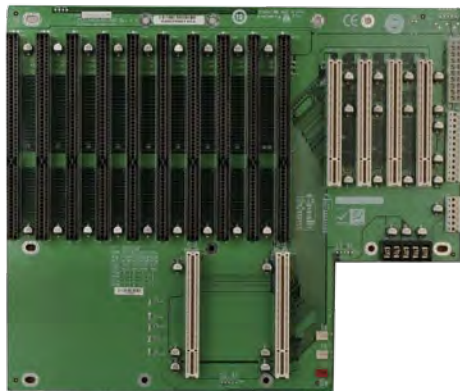
## PCI-14S2-RS-R40



### Ordering Information

PCI-14S2-RS-R40 14-slot backplane with 4 PCI slots and 8 ISA slots  
 RACK-305G 4U 14-slot full-size rack-mount chassis  
 RACK-360G 4U 14-slot full-size rack-mount chassis  
 RACK-3000G 4U 14-slot full-size rack-mount chassis

## PCI-14S3-RS-R40

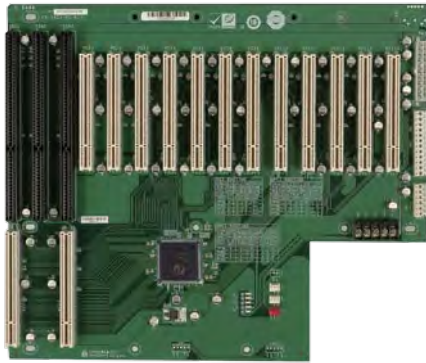


### Ordering Information

PCI-14S3-RS-R40 14-slot backplane with 4 PCI slots and 9 ISA slots  
 RACK-305G 4U 14-slot full-size rack-mount chassis  
 RACK-360G 4U 14-slot full-size rack-mount chassis  
 RACK-3000G 4U 14-slot full-size rack-mount chassis

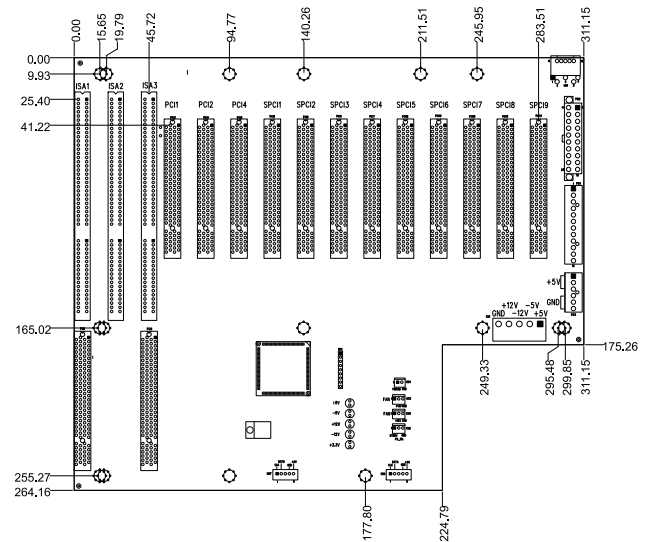
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## PX-14S3-RS-R50

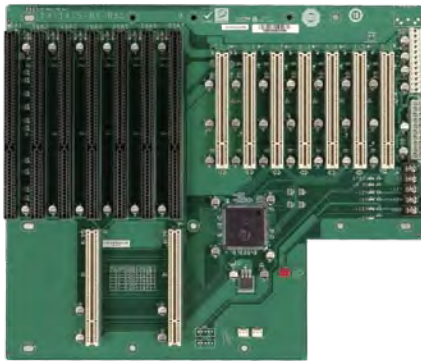


### Ordering Information

PX-14S3-RS-R50	14-slot backplane with 12 PCI slots and 2 ISA slots
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis

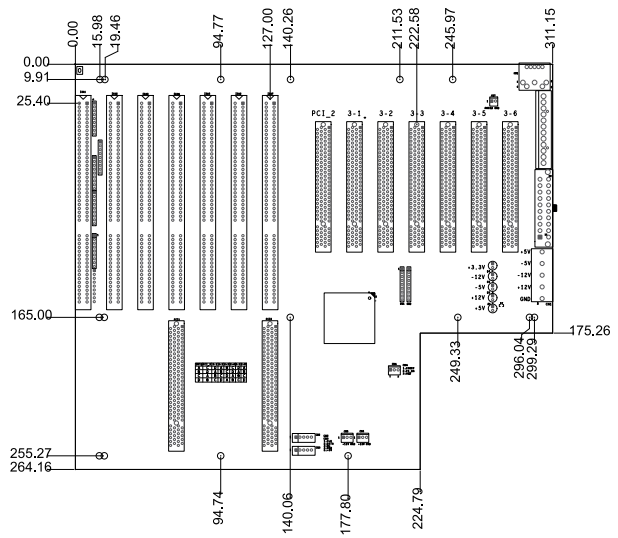


## PX-14S5-RS-R50

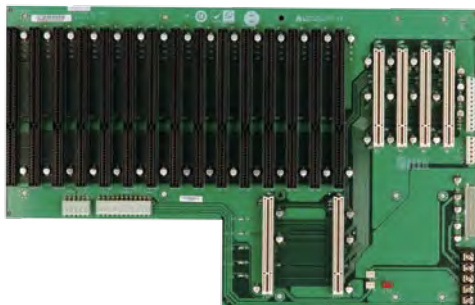


### Ordering Information

PX-14S5-RS-R50	14-slot backplane with 7 PCI slots and 6 ISA slots
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis

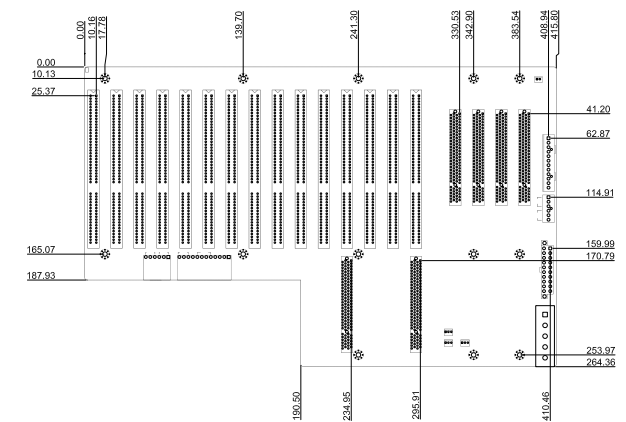


## PCI-19S-RS-R40



### Ordering Information

PCI-19S-RS-R40	19-slot backplane with 4 PCI slots and 14 ISA slots
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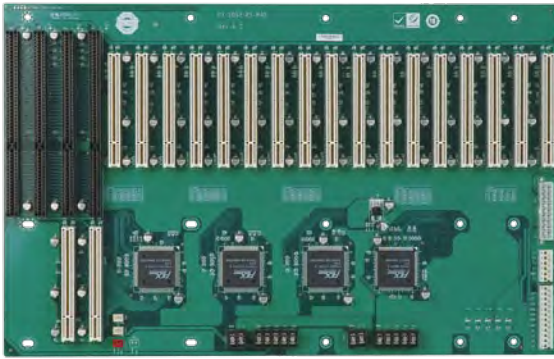
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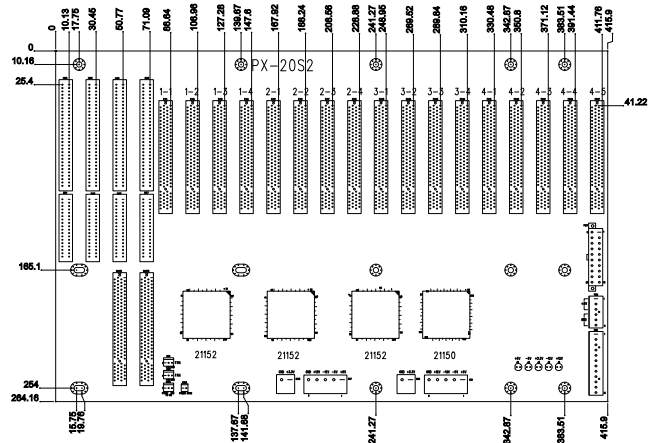
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## PX-20S2-RS-R40

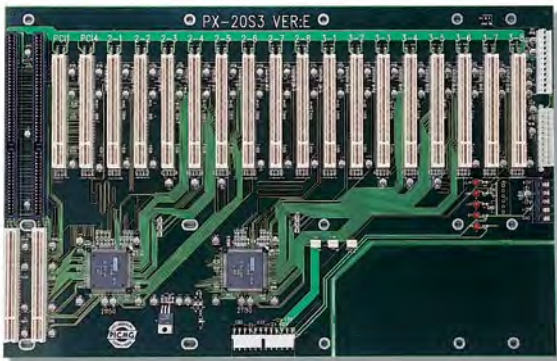


### Ordering Information

PCI-20S2-RS-R40 20-slot backplane with 17 PCI slots and 3 ISA slots

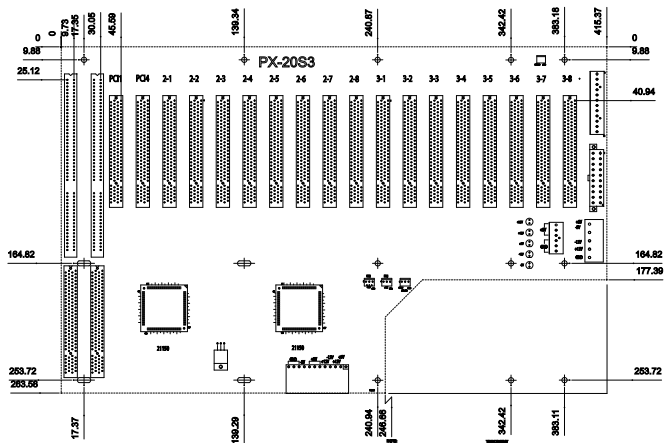


## PX-20S3-RS-R40



### Ordering Information

PCI-20S3-RS-R40 20-slot backplane with 18 PCI slots and 1 ISA slot



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## PCI-2SD2-RS-R41

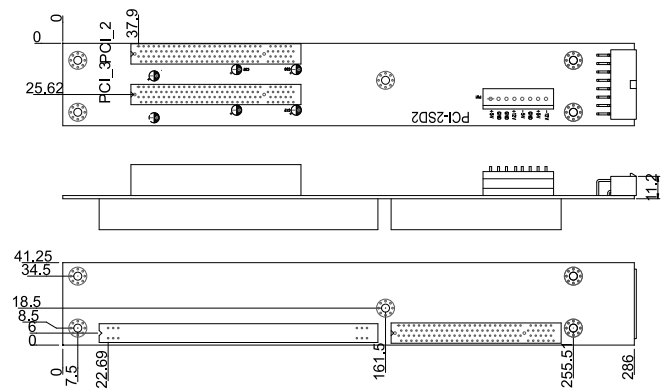


### Ordering Information

PCI-2SD2-RS-R41 1U chassis backplane with 2 PCI slots

RACK-1150G 1U full-size rack-mount chassis

\* The adapter cable 321100-040600-RS is required when connecting PCI-2SD2-RS to a standard ATX supply.





# Half Size PICOe, ISA, Selection Guide



Model Name	PICOe-B650	PICOe-HM650	PICOe-PV-D4251/N4551/D5251-R11
<b>CPU Socket</b>	Intel® LGA1155	Socket G2	On board
<b>CPU Type</b>	2nd Generation Intel® Core™ i7/i5/i3/Pentium®/Celeron®	2nd Generation Intel® Core™ i7/i5/i3/Celeron®	Intel® Atom™ D525 dual-core 1.80GHz Intel® Atom™ D425 single-core 1.80GHz Intel® Atom™ N455 single-core 1.66GHz
<b>FSB</b>	NA	NA	N/A
<b>Chipset</b>	Intel® B65	Intel® HM65	Intel® ICH8M
<b>Memory</b>	One 204-pin 1333/1066MHz DDR3/DDR3L (1.35V) SO-DIMM supported (system max. 8GB)	Two 204-pin 1333/1066 MHz dual-channel DDR3 SO-DIMMs supported (system max. 16GB)	One 204-pin 800MHz DDR3 SDRAM SO-DIMM (system max. 4GB for D525/D425, 2GB for N455) (compatible w/128MB*8 SDRAM) On-board 1GB 800MHz DDR3 memory
<b>Display Interface</b>	1 x VGA	Dual display supported 1 x VGA 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18/24-bit single-channel LVDS
<b>Ethernet</b>	Dual PCIe GbE by Realtek RT8111E supports ASF 2.0	Dual PCIe GbE by Realtek RT8111E supports ASF 2.0	Dual Realtek RTL8111E PCIe GbE controller
<b>I/O Interface</b>	2 x RS-232 4 x USB 2.0 1 x 6-pin wafer for KB & MS	2 x RS-232 1 x RS-422/485 8 x USB 2.0 1 x LPT 1 x 6-pin wafer for KB & MS	3 x RS-232 1 x RS-232/422/485 7 x USB 2.0 1 x LPT 1 x PS/2 KB & MS 1 x 6-pin wafer for PS/2 KB & MS
<b>Driver Interface</b>	1 x SATA 3Gb/s 1 x SATA 6Gb/s	2 x SATA 3Gb/s 2 x SATA 6Gb/s	3 x SATA II 1 x CF Type II
<b>Audio</b>	Supports by IEI AC-KIT-888HD audio kit		IEI AC-KIT-888HD-R10 7.1 channel HD audio kit via the on-board 10-pin header connector
<b>Digital I/O</b>	8-bit Digital I/O		8-bit Digital I/O (4-bit input/4-bit output)
<b>Power Consumption</b>	5V@3.17A, 12V@0.46A, Vcore_12V@7.26A, 5VSB@0.18A (3.4GHz Intel® Core™ i7-2600K with two 2GB 1333MHz DDR3 memory)	5V@3.99A, 12V@0.43A, Vcore_12V@3.80A, 5VSB@0.06A (2.70GHz Intel® Core™ i7-2620M with two 2GB 1333MHz DDR3 memory)	5V@3.38A, 12V@0.54A (Intel® dual-core Atom™ D525 1.80GHz CPU with 1GB 800MHz DDR3 on-board memory) 5V@3.28A, 12V@0.43A (Intel® single-core Atom™ D425 1.80GHz CPU with 1GB 800MHz DDR3 on-board memory) 5V@3.13A, 12V@0.32A (Intel® single-core Atom™ N455 1.66GHz CPU with 1GB 800MHz DDR3 on-board memory)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset		
<b>Operation Environment</b>	Temperature range: -10°C ~ 60°C Relative humidity: 5% ~ 95%, non-condensing	Temperature range: -10°C ~ 60°C Relative humidity: 5% ~ 95%, non-condensing	Temperature range: -20°C ~ 65°C (-4°F ~ 149°F) with free air for D425 CPU -20°C ~ 60°C (-4°F ~ 140°F) with free air for D525 CPU -20°C ~ 70°C (-4°F ~ 158°F) with free air for D525 CPU -20°C ~ 70°C (-4°F ~ 158°F) with force air for D425/D525 CPU -20°C ~ 75°C (-4°F ~ 167°F) with force air for N455 CPU Relative humidity: 5% ~ 95%, non-condensing
<b>Expansion Slot</b>	NA	NA	PCI/PCIe
<b>CPU Cooler</b>	CF-1156A/B/C/D-RS	CF-989A-RS-R12	Heatsink (fanless) (optional CPU fan by 31100-000327-RS)

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# Half Size PICOe, ISA, Selection Guide



Model Name	PICOe-GM45A	PICOe-9452-R21	PICOe-945GSE-R11	PCISA-PV-D4251/N4551/D5251
<b>CPU Socket</b>	Socket P	Socket M	On board	On board
<b>CPU Type</b>	Intel® Atom™ 2 Duo, Celeron® M	Intel® Atom™ 2 Duo, Core™ Duo, Core™ Solo, Celeron® M	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ D525 dual-core 1.80GHz Intel® Atom™ D425 single-core 1.80GHz Intel® Atom™ N455 single-core 1.66GHz
<b>FSB</b>	667/800/1066MHz	533/667MHz	533MHz	N/A
<b>Chipset</b>	Intel® GM45 + ICH9M	Intel® 945GME + ICH7M	Intel® 945GSE + ICH7M	Intel® ICH8M
<b>Memory</b>	Two 240-pin 667/800MHz dual-channel DDR2 SDRAM DIMMs (system max. 4GB)	Two 240-pin 533/667MHz dual-channel DDR2 SDRAM DIMMs (system max. 4GB)	One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM (system max. 2GB) On-board 512MB 667MHz DDR2 memory	One 204-pin 800MHz DDR3 SDRAM SO-DIMM (system max. 4GB for D525/D425, 2GB for N455)
<b>Display Interface</b>	Dual display supported 1 x VGA 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS
<b>Ethernet</b>	Dual Intel® 82574L PCIe GbE controller	Intel® 82537L PCIe GbE controller Intel® 82562 Ethernet 10/100Mbps LAN	Dual Realtek RTL81110S PCIe GbE controller	Dual Realtek RTL8111E PCIe GbE controller
<b>I/O Interface</b>	2 x RS-232 7 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS	2 x RS-232 5 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS 1 x 6-pin wafer for PS/2 KB & MS	2 x RS-232 7 x USB 2.0 1 x Infrared interface 1 x PS/2 KB & MS 1 x 6-pin wafer for PS/2 KB & MS	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS
<b>Driver Interface</b>	4 x SATA II 1 x IDE	2 x SATA II 1 x IDE 1 x CF Type II	2 x SATA II 1 x CF Type II	3 x SATA II 1 x IDE 1 x FDD 1 x CF Type II
<b>Audio</b>	IEI AC-KIT-888HD-R10 7.1 channel HD audio kit via the on-board 10-pin header connector	AC-KIT08R-R10 5.1 channel AC'97 audio kit and IEI AC-KIT-888HD-R10 7.1 channel HD audio kit via the on-board 10-pin header connector		IEI AC-KIT-888HD-R10 7.1 channel HD audio kit via the on-board 10-pin header connector
<b>Digital I/O</b>	8-bit Digital I/O (4-bit input/4-bit output)			
<b>Power Consumption</b>	5V@5.59A, 12V@0.15A (Intel® Core™2 Duo T9400 2.53GHz CPU with 2GB 667MHz DDR2 memory)	5V@3.49A, 3.3V@0.2A, 12V@1.75A (Intel® Core™2 Duo T7400 2.16GHz CPU with 512MB 667MHz DDR2 memory)	5V@2.89A, 12V@0.22A (Intel® Atom™ N270 1.6GHz at FSB 533MHz CPU with 1GB 533MHz DDR2 memory)	5V@3.36A, 12V@0.57A (Intel® dual-core Atom™ D525 1.80GHz with 1GB 1066MHz DDR3 memory) 5V@3.25A, 12V@0.48A (Intel® single-core Atom™ D425 1.80GHz with 1GB 1066MHz DDR3 memory) 5V@3.21A, 12V@0.43A (Intel® single-core Atom™ N455 1.66GHz with 1GB 1066MHz DDR3 memory)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset			
<b>Operation Environment</b>	Temperature range: 0°C ~ 60°C (32°F~140°F) Relative humidity: 5% ~ 95%, non-condensing		Temperature range: -20°C ~ 65°C (-4°F ~ 149°F) with free air for D425 CPU -20°C ~ 60°C (-4°F ~ 140°F) with free air for D525 CPU -20°C ~ 70°C (-4°F ~ 158°F) with free air for D525 CPU -20°C ~ 70°C (-4°F ~ 158°F) with force air for D425/D525 CPU -20°C ~ 75°C (-4°F ~ 167°F) with force air for N455 CPU Relative humidity: 5% ~ 95%, non-condensing	
<b>Expansion Slot</b>	PCI/PCIe	PCI/PCIe	PCI/PCIe	PCI/ISA
<b>CPU Cooler</b>	CF-479B-RS-R11		Heatsink (fanless)	Heatsink (fanless) (optional CPU fan by 31100-000327-RS)

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# Half Size PICOe, ISA, Selection Guide



Model Name	PCISA-9652	PCISA-945GSE-R11	IOWA-LX
<b>CPU Socket</b>	Socket P	On board	On board
<b>CPU Type</b>	Intel® Core™2 Duo, Celeron® M	Intel® Atom™ Processor N270 1.6GHz	On-board AMD Geode™ LX600 Processor (366MHz), 128KB L2 cache
<b>FSB</b>	533/800MHz	533MHz	N/A
<b>Chipset</b>	Intel® GME965 + ICH8ME	Intel® 945GSE + ICH7M	AMD Geode™ CS5536
<b>Memory</b>	One 240-pin 533/667MHz single-channel DDR2 SDRAM DIMM (system max. 2GB)	One 200-pin 533MHz DDR2 SDRAM SO-DIMM (system max. 2GB) On-board 512MB 533MHz DDR2 memory	On-board 128MB 200/266MHz DDR SDRAM One 200-pin 200/266MHz DDR SO-DIMM (system max. 512MB)
<b>Display Interface</b>	Dual display supported 1 x VGA 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS	1 x VGA
<b>Ethernet</b>	Dual Intel® 82573L PCIe GbE controller	Dual Realtek RTL8111CP PCIe GbE controller	10/100Mbps Realtek RTL8100C Ethernet controller
<b>I/O Interface</b>	1 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x 6-pin wafer for PS/2 KB & MS	1 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x Infrared interface 1 x 6-pin wafer for PS/2 KB & MS	2 x RS232 1 x RS422/485 4 x USB 2.0 (by pin-header) 1 x LPT 1 x Infrared interface 1 x PS/2 KB/MS
<b>Driver Interface</b>	3 x SATA II (RAID 0/1) 1 x IDE 1 x FDD 1 x CF Type II	2 x SATA 1 x IDE 1 x FDD 1 x CF Type II	2 x SATA (RAID 0, 1) 1 x IDE 1 x FDD 1 x CF Type II
<b>Audio</b>	IEI AC-KIT-888HD-R10 7.1 channel HD audio kit via the on-board 10-pin header connector	AC-KIT08R-R10 5.1 channel AC'97 audio kit and IEI AC-KIT-888HD-R10 7.1 channel HD audio kit via the on-board 10-pin header connector	Realtek ALC203 with AC'97 codec
<b>Digital I/O</b>	8-bit Digital I/O (4-bit input/4-bit output)		
<b>Power Consumption</b>	5V@7.72A, 12V@0.139A (Intel® Core® 2 Duo T7300 2.0GHz CPU at FSB 800MHz with 1GB 667MHz DDR2 memory)	5V@2.89A, 12V@0.22A (Intel® Atom™ N270 1.6GHz at FSB 533MHz CPU with 512MB 533MHz DDR2 memory)	5V@1.51A, 5VSb@0.09A (On-board AMD Geode™ LX600 CPU 366MHz with on-board 128MB 200MHz DDR memory and 512MB 333MHz DDR memory)
<b>Watchdog Timer</b>	Software programmable and supports 1–255 sec. system reset		
<b>Operation Environment</b>	Temperature range: 0°C ~ 60°C (32°F–140°F) Relative humidity: 5% ~ 95%, non-condensing		Temperature range: 0°C ~ 60°C(32°F–140°F) Relative humidity: 5% ~ 95%, non-condensing
<b>Expansion Slot</b>	PCI/ISA	PCI/ISA	ISA
<b>CPU Cooler</b>	CF-479B-RS-R11	Heatsink (fanless)	Heatsink (fanless)

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# PIC0e CPU Card

The Future of Half-sized CPU Cards

ISA → PCISA → PCI → PIC0e

1990~

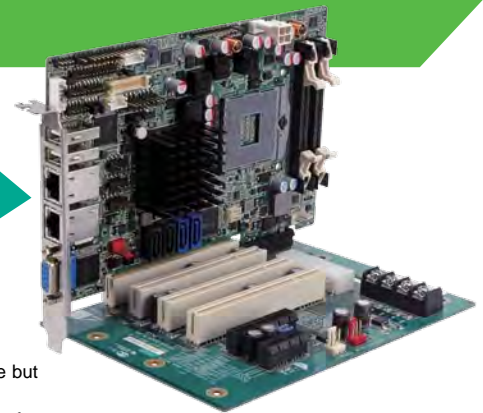
ISA

1996~

PCISA  
ISA + PCI

2006~

PIC0e  
PCI + PCIe x 4



PIC0e-HM650

IEI Patent No CN: 200986704Y  
From SIPO (State Intellectual Property Office of The P.R.C)

## The advantage of PIC0e

PIC0e = PCI + PCIe x4

- PCIe has excellent I/O bandwidth and performance
- Backwards compatible with half-sized CPU cards
- Backplane design for half-size PCIe CPU cards is easy

## The benefit of PIC0e

- Same dimensions, backwards compatible but half the size of PCI SBC
- Higher performance as PCI only solution for the same price
- More configuration options for the same price

## The advantages of PIC0e

### Increasing I/O bandwidth with leading technology

Specifications	ISA	PCI 33	PCI-E x4
Support	(16MB/s)	(132MB/s)	(1250MB/s)

### Backwards Compatible with Half-Sized PCI Backplane and Chassis

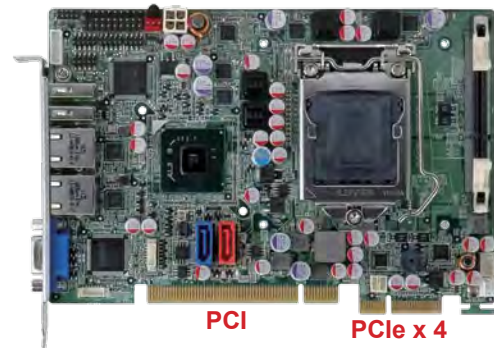
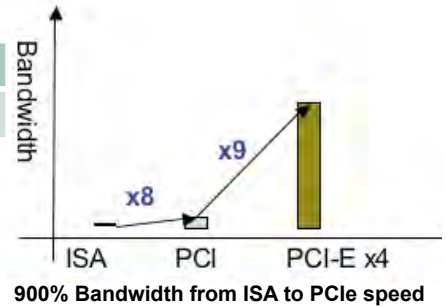
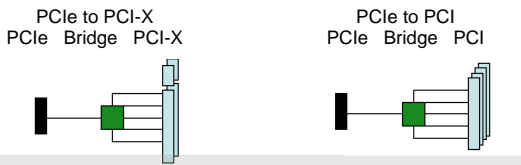
1. Dimensions: 185 mm x 122 mm  
= All half-sized CPU cards

2. PCI pin definition same as PICMG 1.0 PCI  
= All half-sized PCI CPU cards

Share all half-sized PCI backplanes

### Quick design backplane

1. Four PCI slots and one PCIe x4 or four PCIe x1 lanes  
More configuration options on the backplane with a PCI and PCIe slot
2. PCIe switches and bridges such as PLX or TI solutions



PIC0e-B650

## IEI PIC0e backplane solution

Complete PIC0e backplane solutions fully support all kinds of chassis and power modes. PIC0e is the easiest way to upgrade current systems from slow ISA+PCI architecture to the latest high performance PCIe+PCI solution.



### CPU card (Located on the right side of the first slot)

Model Name	PCI	PCIe x4	PCIe x1	PSU Type	Note
HPE-3S1	2			ATX/AT	CPU on R1st
HPE-3S2	1	1		ATX/AT	CPU on R1st
HPE-4S1	3			ATX/AT	CPU on R2st
HPE-4S2	2	1		ATX/AT	CPU on R2st
HPE-5S1	4			ATX/AT	CPU on R2st
HPE-5S2	3	1		ATX/AT	CPU on R2st
HPE-5S3	2	0	2	ATX/AT	CPU on R2st
HPE-6S1	4	1		ATX/AT	CPU on R1st
HPXE-6S1	2	3		ATX/AT	CPU on R1st
HPE-6S2	3	0	2	ATX/AT	CPU on R1st
HPE-7S1	4	0	2	ATX/AT	CPU on R2st
HPE-8S0	4	0	2	ATX/AT	Reserved 1 Slot

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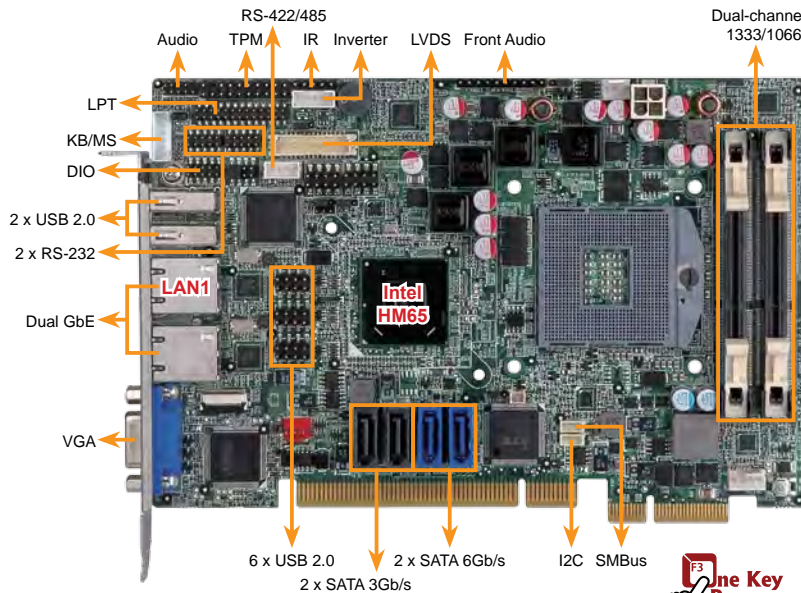
6 Panel Solutions Introduction





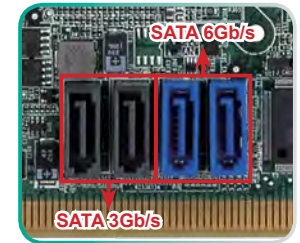
# PIC0e-HM650

Half-size PCIe CPU Card Supports Socket 989B 32nm Intel® Mobile Core™ i7/i5/i3/Celeron® CPU with Intel® HM65, DDR3, VGA/LVDS, Dual PCIe GbE, SATA 6Gb/s, HD Audio and RoHS



The 2nd generation Intel® processors provide advanced technology and intelligent performance.

SATA 6Gb/s and SATA 3Gb/s



The latest SATA 6Gb/s interfaces have double the speed of SATA 3Gb/s.



TPM 1.2 Support



CPU cooler  
P/N: CF-989A-RS-R12



## Specifications

- ◆ CPU  
Socket G2 supports Intel® Core™ i7/i5/i3/Celeron® processor
- ◆ System Chipset  
Intel® HM65
- ◆ Memory  
Two 204-pin 1333/1066 MHz dual-channel DDR3 SO-DIMMs supported (system max. 16GB)
- ◆ BIOS  
UEFI
- ◆ Graphics Engine  
Intel® HD Graphics Gen 6 supports DX10.1 and OpenGL 3.0  
Full MPEG2, VC1, AVC Decode
- ◆ Display Output  
Dual display supported  
1 x VGA (up to 2048 x 1536 @75Hz)  
1 x 18/24-bit dual-channel LVDS (up to 1920 x 1200 @60Hz)
- ◆ Ethernet  
Dual PCIe Realtek RTL8111E GbE controller (LAN1 with ASF 2.0 support)
- ◆ Super I/O  
Fintek F81866
- ◆ Embedded Controller  
ITE IT8519E
- ◆ I/O Interface
 

1 x RS-422/485	2 x RS-232
2 x SATA 3Gb/s	2 x SATA 6Gb/s
1 x LPT	1 x 6-pin wafer for KB & MS
8 x USB 2.0 (2 on rear, 6 by pin header)	
- ◆ Audio  
Supports 7.1 channel HD audio by IEI AC-KIT-888HD kit
- ◆ Front Panel  
1 x Front panel connector (power LED, HDD LED, speaker, power button, reset button)
- ◆ TPM  
1 x 20-pin header
- ◆ SMBus  
1 x 4-pin wafer
- ◆ I2C  
1 x 4-pin wafer
- ◆ PCIe to PCI Bridge IC  
ITE IT8892E
- ◆ Expansions  
PCIe signal and PCI signal via golden finger
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O  
8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Fan Connector  
1 x 4-pin smart fan connector  
1 x 3-pin system fan connector
- ◆ Power Supply  
5V/12V, AT/ATX support
- ◆ Power Consumption  
5V@3.99A, 12V@0.43A, Vcore\_12V@3.80A, 5VSB@0.06A  
(2.70GHz Intel® Core™ i7-2620M with two 2GB 1333MHz DDR3 memory)
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
185 mm x 122 mm
- ◆ Weight  
GW: 1000g/NW: 260g

## Features

1. Half-size PCIe CPU card supports Socket G2 32nm Intel® Core™ i7/i5/i3/Celeron® processor
2. Up to 16 GB 1333/1066 MHz dual-channel DDR3 SDRAM
3. Supports 18/24-bit dual-channel LVDS and analog CRT output
4. High-speed I/O interface provided through the 2nd gen PCIe add-on card and SATA 6Gb/s connectors
5. Rich media acceleration for hardware encoding and decoding
6. TPM V1.2 hardware security provided by the TPM module
7. IEI One Key Recovery solution allows you to create raid OS backup and recovery

## Packing List

1 x PIC0e-HM650 single board computer
1 x Dual RS-232 cable (P/N: 19800-000051-RS)
2 x SATA cable (P/N: 32801-000703-200-RS)
1 x USB cable (P/N: 19800-003100-200-RS)
1 x One Key Recovery CD
1 x Mini jumper pack
1 x Utility CD
1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
PIC0e-HM650-R10	Half-size PCIe CPU card supports 32nm Socket 989B Intel® mobile Core™ i7/i5/i3/Celeron® CPU with Intel® HM65, DDR3, VGA/LVDS, dual PCIe GbE, SATA 6Gb/s, HD Audio and RoHS
32205-003800-100-RS	RS-422/485 cable, 200mm
19800-000075-RS	KB/MS cable with bracket
SAIDE-KIT01-R10	SATA to IDE/CF converter board
32102-000100-200-RS	SATA power cable
32200-015100-RS	LPT cable
AC-KIT-888HD-R10	7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
CF-989A-RS-R12	CPU cooler for mobile socket 989 and 55W CPU
CF-989B-RS-R11	CPU cooler for mobile socket 989 and 50W CPU

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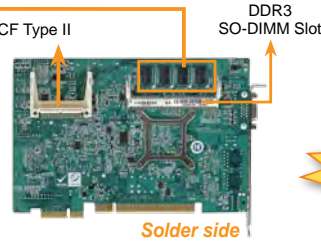
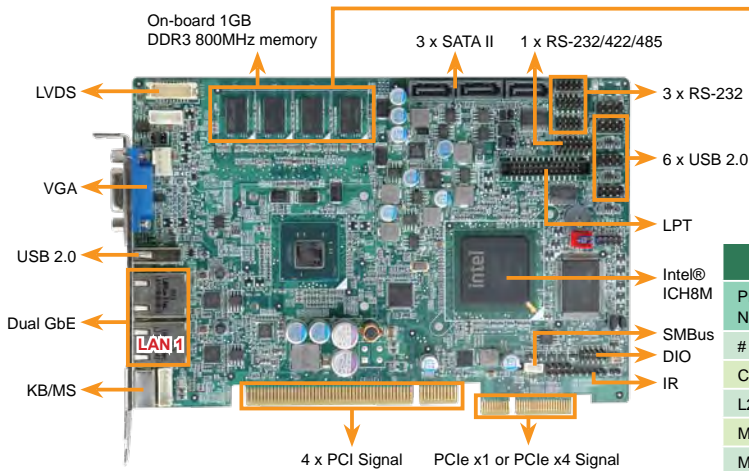
Power Supply/  
Peripherals

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Panel  
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Introduction

# PIC0e-PV- D4251-R11 N4551-R11 D5251-R11

Half-size PCIe CPU card with Intel® Atom™ D425/ N455/D525, DDR3, 1 GB Memory on board, VGA/ LVDS, Dual PCIe GbE, USB 2.0, SATA II, Audio and RoHS



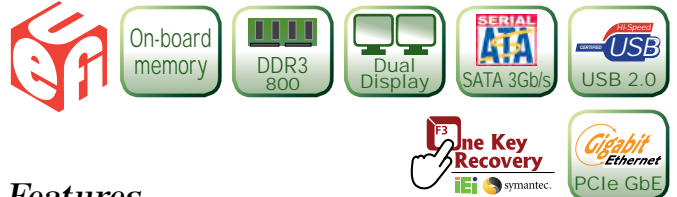
**Dual Core CPU  
DDR3 Memory**

## Specifications

- ◆ CPU
  - Intel® Atom™ Dual Core D525 Processor (1.80GHz with 1MB L2 cache)
  - Intel® Atom™ Single Core N455 Processor (1.66GHz with 512K L2 cache)
  - Intel® Atom™ Single Core D425 Processor (1.80GHz with 512K L2 cache)
- ◆ System Chipset
  - ICH8M
- ◆ BIOS
  - UEFI BIOS
- ◆ Memory
  - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 4GB for D525/D425, 2GB for N455) (compatible w/128MB\*8 SDRAM)
  - On-board 1 GB DDR3 800 MHz memory
- ◆ Graphics Engine
  - GMA 3150
  - Gen3.5 DX9, 400MHz for D525/D425
  - Gen3.5 DX9, 200MHz for N455
- ◆ Ethernet
  - Dual PCIe GbE by Realtek RT8111E, LAN1 with ASF 2.0 support
- ◆ Display Interface
  - Analog CRT up to 2048x1536 for D525/D425, 1400x1050 for N455
  - Supports CRT hot plug
  - Single-channel 18-bit LVDS supports resolution up to XGA (1024x768) & WXGA (1366x768)
- ◆ I/O Interfaces
  - 3 x RS-232                      1 x RS-232/422/485 with auto flow control
  - 1 x LPT                            1 x PS/2 for KB/MS
  - 1 x CF Type II                    1 x 6-pin wafer header for KB/MS
  - 3 x SATA II                        7 x USB 2.0 (6 by header, 1 on rear side)
- ◆ Digital I/O
  - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Super IO
  - Fintek F81865
- ◆ Infrared Interface
  - 1 x 5-pin header
- ◆ TPM (Optional)
  - On-board INFINEON SLB9635TT1.2
- ◆ SMBus
  - 1 x 4-pin wafer connector
- ◆ Fan Connector
  - 1 x 4-pin fan connector
- ◆ Expansion
  - 4 x PCI
  - 4 x PCIe x1 or 1 x PCIe x4
- ◆ Audio
  - Supports 7.1 channel HD audio by IEI AC-KIT-888HD-R10 kit
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset
- ◆ Power Consumption
  - 5V@3.38A, 12V@0.54A (Intel® Dual Core Atom™ D525 1.80GHz with 1GB DDR3 800MHz memory on board)
  - 5V@3.28A, 12V@0.43A (Intel® Single Core Atom™ D425 1.80GHz with 1GB DDR3 800MHz memory on board)
  - 5V@3.13A, 12V@0.32A (Intel® Single Core Atom™ N455 1.66GHz with 1GB DDR3 800MHz memory on board)
- ◆ Power Supply
  - 5V/12V, AT/ATX support
- ◆ Temperature
  - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor
  - 20°C ~ 65°C with free air, -20°C ~ 70°C with force air for D425 processor
  - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N455 processor
- ◆ Humidity
  - Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions
  - 185 mm x 122 mm
- ◆ Weight
  - GW: 1000g/NW: 250g

## Intel® Atom™ Comparison Table for PIC0e-PV SKUs

Processor Name	Intel® Atom™ D525	Intel® Atom™ N455	Intel® Atom™ D425	Intel® Atom™ D510
# of Cores	2	1	1	2
Clock Speed	1.80 GHz	1.66 GHz	1.80 GHz	1.66 GHz
L2 Cache	1 MB	512 KB	512 KB	1 MB
Max TDP	13 W	6.5 W	10 W	13 W
Memory	DDR3 800MHz	DDR3 800MHz	DDR3 800MHz	DDR2 667/800



## Features

1. PCIe CPU card supports four PCIe x1 or one PCIe x4 and four PCI expansions
2. Intel® Atom™ D525/D425/N455 processor
3. 1GB of DDR3 800MHz SDRAM on board and one expansion SO-DIMM slot support
4. Supports VGA and 18-bit single-channel LVDS with dual display support
5. I/O includes three RS-232, one RS-232/422/485, seven USB 2.0 and three SATA II
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x PIC0e-PV-D4251/N4551/D5251 single board computer	
1 x Dual RS-232 cable (P/N: 19800-000112-RS)	
3 x SATA cable (P/N: 32801-000703-200-RS)	
1 x KB/MS Y cable (P/N: 32006-000300-100-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 19800-003100-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

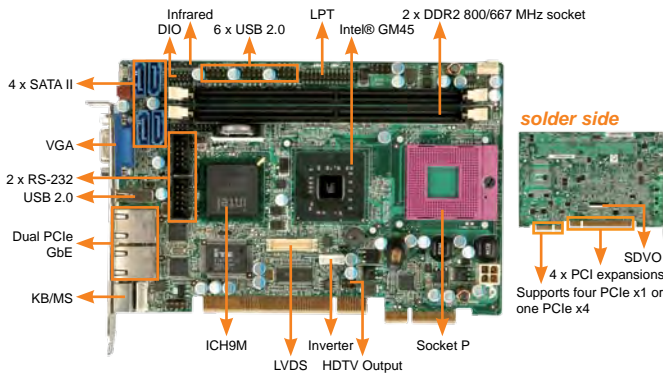
## Ordering Information

Part No.	Description
PIC0e-PV-D5251-R11	Half-size PCIe CPU card with Intel® Atom™ dual-core D525 1.80GHz/1MB L2, 1GB memory on board, VGA/LVDS, dual PCIe GbE, USB 2.0, SATA II and audio, RoHS
PIC0e-PV-D5251T-R11	Half-size PCIe CPU card with Intel® Atom™ dual-core D525 1.80GHz/1MB L2, 1GB memory on board, VGA/LVDS, dual PCIe GbE, USB 2.0, SATA II and audio, TPM, RoHS
PIC0e-PV-N4551-R11	Half-size PCIe CPU card with Intel® Atom™ single-core N455 1.66GHz/512K L2, 1GB memory on board, VGA/LVDS, dual PCIe GbE, USB 2.0, SATA II and audio, RoHS
PIC0e-PV-N4551T-R11	Half-size PCIe CPU card with Intel® Atom™ single-core N455 1.66GHz/512K L2, 1GB memory on board, VGA/LVDS, dual PCIe GbE, USB 2.0, SATA II and audio, TPM, RoHS
PIC0e-PV-D4251-R11	Half-size PCIe CPU card with Intel® Atom™ single-core D425 1.80GHz/512K L2, 1GB memory on board, VGA/LVDS, dual PCIe GbE, USB 2.0, SATA II and audio, RoHS
PIC0e-PV-D4251T-R11	Half-size PCIe CPU card with Intel® Atom™ single-core D425 1.80GHz/512K L2, 1GB memory on board, VGA/LVDS, dual PCIe GbE, USB 2.0, SATA II and audio, TPM, RoHS
AC-KIT-888HD-R10	7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
19800-000075-RS	KB/MS cable with bracket
32102-000100-200-RS	SATA power cable
32200-015100-RS	LPT cable
19800-004300-100-RS	RS-232/422/485 cable with bracket
31100-000327-RS	CPU fan

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## PICOe-GM45A

Half-size PCIe CPU card supports socket P Intel® Core™2 Duo processors and comes with VGA, LVDS, HDTV-out, Dual PCIe GbE, SATA II and USB 2.0



### Features

1. PCIe CPU card supports four PCIe x1 or one PCIe x4 and 4 x PCI expansions
2. Supports Intel® 45nm socket P Core™2 Duo processors with a 1066/800/667MHz FSB
3. Built-in Intel® GMA 4500MHD with hardware MPEG-2 decoding, WMV9 and H.264 supported
4. 4GB (max.) of 800/667MHz dual-channel DDR2 memory supported
5. Dual PCIe GbE, two RS-232, seven USB 2.0 and four SATA II
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

### Specifications

- ◆ CPU  
Socket P Intel® Core™2 Duo processor with a 1066/800/667 MHz FSB
- ◆ System Chipset  
Intel® GM45 + ICH9M
- ◆ BIOS  
AMI BIOS
- ◆ System Memory  
Two 240-pin 800/667 MHz dual-channel DDR2 SDRAM DIMM supported (system max. 4 GB)
- ◆ Ethernet  
Dual Intel® 82574L PCIe GbE controller
- ◆ I/O Interface  
2 x RS-232  
7 x USB 2.0  
4 x SATA II  
1 x LPT  
1 x PS/2 connector for KB/MS
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface  
1 x Infrared by pin header
- ◆ Super I/O  
ITE IT8718F
- ◆ Display Interface  
VGA integrated in Intel® GM45  
HDTV/TV supports NTSC/PAL and HDTV resolution up to 1080i  
18/24-bit dual-channel LVDS
- ◆ Audio  
HD audio supported by IEI AC-KIT-888HD-R10
- ◆ Watchdog Timer  
Software programmable supports 1 ~255 sec. system reset
- ◆ Power Supply  
AT/ATX function supported
- ◆ Power consumption  
5V@5.59A, 12V@0.15A (Intel® Core™2 Duo T9400 2.53 GHz with 4 GB DDR2 800 MHz)
- ◆ Temperature  
Operation: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Humidity  
Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions  
185 mm x 122 mm
- ◆ Weight  
GW: 1000 g/NW: 250 g

### Packing List

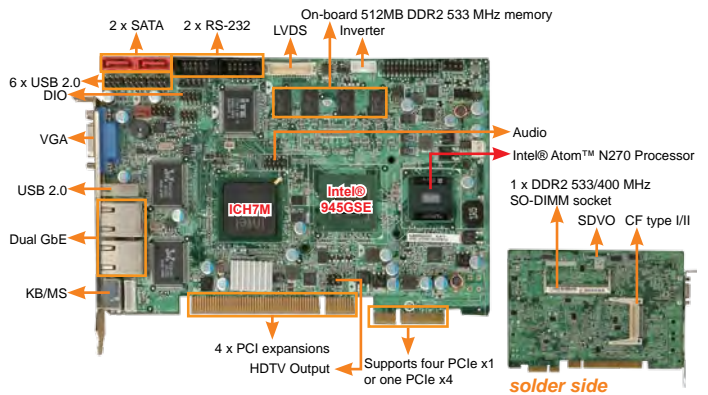
1 x PICOe-GM45A single board computer	
1 x SATA power cable (P/N: 32102-000100-200-RS)	
1 x KB/MS Y cable (P/N: 32006-000300-100-RS)	1 x One Key Recovery
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 19800-003100-200-RS)	1 x Utility CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

### Ordering Information

Part No.	Description
PICOe-GM45A-R10	PCIe CPU card supports Intel® Core™2 Duo CPU with VGA/LVDS/HDTV-out, GbE, USB 2.0 and SATA
CF-479B-RS-R11	CPU cooler (50 mm x 50 mm x 26 mm, 50 W)
AC-KIT-888HD-R10	7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
32200-015100-RS	LPT cable
32100-087100-RS	ATX-12V cable

## PICOe-945GSE

Half-size PCIe CPU card with Intel® Atom™ processor, 512MB memory on board, VGA/LVDS/HDTV-out, Dual GbE, USB 2.0 and SATA



### Features

1. PCIe CPU card supports four PCIe x1 or one PCIe x4 and 4 x PCI expansions
2. Intel® Atom™ processor N270 at 1.6GHz core speed with a 533 MHz FSB and 512 KB L2 cache
3. 512 MB of 533 MHz DDR2 SDRAM on board
4. Supports VGA, HDTV-out (up to 1080i) and 18-bit dual-channel LVDS with dual-display support
5. I/O includes two RS-232, seven USB 2.0 and two SATA
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

### Specifications

- ◆ CPU  
On-board Intel® Atom™ N270 processor 1.6 GHz  
512 KB L2 cache with a 533MHz FSB
- ◆ System Chipset  
Intel® 945GSE + ICH7M
- ◆ BIOS  
AMI BIOS
- ◆ System Memory  
On-board 512 MB DDR2 533 MHz memory and one 200-pin 533/400 MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet  
Dual PCI Realtek 8110SC GbE
- ◆ I/O Interface  
2 x SATA  
1 x LPT  
1 x CF type I/II  
7 x USB 2.0 (1 on bracket, 6 on board by pin header)
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface  
1 x Infrared by pin header
- ◆ Super I/O  
ITE IT8718F
- ◆ Display Interface  
VGA integrated in Intel® 945GSE  
HDTV/TV supports NTSC/PAL and HDTV resolution up to 1080i  
18-bit dual-channel LVDS
- ◆ Audio  
Supports 7.1 channel HD audio or 5.1 channel AC-97 audio by IEI audio kits
- ◆ Watchdog Timer  
Software programmable supports 1 ~255 sec. System reset
- ◆ Power Supply  
AT/ATX Power
- ◆ Power consumption  
5V@2.89A, 12V@0.22A (Intel® Atom™ N270 1.6 GHz/533 MHz CPU with 1GB DDR2 533 MHz)
- ◆ Temperature  
Operation: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Humidity  
Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions  
185 mm x 122 mm
- ◆ Weight  
GW: 1000 g/NW: 250 g

### Packing List

1 x PICOe-945GSE single board computer	
1 x KB/MS Y cable (P/N: 32006-000300-100-RS)	1 x One Key Recovery
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 19800-003100-200-RS)	1 x Utility CD
2 x SATA cable (P/N: 32000-062800-RS)	1 x QIG

### Ordering Information

Part No.	Description
PICOe-945GSE-N270-512MB-R10	PCIe CPU card with Intel® Atom™ N270 1.6 GHz processor, 512 MB memory on board, VGA/LVDS/HDTV-out, Dual GbE, USB 2.0, SATA
AC-KIT-888HD-R10	7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
AC-KIT08R-R10	5.1 channel AC'97 audio kit with Realtek ALC655
32102-000100-200-RS	SATA power cable
32200-015100-RS	LPT cable

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# PCI/PIC0e Backplane

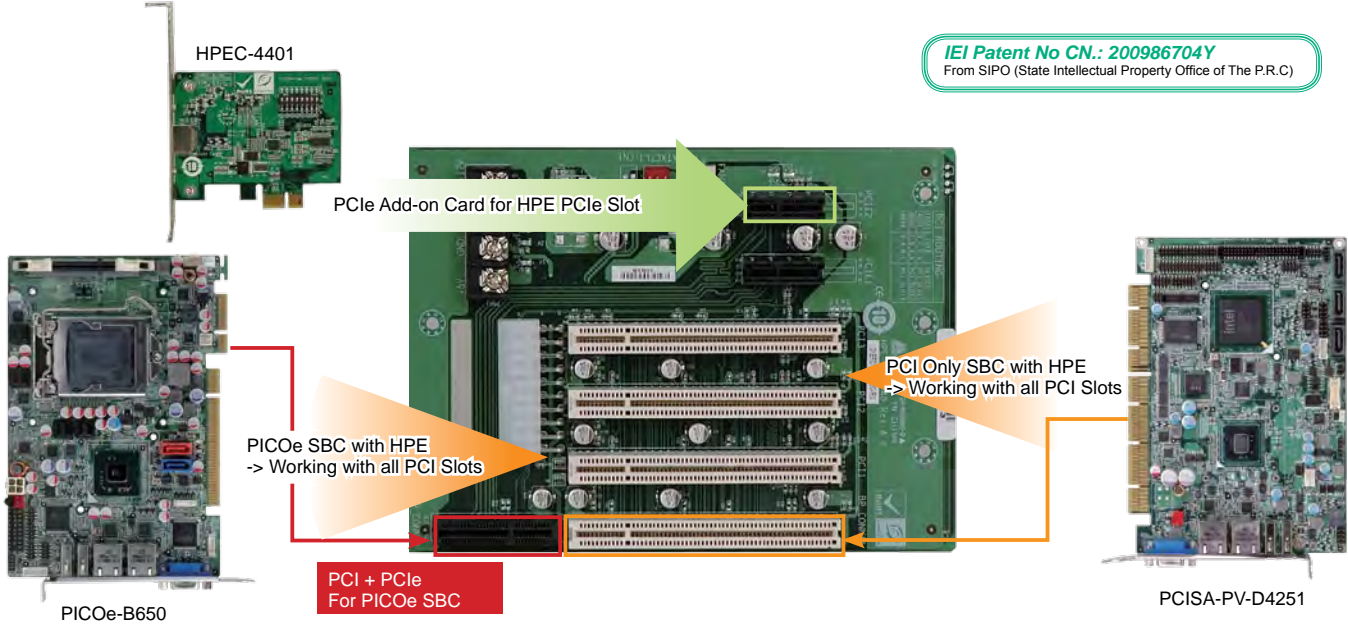
**Supports PCI/PIC0e Slot on one backplane!**

The advantages of using the PCI/PIC0e backplanes are numerous:

1. They support half-size PCI single board computers
2. They support half-size PIC0e single board computers
3. The PIC0e backplanes combine the PCI and the PCIe x4 or PCIe x1 to provide excellent I/O bandwidth and performance.

Compatible with all PICMG 1.0 Half-Sized PCI SBCs and PIC0e SBCs.

**IEI Patent No CN.: 200986704Y**  
From SIPO (State Intellectual Property Office of The P.R.C)



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## Selection Guide

□ PAC series wall-mount chassis      □ 4U rack-mount chassis

	PCIe/PCI	PCIe/PCI	HPE-3S1	HPE-3S2	HPE-4S1	HPE-4S2	HPE-5S1	HPE-5S2
Total Slot			3	3	4	4	5	5
Expansion Slots	PCI		2	1	3	2	4	3
	PCIe	x4		1		1		1
		x1						
Chassis			PR-1300G	PR-1300G	PAC-42GH PAC-400G	PAC-42GH PAC-400G	PR-1500G RACK-500G	PR-1500G RACK-500G

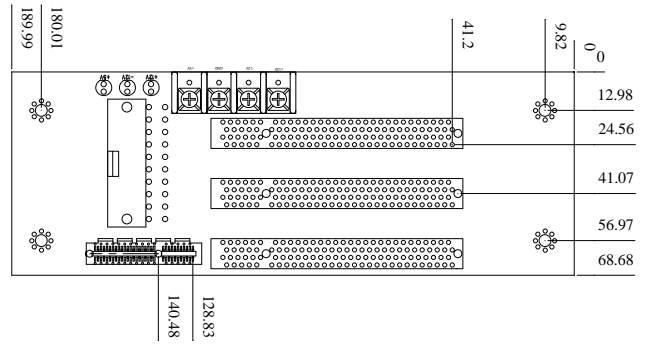
	PCIe/PCI	PCIe/PCI	HPE-5S3	HPE-6S1	HPXE-6S1	HPE-6S2	HPE-7S1	HPE-8S
Total Slot			5	6	6	6	7	7
Expansion Slots	PCI		2	4	2	3	4	4
	PCIe	x4		1	3			
		x1	2			2	2	2
Chassis			PR-1500G RACK-500G	N/A	N/A	N/A	PAC-700G	RACK-3400G

## HPE-3S1-R40



### Ordering Information

HPE-3S1-R40	3-slot backplane with 2 PCI slots
PR-1300G	3-slot half-size compact chassis

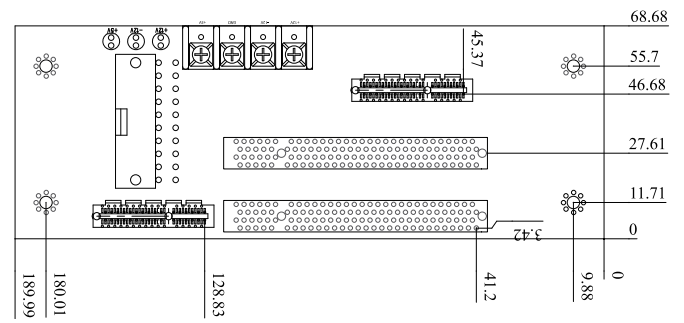


## HPE-3S2-R40



### Ordering Information

HPE-3S2-R40	3-slot backplane with 1 PCI slot and 1 PCIe x4 slot
PR-1300G	3-slot half-size compact chassis

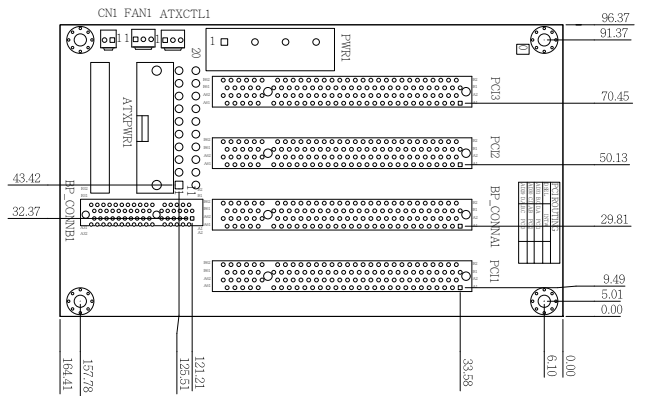


## HPE-4S1-R40



### Ordering Information

HPE-4S1-R40	4-slot backplane with 3 PCI slots
PAC-42GH	4-slot half-size compact chassis
PAC-400G	4-slot half-size compact chassis

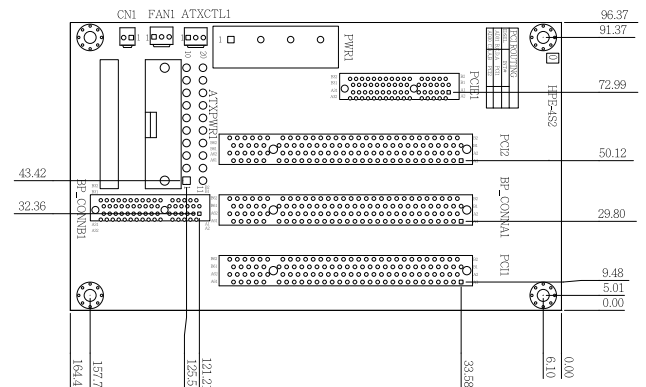


## HPE-4S2-R40



### Ordering Information

HPE-4S2-R40	4-slot backplane with 2 PCI slots and 1 PCIe x4 slot
PAC-42GH	4-slot half-size compact chassis
PAC-400G	4-slot half-size compact chassis



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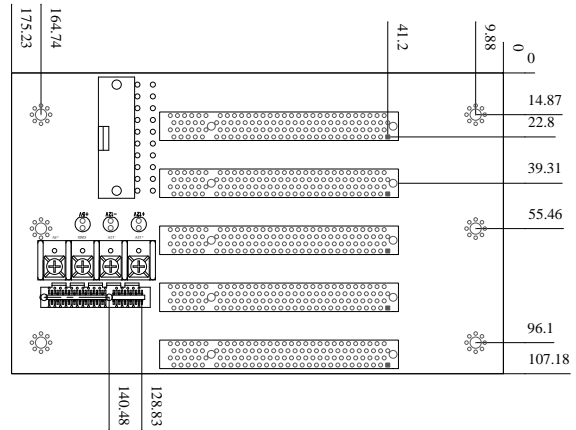
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## HPE-5S1-R50



### Ordering Information

HPE-5S1-R50	5-slot backplane with 4 PCI slots
PR-1500G	5-slot half-size compact chassis
RACK-500G	5U 5-slot full-size rack-mount chassis

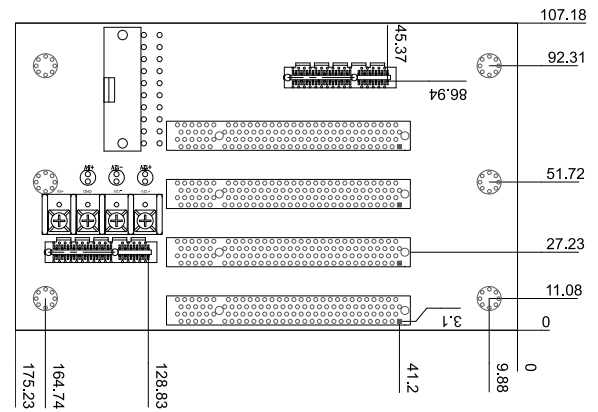


## HPE-5S2-R40



### Ordering Information

HPE-5S2-R40	5-slot backplane with 3 PCI slots and 1 PCIe x4 slot
PR-1500G	5-slot half-size compact chassis
RACK-500G	5U 5-slot full-size rack-mount chassis

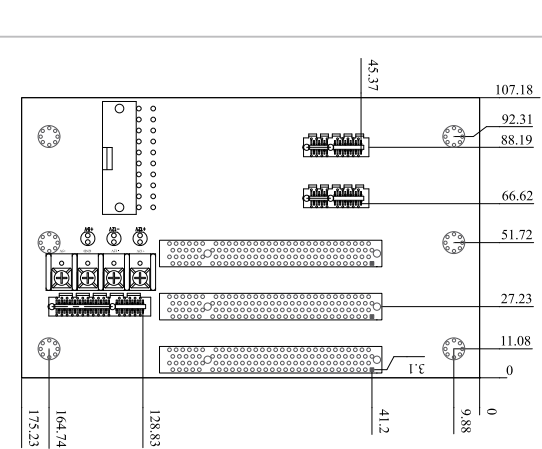


## HPE-5S3-R40



### Ordering Information

HPE-5S3-R40	5-slot backplane with 2 PCI slots and 2 PCIe x1 slots
PR-1500G	5-slot half-size compact chassis
RACK-500G	5U 5-slot full-size rack-mount chassis

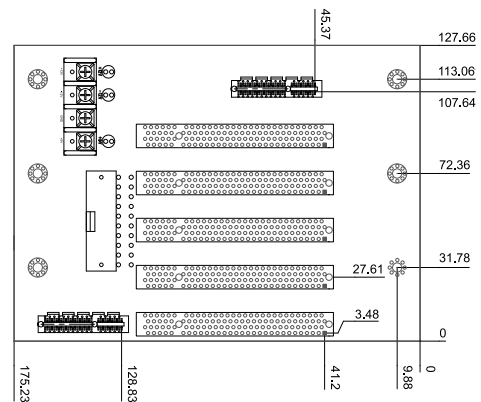


## HPE-6S1-R40



### Ordering Information

HPE-6S1-R40	6-slot backplane with 4 PCI slots and 1 PCIe x4 slot
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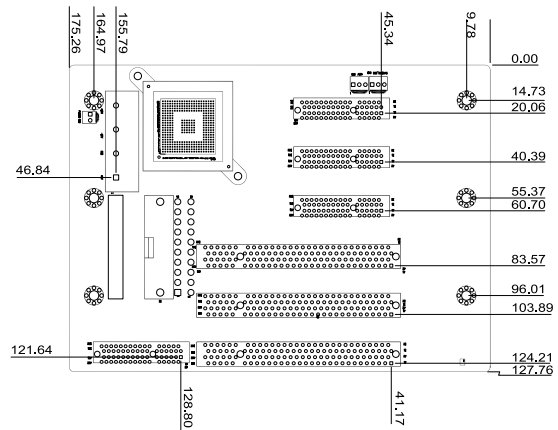
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## HPXE-6S1-R10



### Ordering Information

HPXE-6S1-R10 6-slot backplane with 2 PCI slots and 3 PCIe x4 slots

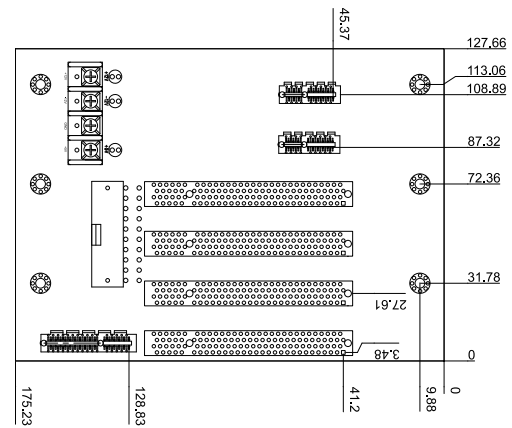


## HPE-6S2-R40



### Ordering Information

HPE-6S2-R40 6-slot backplane with 3 PCI slots and 2 PCIe x1 slots

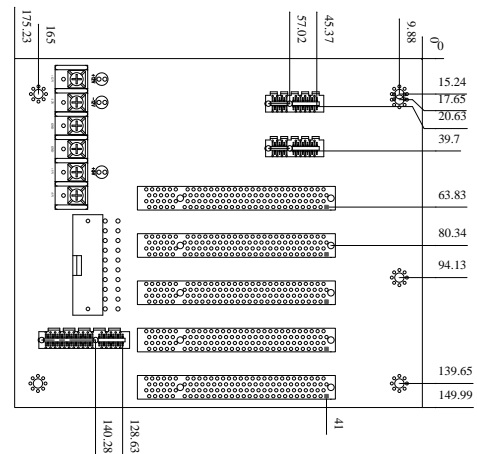


## HPE-7S1-R40

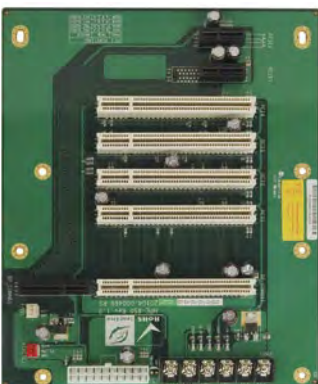


### Ordering Information

HPE-7S1-R40 7-slot backplane with 4 PCI slots and 2 PCIe x1 slots  
PAC-700G 7-slot half-size compact chassis

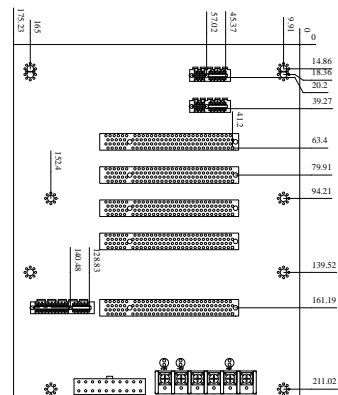


## HPE-8S0-R40



### Ordering Information

HPE-8S0-R40 7-slot backplane with 4 PCI slots and 2 PCIe x1 slots  
RACK-3400G 4U 10-slot half-size rack-mount chassis



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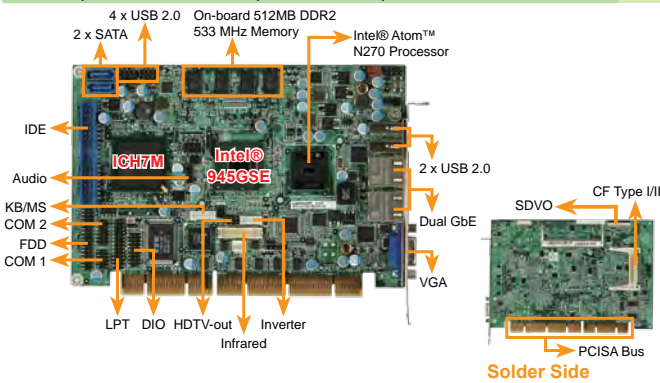
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# PCISA-945GSE-R11

Half-size PCISA CPU card with Intel® Atom™ processor, 512 MB memory on board, VGA/LVDS/HDTV-out, Dual PCIe GbE, USB 2.0 and SATA



## Features

1. PCISA CPU card supports four PCI and ISA expansions
2. Intel® Atom™ N270 processors at 1.6GHz core speed with a 533MHz FSB and 512KB L2 cache
3. 512 MB of 533 MHz DDR2 SDRAM on board
4. Supports VGA, HDTV-out up to 1080i and 18-bit dual-channel LVDS with dual display support
5. Two SATA, one IDE, floppy and CF type I/II for data storage
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: On-board Intel® Atom™ N270 processor 1.6 GHz 512 KB L2 cache with a 533 MHz FSB
- ◆ System Chipset: Intel® 945GSE + ICH7M
- ◆ BIOS: AMI BIOS
- ◆ System Memory: On-board 512 MB DDR2 533 MHz memory. One 200-pin (system memory max. 2GB) 533MHz DDR2 SDRAM DIMM supported
- ◆ Ethernet: Dual PCIe Realtek 8111CP GbE
- ◆ I/O Interface:
  - 1 x RS-232
  - 1 x RS-232/422/485
  - 2 x SATA
  - 1 x LPT
  - 1 x IDE
  - 1 x FDD
  - 6 x USB 2.0 (2 on bracket, 4 on board by pin header)
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface: 1 x Infrared by pin header
- ◆ Super I/O: ITE IT8718F
- ◆ Display Interface: VGA integrated in Intel® 945GSE. HDTV/TV supports NTSC/PAL and HDTV resolution up to 1080i 18-bit dual-channel LVDS
- ◆ Audio: Supports 7.1 channel HD audio or 5.1 channel AC'97 audio by IEI audio kits
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: AT/ATX power
- ◆ Power consumption: 5V@2.89A, 12V@0.22A (Intel® Atom™ N270 1.6GHz/533 MHz CPU with 512 MB 533 MHz DDR2)
- ◆ Temperature: Operation: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Humidity: Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 185 mm x 127.6 mm
- ◆ Weight: GW: 1000g/NW: 252g

## Packing List

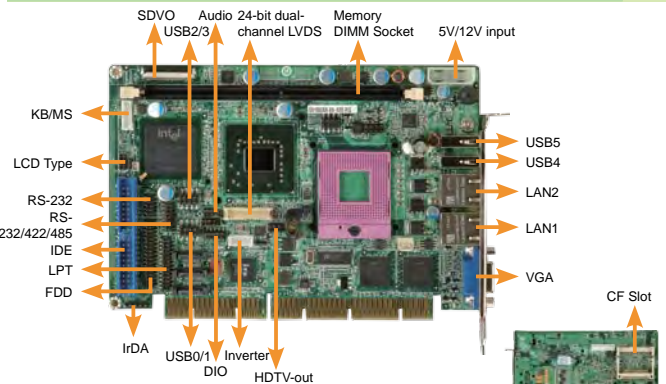
1 x PCISA-945GSE single board computer	
1 x LPT/RS-232 cable (P/N: 19800-000027-RS)	
1 x USB cable (P/N: 19800-003100-200-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG
1 x One Key Recovery CD	1 x Utility CD

## Ordering Information

Part No.	Description
PCISA-945GSE-N270-512MB-R11	PCISA CPU card with Intel® Atom™ N270 1.6G processor, 512 MB memory on board, VGA/LVDS/HDTV-out, dual PCIe GbE, USB 2.0, SATA
AC-KIT-888HD-R10	7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams
AC-KIT08R-R10	5.1 channel AC'97 audio kit with Realtek ALC655
32102-000100-200-RS	SATA power cable
32200-000052-RS	ATA 66 flat cable
32200-000058-RS	FDD cable w/o bracket
19800-004300-100-RS	RS-232/422/485 cable with bracket
19800-000075-RS	KB/MS cable with bracket

# PCISA-9652

Half-size PCISA CPU card supports a Mobile Intel® Core™2 Duo processor with a FSB 800 MHz, dual PCIe GbE, three SATA II, 24-bit dual-channel LVDS, analog CRT and USB 2.0



## Features

1. Supports 45/65 nm Socket P Intel® Mobile Core™2 Duo and Celeron® M processors with a 667 MHz or 800 MHz FSB
2. Intel® GME965 integrates with GMAX3100 graphics engine and delivers high quality video playback
3. HDTV-out, LVDS and VGA display output with support for dual-display function
4. Dual PCIe GbE, three SATA II, CF Type II, and rich IO design
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: Socket P Intel® Core™2 Duo, Core™ Duo, Core™ Solo, Celeron® M mobile processors with a 533 MHz or 800 MHz FSB
- ◆ System Chipset: GME965+ICH8M-E
- ◆ BIOS: AMI BIOS
- ◆ Memory: One 240-pin 2 GB (max.) 533 MHz or 667 MHz DDR2 SDRAM DIMM supported
- ◆ Graphics: Integrated Mobile Intel® GMA X3100 supports 2048x1536 (QXGA) at 60-Hz, 32-bpp. Intel® Clear Video Technology supports MPEG-2/WMV9 Hardware Acceleration, DirectX 9, OpenGL 1.5 and HW Pixel Shader 3.0
- ◆ I/O Interfaces:
  - 1 x RS-232
  - 1 x RS-232/422/485
  - 1 x LPT
  - 1 x FDD
  - 1 x IDE
  - 3 x SATA II with RAID 0/1
  - 1 x 6-pin header for keyboard and mouse
  - 6 x USB 2.0 (Four on-board and two on the bracket)
  - 1 x CF Type II
- ◆ Ethernet: Dual Intel® 82573L PCIe GbE controller
- ◆ Display Output: Analog CRT, 24-bit dual-channel LVDS, HDTV-out support 1080i (max.) resolution
- ◆ Digital I/O: 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Audio: Supports 7.1 channel HD audio via AC-KIT-888HD-R10
- ◆ WDT: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: AT and ATX support
- ◆ Power Consumption: 5 V @ 7.72 A, 12 V @ 0.139 A running at 2.0 GHz Intel® Core™2 Duo T7300 processor with 1GB 667 MHz DDR2 DIMM
- ◆ Temperature: Operation: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Humidity: Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 185 mm x 127.6 mm
- ◆ Weight: GW: 1.0 kg/NW: 266 g

## Packing List

1 x PCISA-9652 single board computer	
1 x SATA power cable (P/N: 32102-000100-200-RS)	
1 x LPT/RS-232 cable (P/N: 19800-000027-RS)	
1 x ATA 66 flat cable (P/N: 32200-000052-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 19800-003100-200-RS)	1 x Utility CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

## Ordering Information

Part No.	Description
PCISA-9652-R10	Half-size PCI and ISA SBC with Intel® Mobile Core™2 Duo/Celeron® M CPU at FSB 800/533MHz, GME965 and ICH8M-E, dual PCIe GbE, 3 SATA II, 24-bit dual-channel LVDS output, USB 2.0
CF-479B-RS-R11	CPU cooler (50 mm x 50 mm x 26 mm, 50 W)
32200-000058-RS	FDD cable w/o bracket
19800-004300-100-RS	RS-232/422/485 cable with bracket
19800-000075-RS	KB/MS cable with bracket
AC-KIT-888HD-R10	7.1 channel HD audio kit with Realtek ALC888 supports dual audio streams


# IP/IPX Series Backplane


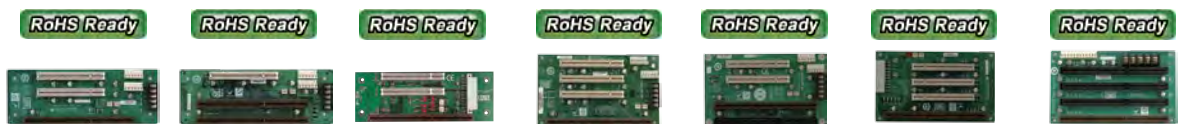
**Supports PCI and ISA slot on one backplane!**  
For half-sized PCISA series single board computers

## The advantages of using the PCISA card series are numerous:

1. Supports standard PISA version 1.0 slot on the IP/IPX series passive backplane.
2. Compatible with all available PCI/ISA cards. IP/IPX backplane is also integrated with the PCISA series card slot.

## Selection Guide

 PAC series wall-mount chassis

 4U rack-mount chassis


Model	IP-3S-RS	IP-3S2-RS	IP-3SA-RS	IP-4S-RS	IP-4S2-RS	IP-4S2A-RS	IP-4S3-RS
Total Slot	3	3	3	4	4	4	4
PCI Slot	2	1	2	3	2	3	
ISA Slot					1		3
PSU Type	AT	AT	ATX	AT	AT	ATX	AT
Chassis	PAC-53GH PR-1300G	PAC-53GH PR-1300G	PR-1300G	PAC-400G PAC-42GH	PAC-400G PAC-42GH	PAC-400G	PAC-400G PAC-42GH



Model	IP-4S4-RS	IP-4SA-RS	IP-5S2-RS	IP-5SA-RS	IP-5SA2-RS	IP-6S-RS	IP-6SA-RS
Total Slot	4	4	5	5	5	6	6
PCI Slot		3	4	3	4	3	3
ISA Slot	3			1		2	2
PSU Type	AT	ATX	AT	ATX	ATX	AT	ATX
Chassis	PAC-400G PAC-42GH	PAC-400G PAC-42GH	PR-1500G	PR-1500G	PR-1500G	PAC-107G PAC-1000G	PAC-106G PAC-107G PAC-1000G



Model	IP-7S-RS	IP-7SA-RS	IP-8S-RS	IPX-9S-RS	IP-10S-RS	IPX-13S-RS
Total Slot	7	7	8	9	10	13
PCI Slot	4	4	4	8	4	12
ISA Slot	2	2	3		5	
PSU Type	AT	ATX	ATX/AT	ATX/AT	ATX/AT	ATX/AT
Chassis	PAC-700G PAC-1700G	PAC-700G PAC-1700G	PAC-125G RACK-3400G	PAC-125G RACK-3400G	PAC-125G RACK-3400G	RACK-305G RACK-360G RACK-3000G

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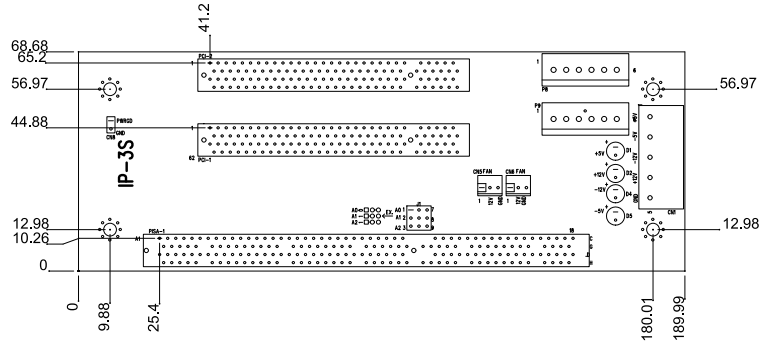
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## IP-3S-RS-R40



### Ordering Information

IP-3S-RS-R40	3-slot backplane with 2 PCI slots
PAC-53GH	3-slot half-size compact chassis
PR-1300G	3-slot half-size compact chassis

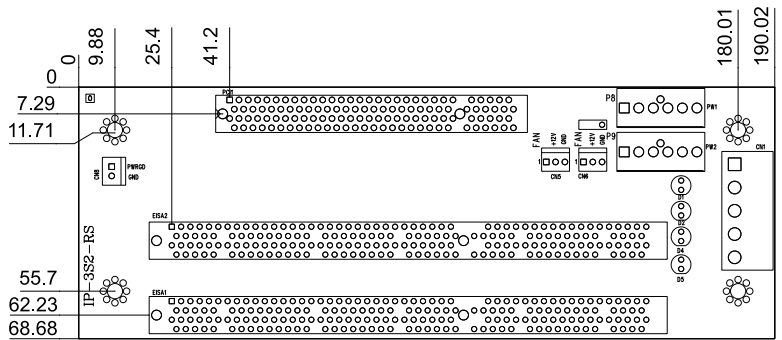


## IP-3S2-RS-R40



### Ordering Information

IP-3S2-RS-R40	3-slot backplane with 1 PCI slot
PAC-53GH	3-slot half-size compact chassis
PR-1300G	3-slot half-size compact chassis



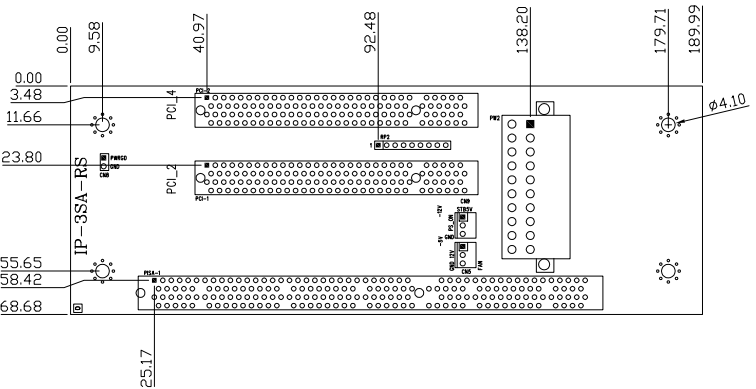
## IP-3SA-RS-R40

ATX power



### Ordering Information

IP-3SA-RS-R40	3-slot backplane with 2 PCI slots
PR-1300G	3-slot half-size compact chassis

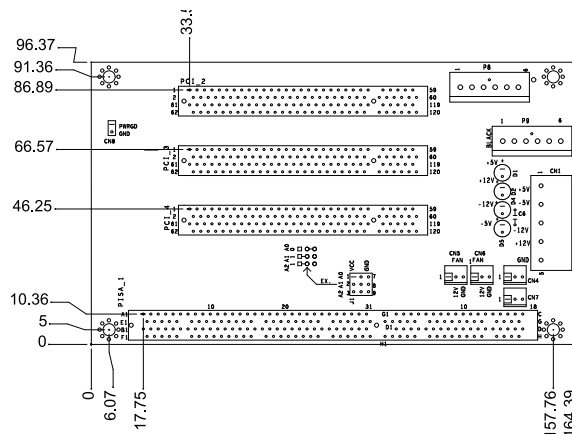


## IP-4S-RS-R40



### Ordering Information

IP-4S-RS-R40	4-slot backplane with 3 PCI slots
PAC-400G	4-slot half-size compact chassis
PAC-42GH	4-slot half-size compact chassis



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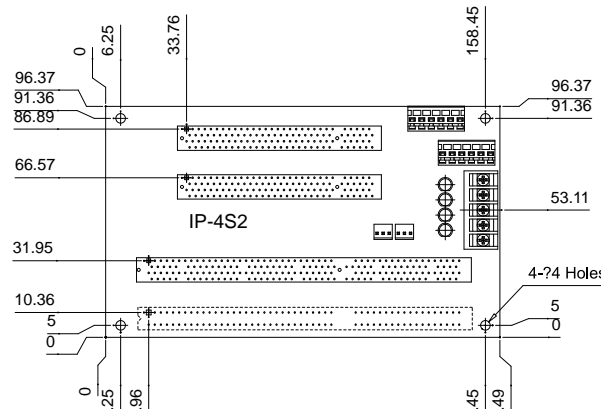
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## IP-4S2-RS-R40



### Ordering Information

IP-4S2-RS-R40	4-slot backplane with 2 PCI slots and 1 ISA slot
PAC-400G	4-slot half-size compact chassis
PAC-42GH	4-slot half-size compact chassis



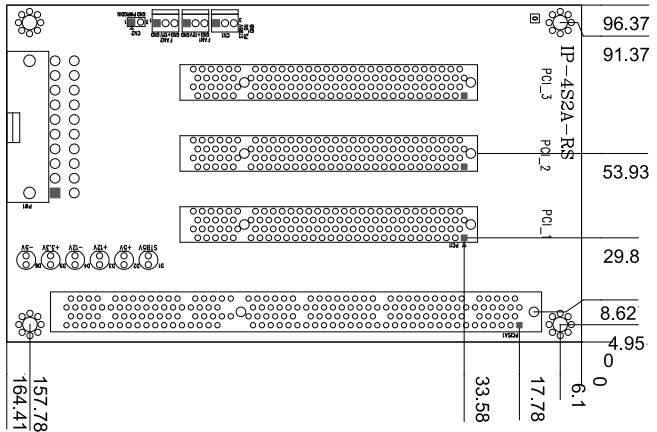
## IP-4S2A-RS-R40

ATX power



### Ordering Information

IP-4S2A-RS-R40	4-slot backplane with 3 PCI slots
PAC-400G	4-slot half-size compact chassis

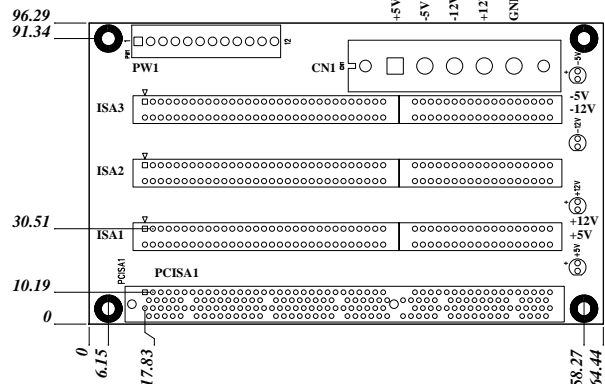


## IP-4S3-RS-R40



### Ordering Information

IP-4S3-RS-R40	4-slot backplane with 3 ISA slots
PAC-400G	4-slot half-size compact chassis
PAC-42GH	4-slot half-size compact chassis

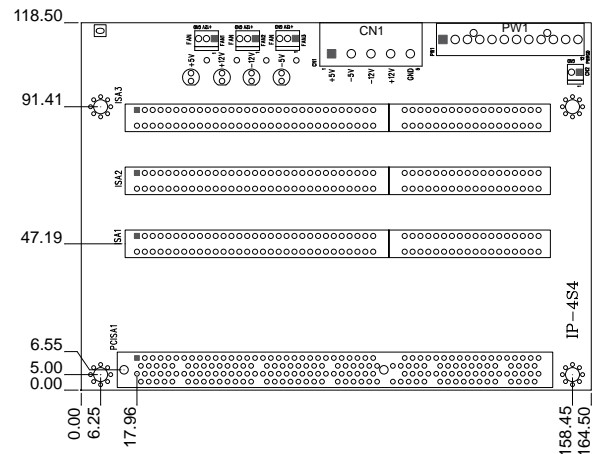


## IP-4S4-RS-R40



### Ordering Information

IP-4S4-RS-R40	4-slot backplane with 3 ISA slots
PAC-400G	4-slot half-size compact chassis
PAC-42GH	4-slot half-size compact chassis



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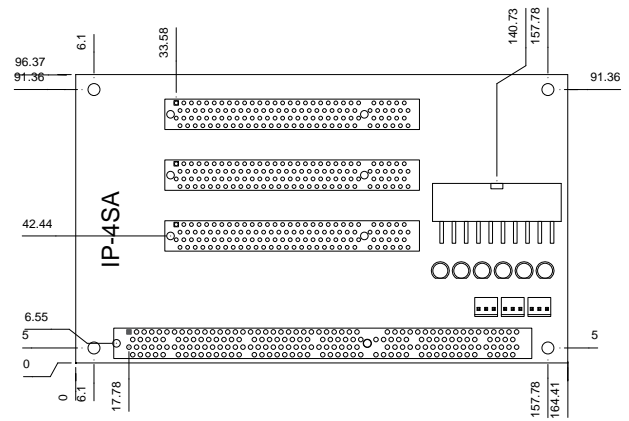
## IP-4SA-RS-R40

ATX power



### Ordering Information

IP-4SA-RS-R40	4-slot backplane with 3 PCI slots
PAC-400G	4-slot half-size compact chassis
PAC-42GH	4-slot half-size compact chassis

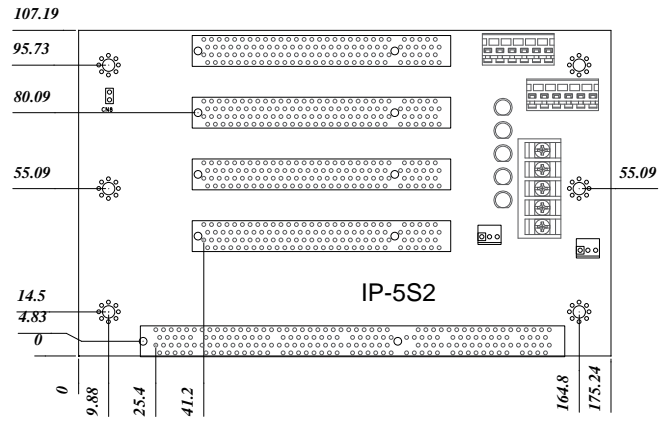


## IP-5S2-RS-R40



### Ordering Information

IP-5S2-RS-R40	5-slot backplane with 4 PCI slots
PR-1500G	5-slot half-size compact chassis



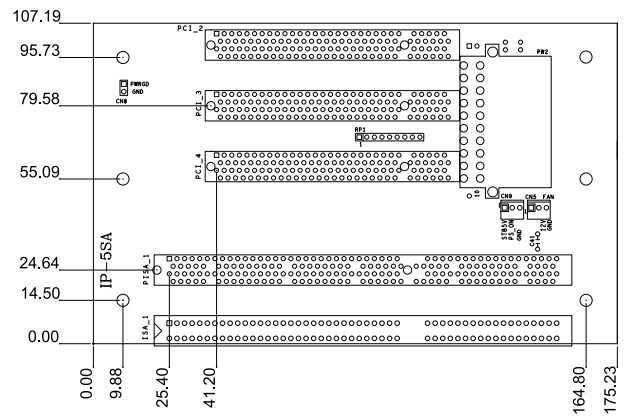
## IP-5SA-RS-R40

ATX power



### Ordering Information

IP-5SA-RS-R40	5-slot backplane with 3 PCI slots and 1 ISA slot
PR-1500G	5-slot half-size compact chassis

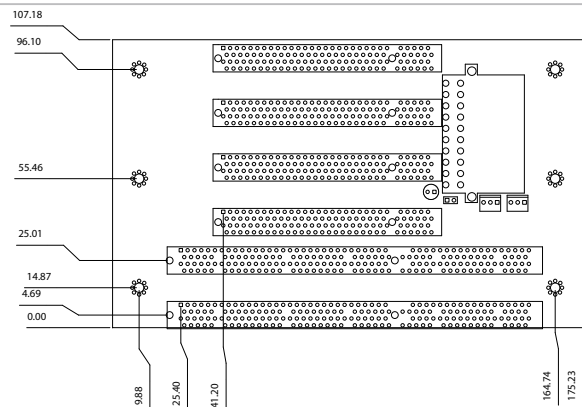


## IP-5SA2-RS-R40



### Ordering Information

IP-5SA2-RS-R40	5-slot backplane with 4 PCI slots
PR-1500G	5-slot half-size compact chassis



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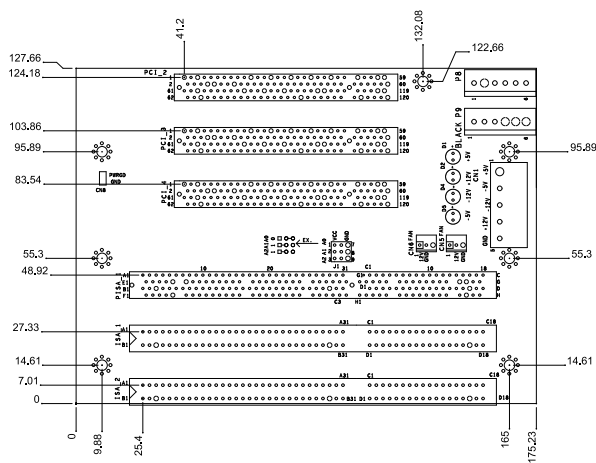
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## IP-6S-RS-R40



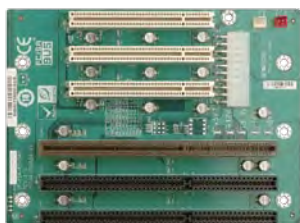
### Ordering Information

IP-6S-RS-R40	6-slot backplane with 3 PCI slots and 2 ISA slots
PAC-107G	6-slot full-size compact chassis
PAC-1000G	6-slot full-size compact chassis



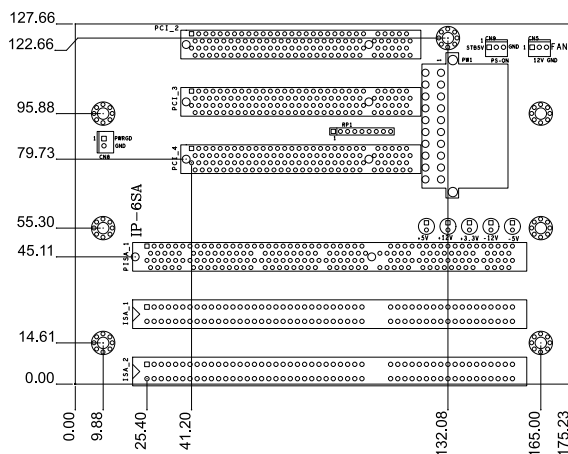
## IP-6SA-RS-R40

ATX power



### Ordering Information

IP-6SA-RS-R40	6-slot backplane with 3 PCI slots and 2 ISA slots
PAC-106G	6-slot full-size compact chassis
PAC-107G	6-slot full-size compact chassis
PAC-1000G	6-slot full-size compact chassis

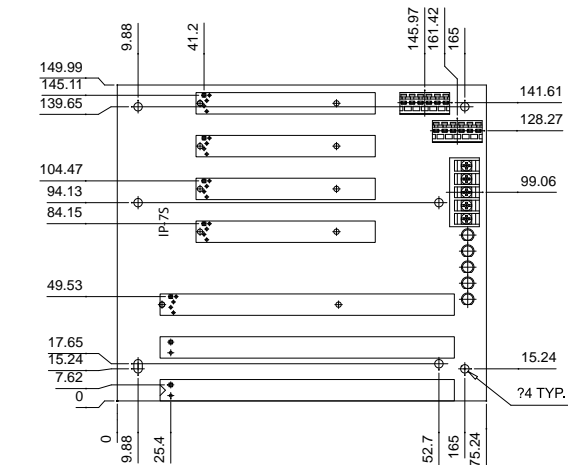


## IP-7S-RS-R40



### Ordering Information

IP-7S-RS-R40	7-slot backplane with 3 PCI slots and 2 ISA slots
PAC-700G	7-slot half-size compact chassis
PAC-1700G	7-slot half-size compact chassis



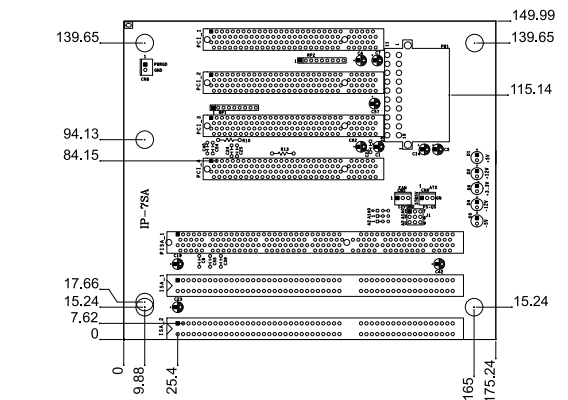
## IP-7SA-RS-R40

ATX power



### Ordering Information

IP-7SA-RS-R40	7-slot backplane with 3 PCI slots and 2 ISA slots
PAC-700G	7-slot half-size compact chassis
PAC-1700G	7-slot full-size compact chassis

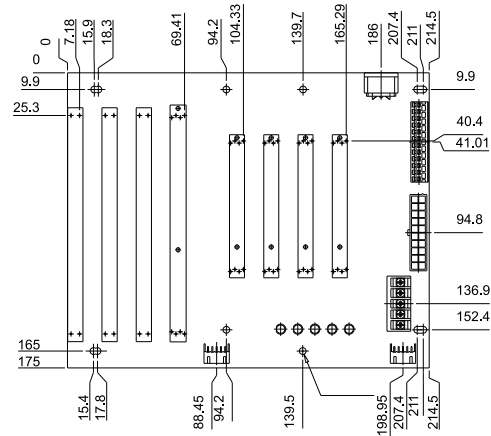


## IP-8S-RS-R40



### Ordering Information

IP-8S-RS-R40	8-slot backplane with 4 PCI slots and 3 ISA slots
PAC-125G	10-slot full-size compact chassis
RACK-3400G	4U 10-slot half-size rack-mount chassis

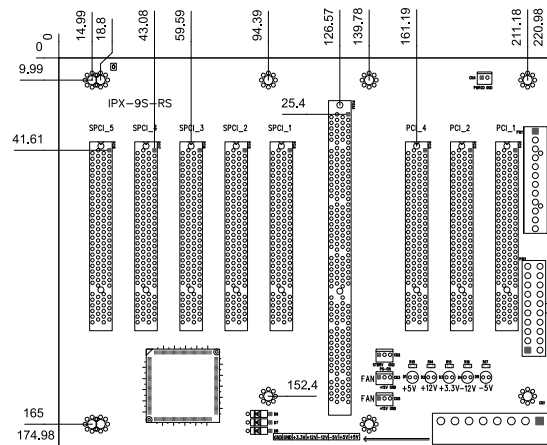


## IPX-9S-RS-R41

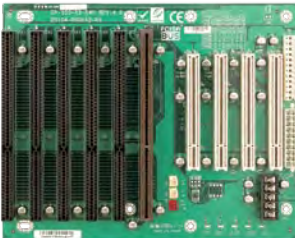


### Ordering Information

IPX-9S-RS-R41	9-slot backplane with 8 PCI slots
PAC-125G	10-slot full-size compact chassis
RACK-3400G	4U 10-slot half-size rack-mount chassis

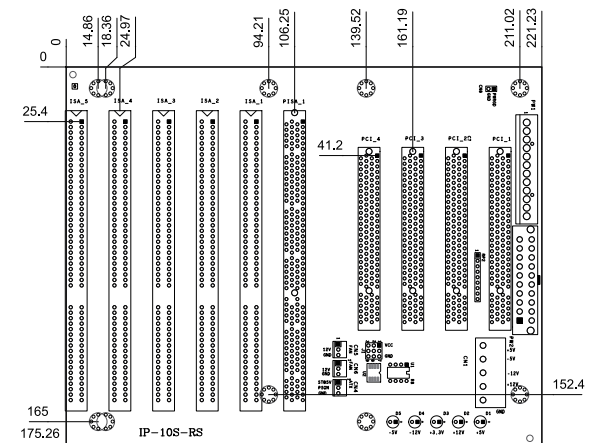


## IP-10S-RS-R40



### Ordering Information

IP-10S-RS-R40	10-slot backplane with 4 PCI slots and 5 ISA slots
PAC-125G	10-slot full-size compact chassis
RACK-3400G	4U 10-slot half-size rack-mount chassis

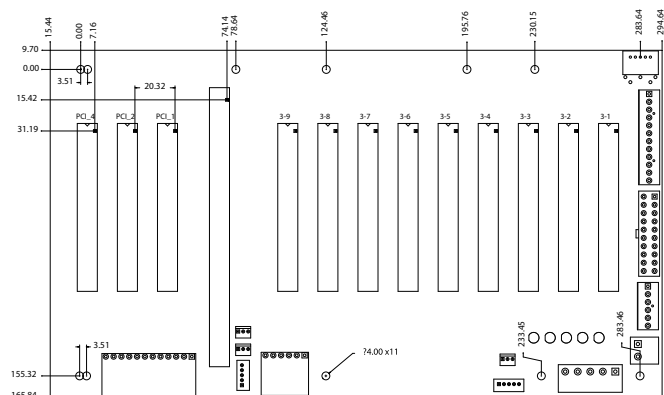


## IPX-13S-RS-R40



### Ordering Information

IPX-13S-RS-R40	13-slot backplane with 12 PCI slots
RACK-305G	4U 14-slot rack-mount chassis
RACK-360G	4U 14-slot rack-mount chassis
RACK-3000G	4U 14-slot rack-mount chassis



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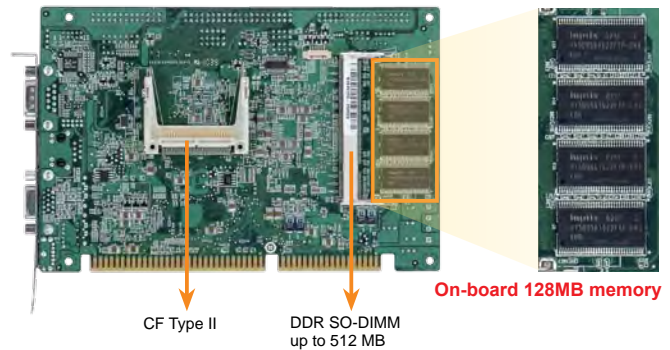
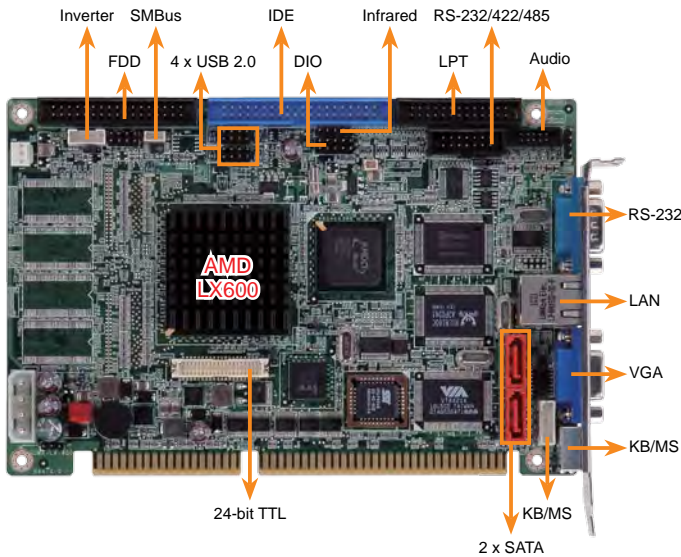
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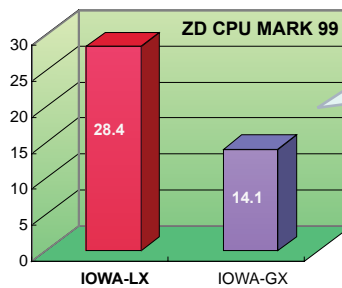


# IOWA-LX

Half-size pure ISA CPU card with on-board AMD Geode™ LX600 processor (366MHz), 128KB L2 cache, 128MB memory on board, VGA, LAN, USB 2.0, CF, COM, LPT and Audio, RoHS



## Performance Comparison Chart



IOWA-LX platform can be easily replace the IOWA-GX platform without any impact to the system for increased levels of performance.



## Specifications

- ◆ CPU
  - On-board AMD Geode™ LX600 processor (366MHz), 128KB L2 cache
- ◆ Chipset
  - AMD Geode™ CS5536
- ◆ BIOS
  - Award BIOS
- ◆ Memory
  - On-board 128MB (max.) 200/266MHz DDR SDRAM supported
  - One 200-pin 512MB (max.) 200/266MHz DDR SDRAM supported
- ◆ Graphics Engine
  - VGA integrated in the AMD Geode™ LX600
- ◆ Display Output
  - Single HD VOP 2.0 output
  - 1920x1440 CRT output
  - 1600x1200 TFT output
- ◆ Super I/O
  - Winbond W83627EHG
- ◆ I/O interface
 

2 x RS-232	1 x RS-422/485
1 x FDD	1 x LPT
1 x PS/2 KB/MS	1 x IrDA
1 x CF Type II	1 x IDE
4 x USB 2.0 (by pin-header)	
2 x SATA with RAID 0/1 function supported (IOWA-LX-600S-R10 only)	
- ◆ Ethernet
  - 10/100Mbps Realtek RTL8100C Ethernet controller
- ◆ Audio
  - Realtek ALC203 with AC'97 codec
- ◆ Expansion Bus
  - ISA bus supported via golden finger
- ◆ Digital I/O
  - 8-bit digital I/O, (4-bit input/4-bit output)
- ◆ WDT
  - Software programmable supports 1~255sec. system reset
- ◆ FAN connector
  - 1x3-pin fan connector (smart fan)
- ◆ Power supply
  - 5V/12V via ISA bus, AT/ATX mode supported
- ◆ Power Consumption
  - 5V @ 1.51A, 5Vsb @ 0.09A
  - (On-board AMD Geode™ LX 600 CPU 366MHz with 128MB 200MHz on-board DDR memory and 512MB 333MHz DDR memory)
- ◆ Temperature
  - 10°C ~ 60°C
- ◆ Humidity
  - 5% ~ 95%, non-condensing
- ◆ Weight
  - GW: 1.0kg/NW: 250g

## Features

1. ISA CPU card with on-board AMD Geode™ LX600 processor (366MHz), 128KB L2 cache
2. Flexible on-board DDR SDRAM and one SO-DIMM slot for optional
3. Enhanced TTL, RS-232, RS-422/485 and USB 2.0 interfaces for extended connectivities
4. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x IOWA-LX-600 single board computer
1 x USB cable (P/N: 19800-003100-200-RS)
1 x KB/MS Y cable (P/N: 32006-000300-100-RS)
1 x Audio cable (P/N: 19800-000111-RS)
1 x IDE flat cable (P/N: 32200-000052-RS)
1 x One Key Recovery CD
1 x Mini jumper pack
1 x Utility CD
1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
IOWA-LX-600-R10	Half-size pure ISA CPU card with on-board AMD Geode™ LX600 processor (366MHz), 128KB L2 cache, on-board 128MB memory VGA, LAN, USB 2.0, COM, CF, LPT and audio, RoHS
IOWA-LX-600S-R10	Half-size pure ISA CPU card with on-board AMD Geode™ LX600 processor (366MHz), 128KB L2 cache, on-board 128MB memory VGA, LAN, USB 2.0, SATA, CF, COM, LPT and audio, RoHS
32000-062800-RS	SATA cable
32229-000100-100-RS	FDD cable
19800-000400-100-RS	LPT cable
19800-000058-RS	RS-232/422/485 cable

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# BP Series Backplane

**Supports ISA slot on one backplane!**  
**For half-sized ISA only single board computer**

**The advantages of using this ISA card series are numerous:**

1. Supports standard ISA slot on the BP series passive backplane.
2. Compatible with all available ISA cards. BP backplane is also integrated with the ROCKY series ISA Card slot.

## Selection Guide

 PAC series wall-mount chassis

 4U rack-mount chassis



Model	BP-3S-RS-R40	BP-4S-RS-R40	BP-5S-RS-R40	BP-6S-RS-R40
Total Slot	3	4	5	6
ISA Slot	3	4	5	6
PSU Type	AT	AT	AT	AT
Chassis	PAC-53GH PR-1300G	PAC-400G PAC-42GH	PR-1500G	PAC-106G, PAC-107G, PAC-1000G



Model	BP-7S-RS-R40	BP-8S-RS-R41	BP-10S-RS-R40	BP-14S-RS-R40
Total Slot	7	8	10	14
ISA Slot	7	8	10	14
PSU Type	AT	AT	AT	AT
Chassis	PAC-700G PAC-1700G	N/A	PAC-125G RACK-3400G	RACK-305G RACK-360G RACK-3000G



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# AC-KIT-892HD

Realtek ALC892 7.1 Channel HD Audio Peripheral Board, RoHS



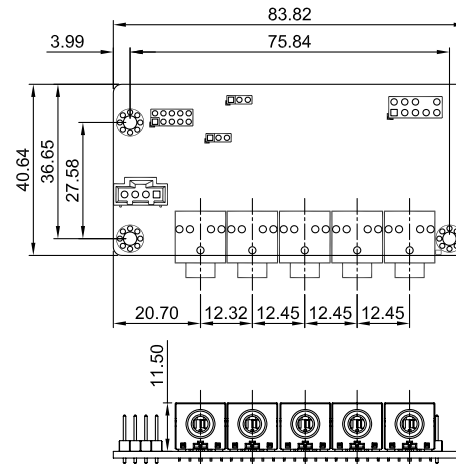
## Features

1. Realtek ALC892 HD audio codec IC supported
2. Five audio jacks for microphone, 7.1+2 channel high definition audio input and output
3. High performance 7.1+2 channel high definition audio board provides 7.1 channel sound playback and multiple streaming through the front panel stereo outputs
4. Digital to Analog Converter (DAC) with 97dB Signal to Noise Ratio (SNR)
5. Analog to Digital Converter (ADC) with 90dB Signal to Noise Ratio (SNR)
6. All the Digital to Analog Converter (DAC) supports 44.1k/48k/96k/192kHz sampling rate
7. All the Analog to Digital Converter (ADC) supports 44.1k/48k/96kHz sample rate
8. Driver supports Windows® 2000/2003/XP/VISTA/7 (32/64 bits) and Linux (Ubuntu or Debian)

## Packing List

1 x AC-KIT-892HD audio peripheral board	
1 x Audio cable	1 x QIG

## Dimensions (Unit: mm)



## Ordering Information

AC-KIT-892HD-R10	Realtek ALC892 7.1 channel HD audio peripheral board
32100-121100-RS	Audio cable with length 200 mm, 2 x 5-pin, pitch 2.0 mm

# AC-KIT08R

Audio Converter Card via Realtek ALC665 AC'97 5.1 Channel Audio Daughter Board, RoHS



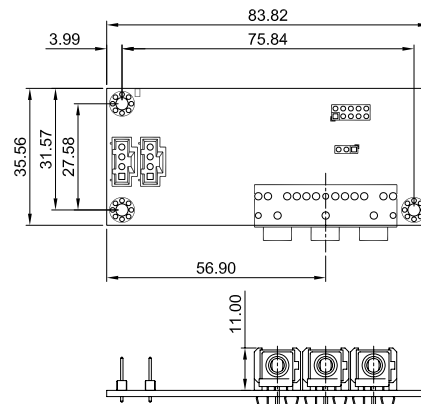
## Features

1. Realtek ALC665 AC'97 audio codec IC supported
2. Three audio jacks for microphone, 5.1 channel AC'97 audio input and output
3. Full duplex AC'97 2.3 compatible 5.1 channel audio codec designed for PC multimedia system
4. Supports double sampling rate (96kHz) of DVD audio playback
5. Driver supports Windows® 2000/2003/XP/VISTA/7 (32/64 bits) and Linux (Ubuntu or Debian)

## Packing List

1 x AC-KIT08R audio peripheral board	
1 x Audio cable	1 x QIG

## Dimensions (Unit: mm)



## Ordering Information

AC-KIT08R-R10	Realtek ALC665 AC'97 5.1 channel audio peripheral board
32107-001100-100-RS	Audio cable with length 200 mm, 2 x 5-pin, pitch 2.0 mm

# IO-KIT-001-R20

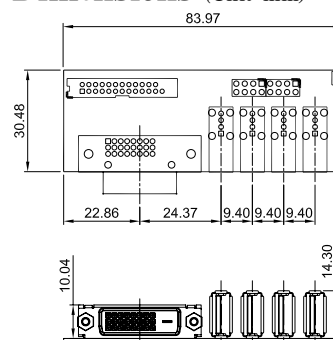
DVI and 4 x USB 1.1/2.0 Translation Daughter Board with Bracket, RoHS



## Features

1. 26-pin header for DVI (from main board), pitch 2.0 mm
2. 2 x 8-pin header for USB 1.1/2.0 (from main board, four sets), pitch 2.54 mm
3. DVI-D connector on edge
4. Four USB 1.1/2.0 connectors on edge

## Dimensions (Unit: mm)



## Packing List

1 x IO-KIT-001-R20 (DVI and four USB 1.1/2.0 translation daughter board)
1 x DVI cable
1 x USB cable
1 x QIG

## Ordering Information

IO-KIT-001-R20	DVI and four USB 1.1/2.0 translation daughter board
32000-051700-RS	DVI cable with length 200 mm, 2 x 13-pin, pitch 2.0 mm
32000-051800-RS	USB cable with length 200 mm, 2 x 8-pin, pitch 2.54 mm

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# Industrial Motherboard Selection Guide

**New****New****New****New**

Model Name	IMBA-C604EN	IMBA-C604EP	IMBA-C2160	IMBA-Q770	IMBA-H610	IMBA-C2060
<b>CPU Socket</b>	Intel® LGA 2011	Intel® LGA 1356	Intel® LGA 1155	Intel® LGA 1155	Intel® LGA 1155	Intel® LGA 1155
<b>CPU Type</b>	Intel® Xeon® E5-2600 series up to 8 cores processor	Intel® Xeon® E5-2400 series up to 8 cores processor	Intel® Xeon® E3 and Intel® Core™ i3 quad/dual	Intel® Core™ i7/i5/i3 quad/dual core	Intel® Core™ i7/i5/i3 Quad/Dual, Pentium® Dual, Celeron® Dual/Single	Intel® Xeon® E3 Quad/Dual, Core™ i3 Dual, Celeron® Dual
<b>FSB</b>	N/A					
<b>Chipset</b>	Intel® C604	Intel® C604	Intel® C216	Intel® Q77	Intel® H61	Intel® C206
<b>Memory</b>	Eight 240-pin 1600/1333MHz Dual-channel DDR3 SDRAM UDIMMs w/ ECC or non-ECC/ RDIMMs/ LRDIMMs supported (system max. 64GB w/ UDIMMs/ 128GB w/ RDIMMs, 256GB w/ LRDIMMs)	Six 240-pin 1600/1333MHz Dual-channel DDR3 SDRAM UDIMMs w/ ECC or non-ECC/ RDIMMs/ LRDIMMs supported (system max. 48GB w/ UDIMMs/ 96GB w/ RDIMMs, 192GB w/ LRDIMMs)	Four 240-pin 1600/1333MHz dual-channel DDR3 SDRAM ECC and non-ECC unbuffered DIMMs supported (system max. 32GB)	Four 240-pin 1600/1333MHz dual-channel DDR3 SDRAM unbuffered DIMMs supported (system max. 32GB)	Two 240-pin 1333/1066MHz dual-channel DDR3 SDRAM DIMM (system max. 16GB)	Four 240-pin 1333/1066MHz dual-channel DDR3 SDRAM ECC Registered and non-ECC unbuffered DIMM (system max. 32GB)
<b>Display Interface</b>	VGA driver form Aspeed AST2300	VGA driver form Aspeed AST1300	Dual display supported 1 x VGA	Triple display supported 2 x HDMI 1 x DVI-I	Dual display supported 1 x VGA 1 x DVI-D	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D
<b>Ethernet</b>	Dual Intel® 82574L PCIe controller	Dual Intel® 82574L PCIe controller	Intel® 82574L PCIe controller Intel® 82579 PHY with Intel® AMT 8.0 supported	Intel® 82583V PCIe controller Intel® 82579L PHY with Intel® AMT 8.0 supported	Dual Realtek RTL8111E PCIe GbE controller	Intel® 82574L PCIe controller Intel® 82579 PHY with Intel® AMT 7.0 supported
<b>I/O Interface</b>	3 x RS-232 2 x USB 3.0 9 x USB 2.0 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x 5-pin pin header for PSM1 1 x PS/2 KB/MS 2 x 10-pin pin header for TPM V1.2 Module	9 x RS-232 1 x RS-422/485 2 x USB 3.0 11 x USB 2.0 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x PS/2 KB/MS 2 x 10-pin pin header for TPM V1.2 Module	5 x RS-232 1 x RS-422/485 4 x USB 3.0 10 x USB 2.0 1 x LPT 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x PS/2 KB/MS 1 x 6-pin wafer for PS/2 KB/MS 2 x 10-pin header for TPM V1.2 Module	5 x RS-232 1 x RS-422/485 4 x USB 3.0 10 x USB 2.0 1 x LPT 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x 6-pin wafer for PS/2 KB/MS 2 x 10-pin header for TPM V1.2 Module	5 x RS-232 1 x RS-422/485 10 x USB 2.0 1 x LPT 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x PS/2 KB/MS 2 x 10-pin header for TPM V1.2 Module	5 x RS-232 1 x RS-422/485 2 x USB 3.0 10 x USB 2.0 1 x LPT 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x PS/2 KB & MS 2 x 10-pin header for TPM V1.2 module
<b>Storage Interface</b>	4 x SATA 3Gb/s 2 x SATA 6Gb/s 4 x SAS 3Gb/s	4 x SATA 3Gb/s 2 x SATA 6Gb/s 4 x SAS 3Gb/s	2 x SATA 6Gb/s 4 x SATA 3Gb/s	2 x SATA 6Gb/s 4 x SATA 3Gb/s	4 x SATA 3Gb/s	2 x SATA 6Gb/s 4 x SATA 3Gb/s
<b>Audio</b>	Realtek ALC662 HD Audio Codec					Realtek ALC888 HD Audio codec
<b>Digital I/O</b>	8-bit programmable I/O (8-bit GPIO is for programming I/O)		8-bit Digital I/O (8-bit GPIO is for programming I/O)	8-bit Digital I/O (4-bit input, 4-bit output)	8-bit programmable I/O (8-bit GPIO is for programming I/O)	8-bit digital I/O (4-bit input/4-bit output)
<b>Power Consumption</b>	Vcore_12V@5.86A, 12V@1.03A, 5V@1.72A, 3.3V@1.01A, 5VSB@0.47A (Intel® Xeon® E5-2658 2.1GHz with four 1333 MHz 4 GB DDR3 memory)	12V@1.08A, Vcore@2.46A, 3.3V@0.61A, -12V@0.15A, 5V@2.33A (Intel® Xeon® 1.40GHz with 28 GB DDR3 w/ECC memory)	3.3V@1.55A, 5V@3.43A, Vcore@3.12A, 12V@0.20A, 5VSB@0.18A (Intel® Xeon® 2.2GHz CPU with two 1333MHz 4GB DDR3 memory)	3.3V@1.39A, 5V@4.63A, Vcore@2.25A, 12V@0.47A, 5VSB@0.14A (Intel® Xeon® 2.4GHz CPU with four 1333MHz 2GB DDR3 memory)	3.3V@1.27A, 5V@3.87A, 12V@0.54A, Vcore@0.767A, 5VSB@0.15A (Intel® Core™ i7-2600K 3.40GHz CPU with 1333MHz DDR3 2GB x 2 Memory)	3.3V@1.61, 5V@2.79A 12V@0.50A, Vcore@5.59A, 5VSB@0.16A (Intel® Xeon® E3-1275 3.40GHz CPU with four 1333MHz 2GB DDR3 memory)
<b>Watchdog Timer</b>	Software programmable and supports 1-255 sec. system reset					
<b>Operation Environment</b>	Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing					
<b>Expansion Slot</b>	4 x PCIe x8	3 x PCIe x8 1 x PCIe x4 2 x PCI	1 x PCIe x16 1 x PCIe x16 (with x8 signal) 2 x PCIe x4 1 x PCIe x1 2 x PCI	1 x PCIe x16 1 x PCIe x4 2 x PCIe x1 3 x PCI slot	1 x PCIe x16 2 x PCIe x1 4 x PCI	1 x PCIe x16 1 x PCIe x16 (with x8 signal) 2 x PCIe x4 3 x PCI
<b>CPU Cooler</b>	CF-2011A-RS (for 1U chassis)/ CF-2011B-RS	CF-1356A-RS (for 1U chassis)/ CF-1356B-RS	CF-1156A-RS (for 1U chassis)/ CF-1156B-RS-11/ CF-1156C-RS/ CF-1156D-RS			

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Model Name	IMBA-Q670-R20	IMBA-G410-R20	IMBA-Q454	IMBA-XQ354-R11	IMBA-9454-R40
<b>CPU Socket</b>	Intel® LGA 1155	Intel® LGA 775	Intel® LGA 775	Intel® LGA 775	Intel® LGA 775
<b>CPU Type</b>	Intel® Core™ i7/i5/i3 Quad/ Dual, Pentium® Dual, Celeron® Dual/Single	Intel® Core™2 Quad/Duo, Pentium® D/Celeron®	Intel® Core™2 Quad/Duo, Pentium® D/4/Celeron® D	Intel® Core™2 Quad/Duo, Pentium® D/4/Celeron® D	Intel® Core™2 Duo, Pentium®D/4/Celeron® D
<b>FSB</b>	N/A	800/1066/1333MHz	800/1066/1333MHz	800/1066/1333MHz	800/1066/1333MHz
<b>Chipset</b>	Intel® Q67	Intel® G41+ICH7	Intel® Q45 + ICH10DO	Intel® Q35 + ICH9DO	Intel® 945G + ICH7
<b>Memory</b>	Four 240-pin 1333/1066MHz dual-channel DDR3 SDRAM unbuffered DIMM (system max. 32GB)	Two 240-pin 800/1066MHz dual-channel DDR3 SDRAM DIMM (system max. 8GB)	Four 240-pin 667/800MHz dual- channel DDR2 SDRAM DIMM (system max. 16GB)	Four 240-pin 667/800MHz dual- channel DDR2 SDRAM DIMM (system max. 8GB)	Four 240-pin 533/667/800MHz dual-channel DDR2 SDRAM DIMM (system max. 4GB)
<b>Display Interface</b>	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D	1 x VGA	1 x VGA	1 x VGA	1 x VGA
<b>Ethernet</b>	Intel® 82583V PCIe controller Intel® 82579 PHY with Intel® AMT 7.0 supported (LAN2)	Dual Realtek RTL8111E PCIe GbE controller	LAN1: Intel® 82574L (MAC + PHY) LAN2: Intel® 82567LM (PHY)	LAN1: Intel® 82573L (MAC + PHY) LAN2: Intel® 82566DM (PHY)	Dual Realtek RTL8111E PCIe GbE controller
<b>I/O Interface</b>	5 x RS-232 1 x RS-422/485 2 x USB 3.0 10 x USB 2.0 1 x LPT 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x PS/2 KB & MS 2 x 10-pin header for TPM V1.2 module	5 x RS-232 1 x RS-422/485 8 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS 1 x 6-pin wafer for PS/2 KB & MS 2 x 10-pin header for TPM V1.2 module	6 x RS-232 12 x USB 2.0 1 x LPT 1 x Infrared Interface 1 x PS/2 KB & MS 1 x 6-pin wafer for PS/2 KB & MS	6 x RS-232 12 x USB 2.0 1 x LPT 1 x PS/2 KB & MS 1 x 6-pin wafer for KB & MS 2 x 10-pin header for TPM V1.2 module	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x LPT 1 x Infrared Interface 1 x PS/2 KB & MS 1 x 6-pin wafer for KB & MS 2 x 10-pin header for TPM V1.2 module
<b>Storage Interface</b>	2 x SATA 6Gb/s 4 x SATA 3Gb/s	4 x SATA 3Gb/s 1 x IDE 1 x CF Type II	6 x SATA 3Gb/s RAID 1 x FDD	6 x SATA 3Gb/s RAID 1 x FDD	4 x SATA 3Gb/s 1 x CF Type II 1 x IDE 1 x FDD
<b>Audio</b>	Realtek ALC888 HD Audio codec				Realtek ALC655 with AC'97 codec
<b>Digital I/O</b>	8-bit digital I/O (4-bit input/4-bit output)				
<b>Power Consumption</b>	3.3V@1.65A, 5V@6.31A, 12V@0.18A, Vcore@7.88A, 5VSb@0.15A (Intel® Core™ i5-2400 3.10GHz CPU with 1333MHz DDR3 4GB x 4 memory)	12V@4.80A, -12V@0.06A, 5V@5.45A, 3.3V@0.16A (Intel® Q9550 2.83GHz with DDR3 1333MHz 2GB memory)	3.3V@2.64A, 5V@5.4A, 12V@0.28A (Intel®Core™2 Duo E8500 3.16GHz with four 800MHz 2GB DDR2 memory)	3.3V@2.96A, 5V@6.92A, 12V@2.77A (Intel® Core™2 Duo E6850 CPU with four 800MHz 2GB DDR2 memory)	5V@2.86A, 12V@0.39A, 3.3V@ 6.24A, Vcore@ 1.05A (Intel® Core®2 Duo E7400 2.8GHz CPU at 1066MHz FSB with two 800MHz 2GB DDR2 memory)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset				
<b>Operation Environment</b>	Temperature Range: -10°C ~ 60°C (14°F~140°F) Relative Humidity: 5% ~ 95%, non-condensing		Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95%, non-condensing		
<b>Expansion Slot</b>	1 x PCIe x16 1 x PCIe x4 1 x PCIe x1 4 x PCI	1 x PCIe x16 1 x PCIe x4 slot (with x1 signal) 5 x PCI	1 x PCIe x16 1 x PCIe x4 4 x PCI	1 x PCIe x16 3 x PCIe x4 3 x PCI	1 x PCIe x16 1 x PCIe x4 5 x PCI
<b>CPU Cooler</b>	CF-1156A-RS (for 1U chassis)/ CF-1156B-RS-11/ CF-1156C-RS/ CF-1156D-RS	CF-775A-RS/ CF-775B-RS (for 1U chassis) CF-520-RS-R11			

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Introduction

# Industrial Motherboard Selection Guide

**New****New**

Model Name	IMB-C2160	IMB-Q770	IMB-H610	IMB-H612
<b>CPU Socket</b>	Intel® LGA 1155	Intel® LGA 1155	Intel® LGA 1155	Intel® LGA 1155
<b>CPU Type</b>	Intel® Xeon® E3 and Intel® Core™ i3 Quad/Dual core	Intel® Core™ i7/i5/i3 Quad/Dual core	Intel® Core™ i7/i5/i3 Quad/Dual, Pentium® Dual, Celeron® Dual/Single	Intel® Core™ i7/i5/i3 Quad/Dual, Pentium® Dual, Celeron® Dual/Single
<b>FSB</b>	N/A			
<b>Chipset</b>	Intel® C216	Intel® Q77	Intel® H61	Intel® H61
<b>Memory</b>	Four 240-pin 1600/1333MHz dual-channel DDR3 SDRAM ECC and non-ECC unbuffered DIMMs supported (system max. 32GB)	Four 240-pin 1600/1333MHz dual-channel DDR3 SDRAM unbuffered DIMMs supported (system max. 32GB)	Two 240-pin 1333/1066MHz Dual-channel DDR3 SDRAM Unbuffered DIMM supported (system max. 16GB)	
<b>Display Interface</b>	Single display supported 1 x VGA	Triple display supported 2 x HDMI 1 x DVI-I	Dual display supported 1 x VGA (up to 2048 x 1536 @75Hz) 1 x DVI-D (up to 1920 x 1200 @60Hz)	Dual display supported VGA1: up to 2048 x 1536 @75Hz VGA2: up to 1920 x 1200 @60Hz
<b>Ethernet</b>	Intel® 82574L PCIe controller Intel® 82579 PHY with Intel® AMT 8.0 supported	Intel® 82583V PCIe controller Intel® 82579 PHY with Intel® AMT 8.0 supported	Dual Realtek RTL8111E PCIe GbE controller	
<b>I/O Interface</b>	9 x RS-232 1 x RS-422/485 4 x USB 3.0 10 x USB 2.0 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x PS/2 KB/MS 1 x 6-pin wafer for PS/2 KB/MS 2 x 10-pin header for TPM V1.2 Module	9 x RS-232 1 x RS-422/485 4 x USB 3.0 6 x USB 2.0 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 2 x 10-pin header for TPM V1.2 Module	5 x RS-232 (for IMB-H610A/ IMB-H612A) 9 x RS-232 (for IMB-H610B/ IMB-H612B) 1 x RS-422/485 10 x USB 2.0 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x PS/2 KB/MS 2 x 10-pin header for TPM V1.2 Module	
<b>Storage Interface</b>	2 x SATA 6Gb/s 4 x SATA 3Gb/s	2 x SATA 6Gb/s 4 x SATA 3Gb/s	4 x SATA 3Gb/s	4 x SATA 3Gb/s
<b>Audio</b>	Realtek ALC662 HD Audio codec			
<b>Digital I/O</b>	24-bit Digital I/O (24-bit GPIO is for programming I/O)		8-bit Programmable I/O (8-bit GPIO is for programming I/O)	
<b>Power Consumption</b>	3.3V@0.96A, 5V@4.33A, 12V@3.5A, 12V@2.09A, 5VSB@0.1A (3.10GHz Intel® Xeon® CPU with two 1333MHz 4GB DDR3 memory)	3.3V@0.31A, 5V@2.91A, 12V@0.51A, 12V@2.12A, -12V@0.10A (Intel® Core™ i3 3200 3.2GHz CPU with four 1333MHz 1GB DDR3 memory)	3.3V@1.75A, 5V@6.61A, Vcore@3.68A, 12V@0.09A, 5sb@0.12A (Intel® 2.60GHz CPU with four 1333MHz 4GB DDR3 memory)	3.3V@1.75A, 5V@6.61A, 12V@3.68A, 12V@0.09A, 5VSB@0.12 (Intel® 2.60GHz CPU with four 1333MHz 4GB DDR3 memory)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset			
<b>Operation Environment</b>	Temperature Range: -10°C ~ 60°C (14°F~140°F) Relative Humidity: 5% ~ 95%, non-condensing			
<b>Expansion Slot</b>	1 x PCIe x16 1 x PCIe x16 (with x8 signal) 2 x PCIe x4	1 x PCIe x16 1 x PCIe x4 1 x PCIe x1 1 x PCI	2 x PCIe x1 2 x PCI	1 x PCIe x16 3 x PCIe x1
<b>CPU Cooler</b>	CF-1156A-RS (for 1U chassis)/ CF-1156B-RS-11/ CF-1156C-RS/ CF-1156D-RS			

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# Industrial Motherboard Selection Guide



Model Name	IMB-C2060	IMB-Q670-R20	IMB-G41A	IMB-Q354
<b>CPU Socket</b>	Intel® LGA 1155	Intel® LGA 1155	Intel® LGA 775	Intel® LGA 775
<b>CPU Type</b>	Intel® Xeon® E3 Quad/Dual, Core i3 Dual, Celeron® Dual	Intel® Core™ i7/i5/i3 Quad/Dual, Pentium® Dual, Celeron® Dual/Single	Intel® Core™2 Quad/Duo, Pentium® D Dual Core/Celeron	Intel® Core™2 Quad/Duo, Pentium® 4/ Celeron® D
<b>FSB</b>	N/A		800/1066/1333MHz	800/1066/1333MHz
<b>Chipset</b>	Intel® C206	Intel® Q67	Intel® G41 + ICH7	Intel® Q35 + ICH9-DO
<b>Memory</b>	Four 240-pin 1333/1066MHz dual-channel DDR3 SDRAM ECC Registered and non-ECC Unbuffered DIMM (system max. 32GB)	Four 240-pin 1333/1066MHz dual-channel DDR3 SDRAM Unbuffered DIMM (system max. 32GB)	Two 240-pin 800/1066MHz dual-channel DDR3 SDRAM DIMM (system max. 4GB)	Four 240-pin 533/667/800MHz dual-channel DDR2 SDRAM DIMM (system max. 8GB)
<b>Display Interface</b>	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D	1 x VGA	1 x VGA
<b>Ethernet</b>	Intel® 82574L PCIe controller Intel® 82579 PHY with Intel® AMT 7.0 supported	Intel® 82583V PCIe controller Intel® 82579 PHY with Intel® AMT 7.0 supported (LAN2)	Dual Realtek RTL8111CP PCIe GbE controller	LAN1: Intel® 82573L (MAC + PHY) LAN2: Intel® 82566DM (PHY)
<b>I/O Interface</b>	9 x RS-232 1 x RS-422/485 2 x USB 3.0 10 x USB 2.0 1 x Infrared interface 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x PS/2 KB & MS 2 x 10-pin header for TPM V1.2 module		9 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS	4 x RS-232 12 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS 2 x 10-pin header for TPM V1.2 module
<b>Storage Interface</b>		2 x SATA 6Gb/s 4 x SATA 3Gb/s	4 x SATA 3Gb/s 1 x IDE	6 x SATA 3Gb/s RAID 1 x FDD
<b>Audio</b>		Realtek ALC888 HD Audio codec		Realtek ALC888 HD Audio codec
<b>Digital I/O</b>		24-bit Digital I/O (12-bit input/12-bit output)		8-bit digital I/O (4-bit input/4-bit output)
<b>Power Consumption</b>	3.3V@1.75A, 5V@6.61A, 12V@3.68A, 12V@0.09A, 5Vsb@0.12 (Intel® Core™ i3-2100 2.60GHz CPU with four 1333MHz 4GB DDR3 memory)		5V@7.26A, 12V@0.26A, Vcore_12V@3.24A, 3.3V@0.16A (Intel® Core™2 Duo E8500 3.16GHz CPU with two 1066MHz 2GB DDR3 memory)	3.3V@2.41A, 5V@5.71A, 5Vsb@0.13A, 12V@3.69A (Intel® Core™2 Duo E6850 3.0GHz CPU with four 800MHz 2GB DDR2 memory)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset			
<b>Operation Environment</b>	Temperature Range: -10°C ~ 60°C (14°F~140°F) Relative Humidity: 5% ~ 95%, non-condensing		Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95%, non-condensing	
<b>Expansion Slot</b>	1 x PCIe x16 1 x PCIe x16 (with x8 signal) 1 x PCIe x4 2 x PCI slot	1 x PCIe x16 1 x PCIe x4 1 x PCIe x1 2 x PCI slot	1 x PCIe x16 1 x PCIe x1 2 x PCI	1 x PCIe x16 1 x PCIe x4 2 x PCI
<b>CPU Cooler</b>	CF-1156A-RS (for 1U chassis)/ CF-1156B-RS-11/ CF-1156C-RS/ CF-1156D-RS		CF-775A-RS/ CF-775B-RS (for 1U chassis) CF-520-RS-R11	

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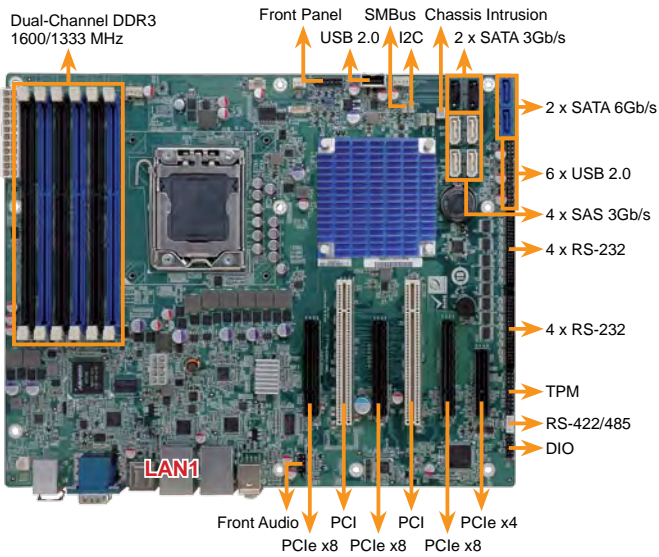
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Panel Solutions Introduction



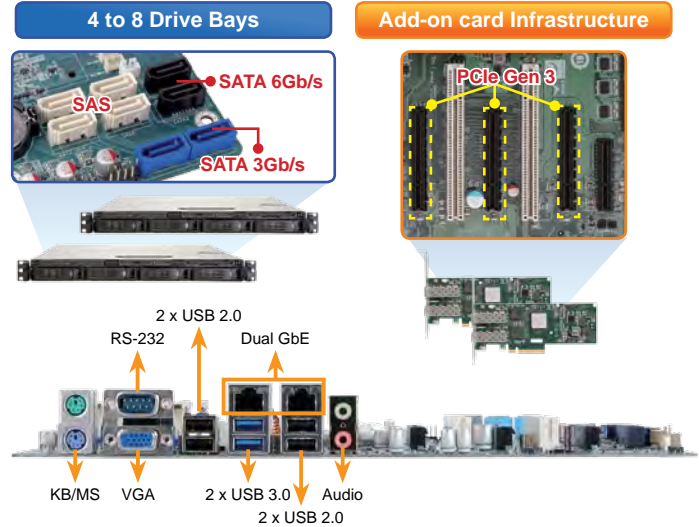
# IMBA-C604EN ATX Server Board Supports 32nm LGA1356 Intel® Xeon® E5-2400 Series up to 8 Cores CPU with Intel® C604, DDR3, VGA, PCIe Gen 3.0, SAS 3Gb/s, SATA 6Gb/s, COMs and Audio

**New**



## Benefits of the entry-level server board IMBA-C604EN with universal processor

1. Storage application fulfill 4 to 8 driver bay needed
2. Rich serial ports fulfill multiple communication devices
3. Multiple expansion slots by PCIe and PCI interfaces for high speed add-on card infrastructure



## Specifications

- ◆ CPU  
LGA1356 socket supports Intel® Xeon® E5-2400 series processor with up to eight cores
- ◆ System Chipset  
Intel® C604
- ◆ Memory  
Six 240-pin 1600/1333MHz dual-channel DDR3 SDRAM sockets supported ECC UDIMMs or non-ECC RDIMMs/LRDIMMs (system max. 48GB UDIMMs/96GB RDIMMs/192GB LRDIMMs)
- ◆ BIOS  
UEFI BIOS
- ◆ Ethernet  
Dual Intel® 82574L PCIe controller
- ◆ Graphics Engine  
ASPEED AST1300  
PCIe VGA/2D controller, 1920x1200@60Hz 32bpp
- ◆ Display Output  
Driver form AST1300
- ◆ Super I/O  
Fintek F81866
- ◆ Audio  
Realtek ALC662 HD audio codec (Line-out, Mic)
- ◆ I/O Interface
 

9 x RS-232	2 x SATA 3Gb/s (RAID 0/1/10/5 support)
1 x RS-422/485	2 x SATA 6Gb/s (RAID 0/1/10/5 support)
1 x PS/2 KB/MS	4 x SAS 3Gb/s (RAID 0/1/10 support)
2 x USB 3.0 (on rear I/O)	11 x USB 2.0 (4 on rear, 6 by pin header, 1 by type A)
- ◆ Front Panel
  - 1 x Front panel connector (power LED, HDD LED, speaker, power button, reset button)
- ◆ Front Audio
  - 2 x 5-pin header
- ◆ TPM
  - 2 x 10-pin header
- ◆ SMBus
  - 1 x 4-pin wafer
- ◆ I2C
  - 1 x 4-pin wafer
- ◆ Expansions
  - 3 x PCIe x8 slot
  - 1 x PCIe x4 slot
  - 2 x PCI slot
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O
  - 8-bit Digital I/O (8-bit GPIO is for programming I/O)
- ◆ Fan Connector
  - 1 x 4-pin CPU fan connector
  - 2 x 4-pin system connector
  - 1 x 3-pin system fan connector
- ◆ Power Supply
  - ATX/AT power supply
- ◆ Power Consumption
  - 12V@1.08A, Vcore@2.46A, 3.3V@0.61A, -12V@0.15A, 5V@2.33A (Intel® Xeon® 1.40GHz 28 GB DDR3 w/ECC memory)
- ◆ Operating Temperature
  - 10°C ~ 60°C
- ◆ Operating Humidity
  - 5% ~ 95%, non-condensing
- ◆ Dimensions
  - 244 mm x 305 mm
- ◆ Weight
  - GW: 1200g/NW: 700g

## Features

1. Supports high-performance LGA1356 Intel® Xeon® E5 CPU with up to eight cores
2. Increased channel counts by three channels (two DIMMs per channel). Six 1600/1333MHz DDR3 sockets support up to 48GB UDIMMs, 96GB RDIMMs or 192GB LRDIMMs
3. Integrated PCI Express Gen 3 for improved bandwidth and connectivity support up to 24 lanes at 8GT/s
4. Intel® Matrix RAID supports 0/1/10/5 for SATA and 0/1/10 for SAS hard drive interfaces
5. VGA display output driver form on-board IC via AST1300 for all Xeon® E5-2400 series CPU
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x IMBA-C604EN single server board computer	
1 x I/O shielding (P/N: 45014-0039C0-00-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32000-062800-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

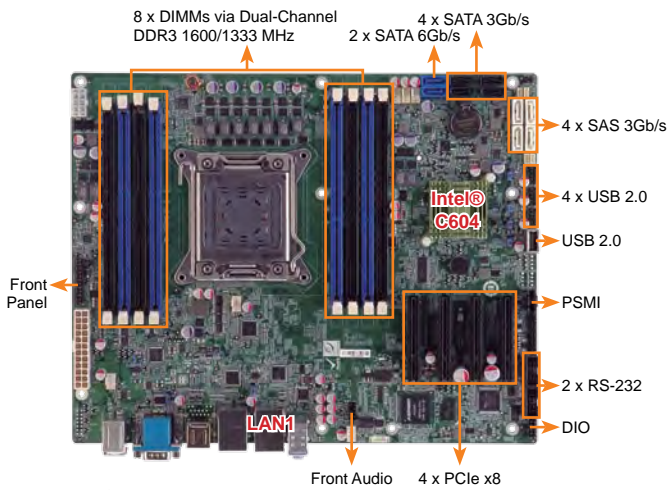
## Ordering Information

Part No.	Description
IMBA-C604EN-R10	ATX server board supports 32nm LGA1356 Intel® Xeon® E5-2400 series up to 8 cores CPU with Intel® C604, DDR3, VGA, dual Intel® PCIe GbE, PCIe Gen 3.0, SAS 3Gb/s, SATA 6Gb/s, SATA 3Gb/s, USB 2.0, COM, HD Audio and RoHS
CB-USB02-RS	Dual-port USB cable with bracket
19800-000051-RS	RS-232 cable, 230mm
32102-000100-200-RS	SATA power cable
CF-1356A-RS	High performance LGA1355/LGA1356 cooler kit, 1U chassis compatible, 95W
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

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# IMBA-C604EP

ATX Server Board Supports 32nm LGA2011 Intel® Xeon® E5-2600 Series up to 8 Cores CPU with Intel® C604, DDR3, VGA, Dual Intel® PCIe GbE, PCIe Gen 3.0, SAS 3Gb/s, SATA 6Gb/s, SATA 3Gb/s, USB 2.0 and Audio

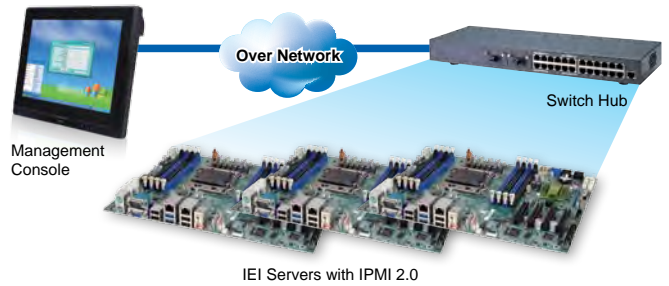


## Specifications

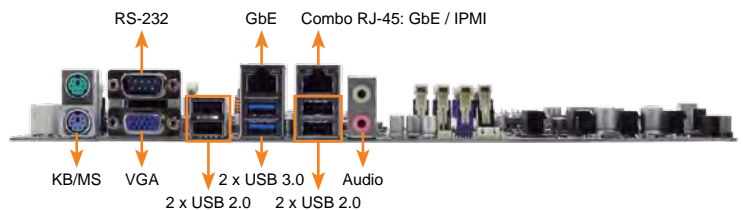
- ◆ CPU  
LGA2011 socket supports Xeon® E5-1600 series (up to 8 cores) processor
- ◆ System Chipset  
Intel® C604
- ◆ Memory  
Eight 240-pin 1600/1333MHz dual-channel DDR3 SDRAM UDIMMs w/ ECC or non-ECC/RDIMMs/LRDIMMs supported (system max. 64GB w/ UDIMMs, 128GB w/ RDIMMs, 256GB w/ LRDIMMs)
- ◆ BIOS  
UEFI BIOS
- ◆ Ethernet  
Dual Intel® 82574L PCIe controller
- ◆ Server Management  
1 x RJ-45 for Intelligent Platform Management Interface (IPMI) v.2.0  
IPMI 2.0 with virtual media over LAN and iKVM-over-LAN support
- ◆ Graphics Engine  
ASPEED AST2300  
PCIe VGA/2D controller, 1920x1200@60Hz 32bpp
- ◆ Display Output  
Driver form AST2300
- ◆ Super I/O  
Fintek F81866
- ◆ Audio  
Realtek ALC662 HD audio codec (Line-out, Mic)
- ◆ I/O Interface
  - 1 x RS-232 11 x USB 2.0 (6 on rear, 4 by pin header, 1 by type A)
  - 2 x USB 3.0 (2 on rear) 4 x SATA 3Gb/s (RAID 0/1/10/5 support)
  - 1 x PS/2 KB/MS 2 x SATA 6Gb/s (RAID 0/1/10/5 support)
  - 4 x SAS 3Gb/s (RAID 0/1/10 support)
- ◆ Front Panel
  - 1 x Front panel connector (power LED, HDD LED, LAN LED, speaker, power button, reset button)
- ◆ Front Audio
  - 2 x 5-pin header
- ◆ TPM
  - 2 x 10-pin header
- ◆ SMBus
  - 1 x 4-pin wafer
- ◆ I2C
  - 1 x 4-pin wafer
- ◆ PSMI
  - 1 x 5-pin box header
- ◆ Expansions
  - 4 x PCIe x8 slot
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O  
8-bit Digital I/O (8-bit GPIO is for programming I/O)
- ◆ Fan Connector
  - 1 x 4-pin CPU fan connector
  - 5 x 4-pin system fan connector
- ◆ Power Supply  
ATX/AT power supply
- ◆ Power Consumption  
Vcore\_12V@5.86A, 12V@1.03A, 5V@1.72A, 3.3V@1.01A, 5Vsb@0.47A (Intel® Xeon® E5-2658 2.1GHz with four 1333 MHz 4 GB DDR3 memory)
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
244 mm x 305 mm
- ◆ Weight  
GW: 1200g/NW: 700g

Server management platform with universal processor

**New**



Server management features are supported by IPMI & iKVM protocols



## Features

1. High performance LGA2011 Xeon® E5 CPU (up to 8 cores) supported
2. Increased channel counts by 4 channels of 2 DIMMs per channel with DDR3 1600/1333MHz support up to 64GB w/ UDIMMs, 128GB w/ RDIMMs and 256GB w/ LRDIMMs
3. Server management features are supported by IPMI & iKVM protocols
4. Integrated PCI Express Gen 3 for improved bandwidth and connectivity support up to 40 lanes at 8GT/s
5. Intel® Matrix RAID supports 0/1/10/5 for SATA and 0/1/10 for SAS hard drive interfaces
6. VGA display output driver form on-board IC via AST1300 for all Xeon® E5 CPU series CPU
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x IMBA-C604EP single server board computer	
1 x I/O shielding (P/N: 45014-0039C0-00-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32000-062800-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
IMBA-C604EP-R10	ATX server board supports 32nm LGA2011 Intel® Xeon® E5-2600 series up to 8 cores CPU with Intel® C604, DDR3, VGA, dual Intel® PCIe GbE, PCIe Gen 3.0, SAS 3Gb/s, SATA 6Gb/s, SATA 3Gb/s, USB 2.0, HD Audio and RoHS
CB-USB02-RS	Dual-port USB cable with bracket
19800-000051-RS	RS-232 cable, 230mm
32102-000100-200-RS	SATA power cable
CF-2011A-RS	High performance LGA2011 cooler kit, 1U chassis compatible, 130W
TPM-IN01-R11	20-pin Infineon TPM module, SW management tool, firmware V3.17

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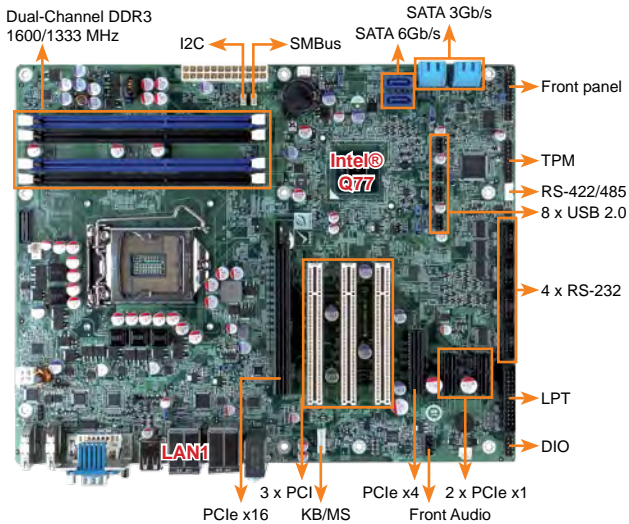
5 Power Supply/Peripherals

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# IMBA-Q770

ATX Motherboard Supports 22nm LGA1155 Intel® Core™ i7/i5/i3 CPU with Intel® Q77, DDR3, Three Independent Displays via Dual HDMI/DVI-I, Dual Intel® PCIe GbE, USB 3.0, SATA 6Gb/s, HD Audio and RoHS



## Specifications

- ◆ CPU  
LGA1155 socket supports Intel® Core™ i7/i5/i3 quad/dual core processor
- ◆ System Chipset  
Intel® Q77
- ◆ Memory  
Four 240-pin 1600/1333MHz dual-channel DDR3 SDRAM unbuffered DIMMs supported (system max. 32GB)
- ◆ BIOS  
UEFI BIOS
- ◆ Ethernet  
LAN1: Intel® 82583V PCIe controller  
LAN2: Intel® 82579L PHY with Intel® AMT 8.0 supported
- ◆ Graphics Engine  
Intel® HD Graphics Gen 7 supports DX11 and OpenCL 1.1  
Full MPEG-2, VC1, AVC Decode
- ◆ Display Output  
Dual HDMI integrated in the Intel® Q77 (up to 1920 x 1200 @60Hz)  
DVI-I integrated in the Intel® Q77 (up to 1920 x 1200 @60Hz)
- ◆ Super I/O  
Fintek F81866
- ◆ Audio  
Realtek ALC662 HD audio codec (Line-in, Line-out, Mic)
- ◆ I/O interface
  - 5 x RS-232 1 x RS-422/485
  - 1 x LPT 1 x 6-pin wafer for PS/2 KB/MS
  - 4 x USB 3.0 (rear I/O) 10 x USB 2.0 (2 on rear, 8 by pin header)
  - 2 x SATA 6Gb/s (RAID 0/1/5/10 support)
  - 4 x SATA 3Gb/s (RAID 0/1/5/10 support)
- ◆ Front Audio  
2 x 5-pin header
- ◆ Front Panel  
1 x Front panel connector (power LED, HDD LED, speaker, power button, reset button)
- ◆ TPM  
2 x 10-pin header
- ◆ SMBus  
1 x 4-pin wafer
- ◆ I2C  
1 x 4-pin wafer
- ◆ Expansions
  - 1 x PCIe x16 slot 1 x PCIe x4 slot
  - 2 x PCIe x1 slot 3 x PCI slot
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O  
8-bit Digital I/O (4-bit input, 4-bit output)
- ◆ Fan Connector  
1 x 4-pin CPU fan connector  
2 x 3-pin system fan connector
- ◆ Power Supply  
ATX power supply
- ◆ Power Consumption  
3.3V@1.39A, 5V@4.63A, Vcore@2.25A, 12V@0.47A, 5VSB@0.14A (Intel® 2.4GHz CPU with four 1333MHz 2GB DDR3 memory)
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
244 mm x 305 mm
- ◆ Weight  
GW:1200g/NW: 700g

## Evolutionary I/O features for display and USB capabilities



1. Three independent displays improve multimedia application with different contents.
2. More compatibility support for USB devices with the innovation native USB 3.0 interface.

### Configuration of three independent displays



#1	HDMI	HDMI	VGA
#2	HDMI	HDMI	DVI-D

### Native USB 3.0 Interface



## Features

1. LGA1155 Intel® Core™ i7/i5/i3 processor supported
2. Dual-channel DDR3 1600/1333MHz supports up to 32GB
3. Intel® PCIe GbE with Intel® AMT 8.0 supported
4. Supports 3 displays with 2 displays in combination of HDMI, DVI and VGA
5. Supports PCI-Express generation 3.0 at 8GT/s I/O bandwidth
6. USB 3.0 and SATA 6Gb/s supported
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x IMBA-Q770 single board computer	
1 x DVI-I to VGA adapter (P/N: 33Z00-000031-RS)	
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x I/O shielding	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
IMBA-Q770-R10	ATX motherboard supports 22nm LGA1155 Intel® Core™ i7/i5/i3 CPU with Intel® Q77, DDR3, three independent displays via Dual HDMI/ DVI-I, dual Intel® PCIe GbE, USB 3.0, SATA 6Gb/s, HD Audio and RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32205-003800-100-RS	RS-422/485 cable, 200mm
19800-000051-RS	RS-232 cable, 230mm
32102-000100-200-RS	SATA power cable
19800-000075-RS	PS/2 KB/MS Y-cable with bracket, 220mm
CF-1156A-RS	High performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS-11	High performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W
19800-000049-RS	LPT cable
TPM-IN01-R11	20-pin Infineon TPM module, SW management tool, firmware V3.17

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

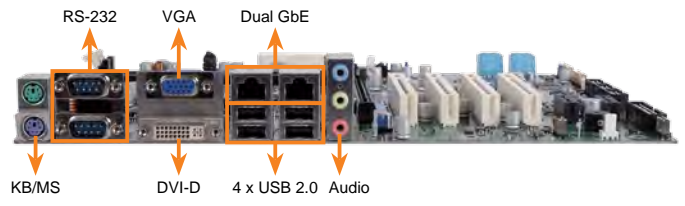
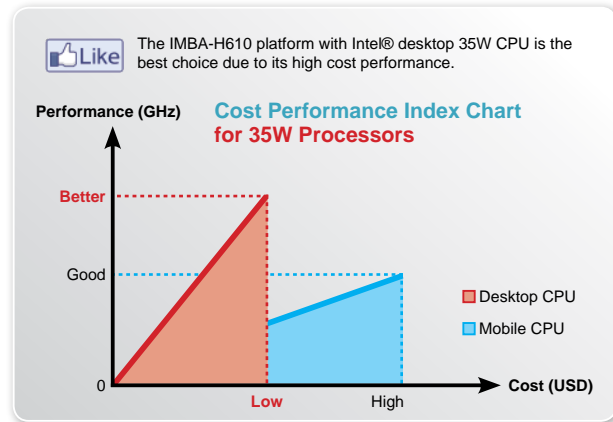
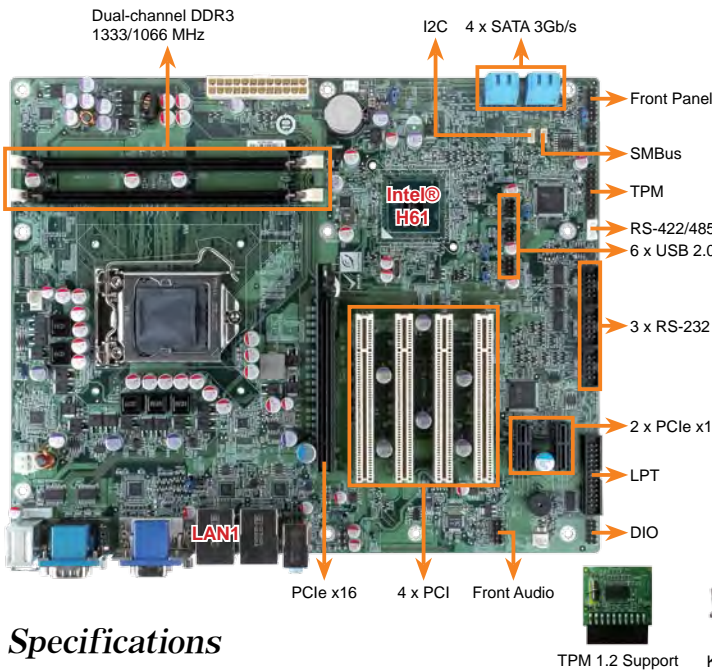
4 ORing Network Communication

5 Power Supply/ Peripherals

6 Panel Solutions Introduction

# IMBA-H610

ATX Motherboard Supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® H61, DDR3, VGA/DVI-D, Dual Realtek PCIe GbE, USB 2.0, SATA 3Gb/s, HD Audio and RoHS



## Specifications

- ◆ CPU
  - LGA1155 socket supports Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor
- ◆ System Chipset
  - Intel® H61
- ◆ Memory
  - Two 240-pin 1333/1066MHz dual-channel unbuffered DDR3 SDRAM DIMMs supported (system max. 16GB)
- ◆ BIOS
  - UEFI BIOS
- ◆ Ethernet
  - Dual Realtek RTL8111E PCIe GbE controller (LAN1 with ASF 2.0 support)
- ◆ Graphics Engine
  - Intel® HD Graphics 2000/3000 (based on CPU type)
  - Supports DX10.1 and OpenGL 3.0
  - Full MPEG2, VC1, AVC Decode
- ◆ Display Output
  - Dual display supported
  - 1 x VGA (up to 2048 x 1536 @75Hz)
  - 1 x DVI-D (up to 1920 x 1200 @60Hz)
- ◆ Super I/O
  - Fintek F81866
- ◆ PCIe-PCI Bridge
  - ITE IT8892E
- ◆ Audio
  - Realtek ALC662 HD audio codec (Line-in, Line-out, Mic)
- ◆ I/O Interface
  - 5 x RS-232
  - 1 x LPT
  - 1 x PS/2 KB/MS
  - 10 x USB 2.0 (4 on rear IO, 6 by pin header)
  - 1 x RS-422/485
  - 4 x SATA 3Gb/s without RAID & AHCI
- ◆ Front Audio
  - 1 x 10-pin header
- ◆ Front Panel
  - 1 x Front panel connector (power LED, HDD LED, speaker, power button, reset button)
- ◆ TPM
  - 1 x 20-pin header
- ◆ SMBus
  - 1 x 4-pin wafer
- ◆ I2C
  - 1 x 4-pin wafer
- ◆ Expansions
  - 1 x PCIe x16 slot
  - 2 x PCIe x1 slot
  - 4 x PCI slot
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O
  - 8-bit programmable I/O
- ◆ Fan Connector
  - 1 x 4-pin CPU fan connector
  - 2 x 3-pin system fan connector
- ◆ Power Supply
  - AT/ATX power supply supported
- ◆ Power Consumption
  - 3.3V@1.27A, 5V@3.87A, 12V@0.54A, Vcore@7.67A, 5VSb@0.15A
  - (Intel® Core™ i7-2600K 3.40GHz CPU with two 1333MHz 2GB DDR3 memory)
- ◆ Operating Temperature
  - 10°C ~ 60°C
- ◆ Operating Humidity
  - 5% ~ 95%, non-condensing
- ◆ Dimensions
  - 244 mm x 305 mm
- ◆ Weight
  - GW: 1200g/NW: 700g



## Features

1. LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor supported
2. Up to 16 GB 1333 MHz dual-channel DDR3 SDRAM
3. Intel® HD Graphics technology integrates high-performance graphics and media processing
4. TPM V1.2 hardware security provided by the TPM module
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x IMBA-H610 single board computer	
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0008C0-00-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

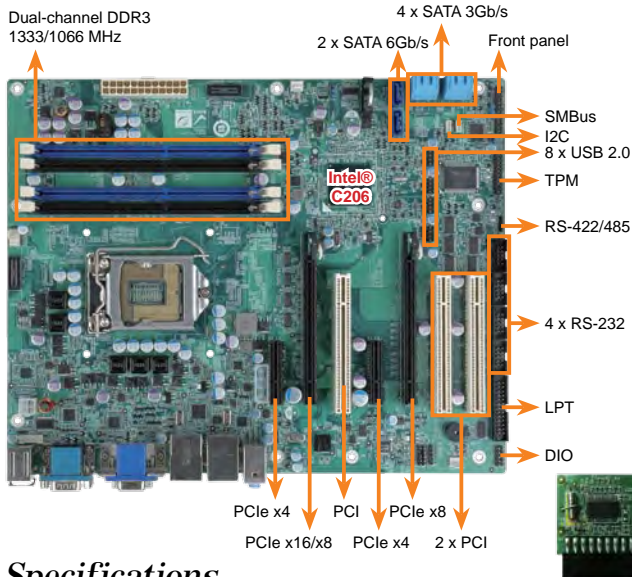
## Ordering Information

Part No.	Description
IMBA-H610-R10	ATX motherboard supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® H61, DDR3, VGA/DVI-D, dual Realtek PCIe GbE, USB 2.0, SATA 3Gb/s, HD Audio and RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32205-003800-100-RS	RS-422/485 cable, 200mm
19800-000051-RS	RS-232 cable, 230mm
32102-000100-200-RS	SATA power cable
19800-000049-RS	LPT cable
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2120T	Intel® Core™ i3-2120T processor, LGA1155, dual core 2.6GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G630T	Intel® Pentium® G630T processor, LGA1155, dual core 2.3GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS-11	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W

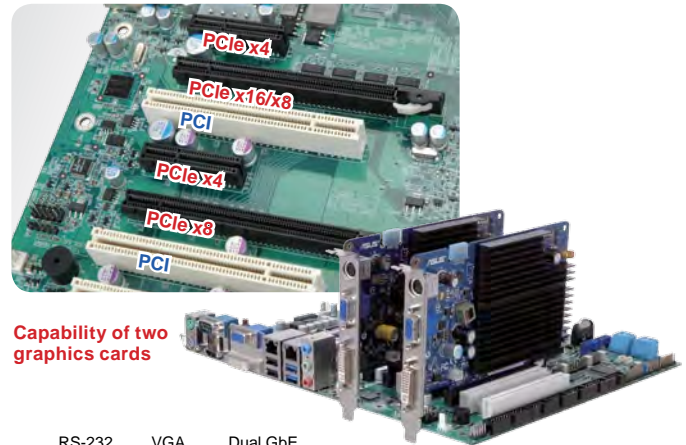
- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/Peripherals
- 6 Panel Solutions Introduction

# IMBA-C2060

ATX motherboard supports 32nm LGA1155 Intel® Xeon® E3/Core™ i3/ Celeron® CPU per Intel® C206, DDR3, VGA/DVI/HDMI, Dual Intel® PCIe GbE, USB 3.0, SATA 6Gb/s, Audio and RoHS



The IMBA-C2060 features PCIe x8 bifurcation supporting two I/O interface cards, two graphics cards or one graphics card plus one I/O interface card.

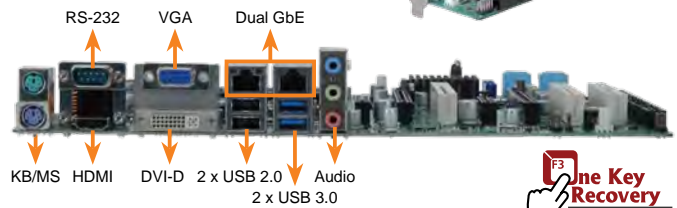


Capability of two graphics cards

## Specifications

- ◆ CPU: LGA1155 socket supports Intel® Xeon® E3 quad/dual, core™ i3 dual, Celeron® dual core processor
- ◆ System Chipset: Intel® C206
- ◆ Memory: Four 240-pin 1333/1066MHz dual-channel DDR3 SDRAM ECC and non-ECC unbuffered DIMM supported (system max. 32GB)
- ◆ BIOS: UEFI BIOS
- ◆ Ethernet: Intel® 82574L PCIe controller, Intel® 82579 PHY with Intel® AMT 7.0 supported
- ◆ Graphics Engine: Support for DX10.1 and OpenGL3.0, Full MPEG2, VC1, AVC Decode
- ◆ Display Output: Dual display supported
  - 1 x VGA
  - 1 x HDMI
  - 1 x DVI-D
- ◆ Super I/O: Fintek F81866
- ◆ Audio: Realtek ALC888 HD Audio codec (Line-in, Line-out, Mic)
- ◆ I/O Interface:
  - 5 x RS-232
  - 1 x LPT
  - 1 x PS/2 KB/MS
  - 2 x USB 3.0 by NEC D720200F1
- ◆ Front Audio: 2 x 5-pin header
- ◆ TPM: 2 x 10-pin header
- ◆ SMBus: 1 x 4-pin wafer
- ◆ I2C: 1 x 4-pin wafer
- ◆ Expansion:
  - 1 x PCIe x16/x8 slot
  - 2 x PCIe x4 slots
  - 1 x RS-422/485
  - 4 x SATA 3Gb/s with RAID 0/1/5/10 support
  - 2 x SATA 6Gb/s with RAID 0/1/5/10 support
  - 10 x USB 2.0 (2 by rear IO, 8 by pin header)
  - 1 x RS-232
  - 4 x SATA 3Gb/s with RAID 0/1/5/10 support
  - 2 x SATA 6Gb/s with RAID 0/1/5/10 support
  - 10 x USB 2.0 (2 by rear IO, 8 by pin header)

TPM 1.2 Support



## Features

1. LGA1155 Intel® Xeon® E3 and Intel® Core™ i3 processor supported
2. Dual-channel 1333 MHz DDR3 supports up to 32 GB memory
3. Intel® PCIe GbE with Intel® AMT 7.0 support
4. Providing high-speed graphics interface by two PCIe x8/PCIe x4 add-on cards
5. USB 3.0 and SATA 6Gb/s supported
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x IMBA-C2060 single board computer	
1 x I/O shielding (P/N: 45014-0028C0-01-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Slot	PCIe x16	PCIe x8	PCIe x4	PCI
Configuration 1	1	N/A	2	3
Configuration 2	N/A	2	2	3
Configuration 3	N/A	1	2	3

- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O: 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Fan Connector: 1 x 4-pin CPU fan connector, 2 x 3-pin system fan connector
- ◆ Power Supply: ATX power supply
- ◆ Power Consumption: 3.3V@1.61, 5V@2.79A 12V@0.50A, Vcore@5.59A, 5VSB@0.16A (Intel® Xeon® E3-1275 3.40GHz CPU with four 1333MHz 2GB DDR3 memory)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~95%, non-condensing
- ◆ Dimensions: 244mm x 305mm
- ◆ Weight: GW:1200g, NW: 700g

## Ordering Information

Part No.	Description
IMBA-C2060-R10	ATX motherboard supports 32nm LGA1155 Intel® Xeon® E3/ Core™ i3/Celeron® CPU per Intel® C206, DDR3, VGA/DVI/ HDMI, dual Intel® PCIe GbE, USB 3.0, SATA 6Gb/s, Audio and RoHS
19800-003100-200-RS	Dual ports USB cable with bracket
32102-000100-200-RS	SATA power cable
32205-003800-100-RS	RS-422/485 cable, 200mm
CF-1156A-RS	High performance LGA1155/LGA1156 cooling kit, 1U chassis compatible, 73W
CF-1156B-RS-11	High performance LGA1155/LGA1156 cooling kit, 95W
19800-000049-RS	LPT cable
19800-000051-RS	RS-232 cable, 230mm
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

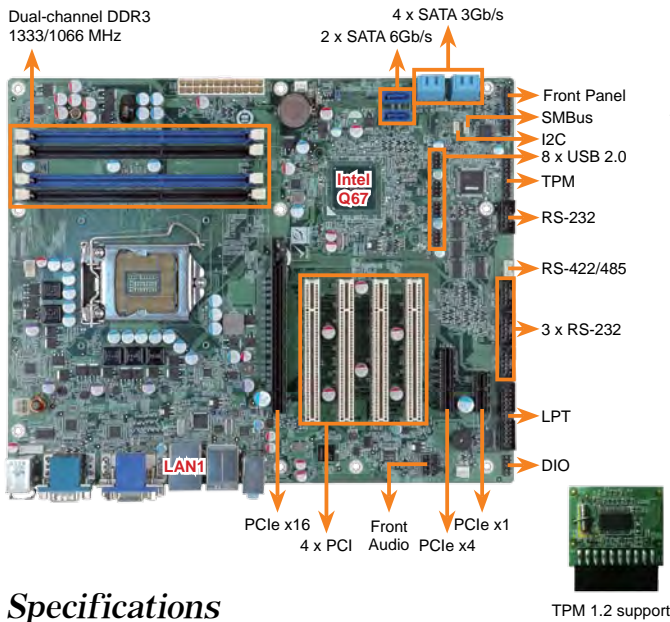
4 ORing Network Communication

5 Power Supply/ Peripherals

6 Panel Solutions Introduction

# IMBA-Q670-R21

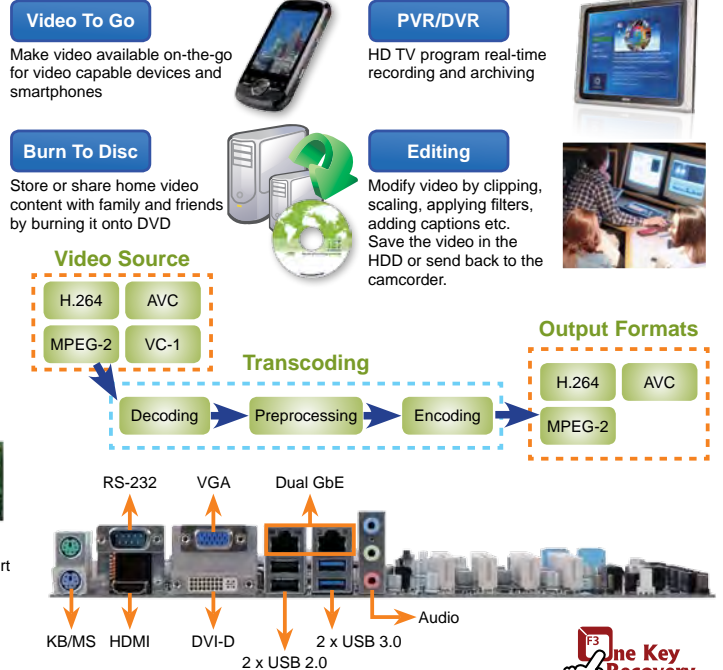
ATX motherboard supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® Q67, DDR3, VGA/DVI-D/HDMI, Dual Intel® PCIe GbE, USB 3.0, SATA 6Gb/s, HD Audio and RoHS



## Specifications

- ◆ CPU: LGA1155 socket supports Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor
- ◆ System Chipset: Intel® Q67
- ◆ Memory: Four 240-pin 1333/1066MHz dual-channel unbuffered DDR3 SDRAM DIMM supported (system max. 32GB)
- ◆ BIOS: UEFI BIOS
- ◆ Ethernet: Intel® 82583V PCIe controller; Intel® 82579 PHY with Intel® AMT 7.0 support (LAN2)
- ◆ Graphics Engine: Support for DX10.1 and OpenGL3.0; Full MPEG2, VC1, AVC Decode
- ◆ Display Output: Dual display supported; 1 x VGA; 1 x HDMI; 1 x DVI-D
- ◆ Super I/O: Fintek F81866
- ◆ Audio: Realtek ALC662 HD Audio codec (Line-in, Line-out, Mic)
- ◆ I/O Interface: 5 x RS-232; 1 x LPT; 1 x PS/2 KB/MS; 2 x USB 3.0 by NEC D720200F1; Front Audio: 1 x 10-pin header
- ◆ TPM: 1 x 20-pin header
- ◆ SMBus: 1 x 4-pin wafer
- ◆ I2C: 1 x 4-pin wafer
- ◆ Expansion: 1 x PCIe x16 slot; 1 x PCIe x4 slot; 4 x PCI slots
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O: 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Fan Connector: 1 x 4-pin CPU Fan Connector; 2 x 3-pin system Fan Connectors
- ◆ Power Supply: ATX/AT power supply
- ◆ Power Consumption: 3.3V@1.65A, 5V@6.31A, 12V@0.18A, Vcore@7.88A, 5VSb@0.15 (Intel® Core™ i5-2400 3.10GHz CPU with four 4 GB 1333MHz DDR3 memory)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~95%, non-condensing
- ◆ Dimensions: 244mm x 305mm
- ◆ Weight: GW:1200g, NW: 700g

## Evolution of Media Usages in Transcoding



## Features

1. LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor supported
2. Up to 32 GB 1333 MHz dual-channel DDR3 SDRAM
3. Intel® PCIe GbE with Intel® AMT 7.0 support
4. USB 3.0 and SATA 6Gb/s supported
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x IMBA-Q670 single board computer	
1 x I/O shielding (P/N: 45014-0028C0-01-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

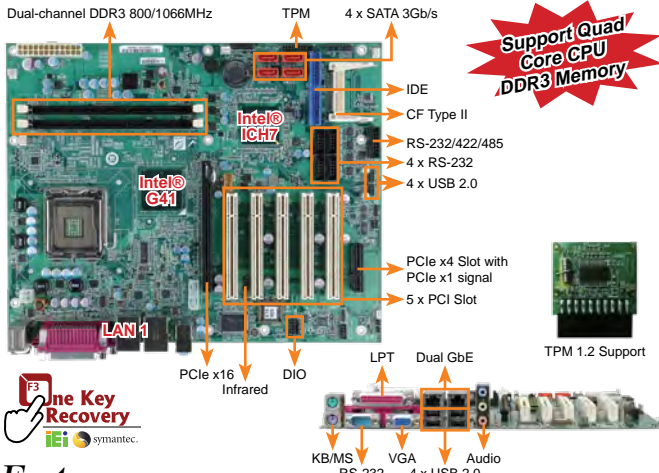
## Ordering Information

Part No.	Description
IMBA-Q670-R21	ATX motherboard supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® Q67, DDR3, VGA/DVI-D/HDMI, dual Intel® PCIe GbE, USB 3.0, SATA 6Gb/s, HD Audio and RoHS
19800-003100-100-RS	Dual-port USB cable with bracket
32102-000100-200-RS	SATA power cable
32205-003800-100-RS	RS-422/485 cable, 200mm
19800-000049-RS	LPT cable
19800-000051-RS	RS-232 cable, 230mm
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2120T	Intel® Core™ i3-2120T processor, LGA1155, dual core 2.6GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G630T	Intel® Pentium® G630T processor, LGA1155, dual core 2.3GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS-11	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W

- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/Peripherals
- 6 Panel Solutions Introduction

# IMBA-G410-R20

ATX motherboard supports Intel® LGA775 Core™2 Duo/Quad processor with 1333 MHz FSB, including VGA, Dual PCIe GbE, USB 2.0, COM, CF, SATA 3Gb/s and audio, RoHS



**Support Quad Core CPU, DDR3 Memory**



## Features

1. Supporte Intel® Core™2 Quad/Core™2 Duo/Pentium®4/Celeron® processor
2. Dual-channel 1066MHz DDR3 supports up to 8GB
3. Intel® GMA X4500 delivers an excellent blend of graphics performance
4. TPM V1.2 hardware security function supported by TPM module
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: LGA775 45nm Intel® Core™2 Duo, Core™2 Duo, Pentium® D, Celeron® processors at FSB 800/1066/1333MHz
- ◆ System Chipset: Intel® G41+ICH7
- ◆ Memory: Two 240-pin 4GB (max.) 800/1066MHz dual-channel DDR3 SDRAM DIMM supported (system max. 8GB)
- ◆ BIOS: AMI BIOS
- ◆ Ethernet: Dual Realtek RTL8111E PCIe GbE controllers LAN 1 with ASF 2.0 support
- ◆ Display Interface: Intel® GMA X4500 Supports DirectX 10/OpenGL 1.5 VGA display supports analog CRT up to 2048x1536 @75MHz
- ◆ Super I/O: Fintek F81865
- ◆ I/O Interface: 5 x RS-232, 1 x LPT, 2 x PS/2 KB/MS, 1 x CF Type II slot, 1 x RS-232/422/485 with auto flow control
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ TPM: 2 x10-pin header
- ◆ Infrared Interface: 1 x 5-pin header
- ◆ Expansion: 1 x PCIe x16 slot (supports PCIe x1/x16 add-on card and SDVO card), 1 x PCIe x4 slot (with x1 signal), 5 x PCI slot
- ◆ Watchdog Timer: Software programmable supports 1-255 sec. system reset
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Fan Connector: 1 x 4-pin CPU fan connector, 3 x 3-pin system fan connector
- ◆ Power Supply: ATX power supply
- ◆ Power Consumption: 12V@4.80A, -12V@0.06A, 5V@5.45A, 3.3V@0.16A (Intel® Q9550 2.83GHz with 2GB 1333MHz DDR3 memory)
- ◆ Temperature Operation: -10°C ~ 60°C
- ◆ Humidity: Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 244mm x 305mm
- ◆ Weight: GW:1200g/NW: 650g

## Packing List

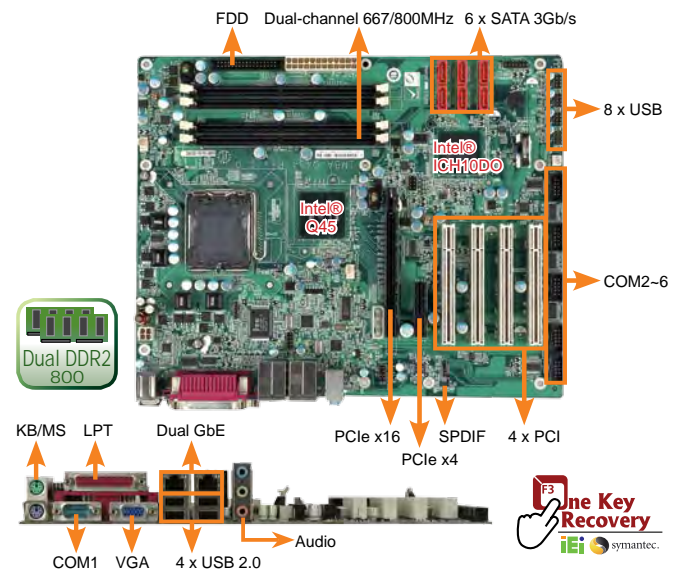
1 x IMBA-G410 single board computer	
2 x Dual RS-232 cable (P/N: 19800-003600-100-RS)	
1 x I/O shielding (P/N: 45014-0017C0-00-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
IMBA-G410-R20	ATX motherboard supports Intel® LGA775 Core™2 Duo/Quad processor with 1333 MHz FSB, VGA, PCIe x16, PCIe x4 (x1 signal), PCI, dual PCIe GbE, USB 2.0, COM, CF, SATA 3Gb/s and audio, RoHS
32200-000052-RS	IDE cable
32102-000100-200-RS	SATA power cable
19800-000100-200-RS	Quad ports USB cable with bracket
19800-003100-200-RS	Dual ports USB cable with bracket
19800-000058-RS	RS-232/422/485 cable
CF-775A-RS	CPU cooler for 130W
CF-520-RS-R11	CPU cooler for 115W
CF-775B-RS	1U CPU cooler for 90W
SDVO-100DVI-R10	PCIe x16 DVI Output SDVO card supports dual display (IEI CPU board only)
SDVO-100VGA-R10	PCIe x16 VGA Output SDVO card supports dual display (IEI CPU board only)
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

# IMBA-Q454

ATX motherboard supports 45nm Intel® LGA775 Core™2 Duo/Quad with a 1333/1066/800MHz FSB, dual Intel® GbE, six SATA 3Gb/s with RAID, six COM ports, USB and Audio



**Dual DDR2 800**



## Features

1. Designed for Intel® Core™2 Quad/Duo processor Q9000/E8000/E7000 series in the LGA775 with a 1333/1066/800 MHz FSB
2. Intel® GbE LAN with Intel® AMT 5.0 supported
3. Intel® Q45 chipset integrating high-performance graphics with DX10 and OpenGL 2.1. External graphics card with PCIe 2.0 and 1x16 PEG support
4. PCIe x16 expansion slot and VGA output for dual display support
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: LGA 775 45nm Intel® Core™2 Duo/Quad, Celeron® CPU with a 1333/1066/800 MHz FSB
- ◆ System Chipset: Intel® Q45 + Intel® ICH10DO
- ◆ BIOS: AMI BIOS
- ◆ System Memory: Four 240-pin 800/667 MHz dual-channel DDR2 SDRAM DIMM support up to 16 GB
- ◆ Ethernet Chipset: LAN 1: Intel® 82567LM (Intel® AMT 5.0 supported), LAN 2: Intel® 82574L
- ◆ IO Interface: 6 x RS-232, 1 x VGA, 1 x LPT, 2 x RJ-45, 12 x USB 2.0, 2 x PS/2 for KB & MS, 1 x Audio jack for Line-in/Line-out/Mic-in
- ◆ Expansion: One PCIe x16, One PCIe x4, Four PCI
- ◆ Graphics Integrated: Intel® GMA 4500 support for Microsoft DirectX® 10, Shader Model 4.0 and OpenGL® 2.0
- ◆ Display Output: Analog CRT and PEG x 16
- ◆ Super IO: ITE IT8718F
- ◆ Digital I/O: 8-bit (4-bit input/4-bit output)
- ◆ Storage: 1 x FDD, 6 x SATA 3Gb/s (with RAID 0, 1, 5, 10 function)
- ◆ Audio: Realtek ALC888
- ◆ TPM: iTPM1.2
- ◆ Watchdog Timer: Software programmable supports 1-255 sec. system reset
- ◆ Power Supply: ATX supported
- ◆ Fan connector: 1 x 4-pin CPU fan, 1 x 4-pin chipset fan, 1 x 3-pin system fan
- ◆ Power Consumption: 3.3V@2.64A, 5V@5.4A, 12V@0.28A, Vcore@3.45 (Intel® Core 2 Duo E8500 3.16 GHz with four 800 MHz 2 GB DDR2)
- ◆ Temperature: Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity: Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 305 mm x 244 mm
- ◆ Weight: GW: 1200 g/NW: 600 g

## Packing List

1 x IMBA-Q454 single board computer	1 x One Key Recovery CD
2 x Dual RS-232 cable (P/N: 19800-000051-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45002-450903-00-RS)	1 x Utility CD
6 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

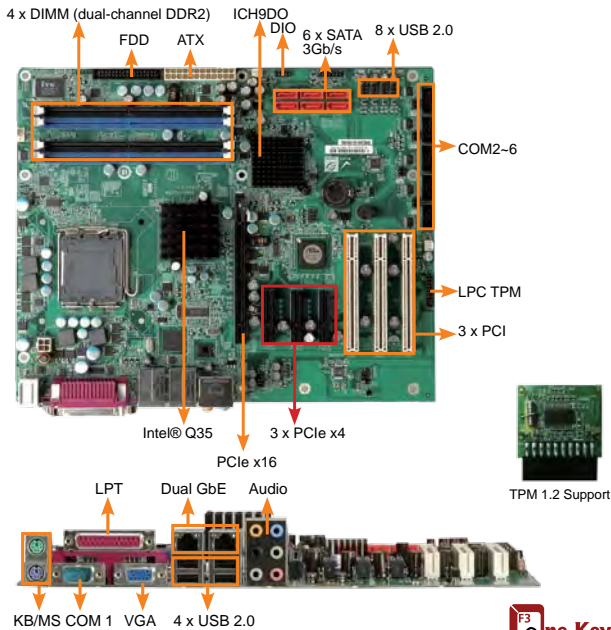
## Ordering Information

Part No.	Description
IMBA-Q454-R10	ATX motherboard supports 45nm Core™2 Duo/Quad with a 1333/1066/800 MHz FSB, Intel® Q45 & ICH10DO platform, dual Intel® GbE, six SATA 3Gb/s with RAID, six COM ports, USB and audio
CF-775A-RS	CPU cooler
CF-520-RS-R11	CPU cooler
19800-003100-200-RS	Dual USB cable
19800-000100-200-RS	Four USB cable
SDVO-100VGA-R10	PCIe x16 VGA output SDVO card support dual display (IEI CPU board only)
SDVO-100DVI-R10	PCIe x16 DVI output SDVO card support dual display (IEI CPU board only)
32229-000100-100-RS	FDD cable
32102-000100-100/200-RS	SATA power cable



# IMBA-XQ354-R11

LGA 775 45nm Intel® Core™2 Quad, Core™2 Duo, Celeron® CPU with a 1333/1066/800MHz FSB



## Features

1. ATX form factor supports Intel® Q35/ICH9DO
2. Supports Intel® Core™2 Quad/Duo 45nm processor with a 1333/1066/800 MHz FSB
3. PLX PCIe switch for three PCIe x4 add-on cards
4. Six SATA 3Gb/s with Intel® Matrix Storage Technology supported
5. Intel® PCIe GbE with Intel® AMT 3.0 supported
6. TPM1.2 IT security solution supported
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
LGA 775 45nm Intel® Core™2 Quad, Core™2 Duo, Celeron® CPU with a 1333/1066/800 MHz FSB
- ◆ FSB  
1333/1066/800 MHz
- ◆ System Chipset  
Intel® Q35  
Intel® ICH9DO
- ◆ BIOS  
AMI BIOS
- ◆ Memory  
4 x 240-pin 800/667 MHz dual-channel DDR2 SDRAM DIMM support up to 8 GB
- ◆ Graphics  
Integrated Graphics Device from Q35
- ◆ Display Output  
Analog display (VGA)
- ◆ Ethernet  
Intel® 82566DM (PHY) + ICH9-DO (MAC) for Intel® AMT support  
Intel® 82573L (MAC+PHY) PCIe GbE
- ◆ Super IO  
ITE IT8718F
- ◆ Audio  
Realtek ALC888 HD Audio codec
- ◆ Digital I/O  
8-bit digital I/O 4-bit input/4-bit output
- ◆ IO Interface  
1 x KB/MS  
1 x FDD  
6 x SATA 3Gb/s  
6 x RS-232 COM Port (2 by super IO, 4 by Fintek F81216DG)
- ◆ Expansions  
1 x PCIe x16  
3 x PCIe x4 (by PLX PEX8518)  
3 x PCI
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ TPM  
2 x 10-pin LPC header
- ◆ Power Supply  
ATX supported
- ◆ Fan Connector  
1 x 4-pin CPU fan  
2 x 3-pin system fan
- ◆ Power Consumption  
3.3V@2.96A, 5V@6.92A, 12V@2.77A (Intel® Core™2 Duo E6850 CPU with 800 MHz 8GB DDR2 DIMM)
- ◆ Temperature  
Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity  
Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 305 mm x 244 mm
- ◆ Weight: GW: 1200 g/NW: 600 g

## Packing List

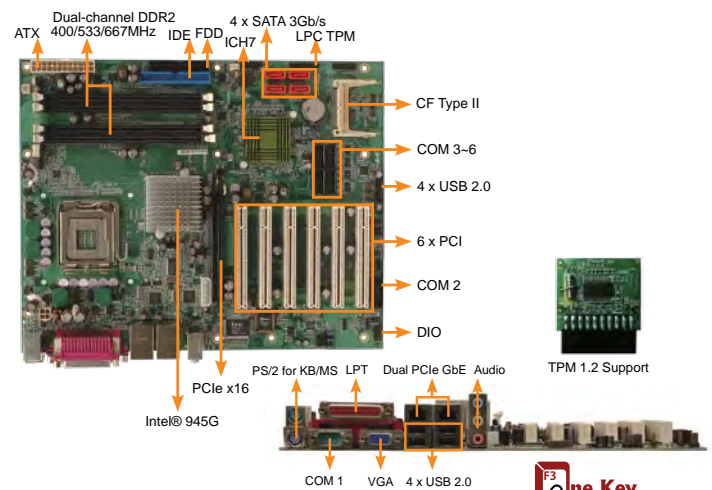
1 x IMBA-XQ354 single board computer	1 x One Key Recovery CD
1 x I/O shielding (P/N: 45014-0025C0-00-RS)	1 x Mini jumper pack
2 x Dual RS-232 cable (P/N: 19800-003600-100-RS)	1 x Utility CD
1 x RS-232 cable (P/N: 19800-000114-RS)	1 x QIG
6 x SATA cable (P/N: 32102-000100-200-RS)	

## Ordering Information

Part No.	Description
IMBA-XQ354-R11	ATX motherboard with Intel® LGA775, Core™2 Quad CPU, Celeron® with a 1333/1066/800 MHz FSB, PCIe x16, PCIe x4, PCIe GbE, SATA 3Gb/s and audio
19800-003100-200-RS	Dual USB cable
19800-000100-200-RS	Four USB cable
32200-000063-RS	RS-232/422/485 cable
CF-775A-RS CF-520-RS-R11	CPU cooler
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
SDVO-100VGA-R10	PCIe x16 VGA output SDVO card supports dual display (IEI CPU board only)
SDVO-100DVI-R10	PCIe x16 DVI output SDVO card supports dual display (IEI CPU board only)

# IMBA-9454-R40

ATX form factor with Intel® Core™2 Duo, Pentium® D/Pentium® 4/Celeron® D CPU FSB 533/800/1066 MHz, VGA, dual-channel DDR2, FDD, LPT, four SATA 3Gb/s, eight USB 2.0 and six COM



## Features

1. Intel® Core™2 Duo, Pentium® D, Pentium® 4, Celeron® D processor in a LGA 775 package
2. Integrated Intel® GMA950 graphics engine that offers adequate display quality via VGA interface
3. Dual-channel 400/533/667 MHz DDR2 SDRAM socket supports up to 4 GB
4. TPM V1.2 hardware security function supported
5. Four SATA 3Gb/s, eight USB 2.0, audio and ATX power only
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
LGA 775 Intel® Core™2 Duo, Pentium® 4/  
Celeron® D processor, FSB 533/800/1066 MHz
- ◆ System Chipset  
Intel® 945G + ICH7
- ◆ BIOS  
AMI BIOS
- ◆ System Memory  
4 x 240-pin dual-channel 400/533/667 MHz  
DDR2 (system max. 4 GB)
- ◆ Ethernet  
Dual PCIe Realtek RTL8111E GbE controller
- ◆ I/O Interface  
8 x USB 2.0  
4 x SATA 3Gb/s  
1 x LPT  
1 x FDD  
2 x PS/2 for KB/MS  
1 x IDE  
5 x RS-232  
1 x RS-232/422/485  
1 x CF Type II  
1 x 20-pin LPC for TPM
- ◆ Expansions  
One PCIe x16  
(Support PCIe x1/x16 PCIe add-on cards)  
6 x PCI
- ◆ Infrared Interface  
1 x Infrared interface by pin header
- ◆ Super I/O  
ITE IT8712F
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input/4-bit output
- ◆ Audio  
Realtek ALC655 with AC'97 codec
- ◆ Display  
VGA integrated in Intel® 945G
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Power Supply  
ATX support
- ◆ Power Consumption  
5V@2.86A, 12V@0.39A, 3.3V@6.24A,  
Vcore@1.05A (Intel® Core™2 Duo E7400 2.8  
GHz/1066 MHz CPU with two 800 MHz 2GB DDR2)
- ◆ Temperature  
Operating: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity  
Operating: 5% ~ 95%, non-condensing
- ◆ Dimensions  
305 (L) mm x 244 (W) mm
- ◆ Weight  
GW: 1200 g/NW: 650 g

## Packing List

1 x IMBA-9454 single board computer	1 x Mini jumper pack
1 x IDE cable (P/N: 32200-000052-RS)	1 x Utility CD
2 x Dual RS-232 cable (P/N: 19800-003600-100-RS)	1 x QIG
1 x SATA power cable (P/N: 32102-000100-200-RS)	
1 x I/O shielding (P/N: 45014-0017C0-00-RS)	
2 x SATA cable (P/N: 32801-000703-200-RS)	
1 x One Key Recovery CD	

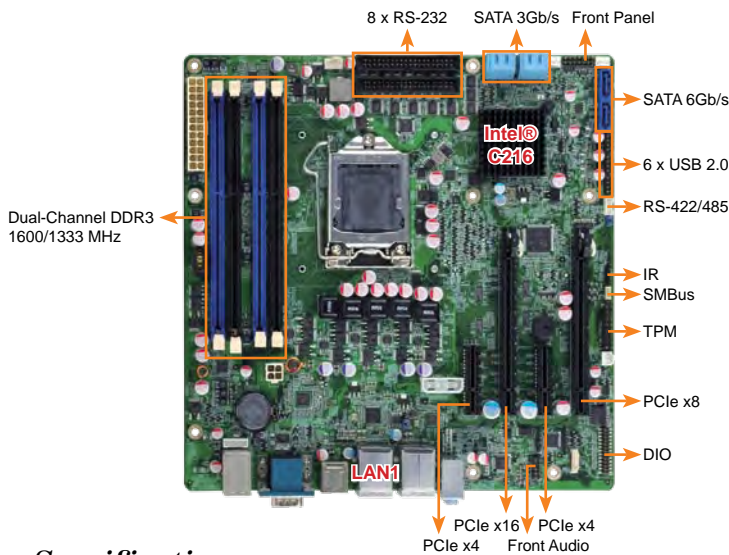
## Ordering Information

Part No.	Description
IMBA-9454G-R40	ATX motherboard with Intel® LGA 775 Core™2 Duo, Pentium® D/Pentium® 4/Celeron® D processor FSB 533/800/1066MHz, PCIe GbE, SATA 3Gb/s and Audio
32229-000100-100-RS	FDD cable
19800-003100-200-RS	Dual USB cable
19800-000100-200-RS	Four USB cable
32200-000063-RS	RS-232/422/485 cable
CF-775A-RS/CF-520-RS-R11	CPU cooler
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
SDVO-100VGA-R10	PCIe x16 VGA output SDVO card supports dual display (IEI CPU board only)
SDVO-100DVI-R10	PCIe x16 DVI output SDVO card supports dual display (IEI CPU board only)

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4 ORing Network Communication  
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6 Panel Solutions Introduction

# IMB-C2160

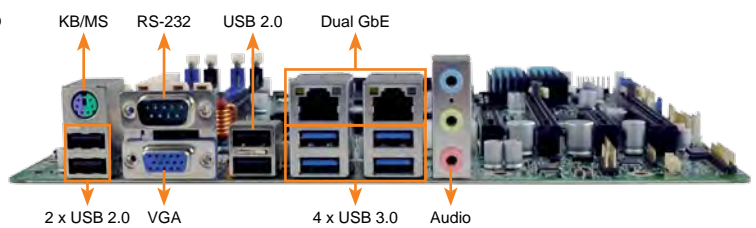
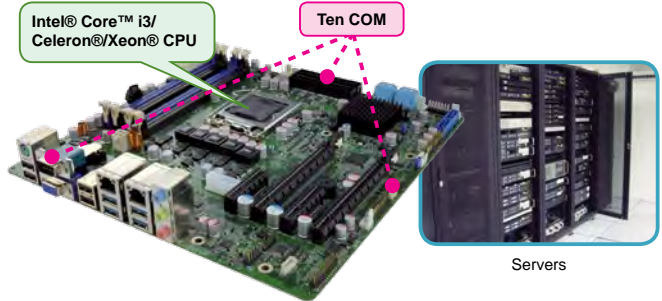
microATX Motherboard Supports 22nm LGA1155 Intel® Xeon® E3/Intel® Core™ i3 CPU with Intel® C216, DDR3, VGA, Dual Intel® PCIe GbE, USB 3.0, SATA 6Gb/s, Ten Serial Ports, HD Audio and RoHS



## Ten COM ports in server board

**New**

The premium server IMB-C2160 implement rich COM ports and compatible cost-effective Intel Core i3-2120 and Celeron G540 processors. It can fulfill application server and communication server that rich COM ports needed.



## Specifications

- ◆ CPU  
LGA1155 socket supports Intel® Xeon® E3 and Intel® Core™ i3 quad/dual core processors
- ◆ System Chipset  
Intel® C216
- ◆ Memory  
Four 240-pin 1600/1333MHz dual-channel DDR3 SDRAM ECC and non-ECC unbuffered DIMMs supported (system max. 32GB)
- ◆ BIOS  
UEFI BIOS
- ◆ Ethernet  
Intel® 82579 PHY with Intel® AMT 8.0 supported  
Intel® 82574L PCIe controller
- ◆ Graphics Engine  
Supports DX10.1 and OpenGL 3.0  
Full MPEG2, VC1, AVC Decode
- ◆ Display Output  
VGA integrated in the Intel® C216 (up to 2048 x 1536 @ 75Hz)
- ◆ Super I/O  
Fintek F81866
- ◆ Audio  
Realtek ALC662 HD audio codec (Line-in, Line-out, Mic)
- ◆ I/O interface
 

9 x RS-232	1 x RS-422/485
4 x USB 3.0 (rear I/O)	10 x USB 2.0 (4 on rear, 6 by pin header)
4 x SATA 3Gb/s	2 x SATA 6Gb/s (RAID 0/1/5/10 support)
1 x PS/2 KB/MS	
- ◆ Front Audio  
2 x 5-pin header
- ◆ Front Panel  
1 x Front panel connector (power LED, HDD LED, speaker, power button, reset button)
- ◆ TPM
- ◆ SMBus  
1 x 4-pin wafer
- ◆ I2C  
1 x 4-pin wafer
- ◆ Infrared Interface  
1 x 5-pin infrared by pin header
- ◆ Expansions  
1 x PCIe x16 slot  
1 x PCIe x16 slot (with x8 signal)  
2 x PCIe x4 slot
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O  
24-bit Digital I/O (24-bit GPIO is for programming I/O)
- ◆ Fan Connector  
1 x 4-pin CPU fan connector  
2 x 3-pin system fan connector
- ◆ Power Supply  
ATX power supply
- ◆ Power Consumption  
3.3V@0.96A, 5V@4.33A, 12V@3.5A, 12V@2.09A, 5VSB@0.1A (3.10GHz Intel® Xeon® CPU with two 1333MHz 4GB DDR3 memory)
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
244 mm x 244 mm
- ◆ Weight  
GW: 1200g/NW: 700g

## Features

1. LGA1155 Intel® Xeon® E3 and Intel® Core™ i3 processors supported
2. Dual-channel DDR3 1600/1333MHz supports up to 32GB
3. Intel® PCIe GbE with Intel® AMT 8.0 supported
5. Support PCI-Express generation 3.0 at 8GT/s I/O bandwidth
5. USB 3.0 and SATA 6Gb/s supported
6. Supports much scalable serial ports
7. High-speed interface usage for two PCIe x8/two PCIe x4 add-on cards
8. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x IMB-C2160 single board computer	
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0034C0-00-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
IMB-C2160-R10	microATX motherboard supports 22nm LGA1155 Intel® Xeon® E3/Intel® Core™ i3 CPU with Intel® C216, DDR3, VGA, dual Intel® PCIe GbE, USB 3.0, SATA 6Gb/s, ten serial ports, HD Audio and RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32006-000300-100-RS	Male PS/2 KB/MS Y-cable w/o bracket, 12cm(KB)+14cm(MS)
32205-003800-100-RS	RS-422/485 cable, 200mm
32205-001203-100-RS	Quad-port RS-232 cable without bracket, 400/400/400/400mm
32102-000100-200-RS	SATA power cable
19800-000075-RS	PS/2 KB/MS Y-cable with bracket, 6-pin header, 220mm
CF-1156A-RS	High performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS-11	High performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W
TPM-IN01-R11	20-pin Infineon TPM module, SW management tool, firmware V3.17

1  
Industrial Computing Solutions

2  
Video Capture Solutions

3  
Embedded Computing Solutions

4  
ORing Network Communication

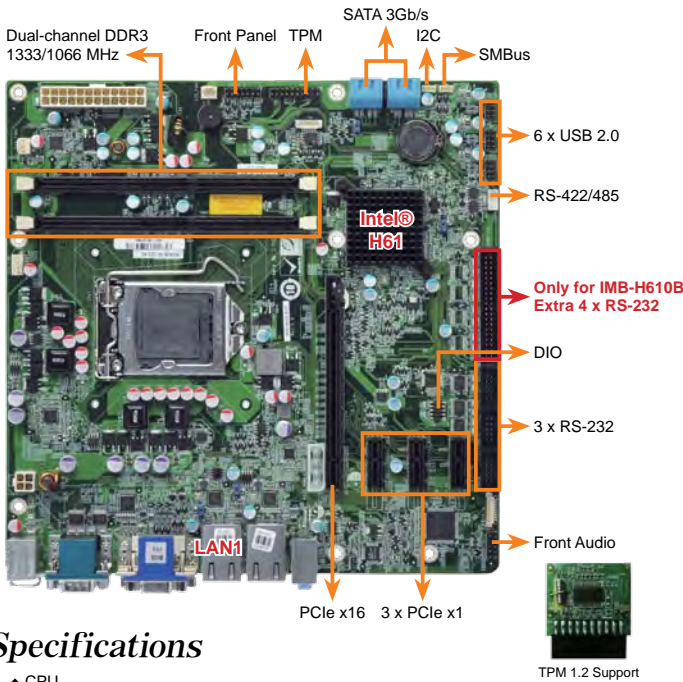
5  
Power Supply/Peripherals

6  
Panel Solutions Introduction



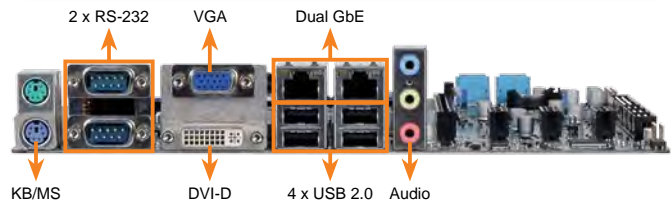
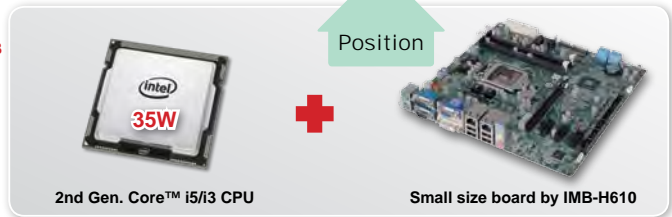
# IMB-H610A IMB-H610B

microATX Motherboard Supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® H61, DDR3, VGA/DVI-D, Dual Realtek PCIe GbE, USB 2.0, Six COMs, SATA 3Gb/s, HD Audio and RoHS  
microATX Motherboard Supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® H61, DDR3, VGA/DVI-D, Dual Realtek PCIe GbE, USB 2.0, Ten COMs, SATA 3Gb/s, HD Audio and RoHS



## Application Level

The IMB-H61 platform with Intel® 35W CPU is cost-efficient and fulfills common application needs.



## Specifications

- ◆ CPU  
LGA1155 socket supports Intel® Core™ i7/i5/i3 quad/dual, Pentium® dual and Celeron® dual/single core processors
- ◆ System Chipset  
Intel® H61
- ◆ Memory  
Two 240-pin 1333/1066 MHz dual-channel unbuffered DDR3 SDRAM DIMMs supported (system max. 16GB)
- ◆ BIOS  
UEFI BIOS
- ◆ Ethernet  
Dual Realtek RTL8111E PCIe GbE controller (LAN1 with ASF 2.0 support)
- ◆ Graphics Engine  
Intel® HD Graphics 2000/3000 (based on CPU type)  
Supports DX10.1 and OpenGL 3.0  
Full MPEG2, VC1, AVC Decode
- ◆ Display Output  
Dual display supported  
1 x VGA (up to 2048 x 1536 @75Hz)  
1 x DVI-D (up to 1920 x 1200 @60Hz)
- ◆ Super I/O  
Fintek F81866
- ◆ Audio  
Realtek ALC662 HD audio codec (Line-in, Line-out, Mic)
- ◆ I/O Interface
  - 1 x RS-422/485
  - 4 x SATA 3Gb/s without RAID & AHCI
  - 1 x PS/2 KB/MS
  - 10 x USB 2.0 (4 by rear IO, 6 by pin header)
  - 5 x RS-232 (for IMB-H610A-R10) / 9 x RS-232 (for IMB-H610B-R10)
- ◆ Front Audio  
1 x 10-pin header
- ◆ Front Panel  
1 x Front panel connector (power LED, HDD LED, speaker, power button, reset button)
- ◆ TPM  
1 x 20-pin header
- ◆ SMBus  
1 x 4-pin wafer
- ◆ I2C  
1 x 4-pin wafer
- ◆ Expansions  
1 x PCIe x16 slot  
3 x PCIe x1 slot
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O  
8-bit programmable I/O
- ◆ Fan Connector  
1 x 4-pin CPU fan connector  
2 x 3-pin system fan connector
- ◆ Power Supply  
ATX/AT power supply
- ◆ Power Consumption  
3.3V@1.75A, 5V@6.61A, Vcore@3.68A, 12V@0.09A, 5sb@0.12A (Intel® 2.60GHz CPU with two 1333MHz 4GB DDR3 memory)
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
244 mm x 244 mm
- ◆ Weight  
GW: 1200g/NW: 680g

## Features

1. LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor supported
2. Up to 16 GB 1333 MHz dual-channel DDR3 SDRAM
3. Intel® HD Graphics technology integrates high-performance graphics and media processing
4. TPM V1.2 hardware security provided by the TPM module
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x IMB-H610 single board computer	
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0008C0-00-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
IMB-H610A-R10	microATX motherboard supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® H61, DDR3, VGA/DVI-D, dual Realtek PCIe GbE, USB 2.0, 6 COM, SATA 3Gb/s, HD Audio and RoHS
IMB-H610B-R10	microATX motherboard supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® H61, DDR3, VGA/DVI-D, dual Realtek PCIe GbE, USB 2.0, 10 COM, SATA 3Gb/s, HD Audio and RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32205-003800-100-RS	RS-422/485 cable, 200mm
32102-000100-200-RS	SATA power cable
32205-001203-100-RS	Quad-port RS-232 cable without bracket, 400/400/400/400mm
19800-003600-100-RS	Dual-port RS-232 cable
19800-000114-RS	Single-port RS-232 cable
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2120T	Intel® Core™ i3-2120T processor, LGA1155, dual core 2.6GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G630T	Intel® Pentium® G630T processor, LGA1155, dual core 2.3GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS-11	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

4 ORing Network Communication

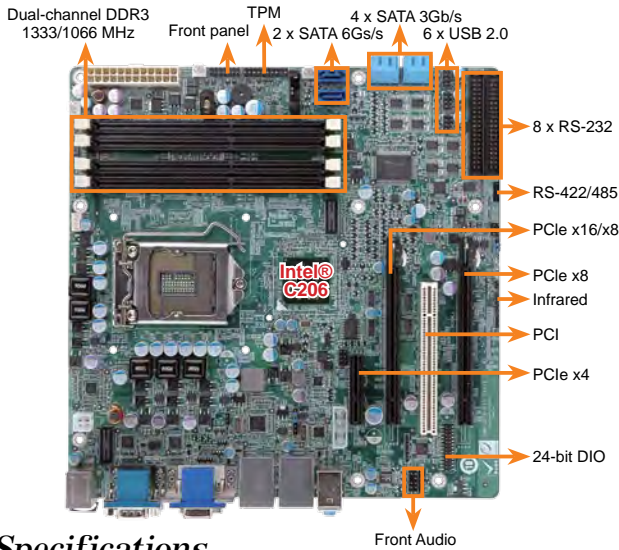
5 Power Supply/Peripherals

6 Panel Solutions Introduction

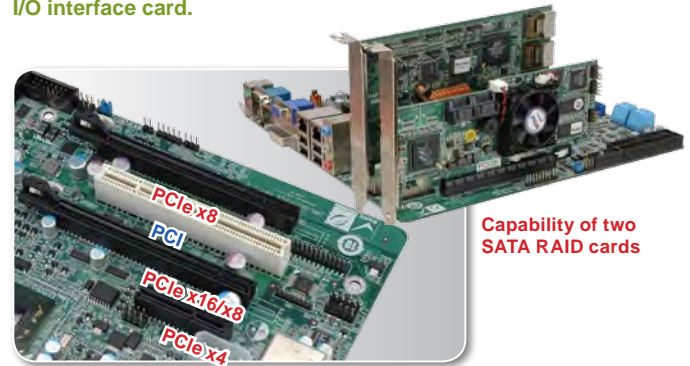


# IMB-C2060

microATX motherboard supports 32nm LGA1155 Intel® Xeon® E3/Core™ i3/ Celeron® CPU per Intel® C206, DDR3, VGA/DVI/HDMI, dual Intel® PCIe GbE, USB 3.0, COM, SATA 6Gb/s, Audio and RoHS



The two PCIe x8 interfaces of the IMB-C2060 can support two I/O interface cards, two graphic cards or one graphic card plus one I/O interface card.

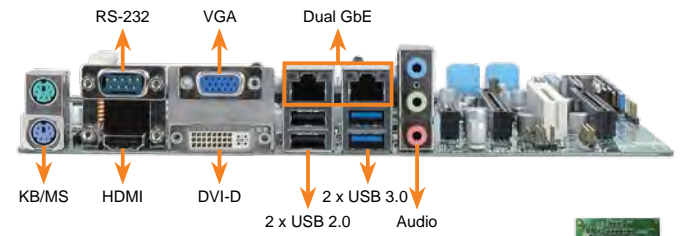


## Specifications

- ◆ CPU: LGA1155 socket supports Intel® Xeon® E3 quad/dual, Core™ i3 dual, Celeron® dual core processor
- ◆ System Chipset: Intel® C206
- ◆ Memory: Four 240-pin 1333/1066MHz dual-channel DDR3 SDRAM ECC and non-ECC unbuffered DIMM supported (system max. 32GB)
- ◆ BIOS: UEFI BIOS
- ◆ Ethernet: Intel® 82574L PCIe controller, Intel® 82579 PHY with Intel® AMT 7.0 supported
- ◆ Graphics Engine: Support for DX10.1 and OpenGL3.0, Full MPEG2, VC1, AVC Decode
- ◆ Display Output: Dual display supported, 1 x VGA, 1 x HDMI, 1 x DVI-D
- ◆ Super I/O: Fintek F81866
- ◆ Audio: Realtek ALC888 HD Audio codec (Line-in, Line-out, Mic)
- ◆ I/O Interface: 9 x RS-232, 4 x SATA 3Gb/s with RAID 0/1/5/10 support, 1 x RS-422/485, 2 x SATA 6Gb/s with RAID 0/1/5/10 support, 1 x PS/2 KB/MS, 2 x USB 3.0 by NEC D720200F1, 10 x USB 2.0 (2 by Rear IO, 8 by pin header)
- ◆ Front Audio: 2 x 5-pin header
- ◆ TPM: 2 x 10-pin header
- ◆ SMBus: 1 x 4-pin wafer
- ◆ Expansions: 1 x PCIe x16/x8 slot, 1 x PCIe x16 slot (with x8 signal), 1 x PCIe x4 slot, 1 x PCI slot

PCIe and PCI Slot Combination Table				
Slot	PCIe x16	PCIe x8	PCIe x4	PCI
Configuration 1	1	N/A	1	1
Configuration 2	N/A	2	1	1
Configuration 3	N/A	1	1	1

- ◆ Watchdog Timer: Software programmable supports 1-255 sec. system reset
- ◆ Digital I/O: 24-bit digital I/O (12-bit input, 12-bit output)
- ◆ Fan Connector: 1 x 4-pin CPU fan connector, 1 x 3-pin NB fan connector, 2 x 3-pin system fan connector
- ◆ Power Supply: ATX Power Supply
- ◆ Power Consumption: 3.3V@1.75A, 5V@6.61A, 12V@3.68A, 12V@0.09A, 5Vsb@0.12 (Intel® Core™ i3-2100 2.60GHz CPU with four 1333MHz 4GB DDR3 memory)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 244mm x 244mm
- ◆ Weight: GW: 1200g/NW: 680g



## Features

1. LGA1155 Intel® Xeon® E3 and Intel® Core™ i3 processor supported
2. Dual-channel 1333MHz DDR3 supports up to 32GB
3. Intel® PCIe GbE with Intel® AMT 7.0 support
4. Providing high-speed graphics interface by two PCIe x8/two PCIe x4 add-on cards
5. USB 3.0 and SATA 6Gb/s supported
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x IMB-C2060 single board computer	
2 x Quad-port RS-232 cable (P/N: 32205-001203-100-RS)	
1 x I/O shielding (P/N: 45014-0028C0-01-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
IMB-C2060-R10	microATX motherboard supports 32nm LGA1155 Intel® Xeon® E3/Core™ i3/Celeron® CPU per Intel® C206, DDR3, VGA/DVI/HDMI, dual Intel® PCIe GbE, USB 3.0, COM, SATA 6Gb/s, Audio and RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32102-000100-200-RS	SATA power cable
32205-003800-100-RS	RS-422/485 cable, 200mm
CF-1156A-RS	High performance LGA1155/LGA1156 cooling kit, 1U chassis compatible, 73W
CF-1156B-RS-11	High performance LGA1155/LGA1156 cooling kit, 95W
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

4 ORing Network Communication

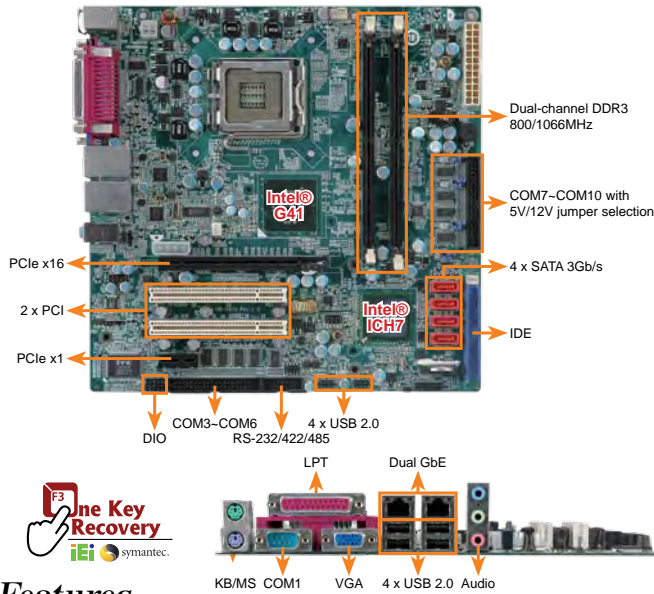
5 Power Supply/Peripherals

6 Panel Solutions Introduction



# IMB-G41A

microATX motherboard supports 45nm LGA775 Intel® Core™2 Quad CPU with a 1333/1066/800MHz FSB, PCIe x16, PCIe x1, two PCI, 10 COM, dual PCIe GbE, SATA 3Gb/s, audio and RoHS



## Features

1. Support for the next-generation 45nm Intel® Core™2 processor family with faster system performance
2. Intel® GMA X4500 delivers an excellent blend of graphics performance
3. Integrated VGA and PCIe x16 SDVO add-on card for dual display
4. Diverse I/O interfaces, including 10 COM ports, four SATA 3Gb/s ports
5. Support dual-channel DDR3 SDRAM DIMM up to 8GB (max.)
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: LGA775 45nm Intel® Core™2 Quad, Core™2 Duo, Pentium® D, Celeron® processor with a 800/1066/1333MHz FSB
- ◆ System Chipset: Intel® G41+ICH7
- ◆ Memory: Two 240-pin 4GB (max.) 800/1066MHz dual-channel DDR3 SDRAM DIMM supported (System max. 8GB)
- ◆ BIOS: AMI BIOS
- ◆ Ethernet: Dual Realtek RTL8111PC PCIe GbE controller
- ◆ Display Interface: Intel® GMA X4500 Supports DirectX 10/OpenGL 1.5 One VGA supports analog CRT up to 2048x1536@75MHz
- ◆ Super I/O: ITE IT8783F
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ I/O Interface: 1 x IDE, 8 x USB 2.0, 1 x LPT, 4 x SATA 3Gb/s, 2 x PS/2 for KB/MS, 1 x RS-232/422/485, 9 x RS-232 (COM7~COM10 with 5V/12V jumper selection)
- ◆ Infrared Interface: 1 x Infrared connector by 5-pin header
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Expansions: 1 x PCIe x16 slot, 1 x PCIe x1 slot, 2 x PCI slot
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Fan Connector: 1 x 4-pin CPU fan connector, 1 x 3-pin northbridge fan connector, 1 x 3-pin system fan connector
- ◆ Power Supply: ATX power
- ◆ Power Consumption: 5V@7.42A, 3.3V@0.15A, 12V@0.27A, Vcore@3.03A 3.16GHz (Intel® Core™2 Duo E8500 and 4GB 1066MHz DDR3)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Humidity: Operating: 5% ~ 95%, non-condensing
- ◆ Dimensions: 244mm x 244mm
- ◆ Weight: GW: 1200g/NW: 700g

## Packing List

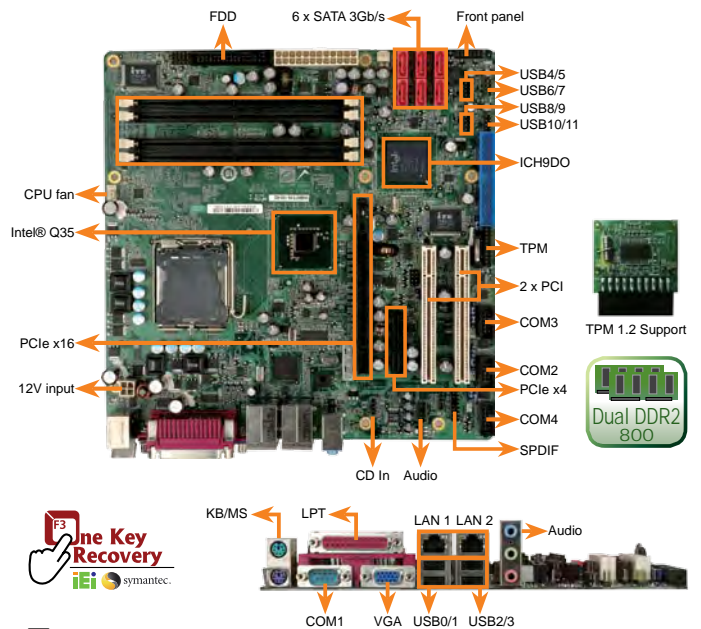
1 x IMB-G41A single board computer	
2 x Quad-port RS-232 cable (P/N: 32205-001203-100-RS)	
1 x I/O shielding (P/N: 45014-0017C0-00-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
IMB-G41A-R10	microATX motherboard supports 45nm LGA775 Intel® Core™2 Quad CPU with a 1333/1066/800MHz FSB, PCIe x16, PCIe x1, two PCI, ten COM, dual PCIe GbE, SATA 3Gb/s and audio, RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32102-000100-200-RS	SATA power cable
32200-000063-RS	RS-232/422/485 cable
32200-000052-RS	ATA66 IDE flat cable
CF-775A-RS	CPU cooler for 130W
CF-520-RS-R11	CPU cooler for 115W
CF-775B-RS	1U CPU cooler for 90W
SDVO-100VGA-R10	PCIe x16 VGA Output SDVO card supports dual display (IEI CPU board only)
SDVO-100DVI-R10	PCIe x16 DVI Output SDVO card supports dual display (IEI CPU board only)

# IMB-Q35A

microATX motherboard supports 45nm LGA775 Intel® Core™2 Duo CPU with a 800/1066/1333 MHz FSB, Intel® Q35 & ICH9DO platform, dual Intel® PCIe GbE, SATA 3Gb/s with RAID functions



## Features

1. microATX and RoHS compliant
2. Supports LGA775 Intel® Core™2 Duo, Core™2 Duo, 45 nm processor with a 1333/1066/800 MHz FSB
3. Intel® Q35 & ICH9DO platform
4. Six SATA 3Gb/s with Intel® Matrix Storage Technology supported
5. Intel® PCIe GbE with Intel® AMT 3.0 supported
6. TPM1.2 IT security solution supported
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: LGA775 45nm Intel® Core™2 Duo, Core™2 Duo, Celeron® CPU with a 1333/1066/800 MHz FSB
- ◆ System Chipset: Intel® Q35 + ICH9DO
- ◆ BIOS: AMI BIOS
- ◆ System Memory: 4 x 240-pin 2 GB (max.) 800/667 MHz dual-channel DDR2 SDRAM DIMM (system max. 8 GB)
- ◆ Ethernet: Dual GbE LAN1: Intel® 82573L (MAC + PHY) LAN2: Intel® 82566DM (PHY) with Intel® AMT support
- ◆ I/O Interface: 4 x RS-232, 12 x USB 2.0, 1 x LPT, 1 x FDD, 2 x PS/2 for KB/MS (external), 6 x SATA 3Gb/s with RAID 0, 1, 5, 10 support
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface: One Infrared Interface by pin header
- ◆ Audio: Realtek ALC883 HD Audio codec
- ◆ Graphics: VGA intergated in Intel® Q35
- ◆ Super I/O: ITE IT8712F
- ◆ Expansions: 1 x PCIe x16, 1 x PCIe x4, 2 x PCI
- ◆ TPM1.2: 1 x 20-pin header on-board for TPM (Trusted Platform Module)
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: ATX
- ◆ Power Consumption: 3.3V@2.41A, 5V@5.71A, 5Vsb@0.13A, 12V@3.69A (2DMark 2001) Intel® Core™2 Duo E6850 3.0GHz, 8GB DDR2 800MHz, 3DMark 2001
- ◆ Temperature: Operating: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity: Operating: 5% ~ 95%, non-condensing
- ◆ Dimensions: 244 mm x 244 mm
- ◆ Weight: GW: 1100 g

## Packing List

1 x IMB-Q35A single board computer	
3 x SATA power cable (P/N: 32102-000100-200-RS)	
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	1 x One Key Recovery CD
1 x I/O shielding (P/N: 45014-0017C0-00-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 19800-003100-200-RS)	1 x Utility CD
6 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

## Ordering Information

Part No.	Description
IMB-Q35A-R10	microATX motherboard supports 45 nm LGA775 Intel® Core™2 Duo CPU with a 800/1066/1333 MHz FSB, Intel® Q35 & ICH9DO platform, dual Intel® PCIe GbE, six SATA 3Gb/s with RAID functions
CF-520-RS-R11	High performance CPU cooler, (115mm x 115mm x 67mm, 115W)
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
SDVO-100VGA-R10	PCIe x16 VGA output SDVO card supports dual display (IEI CPU board only)
SDVO-100DVI-R10	PCIe x16 DVI output SDVO card supports dual display (IEI CPU board only)

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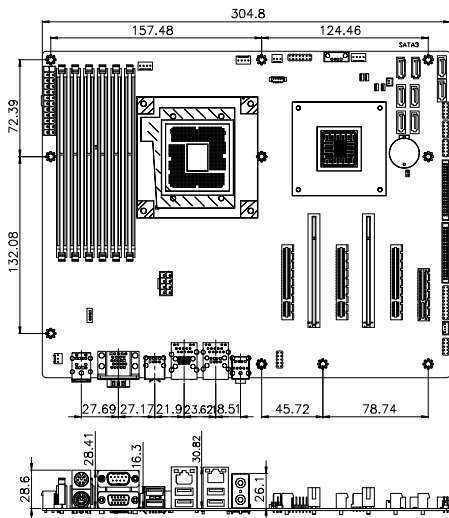
5 Power Supply/Peripherals

6 Panel Solutions Introduction

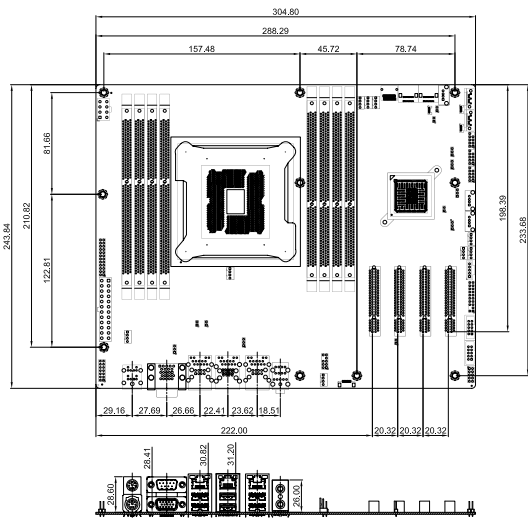


Dimensions (Unit: mm)

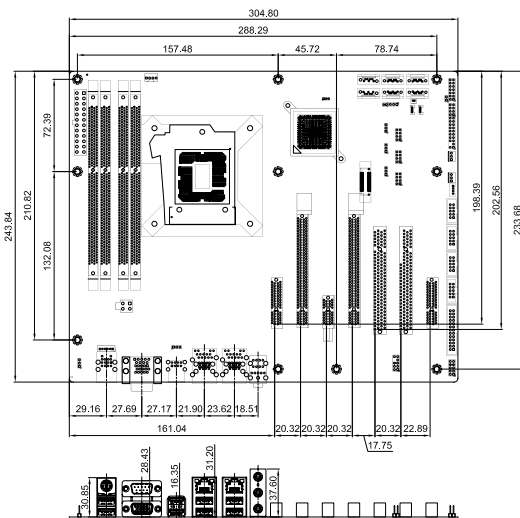
IMBA-C604EN **New**



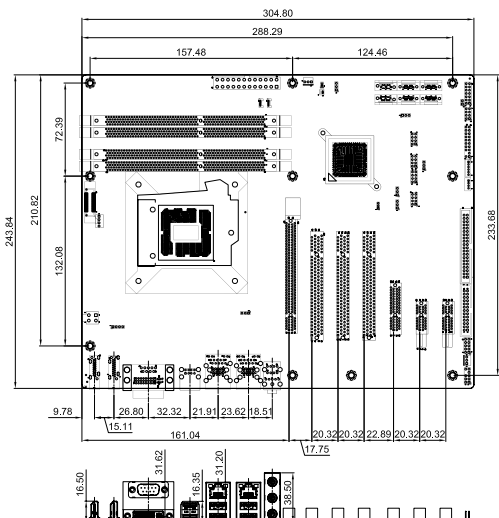
IMBA-C604EP **New**



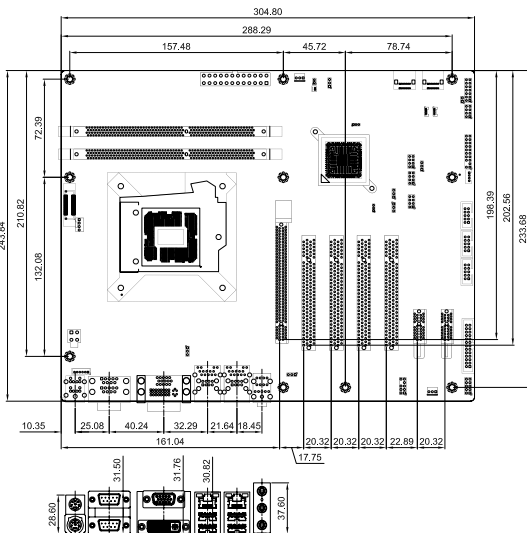
IMBA-C2160 **New**



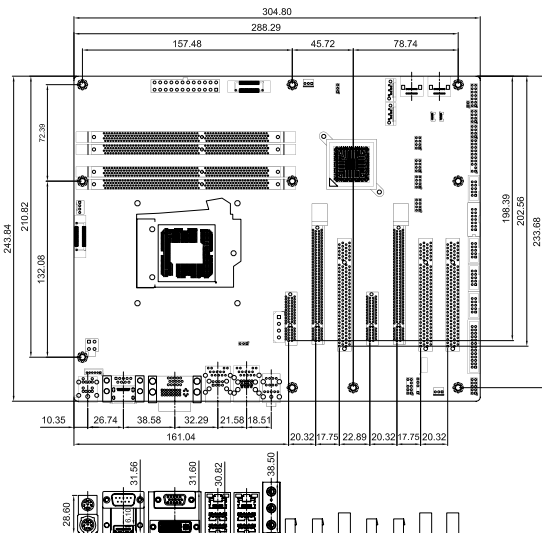
IMBA-Q770 **New**



IMBA-H610



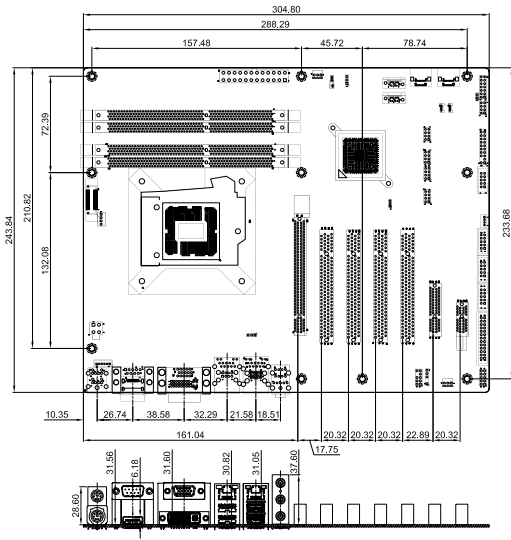
IMBA-C2060



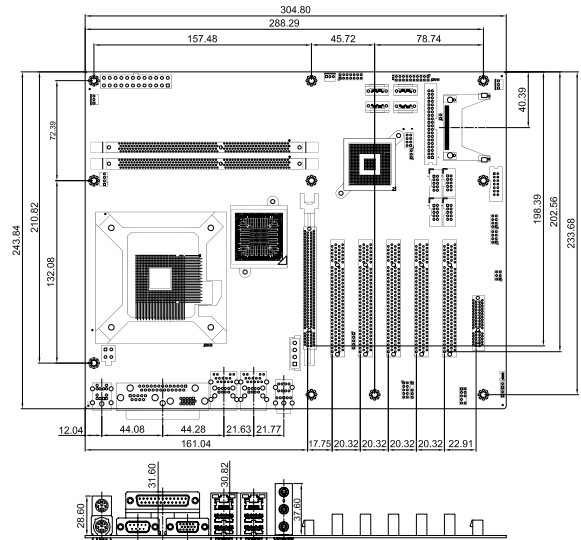
- 1 Industrial Computing Solutions
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Dimensions (Unit: mm)

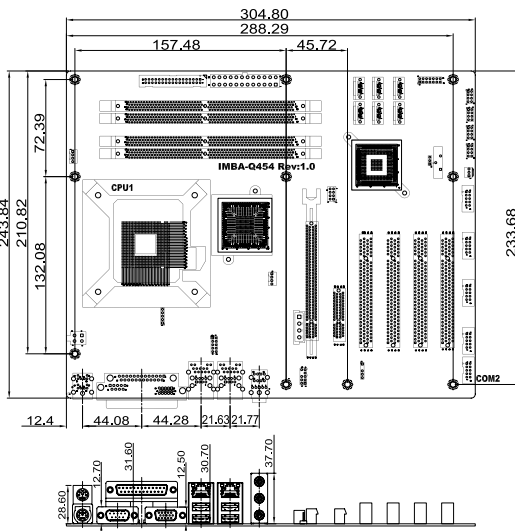
IMBA-Q670-R20



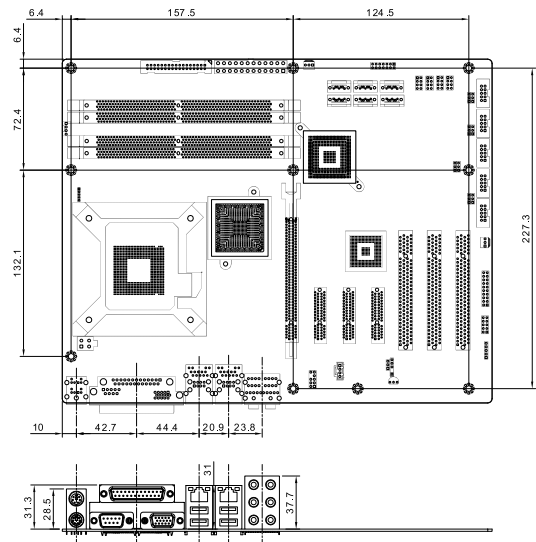
IMBA-G410



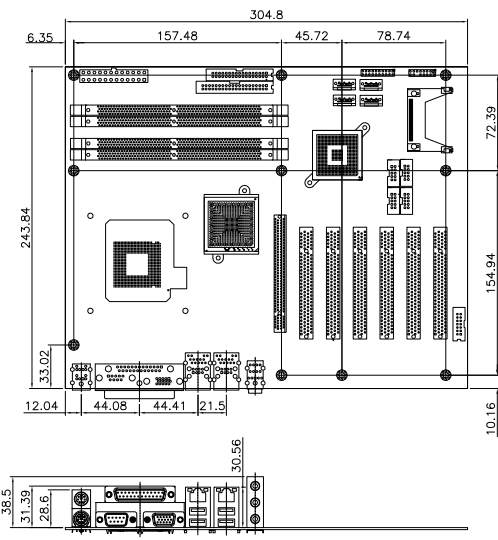
IMBA-Q454



IMBA-XQ354-R11



IMBA-9454-R40



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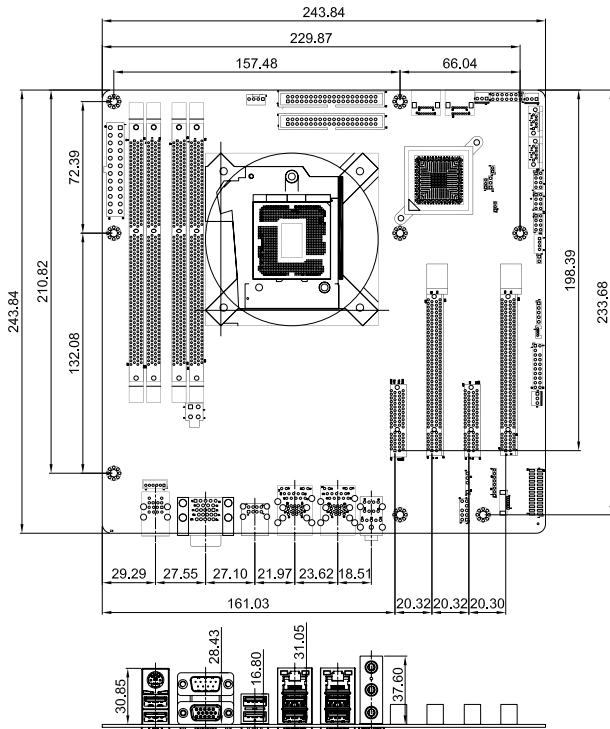
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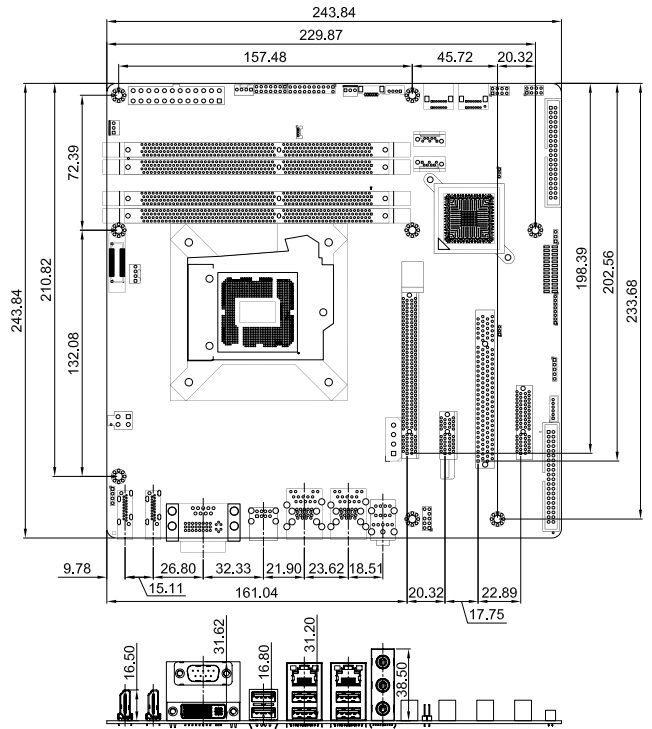
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Dimensions (Unit: mm)

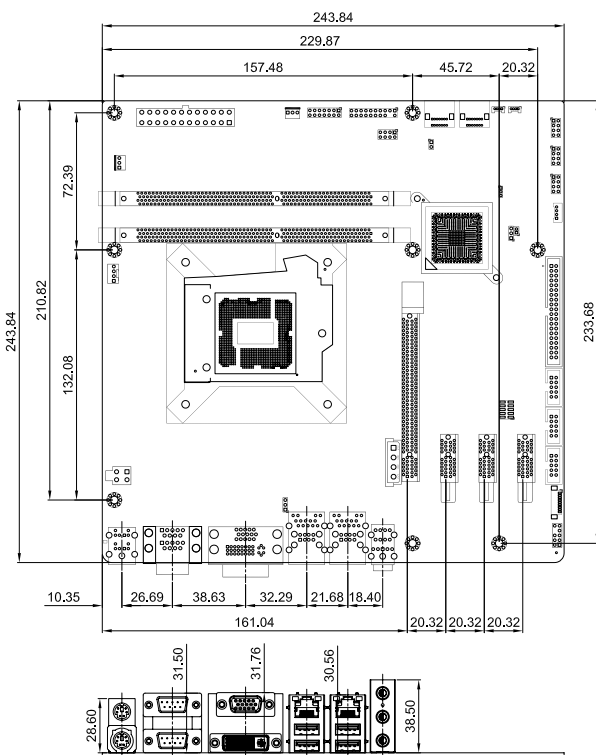
IMB-C2160 **New**



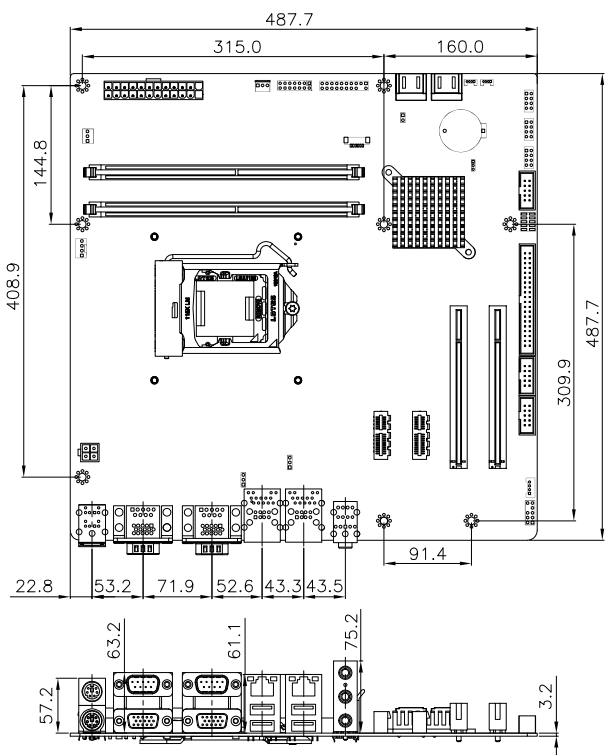
IMB-Q770 **New**



IMB-H610



IMB-H612



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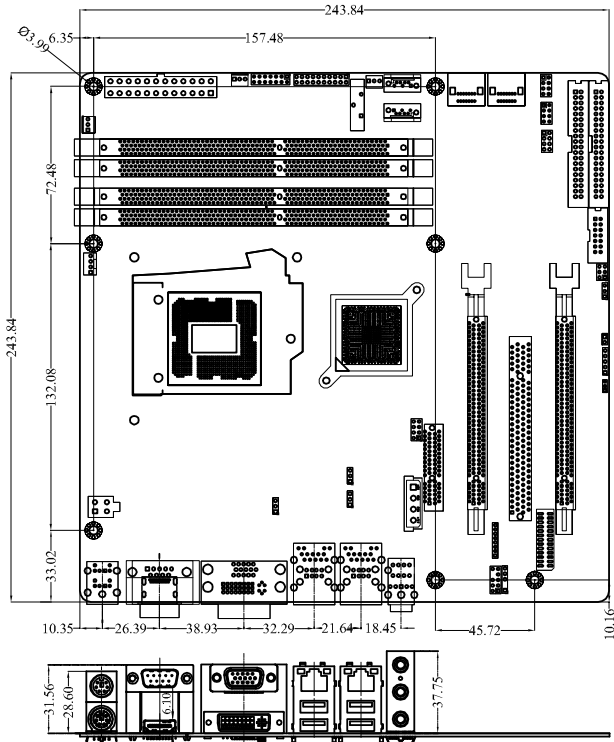
Power Supply/Peripherals

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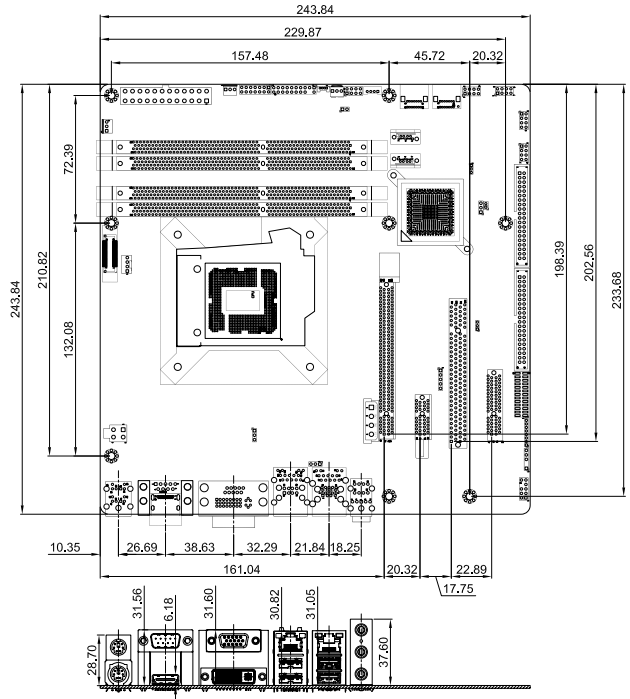
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Dimensions (Unit: mm)

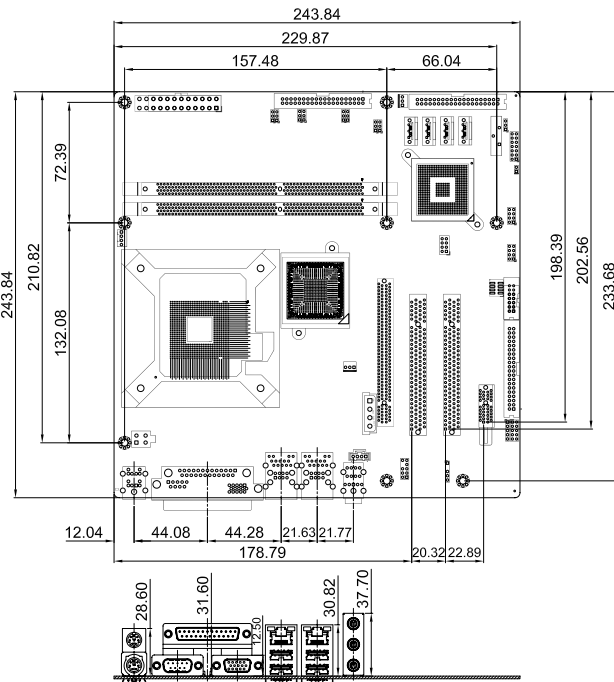
IMB-C2060



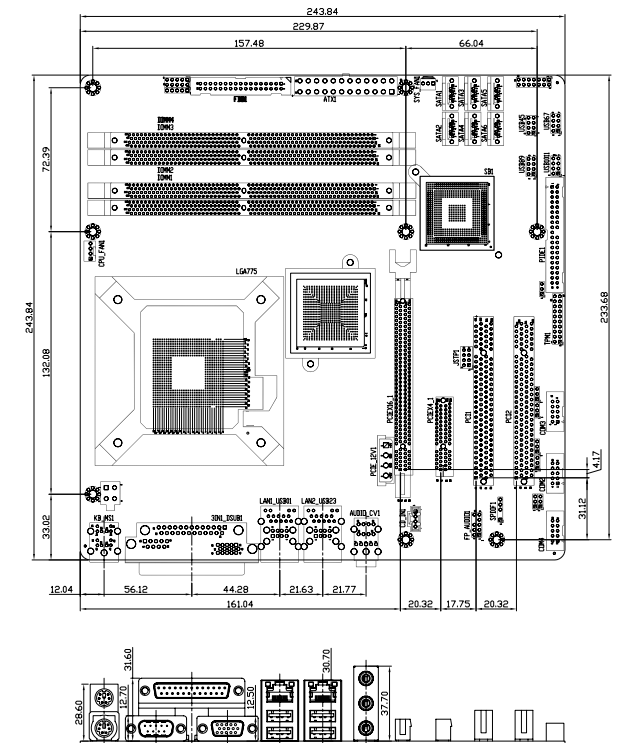
IMB-Q670-R20



IMB-G41A



IMB-Q354



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# Mini-ITX Selection Guide

**New**



Model Name	KINO-QM770	KINO-AQ670	KINO-DH610	KINO-AH611	KINO-AH612	KINO-CV-D25501/N26001
<b>CPU Socket</b>	Socket G2	Socket H2	Socket H2	Socket H2	Socket H2	On Board
<b>CPU Type</b>	3rd generation Intel® 22nm mobile processor	2nd Generation Intel® Core™ i7/i5/i3/Pentium®/ Celeron®	2nd Generation Intel® Core™ i3/Pentium®/ Celeron®	2nd Generation Intel® Core™ i7/i5/i3/Pentium®/ Celeron®	2nd Generation Intel® Core™ i7/i5/i3/Pentium®/ Celeron®	Intel® Atom™ Processor D2550 1.86GHz Intel® Atom™ Processor N2600 1.6GHz
<b>Chipset</b>	Intel® QM77	Intel® Q67	Intel® H61	Intel® H61	Intel® H61	NM10
<b>Memory</b>	2 x 204-pin, Max. 16GB, 1066/1333/1600 MHz dual-channel DDR3 SO-DIMMs	2 x 204-pin, Max.16GB, 1066/1333 MHz dual-channel DDR3 SO-DIMMs	2 x 204-pin, Max.16GB, 1066/1333 MHz dual-channel DDR3 SO-DIMMs	2 x 204-pin, Max.16GB, 1066/1333 MHz dual-channel DDR3 SO-DIMMs	2 x 204-pin, Max.16GB, 1066/1333 MHz dual-channel DDR3 SO-DIMMs	1 x 204-pin, Max.4GB, 1066 MHz DDR3/DDR3L (1.35V) SO-DIMM (D2550) 1 x 204-pin, Max.2GB, 800 MHz DDR3/DDR3L (1.35V) SO-DIMM (N2600)
<b>Display Interface</b>	Triple display supported 2 x HDMI 1 x DVI-I 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x DVI-D	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D	Dual display supported 1 x VGA 2 x HDMI	Dual display supported 1 x VGA 1 x DVI-D	Dual display supported 1 x VGA 1 x Single-channel 18-bit (N2600)/24-bit LVDS2 (D2550) 1 x 24-bit dual-channel LVDS
<b>Ethernet</b>	Intel® 82583V PCIe controller Intel® 82579 PHY with Intel® AMT 8.0 supported	Intel® 82583V PCIe controller Intel® 82579 PHY with Intel® AMT7.0 support	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0
<b>I/O Interface</b>	2 x RS-232 1 x RS-422/485 4 x USB 2.0 4 x USB 3.0 1 x 4-pin wafer for SMBus 1 x KB/MS by 6-pin header 1 x 20-pin LPC for TPM	2 x RS-232 2 x USB 3.0 8 x USB 2.0 1 x PS2 KB/MS 1 x 20-pin LPC for TPM	1 x RS-232 1 x RS-422/485 10 x USB 2.0 1 x KB/MS by 6-pin header 1 x 20-pin LPC for TPM	2 x RS-232 8 x USB 2.0 1 x 20-pin LPC for TPM 1 x KB/MS by pin header	5 x RS-232 1 x RS-422/485 8 x USB 2.0 2 x 10-pin header for TPM 1 x PS2 KB/MS	5 x RS-232 1 x RS-422/485 6 x USB 2.0 2 x USB 3.0 1 x 20-pin LPC for TPM 1 x KB/MS by 6-pin header
<b>Drive Interface</b>	2 x SATA 6Gb/s 2 x SATA 3Gb/s	2 x SATA 3Gb/s 2 x SATA 6Gb/s	4 x SATA 3Gb/s	3 x SATA 3Gb/s	4 x SATA 3Gb/s	2 x SATA 3Gb/s or 1 x SATA 3Gb/s + 1 x mSATA 1 x microSD slot (bootable)
<b>Audio</b>	Realtek ALC892 HD codec	Realtek ALC662 HD Audio codec				
<b>Digital I/O</b>	8-bit digital I/O					
<b>Power Consumption</b>	12V@6.08A (2.3GHz Intel® Core™ i7-3610QE with two 1333 MHz 4GB DDR3 memory running 3DMark06 burn in)	5V@3.84A, 12V@0.16A, Vcore_12V@5.31A, 3.3V@1.81A, 5VSB@0.5A (2.5GHz Intel® Core™ i5-2400S with two 1333MHz 2GB DDR3)	12V@5.07A (2.2GHz Intel® G620T with 2GB*2 DDR3 1066MHz running 3DMark06 burn in) 12V@8.85A (2.8GHz Intel® Core™ i7-2600S with two 1066MHz 2GB DDR3 running 3DMark06 burn in)	5V@3.47A, 12V@0.11A, Vcore_12V@6.73A, 3.3V@1.01A, 5VSB@0.15A (3.4GHz Intel® Core™ i7-2600K with two 1333MHz 2GB DDR3)	5V@3.9A, 12V@0.36A, Vcore_12V@8.28A, 3.3V@1.24A, 5VSB@0.18A (3.4GHz Intel® Core™ i7-2600 with two 1333MHz 2GB DDR3)	12V@2.8A (1.86GHz Intel® D2550 CPU with DDR3 1333MHz 4GB DIMM) 12V@2.4A (1.6GHz Intel® N2600 CPU with 1333MHz 2GB DDR3 DIMM)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset					
<b>Operation Environment</b>	Temperature Range: -10°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing					-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor -20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 processor Relative Humidity: 5% ~ 95%, non-condensing
<b>Expansion Slots</b>	1 x PCIe Mini card slot (compatible with mSATA device) 1 x PCIe x16	1 x PCIe x16	1x PCI Slot 1x PCIe x1 slot	1 x PCIe x16 slot 1 x Half-size PCIe Mini card slot	1 x PCIe x4 slot	1 x PCIe Mini Card Slot 1 x PCI
<b>CPU Cooler</b>	CF-989A-RS-R12	CF-1156A/B/C/D-RS	CF-1156C/D-RS	CF-1156A/B/C/D-RS	CF-1156A/B/C/D-RS	Heatsink

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# Mini-ITX Selection Guide



Model Name	KINO-CVR-D25502/N26002	KINO-QM670	KINO-HM551	KINO-G410	KINO-PVN-D5251/D4251	KINO-PV-D5252/D4252
<b>CPU Socket</b>	On Board	Socket G2	Socket G1	LGA775	On board	On board
<b>CPU Type</b>	Intel® Atom™ Processor D2550 1.86GHz Intel® Atom™ Processor N2600 1.6GHz	Socket G2 for Intel® mobile Core™ i7/i5/i3	Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron®	Intel® Core™2 Duo/Quad/Extreme	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz
<b>FSB</b>	NA	NA	NA	800/1066/1333MHz	NA	NA
<b>Chipset</b>	ICH10R	Intel® QM67	Intel® HM55	Intel® G41 + ICH7	ICH8M	ICH8M
<b>Memory</b>	2 x 204-pin, Max.4GB, 1066 MHz DDR3 SO-DIMM (D2550) 2 x 204-pin, Max.2GB, 800 MHz DDR3 SO-DIMM (N2600)	2 x 204-pin 1333/1066 MHz 4GB DDR3 SO-DIMM (system max. 8GB)	2 x 204-pin 800/1066 MHz 4GB DDR3 SO-DIMM (system max. 8GB)	2 x 240-pin 800/1066 MHz 4GB dual-channel DDR3 DIMMs (system max. 8GB)	2 x 204-pin 800 MHz 2GB DDR3 SO-DIMM (system max. 4GB)	2 x 204-pin 800 MHz 2GB DDR3 SO-DIMM (system max. 4GB)
<b>Display Interface</b>	Dual display supported 1 x VGA 1 x HDMI	Dual display supported 1 x VGA 2 x HDMI 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 24-bit LVDS by VGA-LVDS-R10	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit dual-channel LVDS
<b>Ethernet</b>	Dual PCIe GbE by Intel® 82574L	Intel® 82579 GbE LAN controller with Intel® AMT 7.0 support Intel® 82583V GbE LAN	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0
<b>I/O Interface</b>	2 x RS-232 6 x USB 2.0 2 x USB 3.0	2 x RS-232 1 x RS-422/485 6 x USB 2.0 2 x USB 3.0 1 x 6-pin header for KB/MS 1 x 20-pin LPC for TPM	4 x RS-232 2 x RS-232/422/485 8 x USB 2.0 1 x 6-pin header for KB/MS 1 x 20-pin LPC for TPM	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 2 x PS/2 KB/MS 1 x LPT	3 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x LPT 1 x KB/MS by pin header	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 2 x 10-pin header for TPM 1 x LPT 1 x KB/MS by pin header
<b>Drive Interface</b>	6 x SATA 3Gb/s or 5 x SATA 3Gb/s + 1 x mSATA 1 x microSD slot (bootable)	2 x SATA 3Gb/s 2 x SATA 6Gb/s	4 x SATA 3Gb/s	4 x SATA 3Gb/s	2 x SATA 3Gb/s 1 x CF Type II	2 x SATA 3Gb/s 1 x CF Type II
<b>Audio</b>	Realtek ALC662 HD Audio codec	Realtek ALC888 HD Audio codec				
<b>Digital I/O</b>	8-bit digital I/O	8-bit digital I/O (4 input/4 output)				
<b>Power Consumption</b>	5V@1.21A, 12V@0.09A, Vcore_12V@0.32A, 3.3V@0.37A, 5VSB@0.04A (1.86GHz Intel® D2550 with two 1066MHz 2GB DDR3)	12V@6.5A (2.2GHz Intel® Core i7 with two 1333MHz 4GB DDR3 DIMM)	12V@4.67A (2.66GHz Intel® Core i7 620M CPU with two 1333MHz 4GB DDR3 DIMM)	5V@6.41A, Vcore_12V@2.52A, 3.3V@0.27A (2.8GHz Intel® Core™2 Duo E7400 with two 1066MHz 1GB DDR3 DIMM)	12V@3.44A (Intel® Atom™ D525 1.8GHz with two 1333MHz 2GB DDR3 DIMM) 12V@3.11A (Intel® Atom™ D425 1.8GHz with two 1333MHz 2GB DDR3 DIMM)	12V@1.95A (Intel® Atom™ D525 1.8GHz with two 1GB DDR3)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset					
<b>Operation Environment</b>	-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor -20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 processor Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: -10°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing				
<b>Expansion Slots</b>	1 x PCIe Mini Card Slot 1 x PCIe x4 slot (x1 signal)	1 x PCI x16 1 x PCIe Mini card slot	1 x PCI x16 1 x PCIe Mini card slot	1 x PCIe x16	1 x PCI Slot 1 x PCIe x1 slot 1 x PCIe Mini card slot	1 x PCI Slot 1 x PCIe x1 slot 1 x PCIe Mini card slot
<b>CPU Cooler</b>	Heatsink	CF-989A-RS-R12	CF-989A-RS-R12	CF-775A-RS CF-520-RS-R11	Cooler	Heatsink

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Panel  
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Introduction

# Mini-ITX Selection Guide



Model Name	KINO-PV-D5253/D4253	KINO-945GSE3	KINO-QM57A	eKINO-945GSE-R11	KINO-945GSE-R11	KINO-945GSE2
<b>CPU Socket</b>	On board	On Board	Socket G1	On board	On board	On board
<b>CPU Type</b>	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz	Intel® Atom™ Processor N270 1.6GHz	Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz
<b>FSB</b>	NA	533MHz	NA	533MHz	533MHz	533MHz
<b>Chipset</b>	ICH8M	Intel® 945GSE + ICH7M	Intel® QM57	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M
<b>Memory</b>	2 x 204-pin 800 MHz 2GB DDR3 SO-DIMM (system max. 4GB)	1 x 200-pin 400/533 MHz 2GB DDR2 SO-DIMM (system max. 2GB)	2 x 204-pin 800/1066 MHz 4GB DDR3 SO-DIMM (system max. 8GB)	1 x 200-pin 400/533 MHz 2GB DDR2 SO-DIMM (system max. 2GB)	1 x 200-pin 400/533 MHz 2GB DDR2 SO-DIMM (system max. 2GB)	1 x 200-pin 400/533 MHz 2GB DDR2 SO-DIMM (system max. 2GB)
<b>Display Interface</b>	1 x VGA	Dual display supported 1 x VGA 1 x DVI 1 x 18-bit dual-channel LVDS	Dual display supported 1 x VGA 2 x HDMI 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x DVI 1 x 18-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x DVI 1 x 18-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS 1 x 18/24-bit dual-channel LVDS 1 x HDTV
<b>Ethernet</b>	Three PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Intel® 82577 GbE LAN controller with Intel® AMT 6.0 support Intel® 82574L GbE LAN	Dual PCIe GbE Realtek RTL 8111CP chipset	Dual PCIe GbE Realtek RTL 8111CP chipset	PCIe GbE Realtek RTL8111CP controller
<b>I/O Interface</b>	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 2 x 10-pin header for TPM 1 x LPT 1 x KB/MS by pin header	9 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x Infrared Interface 1 x 6-pin header for KB/MS	2 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x 6-pin header for KB/MS	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x KB/MS by pin header	3 x RS-232 1 x RS-232/422/485 8 x USB 2.0 2 x PS/2 KB/MS	4 x RS-232 2 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x Infrared interface 1 x 6-pin header for KB/MS
<b>Drive Interface</b>	2 x SATA 3Gb/s	2 x SATA 1 x IDE 1 x CF Type II	6 x SATA 3Gb/s	2 x SATA 1 x IDE 1 x CF Type II	2 x SATA 1 x IDE 1 x CF Type II	2 x SATA
<b>Audio</b>	Realtek ALC888 HD Audio codec	Realtek ALC655 with AC'97 codec	Realtek ALC888 HD Audio codec	Realtek ALC655 with AC'97 codec		
<b>Digital I/O</b>	8-bit digital I/O (4 input/4 output)					
<b>Power Consumption</b>	12V@0.76A, 5V@2.62A (Intel® Atom™ D525 1.8GHz with two 1333MHz 1GB DDR3 DIMM)	12V@0.43A, 5V@4.5A (Intel® Atom™ N270 1.6GHz with 2GB DDR2)	12V@5.27A (2.66GHz Intel® Core i7 620M CPU with two 1333MHz 2GB DDR3 DIMM)	12V@1A (Intel® Atom™ N270 with 1GB DDR2)	5V@2.89A, 12V@0.04A (Intel® Atom™ N270 with 1GB DDR2)	12V@2.94A (Intel® Atom™ N270 1.6GHz with 2GB DDR2)
<b>Watchdog Timer</b>	Software programmable and supports 1-255 sec. system reset			Software programmable and supports 1-255 sec. system reset		
<b>Operation Environment</b>	Temperature Range: -10°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing			Temperature Range: 0°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: -20°C ~ 70°C Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: 0°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing
<b>Expansion Slots</b>	1 x PCI Slot 1 x PCIe x1 slot 2 x PCIe Mini card slot	1 x PCI 1 x PCIe Mini card	1 x PCIx16 1 x PCIe Mini card slot	1 x PCI 1 x PCIe Mini card	1 x PCI 1 x PCIe Mini card	1 x PCI 1 x PCIe Mini card
<b>CPU Cooler</b>	Heatsink	Heatsink	CF-989A-RS-R12	Heatsink	Heatsink	Heatsink

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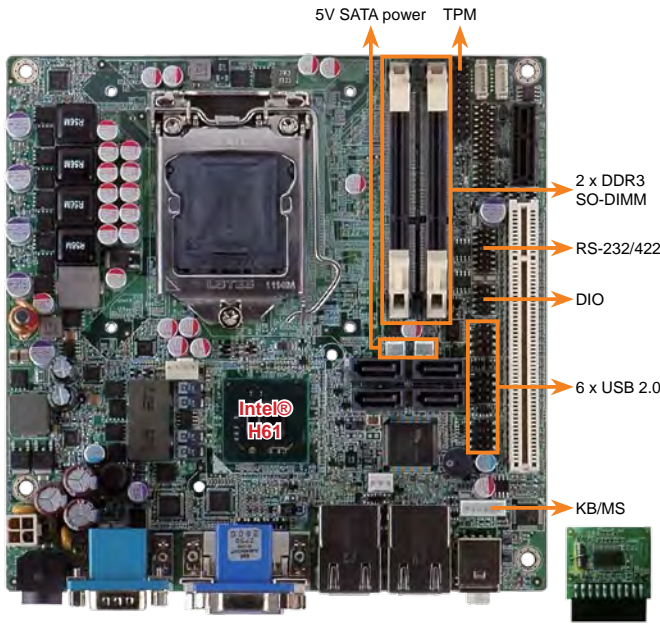
Panel Solutions Introduction





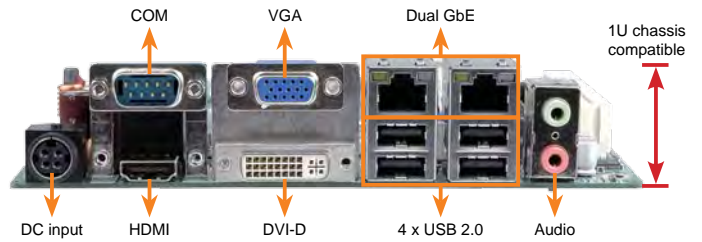
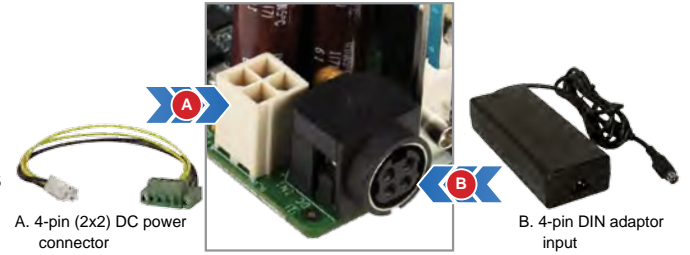
# KINO-DH610

Mini-ITX SBC Supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU, DDR3, VGA/DVI-D/HDMI, Dual PCIe GbE, USB 2.0, SATA 3Gb/s, HD Audio and RoHS



## Wide range 9 ~ 28VDC input on board

IEI offers two ways for DC input without extra power module



## Specifications

- ◆ CPU  
LGA1155 socket supports Intel® Core™ i7/i5/i3/Pentium®/Celeron® dual-core processor (TDP 65W max.)
- ◆ System Chipset  
Intel® H61
- ◆ Memory  
Two 204-pin 1066/1333 MHz dual-channel DDR3 SO-DIMMs supported (system max. 16 GB)
- ◆ BIOS  
UEFI BIOS
- ◆ Ethernet  
Dual Realtek RTL8111E PCIe GbE controller with ASF 2.0 support
- ◆ Graphics Engine  
Supports DX10.1 and OpenGL 3.0  
Full MPEG2, VC1, AVC Decode
- ◆ Display Output  
Dual display supported  
1 x VGA (up to 2048 x 1536 @75Hz)  
1 x HDMI (up to 1920 x 1200 @60Hz) 1 x DVI-D (up to 1920 x 1200 @60Hz)
- ◆ Super I/O  
Fintek F81866
- ◆ Embedded Controller  
iWDD
- ◆ Audio  
Realtek ALC662 HD audio codec
- ◆ I/O Interface  
1 x RS-232 1 x RS-232/422/485  
10 x USB 2.0 1 x TPM pin-header  
4 x SATA 3Gb/s 2 x SATA power (5V) connector  
1 x 6-pin header for PS/2 KB/MS
- ◆ Expansions  
1 x PCI 1 x PCIe x1
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O  
8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Fan Connector  
1 x 4-pin CPU fan connector  
1 x 3-pin system fan connector
- ◆ Power Supply  
Maximum input voltage range: 9V ~ 28V  
Recommended operating input voltage range: 12V ~ 24V  
1 x External DC jack (4-pin DIN)  
1 x Internal 4-pin (2x2) power connector
- ◆ Power Consumption  
12V@5.07A (2.2GHz Intel® G620T with two 1066 MHz 2 GB DDR3 memory running 3DMark06 burn in)  
12V@8.85A (2.8GHz Intel® Core™ i7-2600S with two 1066 MHz 2 GB DDR3 memory running 3DMark06 burn in)
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
170 mm x 170 mm
- ◆ Weight  
GW: 1100g/NW: 700g

## Features

1. LGA1155 socket for Intel® 2nd generation Core™ i3/Pentium®/Celeron® processor supported
2. Up to 16 GB 1333/1066 MHz dual-channel DDR3 SDRAM
3. Supports dual display by DVI/VGA/HDMI
4. SATA 3Gb/s, PCI and PCIe x1 expansion slots supported
5. Wide range 9 ~ 28V DC input support with either adaptor or 4-pin (2x2) ATX power connector
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x KINO-DH610 single board computer	
2 x SATA with 5V power cable (P/N: 32801-000201-100-RS)	
1 x I/O shielding (P/N: 45014-0032C0-00-RS)	
1 x One Key Recovery CD	1 x Utility CD
1 x Mini jumper pack	1 x QIG

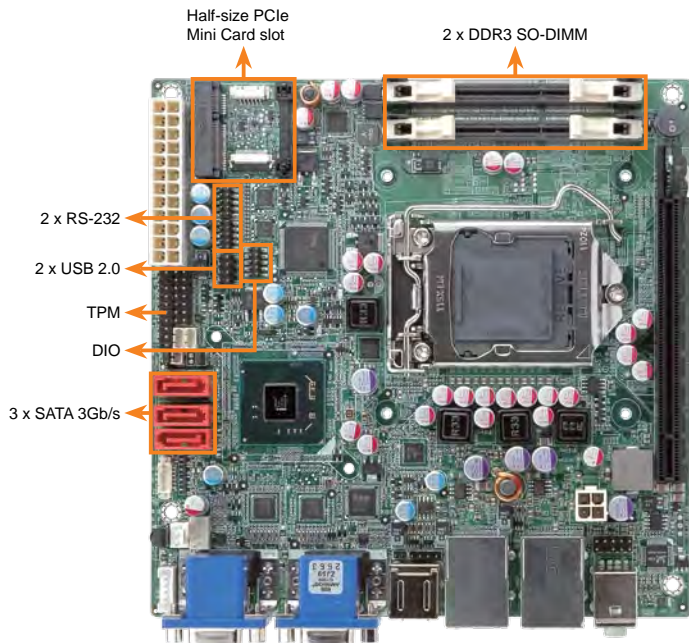
## Ordering Information

Part No.	Description
KINO-DH610-R10	Mini-ITX SBC supports LGA1155 Intel® Core™ i5/i3/Pentium®/Celeron® CPU, DDR3, VGA/DVI-D/HDMI, dual PCIe GbE, USB 2.0, SATA 3Gb/s, HD Audio and RoHS
19800-003100-200-RS	Dual-port USB cable w/bracket
19800-004300-100-RS	RS-232/422/485 cable w/bracket
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
SACF-KIT01-R10	SATA to CF converter board
32000-023800-RS	KB/MS Y cable
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2120T	Intel® Core™ i3-2120T processor, LGA1155, dual core 2.6GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G630T	Intel® Pentium® G630T processor, LGA1155, dual core 2.3GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS-11	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W
63040-010060-050-RS	12V 60W power adaptor with 4-pin DIN lock, 90 ~ 264VAC input, ErP

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- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/Peripherals
- 6 Panel Solutions Introduction

# KINO-AH611

Mini-ITX SBC Supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU, DDR3, Dual HDMI/Dual VGA, Dual PCIe GbE, SATA 3Gb/s, HD Audio and RoHS



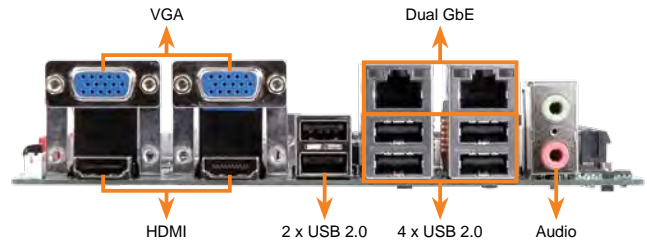
## 2011 LGA1155 Solution



Upgradable  
LGA1155 socket is compatible with Intel® 2012 3rd generation Core™ i7 processor



2012 3rd generation Intel® Core™ i7 Processor



TPM 1.2 Support

## Specifications

- ◆ CPU  
LGA1155 socket supports Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor
- ◆ System Chipset  
Intel® H61
- ◆ Memory  
Two 204-pin 1066/1333 MHz dual-channel DDR3 SDRAM SO-DIMMs supported (system max. 16GB)
- ◆ BIOS  
UEFI BIOS
- ◆ Ethernet  
Dual Realtek RTL8111E PCIe GbE controller with ASF 2.0 support
- ◆ Graphics Engine  
Supports DX10.1 and OpenGL 3.0  
Full MPEG-2, VC1, AVC Decode
- ◆ Display Output  
Dual display supported  
2 x VGA (up to 2048 x 1536 @75Hz)  
2 x HDMI (up to 1920 x 1200 @60Hz)
- ◆ Super I/O  
Fintek F81866
- ◆ Embedded Controller  
iWDD
- ◆ Audio  
Realtek ALC662 HD audio codec
- ◆ I/O Interface  
2 x RS-232 8 x USB 2.0  
1 x TPM pin-header 3 x SATA 3Gb/s  
1 x 6-pin header for PS/2 KB/MS
- ◆ Expansions  
1 x PCIe x16 slot  
1 x Half-size PCIe Mini card slot
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O  
Programmable 8-bit GPIO
- ◆ Fan Connector  
1 x 4-pin CPU fan connector  
1 x 3-pin system fan connector
- ◆ Power Supply  
ATX Power Supply
- ◆ Power Consumption  
5V@3.47A, 12V@0.11A, Vcore\_12V@6.73A, 3.3V@1.01A, 5VSB@0.15A (3.4GHz Intel® Core™ i7-2600K with two 1333 MHz 2 GB DDR3 SO-DIMMs)
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
170 mm x 170 mm
- ◆ Weight  
GW: 1100g/NW: 700g

## Features

1. LGA1155 for the next generation Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor supported
2. Up to 16 GB 1333/1066 MHz dual-channel DDR3 SDRAM
3. Supports dual independent display by dual VGA and dual HDMI
4. Two COM ports and three SATA 3Gb/s connectors supported
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

- 1 x KINO-AH611 single board computer
- 3 x SATA cable (P/N: 32801-000703-200-RS)
- 1 x Dual RS-232 cable (P/N: 19800-000112-RS)
- 1 x I/O shielding (P/N: 45014-0035C0-00-RS)
- 1 x One Key Recovery CD
- 1 x Mini jumper pack
- 1 x Utility CD
- 1 x QIG

## Ordering Information

Part No.	Description
KINO-AH611-R10	Mini-ITX SBC supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU, DDR3, dual HDMI/dual VGA, dual PCIe GbE, SATA 3Gb/s, HD Audio and RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32102-000100-200-RS	SATA power cable
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
SACF-KIT01-R10	SATA to CF converter board
32000-023800-RS	KB/MS Y cable
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2120T	Intel® Core™ i3-2120T processor, LGA1155, dual core 2.6GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G630T	Intel® Pentium® G630T processor, LGA1155, dual core 2.3GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS-11	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W

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Industrial Computing Solutions

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Video Capture Solutions

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Embedded Computing Solutions

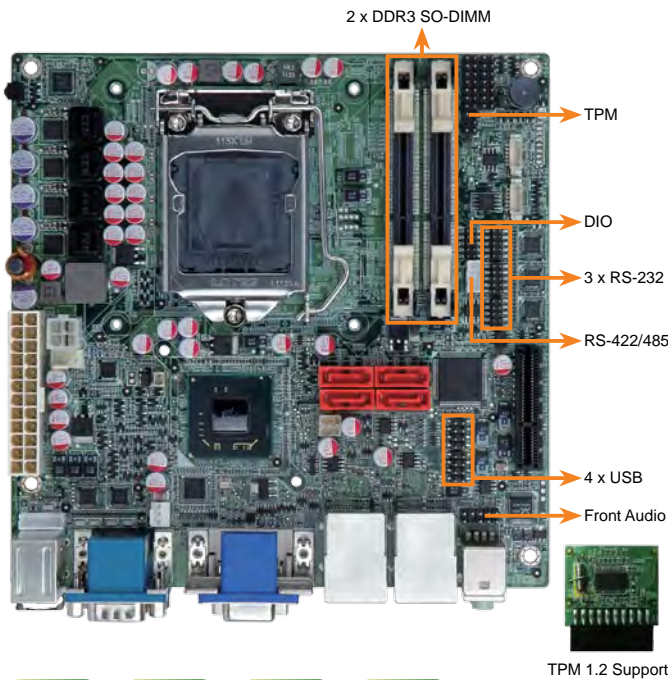
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ORing Network Communication

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Power Supply/Peripherals

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Panel Solutions Introduction

# KINO-AH612

Mini-ITX SBC Supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with H61, DDR3, VGA/DVI-D, Six COMs, Dual PCIe GbE, SATA 3Gb/s, HD Audio and RoHS



TPM 1.2 Support

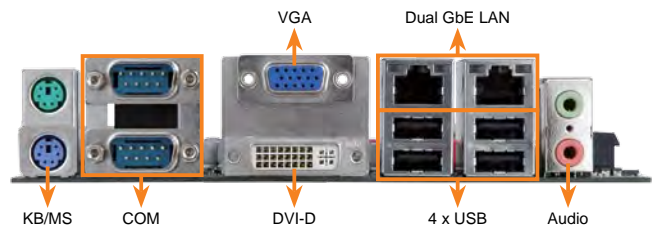


## Specifications

- ◆ CPU: LGA1155 socket supports Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor
- ◆ System Chipset: Intel® H61
- ◆ Memory: Two 204-pin 1066/1333MHz dual-channel DDR3 SDRAM unbuffered SO-DIMMs supported (system max. 16GB)
- ◆ BIOS: UEFI BIOS
- ◆ Ethernet: Dual Realtek RTL8111E PCIe GbE controller with ASF 2.0 support
- ◆ Graphics Engine: Supports DX10.1 and OpenGL 3.0, Full MPEG-2, VC1, AVC Decode
- ◆ Display Output: Dual display supported, 1 x VGA (up to 2048 x 1536 @75Hz), 1 x DVI-D (up to 1920 x 1200 @60Hz)
- ◆ Super I/O: Fintek F81866
- ◆ Embedded Controller: iWDD
- ◆ Audio: Realtek ALC662 HD audio codec
- ◆ I/O Interface: 5 x RS-232, 8 x USB 2.0, 4 x SATA 3Gb/s, 1 x RS-422/485, 1 x TPM pin header, 1 x PS/2 KB/MS
- ◆ Expansions: 1 x PCIe x4 slot
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ GPIO: Programmable 8-bit GPIO
- ◆ Fan Connector: 1 x 4-pin CPU fan connector, 1 x 3-pin PCH fan connector
- ◆ Power Supply: ATX power supply
- ◆ Power Consumption: 5V@3.9A, 12V@0.36A, Vcore\_12V@8.28A, 3.3V@1.24A, 5VSB@0.18A (3.4GHz Intel® Core™ i7-2600 with two 1333MHz 2GB DDR3 memory)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170 mm x 170 mm
- ◆ Weight: GW: 1100g/NW: 700g

## IEI Solutions Matrix Table

Model Name	KINO-DH610	KINO-AH611	KINO-AH612	KINO-AQ670
CPU TDP	65W	95W	95W	95W
Display Output	VGA/DVI-D/HDMI	Dual VGA/Dual HDMI	VGA/DVI-D	VGA/DVI-D
Expansions	1 x PCIe x1 slot 1 x PCI slot	1 x PCIe x16 slot 1 x PCIe Mini card slot	1 x PCIe x4 slot	1 x PCIe x16 slot
COM	1 x RS-232 1 x RS-232/422/485	2 x RS-232	5 x RS-232 1 x RS-422/485	2 x RS-232
USB 2.0	10	10	8	6
USB 3.0	No	No	No	2
SATA	4 x SATA 3Gb/s	3 x SATA 3Gb/s	4 x SATA 3Gb/s	2 x SATA 3Gb/s 2 x SATA 6Gb/s
RAID	No	No	No	Yes
TPM	Yes	Yes	Yes	Yes
Intel® AMT 7.0	No	No	No	Yes
Power Supply	DC 9 ~ 28V input	AT/ATX power	AT/ATX power	AT/ATX power



## Features

1. LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor supported
2. Dual-channel 1333/1066MHz DDR3 supports up to 16GB
3. Supports dual independent display by VGA and DVI-D
4. Supports six COM ports, four SATA 3Gb/s ports and one PCIe x4 slot for IO expansion card
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x KINO-AH612 single board computer
1 x Dual RS-232 cable (P/N: 19800-000112-RS)
1 x I/O shielding (P/N: 45014-0008C0-00-RS)
2 x SATA Cable (P/N: 32801-000703-200-RS)
1 x One Key Recovery CD
1 x Mini jumper pack
1 x Utility CD
1 x QIG

## Ordering Information

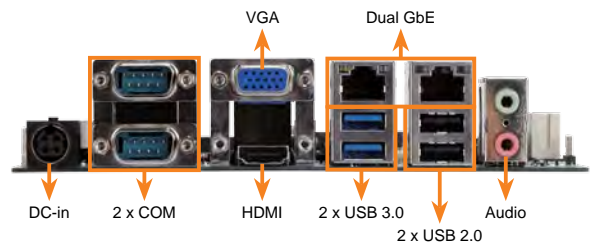
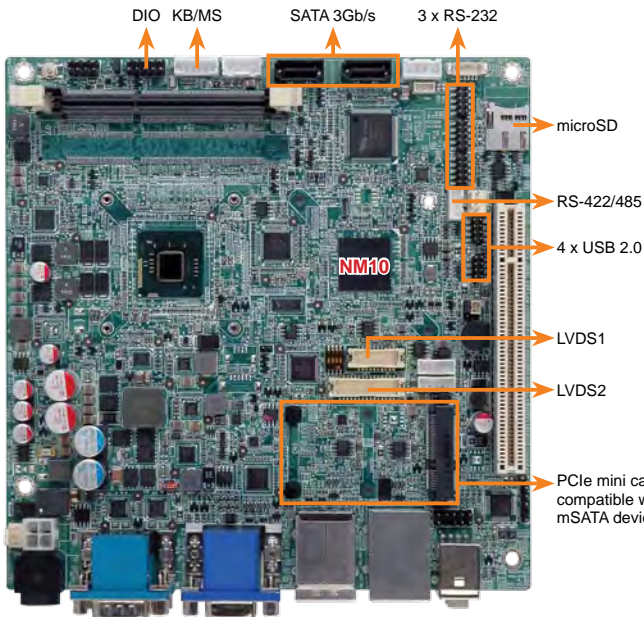
Part No.	Description
KINO-AH612-R10	Mini-ITX SBC supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with H61, DDR3, VGA/DVI-D, 6COM, dual PCIe GbE, SATA 3Gb/s, HD Audio and RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32102-000100-200-RS	SATA power cable
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
SACF-KIT01-R10	SATA to CF converter board
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA-1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA-1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2120T	Intel® Core™ i3-2120T processor, LGA1155, dual core 2.6GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G630T	Intel® Pentium® G630T processor, LGA1155, dual core 2.3GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA-1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS-11	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W

1 Industrial Computing Solutions  
2 Video Capture Solutions  
3 Embedded Computing Solutions  
4 ORing Network Communication  
5 Power Supply/Peripherals  
6 Panel Solutions Introduction



# KINO-CV-D25501-N26001

Mini-ITX SBC with Intel® D2550/N2600 Processor, DDR3, VGA/HDMI/Dual LVDS, Dual GbE, USB 3.0, mSATA, SATA 3Gb/s, Audio, RoHS



20mm height heatsink with bracket preinstalled for D2550/N2600 products  
IEI P/N: 34000-000438-RS



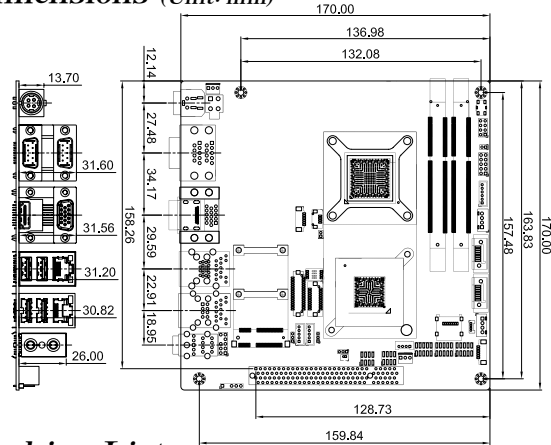
## Specifications

- ◆ CPU
  - 1.86GHz Intel® Atom™ D2550 dual-core processor
  - 1.6GHz Intel® Atom™ N2600 dual-core processor
  - 1.86GHz Intel® Atom™ N2800 dual-core processor (optional)
- ◆ Chipset
  - Intel® NM10
- ◆ BIOS
  - UEFI BIOS
- ◆ Memory
  - 1 x 1066MHz DDR3/DDR3L (1.35V) SO-DIMM up to 4GB (D2550 and N2800)
  - 1 x 800MHz DDR3/DDR3L (1.35V) SO-DIMM up to 2GB (N2600)
- ◆ Graphics
  - Intel® GMA 3650 with 640 MHz graphics core speed for D2550 and N2800
  - Intel® GMA 3600 with 400 MHz graphics core speed for N2600
- ◆ Display Output
  - Supports dual LVDS, VGA and HDMI for dual independent display
  - 1 x VGA (up to 2048 x 1536 @75Hz)
  - 1 x HDMI (up to 1920 x 1200 @60Hz)
  - LVDS1 integrated in the D2550/N2600
  - Single-channel 24-bit LVDS by D2550, resolution support up to 1440x900
  - Single-channel 18-bit LVDS by N2600 and N2800, resolution support up to 1366x768
  - LVDS2 supports 24-bit dual-channel by CH7511 DP to LVDS converter
- ◆ Ethernet
  - Dual GbE Realtek RTL8111E controller with ASF 2.0 support
- ◆ I/O Interfaces
  - 5 x RS-232 1 x RS-422/485
  - 1 x 6-pin KB/MS 2 x SATA 3Gb/s with 5V/12V power connector
  - 6 x USB 2.0 2 x USB 3.0
  - 1 x microSD slot (bootable)
- ◆ Super IO
  - Fintek F81866
- ◆ Digital I/O
  - 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Expansions
  - 1 x PCIe Mini card slot (compatible with mSATA SSD storage)
  - 1 x PCI slot
- ◆ Audio
  - Realtek ALC662 HD audio codec
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset by Super I/O
- ◆ Power Supply
  - Maximum input voltage range: 9V ~ 28V
  - Recommended operating input voltage range: 12V ~ 24V
  - 1 x External 4-pin DIN DC jack
  - 1 x Internal 4-pin (2x2) power connector
- ◆ Fan Connector
  - 1 x 3-pin CPU fan connector
  - 1 x 3-pin system fan connector
- ◆ SMBus
  - 1 x 4-pin connector
- ◆ Power Consumption
  - 12V@2.8A (1.86GHz Intel® D2550 CPU with DDR3 1333MHz 4GB DIMM)
  - 12V@2.4A (1.6GHz Intel® N2600 CPU with DDR3 1333MHz 2GB DIMM)
- ◆ Operating Temperature
  - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor
  - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 and N2800 processor
- ◆ Operating Humidity
  - 5% ~ 95%, non-condensing
- ◆ Weight
  - GW: 600g/NW: 250g

## Features

1. Mini-ITX form factor with Intel® D2550/N2600 dual-core processor supports DDR3/DDR3L (1.35V) memory
2. Wide range 9V ~ 28V DC input
3. Flexible VGA, dual LVDS and HDMI with dual-display support
4. Complete I/O: six USB 2.0, two USB 3.0, two SATA 3Gb/s, six COM and audio. mSATA SSD capable
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (Unit: mm)



## Packing List

1 x KINO-CV-D25501/N26001 single board computer	
2 x SATA with 5V output cable Kit (P/N: 32801-000100-100-RS)	
1 x Dual-port USB cable (P/N: 19800-003100-200-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0038C0-00-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
KINO-CV-D25501-R10	Mini-ITX SBC with Intel® Atom™ D2550 1.86GHz, DDR3, VGA/HDMI/dual LVDS, dual GbE, USB 3.0, 9V ~ 28V, SATA 3Gb/s, Audio, RoHS
KINO-CV-N26001-R10	Mini-ITX SBC with Intel® Atom™ N2600 1.6GHz, DDR3, VGA/HDMI/dual LVDS, dual GbE, USB 3.0, 9V ~ 28V, SATA 3Gb/s, Audio, RoHS
KINO-CV-N28001-R10	Mini-ITX SBC with Intel® Atom™ N2800 1.86GHz, DDR3, VGA/HDMI/Dual LVDS, Dual GbE, USB 3.0, 9 ~ 28V, SATA 3Gb/s, Audio, RoHS
32205-003800-100-RS	RS-422/485 cable
32000-023800-RS	KB/MS Y cable

1

Industrial Computing Solutions

2

Video Capture Solutions

3

Embedded Computing Solutions

4

ORing Network Communication

5

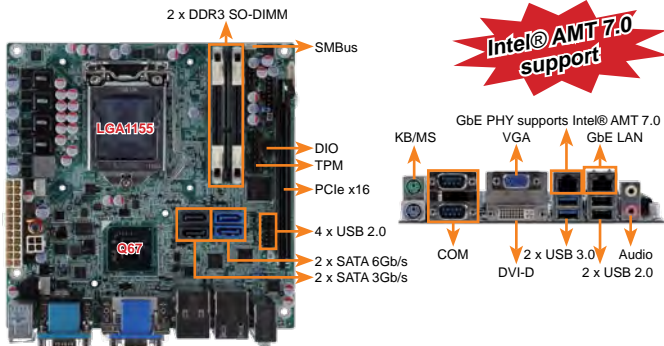
Power Supply/Peripherals

6

Panel Solutions Introduction

# KINO-AQ670

Mini-ITX SBC Supports LGA1155 Intel® Core™ i7/i5/i3/Pentium® and Celeron® CPU, DDR3, VGA/DVI-D, two COMs, Intel® GbE, SATA 6Gb/s, USB 3.0, HD Audio and RoHS



## Features

1. LGA1155 with Intel® 2nd generation Core™ i7/i5/i3/Pentium® and Celeron® processors supported
2. Dual-channel DDR3 1333/1066MHz supports up to 16GB
3. Supports dual independent display by VGA and DVI-D
4. High speed USB 3.0 and SATA 6Gb/s supported
5. Intel® GbE LAN with Intel® AMT 7.0 support
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: LGA1155 socket supports Intel® Core™ i7/i5/i3/Pentium® and Celeron® processors
- ◆ System Chipset: Intel® Q67
- ◆ Memory: Two 204-pin 1066/1333MHz dual-channel DDR3 SDRAM SO-DIMMs supported (system max. 16GB)
- ◆ BIOS: UEFI BIOS
- ◆ Ethernet: Intel® 82583V PCIe controller, Intel® 82579 PHY with Intel® AMT 7.0 support
- ◆ Graphics Engine: Supports DX10.1 and OpenGL3.0, Full MPEG-2, VC1, AVC Decode
- ◆ Display Output: Dual display supported, 1 x VGA (up to 2048 x 1536 @ 75Hz), 1 x DVI-D (up to 1920 x 1200 @ 60Hz)
- ◆ I/O Interface: 2 x RS-232, 1 x TPM pin header, 6 x USB 2.0, 2 x USB 3.0, 2 x SATA 3Gb/s, 1 x PS/2 KB/MS, 2 x SATA 6Gb/s with RAID 0/1/5/10 support
- ◆ Super I/O: Fintek F81866
- ◆ Audio: Realtek ALC662 HD audio codec
- ◆ Expansions: 1 x PCIe x16 slot
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ GPIO: Programmable 8-bit GPIO
- ◆ Fan Connector: 1 x 4-pin CPU fan connector, 1 x 3-pin system fan connector (Co-layout with 4-pin)
- ◆ Power Supply: AT/ATX power supply
- ◆ Power Consumption: 5V@3.84A, 12V@0.16A, Vcore\_12V@5.31A, 3.3V@1.81A, 5VSB@0.5A (2.5GHz Intel® Core™ i5-2400S with two 1333MHz 2GB DDR3 memory)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170 mm x 170 mm
- ◆ Weight: GW: 1100g/NW: 700g

## Packing List

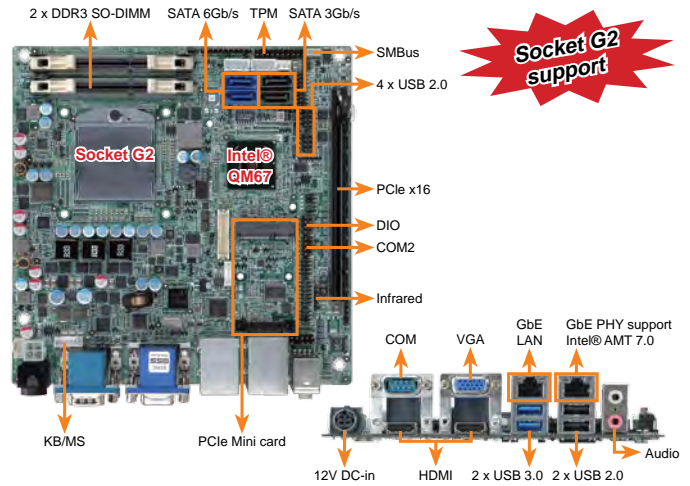
1 x KINO-AQ670 single board computer	
1 x I/O shielding (P/N: 45014-0008C0-00-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
KINO-AQ670-R10	Mini-ITX SBC supports LGA1155 Intel® Core™ i7/i5/i3 CPU, DDR3, VGA/DVI-D, 2 COM, Intel® GbE, SATA 6Gb/s, USB 3.0, HD Audio and RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32102-000100-200-RS	SATA power cable
SACF-KIT01-R10	SATA to CF converter board
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA-1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA-1155, dual core 2.7GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2120T	Intel® Core™ i3-2120T processor, LGA-1155, dual core 2.5GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G630T	Intel® Pentium® G630T processor, LGA1155, dual core 2.3GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA-1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS-11	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W

# KINO-QM670

Mini-ITX SBC with Socket G2 for Intel® mobile Core™ i7/i5/i3 CPU, VGA/Dual HDMI/LVDS, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s and Audio



## Features

1. Mini-ITX SBC with Socket G2 for Intel® Core™ i7/i5/i3 processor
2. Dual-channel 1333/1066MHz DDR3 SDRAM (system max. 8GB)
3. HDMI 1.3 compliant
4. 3D micro-architecture enhancements supports DX™10.1 and OGL™3.0
5. Rich media acceleration for hardware decoding and encoding acceleration
6. Intel® GbE LAN with Intel® AMT 7.0 supported
7. High speed I/O interface for PCIe Gen2 add-on card, USB 3.0 and SATA 6Gb/s

## Specifications

- ◆ CPU: Socket G2 for Intel® Core™ i7/i5/i3 processor
- ◆ PCH: Intel® QM67
- ◆ Memory: Two 204-pin 1333/1066 DDR3 dual-channel SO-DIMMs supported (system max. 8GB)
- ◆ BIOS: UEFI BIOS
- ◆ Ethernet: Intel® 82583V PCIe controller, Intel® 82579 PHY with Intel® AMT 7.0 supported
- ◆ Graphics Engine: Support for DX10.1 and OpenGL3.0, Full MPEG2, VC1, AVC Decode
- ◆ Display Output: Dual display supported, 1 x VGA, 2 x HDMI, 1 x 18/24-bit dual-channel LVDS support
- ◆ Super I/O: Fintek F81865
- ◆ Embedded Controller: ITE IT8518
- ◆ I/O Interface: 2 x RS-232, 1 x RS-422/485, 6 x USB 2.0, 2 x USB 3.0, 2 x SATA 3Gb/s, 2 x SATA 6Gb/s with RAID 0/1/5/10 support, 2 x SATA power connector, 1 x 6-pin KB/MS
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ SM bus: 1 x 4-pin wafer
- ◆ TPM: 2 x 10-pin header
- ◆ Expansion: 1 x PCIe Mini card slot, 1 x PCIe x16
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O: 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Infrared Interface: 1 x 5-pin header
- ◆ Fan Connector: 1 x 4-pin CPU fan connector, 1 x 3-pin system fan connector
- ◆ Power Supply: Single voltage 12V DC input, 1 x External DIN 4-pin DC jack, 1 x Internal 4-pin (2x2) power connector, Support AT/ATX mode
- ◆ Power Consumption: 12V@6.5A (2.1GHz Intel® Core™ i7-2710QE CPU with two 1333MHz 2GB DDR3 DIMM)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW: 900g/NW: 450g

## Packing List

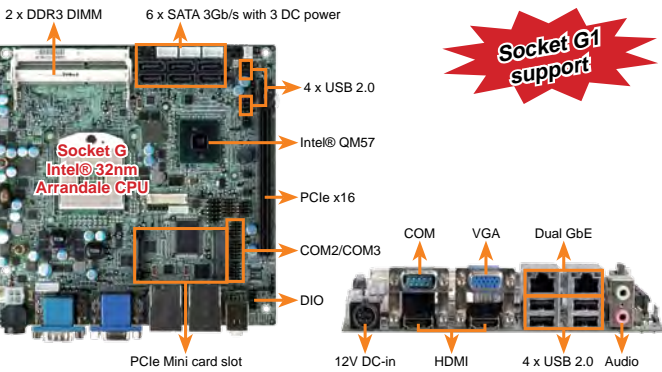
1 x KINO-QM670 single board computer	
2 x SATA with power output cable (P/N: 32801-000100-100-RS)	
1 x RS-232 cable (P/N: 19800-000300-100-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0029C0-00-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
KINO-QM670-R10	Mini-ITX SBC with Socket G2 for Intel® mobile Core i7/i5/i3 CPU, VGA/Dual HDMI/LVDS, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s and audio
19800-003100-200-RS	Dual USB cable
32000-023800-RS	KB/MS Y cable
32205-003800-100-RS	RS-422/485 cable
SACF-KIT01-R10	SATA to CF converter board
CF-989A-RS-R12	CPU cooler
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

# KINO-QM57A

Mini-ITX SBC with Socket G1 for Intel® mobile Core™ i7/i5/i3/Celeron® CPU, VGA/Dual HDMI/LVDS, PCIe GbE, USB 2.0, PCIe Mini, SATA 3Gb/s, Audio and RoHS



## Features

1. Mini-ITX SBC with Socket G for Intel® 32nm/45nm mobile Core™ i7/i5/i3 and Celeron® processor
2. 800/1066MHz dual-channel DDR3 SO-DIMM supported (System max. 8GB)
3. Analog CRT/18-bit or 24-bit dual-channel LVDS/Dual HDMI outputs supported
4. Intel® GbE LAN with Intel® AMT 6.0 support, iEzMan UI is bounded for remote control under Windows® environment
5. UEFI software interface between OS and platform firmware
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron® processor (Socket 988)
- ◆ PCH: Intel® QM57
- ◆ Memory: Two 204-pin 800/1066MHz dual-channel DDR3 SDRAM SO-DIMM supported (system max. 8GB)
- ◆ BIOS: UEFI BIOS
- ◆ Ethernet: 1 x Intel® 82577 GbE LAN controller with Intel® AMT 6.0 supported by iEzMan software UI, 1 x Intel® 82574L GbE LAN
- ◆ Graphics Engine: Gen 5.75 with 12 Execution Units DirectX® 10, OpenGL® 2.1
- ◆ Display Output: Dual display supported, 1 x VGA, 2 x HDMI, 1 x 18/24-bit dual-channel LVDS support
- Note: The Intel® quad-core processor is a discrete processor which does not integrate a graphics engine. If a quad-core processor is used on the motherboard, an additional graphic card must be installed in order to support display output. Otherwise, the display will show "No display output" when connected to the on-board display port.
- ◆ Super I/O: Fintek F81865
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ I/O Interface: 3 x RS-232, 8 x USB 2.0, 1 x RS-232/422/485 with auto flow control, 1 x 6-pin header for KB/MS, 6 x SATA 3Gb/s with RAID 0/1/5/10, support three SATA power connectors
- ◆ Expansion: 1 x PCIe Mini Card, 1 x PCIe x16
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Fan Connector: 1 x 4-pin CPU fan connector, 1 x 3-pin system fan connector
- ◆ Power Supply: Single voltage 12V DC input, 1 x External 4-pin DIN DC jack, 1 x Internal 4-pin (2x2) power connector Support AT/ATX mode
- ◆ Power Consumption: 12V@5.27A (2.66GHz Intel® Core™ i7 620M CPU with two 2GB 1333MHz DDR3 DIMMs)
- ◆ Temperature: Operation: 0°C ~ 60°C (32°F~140°F), Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW:1000g/NW:350g

## Packing List

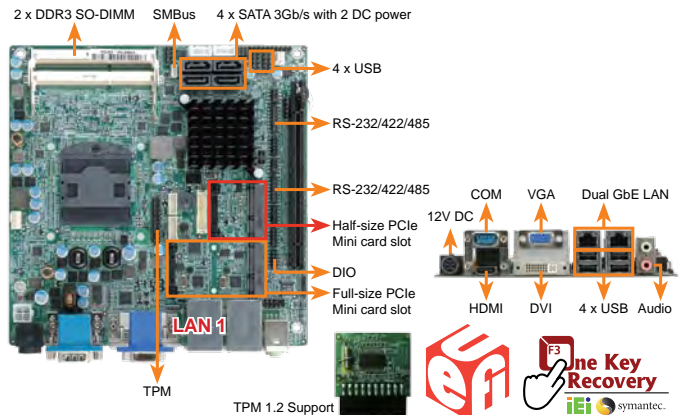
1 x KINO-QM57A single board computer	
3 x SATA with power output cable (P/N: 32801-000100-100-RS)	
1 x Dual RS-232 cable w/bracket (P/N: 19800-000112-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0029C0-00-RS)	1 x QIG
1 x One Key Recovery CD	1 x Utility CD

## Ordering Information

Part No.	Description
KINO-QM57A-R10	Mini-ITX SBC with Socket G1 for Intel® mobile Core™ i7/i5/i3/Celeron® CPU, VGA/Dual HDMI/LVDS, PCIe GbE, USB 2.0, PCIe Mini, SATA 3Gb/s and audio, RoHS
19800-003100-200-RS	Dual USB cable
SAIDE-KIT01-R10	SATA to IDE/CF converter board
WMPCIE-V01-R30	PCIe Mini card wireless LAN module
WMUSB-V01-R20	USB Mini card wireless LAN module
63000-FSP096AHB-RS	96W/12V power adaptor 90VAC~260VAC, DIN 4 pin
19800-004300-100-RS	RS-232/422/485 cable with bracket
CF-989A-RS-R12	CPU cooler for mobile socket-G (PGA988) up to 55W processor, Copper, 60mm x 60mm x 27.6mm, RoHS
CF-989B-RS-R11	CPU cooler for mobile socket-G (PGA988) 50W processor, Aluminum, 60x60x27.6mm, RoHS

# KINO-HM551

Mini-ITX SBC with Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron® CPU, VGA/DVI/LVDS/HDMI, Dual PCIe GbE, USB 2.0, Dual PCIe Mini, SATA 3Gb/s and Audio, RoHS



## Features

1. Mini-ITX SBC with Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron® processor
2. DDR3 800/1066MHz dual-channel SDRAM supported up to 8GB
3. 18/24-bit dual-channel LVDS/Analog CRT/DVI/HDMI output supported
4. PCIe x16 slot and dual PCIe Mini card for high speed device expansion
5. TPM V1.2 hardware security function supported by TPM module
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron® processor (Socket 988)
- ◆ PCH: Intel® HM55
- ◆ Memory: Two 204-pin 4GB (max.) 800/1066MHz dual-channel DDR3 SDRAM SO-DIMM supported (System max. 8GB)
- ◆ BIOS: UEFI BIOS
- ◆ Ethernet: Dual GbE LAN controller by Realtek RTL8111E LAN1 with ASF 2.0 support
- ◆ Graphics Engine: Gen 5.75 with 12 Execution Units DirectX® 10, OpenGL® 2.1
- ◆ Display Interface: Dual display supported, 1 x VGA, 2 x HDMI, 1 x 18/24-bit dual-channel LVDS support
- Note: The Intel® quad-core processor is a discrete processor which does not integrate a graphics engine. If a quad-core processor is used on the motherboard, an additional graphic card must be installed in order to support display output. Otherwise, the display will show "No display output" when connected to the on-board display port.
- ◆ Super I/O: Fintek F81865
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ TPM: 2 x 10-pin header
- ◆ Expansions: 1 x PCIe Mini card slot, 1 x Half-size PCIe Mini card slot, 1 x PCIe x16 slot
- ◆ I/O Interface: 4 x RS-232, 8 x USB 2.0, 2 x RS-232/422/485 with auto flow control, 4 x SATA 3Gb/s with two DC power connector, 1 x 6-pin header for KB/MS
- ◆ SMBus: 1 x 4-pin wafer connector
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Fan Connector: 1 x 4-pin CPU fan connector, 1 x 3-pin system fan connector
- ◆ Power Supply: Single voltage 12V DC input, 1 x External 4-pin DIN DC jack, 1 x Internal 4-pin (2x2) power connector AT/ATX power mode selected by jumper
- ◆ Power Consumption: 12V@4.67A (2.66GHz Intel® Core™ i7 620M CPU with two 1333MHz 4GB DDR3 DIMM)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW: 900g/NW: 450g

## Packing List

1 x KINO-HM551 single board computer	
1 x Dual RS-232 cable with bracket (P/N: 19800-000112-RS)	
2 x SATA with power cable (P/N: 32801-000100-100-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0032C0-00-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
KINO-HM551-R10	Mini-ITX SBC with Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron® CPU, VGA/DVI/LVDS/HDMI, Dual PCIe GbE, USB 2.0, Dual PCIe Mini, SATA 3Gb/s and Audio, RoHS
19800-003100-200-RS	Dual USB cable with bracket
SAIDE-KIT01-R10	SATA to IDE/CF converter board
19800-004300-100-RS	RS-232/422/485 cable with bracket
32000-023800-RS	KB/MS Y cable
CF-989A-RS-R12	CPU cooler for mobile socket-G (PGA988) up to 55W processor, Copper, 60mm x 60mm x 27.6mm, RoHS
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

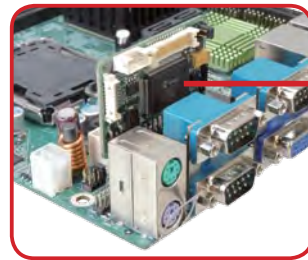
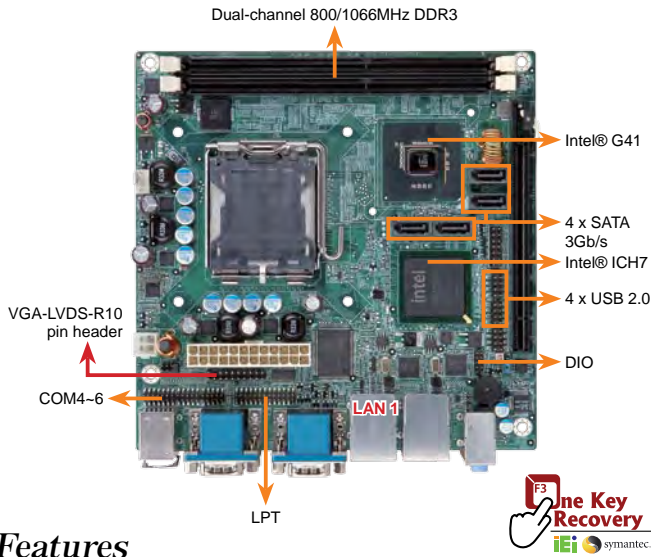
4 ORing Network Communication

5 Power Supply/Peripherals

6 Panel Solutions Introduction

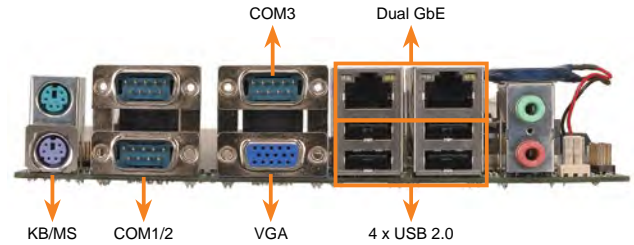
# KINO-G410

Mini-ITX SBC supports LGA775 Intel® Core™2 Quad CPU with a 1333MHz FSB, DDR3, VGA, dual PCIe GbE, six COM, four SATA 3Gb/s, audio and RoHS



### VGA-LVDS-R10

VGA to 24-bit dual-channel LVDS converter  
Supported resolution:  
800x600, 1024x768, 1280x1024, 1366x768, 1920x1080



## Features

1. LGA775 Intel® Core™2 Extreme/Quad/Duo and Celeron® processor with up to 1333MHz FSB
2. Intel® GMA X4500 delivers an excellent blend of graphics performance
3. Dual-channel 800/1066MHz DDR3 supports up to 8GB
4. LVDS supported by VGA-LVDS-R10 converter board
5. Complete I/O interfaces for six COM, eight USB, LPT and four SATA 3Gb/s
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
LGA775 45nm Intel® Core™2 Quad, Core™2 Duo, Pentium® D, Celeron® at FSB 800/1066/1333MHz processors
- ◆ System Chipset  
Intel® G41 + ICH7
- ◆ Memory  
Two 240-pin 800/1066MHz dual-channel DDR3 SDRAM DIMM supported (System max. 8GB)
- ◆ BIOS  
UEFI BIOS
- ◆ Ethernet  
Dual Realtek RTL8111E PCIe GbE controller, LAN 1 with ASF 2.0 support
- ◆ Graphics Engine  
Intel® GMA X4500
- ◆ Display Interface  
VGA integrated in Intel® G41  
24-bit LVDS by VGA-LVDS-R10
- ◆ Super I/O  
Fintek F81865
- ◆ Audio  
Realtek ALC888 HD Audio codec
- ◆ Expansion  
1 x PCIe x16 slot
- ◆ TPM (Optional)  
On-board Infineon SLB9635TT1.2
- ◆ I/O Interface  
5 x RS-232                      8 x USB 2.0  
1 x LPT                              4 x SATA 3Gb/s  
2 x PS/2 KB/MS  
1 x RS-232/422/485 with auto flow control
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input/4-bit output
- ◆ Fan Connector  
1 x 4-pin CPU fan connector  
1 x 3-pin system fan connector
- ◆ Power Supply  
ATX power supply
- ◆ Power Consumption  
5V@6.41A, Vcore\_12V@2.52A, 3.3V@0.27A (2.8GHz Intel® Core™2 Duo E7400 with two 1066MHz 1GB DDR3)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW:1100g/NW: 700g

## Packing List

1 x KINO-G410 single board computer	
1 x I/O shielding (P/N: 45014-0014C0-00-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
KINO-G410-R10	Mini-ITX SBC supports LGA775 Intel® Core™2 Quad CPU with a 1333MHz FSB, DDR3, VGA, Dual PCIe GbE, 6 COM, 4 SATA 3Gb/s and Audio, RoHS
KINO-G410T-R10	Mini-ITX SBC supports LGA775 Intel® Core™2 Quad CPU with a 1333MHz FSB, DDR3, VGA, Dual PCIe GbE, 6 COM, 4 SATA 3Gb/s and Audio, TPM, RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32102-000100-200-RS	SATA power cable
CF-775A-RS	CPU cooler for 130W
CF-520-RS-R11	CPU cooler for 115W
CF-775B-RS	1U CPU cooler for 90W
32200-015100-RS	LPT cable
32205-000300-100-RS	RS-232/422/485 cable
19800-000112-RS	Dual RS-232 with bracket cable
VGA-LVDS-R10	VGA to 24-bit dual-channel LVDS convertor module

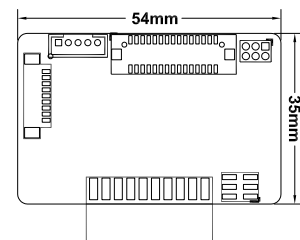
# VGA-LVDS-R10

VGA to 24-bit dual-channel LVDS converter board



- ◆ LVDS supported by scaling chip Novatek 68667UFG
- ◆ Supported resolution:  
800x600, 1024x768, 1280x1024, 1366x768, 1920x1080
- ◆ Compatible with IEI Mini-ITX SBC KINO-G410 only

### Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
VGA-LVDS-R10	VGA to 24-bit dual-channel LVDS converter module
32600-004900-RS	30-pin LVDS connecting cable for evaluation only

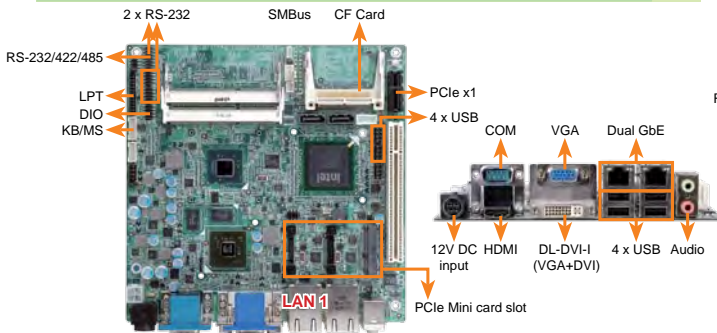
## Packing List

1 x VGA to LVDS converter module	1 x Mini jumper pack	1 x QIG
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# KINO-PVN-D4251/D5251

Mini-ITX SBC with Intel® Atom™ D425/D525, VGA/DVI-DL/HDMI by Nvidia GT218-ION, Dual GbE, Audio, USB 2.0 and SATA 3Gb/s, RoHS



## Features

1. Mini-ITX form factor with Intel® Atom™ D525/D425 processor
2. 12V single voltage input designed for AT/ATX power
3. Two 800MHz DDR3 SO-DIMM slots support up to 4GB memory
4. Excellent graphics engine supports VGA, dual-link DVI-I, HDMI by Nvidia GT218-ION for dual independent display
5. Complete I/O with eight USB, two SATA 3Gb/s, one CF Type II, one LPT, four COM and audio
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU
  - Intel® Atom™ D525 dual-core processor (1.8GHz/1MB L2 cache)
  - Intel® Atom™ D425 single-core processor (1.8GHz/512KB L2 cache)
- ◆ Chipset: ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory
  - Two 204-pin 800MHz DDR3 SDRAM SO-DIMMs supported (system max. 4GB) for D525/D425
- ◆ Graphic
  - On-board NVIDIA GT218-ION graphics chip with 512MB DDR3 memory
- ◆ Display Interface
  - Dual display supported
  - 1 x VGA
  - 1 x HDMI
  - 1 x DVI-I
- ◆ Ethernet
  - Dual PCIe GbE by Realtek RTL8111E, LAN1 with ASF 2.0 support
- ◆ Digital I/O
  - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ I/O Interfaces
  - 1 x LPT
  - 8 x USB 2.0
  - 1 x KB/MS
  - 2 x SATA 3Gb/s
  - 3 x RS-232
  - 1 x CF Type II
  - 1 x RS-232/422/485 with auto flow control
- ◆ SMBus
  - 1 x 4-pin wafer connector
- ◆ Expansion
  - 1 x PCI slot
  - 1 x PCIe x1 slot
  - 1 x PCIe Mini card slot
- ◆ Audio
  - Realtek ALC888 HD Audio codec
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
  - 12V, AT/ATX power mode
  - 1 x External 4-pin DIN DC jack
  - 1 x Internal 4-pin (2x2) power connector
- ◆ Super IO: Fintek F81865
- ◆ Fan Connector
  - 1 x 4-pin CPU fan connector
  - 1 x 3-pin system fan connector
- ◆ Power Consumption
  - 12V@3.44A (Intel® Atom™ D525 1.8GHz with two 1333MHz 2GB DDR3 DIMM)
  - 12V@3.11A (Intel® Atom™ D425 1.8GHz with two 1333MHz 2GB DDR3 DIMM)
- ◆ Operating Temperature
  - 10°C ~ 60°C
- ◆ Operating Humidity
  - 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW: 900g/NW: 360g

## Packing List

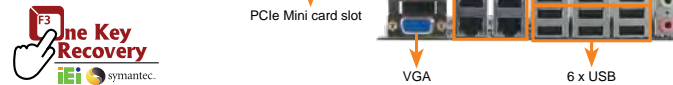
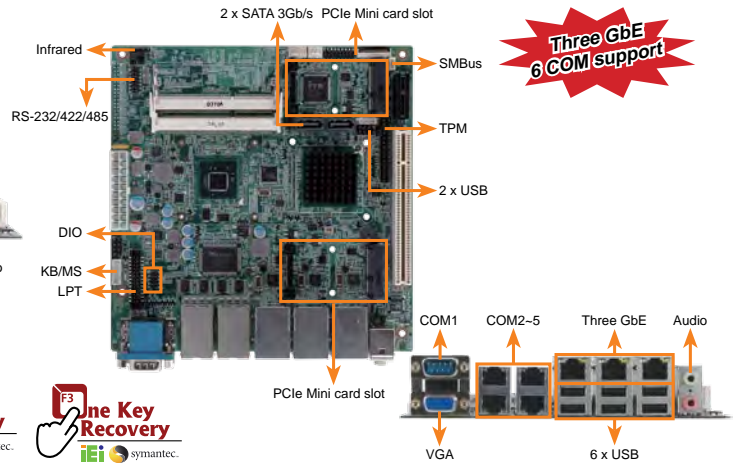
1 x KINO-PVN-D4251/D5251 single board computer	
1 x SATA with 5V/12V output cable kit (P/N: 32801-000100-100-RS)	
1 x SATA with 5V output cable kit (P/N: 32801-000201-100-RS)	1 x One Key Recovery CD
1 x RS-232 cable with bracket (P/N: 19800-000300-100-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0032C0-00-RS)	1 x QIG
1 x DVI to VGA Adaptor (P/N: 33200-000031-RS)	1 x Utility CD

## Ordering Information

Part No.	Description
KINO-PVN-D5251-R10	Mini-ITX SBC with Intel® Atom™ D525 1.8GHz/1MB L2 cache, DDR3, VGA/DVI-I DL/HDMI by Nvidia GT218, dual GbE, audio, USB 2.0 and SATA 3Gb/s, RoHS
KINO-PVN-D4251-R10	Mini-ITX SBC with Intel® Atom™ D425 1.8GHz/512KB L2 cache, DDR3, VGA/DVI-I DL/HDMI by Nvidia GT218, dual GbE, audio, USB 2.0 and SATA 3Gb/s, RoHS
32000-0023800-RS	PS2 KB/MS cable
32100-192900-RS	One 4-pin (2x2) to one 4-pin (1x4) DC power cable with terminal block
32200-015100-RS	LPT cable
19800-004300-100-RS	RS-232/422/485 cable with bracket
19800-003100-200-RS	Dual-port USB cable
PCIER-K101L-R10	PCIe x1 riser card

# KINO-PV-D4253/D5253

Mini-ITX SBC supports Intel® Atom™ D525/D425, DDR3, VGA, three GbE, six COM, USB 2.0 and SATA 3Gb/s, RoHS



## Features

1. Mini-ITX form factor with Intel® Atom™ D525/D425 processor
2. Two 800MHz DDR3 SO-DIMM slots support up to 4GB
3. Compliant with 1U chassis
4. Three GbE LAN with ASF 2.0 support
5. Complete I/O with eight USB, two SATA 3Gb/s, one LPT, six COM and audio

## Specifications

- ◆ CPU
  - Intel® Atom™ D525 dual-core processor (1.8GHz/1MB L2 cache)
  - Intel® Atom™ D425 single-core processor (1.8GHz/512KB L2 cache)
- ◆ Chipset: ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory
  - 2 x 800MHz DDR3 SO-DIMM up to 4GB
- ◆ Graphic
  - GMA 3150
- ◆ Display Interface
  - Analog CRT up to 2048x1536, CRT hotplug supported
- ◆ Ethernet
  - Three PCIe GbE by Realtek RTL8111E with ASF 2.0 support
- ◆ I/O Interfaces
  - 1 x LPT
  - 1 x KB/MS pin header
  - 1 x SATA 3Gb/s
  - 8 x USB 2.0
  - 4 x RS-232 (RJ-45)
  - 1 x RS-232 (DB-9)
  - 1 x RS-232/422/485 (pin header)
- ◆ SMBus: 1 x 4-pin wafer connector
- ◆ TPM: 2 x 10-pin header
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Expansion
  - 1 x PCI Slot
  - 1 x PCIe x1 slot
  - 2 x PCIe Mini card slot
- ◆ Audio
  - Realtek ALC888 HD Audio codec
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
  - AT/ATX power supply support
- ◆ Super IO
  - Fintek F81865
- ◆ Fan Connector
  - 1 x 4-pin CPU fan connector
  - 1 x 3-pin system fan connector
- ◆ Power Consumption
  - 12V@0.76A, 5V@2.62A (Intel® Atom™ D525 1.8GHz with two 1333MHz 1GB DDR3 DIMM)
- ◆ Operating Temperature
  - 10°C ~ 60°C
- ◆ Operating Humidity
  - 5% ~ 95%, non-condensing
- ◆ Dimensions
  - 170mm x 170mm
- ◆ Weight
  - GW: 900g/NW: 360g

## Packing List

1 x KINO-PV-D4253/D5253 single board computer	
1 x SATA cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0036C0-00-RS)	1 x QIG
1 x One Key Recovery CD	1 x Utility CD

## Ordering Information

Part No.	Description
KINO-PV-D5253-R10	Mini-ITX SBC with Intel® Atom™ D525 1.8GHz, DDR3, VGA, 6 COM, 3 GbE, dual PCIe Mini, SATA 3Gb/s, and audio
KINO-PV-D4253-R10	Mini-ITX SBC with Intel® Atom™ D425 1.8GHz, DDR3, VGA, 6 COM, 3 GbE, dual PCIe Mini, SATA 3Gb/s, and audio
32000-0023800-RS	PS2 KB/MS cable
32102-000100-200-RS	SATA power cable
32200-015100-RS	LPT cable
32005-000200-100-RS	RJ-45 to RS-232 cable
19800-003100-200-RS	Dual USB port with bracket
PCIER-K101L-R10	PCIe x1 riser card
19800-004300-100-RS	RS-232/422/485 cable
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

1

Industrial Computing Solutions

2

Video Capture Solutions

3

Embedded Computing Solutions

4

ORing Network Communication

5

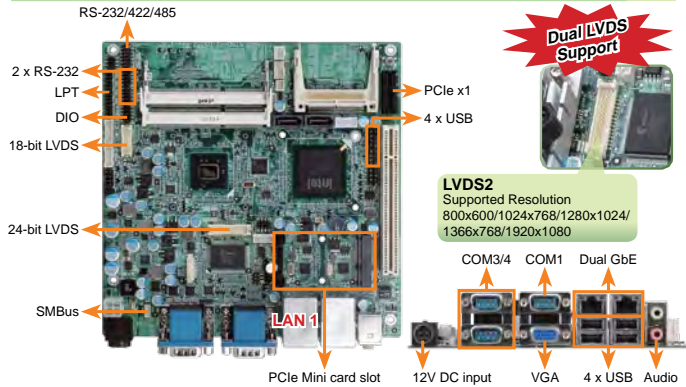
Power Supply/Peripherals

6

Panel Solutions Introduction

# KINO-PV-D4252/D5252

Mini-ITX SBC with Intel® Atom™ D425/D525, DDR3, VGA/18+48-bit LVDS, Dual GbE, Audio, USB 2.0 and SATA 3Gb/s, RoHS



## Features

1. Mini-ITX SBC with Intel® Atom™ D525/D425 processor
2. Support 800MHz DDR3 SO-DIMM socket (system max. 4GB)
3. Support 24-bit dual-channel LVDS with up to 1920x1080 resolution
4. Complete I/O with eight USB, two SATA 3Gb/s, one CF Type II, six COM and audio
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
Intel® Atom™ D525 dual-core processor  
1.8GHz/1MB L2 cache  
Intel® Atom™ D425 single-core processor  
1.8GHz/512KB L2 cache
- ◆ Chipset: ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory  
Two 204-pin 800MHz DDR3 SDRAM SO-DIMMs supported (System max. 4GB) for D525/D425
- ◆ Graphic  
GMA 3150  
Graphic core speed 400MHz for D525/D425
- ◆ Display Interface  
Analog CRT up to 2048x1536 for D525/D425  
Support CRT hotplug  
18-bit single-channel LVDS, resolution support up to WXGA 1366x768 or XGA 1024x768  
24-bit dual-channel LVDS by Novatek 68667UFG, resolution support up to 1920x1080
- ◆ Ethernet  
Dual GbE by Realtek RTL8111E, LAN1 with ASF 2.0 support
- ◆ SMBus: 1 x 4-pin wafer connector
- ◆ Super IO: Fintek F81865
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ Expansion  
1 x PCI slot  
1 x PCIe x1 slot  
1 x PCIe Mini card slot
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ I/O Interfaces  
5 x RS-232  
2 x SATA 3Gb/s  
1 x CF Type II  
1 x RS-232/422/485 (COM2) with Auto Flow control
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Power Supply  
12V, AT/ATX power mode  
1 x External 4-pin DIN DC jack  
1 x Internal 4-pin (2x2) power connector
- ◆ TPM (Optional)  
On-board Infineon SLB9635TT1.2
- ◆ Fan Connector  
1 x 4-pin CPU fan  
1 x 3-pin system fan
- ◆ Power Consumption  
12V@1.95A (Intel® Atom™ D525 1.8GHz with two 1GB DDR3)
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Weight: GW: 800g/NW: 340g

## Packing List

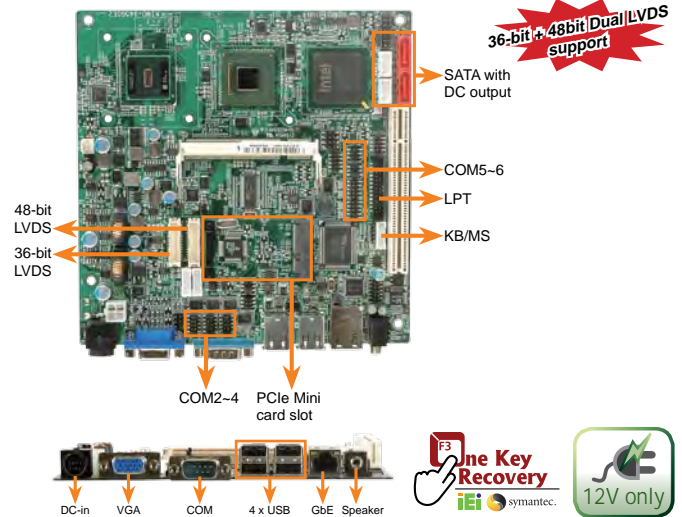
1 x KINO-PV-D4252/D5252 single board computer	
1 x RS-232 cable with bracket (P/N: 19800-000300-100-RS)	
1 x SATA with power cable (P/N: 32801-000100-100-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0024C0-01-RS)	1 x QIG
1 x One Key Recovery CD	1 x Utility CD

## Ordering Information

Part No.	Description
KINO-PV-D5252-L2-R10	Mini-ITX SBC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/18+48-bit LVDS, dual GbE, audio, USB 2.0 and SATA 3Gb/s, RoHS
KINO-PV-D5252T-L2-R10	Mini-ITX SBC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/18+48-bit LVDS, dual GbE, audio, USB 2.0 and SATA 3Gb/s, TPM, RoHS
KINO-PV-D4252-R10	Mini-ITX SBC with Intel® Atom™ D425 1.8GHz, DDR3, VGA/18-bit LVDS, dual GbE, audio, USB 2.0 and SATA 3Gb/s, RoHS
KINO-PV-D4252T-R10	Mini-ITX SBC with Intel® Atom™ D425 1.8GHz, DDR3, VGA/18-bit LVDS, dual GbE, audio, USB 2.0 and SATA 3Gb/s, TPM, RoHS
32000-0023800-RS	PS2 KB/MS cable
32100-192900-RS	One 4-pin (2x2) to one 4-pin (1x4) DC power cable with terminal block
32200-015100-RS	LPT cable
19800-004300-100-RS	RS-232/422/485 cable with bracket
19800-003100-200-RS	Dual-port USB cable
31100-000327-RS	CPU fan
PCIER-K101L-R10	PCIe x1 riser card

# KINO-945GSE2

Mini-ITX SBC with 1.6GHz Intel® Atom™ N270, DC 12V input, VGA/36-bit + 48-bit LVDS/HDTV, Dual PCIe GbE, USB 2.0, SATA and Audio



## Features

1. 1.6GHz Intel® Atom™ N270 processor with fanless support
2. One 400/533MHz DDR2 SO-DIMM socket supports up to 2GB memory
3. One PCIe Mini card and one PCI slot for expansion
4. 36-bit and 48-bit LVDS support dual display outputs
5. Single voltage 12V DC input
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
1.6GHz Intel® Atom™ N270 processor with a 533MHz FSB
- ◆ System Chipset  
Intel® 945GSE+ICH7M
- ◆ BIOS  
AMI BIOS
- ◆ Memory  
One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet  
1 x Realtek PCIe RT81111CP GbE controller
- ◆ I/O Interface  
6 x USB 2.0  
2 x SATA with DC power  
1 x RS-232 DB-9  
3 x RS-232  
2 x RS-232/422/485  
1 x LPT  
1 x 6-pin box header (2.0mm pitch) for KB/MS
- ◆ Graphic  
Intel® Graphics Media Accelerator 950
- ◆ Display Output  
VGA integrated in Intel® 945GSE  
Support HDTV resolution up to 1080i by component interface  
18-bit dual-channel LVDS by Intel® 945GSE  
24-bit dual-channel LVDS by Chrontek CH7308B
- ◆ Expansion  
1 x PCI  
1 x PCIe Mini card
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface  
1 x Infrared interface by pin header
- ◆ Super IO  
Fintek 81865
- ◆ Audio  
Realtek ALC655 AC'97 codec
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ DC Connector  
Two 4-pin 5V power connectors (mainly for 2.5" HDD used)
- ◆ Power Supply  
Single voltage 12V DC input  
1 x External 4-pin DIN DC jack  
1 x Internal 4-pin (2x2) power connector
- ◆ Power Consumption  
1.73A@12V (Intel® Atom™ N270 1.6GHz with 2GB DDR2)
- ◆ Operating Temperature  
0°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
170mm x 170mm
- ◆ Weight  
GW: 1000g/NW: 350 g

## Packing List

1 x KINO-945GSE2 single board computer	
2 x SATA 5V power output cable (P/N: 32801-000100-100-RS)	
1 x Dual RS-232 cable (P/N: 19800-000112-RS)	
1 x I/O shielding (P/N: 45014-0031C0-00-RS)	
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x Mini jumper pack
1 x Audio cable (P/N: 32000-072100-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
KINO-945GSE2-N270-R10	Mini-ITX SBC with Intel® Atom™ N270 1.6G, 12V DC input, VGA/18+24-bit LVDS/HDTV, PCIe GbE, USB 2.0, SATA and Audio
19800-003100-200-RS	Dual USB cable
32100-192900-RS	One 4-pin (2x2) to one 4-pin (1x4) DC power cable with terminal block
32200-015100-RS	LPT cable
63000-FSP0601AD101C746-RS	60W/12V power adaptor 90VAC~260VA, 4-pin DIN

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

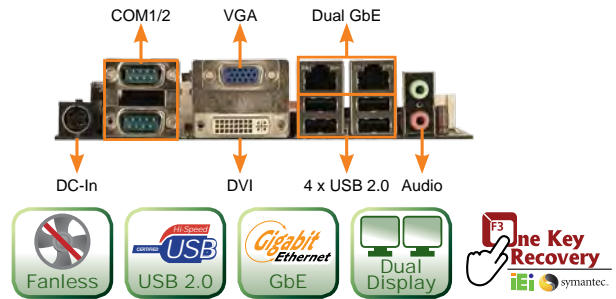
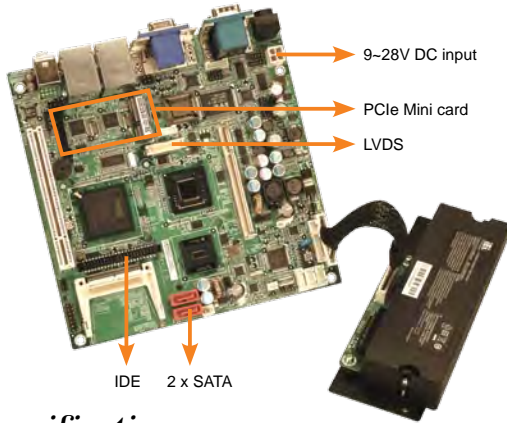
4 ORing Network Communication

5 Power Supply/Peripherals

6 Panel Solutions Introduction

# eKINO-945GSE-R11

Mini-ITX SBC support AUPS sub-system, Intel® Atom™ N270 1.6GHz, Wide range 9-28VDC input, VGA/DVI/HDTV



## Specifications

- ◆ CPU  
Intel® Atom™ processor N270 1.6GHz with 533MHz FSB 512K L2 Cache
- ◆ System Chipset  
Intel® 945GSE + Intel® ICH7M
- ◆ BIOS  
AMI BIOS
- ◆ Memory  
One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet  
Dual Realtek PCIe 8111CP GbE controller
- ◆ I/O Interface  
6 x USB 2.0                      3 x RS-232  
1 x IDE                              2 x SATA with 5V DC output  
1 x RS-232/422/485              1 x 6-pin header for KB/MS
- ◆ Graphic  
Intel® Graphics media accelerator 950 (Intel® GMA 950)
- ◆ Display Output  
VGA integrated in Intel® 945GSE  
Support HDTV resolution up to 1080i by component interface  
18-bits dual-channel LVDS by Intel® 945GSE  
DVI-D support by silicon image Sil1362
- ◆ Expansion  
1 x PCI, 1 x PCIe Mini card
- ◆ DC connector  
Two 4-pin 5V power connectors (mainly for 2.5" HDD used)
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface  
1 x 5-pin header
- ◆ SSD  
1 x CF Type II
- ◆ Super IO  
ITE IT8718F
- ◆ Audio  
Realtek ALC655 AC'97 Codec
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Power Supply  
Maximum input voltage range: 9V~28V  
Recommend operating input voltage range: 12V~24V  
1 x External 4-pin DIN DC jack  
1 x Internal 4-pin (2x2) power connector
- ◆ Power Consumption  
12V@1A (Intel® Atom™ N270 with 1GB DDR2)
- ◆ Temperature  
Operation: 0°C ~ 40°C with AUPS sub-system  
Operation: 0°C ~ 60°C without AUPS sub-system  
Storage: -20°C ~ 70°C
- ◆ Humidity  
Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW: 1100g/NW: 400 g

## Features

1. Intel® Atom™ N270 1.6GHz with ultra low voltage fanless support
2. Wide range 9-28V DC input
3. Equipped with AUPS sub-system acts as a simple UPS system
4. Dual-display supported by VGA + DVI-D, LVDS + VGA, LVDS + DVI-D
5. Support six USB 2.0, two SATA, four COM
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

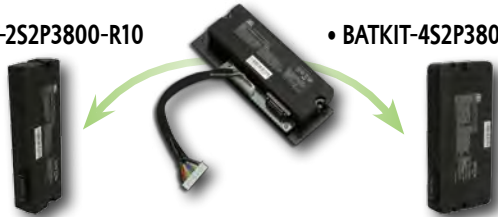
1 x eKINO-945GSE single board computer
2 x SATA 5V power output cable (P/N: 32801-000100-100-RS)
1 x I/O shielding (P/N: 45014-0023C0-00-RS)
1 x Mini jumper pack
1 x KB/MS Y cable (P/N: 32000-023800-RS)
1 x Utility CD
1 x One Key Recovery CD
1 x QIG

## Ordering Information

Part No.	Description
eKINO-945GSE-N270UPS-R11	Mini-ITX SBC supports AUPS sub-system, Intel® Atom™ N270 1.6GHz, wide range 9-28VDC input, VGA/DVI/HDTV
19800-003100-200-RS	Dual USB cable
WMPCIE-V01-R30	PCIe Mini card wireless LAN module
BATKIT-2S2P3800-R10	2S2P 7.4V 3800mAH AUPS battery kit
BAT-LI-2S2P3800	2S2P 7.4V 3800mAH smart battery
BATKIT-4S2P3800-R10	4S2P 14.8V 3800mAH AUPS battery kit
BAT-LI-4S2P3800	4S2P 14.8V 3800mAH smart battery
63000-FSP0601AD101C746-RS	60W/12V power adaptor 90VAC~260VAC, 4-pin DIN
63000-FSP120AAB-RS	120W/19V power adaptor, 90VAC~264VAC, 4-pin DIN
32200-000009-RS	44-pin 2.5" IDE cable
32100-192900-RS	One 4-pin (2 x 2) to one 4-pin (1 x 4) DC power cable with terminal block
19800-000300-100-RS	RS-232 cable with bracket
32200-833600-RS	RS-422/485 cable

## AUPS Battery Kit

- BATKIT-2S2P3800-R10
- BATKIT-4S2P3800-R10



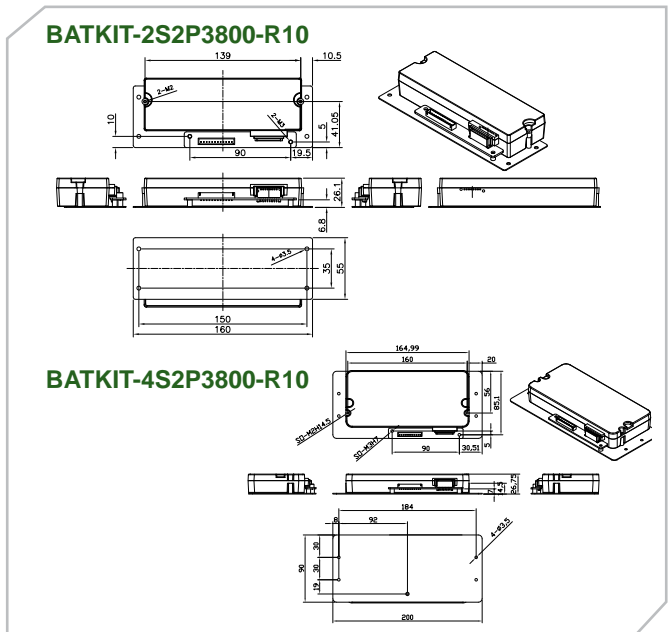
P/N: BAT-LI-2S2P3800  
2S2P 7.4V 3800mAH

P/N: BAT-LI-4S2P3800  
4S2P 14.8V 3800mAH

## Battery Specifications

Battery Model	BAT-LI-2S2P3800	BAT-LI-4S2P3800
Battery type	Li-Ion 2S2P 7.4V	Li-Ion 4S2P 14.8V
Battery capacity	7.4V 3800mAH	14.8V, 3800mAH
Maximum charge voltage	8.4V	16.8V
The end of discharging voltage	5.6V	11.2V
Battery charge time (Power off)	2.5hrs	5hrs
Battery charge time (Power on)	6.5hrs	13hrs
Operating temp.	0°C ~ 40°C	0°C ~ 40°C
Storage temp.	-20°C ~ 60°C	-20°C ~ 60°C
Cycle life	300 charge/discharge cycles	
Backup	60W/10Min	100W/10Min
Safety class	CE	

## Dimensions (Unit: mm)



1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

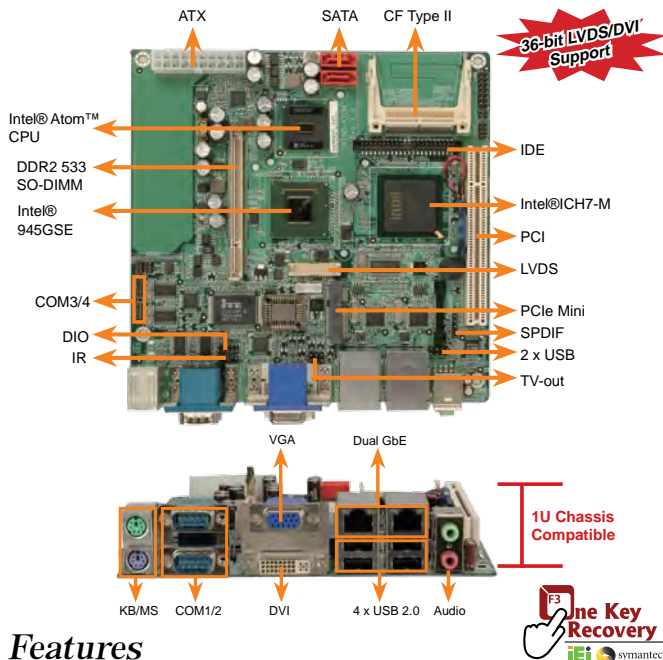
4 ORing Network Communication

5 Power Supply/Peripherals

6 Panel Solutions Introduction

# KINO-945GSE-R11

Mini-ITX SBC with Intel® Atom™ N270 1.6G, VGA/DVI/TV, Dual PCIe GbE, USB 2.0, SATA and Audio



## Features

1. Intel® Atom™ processor N270 1.6GHz with ultra low voltage fanless support
2. 400/533MHz DDR2 SO-DIMM memory support up to 2GB
3. Dual display support by VGA + DVI-D, LVDS + VGA, LVDS + DVI-D
4. Support PCIe Mini slot and PCI slot for expansion
5. Support six USB 2.0, two SATA, four COM
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: Intel® Atom™ processor N270 1.6GHz with a 533MHz FSB
- ◆ System Chipset: Intel® 945GSE + ICH7M
- ◆ BIOS: AMI BIOS
- ◆ Memory: One 200-pin 400/533 DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet: Dual Realtek PCIe 8111CP GbE chipset
- ◆ I/O Interface: 6 x USB 2.0, 2 x SATA, 1 x CF Type II, 3 x RS-232, 1 x RS-232/422/485, 1 x IDE, 2 x PS/2 for KB/MS
- ◆ Graphic: Intel® Graphics Media Accelerator 950
- ◆ Display Output: VGA integrated in Intel® 945GSE. Support HDTV resolution up to 1080i by component interface. 18-bit dual-channel LVDS by Intel® 945GSE. DVI-D supported by silicon image Sil1362
- ◆ Expansion: 1 x PCI, 1 x PCIe Mini card
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface by pin header
- ◆ Super IO: ITE IT8718F
- ◆ Audio: Realtek ALC655 AC'97 codec
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: AT/ATX power support
- ◆ Power Consumption: 2.89A@5V, 0.04A@12V (Intel® Atom™ N270 with 1GB DDR2)
- ◆ Temperature: KINO-945GSE-N270-R11: Operation: 0°C ~ 60°C (32°F~140°F), Storage: -20°C ~ 70°C; KINO-945GSE-N270W-R11: Operation: -20°C ~ 70°C
- ◆ Humidity: Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW: 1100g/NW: 370g

## Packing List

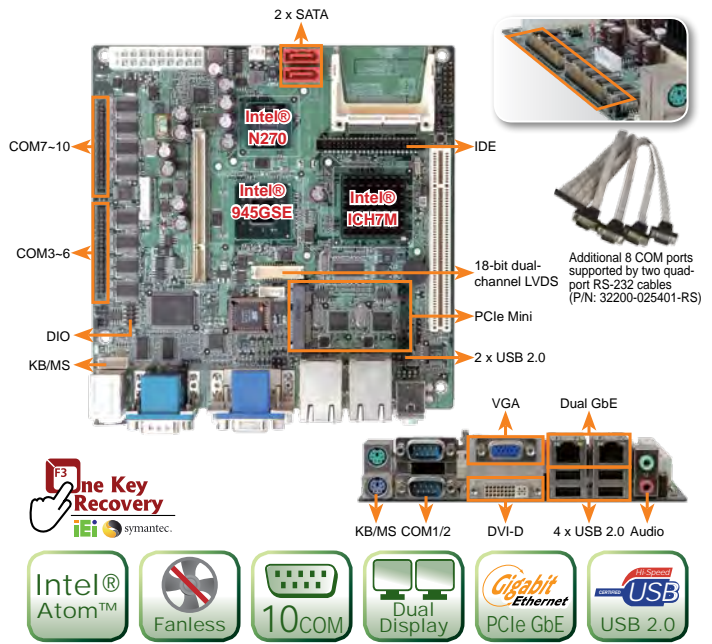
1 x KINO-945GSE single board computer	
1 x Dual RS-232 cable (P/N: 19800-000112-RS)	
1 x I/O shielding (P/N: 45014-0008C0-00-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
KINO-945GSE-N270-R11	Mini-ITX SBC with Intel® Atom™ N270 1.6G, VGA/DVI/TV, Dual PCIe GbE, USB 2.0, SATA and Audio
KINO-945GSE-N270W-R11	Mini-ITX SBC with Intel® Atom™ N270 1.6G, VGA/DVI/TV, Dual PCIe GbE, USB 2.0, SATA and Audio, -20~70°C
19800-003100-200-RS	Dual USB cable
32102-000100-200-RS	SATA power cable
32200-000009-RS	44-pin 2.5" IDE cable
32200-833600-RS	RS-422/485 cable

# KINO-945GSE3

Mini-ITX SBC with Intel® Atom™ N270 1.6G, VGA/DVI/LVDS, Dual PCIe GbE, USB 2.0, ten COM, SATA and Audio



## Features

1. Intel® Atom™ N270 processor 1.6GHz for fanless support
2. 400/533MHz DDR2 SO-DIMM memory support up to 2GB
3. Dual display support by VGA + DVI-D/LVDS + VGA/LVDS + DVI-D
4. Support PCIe Mini card/PCI slot for expansion
5. Complete I/O interfaces: six USB 2.0, two SATA and ten COM
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: Intel® Atom™ N270 processor 1.6GHz with a 533MHz FSB
- ◆ System Chipset: Intel® 945GSE+ICH7M
- ◆ BIOS: AMI BIOS
- ◆ Memory: One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet: Dual Realtek PCIe RTL8111E GbE Chipsets, LAN1 with ASF 2.0 support
- ◆ I/O Interface: 6 x USB 2.0, 2 x SATA, 1 x CF Type II, 1 x 6-pin header for KB/MS, 1 x IDE, 1 x RS-232/422/485, 9 x RS-232, 2 x PS/2 for KB/MS
- ◆ Graphic: GMA950
- ◆ Display Output: VGA integrated in Intel® 945GSE. Support HDTV resolution up to 1080i by component interface. 18-bits dual-channel LVDS by Intel® 945GSE. DVI-D support by Silicon Image Sil1362
- ◆ Expansion: 1 x PCI, 1 x PCIe Mini card
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface: 1 x Infrared Interface by pin header
- ◆ Super IO: Fintek F81865
- ◆ Audio: Realtek ALC655 AC'97 codec
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: AT/ATX power supply support
- ◆ Power Consumption: 12V@0.43A, 5V@4.5A (Intel® Atom™ N270 1.6GHz with 2GB DDR2)
- ◆ Temperature: Operation: -10°C ~ 60°C
- ◆ Humidity: Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW: 1100g/NW: 370g

## Packing List

1 x KINO-945GSE3 single board computer	
2 x Quad port RS-232 cable (P/N: 32200-025401-RS)	
1 x I/O shielding (P/N: 45014-0008C0-00-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
KINO-945GSE3-N270-R10	Mini-ITX SBC with Intel® Atom™ N270 1.6G, VGA/DVI/LVDS, Dual PCIe GbE, USB 2.0, 10 COM, SATA and Audio
19800-003100-200-RS	Dual USB cable
32102-000100-200-RS	SATA power cable
32200-0833600-RS	RS-422/485 cable
32200-000009-RS	44-pin 2.5" IDE cable
32200-023800-RS	Keyboard/Mouse Y cable

# PCIER Riser Card

## PCIe x1 Riser Card

### PCIER-K101L-R10

Dimensions: 135mm x 31mm

### Packing List

1 x PCIe x1 riser card

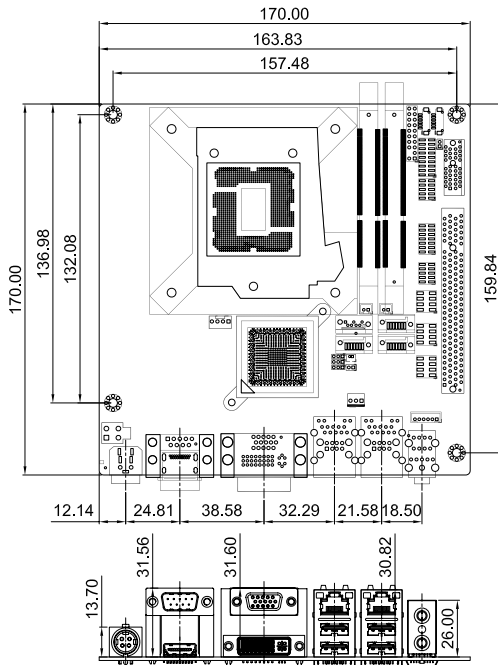
1 x QIG



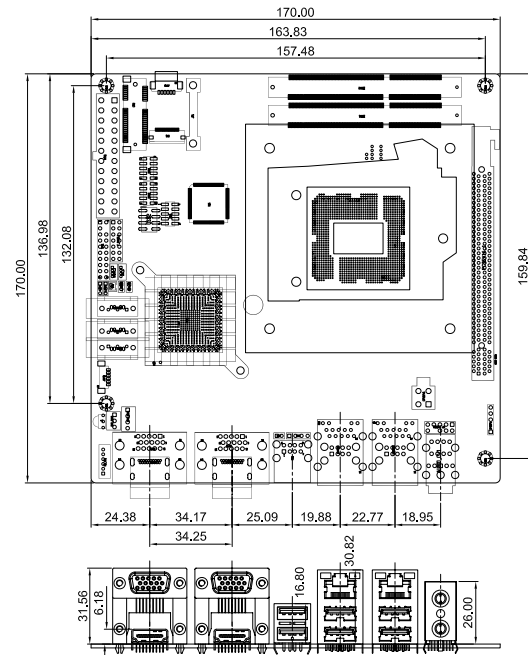
Compatible model list KINO-PVN-D4251/D5251, KINO-PV-D4252/D5252

## Mini-ITX Dimensions (Unit: mm)

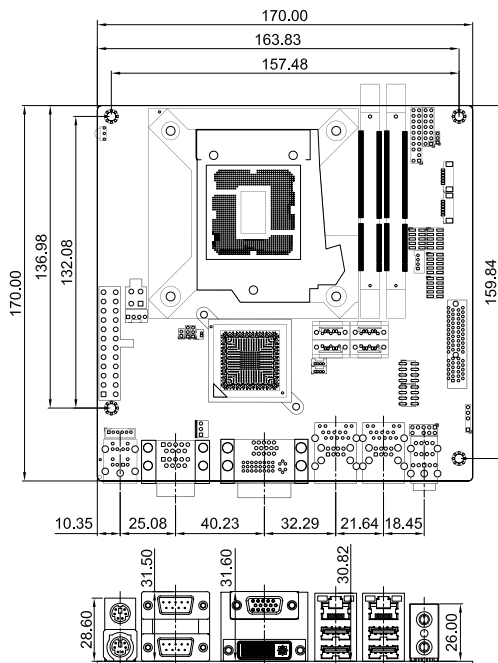
**KINO-DH610**



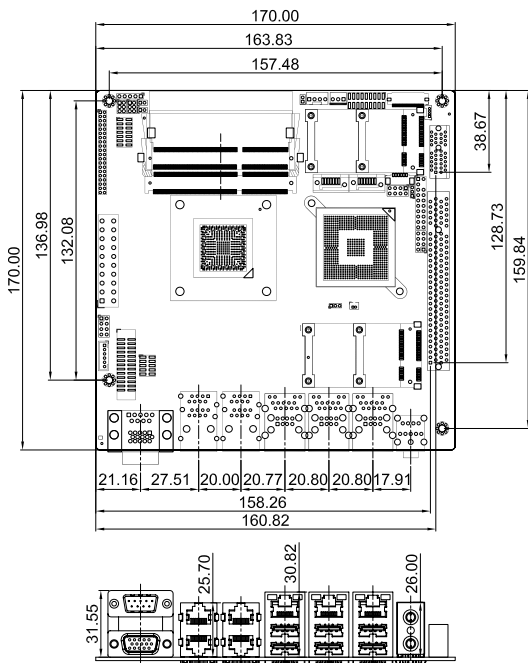
**KINO-AH611**



**KINO-AH612**



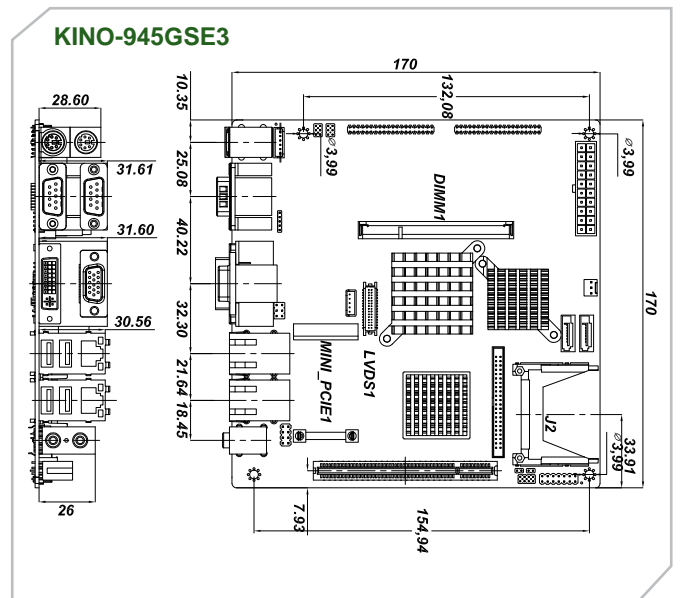
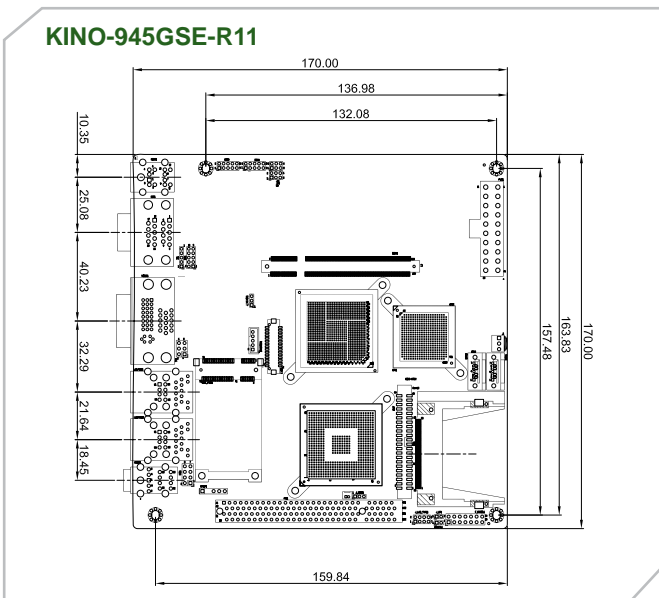
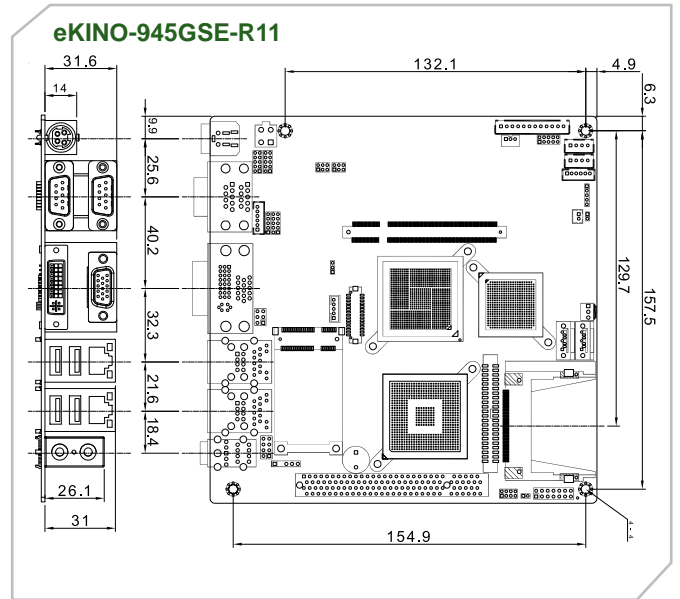
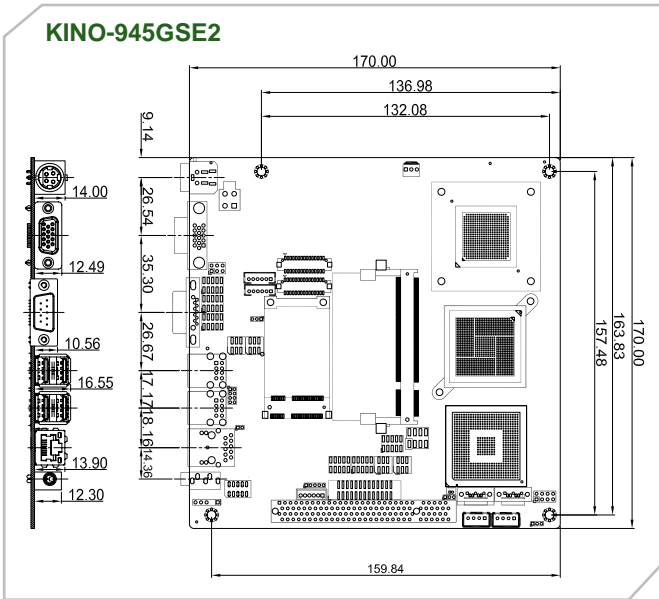
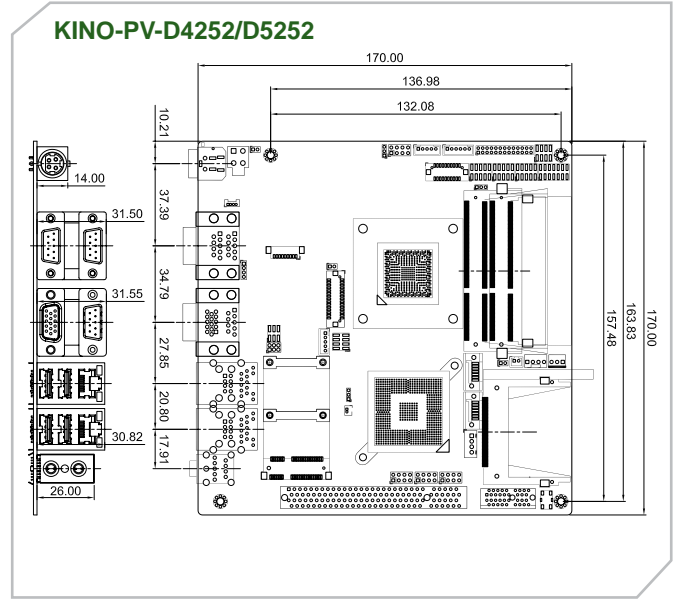
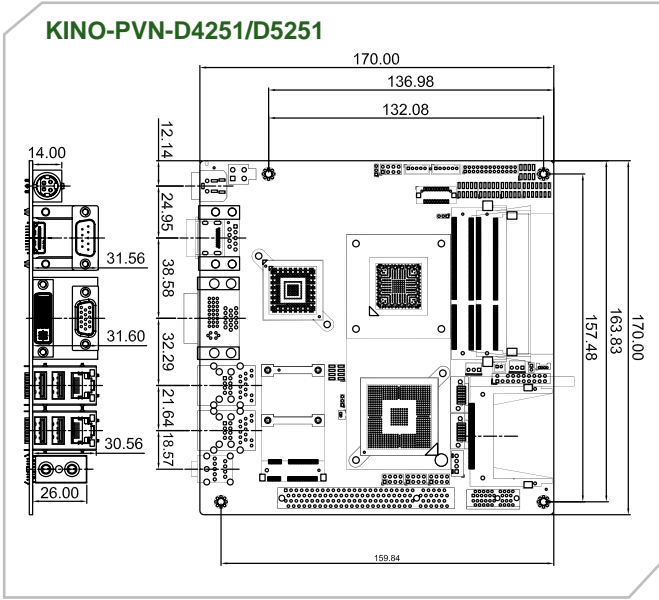
**KINO-PV-D4253/D5253**



- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/Peripherals
- 6 Panel Solutions Introduction



Mini-ITX Dimensions (Unit: mm)



- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/Peripherals
- 6 Panel Solutions Introduction

# 5.25" NOVA/EPIC NANO Selection Guide



**New**



**New**



Model Name	NOVA-PV-D5251/D4251	NOVA-945GSE-R20	epic NANO-QM770	epic NANO-HM651
<b>CPU Socket</b>	On board	On board	Intel® Socket G2	On Board
<b>CPU Type</b>	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz	Intel® Atom™ Processor N270 1.6GHz	2nd Generation Intel® Core™ i7/i5/i3/Celeron® mobile processor	2nd Generation Intel® Core™ Celeron® dual core mobile processor 847E 1.1GHz
<b>FSB</b>	NA	533 MHz	NA	NA
<b>Chipset</b>	ICH8M	Intel® 945GSE + ICH7M	Intel® QM77	Intel® HM65
<b>Memory</b>	2 x 204-pin 800 MHz 2 GB DDR3 SO-DIMM (system max. 4GB)	1 x 200-pin 400/533 MHz 1 GB DDR2 SO-DIMM (system max. 2GB)	1 x 204-pin 1600/1333MHz DDR3 SO-DIMM (system max. 8GB)	2 x 204-pin 1066/1333MHz dual-channel DDR3 SO-DIMMs (system max. 16GB)
<b>Display Interface</b>	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS	Dual display supported 1 x DVI-I 2 x HDMI 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 2 x HDMI 1 x 24-bit dual-channel LVDS
<b>Ethernet</b>	Quad PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE Realtek RTL 8111CP chipset	LAN1: Intel® 82583V PCIe controller LAN2: Intel® 82579 PHY with Intel® AMT 8.0 supported	Dual Realtek RTL8111E PCIe GbE controllers with ASF 2.0 support
<b>I/O Interface</b>	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 2 x 10-pin header for TPM 1 x LPT 1 x KB/MS by pin header	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x KB/MS by pin header 1 x 20-pin LPC for TPM	2 x RS-232 1 x RS-422/485 4 x USB 3.0 2 x USB 2.0 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x 5-pin header for Infrared 1 x PS/2 KB/MS 2 x 10-pin pin header for TPM V1.2 Module	2 x RS-232 1 x RS-422/485 2 x USB 3.0 4 x USB 2.0 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x 6-pin wafer for PS/2 KB/MS 2 x 10-pin pin header for TPM V1.2 Module
<b>Drive Interface</b>	2 x SATA 3Gb/s 1 x CF Type II	2 x SATA 1 x IDE 1 x CF Type II	2 x SATA 6Gb/s	2 x SATA 6Gb/s
<b>Audio</b>	Realtek ALC888 HD Audio codec	Realtek ALC655 with AC'97 codec	Realtek ALC662 HD Audio Codec	
<b>Digital I/O</b>	24-bit digital I/O (12-bit input / 12-bit output)		8-bit digital I/O (4-bit input / 4-bit output)	
<b>Power Consumption</b>	12V@1.46A (Intel® Atom™ D525 1.8GHz with two 1GB DDR3)	5V@2.89A (Intel® Atom™ N270 with 1GB DDR2)	12V@4.89A (Intel® 1.8GHz CPU with 1333MHz DDR3 4GB memory)	12V@3.01A (Intel® Celeron® 847E 1.1GHz with 1333MHz 4GB memory)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset			
<b>Operation Environment</b>	Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C~60°C (32°F~140°F) Relative Humidity 5% ~ 95% non- condensing	Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing	
<b>Expansion Slots</b>	1 x PCI Slot 2 x PCIe Mini card slot	1 x PCI 2 x PCIe Mini card 1 x PC/104+ (ISA+PCI Bus)	1 x PCIe Mini card slot with mSATA support	1 x PCIe Mini card slot with mSATA support
<b>CPU Cooler</b>	Heatsink	Heatsink	CF-989A-RS-R12 / CF-989B-RS	Enclosure Heatsink

1

Industrial Computing Solutions

2

Video Capture Solutions

3

Embedded Computing Solutions

4

ORing Network Communication

5

Power Supply/Peripherals

6

Panel Solutions Introduction



# EPIC NANO Selection Guide

**New**



Model Name	epic NANO-HM650	epic NANO-CV-D25502/N26002	epic NANO-CV-D25501/N26001	epic NANO-QM57A	epic NANO-PV-D4251/N4551/D5251
<b>CPU Socket</b>	Intel® Socket G2	On Board	On Board	Socket G1	On board
<b>CPU Type</b>	2nd Generation Intel® Core™ i7/i5/i3/Celeron® mobile processor	Intel® Atom™ Processor D2550 1.86GHz Intel® Atom™ Processor N2600 1.6GHz	Intel® Atom™ Processor D2550 1.86GHz Intel® Atom™ Processor N2600 1.6GHz	Intel® Core™ i7/i5/i3/Celeron®	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz Intel® Atom™ Processor N455 1.66GHz
<b>Chipset</b>	Intel® HM65	Intel® NM10	NM10	Intel® QM57	Intel® ICH8M
<b>Memory</b>	1 x 204-pin 1066/1333MHz DDR3/DDR3L (1.35V) SO-DIMM (system max. 4GB)	1 x 204-pin 1066 MHz 4 GB DDR3/DDR3L (1.35V) SO-DIMM (system max. 4GB) for D2550 1 x 204-pin 800 MHz 2 GB DDR3/DDR3L (1.35V) SO-DIMM (system max. 2GB) for N2600	1 x 204-pin 1066 MHz 4 GB DDR3/DDR3L (1.35V) SO-DIMM (system max. 4GB) for D2550 1 x 204-pin 800 MHz 2 GB DDR3/DDR3L (1.35V) SO-DIMM (system max. 2GB) for N2600	1 x 204-pin 800/1066 MHz 4 GB DDR3 SO-DIMM (system max. 4GB)	1 x 204-pin 800 MHz 4 GB DDR3 SO-DIMM (system max. 4GB) for D525/D425 1 x 204-pin 800 MHz 2 GB DDR3 SO-DIMM (system max. 2GB) for N455
<b>Display Interface</b>	Dual display supported 1 x VGA 1 x HDMI 1 x 24-bit dual-channel LVDS	Dual display supported VGA1: Integrated in Intel® CPU VGA2: Integrated in NXP PTN3392 1 x Single-channel 18-bit (N2600)/24-bit LVDS2 (D2550)	Dual display supported 1 x VGA 1 x Single-channel 18-bit (N2600)/24-bit LVDS2 (D2550) 1 x 24-bit Dual-channel LVDS 1 x HDMI	Dual display supported 1 x DVI-I 1 x DVI-D	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS
<b>Ethernet</b>	Dual Realtek RTL8111E PCIe GbE controllers with ASF 2.0 support			Intel® 82577 GbE LAN controller with Intel® AMT 6.0 support	Dual PCIe GbE by Realtek RT8111E support ASF 2.0
<b>I/O Interface</b>	2 x RS-232 1 x RS-422/485 8 x USB 2.0 1 x 6-pin wafer for PS/2 KB/MS	3 x RS-232 1 x RS-422/485 6 x USB 2.0 1 x 6-pin header for KB/MS	5 x RS-232 1 x RS-422/485 6 x USB 2.0 2 x USB 3.0 2 x 10-pin header for TPM 1 x 6-pin header for KB/MS	2 x RS-232 8 x USB 2.0 1 x 6-pin header for KB/MS	4 x RS-232 1 x RS-232/422/485 8 x USB 2.0 2 x 10-pin header for TPM 1 x LPT 1 x KB/MS
<b>Drive Interface</b>	2 x SATA 6Gb/s	2 x SATA 3Gb/s or 1 x SATA 3Gb/s + 1 x mSATA	2 x SATA 3Gb/s or 1 x SATA 3Gb/s + 1 x mSATA 1 x microSD	2 x SATA 3Gb/s	2 x SATA 3Gb/s 1 x CF Type II
<b>Audio</b>	Realtek ALC662 HD Audio Codec			Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec
<b>Digital I/O</b>	8-bit digital I/O (4-bit input / 4-bit output)			N/A	8-bit digital I/O (4-bit input/4-bit output)
<b>Power Consumption</b>	12V@4.85A (2.6GHz Intel® Core™ i5-2540M with 1333MHz 4GB DDR3 DIMM)	12V@1.59A (Intel® dual core D2550 CPU with 1333MHz 4GB DDR3 memory) 12V@1.23A (Intel® dual core N2600 CPU with 1333MHz 4GB DDR3 memory)	12V@2.1A (1.86GHz Intel® D2550 CPU with DDR3 1333MHz 2GB DIMM) 12V@1.72A (1.6GHz Intel® N2600 CPU with DDR3 1333MHz 2GB DIMM)	12V@4.66A (2.66GHz Intel® Core i7 620M CPU with DDR3 1333MHz 2GB DIMM)	2.21A @ 12V (Intel® Atom™ D525 with 2GB 1066MHz DDR3) 2.11A @ 12V (Intel® Atom™ D425 with 2GB 1066MHz DDR3) 2.00A @ 12V (Intel® Atom™ N455 with 2GB 1066MHz DDR3)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset				
<b>Operation Environment</b>	Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing	-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor -20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 processor Relative Humidity: 5% ~ 95%, non-condensing		Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing	
<b>Expansion Slots</b>	1 x PCIe Mini card slot with mSATA support 1 x PCI-104 slot	1 x PCIe Mini card slot with mSATA support 1 x half-size PCIe Mini card slot	1 x PCIe Mini card slot 1 x PC-104+ slot (PCI + ISA)	1 x PCIe Mini card slot	1 x PCI-104 slot 1 x PCIe Mini card Slot
<b>CPU Cooler</b>	CF-989A-RS-R12 / CF-989B-RS	Enclosure Heatsink	Heatsink	CF-989A-RS-R12	Heatsink

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Power Supply/  
Peripherals

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Panel  
Solutions  
Introduction

# EPIC NANO Selection Guide



Model Name	epic NANO-PV-D4252/N4552/D5252	epic NANO-9452-R40	epic NANO-945GSE-R20	epic NANO-945GSE2	epic NANO-LX-R12
<b>CPU Socket</b>	On board	Socket M	On board	On board	On board
<b>CPU Type</b>	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz Intel® Atom™ Processor N455 1.6GHz	Intel® Core™2 Duo, Core™ Duo/Solo, Celeron® M	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz	AMD Geode™ LX800
<b>FSB</b>	N/A	533/667 MHz	533 MHz	533 MHz	N/A
<b>Chipset</b>	Intel® ICH8M	Intel® 945GME + ICH7M	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M	AMD Geode™ LX800 + AMD CS5536
<b>Memory</b>	1 x 204-pin 800 MHz 4 GB DDR3 SO-DIMM (system max. 4GB) for D525/D425 1 x 204-pin 800 MHz 2 GB DDR3 SO-DIMM (system max. 2GB) for N455	1 x 200-pin 400/533/667 MHz 2 GB DDR2 SO-DIMM (system max. 2GB)	One 200-pin 2GB (max.) 400/533MHz DDR2 SO-DIMM	One 200-pin 2GB (max.) 400/533MHz DDR2 SO-DIMM	One 200-pin 1GB (max.) 333/400MHz DDR SO-DIMM
<b>Display Interface</b>	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18/24-bit dual-channel LVDS 1 x HDTV	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS 1 x 24-bit dual-channel LVDS 1 x HDTV	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL (LVDS to TTL)	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL (LVDS to TTL)
<b>Ethernet</b>	Single PCIe GbE by Realtek RT8111E support ASF 2.0				Realtek RTL8100C 10/100Mbps Ethernet chipset
<b>I/O Interface</b>	4 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x LPT 1 x KB/MS	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 for KB/MS	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 for KB/MS	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 for KB/MS	6 x RS-232 1 x RS-422/485 4 x USB 2.0 1 x LPT 1 x PS/2 for KB/MS 1 x Infrared interface
<b>Drive Interface</b>	2 x SATA 3Gb/s 1 x CF Type II	2 x SATA 1 x IDE 1 x CF Type II	2 x SATA 1 x IDE 1 x CF Type II	2 x SATA 1 x CF Type II	2 x SATA RAID 1 x IDE 1 x CF Type II
<b>Audio</b>	Realtek ALC888 HD Audio codec	AC-KIT-888HD AC-KIT08R		Realtek ALC655 with AC'97 codec	Realtek ALC203 with AC'97 codec
<b>Digital I/O</b>	8-bit digital I/O (4-bit input/4-bit output)				
<b>Power Consumption</b>	2.16A@12V (Intel® Atom™ D525 with 2 GB 1066 MHz DDR3) 2.08A@12V (Intel® Atom™ D425 with 2 GB 1066 MHz DDR3) 1.99A@12V (Intel® Atom™ N455 with 2 GB 1066 MHz DDR3)	12V@2.99A (Intel® Core™2 Duo T2500 2.0GHz, 2GB 800 MHz DDR2)	12V@1.53A (Intel® Atom™ N270 1.6GHz, 2GB DDR2 533 MHz)	12V@1.6A (Intel® Atom™ N270 1.6GHz, 1 GB DDR2 533 MHz)	12V@ 0.92A (AMD LX800, 256 MB 400 MHz DDR)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset				
<b>Operation Environment</b>	Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95% non- condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) -20°C ~ 70°C (W) -40°C ~ 85°C (W2) Relative Humidity: 5% ~ 95% non- condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) -20°C ~ 70°C (W) Relative Humidity: 5% ~ 95% non- condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95% non- condensing
<b>Expansion Slots</b>	1 x PCI-104 slot 1 x PCIe Mini card slot	1 x PCI-104 slot 1 x PCIe Mini card slot	1 x PCI-104 slot 1 x PCIe Mini card slot	1 x PC/104-Plus	1 x PC/104-Plus
<b>CPU Cooler</b>	Heatsink	CF-479B-RS	Heatsink	Heatsink	Heatsink

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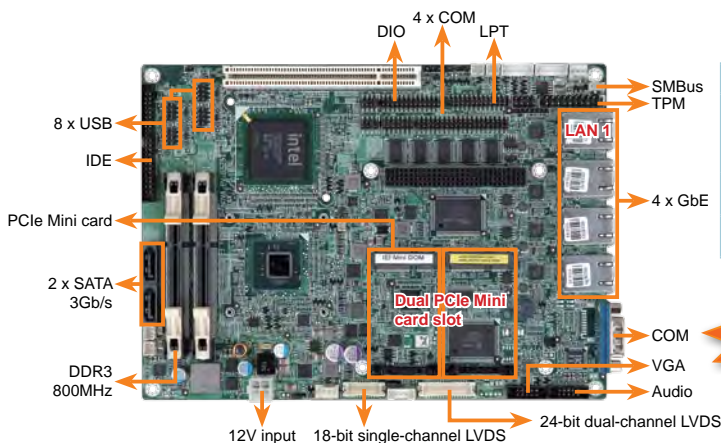
Power Supply/  
Peripherals

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# NOVA-PV-D4251-D5251

5.25" SBC, Intel® Atom™ D425/D525, DDR3, 18-bit+48-bit LVDS/VGA, Dual PCIe Mini, Quad PCIe GbE, USB 2.0, SATA 3Gb/s, Audio, RoHS



## Model Variations

Model	CPU	PCIe GbE	LVDS	COM Ports
NOVA-PV-D5251-G4	Intel® Atom™ D525	Four RJ-45	18-bit single-channel	1 x DB-9 RS-232 4 x Internal RS-232 1 x Internal RS-232/422/485
NOVA-PV-D4251-G2L2	Intel® Atom™ D425	Two RJ-45	18-bit single-channel & 24-bit dual-channel	4 x Internal RS-232
NOVA-PV-D5251-G2L2	Intel® Atom™ D525			1 x Internal RS-232/422/485

Dual LVDS  
4 PCIe GbE  
24-bit DIO

## Solder side



TPM 1.2 Support

CF Type II



## Specifications

- ◆ CPU
  - 1.8GHz Intel® Atom™ D525 dual-core processor with 1MB L2 cache
  - 1.8GHz Intel® Atom™ D425 single-core processor with 512KB L2 cache
- ◆ System Chipset
  - Intel® ICH8M
- ◆ BIOS
  - UEFI BIOS
- ◆ Memory
  - Two 204-pin 800MHz DDR3 SDRAM SO-DIMMs supported (system max. 4GB) for D525/D425
- ◆ Ethernet
  - Four PCIe Realtek RTL8111E GbE controller, LAN1 with ASF 2.0 support
- ◆ Graphic
  - GMA 3150
  - Graphic core speed 400MHz for D525/D425
- ◆ I/O Interface
  - 4 x RS-232 for NOVA-PV-D5251/D4251-G2L2-R10
  - 5 x RS-232 for NOVA-PV-D5251-G4-R10
  - 1 x RS-232/422/485 with auto flow control
  - 8 x USB 2.0      2 x SATA 3Gb/s
  - 1 x LPT    1 x IDE
  - 1 x CF Type II      1 x 6-pin header for KB/MS
- ◆ Expansion
  - 1 x PCI-104
  - 2 x PCIe Mini card slot
  - 1 x PCI
- ◆ Digital I/O
  - 24-bit digital I/O, 12-bit input/12-bit output
- ◆ Super IO
  - Fintek F81865
- ◆ Display Interface
  - Dual display supported
  - 1 x VGA
  - 1 x 18-bit single-channel LVDS
  - 1 x 24-bit dual-channel LVDS
- ◆ Audio
  - Realtek ALC888 HD Audio codec
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset
- ◆ TPM
  - 2 x 10-pin header
- ◆ SMBus
  - 1 x 4-pin wafer
- ◆ SATA Power
  - 2 x 2-pin wafer for SATA 5V power connector
- ◆ Fan Connector
  - 1 x 4-pin CPU fan connector
  - 1 x 3-pin system fan connector
- ◆ Power Supply
  - 12V only
- ◆ Power Consumption
  - 12V@1.46A (Intel® Atom™ D525 1.8GHz with DDR3 1GB\*2)
- ◆ Operating Temperature
  - 10°C ~ 60°C
- ◆ Humidity
  - Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions
  - 203 mm x 146 mm
- ◆ Weight
  - GW: 1000g/NW: 400g

## Features

1. 5.25" SBC supports Intel® Atom™ D525/D425 processor
2. 800/1066 MHz DDR3 supports up to 4GB
3. VGA/18-bit single-channel/24-bit dual-channel LVDS for dual independent display support
4. Quad PCIe Ethernet, two SATA 3Gb/s, and six RS-232 serial port connectors
5. TPM V1.2 hardware security function supported by TPM module
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x NOVA-PV-D4251/D5251 single board computer	
1 x KB/MS Y cable (P/N: 32000-023800-RS)	
1 x VGA cable (P/N: 32000-033804-RS)	
1 x Quad RS-232 cable (P/N: 32100-147900-RS)	
1 x SATA with Power cable kit (P/N: 32801-000201-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 32001-008600-100-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
NOVA-PV-D5251-G4-R10	5.25" SBC, Intel® Atom™ D525 dual-core 1.8GHz, DDR3, 18-bit LVDS/VGA, dual PCIe Mini, quad PCIe GbE, USB 2.0, SATA 3Gb/s, audio, RoHS
NOVA-PV-D4251-G2L2-R10	5.25" SBC, Intel® Atom™ D425 single-core 1.8GHz, DDR3, 18+48-bit LVDS/VGA, dual PCIe Mini, dual PCIe GbE, USB 2.0, SATA 3Gb/s, audio, RoHS
NOVA-PV-D5251-G2L2-R10	5.25" SBC, Intel® Atom™ D525 dual-core 1.8GHz, DDR3, 18+48-bit LVDS/VGA, dual PCIe Mini, dual PCIe GbE, USB 2.0, SATA 3Gb/s, audio, RoHS
32200-000009-RS	44 pin 2.5" IDE cable
32200-015100-RS	LPT cable
32205-000300-100-RS	RS-232/422/485 cable
31100-000327-RS	CPU fan
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

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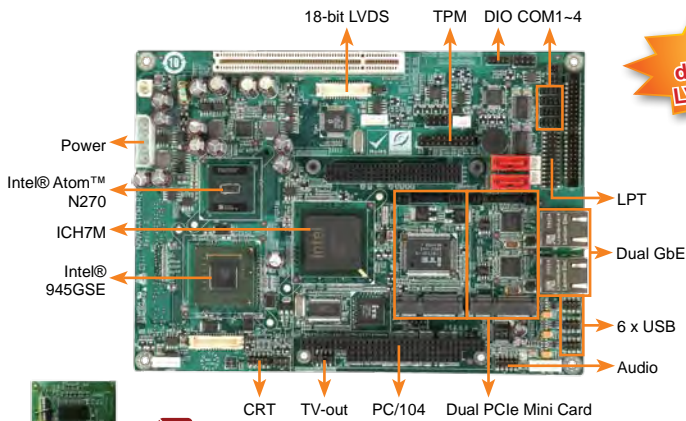
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# NOVA-945GSE-R20

5.25" SBC, Intel® Atom™ N270 1.6GHz, LVDS/VGA/HDTV, Dual PCIe Mini, Dual PCIe GbE, USB 2.0, SATA, RoHS



18/24-bit dual-channel LVDS support

Solder side



SO-DIMM

CF Type II



TPM 1.2 Support



## Specifications

- ◆ CPU  
Intel® Atom™ N270 1.6GHz with a 533MHz FSB
- ◆ System Chipset  
Intel® 945GSE+ICH7M
- ◆ BIOS  
AMI BIOS
- ◆ Memory  
One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet  
Dual Realtek PCIe RTL8111CP GbE LAN
- ◆ Graphic  
Intel® Graphics Media Accelerator 950
- ◆ I/O Interface  
3 x RS-232 1 x RS-232/422/485  
6 x USB 2.0 2 x SATA with 5V output  
1 x LPT 1 x IDE  
1 x 6-pin header for KB/MS
- ◆ Expansion  
1 x PC/104+ (ISA+PCI bus)  
2 x PCIe Mini card  
1 x PCI
- ◆ Digital I/O  
8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Infrared Interface  
1x 5-pin infrared interface by pin header
- ◆ Super IO  
ITE IT8718F
- ◆ Display Output  
Analog CRT support CRT hotplug  
HDTV supported by component interface
- ◆ Audio  
AC'97 ALC655 codec
- ◆ SSD  
CF Type II
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ TPM  
1x 20-pin header
- ◆ Power Supply  
5V only, 12V for LCD/system fan, AT/ATX power
- ◆ Power Consumption  
5V@3.49A (Intel® Atom™ N270 with 512MB DDR2)
- ◆ Temperature Operation  
0°C ~ 60°C (32°F~140°F)
- ◆ Humidity Operation  
5% ~ 95%, non-condensing
- ◆ Dimensions  
203mm x 146mm
- ◆ Weight  
GW:1000g, NW:400g

## Features

- 1.6GHz Intel® Atom™ N270 processor with fanless support
- 400/533MHz DDR2 SO-DIMM memory support up to 2GB
- Support dual PCIe Mini card/PCI slot for expansion
- Dual LVDS support dual display output
- CF socket for storage expansion
- TPM support
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x NOVA-945GSE-R20 single board computer	
1 x Audio cable (P/N: 32000-072100-RS)	1 x VGA cable (P/N: 32000-033804-RS)
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x One Key Recovery CD
4 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x USB cable (P/N: 32001-008600-100-RS)	1 x QIG

## Ordering Information

Part No.	Description
NOVA-945GSE-N270-R20	5.25" SBC, Intel® Atom™ N270 1.6GHz, 18-bit LVDS/VGA/HDTV, dual PCIe Mini, dual PCIe GbE, USB 2.0, SATA, RoHS
32200-000009-RS	44-pin 2.5" IDE cable
32102-000100-200-RS	SATA power cable
32200-015100-RS	LPT cable
WMPCIE-V01-R30	802.11b/g PCIe Mini card wireless LAN module
WMUSB-V01-R20	802.11b/g USB embedded module
32200-833600-RS	RS-422/485 cable

1 Industrial Computing Solutions

2 Video Capture Solutions

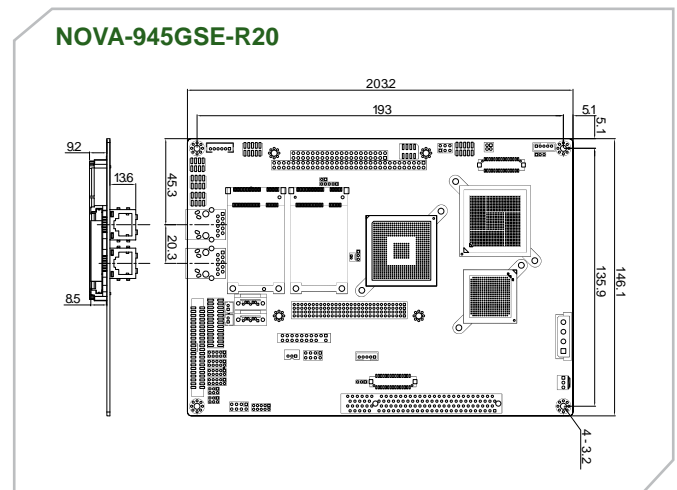
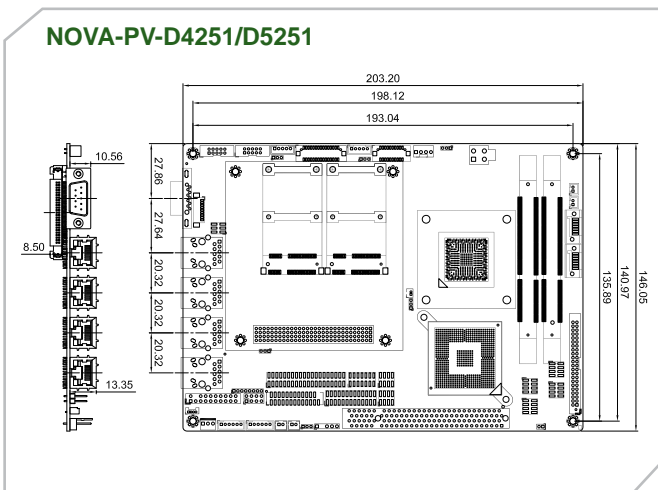
3 Embedded Computing Solutions

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6 Panel Solutions Introduction

## 5.25" NOVA Dimensions (Unit: mm)



# IEI EPIC

# NANO

EPIC - NANO is to define a new industry open standard for small form factor embedded computer boards, called Embedded Platform for Industrial Computing or EPIC. The NANO single board computer series has multiple I/O expansion options. Its size is midway between the industry standard PC/104 module and EBX board. The boards in EPIC form factor support advanced processors plus complex I/O functions for applications involving data acquisition, video processing, telecommunications, networking, motion control plus the associated field wiring termination, I/O circuit protection, etc. The initial specifications define PC/104 expansions; however, future updates will embrace PCI Express and/or other expansion features. The EPIC standard provides a platform on which to build the next generation feature-rich embedded system for industrial, medical, military, transportation, and commercial applications.

## ■ EPIC History

A new platform for embedded single board computer with multiple I/O expansion options. Defined by five leading SBC manufacturers: Micro/sys, Octagon Systems, VersaLogic, WinSystems, Ampro Computers Specifications were released on March 23, 2004

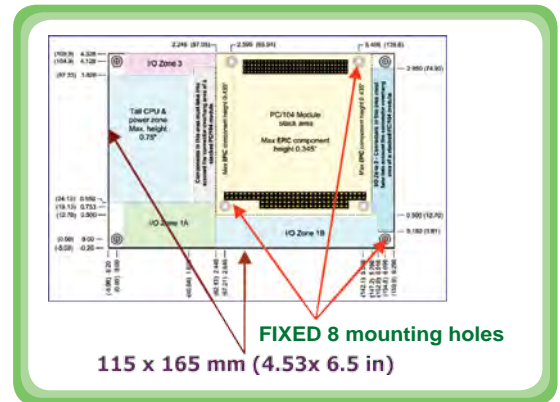
## ■ Key Features

- Fixed Dimensions and mounting holes
- Fixed I/O interface
- Fixed PCI-104, PC/104 location
- Fixed CPU location



## ■ Benefits from NANO Board

- Easy upgrading from same EPIC form factor CPU boards
- Complex I/O functions based on customers' requirements
- Small form factor
- Saves money and space with cables and shared chassis



1

Industrial Computing Solutions

## ■ Dual Display Solutions

Chipset	Intel® QM57	Intel® HM55	Intel® GM45	Intel® 945GME	Intel® D525/D425/N455	
<b>Model Name</b>	NANO-QM57A	NANO-HM551	NANO-GM45A2	NANO-9452	NANO-PV-D5251/D4251/N4551	NANO-PV-D5252/D4252/N4552
<b>Dual Display</b>	DVI + DVI DVI + VGA	VGA + LVDS VGA + HDMI LVDS + HDMI	VGA + LVDS VGA + HDMI LVDS + HDMI	VGA + LVDS VGA + HDTV LVDS + HDTV	VGA + LVDS	VGA + LVDS LVDS + LVDS

2

Video Capture Solutions

Chipset	Intel® 945GSE		
<b>Model Name</b>	NANO-945GSE3	NANO-945GSE2	NANO-945GSE
<b>Dual Display</b>	VGA + LVDS	VGA + LVDS VGA + TTL	VGA + LVDS VGA + HDTV LVDS + HDTV LVDS + LVDS



3

Embedded Computing Solutions

## ■ CPU Support

Chipset	Intel® QM57	Intel® HM55	Intel® GM45
<b>Model Name</b>	NANO-QM57A	NANO-HM551	NANO-GM45A2
<b>Dual Core</b>	Socket G1	Socket G1	Socket P 1066Mhz

Chipset	Intel® D425/N455	Intel® 945GSE	AMD LX800
<b>Model Name</b>	NANO-PV-D4251/N4551 NANO-PV-D4252/N4552	NANO-945GSE NANO-945GSE2 NANO-945GSE3	NANO-LX
<b>Single Core</b>	D425: 1.8GHz N455: 1.6GHz	N270: 1.6GHz	LX800

Chipset	Intel® 945GME	Intel® D525	
<b>Model Name</b>	NANO-9452	NANO-PV-D5251	NANO-PV-D5252
<b>Dual Core</b>	Socket M 667MHz	On board	On board

4

ORing Network Communication

## ■ Embedded System Mapping



Embedded System	ECN-381B	ECN-581A	ECN-581A	EBC-2100	EBC-2101	EBC-2102
<b>Model</b>	NANO-GM45A2	NANO-QM57A	NANO-HM551 NANO-PV-D5251	NANO-LX	NANO-945GSE	NANO-PV-D5251

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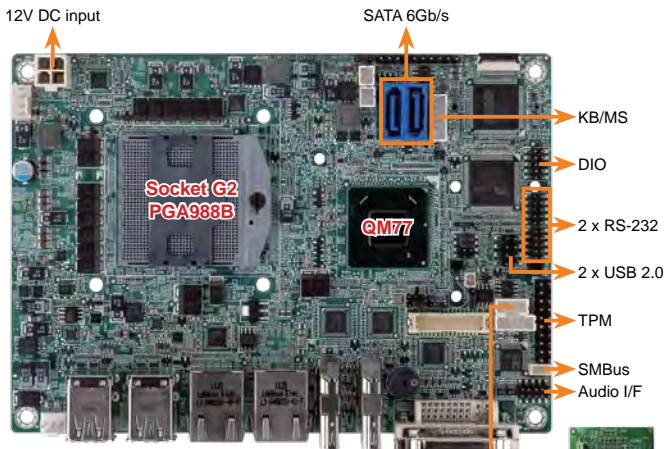
Power Supply/Peripherals

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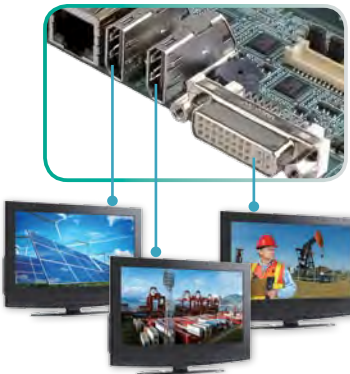
Panel Solutions Introduction

# epic NANO-QM770

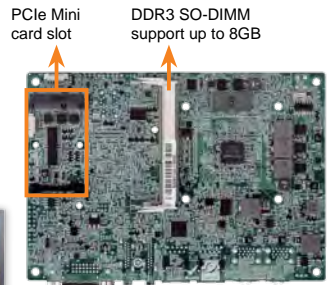
EPIC SBC Supports Socket G2 for Intel® 22nm Mobile CPU, DVI-I/Dual HDMI/LVDS, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s and Audio



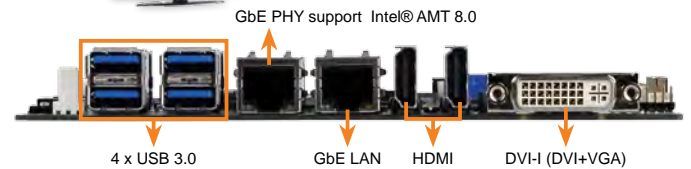
3 independent displays support under Win7 OS



**New**



Solder side



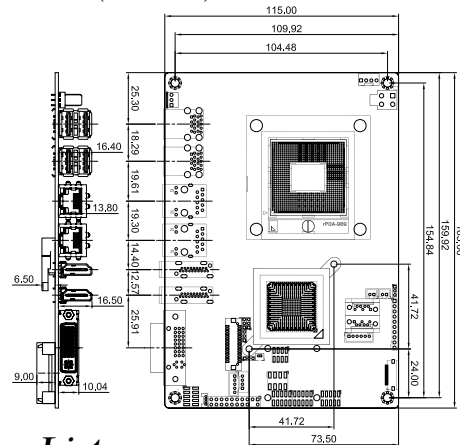
## Specifications

- ◆ CPU  
Socket G2 for Intel® 3rd generation 22nm mobile processor
- ◆ PCH  
Intel® QM77
- ◆ BIOS  
UEFI BIOS
- ◆ Memory  
One 204-pin 1066/1333/1600 DDR3 SO-DIMM supported (system max. 8GB)
- ◆ Graphics  
Gen 7 with 12 execution units  
DirectX 11, OpenGL 3.1, OpenCL 1.1
- ◆ Display Output  
Analog CRT and DVI by DVI-I connector (up to 2048 x 1536 @75Hz)  
18/24-bit dual channel LVDS (up to 1920 x 1200 @60Hz)  
Dual HDMI supports resolution up to 1080p (up to 1920 x 1200 @60Hz)
- ◆ LAN  
Intel® 82583V PCIe controller  
Intel® 82579 PHY with Intel® AMT 8.0 supported
- ◆ Super I/O  
Fintek F81866
- ◆ I/O interface  
2 x SATA 6Gb/s with 5V SATA power connector  
2 x USB 2.0  
4 x USB 3.0  
2 x RS-232  
1 x RS-422/485  
1 x 6-pin header for KB/MS
- ◆ TPM  
2 x 10-pin LPC pin header for TPM
- ◆ Audio  
Realtek ALC662 HD codec
- ◆ Expansions  
1 x PCIe Mini card slot (compatible with mSATA device)
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Programmable I/O  
8-bit digital I/O
- ◆ Fan Connector  
1 x 4-pin CPU fan connector  
1 x 3-pin system fan connector
- ◆ Power supply  
12V only, AT/ATX support,
- ◆ Power Consumption  
12V@4.89A (Intel® 1.8GHz CPU with 1333MHz DDR3 4GB memory)
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
115 mm x 165 mm
- ◆ Weight  
GW: 850g/NW: 350g

## Features

1. EPIC SBC with Socket G2 for Intel® 22nm mobile Ivy Bridge processor
2. Three independent display support with dual HDMI+DVI/dual HDMI+LVDS (HDMI V1.3a compliant)
3. 1066/1333/1600 MHz DDR3 SDRAM supported up to 8GB
4. Supports 3 COM, 4 x USB 3.0, 2 x SATA 6Gb/s and audio
5. Intel® GbE LAN with Intel® AMT 8.0 supported
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (Unit: mm)



## Packing List

1 x NANO-QM770 single board computer	
2 x SATA with power cable kit (P/N: 32801-000201-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	
1 x Power cable (P/N: 32100-087100-RS)	1 x Mini jumper pack
2 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
NANO-QM770-R10	EPIC SBC supports Socket G2 for Intel® 22nm mobile CPU, DVI-I/dual HDMI/LVDS, dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s and Audio
32001-008600-100-RS	Dual port USB cable
32205-003800-100-RS	RS-422/485 cable
CF-989A-RS-R12	CPU cooler for mobile socket-G (PGA988) up to 55W processor, copper, 60 x 60 x 27.6mm, RoHS
32000-023800-RS	KB/MS cable
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

4 ORing Network Communication

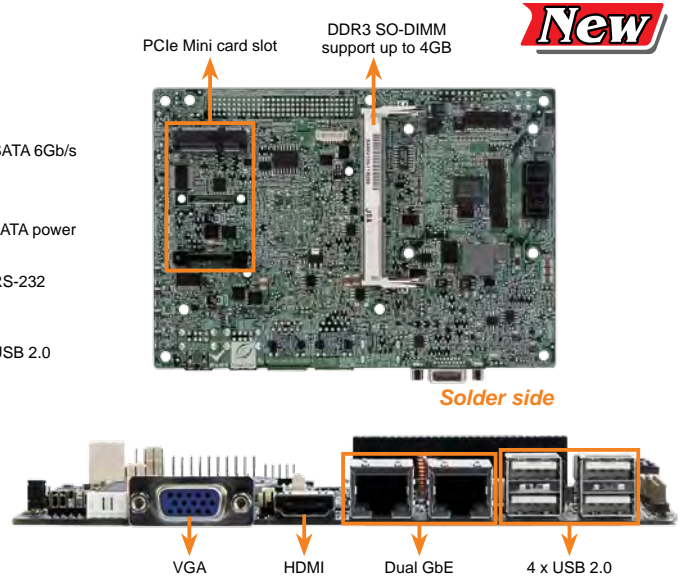
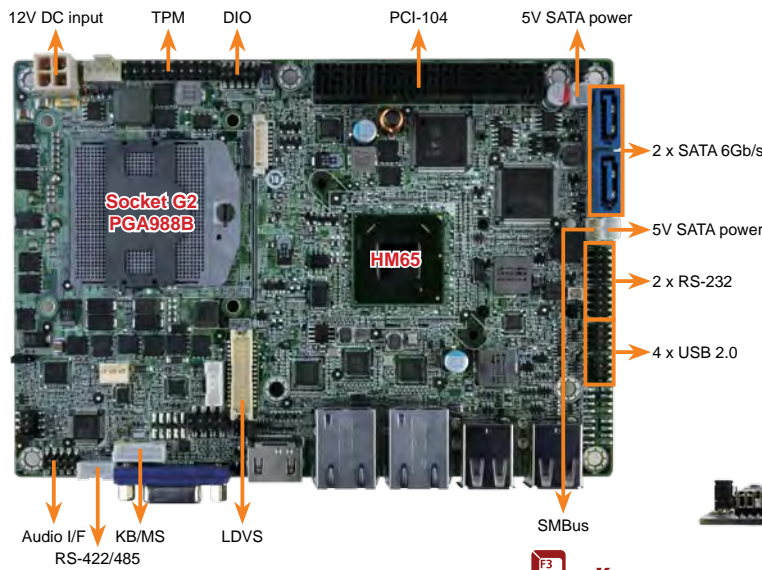
5 Power Supply/Peripherals

6 Panel Solutions Introduction



# epic NANO-HM650

EPIC SBC Supports Socket G2 for Intel® 2nd Generation Core™ i7/i5/i3 and Celeron® CPU, VGA/HDMI, Dual PCIe GbE, USB 2.0, PCI-104, SATA 6Gb/s and Audio



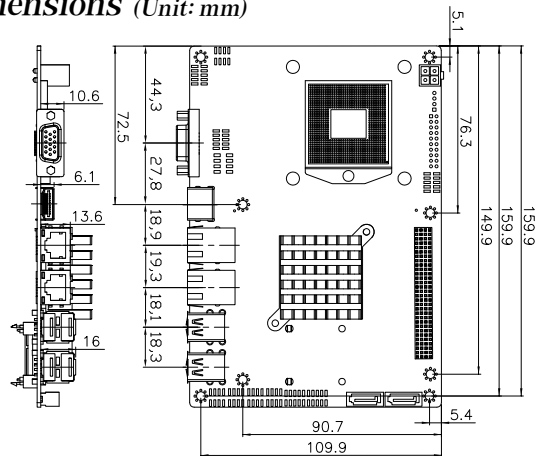
## Specifications

- ◆ CPU  
Socket G2 for 2nd generation Intel® Core™ i7/i5/i3 and Celeron® mobile processor
- ◆ PCH  
Intel® HM65
- ◆ BIOS  
UEFI BIOS
- ◆ Memory  
One 204-pin 1066/1333MHz DDR3 SO-DIMM supported (system max. 4GB)
- ◆ Display Output  
Dual display supported  
1 x VGA (up to 2048 x 1536 @75Hz)  
1 x HDMI (up to 1920 x 1200 @60Hz)  
1 x 18/24-bit dual-channel LVDS (up to 1920 x 1200 @60Hz)
- ◆ Ethernet  
Dual PCIe LAN controller by Realtek RTL8111E with ASF 2.0 support
- ◆ Super I/O  
Fintek F81866
- ◆ I/O Interface  
1 x 6-pin header for KB/MS  
2 x RS-232  
1 x RS-422/485  
2 x SATA 6Gb/s with 5V SATA power connector  
8 x USB 2.0
- ◆ Audio  
Realtek ALC662 HD audio codec
- ◆ Expansions  
1 x PCIe Mini card slot with mSATA support  
1 x PCI-104 slot (PCI signal)
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Programmable GPIO  
8-bit digital I/O (4-bit input / 4-bit output)
- ◆ Fan Connector  
1 x 4-pin CPU fan connector  
1 x 3-pin system fan connector
- ◆ Power Supply  
12V only, AT/ATX support
- ◆ Power Consumption  
12V@4.85A (2.6GHz Intel® Core i5-2540M with 1333MHz 4GB DDR3 memory)
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
115 mm x 165 mm
- ◆ Weight  
GW: 850g/NW: 350g

## Features

1. EPIC SBC with Socket G2 for Intel® 2nd generation Core™ i7/i5/i3 and Celeron® processor
2. VGA 24-bit dual-channel LVDS/HDMI for dual display support
3. 1066/1333MHz DDR3 SDRAM supported (system max. 4GB)
4. Supports three COM, eight USB 2.0, two SATA 6Gb/s, PCI-104 and audio
5. TPM V1.2 hardware security function supported by TPM module
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (Unit: mm)



## Packing List

1 x NANO-HM650 single board computer	
2 x SATA with power cable (P/N: 32801-000201-100-RS)	
2 x RS-232 cable (P/N: 32205-002700-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG (Quick Installation Guide)

## Ordering Information

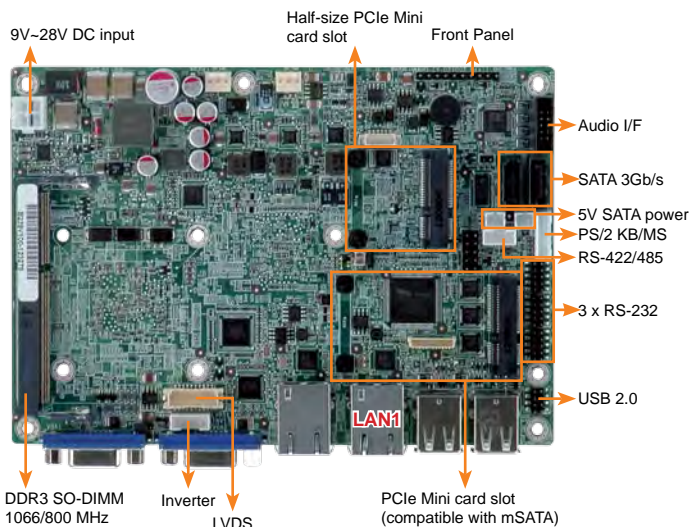
Part No.	Description
NANO-HM650-R10	EPIC SBC supports Socket G2 for Intel® 2nd generation Core™ i7/i5/i3 and Celeron® CPU, VGA/HDMI, dual PCIe GbE, USB 2.0, PCI-104, SATA 6Gb/s and Audio
32001-008600-100-RS	Dual-port USB cable
32205-003800-100-RS	RS-422/485 cable, 200mm
32000-023800-RS	KB/MS cable
CF-989A-RS-R12	CPU cooler for mobile socket-G up to 55W processor, copper, 60mm x 60mm x 27.6mm

- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/Peripherals
- 6 Panel Solutions Introduction



# epic NANO-CV-D25502-N26002

EPIC SBC with Intel® Atom™ D2550 1.86GHz/N2600 1.6GHz, DDR3, Dual VGA/LVDS, Dual GbE, USB 2.0, Dual PCIe Mini, SATA 3Gb/s, mSATA and Audio



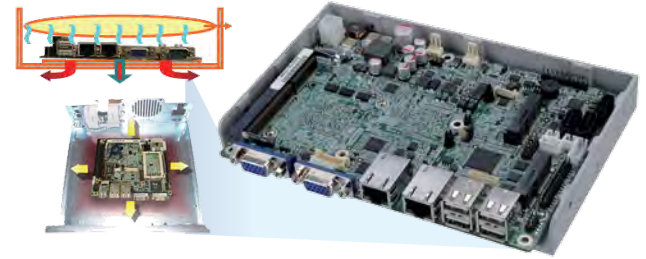
## Specifications



- ◆ CPU
  - Intel® dual core Atom™ D2550 1.86GHz processor
  - Intel® dual core Atom™ N2600 1.6GHz processor
  - Intel® dual core Atom™ N2800 1.86GHz processor (optional)
- ◆ Chipset
  - Intel® NM10
- ◆ BIOS
  - UEFI BIOS
- ◆ Memory
  - 1 x 1066MHz DDR3 SO-DIMM supporting up to 4GB (for D2550 and N2800)
  - 1 x 800MHz DDR3 SO-DIMM supporting up to 2GB (for N2600)
- ◆ Graphics Engine
  - GMA 3650 at 640MHz graphics core speed (for N2550 and N2800)
  - GMA 3600 at 400MHz graphics core speed (for N2600)
- ◆ Display Output
  - 1st VGA integrated in the CPU (up to 1920 x 1200 @60Hz)
  - 2nd VGA driver via the NXP PTN3392 (up to 1920 x 1200 @60Hz)
  - LVDS1 integrated in the CPU
  - Single-channel 24-bit LVDS by D2550, resolution support up to 1440x900 @60Hz
  - Single-channel 18-bit LVDS by N2600 and N2800, resolution support up to 1366x768 @60Hz
- ◆ Ethernet
  - Dual PCIe LAN controller by Realtek RTL8111E with ASF 2.0 support
- ◆ Super I/O
  - Fintek F81866
- ◆ I/O interface
  - 3 x RS-232
  - 1 x RS-422/485
  - 1 x 6-pin wafer for PS/2 KB/MS
  - 6 x USB 2.0 (4 on rear, 2 by pin header)
  - 2 x SATA 3Gb/s with SATA 5V power connector (SATA1 and mSATA shares SATA signal)
- ◆ Audio
  - Realtek ALC662 HD codec (Line-in, Line-out, Mic)
- ◆ Expansions
  - 1 x full-size PCIe Mini card slot with mSATA support (SATA1 and mSATA shares SATA signal)
  - 1 x half-size PCIe Mini card slot
- ◆ Watchdog Timer
  - Software programmable supports 1-255 sec. system reset
- ◆ Digital I/O
  - 8-bit programmable I/O
- ◆ Fan Connector
  - 1 x 4-pin CPU fan connector
  - 1 x 3-pin system fan connector
- ◆ Power supply
  - 9 ~ 28V, AT/ATX support
- ◆ Power Consumption
  - 12W@1.59A (Intel® dual core D2550 CPU with 1333MHz 4GB DDR3 memory)
  - 12W@1.23A (Intel® dual core N2600 CPU with 1333MHz 4GB DDR3 memory)
- ◆ Operating Temperature
  - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor
  - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600/N2800 processor
- ◆ Operating Humidity
  - 5% ~ 95%, non-condensing
- ◆ Dimensions
  - 115 mm x 165 mm
- ◆ Weight
  - GW: 850g/NW: 350g

## The innovation of thermal solution for EPIC

NANO-CV-D25502/N26002 is the first IEI EPIC board to be implemented enclosure heatsink for easy fanless assembly solution.



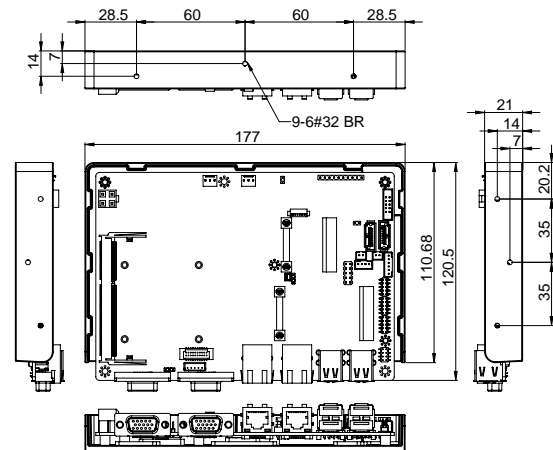
Most of the heat will be spread to by whole system surface



## Features

1. EPIC form factor with Intel® Atom™ dual core D2550 1.86GHz/N2600 1.6GHz processor supporting DDR3 memory
2. Dual display support by dual VGA and 18/24-bit single channel LVDS
3. 1066/800MHz DDR3 SO-DIMM supported up to 4GB
4. Thermal design for easy assembly by enclosure heatsink
5. Wide power voltage range by 9V ~ 28V support
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (Unit: mm)



## Packing List

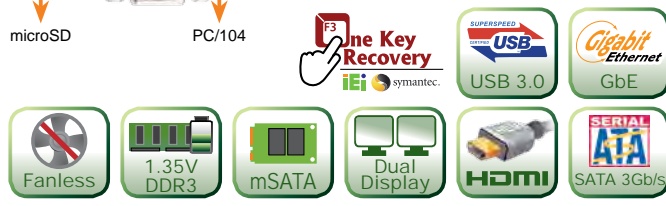
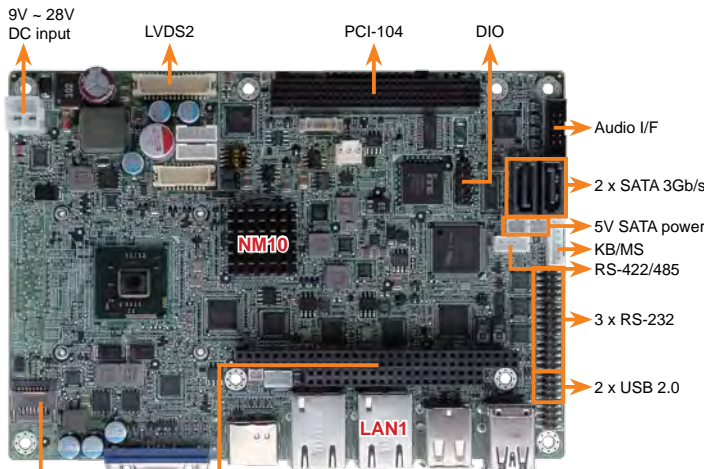
1 x NANO-CV-D25502/N26002 single board computer	
1 x SATA with 5V output cable kit (P/N: 32801-000201-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD
1 x Power cable (P/N: 32100-087100-RS)	1 x Mini jumper pack
1 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x Utility CD
1 x Enclosure heatsink	1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
NANO-CV-D25502-R10	EPIC SBC with Intel® Atom™ D2550 1.86GHz, DDR3, dual VGA/LVDS, dual GbE, USB 2.0, dual PCIe Mini, SATA 3Gb/s, mSATA and Audio
NANO-CV-N26002-R10	EPIC SBC with Intel® Atom™ N2600 1.6GHz, DDR3, dual VGA/LVDS, dual GbE, USB 2.0, dual PCIe Mini, SATA 3Gb/s, mSATA and Audio
NANO-CV-N28002-R10	EPIC SBC with Intel® Atom™ N2800 1.86GHz, DDR3, dual VGA/LVDS, dual GbE, USB 2.0, dual PCIe Mini, SATA 3Gb/s, mSATA and Audio (by project support, MOQ 100pcs / lot)
32000-070301-RS	Dual-port USB cable
32205-002700-100-RS	RS-232 cable
32205-003800-100-RS	RS-422/485 cable, 200mm
32000-023800-RS	PS/2 KB/MS Y cable

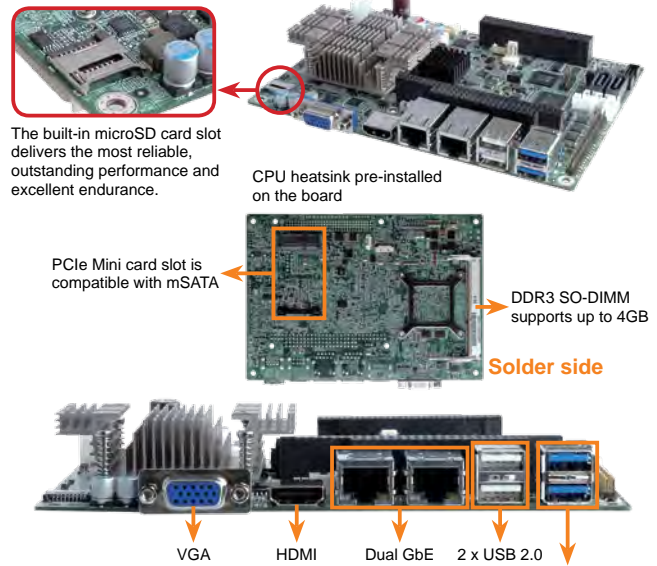
# epic NANO-CV-D25501-N26001

EPIC SBC with Intel® D2550/N2600, DDR3, VGA/HDMI/Dual LVDS, Dual GbE, USB 3.0, mSATA, SATA 3Gb/s, Audio and RoHS



## Specifications

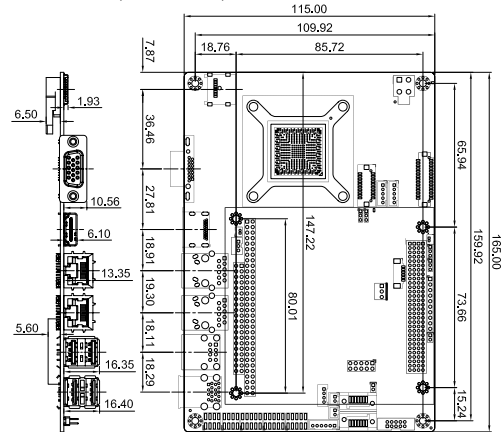
- ◆ CPU
  - Intel® dual core Atom™ D2550 1.86GHz processor
  - Intel® dual core Atom™ N2600 1.6GHz processor
  - Intel® dual core Atom™ N2800 1.86GHz processor (optional)
- ◆ Chipset
  - Intel® NM10
- ◆ BIOS
  - UEFI BIOS
- ◆ Memory
  - 1 x 1066MHz DDR3 SO-DIMM supporting up to 4GB (for D2550 and N2800)
  - 1 x 800MHz DDR3 SO-DIMM supporting up to 2GB (for N2600)
- ◆ Graphics
  - GMA 3650 at 640MHz graphics core speed (for N2550 and N2800)
  - GMA 3600 at 400MHz graphics core speed (for N2600)
- ◆ Display Output
  - Dual display supported
  - 1 x VGA (up to 1920 x 1200 @60Hz)
  - (Due to Intel GMA driver limitation, the monitor connected to the VGA connector may not have signal to it or become extended desktop after restarting from the graphics driver installation. To solve this problem, press the Ctrl+Alt+F1 hotkey to switch the primary screen to CRT mode.)
  - 1 x HDMI (up to 1920 x 1200 @60Hz)
  - LVDS1 integrated in the D2550/N2600
  - Single-channel 24-bit LVDS by D2550, resolution support up to 1440x900 @60Hz
  - Single-channel 18-bit LVDS by N2600 and N2800, resolution support up to 1366x768 @60Hz
  - LVDS2 supports 24-bit dual-channel by CH7511 DP to LVDS converter, resolution support up to 1920x1200 for D2550, 1600x1200 for N2600/N2800
- ◆ Ethernet
  - Dual GbE by Realtek RTL8111E controllers
- ◆ I/O Interface
  - 3 x RS-232
  - 1 x RS-422/485
  - 4 x USB 2.0
  - 1 x microSD (Only for boot up to DOS)
  - 2 x USB 3.0
  - 1 x 6-pin wafer for PS/2 KB/MS
  - 2 x SATA 3Gb/s with 5V power connector (SATA1 and mSATA shares SATA signal)
- ◆ Audio
  - Realtek ALC662 HD audio codec
- ◆ Expansions
  - 1 x PCIe Mini card (compatible with mSATA SSD device) (SATA1 and mSATA shares SATA signal)
  - 1 x PC/104 slot (ISA)
  - 1 x PCI/104 slot (PCI)
- ◆ SMBus
  - 1 x 4-pin wafer connector
- ◆ TPM
  - 1 x 20-pin LPC pin header
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset
- ◆ Programmable GPIO
  - 8-bit GPIO
- ◆ Fan Connector
  - 1 x 3-pin CPU fan connector
  - 1 x 3-pin system fan connector
- ◆ Power supply
  - Maximum input voltage range: 9V ~ 28V
  - Recommended operating input voltage range: 12V ~ 24V
  - One internal 4-pin (2x2) power connector
- ◆ Power Consumption
  - 12V@2.1A (Intel® D2550 1.86GHz CPU with 1333MHz 2GB DDR3 memory)
  - 12V@1.72A (Intel® N2600 1.6GHz CPU with 1333MHz 2GB DDR3 memory)
- ◆ Operating Temperature
  - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor
  - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600/N2800 processor
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Weight: GW: 670g/NW: 350g



## Features

1. EPIC form factor with Intel® D2550/N2600 dual-core processor supporting DDR3/DDR3L (1.35V) memory
2. Wide range 9V ~ 28V DC input design
3. Flexible VGA, dual LVDS and HDMI with dual-display support
4. Supports PC/104-Plus and PCIe Mini card slot compatible with mSATA SSD storage
5. Complete I/O with six USB, two SATA 3Gb/s, four COM and audio
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (Unit: mm)



## Packing List

1 x NANO-CV-D25501/N26001 single board computer	
1 x PS/2 KB/MS Y cable (P/N: 32000-023800-RS)	
1 x SATA with 5V output cable (P/N: 32801000201-100-RS)	
1 x Power cable (P/N: 32100-087100-RS)	1 x One Key Recovery CD
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 32001-008600-100-RS)	1 x Utility CD
1 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
NANO-CV-D25501-R10	EPIC SBC with Intel® Atom™ D2550 1.86GHz, DDR3, VGA/HDMI/dual LVDS, dual GbE, USB 3.0, mSATA, SATA 3Gb/s, Audio, RoHS
NANO-CV-N26001-R10	EPIC SBC with Intel® Atom™ N2600 1.6GHz, DDR3, VGA/HDMI/dual LVDS, dual GbE, USB 3.0, mSATA, SATA 3Gb/s, Audio, RoHS
NANO-CV-N28001-R10	EPIC SBC with Intel® Atom™ N2800 1.86GHz, DDR3, VGA/HDMI/dual LVDS, dual GbE, USB 3.0, mSATA, SATA 3Gb/s, Audio and RoHS (by project support, MOQ 100pcs / lot)
32205-002700-100-RS	RS-232 cable
32205-003800-100-RS	RS-422/485 cable, 200mm

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

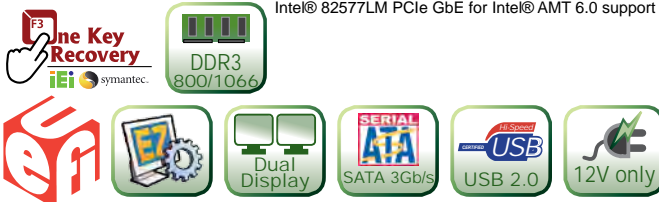
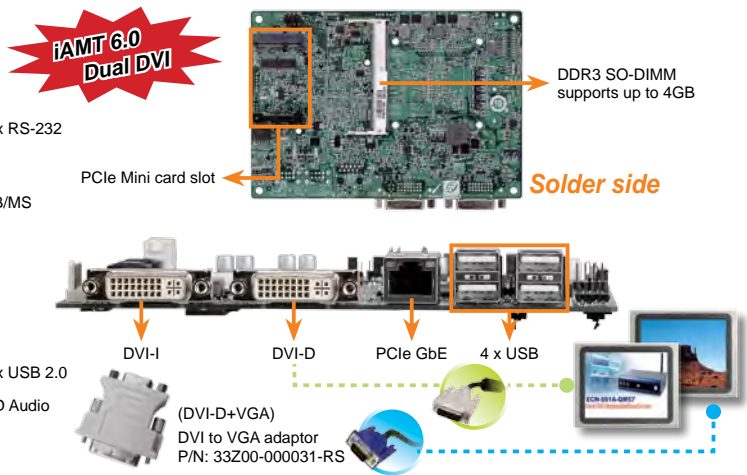
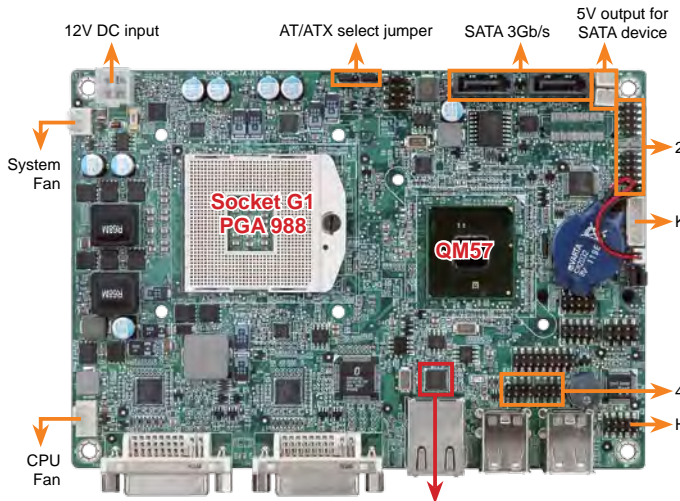
4 ORing Network Communication

5 Power Supply/Peripherals

6 Panel Solutions Introduction

# epic NANO-QM57A

EPIC SBC with Intel® Core™ i7/i5/i3 and Celeron® mobile processor, Dual DVI, PCIe GbE, USB 2.0, PCIe Mini, SATA 3Gb/s, Audio and RoHS



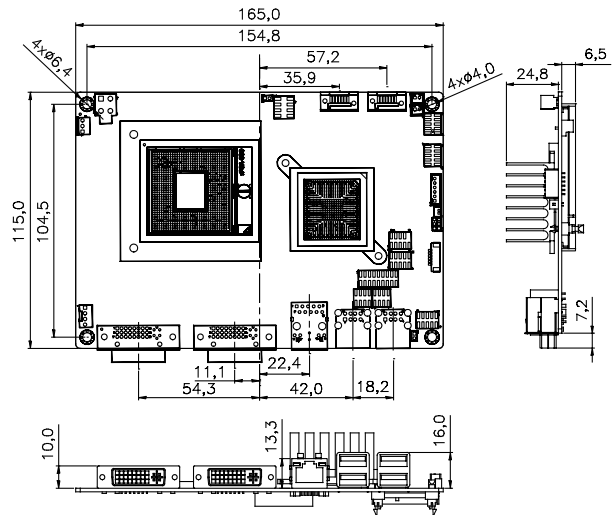
## Specifications

- ◆ CPU  
Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron® processor (Socket 988)
- ◆ PCH  
Intel® QM57
- ◆ BIOS  
UEFI BIOS
- ◆ Memory  
One 204-pin 800/1066MHz DDR3 SDRAM SO-DIMM up to 4GB
- ◆ Graphic  
Gen 5.75 with 12 Execution Units DirectX\* 10, OpenGL\* 2.1  
Support MPEG2, WMV9/VC-1, AVC and Hardware acceleration
- ◆ Display Output  
Dual display supported  
1 x DVI-D  
1 x DVI-I
- ◆ Ethernet Chipset  
One Intel® 82577LM PCIe GbE PHY with Intel® AMT 6.0 support
- ◆ Super I/O  
Fintek F81801U
- ◆ Audio  
Realtek ALC888 HD Audio codec
- ◆ I/O Interface  
8 x USB 2.0  
2 x RS-232  
2 x SATA 3Gb/s with RAID 0, 1 support  
1 x 6-pin header for KB/MS
- ◆ Expansion  
1 x PCIe Mini card slot
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ Fan Connector  
1 x 4-pin CPU fan connector  
1 x 3-pin system fan connector
- ◆ Power Supply  
12V only, AT/ATX support by jumper
- ◆ Power Consumption  
12V@4.66A (Intel® Core™ i7 620M 2.66G, DDR3 2GB/1333Mhz)
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
115mm x 165mm
- ◆ Weight  
GW:850g/NW:350g

## Features

1. EPIC SBC supports Socket G1 Intel® Core i7/i5/i3 and Celeron® mobile processor
2. Dual independent display supported by DVI+DVI or DVI+VGA
3. One 800/1066MHz DDR3 SO-DIMM slot supports up to 4GB
4. Support dual SATA 3Gb/s with RAID 1, 0 function, two serial ports and eight USB 2.0 ports
5. One Intel® 82577LM GbE PHY with Intel® AMT 6.0 support. iEZman tool is bundled for remote control under Windows® environment
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (Unit: mm)



## Packing List

1 x NANO-QM57A single board computer	
1 x SATA with 5V output cable (P/N: 32801-000201-100-RS)	
1 x DVI-I to VGA adapter (P/N: 33Z00-000031-RS)	1 x One Key Recovery CD
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
2 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x QIG

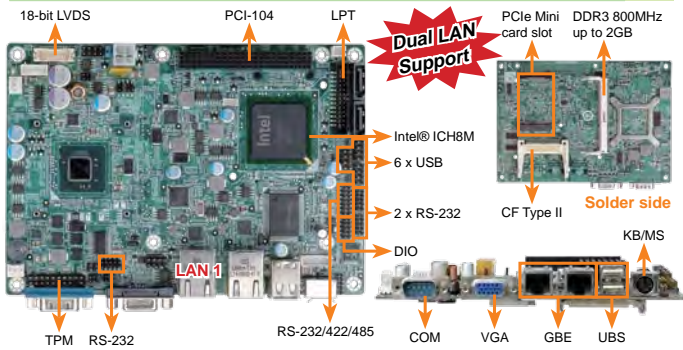
## Ordering Information

Part No.	Description
NANO-QM57A-R10	EPIC SBC supports Socket G for Intel® Core™ i7/i5/i3 and Celeron® mobile CPU, Dual DVI, PCIe GbE, USB 2.0, PCIe Mini, SATA 3Gb/s and Audio, RoHS
32001-008600-100-RS	Dual port USB cable
32000-023800-RS	KB/MS cable
CF-989A-RS-R12	CPU cooler for mobile socket-G (PGA988) up to 55W processor, Copper, 60mm x 60mm x 27.6mm, RoHS

- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/Peripherals
- 6 Panel Solutions Introduction

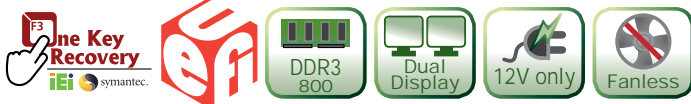
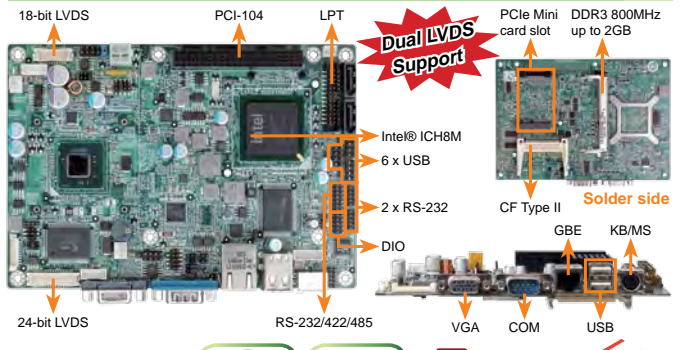
## epic NANO-PV-D4251/N4551/D5251

EPIC SBC with Intel® Atom™ D425/N455/D525, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF Type II, Audio and SATA 3Gb/s, RoHS



## epic NANO-PV-D4252/N4552/D5252

EPIC SBC with Intel® Atom™ D425/N455/D525, DDR3, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s



### Features

1. EPIC SBC with Intel® Atom™ D525/D425/N455 processor
2. 800MHz DDR3 SDRAM supported (system max. 2 GB)
3. Support VGA and 18-bit single-channel LVDS with dual display
4. Support PCI-104 and PCIe Mini card slot
5. Support five COM, eight USB, two SATA 3Gb/s and one CF Type II socket
6. TPM V1.2 hardware security function support by TPM module
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery



### Specifications

- ◆ CPU
  - Intel® Atom™ D525 dual-core processor 1.8GHz/1MB L2 cache
  - Intel® Atom™ D425 single-core processor 1.8GHz/512KB L2 cache
  - Intel® Atom™ N455 single-core processor 1.66GHz/512KB L2 cache
- ◆ Chipset: Intel® ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory
  - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 4GB for D525/D425)
  - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 2GB for N455)
- ◆ Graphic
  - GMA 3150
  - Graphic core speed 400MHz for D525/D425
  - Graphic core speed 200MHz for N455
- ◆ Display
  - Analog CRT with up to 2048x1536 resolution for D525/D425, 1400x1050 for N455
  - Support CRT hotplug
  - 18-bit single-channel LVDS, resolution support up to WXGA 1366x768 or XGA 1024x768
- ◆ Super IO
  - Fintek F81865
- ◆ LAN
  - Dual PCIe GbE by Realtek RT8111E, LAN1 with ASF 2.0 support
- ◆ Audio
  - Realtek ALC888 HD Audio codec
- ◆ SMBus
  - 1 x 4-pin wafer connector
- ◆ TPM
  - 1 x 20-pin LPC pin header
- ◆ I/O Interface
  - 4 x RS-232
  - 1 x LPT
  - 2 x KB/MS
  - 1 x RS-232/422/485 (COM3) with auto flow control
- ◆ Expansion
  - 1 x PCI-104 slot
  - 1 x PCIe Mini card slot
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset by Super I/O
- ◆ Digital I/O
  - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Fan Connector
  - 1 x 3-pin CPU fan, 1 x 3-pin system fan
- ◆ Power Supply: 12V only, AT/ATX support
- ◆ Power Consumption
  - 2.21A @ 12V (Intel® Atom™ D525 with 2GB 1066MHz DDR3)
  - 2.11A @ 12V (Intel® Atom™ D425 with 2GB 1066MHz DDR3)
  - 2.00A @ 12V (Intel® Atom™ N455 with 2GB 1066MHz DDR3)
- ◆ Operating Temperature
  - 10°C ~ 60°C
- ◆ Operating Humidity
  - 5% ~ 95%, non-condensing
- ◆ Weight
  - GW: 670g/NW: 350g

### Packing List

1 x NANO-PV-D4251/N4551/D5251 single board computer	
2 x RS-232 cable (P/N: 32205-002700-100-RS)	
1 x SATA with 5V output cable (P/N: 32801000201-100-RS)	
1 x KB/MS Y cable (P/N: 32006-000300-100-RS)	1 x One Key Recovery CD
1 x USB cable (P/N: 32001-002700-200-RS)	1 x Mini jumper pack
1 x Audio cable (P/N: 32000-072100-RS)	1 x Utility CD
1 x Power cable (P/N: 32100-087100-RS)	1 x QIG

### Ordering Information

Part No.	Description
NANO-PV-D5251-R10	EPIC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF Type II, audio and SATA 3Gb/s, RoHS
NANO-PV-D4251-R10	EPIC with Intel® Atom™ D425 1.8GHz, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF Type II, audio and SATA 3Gb/s, RoHS
NANO-PV-N4551-R10	EPIC with Intel® Atom™ N455 1.66GHz, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF Type II, audio and SATA 3Gb/s, RoHS
32200-015100-RS	LPT cable
32801-000703-200-RS	SATA cable
32205-000300-100-RS	RS-232/422/485 cable
31100-000327-RS	CPU fan
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

### Features

1. EPIC SBC with Intel® Atom™ D525/D425/N455 processor and DDR3 solution
2. 12V only single voltage design for AT/ATX mode
3. Support dual LVDS
4. Support PCI-104 and PCIe Mini card slot
5. Support five COM, eight USB, two SATA 3Gb/s and one CF Type II socket
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

### Specifications

- ◆ CPU
  - Intel® Atom™ D525 dual-core processor 1.8GHz/1MB L2 cache
  - Intel® Atom™ D425 single-core processor 1.8GHz/512KB L2 cache
  - Intel® Atom™ N455 single-core processor 1.66GHz/512KB L2 cache
- ◆ Chipset: Intel® ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory
  - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 4GB for D525/D425)
  - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 2GB for N455)
- ◆ Graphic
  - GMA 3150
  - Graphic core speed 400MHz for D525/D425
  - Graphic core speed 200MHz for N455
- ◆ Display Out
  - Analog CRT with up to 2048x1536 resolution, support CRT hotplug
  - 18-bit single-channel LVDS, resolution support up to 1366x768
  - 18/24-bit single/dual-channel LVDS by Novatek NT68667/UF6 resolution support up to 800x600, 1024x768, 1280x1024, 1366 x768, 1920x1080
- ◆ I/O Interface
  - 4 x RS-232
  - 1 x LPT
  - 1 x CF Type II
  - 1 x RS-232/422/485 (COM3) with auto flow control
  - 8 x USB 2.0
  - 2 x KB/MS
  - 2 x SATA 3Gb/s
- ◆ Super IO
  - Fintek F81865
- ◆ Audio
  - Realtek ALC888 HD codec
- ◆ LAN
  - Realtek RTL8111E PCIe GbE controller with ASF 2.0 support
- ◆ Expansion
  - 1 x PCI-104 slot
  - 1 x PCIe Mini card slot
- ◆ TPM (Optional)
- ◆ On-board Infineon SLB9635TT1.2
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset by Super I/O
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Fan Connector
  - 1 x 3-pin CPU fan, 1 x 3-pin system fan
- ◆ Power Supply: 12V only, AT/ATX support
- ◆ Power Consumption
  - 2.16A @ 12V (Intel® Atom™ D525 with 2 GB 1066 MHz DDR3)
  - 2.08A @ 12V (Intel® Atom™ D425 with 2 GB 1066 MHz DDR3)
  - 1.99A @ 12V (Intel® Atom™ N455 with 2 GB 1066 MHz DDR3)
- ◆ Operating Temperature
  - 10°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Weight
  - GW: 650g/NW: 340g

### Packing List

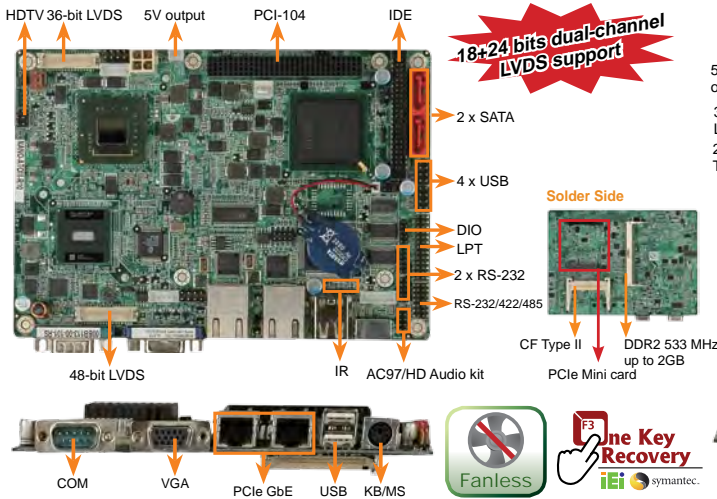
1 x NANO-PV-D4252/N4552/D5252 single board computer	
1 x SATA with 5V output cable (P/N: 32801000201-100-RS)	
1 x KB/MS Y cable (P/N: 32006-000300-100-RS)	1 x Audio cable (P/N: 32000-072100-RS)
1 x Power cable (P/N: 32100-087100-RS)	1 x One Key Recovery CD
1 x USB cable (P/N: 32001-002700-200-RS)	1 x Mini jumper pack
2 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x Utility CD
	1 x QIG

### Ordering Information

Part No.	Description
NANO-PV-D5252-R10	EPIC SBC with Intel® Atom™ D525 1.8GHz/1MB L2, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s
NANO-PV-D5252T-R10	EPIC SBC with Intel® Atom™ D525 1.8GHz/1MB L2, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s, TPM
NANO-PV-D4252-R10	EPIC SBC with Intel® Atom™ D425 1.8GHz/512KB L2, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s
NANO-PV-D4252T-R10	EPIC SBC with Intel® Atom™ D425 1.8GHz/512KB L2, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s, TPM
NANO-PV-N4552-R10	EPIC SBC with Intel® Atom™ N455 1.66GHz/512KB L2, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s
NANO-PV-N4552T-R10	EPIC SBC with Intel® Atom™ N455 1.66GHz/512KB L2, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s, TPM
32200-015100-RS	LPT cable
32801-000703-200-RS	SATA cable
32205-000300-100-RS	RS-232/422/485 cable
31100-000327-RS	CPU fan

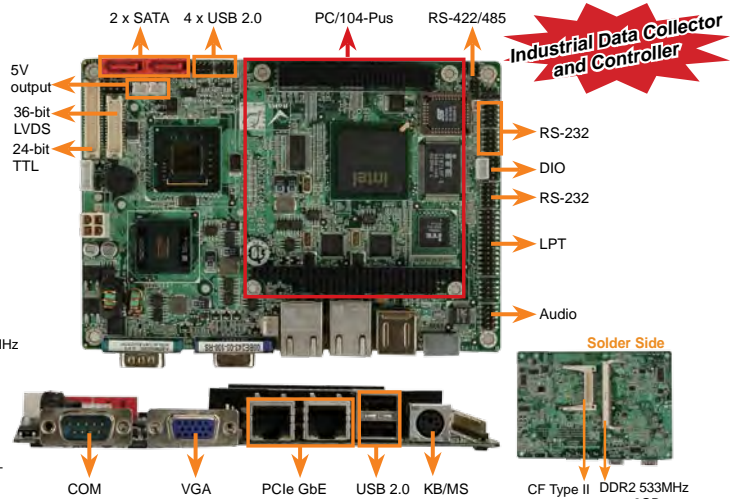
# epic NANO-945GSE-R20

EPIC SBC with Intel® Atom™ processor, VGA/Dual LVDS/Dual PCIe GbE, CF Type II, SATA



# epic NANO-945GSE2

EPIC SBC with Intel® Atom™ processor, VGA/LCD/Dual PCIe GbE, CF Type II, SATA, PC/104-Pus



## Features

1. Intel® Atom™ processor N270 1.6GHz CPU for ultra low voltage fanless support
2. Single 12V power input, 5V output for SATA device
3. Dual LVDS supports dual independent display
4. Support four COM, six USB, two SATA
5. Support PCIe Mini Card, PCI-104 for expansion
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: 1.6 GHz Intel® Atom™ N270 processor with a 533 MHz FSB
- ◆ System Chipset: Intel® 945GSE Intel® 82801GBM/ICH7M
- ◆ BIOS: AMI BIOS
- ◆ System Memory: One 200-pin 533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet: Dual PCIe Realtek 8111E GbE chipset
- ◆ I/O Interface: 6 x USB 2.0, 2 x SATA, 1 x IDE, 3 x RS-232, 1 x RS-232/422/485, 1 x PS/2 for KB/MS, 1 x LPT, 1 x CF Type II
- ◆ Infrared Interface: 1 x Infrared interface by pin header
- ◆ Expansions: 1 x PCI-104 (PCI Bus), 1 x PCIe Mini card
- ◆ Super IO: ITE IT8718
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output by super I/O
- ◆ Audio: 5.1 channel audio kit with Realtek ALC655 AC'97 codec, 7.1 channel HD Audio kit with Realtek ALC888 codec supports dual audio stream
- ◆ Display Interface: Intel® Graphics Media Accelerator 950, VGA intergrated in Intel® 945GSE, Support HDTV resolution up to 1080i by component interface
- ◆ Watchdog Timer: software programmable 1-255 sec. by super I/O
- ◆ Power Supply: 12V only, AT/ATX support
- ◆ Power Consumption: 12W @ 1.53A (Intel® Atom™ N270 with 2GB DDR2)
- ◆ Temperature: Operation: 0°C ~ 60°C (NANO-945GSE-N270-R20), Operation: -40°C ~ 85°C (NANO-945GSE-N270W2-R20), Operation: -20°C ~ 70°C (NANO-945GSE-N270W-R20)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 165 mm x 115 mm
- ◆ Weight: GW: 700g NW 350g

## Packing List

1 x NANO-945GSE single board computer	2 x RS-232 cable (P/N: 32205-002700-100-RS)
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x One Key Recovery CD
1 x Power cable (P/N: 32100-087100-RS)	1 x Mini jumper pack
1 x KB/MS cable (P/N: 32006-000300-100-RS)	1 x Utility CD
	1 x QIG

## Ordering Information

Part No.	Description
NANO-945GSE-N270-R20	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/18-bit dual-channel LVDS, dual GbE, CF Type II, USB, SATA
NANO-945GSE-N270W2-R20	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/18-bit dual-channel LVDS, dual GbE, CF Type II, USB, SATA, -40~85°C
NANO-945GSE-N270W-R20	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/18-bit dual-channel LVDS, dual GbE, CF Type II, USB, SATA, -20~70°C
NANO-945GSELVDS2-N270-R20	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/18+24-bit dual-channel LVDS, dual GbE, CF Type II, USB, SATA
NANO-945GSELVDS2-N270W2-R20	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/18+24-bit dual-channel LVDS, dual GbE, CF Type II, USB, SATA, -40~85°C
NANO-945GSELVDS2-N270W-R20	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/18+24-bit dual-channel LVDS, dual GbE, CF Type II, USB, SATA, -20~70°C
32001-002700-200-RS	Dual port USB cable
32200-015100-RS	LPT cable
32205-000300-100-RS	RS-232/422/485 cable
32100-043403-RS	ATX power cable
32010-000700-100-RS	HDTV out cable
32200-000009-RS	44-pin 2.5" IDE cable
32200-008800-RS	44-pin to 2.5"/3.5" IDE cable
32102-000100-200-RS	SATA power cable
32801-000201-100-RS	SATA 5V power output cable kit for NANO series
AC-KIT08R-R10	5.1 channel AC'97 audio kit with realtek ALC655 codec
AC-KIT-888HD-R10	7.1 channel HD Audio kit with realtek ALC888 codec support dual audio stream

## Features

1. 1.6 GHz Intel® Atom™ N270 CPU with ultra low voltage fanless support
2. Single 12V power input, 5V output for SATA device
3. Dual display supported by VGA+LVDS, VGA+TTL
4. Support four COM, six USB, two SATA and CF Type II socket
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: 1.6 GHz Intel® Atom™ N270 processor with a 533MHz FSB
- ◆ System Chipset: Intel® 945GSE Intel® 82801GBM/ICH7M
- ◆ BIOS: AMI BIOS
- ◆ System Memory: One 200-pin 533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet: Dual PCIe Realtek 8111CP GbE chipset
- ◆ I/O Interface: 6 x USB 2.0, 2 x SATA, 3 x RS-232, 1 x RS-232/422/485 (RS-232, RS-422/485 shared with COM3), 1 x PS/2 for KB/MS, 1 x LPT, 1 x CF Type II
- ◆ Infrared Interface: 1 x Infrared interface by pin header
- ◆ Expansions: 1 x PC/104-Plus
- ◆ Super IO: ITE IT8718
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output by super I/O
- ◆ Audio: Realtek ALC655 with AC'97 codec
- ◆ Display Interface: Intel® Graphics media accelerator 950, VGA intergrated in Intel® 945GSE, 18-bit dual-channel LVDS intergrated in Intel® 945GSE 24-bit TTL (LVDS to TTL)
- ◆ Watchdog Timer: Software programmable 1-255 sec. by super I/O
- ◆ Power Supply: 12V only, AT/ATX support
- ◆ Power Consumption: 12W @ 1.45A (Intel® Atom™ Processor N270 with 1GB DDR2)
- ◆ Temperature: Operation: 0°C ~ 60°C (NANO-945GSE2-N270-R10), Operation: -20°C ~ 70°C (NANO-945GSE2-N270W-R10)
- ◆ Operation Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 165 mm x 115 mm
- ◆ Weight: GW: 700g NW 350g

## Packing List

1 x NANO-945GSE2 single board computer	1 x Audio cable (P/N: 32000-072100-RS)
1 x KB/MS cable (P/N: 32006-000300-100-RS)	1 x One Key Recovery CD
1 x Power cable (P/N: 32100-087100-RS)	1 x Mini jumper pack
2 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x Utility CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

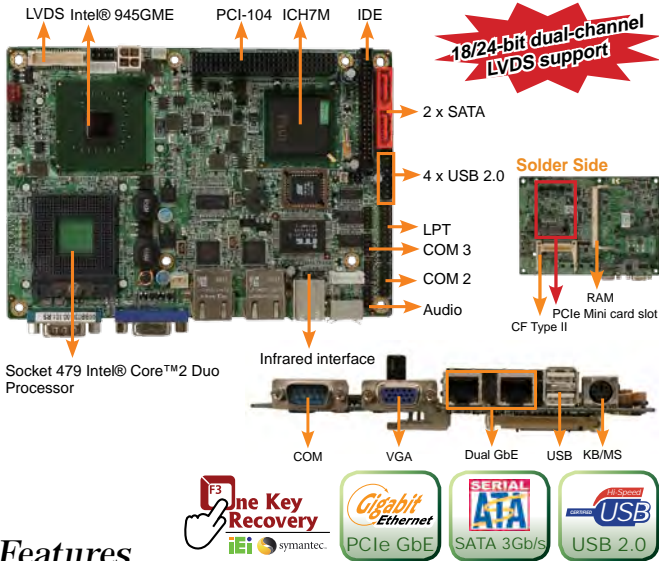
## Ordering Information

Part No.	Description
NANO-945GSE2-N270-R10	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/LVDS/TTL, dual GbE, CF Type II, USB, SATA and PC/104+
NANO-945GSE2-N270W-R10	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/LVDS/TTL, dual GbE, CF Type II, USB, SATA and PC/104+, -20~70°C
32001-008600-100-RS	Dual port USB cable
32200-015100-RS	LPT cable
32200-833600-RS	RS-422/485 cable
32100-052100-RS	ATX power cable
32102-000100-200-RS	SATA power cable
32801-000201-100-RS	SATA 5V power output cable kit for NANO series

- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/Peripherals
- 6 Panel Solutions Introduction

# epic NANO-9452-R40

EPIC SBC with Intel® Core™2 Duo/Core™ Duo/Solo processor, SATA, Dual PCIe GbE, CF Type II, IDE, USB 2.0 & audio



## Features

1. Support Intel® Core™2 Duo, Core™ Duo/Solo processor with 667 MHz FSB
2. VGA integrated in Intel® 945GME supports 1080i HDTV-out, 18/24-bit dual-channel LVDS
3. DDR2 667/533/400 MHz SO-DIMM socket supports up to 2 GB
4. Dual PCIe Broadcom BCM5787M GbE chipset
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
Socket M Intel® Core™2 Duo, Core™ Duo/Solo processor with a 667MHz FSB  
Celeron® M processor with a 533MHz FSB (Yonah Core)
- ◆ System Chipset  
Intel® 945GME + ICH7M
- ◆ BIOS  
AMI BIOS
- ◆ System Memory  
One 200-pin 667/533/400MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet  
Dual PCIe Realtek RTL8111E GbE chipset
- ◆ I/O Interface  
6 x USB 2.0  
2 x SATA  
1 x IDE  
3 x RS-232  
1 x RS-232/422/485  
1 x PS/2 for KB/MS  
1 x LPT  
1 x CF Type II
- ◆ Infrared Interface  
1 x Infrared interface by pin header
- ◆ Expansion  
1 x PCI-104 (PCI bus)
- ◆ Super I/O  
ITE IT8712F
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input/4-bit output by super I/O
- ◆ Audio  
5.1 channel audio kit with Realtek ALC655 AC'97 codec  
7.1 channel HD Audio kit with Realtek ALC888 codec supports dual audio stream
- ◆ Display Interface  
VGA integrated in Intel® 945GME  
Support HDTV resolution up to 1080i by component interface  
18/24-bit dual-channel LVDS
- ◆ Watchdog Timer  
Software programmable 1-255 sec. by super I/O
- ◆ Power Supply  
12V only AT/ATX support
- ◆ Power Consumption  
12V@2.99A (Intel® Core™2 Duo T2500 2.0GHz, 2GB 800 MHz DDR2)
- ◆ Temperature  
Operating: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity  
Operating: 5% ~ 95%, non-condensing
- ◆ Dimensions  
165 mm x 115 mm

## Packing List

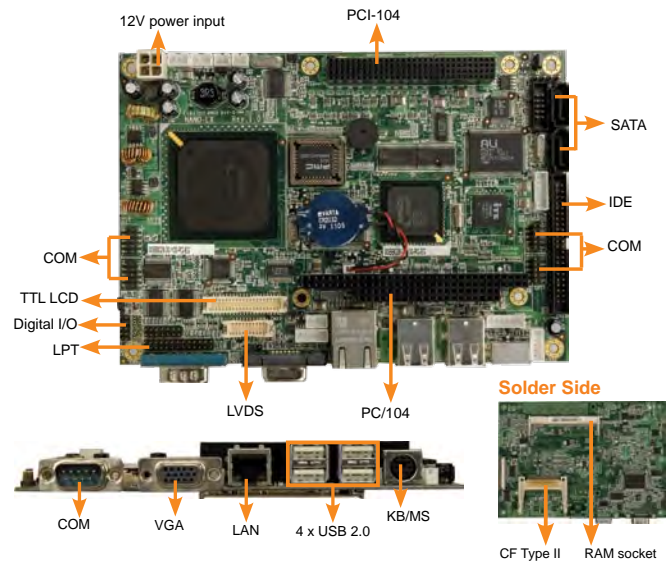
1 x NANO-9452 single board computer	
2 x RS-232 cable (P/N: 32205-002700-100-RS)	
1 x SATA power cable (P/N: 32102-000100-200-RS)	
1 x KB/MS cable (P/N: 32006-000300-100-RS)	1 x One Key Recovery CD
1 x IDE cable (P/N: 32200-000009-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

## Ordering Information

Part No.	Description
NANO-9452-R40	EPIC SBC, Intel® Core™2 Duo, Core Duo/Solo FSB 667MHz with VGA/LVDS/HDTV-out, dual PCIe GbE, SATA and audio
32001-002700-200-RS	USB cable
19800-004300-100-RS	RS-232/422/485 cable
AC-KIT08R-R10	5.1 channel AC' 97 Audio Kit with Realtek ALC655 codec
AC-KIT-888HD-R10	7.1 channel HD Audio kit with realtek ALC888 codec support dual audio streams
CF-479B-RS	CPU cooler (50 mm x 50 mm x 26 mm, 50W)
32200-015100-RS	LPT cable
32100-043403-RS	ATX power cable
32010-000700-100-RS	HDTV out cable

# epic NANO-LX-R12

EPIC SBC with AMD LX800 CPU, Audio, VGA/LVDS, SATA and RAID 0, 1, JBOD Function Support



## Features

1. EPIC form factor AMD LX800 processor embedded board with RoHS compliant
2. DDR 400MHz SO-DIMM SDRAM up to 1GB
3. VGA, 24-bit TTL, and 18-bit single-channel LVDS
4. SATA RAID 0, 1, JBOD function support
5. Complete I/O support with two SATA, IDE, PC/104-Plus and four USB 2.0
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
On-board AMD Geode™ LX800 (500MHz) processor
- ◆ System Chipset  
AMD Geode LX800 + AMD CS5536
- ◆ BIOS  
AWARD
- ◆ System Memory  
One 200-pin 400/333MHz DDR SDRAM SO-DIMM Supported (System max. 1GB)
- ◆ Ethernet  
10/100Mbps Realtek RTL8100C chipset
- ◆ I/O Interface  
4 x USB 2.0  
2 x SATA with VIA VT6421A RAID 0, 1 function support  
1 x CF Type II  
1 x LPT  
6 x RS-232  
1 x RS-422/485  
1 x PS/2 for KB/MS  
1 x IDE
- ◆ Expansion  
1 x PC/104-Plus
- ◆ Audio  
Realtek ALC203 with AC'97 Codec
- ◆ Infrared Interface  
1 x Infrared interface by pin header
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input/4-bit output by super I/O
- ◆ Super I/O  
Winbond W83627EHG
- ◆ Display Interface  
VGA integrated in AMD LX800  
24-bit single-channel TTL  
18-bit single-channel LVDS
- ◆ Watchdog Timer  
Software programmable supports 1-255 sec. system reset
- ◆ Power Supply  
12V only, AT/ATX support
- ◆ Power Consumption  
12V@ 0.92A (AMD LX800 with 400MHz 256MB DDR RAM)
- ◆ Operating Temperature : 0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions  
115 mm x 165 mm
- ◆ Weight  
GW: 950 g; NW: 350 g

## Packing List

1 x NANO-LX single board computer	
1 x IDE flat cable 44p/44p (P/N: 32200-000009-RS)	
1 x SATA power cable (P/N: 32102-000100-200-RS)	
2 x RS-232 port cable (P/N: 32205-002700-100-RS)	
1 x KB/MS Y cable (P/N: 32006-000300-100-RS)	1 x One Key Recovery CD
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

## Ordering Information

Part No.	Description
NANO-LX-800-R12	EPIC SBC, AMD LX800 500MHz processor, VGA/LVDS/TTL, LAN, SATA and Audio
32200-015100-RS	LPT cable
32100-052100-RS	ATX power cable
32205-000300-100-RS	RS-232 and RS-422/485 cable

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

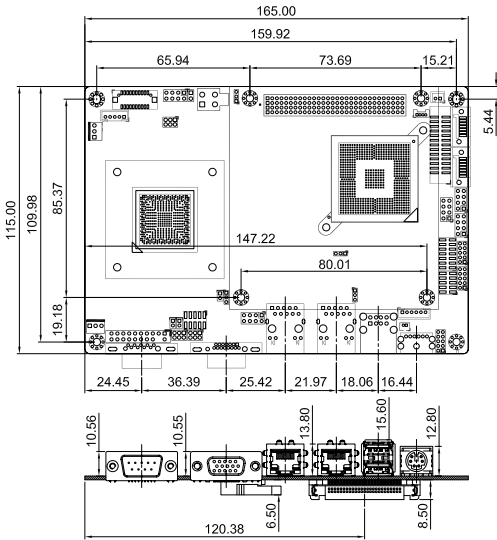
4 ORing Network Communication

5 Power Supply/Peripherals

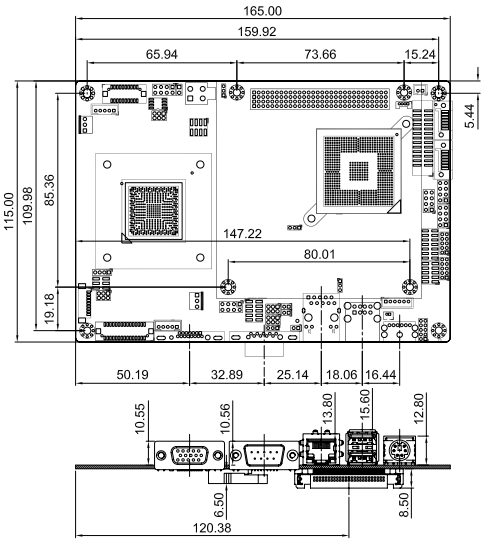
6 Panel Solutions Introduction

**EPIC NANO Dimensions** (Unit: mm)

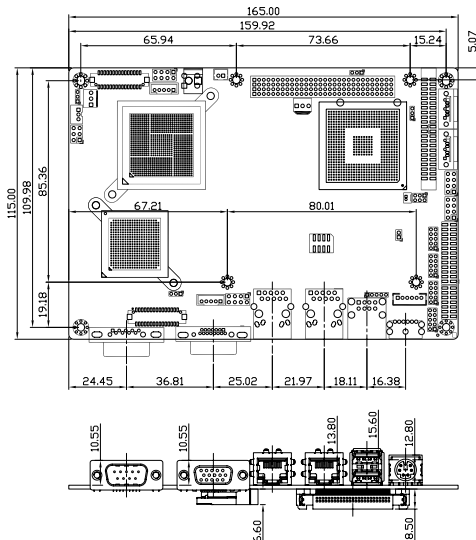
**NANO-PV-D4251/N4551/D5251**



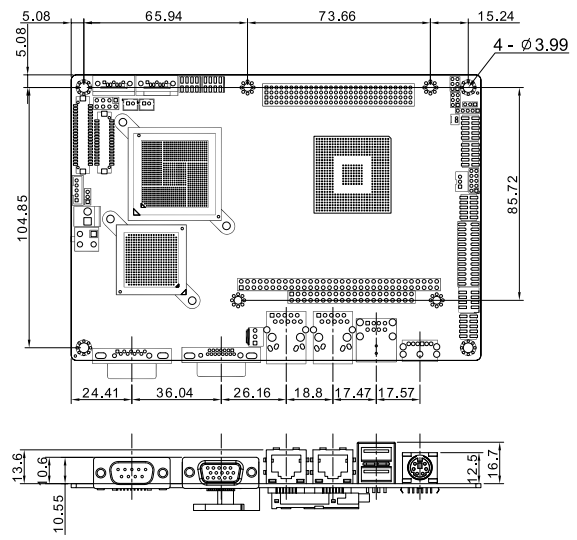
**NANO-PV-D4252/N4552/D5252**



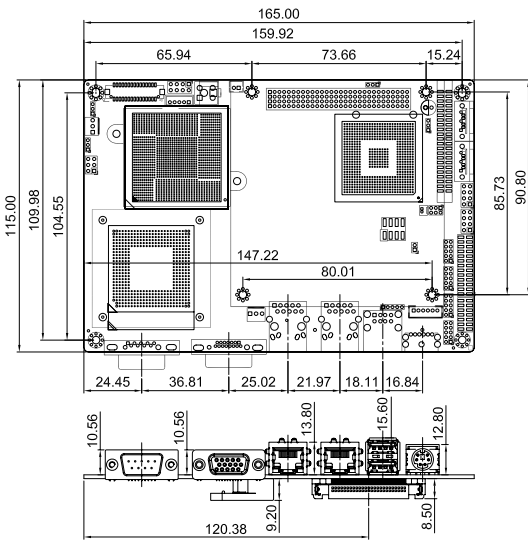
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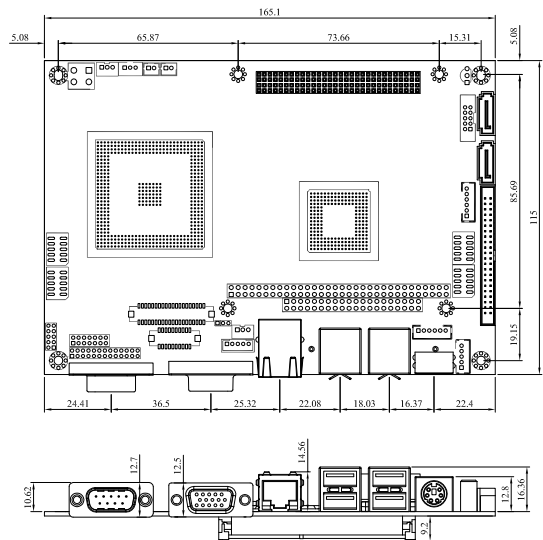
**NANO-945GSE2**



**NANO-9452-R40**



**NANO-LX-R12**



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# 3.5" WAFER Selection Guide

**New****New**

Model Name	WAFER-NM701-847	WAFER-CV-D25502/ N26002	WAFER-CV-D25501/ N26001	WAFER-OT-Z650/Z670	WAFER-PV-D4251/N4551/ D5251	WAFER-PV-D4252/N4552/ D5252
<b>CPU Socket</b>	On Board	On Board	On Board	On Board	On board	On board
<b>CPU Type</b>	Intel® mobile Celeron dual core processor 847 1.1GHz	Intel® Atom™ Processor D2550 1.86GHz Intel® Atom™ Processor N2600 1.6GHz	Intel® Atom™ Processor D2550 1.86GHz Intel® Atom™ Processor N2600 1.6GHz	Intel® Atom™ Processor Z650 1.2GHz Intel® Atom™ Processor Z670 1.5GHz	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz Intel® Atom™ Processor N455 1.66GHz	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz Intel® Atom™ Processor N455 1.66GHz
<b>Chipset</b>	Intel® NM70	Intel® NM10	NM10	SM35	ICH8M	ICH8M
<b>Memory</b>	One 204-pin 1333 DDR3 SO-DIMM supported (system max. 8GB)	On-board DDR3 1066MHz 2GB SDRAM	1 x 204-pin 1066 MHz 4GB (max.) DDR3/DDR3L (1.35V) SO-DIMM (D2550) 1 x 204-pin 800 MHz 2GB (max.) DDR3/DDR3L (1.35V) SO-DIMM (N2600)	On-board 1GB 800 MHz DDR2 memory	On-board 2GB 800 MHz DDR3 memory	1 x 204-pin 800 MHz 4GB (max.) DDR3 SO-DIMM (D525/ D425) 1 x 204-pin 800 MHz 2GB (max.) DDR3 SO-DIMM (N455)
<b>Display Interface</b>	Dual display supported 1 x VGA integrated in Intel NM70 1 x dual channel 24-bit dual LVDS	Dual display supported 1 x VGA Integrated in Intel® CPU 1 x Single-channel 18-bit (N2600)/24-bit LVDS2 (D2550)	Dual display supported 1 x VGA 1 x Single-channel 18-bit (N2600)/24-bit LVDS2 (D2550) 1 x 24-bit Dual-channel LVDS	Dual display supported 1 x HDMI 1 x 18-bit single-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS
<b>Ethernet</b>	Dual Realtek RTL8111E PCIe GbE controllers with ASF 2.0 support			USB interface 10/100 Mbps LAN by AX88772A	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	
<b>I/O Interface</b>	5 x RS-232 1 x RS-422/485 4 x USB 2.0 1 x 6-pin wafer for PS/2 KB/MS	5 x RS-232 1 x RS-422/485 4 x USB2.0 1 x 6-pin wafer for PS/2 KB/MS	3 x RS-232 1 x RS-422/485 6 x USB 2.0 1 x KB/MS by pin header	4 x RS-232 7 x USB 2.0	3 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x KB/MS by pin header	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x KB/MS by pin header
<b>Drive Interface</b>	2 x SATA 3Gb/s 1 x mSATA	2 x SATA 3Gb/s or 1 x SATA 3Gb/s + 1 x mSATA	2 x SATA 3Gb/s 1 x mSATA	1 x SATA 3Gb/s 1 x SD	2 x SATA 3Gb/s 1 x CF Type II	2 x SATA 3Gb/s 1 x CF Type II
<b>Audio</b>	Realtek ALC662 HD Audio Codec				Realtek ALC888 HD Audio codec	
<b>Digital I/O</b>	8-bit digital I/O (4-bit input / 4-bit output)			N/A	8-bit digital I/O (4-bit input/4-bit output)	
<b>Power Consumption</b>	12V@2.72 (1.1GHz Intel® mobile Celeron™ 847 with 1333MHz 8GB DDR3)	12V@1.19A (1.86GHz Intel® D2550 with on-board 1066MHz 1GB SDRAM) 12V@0.95A (1.6GHz Intel N2600 with on-board 1066MHz 1GB SDRAM)	12V@1.53A (1.86GHz Intel® D2550 with 1GB DDR3 1066MHz) 12V@1.15A (1.6GHz Intel® N2600 with 1GB DDR3 1066MHz)	12V@0.93A (1.2GHz Intel® Z650 with 1GB DDR2 800MHz) 12V@0.95A (1.5GHz Intel® Z670 with 1GB DDR2 800MHz)	12V@1.7A (Intel® Atom™ D525 with 1GB 1066MHz DDR3) 12V@1.52A (Intel® Atom™ D425 with 1GB 1066MHz DDR3) 12V@1.33A (Intel® Atom™ N455 with 1GB 1066MHz DDR3)	12V@1.79A (Intel® Atom™ D525 with 2 GB 1066 MHz DDR3)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset					
<b>Operating Environment</b>	Temperature Range: -10°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing	-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor -20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 processor Relative Humidity: 5% ~ 95%, non-condensing"		Temperature Range: -10°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing	
<b>Expansion Slot</b>	1 x full/half size PCIe Mini card slot with mSATA support	1 x full size PCIe Mini card slot with mSATA support 1 x PCI-104 slot supports PCI singal	1 x PCIe Mini card slot	N/A	1 x PCIe Mini card slot	1 x PCIe Mini card slot
<b>Recommended CPU Cooler</b>	Heatsink enclosure	Specific Heatsink	Heatsink enclosure	Heatsink	Heatsink	Heatsink enclosure

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Industrial Computing Solutions

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Video Capture Solutions

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Embedded Computing Solutions

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ORing Network Communication

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Power Supply/ Peripherals

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Panel Solutions Introduction



# 3.5" WAFER Selection Guide



Model Name	WAFER-PV-D4253/N4553/D5253	WAFER-945GSELVDS2	WAFER-945GSE-R20	WAFER-945GSE2-R20	WAFER-LX-R12	WAFER-LX2-R11
<b>CPU Socket</b>	On board	On board	On board	On board	On board	On board
<b>CPU Type</b>	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz Intel® Atom™ Processor N455 1.66GHz	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz	AMD Geode™ LX800	AMD Geode™ LX800
<b>FSB</b>	NA	533 MHz	533 MHz	533 MHz	N/A	N/A
<b>Chipset</b>	Intel® ICH8M	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M	AMD Geode™ LX800 + AMD CS5536	AMD Geode™ LX800 + AMD CS5536
<b>Memory</b>	1 x 204-pin 800 MHz 4GB (max.) DDR3 SO-DIMM (D525/ D425) 1 x 204-pin 800 MHz 2GB (max.) DDR3 SO-DIMM (N455)	1 x 200-pin 400/533 MHz, 2 GB (max.) DDR2 SO-DIMM	1 x 200-pin 400/533 MHz, 2 GB (max.) DDR2 SO-DIMM	On-board 1GB DDR2 SDRAM	1 x 200-pin 333/400 MHz, 1 GB (max.) DDR SO-DIMM	1 x 200-pin 400 MHz, 1 GB (max.) DDR SO-DIMM
<b>Display Interface</b>	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL
<b>Ethernet</b>	Single PCIe GbE by Realtek RT8111E support ASF 2.0	Realtek RTL8111CP PCIe GbE chipset	Dual Realtek RTL8111E PCIe GbE chipset		Dual Realtek RTL8100CL GbE chipset	
<b>I/O Interface</b>	3 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x KB/MS by pin header	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x PS2 for KB/MS	5 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x PS2 for KB/MS	1 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x PS2 for KB/MS	2 x RS-232 1 x RS-422/485 4 x USB 2.0 1 x LPT 1 x PS/2 for KB/MS	7 x RS-232 1 x RS-232/422/485 4 x USB 2.0
<b>Drive Interface</b>	2 x SATA 3Gb/s 1 x CF Type II	2 x SATA 1 x CF Type II	2 x SATA 1 x CF Type II	2 x SATA 1 x CF Type II	2 x SATA RAID 1 x IDE 1 x CF Type II	1 x IDE 1 x CF Type II
<b>Audio</b>	Realtek ALC888 HD Audio codec	Realtek ALC655 with AC'97 codec	Realtek ALC662 with HD Audio codec		Realtek ALC203 with AC'97 codec	
<b>Digital I/O</b>	8-bit digital I/O (4-bit input/4-bit output)					
<b>Power Consumption</b>	12V@1.66A (Intel® Atom™ D525 with 2 GB 1066 MHz DDR3)	5V@2.49A (Intel® Atom™ N270 1.6GHz, 2GB DDR2 533 MHz)	5V@2.94A (Intel® Atom™ N270 1.6GHz, 2GB DDR2 533 MHz)	5V@2.36A (Intel® Atom™ N270 1.6GHz, 1GB DDR2 533 MHz)	5V@1.53A (AMD Geode™ LX 800 1GB 400 MHz DDR)	5V@1.33A (AMD Geode™ LX800 512MB 333 MHz DDR)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset					
<b>Operating Environment</b>	Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: 0°C ~ 60°C, -20°C ~ 70°C (W), -40°C ~ 85°C (W2) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C, -20°C ~ 70°C (W) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95% non-condensing	
<b>Expansion Slot</b>	1 x PCIe Mini card slot	1 x PCIe Mini card slot	1 x PCIe Mini card slot	1 x PC/104	1 x PC/104	1 x PC/104
<b>Recommended CPU Cooler</b>	Heatsink	Heatsink enclosure	Heatsink enclosure	Heatsink	Heatsink	Heatsink

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Industrial Computing Solutions

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Video Capture Solutions

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Embedded Computing Solutions

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ORing Network Communication

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Power Supply/Peripherals

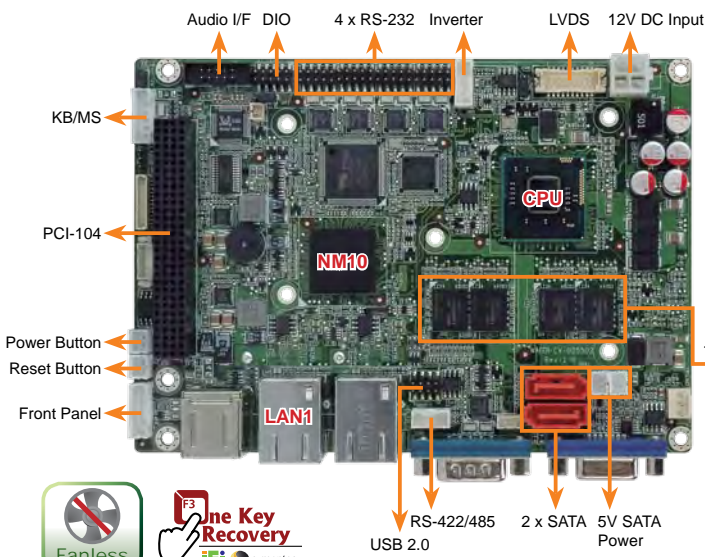
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Panel Solutions Introduction



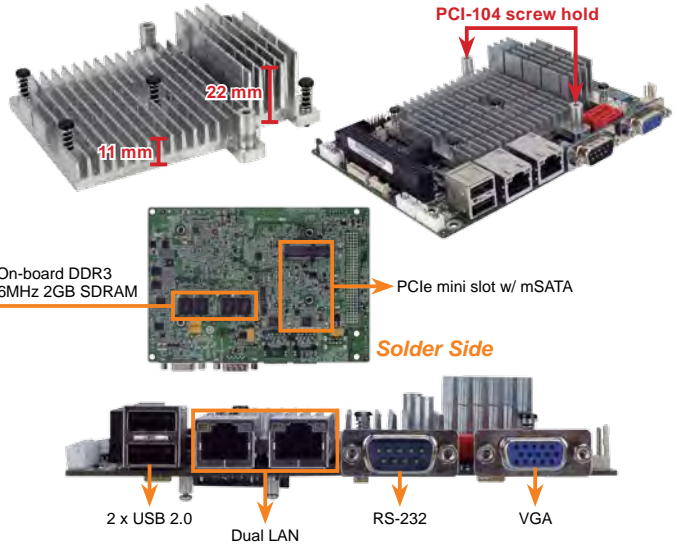
# WAFER-CV-D25502-N26002

3.5" SBC supports Intel® Atom™ D2550/N2600 processor with 2GB DDR3 memory down, VGA/LVDS, Dual GbE, PCI-104, USB 2.0, SATA 3GB/s and Audio



Fanless solution by specific heatsink is for put on the PCI-104 add-in card easily

**New**



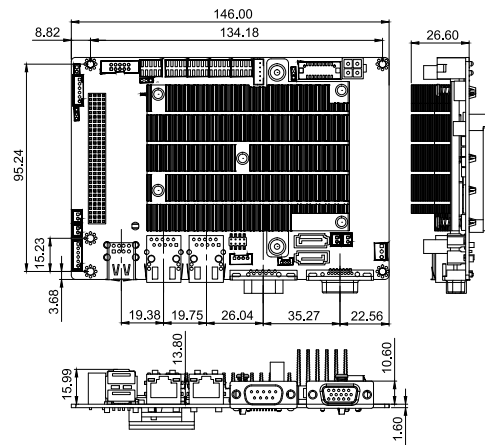
## Specifications

- ◆ CPU
  - Intel® Atom™ dual core D2550 1.86 GHz/ 10W TDP processor
  - Intel® Atom™ dual core N2600 1.6 GHz/ 3.5W TDP processor
  - Intel® Atom™ dual core N2800 1.86 GHz/ 6.5W TDP processor (optional)
- ◆ System Chipset
  - Intel® NM10
- ◆ BIOS
  - UEFI BIOS
- ◆ Memory
  - On-board DDR3 1066MHz 2GB SDRAM
- ◆ Graphic
  - GMA 3650 with 640MHz graphic core speed for D2550 and N2800
  - GMA 3600 with 400MHz graphic core speed for N2600
- ◆ Display Out
  - 1 x VGA Integrated in Intel® CPU (Resolution up to 1920x1200 for D2550/N2600/N2800)
  - 1 x LVDS integrated in D2550/N2600
  - Single-channel 24-bit LVDS by D2550, resolution support up to 1440x900
  - Single-channel 18-bit LVDS by N2600/N2800, resolution support up to 1366x768
- ◆ Ethernet
  - Dual Realtek RTL8111E PCIe GbE controllers, LAN1 with ASF2.0 supported
- ◆ Super IO
  - Fintek F81866
- ◆ I/O Interfaces
  - 5 x RS-232
  - 1 x RS-422/485
  - 1 x 6-pin wafer for PS/2 KB/MS
  - 2 x SATA 3Gb/s with 5V power connector
  - 4 x USB 2.0 (2 on rear I/O, 2 by pin header)
- ◆ Expansion
  - 1 x full size PCIe Mini card slot with mSATA support
  - 1 x PCI-104 slot supports PCI singal
- ◆ Audio
  - Realtek ALC662 HD codec
- ◆ Digital I/O
  - 8-bit programmable I/O (4-bit in/ 4-bit out)
- ◆ Watchdog Timer
  - Software programmable support 1~255 sec. system reset
- ◆ Power Supply
  - 12V only, AT/ATX supported
- ◆ Operating temperature
  - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor
  - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600/N2800 processor
- ◆ Operating Humidity
  - 5%~95%, non-condensing
- ◆ Power Consumption
  - 12V@1.19A (1.86GHz Intel® Atom™ D2550 with on-board 1GB 1066MHz DDR3 SDRAM)
  - 12V@0.95A (1.6GHz Intel® Atom™ N2600 with on-board 2GB 1066MHz DDR3 SDRAM)
- ◆ Dimensions
  - 146mm x 102mm
- ◆ Weight
  - GW: 600g/ NW: 250g

## Features

1. 3.5" form factor supports Intel® Atom™ D2550/N2600 dual core processor with 2GB DDR3 memory down
2. 12V only single voltage design for AT/ATX power
3. 24-bit single channel LVDS via D2550 CPU or 18-bit single channel via N2600/N2800 CPU support
4. Supporting PCI-104 and mSATA capabilities
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (Unit: mm)



## Packing List

1 x WAFER-CV-D25502/N26002 single board computer	
2 x SATA with 5V output cable kit (P/N: 32801-000201-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x QIG
1 x PS/2 KB/MS cable (P/N: 32000-023800-RS)	1 x Utility CD
1 x RS-232 cable (P/N: 32200-000049-RS)	1 x One key recovery CD

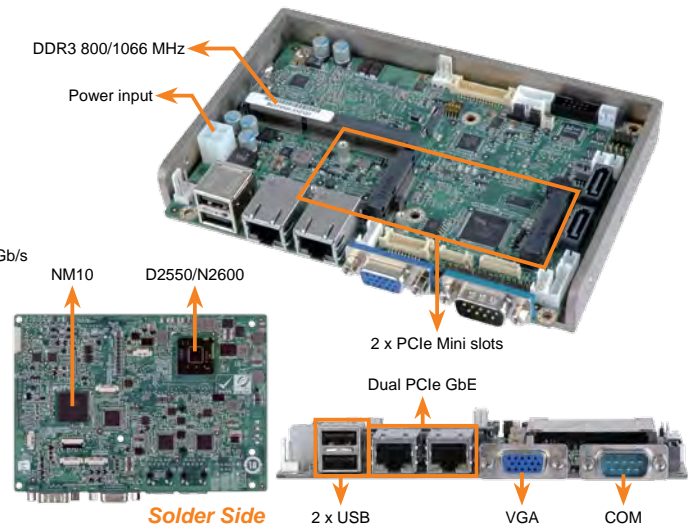
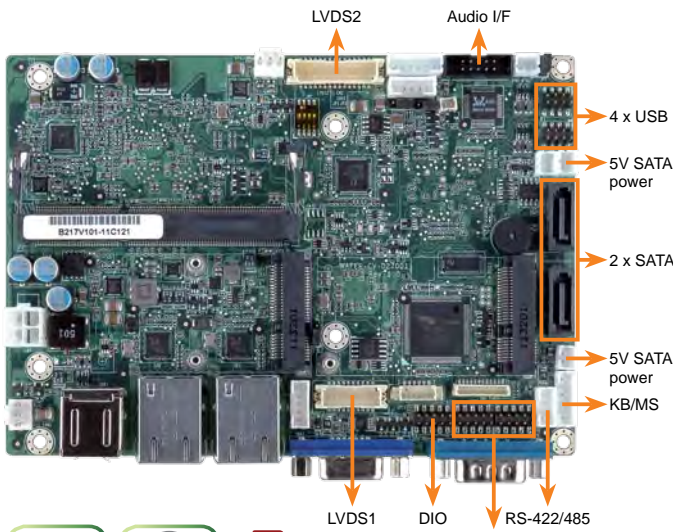
## Ordering Information

Part No.	Description
WAFER-CV-D25502-R10	3.5" SBC supports Intel® Atom™ D2550 1.86MHz processor with 2GB DDR3 memory down, VGA/LVDS, Dual GbE, PCI/104, USB 2.0, SATA 3GB/s and Audio
WAFER-CV-N26002-R10	3.5" SBC supports Intel® Atom™ N2600 1.6MHz processor with 2GB DDR3 memory down, VGA/LVDS, Dual GbE, PCI/104, USB 2.0, SATA 3GB/s and Audio
WAFER-CV-N28002-R10	3.5" SBC supports Intel® Atom™ N2800 1.86MHz processor with 2GB DDR3 memory down, VGA/LVDS, Dual GbE, PCI/104, USB 2.0, SATA 3GB/s and Audio (by project support, MOQ 100pcs / lot)
32000-070301-RS	Dual ports USB cable
32200-074800-RS	RS-422/485 cable

- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/ Peripherals
- 6 Panel Solutions Introduction

# WAFER-CV-D25501-N26001

3.5" SBC with Intel® Atom™ D2550/N2600 Processor, DDR3, VGA/Dual LVDS, Dual GbE, USB 2.0, SATA 3Gb/s, Audio and RoHS



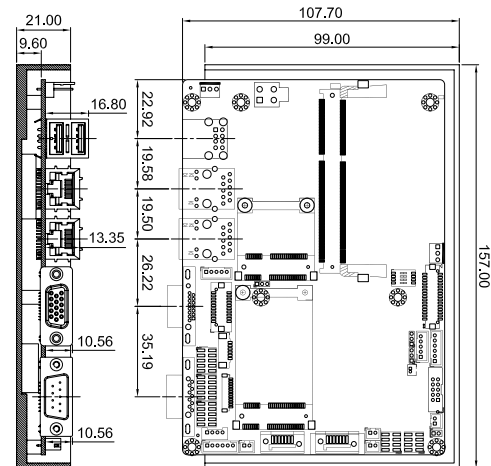
## Specifications

- ◆ CPU
  - Intel® dual core Atom™ D2550 1.86GHz processor
  - Intel® dual core Atom™ N2600 1.6GHz processor
  - Intel® dual core Atom™ N2800 1.86GHz processor (optional)
- ◆ Chipset
  - Intel® NM10
- ◆ BIOS
  - UEFI BIOS
- ◆ Memory
  - 1 x 1066MHz DDR3 SO-DIMM supporting up to 4GB (for D2550 and N2800)
  - 1 x 800MHz DDR3 SO-DIMM supporting up to 2GB (for N2600)
- ◆ Graphics
  - GMA 3650 at 640MHz graphics core speed (for N2550 and N2800)
  - GMA 3600 at 400MHz graphics core speed (for N2600)
- ◆ Display Output
  - Dual display supported
  - 1 x VGA (up to 1920 x 1200 @60Hz)
  - (Due to Intel GMA driver limitation, the monitor connected to the VGA connector may not have signal to it or become extended desktop after restarting from the graphics driver installation. To solve this problem, press the Ctrl+Alt+F1 hotkey to switch the primary screen to CRT mode.)
  - LVDS1 integrated in the D2550/N2600
  - Single-channel 24-bit LVDS by D2550, resolution support up to 1440x900 @60Hz
  - Single-channel 18-bit LVDS by N2600, resolution support up to 1366x768 @60Hz
  - LVDS2 supports 24-bit dual-channel by CH7511B DP to LVDS converter, resolution support up to 1920x1200 for D2550, 1600x1200 for N2600/N2800
- ◆ Ethernet
  - Dual GbE by Realtek RTL8111E controllers
- ◆ I/O Interfaces
  - 1 x RS-422/485
  - 1 x RS-232
  - 6 x USB 2.0
  - 1 x 6-pin wafer for PS/2 KB/MS
  - 2 x SATA 3Gb/s with 5V power connector
- ◆ Super IO
  - Fintek F81866
- ◆ Digital I/O
  - 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Expansions
  - 1 x Full-size PCIe Mini card slot supporting mSATA SSD storage
  - 1 x Half-size PCIe Mini card slot
- ◆ Audio
  - Realtek ALC662 HD audio codec
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
  - 12V only, AT/ATX support
- ◆ Fan Connector
  - 1 x 3-pin CPU fan connector
  - 1 x 3-pin system fan connector
- ◆ Power Consumption
  - 12V@1.53A (Intel® D2550 1.86GHz CPU with 1GB DDR3 1066MHz memory)
  - 12V@1.15A (Intel® N2600 1.6GHz CPU with 1GB DDR3 1066MHz memory)
- ◆ Operating Temperature
  - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor
  - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600/N2800 processor
- ◆ Operating Humidity
  - 5% ~ 95%, non-condensing
- ◆ Weight: GW: 600g/NW: 250g

## Features

- 1.35" form factor with Intel® Atom™ D2550/N2600 dual-core processor supporting DDR3/DDR3L (1.35V) memory
- 12V only single voltage design for AT/ATX power
- Open frame heatsink thermal design for fanless solutions
- Flexible VGA, 18/24-bit LVDS with dual display support
- Complete I/O: six USB, two SATA 3Gb/s, one mSATA, four COM and audio
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (Unit: mm)



## Packing List

1 x WAFER-CV-D25501/N26001 single board computer	
2 x SATA with 5V output cable (P/N: 32801-000201-100-RS)	
1 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x One Key Recovery CD
1 x Audio cable (P/N: 32000-072100-RS)	1 x Enclosure heatsink
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
1 x Screw set for PCIe Mini card	1 x QIG

## Ordering Information

Part No.	Description
WAFER-CV-D25501-R10	3.5" SBC with Intel® Atom™ D2550 1.86GHz, DDR3, VGA/dual LVDS, dual GbE, USB 2.0, SATA 3Gb/s, Audio, RoHS
WAFER-CV-N26001-R10	3.5" SBC with Intel® Atom™ N2600 1.6 GHz, DDR3, VGA/dual LVDS, dual GbE, USB 2.0, SATA 3Gb/s, Audio, RoHS
WAFER-CV-N28001-R10	3.5" SBC with Intel® Atom™ N2800 1.86GHz, DDR3, VGA/dual LVDS, dual GbE, USB 2.0, SATA 3Gb/s, Audio, RoHS (by project support, MOQ 100pcs / lot)
32001-008600-100-RS	Dual-port USB cable
32205-003800-100-RS	RS-422/485 cable, 200mm

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

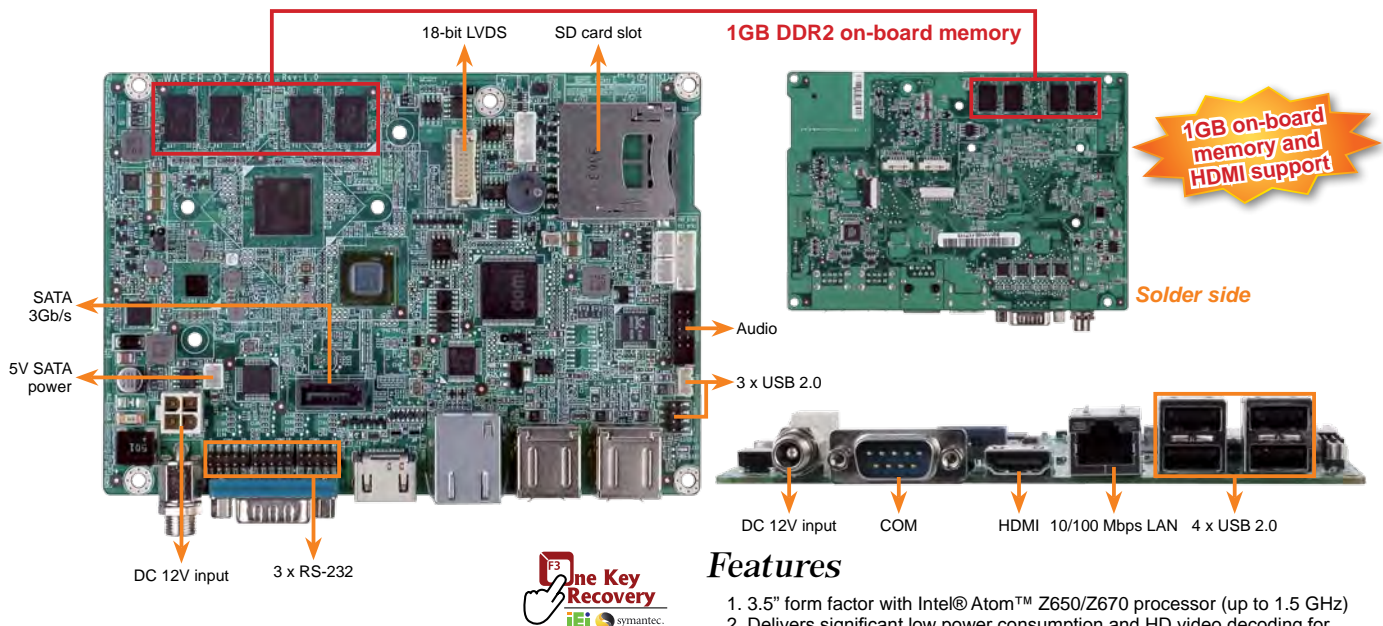
4 ORing Network Communication

5 Power Supply/Peripherals

6 Panel Solutions Introduction

# WAFER-OT-Z670 Z650

3.5" SBC with Intel® Atom™ Z650/Z670 Processor, 1GB DDR2 Memory on Board, HDMI/LVDS, 10/100 Mbps LAN, USB 2.0, SATA 3Gb/s, Audio and RoHS



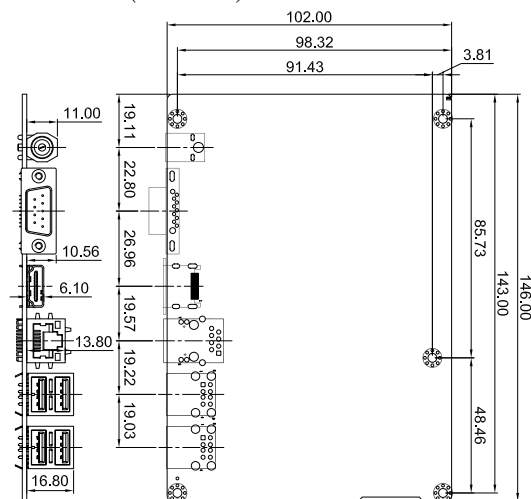
## Specifications

- ◆ CPU
  - Intel® Atom™ Z650 processor 1.2GHz
  - Intel® Atom™ Z670 processor 1.5GHz
- ◆ Chipset
  - Intel® SM35
- ◆ BIOS
  - AMI BIOS
- ◆ Memory
  - On-board 800 MHz 1 GB DDR2 SDRAM
- ◆ Graphics
  - Intel® GMA 600 with a 400MHz graphics core
  - Supports MPEG2, H.264, VC-1/WMV9 up to 1080p decoding
- ◆ Display Output
  - Dual display supported
  - 1 x HDMI (up to 1920 x 1200 @60Hz)
  - 1 x 18-bit single-channel LVDS (up to 1366 x 768 @60Hz)
- ◆ Ethernet
  - USB interface 10/100 Mbps LAN by AX88772A
- ◆ I/O Interfaces
  - 4 x RS-232
  - 1 x SATA 3Gb/s with 5V power
  - 1 x SD card slot (only for storage)
  - 7 x USB 2.0/1.1
- ◆ Audio
  - Realtek ALC662 HD audio codec
- ◆ Power Supply
  - 12V input only
  - AT/ATX mode supported
  - 1 x External power jack
  - 1 x 4-pin (2x2) internal power connector
- ◆ Power Consumption
  - 12W@0.93A (1.2GHz Intel® Z650 with 800MHz 1GB DDR2 memory)
  - 12W@0.95A (1.5GHz Intel® Z670 with 800MHz 1GB DDR2 memory)
- ◆ Operating Temperature
  - 10°C ~ 60°C
- ◆ Operating Humidity
  - 5% ~ 95%, non-condensing
- ◆ Dimensions
  - 146 mm x 102 mm
- ◆ Weight
  - GW: 450g/NW: 130g

## Features

1. 3.5" form factor with Intel® Atom™ Z650/Z670 processor (up to 1.5 GHz)
2. Delivers significant low power consumption and HD video decoding for Windows® 7, WES 2011 and MeeGo OS
3. On-board 800 MHz 1 GB DDR2 SDRAM
4. Supports HDMI and 18-bit single-channel LVDS display output
5. Complete I/O with seven USB ports, one SATA 3Gb/s connector, one SD slot, four COM ports and one audio connector
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (Unit: mm)



## Packing List

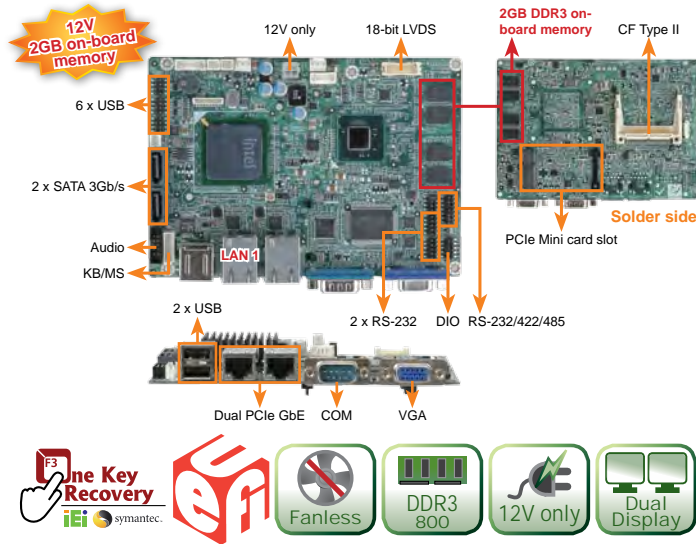
1 x WAFER-OT-Z650/Z670 single board computer	
1 x SATA with 5V output cable (P/N: 32801-000201-100-RS)	
3 x RS-232 cable (P/N: 32205-002700-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 19800-003000-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
WAFER-OT-Z670-R10	3.5" SBC with Intel® Atom™ Z670 1.5 GHz processor, on-board 1GB DDR2 memory, HDMI/LVDS, 10/100 Mbps LAN, USB 2.0, SATA 3Gb/s, Audio, RoHS
WAFER-OT-Z650-R10	3.5" SBC with Intel® Atom™ Z650 1.2 GHz processor, on-board 1GB DDR2 memory, HDMI/LVDS, 10/100 Mbps LAN, USB 2.0, SATA 3Gb/s, Audio, RoHS
63000-FSP036RAB608-RS	36W/12V power adaptor 90 ~ 264VAC
32000-120100-RS	Single USB port cable

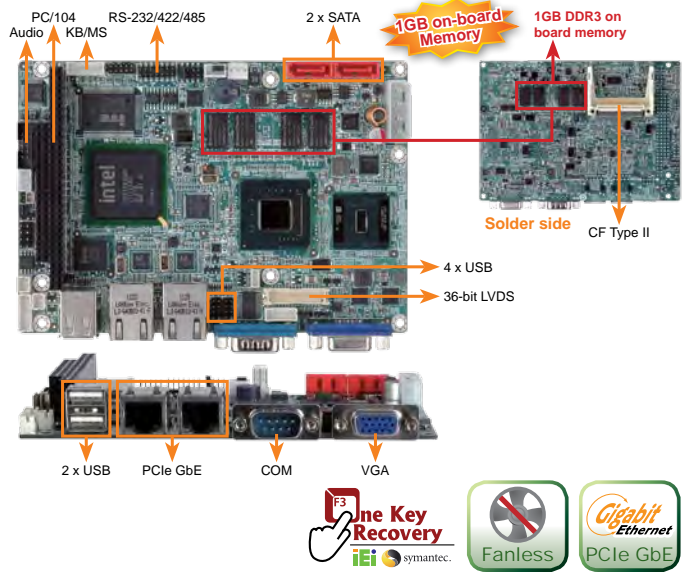
## WAFER-PV-D4251/N4551/D5251-R11

3.5" SBC with Intel® Atom™ D425/N455/D525, DDR3 2GB memory on board, VGA/LVDS, Dual GbE, USB 2.0 and SATA 3Gb/s, Audio, RoHS



## WAFER-945GSE2-R20

3.5" SBC with Intel® Atom™ N270 1.6G, VGA/LVDS, Dual GbE, CF Type II, USB, SATA, 1GB on-board Memory and PC/104



### Features

1. 3.5" form factor with Intel® Atom™ D525/D425/N455 processor supports DDR3 memory
2. 12V only single voltage design for AT/ATX power
3. On-board DDR3 800 MHz 2GB SDRAM
4. Support VGA and 18-bit single-channel LVDS with dual-display support
5. Complete I/O with eight USB, two SATA 3Gb/s, one CF Type II, four COM and audio
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

### Specifications

- ◆ CPU
  - Intel® Atom™ D525 dual-core processor 1.8GHz/1MB L2 cache
  - Intel® Atom™ D425 single-core processor 1.8GHz/512KB L2 cache
  - Intel® Atom™ N455 single-core processor 1.66GHz/512KB L2 cache
- ◆ Chipset: ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory
  - On-board DDR3 800MHz 2GB SDRAM
- ◆ Graphic
  - GMA 3150
  - Graphic core speed 400MHz for D525/D425
  - Graphic core speed 200MHz for N455
- ◆ Display Interface
  - Analog CRT up to 2048x1536 for D525/D425, 1400x1050 for N455
  - Support for CRT hotplug
  - Single-channel 18-bit LVDS, resolution support up to WXGA 1366x768 or XGA 1024x768
- ◆ Ethernet
  - Dual GbE by Realtek RTL8111E, LAN1 with ASF 2.0 support
- ◆ I/O Interfaces
  - 3 x RS-232 1 x CF Type II
  - 1 x KB/MS 2 x SATA 3Gb/s
  - 8 x USB 2.0
  - 1 x RS-232/422/485 with Auto Flow control
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ Digital I/O
  - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Expansion
  - 1 x PCIe Mini card slot
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset by Super I/O
- ◆ Power Supply
  - 12V input only AT/ATX mode select
  - 4-pin (2x2) power connector
- ◆ Super IO: Fintek F81865
- ◆ Fan Connector
  - 1 x 3-pin CPU fan, 1 x 3-pin system fan
- ◆ Power Consumption
  - 1.7A @ 12V (Intel® Atom™ D525 with 1GB 1066MHz DDR3)
  - 1.52A @ 12V (Intel® Atom™ D425 with 1GB 1066MHz DDR3)
  - 1.33A @ 12V (Intel® Atom™ N455 with 1GB 1066MHz DDR3)
- ◆ Operating Temperature
  - 10°C ~ 60°C
- ◆ Operating Humidity
  - 5% ~ 95%, non-condensing
- ◆ Dimensions
  - 146 mm x 102 mm
- ◆ Weight
  - GW: 650g/NW: 170g

### Packing List

1 x WAFER-PV-D4251/N4551/D5251 single board computer	
1 x SATA with 5V output cable (P/N: 32801-000201-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD 1 x QIG

### Ordering Information

Part No.	Description
WAFER-PV-D5251-2GB-R11	3.5" SBC with Intel® Atom™ D525 1.8GHz, 2GB DDR3 memory on board, VGA/LVDS, Dual GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
WAFER-PV-D4251-2GB-R11	3.5" SBC with Intel® Atom™ D425 1.8GHz, 2GB DDR3 memory on board, VGA/LVDS, Dual GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
WAFER-PV-N4551-2GB-R11	3.5" SBC with Intel® Atom™ N455 1.66GHz, 2GB DDR3 memory on board, VGA/LVDS, Dual GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
32001-008600-100-RS	Dual port USB cable
32801-000703-200-RS	SATA cable
32205-000300-100-RS	RS-232/422/485 cable
31100-000327-RS	CPU fan

### Features

1. Intel® Atom™ N270 1.6GHz processor for ultra low voltage fanless support
2. Support VGA and LVDS for dual display
3. On-board 1GB DDR2 memory
4. Support two COM, six USB 2.0, two SATA and one CF Type II socket
5. Support PC/104 ISA expansion slot
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

### Specifications

- ◆ CPU
  - Intel® Atom™ processor N270 1.6GHz with a 533MHz FSB
- ◆ System Chipset
  - Intel® 945GSE
  - Intel® 82801GBM/ICH7M
- ◆ BIOS
  - AMI BIOS
- ◆ Memory
  - 1GB on-board DDR2 SDRAM
- ◆ Ethernet
  - Dual Realtek RTL8111E PCIe GbE controller
- ◆ I/O Interface
  - 6 x USB 2.0 2 x SATA
  - 1 x RS-232 1 x RS-232/422/485
  - 1 x CF Type II 1 x PS/2 for KB/MS
- ◆ Digital I/O
  - 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Super IO
  - ITE IT8718
- ◆ Expansion
  - PC/104 (ISA Bus, not support ISA DMA Mode)
- ◆ Audio
  - Realtek ALC662 with HD Audio codec
- ◆ Display Interface
  - Intel® Graphics Media Accelerator 950
  - VGA integrated in Intel® 945GSE
  - 18-bit dual-channel LVDS integrated in Intel® 945GSE
- ◆ Watchdog Timer
  - Software programmable support 1~255 sec. system reset
- ◆ Power Supply
  - 5V only, 12V for LCD/system fan, AT/ATX support
- ◆ Watchdog Timer
  - Software programmable 1-255 sec. by super I/O
- ◆ Operating Temperature
  - 0°C ~ 60°C (WAFER-945GSE2-N270-R20)
  - 20°C ~ 70°C (WAFER-945GSE2-N270W-R20)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Power Consumption
  - 5V@2.36A (Intel® Atom™ N270 1.6G with on-board 1GB DDR2)
- ◆ Dimensions: 146 mm x 102 mm
- ◆ Weight: GW: 700g/NW 230g

### Packing List

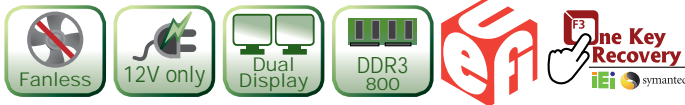
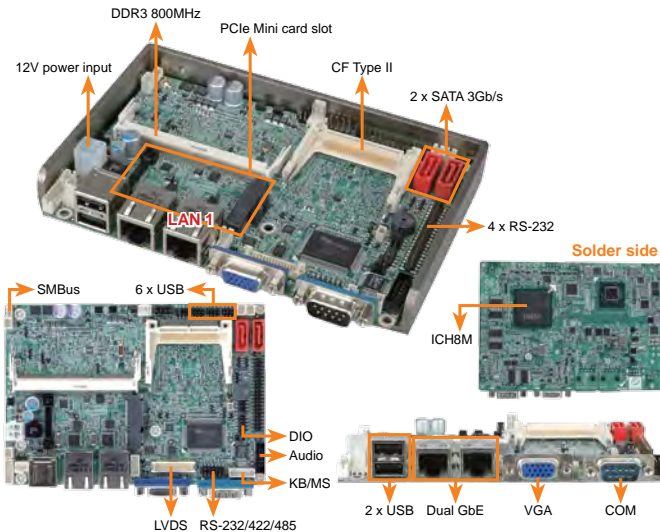
1 x WAFER-945GSE2 single board computer	
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x Mini jumper pack
4 x Plastic intermediate pole for PC/104	1 x Utility CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

### Ordering Information

Part No.	Description
WAFER-945GSE2-N270-R20	3.5" SBC with Intel® Atom™ processor N270 1.6G, VGA/LVDS, Dual GbE, CF Type II, USB, SATA, on board 1GB memory and PC/104
WAFER-945GSE2-N270W-R20	3.5" SBC with Intel® Atom™ processor N270 1.6G, VGA/LVDS, Dual GbE, CF Type II, USB, SATA, on board 1GB memory and PC/104, -20°C ~ 70°C
32001-008600-100-RS	Dual port USB cable
32205-000300-100-RS	RS-232/422/485 cable
32100-052100-RS	ATX power cable
32100-088600-RS	SATA power cable

# WAFER-PV-D4252/N4552/D5252

3.5" SBC with Intel® Atom™ D425/N455/D525, DDR3, VGA/LVDS, Dual GbE, USB 2.0 and SATA 3Gb/s, Audio, RoHS



## Features

- 3.5" form factor with Intel® Atom™ D525/D425/N455 processor supports DDR3 memory
- 12V only single voltage design for AT/ATX power
- Open frame heatsink thermal design for fanless solutions
- Support VGA and 18-bit single-channel LVDS with dual display support
- Complete I/O with eight USB, two SATA 3Gb/s, one CF Type II, six COM and audio
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- CPU**
  - Intel® Atom™ D525 dual-core processor 1.8GHz/1MB L2 cache
  - Intel® Atom™ D425 single-core processor 1.8GHz/512KB L2 cache
  - Intel® Atom™ N455 single-core processor 1.66GHz/512KB L2 cache
- Chipset:** Intel® ICH8M
- BIOS:** UEFI BIOS
- Memory**
  - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 4GB for D525/D425)
  - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 2GB for N455)
- Graphic**
  - GMA 3150
  - Graphic core speed 400MHz for D525/D425
  - Graphic core speed 200MHz for N455
- Display Interface**
  - Analog CRT up to 2048x1536 for D525/D425, 1400x1050 for N455
  - Support for CRT hotplug
  - Single-channel 18-bit LVDS
- I/O Interfaces**
  - 1 x KB/MS
  - 2 x SATA 3Gb/s
  - 8 x USB 2.0
  - 1 x CF Type II
  - 5 x RS-232
  - 1 x RS-232/422/485 with auto flow control
- Ethernet**
  - Dual GbE by Realtek RTL8111E, LAN1 with ASF 2.0 support
- Digital I/O**
  - 8-bit digital I/O, 4-bit input/4-bit output
- Expansion**
  - 1 x PCIe Mini card slot
- Audio**
  - Realtek ALC888 HD Audio codec
- Watchdog Timer**
  - Software programmable supports 1~255 sec. system reset by Super I/O
- Power Supply**
  - 12V only, AT/ATX support
- Super IO**
  - Fintek F81865F
- Fan Connector**
  - 1 x 3-pin CPU fan, 1 x 3-pin system fan
- SMBus:** 1 x 4-pin wafer connector
- Power Consumption**
  - 12V@1.79A (Intel® Atom™ D525 1.8GHz with 1GB DDR3)
- Operating Temperature**
  - 10°C ~ 60°C
- Operating Humidity**
  - 5% ~ 95%, non-condensing
- Weight**
  - GW: 600g/NW: 250g

## Packing List

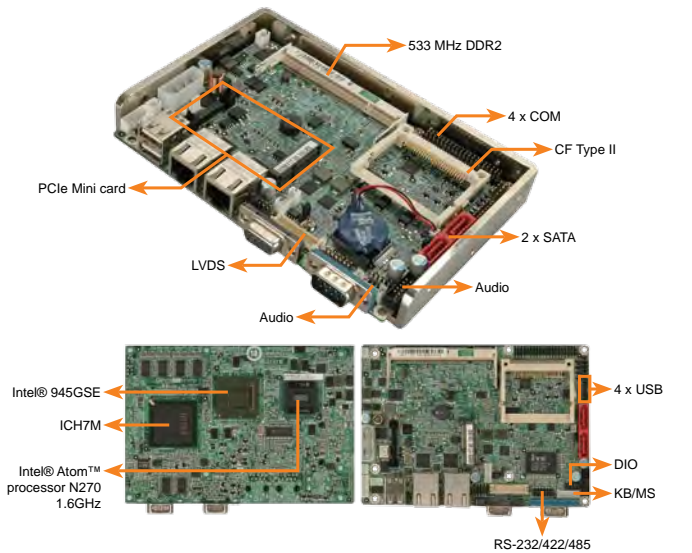
1 x WAFER-PV-D4252/N4552/D5252 single board computer	
1 x SATA with 5V output cable (P/N: 32801-000201-100-RS)	
1 x Quad RS-232 cable (P/N: 32200-025401-RS)	
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x One Key Recovery CD
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x Enclosure heatsink	1 x Utility CD
1 x Power cable (P/N: 32100-087100-RS)	1 x QIG

## Ordering Information

Part No.	Description
WAFER-PV-D5252-R10	3.5" SBC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/LVDS, dual GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
WAFER-PV-D4252-R10	3.5" SBC with Intel® Atom™ D425 1.8GHz, DDR3, VGA/LVDS, dual GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
WAFER-PV-N4552-R10	3.5" SBC with Intel® Atom™ N455 1.66GHz, DDR3, VGA/LVDS, dual GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
32001-008600-100-RS	Dual-port USB cable
32205-000300-100-RS	RS-232/RS-422/485 cable

# WAFER-945GSE-R20

3.5" SBC with Intel® Atom™ Processor, VGA/LVDS/Dual PCIe GbE, CF Type II, SATA



## Features

- Intel® Atom™ processor N270 1.6 GHz CPU for ultra low voltage fanless support
- Support dual display for VGA+LVDS
- System memory supports up to 2 GB 533 MHz DDR2
- Support six COM, six USB 2.0, two SATA and CF Type II socket
- Thermal design for easy assembly
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- CPU**
  - Intel® Atom™ Processor N270 1.6 GHz with 533 MHz FSB
- System Chipset**
  - Intel® 945GSE/Intel® 82801GBM/ICH7M
- BIOS**
  - AMI BIOS
- Memory**
  - One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- Ethernet**
  - Dual PCIe Realtek 8111E GbE chipset with ASF 2.0 support
- I/O Interface**
  - 6 x USB 2.0
  - 2 x SATA
  - 5 x RS-232
  - 1 x RS-232/422/485
  - 1 x CF Type II
  - 1 x PS/2 for KB/MS
- Digital I/O**
  - 8-bit digital I/O (4-bit input, 4-bit output)
- Expansion**
  - 1 x PCI Express Mini card
- Audio**
  - Realtek ALC662 with HD Audio codec
- Display Interface**
  - Intel® Graphics Media Accelerator 950 VGA integrated in Intel® 945GSE
  - 18-bit dual-channel LVDS intergrated in Intel® 945GSE
- Power Supply**
  - 5V only, 12V for LCD/System FAN, AT/ATX support
- Super IO**
  - ITE IT8718
- Watchdog Timer**
  - Software programmable 1-255 sec. by super I/O
- Operating Temperature**
  - 0°C ~ 60°C (WAFER-945GSE-N270-R20)
  - 20°C ~ 70°C (WAFER-945GSE-N270W-R20)
  - 40°C ~ 85°C (WAFER-945GSE-N270W2-R20)
- Power Consumption**
  - 5V@2.94A (Intel® Atom™ N270 1.6G with 1GB DDR2)
- Dimensions:** 146 mm x 102 mm
- Weight:** GW: 700g/NW 230g

## Packing List

1 x WAFER-945GSE single board computer	
1 x Quad RS-232 cable (P/N: 32200-025401-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD
1 x Enclosure heatsink	1 x Mini jumper pack
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x Utility CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

## Ordering Information

Part No.	Description
WAFER-945GSE-N270-R20	3.5" SBC with Intel® Atom™ processor N270 1.6G, VGA/LVDS, dual GbE, CF Type II, USB, SATA
WAFER-945GSE-N270W-R20	3.5" SBC with Intel® Atom™ processor N270 1.6G, VGA/LVDS, dual GbE, CF Type II, USB, SATA, -20°C~70°C
WAFER-945GSE-N270W2-R20	3.5" SBC with Intel® Atom™ processor N270 1.6G, VGA/LVDS, dual GbE, CF Type II, USB, SATA, -40°C~85°C
32001-008600-100-RS	Dual-port USB cable
32205-000300-100-RS	RS-232/422/485 cable
32100-052100-RS	ATX power cable
32100-088600-RS	SATA power cable

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

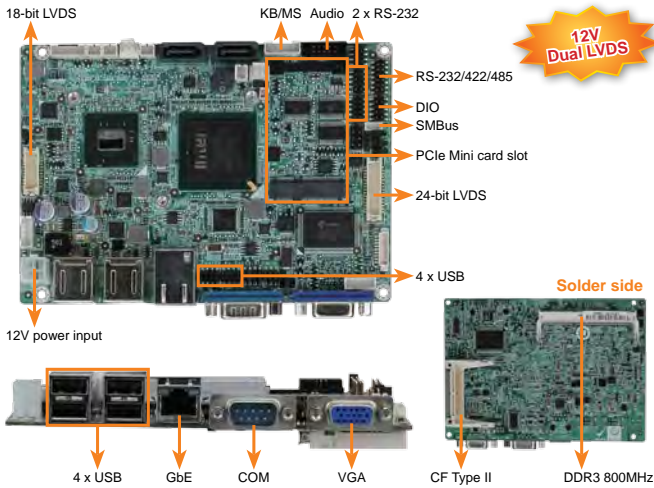
4 ORing Network Communication

5 Power Supply/Peripherals

6 Panel Solutions Introduction

# WAFER-PV-D4253/N4553/D5253

3.5" SBC with Intel® Atom™ D425/N455/D525, DDR3, VGA/18-bit+48-bit LVDS, GbE, USB 2.0 and SATA 3Gb/s, Audio, RoHS



12V Dual LVDS



## Features

1. 3.5" form factor with Intel® Atom™ D525/D425/N455 processor
2. 12V only single voltage design for AT/ATX power
3. Support 24-bit dual-channel LVDS resolution up to 1920x1080
4. Complete I/O with eight USB, two SATA 3Gb/s, one CF Type II, four COM and audio
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU
  - Intel® Atom™ D525 dual-core processor 1.8GHz/1MB L2 cache
  - Intel® Atom™ D425 single-core processor 1.8GHz/512KB L2 cache
  - Intel® Atom™ N455 single-core processor 1.66GHz/512KB L2 cache
- ◆ Chipset: Intel® ICH7M
- ◆ BIOS: UEFI BIOS
- ◆ Memory
  - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 4GB for D525/D425)
  - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 2GB for N455)
- ◆ Graphic
  - GMA 3150
  - Graphic core speed 400MHz for D525/D425
  - Graphic core speed 200MHz for N455
- ◆ Display Interface
  - Analog CRT up to 2048x1536 for D525/D425, 1400 x 1050 for N455
  - Support for CRT hotplug
  - Dual-channel 24-bit LVDS by scaler chip
  - Novatek 68667UFG, resolution support up to 1920x1080
  - Single-channel 18-bit LVDS, resolution support up to WXGA 1366x768 or XGA 1024x768
- ◆ Ethernet
  - Single GbE by Realtek RTL8111E with ASF 2.0 support
- ◆ I/O Interfaces
  - 1 x KB/MS
  - 8 x USB 2.0
  - 1 x RS-232
  - 1 x RS-232/422/485 with auto flow control
- ◆ Digital I/O
  - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Expansion
  - 1 x PCIe Mini card slot
- ◆ Audio
  - Realtek ALC888 HD Audio codec
  - Watchdog Timer
  - Software programmable supports 1~255 sec. system reset by Super I/O
- ◆ Power Supply
  - 12V only, AT/ATX support
- ◆ Super IO
  - Fintek F81865
- ◆ Fan Connector
  - 1 x 3-pin CPU fan, 1 x 3-pin system fan
- ◆ SMBus: 1 x 4-pin wafer connector
- ◆ Power Consumption
  - 12V@1.66A (Intel® Atom™ D525 1.8GHz with DDR3 1GB)
- ◆ Operating Temperature
  - 10°C ~ 60°C
- ◆ Operating Humidity
  - 5% ~ 95%, non-condensing
- ◆ Weight
  - GW: 600g/NW: 180g

## Packing List

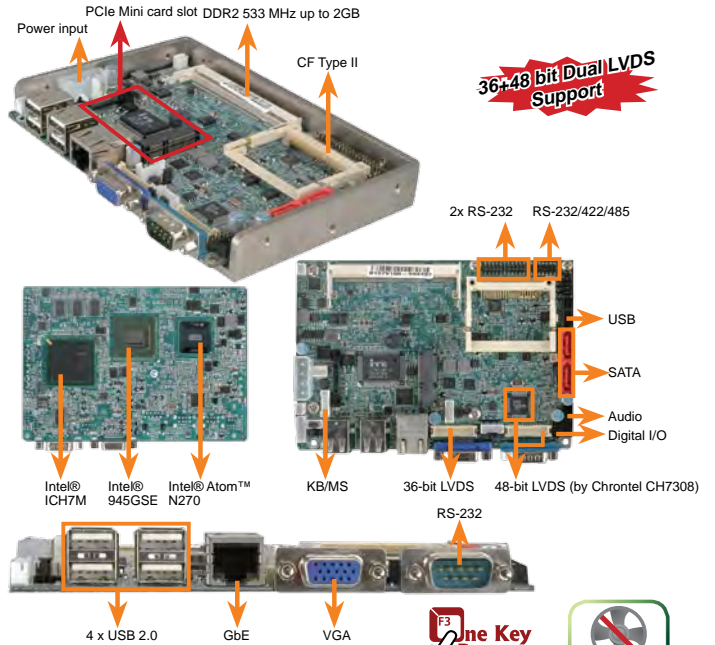
1 x WAFER-PV-D4253/N4553/D5253 single board computer	
1 x SATA with 5V output cable (P/N: 32801-000201-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
	1 x QIG

## Ordering Information

Part No.	Description
WAFER-PV-D5253-R10	3.5" SBC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/18-bit + 48-bit LVDS, GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
WAFER-PV-D4253-R10	3.5" SBC with Intel® Atom™ D425 1.8GHz, DDR3, VGA/18-bit + 48-bit LVDS, GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
WAFER-PV-N4553-R10	3.5" SBC with Intel® Atom™ N455 1.66GHz, DDR3, VGA/18-bit + 48-bit LVDS, GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
32001-008600-100-RS	Dual port USB cable
32801-000703-200-RS	SATA cable
32205-000300-100-RS	RS-232/RS-422/485 cable
32205-002700-100-RS	RS-232 cable

# WAFER-945GSELVDS2

3.5" SBC with Intel® Atom™ processor, 18-bit and 24-bit dual-channel LVDS, four COM ports



36+48 bit Dual LVDS Support



## Features

1. Intel® Atom™ N270 1.6GHz CPU for ultra low voltage and fanless support
2. Single 5V low power design, 12V for LCD
3. Dual LVDS support 36-bit and 48-bit for dual independent display
4. Support two SATA, four COM, six USB, PCIe Mini card, CF Type II and audio
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU
  - Intel® Atom™ processor N270 1.6GHz with a 533MHz FSB
- ◆ System Chipset
  - Intel® 945GSE
  - Intel® 82801GBM/ICH7M
- ◆ BIOS
  - AMI BIOS
- ◆ Memory
  - One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet
  - One Realtek RTL8111CP PCIe GbE controller
- ◆ I/O Interface
  - 6 x USB 2.0
  - 2 x SATA
  - 3 x RS-232
  - 1 x RS-232/422/485
  - 1 x PS/2 for KB/MS
  - 1 x CF Type II
- ◆ Digital I/O
  - 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Expansion
  - 1x PCI Express Mini card
- ◆ Audio
  - Realtek ALC655 with AC'97 codec
- ◆ Display Interface
  - Intel® Graphics Media Accelerator 950
  - VGA integrated in Intel® 945GSE
  - LVDS1: 18-bit dual-channel LVDS integrated in Intel® 945GSE
  - LVDS2: 18/24-bit dual-channel LVDS supported by Chrontel CH7308
- ◆ Power Supply
  - 5V only, 12V for LCD, AT/ATX support
- ◆ Super IO
  - ITE IT8718
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset
- ◆ Operating Temperature: 0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity: 5% ~ 95% non-condensing
- ◆ Power Consumption
  - 5V@2.49A (Intel® Atom™ N270 1.6G with 2GB DDR2)
- ◆ Dimensions
  - 146 mm x 102 mm
- ◆ Weight
  - GW: 700g/NW: 350g

## Packing List

1 x WAFER-945GSELVDS2 single board computer	
1 x Audio cable (P/N: 32000-072100-RS)	1 x Enclosure heatsink
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x One Key Recovery CD
2 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
	1 x QIG

## Ordering Information

Part No.	Description
WAFER-945GSELVDS2-N270-R10	3.5" SBC with Intel® Atom™ N270 1.6GHz, VGA/18-bit and 24-bit dual-channel LVDS, GbE, CF Type II, USB, Audio, SATA
32001-008600-100-RS	Dual-port USB cable
32205-000300-100-RS	RS-232/422/485 cable
32100-052100-RS	ATX power cable
32102-000100-200-RS	SATA power cable

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

4 ORing Network Communication

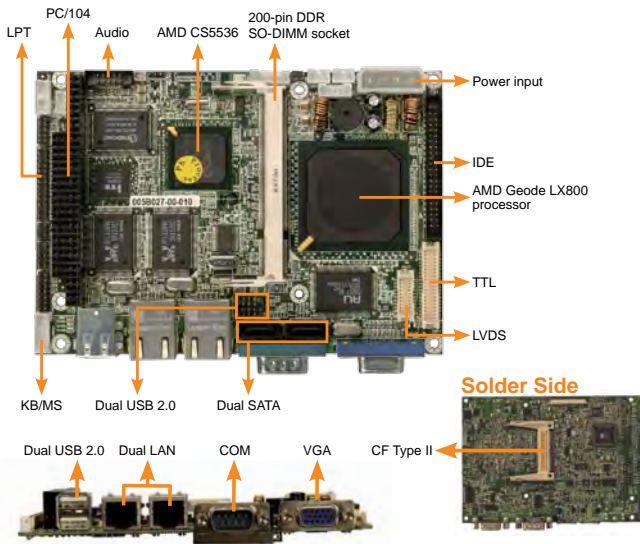
5 Power Supply/Peripherals

6 Panel Solutions Introduction



# WAFER-LX-R12

3.5" SBC with on-board AMD Geode™ LX 800 processor VGA/LVDS/TTL, Dual LAN and SATA



## Features

1. 3.5" form factor embedded board with AMD Geode™ LX 800 processor and RoHS compliant
2. DDR 333/400MHz SO-DIMM SDRAM up to 1GB
3. Complete I/O support with two SATA, IDE, CF Type II, PC/104, dual LAN and four USB 2.0
4. 24-bit TTL/18-bit single-channel LVDS
5. Value embedded applications with low power and fanless design. Support Windows® XP/CE/XPe
6. The best choice for thin client Windows® CE 5.0, XPe OS image with ICA, RDP and IE APs ready
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: On board AMD Geode™ LX800 (500MHz) processor
- ◆ System Chipsets: AMD Geode LX800 + AMD CS5536
- ◆ BIOS: Award BIOS
- ◆ System Memory: One 200-pin 400/333MHz DDR SDRAM SO-DIMM Supported (system max. 1GB)
- ◆ Ethernet: 10/100Mbps dual RTL8100C Ethernet Chipsets
- ◆ I/O Interface: 4 x USB 2.0, 2 x SATA with VIA VT6421A RAID 0, 1 function support, 1 x LPT, 1 x CF Type II, 2 x RS-232, 1 x RS-422/485, 1 x PS/2 for KB/MS, 1 x IDE
- ◆ Expansion: 1 x PC/104
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output by super I/O
- ◆ Super I/O: Winbond W83627EHG
- ◆ Audio: Realtek ALC203 with AC'97 Codec
- ◆ Display: VGA integrated in AMD Geode™ LX 800, 24-bit TTL, 18-bit single-channel LVDS
- ◆ Infrared Interface: 1 x Infrared interface by pin header
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: 5V only, AT/ATX power support
- ◆ Power Consumption: 5V@1.53A (AMD LX800 with DDR 400MHz/1GB)
- ◆ Operating Temperature: 0°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 146 mm x 102 mm
- ◆ Weight: GW: 670 g/NW: 230 g

## Packing List

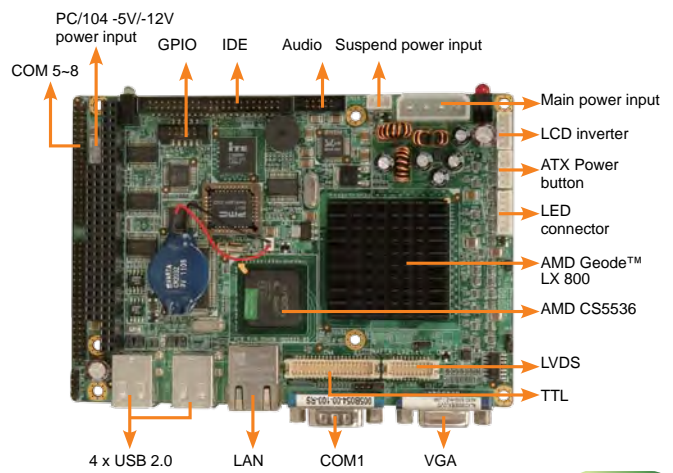
1 x WAFER-LX800 single board computer	
1 x IDE flat cable 44p/44p (P/N: 32200-000009-RS)	
1 x RS-232/422/485 cable (P/N: 32205-000300-100-RS)	
1 x SATA power cable (P/N: 32102-000100-200-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x USB cable (P/N: 32001-008600-100-RS)	1 x QIG

## Ordering Information

Part No.	Description
WAFER-LX-800-R12	3.5" SBC with AMD Geode™ LX 800 processor, audio, VGA/LVDS/TTL, dual LAN and SATA connectors
32200-015100-RS	LPT cable

# WAFER-LX2-R12

3.5" SBC with AMD Geode™ LX 800 processor, 8 COM, DDR 400MHz, VGA/LVDS/TTL display interfaces, PC/104, four USB 2.0, Embedded OS support



## Features

1. 3.5" form factor with AMD Geode™ LX 800 CPU
2. One 333/400MHz DDR SO-DIMM socket supports up to 1GB memory
3. VGA, 24-bit TTL, 18-bit LVDS display interfaces
4. Seven RS-232 and one RS-232/422/485
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: On-board AMD Geode™ LX 800 (500MHz) processor
- ◆ System Chipsets: AMD Geode™ LX 800 + CS5536
- ◆ BIOS: Award BIOS
- ◆ System Memory: One 200-pin 400/333MHz DDR SDRAM SO-DIMM supported (system max. 1GB)
- ◆ Ethernet: Single Realtek RTL8100C 10/100Mbps Ethernet chipset
- ◆ I/O Interface: 7 x RS-232, 1 x RS-232/422/485, 4 x USB 2.0, 1 x IDE
- ◆ Expansion: PC/104 (ISA Bus)
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Display Interface: VGA integrated in AMD Geode™ LX 800, 24-bit TTL, 18-bit single-channel LVDS
- ◆ Audio: Realtek ALC203 with AC'97 codec
- ◆ SSD: CF Type II
- ◆ Watchdog Timer: Software programmable supports 1 ~255 sec. system reset
- ◆ Power Supply: 5V only, AT/ATX support
- ◆ Power Consumption: 5V@1.33A (AMD Geode™ LX 800 with 400MHz 1GB DDR)
- ◆ Operating Temperature: 0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 146 mm x 102 mm
- ◆ Weight: GW: 670g/NW: 230g

## Packing List

1 x WAFER-LX2 single board computer		
1 x IDE flat cable 44p/44p (P/N: 32200-000009-RS)		
2 x Quad RS-232 adapter cable (P/N: 32200-025401-RS)		
1 x Audio cable (P/N: 32200-072100-RS)	1 x One Key Recovery CD	
1 x Mini jumper pack	1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
WAFER-LX2-800-R12	3.5" SBC with AMD Geode™ LX 800 processor, Audio, VGA/LVDS, TTL/LVDS, four USB 2.0, seven RS-232 and one RS-232/422/485

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

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5 Power Supply/Peripherals

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■ Enclosure Heatsink

**Old Way**

**OLD STYLE**

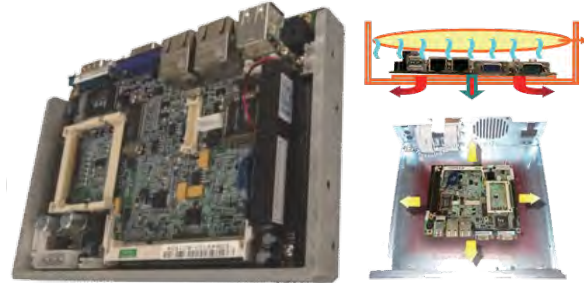
Heat from CPU board is circling in the system. Accumulation heat occurs the unstable system !!!

Most of heat will be spread out by whole system surface !!!

**New Way**

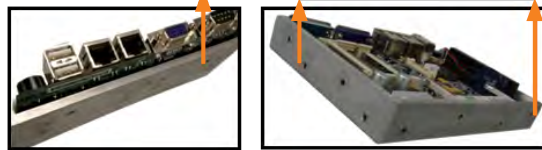
**UPGRADE NOW!**

**ieI Technology Corp.**

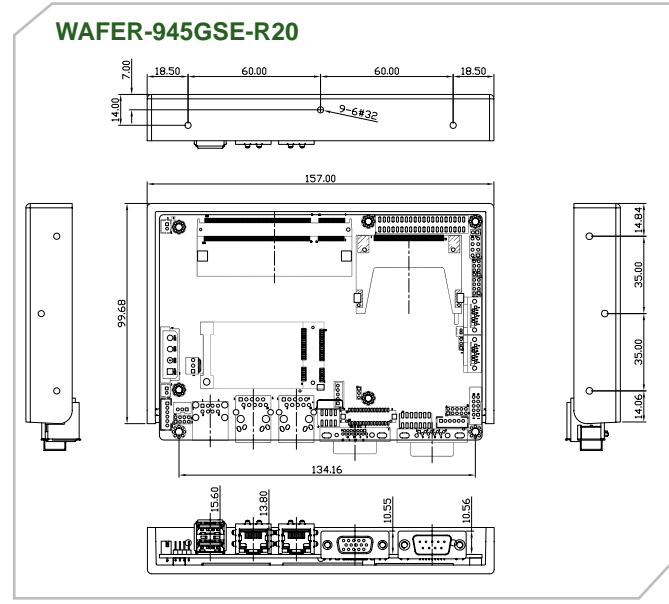
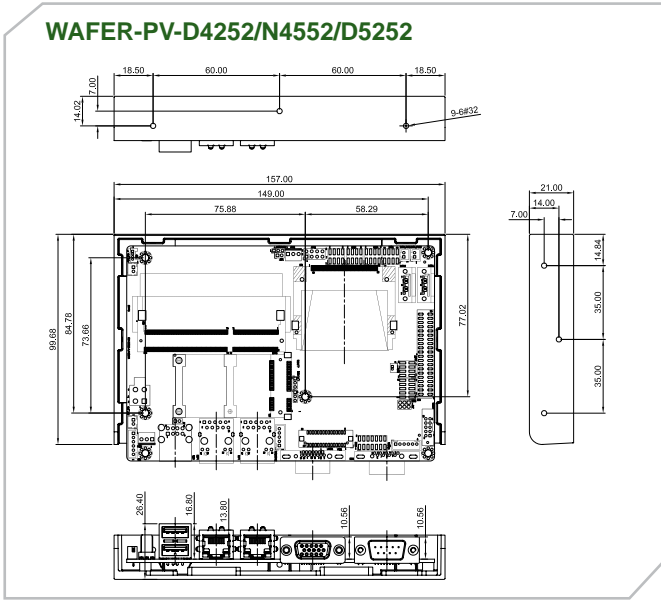
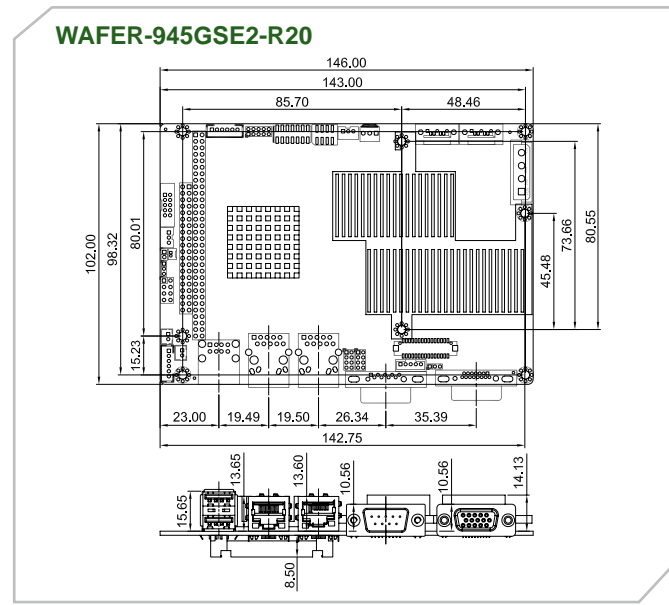
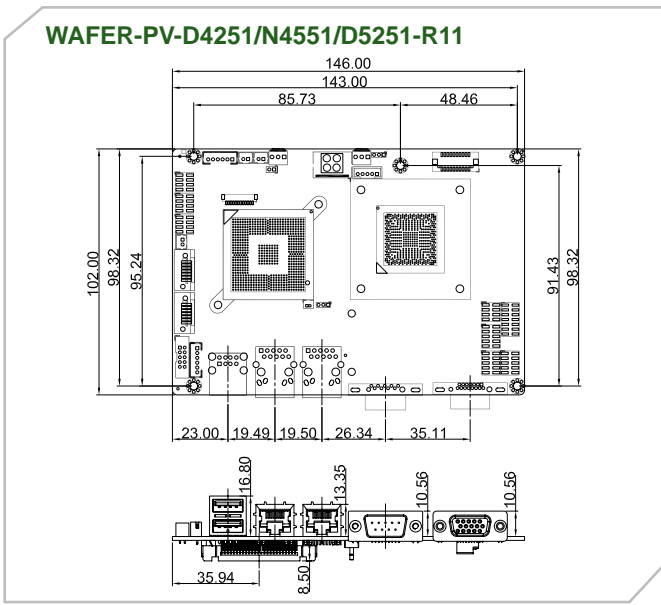


IEI unique enclosure heatsink design: the heatsink housing is included in the standard packing list.

Multiple screw mounting holes provide flexibility for all thermal solutions.



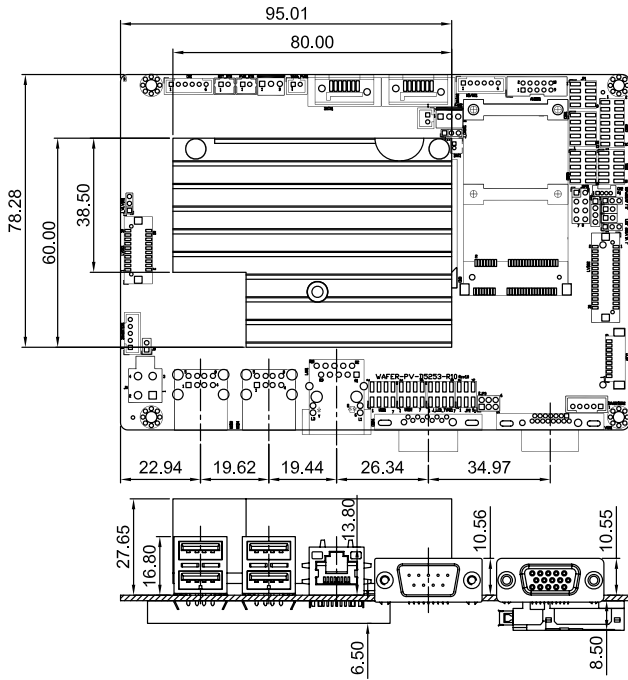
**WAFER Dimensions (Unit: mm)**



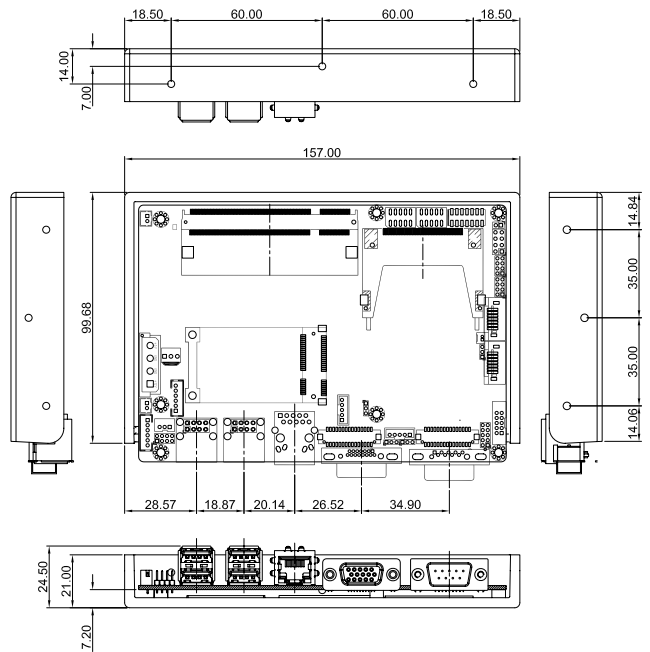
- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/ Peripherals
- 6 Panel Solutions Introduction

**WAFER Dimensions** (Unit: mm)

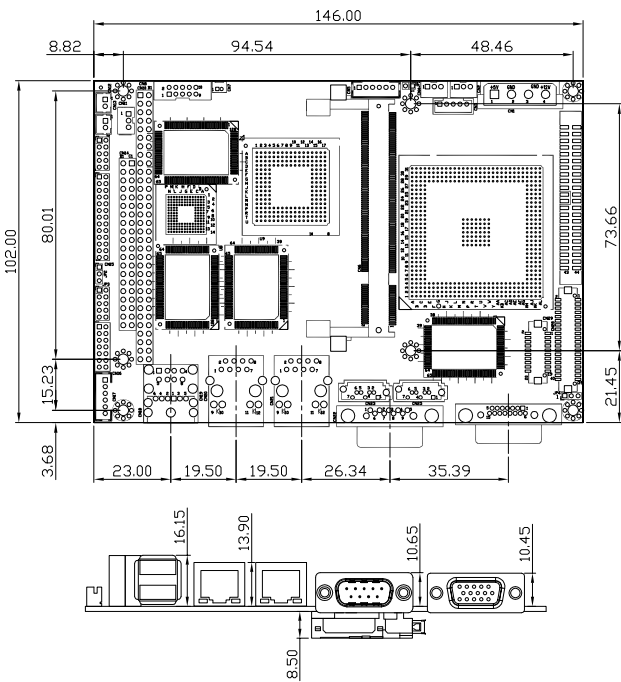
**WAFER-PV-D4253/N4553/D5253**



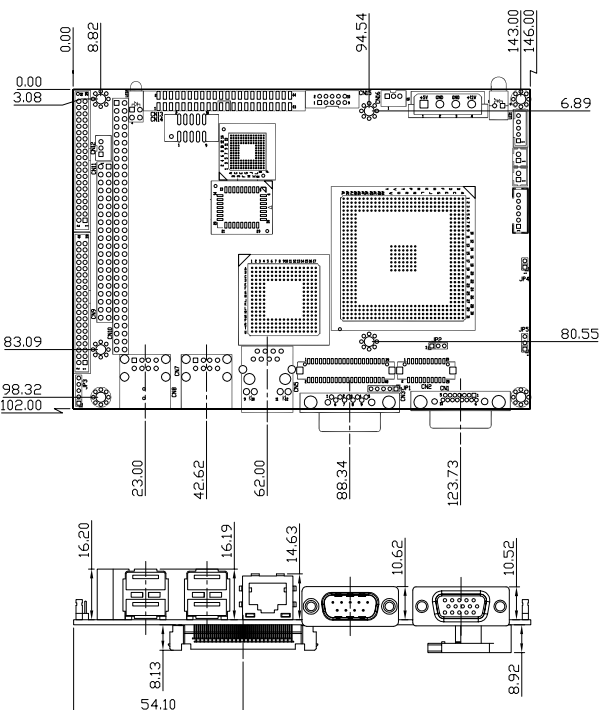
**WAFER-945GSELVDS2**



**WAFER-LX-R12**



**WAFER-LX2-R12**



- 1** Industrial Computing Solutions
- 2** Video Capture Solutions
- 3** Embedded Computing Solutions
- 4** ORing Network Communication
- 5** Power Supply/Peripherals
- 6** Panel Solutions Introduction

# PC/104 Selection Guide



Model Name	PM-PV-N4551/D5251	PM-945GSE	PM-LX	PM-LX2
<b>CPU Socket</b>	On board	On board	On board	On board
<b>CPU Type</b>	Intel® Atom™ processor D525 1.8GHz Intel® Atom™ processor N455 1.66GHz	Intel® Atom™ processor N270 1.6GHz	AMD Geode™ LX 800 500MHz processor	AMD Geode™ LX 800 500MHz processor
<b>FSB</b>	NA	533MHz	N/A	N/A
<b>Chipset</b>	ICH8M	945GSE + ICH7M	Geode™ LX800 + CS5536	Geode™ LX800 + CS5536
<b>Memory</b>	1 x 204-pin 800 MHz 4GB (max.) DDR3 SO-DIMM (D525) 1 x 204-pin 800 MHz 2GB (max.) DDR3 SO-DIMM (N455)	On-board 1GB 800 MHz DDR2 memory	1 x 200-pin 400 MHz 1GB (max.) DDR SDRAM SO-DIMM	1 x 200-pin 400 MHz 1GB (max.) DDR SDRAM SO-DIMM
<b>Display Interface</b>	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 24-bit TTL	Dual display supported 1 x VGA 1 x 24-bit TTL
<b>Ethernet</b>	GbE by Intel® 82567V Ethernet PHY	10/100Mbps LAN by Realtek RTL8102E	10/100Mbps LAN by Realtek RTL8100C	10/100Mbps LAN by Realtek RTL8100C
<b>I/O Interface</b>	1 x RS-232 1 x RS-232/422/485 4 x USB 2.0 1 x KB/MS by pin header	4 x RS-232 1 x RS-422/485 4 x USB 2.0 1 x KB/MS by pin header	2 x RS-232 1 x RS-422/485 2 x USB 2.0 1 x KB/MS by pin header 1 x LPT	2 x RS-232 1 x RS-422/485 2 x USB 2.0 1 x KB/MS by pin header 1 x LPT
<b>Drive Interface</b>	1 x SATA 3Gb/s 1 x CF Type II	1 x SATA 1 x CF Type II	1 x IDE 1 x CF Type II	1 x Slim FDD 1 x IDE 1 x CF Type II
<b>Audio</b>	10-pin header on board supports 7.1 channel HD Audio by AC-KIT-888HD	10-pin header on board supports 7.1 channel HD Audio by AC-KIT-888HD or AC97 audio by AC-KIT08R	N/A	N/A
<b>Digital I/O</b>	N/A	8-bit digital I/O (4-bit input/4-bit output)	N/A	N/A
<b>Power Consumption</b>	5V@3.31A (Intel® Atom™ D525 with 1GB DDR3) 5V@2.39A (Intel® Atom™ N455 with 1GB DDR3)	5V@2.6A (Intel® Atom™ N270 with 1GB DDR2)	5V@1.13A (AMD Geode™ LX 800 with 1GB DDR 400 MHz)	5V@1.09A (AMD Geode™ LX 800 with 512MB DDR 400 MHz)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset			
<b>Operation Environment</b>	Temperature Range -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing		Temperature Range: -40°C ~ 70°C (W) Relative Humidity: 5% ~ 95%, non-condensing
<b>Expansion Slot</b>	1 x PCI-104	1 x PCI-104	1 x PCI-104	1 x PC-104
<b>CPU Cooler</b>	Heatsink	Heatsink	Heatsink	Heatsink

1

Industrial  
Computing  
Solutions

2

Video  
Capture  
Solutions

3

Embedded  
Computing  
Solutions

4

ORing  
Network  
Communication

5

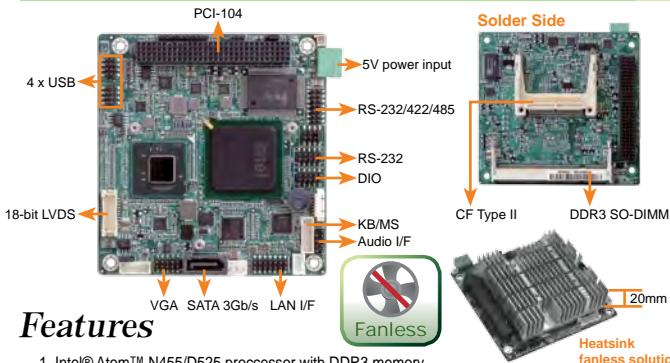
Power Supply/  
Peripherals

6

Panel  
Solutions  
Introduction

# PM-PV-N4551/D5251

PCI-104 SBC with Intel® Atom™ N455/D525, DDR3, VGA/LVDS, GbE, USB 2.0, SATA 3Gb/s and CF Type II, RoHS



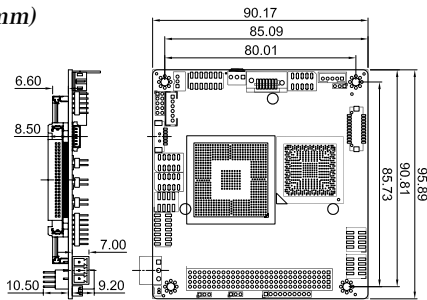
## Features

1. Intel® Atom™ N455/D525 processor with DDR3 memory
2. Single 5V power input design, 12V for LCD/fan
3. Single-channel 18-bit LVDS/VGA output for display
4. Support two COM, four USB, SATA 3Gb/s and CF Type II socket
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU
  - Intel® Atom™ N455 single-core processor 1.66GHz/512KB L2 cache
  - Intel® Atom™ D525 dual-core processor 1.8GHz/1MB L2 cache
- ◆ Chipset
  - Intel® ICH8M
- ◆ BIOS
  - UEFI BIOS
- ◆ Memory
  - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 4GB for D525)
  - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 2GB for N455)
- ◆ Graphic
  - GMA 3150
  - Graphic core speed 400MHz for D525
  - Graphic core speed 200MHz for N455
- ◆ Display interface
  - Analog CRT up to 2048x1536 for D525, 1400x1050 for N455
  - Support for CRT hotplug
  - Single-channel 18-bit LVDS, resolution support up to WXGA 1366x768 or XGA 1024x768
- ◆ Ethernet
  - Intel® 82567V GbE Ethernet PHY
- ◆ Expansion
  - 1 x PCI-104 slot
- ◆ I/O Interface
  - 4 x USB 2.0
  - 1 x RS-232
  - 1 x KB/MS
  - 1 x SATA 3Gb/s
  - 1 x RS-232/422/485
  - 1 x CF card slot
- ◆ Digital I/O
  - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Audio
  - 7.1 channel HD Audio kit with Realtek ALC888 codec supports dual audio streams
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset by Super I/O
- ◆ Power Supply
  - 5V power input, AT/ATX support
- ◆ Super I/O
  - ITE IT8718F
- ◆ Power Consumption
  - 5V@3.31A (Intel® Atom™ D525 with 1GB DDR3)
  - 5V@2.39A (Intel® Atom™ N455 with 1GB DDR3)
- ◆ Operating Temperature
  - 10°C ~ 60°C
- ◆ Operating Humidity
  - 5% ~ 95%, non-condensing
- ◆ Dimensions
  - 96mm x 90mm

## Dimensions (mm)



## Packing List

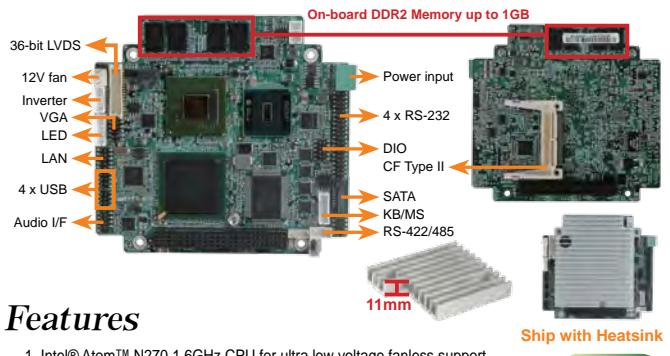
1 x PM-PV-N4551/D5251 single board computer	
1 x Dual-port USB cable (P/N: 32001-008600-100-RS)	
1 x PS/2 KB/MS cable (P/N: 32000-023800-RS)	1 x SATA cable (P/N: 32000-062800-RS)
1 x VGA cable (P/N: 32000-033804-RS)	1 x One Key Recovery CD
1 x LAN cable (P/N: 32013-000400-100-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-130300-RS)	1 x Utility CD
1 x RS-232 cable (P/N: 32200-000049-RS)	1 x QIG

## Ordering Information

Part No.	Description
PM-PV-D5251-R10	PCI-104 SBC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/LVDS, GbE, USB 2.0, SATA 3Gb/s and CF Type II, RoHS
PM-PV-N4551-R10	PCI-104 SBC with Intel® Atom™ N455 1.66GHz, DDR3, VGA/LVDS, GbE, USB 2.0, SATA 3Gb/s and CF Type II, RoHS
32205-000300-100-RS	RS-232/422/485 cable
32102-000100-200-RS	SATA power cable
AC-KIT-888HD-R10	7.1 channel HD Audio kit with Realtek ALC888 supports dual audio streams
CF-PV4010-R10	CPU fan (40mm x 40mm x 10mm)

# PM-945GSE

PCI-104 SBC with Intel® Atom™ 1.6GHz CPU, VGA/LVDS, LAN, USB, SATA, four COM and on-board 1GB memory



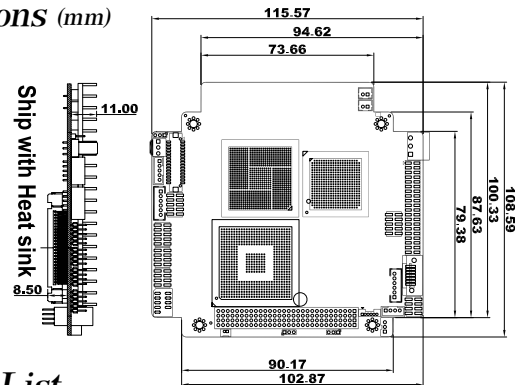
## Features

1. Intel® Atom™ N270 1.6GHz CPU for ultra low voltage fanless support
2. Single 5V power input design, 12V for LCD/fan
3. 18-bit dual-channel LVDS plus VGA support dual independent display
4. On-board memory supports up to 1GB
5. Support four COM, four USB 2.0, one SATA and CF Type II socket
6. Low profile heat sink design
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU
  - Intel® Atom™ processor N270 1.6GHz with a 533Mhz FSB
- ◆ System Chipset
  - Intel® 945GSE/ICH7-M
- ◆ BIOS
  - AMI BIOS
- ◆ Memory
  - On-board 1GB DDR2 SDRAM supported
- ◆ Ethernet
  - One Realtek 8102E PCIe 10/100Mbps chipset
- ◆ I/O Interface
  - 4 x USB 2.0
  - 1 x PS/2 for KB/MS
  - 4 x RS-232
  - 1 x RS-422/485 (share with COM2)
- ◆ Digital I/O
  - 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Expansion
  - PCI-104
- ◆ Power Supply
  - 5V only, 12V for LCD/fan, AT/ATX support
- ◆ Super I/O
  - Fintek F81865
- ◆ Audio
  - 5.1 channel audio kit with Realtek ALC655 AC'97 codec
  - 7.1 channel HD Audio kit with Realtek ALC888 codec supports dual audio streams
- ◆ Display Interface
  - Intel® Graphics Media Accelerator 950 VGA integrated in Intel® 945GSE
  - 18-bit dual-channel LVDS integrated in Intel® 945GSE
- ◆ Watchdog Timer
  - Software programmable 1-255 sec. by super I/O
- ◆ Operating Temperature
  - 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Operating Humidity
  - 5% ~ 95%, non-condensing
- ◆ Power Consumption
  - 5V@2.6A (Intel® Atom™ N270 1.6GHz, 1GB DDR2)
- ◆ Dimensions
  - 108.59mm x 116mm (4.275" x 4.55")
- ◆ Weight
  - GW: 650g/NW: 250g

## Dimensions (mm)



## Packing List

1 x PM-945GSE single board computer		
1 x Quad RS-232 cable (P/N: 32100-147900-RS)		
2 x Dual USB cable (P/N: 32001-008600-100-RS)	1 x VGA cable (P/N: 32000-033804-RS)	
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x One Key Recovery CD	
1 x LAN cable (P/N: 32000-055702-RS)	1 x Mini jumper pack	
1 x Power cable (P/N: 32100-130300-RS)	1 x Utility CD	1 x QIG
1 x SATA cable (P/N: 32801-000703-200-RS)		

## Ordering Information

Part No.	Description
PM-945GSE-N270-R10	PCI-104 SBC with Intel® Atom™ 1.6GHz CPU, VGA/LVDS, LAN, USB, SATA, four COM and on-board 1GB memory
32205-003800-100-RS	RS-422/485 cable
32102-000100-200-RS	SATA power cable
32100-052100-RS	ATX power cable
AC-KIT08R-R10	5.1 channel AC'97 audio kit with Realtek ALC655 codec
AC-KIT-888HD-R10	7.1 channel HD Audio kit with Realtek ALC888 codec supports dual audio streams

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

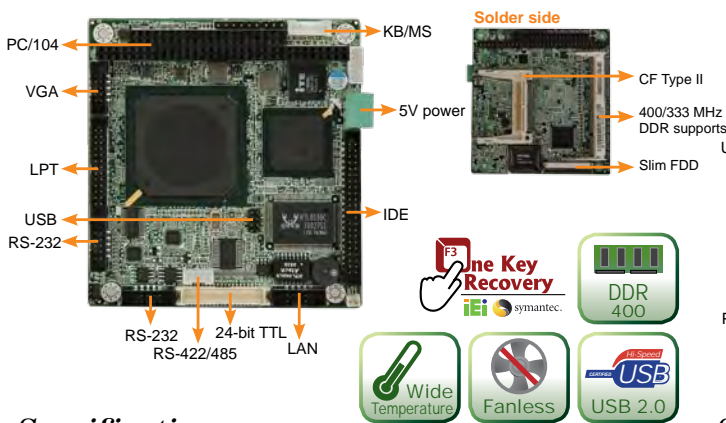
4 ORing Network Communication

5 Power Supply/Peripherals

6 Panel Solutions Introduction

# PM-LX2

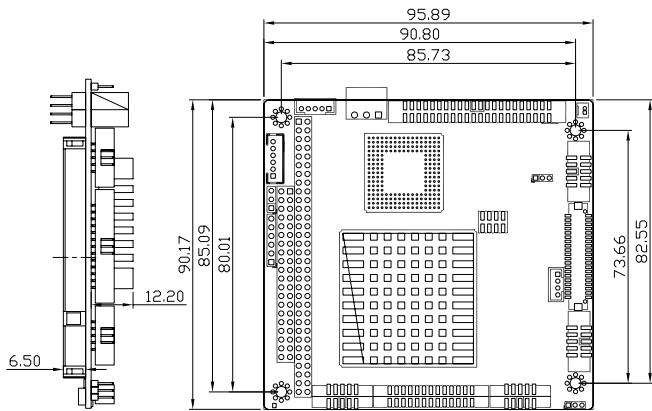
AMD Geode™ LX 800 CPU on-board PC/104 Module



## Specifications

- ◆ CPU  
AMD Geode™ LX 800 500MHz processor
- ◆ System Chipset  
AMD Geode™ LX 800 + CS5536
- ◆ BIOS  
AMI BIOS
- ◆ System Memory  
One 200-pin 400MHz DDR SDRAM  
SO-DIMM supported (system max. 1GB)
- ◆ Super I/O  
SMSC 3114
- ◆ Ethernet  
One Realtek RTL8100C 10/100Mbps  
Ethernet chipset
- ◆ I/O Interface  
2 x USB 2.0  
2 x RS-232  
1 x RS-422/485  
1 x PS/2 for KB/MS  
1 x LPT  
1 x Slim FDD  
1 x CF Type II  
1 x IDE
- ◆ Display Interface  
CRT integrated in AMD Geode™ LX 800  
24-bit TTL integrated in AMD Geode™ LX 800
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec.  
system reset.
- ◆ Expansion  
1 x PC/104 supported by ITE IT8888G
- ◆ Power Supply  
5V only, AT support
- ◆ Power Consumption  
5V@ 1.09A (AMD Geode™ LX 800 with  
400MHz 512MB DDR)
- ◆ Operating Temperature  
PM-LX2-800-R10: 0°C ~ 60°C  
PM-LX2-800W-R10: -40°C ~ 70°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions:  
96mm (L) x 90mm (W)
- ◆ Weight  
GW: 500g/NW 110g

## Dimensions (mm)



## Packing List

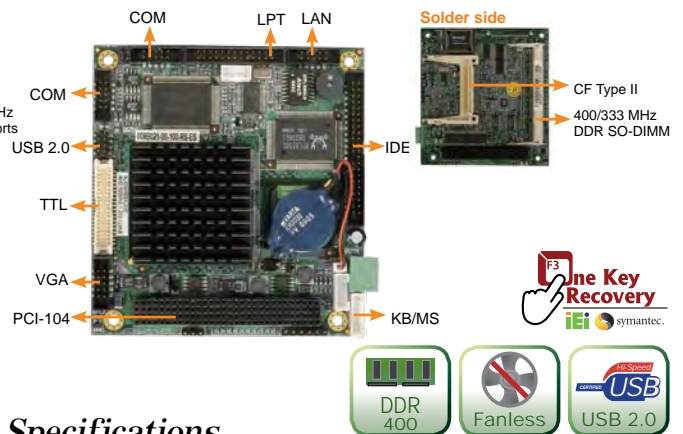
1 x PM-LX2 single board computer	1 x ATA33 flat cable (P/N: 32200-000009-RS)
1 x PS/2 KB/MS cable (P/N: 32000-023800-RS)	1 x Power cable (P/N: 32100-130300-RS)
1 x Dual USB cable (P/N: 32001-008600-100-RS)	1 x VGA cable (P/N: 32000-033804-RS)
1 x LAN cable (P/N: 32000-055702-RS)	2 x RS-232 cable (P/N: 32205-002700-100-RS)
1 x One Key Recovery CD	1 x Utility CD
1 x Mini jumper pack	1 x QIG

## Ordering Information

Part No.	Description
PM-LX2-800-R10	PC/104 SBC with AMD Geode™ LX 800 500 MHz, VGA/TTL, LAN, USB 2.0 and CF Type II
PM-LX2-800W-R10	PC/104 SBC with AMD Geode™ LX 800 500 MHz, VGA/TTL, LAN, USB 2.0 and CF Type II, Wide Temperature -40°C ~ 70°C
32400-001100-RS	FDD cable
32200-015100-RS	LPT cable
32205-003800-100-RS	RS-422/485 cable

# PM-LX

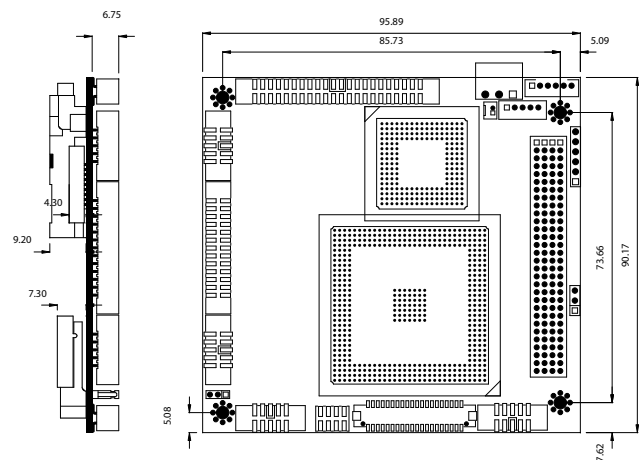
PCI-104 Module with on-board AMD Geode™ LX 800 CPU



## Specifications

- ◆ CPU  
On-board AMD Geode™ LX 800 (500MHz) processor
- ◆ System Chipset  
AMD Geode™ LX 800 + AMD CS5536
- ◆ BIOS  
Award BIOS
- ◆ System Memory  
One 200-pin 400/333MHz DDR SDRAM  
SO-DIMM supported (system max. 1GB)
- ◆ Ethernet  
10/100Mbps realtek RTL8100C Ethernet  
chipset
- ◆ I/O Interface  
2 x USB 2.0  
1 x LPT  
2 x RS-232  
1 x RS-422/485  
1 x PS/2 for KB/MS  
1 x IDE
- ◆ Expansion  
1 x PCI-104
- ◆ Super I/O  
Winbond W83627EHG
- ◆ SSD  
CF Type II
- ◆ Display Interface  
VGA integrated in AMD Geode™ LX 800  
24-bit TTL
- ◆ Watchdog Timer  
Software programmable supports 1~255  
sec. system reset
- ◆ Power Supply  
5V only, AT support
- ◆ Power Consumption  
5V@1.13A (AMD Geode™ LX 800  
500MHz with 400MHz 1G DDR memory)
- ◆ Operating Temperature  
0°C ~ 60°C
- ◆ Operating Humidity  
5%~95%
- ◆ Dimensions  
95 mm x 95 mm
- ◆ Weight  
GW:500 g/NW:110 g

## Dimensions (mm)



## Packing List

1 x PM-LX single board computer	1 x VGA cable (P/N: 32000-033804-RS)
1 x ATA33 flat cable (P/N: 32200-000009-RS)	1 x One Key Recovery CD
1 x USB cable (P/N: 32001-008600-100-RS)	1 x Mini jumper pack
1 x LAN cable (P/N: 32000-055702-RS)	1 x Utility CD
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x QIG
1 x Power cable (P/N: 32100-130300-RS)	
2 x RS-232 cable (P/N: 32205-002700-100-RS)	

## Ordering Information

Part No.	Description
PM-LX-800-R11	PCI-104 SBC with AMD Geode™ LX 800 processor , VGA/TTL, LAN, USB 2.0, CF Type II
32200-015100-RS	LPT cable
32205-003800-100-RS	RS-422/485 cable

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

4 ORing Network Communication

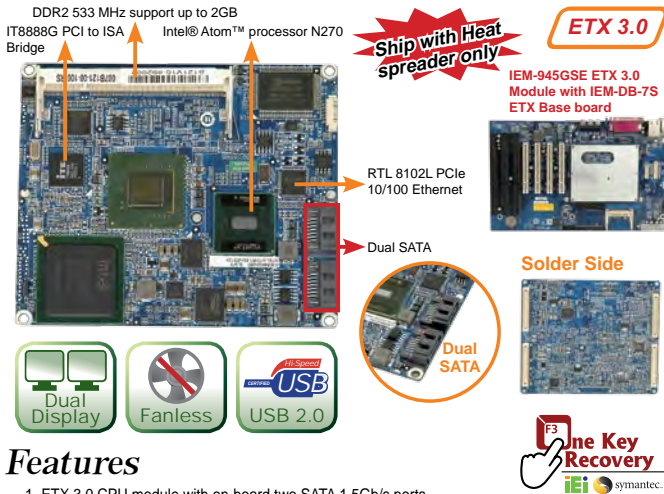
5 Power Supply/ Peripherals

6 Panel Solutions Introduction



# IEM-945GSE

ETX 3.0 CPU Module with Intel® Atom™ processor, VGA/LVDS, LAN, SATA, USB and Audio



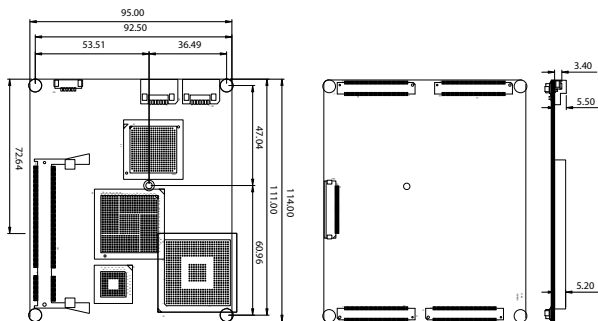
## Features

1. ETX 3.0 CPU module with on-board two SATA 1.5Gb/s ports
2. Support four PCI, one ISA slot for expansion
3. Support dual display for VGA + LVDS
4. Support four USB 2.0, two SATA, one IDE interface
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: Intel® Atom™ processor N270 1.6 GHz with 533 MHz FSB
- ◆ System Chipset: Intel® 945GSE + Intel® 82801GBM/ICH7M
- ◆ BIOS: AMI
- ◆ System Memory: One 200-pin 533/400MHz DDR2 SO-DIMM supported (system max. 2GB)
- ◆ Ethernet: One 10/100Mbps Realtek RTL8102E Ethernet chipset (PCIe interface)
- ◆ Super I/O: ITE IT8718
- ◆ I/O Interface: 4 x USB 2.0 (to baseboard), 2 x SATA (on CPU module), 1 x IDE (to baseboard), 1 x LPT (to baseboard), 2 x RS-232 (to baseboard), 1 x PS2 KB/MS (to baseboard)
- ◆ Expansions: 4 x PCI, 32-bit 33MHz PCI bus to baseboard, ISA supported by ITE IT8888G
- ◆ Display Interface: VGA/TV-Out integrated in Intel® 945GSE (to baseboard), 18-bit dual-channel LVDS signal (to baseboard)
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: AT/ATX supported
- ◆ Power Consumption: 5V@2.9A (Intel® Atom™ processor N270 with 1GB DDR2)
- ◆ Operating Temperature: 0°C ~ 60°C (IEM-945GSE-N270-R10), -40°C ~ 85°C (IEM-945GSE-N270W2-R10), -20°C ~ 70°C (IEM-945GSE-N270W-R10)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 95 mm x 114 mm
- ◆ Weight: GW 600g/NW 250g

## Dimensions (mm)



## Packing List

1 x IEM-945GSE single board computer	1 x One Key Recovery CD
1 x Heatspreader	1 x Utility CD    1 x QIG

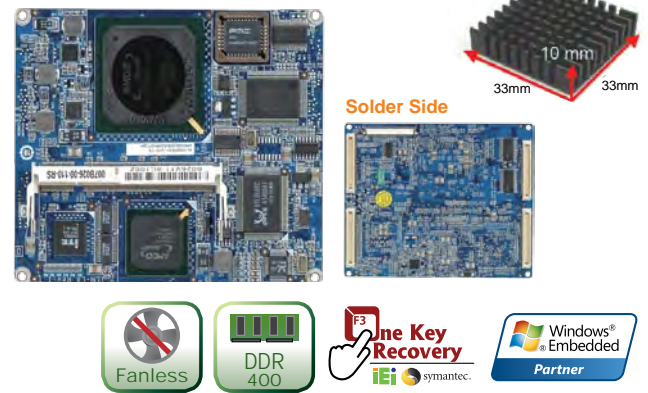
## Ordering Information

Part No.	Description
IEM-945GSE-N270-R10	ETX 3.0 module with Intel® Atom™ processor N270 1.6G, VGA/LVDS, LAN, USB, SATA and audio
IEM-945GSE-N270W2-R10	ETX 3.0 module with Intel® Atom™ processor N270 1.6G, VGA/LVDS, LAN, USB, SATA and audio, -40°C ~ 85°C
IEM-945GSE-N270W-R10	ETX 3.0 module with Intel® Atom™ processor N270 1.6G, VGA/LVDS, LAN, USB, SATA and audio, -20°C ~ 70°C
IEM-DB-7S-RS-R30	ATX size 7 slots ETX baseboard

# IEM-LX-R11

AMD Geode™ LX 800 Highly Integrated ETX Module

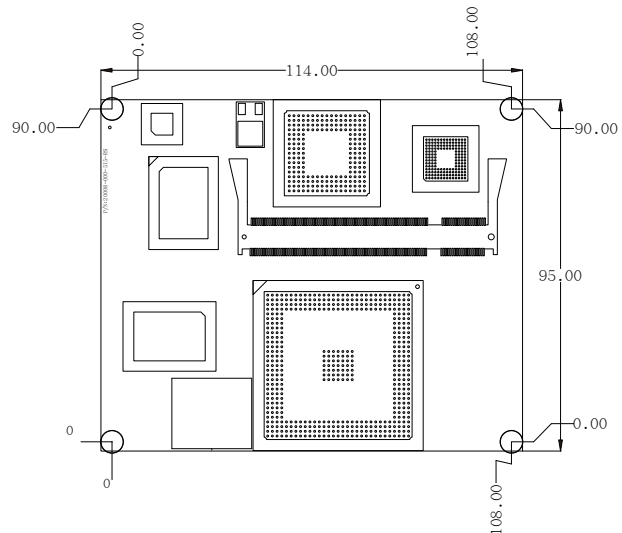
ETX CPU Module with on-board AMD Geode™ LX 800, USB 2.0, LAN & Audio



## Specifications

- ◆ CPU: On-board AMD Geode™ LX 800 (500MHz) processor
- ◆ System Chipset: AMD Geode™ LX 800 + AMD CS5536
- ◆ BIOS: Award BIOS
- ◆ System Memory: One 200-pin 400/333 MHz DDR SDRAM SO-DIMM Supported (system max. 1GB)
- ◆ Ethernet: 10/100Mbps RTL8100C Ethernet chipset
- ◆ I/O Interface: 4 x USB 2.0, 1 x IDE, 1 x PS/2 KB/MS, 1 x LPT/FDD, 2 x RS-232
- ◆ Expansions: 4 x PCI bus master, ISA support by ITE IT8888G
- ◆ Audio: Realtek ALC203 AC'97 codec
- ◆ SSD: CF Type II
- ◆ Super I/O: Winbond W83627EHG
- ◆ Display Interface: VGA integrated in AMD Geode™ LX 800 24-bit TTL (optional), 18-bit single-channel LVDS
- ◆ Watchdog Timer: Software programmable supports 1-255 sec. system reset
- ◆ Power Supply: AT/ATX support
- ◆ Power Consumption: 5V@0.92A (AMD Geode™ LX 800 CPU with DDR 333MHz 256MB RAM)
- ◆ Operating Temperature: 0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 95 mm x 114 mm
- ◆ Weight: GW: 650g/NW: 250g

## Dimensions (mm)



## Packing List

1 x IEM-LX single board computer	1 x One Key Recovery CD
1 x Screw kit	1 x Utility CD    1 x QIG

## Ordering Information

Part No.	Description
IEM-LX-800-R11	AMD Geode™ LX 800 500MHz processor, VGA/LVDS/TTL, LAN & Audio

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

4 ORing Network Communication

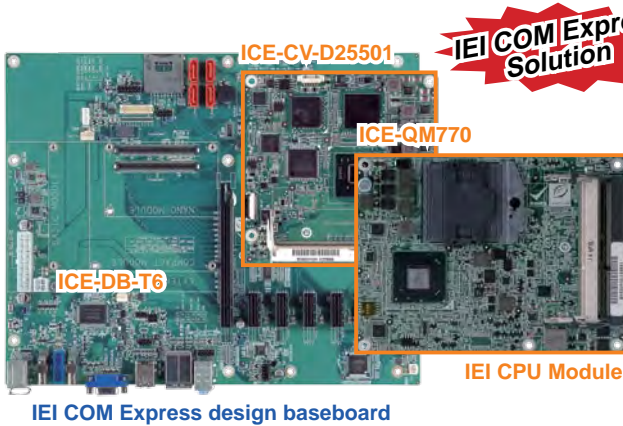
5 Power Supply/Peripherals

6 Panel Solutions Introduction



# IEI COM Express Series

COM Express is a computer-on-module (COM) form factor series. It can be integrated in various customized applications. Each COM Express module integrates CPU, memory and common I/O of a PC/AT including USB, audio, graphics, and Ethernet. All I/O signals are mapped to two high density, low profile connectors on the bottom side of the module. The COM Express specification is hosted by PICMG. ICE (IEI COM Express) modules provide complete performance range for users to choose. With the IEI COM Express baseboard design service, user can quickly enjoy the benefits of modulization and efficiency.



**Transfer your ETX Module to IEI COM Express Solution**  
COM Express provides PCI Express, dual-channel LVDS, GbE, eight USB and four SATA ports for I/O Expansion

Platform	ETX	COM Express Type II Basic Module
Size	95 mm x 114 mm	95 mm x 125 mm
VGA	Yes	Yes
LCD	TTL or LVDS	Up to 2x single LVDS or dual-channel LVDS
SDVO	N/A	Up to 2 SDVO (shared with PCIe x16)
Expansion	PCI & ISA	PCIe & PCI
Ethernet	10/100 Mbps	10/100/1000 Mbps
USB	up to 4 ports	up to 8 ports
SATA	up to 2 Ports (ETX 3.0 only)	up to 4 SATA
IDE	up to 2 channels	up to 1 channel

## COM Express pin-out types

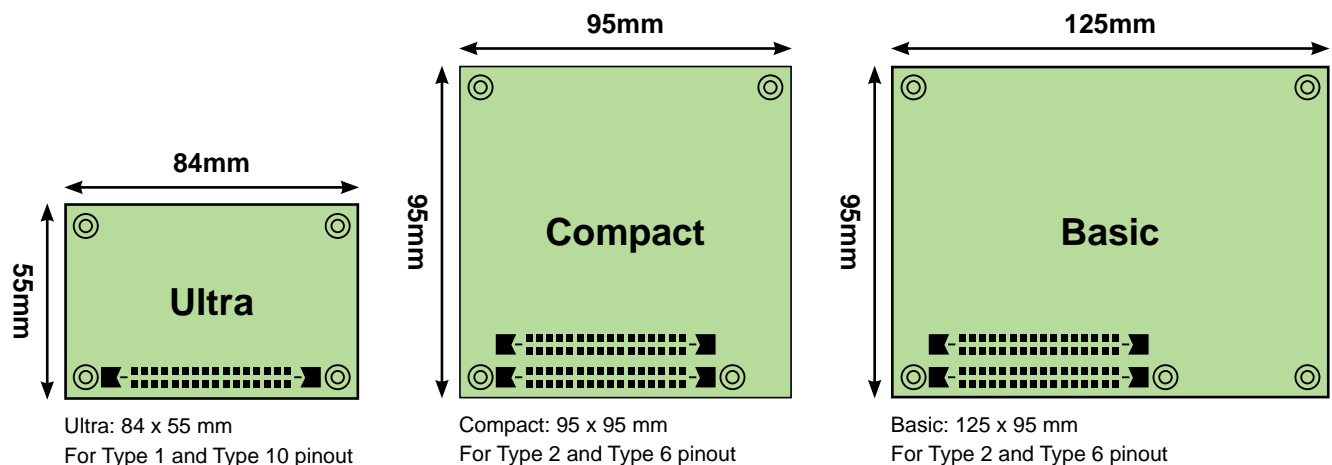
**COM Express**, a computer-on-module (COM) form factor, is a highly integrated and compact PC that can be used in a design application much like an integrated circuit component. Each COM Express Module COM integrates core CPU and memory functionality, the common I/O of a PC/AT, USB, audio, graphics (PEG), and Ethernet. All I/O signals are mapped to two high density, low profile connectors on the bottom side of the module.

### Types

The COM Express specification is hosted by PICMG. There are seven different pinouts defined in the specification. The most common used pin out is Type 2 and Type 1. The latest pin-outs added in the revision 2.0 of the COM Express specification are Type 6 and Type 10.

Types	PCIe Lanes	PEG/SDVO	Display	SATA	LAN	PCI	IDE	USB 2.0	USB 3.0
Type 1	Up to 6	x	VGA, LVDS	4	1	x	x	8	x
Type 10	Up to 4	/1	DDI, LVDS	2	1	x	x	8	x
Type 2	Up to 22	1/2	VGA, LVDS, PEG, SDVO	4	1	✓	x	8	x
Type 6	Up to 24	1/	VGA, LVDS, PEG, 3*DDI	4	1	x	x	8	4

### The specification defines three module sizes:



- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/Peripherals
- 6 Panel Solutions Introduction

◆ Pinout Comparison of Type 1 and Type 10

Type 1 Pinout

B	LPC SMB I <sup>2</sup> C	4 ports SATA	Audio	8 ports USB 2.0	6 lanes PCIe x1	LVDS B	VGA	5VSB	12V
A	GBE					LVDS A	Others	SPI	12V

Type 10 Pinout

B	LPC SMB I <sup>2</sup> C	2 ports SATA	n/c	Audio	8 ports USB 2.0	4 lanes PCIe x1	n/c	LVDS B	VGA	5VSB	12V
A	GBE					LVDS A	Others	SPI	2 ports serial	12V	

◆ Pinout Comparison of Type 2 and Type 6

Type 2 Pinout

D	PATA IDE	PCI	PCIe x16 (SDVO)	12V
C				

B	LPC SMB I <sup>2</sup> C	4 ports SATA	Audio	8 ports USB 2.0	6 lanes PCIe x1	LVDS B	VGA	5VSB	12V
A	GBE					LVDS A	Others	SPI	12V

Type 6 Pinout

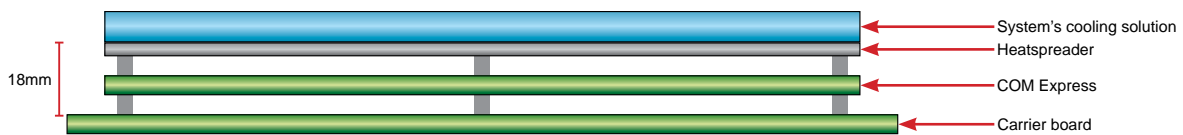
D	4 ports USB 3.0/2.0	2 Lanes PCIe x 1	DDI 1	DDI 2	DDI 3	PCIe x16	12V
C							

B	LPC SMB I <sup>2</sup> C	4 ports SATA	Audio	8 ports USB 2.0	6 lanes PCIe x1	LVDS B	VGA	5VSB	12V
A	GBE					LVDS A	Others	SPI	2 ports Serial TPM

■ Installing the COM Express

◆ Thermal Design of COM Express

COM Express definition includes a heatspreader that acts as a thermal interface between the COM Express module and the system's cooling solution. The height of a COM Express module, including the heatspreader, has been defined as 18 mm and covers the complete area of the COM Express. All heat generating components are thermally conducted to the heatspreader in order to avoid hot spots.



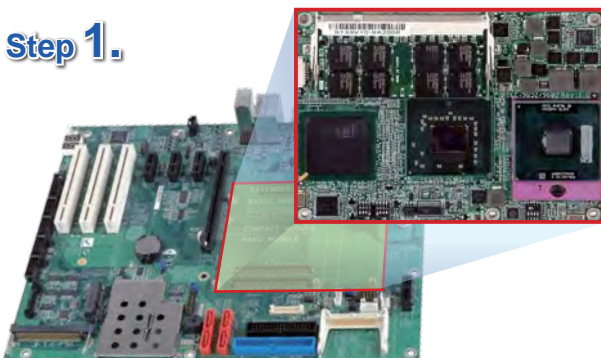
1. Installing the COM Express

Firmly insert the COM Express into the COM Express socket.

2. Installing the heatspreader

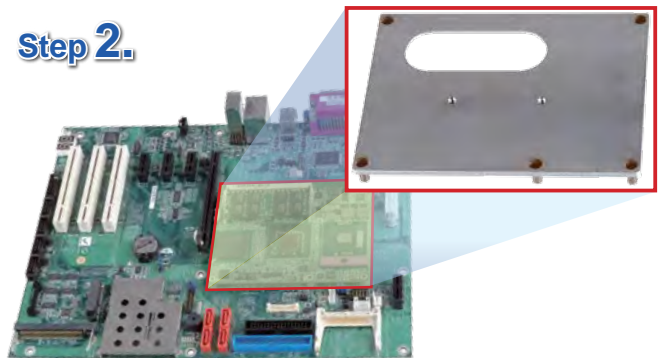
A heatspreader must be installed on the COM Express. Thermal pads must be smeared on the lower side of the heatspreader before it is mounted on the COM Express. Heatspreaders are mounted on the CPU, Northbridge and Southbridge chipsets to ensure the operating temperature of these chips remain low.

Step 1.



▲ Installing the COM Express

Step 2.



▲ Installing the heatspreader

1 Industrial Computing Solutions

2 Video Capture Solutions

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4 ORing Network Communication

5 Power Supply/ Peripherals

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### 3. Installing the system's cooling solution

In addition to the heatspreader, COM Express needs another heatsink or other thermal solution to cool down the COM Express.

Before installing the system's cooling solution, make sure that you have properly applied thermal interface material to the heatspreader.

#### Operating Temperature

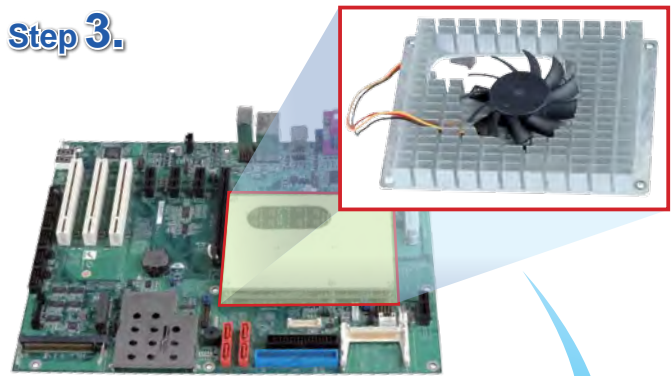
The maximum and minimum operating temperatures for the standard COM Express are listed below.

- Minimum Operating Temperature: 0°C (32°F)
- Maximum Operating Temperature: 60°C (140°F)

#### WARNING:

Never run the embedded module without the heat sink. The heatspreader plate shipped with the COM Express acts as a thermal interface between the module and the heat sink. The heat sink must be installed on the heatspreader plate to maintain proper operating temperatures. Make sure to maintain the heatspreader plate temperature under 60°C in operation.

Step 3.



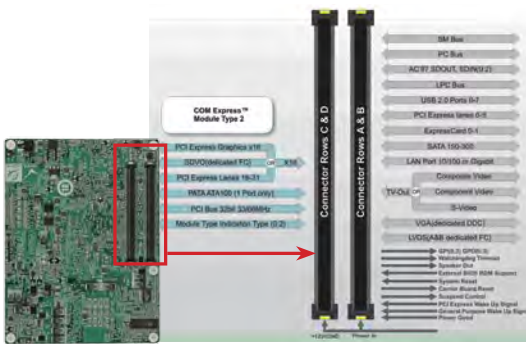
▲ Installing the system's cooling solution



## Benefits

### A: High Compatibility

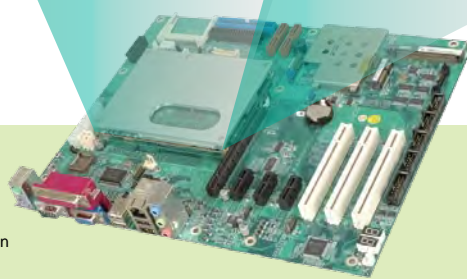
- IEI ICE modules follow standard COM Express design guide and have high compatibility
- ICE modules are compatible with all baseboards compliant with COM Express specifications
- Complete performance level for customers' choice



### Embedded Fanless



### Performance Dual Core



Embedded, single core, or dual core complete performance level could be immediately applied on the baseboard.

### B: Strong Support

- With strong R&D resources, IEI provides customers innovatively leading products and service to drive successfully experience.
- IEI provides complete turnkey solutions from hardware, software and industrial BIOS design support.

#### R&D Support Service

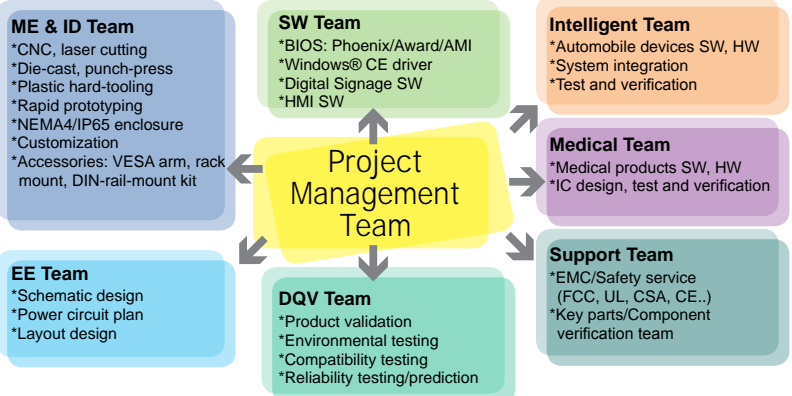
Embedded OS Service

ICE Solution

Customized BIOS Service

Compatibility & Reliability Test

#### R&D Support Team



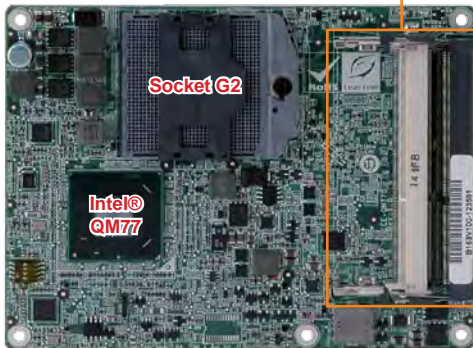
- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/Peripherals
- 6 Panel Solutions Introduction

# ICE-QM770

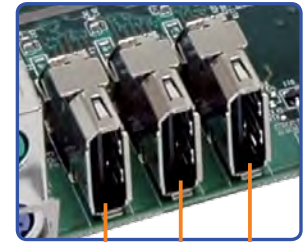
COM Express Basic Type 6 module with socket G2 supports Intel® 2nd & 3rd generation Core™ i7/i5/i3 Celeron® processor, VGA/LVDS, DDI, GbE, SATA 6Gb/s, USB 3.0, Audio and RoHS



Dual-Channel DDR3 1333/1066 MHz



Three DDI (Digital Display Interface) by carrier board



## Specifications

- ◆ Form Factor  
PICMG COM Express R2.0 Basic Type 6
- ◆ CPU  
Socket G2 for Intel® 2nd & 3rd generation Core™ i7/i5/i3/Pentium®/Celeron® processor
- ◆ PCH  
Intel® QM77
- ◆ Memory  
Two 204-pin 1600/1333/1066 MHz dual-channel DDR3 SDRAM unbuffered DIMMs supported (system max. 16GB)  
Supports 1.35V DDR3L
- ◆ BIOS  
UEFI BIOS
- ◆ Graphics Engine  
Intel® HD Graphics 2000/3000  
Supports DX11, OCL 1.1 and OpenGL 3.0  
Full MPEG2, VC1, AVC Decode
- ◆ Display Output  
VGA integrated in the Intel® QM77 (signal to baseboard)  
3 x DDI (up to 2560 x 1600 @60Hz)  
1 x VGA up to QXGA (up to 2048 x 1536 @75Hz)  
1 x 18/24-bit dual-channel LVDS up to UXGA (up to 1920 x 1200 @60Hz)
- ◆ Ethernet  
Intel® 82579LM
- ◆ Embedded Controller  
iWDD
- ◆ I/O Interface  
2 x RS-232 (to baseboard) (3.3V)      8 x USB 2.0 (to baseboard)  
4 x USB 3.0 (to baseboard)                      2 x SATA 3GB/s (signal to baseboard)  
2 x SATA 6Gb/s (signal to baseboard)
- ◆ Audio  
High definition audio interface
- ◆ SMBus  
Yes (to baseboard)
- ◆ I2C  
YYes (to baseboard)
- ◆ LPC  
Yes (to baseboard)
- ◆ Expansions  
1 x PCIe x16 signal (to baseboard)  
7 x PCIe x1 signal (to baseboard)
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ GPIO  
8-bit GPIO (to baseboard)
- ◆ TPM  
Through the baseboard
- ◆ Intel® AMT  
Supports Intel® AMT 8.0
- ◆ Power Consumption  
+12V@1.75A, Vcore \_12V@3.33A
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
338 mm x 126 mm
- ◆ Weight  
GW: 700g/NW: 250g



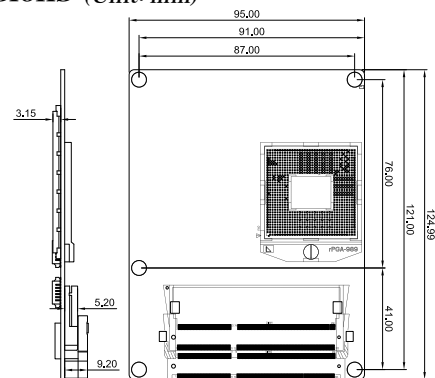
2nd & 3rd generation Intel® Core™ processors supported



## Features

1. Intel® Core™ i7/i5/i3/Celeron® processors supported
2. Intel® HD Graphics technology integrates high-performance graphics and media processing
3. 1600/1333/1066MHz dual-channel DDR3 memory supports up to 16GB
4. Supports 1.35V DDR3L
5. 18/24-bit dual-channel LVDS, analog CRT and 3 x DDI supported
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (Unit: mm)



## Packing List

1 x ICE-QM770-R10 single board computer	
1 x Heatspreader for Ivy Bridge socket type CPU (22nm)	
1 x Cooler	1 x Utility CD
1 x Driver CD	1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
ICE-QM770-R10	COM Express Basic Type 6 module with socket G2 supports Intel® 2nd & 3rd generation Core™ i7/i5/i3 Celeron® processor, VGA/LVDS, DDI, GbE, SATA 6Gb/s, USB 3.0, Audio and RoHS
ICE-DB-T6-R10	Baseboard for COM Express Type 6 modules

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

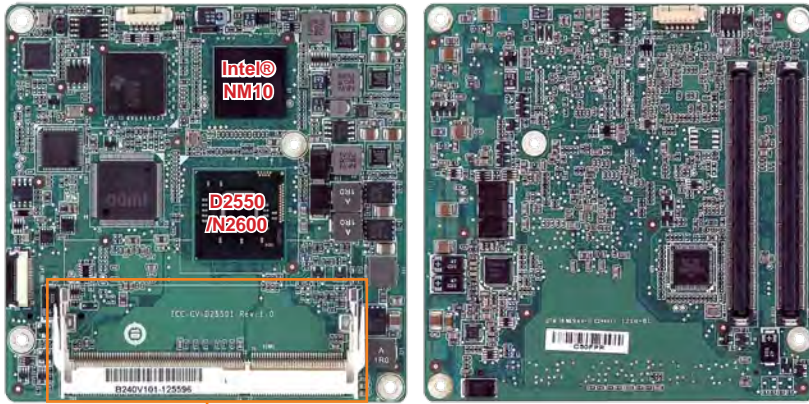
4 ORing Network Communication

5 Power Supply/Peripherals

6 Panel Solutions Introduction

# ICE-CV-D25501-N26001

COM Express Rev 2.0 Basic/Compact Type 6 Modules, Intel® Atom™ N2600/D2550 Processor, VGA/LVDS, DDI, GbE, SATA 3Gb/s, USB 3.0, Audio and RoHS



Single-Channel DDR3 1066/800 MHz

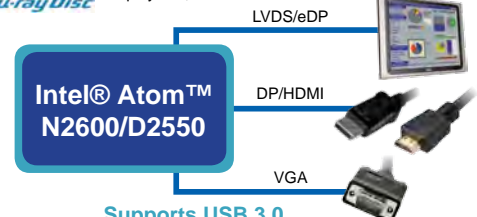
## Specifications

- ◆ Form Factor  
PICMG COM Express R2.0 Type 6 for compact size  
95 mm x 95 mm  
10 layers
- ◆ CPU  
Intel® Atom™ N2600 dual-core processor 1.6GHz (2 x 512 L2 cache)  
Intel® Atom™ D2550 dual-core processor 1.86GHz (2 x 512 L2 cache)
- ◆ PCH  
Intel® NM10
- ◆ Memory  
One 204-pin 1066/800MHz DDR3 SDRAM SO-DIMM supported  
(D2550 supports 1066MHz DDR3, system max. 4GB)  
(N2600 supports 800MHz DDR3, system max. 2GB)  
Supports 1.35V DDR3L
- ◆ BIOS  
UEFI BIOS
- ◆ Graphics Engine  
Intel® GMA 3650 with a 640MHz graphics core (for D2550)  
Intel® GMA 3600 with a 400MHz graphics core (for N2600)  
Supports DX9 and Blu-ray 2.0  
MPEG2, H.264, VC-1 and 1080p decoding
- ◆ Display Output  
VGA integrated in the Intel® N2600/D2550 (signal to baseboard)  
1 x CRT (up to 2048 x 1536 @75Hz)  
LVDS integrated in the D2550/N2600  
Single-channel 24-bit LVDS by D2550, resolution support up to 1440x900 @60Hz  
Single-channel 18-bit LVDS by N2600 and N2800, resolution support up to 1366x768 @60Hz  
2 x DDI (up to 2560 x 1600 @60Hz)
- ◆ Ethernet  
RTL 8111E GbE
- ◆ USB 3.0  
Asmedia: asm1042
- ◆ Embedded Controller  
iWDD (ITE)  
8 x USB 2.0 (signal to baseboard)  
2 x SATA 3Gb/s (signal to baseboard)
- ◆ Audio  
High definition audio interface (to baseboard)
- ◆ GPIO  
Yes (to baseboard)
- ◆ SMBus  
Yes (to baseboard)
- ◆ I2C  
Yes (to baseboard)
- ◆ LPC  
Yes (to baseboard)
- ◆ SPI  
Yes (to baseboard)
- ◆ Serial port  
2 x Serial port (to baseboard)
- ◆ Expansions  
2 x PCIe x1 signal (to baseboard)
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset (by EC)
- ◆ Power Consumption  
+12V@0.45A, Vcore \_12V@1.0A
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
95 mm x 95 mm
- ◆ Weight  
GW: 600g/NW: 200g

## Rich Media with Intel® 3rd Generation Atom™ **New**



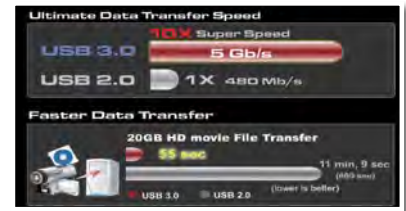
Full HD decoding with support for Blu-ray logo. Additional display capabilities with support of HDMI, DisplayPort, LVDS and VGA



### Supports USB 3.0



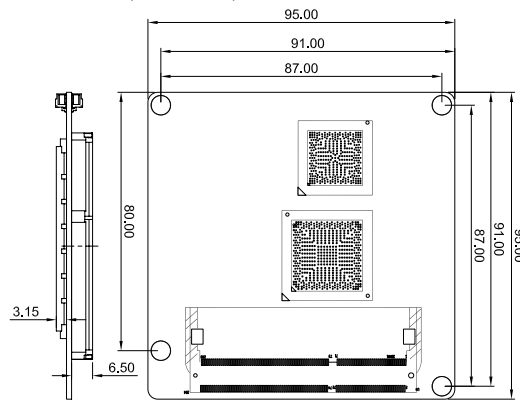
- The SuperSpeed USB 3.0 supports a data transfer rate that is up to 10 times faster than USB 2.0 with optimized power efficiency.
- USB 3.0 is backwards compatible with the USB 2.0 components.



## Features

1. Intel® Atom™ N2600/D2700 processors supported
2. Intel® GMA integrates high-performance graphics and media processing
3. Supports DDR3 & DDR3L (1.35V) 1066/800MHz, up to 2GB
4. 18/24-bit single-channel LVDS, analog CRT and two DDI supported
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (Unit: mm)



## Packing List

1 x ICE-CV-N26001 single board computer	1 x Heatspreader
1 x Heatsink	1 x Utility CD
1 x One Key Recovery CD	1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
ICE-CV-D25501-R10	COM Express Rev 2.0 Basic/Compact Type 6 module, Intel® Atom™ D2550 processor, VGA/LVDS, DDI, GbE, SATA 3Gb/s, USB 3.0, Audio and RoHS
ICE-CV-N26001-R10	COM Express Rev 2.0 Basic/Compact Type 6 module, Intel® Atom™ N2600 processor, VGA/LVDS, DDI, GbE, SATA 3Gb/s, USB 3.0, Audio and RoHS
ICE-DB-T6-R10	Baseboard for COM Express Type 6 modules

1 Industrial Computing Solutions

2 Video Capture Solutions

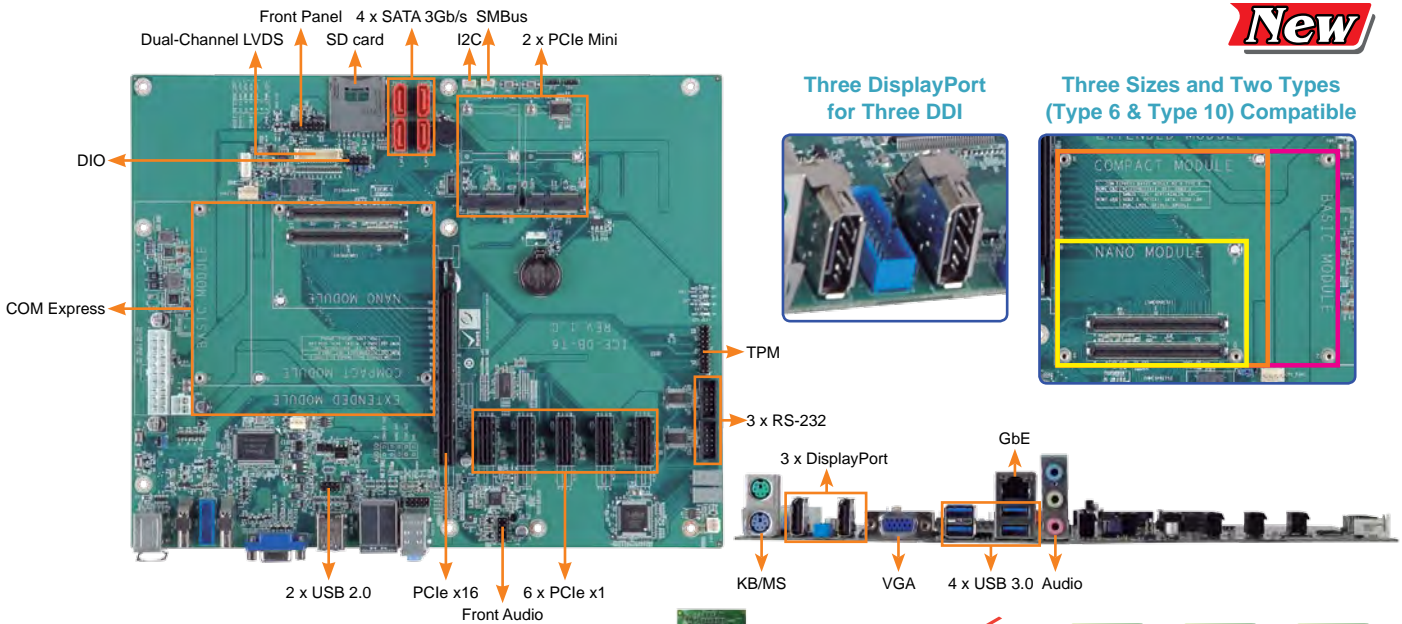
3 Embedded Computing Solutions

4 ORing Network Communication

5 Power Supply/Peripherals

6 Panel Solutions Introduction

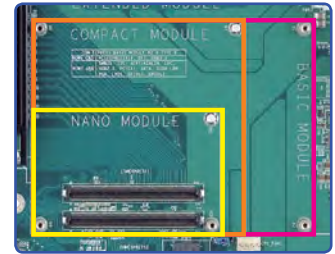
# ICE-DB-T6 Baseboard for COM Express Type 6 Module



Three DisplayPort for Three DDI



Three Sizes and Two Types (Type 6 & Type 10) Compatible



## Specifications

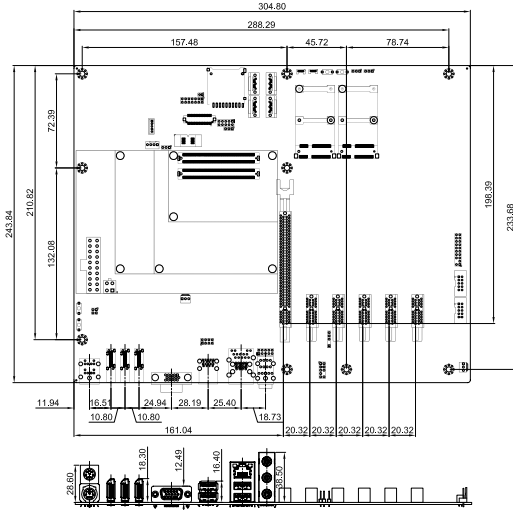
- ◆ Form Factor  
ATX form factor baseboard
- ◆ CPU  
Supports COM Express Compact / Basic module using connector pin out Type 6
- ◆ Display Interfaces  
1 x 18/24-bit single/dual-channel LVDS  
1 x VGA  
3 x DisplayPort (2 x real connectors, 1 x pin header)
- ◆ Super I/O  
W83627DHG
- ◆ Audio  
Realtek ALC892 HD audio codec (Line-in, Line-out, Mic)
- ◆ Expansions  
1 x PCIe x16                    6 x PCIe x1  
2 x PCIe Mini (with USB)    1 x LPC
- ◆ Internal I/O Interface  
4 x SATA port                    2 x RS-232 from COM Express (only TX, RX and GND)  
2 x RS-232 from SIO            1 x PS2 KB/MS  
2 x USB 2.0                        1 x SD
- ◆ Rear IO  
1 x VGA                            4 x USB 3.0  
1 x RJ-45                            3 x DisplayPort  
1 x Audio jack (Line-in, Line-out, Mic)
- ◆ Front Audio  
2 x 5-pin header
- ◆ TPM  
2 x 10-pin header
- ◆ 80 port  
2 x 7 segment display
- ◆ Front Panel  
1 x Front panel connector (power LED, HDD LED, speaker/buzzer, power button, reset button)
- ◆ I2C  
1 x 4-pin wafer
- ◆ SMBus  
1 x 4 pin wafer
- ◆ Watchdog Timer  
Software programmable supports 1~255 sec. system reset
- ◆ GPIO  
8-bit GPIO (GPIO from iwDD co-lay SDIO)
- ◆ Power Supply  
ATX/AT power supply
- ◆ Battery  
Supports smart battery charger connector
- ◆ Fan Connector  
1 x 4-pin / 1 x 3-pin CPU module fan connector  
1 x 3-pin system fan connector by SIO
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
304.8 mm x 243.8 mm (12" x 9.6")



## Features

1. ATX form factor baseboard for COM Express Rev. 2, Pin-out Type 6
2. Supports one PCIe x16, six PCIe x1 and two PCIe Mini
3. Supports smart battery charger

## Dimensions (Unit: mm)



## Packing List

1 x COM Express baseboard	
1 x Dual-port RS232 cable (P/N: 19800-000051-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32000-062800-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

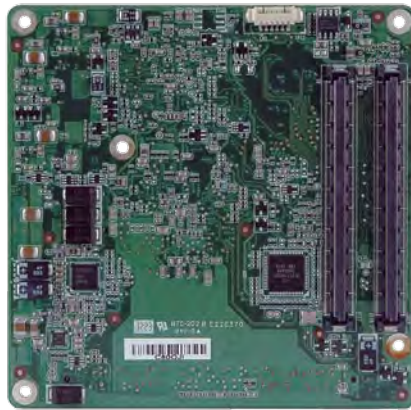
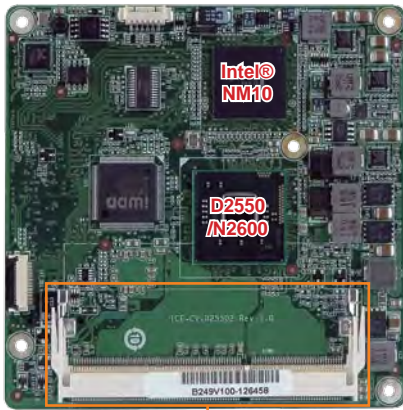
Part No.	Description
ICE-DB-T6-R10	Baseboard for COM Express Type 6 modules
19800-000082-RS	RS-232/422/485 cable
32102-000100-200-RS	SATA power cable

- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/Peripherals
- 6 Panel Solutions Introduction

# ICE-CV-D25502-N26002

COM Express Rev 2.0 Basic/Compact Type II Modules, Intel® Atom™ D2550 Processor, VGA/LVDS, PCI, GbE, SATA 3Gb/s, USB and Audio, RoHS

**New**



Dual display by LVDS VGA



Full HD decode with support for Blu-ray logo

Cedarview Processor

Dual Core CPU  
DX9 Graphics  
DDR3 Memory  
31nm



Single-Channel DDR3 1066/800 MHz

## Specifications

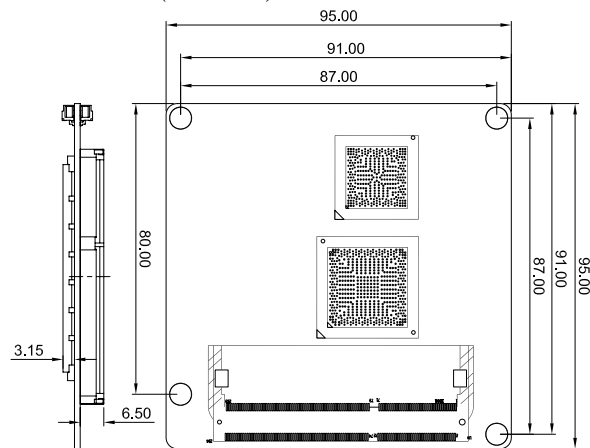
- ◆ Form Factor  
PICMG COM Express R2.0 Type II for Compact size  
95 mm x 95 mm  
10-layers
- ◆ CPU  
Intel® Atom™ N2600 dual-core processor 1.6 GHz/512 x 2 L2 cache  
Intel® Atom™ D2550 dual-core processor 1.86 GHz/512 x 2 L2 cache
- ◆ PCH  
Intel® NM10
- ◆ Memory  
Intel® Atom™ N2600 dual-core processor 1.6 GHz/512 x 2 L2 cache (system max. 2GB)  
Intel® Atom™ D2550 dual-core processor 1.86 GHz/512 x 2 L2 cache (system max. 4GB)  
Supports 1.35V DDR3L
- ◆ BIOS  
UEFI BIOS
- ◆ Graphic Engine  
Intel® GMA 3650 Grippic core 640 MHz for D2550  
Support for DX9, Blu Ray 2.0  
MPEG2, h.264, VC-1, 1080p decode
- ◆ Display Output  
VGA Integrated in the Intel® N2600/D2550 signal to base board  
1 x CRT  
1 x single channel LVDS 18/24-bit (N2600: 18-bit ; D2550: 24-bit)
- ◆ Ethernet  
RTL RTL8111E-VL-CG Gbe Ethernet  
Co-layer RTL8111E-VB-GR
- ◆ Embedded Controller  
iWDD (ITE)
- ◆ USB  
8 x USB 2.0 signal to base board
- ◆ SATA  
2 x SATA 3GB/s signal to base board
- ◆ Audio  
High definition audio interface to base board
- ◆ GPIO  
YES, to base board
- ◆ SMBus  
YES, to base board
- ◆ I2C  
YES, to base board
- ◆ LPC  
YES, to base board
- ◆ SPI  
YES, to base board
- ◆ Serial port  
2 serial ports to base board
- ◆ Expansion  
3 x PCIe x1 signal to base board
- ◆ PCI  
YES, to base board
- ◆ Watchdog Timer  
Software programmable support 1~255 sec. system reset (By EC)
- ◆ Power Consumption  
+12V@0.45A, Vcore \_12V@1.0A
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~95%, non-condensing
- ◆ Dimensions  
95 mm x 95 mm
- ◆ Weight  
GW: 600g / NW: 200g



## Features

1. Intel® Atom™ N2600/D2550 processors supported
2. Intel® GMA integrates high-performance graphics and media processing
3. Support DDR3 & DDR3L (1.35V) 1066/800MHz, up to 4GB
4. 18/24-bit single-channel LVDS, analog CRT
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (Unit: mm)



## Packing List

1 x ICE-CV-N26002 Single Board Computer	1 x Heatspreader
1 x Heatsink	1 x Utility CD
1 x One Key Recovery CD	1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
ICE-CV-D25502-R10	COM Express Rev 2.0 Basic/Compact Type II Module, Intel® Atom™ D2550 Processor, VGA/LVDS, PCI, GbE, SATAII, USB and Audio, RoHS
ICE-CV-N26002-R10	COM Express Rev 2.0 Basic/Compact Type II Module Intel® Atom™ N2600 Processor, VGA/LVDS, PCI, GbE, SATAII, USB and Audio, RoHS
ICE-DB-9S-R10	Baseboard for COM Express Type II modules

1 Industrial Computing Solutions

2 Video Capture Solutions

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5 Power Supply/Peripherals

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# ICE-PV-N4551/D5251

COM Express Compact Type 2 Module, Intel® Atom™ N455/D525 Processor, DDR3, VGA/LVDS, GbE, SATA, USB and audio, RoHS



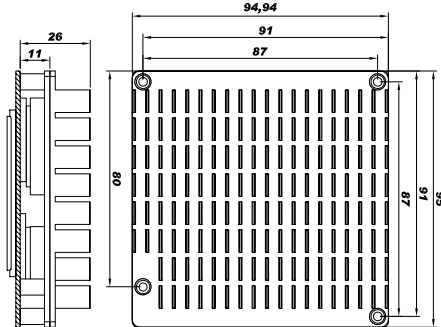
## Features

1. COM Express Type 2 module with compact size (95 mm x 95 mm)
2. Intel® Atom™ N455/D525 processor support
3. DDR3 800MHz SO-DIMM socket supports up to 2GB
4. Support eight USB 2.0, three SATA 3Gb/s and one IDE
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU
  - Intel® Atom™ N455 single-core processor 1.66GHz/512KB L2 cache
  - Intel® Atom™ D525 dual-core processor 1.8GHz/1MB L2 cache
- ◆ System Chipset
  - Intel® ICH8M
- ◆ BIOS
  - UEFI BIOS
- ◆ Memory
  - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 4GB for D525)
  - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 2GB for N455)
- ◆ GMA
  - GMA 3150
  - Graphic core speed 400MHz for D525
  - Graphic core speed 200MHz for N455
- ◆ Display Interface
  - Analog CRT (VGA) integrated in Intel® N455/D525 (signal to baseboard)
  - 18-bit single-channel LVDS signal (to baseboard)
- ◆ Ethernet
  - Intel® 82567V Gbe Ethernet PHY
- ◆ I/O Interface
  - 1 x IDE channel (signal to baseboard)
  - 3 x SATA 3Gb/s (to baseboard)
  - 8 x USB 2.0 (to baseboard)
- ◆ Expansions
  - 5 x PCIe x1 signal to baseboard
  - 4 x PCI, 32-bit/33MHz PCI bus to baseboard
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset by F75111R
- ◆ Power Supply
  - 12V only, AT/ATX mode support
- ◆ Power Consumption
  - 12V@1.25A (Intel® Atom™ D525 1.8GHz with DDR3 1GB)
- ◆ Operating Temperature
  - 10°C ~ 60°C
- ◆ Operating Humidity
  - 5% ~ 95%, non-condensing
- ◆ Dimensions
  - 95mm x 95mm
- ◆ Weight
  - GW: 600g/NW:200g
- ◆ Display Interface
  - VGA/HDTV integrated in Intel® 945GSE signal (to baseboard)
  - 18-bit dual-channel LVDS Signal (to baseboard)
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset (depend on super I/O of baseboard)
- ◆ Power Supply
  - AT/ATX supported
- ◆ Power Consumption
  - 12V@0.95A (Intel® Atom™ processor N270 with 1GB DDR2)
- ◆ Operating Temperature
  - 0°C ~ 60°C (ICE-945GSE-N270-R10)
  - 40°C ~ 85°C (ICE-945GSE-N270W2-R10)
  - 20°C ~ 70°C (ICE-945GSE-N270W-R10)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 125 mm x 95 mm
- ◆ Weight: GW: 700g/NW 250g

## Dimensions (mm)



## Packing List

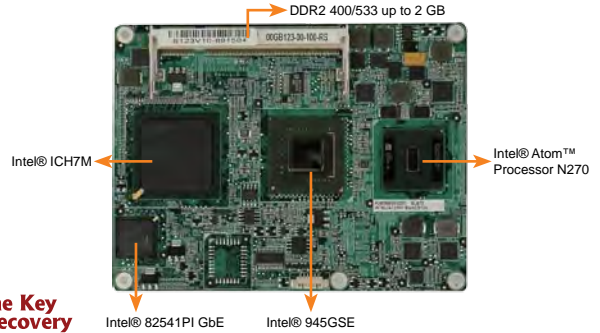
1 x ICE-PV-N4551/D5251 single board computer	1 x Heat spreader
1 x Heat sink	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
ICE-PV-D5251-R10	COM Express Compact Type 2 module, Intel® Atom™ D525 processor, DDR3, VGA/LVDS, GbE, SATA, USB and audio, RoHS
ICE-PV-N4551-R10	COM Express Compact Type 2 module, Intel® Atom™ N455 processor, DDR3, VGA/LVDS, GbE, SATA, USB and audio, RoHS
ICE-DB-9S-R10	Baseboard for COM Express Type II modules

# ICE-945GSE-R11

COM Express Basic Type 2 Module, Intel® Atom™ Processor, VGA/LVDS, GbE, SATA, USB and Audio



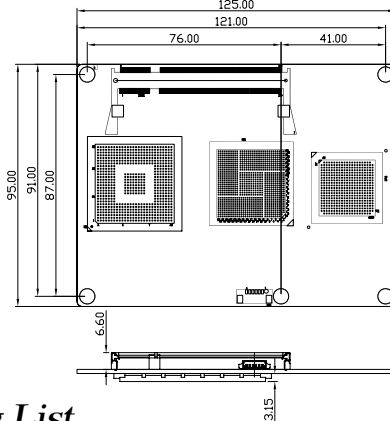
## Features

1. Intel® 45nm mobile Atom™ N270 processor supported
2. High-performance MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC) supported
3. DDR2 800/667MHz dual-channel SD RAM supported (system max. 4 GB)
4. 18/24-bit dual-channel LVDS, analog CRT, HDTV supported
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU
  - Intel® Atom™ processor N270 1.6GHz with 533MHz FSB
- ◆ System Chipset
  - Intel® 945GSE, Intel® 82801GBM/ICH7M
- ◆ BIOS: AMI BIOS
- ◆ System Memory
  - One 200-pin 533/400MHz DDR2 SO-DIMM supported (system max. 2GB)
- ◆ Ethernet: One Intel® 82541PI GbE chipset
- ◆ I/O Interface
  - 8 x USB 2.0 (to baseboard)
  - 2 x SATA (to baseboard)
  - 1 x IDE channel (to baseboard)
- ◆ Expansions
  - 1 x SDVO signal to baseboard
  - 4 x PCIe x1 signal to baseboard
  - 4 x PCI , 32 bit/33 MHz PCI bus to baseboard
- ◆ Display Interface
  - VGA/HDTV integrated in Intel® 945GSE signal (to baseboard)
  - 18-bit dual-channel LVDS Signal (to baseboard)
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset (depend on super I/O of baseboard)
- ◆ Power Supply
  - AT/ATX supported
- ◆ Power Consumption
  - 12V@0.95A (Intel® Atom™ processor N270 with 1GB DDR2)
- ◆ Operating Temperature
  - 0°C ~ 60°C (ICE-945GSE-N270-R10)
  - 40°C ~ 85°C (ICE-945GSE-N270W2-R10)
  - 20°C ~ 70°C (ICE-945GSE-N270W-R10)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 125 mm x 95 mm
- ◆ Weight: GW: 700g/NW 250g

## Dimensions (Unit: mm)



## Packing List

1 x ICE-945GSE single board computer	
1 x Heatspreader	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
ICE-945GSE-N270-R11	COM Express basic type 2 module with Intel® Atom™ processor N270 1.6G, VGA/LVDS, GbE, USB, SATA and audio
ICE-945GSE-N270W2-R11	COM Express basic type 2 module with Intel® Atom™ processor N270 1.6G, VGA/LVDS, GbE, USB, SATA and audio, -40°C ~ 85°C
ICE-945GSE-N270W-R11	COM Express basic type 2 module with Intel® Atom™ processor N270 1.6G, VGA/LVDS, GbE, USB, SATA and audio, -20°C ~ 70°C
ICE-DB-9S-R10	Baseboard for COM express Type 2 module
34000-000417-RS	Heatsink for COM express module

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# ICE-GM45A-R11

COM Express Basic Type 2 Module, Intel® 45nm Core™ Duo Processor, VGA/LVDS, GbE, SATA 3Gb/s, USB and Audio



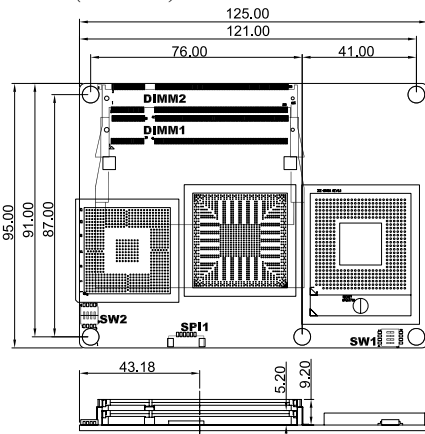
## Features

1. Intel® 45nm mobile Core™ Duo processor supported
2. High-performance MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC) supported
3. DDR2 800/667MHz dual-channel SD RAM supported (system max. 4 GB)
4. 18/24-bit dual-channel LVDS, analog CRT, HDTV supported
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU
  - Socket P Intel® Core™ Duo processor with 1066/800 MHz FSB
  - Socket P Intel® Celeron® M processor with 667 MHz FSB
- ◆ System Chipset: Intel® GM45/ICH9-M
- ◆ BIOS: AMI BIOS
- ◆ System Memory
  - Two 200-pin 800/667MHz DDR2 SO-DIMM support (system max. 4 GB)
- ◆ Ethernet
  - One Intel® 82574L PCIe GbE chipset
- ◆ I/O Interface
  - 8 x USB 2.0 (to baseboard)
  - 4 x SATA 3Gb/s (to baseboard)
- ◆ Audio
  - HD Audio signal to baseboard (audio codec on baseboard)
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset (depend on super I/O of baseboard)
- ◆ Expansions
  - 1 x PCIe x16 or 2 x SDVO signal to baseboard
  - 5 x PCIe x1 signal to baseboard
  - 4 x PCI, 32-bit/33 MHz PCI bus to baseboard
- ◆ Display Interface
  - VGA/HDTV integrated in Intel® GM45 signal (to baseboard)
  - 18/24-bit dual-channel LVDS signal (to baseboard)
- ◆ Power Supply
  - AT/ATX supported
- ◆ Power Consumption
  - 12V@2.574A (Intel® Core™2 Duo processor P8600 2.4 GHz with 1 GB DDR2)
- ◆ Operating Temperature
  - 0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity
  - 5% ~ 95%, non-condensing
- ◆ Dimensions: 125 mm x 95 mm
- ◆ Weight: GW: 700g/NW 250g

## Dimensions (Unit: mm)



## Packing List

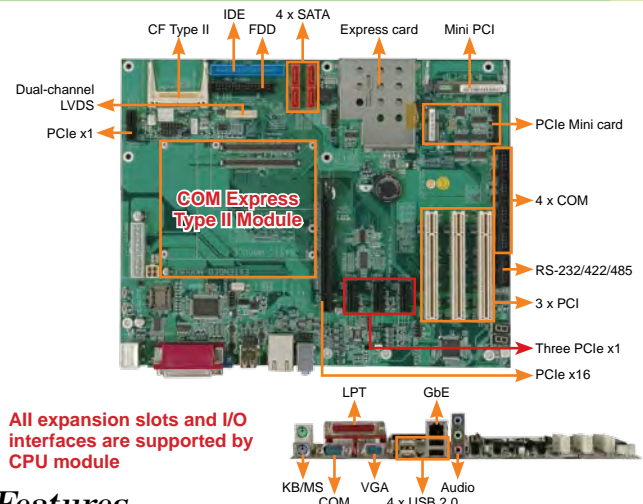
1 x ICE-GM45A single board computer	1 x One Key Recovery CD
1 x Heatspreader for CPU (45nm)	1 x Utility CD
1 x Cooler	1 x QIG

## Ordering Information

Part No.	Description
ICE-GM45A-R11	COM Express basic Type 2 module, Intel® 45nm Core™ Duo processor, VGA/LVDS, GbE, SATA 3Gb/s, USB and audio
ICE-DB-9S-R10	Baseboard for COM Express Type 2 module
34000-000256-RS	Heatspreader for socket P merom CPU (65nm)

# ICE-DB-9S

Baseboard for COM Express Type 2 Module



All expansion slots and I/O interfaces are supported by CPU module

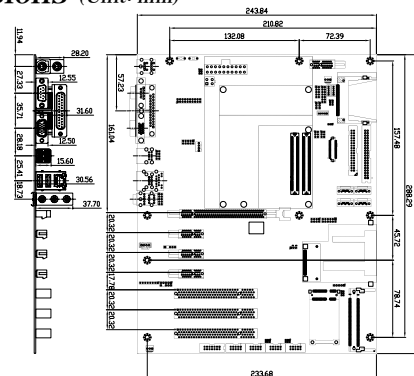
## Features

1. ATX form factor baseboard for COM Express Type 2 module
2. Support one PCIe x16, four PCIe x1, three PCI expansions
3. Second I/O interface supports up to six COM ports
4. COM2/COM3 with 5V/12V power by jumper selection

## Specifications

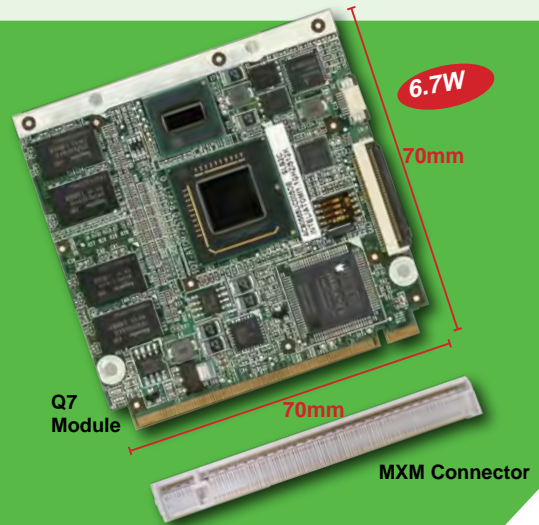
- ◆ CPU Module Interface
  - Supports COM Express Compact/Basic module using connector pinout Type 2
- ◆ Display Interface
  - VGA DB-15 connector
  - 18/24-bit dual-channel LVDS
  - TV-out interface
- ◆ Expansions
  - 1 x PCIe x16
  - 1 x Mini PCI
  - 3 x PCI, 32-bit/33 MHz PCI bus
  - 1 x Express Card
- ◆ I/O Interface
  - 1 x IDE
  - 1 x FDD
  - 1 x LPT
  - 2 x PS/2 KB/MS
  - 5 x RS-232 (COM2/COM3 with 5V/12V power)
- ◆ Ethernet Connector
  - 1 x RJ-45 connector for GbE
- ◆ Audio
  - Realtek ALC888 for 7.1 channels HD Audio
  - 1 x Mic-in, Lin-in, Lin-out connector
  - 1 x Front audio
- ◆ Super I/O
  - First Super I/O: Winbond W83627EHG
  - Second Super I/O: Fintek F81216
- ◆ Digital I/O
  - 8-bit digital I/O, 4-bit input/4-bit output by Winbond W83627EHG
  - 8-bit digital I/O, 4-bit input/4-bit output by Fintek F75111R
- ◆ Infrared Interface
  - 1 x Infrared interface by pin header
- ◆ Power Supply: ATX/AT support
- ◆ Fan
  - 3 x Fan connector (FAN1 supports smart fan for CPU)
- ◆ Operating Temperature: 0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 304.8 mm x 243.8 mm (12" x 9.6")

## Dimensions (Unit: mm)



# Q7 Introduction

- The Qseven™ concept is an off-the-shelf, multi vendor, Single Board Computer that integrates all the core components of a common PC and is mounted onto an application specific carrier board.
- Qseven™ modules have a standardized form factor of 70mm x 70mm and have specified pinouts based on the high speed MXM system connector that has a standardized pinout regardless of the vendor.
- The Qseven™ module provides the functional requirements for an embedded application. These functions include, but are not limited to, graphics, sound, mass storage, network and multiple USB ports. A singleruggedized MXM connector provides the carrier board interface to carry all the I/O signals to and from the Qseven™ module.



## Pin Definition of Q7

Qseven offers the newest I/O technologies on this minimum size form factor. This includes serial high speed buses such as:

- 4 x PCI Express x1 Lanes
- DisplayPort, TDMS or SDVO Interface
- 8 x USB 2.0
- ExpressCard
- High Definition Digital Audio
- 2 x Serial ATA
- LPC interface
- Secure Digital I/O interface
- Gigabit Ethernet
- 2 x 24-bit LVDS Display Interface



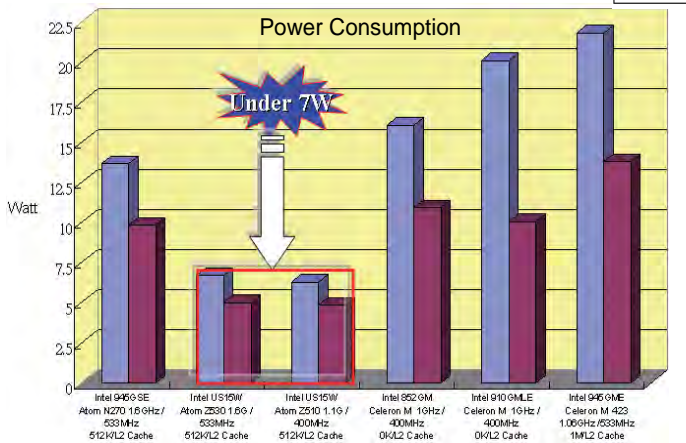
1. PCI Express
2. USB 2.0
3. Express Card
4. SATA
5. SDIO
6. Audio
7. Display Port
8. HDMI
9. GbE

## Benefits of Q7

- Compact size, cost-efficient and low-power consumption (TDP 12W)
- Legacy free and fast serial interface

ETX/COM Express/Q7 Comparison Table			
Platform	ETX 3.0	COM Express Type II Basic Module	Q7
Size	95 x 114 mm	95 x 125 mm	70 x 70 mm
Connector	4 x 100-pin	2 x 220-pin	1 x 230-pin
Memory	1 x SO-DIMM	1 x SO-DIMM	on board memory
VGA	Yes	Yes	N/A
LCD	TTL or LVDS	Up to 2 x single LVDS or Dual-channel LVDS	SDVO/HDMI/DP (Shared)
Expansion	PCI & ISA	PCI & PCI Express	PCI Express
Ethernet	10/100 Mbps	10/100/1000 Mbps	10/100/1000Mbps
USB	4	8	8
SATA	2 (ETX 3.0 only)	up to 4 SATA	up to 2 SATA
IDE	2CH	1CH	N/A
Audio	Mic-In/Lin-in/Lin-Out	AC97/HD interface	HD interface
Power	5V	12V	5V

## Embedded Intel® Atom™ Processor Power Consumption Comparison

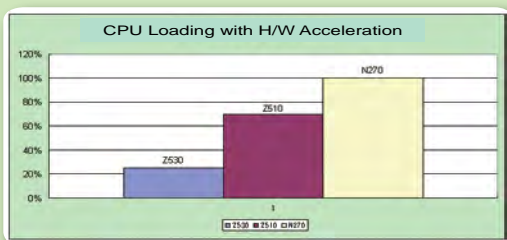


## iQ7-US15W Supported Video Codecs

IEI Q7 module – iQ7-US15W with Intel® US15W chipset graphic video codecs support table

Codec	Profile @ Level	Max Bit Rate (bps)	Resolution and Frame Rate
H.264	BP@L3	10M	720 x 480 @ 30fps (NTSC), 720 x 576 @ 25fps (PAL)
H.264	MP@L4.1	50M	1920 x 1080 @ 30fps, 1280 x 720 @ 60fps
H.264	HP@L4.1	50M	1920 x 1080 @ 30fps, 1280 x 720 @ 60fps
VC-1 (WMV9)	SP@MP	384K	240 x 176 @ 30fps, 352 x 288 @ 15fps (CIF)
VC-1 (WMV9)	MP@HP	20M	1920 x 1080 @ 30fps
VC-1 (WMV9)	AP@L3	45M	1920 x 1080p @ 24fps, 1920 x 1080i @ 30, 1280 x 720p @ 60
MPEG-4 Part 2	SP@L3	384K	CIF @ 30fps
MPEG-4 Part 2	ASP@L5	8M	720 x 480 @ 30fps (NTSC), 720 x 576 @ 25fps (PAL)
DivX	Certified HD	4M	1280 x 720 @ 30fps
MPEG-2	MP@HL	80M	1920 x 1080 @ 30fps
MPEG-1	CPB	1.856M	768 x 576 @ 30fps
JPEG	Baseline	N/A	Not restricted

## H.264 Graphic Performance



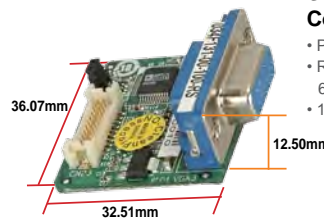
SW: Power DVD V8.0/Video type: H.264 DVD 1080P video file

CPU	Z530/1.6G	Z510/1.1G	ATOM N270
CPU Loading (With H/W acceleration)	20%~30% smoothly	60%~80% Laggard	Not Support

## LVDS-VGA-R10

### Single-channel LVDS to VGA Converter Board

- Provide 2nd VGA option for dual VGA display
- Resolution adjust by BIOS: Support 640x480, 800x600, 1024x768
- 18-bit LVDS to VGA Converter board



### Packing List

- 1 x LVDS to VGA Converter board
- 1 x QIG

## Ordering Information

Part No.	Description
LVDS-VGA-R10	18-bit LVDS to VGA converter board
32600-112300-RS	30-pin LVDS connecting cable
32600-114400-RS	20-pin LVDS connecting cable

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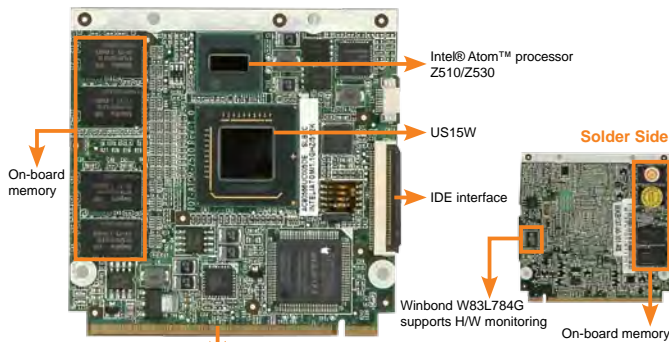
4 ORing Network Communication

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# iQ7-US15W

Q7 CPU module with Intel® Atom™ processor Z510/530



- 2 x PCI Express x1
- 1 x SDVO, 1 x 24bit LVDS
- 8 x USB 2.0, 1 x SDIO
- LPC Bus



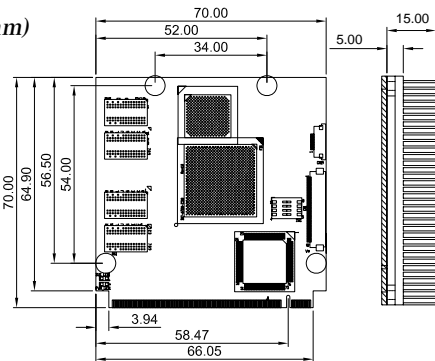
## Features

1. Intel® Atom™ processor Z510/Z530 low power CPU with single 5V low power design
2. High graphic performance supports H.264, MPEG1/2/4, VC1/WMV9 high-definition decode
3. Single-channel 24-bit LVDS supported
4. On-board memory 1GB supported
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
Intel® Atom™ processor Z530 1.6GHz with a 533MHz FSB  
Intel® Atom™ processor Z510 1.1GHz with a 400MHz FSB
- ◆ System Chipset  
Intel® US15W
- ◆ BIOS  
AMI BIOS
- ◆ System Memory  
On-board 1GB DDR2 SDRAM supported
- ◆ I/O Interface  
8 x USB 2.0 (to baseboard)  
1 x IDE (on CPU module)  
1 x LPC bus (to baseboard)  
1 x Single-channel 18/24-bit LVDS (to baseboard)  
1 x SDIO (to baseboard)  
1 x SDVO (to baseboard)  
1 x SMBUS (to baseboard)
- ◆ Expansion  
2x PCIe x1 (to baseboard)
- ◆ Audio  
1 x HD Audio interface (to baseboard)
- ◆ HW Monitor  
Winbond W83L784G
- ◆ Display Interface  
Intel® Graphics Media Accelerator 500  
SDVO/single-channel 24-bit LVDS Integrated in Intel® US15W (to baseboard)  
Max Display Resolution:  
LVDS: 1366x768 (24-bit color)  
SDVO: 1280 x 1024
- ◆ Watchdog Timer  
Software programmable supports 1~255sec. system rest by Winbond W83L784G
- ◆ Power Supply  
5V only AT/ATX supported
- ◆ Power Consumption  
5V@1.34A (Intel® Atom™ Z530 1.6GHz with 1GB DDR2)  
5V@1.255A (Intel® Atom™ Z510 1.1GHz with 1GB DDR2)
- ◆ Operating Temperature  
0°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
70 mm x 70 mm
- ◆ Weight  
GW: 600g/NW: 100g

## Dimensions (mm)



## Packing List

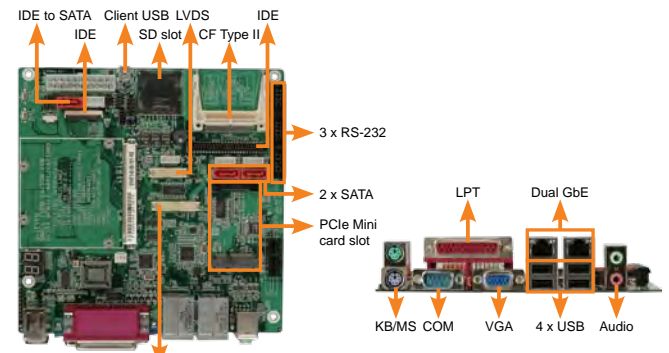
1 x Q7 CPU module	
1 x 50mm 1.8" IDE HDD FFC cable (P/N: 32400-029002-RS)	
1 x Heatsink	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
iQ7-US15W-Z510-R10	Q7 module with Intel® Atom™ Z510 1.1GHz, SDVO/LVDS, USB, SD, IDE, on board 1GB memory
iQ7-US15W-Z530-R10	Q7 module with Intel® Atom™ Z530 1.6GHz, SDVO/LVDS, USB, SD, IDE, on board 1GB memory
iQ7-DB-MITX-R10	Mini-ITX form factor baseboard for Q7 module, RoHS
32400-307900-RS	15cm 1.8" IDE FFC cable

# iQ7-DB-MITX

Baseboard for Q7 modules



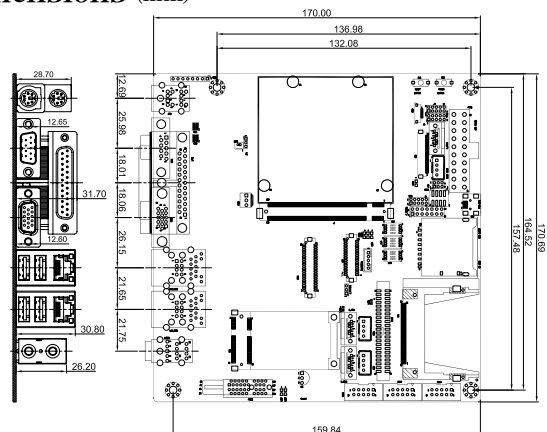
## Features

1. Mini-ITX form factor baseboard for Q7 platform
2. Support audio, SD slot, IDE, CF Type II, single-channel LVDS, TTL
3. Support six USB, four COM, two SATA
4. Support PCIe x1 slot, one PCIe Mini card

## Specifications

- ◆ Display Interface  
VGA DB15 connector (SDVO to VGA by Chrontel CH7317B)  
18/24-bit single-channel LVDS  
TTL (LVDS to TTL by TI SN75LVDS) (Option)
- ◆ Expansion Slot  
1 x PCIe Mini card slot shared with LAN1 (selected by switch: SW3)  
1 x PCIe x1 slot shared with LAN2 (selected by switch: SW3)
- ◆ I/O Interface  
2 x SATA/SATA 3Gb/s with 5V/12V power output (not support by iQ7-US15W)  
1 x IDE (IDE signal support from iQ7-US15W)  
1 x CF Type II (signal support from iQ7-US15W)  
1 x SATA with 5V/12V power output (IDE to SATA Bridge: Jmicron JM20330 Signal support from iQ7-US15W)  
1 x SD Slot      2 x PS2 KB/MS  
6 x USB 2.0      1 x USB Client  
1 x LPT            4 x RS-232
- ◆ Audio  
Realtek ALC883 for 7.1 channels HD Audio  
1 x Mic-in, Line-out connector
- ◆ Ethernet Connector  
2 x Realtek RTL8111CP GbE chipsets  
LAN1 shared with PCIe Mini card slot (selected by switch: SW3)  
LAN2 shared with PCIe x1 Slot (selected by switch: SW3)
- ◆ Super I/O  
SMSC SCH3114-NU
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input/4-bit output by SMSC SCH3114-NU
- ◆ Infrared Interface  
N/A
- ◆ Power Supply  
ATX Power, ATX/AT Mode Support
- ◆ Operating Temperature  
0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
170 mm x 170 mm
- ◆ Weight  
GW: 700g/NW: 350g

## Dimensions (mm)



## Packing List

1 x Mini-ITX form factor baseboard for Q7 module	
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
iQ7-DB-MITX-R10	Mini-ITX form factor baseboard for Q7 module
19800-000051-RS	Dual RS-232 cable
19800-000047-RS	Single RS-232 cable
32400-029000-RS	15cm IDE FFC cable from Q7 module to baseboard
32400-029002-RS	5cm IDE FFC cable from Q7 module to baseboard

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# IEI Trusted Platform Module (TPM)

Hardware base security solution for data protection and reliable authentication via TPM that stores key, passwords and digital certificates.

## H/W Features Comparison

<b>Solution</b>	<b>Infineon</b> <b>SLB9635 TT1.2</b> 
<b>Features</b>	
<b>Secure Startup</b>	Root of Trust Measurement of early boot devices
<b>Anti H/W Attack</b>	Sensors and active shield
<b>TSS API Support</b>	MS-CAPI/PKCS#11, #12
<b>H/W Certification</b>	
<b>Management Tool Function</b>	<ol style="list-style-type: none"> <li>1. TPM management</li> <li>2. File&amp;Folder En/De-cryption</li> <li>3. Personal secure drive</li> <li>4. Secure Email</li> <li>5. Key transferring</li> <li>6. Security policy configuration</li> </ol>
<b>Market Segment</b>	Complete TPM1.2 function
<b>TCG Specification</b>	TCG 1.2 compliance trusted platform module
<b>Interface</b>	Low pin count
<b>Software Structure</b>	TCG software stack 1.2 complaint
<b>Cryptographic Accelerator</b>	HAS-1/RSA algorithm

## Ordering Information

Model Name	Description
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

## IEI SBC with TPM support

Form factor	Model name	Form factor	Model name
ATX	IMBA-H610	Mini-ITX	KINO-QM770
	IMBA-C2060		KINO-AQ670
	IMBA-Q670		KINO-DH610
	IMBA-G410		KINO-AH611
	IMBA-G412ISA		KINO-AH612
	IMBA-XQ354		KINO-PV-D5253/D4253
microATX	IMBA-9454	KINO-QM670	
	IMB-H610	KINO-HM551	
	IMB-H612	KINO-780AM2	
	IMB-C2060	KINO-780EB	
	IMB-Q670	NOVA-PV-D5251/D4251	
	IMB-Q354	NOVA-945GSE	
PICMG1.3	IMB-9454	5.25" SBC	NANO-QM770
	SPCIE-C2060		NANO-HM551
	PCIE-H610		NANO-PV-D5251/D4251
	PCIE-Q670		WSB-H610
Half-size SBC	PCIE-Q350	EPIC	WSB-PV-D5251/D4251
	PCIE-9652		WSB-Q354
	PIC0e-B650		WSB-9452
	PIC0e-HM650		

## Pin Assignment



Pin	Signal	Pin	Signal
1	LCLK	11	LAD0#
2	GND	12	GND
3	LFRAME#	13	SCL
4	KEYWAY	14	SDA
5	LRST#	15	SB3V
6	VCC5	16	SERIRQ
7	LAD3#	17	GND
8	LAD2#	18	CLKRUN#
9	VCC3	19	LPCPD#
10	LAD1#	20	LDRQ#

## TPM OS Supported List

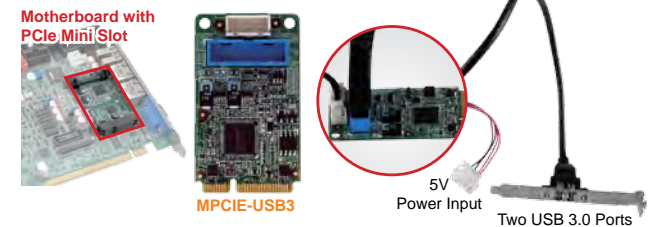
<b>OS Supported</b>	<b>Infineon</b>
<b>Windows®</b>	Windows® XP SP2, Windows® 7, Vista
<b>Linux</b>	Fedora 6 (Kernel 2.6.8 or above)

# MPCIE-USB3 PCIe Mini USB 3.0 adapter card, RoHs



## IEI USB 3.0 Expanded Solution

The MPCIE is applied to add additional super speed USB 3.0 ports for the motherboard with a PCIe Mini slot.



## Specifications

- ◆ Form Factor: PCI Express Mini card
- ◆ USB 3.0 Controller: Asmedia ASM1042
- ◆ Internal Connector: 1 x 20-pin (2x10) box header
- ◆ Power Jack: 1 x 4-pin box header
- ◆ Compatible OS: Windows® 2000/XP/Server 2003/Server 2008/Vista/7, Linux kernel version 2.6.32 above
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions (LxW): 50 mm x 30 mm
- ◆ Weight: 70g

## Packing List

1 x MPCIE-USB3 PCIe Mini USB 3.0 adapter card
1 x Dual USB 3.0 type A port cable with bracket (P/N: 19800-010500-100-RS)
1 x Power cable (P/N: 32102-020900-100-RS) 1 x QIG

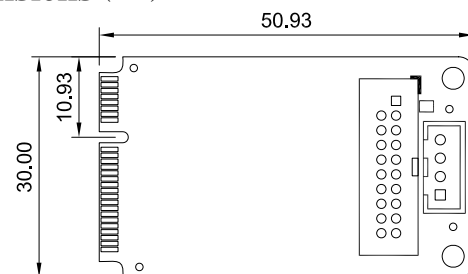
## Ordering Information

Part No.	Description
MPCIE-USB3-R10	PCIe Mini USB 3.0 adapter card, RoHs
19800-010500-100-RS	Dual USB 3.0 type A port cable with bracket

## Features

1. Supports two external USB 3.0 type A ports
2. USB 3.0 provides up to 5Gbps of transferring rate
3. Backward compatible with USB 2.0 and USB 1.0/1.1 devices
4. Fully compliant with USB 3.0 rev 1.0 specifications and Intel® xHCI rev 0.96 specifications, with transfer rates up to 5Gbps
5. Compliant with PCI Express Mini specification 1.2

## Dimensions (mm)



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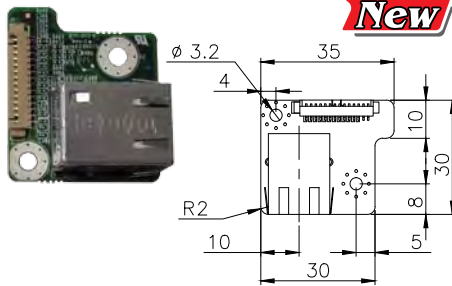
Power Supply/Peripherals

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Panel Solutions Introduction

# MPCIE-LAN-R10

Mini PCI Express GbE LAN module, Full size, RoHs



**New**

## Features

1. Support one GbE LAN by RTL8111E
2. Compliant with PCI Express Mini Card specification 1.2

## Specifications

- ◆ Form Factor: PCI Express mini card
- ◆ Display Controller IC: Realtek RTL8111E
- ◆ Speed: 10/100/1000Mbps
- ◆ External Connector: 1 x 8-pin RJ-45
- ◆ Power Supply: On board 3.3V
- ◆ Compatible OS: Windows 2000/ XP/ Server 2003/ Server 2008/ Vista/ 7
- ◆ Linux kernel version 2.6.32 above
- ◆ Operating Temperature: -10°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimension (LxW): 51mm x 30mm
- ◆ Weight: 70g

## Packing List

1 x MPCIE-LAN module	1 x Flat Cable (Pitch=1.25mm)	1 x QIG
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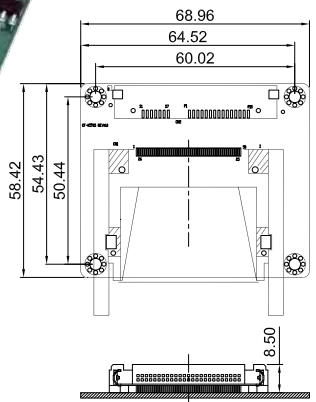
## Ordering Information

Part No.	Description
MPCIE-LAN-R10	Mini PCI Express GbE LAN module, Full size, RoHs

# SATA to CF Type II Converter Board



32801-000100-100-RS



## SACF-KIT01-R10

SATA to CF converter board

## Features

1. CF Type II socket
2. 50-pin CF Type II connector

## Packing List

1 x SACF-KIT01-R10	
1 x SATA with power cable kit (P/N: 32801-000100-100-RS)	1 x QIG

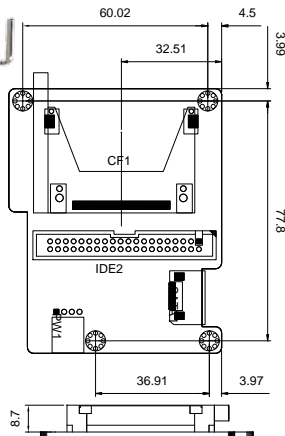
## Ordering Information

Part No.	Description
SACF-KIT01-R10	SATA to 50-pin CF socket converter board
45015-000400-RS	CF Type II cover with right side ejector

1 Industrial Computing Solutions

# SATA to IDE/CF Type II Converter Board

SATA to IDE/CF converter board



32100-064401-RS

## SAIDE-KIT01-R10

SATA to IDE/CF converter board

## Features

1. CF Type II socket
2. 40-pin IDE connector (master mode)
3. 4-pin 5V input connector
4. Power/5V/HDD LED indicator
5. Support one IDE device or one CF

## Packing List

1 x SAIDE-KIT01-R10	
1 x Power cable (P/N: 32100-171800-RS)	1 x QIG

## Ordering Information

SAIDE-KIT01-R10	SATA to 40-pin IDE/CF socket converter board with bracket
32801-000703-200-RS	SATA cable
32102-000100-200-RS	SATA power cable
32100-064401-RS	Power cable

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# IDE/CF Type II Converter Board



## CF-KIT04-R10

IDE to CF Type II converter board with master/slave mode selection

## Features

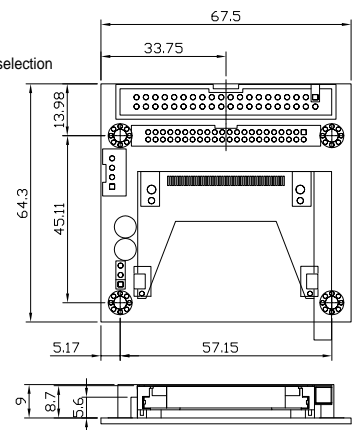
1. CF Type II socket with master/slave mode selection
2. 4-pin power connector
3. Power/HDD signal LED

## IEI CF Solution



ICF1000 Industrial standard grade

ICF1000 Wide Temp. grade

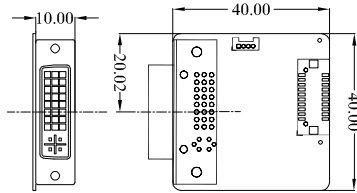


## LVDS-DVI

18-bit LVDS to DVI converter board, resolution support up to 1366x768



Dimensions (Unit: mm)



### Features

- ◆ Provide DVI option for dual display output
- ◆ Resolution supported: 1366x768, 1024x768, 800x600, 640x480
- ◆ 18 or 24-bit LVDS to DVI converter board

### Supported Models

WSB-PV-D5251	PICOe-PV-D5251	PCISA-PV-D5251
KINO-PV-D5252	NOVA-PV-D5251	NANO-PV-D5251
NANO-PV-D5252	WAFER-PV-D5252	

### Packing List

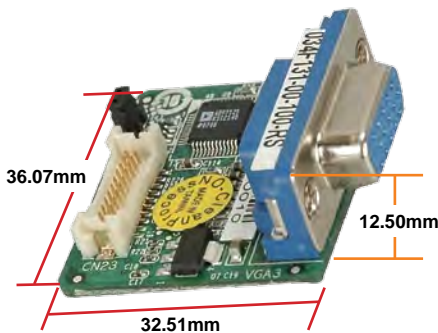
1 x LVDS to DVI converter board	
1 x SMBus cable	1 x QIG

### Ordering Information

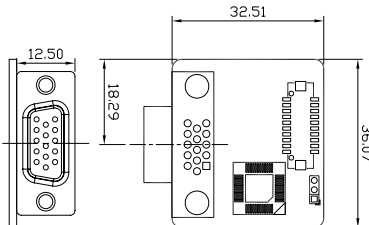
LVDS-DVI-R10	18/24-bit LVDS to DVI converter board
32602-012200-100-RS	20-pin to 30-pin LVDS connecting cable for WAFER-PV-D5252 only
32602-012300-100-RS	20-pin to 20-pin LVDS connecting cable

## LVDS-VGA-R10

Single-channel LVDS to VGA converter board



Dimensions (Unit: mm)



### Features

- ◆ Provide 2nd VGA option for dual VGA display
- ◆ Resolution adjust by BIOS: Support 1024x768, 800x600, 640x480
- ◆ 18-bit LVDS to VGA converter board

### Packing List

1 x LVDS to VGA converter board
1 x QIG

### Ordering Information

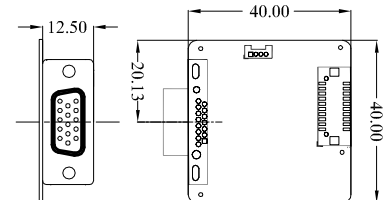
Part No.	Description
LVDS-VGA-R10	18-bit LVDS to VGA converter board
32600-112300-RS	30-pin LVDS connecting cable
32600-114400-RS	20-pin LVDS connecting cable

## LVDS-VGA02

18-bit LVDS to VGA converter board, resolution support up to 1366x768



Dimensions (Unit: mm)



### Features

- ◆ Provide VGA option for dual VGA display output
- ◆ Resolution supported: 1366x768, 1024x768, 800x600, 640x480
- ◆ 18 or 24-bit LVDS to VGA converter board

### Supported Models

WSB-PV-D5251	PICOe-PV-D5251	PCISA-PV-D5251
KINO-PV-D5252	NOVA-PV-D5251	NANO-PV-D5251
NANO-PV-D5252	WAFER-PV-D5252	

### Packing List

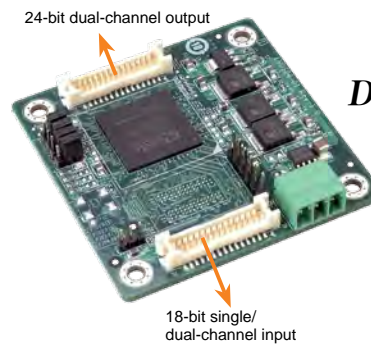
1 x LVDS to VGA converter board	
1 x SMBus cable	1 x QIG

### Ordering Information

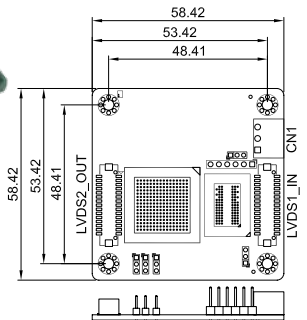
LVDS-VGA02-R10	18/24-bit LVDS to VGA converter board
32602-012200-100-RS	20-pin to 30-pin LVDS connecting cable for WAFER-PV-D5252 only
32602-012300-100-RS	20-pin to 20-pin LVDS connecting cable

## LVDS24-01

18-bit to 24-bit LVDS converter board



Dimensions (Unit: mm)



### Features

- ◆ Resolution supports up to 1280x1024
- ◆ Support below configuration:
  - › Single-channel 18-bit to single-channel 24-bit
  - › Single-channel 18-bit to dual-channel 24-bit
  - › Dual-channel 18-bit to dual-channel 24-bit

\* Note: The module does not support dual-channel 18-bit to single-channel 24-bit conversion.

### Packing List

1 x 18-bit to 24-bit LVDS converter board
1 x Power cable (P/N: 32100-130300-RS)
1 x QIG



### Ordering Information

Part No.	Description
LVDS24-01-R10	18-bit to 24-bit LVDS converter board
32600-004900-RS	30-pin LVDS connection cable for evaluation
32602-007900-100-RS	Single-channel 18-bit 20-pin to 24-bit LVDS 30-pin connection cable
32602-008000-100-RS	Dual-channel 18-bit 30-pin to 24-bit 30-pin LVDS connection cable

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# IGCME-1300

PCIe Mini VGA adapter card, RoHS

## IEI Scalable Display Solution

The IGCME-1300 is applied to expand one VGA port for the IEI motherboard with a PCIe Mini slot for multiple display applications.

### Compatible models

KINO-QM670-R10	PCIE-Q670-R10
----------------	---------------

## Features

1. Support PCIe VGA/2D Controller, 1920x1200@60Hz 32bpp
2. DDR3 SDRAM supports up to 800 MHz speed
3. Compliant with PCI Express Mini specification 1.2

## Specifications

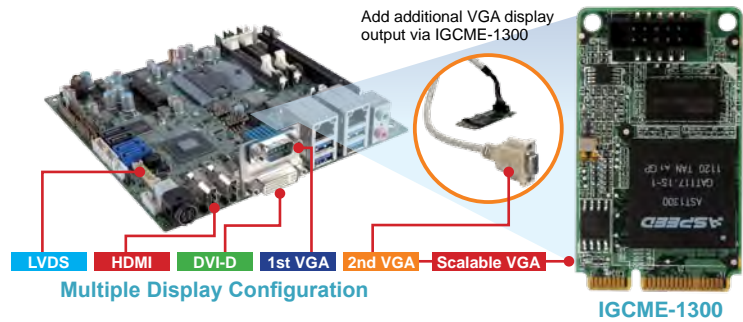
- ◆ Form Factor  
PCI Express Mini card
- ◆ Display Controller  
Aspeed AST1300
- ◆ Internal Connector  
1 x 10-pin (2x5) box header by 2.0mm pitch
- ◆ Compatible OS  
Windows® 2000/XP/Server 2003/Server 2008  
Linux kernel version 2.6.32 above
- ◆ Power Supply  
On-board 3.3V
- ◆ Operating Temperature  
-10°C ~ 60°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions (LxW)  
50mm x 30mm
- ◆ Weight  
70g

## Packing List

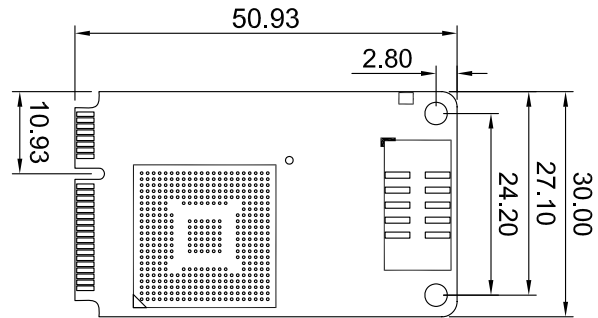
1 x IGCME-1300 PCIe Mini VGA adapter card
VGA cable (Pitch=2.0mm) (P/N: 32003-001500-100-RS) 1 x QIG

## Ordering Information

Part No.	Description
IGCME-1300-R10	PCIe Mini VGA adapter card, RoHS



## Dimensions (mm)



# LCD TTL/LVDS Cable

Open frame LCD cable for various panel connection evaluation

- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/Peripherals
- 6 Panel Solutions Introduction

**20-pin LVDS**  
**P/N: 32600-004800-RS**  
**I. IEI AMD GX/LX Solutions**

1. 1.25 pitch 20-pin connector for 18-bit LVDS panel
2. Connecting to IEI series SBC 20-pin LVDS LCD connector
3. 300 mm length

**30-pin LVDS**  
**P/N: 32600-004900-RS**  
**II. IEI SiS 661 ; Intel® 852/915/945 ; VIA MARK/LUKE Solutions**

1. 1.25 pitch 30-pin connector for dual-channel 18/24-bit LVDS panel
2. Connecting to IEI series SBC 30-pin LVDS LCD connector
3. 600 mm length

**40-pin TTL**  
**P/N: 32600-004700-RS**  
**III. IEI AMD GX/LX ; VIA MARK/LUKE**

1. 1.25 pitch 40-pin connector for 18/24-bit TFT LCD panel
2. Connecting to IEI series SBC 40-pin TFT LCD connector
3. 300 mm length

# PCIe x16 SDVO Interface VGA/DVI Graphics Card

PCIe SDVO add-on card: IEI only Intel® dual display solution by PCIe x16 interface



SDVO-100DVI-R10



SDVO-100VGA-R10



The most cost effective dual display solution for IEI boards with customized BIOS.

## Ordering Information

Part No.	Description
SDVO-100DVI-R10	DVI output, PCIe x16 add-on card by SDVO interface, Max. resolution 1600x1200
SDVO-100VGA-R10	VGA output, PCIe x16, add-on card by SDVO interface, Max. resolution 1600x1200
32100-154400-RS	SDVO I2C bus wire cable (Connector pitch 2.0mm to 2.0mm) (SBC to PE & PXE series backplane only)
32100-154401-RS	SDVO I2C bus wire cable (Connector pitch 2.54mm to 2.0mm) (SBC to PE & PXE series backplane only)

### IEI SDVO Cards Support List

PCIMG 1.3 Board	Model	PCIE-G41A2, PCIE-Q350, PCIE-9652
Embedded Board	Model	IMBA-G410, IMBA-G412ISA, IMBA-Q454, IMBA-XQ354, IMBA-9454G, IMBA-9454ISA, IMBA-9454B, IMB-G41A, IMB-Q354, IMB-9454G, KINO-G410

# Wireless LAN Module



## WIFI-RT5392-SB-R10

### Features

1. Half-size PCIe Mini card
2. 2.4GHz 802.11b/g/n supports 2Tx/2Rx 2-stream MIMO to enable data rates up to 300Mbps for a 40MHz channel.
3. 20MHz/40MHz bandwidth
4. Solid design with external antenna diversity
5. Low power consumption and high performance
6. Supports 802.11x authentication, WEP 64/128, WPA, WPA2, TKIP, AES, WAPI encryption
7. Supported operating systems: Windows® XP, CE6.0, XPE, 2000, Vista 32/64, Windows® 7 32/64, Linux, MAC



## WIFI-RT3593-DB-R10

### Features

1. Half-size PCIe Mini card
2. Dual band 802.11a/b/g/n supports 3Tx/3Rx 3-stream MIMO to enable data rates up to 450Mbps for a 40MHz channel.
3. 20MHz/40MHz bandwidth
4. Solid design with external antenna diversity
5. Low power consumption with advanced power management
6. Supports 802.11x authentication, WEP 64/128, WPA, WPA2, WAPI encryption.
7. Supported operating systems: Windows® XP, CE6.0, XPE, 2000, ME, 98SE, Vista 32/64, Windows® 7 32/64, Linux, MAC

Model	WIFI-RT5392-SB-R10	WIFI-RT3593-DB-R10
<b>Standards</b>	IEEE 802.11b/g/n, Wi-Fi compliant	IEEE 802.11a/b/g/n, Wi-Fi compliant
<b>Rate</b>	300 Mbps PHY rate in 2T2R mode	450 Mbps PHY rate in 3T3R mode
<b>Interface</b>	PCIe Mini card	PCIe Mini card
<b>Controller Chip</b>	Ralink RT5392	Ralink RT3593
<b>Connectors</b>	2 x U.FL (I-PEX) antenna connectors	3 x U.FL (I-PEX) antenna connectors
<b>Security</b>	WEP 64/128, WPA, WPA2, TKIP, AES, WAPI	WEP 64/128, WPA, WPA2, WAPI
<b>Frequency Range</b>	2.4GHz	2.4/5GHz
<b>Modulation Type</b>	802.11b (DSSS): CCK, DQPSK, DBPSK 802.11g (OFDM): BPSK, QPSK, 16-QAM, 64-QAM 802.11n (OFDM): BPSK, QPSK, 16-QAM, 64-QAM	802.11a (OFDM) 802.11b (DSSS): CCK, DQPSK, DBPSK 802.11g (OFDM): BPSK, QPSK, 16-QAM, 64-QAM 802.11n (OFDM): BPSK, QPSK, 16-QAM, 64-QAM
<b>Supported OS</b>	Windows® XP, CE6.0, XPE, 2000, Vista 32/64, Windows® 7 32/64, Linux, MAC	Windows® XP, CE6.0, XPE, 2000, ME, 98SE, Vista 32/64, Windows® 7 32/64, Linux, MAC
<b>Receiver Sensitivity</b>	802.11b: -84dBm (Typical) at 11 Mbps 802.11g: -71dBm (Typical) at 54 Mbps 802.11n: -71dBm (Typical) at 300 Mbps	802.11a: -71dBm (Typical) at 54 Mbps 802.11b: -80dBm (Typical) at 11 Mbps 802.11g: -73dBm (Typical) at 54 Mbps 802.11n: -71dBm (Typical) at 450 Mbps
<b>Power Consumption</b>	255mA@3.3V in continuous Tx 495mA@3.3V in continuous Rx	430mA@3.3V in continuous Tx 460mA@3.3V in continuous Rx
<b>Temperature</b>	Operating: -10°C ~ 70°C Storage: -40°C ~ 150°C	Operating: -10°C ~ 70°C Storage: -40°C ~ 150°C
<b>Humidity</b>	Operating: 10% ~ 90%, non-condensing Storage: 5% ~ 95%, non-condensing	Operating: 10% ~ 90%, non-condensing Storage: 5% ~ 95%, non-condensing
<b>Dimensions (W x D x H)</b>	28 mm x 30 mm x 4 mm	28 mm x 30 mm x 4 mm
<b>Weight</b>	NW: 11g	NW: 11g
<b>Safety &amp; EMC</b>	CE/FCC	CE/FCC

## Ordering Information

Part No.	Description	Part No.	Description
WIFI-RT5392-SB-R10	Wi-Fi module with RT5392 single chip, 2T2R, single band, RoHS	32501-000200-100-RS	Antenna; RF cable; outside diameter: 1.13mm; L=128mm; 0-6 GHz; (A)reverse sma jack, nut *1+washer *2; (B)I-PEX; RoHS
WIFI-RT3593-DB-R10	Wi-Fi module with RT3593 single chip, 3T3R, dual band, RoHS	32505-000900-100-RS	External antenna; WLAN; RG 178; 108mm; TANK-700-QM67-R10; PEAK GAIN 2.0DBI; Exceltek; 2.4-2.5 GHz/5.15-5.85 GHz; reverse SMA plug; RoHS



## WMUSB-V01-R20

USB embedded module with VIA wireless LAN module

### Features

1. IEEE 802.11b DSSS/IEEE 802.11g OFDM high rate compatible
2. USB embedded module
3. Supports RF On/Off mechanism
4. Supports an external or internal LED indicator
5. WEA/WAP support



## WMPCIE-V01-R30

PCIe Mini card wireless LAN module

### Features

1. PCIe Mini card form factor
2. High speed wireless connection to 54Mbps
3. Solid design with external antenna diversity
4. Low power consumption and high performance
5. Enhanced wireless security

Model	WMUSB-V01-R20	WMPCIE-V01-R30
<b>Standards</b>	IEEE 802.11 b/g	IEEE 802.11 b/g/n
<b>Interface</b>	USB 1.1/2.0 interface	PCIe Mini card
<b>Controller Chip</b>	VIA VT6656	Ralink
<b>Connectors</b>	2 x U.FL (I-PEX) antenna connectors	2 x U.FL (I-PEX) antenna connectors
<b>Security</b>	Supports WEP, WPA 1.0/2.0	64/128-bit WEP, WPA, WPA2, TKIP, AES
<b>Frequency Range</b>	2.4 ~ 2.5GHz	2.412-2.472 GHz
<b>Modulation Type</b>	802.11b : DQPSK, DBPSK, DSSS and CCK 802.11g : BPSK, QPSK, 16QAM, 64QAM, OFDM	IEEE 802.11b (DSSS): CCK, DQPSK, DBPSK 802.11g (OFDM): BPSK, QPSK, 16-QAM, 64-QAM
<b>Supported OS</b>	Windows® 98SE/ME/2000/XP	Windows® 2000/XP/Vista
<b>Receiver Sensitivity</b>	802.11b (8% PER) -83 dBm (Typical) at 11Mbps 802.11g (10% PER) -68 dBm (Typical) at 54Mbps	802.11g: -72 dBm (Typical) at 54 Mbps 802.11b: -88 dBm (Typical) at 11 Mbps
<b>Power Consumption</b>	382 mA @ 5V Tx mode/High speed 305 mA @ 5V Rx mode/High speed	868mA@3.3V in continue Tx 485mA@3.3V in continue Rx
<b>Temperature</b>	operation: 0°C ~ 60°C	Operation: 5°C to 55°C Storage: -20°C to 70°C
<b>Humidity</b>	operation: 10% ~ 90%, non-condensing	Operation: 10% ~ 90% (non-condensing) Storage: 5% ~ 90% (non-condensing)
<b>Dimensions</b>	60 mm x 25 mm	510 mm x 30 mm
<b>Weight</b>	NW: 8 g	NW: 5 g
<b>Compliance Certifications</b>	FCC, CE	FCC

## Ordering Information

Part No.	Description	Part No.	Description
WMPCIE-V01-R30	802.11 b+g PCIe Mini card wireless LAN module with Ralink	32500-001900-RS	RF cable; 300MM; 28AWG; (A) SMA connector; (B) MHF20278-11R-13; ROHS
WMUSB-V01-R20	802.11 b+g USB embedded module with VIA VT6656	32000-102500-RS	USB cable, 2x4pin 2.0mm to JST SHR-06V 1.00mm, L: 150mm
32500-000500-RS	2 dBi 109mm antenna	32500-001000-RS	5 dBi 173mm antenna



# PM-1004/1028-4/1028-8

4-port non-isolated RS-232/422/485 serial communication PC/104 module



## PM-1004

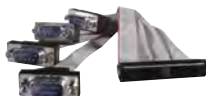


P/N: 32200-026800-RS

Shipped with 4-port RS-422/485 connection cable

**4-port/8-port non-isolated RS-232 serial communication PC/104 modules**

## PM-1028



P/N: 32200-025400-RS

Shipped with 4-port RS-232 connection cable

### Features

1. PC/104 form factor
2. 16C554 UART controller
3. Four jumper selectable RS-232 or RS-422/485 serial communication ports
4. Supports shared IRQ or independent IRQ mode
5. Jumper selectable interrupt level
6. Max. baud rate: 921.6kb/s
7. Windows® NT, Windows® 2000, Windows® XP, Windows® CE and Linux driver support

### Specifications

	PM-1004	PM-1028-4	PM-1028-8
<b>Bus Interface</b>	PC/104		
<b>Number of Ports</b>	4-port	4-port	8-port
<b>Interrupt Level</b>	3, 4, 5, 7, 9, 10, 11, 12		
<b>Chipset</b>	TI 16C554A		
<b>Baud Rate</b>	921.6 Kbps (max.) at 14.745MHz clock input		
<b>Serial Port</b>	16C550-compatible UARTs		
<b>Connectors (40-pin; 2.54 box header)</b>	4-port RS-232/ RS-422/RS-485 x 1	4-port RS-232 x 1	4-port RS-232 x 2
<b>Power Consumption</b>	+5V@0.6A (max.)		
<b>Operating Temperature</b>	0°C ~ 60°C		
<b>Dimensions</b>	96 mm x 90 mm		
<b>Driver Support</b>	Windows®NT, Windows®2000, Windows®XP, Windows®CE and Linux		

### Packing List

- 1 x 4-port non-isolated RS-232/422/485 serial communication PC/104 module
- 1 x 4-port RS-422/485 connection cable (P/N: 32200-026800-RS)
- 1 x Utility CD
- 1 x RS-232 cable (P/N: 32200-025400-RS)
- 1 x Mini jumper pack

### Ordering Information

Part No.	Description
PM-1004-R20	4-port non-isolated RS-232/422/485 serial communication PC/104 module
PM-1028-4-R20	4-port non-isolated RS-232 serial communications PC/104 module
PM-1028-8-R20	8-port non-isolated RS-232 serial communications PC/104 module

# IPCI-1680-CBM

2-port isolated protection CAN communication bus PCI card supports CANopen



**CANopen**  
Bundle CANopen AP

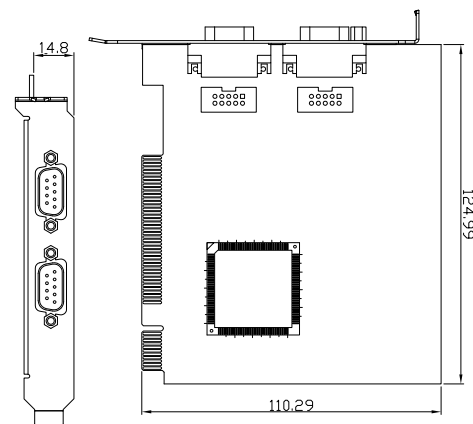
### Features

1. PCI Revision 2.2 compliant
2. Two independent CAN-bus communication ports
3. Compatible with CAN Specifications 2.0
4. On-board optical isolation protection 2500Vrms on CAN side
5. Programmable transfer rate up to 1 Mbps
6. Selective jumper for dual ports select 120 Ω terminator resistor
7. Support CANopen protocol following CiA DS-301 and support CiA DS-401

### Specifications

<b>Bus Interface</b>	PCI Revision 2.2 compliant
<b>Number of Ports</b>	2-port
<b>CAN Controller</b>	Philips SJA1000T
<b>CAN Transceiver</b>	Philips PCA82C251
<b>Signal Support</b>	CAN_H, CAN_L
<b>Speed (bps)</b>	1 Mbps
<b>Connectors</b>	Two external DB-9 male connectors or two internal 10-pin 2.54 pitch box headers
<b>Isolated Protection</b>	2500Vrms on CAN side
<b>Power Consumption</b>	5 V @ 400 mA
<b>Temperature</b>	Operating: -5°C ~ 65°C (23°F~149°F)
<b>Humidity</b>	Operating: 5% ~95% Non-condensing
<b>Driver Support</b>	Windows® XP/Windows® XP Embedded/Windows® CE 5.0
<b>CANopen Communication</b>	Support NMT/EMCY/SYNC/SDO/PDO/Error Control protocols Follow CiA DS-301 and support CiA DS-401 Support 10K, 20K, 50K, 125K, 250K, 500, 800K, 1M bps Transfer Rate

### Dimensions (mm)



### Packing List

- 1 x IPCI-1680-CBM CAN-bus PCI card
- 1 x Mini jumper pack
- 1 x Utility CD (with bundled CANopen software)
- 1 x QIG

### Ordering Information

Part No.	Description
IPCI-1680-CBM-R10	2-port isolated protection CAN communication bus PCI card support CANopen

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Video  
Capture  
Solutions3  
Embedded  
Computing  
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Introduction

# IEI Video Capture Cards and System Solutions

IEI provides complete video/audio capture solutions to fulfill the demands of various applications.

The latest HDC solutions are capable of compressing and decompressing Full HD video (1920x1080) in Real-Time using the H.264 Codec. The products enable recording, decoding and streaming HD video with high quality on devices such as digital video cameras, home network devices, industrial broadcasting devices and surveillance cameras. IVC / IVCE solutions provide Standard-Definition (SD) video resolution with 30 fps for Real-Time monitoring.

To integrate video capture cards and system resources, IEI provides video capture systems which support both HD and SD video format to fulfill variable video applications.



## High Definition Solutions

- Support 1080p60 Full HD video format and general HD interfaces
- Fujitsu ultra low power with full HD H.264 codec

### High Definition Video Systems

#### Embedded Fanless Systems

HDCS-7003-S series

#### Rack-Mounted Systems

HDCS-2U12-H series  
 HDCS-2U06-S series  
 HDCS-4U32-H series  
 HDCS-4U16-S series



### Long Distance High Quality Extension Solution

#### SDI Extension Boxes

HD-SDI-BOX-M  
 HD-SDI-BOX-S



### H.264 Hardware Compression Capture Cards

#### HDMI Interface

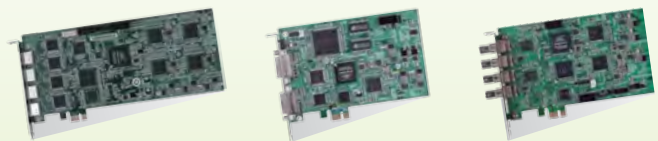
HDC-301  
 HDC-301E  
 HDC-302E  
 HDC-304E

#### DVI Interface

HDC-401  
 HDC-401E

#### SDI Interface

HDC-502E **New**



## Standard Definition Solutions

- Support 30FPS per channel up to D1 resolution
- Support Microsoft DirectShow architecture

### Standard Definition Video Systems

#### Software Compression Systems

IVCS-7008-B series

*(Wireless Optional for Customization Project)*



### Software Compression Capture Cards

#### Mini-PCIe Type

IVCME-C604 **New**

#### PCIe Type

IVCE-C608 **New**  
 IVCE-C604 **New**



#### PCI-104 Type

PM-1056

#### PCI Type

IVC-200G  
 IVC-100G



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Industrial Computing Solutions

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Video Capture Solutions

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Panel Solutions Introduction

## H.264 Hardware Compression Solution

IEI HDC-series products are designed with FUJITSU Codec IC MB86H46 solution which is capable of compressing and decompressing full HD video (1920 x1080) in the H.264 format in real-time.



### Main Features

- Supports high-definition 1080p, 1080i, 720p, and 480i video inputs
- Supports video and audio capture from all kinds of HD devices
- Edit and playback captured files on computer
- H.264 codec supports better storage advantages
- 8-channel hardware capture with under 10% CPU loading
- HDMI output port with hardware decoding for external HDMI monitor
- PCI and PCIe interfaces for different system configurations

### Benefits

Media data HD video/audio causes huge storage capacity. For example, an uncompressed full HD video will be about 373 MB/sec @60 fps. With IEI HDC series capture cards, the HD data could be compressed through hardware codec and then it is beneficial for storage usage, cost saving and transmission bandwidth in a variety of applications.

**(1920 x 1080 x 3 (R.G.B.) x 60 frame/sec. = 373.248 MByte)**

Compressed video encoding bit rate range from

**30 Mbps = 3.75 MB to 2 Mbps = 0.25 MB**

The compression ratio between compressed and uncompressed media data is up to **1492:1**.



120 minutes 1080p movie



**3 TB HDD (cost \$300) with uncompressed file**  
**VS**  
**30 GB (cost \$30) with compressed file**



120 minutes 1080p movie storage cost  
**\$300 VS \$30**

## Marketing Applications

HD video and audio networking solution



Compressed HD media content for fast transmission with best quality

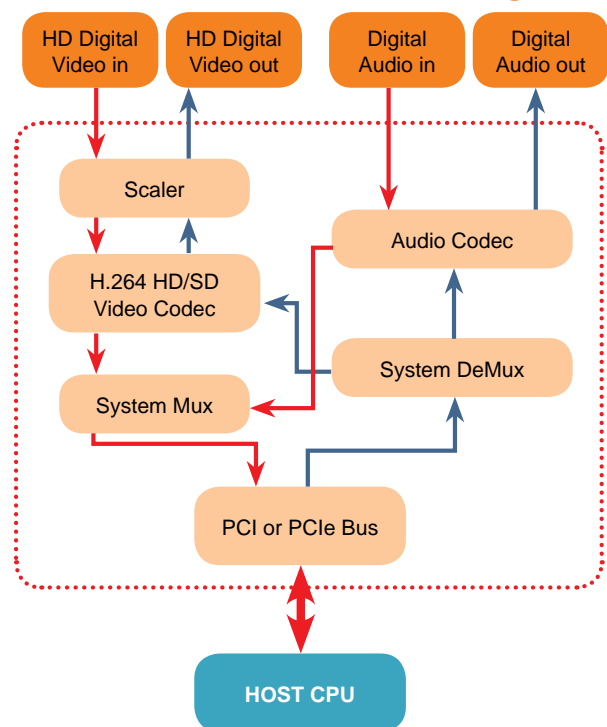


Media Processing for

- Compressing
- Editing
- Uploading
- Broadcasting
- Streaming
- Recording



### FUJITSU H.264 Codec IC Block Diagram



	Un-compressed	Compressed			
Encoding Bit Rate	373 MB	0.25 MB	1 MB	2 MB	3.75 MB
1 TB HDD Capacity	0.75 hr	1108 hrs	277 hrs	139 hrs	74 hrs
30-minute Full HD Video Recording	671 GB	450 MB	1.8 GB	3.6 GB	6.75 GB

Take 30-minute full HD video recording as an example. The uncompressed video is 671 GB, while the compressed video encoding with 0.25 MB (2 Mbps) bit rate is only 450 MB.

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Industrial Computing Solutions

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Panel Solutions Introduction

## ■ Applications of Medical HD Image/Video Capture Equipment



### Endoscopy Surgery

Endoscopy typically refers to looking inside the body for medical reasons using an endoscope. Unlike most other medical imaging devices, endoscopes are inserted directly into the organ or incision. Clear and detailed image is necessary for precise operations.

### Ultrasound Scanner

A general-purpose ultrasound machine may be used for most imaging purposes. Usually specialty applications may be served only by use of a specialty transducer. Most ultrasound procedures are done using a transducer on the surface of the body, but improved diagnostic confidence is often possible if a transducer can be placed inside the body.

### Microscope

Microscope is an instrument used to investigate objects that are too small for the naked eye. Recently, electron microscopic captures and displays the image through electric devices that allow people to see objects in detail.

### Thermography

Thermal imaging/video are examples of infrared imaging science. The appearance and operation of a modern thermographic camera is often similar to a camcorder. The live thermography reveals temperature variations so clearly. Thus, it plays more and more important role for health analysis and management. For health reasons, a recording module is built-in for patient tracing.

## ■ Network Video Applications through HDC-series Capture Cards/HDCS solutions

### Distance education/instruction

An educational model where the student and the teacher are in locations different from one another while the instruction is taking place. Ideal for this kind of education, the capture cards allow real-time capture or composition of two input sources, typically a live instruction with a Powerpoint presentation.

### Sport/Game Broadcasting

The broadcasting of sport/game events is the coverage of sports/games as a television program. Spectators can engage in live conversations using broadcasting media. Through HD capture and broadcast, there is no virtually impact on the sport/game performance.

### Traffic Broadcasting

The traffic systems now provide more informative and communicative broadcasting program that improve transport outcomes such as transport safety, transport productivity, travel reliability, and etc. Traffic media in vehicles or transportation is getting popular since wireless environment is getting mature.



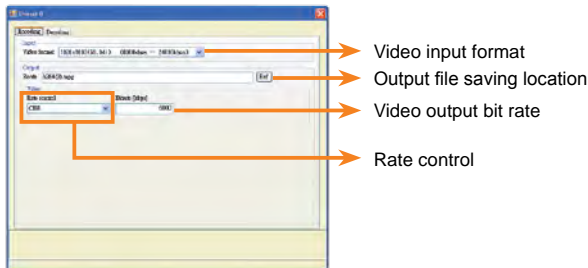
## Video Capture Software

### ■ IEI SDK Software Support

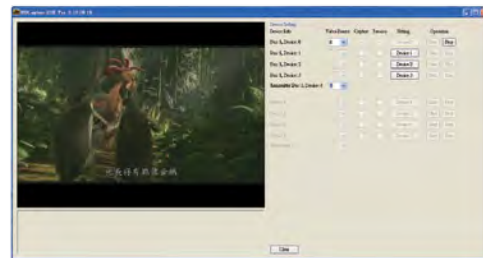
IEI provides complete software solutions such as device drivers and software development kit (SDK), and the flexible open architecture allows easy integration of cameras, video signal processing, storage, and video management/security.

#### HDC series demo AP

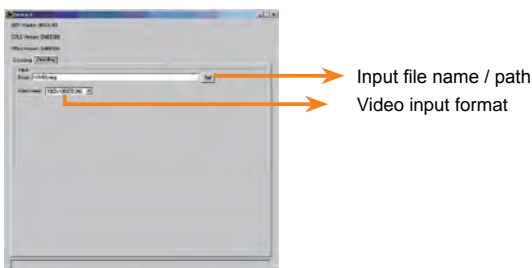
##### Encoding settings



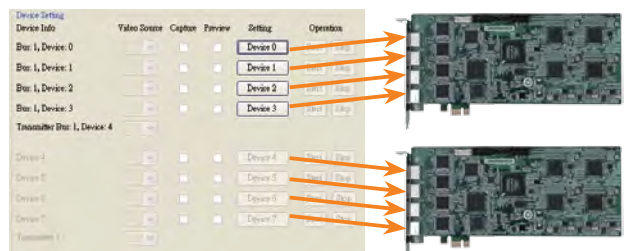
##### Video capture and preview



##### Decoding settings



##### Support multi-channel inputs



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Industrial Computing Solutions

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ORing Network Communication

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Panel Solutions Introduction

# SD Video Capture Solutions

## Market Coverage

### Intelligent Transportation Systems (ITS)

Providing timely information on highway traffic conditions is a major function of intelligent transportation systems (ITS), and video surveillance systems are critical tools for ITS to monitor and control any emergency evacuation event.

The toll road payment stations process large numbers of micro transactions. The surveillance system minimizes fraud by recording all transactions including those carried out by potential gatecrashers.

### Automotive Video Surveillance

Automotive video surveillance is now widely used to monitor vehicle interiors on public transportation systems to ensure the safety of the onboard passengers. Automotive video surveillance systems can record the interior of train, cars and buses and can also be adopted in police vehicles to monitor patrol activity.

### Banking Security System

In a bank, the surveillance system easily monitors a teller line and automated teller machine transactions. Bank surveillance systems can also record robberies, unauthorized withdrawals, and other disputed transactions.

### Building, Airport, Road Surveillance System

Video surveillance has emerged as a vital technology in the war against terror. Video surveillance enables the easy identification of culprits behind terrorist bombings. As a result, since 911, governments around the world have started to leverage high-performance surveillance equipment in their efforts to protect their country and people from terrorist attacks.

### Industrial Automation

Latest Supervisory Control And Data Acquisition (SCADA) systems adopt video capturing technologies to collect factory data and thereby provide operators and supervisors access to real-time data and video feeds enabling them to make increasingly accurate assessments faster.



1 Industrial Computing Solutions

## Standard Definition Compression Capture Card

The world has seen increasing demand for security applications, and the video surveillance system has been a popular security tool for years. Security cameras are an everyday occurrence, and chances are, you're used to watching yourself walk into a store on a security monitor. Banks and retail stores have come to depend on the protection provided by video surveillance. Digital technology have made video surveillance more flexible and easy to use than ever, and allow you to create the security system that conforms exactly to your needs.

2 Video Capture Solutions

2013 Solution	Capture Chip	4 Channels	8 Channels
PCIe Slot	Conexant CX25853		IVCE-C608
	Conexant CX25850	IVCE-C604	
PCIe Mini Slot	Conexant CX25854	IVCME-C604	
PCI Slot	Conexant BT878A	IVC-100G	
		IVC-200G	
PCI-104	Conexant BT878A	PM-1056	

3 Embedded Computing Solutions

4 ORing Network Communication

5 Power Supply/Peripherals

6 Panel Solutions Introduction

### New Features

1. Single card with 8 channels capture up to 128 channels
2. Direct PCIe bus with better bandwidth flow
3. Less power consumption
4. Real time video/audio output for monitoring
5. MP3 quality audio capture

### Space Saving

16 channels via 4 capture cards

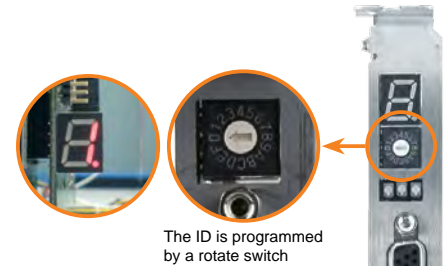
16 channels via 2 capture cards



## Multiple Card with Digit LED Card ID Support

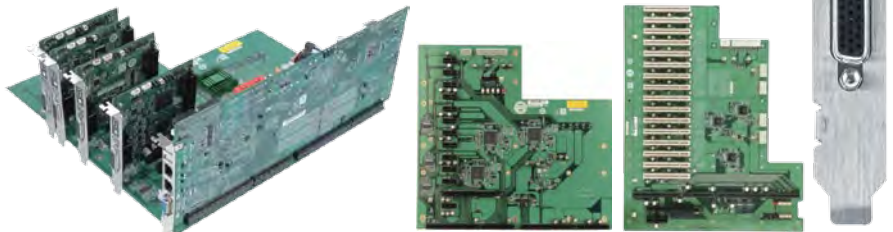
### One Digit LED for Card Identification (ID)

Because the IEI IVC series support multiple IVC cards, users need to know which card is related to which device name in the Device Manager of Windows® 7. Each IVC card provides one digit LED to show its ID (identification), and the ID is programmed by a rotate switch. The IEI IVC SDK also provides an application programming interface (API) to get device name and the demo application software shows how to display device names on screen. The advantages are for ease of maintenance and debugging. When a display channel malfunctions, the users can quickly find out which IVC card should be checked for error via the device name and LED ID.



### Multiple Card Support

The IEI IVC series are designed to support multiple IVC cards in a system. Its driver can recognize and support multiple IVC cards plugged into a system. The limitation of how many IVC cards can be plugged into a system is dependent on system resources such as CPU performance, interface bandwidth, and number of available IRQs.



Card Number	Card 1	Card 2	Card 3	Card 4	Card 5	Card 6	Card 7	Card 8
Card ID	0	1	2	3	4	5	6	7
Card Number	Card 9	Card 10	Card 11	Card 12	Card 13	Card 14	Card 15	Card 16
Card ID	8	9	A	B	C	D	E	F

## Multiple Card Cascade Reset

### One Bottom Cascade Reset

The latest IEI software compressive capture (IVC series) provides multiple card cascade reset function. It can enable system restore via external hardware reset button when system failure occurs.

**IVC Series Connector Pin Define**

CARD TYPE	CNa	CNb
IVCE-C604-R10	CN4	CN5
IVCE-C608-R10	CN4	CN5

Chassis reset button

MB reset signal

## Multiple Zones Real Time Monitoring

IEI video capture card is capable of video and audio output for second location real-time monitoring. Using this function, local on-site monitoring can focus on capturing video and audio with no need to operate system control. Local channel switch can be assigned by the system administrator or switch by GPIO module.

**Source**

4/8 channels video/audio capture

**Capture Cards**

Complete 4 or 8 channels function control

2 channels video + 1 channel audio real-time information

**Central control room**  
System monitor and control with video/audio capture

**Local security site**  
Real-time monitoring with video and audio

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## Benefits

The software compression card is used to transfer analog NTSC/PAL signal to digital raw data signal. The uncompressed raw data can provide better video quality without distortion. It is useful for real-time video surveillance applications. The software compression process is first transferring data into PC through PCI or PCIe interface then the CPU compresses the video and stores it in the HDD. Since compression and de-compression are handled by the CPU, the software compression card needs a more powerful hardware requirement.



Raw video capturing data

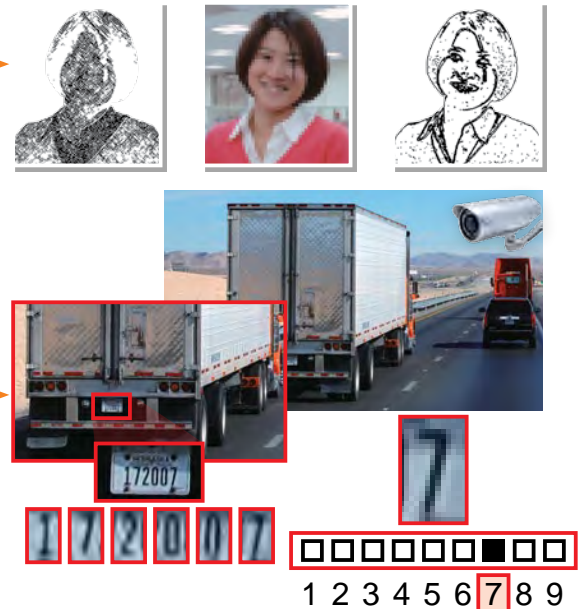


Un-compressed raw data w/o distortion



Data decoding from CPU w/ distortion

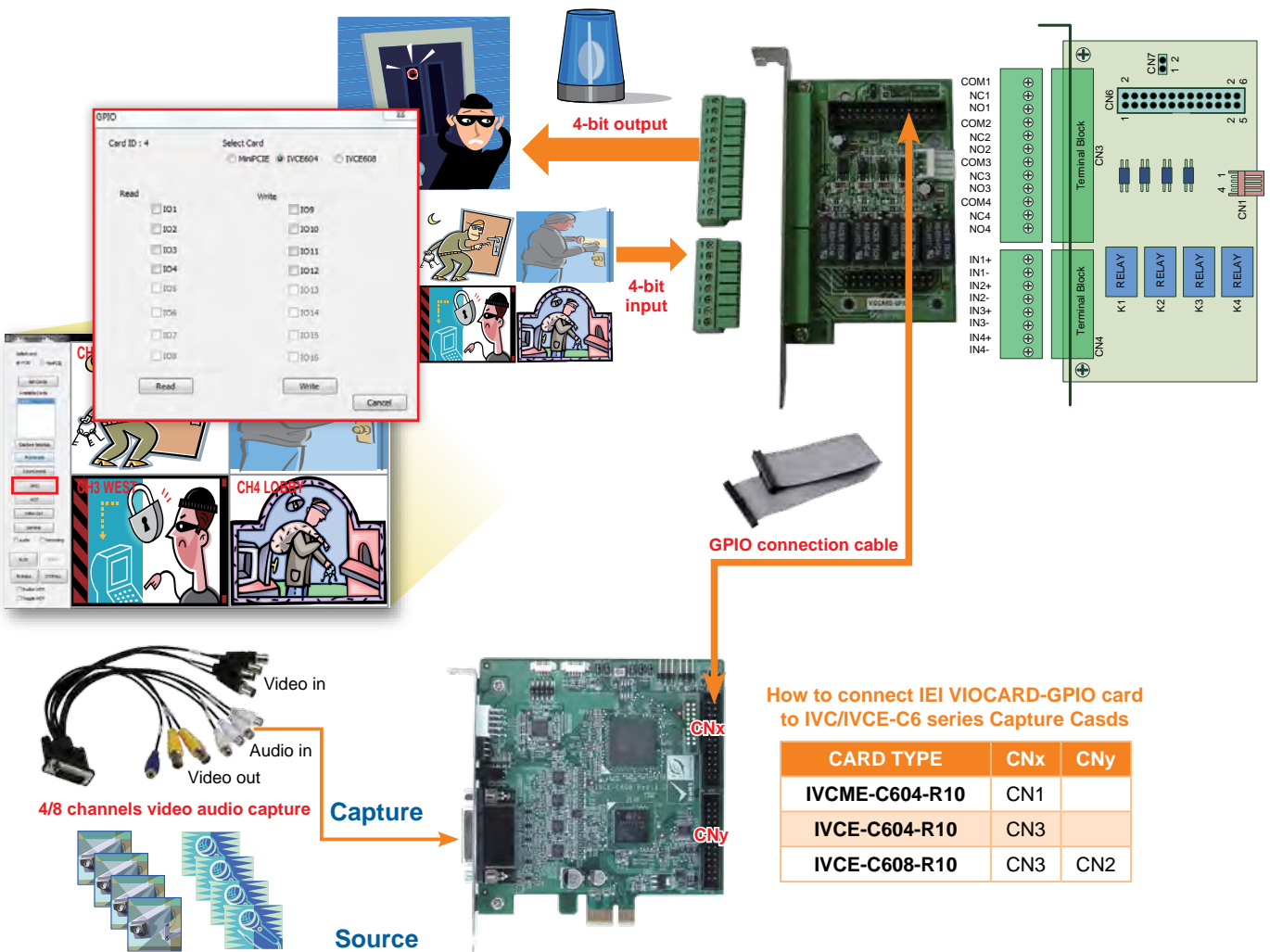
## Video Analytics



## GPIO Alarm

### Optional GPIO port support

The optional IEI VIOCARD-GPIO card provides 4-bit alarm input and 4-bit alarm output with normal open relay. It is compatible with IVC software compression capture card to connect with external I/O sensors.



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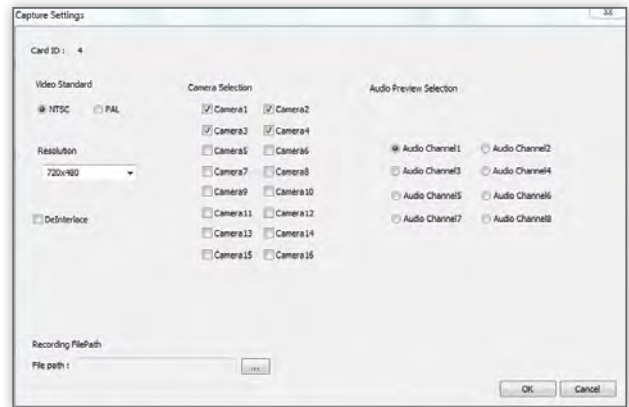
# Video Capture Software

IEI provides a test suite with SDK usage for Conexant solutions. The program demonstrates the following functions:

- Card ID and selection
- Video and audio capture setting
- Frame rate information and color property adjustment
- GPIO, WDT, video out and general settings



## 1 Capture Setting



## 2 Frame Rate



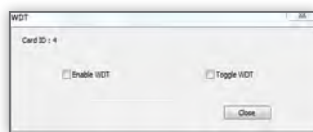
## 3 Color Properties



## 4 GPIO



## 5 WDT



## 6 Video Out



## 7 General Setting



## Software Compression Cards Selection Guide

Video Engine	Conexant CX25853	Conexant CX25850	Conexant CX25854	Conexant BT878A	Conexant BT878A	Conexant BT878A
IEI Solution	IVCE-C608	IVCE-C604	IVCME-C604	IVC-100G	IVC-200G	PM-1056
Bus	PCIe	PCIe	PCIe Mini	PCI	PCI	PCI-104
Video Input	8 channels	4 channels	4 channels	4 channels	4 channels	4 channels
Frame Rate	240/200 FPS	120/100 FPS	120/100 FPS	30/25 FPS	120/100 FPS	30/25 FPS
Video Input Format	NTSC/PAL	NTSC/PAL	NTSC/PAL	NTSC/PAL	NTSC/PAL	NTSC/PAL
Video Output	2 channels	2 channels	N/A	N/A	N/A	N/A
Audio Sampling Rate	8 ~ 96 kHz	8 ~ 96 kHz	8 ~ 96 kHz	N/A	N/A	N/A
LED Indicator	Yes	Yes	Yes	N/A	N/A	N/A
Driver for Windows®	Windows® XP/7 32/64-bit	Windows® XP/7 32/64-bit	Windows® XP/7 32/64-bit	Windows® 2000/XP	Windows® 2000/XP	Windows® 2000/XP
Driver for Linux 32/64-bit	Linux 2.6.27	Linux 2.6.27	Linux 2.6.27	Linux 2.4	Linux 2.4	Linux 2.4
Power Consumption	5.3W, 1.39A@3.3V, 0.06A@12V	3.51W, 0.9A@3.3V, 0.045A@12V	1.65W, 0.5A@3.3V	10.7W, 2.14A@5V	15W, 3A@5V	3.5W, 0.7A@5V

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# Video Capture Systems Selection Guide

**New**



Model Name	HDCS-4U32-H	HDCS-2U12-H	HDCS-4U16-S	HDCS-2U06-S	HDCS-7003-S	IVCS-7008-B
------------	-------------	-------------	-------------	-------------	-------------	-------------

◆ Chassis

Color	Black					
Dimensions (mm)	435.5 x 431 x 176	576.9 x 431 x 88	435.5 x 431 x 176	576.9 x 431 x 88	310 x 200 x 62	
Chassis Construction	SECC	SECC	SECC	SECC	Extruded aluminum alloy Heavy duty steel sheet	

◆ System

Platform	SPCIE-C2060-R10	PCIE-Q670-R20	SPCIE-C2060-R10	PCIE-Q670-R20	TANK-700-QM67/2G-R10	
CPU	Intel® Xeon® E3 processor	2nd Gen Intel® Core™ i7 processor	Intel® Xeon® E3 processor	2nd Gen Intel® Core™ i7 processor	2nd Gen Intel® Core™ i7 processors	
Chipest	Intel® C206	Intel® Q67	Intel® C206	Intel® Q67	Intel® QM67	Intel® QM67
Memory	Two 240-pin 1333/1066 DDR3 Dual-Channel unbuffered DDR3 SDRAM DIMMs (max capacity 16G)				One 204-pin 1333/1066 DDR3 Dual-Channel SDRAM SODIMM (max capacity 4G) On board 2G memory	
Storage	SATA 6GB/s with 3.5" HDD/SSD Supported	SATA 6GB/s with 3.5" HDD/SSD Supported	SATA 6GB/s with 3.5" HDD/SSD Supported	SATA 6GB/s with 3.5" HDD/SSD Supported	SATA 6GB/s with 2.5" HDD/SSD Supported	SATA 6GB/s with 2.5" HDD/SSD Supported
Extension HDD Bay	3	1	3	1	N/A	N/A

◆ System Function

USB3.0	N/A	N/A	N/A	N/A	2	2
USB2.0	6	2	6	2	4	4
Ethernet	LAN 1: Intel® 82574L PCIe controller LAN 2: Intel® 82579 PHY with Intel® AMT 7.0	LAN 1: Intel® 82583V PCIe controller LAN 2: Intel® 82579 PHY with Intel AMT 7.0	LAN 1: Intel® 82574L PCIe controller LAN 2: Intel® 82579 PHY with Intel® AMT 7.0	LAN 1: Intel® 82583V PCIe controller LAN 2: Intel® 82579 PHY with Intel AMT 7.0	2 x Combo (SFP Fiber/RJ-45) Realtek 8111E PCIe GbE Gigabit LAN	
RS-232	2	2	2	2	4	4
RS-232/422/485	1	1	1	1	2	2
Digital I/O	8-bit Digital IO, 4-bit input. 4-bit output					
Display	1 x VGA 1 x DVI-D (via header to IO-KIT-001-R20 DVI-D/USB module) (Optional) 1 x HDMI				1 x VGA 1 x HDMI	1 x VGA 1 x HDMI
Audio	Supported by AC-KIT-888HD audio kit				1 x Mic-in, 1 x Line-out	
CAN Bus	N/A	N/A	N/A	N/A	1 x CAN w/isolation	1 x CAN w/isolation
Wireless	N/A	N/A	N/A	N/A	1 x 802.11 a/b/g/n (Optional)	
Expansions	1 x PCIe x16 12 x PCIe x1 slot	1 x PCIe x16 3 x PCIe x1 slot	1 x PCIe x16 12 x PCIe x1 slot	1 x PCIe x16 3 x PCIe x1 slot	3 x PCIe Mini slot	3 x PCIe Mini slot

◆ Video Capture

Source Type	HDMI	HDMI	SDI	SDI	SDI	NTSC/PAL
Input Channel	32 Channels	12 Channels	16 Channels	6 Channels	3 Channels	8 Channels
H/W Codec	H.264/AVC High Profile Level 4.2		H.264/AVC High Profile Level 4.2		N/A	N/A

◆ Others

Power Input	110-240VAC				Redundant dual DC input Power 1 (Terminal Block): 9V(+/-0.3V)-36V Power 2 (DC Jack): 10.5V(+/-0.3V)-36V	
Mounting	Desktop, Rack-mounted				Desktop, Wall-mounted	
Operating Shock	N/A	N/A	N/A	N/A	Half-Sine Shock Test 5G/11ms, 3 shocks per axis	

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Panel Solutions Introduction

# HDCS-4U32-H HDCS-2U12-H

4U/2U HDMI Channel H.264 Real-Time Video Server

**New**



HDCS-4U32-H Series

HDCS-2U12-H Series



HDC-304E 4CH HDMI HW Compression Card



## Features

- HDMI 1080p 60fps real time video recording by hardware compression SoC
- Intel® Core™ i7 processor with 4GB/8GB 1333MHz DDR3
- Built-in 500GB HDD and one to three 5.25" expansion bay(s) for extra HDD
- Linux kernel v3.4 Fedora 16 32/64bit compatible

- Provides SDK and reference samples for second development
- Two Gigabit Ethernet ports
- Supports USB 2.0 devices
- Decoding and playback performance may depend on CPU/SoC performance
- Realtek ALC888 7.1 Channel HD Audio

## HDCS-4U32-H



3 extension HDD bays for large storage space

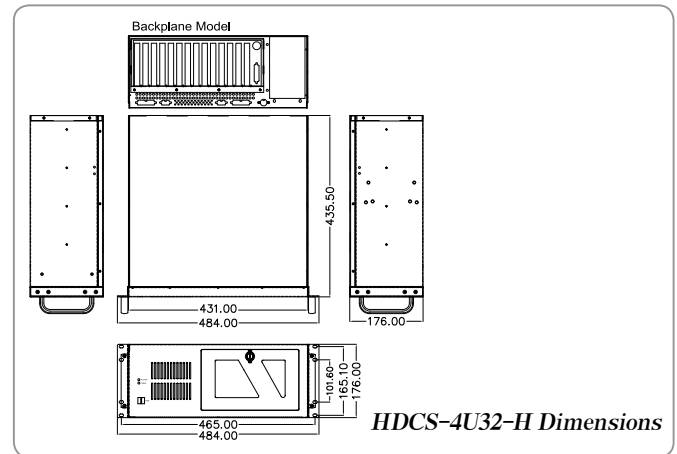


32CH HDMI Inputs & 1CH HDMI Outputs



HDC-304E x8

## Dimensions (Unit: mm)



## HDCS-2U12-H

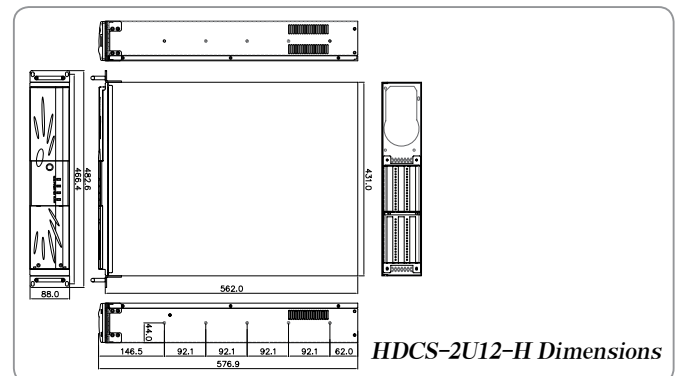


1 extension HDD bay for large storage space



HDC-304E x3

12CH HDMI Inputs & 1CH HDMI Outputs



## Introduction

The HDCS-2U/4U series is a video processing system for video/audio recording in 1080p 60fps from 6Mbps to 30Mbps bit rate. It features up to 32 channels of HDMI input supporting real-time recording in H.264/AVC High Profile Level 4.2 format, MPEG-1 Layer II standard is used for audio compression at 256kbps.

The system provides real time encoding for high-density video recording server applications. The HDCS-2U series supports up to 12 channels of 1080p 60fps video streams while the HDCS-4U series supports 32 channels of video streams.

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## Applications



### Distance Education/Instruction

- 1080p60 high quality lesson/course recording
- Live streaming for distance education



### Sport/Game Broadcasting

- 1080p60 recording fits high speed sports/games motion and activity
- Share live sports/games video with friends by streaming and broadcasting applications



### Traffic Broadcasting

- Highway/freeway traffic status monitoring
- Weather report and lane detection

## Specifications

Model Name	HDCS-4U32-H	HDCS-2U12-H
Input Channel	4/8/12/16/20/24/28/32 CH	4/8/12 CH
Platform	SPCIE-C2060-R20	PCIE-Q670-R20
Processor	LGA1155 supports Intel® Xeon® E3 processor	LGA1155 socket supports Intel® Core™ i7 processor
System Chipset	Intel® C206	Intel® Q67
Video Processing	Video Compression	H.264/AVC High Profile Level 4.2
	Input Resolution & Frame Rate	1920x1080x60p/59.94p/50p 1920x1080x60i/59.94i/50i 1280x720x60p/59.94p/50p
	Record Resolution/ Frame Rate/Bit Rate	1920x1080x60p/59.94p/50p, encoding video bit rate from 6Mbps to 30Mbps 1920x1080x60i/59.94i/50i, encoding video bit rate from 6Mbps to 24Mbps 1280x720x60p/59.94p/50p, encoding video bit rate from 4Mbps to 24Mbps 720x480x60i/59.94i, encoding video bit rate from 2Mbps to 10Mbps 720x576x50i, encoding video bit rate from 2Mbps to 10Mbps
Audio Processing	Audio Compression	MPEG-1 Audio Layer II
	Bitrate	256K
OS	Linux Fedora 16 (Kernel 3.4) 32bit/64bit	
Display	VGA+HDMI+DVI-D(optional)	
Memory	DDR3 1333/1066MHz (Max:16GB)	
HDD	500GB	
LAN	2 x RJ-45 with Intel® AMT 7.0 support	
USB Port	6 x USB 2.0	2 x USB 2.0
COM Port	2 x RS-232 1 x RS-422/485	
Storage	SATA 6Gb/s or SATA 3Gb/s supported	
Extension HDD Bay	3	1
Video/Audio Capture	Up to eight HDC-304E capture cards	Up to four HDC-304E capture cards
Video/Audio Source Inputs	Up to 32 channels	Up to 12 channels
Video/Audio Outputs	1 channel	1 channel
Audio	7.1 channel HD Audio kit with Realtek ALC888 supporting dual audio stream	
Chassis	4U (RACK-3600GB)	2U (RACK-2100GB)
Chassis Dimensions	435.5mm x 431mm x 176mm	576.9mm x 431.0mm x 88mm
Chassis Color	Black	
Humidity	5% to 95% no condensation	

## Ordering Information

Part No.	Description
4U Chassis	HDCS-4U04-H/HC/LF64-R10 4U full-size rackmount chassis with Intel® Xeon® E3, SPCIE-C2060, 8GB DDR3, 500GB HDD, 4 channel HDMI inputs capture card and ACE-4860AP-R11-RS(600W)/SPXE-14S-R10, Linux Fedora 64bit OS, RoHS
	HDCS-4U32-H/HC/LF64-R10 4U full-size rackmount chassis with Intel® Xeon® E3, SPCIE-C2060, 8GB DDR3, 500GB HDD, 32 channel HDMI inputs capture card and ACE-4860AP-R11-RS(600W)/SPXE-14S-R10, Linux Fedora 64bit OS, RoHS
2U Chassis	HDCS-2U04-H/HC/LF64-R10 2U full-size rackmount chassis with Intel® Xeon® E3, SPCIE-C2060, 8GB DDR3, 500GB HDD, 4 channel HDMI inputs capture card and ACE-A130B(300W)/PE-6SD-R40, Linux Fedora 64bit OS, RoHS
	HDCS-2U08-H/HC/LF64-R10 2U full-size rackmount chassis with Intel® Core™ i7-2600, PCIE-Q670, 8GB DDR3, 500GB HDD, 8 channel HDMI inputs capture card and ACE-A130B(300W)/PE-6SD-R40, Linux Fedora 64bit OS, RoHS
	HDCS-2U12-H/HC/LF64-R10 2U full-size rackmount chassis with Intel® Core™ i7-2600, PCIE-Q670, 8GB DDR3, 500GB HDD, 12 channel HDMI inputs capture card and ACE-A130B(300W)/PE-6SD-R40, Linux Fedora 64bit OS, RoHS

Please contact with our sales for

- (1) OS Selection: Linux Fedora 16 32bit and Windows® 7 64bit/32bit
- (2) Channel Amount: 4/8/12/16/20/24/28/32 CH
- (3) Other ODM/OEM requirements

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# HDCS-4U16-S HDCS-2U06-S

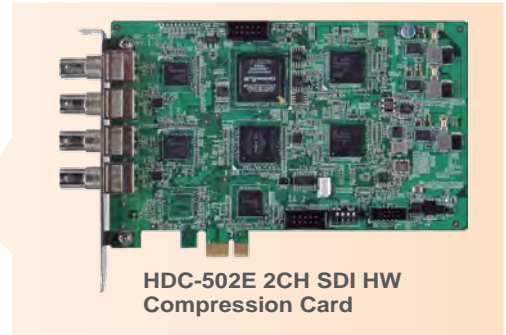
4U/2U SDI Channel H.264 Real-Time Video Server

**New**



HDCS-4U16-S Series

HDCS-2U06-S Series



HDC-502E 2CH SDI HW Compression Card



## Features

- HDMI 1080p 60fps real time video recording by hardware compression SoC
- Intel® Core™ i7 processor with 4GB/8GB 1333MHz DDR3
- Built-in 500GB HDD and one to three 5.25" expansion bay(s) for extra HDD
- Linux kernel v3.4 Fedora 16 32/64bit compatible

- Provides SDK and reference samples for second development
- Two Gigabit Ethernet ports
- Supports USB 2.0 devices
- Decoding and playback performance may depend on CPU/SoC performance
- Realtek ALC888 7.1 Channel HD Audio

## HDCS-4U16-S



3 extension HDD bays for large storage space

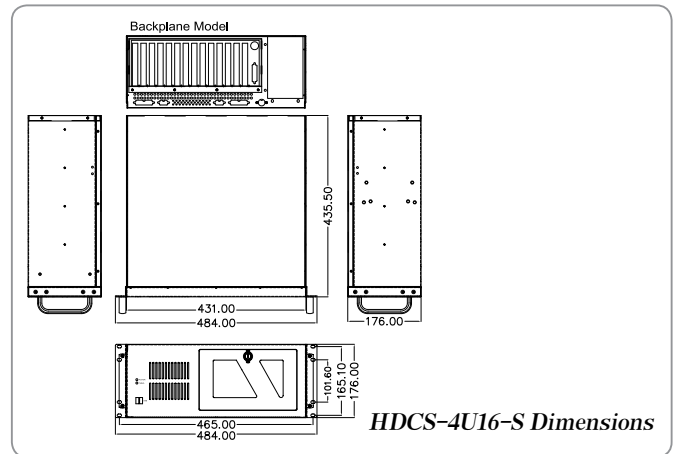


16CH SDI Inputs & 16CH SDI Loop-Output



HDC-304E x8

## Dimensions (Unit: mm)



## HDCS-2U12-H

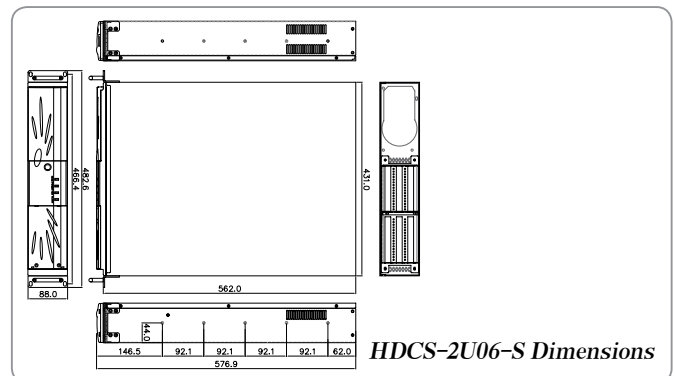


1 extension HDD bay for large storage space



HDC-502E x3

6CH SDI Inputs & 6CH SDI Loop-Output



## Introduction

The HDCS-2U/4U series is a video processing system for video/audio recording in 1080p 60fps from 6Mbps to 30Mbps bit rate. It features up to 32 channels of HDMI input supporting real-time recording in H.264/AVC High Profile Level 4.2 format, MPEG-1 Layer II standard is used for audio compression at 256kbps.

The system provides real time encoding for high-density video recording server applications. The HDCS-2U series supports up to 12 channels of 1080p 60fps video streams while the HDCS-4U series supports 32 channels of video streams.

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## Applications



### Distance Education/Instruction

- 1080p60 high quality lesson/course recording
- Live streaming for distance education



### Sport/Game Broadcasting

- 1080p60 recording fits high speed sports/games motion and activity
- Share live sports/games video with friends by streaming and broadcasting applications



### Traffic Broadcasting

- Highway/freeway traffic status monitoring
- Weather report and lane detection

## Specifications

Model Name		HDCS-4U16-S	HDCS-2U06-S
Input Channel		2/4/6/8/10/12/14/16 CH	2/4/6 CH
Platform		SPCIE-C2060-R20	PCIE-Q670-R20
Processor		LGA1155 supports Intel® Xeon® E3 processor	LGA1155 socket supports Intel® Core™ i7 processor
System Chipset		Intel® C206	Intel® Q67
Video Processing	Video Compression	H.264/AVC High Profile Level 4.2	
	Input Resolution & Frame Rate	1920x1080x60p/59.94p/50p 1920x1080x60i/59.94i/50i 1280x720x60p/59.94p/50p	720x480x60i/59.94i 720x576x50i
	Record Resolution/Frame Rate/Bit Rate	1920x1080x60p/59.94p/50p, encoding video bit rate from 6Mbps to 30Mbps 1920x1080x60i/59.94i/50i, encoding video bit rate from 6Mbps to 24Mbps 1280x720x60p/59.94p/50p, encoding video bit rate from 4Mbps to 24Mbps 720x480x60i/59.94i, encoding video bit rate from 2Mbps to 10Mbps 720x576x50i, encoding video bit rate from 2Mbps to 10Mbps	
Audio Processing	Audio Compression	MPEG-1 Audio Layer II	
	Bitrate	256K	
OS		Linux Fedora 16 (Kernel 3.4) 32bit/64bit	
Display		VGA+HDMI+DVI-D(optional)	
Memory		DDR3 1333/1066MHz (Max:16GB)	
HDD		500GB	
LAN		2 x RJ-45 with Intel® AMT 7.0 support	
USB Port		6 x USB 2.0	2 x USB 2.0
COM Port		2 x RS-232 1 x RS-422/485	
Storage		SATA 6Gb/s or SATA 3Gb/s supported	
Extension HDD Bay		3	1
Video/Audio Capture		Up to eight HDC-502E capture cards	Up to four HDC-502E capture cards
Audio		7.1 channel HD Audio kit with Realtek ALC888 supporting dual audio stream	
Chassis		4U (RACK-3600GB)	2U (RACK-2100GB)
Chassis Dimensions		435.5mm x 431mm x 176mm	576.9mm x 431.0mm x 88mm
Chassis Color		Black	
Humidity		5% to 95% no condensation	

## Ordering Information

Part No.	Description
4U Chassis	HDCS-4U02-S/HC/LF64-R10 4U full-size rackmount chassis with Intel® Xeon® E3, SPCIE-C2060, 8GB DDR3, 500GB HDD, 2 channel SDI inputs/outputs capture solution and ACE-4860AP-R11-RS(600W)/SPXE-14S-R10, Linux Fedora 64bit OS, RoHS
	HDCS-4U16-S/HC/LF64-R10 4U full-size rackmount chassis with Intel® Xeon® E3, SPCIE-C2060, 8GB DDR3, 500GB HDD, 16 channel SDI inputs/outputs capture solution and ACE-4860AP-R11-RS(600W)/SPXE-14S-R10, Linux Fedora 64bit OS, RoHS
2U Chassis	HDCS-2U02-S/HC/LF64-R10 2U full-size rackmount chassis with Intel® Core™ i7-2600, PCIE-Q670, 8GB DDR3, 500GB HDD, 2 channel SDI inputs capture card and ACE-A130B(300W)/PE-6SD-R40, Linux Fedora 64bit OS, RoHS
	HDCS-2U04-S/HC/LF64-R10 2U full-size rackmount chassis with Intel® Core™ i7-2600, PCIE-Q670, 8GB DDR3, 500GB HDD, 4 channel SDI inputs capture card and ACE-A130B(300W)/PE-6SD-R40, Linux Fedora 64bit OS, RoHS
	HDCS-2U06-S/HC/LF64-R10 2U full-size rackmount chassis with Intel® Core™ i7-2600, PCIE-Q670, 8GB DDR3, 500GB HDD, 6 channel HDMI inputs capture card and ACE-A130B(300W)/PE-6SD-R40, Linux Fedora 64bit OS, RoHS

Please contact with our sales for

- (1) OS Selection: Linux Fedora 16 32bit and Windows® 7 64bit/32bit
- (2) Channel Amount: 2/4/6/8/10/12/14/16 CH
- (3) Other ODM/OEM requirements

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Panel Solutions Introduction

# HDCS-7003

Fanless Embedded System SDI 1080p Full HD Video Capture Solution

**New**



## Features

- 2nd Gen Intel® Core™ i7 with on-board 2GB DDR3 memory and one DDR3 SO-DIMM slot (system max. 8GB)
- Dual combo (10/100/1000 baseT(X) or 1000 baseSFP slot) Gigabit LAN ports, supporting Intel® AMT 7.0
- Supports two USB 3.0 ports, four USB 2.0 ports, one SATA 6GB/s port, one CAN-bus port and eight COM ports (four with isolation)
- Supports maximum 3-channel SDI 1080p real time video capture
- Supports Linux Fedora 16 (v3.4) 32-bit/64-bit V4L2
- Supports Windows® 7 64-bit/32-bit for Microsoft WDM driver
- Provides SDK compatible with Microsoft DirectShow and reference sample code for second development

## Introduction

The HDCS-7003 series is a high performance fanless embedded system for video processing and video/audio analyzing with full HD video format. The HDCS-7003 series supports one to three channels of Serial Digital Interface (SDI) video and audio inputs. The SDI interface is currently available and popular in professional video equipments and devices to provide precise and high quality video. The HDCS-7003 series is capable to perform 30fps in each channel with full HD 1080p video format. The target markets of the HDCS-7003 series focus on medical imaging devices, studio HD storage and automatic inspection machines. The software development kit (SDK) makes the HDCS-7003 series an ideal solution for system integrators to facilitate project and product implementation and fulfill a variety of applications and requirements.

## Applications



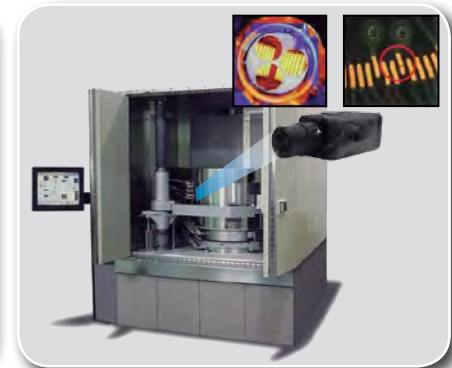
### Endoscopy Surgery

Endoscopy typically refers to looking inside the body for medical reasons using an endoscope through video capture devices which require clear and detailed image for precise operations.



### Ultrasound Scanner

Ultrasound procedures are done using a transducer on the surface of the body, and the reflection could construct image/video data for diagnosis.



### Automatic Optical Inspection

Automated optical inspection (AOI) is an automated visual inspection of a wide range of products. AOI systems are always implemented at image processing through video capture devices. Each industry is different in how image acquisition signals are transferred to the camera.

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## Specifications

Model Name	HDCS-7003-R10 Series	HDCS-7002-R10 Series	HDCS-7001-R10 Series
Platform	TANK-700-QM67/2G-R10		
Processor	Socket G2 supports Intel® Core™ i7 processor		
System Chipset	Intel® QM67		
OS	Windows® 7 64-bit (W764) Windows® 7 32-bit (W732) Linux Fedora OS 64-bit (LF64) Linux Fedora OS 32-bit (LF32)		
Display	VGA+HDMI		
Memory	On-board 2GB memory One 204-pin 1333/1066 MHz DDR3 dual-channel SDRAM SO-DIMM slot (system max. 4GB)		
LAN	2 x RJ-45 (one with Intel® AMT 7.0 support)		
Wireless	Optional		
USB Port	4 x USB 2.0 port on the rear panel 2 x USB 3.0 port on the front panel		
COM Port	4 x RS-232 port by DB-9 connector on the rear panel 2 x RS-232 port by RJ-45 connector on the front panel 2 x RS-232/422/485 port with isolation by RJ-45 connector on the front panel		
CAN Bus	1 x Phoenix terminal block on the front panel		
Storage	Built-in 500GB 2.5" SATA 6Gb/s		
Video/Audio Capture	Three SDI video capture cards pre-installed	Two SDI video capture cards pre-installed	One SDI video capture card pre-installed
Audio	Audio jacks (line-out/mic-in) on the rear panel		
Expansions	1 x SO-DIMM slot		
Indicators	Indicators are located on the front panel, including: AT/ATX mode indicator HDD status indicator CPU over-heat warning indicator Power One: 9V-28V DC terminal block input indicator Power Two: 9V-28V DC adapter input indicator		
Antenna Connectors	Two on the front panel One on the rear panel		
Switches	AT/ATX, ACC Mode1 and ACC Mode2 switches on the rear panel		
Chassis Construction	Extruded Aluminum Alloy for fanless support Heavy duty steel sheet		
Chassis Dimensions	310mm x 200mm x 62mm		
Chassis Color	Silver black		
Operating Shock	Half-Sine Shock Test 5G/11ms, 3 shocks per axis		
Operating Vibration	MIL-STD-810F 514.5 C-2		
Humidity	5% to 95%, no condensation		

## Ordering Information

Part Number	Description
<b>HDCS-7003-R10</b>	Fanless embedded system, Intel® QM67 chipset, 2nd Generation Intel® Core™ i7 processor, 2GB DDR3 on-board memory, 2.5" 500GB HDD, 3 built-in SDI high-definition capture solution
<b>Windows® 7 64-bit</b>	<b>HDCS-7003-S/SC/W764-R10</b>
<b>Linux Fedora 64-bit</b>	<b>HDCS-7003-S/SC/LF64-R10</b>
	Fanless embedded system, Intel® QM67 chipset, 2nd Generation Intel® Core™ i7 processor, 2GB DDR3 on-board memory, 2.5" 500GB HDD, 3 built-in high-definition capture cards, Windows® 7 64-bit
	Fanless embedded system, Intel® QM67 chipset, 2nd Generation Intel® Core™ i7 processor, 2GB DDR3 on-board memory, 2.5" 500GB HDD, 3 built-in high-definition capture cards, Linux Fedora 64-bit

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# IVCS-7008 Fanless Embedded System Multi-Channel NTSC/PAL D1 Video Capture Solution

**New**



## Features

- 2nd Gen Intel® Core™ i7 with on-board 2GB DDR3 memory and one DDR3 SO-DIMM slot (system max. 8GB)
- Dual combo (10/100/1000 baseT(X) or 1000 baseSFP slot) Gigabit LAN ports, supporting Intel® AMT 7.0
- Supports two USB 3.0 ports, four USB 2.0 ports, one SATA 6GB/s port, one CAN-bus port and eight COM ports (four with isolation)
- Supports maximum 8-channel NTSC/PAL D1 real time video monitoring
- Supports Windows® 7 and Linux Fedora 64-bit/32-bit
- Provides C++ SDK compatible with Microsoft DirectShow and reference sample code for second development

## Introduction

The IVCS-7008 series is a high performance fanless embedded system for multi-channel video processing and video/audio monitoring. The IVCS-7008 series is capable to perform 30fps/25fps in each channel with NTSC/PAL D1 video and audio format. Based on real-time video capturing and high performance hardware design, the IVCS-7008 series is suitable to be the central management system (CMS) for intelligent video monitoring and transportation surveillance system. All purposes in vehicle system, parking lot management server, banking security and building surveillance can be achieved through the IVCS-7008 series. With software development kit (SDK), the IVCS-7008 series is an ideal solution for system integrators to facilitate project and product implementation and fulfill a variety of applications and requirements.

## Applications



### Bank Surveillance

- Multi-channel monitoring and analyzing
- SDK for developing intelligent systems
- Regional detection and face recognition
- Human behavior analysis and detection



### Parking Lot Surveillance

- Surround multi-channel monitoring
- SDK for analytic transportation system
- Plate recognition and suspect tracking
- Parking and payment system



### Transportation System

- Multi-channel inside/outside monitoring
- Lane change detection and vehicle
- Pedestrian and object detection
- People counter and face recognition

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## Specifications

Model Name	IVCS-7008-R10	IVCS-7004-R10
Platform	TANK-700-QM67/2G-R10	
Processor	Socket G2 supports Intel® Core™ i7 processor	
System Chipset	Intel® QM67	
OS	Windows® 7 64-bit (W764) Windows® 7 32-bit (W732) Linux Fedora OS 64-bit (LF64) Linux Fedora OS 32-bit (LF32)	
Display	VGA+HDMI	
Memory	On-board 2GB memory One 204-pin 1333/1066 MHz DDR3 dual-channel SDRAM SO-DIMM slot (system max. 4GB)	
LAN	2 x RJ-45 (one with Intel® AMT 7.0 support)	
Wireless	Optional	
USB Port	4 x USB 2.0 port on the rear panel 2 x USB 3.0 port on the front panel	
COM Port	4 x RS-232 port by DB-9 connector on the rear panel 2 x RS-232 port by RJ-45 connector on the front panel 2 x RS-232/422/485 port with isolation by RJ-45 connector on the front panel	
CAN Bus	1 x Phoenix terminal block on the front panel	
Storage	Built-in 500GB 2.5" SATA 6Gb/s	
Video/Audio Capture	Two IVCME-C604-R10 capture cards pre-installed Eight analog video input via BNC connectors on the front panel	One IVCME-C604-R10 capture card pre-installed Four analog video input via BNC connectors on the front panel
Audio	Audio jacks (line-out/mic-in) on the rear panel	
Expansions	1 x PCIe Mini slot 1 x SO-DIMM slot	2 x PCIe Mini slot 1 x SO-DIMM slot
Indicators	Indicators are located on the front panel, including: AT/ATX mode indicator HDD status indicator CPU over-heat warning indicator Power one: 9V~28V DC terminal block input indicator Power two: 9V~28V DC adapter input indicator	
Antenna Connectors	Two on the front panel One on the rear panel	
Switches	AT/ATX, ACC Mode1 and ACC Mode2 switches on the rear panel	
Chassis Construction	Extruded aluminum alloy for fanless support Heavy duty steel sheet	
Chassis Dimensions	310mm x 200mm x 62mm	
Chassis Color	Sliver black	
Operating Shock	Half-Sine Shock Test 5G/11ms, 3 shocks per axis	
Operating Vibration	MIL-STD-810F 514.5 C-2	
Humidity	5% to 95%, no condensation	

## Ordering Information

Part Number	Description
IVCS-7008-R10	Fanless embedded system, Intel® QM67 chipset, 2nd Generation Intel® Core™ i7 processor, 2GB DDR3 on-board memory, 2.5" 500GB HDD, built-in 8-channel NTSC/PAL capture solution
Windows® 7 64-bit	IVCS-7008-B/SC/W764-R10 Fanless embedded system, Intel® QM67 chipset, 2nd Generation Intel® Core™ i7 processor, 2GB DDR3 on-board memory, 2.5" 500GB HDD, built-in 8-channel NTSC/PAL capture solution, Windows® 7 64-bit
Linux Fedora 64-bit	IVCS-7008-B/SC/LF64-R10 Fanless embedded system, Intel® QM67 chipset, 2nd Generation Intel® Core™ i7 processor, 2GB DDR3 on-board memory, 2.5" 500GB HDD, built-in 8-channel NTSC/PAL capture solution, Linux Fedora 64-bit

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# High-Definition Hardware Compression Capture Card Selection Guide



Model Name	HDC-304E	HDC-302E	HDC-301E	HDC-301
Form Factor	PCIe	PCIe	PCIe	PCI
<b>◆ Interface</b>				
Video Input	4 channels	2 channels	1 channel	1 channel
Video Input Type	HDMI	HDMI	HDMI	HDMI
Audio Input	4 channels	2 channels	1 channel	1 channel
Audio Input Type	HDMI	HDMI	HDMI	HDMI
Video Output	1 channel	2 channels	1 channel	1 channel
Video Output Type	HDMI output cable kit	HDMI	HDMI	HDMI
Audio Output	1 channel	2 channels	1 channel	1 channel
Audio Output Type	HDMI output cable kit	HDMI	HDMI	HDMI
Bus Interface	PCIe x1	PCIe x1	PCIe x1	PCI
Loop Through	1 channel	2 channels	1 channel	1 channel
<b>◆ Video Processing</b>				
Video Compression	H.264/AVC High Profile Level 4.2			
Input Resolution & Frame Rate	1920 x 1080 x 60p / 59.94p / 50p 1920 x 1080 x 60i / 59.94i / 50i 1280 x 720 x 60p / 59.94p / 50p 720 x 480 x 60i / 59.94i 720 x 576 x 50i			
Record Resolution / Frame Rate / Bit Rate	1920 x 1080 x 60p / 59.94p / 50p, encoding video bit rate from 6Mbps to 20Mbps 1920 x 1080 x 60i / 59.94i / 50i, encoding video bit rate from 6Mbps to 20Mbps 1280 x 720 x 60p / 59.94p / 50p, encoding video bit rate from 4Mbps to 20Mbps 720 x 480 x 60i / 59.94i, encoding video bit rate from 2Mbps to 10Mbps 720 x 576 x 50i, encoding video bit rate from 2Mbps to 10Mbps			
<b>◆ Audio Processing</b>				
Audio Compression	MPEG-1 Audio Layer 2			
Bit Rate	256k			
<b>◆ Functionality</b>				
Multiple Card Support	Yes	Yes	No	No
HDCP Compliant	Yes	Yes	Yes	Yes
<b>◆ System Requirement</b>				
System	x86 PC compatible computer, Intel® Pentium® 4 2.0GHz or above for video recording Recommends using a DXVA or CUDA capable graphics card for real-time video playback			
Memory	1GB or more			
OS Environment	Windows®: Microsoft® Windows® XP Service Pack 2 (SP2) (32-bit version) Microsoft® DirectX 9.0c (32-bit) Microsoft® .NET Framework 2.0 (32-bit version) Linux: Fedora 16 (Kernel 3.1)			
<b>◆ Software Support</b>				
Device Driver	Compatible with Windows® XP, Windows® 7, Linux Kernel 3.1			
SDK	Windows®: Provides SDK and demo program with sample source code in C# Linux: Provides SDK and driver/demo program with sample source code in C			
<b>◆ Others</b>				
Dimensions	230 mm x 116 mm	155 mm x 98.6 mm	168 mm x 69 mm	168 mm x 64 mm
Operating Temperature	0°C ~ 65°C, non-condensing			
Power Consumption	12.7W (12V@0.61A, 3.3V@1.63A)	9.53W (12V@0.46A, 3.3V@1.21A)	6.07 W (12V@0.3A, 3.3V@0.72A)	5.29W (5V@0.73A, 3.3V@0.49A)

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# High-Definition Hardware Compression Capture Card Selection Guide



**New**



Model Name	HDC-401E	HDC-401	HDC-502E
Form Factor	PCIe	PCI	PCIe
<b>◆ Interface</b>			
Video Input	1 channel	1 channel	2 channels
Video Input Type	DVI-I	DVI-I	SDI
Audio Input	N/A	N/A	2 channels
Audio Input Type	N/A	N/A	SDI
Video Output	1 channel	1 channel	N/A
Video Output Type	DVI-I	DVI-I	N/A
Audio Output	N/A	N/A	N/A
Audio Output Type	N/A	N/A	N/A
Bus Interface	PCIe x1	PCI	PCIe x1
Loop Through	1 channel	1 channel	2 channels
<b>◆ Video Processing</b>			
Video Compression	H.264/AVC High Profile Level 4.2		
Input Resolution & Frame Rate	1920 x 1080 x 60p / 59.94p / 50p 1920 x 1080 x 60i / 59.94i / 50i 1280 x 720 x 60p / 59.94p / 50p 720 x 480 x 60i / 59.94i 720 x 576 x 50i		
Record Resolution / Frame Rate / Bit Rate	1920 x 1080 x 60p / 59.94p / 50p, encoding video bit rate from 6Mbps to 20Mbps 1920 x 1080 x 60i / 59.94i / 50i, encoding video bit rate from 6Mbps to 20Mbps 1280 x 720 x 60p / 59.94p / 50p, encoding video bit rate from 4Mbps to 20Mbps 720 x 480 x 60i / 59.94i, encoding video bit rate from 2Mbps to 10Mbps 720 x 576 x 50i, encoding video bit rate from 2Mbps to 10Mbps		
<b>◆ Audio Processing</b>			
Audio Compression	N/A	N/A	MPEG-1 Audio Layer 2
Bit Rate	N/A	N/A	256k
<b>◆ Functionality</b>			
Multiple Card Support	No	No	Yes
HDCP Compliant	No	No	No
<b>◆ System Requirement</b>			
System	x86 PC compatible computer, Intel® Pentium® 4 2.0GHz or above for video recording Recommends using a DXVA or CUDA capable graphics card for real-time video playback		
Memory	1GB or more		
OS Environment	Windows®: Microsoft® Windows® XP Service Pack 2 (SP2) (32-bit version) Microsoft® DirectX 9.0c (32-bit) Microsoft® .NET Framework 2.0 (32-bit version) Linux: Fedora 16 (Kernel 3.1)		
<b>◆ Software Support</b>			
Device Driver	Compatible with Windows® XP, Windows® 7, Linux Kernel 3.1		
SDK	Windows®: Provides SDK and demo program with sample source code in C# Linux: Provides SDK and driver/demo program with sample source code in C		
<b>◆ Others</b>			
Dimensions	155 mm x 111 mm	106.7 mm x 167.6 mm	188 mm x 125 mm
Operating Temperature	0°C-65°C, non-condensing		
Power Consumption	7.1W (12V@0.34A, 3.3V@0.89A)	6.32W (5V@0.83A, 3.3V@0.65A)	14.2W (12V@0.76A, 3.3V@1.52A)

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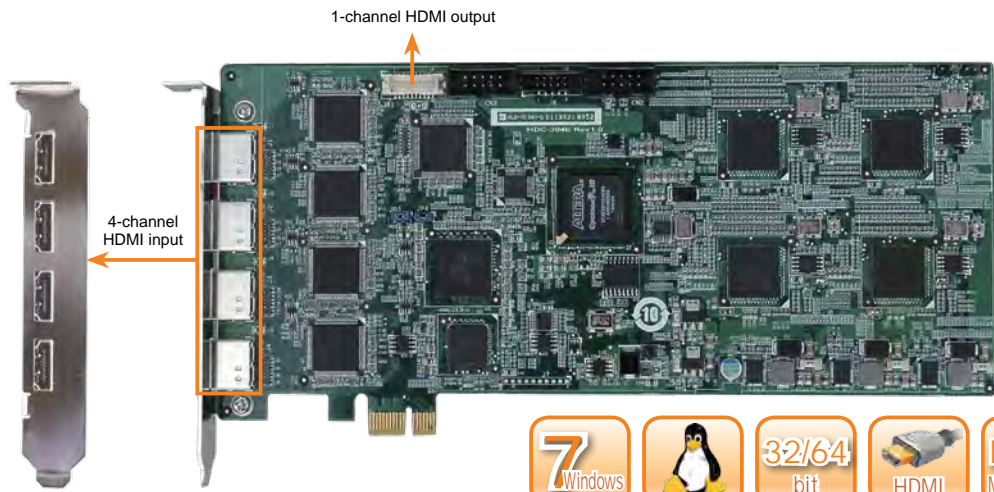
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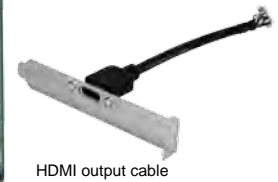
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# HDC-304E

PCI Express video/audio capture card with four HDMI input channels and one HDMI output channel, 1920x1080@60p, and H.264 hardware codec



H.264 Hardware Codec



HDMI output cable



## Features

- Compatible with Windows® XP, Windows® 7 and Linux
- Equipped with four HDMI input ports
- Encoding or decoding up to 1080p HD video
- Pass through for transmitting uncompressed video up to 1080p resolution
- Reduces the amount of hard disk space needed by real-time H.264 recording compression capability
- Enables the system to support up to 8-channel input by adding multiple video capture cards
- SDK available for customer to create customized applications
- PCI Express interface provides higher bandwidth and great performance

## Specifications

### Interface

Video Input	4 channels
Video Input type	HDMI
Audio Input	4 channels
Audio Input Type	HDMI
Video Output	1 channel
Video Output Type	HDMI output cable kit
Audio Output	1 channel
Audio Output Type	HDMI output cable kit
Bus Interface	PCIe x1
Loop Through	1 channel

### Video Processing

Video Compression	H.264/AVC High Profile Level 4.2
Input Resolution & Frame Rate	1920 x 1080 x 60p / 59.94p / 50p    720 x 480 x 60i / 59.94i 1920 x 1080 x 60i / 59.94i / 50i    720 x 576 x 50i 1280 x 720 x 60p / 59.94p / 50p
Record Resolution / Frame Rate / Bit Rate	1920 x 1080 x 60p / 59.94p / 50p, encoding video bit rate from 6Mbps to 20Mbps 1920 x 1080 x 60i / 59.94i / 50i, encoding video bit rate from 6Mbps to 20Mbps 1280 x 720 x 60p / 59.94p / 50p, encoding video bit rate from 4Mbps to 20Mbps 720 x 480 x 60i / 59.94i, encoding video bit rate from 2Mbps to 10Mbps 720 x 576 x 50i, encoding video bit rate from 2Mbps to 10Mbps

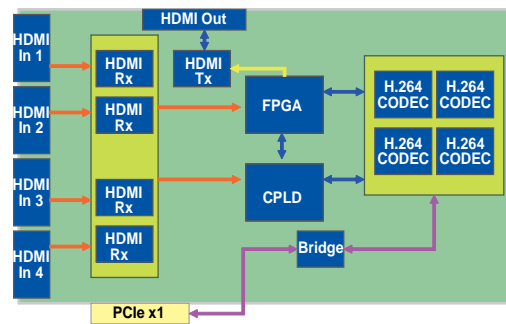
### Audio Processing

Audio Compression	MPEG-1 Audio Layer 2
Bit Rate	256k

## Packing List

1 x HDC-304E capture card	
1 x HDMI output kit	
1 x Utility CD	1 x QIG

## System Block



### Functionality

Multiple Card Support	2 cards, 8 channels
HDCP Compliant	Yes

### System Requirement

System	x86 PC compatible computer, Intel® Pentium® 4 2.0GHz or above for video record Recommends using a DXVA or CUDA capable graphics card for real-time video playback
Memory	1GB or more
OS Environment	Microsoft® Windows® XP Service Pack 2 (SP2) (32-bit version) Microsoft® DirectX 9.0c (32-bit) Microsoft® .NET Framework 2.0 (32-bit version) Linux: Fedora 16 (Kernel 3.1)

### Software Support

Device Driver	Compatible with Windows® XP, Windows® 7, Linux Kernel 3.1
SDK	Windows®: Provides SDK and demo program with sample source code in C# Linux: Provides SDK and driver/demo program with sample source code in C

### Others

Dimensions	230 mm x 116 mm
Operating Temperature	0°C ~ 65°C, non-condensing
Power Consumption	12.7W (12V@0.61A, 3.3V@1.63A)

## Ordering Information

Part No.	Description
HDC-304E-R10	PCI Express video/audio capture card with four HDMI input channels, 1920x1080@60p, and H.264 hardware codec

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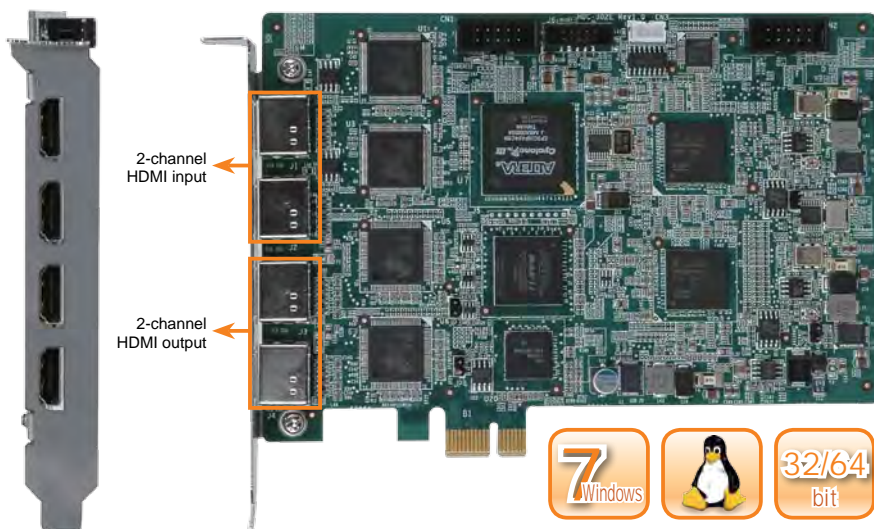
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# HDC-302E

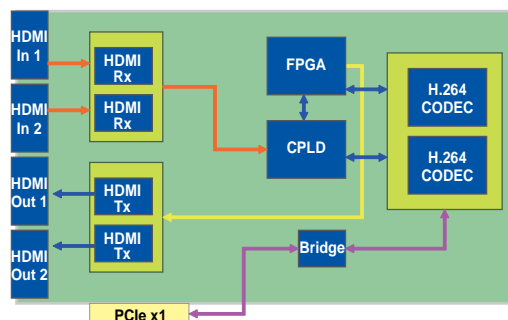
PCI Express video/audio capture card with two HDMI input channels and two HDMI output channels, 1920x1080@60p, and H.264 Hardware Codec



H.264 Hardware Codec



## System Block



## Features

- Compatible with Windows® XP, Windows® 7 and Linux
- Equipped with two HDMI input ports
- Encoding or decoding up to 1080p HD video
- Pass through for transmitting uncompressed video up to 1080p resolution
- Captures or records HD video in H.264 format
- Playbacks the recordings on HDMI display
- SDK available for customer to create customized applications

## Specifications

### ◆ Interface

Video Input	2 channels
Video Input Type	HDMI
Audio Input	2 channels
Audio Input Type	HDMI
Video Output	2 channels
Video Output Type	HDMI
Audio Output	2 channels
Audio Output Type	HDMI
Bus Interface	PCIe x1
Loop Through	2 channels

### ◆ Video Processing

Video Compression	H.264/AVC High Profile Level 4.2	
Input Resolution & Frame Rate	1920 x 1080 x 60p / 59.94p / 50p	720 x 480 x 60i / 59.94i
	1920 x 1080 x 60i / 59.94i / 50i	720 x 576 x 50i
	1280 x 720 x 60p / 59.94p / 50p	
Record Resolution / Frame Rate / Bit Rate	1920 x 1080 x 60p / 59.94p / 50p, encoding video bit rate from 6Mbps to 20Mbps	
	1920 x 1080 x 60i / 59.94i / 50i, encoding video bit rate from 6Mbps to 20Mbps	
	1280 x 720 x 60p / 59.94p / 50p, encoding video bit rate from 4Mbps to 20Mbps	
	720 x 480 x 60i / 59.94i, encoding video bit rate from 2Mbps to 10Mbps	
	720 x 576 x 50i, encoding video bit rate from 2Mbps to 10Mbps	

### ◆ Audio Processing

Audio Compression	MPEG-1 Audio Layer 2
Bit Rate	256k

### ◆ Functionality

Multiple Card Support	4 cards, 8 channels
HDCP Compliant	Yes

### ◆ System Requirement

System	x86 PC compatible computer, Intel® Pentium® 4 2.0GHz or above for video record Recommends using a DXVA or CUDA capable graphics card for real-time video playback
Memory	1GB or more
OS Environment	Microsoft® Windows® XP Service Pack 2 (SP2) (32-bit version) Microsoft® DirectX 9.0c (32-bit) Microsoft® .NET Framework 2.0 (32-bit version) Linux: Fedora 16 (Kernel 3.1)

### ◆ Software Support

Device Driver	Compatible with Windows® XP, Windows® 7, Linux Kernel 3.1
SDK	Windows®: Provides SDK and demo program with sample source code in C# Linux: Provides SDK and driver/demo program with sample source code in C

### ◆ Others

Dimensions	155 mm x 98.6 mm
Operating Temperature	0°C ~ 65°C, non-condensing
Power Consumption	9.53W (12V@0.46A, 3.3V@1.21A)

## Packing List

1 x HDC-302E
1 x Utility CD
1 x QIG

## Ordering Information

Part No.	Description
HDC-302E-R10	PCI Express video/audio capture card with two HDMI input channels and two HDMI output channels, 1920x1080@60p, and H.264 Hardware Codec

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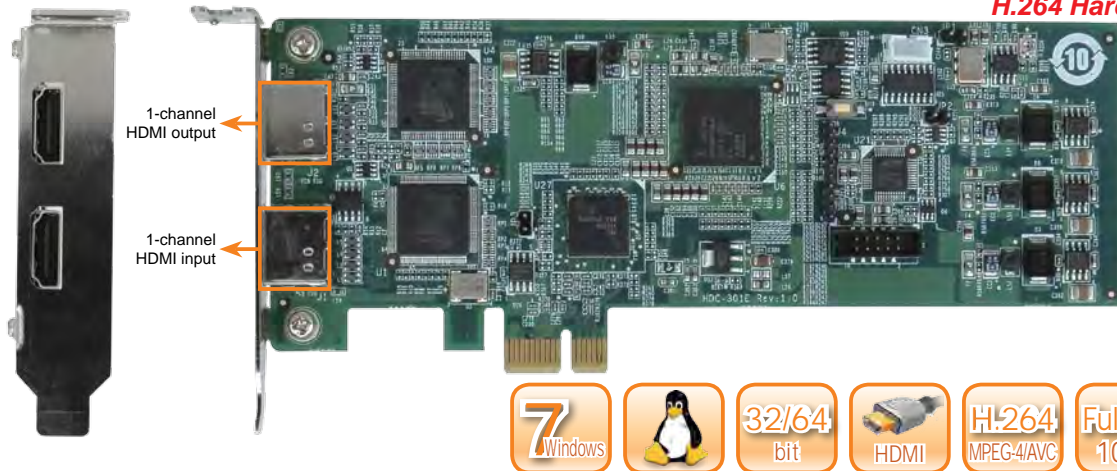
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# HDC-301E

PCI Express video/audio capture card with one HDMI input channel and one HDMI output channel, 1920x1080@60p, and H.264 Hardware Codec



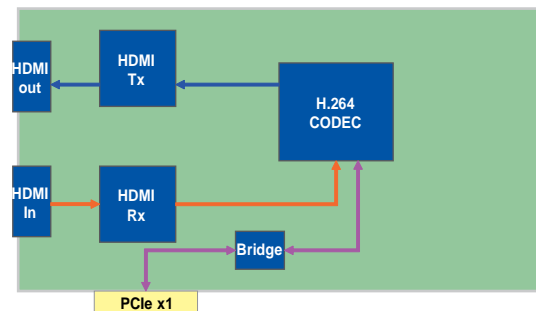
H.264 Hardware Codec



## Features

- Compatible with Windows® XP, Windows® 7 and Linux
- Equipped with one HDMI input port
- Encoding or decoding up to 1080p HD video
- Pass through for transmitting uncompressed video up to 1080p resolution
- Captures or records HD video in H.264 format
- Playbacks the recordings on HDMI display
- SDK available for customer to create customized applications

## System Block



## Specifications

### Interface

Video Input	1 channel
Video Input type	HDMI
Audio Input	1 channel
Audio Input Type	HDMI
Video Output	1 channel
Video Output Type	HDMI
Audio Output	1 channel
Audio Output Type	HDMI
Bus Interface	PCIe x1
Loop Through	1 channel

### Video Processing

Video Compression	H.264/AVC High Profile Level 4.2	
Input Resolution & Frame Rate	1920 x 1080 x 60p / 59.94p / 50p 1920 x 1080 x 60i / 59.94i / 50i 1280 x 720 x 60p / 59.94p / 50p	720 x 480 x 60i / 59.94i 720 x 576 x 50i
Record Resolution / Frame Rate / Bit Rate	1920 x 1080 x 60p / 59.94p / 50p, encoding video bit rate from 6Mbps to 20Mbps 1920 x 1080 x 60i / 59.94i / 50i, encoding video bit rate from 6Mbps to 20Mbps 1280 x 720 x 60p / 59.94p / 50p, encoding video bit rate from 4Mbps to 20Mbps 720 x 480 x 60i / 59.94i, encoding video bit rate from 2Mbps to 10Mbps 720 x 576 x 50i, encoding video bit rate from 2Mbps to 10Mbps	

### Audio Processing

Audio Compression	MPEG-1 Audio Layer 2
Bit Rate	256k

## Packing List

1 x HDC-301E	
1 x Full size bracket	
1 x Utility CD	1 x QIG

### Functionality

Multiple Card Support	No
HDCP Compliant	Yes

### System Requirement

System	x86 PC compatible computer, Intel® Pentium® 4 2.0GHz or above for video record Recommends using a DXVA or CUDA capable graphics card for real-time video playback
Memory	1GB or more
OS Environment	Microsoft® Windows® XP Service Pack 2 (SP2) (32-bit version) Microsoft® DirectX 9.0c (32-bit) Microsoft® .NET Framework 2.0 (32-bit version) Linux: Fedora 16 (Kernel 3.1)

### Software Support

Device Driver	Compatible with Windows® XP, Windows® 7, Linux Kernel 3.1
SDK	Windows®: Provides SDK and demo program with sample source code in C# Linux: Provides SDK and driver/demo program with sample source code in C

### Others

Dimensions	168 mm x 69 mm
Operating Temperature	0°C ~ 65°C, non-condensing
Power Consumption	6.07 W (12V@0.3A, 3.3V@0.72A)

## Ordering Information

Part No.	Description
HDC-301E-R10	PCI Express video/audio capture card with one HDMI input channel and one HDMI output channel, 1920x1080@60p, and H.264 Hardware Codec

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# HDC-301

PCI video/audio capture card with one HDMI input channel and one HDMI output, 1920x1080@60p, and H.264 Hardware Codec



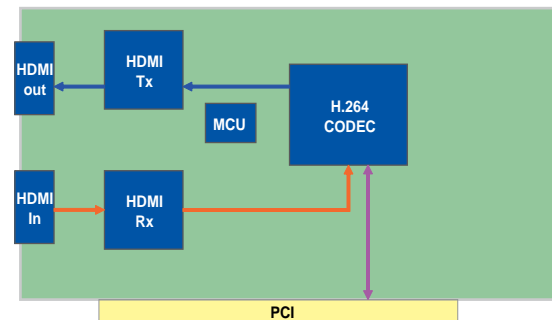
H.264 Hardware Codec



## Features

- Compatible with Windows® XP, Windows® 7 and Linux
- Equipped with one HDMI input port
- Encoding or decoding up to 1080p HD video
- Pass through for transmitting uncompressed video up to 1080p resolution
- Captures or records HD video in H.264 format
- Reduce the amount of hard disk space needed by real-time H.264 recording compression capability
- SDK available for customer to create customized applications

## System Block



## Specifications

### ◆ Interface

Video Input	1 channel
Video Input Type	HDMI
Audio Input	1 channel
Audio Input Type	HDMI
Video Output	1 channel
Video Output Type	HDMI
Audio Output	1 channel
Audio Output Type	HDMI
Bus Interface	PCI
Loop Through	1 channel

### ◆ Video Processing

Video Compression	H.264/AVC High Profile Level 4.2
Input Resolution & Frame Rate	1920 x 1080 x 60p / 59.94p / 50p    720 x 480 x 60i / 59.94i 1920 x 1080 x 60i / 59.94i / 50i    720 x 576 x 50i 1280 x 720 x 60p / 59.94p / 50p
Record Resolution / Frame Rate / Bit Rate	1920 x 1080 x 60p / 59.94p / 50p, encoding video bit rate from 6Mbps to 20Mbps 1920 x 1080 x 60i / 59.94i / 50i, encoding video bit rate from 6Mbps to 20Mbps 1280 x 720 x 60p / 59.94p / 50p, encoding video bit rate from 4Mbps to 20Mbps 720 x 480 x 60i / 59.94i, encoding video bit rate from 2Mbps to 10Mbps 720 x 576 x 50i, encoding video bit rate from 2Mbps to 10Mbps

### ◆ Audio Processing

Audio Compression	MPEG-1 Audio Layer 2
Bit Rate	256k

## Packing List

1 x HDC-301 capture card	
1 x Full size bracket	
1 x Utility CD	1 x QIG

### ◆ Functionality

Multiple Card Support	No
HDCP Compliant	Yes

### ◆ System Requirement

System	x86 PC compatible computer, Intel® Pentium® 4 2.0GHz or above for video record Recommends using a DXVA or CUDA capable graphics card for real-time video playback
Memory	1GB or more
OS Environment	Microsoft® Windows® XP Service Pack 2 (SP2) (32-bit version) Microsoft® DirectX 9.0c (32-bit) Microsoft® .NET Framework 2.0 (32-bit version) Linux: Fedora 16 (Kernel 3.1)

### ◆ Software Support

Device Driver	Compatible with Windows® XP, Windows® 7, Linux Kernel 3.1
SDK	Windows®: Provides SDK and demo program with sample source code in C# Linux: Provides SDK and driver/demo program with sample source code in C

### ◆ Others

Dimensions	168 mm x 64 mm
Operating Temperature	0°C ~ 65°C, non-condensing
Power Consumption	5.29W (5V@0.73A, 3.3V@0.49A)

## Ordering Information

Part No.	Description
HDC-301-R10	PCI video/audio capture card with one HDMI input channel and one HDMI output, 1920x1080@60p, and H.264 Hardware Codec

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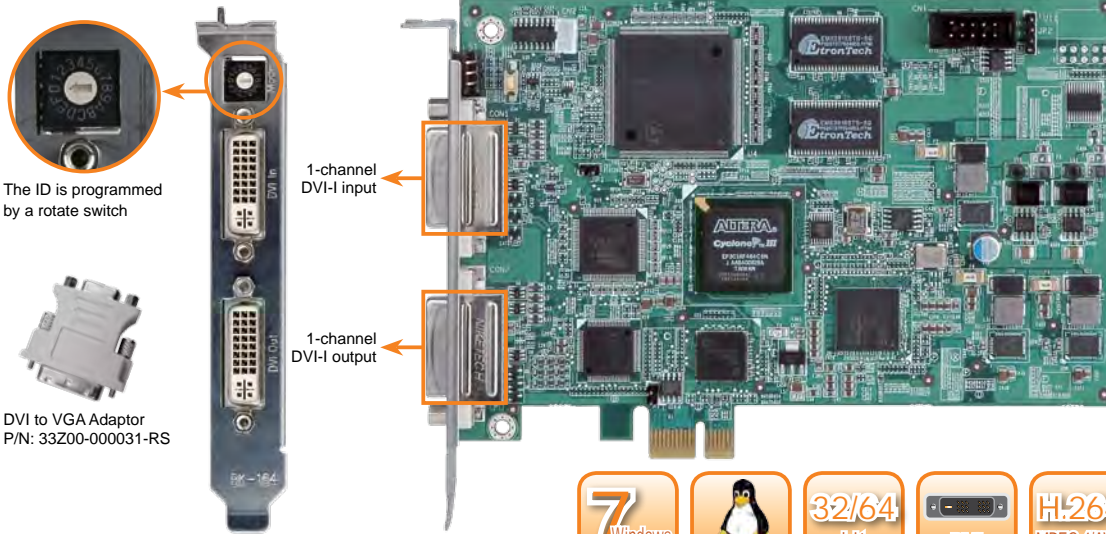
6 Panel Solutions Introduction

# HDC-401E

PCI Express video capture card with one DVI-I input channel and one DVI-I output channel, 1920x1080@60p, and H.264 Hardware Codec



H.264 Hardware Codec



The ID is programmed by a rotate switch

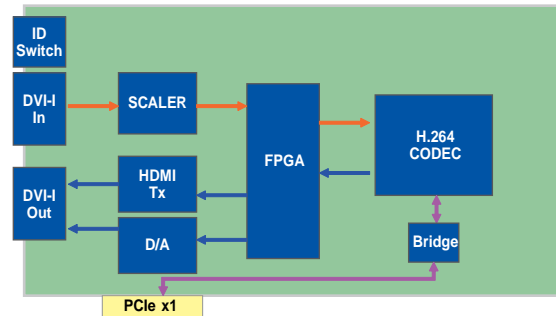
DVI to VGA Adaptor  
P/N: 33Z00-000031-RS



## Features

- Compatible with Windows® XP, Windows® 7 and Linux
- Equipped with one DVI-I input port
- Encoding or decoding up to 1080p HD video
- Pass through for transmitting uncompressed video up to 1080p resolution
- Captures or records HD video in H.264 format
- Playbacks the recordings on DVI-I display
- SDK available for customer to create customized applications

## System Block



## Specifications

### ◆ Interface

Video Input	1 channel
Video Input Type	DVI-I (DVI/VGA)
Video Output	1 channel
Video Output Type	DVI-I (DVI/VGA)
Bus Interface	PCIe x1
Loop Through	1 channel

### ◆ Video Processing

Video Compression	H.264/AVC High Profile Level 4.2
Input Resolution & Frame Rate	Supports VESA video input up to 1920 x 1080 x 60p
Record Resolution / Frame Rate / Bit Rate	1920 x 1080 x 60p, encoding video bit rate from 6Mbps to 20Mbps 1280 x 720 x 60p, encoding video bit rate from 4Mbps to 20Mbps

### ◆ Functionality

Multiple Card Support	No
HDCP Compliant	No

### ◆ System Requirement

System	x86 PC compatible computer, Intel® Pentium® 4 2.0GHz or above for video record Recommends using a DXVA or CUDA capable graphics card for real-time video playback
Memory	1GB or more
OS Environment	Microsoft® Windows® XP Service Pack 2 (SP2) (32-bit version) Microsoft® DirectX 9.0c (32-bit) Microsoft® .NET Framework 2.0 (32-bit version) Linux: Fedora 16 (Kernel 3.1)

### ◆ Software Support

Device Driver	Compatible with Windows® XP, Windows® 7, Linux Kernel 3.1
SDK	Windows®: Provides SDK and demo program with sample source code in C# Linux: Provides SDK and driver/demo program with sample source code in C

### ◆ Others

Dimensions	155 mm x 111 mm
Operating Temperature	0°C ~ 65°C, non-condensing
Power Consumption	7.1W (12V@0.34A, 3.3V@0.89A)

## Packing List

- 1 x HDC-401E capture card
- 1 x Utility CD
- 1 x QIG

## Ordering Information

Part No.	Description
HDC-401E-R10	PCI Express video capture card with one DVI-I input channel and one DVI-I output channel, 1920x1080@60p, and H.264 Hardware Codec
33Z00-000031-RS	DVI to VGA adaptor

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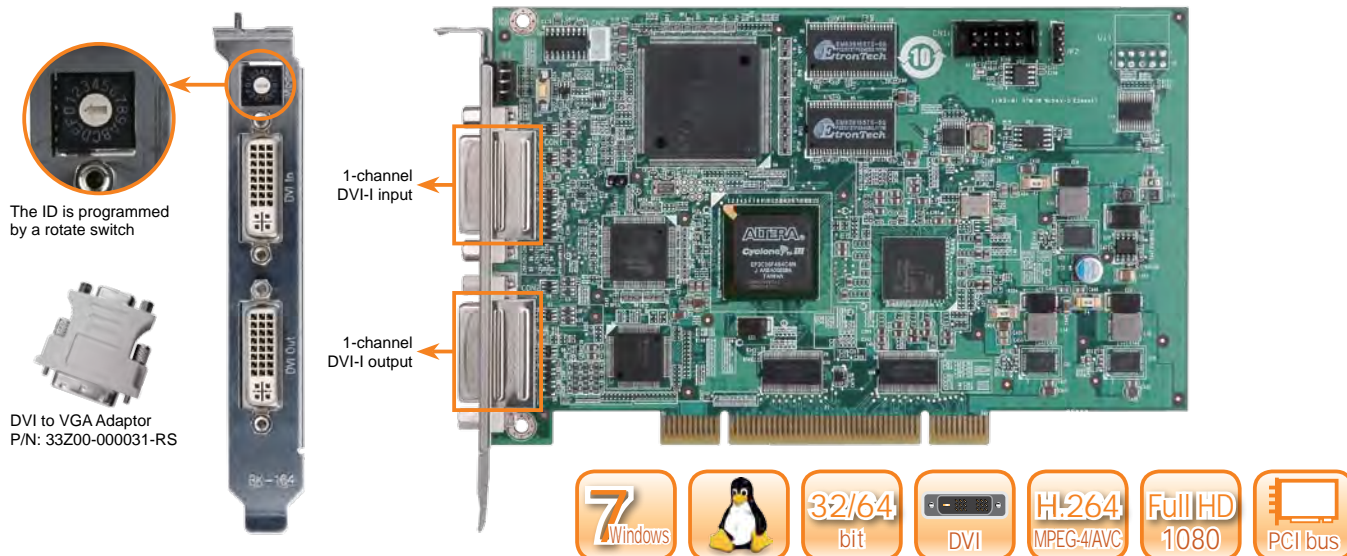
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# HDC-401

PCI video capture card with one DVI-I input channel and one DVI-I output channel, 1920x1080@60p, and H.264 Hardware Codec

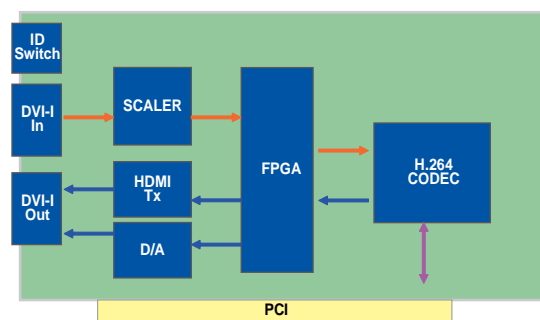
H.264 Hardware Codec



## Features

- Compatible with Windows® XP, Windows® 7 and Linux
- Equipped with one DVI-I input port
- Encoding or decoding up to 1080p HD video
- Pass through for transmitting uncompressed video up to 1080p resolution
- Captures or records HD video in H.264 format
- Playbacks the recordings on DVI-I display
- SDK available for customer to create customized applications

## System Block



## Specifications

### ◆ Interface

Video Input	1 channel
Video Input Type	DVI-I (DVI/VGA)
Video Output	1 channel
Video Output Type	DVI-I (DVI/VGA)
Bus Interface	PCI
Loop Through	1 channel

### ◆ Video Processing

Video Compression	H.264/AVC High Profile Level 4.2
Input Resolution & Frame Rate	Supports VESA video input up to 1920 x 1080 x 60p
Record Resolution / Frame Rate / Bit Rate	1920 x 1080 x 60p, encoding video bit rate from 6Mbps to 20Mbps 1280 x 720 x 60p, encoding video bit rate from 4Mbps to 20Mbps

### ◆ Functionality

Multiple Card Support	No
HDCP Compliant	No

### ◆ System Requirement

System	x86 PC compatible computer, Intel® Pentium® 4 2.0GHz or above for video record Recommends using a DXVA or CUDA capable graphics card for real-time video playback
Memory	1GB or more
OS Environment	Microsoft® Windows® XP Service Pack 2 (SP2) (32-bit version) Microsoft® DirectX 9.0c (32-bit) Microsoft® .NET Framework 2.0 (32-bit version) Linux: Fedora 16 (Kernel 3.1)

### ◆ Software Support

Device Driver	Compatible with Windows® XP, Windows® 7, Linux Kernel 3.1
SDK	Windows®: Provides SDK and demo program with sample source code in C# Linux: Provides SDK and driver/demo program with sample source code in C

### ◆ Others

Dimensions	106.7 mm x 167.6 mm
Operating Temperature	0°C ~ 65°C, non-condensing
Power Consumption	6.32W (5V@0.83A, 3.3V@0.65A)

## Packing List

- 1 x HDC-401 capture card
- 1 x Utility CD
- 1 x QIG

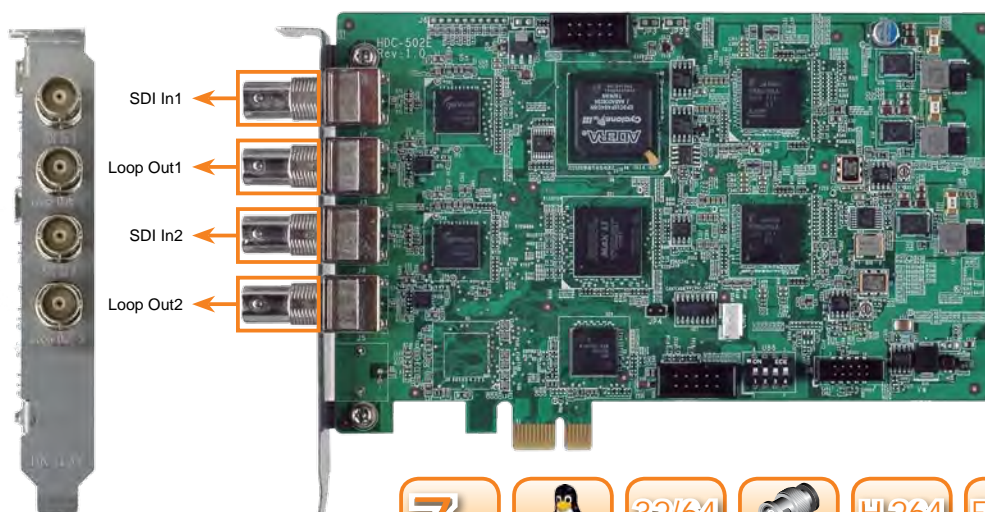
## Ordering Information

Part No.	Description
HDC-401-R10	PCI video capture card with one DVI-I input channel and one DVI-I output channel, 1920x1080@60p, and H.264 Hardware Codec
33Z00-000031-RS	DVI to VGA adapter

# HDC-502E

PCIe video/audio capture card with 2 channel SDI loop inputs, 2 channel SDI loop outputs and H.264 hardware codec up to 1920x1080@60p

**New**



## Features

- Compatible with Windows® XP, Windows® 7 and Linux
- High quality and long distance video compression solution
- Encoding or decoding up to 1080p HD video
- Reduces the amount of hard disk space needed by real-time H.264 recording compression capability
- Applications: professional studio, broadcast and transportation video applications
- SDK available for customer to create customized applications

## Specifications

### ◆ Interface

Video Input	2 channels
Video Input Type	SDI
Audio Input	2 channels
Audio Input Type	SDI
Loop Through Output	2 channels
Loop Through Type	SDI
Bus Interface	PCIe x1

### ◆ Video Processing

Video Compression	H.264/AVC High Profile Level 4.2
Input Resolution & Frame Rate	1920 x 1080 x 60p / 50p / 30p / 25p / 24p    720 x 480 x 60i 1920 x 1080 x 60i / 50i    720 x 576 x 50i 1280 x 720 x 60p / 50p / 30p / 25p / 24p
Record Resolution / Frame Rate / Bit Rate	1920 x 1080 x 60p, encoding video bit rate from 6Mbps to 20Mbps 1280 x 720 x 60p, encoding video bit rate from 4Mbps to 20Mbps

### ◆ Audio Processing

Audio Compression	MPEG-1 Audio Layer 2
Bit Rate	256k

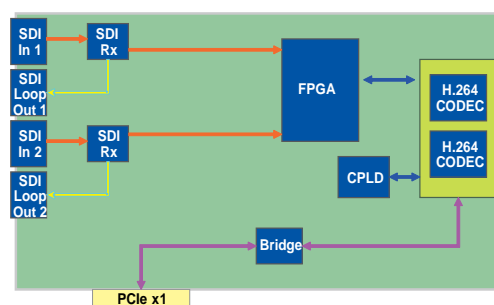
### ◆ Functionality

Multiple Card Support	4 cards, 8 channels
HDCP Compliant	No

## Packing List

1 x HDC-502E capture card
1 x Utility CD
1 x QIG

## System Block



### ◆ Software Support

Device Driver	Compatible with Windows® XP, Windows® 7 and Linux Fedora 16
SDK	Windows®: Provides SDK and demo program with sample source code in C# Linux: Provides SDK and driver/demo program with sample source code in C

### ◆ System Requirement

System	x86 PC compatible computer, Intel® Pentium® 4 2.0GHz or above for video record Recommends using a DXVA or CUDA capable graphics card for real-time video playback
Memory	1GB or more
OS Environment	Windows: Microsoft® Windows® 7/XP Service Pack 2 (SP2) (32-bit version) Microsoft® DirectX 9.0c Microsoft® .NET Framework 3.0/3.5/4.0 Visual C++ 2005 & 2008 Redistributable Linux: Fedora 16 (Kernel: 3.1)

### ◆ Others

Dimensions (WxH) (mm)	188 mm x 125 mm
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F), non-condensing
Power Consumption	14.2W (12V@0.76A, 3.3V@1.52A)

## Ordering Information

Part No.	Description
HDC-502E-R10	PCI Express video/audio capture card with 2 SDI input channels, 2 loop-out channels, 1920x1080@60p, and H.264 Hardware Codec

# Long Distance High-Definition Compression Solution

Nowadays, more and more equipments are equipped with SDI output for television studios and other broadcasting applications. SDI is a high capacity interface used as a way of exporting uncompressed digital video in real time. That makes it ideal for live feed productions (such as a live TV show), as well as for editing and monitoring video at the highest possible quality. Since SDI is designed primarily for professional use, it is also compatible with a variety of video devices found in broadcast studios, including monitors, tape decks and switchers. SDI exports uncompressed SD and HD video over a coaxial cable.



## Long Distance and High Quality Capture Card

### SDI in studio editing field

**SDI (Serial Digital Interface)** is a family of video interfaces used for broadcast-grade video. A related standard known as high-definition serial digital interface (HD-SDI) provides a nominal data rate of 1.485 Gbit/s. IEI SDI product HDC-502E is designed with 2 channels SDI input, 2 channels SDI loop and 1 channel SDI output for high quality and long distance signal transmission. It achieves this through a 100 m (HD-SDI)/300 m (SD-SDI) coaxial cable without compression and with no data loss for professional studio, broadcast and transportation video applications.



Name	Bit rates	Video
		Formats
SD-SDI (300 meters)	270 Mbit/s, 360 Mbit/s, 143 Mbit/s, 177 Mbit/s	480i, 576i
HD-SDI (100 meters)	1.5 Gbit/s, 1.5/1 Gbit/s	720p, 1080i

How high is 300 m?



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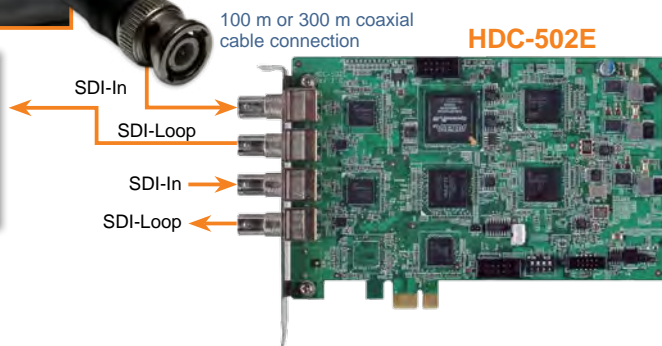
Power Supply/Peripherals

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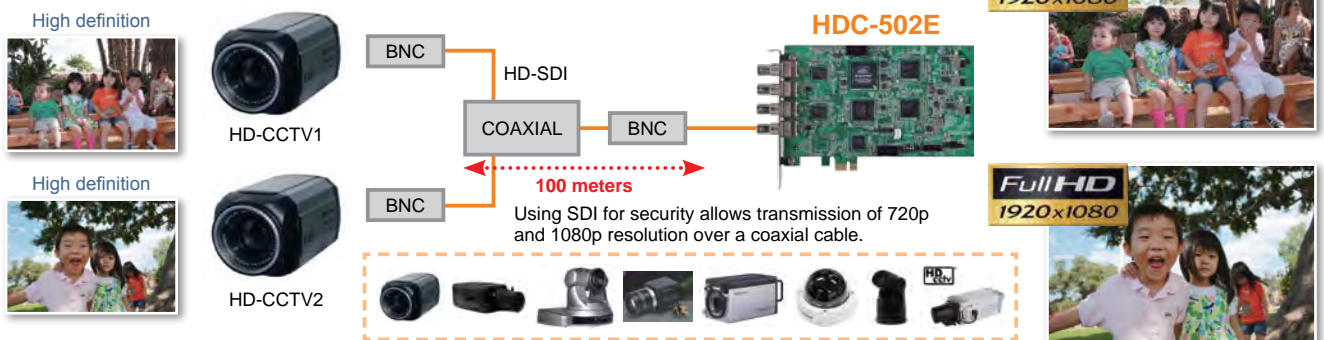
Uncompressed raw data for editing

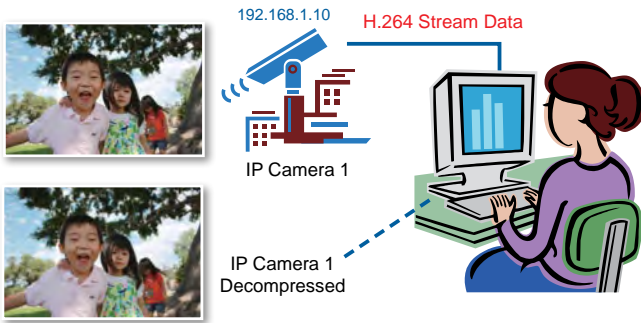


High definition capturing has become a trend of the industrial surveillance. The HD-CCTV camera with SDI interface provides long distance transmission compared to analog camera and IP camera. The advantage is SDI interface can transmit high-definition 1080p video via coaxial cable instead of network cable. In other words, users can enjoy 1080p HD video over existing analog system without any changes.

### SDI in high quality surveillance field

#### HD-CCTV1 camera V.S. IP camera





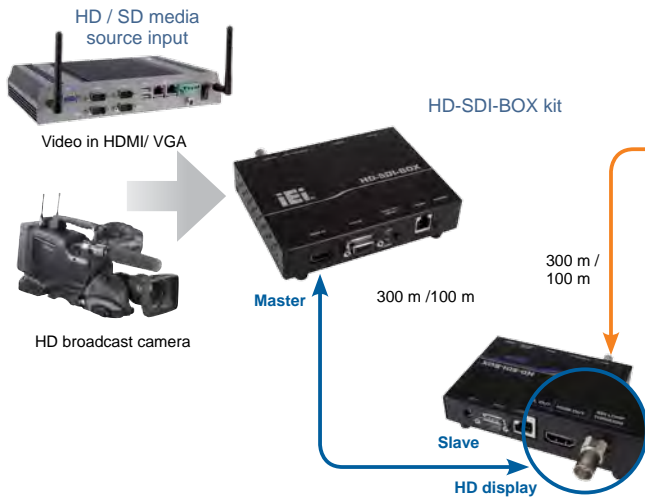
Full HD 1080p Uncompressed Video



H.264 Full HD Decompressed Video

## Long Distance and High Quality BOX

The HD-SDI-BOX kit, combining the HD-SDI-BOX-M (Master) and the HD-SDI-BOX-S (Slave), provides a high-definition serial digital interface (SDI) for long distance signal transmission. With the HD-SDI-BOX kit, the HDMI or VGA video signal can be transmitted directly through a 100 m coaxial cable without compression. The HD-SDI-BOX kit also supports touch-screen remote control. The touch-screen remote control is linked through the RJ-45 Cat5 cable and RS-232 cable.



300 m for SD video



100 m for HD video

## Marketing Application

By using one HD-SDI-BOX Master and two HD-SDI-BOX Slave connected with PC or display devices, the integrated system could perform lossless signal transmission through up to 200 m long distance. The user can extend the connection distance by adding more HD-SDI-BOX Slave systems. Adding one HD-SDI-BOX Slave system can extend 100 m ~ 300 m for HD or SD video quality.

### Applications



Shopping mall digital signage



Airport information



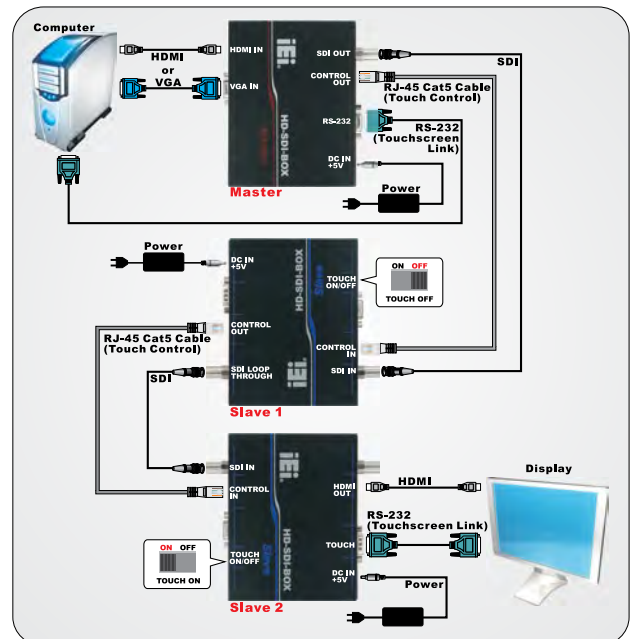
Restaurant video



Broadcast



Professional studio



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# HD-SDI-BOX

High-Definition Serial Digital Interface, long distance signal transmission box (Master/Slave) up to 100M, video input format 720p/1080i

**New**

## HD-SDI-BOX-M-R10



## HD-SDI-BOX-S-R10



### Long Distance and High Quality BOX

The HD-SDI-BOX kit, combining the HD-SDI-BOX-M (Master) and the HD-SDI-BOX-S (Slave), provides a high-definition serial digital interface (SDI) for long distance signal transmission.

With the HD-SDI-BOX kit, the HDMI or VGA video signal can be transmitted directly through a 100 m coaxial cable without compression. The HD-SDI-BOX kit also supports touch-screen remote control. The touch-screen remote control is linked through the RJ-45 Cat5 cable and RS-232 cable.



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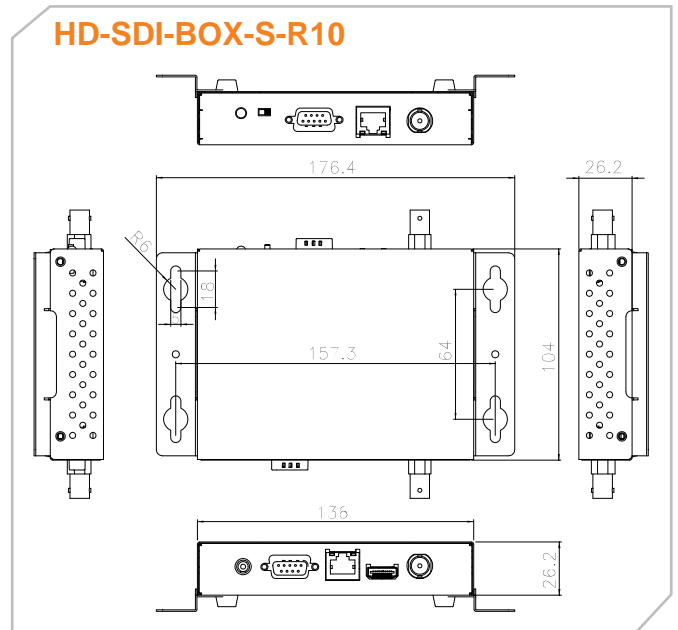
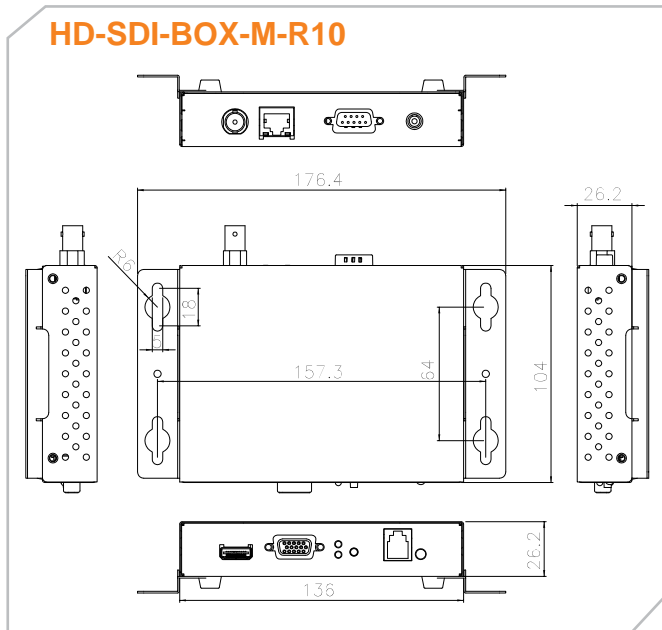
## Features

- High-definition serial digital interface (HD-SDI) transmission box supports 720p 1080i video resolution
- Long distance signal transmission up to 100M (adds additional HD-SDI-BOX-S to extend the transmission distance)
- HD-SDI-BOX-M converts VGA/HDMI to HD-SDI
- HD-SDI-BOX-S converts HD-SDI to HDMI
- Remote touch control link
- Uncompressed transmission
- Applications: Broadcasting and Transportation Monitoring

## Specifications

Model Name	HD-SDI-BOX-M-R10	HD-SDI-BOX-S-R10
<b>Input</b>	1 x HDMI (No HDCP compliant), 1 x VGA	1 x HD-SDI
<b>Output</b>	1 x HD-SDI	1 x HD-SDI Loop Through, 1 x HDMI
<b>I/O Panel</b>	Front: 1 x HDMI 1 x VGA IN 2 x LED (HDMI, VGA)	Front: 1 x HD-SDI IN 1 x RJ-45 Control In for remote touch link 1 x RS-232
	Rear: 1 x HD-SDI OUT 1 x RJ-45 Control Out for remote touch link	Rear: 1 x HD-SDI Loop Through 1 x HDMI Out 1 x Control Out
<b>Supported Mode</b>	Video mode: 720p (1280 x 720 @ 50/60Hz) 1080i (1920 x 1080 @ 50/60Hz)	Video mode: 720p (1280 x 720 @ 50/60Hz) 1080i (1920 x 1080 @ 50/60Hz)
	PC mode: 1280 x 720 @ 50Hz/60Hz 1920 x 1080 @ 50/60Hz	PC mode: 1280 x 720 @ 50Hz/60Hz 1920 x 1080 @ 50/60Hz
<b>Data Rate</b>	1.5Gb/s	1.5Gb/s
<b>Power</b>	Power Supply: 5V, 5A Power Consumption: 5W	Power Supply: 5V, 5A Power Consumption: 4W
<b>Dimensions</b>	136 mm x 103 mm x 32 mm	136 mm x 103 mm x 32 mm
<b>Power Adapter</b>	Input: 90VAC to 264VAC/47Hz to 63Hz Output: 5V DC	Input: 90VAC to 264VAC/47Hz to 63Hz Output: 5V DC

**Dimensions** (Unit: mm)



**I/O Interface**

**HD-SDI-BOX-M-R10**



**HD-SDI-BOX-S-R10**



**Packing List**

1 x HD-SDI-BOX set (Including master and slave boxes)
2 x EU power cord for master and slave boxes
2 x 5V adaptor for master and slave boxes
4 x Wall mounting bracket
8 x Screw
1 x User manual

**Ordering Information**

Part No.	Description
HD-SDI-BOX-R10	High-Definition Serial Digital Interface, long distance signal transmission box (master/slave) up to 100M, video input format 720p/1080i
HD-SDI-BOX-M-R10	High-Definition Serial Digital Interface, long distance signal transmission master box up to 100M
HD-SDI-BOX-S-R10	High-Definition Serial Digital Interface, long distance signal transmission slave box up to 100M

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# Standard-Definition Software Compression Capture Card Selection Guide



Model Name	IVCME-C604	IVCE-C608	IVCE-C604
Form Factor	PCIe Mini	PCIe	PCIe

◆ Interface

Video Input	4 channels composite video NTSC/PAL auto sensing	8 channels composite video NTSC/PAL auto sensing	4 channels composite video NTSC/PAL auto sensing
Video Input Type	BNC (BNC+RCA to DB-26 cable included)	BNC (BNC+RCA to DB-26 cable included)	
Audio Input	4 channels	8 channels	4 channels
Audio Input Type	RCA (BNC+RCA to DB-26 cable included)	RCA (BNC+RCA to DB-26 cable included)	
Bus Interface	Mini PCIe x1	PCIe x1	PCIe x1
Alarm I/O	Yes	Yes	Yes
Card ID	N/A	Rotate switch selectable with LED for ID indication	
LED Indicator	N/A	Red LED for system alarm Green LED for AP running Yellow LED for watchdog	

◆ Video Processing

Video Compression	Software compression					
Video Engine	1 x Conexant CX25854		1 x Conexant CX25853		1 x Conexant CX25850	
Resolution & Frame Rate	NTSC:	PAL:	NTSC:	PAL:	NTSC:	PAL:
	720 x 576	720 x 576	720 x 576	720 x 576	720 x 576	720 x 576
	720 x 480	720 x 480	720 x 480	720 x 480	720 x 480	720 x 480
	720 x 288	720 x 288	720 x 288	720 x 288	720 x 288	720 x 288
	720 x 240	720 x 248	720 x 240	720 x 248	720 x 240	720 x 248
	352 x 240	352 x 288	352 x 240	352 x 288	352 x 240	352 x 288
	320 x 240	320 x 240	320 x 240	320 x 240	320 x 240	320 x 240
	160 x 120	160 x 120	160 x 120	160 x 120	160 x 120	160 x 120
	NTSC: Total 120fps @ D1 for 4 channels PAL: Total 100fps @ D1 for 4 channels		NTSC: Total 240fps @ D1 for 8 channels PAL: Total 200fps @ D1 for 8 channels		NTSC: Total 120fps @ D1 for 4 channels PAL: Total 100fps @ D1 for 4 channels	

◆ Audio Processing

Audio Compression	Software compression		
Sampling Rate	32kHz, 44.1kHz, 48kHz, 96kHz (hardware spec.)	32kHz, 44.1kHz, 48kHz, 96kHz (hardware spec.)	32kHz, 44.1kHz, 48kHz, 96kHz (hardware spec.)
Quantization	24-bit (hardware spec.)	24-bit (hardware spec.)	24-bit (hardware spec.)

◆ System Requirement

System	x86 PC compatible computer	x86 PC compatible computer, PCI Express 1 lane, compatible with 1, 4, 8 and 16 lane PCIe slots
Memory	512MB or above	
Graphics	DirectX compatible VGA card supporting YUV overlay mode	

◆ Software Support

Device Driver	Windows® XP/7 Linux Kernel 3.1
SDK	Provides SDK and demo program with source code in C++

◆ Others

Dimensions	51 mm x 30 mm	111 mm x 102.4 mm	111.23 mm x 102.39 mm
Operating Temperature	0°C ~ 60°C (32°F~140°F), non-condensing		
Power Consumption	1.65W, 3.3V@0.5A	5.3W, 3.3V@1.39A, 12V@0.06A	3.51W, 3.3V@0.9A, 12V@0.045A

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# Standard-Definition Software Compression Capture Card Selection Guide



Model Name	IVC-100G-RS	IVC-200G-RS	PM-1056
Form Factor	PCI	PCI	PCI-104

◆ Interface

Video Input	4 channels composite video NTSC/PAL/SECAM auto sensing		
Video Input Type	BNC	BNC	BNC
Audio Input	N/A	N/A	N/A
Audio Input Type	N/A	N/A	N/A
Bus Interface	PCI Rev. 2.1 compliant	PCI Rev. 2.1 compliant	PCI Rev. 2.1 compliant
Alarm I/O	Yes	Yes	Yes
Card ID	DIP switch selectable with LED for ID indication		
LED Indicator	N/A		

◆ Video Processing

Video Compression	Software compression		Software compression		Software compression	
Video Engine	1 x Conexant CX25878		4 x Conexant CX25878		1 x Conexant CX25878	
Resolution & Frame Rate	NTSC:	PAL/SECAM:	NTSC:	PAL/SECAM:	NTSC:	PAL/SECAM:
	720 x 480	720 x 576	720 x 480	720 x 576	720 x 480	720 x 576
	720 x 288	720 x 480	720 x 288	720 x 480	720 x 288	720 x 480
	720 x 240	720 x 288	720 x 240	720 x 288	720 x 240	720 x 288
	640 x 480	720 x 240	640 x 480	720 x 240	640 x 480	720 x 240
	640 x 288	704 x 576	640 x 288	704 x 576	640 x 288	704 x 576
	640 x 240	640 x 480	640 x 240	640 x 480	640 x 240	640 x 480
	352 x 288	640 x 288	352 x 288	640 x 288	352 x 288	640 x 288
	352 x 240	640 x 240	352 x 240	640 x 240	352 x 240	640 x 240
	320 x 240	352 x 288	320 x 240	352 x 288	320 x 240	352 x 288
240 x 180	352 x 240	240 x 180	352 x 240	240 x 180	352 x 240	
240 x 176	320 x 240	240 x 176	320 x 240	240 x 176	320 x 240	
176 x 144	240 x 180	176 x 144	240 x 180	176 x 144	240 x 180	
160 x 120	240 x 176	160 x 120	240 x 176	160 x 120	240 x 176	
128 x 96	176 x 144	128 x 96	176 x 144	128 x 96	176 x 144	
88 x 72	160 x 120	88 x 72	160 x 120	88 x 72	160 x 120	
80 x 60	128 x 96	80 x 60	128 x 96	80 x 60	128 x 96	
	88 x 72		88 x 72		88 x 72	
	80 x 60		80 x 60		80 x 60	
	NTSC: Up to 30fps at all resolutions PAL/SECAM: Up to 25fps at all resolutions		NTSC: Up to 120fps at all resolutions PAL/SECAM: Up to 100fps at all resolutions		NTSC: Total 30fps @ D1 for 4 channels PAL/SECAM: Total 25fps @ D1 for 4 channels	

◆ Audio Processing

Audio Compression	N/A	N/A	N/A
Sampling Rate	N/A	N/A	N/A
Quantization	N/A	N/A	N/A

◆ System Requirement

System	x86 PC compatible computer
Memory	256MB or above
Graphics	DirectX compatible VGA card supporting YUV overlay mode

◆ Software Support

Device Driver	Windows® 98/SE/ME/2000/XP Linux Kernel 3.1
SDK	Provides SDK and demo program with source code in C++

◆ Others

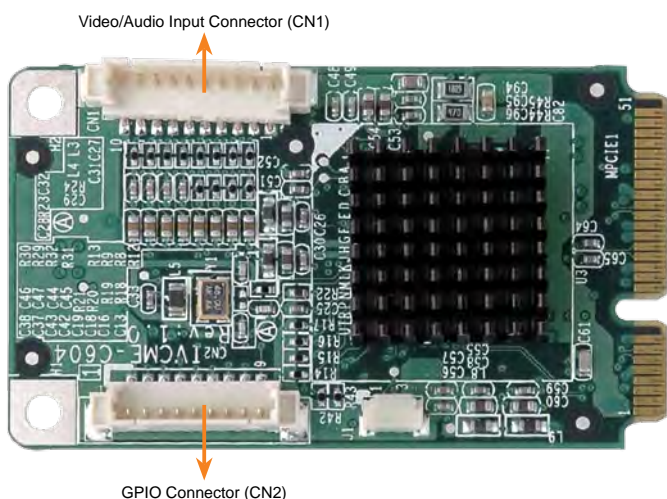
Dimensions	119.91 mm x 106.68 mm	119.91 mm x 106.68 mm	95.89 mm x 90.17 mm
Operating Temperature	0°C ~ 60°C (32°~140°F), non-condensing		
Power Consumption	10.7W, 2.14A@5V (with relay)	15W, 3A@5V (with relay)	3.5W, 0.7A@5V (with relay)

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# IVCME-C604

PCIe Mini video/audio capture card with 4-channel video/audio input, total 120fps@D1 for 4 channels (NTSC)



## Features

- Single card 4-channel composite video (NTSC/PAL) solution
- PCIe Mini card interface supported
- Compatible with Linux, Windows® XP and Windows® 7 (32-bit and 64-bit)
- Total 120fps @ D1 for 4 channels (NTSC)
- External GPIO daughter board with 4 inputs and 4 outputs (optional)
- SDK available for customer to create customized applications



## Specifications

### ◆ Interface

Video Input	4 channels composite video NTSC/PAL auto sensing
Video Input Type	BNC (BNC to DB-9 cable included)
Audio Input	4 channels analog
Audio Input Type	RCA (RCA to DB-9 cable included)
Bus Interface	PCIe Mini x1
Alarm IO	Yes

### ◆ Video Processing

Video Compression	Software compression	
Video Engine	1 x Conexant CX25854	
Resolution	NTSC: 720 x 576 720 x 480 720 x 288 720 x 240 352 x 240	PAL: 720 x 576 720 x 480 720 x 288 720 x 248 720 x 248
Frame Rate	NTSC: Total 120fps @ D1 for 4 channels PAL: Total 100fps @ D1 for 4 channels	

### ◆ Audio Processing

Audio Compression	Software compression
Sampling Rate	8kHz, 16kHz, 32kHz, 44.1kHz and 48kHz
Quantization	16-bit

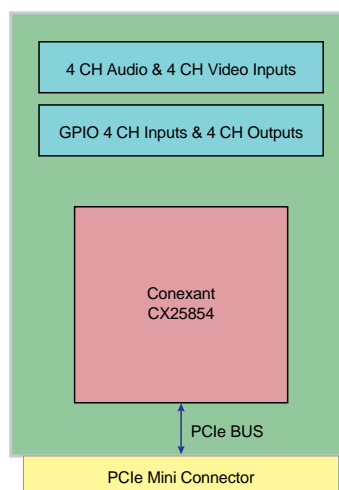
### ◆ System Requirement

Platform	x86 PC compatible computer
Memory	512MB or above
OS Environment	Windows® XP, Windows® 7, Linux Kernel 3.1

### ◆ Others

Dimensions	51 mm x 30 mm
Operating Temperature	0°C ~ 60°C, non-condensing
Power Consumption	1.65W (3.3V@0.5A)

## System Block



### Video/Audio Input Connector (CN1)

Pin No.	Signal
1	GND
2	Video In CH1
3	Video In CH2
4	Video In CH3
5	Video In CH4
6	Audio In CH1
7	Audio In CH2
8	Audio In CH3
9	Audio In CH4
10	GND

### GPIO Connector (CN2)

Pin No.	Signal
1	GND
2	DI1
3	DI2
4	DI3
5	DI4
6	DO1
7	DO2
8	DO3
9	DO4

## Packing List

- 1 x IVCME-C604 capture card
- 1 x BNC to DB-9 cable
- 1 x RCA to DB-9 cable
- 1 x Video/Audio input cable kit
- 1 x Utility CD
- 1 x QIG



## Ordering Information

Part No.	Description
IVCME-C604-R10	PCIe Mini video/audio capture card with 4-channel video/audio input, total 120fps@D1 for 4 channels (NTSC)
VIOCARD-GPIO-RS-R10	8 GPIO channels (4 digital inputs and 4 relay outputs)
32031-000100-100-RS	GPIO card to IVCME capture card connection cable

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# IVCE-C608

PCIe video/audio capture card with 8-channel video/audio input, total 240fps for 8 channels (NTSC)



## Specifications

### Interface

Video Input	8 channels composite video NTSC/PAL auto sensing
Video Input Type	BNC (BNC+RCA to DB-26 cable included)
Audio Input	8 channels
Audio Input Type	RCA (BNC+RCA to DB-26 cable included)
Video Output	2 channels
Video Output Type	BNC (BNC+RCA to DB-26 cable included)
Bus Interface	PCIe x1
Alarm I/O	Yes
Card ID	Rotary switch selectable with LED for ID indication
LED Indicator	Red LED for system Green LED for AP running Yellow LED for watchdog

### Video Processing

Video Compression	Software compression	
Video Engine	1 x Conexant CX25853	
Resolution	NTSC: 720 x 576 720 x 480 720 x 288 720 x 240 352 x 240 320 x 240 160 x 120	PAL: 720 x 576 720 x 480 720 x 288 720 x 248 352 x 288 352 x 240 320 x 240 160 x 120
Frame Rate	NTSC: Total 240fps for 8 channels PAL: Total 200fps for 8 channels	

### Audio Processing

Audio Compression	Software compression
Sampling Rate	32kHz, 44.1kHz, 48kHz, 96kHz (hardware spec.)
Quantization	24-bit (hardware spec.)

### System Requirement

Platform	x86 PC compatible computer, PCI Express 1 lane, compatible with 1, 4, 8 and 16 lane PCIe slots
Memory	512MB or above
OS Environment	Windows® XP, Windows® 7, Linux Kernel 3.1

### Others

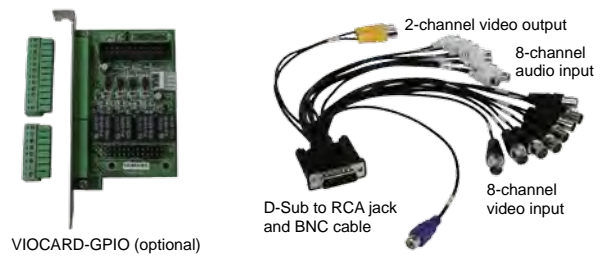
Dimensions	111 mm x 102.4 mm
Operating Temperature	0°C ~ 65°C, non-condensing
Power Consumption	5.3W (3.3V@1.39A, 12V@0.06A)

## Features

- Single card 8-channel solution
- PCI Express interface provides higher bandwidth and great performance
- Compatible with Linux, Windows® XP and Windows® 7 (32-bit and 64-bit)
- Total 240fps for 8 channels (NTSC)
- Supports multiple cards up to 128 channels video/audio input
- External GPIO daughter board supports up to 8 inputs and 8 outputs (optional)
- SDK available for customer to create customized applications
- Supports 8 channels video/audio input and 2 channels video output

## Packing List

1 x IVCE-C608 capture card	
1 x Video/Audio input cable kit	1 x Utility CD
1 x Reset cable	1 x QIG



## Ordering Information

Part No.	Description
IVCE-C608-R10	PCIe video/audio capture card with 8-channel video/audio input, total 240fps@D1 for 8 channels (NTSC)
VIOCARD-GPIO-RS-R10	8 GPIO channels (4 digital inputs and 4 relay outputs)
32225-002200-100-RS	GPIO card to IVC capture card connection cable

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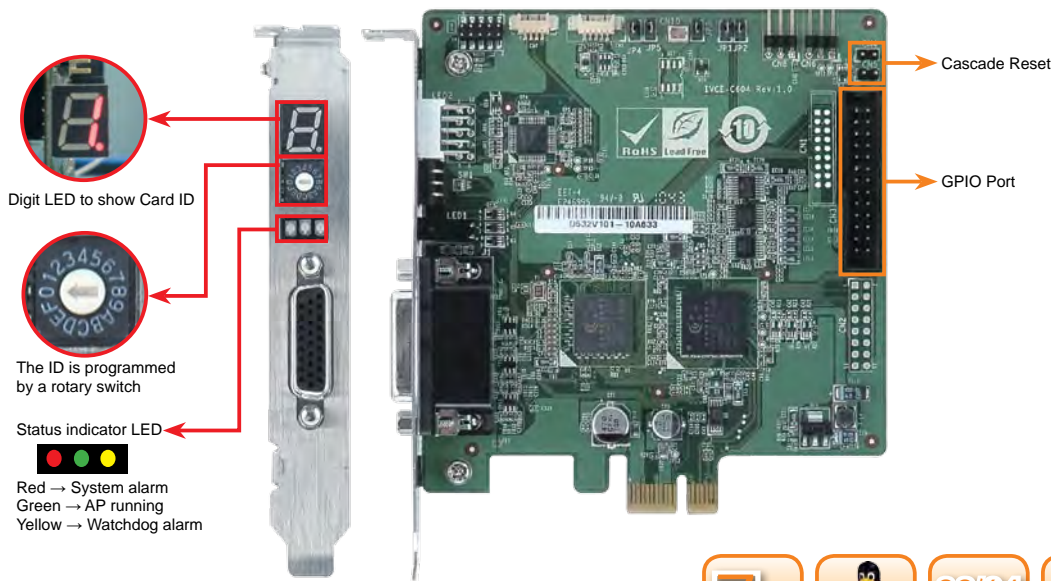
Power Supply/Peripherals

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# IVCE-C604

PCIe video/audio capture card with 4-channel video/audio input, total 120fps@D1 for 4 channels (NTSC)



## Specifications



### Interface

Video Input	4 channels composite video NTSC/PAL auto sensing
Video Input Type	BNC (BNC+RCA to DB-26 cable included)
Audio Input	4 channels
Audio Input Type	RCA (BNC+RCA to DB-26 cable included)
Video Output	2 channels
Video Output Type	BNC (BNC+RCA to DB-26 cable included)
Bus Interface	PCIe x1
Alarm I/O	Yes
Card ID	Rotary switch selectable with LED for ID indication
LED Indicator	Red LED for system Green LED for AP running Yellow LED for watchdog

### Video Processing

Video Compression	Software compression	
Video Engine	1 x Conexant CX25850	
Resolution	NTSC:	PAL:
	720 x 576	720 x 576
	720 x 480	720 x 480
	720 x 288	720 x 288
	720 x 240	720 x 248
	352 x 240	352 x 288
Frame Rate	NTSC: Total 120fps @ D1 for 4 channels	
	PAL: Total 100fps @ D1 for 4 channels	

### Audio Processing

Audio Compression	Software compression
Sampling Rate	32kHz, 44.1kHz, 48kHz, 96kHz (hardware spec.)
Quantization	24-bit (hardware spec.)

### System Requirement

Platform	x86 PC compatible computer, PCI Express 1 lane, compatible with 1, 4, 8 and 16 lane PCIe slots
Memory	512MB or above
OS Environment	Windows® XP, Windows® 7, Linux Kernel 3.1

### Others

Dimensions	111.23 mm x 102.39 mm
Operating Temperature	-5°C ~ 65°C, non-condensing
Power Consumption	3.51W (3.3V@0.9A, 12V@0.045A)

## Features

- Single card 4-channel solution
- PCI Express interface provides higher bandwidth and great performance
- Compatible with Linux, Windows® XP and Windows® 7 (32-bit and 64-bit)
- Total 120fps @ D1 for 4 channels (NTSC)
- Supports multiple cards up to 64 channels video/audio input
- External GPIO daughter board with 4 inputs and 4 outputs (optional)
- SDK available for customer to create customized applications
- Supports 4 channels video/audio input and 2 channels video output

## Packing List

1 x IVCE-C604 capture card	
1 x Video/Audio input cable kit	1 x Utility CD
1 x Reset cable	1 x QIG



## Ordering Information

Part No.	Description
IVCE-C604-R10	PCIe video/audio capture card with 4-channel video/audio input, total 120fps@D1 for 4 channels (NTSC)
VIOCARD-GPIO-RS-R10	8 GPIO channels (4 digital inputs and 4 relay outputs)
32225-002200-100-RS	GPIO card to IVC capture card connection cable

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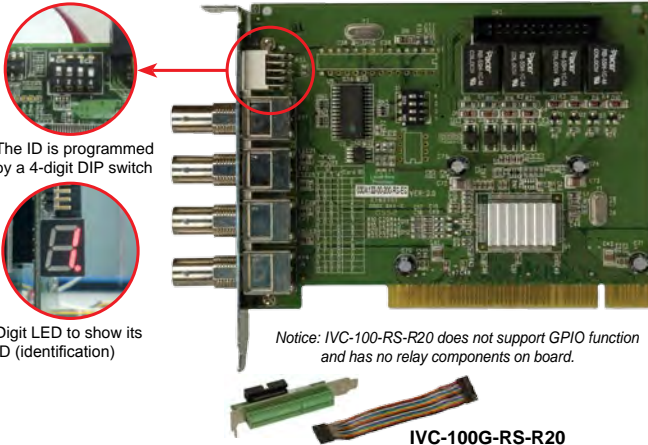
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# IVC-100G-RS

PCI video capture card with four video input channels, total 30 fps @720x480 (NTSC)



The ID is programmed by a 4-digit DIP switch

Digit LED to show its ID (identification)

Notice: IVC-100-RS-R20 does not support GPIO function and has no relay components on board.

**IVC-100G-RS-R20**  
GPIO daughter board and cable

## Specifications

### ◆ Interface

Video Input	4 channels composite video; NTSC, PAL and SECAM auto sensing
Video Input Type	BNC
PCI Interface	PCI Rev 2.1 compliance
CARD ID	DIP switch selectable with LED for ID indication
Alarm I/O	GPIO daughter board with 4 inputs and 4 outputs (IVC-100G-RS-R20 only)

### ◆ Software Support

Device Driver	Windows® 2000, XP / Linux kernel 2.6
SDK	Provides SDK and demo program with sample source code in C++

### ◆ Video Processing

Video Engine	1 x Conexant Fusion BT878A			
Resolution	NTSC:	PAL / SECAM:		
	720 x 480	640 x 288	720 x 576	640 x 480
	720 x 288	640 x 240	720 x 480	640 x 288
	720 x 240	352 x 288	720 x 288	640 x 240
	640 x 480	352 x 240	720 x 240	352 x 288
Frame Rate	NTSC: Up to 30 fps per channel PAL/SECAM: Up to 25fps at all resolutions			

### ◆ Multiple Card Support

Card	Video Port	Audio Port	Max. Channel / Resolution Support	Total Frame (NTSC/PAL)
1	4	N/A	4 channels, D1 (720 x 480)	30/25 fps
4	16	N/A	16 channels, D1 (720 x 480)	120/100 fps
8	32	N/A	32 channels, QVGA (320 x 240)	240/200 fps
16	64	N/A	64 channels, QVGA (320 x 240)	480/400 fps



Supports multiple cards (maximum 64 ports video input)

### ◆ System Requirement

System	x86 compatible computer
Graphic	DirectX compatible VGA card supporting YUV overlay mode

### ◆ Others

Dimensions	119.91 mm x 106.68 mm
Operating Temperature	0°C ~ 60°C (32°F~140°F), non-condensing
Power Consumption	10.7W, 2.14A@5V (with relay)

## Packing List

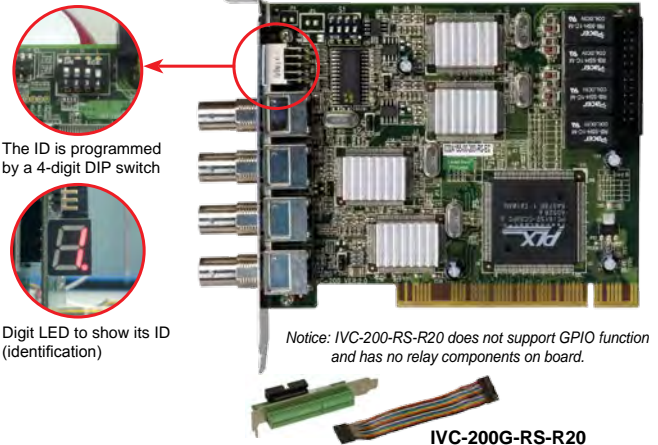
IVC-100G-RS-R20	1 x IVC-100G-RS-R20	
	1 x GPIO daughter board with cable	
	1 x Utility CD	1 x QIG
IVC-100-RS-R20	1 x IVC-100-RS-R20	
	1 x Utility CD	

## Ordering Information

Part No.	Description
IVC-100G-RS-R20	PCI video capture card with four video input channels, total 30 fps@720x480 (NTSC), and GPIO daughter board
IVC-100-RS-R20	PCI video capture card with four video input channels, total 30 fps@720x480 (NTSC)

# IVC-200G-RS

PCI video capture card with four video input channels, total 120 fps @720x480 (NTSC)



The ID is programmed by a 4-digit DIP switch

Digit LED to show its ID (identification)

Notice: IVC-200-RS-R20 does not support GPIO function and has no relay components on board.

**IVC-200G-RS-R20**  
GPIO daughter board and cable

## Specifications

### ◆ Interface

Video Input	4 channels composite video NTSC, PAL and SECAM auto sensing
Video Input Type	BNC
PCI Interface	PCI Rev 2.1 compliance
CARD ID	DIP switch selectable with LED for ID indication
Alarm I/O	GPIO daughter board with 4 inputs and 4 outputs (IVC-200G-RS-R20 only)

### ◆ Software Support

Device Driver	Windows® 98 SE, ME, 2000, XP / Linux kernel 2.4
SDK	Provides SDK and demo program with sample source code in C++

### ◆ Video Processing

Video Engine	4 x Conexant Fusion BT878A			
Resolution	NTSC:	PAL / SECAM:		
	720 x 480	640 x 288	720 x 576	640 x 480
	720 x 288	640 x 240	720 x 480	640 x 288
	720 x 240	352 x 288	720 x 288	640 x 240
	640 x 480	352 x 240	720 x 240	352 x 288
Frame Rate	NTSC: Up to 120 fps per channel PAL /SECAM: Up to 100 fps per channel			

### ◆ Multiple Card Support

Card	Video Port	Audio Port	Max. Channel / Resolution Support	Total Frame (NTSC/PAL)
1	4	N/A	4 channels, D1 (720 x 480)	120/100 fps
4	16	N/A	16 channels, QVGA (320 x 240)	480/400 fps

### ◆ System Requirement

System	x86 compatible computer
Graphic	DirectX compatible VGA card supporting YUV overlay mode

### ◆ Functionality

Video Loss Detection	Yes
Multi-screen Support	Yes

### ◆ Others

Dimensions	119.91 mm x 106.68 mm
Operating Temperature	0°C ~ 60°C (32°F~140°F), non-condensing
Power Consumption	15W, 3A@5V (with relay)

## Packing List

IVC-200G-RS-R20	1 x IVC-200G-RS-R20	
	1 x GPIO daughter board with cable	
	1 x Utility CD	1 x QIG
IVC-200-RS-R20	1 x IVC-200-RS-R20	
	1 x Utility CD	

## Ordering Information

Part No.	Description
IVC-200G-RS-R20	PCI video capture card with four video input channels, total 120 fps@720x480 (NTSC), and GPIO daughter board
IVC-200-RS-R20	PCI video capture card with four video input channels, total 120 fps@720x480 (NTSC)

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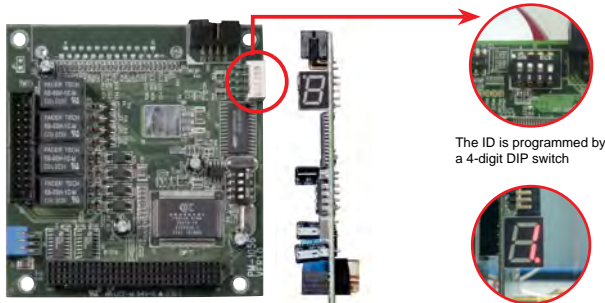
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# PM-1056-RS-R21

PCI-104 video capture card with four video input channels, total 30 fps @ 720x480 (NTSC)



◆ Applications: Video surveillance, security, public transportations, police and government



## Specifications

### ◆ Interface

Video Input	4 channels composite video NTSC, PAL and SECAM auto sensing
Connector	BNC
Audio Input	4-channel analog audio
Connector	DB9 to 3.5mm phone jack audio cable
PCIe Interface	PCI 2.1 compliance
Card ID	Selectable with LED for ID indication
Alarm I/O	External GPIO daughter board with 4 inputs and 4 outputs (optional)

### ◆ Software support

Device Driver	Windows® 2000, XP, Linux Kernel 2.4
SDK	Provides SDK and demo program with sample source code in C++

### ◆ Video Processing

Video Engine	1 x Conexant Fusion™ BT878A	
Resolution	NTSC:	PAL / SECAM:
	720 x 480 720 x 288 720 x 240 640 x 480 640 x 288 640 x 240	720 x 576 720 x 480 720 x 288 720 x 240 704 x 576 640 x 480
Frame Rate	NTSC: Total 30fps @D1 for 4 channels PAL/SECAM: 25fps @D1 for 4 channels	

### ◆ Multiple Card Support

Card	Video Port	Audio Port	Max. Channel / Resolution Support	Total Frame (NTSC/PAL)
1	4	N/A	4 channels, D1 (720 x 480)	30/25 fps
4	16	N/A	16 channels, D1 (720 x 480)	120/100 fps

### ◆ System Requirement

System	x86 compatible computer
Graphics	DirectX compatible VGA card with YUV overlay mode supporting

### ◆ Functionality

Video / Audio synchronization	Yes
Video Loss Detection	Yes
Motion Detection	Hardware built-in
Watermarking	128-bit secret key, adjustable length

### ◆ Others

Dimensions	95.89 mm x 90.17 mm
Operating Temperature	0°C ~ 60°C (32°F~140°F), non-condensing
Power Consumption	3.5W@5V (with relay)

## Packing List

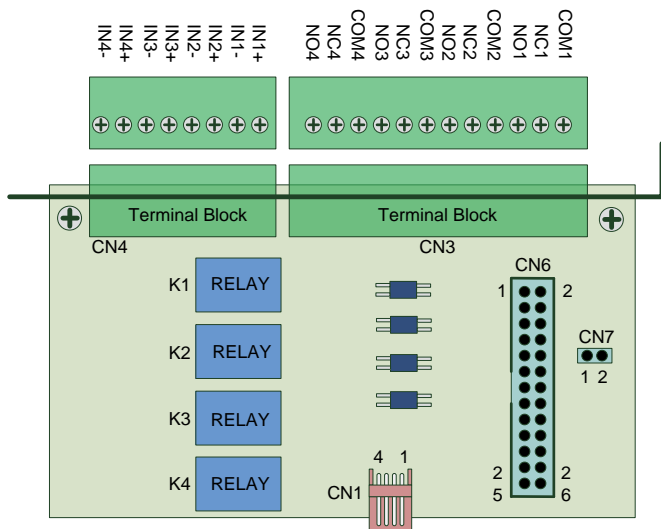
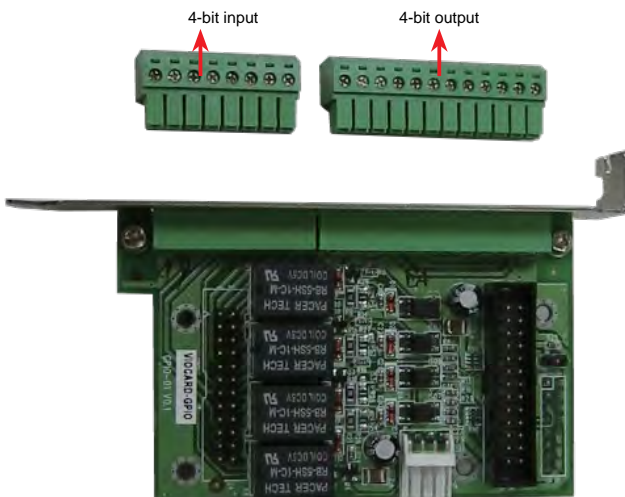
1 x PM-1056	1 x Utility CD	1 x User manual
1 x Audio cable (P/N: 32000-038100-RS)		1 x Video flat cable (P/N: 32000-038100-RS)

## Ordering Information

Part No.	Description
PM-1056-4P-RS-R21	PCI-104 video capture card with four video input channels, total 30 fps@720x480 (NTSC)
PM-1056-4PB-RS-R21	PCI-104 video capture card with four video input channels, total 30 fps@720x480 (NTSC), and VIN-Kit-01

# VIOCARD-GPIO-RS-R10

4-bit input and 4-bit output GPIO card



## Packing List

1 x VIOCARD-GPIO board
1 x QIG

## Ordering Information

Part No.	Description
VIOCARD-GPIO-RS-R10	4-bit input and 4-bit output GPIO card
32225-002200-100-RS	GPIO card to IVC/IVCE capture card connection cable
32031-000100-100-RS	GPIO card to IVCME capture card connection cable



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# Embedded System Platform Solutions

As the leading Embedded SBC provider, IEI continues to extend the product footprint from component level to system integration service. Our strong knowledge of market and technology innovation offers reliability, flexibility and interoperability for all of our embedded products with choices of size, performance and features.

## NEW for 2013

### 1. Wide Temperature Ruggedize System

Model Name	Processor CPU
TANK-600	Intel® Dual Core D2550 1.86 GHz processor, Intel® Dual Core N2600 1.6 GHz processor
TANK-820-H61	2nd Generation Intel® Core i5 / i3 / pentium processor, 35W
TANK-800-D525	Intel® Dual Core D525 1.8 GHz processor
TANK-720-Q67	2nd Generation Intel® Core i5 / i3 / pentium processor, 35W
TANK-700-QM67	2nd Generation Intel® Core i5 / i3 / pentium processor, 35W
TANK-GM45A	Intel® Core™ Duo processor P8600, Intel® Celeron™ M processor 575
TANK-101B	Intel® Dual Core D525 1.8 GHz, Intel® Dual Core N455 1.66 GHz



### 2. Digital Signage Embedded System

Model Name	Processor
ECN-780-Q67	2nd Generation Intel® Core i5 / i3 / pentium processor
ECN-680A-H61	2nd Generation Intel® Core i5 / i3 / pentium processor
IOPS-H61/2GB-R10	Intel® Celeron Dual Core G530 2.4 GHz
IOPS-Q67/2GB-R10	Intel® Dual Core i5-2390T 2.7 GHz
IDS-H61-R10	Intel® Celeron Dual Core G530T 2.0 GHz



### 3. Compact Size Embedded System

Model Name	Processor
DRPC-100-CV	Intel® Atom™ N2800 1.86GHz
ulBX-210	Intel® Atom™ N2600 1.6GHz
ulBX-200 Series	VIA® Eden™ ULV 500MHz Intel® Atom™ Z510P 1.1GHz
IBX-530-945GSE	Intel® Atom™ N270 1.6GHz



### 4. SBC Embedded System (ECW/ECN series embedded system)

Model Name	MB Model No.	Processor
ECW-281B/D2550	WAFER-CV-D25501	Intel® Atom™ D2550
ECW-281B/B2-D525	WAFER-PV-D5252	Intel® Atom™ D525
ECW-281B-R21/N270 (ECW-281B2-R21/N270)	WAFER-945GSE	Intel® Atom™ N270
ECN-581A-QM57	NANO-QM57A	Intel® Core™ i5-520M



### 5. Embedded Chassis Series

Model Name	Motherboard Model	Dimensions (W x D x H)
EBC-3680	KINO-AQ670, KINO-AH611, KINO-AH612, KINO-G410 KINO-CVR-D27002, KINO-PV-D4253/D5253, KINO-945GSE	220 x 310 x 270 mm
EBC-3220	KINO-QM770, KINO-CV/D25501/N26001, KINO-QM670 KINO-QM57A, KINO-HM551, KINO-PV-D525, KINO-945GSE2	190 x 180 x 55 mm
EBC-3200	KINO-QM770, KINO-CV/D25501/N26001, KINO-QM670 KINO-QM57A, KINO-HM551, KINO-PV-D525, KINO-945GSE2	260 x 180 x 55 mm
EBC-3100 (PCI/PCle Expansion)	KINO-AQ670, KINO-AH611, KINO-AH612, KINO-G410 KINO-CVR-D27002, KINO-PV-D4253/D5253, KINO-945GSE	250 x 260 x 156 mm
EBC-3000	KINO-AQ670, KINO-AH611, KINO-AH612, KINO-G410 KINO-CVR-D27002, KINO-PV-D4253/D5253, KINO-945GSE	230 x 280 x 88 mm
EBC-2102	NANO-PV-D5251, NANO-PV-D4251, NANO-PV-N4551	262 x 134 x 56 mm
EBC-2101	NANO-945GSE	262 x 134 x 56 mm
EBC-2100	NANO-LX	262 x 134 x 56 mm
ECN-581A	NANO-PV-D5251, NANO-HM551	138 x 180 x 50 mm



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# Versatile Expansion Interface

IEI embedded system provides various kinds of expansion interfaces inside a compact enclosure, providing the flexibility of function enhancement and the ease of system integration.

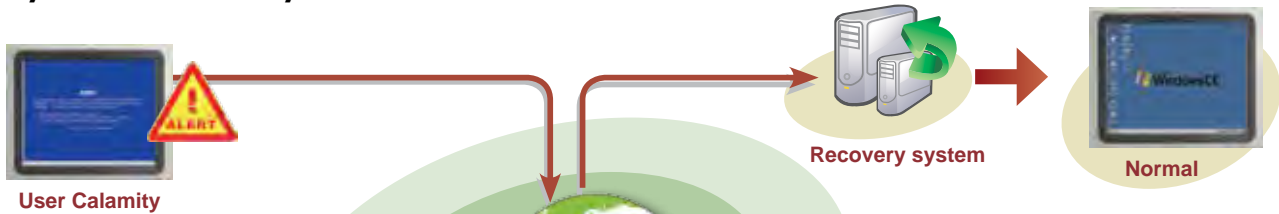


# IEI One Key Recovery Solution



The IEI recovery CD includes a system recovery software developed by IEI with Windows® PE 2.0. The recovery CD allows you to create full system backup and restore from system failures. Users don't need to buy other system backup and recovery tools.

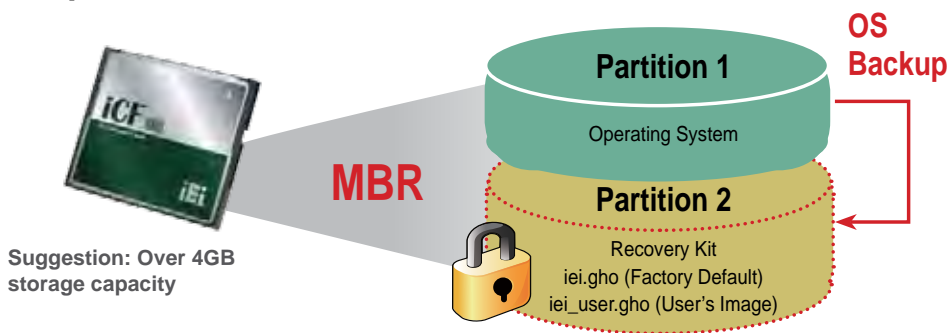
## System Recovery



## System Backup



## Recovery Partition



## IEI Products Only



### Supported OS List

Windows® XP	Linux OS
Windows® XP Embedded	1. RedHat 9
Windows® Vista	2. RedHat RHEL- 5.4
Windows® 7	3. Fedora Core 7, 8, 10, 11, 12
Windows® CE 5.0	4. Ubuntu 6.10, 7.10, 8.10
Windows® CE 6.0	5. Debian 4.0, 5.0
	6. SuSe 10.3, 11.2

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## Redundant dual DC power input

The redundant dual DC power input design increases the reliability of the system while preventing data loss and system corruption from sudden power failure. When main power is unavailable or low voltage capacity is present, the system can switch to the second power input instantly and without interruption.

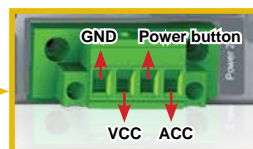
There are two power connectors on the bottom panel. The Power 1 connector is a terminal block that supports ACC On signal. The Power 2 connector is a DIN connector that directly connects to a power adapter.

When the system is in ACC On mode, the main power input is from the Power 1 connector. When the system is in ACC Off mode, the main power input is from the Power 2 connector. The ACC on/off mode is selected by the ACC on/off switch on the bottom panel.

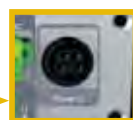
The TANK-700/720 series adopts redundant dual DC power input design, which ensures uninterrupted power supply to the system and eliminates the risk of sudden shutdown and data loss, even if one power is unavailable or low voltage capacity is present.



**Power1: 9 ~ 36V DC input**



**Power2: 10.5 ~ 36V DC input**



## Multiple mounting ways

IEI provide multiple mounting ways for users to fulfill different environment. With VESA 75/100, DIN-Rail, Wall mount, users can have great flexibility to meet their requirement. Customers can choose the most suitable embedded systems from selection guide.



## Various segments with different features

The IEI recovery CD includes a system recovery software developed by IEI with Windows® PE 2.0. The recovery CD allows you to create full system backup and restore from system failures. Users don't need to buy other system backup and recovery tools.

Segments	Features
Wide Temp. Ruggedize	Wide temp series, various fanless embedded box for harsh environment
Digital Signage	Multiple video output with high resolution, the best choice for digital signage application
Compact Size	Compact size with rich I/O, great solution for space-concern environment
SBC Embedded	Embedded System with standard NANO/Wafer M/B
Embedded Chassis	Compatible with KINO, NANO series chassis

## Low power solution

With Intel® Desktop / Mobile / Atom low power solution processor .

IEI embedded systems can provide a more energy-saving products for users to create eco-friendly environment.

## Versatile peripherals for highly flexibility

Along with IEI flash storage / DRAM memory / cables / connectors / power supply etc. Users can have great flexibility if want to do some customization. To meet different condition on some changes .



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# Wide Temperature Ruggedize System



Model Name	TANK-600-D2550 TANK-600-N2600	TANK-820-H61	TANK-800-D525	TANK-720-Q67	TANK-700-QM67	TANK-GM45A	TANK-101B		
Chassis	Color	Black C + Silver	Black C + Silver	Black C + Silver	Blue C + Silver	Black C + Silver	Silver	Cool Gray + Blue	
	Dimension (WxDxH)	260 x 200 x 105 mm	133 x 269 x 208 mm	136 x 219 x 188 mm	310 x 200 x 70 mm	310 x 200 x 62 mm	310 x 200 x 55 mm	248 x 138 x 44 mm	
	System Fan	Fanless	60 x 60 mm	Fanless	Fanless		Fanless	Fanless	
	Chassis Construction	Aluminum alloy	Extruded aluminum alloy		Extruded aluminum alloy Heavy duty steel sheet		Aluminum alloy with heavy duty metal		
Motherboard	CPU	Intel® Dual Core D2550 1.86 GHz processor Intel® Dual Core N2600 1.6 GHz processor	2nd Generation Intel® -Core i5 Dual Core 2xxT (Above 2.7GHz), 35W -Core i3 Dual Core 2xxT (Above 2.5GHz), 35W -Pentium Dual Core G6xxT (Above 2.2GHz), 35W	Intel® Dual Core D525 1.8 GHz processor	2nd Generation Intel® -Core i5 Dual Core 2xxT (Above 2.7GHz), 35W -Core i3 Dual Core 2xxT (Above 2.5GHz), 35W -Pentium Dual Core G6xxT (Above 2.2GHz), 35W	2nd Generation Intel® -Core i5 Dual Core 2xxE (Above 2.5GHz), 35W -Core i3 Dual Core 2xxE (Above 2.2GHz), 35W -Celeron Dual Core B8xx (Above 1.6GHz), 35W	Intel® Core Duo P8600 2.4GHz Intel® Celeron M575 2.0GHz	Intel® Dual Core D525 1.8 GHz Intel® Dual Core N455 1.66 GHz	
	Chipset	Intel® NM10	Intel® H61	Intel® ICH8M	Intel® Q67	Intel® QM67	Intel® GM45 + ICH9M	Intel® ICH8M	
	System Memory	D2550: On-board DDR3 4GB N2600: On-board DDR3 2GB	On-board DDR3 2GB memory 1 x 204-pin DDR3 SDRAM SO-DIMM (System Max : 10GB)	On-board DDR3 1GB memory 1 x 204-pin DDR3 SDRAM SO-DIMM (System Max : 3GB)	On-board DDR3 2GB memory, 1 x 204-pin DDR3 SDRAM SO-DIMM (System Max : 10GB)		Pre-installed 2GB DDR2 SO-DIMM ( System Max 2GB)	On-board DDR3 1GB memory 1 x 204-pin DDR3 SDRAM SO-DIMM (System Max : 3GB)	
Storage	Hard Drive	1 x 2.5" SATA HDD Bay							
	CompactFlash®	N/A	1 x CF Type II		N/A		N/A	1 x CF Type II	
I/O Interfaces	PS2(KB/MS)	N/A	N/A		N/A		1	N/A	
	USB 3.0	N/A	2	N/A		2	N/A	N/A	
	USB 2.0	6	4		4		4	4	
	Ethernet	2 x RJ-45 Realtek 8111E GbE LAN	2 x RJ-45 Realtek 8111E GbE LAN support ASF 2.0		LAN1 : Intel® 82579 with Intel® AMT 7.0 supported LAN2: Intel® 82583V Ethernet		2 x RJ-45 LAN1 : Intel® 82574L Ethernet Controller LAN2: Intel® WG82567LM Ethernet PHY	2 x RJ-45 Realtek 8111E PCIe GbE	
	RS-232	Default: 6 x DB-9 Optional : 8 x RS-232 by DB-78	4 x DB-9 2 x DB-9 w/isolation	4 x DB-9		4 x DB-9, 2 x RJ-45 w/isolation		1 x DB-9 w/isolation	3 x DB-9
	RS-422/485	2 x DB-9	2 x RJ-45		2 x RJ-45 with isolation		1 x DB-9 Default RS-422 w/isolation		
	Digital I/O	N/A	8 bit Digital I/O, 4 bit input / 4 bit output		8-bit Digital IO, 4-bit input / 4-bit output		DIO signal for remote on / off control		
	CAN Bus	N/A	N/A		1 x Phoenix terminal block		N/A		
	Display	1 x VGA	1 x VGA, 1 x DVI-I	1 x VGA		1 x VGA, 1 x HDMI		1 x VGA	1 x VGA
	Resolution	Up to 2048 x 1536 @ 75Hz	VGA:Up to 2048 x 1536 @ 75Hz DVI-I:Up to 1920 x 1080 @ 60Hz	2048 x 1536 @ 75Hz		VGA:Up to 2048 x 1536 @ 75Hz HDMI:Up to 1920 x 1200 @ 60Hz		2048 x 1536 @ 75Hz	2048 x 1536 @ 60Hz
Audio	1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Mic-in		1 x Mic-in, 1 x Line-out		N/A		1 x Line-out, 1 x Mic-in	
Other	N/A	N/A		Optional 4-channel audio/video input PCIe Mini Card		N/A		N/A	
Wireless	N/A	N/A		1 x 802.11 a/b/g/n ( optional)		N/A		1 x 802.11 b/g/n (optional)	
Expansions	PCI	N/A	2P1E: 2 x PCI, 1P2E: 1 x PCI		N/A		N/A		
	PCIe	N/A	2P1E : One PCIe x 8 (physical PCIe x 16 slot) 1P2E : One PCIe x 1 (physical x 4 slot), One PCIe x 8 (physical x 16 slot)	2P1E : One PCIe x 4 (physical PCIe x 16 slot) 1P2E : One PCIe x 1 (physical x 4 slot), One PCIe x 2 (physical x 16 slot)	N/A		N/A		
	PCIe Mini	1 x Full Size (Support mSATA), 1 x Half size	N/A		3 x Full Size		N/A		
Power	Power Input	Terminal Block : 9~36V DC	Redundant dual DC input Terminal Block : 9~24V DC Jack : 9~24V	Redundant dual DC input Terminal Block : 9V(+/-0.3V) ~ 36V DC Jack : 10.5V(+/-0.3V)~36V	Redundant dual DC input Power 1 (Terminal Block): 9V(+/-0.3V) ~ 36V Power 2 (DC Jack) : 10.5V(+/-0.3V)~36V	Redundant dual DC input Terminal Block : 9 ~ 24V DC Jack : 9 ~ 24V	Terminal / DC Jack : 12V	DC Jack : 9~36V DC	
	Power Consumption	TBD	19V@3.5A (Intel® Core i3-2100 with 6GB DDR3 memory) w/o add-on card	19V@1.73A (with 4GB DDR3 Memory)	19V@3.1A (Intel® Core i3-2100T with 4GB DDR3 Memory)	19V@3.3A (Intel® Core i5-2540M with 4GB DDR3 Memory)	12V@3.85A (Intel® Core 2 Duo P8600 2.4GHz with 3MB L2 Cache, DDR2 2GB)	12@1.85A ( with DDR3 1GB)	
Reliability	Mounting	VESA 100, DIN-Rail	Wall mount		Wall mount		Wall mount	Din-rail, wall mount	
	Operating Temperature	-20°C ~70°C with air flow	-20°C ~ 60°C with air flow ( SSD),5% ~ 95%, non-condensing	-20°C ~70°C with air flow (SSD), 5% ~ 95%, non-condensing	-20°C ~50°C with air flow (SSD), 5% ~ 95%, non-condensing	-20°C ~70°C with air flow (SSD), 5% ~ 95%, non-condensing	-20°C ~70°C with air flow (SSD)	-20°C ~60°C (D525 with air flow CF/SSD) -20°C ~70°C (N455 with air flow CF/SSD)	
	Operating Shock	Half-sine wave shock 5G, 11ms, 3 shocks per axis							
	Operating Vibration	MIL-STD-810F 514.5C-2 (with SSD)						MIL-STD-810F 514.5C-1	
	Weight (Net/Gross)	TBD	4.2Kg/6.3Kg	2.6Kg/4.1Kg	4.2Kg/6.9Kg	3.8Kg/6.5Kg	3.5Kg/4.2Kg	2.1Kg/3.9Kg	
	Safety / EMC	CE/FCC							
OS	Supported OS	Microsoft® WES7E, Microsoft® Windows® XP Embedded						Microsoft® Windows® XP Embedded	

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# TANK-600-D2550 ■ Fanless Embedded System

# TANK-600-N2600 ■ Intel® Cedarview Dual Core Atom CPU



## Features

- ◆ Intel® Dual Core D2550 1.86 GHz processor  
Intel® Dual Core N2600 1.6 GHz processor
- ◆ Default : 8 x COM ports (6 x RS:232, 2 x RS:422/484)  
Optional : 8 x COM ports via DB-78 (8 x RS:232)
- ◆ 6 x USB2.0
- ◆ Dual PCIe GbE LAN for high speed network applications



## Specifications

Model Name		TANK-600-D2550	TANK-600-N2600
Chassis	Color	Black C + Silver	
	Dimension (WxDxH)	260 x 200 x 105 mm	
	System Fan	Fanless	
	Chassis Construction	Aluminum alloy	
Motherboard	CPU	Intel® Dual Core D2550 1.86 GHz processor	Intel® Dual Core N2600 1.6 GHz processor
	Chipset	Intel® NM10	
	System Memory	On-board DDR3 4GB	On-board DDR3 2GB
Storage	Hard Drive	1 x 2.5" SATA HDD Bay	
I/O interfaces	USB 2.0	6	
	Ethernet	2 x RJ-45 Realtek 8111E GbE LAN	
	RS-232	Default : 6 x DB-9 Optional : 8 x RS-232 by DB-78	
	RS-422/485	2 x DB-9	
	Display	1 x VGA	
	Resolution	Up to 2048 x 1536 @ 75Hz	
	Audio	1 x Line-out, 1 x Mic-in	
Expansions	PCIe Mini	1 x Full Size (Support mSATA) 1 x Half size	
Power	Power Input	Terminal Block : 9~36V DC	
	Power Consumption	TBD	
Reliability	Mounting	VESA 100, DIN-Rail	
	Operating Temperature	-20°C ~70°C with air flow	
	Operating Shock	Half-sine wave shock 5G, 11ms, 3 shocks per axis	
	Operating Vibration	MIL-STD-810F 514.5C-2 (with SSD)	
	Weight (Net/Gross)	TBD	
	Safety / EMC	CE/FCC	
OS	Supported OS	Microsoft® WES7E, Microsoft® Windows® XP Embedded	

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### Versatile mounting ways

The TANK-600 series can fulfill VESA 100/DIN-rail/ Wall mount. Providing users different ways to meet their application.



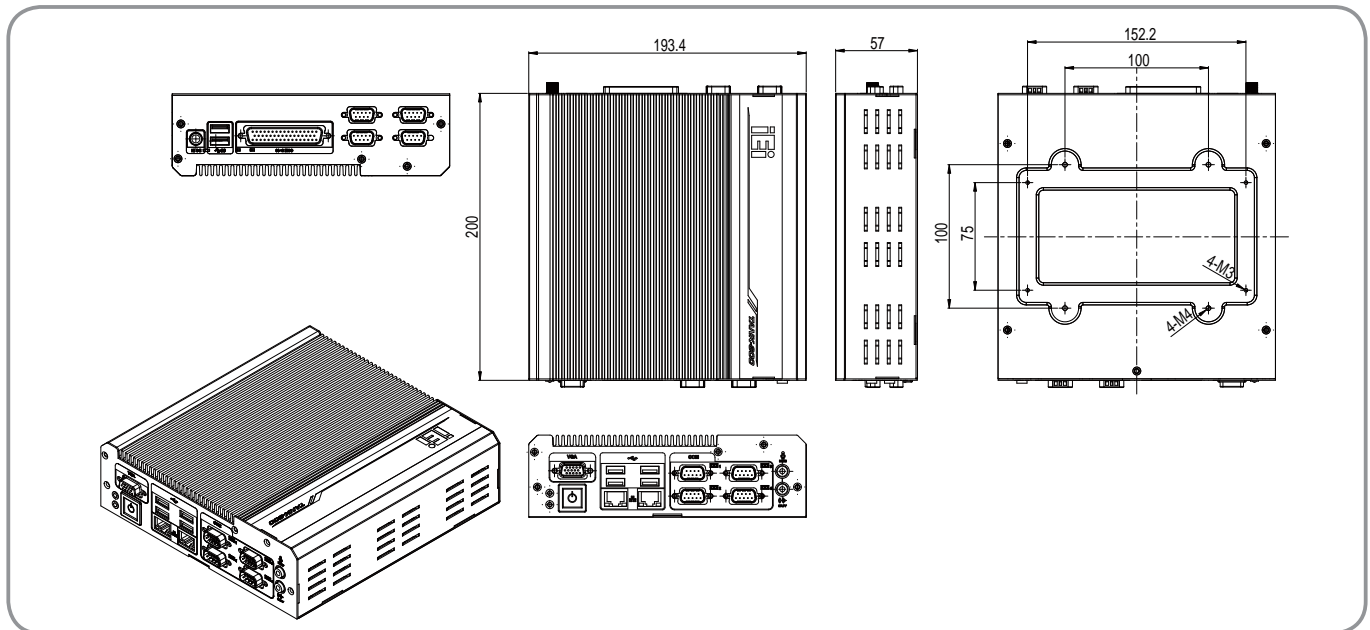
### Rich COM ports

There are 8 COM ports of TANK-600 on default, and another optional 8 COM ports through DB-78. Max 16 ports to achieve uses high demand of COM ports.

### Wide Range Temperature

The TANK-600 support -20°C~70°C wide range environment. Best choice for some ruggedize application.

### Dimensions (Unit: mm)



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### Ordering Information

Part No.	Description
TANK-600-CV-D2550-R10	Extend temperature Fanless embedded system with Intel® Cedarview D2550 dure core 1.86GHz CPU, with 4G DDR3 RAM onboard, 1xVGA, Dual GbE, 6xUSB2.0
TANK-600-CV-N2600-R10	Extend temperature Fanless embedded system with Intel® Cedarview N26001.6 GHz processor dure core CPU, with 2G DDR3 RAM onboard, 1xVGA, Dual GbE

### Options

Item	Qty	Description
DB-78	1	8 X COM RS:232
VESA Kit	1	VESA 100 kit

### Packing List

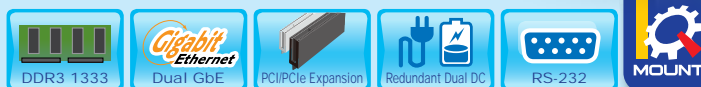
Item	P/N	Qty	Description
Utility CD		1	Drivers and user manual
One Key recovery CD		1	
Screw set		1	
Wall mount bracket		1	
Wall mount bracket screws			
DIN-rail mount	DK-84MB	1	
Power adapter		1	
Power cord		1	

# TANK-800-D525 820-H61

- D525 3-Slot Fanless Embedded System
- Sandy Bridge 3-Slot Embedded System

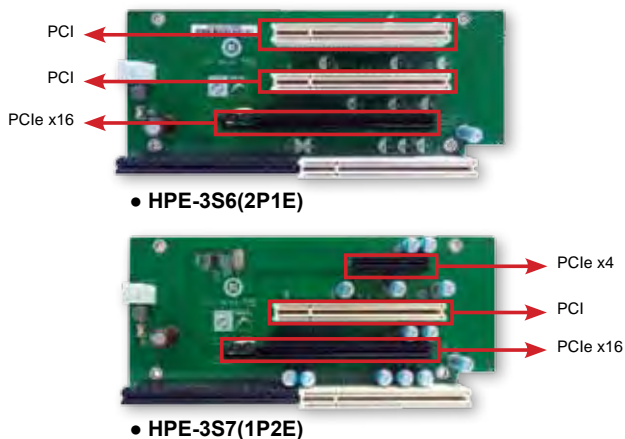
## Features

- ◆ Intel® Atom™ D525 1.8GHz dual-core processor for TANK-800  
2nd Generation Intel® Core™ low power desktop processors for TANK-820
- ◆ On-board 1GB DDR3 memory and one DDR3 SO-DIMM slot (system max. 3GB) for TANK-800  
On-board 2GB DDR3 memory and one DDR3 SO-DIMM slot (system max. 10GB) for TANK-820
- ◆ Redundant dual wide range DC power support (TANK-800-D525: 9 ~36 VDC / TANK-820-H61: 9 ~ 24 VDC)
- ◆ Flexible PCI/PCIe expansion slots satisfy customized requirements
- ◆ Rich I/O functions satisfy various applications
- ◆ Extended temperature fanless design (TANK-800-D525)
- ◆ Dual PCIe GbE LAN for high speed network applications
- ◆ Intelligent Light Fanless control (TANK-820-H61)
- ◆ One CompactFlash® socket



## Versatile Expansion Interface

The TANK-800/820 series has various kinds of expansion interfaces which allow you to connect additional circuits or expansion boards to the system via IEI riser cards. These expansion options provide flexible function enhancement and simplify system integration.



- The two types of backplane support standard PCI/PCIe cards with maximum dimensions (WxHxD): 195mm x 170mm x 20mm
- The rated voltage and current of the backplane

Voltage	Current
+5V	7A
+12V	3.75A
-12V	0.1A
+3.3V	8A

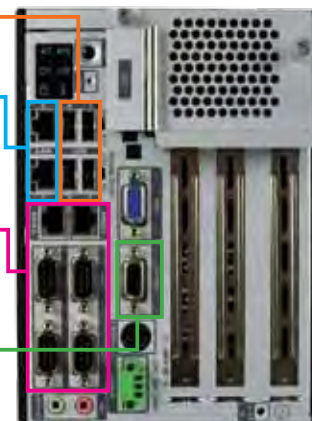
Max. power supported by the backplane: <45W

The system default power is 90 W. **The maximum total power of the backplane to support expansion cards is 45 W.** The power of the selected expansion cards can not exceed the max. power (45 W), otherwise, the system may be unstable.

Backplane	Slot	TANK-800	TANK-820
		Signal	Signal
HPE-3S6(2P1E)	PCI	PCI	PCI
	PCIe x16	PCIe x4	PCIe x8
HPE-3S7(1P2E)	PCI	PCI	PCI
	PCIe x4	PCIe x1	PCIe x1
	PCIe x16	PCIe x2	PCIe x8

## Rich I/O Function

- **Four USB Ports**  
Four USB ports can completely satisfy other USB devices or access requirements.
- **Dual GbE Ethernet Ports**  
Dual GbE Ethernet ports offer a diverse range of network communication options, helping users easily create an integrated industrial application that requires Ethernet protocols.
- **Serial Ports**  
Serial ports help millions of serial devices connect to the network for industrial applications. Our RS-232/422/485 serial ports provide powerful communication performance for all industrial device connectivity.
- **8-bit Digital I/O, 4-bit input/4-bit output**  
The DIO channels are quite useful for remote controlling, such as device power on/off, LEDs on/off, counter and cash drawer control.



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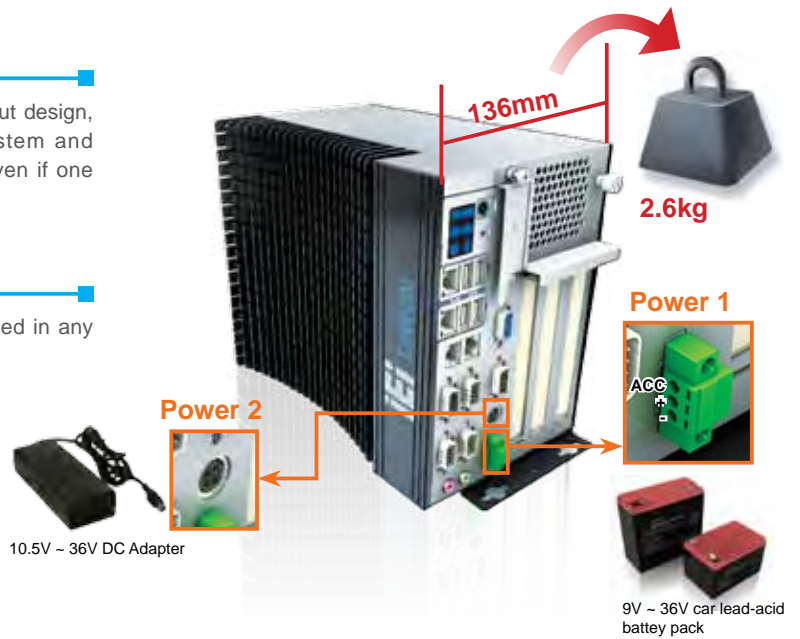
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### Redundant Dual DC Power Input

The TANK-800-D525 adopts redundant dual DC power input design, which ensures uninterrupted power supply to the system and eliminates the risk of sudden shutdown and data loss, even if one power is unavailable or low voltage capacity is present.

### Compact

Compact solution can sustain strong vibrations and be used in any industrial environments.



### Anti-Vibration and Anti-Shock Design

With the rugged design, the TANK-800/820 series is reliable in industrial environments to resist strong vibrations and can be used as a core computer requiring to be installed on moving objects.



### Cable-less

The cable-less concept offers a strong hardware design and promises a reliable combination of embedded components. This design helps ensuring stable system operation and robust hardware design. With all the components firmly attached, the TANK-800/820 series is ideal to be installed on moving objects.



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### Wide Range DC Power Input

The TANK-800/820 series accepts wide range DC power input, allowing it to be powered anywhere, no matter if a 12V, 24V DC source or a 19V power adapter is available.



### Ingenious Fan Space Design

The TANK-800/820 series reserves an easy-to-install, hot-pluggable fan module space, ensuring the PCI/PCIe expansion cards with high power consumption to operate under high temperature environment.



### Fanless

The TANK-800 series provides the best components that generate less heat, but maintain high system performance. With the fanless design, the TANK-800-D525 reduces system failure caused by fans and extends the lifetime of the device.



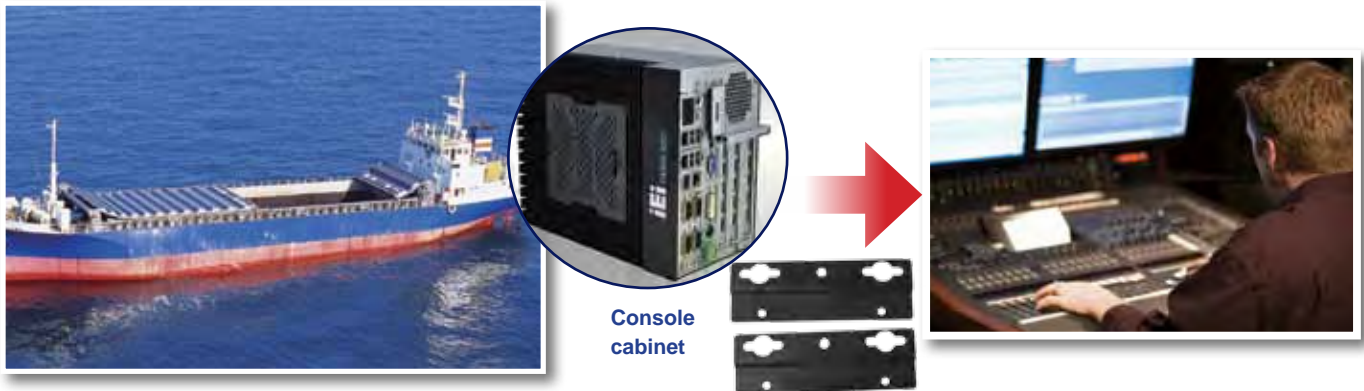
### Wide Range Temperature

The TANK-800/820 series is designed to withstand wide range of temperatures. With this design, the TANK-800/820 series can even be installed in a high-temperature roadside cabinet.



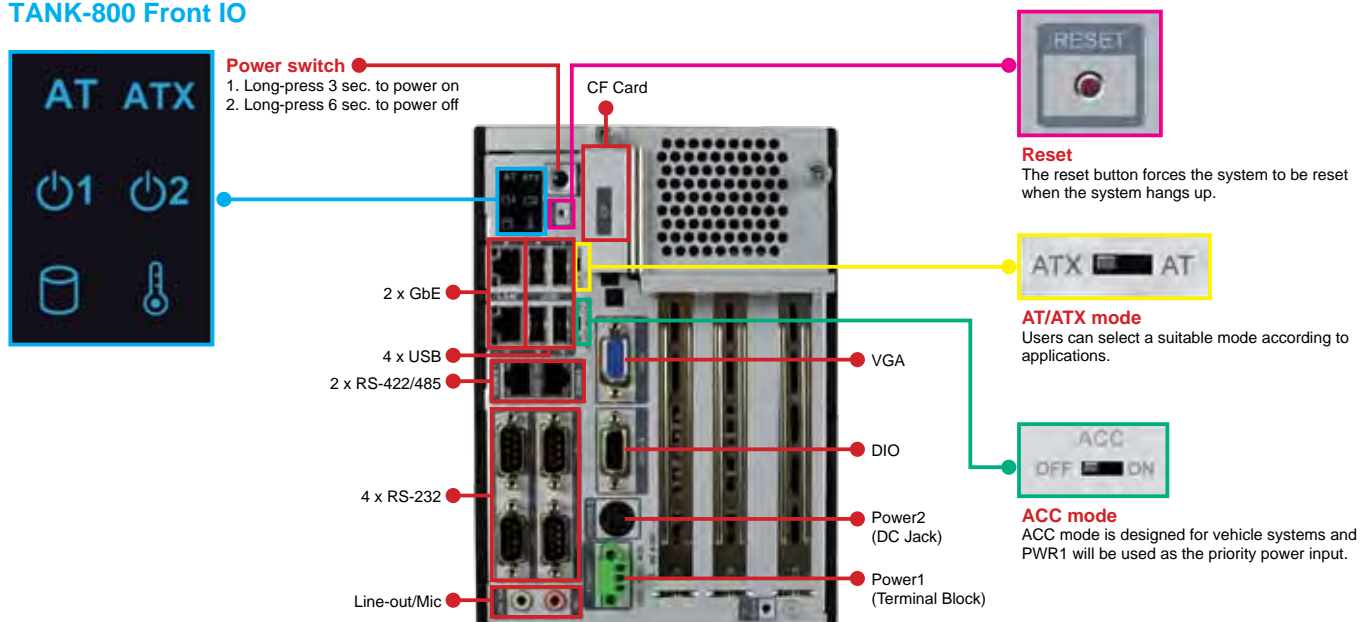
## Mounting Method

Mount the embedded system onto a wall or other surfaces using the two mounting brackets.

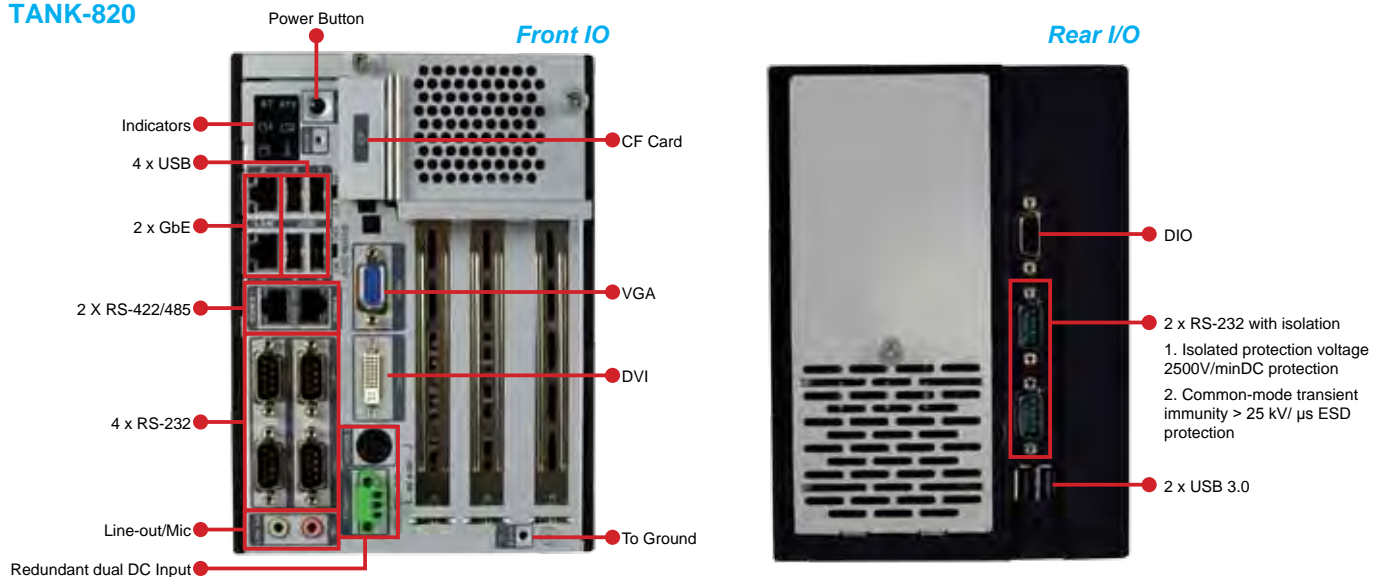


## Fully Integrated I/O

### TANK-800 Front IO



### TANK-820



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## Specifications

Model Name		TANK-800-D525	TANK-820-H61 <b>New</b>
Chassis	Color	Black C + Silver	Black C + Silver
	Dimensions(W x D x H)	136 x 219 x 188 mm	133 x 269 x 208 mm
	System Fan	Fanless	60 x 60 mm
	Chassis Construction	Extruded Aluminum Alloy	Extruded Aluminum Alloy
Motherboard	CPU	Intel® Dual Core D525 1.8 GHz processor	2nd Generation Intel® -Core i5 Dual Core 2xxT (Above 2.7GHz), 35W -Core i3 Dual Core 2xxT (Above 2.5GHz), 35W -Pentium Dual Core G6xxT (Above 2.2GHz), 35W
	Chipset	Intel® ICH8M	Intel® H61
	System Memory	On-board DDR3 1GB memory 1 x 204-pin DDR3 SDRAM SO-DIMM (System Max : 3GB)	On-board DDR3 2GB memory 1 x 204-pin DDR3 SDRAM SO-DIMM (System Max : 10GB)
Storage	Hard Drive	1 x 2.5" SATA HDD Bay	1 x 2.5" SATA HDD Bay
	CompactFlash®	1 x CF Type II	1 x CF Type II
I/O interfaces	USB 3.0	N/A	2
	USB 2.0	4	4
	Ethernet	2 x RJ-45 Realtek 8111E GbE LAN support ASF 2.0	2 x RJ-45 Realtek 8111E GbE LAN support ASF 2.0
	RS-232	4 x DB-9	4 x DB-9 2 x DB-9 w/isolation
	RS-422/485	2 x RJ-45	2 x RJ-45
	Digital I/O	8 bit Digital I/O, 4 bit input / 4 bit output	8 bit Digital I/O, 4 bit input / 4 bit output
	Display	1 x VGA	1 x VGA, 1 x DVI-I
	Resolution	2048 x 1536 @ 75Hz	VGA : Up to 2048 x 1536 @ 75Hz DVI-I : Up to 1920 x 1080 @ 60Hz
	Audio	1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Mic-in
Expansions	PCI	2P1E : 2 x PCI, 1P2E : 1 x PCI	2P1E : 2 x PCI, 1P2E : 1 x PCI
	PCIe	2P1E : One PCIe x 4 (physical PCIe x 16 slot) 1P2E : One PCIe x 1 (physical x 4 slot), One PCIe x 2 (physical x 16 slot)	2P1E : One PCIe x 8 (physical PCIe x 16 slot) 1P2E : One PCIe x 1 (physical x 4 slot), One PCIe x 8 (physical x 16 slot)
Power	Power Input	Redundant dual DC input Terminal Block : 9V(+/-0.3V) ~ 36V DC Jack : 10.5V(+/-0.3V) ~ 36V	Redundant dual DC input Terminal Block : 9~24V DC Jack : 9~24V
	Power Consumption	19V@1.73A (with 4GB DDR3 Memory)	19V@3.5A (Intel® Core i3-2100 with 6GB DDR3 memory) w/o add-on card
Reliability	Mounting	Wall mount	Wall mount
	Operating Temperature	-20°C ~ 70°C with air flow (SSD), 5% ~ 95%, non-condensing	-20°C ~ 60°C with air flow (SSD), 5% ~ 95%, non-condensing
	Operating Shock	Half-sine wave shock 5G, 11ms, 3 shocks per axis	Half-sine wave shock 5G, 11ms, 3 shocks per axis
	Operating Vibration	MIL-STD-810F 514.5C-2 (with SSD)	MIL-STD-810F 514.5C-2 (with SSD)
	Weight (Net/Gross)	2.6Kg / 4.1Kg	4.2 Kg / 6.3 Kg
	Safety & EMC	CE / FCC	CE / FCC
OS	Supported OS	Microsoft® WES7E, Microsoft® Windows® XP Embedded	

## Ordering Information

Part No.	Description	
TANK-800-D525/1GB/2P1E-R10	Extended temperature fanless embedded system with one PCIe x 4 and two PCI expansion, Intel® Atom™ D525 1.8GHz dual core processor, dual 9V-36V DC-IN, on-board 1GB DDR3 memory, -20°C ~ 70°C, RoHS	
TANK-800-D525/1GB/1P2E-R10	Extended temperature fanless embedded system with one PCIe x 1, one PCIe x 2 and one PCI expansions, Intel® Atom™ D525 1.8GHz dual core processor, dual 9V-36V DC-IN, on-board 1GB DDR3 memory, -20°C ~ 70°C, RoHS	
TANK-820-H61-i5/2G/2P1E-R10	Extend temperature fanless embedded system with One PCIe x 8 and two PCI expansion, Core i5 Dual Core 2xxT CPU (Above 2.7GHz), TDP 35W, Dual 9-24V DC-IN, 2GB DDR3 Memory on-board, -20°C~60°C, R10	
TANK-820-H61-i5/2G/1P2E-R10	Extend temperature fanless embedded system with One PCIe x 1 and one PCIe x 8 and one PCI expansion, Core i5 Dual Core 2xxT CPU (Above 2.7GHz), TDP 35W, Dual 9-24V DC-IN, 2GB DDR3 Memory on-board, -20°C~60°C, R10	
TANK-820-H61-i3/2G/2P1E-R10	Extend temperature fanless embedded system with One PCIe x 8 and two PCI expansion, Core i3 Dual Core 2xxT CPU (Above 2.5GHz), TDP 35W, Dual 9-24V DC-IN, 2GB DDR3 Memory on-board, -20°C~60°C, R10	
TANK-820-H61-i3/2G/1P2E-R10	Extend temperature fanless embedded system with One PCIe x 1 and one PCIe x 8 and one PCI expansion, Core i3 Dual Core 2xxT CPU (Above 2.5GHz), TDP 35W, Dual 9-24V DC-IN, 2GB DDR3 Memory on-board, -20°C~60°C, R10	
TANK-820-H61-P/2G/2P1E-R10	Extend temperature fanless embedded system with One PCIe x 8 and two PCI expansion, Pentium Dual Core G6xxT CPU (Above 2.2GHz), TDP 35W, Dual 9-24V DC-IN, 2GB DDR3 Memory on-board, -20°C~60°C, R10	
TANK-820-H61-P/2G/1P2E-R10	Extend temperature fanless embedded system with One PCIe x 1 and one PCIe x 8 and one PCI expansion, Pentium Dual Core G6xxT CPU (Above 2.2GHz), TDP 35W, Dual 9-24V DC-IN, 2GB DDR3 Memory on-board, -20°C~60°C, R10	
Memory Selection	DDR3-SO-1333-2GB	SO-DIMM DDR3 1333 MHz 2GB
	DDR3-SO-1333-4GB	SO-DIMM DDR3 1333 MHz 4GB

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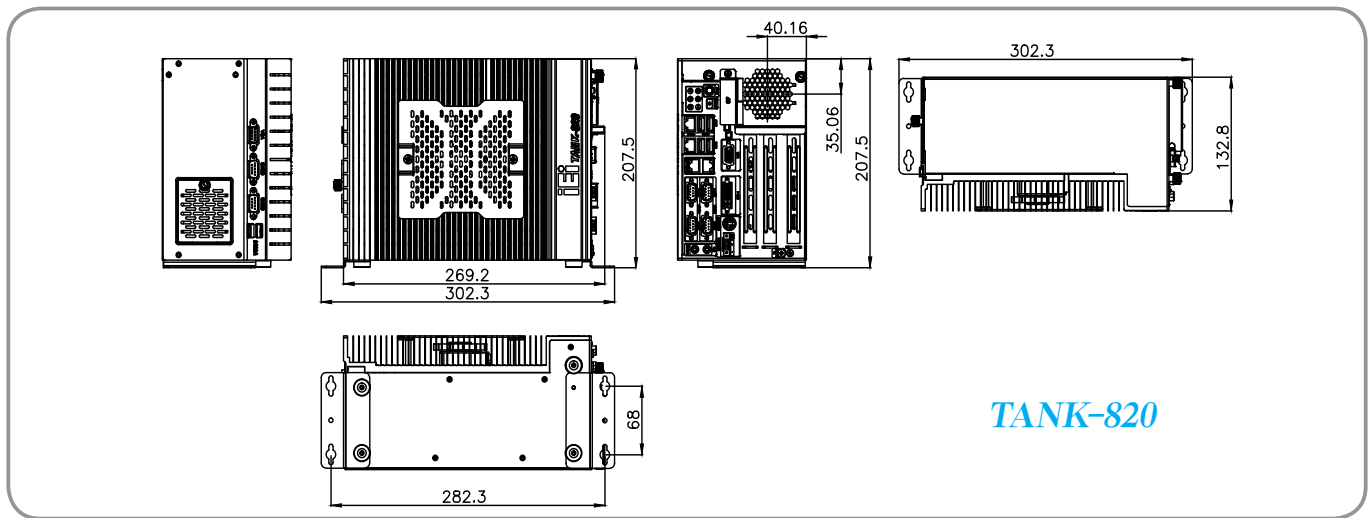
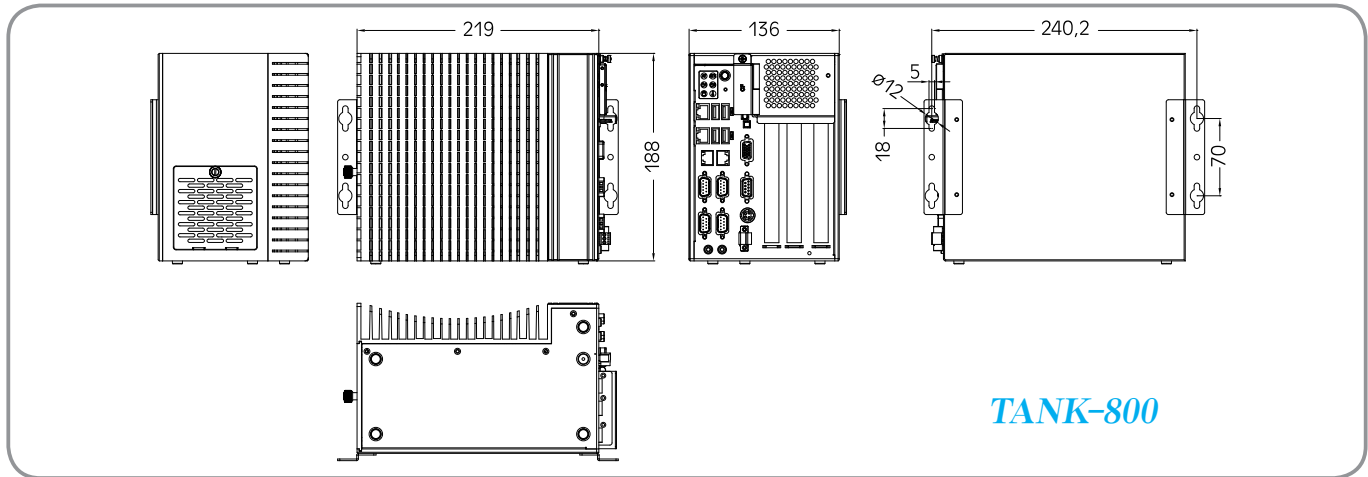
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**Dimensions (Unit: mm)**



**Options**

Item	P/N	Description
System Fan	31100-000272-RS	FAN, +12V, 4PIN, 40x40x15mm, 6000RPM, TWO BALL BEARING, WIRE LENGTH 220MM, AXIAL FAN, WITH FRAME, CCL, RoHS
OS : Linux (2GB CF Card)	TANKCF-800-D525-LNX-2G-R10	OS Image with Linux for TANK-800 D525, Debian operating system, Kernel version 2.6.26, 2GB CompactFlash® card, RoHS
	TANKCF-820-H61-LNX-2G-R10	OS Image with Linux for TANK-820 H61, Debian operating system, Kernel version 2.6.26, 2GB CompactFlash® card, RoHS
OS : Win CE 6.0 (128MB CF Card)	TANKCF-800-D525-CE060-128M-R10	OS Image with WINCE 6.0, for TANK-800 D525 Series, 128MB CompactFlash® card, RoHS
OS : Win XPE (4GB CF Card)	TANKCF-800-D525-XPE-4G-R10	OS Image with XPE, for TANK-800 D525 Series, 4GB CompactFlash® card, RoHS
	TANKCF-820-H61-XPE-4G-R10	OS Image with XPE, for TANK-820 H61 Series, 4GB CompactFlash® card, RoHS
OS : Win 7 Embedded (4GB CF Card)	TANKCF-800-D525-WES7E-4G-R10	OS Image with Windows Embedded Standard 7 E, for TANK-800 D525 Series, 4GB CompactFlash® card, RoHS
	TANKCF-820-H61-WES7E-4G-R10	OS Image with Windows Embedded Standard 7 E, for TANK-820 H61 Series, 4GB CompactFlash® card, RoHS

**Packing List**

Item	P/N	Q'ty	Description
Utility CD		1	Drivers and user manual
One Key Recovery CD	7B000-000724-RS	1	
Power Adapter	63040-010090-020-RSS	1	FSP090-D2BA1, 90 ~ 264VAC input, 90W, 19VDC output (for TANK-800)
	63000-FSP120AAB-RS	1	FSP120-AAB, 90 ~ 264V input, 120W, 19VDC output (for TANK-820)
Power Cord	32702-000401-100-RS	1	1500 mm, European Standard
Mounting Bracket	41020-0308C2-00-RS	2	Wall mount bracket, Mount bracket, NCT processing formation, TANK-800, RoHS
	41020-0366E4-00-RS	2	Wall mount bracket, Mount bracket, NCT processing formation, TANK-820 RoHS
Mounting Bracket Screws	44033-040062-RS	4	
HDD Screw	44043-030051-RS	4	M030*05 for securing HDD
Rubber Foot Pad Screws	44005-030061-RS	8	M4*6 for securing rubber foot pads (for TANK-800)
	44033-040061-RS	4	M4*6 for securing rubber foot pads (for TANK-820)
RJ-45 to DB-9 COM Port Cable	32005-000200-200-RS	2	Round cable, RS-232/422/485, RS-232 cable, 2, 300mm, 26AWG, (A)D-SUB 9P male, (B)RJ-45 8P8C+SHELL, RoHS
Pluggable DC-in Terminal Block	33502-000007-RS	1	3-pin terminal block
Foot Pads	46007-001500-RS	4	BOTTOM PAD, NF-002, 11.5D*8.7D*7.4H, black rubber, RoHS
FAN screws	44003-030151-RS	4	For TANK-820

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# TANK-700-QM67 720-Q67

- Intel® 2nd Gen Core™ Mobile Processor
- Intel® 2nd Gen Core™ Desktop Processor

High Performance Fanless Embedded System with 2nd Generation Intel® Core™ i7/i5/i3 Processors

Combo Gigabit LAN (SFP Fiber/RJ-45)



## Features

- ◆ 2nd Gen Intel® Core™ i7/i5/i3 or Celeron® mobile processors for TANK-700
- ◆ 2nd Gen Intel® Core™ i7/i5/i3 Pentium® and Celeron® desktop processors for TANK-720
- ◆ Intel® HD graphics supports H.264/AVC-MPEG2/VC1, DirectX 10.1 and OpenGL 3.0
- ◆ On-board 2GB DDR3 memory and one DDR3 SO-DIMM slot (system max. 10GB)
- ◆ Dual combo (10/100/1000 baseT(X) or 1000 baseSFP slot RJ-45 port) Gigabit LAN ports, supporting Intel® AMT 7.0
- ◆ Supports 8-channel audio/video capture and dual display by VGA/HDMI
- ◆ Supports two USB 3.0 ports, four USB 2.0 ports, one SATA 6Gb/s port, one CAN-bus port and eight COM ports (four with isolation)
- ◆ Dual-band 2.4/5GHz 802.11a/b/g/n 3T3R MIMO Wi-Fi for high speed wireless transmission
- ◆ Redundant dual DC power input (9V ~ 36V)
- ◆ CAN-bus interface with isolation



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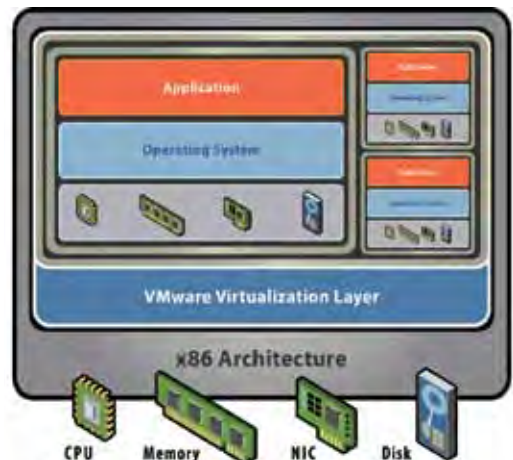
## Fanless Solution

The TANK-700/720 series focus on the best components that generate less heat, but maintain high system performance. With the fanless design, the TANK-700/720 series reduces system failure caused by fans and extends the lifetime of the device.



## Intel® Virtualization Technology

Intel® Virtualization Technology (Intel® VT) allows multiple, independent operating systems to run simultaneously on a single system. This entire "package" of virtual hardware - CPU, memory, NIC, OS and applications--is turned into a single software file that can be utilized as easily as using file copy and paste. Intel® VT brings an entirely new level of efficiency and flexibility to IT environments.



### Auto Distribution of Resources

- Dynamic Balancing
- Continuous Optimization

### Various Applications

- Automated
- Cross Applications

### Dynamic Adjustment of Resources

- Non-disruptive Scaling
- Flexible and Reconfigurable

## High Performance



### Performance Leadership

- Desktop Intel® Core™ i7/i5/i3 + Q67
- Mobile Intel® Core™ i7/i5/i3 + QM67

### Graphics and Media

- Integrated 3D graphics performance
- Enhanced graphics engine
- Enhanced media encode/decode
- New AVX instruction set

### Advanced Technologies and I/O

- USB data lock
- PCI Express Gen2 speed

### Scalability & Power Efficiency

- Less power consumption for improved thermal management

## Fast Network Communication

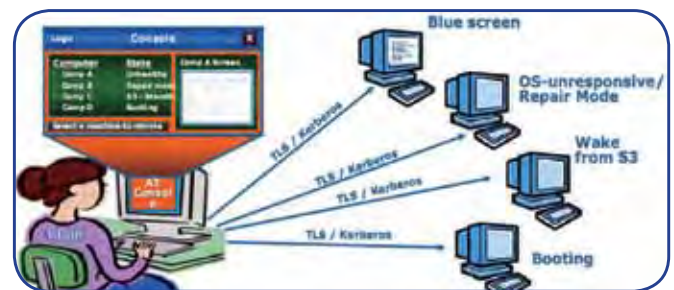
### Dual Combo (SFP Fiber/RJ-45) Gigabit LAN

The TANK-700/720 series adopts dual combo (SFP Fiber/RJ-45) Gigabit LAN designed for long-distance networking. It is used in long distance network environments where an Ethernet cable would be unable to provide adequate coverage.



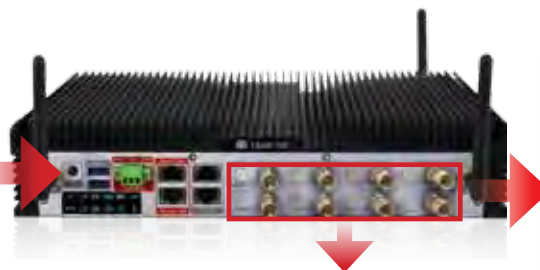
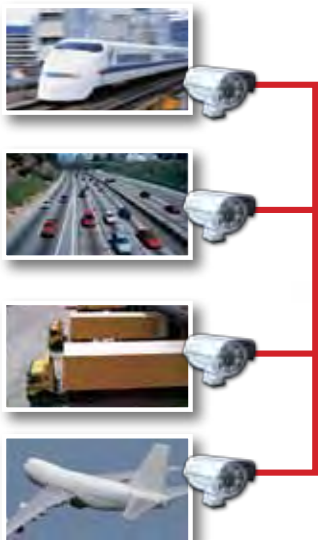
### Intel® 82579 PHY with Intel® AMT 7.0 Supported

On the Intel® Core™ i7/i5/i3 hardware architecture, Intel® 82579 PHY Gigabit chipset and Intel® Active Management Technology 7.0 (AMT 7.0), IEI developed the iEZman program, which allows users to remotely control devices and perform administrative tasks such as wake-on LAN, access, diagnostics and power on/off.



## 8-Channel Audio/Video Capture Solution

With a H.264 codec, the TANK-700/720 series is capable of compressing and decompressing Full HD (1920x1080) video in real-time without increasing CPU loadings. By supporting real-time recording, previewing, and HD video transmission through surveillance devices, the TANK-700/720 series is suitable as an intelligent monitoring system and transportation intelligent scheduling system solution.



2 x 4-channel audio/video capture (Optional)

Besides audio/video capture cards, the TANK-700/720 series can support other PCIe Mini cards by demand, such as 3G and GPS modules.

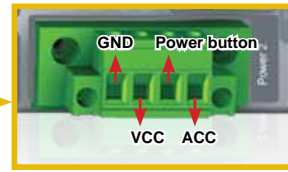


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## Redundant Dual DC Power Input

The TANK-700/720 series adopts redundant dual DC power input design, which ensures an uninterrupted power supply to the system and eliminates the risk of sudden shutdown and data loss, even if one power is unavailable or low voltage capacity is present.

### Power1: 9 ~ 36V DC input



### Power2: 10.5 ~ 36V DC input



### Isolation Protection

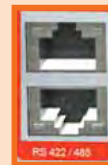
## 4 COM Ports with Isolation

### COM with isolation

1. Isolated protection voltage: 2500V/min DC protection
2. Common-mode transient immunity >25 kV/μs ESD protection



### 2 x RS-422/485



## CAN-bus Interface with Isolation

Controller Area Network (CAN or CAN-bus) is a vehicle bus standard designed to communicate or detect errors with each other within a vehicle, industrial automation and medical equipment. This drastically reduces the chance of data loss and ensures system reliability and is suitable for intelligent networking I/O devices such as sensors or actuator of machines or plants.



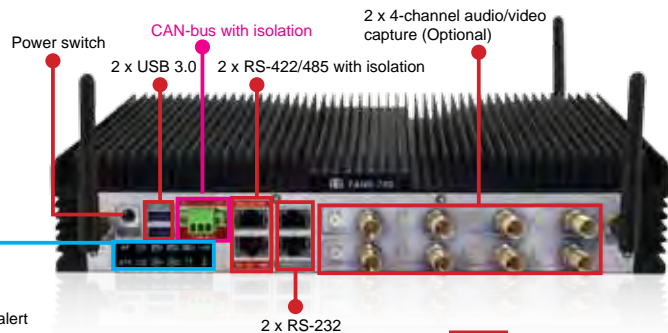
### CAN-bus with isolation

1. Isolated protection voltage 2500V/min DC protection
2. Typical transient immunity 50 kV/ms ESD protection

## Fully Integrated I/O

### Power switch and LED

1. Long-press 3 sec. to power on
2. Long-press 6 sec. to power off

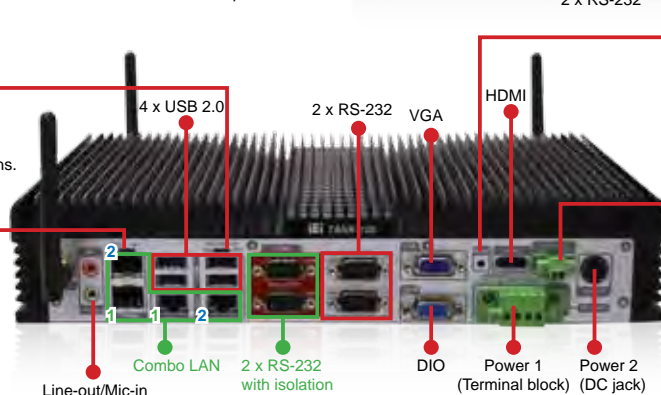


### ACC on/off

ACC on mode is designed for vehicle applications. Use the ACC signal to control power on/off.

### AT/ATX mode

Users can select a suitable mode according to the application.



### Reset

The reset button forces the system to be reset when system hangs up.

### Remote control

Users can power on/off the system by inputting low or high voltage into the terminal block.  
High (2V ~ 5V): Power off  
Low (< 0.4V): Power on

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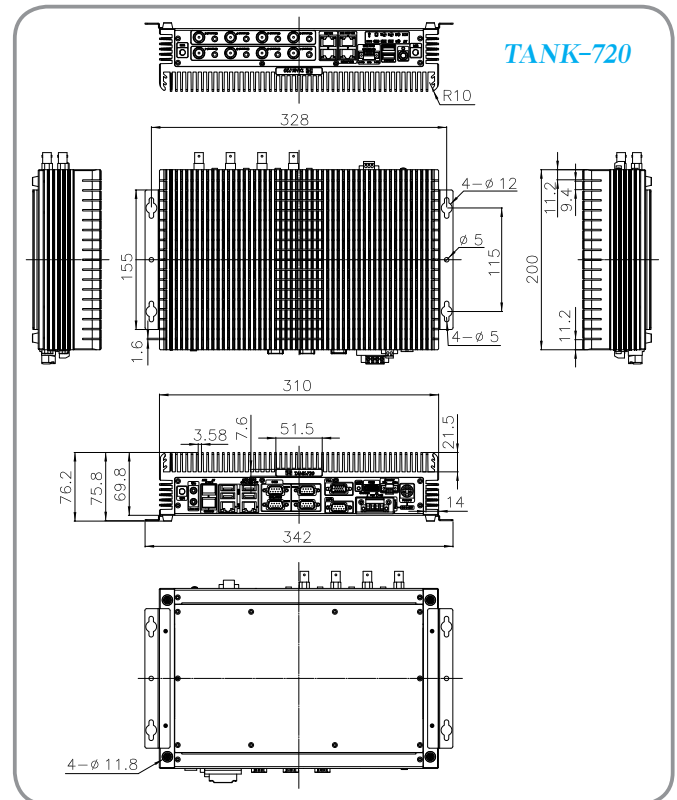
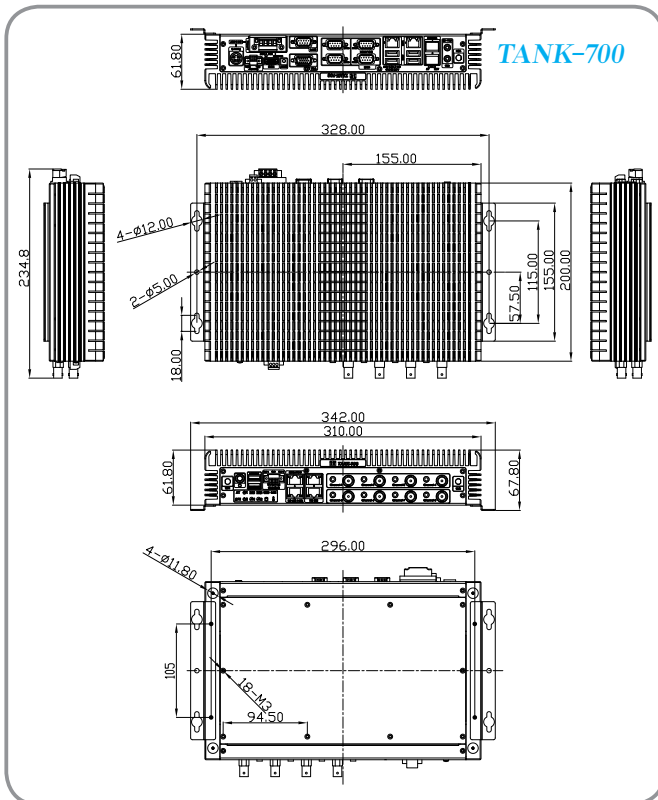
5 Power Supply/Peripherals

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## Specifications

Model Name		TANK-700-QM67	TANK-720-Q67
Chassis	Color	Black C + Sliver C	Blue C + Sliver C
	Dimensions (WxDxH)	310 x 200 x 62 mm	310 x 200 x 70 mm
	System Fan	Fanless	
	Chassis Construction	Extruded aluminum alloy, Heavy duty steel sheet	
Motherboard	CPU	2nd Generation Intel® -Core i5 Dual Core 2xxE (Above 2.5GHz), 35W -Core i3 Dual Core 2xxE (Above 2.2GHz), 35W -Celeron Dual Core B8xx (Above 1.6GHz), 35W	2nd Generation Intel® -Core i5 Dual Core 2xxT (Above 2.7GHz), 35W -Core i3 Dual Core 2xxT (Above 2.5GHz), 35W -Pentium Dual Core G6xxT (Above 2.2GHz), 35W
	Chipset	Intel® QM67	Intel® Q67
	System Memory	On-board DDR3 2GB memory. 1 x 204-pin DDR3 SDRAM SO-DIMM (System Max : 10GB)	
	Storage	Hard Drive	1 x 2.5" SATA HDD Bay
I/O interfaces	USB 3.0	2	
	USB 2.0	4	
	Ethernet	2 x Combo (SFP Fiber / RJ-45) LAN1 : Intel® 82579 with Intel® AMT 7.0 supported, LAN2 : Intel® 82583V Ethernet	
	RS-232	4 x DB-9, 2 x RJ-45 w/isolation	
	RS-422/485	2 x RJ-45 with isolation	
	Digital I/O	8 bit Digital I/O, 4 bit input / 4 bit output	
	CAN-Bus	1 x Phoenix terminal block	
	Display	1 x VGA, 1 X HDMI	
	Resolution	VGA: Up to 2048 x 1536 @ 75Hz, HDMI:Up to 1920 x 1200 @ 60Hz	
	Audio	1 x Line-out, 1 x Mic-in	
	Other	Optional 4-channel audio/video input PCIe Mini Card	
	Wireless	1 x 802.11 a/b/g/n (optional)	
	Expansions	PCIe Mini	3 x Full Size
Power	Power Input	Redundant dual DC input, Terminal Block : 9 ~ 24V, DC Jack : 9 ~ 24V	Redundant dual DC input, Power 1 (Terminal Block) : 9V(+/-0.3V) ~ 36V, Power 2 (DC Jack) : 10.5V(+/- 0.3V)~36V
	Power Consumption	19V@3.3A (Intel® Core i5-2540M with 4GB DDR3 Memory)	19V@3.1A (Intel® Core i3-2100T with 4GB DDR3 Memory)
Reliability	Mounting	Wall mount	
	Operating Temperature	-20°C ~ 70°C with air flow (SSD), 5% ~ 95%, non-condensing	
	Operating Shock	Half-sine wave shock 5G, 11ms, 3 shocks per axis	
	Operating Vibration	MIL-STD-810F 514.5C-2 (with SSD)	
	Weight (Net/Gross)	3.8Kg/6.5Kg	4.2Kg/6.9Kg
	Safety & EMC	CE/FCC	
OS	Supported OS	Microsoft® WES7E, Microsoft® Windows® XP Embedded	

## Dimensions (Unit: mm)



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## Ordering Information

### TANK-700 series

Part No.	Description
TANK-700-QM67-I5/2G-R10	Fanless embedded system, Core i5 Dual Core 2xxE CPU (Above 2.5GHz), TDP 35W, 2GB DDR3 on board memory, VGA/HDMI, USB3.0, SATA3.0, SFP Fiber, Isolated CAN, Audio, 9-36V DC input, -20~70°C, R10
TANK-700-QM67W-I5/2G-R10	Fanless embedded system, Core i5 Dual Core 2xxE CPU (Above 2.5GHz), TDP 35W, 2GB DDR3 on board memory, VGA/HDMI, USB3.0, SATA3.0, SFP Fiber, 3T3R 802.11b/g/n wireless, Isolated CAN, Audio, 9-36V DC input, -20~70°C, R10
TANK-700-QM67-I3/2G-R10	Fanless embedded system, Core i3 Dual Core 2xxE CPU (Above 2.2GHz), TDP 35W, 2GB DDR3 on board memory, VGA/HDMI, USB3.0, SATA3.0, SFP Fiber, Isolated CAN, Audio, 9-36V DC input, -20~70°C, R10
TANK-700-QM67W-I3/2G-R10	Fanless embedded system, Core i3 Dual Core 2xxE CPU (Above 2.2GHz), TDP 35W, 2GB DDR3 on board memory, VGA/HDMI, USB3.0, SATA3.0, SFP Fiber, 3T3R 802.11b/g/n wireless, Isolated CAN, Audio, 9-36V DC input, -20~70°C, R10
TANK-700-QM67-C/2G-R10	Fanless embedded system, Celeron Dual Core B8xx CPU (Above 1.6GHz), TDP 35W, 2GB DDR3 on board memory, VGA/HDMI, USB3.0, SATA3.0, SFP Fiber, Isolated CAN, Audio, 9-36V DC input, -20~70°C, R10
TANK-700-QM67W-C/2G-R10	Fanless embedded system, Celeron Dual Core B8xx CPU (Above 1.6GHz), TDP 35W, 2GB DDR3 on board memory, VGA/HDMI, USB3.0, SATA3.0, SFP Fiber, 3T3R 802.11b/g/n wireless, Isolated CAN, Audio, 9-36V DC input, -20~70°C, R10
Memory Selection	DDR3-SO-1333-2GB
	DDR3-SO-1333-4GB

### TANK-720 series

Part No.	Description
TANK-720-Q67-I5/2G-R10	Fanless embedded system, Core i5 Dual Core 2xxT CPU (Above 2.7GHz), TDP 35W, 2GB DDR3 on board memory, VGA/HDMI, USB3.0, SATA3.0, SFP Fiber, Isolated CAN, Audio, 9-36V DC input, -20~50°C, R10, RoHS
TANK-720-Q67W-I5/2G-R10	Fanless embedded system, Core i5 Dual Core 2xxT CPU (Above 2.7GHz), TDP 35W, 2GB DDR3 on board memory, VGA/HDMI, USB3.0, SATA3.0, SFP Fiber, 3T3R 802.11a/b/g/n wireless, Isolated CAN, Audio, 9-36V DC input, -20~50°C, R10, RoHS
TANK-720-Q67-I3/2G-R10	Fanless embedded system, Core i3 Dual Core 2xxT CPU (Above 2.5GHz), TDP 35W, 2GB DDR3 on board memory, VGA/HDMI, USB3.0, SATA3.0, SFP Fiber, Isolated CAN, Audio, 9-36V DC input, -20~50°C, R10, RoHS
TANK-720-Q67W-I3/2G-R10	Fanless embedded system, Core i3 Dual Core 2xxT CPU (Above 2.5GHz), TDP 35W, 2G DDR3 on board memory, VGA/HDMI, USB3.0, SATA3.0, SFP Fiber, 3T3R 802.11a/b/g/n wireless, Isolated CAN, Audio, 9-36V DC input, -20~50°C, R10, RoHS
TANK-720-Q67-P/2G-R10	Fanless embedded system, Pentium Dual Core G6xxT CPU (Above 2.2GHz), TDP 35W, 2GB DDR3 on board memory, VGA/HDMI, USB3.0, SATA3.0, SFP Fiber, Isolated CAN, Audio, 9-36V DC input, -20~50°C, R10, RoHS
TANK-720-Q67W-P/2G-R10	Fanless embedded system, Pentium Dual Core G6xxT CPU (Above 2.2GHz), TDP 35W, 2G DDR3 on board memory, VGA/HDMI, USB3.0, SATA3.0, SFP Fiber, 3T3R 802.11a/b/g/n wireless, Isolated CAN, Audio, 9-36V DC input, -20~50°C, R10, RoHS
Memory Selection	DDR3-SO-1333-2GB
	DDR3-SO-1333-4GB

## Options

Options	P/N	Description
Gigabit Ethernet SFP Module	SFP1G-SX-I	1Gbps SFP optical transceiver, multi-mode/550m, 850nm (0°C ~ 70°C)/industrial grade (-20°C ~ 85°C)
	SFP1G-MLX-I	1Gbps SFP optical transceiver, multi-mode/2Km, 1310nm (0°C ~ 70°C)/industrial grade (-40°C ~ 85°C)
	SFP1G-LX10-I	1Gbps SFP optical transceiver, single-mode/10Km, 1310nm (0°C ~ 70°C)/industrial grade (-40°C ~ 85°C)
	SFP1G-XD70-I	1Gbps SFP optical transceiver, single-mode/50Km, 1550nm (0°C ~ 70°C)/industrial grade (-40°C ~ 85°C)
Fiber Cord	FPC-LCLC-MM3M	Optical connector LC/LC, multi-mode, diameter 62.5/125 μm, length 3m
Fiber Cord	FPC-LCLC-SS3M	Optical connector LC/LC, single-mode, diameter 9/125 μm, length 3m
OS: Win CE 6.0 (CD-ROM)	TANK-700-QM67-CE060-R10	OS Image with WINCE 6.0, for TANK-700 QM67 Series, with CD-ROM, RoHS
OS: Win XPE (CD-ROM)	TANK-720-Q67-CE060-R10	OS Image with WINCE 6.0, for TANK-720 Q67 Series, with CDROM, R10
	TANK-700-QM67-XPE-R10	OS Image with XPE, for TANK-700 QM67 Series, with CD-ROM, RoHS
OS: Linux (CD-ROM)	TANK-720-Q67-XPE-R10	OS Image with XPE, for TANK-720 Q67 Series, with DVD-ROM, R10
	TANK-700-QM67-LNX-R10*	OS Image with Linux for TANK-700 QM67, Debian operating system, Kernel version 2.6.26, with CD-ROM, RoHS
OS: Linux (CD-ROM)	TANK-720-Q67-LNX-R10*	OS Image with Linux for TANK-720 Q67, Debian operation system, Kernel version 2.6.26, with CD-ROM, R10
	TANK-700-QM67-WES7E-R10	OS Image with Windows Embedded Standard 7 E, for TANK-700 QM67 Series, with CD-ROM, RoHS
OS: Win 7 Embedded (CD-ROM)	TANK-720-Q67-WES7E-R10	OS Image with Windows Embedded Standard 7 E, for TANK-720 Q67 Series, with DVD-ROM, R10

\* it doesn't include video/audio capture card's driver

## Packing List

Item	P/N	Q'ty	Description
Utility CD		1	Drivers and user manual
One Key Recovery CD	7B000-000724-RS	1	
Power Adapter	63040-010090-020-RS	1	FSP090-D2BA1, 90 ~ 264VAC input, 90W, 19VDC output, Din 4-pin
Power Cord	32702-000401-100-RS	1	1500 mm, European Standard
RJ-45 to DB-9 COM Port Cable	32005-000200-200-RS	4	Round cable, RS-232/422/485, RS-232 cable, 2, 300mm, 26AWG, (A)D-SUB 9P male, (B)RJ-45 8P8C+SHELL, RoHS
Power Cord Convert Cable	32702-000300-100-RS	1	Convert normal type cord to triangle type cord cable
Chassis Screw	44013-030041-RS	8	M3*4 chassis screws for backup
Mounting Bracket	41020-0163J4-00-RS	2	
Mounting Bracket Screws	44003-030062-RS	8	M3*6 mounting bracket screws
Wi-Fi Antenna (for Wi-Fi module only)	32505-000900-100-RS	3	External antenna
Pluggable DC-in Terminal Block	33502-000055-RS	1	4-pin
Pluggable CAN-bus Terminal Block	33502-000007-RS	1	3-pin
Pluggable Remote Control Terminal Block	33101-000422-RS	1	2-pin

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Panel Solutions Introduction

# TANK-GM45A

Extended Temperature Fanless Embedded System with Intel® Core™ 2 Duo Processor




## Features

- ◆ Socket P Intel® 45nm Mobile Core™2 Duo Processor
- ◆ Extended Temperature Fanless design supports -20°C~70°C
- ◆ High Performance MPEG-2 Decoding, WMV9 (VC-1) and H.264 (AVC)
- ◆ Built-in DDR2 SO-DIMM 2G memory
- ◆ Supports 2 x COM, 4 x USB 2.0, 2 x Intel® GbE LAN
- ◆ IEI One Key Recovery solution allows you to create rapid OS backup and recovery

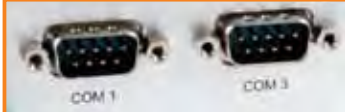


## Extended Temperature System with Multi-Function

The TANK-GM45A supports an extended temperature range from -20°C up to 70°C with one industrial 2.5" SATA Flash Disk. IEI IFD 2.5" SSD supports SATA SLC solutions and features anti-vibration, low power consumption, high performance and perfect reliability. SSD not only performs much better IOPS than HDD, it also can be operated anytime without mobile components like a motor, bearing or rotating head. In addition, SSD can perform in any harsh environment.



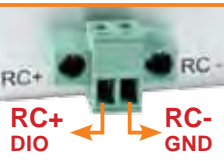
**Single 12V Power Input**  
4-pin Power Jack with Lock for 12V DC power input



**COM with Isolation**


1. On board +15KV ESD protection
2. Isolated 1200VDC protection

An integrated circuit (IC) connected to external port is susceptible to damaging electrostatic discharge (ESD) pulses from the operating environment and peripherals. Additional protection can violate stringent signaling requirements, leaving design engineers with the need to balance performance and reliability.



**DIO Signal**  
The GPIO terminal block connects to a remote control device. Users can control the system power on/off by inputting high or low voltage into the terminal block.


Turn off the system: more than 1 V input  
Turn on the system: less than 0.5 V input




**High Performance Intel® GbE**

- Intel® 82574L


The 82574 provides one PCIe lane operating at 2.5 GHz with sufficient bandwidth to support 1000 Mb/s transfer rate. It supports 9018-byte jumbo packets, 40 KB of on-chip buffering mitigates instantaneous receive bandwidth demands and eliminates transmit under-runs by buffering the entire outgoing packet prior to transmission.




**AT/ATX Mode by external switch**  
The TANK-GM45A supports AT and ATX power modes. The setting can be made through the AT/ATX switch on the external peripheral interface panel.



**Digital Security Surveillance**





**One 2.5" SATA HDD Space**

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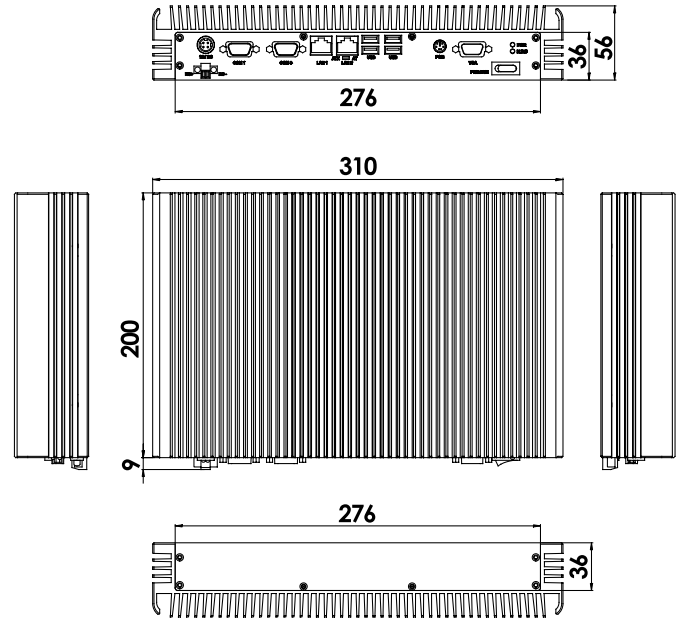
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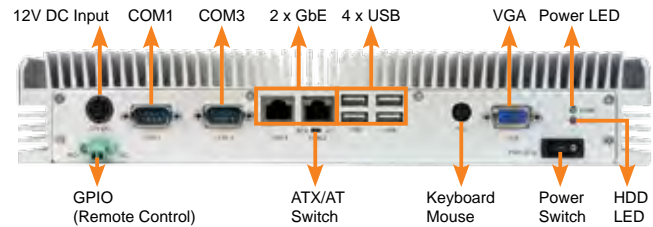
## Specifications

Model Name		TANK-GM45A	
Chassis	Color	Sliver	
	Dimensions(WxDxH)	310 x 200 x 55 mm	
	System Fan	Fanless	
	Chassis Construction	Aluminum alloy with heavy duty metal	
Motherboard	CPU	Intel® Core Duo P8600 2.4GHz Intel® Celeron M 575 2.0GHz	
	Chipset	Intel® GM45 + ICH9M	
	System Memory	Pre-installed 2GB DDR2 SO-DIMM (System Max 2GB)	
Storage	Hard Drive	1 x 2.5" SATA HDD Bay	
I/O interfaces	PS2 (KB/MS)	1	
	USB 2.0	4	
	Ethernet	2 x RJ-45 LAN1 : Intel® 82574L Ethernet Controller LAN2 : Intel® WG82567LM Ethernet PHY	
	RS-232	1 x DB-9 w/isolation	
	RS-232/422/485	1 x DB-9 Default RS-422 w/isolation	
	Digital I/O	DIO signal for remote on/off control	
	Display	1 x VGA	
	Resolution	2048 x 1536 @ 75 Hz	
	Power	Power Input	Terminal / DC Jack : 12V
		Power Consumption	12V@3.85A (Intel® Core 2 Duo P8600 2.4GHz with 3MB L2 Cache, DDR2 2GB)
Reliability	Mounting	Wall mount	
	Operating Temperature	-20°C ~ 70°C with air flow (SSD)	
	Operating Shock	Half-sine wave shock 3G, 11ms, 3 shocks per axis	
	Operating Vibration	MIL-STD-810F 514.5C-1	
	Weight (Net/Gross)	3.5kg/4.2kg	
	Safety / EMC	CE/FCC	
OS	Supported OS	Microsoft® WESTE, Microsoft® Windows® XP Embedded	

## Dimensions (Unit: mm)



## Integrated I/O



## Packing List

- 1 x Power Cable (Terminal Block DC in Cable) (P/N : 32002-002000-100-RS)
- 1 x Screw Set for Wall Mount Kit
- 2 x Wall Mount Baskets
- 1 x QIG
- 1 x One Key Recovery CD
- 1 x CD



Power Cable



Wall Mount bracket

## Ordering Information

Part No.	Description
TANK-GM45A-R10/P8600/2GB	Extended temperature fanless embedded system with Intel® Core™2 Duo P8600 2.4 GHz 3MB L2 cache and GM45 chipset, with 2GB DDR2 memory, 12VDC, -20°C~70°C, RoHS
TANK-GM45A-R10/CM575/2GB	Extended temperature fanless embedded system with Intel® Celeron® M 575 2.0 GHz 1MB L2 cache and GM45 chipset, with 2GB DDR2 memory, 12VDC, -20°C~70°C, RoHS
63000-FSP060DBAB1554-RS	Power adapter, FSP060-DBAB1554, input VAC : 90~264V, output : 12V/60W with ERP and PSE certificates
63000-FSP096AHB-RS	Power adapter, FSP096-AHB, input VAC : 90~264V, output : 12V/96W with ERP and PSE certificates
32000-000002-RS	17.5cm European Standard Power Cord
32000-000025-RS	18.3cm American Standard Power Cord
32006-00300-100-RS	PS2 KB/MS Y Cable
IFD-2510WT-XXXXX	iFD 2.5" SATA 3.0 2510WT SLC SSD Wide Temp. Grade -40°C~85°C (8GB~128GB)
IFD-2510RW-XXXXX	iFD 2.5" SATA 3.0 2510RW SLC SSD Wide Temp. Grade -40°C~85°C (1GB~32GB)
IFD-2000JW-XXXXX	iFD 2.5" SATA 3.0 2000JW SLC SSD Wide Temp. Grade -40°C~85°C (8GB~128GB)

XXXXX=Capacity

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Panel Solutions Introduction

# TANK-101B-D525-N455

Fanless Embedded Controller with dual-core Intel® Atom™ D525 processor



## Features

- ◆ Dual-core Intel® Atom™ D525 processor inside
- ◆ Wide range 9~36VDC power input
- ◆ Isolation protected COM and CAN communication
- ◆ Extended temperature fanless design supports -20°C ~ 70°C (N455)



The TANK-101B is designed with all the functions and protections compliant with targeting transport market. It not only provides dual-core computing power delivered by the Intel® Atom™ D525, its onboard memory with CompactFlash/SATA DOM solid-state storage can withstand severe operating environments on board. With typical voltage at 24VDC, the TANK-101B can take wide range DC input from 9V to 36V as power source. It also has COM port and CANBus with isolation protection for device control, dual Realtek GbE LAN and 802.11b/g/n for high speed communication. The TANK-101B supports all these versatile functions in a compact enclosure in addition to fanless operation.

## Isolation Protection

An integrated circuit (IC) connected to external ports is susceptible to damaging electrostatic discharge (ESD) pulses from the operating environment and peripherals. Additional protection can violate stringent signaling requirements, leaving design engineers with the need to balance performance and reliability.

**COM3** : RS-232/422/485  
Default RS-422 with isolation  
1. On-board 15KV ESD Protection  
2. Isolated 3000 VDC Protection

**LAN1 with ASF 2.0 support**  
Alert Standard Format (ASF 2.0) is also supported to provide system manageability in OS-absent environments. The ASF defines remote control and alerting interface that serve managed PCs in OS-absent states. The ASF capability can minimize on-site IT maintenance, improve system availability, and allow remote control of power management.

**Wide Range Power Input: 9~36 VDC**

**Power Jack**

**Reset**

**Isolated CAN :**  
The Control Area Network (CAN) is a serial bus system originally developed by Bosch for use in automobiles, and is now increasingly used in industrial automation. IEI TANK-101B has built-in on-board CAN controllers. The IEI CAN provides bus arbitration and error detection with an automatic transmission repeat function. This drastically reduces the chance of data loss, ensures system reliability and is suitable for networking intelligent I/O devices such as sensors or actuator of machines or plants. On-board optical isolators along with additional protection design protect your system and equipment against damage from ground loops and electrostatic discharge (ESD), which increases system reliability in harsh environments.

**Dual USB 2.0**

**VGA**

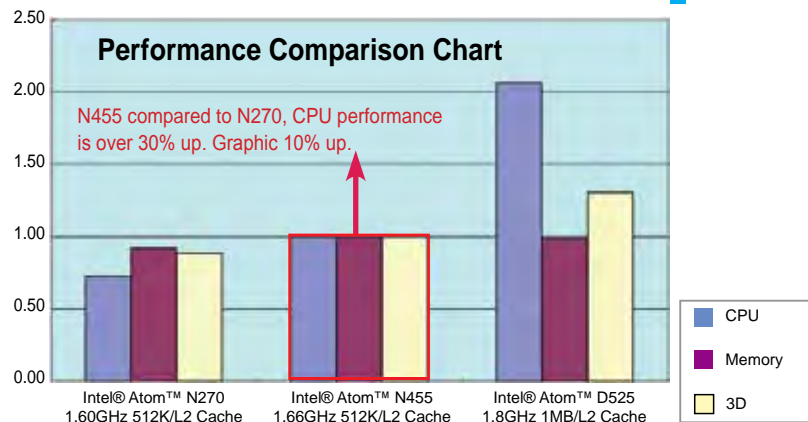
**Compact Flash**

**Mic-in**

**SPK-Out**

**Power adapter**  
12V/24V DC power supply

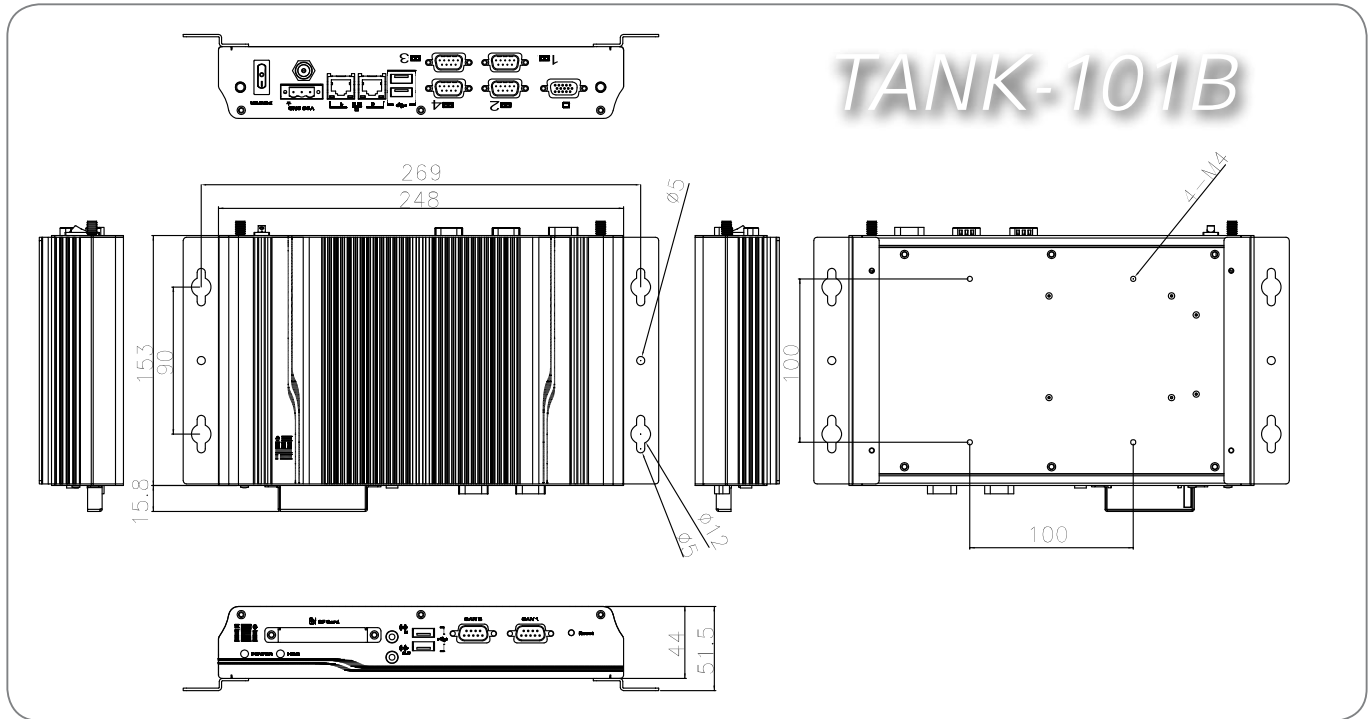
## Dual-core Intel® Atom™ D525



CAN Controller	Philips SJA1000T
CAN Transceiver	TI ISO1050DUBR
Signal Support	CAN_H, CAN_L
Speed (bps)	1Mbps
Connectors	Two DB-9 Connectors
Isolated Protection	2500Vrms on CAN side



Dimensions (Unit: mm)



Specifications

Model Name	TANK-101B	
Chassis	Color	Cool Gray+Blue
	Dimensions (WxDxH)	248 x 138 x 44 mm
	System Fan	Fanless
	Chassis Construction	Aluminum alloy with heavy duty metal
Motherboard	CPU	Intel® Dual Core D525 1.8 GHz Intel® Dual Core N455 1.66 GHz
	Chipset	Intel® ICH8M
Storage	System Memory	On-board DDR3 1GB memory 1 x 204-pin DDR3 SDRAM SO-DIMM (SO-DIMM : Max 2GB)
	Hard Drive	1 x 2.5" SATA HDD Bay
System Function	CompactFlash®	1 x CF Type II
	USB 2.0	4
	Ethernet	2 x RJ-45 Realtek 8111E PCIe GbE
	RS-232	3 x DB-9
	RS-422/485	1 x DB-9 Default RS-422 w/isolation
	CAN Bus	2 x DB-9 CAN w/isolation
	Display	1 x VGA
	Resolution	2048 x 1536 @ 60Hz
	Audio	1 x Line-out, 1 x Mic-in
	Wireless	1 x 802.11 b/g/n (optional)
Expansions	PCIe Mini	1 x Full size (reserved for Wi-Fi module)
Power	Power Input	DC Jack : 9~36V DC
	Power Consumption	12@1.85A (with DDR3 1GB)
Reliability	Mounting	Din-rail, wall mount
	Operating Temperature	-20°C ~ 60°C (D525 with air flow CF/SSD) -20°C ~ 70°C (N455 with air flow CF/SSD)
	Operating Shock	Half-sine wave shock 3G, 11ms, 3 shocks per axis
	Operating Vibration	MIL-STD-810F 514.5C-1 with SATA HDD MIL-STD-810F 514.5C-2 with CompactFlash® / SSD
OS	Weight (Net/Gross)	2.1 kg/3.9 kg
	Safety / EMC	CE/FCC
	Supported OS	Microsoft® Windows® XP Embedded

Packing List

1 x SATA HDD drive cable (P/N : 32801-004900-100-RS)	
1 x 60W 12V power adapter (P/N : 63000-FSP060DBAB1552-RS)	
2 x Wireless antenna (For wireless model only)	
1 x Power cord	1 x One Key Recovery CD
2 x Wall mount brackets	1 x Driver CD
1 x Screw set	1 x QIG



Wall Mount bracket

Ordering Information

Part No.	Description
TANK-101B-R10/D525/1GB	Extended temperture fanless embedded system with dual-core Intel® Atom™ Processor D525 1.8GHz CPU with two isolated CAN, one isolated serial port, 1GB DDR3 memory onboard, 9~36V DC in, Pantone 287C + Cool Gray 2C, -20°C ~ 60°C, RoHS
TANK-101B-R10/N455/1GB	Extended temperture fanless embedded system with Intel® Atom™ Processor N455 1.66GHz CPU with two isolated CAN, one isolated serial port, 1GB DDR3 memory onboard, 9~36V DC in, Pantone 287C + Cool Gray 2C, -20°C ~ 70°C, RoHS
TANK-101BW-R10/D525/1GB	Fanless embedded system with dual-core Intel® Atom™ Processor D525 1.8GHz CPU with two isolated CAN, one isolated serial port, built-in 802.11b/g/n wireless, 1GB DDR3 memory onboard, 9~36V DC in, Pantone 287C + Cool Gray -10°C ~ 50°C, RoHS

Embedded OS support

TANKCF-101B-XPE-1GB	Windows® XP Embedded OS image, for TANK-101B, with 1GB CompactFlash memory card, RoHS
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\* For other CompactFlash® capacity, please contact IEI for customization options.

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Panel Solutions Introduction

# Digital Signage Embedded System



Model Name		ECN-780-Q67	ECN-680A-H61	IOPS-H61/Q67	IDS-H61
Chassis	Color	Black	Black	Black	Black
	Dimension (WxDxH)	230 x 173 x 60 mm	222 x 54.5 x 163 mm	200 x 171 x 30 mm	267 x 160 x 45 mm
	System Fan	1 x 80 mm	1 x 80 mm	1 x 60 mm	Fanless
	Chassis Construction	SECC	SECC + Plastic	Aluminum Alloy	Aluminum Alloy
Motherboard	CPU	2nd Generation Intel® -Core i5 Dual Core 2xxT (Above 2.7GHz), 35W -Core i3 Dual Core 2xxT (Above 2.5GHz), 35W -Pentium Dual Core G6xxT (Above 2.2GHz), 35W	2nd Generation Intel® -Core i5 Dual Core 2xxT (Above 2.7GHz), 35W -Core i3 Dual Core 2xxT (Above 2.5GHz), 35W -Pentium Dual Core G6xxT (Above 2.2GHz), 35W	H61 : Intel® Celeron Dual Core G530 2.4 GHz, 65W Q67 : Intel® Dual Core i5-2390T 2.7 GHz, 35W	Intel® Celeron Dual Core G530T 2.0 GHz, 35W
	Chipset	Intel® Q67	Intel® H61	Intel® H61 / Intel® Q67	Intel® H61
	System Memory	On-board DDR3 2GB memory 1 x 204-pin DDR3 SDRAM SO-DIMM (System Max : 8GB)	1 x 204-pin DDR3 SO-DIMM support up to 1066/1333 MHz Pre-installed 2GB (System Max : 8GB)	1 x 204-pin DDR3 SO-DIMM 1333 MHz Pre-installed 4GB (System Max : 8GB)	2 x 204-pin DDR3 SO-DIMM 1333 MHz Pre-installed 4GB (System Max : 16GB)
Storage	Hard Drive	1 x 2.5" SATA HDD Bay	1 x 2.5" SATA HDD Bay	N/A	1 x 2.5" SATA HDD Bay
	CompactFlash®	N/A	N/A	N/A	N/A
I/O Interfaces	PS2(KB/MS)	N/A	N/A	N/A	N/A
	USB 3.0	2	2	N/A	N/A
	USB 2.0	2	4	2	4
	Ethernet	2 x RJ-45 LAN1 : Intel® 82579 PHY Ethernet with Intel® AMT 7.0 support LAN2 : Intel® 82583V Ethernet	2 x RJ-45 LAN1 : Intel® 82579 PHY Ethernet with Intel® AMT 7.0 support LAN2 : Intel® 82583V Ethernet	IOPS-H61:1 x RJ-45 Intel® 82579LM Gbe IOPS-Q67: 1 x RJ-45 Intel® 82579LM Gbe with Intel® AMT 7.0 support	1 x RJ-45 Intel® 82579LM Gbe
	RS-232	2 x DB-9	2 x DB-9, 1 x RJ-45	1 x RJ45	1 x DB-9
	RS-422/485	1 x DB-9	1 x DB-9	N/A	N/A
	Digital I/O	N/A	N/A	N/A	N/A
	CAN Bus	N/A	N/A	N/A	N/A
	Display	1 x HDMI 1 x DVI-D 1 x VGA	1 x HDMI 1 x DVI-D 1 x DVI-I	1 x DisplayPort 1.1	1 x DVI-I 1 x DisplayPort 1.1
	Resolution	VGA :Up to 2048 x 1536 @ 75Hz HDMI :Up to 1920 x 1200 @ 60Hz DVI-D : Up to 1920 x 1080 @ 60Hz	HDMI : Up to 1920 x 1200 @ 60Hz DVI-D/DVI-I : Up to 1920 x 1080 @ 60Hz	OPS display : Up to 1920 x 1200 DisplayPort : Up to 2560 x 1600	DVI-I : Up to 1920 x 1200 DisplayPort : Up to 2560 x 1600
	Audio	1 x Line-out , 1 x Mic-in	1 x Line-out , 1 x Mic-in	1 x Line-out	1 x Line-out
	Other	N/A	N/A	1 x SDHC card	1 x SDHC card
	Wireless	1 x 802.11 b/g/n (optional)	1 x 802.11 b/g/n (optional)	1 x 802.11 b/g/n (optional)	1 x 802.11 b/g/n (optional)
	Expansions	PCI	N/A	N/A	N/A
PCIe		N/A	N/A	N/A	N/A
PCIe Mini		2 x Full size (reserved for Wi-Fi and TV-Tuner)	1 x Full size (reserved for Wi-Fi)	1 x Full size (default mSATA 32GB)	1 x Full size (default mSATA 32GB) 1 x Half size
Power	Power Input	100~ 240 AC input	DC Jack : 9~36V	12~19V DC	12V DC
	Power Consumption	19V@3.5A (Intel® Core i7-2600S with 1333MHz 4G DDR3 memory)	19V@3.6A (Intel® Core i7-2600S with 1333MHz 4G DDR3 memory)	TBD	TBD
Reliability	Mounting	Wall mount	Wall mount	OPS module PC	VESA 75/100, wall mount
	Operating Temperature	-20°C ~50°C with air flow	-20°C ~60°C with air flow	0°C ~45°C with air flow	0°C~45°C with air flow
	Operating Shock	Half-sine wave shock 3G, 11ms, 3 shocks per axis			
	Operation Vibration	MIL-STD-810F 514.5C-1 with SATA HDD MIL-STD-810F 514.5C-2 with CompactFlash® / SSD		MIL-STD-810F 514.5C-2 with mSATA	MIL-STD-810F 514.5C-1 with SATA HDD MIL-STD-810F 514.5C-2 with mSATA
	Weight ( Net/Gross)	3.1Kg/4.3Kg	1.8Kg/3.0Kg	1.2Kg/2.4Kg	2.1Kg/4.5Kg
OS	Safety / EMC	CE/FCC	CE/FCC	CE/FCC/LVD	CE/FCC/LVD
	Supported OS	Microsoft® WES7E, Microsoft® Windows® XP Embedded, Linux		Microsoft® Windows 7, Microsoft® WES7	

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# ECN-780-Q67

Embedded System with 2nd Gen Intel® Core™ i7/i5/i3 Desktop Processors



## Features

- ◆ 2nd Generation Intel® Core™ i7/i5/i3, Pentium® and Celeron® desktop processors
- ◆ Intel® HD graphics supports H.264/AVC-MPEG2/VC1, DirectX 10.1 and OpenGL 3.0
- ◆ On-board 2GB DDR3 memory and one DDR3 SO-DIMM slot (system max. 10GB)
- ◆ Dual Gigabit Ethernet with Intel® AMT 7.0 support
- ◆ Dual display output supported by VGA/DVI/HDMI
- ◆ Optional 2.4GHz 802.11 b/g/n Wi-Fi
- ◆ Easy to install SATA hard drive
- ◆ USB 3.0 ports provide super speed data transfer



## Specifications

Model Name	ECN-780-Q67	
Chassis	Color	Black
	Dimensions (WxDxH)	230 x 173 x 60 (mm)
	System Fan	1 x 80 mm
	Chassis Construction	SECC
Motherboard	CPU	2nd Generation Intel® -Core i5 Dual Core 2xT (Above 2.7GHz), 35W -Core i3 Dual Core 2xT (Above 2.5GHz), 35W -Pentium Dual Core G6xxT (Above 2.2GHz), 35W
	Chipset	Intel® Q67
	System Memory	On-board DDR3 2GB memory 1 x 204-pin DDR3 SDRAM SO-DIMM (System Max : 8GB)
Storage	Hard Drive	1 x 2.5" SATA HDD Bay
	USB 3.0	2
I/O interfaces	USB 2.0	2
	Ethernet	2 x RJ-45 LAN1 : Intel® 82579 PHY Ethernet with Intel® AMT 7.0 support LAN2 : Intel® 82583V Ethernet
	RS-232	2 x DB-9
	RS-422/485	1 x DB-9
	Display	1 x HDMI, 1 x DVI-D, 1 x VGA
	Resolution	VGA : Up to 2048 x 1536 @ 75Hz HDMI : Up to 1920 x 1200 @ 60Hz DVI-D : Up to 1920 x 1080 @ 60Hz
	Audio	1 x Line-out, 1 x Mic-in
	Wireless	1 x 802.11 b/g/n (optional)
Expansions	PCIe Mini	2 x Full size (reserved for Wi-Fi and TV-Tuner)
Power	Power Input	100~ 240 AC input
	Power Consumption	19V@3.5A (Intel® Core i7-2600S with 1333MHz 4G DDR3 memory)
Reliability	Mounting	Wall mount
	Operating	-20°C ~ 50°C with air flow
	Operating Shock	Half-sine wave shock 3G, 11ms, 3 shocks per axis
	Operating Vibration	MIL-STD-810F 514.5C-1with SATA HDD, MIL-STD-810F 514.5C-2 with CompactFlash® / SSD
	Weight (Net/Gross)	3.1 Kg/4.3 Kg
OS	Safety & EMC	CE/FCC
	Supported OS	Microsoft® WES7E, Microsoft® Windows® XP, Embedded, Linux

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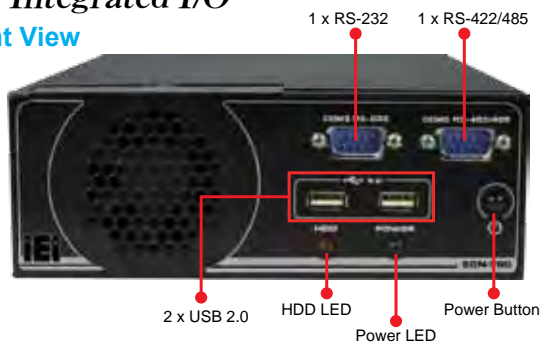
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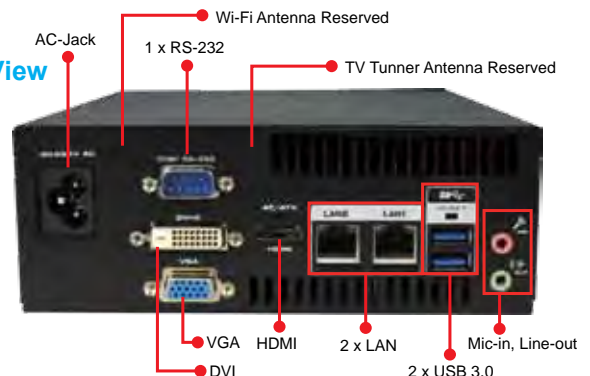
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## Fully Integrated I/O

### • Front View



### • Rear View



### Easily accessible HDD disk drive

The hard disk drive can be accessed easily by removing screws from the HDD bracket.



### In-chassis Power Adapter

The ECN-780 has a built-in power adapter module to prevent disorder situations and inconveniences caused by an external power adapter.

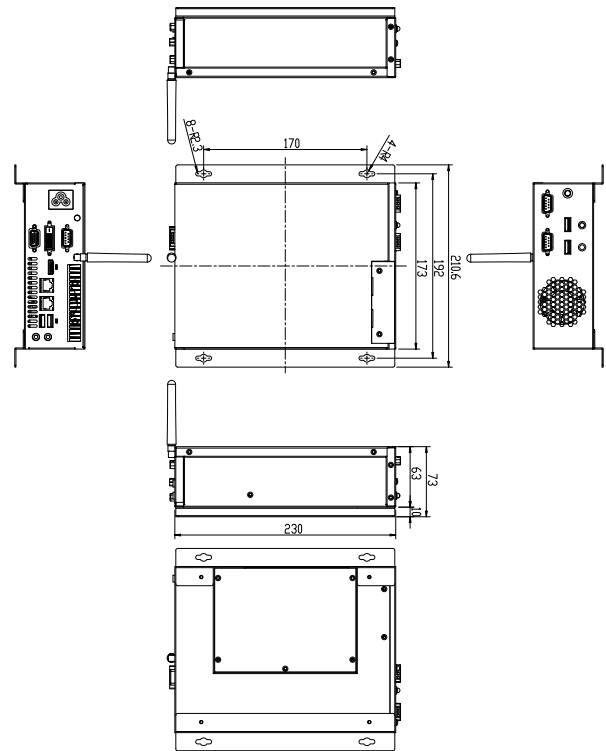


### Dual display by VGA/DVI/HDMI

- The ECN-780 has three types of display interfaces - VGA, DVI and HDMI, which support dual display and high resolution
- VGA supports resolutions up to 2048x1536@75Hz
- HDMI supports resolutions up to 1920x1200@60Hz
- DVI supports resolutions up to 1920x1080@60Hz



### Dimensions (Unit: mm)



### Packing List

Item	P/N	Q'ty	Description
Utility CD		1	Drivers and user manual
One Key Recovery CD	7B000-000724-RS	1	
Power cord	32702-000401-100-RS	1	1500 mm, European Standard
Wi-Fi antenna (for Wi-Fi module only)	32505-000900-100-RS	1	External Antenna
Mounting brackets		2	
Mounting bracket screws	44015-030041-RS	4	Mounting brackets screw
Power cord convert cable	32000-089400-RS	1	Covert normal type cord to triangle type cord cable
Thermal pad	34100-000197-RS	1	Thermal pad, 27.5 x 27.5 x 1.0mm, Silicone, K=6, Color : Reddish gray, RoHS

### Ordering Information

Part No.	Description
ECN-780-Q67-i5-R10	Embedded system, Core i5 Dual Core 2xxT CPU (Above 2.7GHz), TDP 35W, 2GB DDR3 on-board memory, dual display multimedia BOX, Dual GbE LAN, supports Intel® AMT 7.0, 100~240VAC Input, built-in 90W adapter, black, R10
ECN-780W-Q67-i5-R10	Embedded system, Core i5 Dual Core 2xxT CPU (Above 2.7GHz), TDP 35W, 2GB DDR3 on-board memory, dual display multimedia BOX, Dual GbE LAN, build-in 802.11b/g/n wireless, supports Intel® AMT 7.0, 100~240VAC Input, built-in 90W adapter, black, R10
ECN-780-Q67-i3-R10	Embedded system, Core i3 Dual Core 2xxT CPU (Above 2.5GHz), TDP 35W, 2GB DDR3 on-board memory, dual display multimedia BOX, Dual GbE LAN, 100~240VAC Input, built-in 90W adapter, black, R10
ECN-780W-Q67-i3-R10	Embedded system, Core i3 Dual Core 2xxT CPU (Above 2.5GHz), TDP 35W, 2GB DDR3 on-board memory, dual display multimedia BOX, Dual GbE LAN, build-in 802.11b/g/n wireless, 100~240VAC Input, built-in 90W adapter, black, R10
ECN-780-Q67-P-R10	Embedded system, Pentium Dual Core G6xxT CPU (Above 2.2GHz), TDP 35W, 2GB DDR3 on-board memory, dual display multimedia BOX, Dual GbE LAN, 100~240VAC Input, built-in 90W adapter, black, R10
ECN-780W-Q67-P-R10	Embedded system, Pentium Dual Core G6xxT CPU (Above 2.2GHz), TDP 35W, 2GB DDR3 on-board memory, dual display multimedia BOX, Dual GbE LAN, build-in 802.11b/g/n wireless, 100~240VAC Input, built-in 90W adapter, black, R10
Memory Selection	DDR3-SO-1333-2GB SO-DIMM DDR3 1333MHz 2GB
	DDR3-SO-1333-4GB SO-DIMM DDR3 1333MHz 4GB

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# ECN-680A-H61

Embedded System with 2nd Gen Intel® Core™ i7/i5/i3 Desktop Processors



## Features

- ◆ 2nd Generation Intel® Core™ i7/i5/i3 Pentium® and Celeron® desktop processor supported
- ◆ Intel® HD graphics supports H.264/AVC-MPEG2/VC1, DirectX 10.1 and OpenGL 3.0
- ◆ One 204-pin DDR3 SO-DIMM slot (system max. 8GB)
- ◆ Dual DVI display output supported
- ◆ Optional 2.4GHz 802.11 b/g/n 2T2R MIMO Wi-Fi for high speed wireless transmission
- ◆ Wide DC power input range 9 ~ 36V
- ◆ Extended temperature design supports -20°C to 60°C with air flow condition
- ◆ USB 3.0 for super high speed data transfer
- ◆ TPM V1.2 hardware security function supported



## Specifications

Model Name	ECN-680A-H61		
Chassis	Color	Black	
	Dimensions(W x D x H)	222 x 54.5 x 163 mm	
	System Fan	1 x 80 mm	
	Chassis Construction	SECC + Plastic	
Motherboard	CPU	2nd Generation Intel® -Core i5 Dual Core 2xxT (Above 2.7GHz), 35W -Core i3 Dual Core 2xxT (Above 2.5GHz), 35W -Pentium Dual Core G6xxT (Above 2.2GHz), 35W	
	Chipset	Intel® H61	
	System Memory	1 x 204-pin DDR3 SO-DIMM support up to 1066/1333 MHz Pre-installed 2GB (System Max : 8GB)	
Storage	Hard Drive	1 x 2.5" SATA HDD Bay	
	USB 3.0	2	
I/O interfaces	USB 2.0	4	
	Ethernet	2 x RJ-45, LAN1 : Intel® 82579 PHY Ethernet with Intel® AMT 7.0 support, LAN2 : Intel® 82583V Ethernet	
	RS-232	2 x DB-9, 1 x RJ-45	
	RS-422/485	1 x DB-9	
	Display	1 x HDMI, 1 x DVI-D, 1 x DVI-I	
	Resolution	HDMI : Up to 1920 x 1200 @ 60Hz, DVI-D / DVI-I : Up to 1920 x 1080 @ 60Hz	
	Audio	1 x Line-out, 1 x Mic-in	
	Wireless	1 x 802.11 b/g/n (optional)	
	Expansions	PCIe Mini	1 x Full size (reserved for Wi-Fi)
	Power	Power Input	DC Jack : 9~36V
Power Consumption		19W@3.6A (Intel® Core i7-2600S with 1333MHz 4G DDR3 memory)	
Mounting		Wall mount	
Reliability	Operating	-20°C ~ 60°C with air flow	
	Operating Shock	Half-sine wave shock 3G, 11ms, 3 shocks per axis	
	Operating Vibration	MIL-STD-810F 514.5C-1 with SATA HDD, MIL-STD-810F 514.5C-2 with CompactFlash® / SSD	
	Weight (Net/Gross)	1.8 Kg/3.0 Kg	
	Safety & EMC	CE/FCC	
OS	Supported OS	Microsoft® WES7E, Microsoft® Windows® XP, Embedded, Linux	

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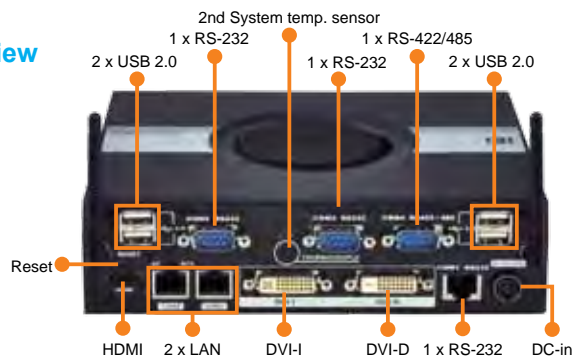
Panel Solutions Introduction

## Fully Integrated I/O

### • Front View



### • Rear View



### Easily accessible HDD disk driver

The hard disk drive can be easily accessed by removing screws from the HDD bracket.



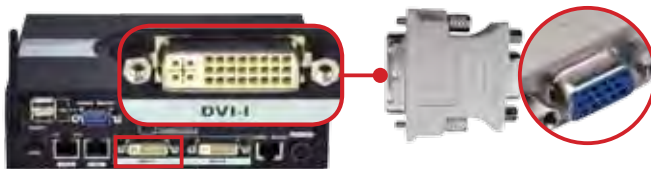
### Customized RS-232/422/485

The ECN-680A has one RS-422/485 and two RS-232 for COM Ports. The flexibility of the two COM ports allow the user choose two RS-232 or one RS-232 and one RS-422/485 according to applications.



### Dual DVI display and full HD display

- The ECN-680A has DVI-I, DVI-D display interfaces which supports dual display and high resolution with audio output for signage applications.
- DVI-I and DVI-D support resolutions up to 1920x1200@60Hz

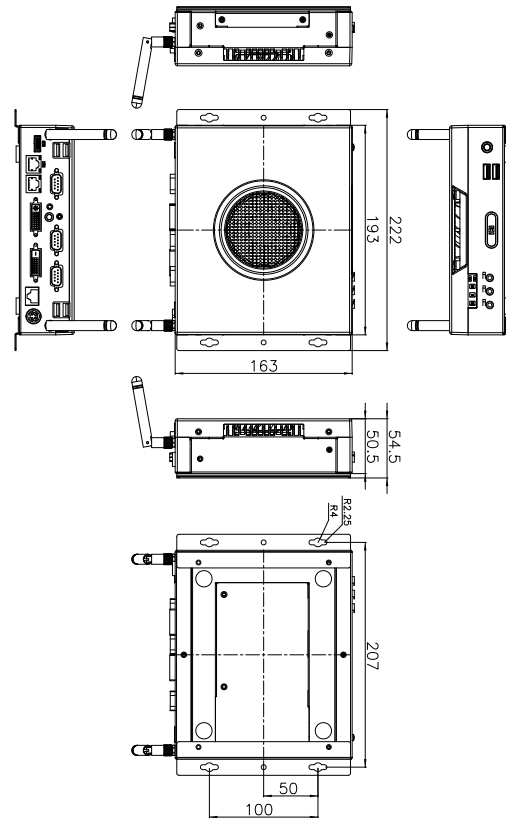


### DVI interfaces



Classify	Single	Convert VGA	Transfer Speed	Max resolution refresh rate
DVI-I single link	Digital/Analog	Yes	165Mbps	1920x1080, 60Hz/ 1600x1200, 60Hz
DVI-I dual link	Digital/Analog	Yes	330Mbps	2560x1600, 60Hz/ 1920x1080, 120Hz
DVI-D single link	Digital	No	165Mbps	1920x1080, 60Hz/ 1600x1200, 60Hz
DVI-I dual link	Digital	No	330Mbps	2560x1600, 60Hz/ 1920x1080, 120Hz

### Dimensions (Unit: mm)



### Packing List

Item	P/N	Q'ty	Description
Utility CD		1	Drivers and user manual
One Key Recovery CD	7B000-000724-RS	1	
Power adapter	63040-010090-020-RS	1	FSP090-D2BA1, 90 ~ 264VAC input, 90W, 19VDC output, Din 4-pin
Power cord	32702-000401-100-RS	1	1500 mm, European Standard
Power cord convert cable	32000-089400-RS	1	Convert normal type cord to triangle type cord cable
Wi-Fi antenna (for Wi-Fi module only)	32505-000900-100-RS	2	External antenna
Mounting brackets	41020-0343C2-00-RS	2	Wall mount kit
Mounting bracket screws	44015-030041-RS	8	Mounting brackets screw/HDD securing screw
RJ-45 to DB-9 COM port cable	32005-000200-200-RS	1	Round cable, RS-232/422/485, RS-232 cable, 2, 300mm, 26AWG, (A)D-SUB 9P male, (B)RJ-45 8P8C+SHELL, RoHS
Thermal pad	34100-000197-RS	1	Thermal pad, 27.5x27.5x1.0mm, Silicone,K=6, Color : Reddish gray, RoHS
RS-422/485 Cable	32205-004200-100-RS	1	Flat cable, RS-232/422/485, RS-422/485 Cable, 2, 100mm, 28AWG, (A)DU PONT 2*4P P=2.0 Female, IDIOT-PROOF, (B)D-SUB 9P, RoHS

### Ordering Information

Part No.	Description
ECN-680A-H61-i5-R10	Embedded system, Core i5 Dual Core 2xxT CPU (Above 2.7GHz), TDP 35W, Pre-installed 2GB DDR3 RAM*1, dual DVI display multimedia box, Dual GbE LAN, HDMI, TPM, 9~28VDC Input, 90W adapter, black, R10
ECN-680AW-H61-i5-R10	Embedded system, Core i5 Dual Core 2xxT CPU (Above 2.7GHz), TDP 35W, Pre-installed 2GB DDR3 RAM*1, dual DVI display multimedia box, Dual GbE LAN, build-in 802.11b/g/n wireless, HDMI, TPM, 9~28VDC Input, 90W adapter, black, R10
ECN-680A-H61-i3-R10	Embedded system, Core i3 Dual Core 2xxT CPU (Above 2.5GHz), TDP 35W, Pre-installed 2GB DDR3 RAM*1, dual DVI display multimedia box, Dual GbE LAN, HDMI, TPM, 9~28VDC Input, 90W adapter, black, R10
ECN-680AW-H61-i3-R10	Embedded system, Core i3 Dual Core 2xxT CPU (Above 2.5GHz), TDP 35W, Pre-installed 2GB DDR3 RAM*1, dual DVI display multimedia box, Dual GbE LAN, build-in 802.11b/g/n wireless, HDMI, TPM, 9~28VDC Input, 90W adapter, black, R10
ECN-680A-H61-P-R10	Embedded system, Pentium Dual Core G6xxT CPU (Above 2.2GHz), TDP 35W, Pre-installed 2GB DDR3 RAM*1, dual DVI display multimedia box, Dual GbE LAN, HDMI, TPM, 9~28VDC Input, 90W adapter, black, R10
ECN-680AW-H61-P-R10	Embedded system, Pentium Dual Core G6xxT CPU (Above 2.2GHz), TDP 35W, Pre-installed 2GB DDR3 RAM*1, dual DVI display multimedia box, Dual GbE LAN, build-in 802.11b/g/n wireless, HDMI, TPM, 9~28VDC Input, 90W adapter, black, R10

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# IOPS-Q67/H61

Intel® OPS Compliant Digital Signage Pluggable Module PC

## Features

- ◆ Designed for pin compliance with Intel® OPS (Open Pluggable Specification)
- ◆ Supports DisplayPort, UART, USB 2.0
- ◆ Intel® HD Graphics with Full HD video decoding capability
- ◆ Intel® Q67/H61 platform



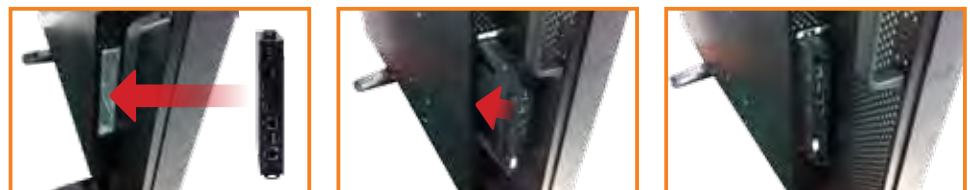
## Specifications

Model Name		IOPS-H61	IOPS-Q67
Chassis	Color	Black	Black
	Dimension (WxDxH)	200 x 171 x 30	200 x 171 x 30
	System Fan	1 x 60 mm	1 x 60 mm
	Chassis Construction	Aluminum Alloy	Aluminum Alloy
Motherboard	CPU	Intel® Celeron Dual Core G530 2.4 GHz, 65W	Intel® Dual Core i5-2390T 2.7 GHz, 35W
	Chipset	Intel® H61	Intel® Q67
	System Memory	1 x 204-pin DDR3 SO-DIMM 1333 MHz Pre-installed 4GB (System Max : 8GB)	1 x 204-pin DDR3 SO-DIMM 1333 MHz Pre-installed 4GB (System Max : 8GB)
I/O interfaces	USB 2.0	2	2
	Ethernet	1 x RJ-45 Intel® 82579LM Gbe	1 x RJ-45 Intel® 82579LM Gbe with Intel® AMT 7.0 support
	RS-232	1 x RJ45	1 x RJ45
	Display	1 x DisplayPort 1.1	1 x DisplayPort 1.1
	Resolution	OPS display : Up to 1920 x 1200 DisplayPort : Up to 2560 x 1600	OPS display : Up to 1920 x 1200 DisplayPort : Up to 2560 x 1600
	Audio	1 x Line-out	1 x Line-out
	Other	1 x SDHC card	1 x SDHC card
	Wireless	1 x 802.11 b/g/n (optional)	1 x 802.11 b/g/n (optional)
	Expansions	PCIe Mini	1 x Full size (default mSATA 32GB)
Power	Power Input	12~19V DC	12~19V DC
	Power Consumption	TBD	TBD
Reliability	Mounting	OPS module PC	OPS module PC
	Operating Temperature	0°C ~45°C with air flow	0°C ~45°C with air flow
	Operating Shock	Half-sine wave shock 3G, 11ms, 3 shocks per axis	Half-sine wave shock 3G, 11ms, 3 shocks per axis
	Operation Vibration	MIL-STD-810F 514.5C-2 with mSATA	MIL-STD-810F 514.5C-2 with mSATA
	Weight ( Net/Gross)	1.2Kg/2.4Kg	1.2Kg/2.4Kg
OS	Safety / EMC	CE/FCC/LVD	CE/FCC/LVD
	Supported OS	Microsoft® Windows 7, Microsoft® WES7	Microsoft® Windows 7, Microsoft® WES7

OPS (Open Pluggable Specification) module PC can be inserted into any OPS compatible display to satisfy customers' various requirements.

### Compatible Display Model

Display Brand	Display Model
NEC	X461S (46")
TVS	DS-42 (42")
TPV	DS4210MC (42")
Philips	BDL-4245E (42")
Mitsubishi	MDT551S (55")
eJump	PX420CHN-OPS (42")



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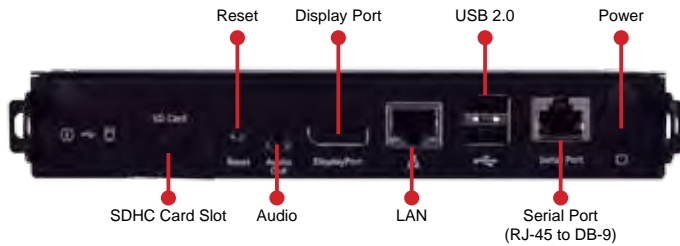
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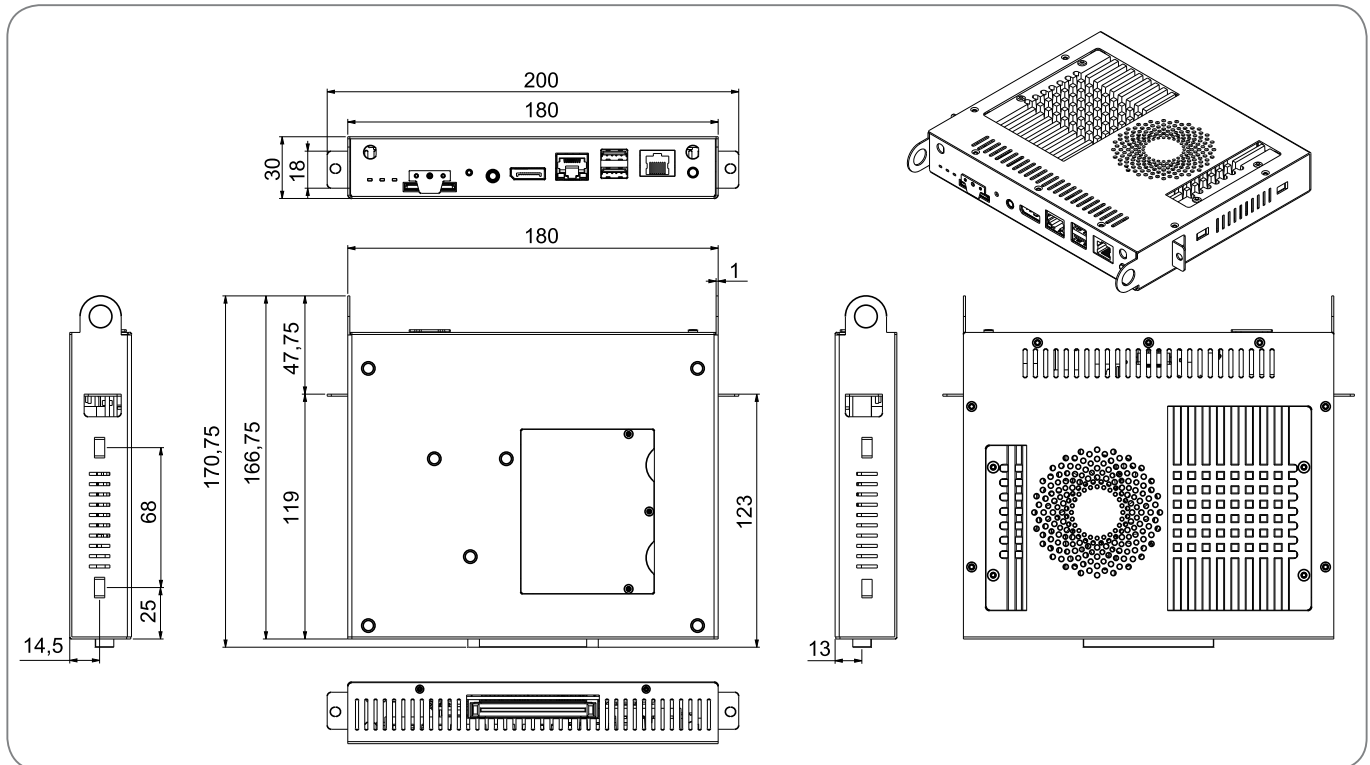
Front View



Rear View



Dimensions (Unit: mm)



Ordering Information

Part No.	Description
IOPS-H61-C-4GB-R10	OPS Module PC, Intel® Celeron G530 2.4GHz, TDP 65W, 4GB DDR3 SO-DIMM pre-installed, mSATA 32GB, DisplayPort, Intel® GbE, JAE 80-pin connector, USB2.0, serial port, SDHC card slot, HD Audio, 0°C~45°C, R10
IOPS-Q67-I5-4GB-R10	OPS Module PC, Intel® i5-2390T 2.7GHz, TDP 65W, 4GB DDR3 SO-DIMM pre-installed, mSATA 32GB, DisplayPort, Intel® GbE, JAE 80-pin connector, USB2.0, serial port, SDHC card slot, HD Audio, 0°C~45°C, R10

Options

Item	P/N	Description
OS: Win 7 Embedded	IOPS-Q67-WES7E-R10	OS Image with Windows® Embedded Standard 7 E, for IOPS-Q67/H61 series

Packing List

Item	Qty	Description
Utility CD	1	Drivers and user manual
One Key Recovery CD	1	
RS-232 cable (RJ-45 to DB-9)	1	

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# IDS-H61-R10

High Performance Digital Signage Player

## Features

- ◆ Fanless Design Digital Signage Player
- ◆ Supports DisplayPort, DVI/VGA, Gigabit Ethernet, USB 2.0
- ◆ Intel® HD Graphics with Full HD video decoding capability
- ◆ Intel® H61 platform



## Specifications

Model Name		IDS-H61
Chassis	Color	Black
	Dimension (WxDxH)	267 x 160 x 45 mm
	System Fan	Fanless
	Chassis Construction	Aluminum Alloy
Motherboard	CPU	Intel® Celeron Dual Core G530T 2.0 GHz, 35W
	Chipset	Intel® H61
	System Memory	2 x 204-pin DDR3 SO-DIMM 1333 MHz Pre-installed 4GB (System Max : 16GB)
Storage	Hard Drive	1 x 2.5" SATA HDD Bay
I/O interface	USB 2.0	4
	Ethernet	1 x RJ-45 Intel® 82579LM Gbe
	RS-232	1 x DB-9
	Display	1 x DVI-I 1 x DisplayPort 1.1
	Resolution	DVI-I : Up to 1920 x 1200 DisplayPort : Up to 2560 x 1600
	Audio	1 x Line-out
	Other	1 x SDHC card
	Wireless	1 x 802.11 b/g/n (optional)
Expansions	PCIe Mini	1 x Full size (default mSATA 32GB) 1 x Half size
	Power Input	12V DC
Power	Power Consumption	TBD
	Reliability	Mounting
Operating Temperature		0°C~45°C with air flow
Operating Shock		Half-sine wave shock 3G, 11ms, 3 shocks per axis
Operation Vibration		MIL-STD-810F 514.5C-1 with SATA HDD MIL-STD-810F 514.5C-2 with mSATA
Weight ( Net/Gross)		2.1Kg/4.5Kg
OS	Safety / EMC	CE/FCC/LVD
	Supported OS	Microsoft® Windows 7, Microsoft® WES7

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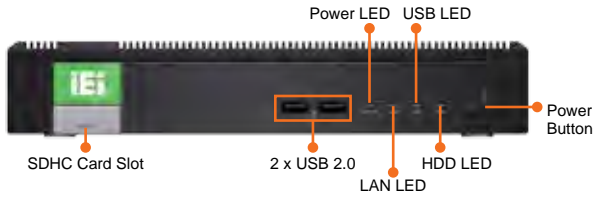
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Power Supply/ Peripherals

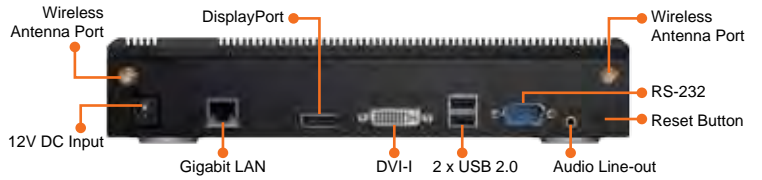
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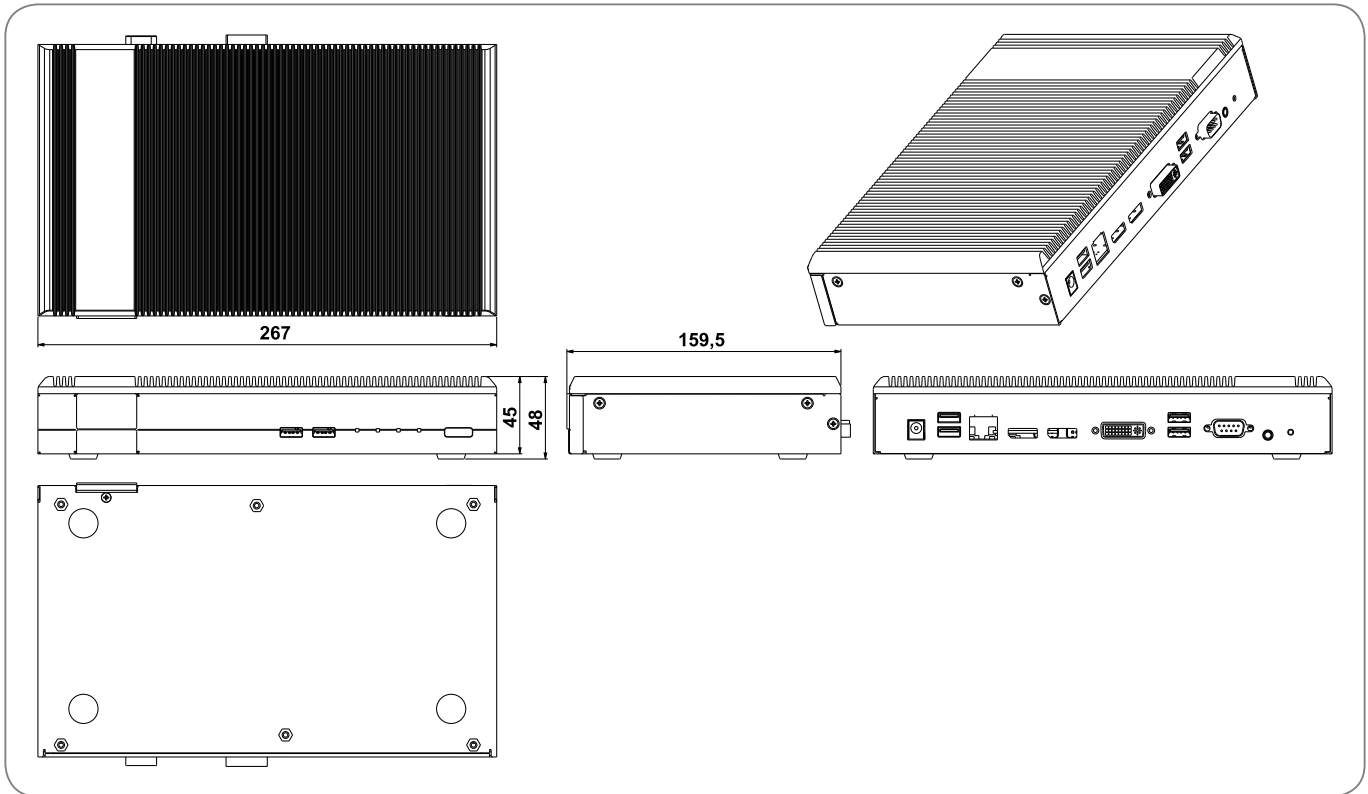
### Front View



### Rear View



### Dimensions (Unit: mm)



### Ordering Information

Part No.	Description
IDS-H61-C-4GB-R10	Fanless embedded system, Intel® Celeron G530T 2.0GHz, TDP 35W, 2GB x 2 DDR3 SO-DIMM pre-installed, mSATA 32GB, DisplayPort, Intel® GbE, DVI, 2.5" HDD bay, USB 2.0, serial port, SDHC card slot, HD Audio, 0°C~45°C, R10

### Options

Item	P/N	Description
OS: Win 7 Embedded	IDS-H61-WES7E-R10	OS Image with Windows® Embedded Standard 7 E, for IDS-H61 series

### Packing List

Item	Qty	Description
Utility CD	1	Drivers and user manual
One Key Recovery CD	1	
DVI to VGA adapter	1	
Power adapter	1	
Wall mount kit	1	

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# Compact Size Embedded System



**New**

DIN-Rail

**New**

Model Name		DRPC-100-CV	uIBX-210-CV-N2600	uIBX-200-VX800A	uIBX-200-Z510P	IBX-530B-N270
Chassis	Color	Black	Silver	Silver		Black
	Dimension (WxDxH)	59.4 x 140 x 170 mm	146.6 x 132 x 45.2 mm	120 x 120 x 44.4 mm		210 x 108.2 x 39 mm
	System Fan	Fanless	Fanless	Fanless		Fanless
	Chassis Construction	Extruded aluminum alloy	Aluminum Alloy	Aluminum Alloy		Aluminum Alloy
Motherboard	CPU	Intel® Atom™ N2800 1.86GHz	Intel® Atom™ N2600 1.6GHz	VIA® Eden™ ULV 500MHz	Intel® Atom™ Z510P 1.1 GHz	Intel® Atom™ N270 1.6GHz
	Chipset	Intel® NM10	Intel® NM10	VIA® VX800	Intel® US15WP	Intel® 945GSE + ICH7M
	System Memory	1 x 204 pin DDR3 SO-DIMM (System Max 2GB) Pre-installed 2GB	1 x 204 pin DDR3 SO-DIMM (System Max 2GB) Pre-installed 2GB	On-board DDR2 512MB memory	On-board DDR2 1GB memory	1 x 200 pin DDR2 SO-DIMM (System Max 2GB) Pre-installed 1GB
Storage	Hard Drive	N/A	1 x 2.5" SATA HDD Bay	N/A		N/A
	CompactFlash®	1 x CF Type II	N/A	1 x CF Type II		1 x CF Type II
I/O Interfaces	PS2(KB/MS)	N/A	N/A	N/A		N/A
	USB 3.0	N/A	N/A	N/A		N/A
	USB 2.0	4	4	4		4
	Ethernet	2 x RJ-45 Realtek 8111E PCIe GbE	1 x RJ-45 Realtek 8111E PCIe GbE	1 x RJ-45 Realtek 8111CP PCIe GbE		2 x RJ-45 Realtek 8111CP PCIe GbE
	RS-232	2 x DB-9 w/3KV isolation protection	2 x DB-9	2 x DB-9		2 x DB-9
	RS-422/485	2 x DB-9 w/3KV isolation protection	1 x RJ-45	N/A		N/A
	Digital I/O	1 x Phoenix terminal block w/ 3KV isolation protection 8 bit Digital I/O, 4 bit input / 4 bit output	N/A	N/A		N/A
	CAN Bus	1 x Phoenix terminal block w/ 3KV isolation protection. Supporting 2-port CAN-bus	N/A	N/A		N/A
	Display	1 x VGA	1 x VGA , 1 x HDMI	1 x VGA		1 x VGA
	Resolution	Up to 1920 x 1200 @ 60Hz	VGA : Up to 1920 x 1200 HDMI : Up to 1920 x 1080	Up to 1920 x 1440 @ 60Hz	Up to 1600 x 1200 @ 60Hz	Up to 1900 x 1200 @ 60Hz
	Audio	N/A	1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Mic-in		1 x Line-out
	Other	SATA DOM support	N/A	N/A		1 x eSATA
Expansions	Wireless	N/A	1 x 802.11 b/g/n (optional)	1 x 802.11 b/g/n (optional)		1 x 802.11 b/g/n (optional)
	PCI	N/A	N/A	N/A		N/A
	PCIe	N/A	N/A	N/A		N/A
Power	PCIe Mini	1 x Full size (reserved for mSATA)	1 x Full size (reserved for Wi-Fi module)	1 x Full size (reserved for Wi-Fi module)		1 x Full size (reserved for Wi-Fi module)
	Power Input	3 pin terminal block : 9~28V DC	12V DC	5V DC		12V DC
	Power Consumption	12V@1.85A (with DDR3 2GB)	12V@1.57A (with DDR3 2GB)	5V@2.52A (VIA Eden 500MHz DDR2 512MB) 5V@3.2A (VIA Eden 1GHz DDR2 1GB)	12V@1.98A (with DDR2 1GB)	12V@1.28A (with DDR2 1GB)
Reliability	Mounting	DIN-rail	VESA 75 / 100	VESA 75 / 100		Din-rail, VESA 75, Wall mount
	Operating Temperature	-25°C ~65°C with air flow (with SSD)	0°C ~50°C with air flow	0°C ~50°C with air flow		-10°C ~50°C with air flow
	Operating Shock	Half-sine wave shock 3G, 11ms, 3 shocks per axis				
	Operation Vibration	Meet MIL-STD-810F 514.5C-2	Meet MIL-STD-810F 514.5C-1	Meet MIL-STD-810F 514.5C-2		
	Weight ( Net/ Gross)	1Kg/2Kg	980g/1.8Kg	480g/1.5Kg		645g/1.8Kg
	Safety / EMC	CE/FCC				
OS	Supported OS	Microsoft® WESTE Microsoft® Windows® XP Embedded	Microsoft® WESTE Microsoft® Windows® XP Embedded Microsoft® Windows® CE 6.0	Microsoft® Windows® XP Embedded Microsoft® Windows® CE 5.0		Microsoft® Windows® XP Embedded Microsoft® Windows® CE 6.0

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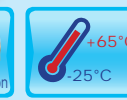
Panel Solutions Introduction

# DRPC-100

Fanless Embedded DIN-Rail Mounting System with Intel® Atom™ N2800 Dual Core Processor

## Features

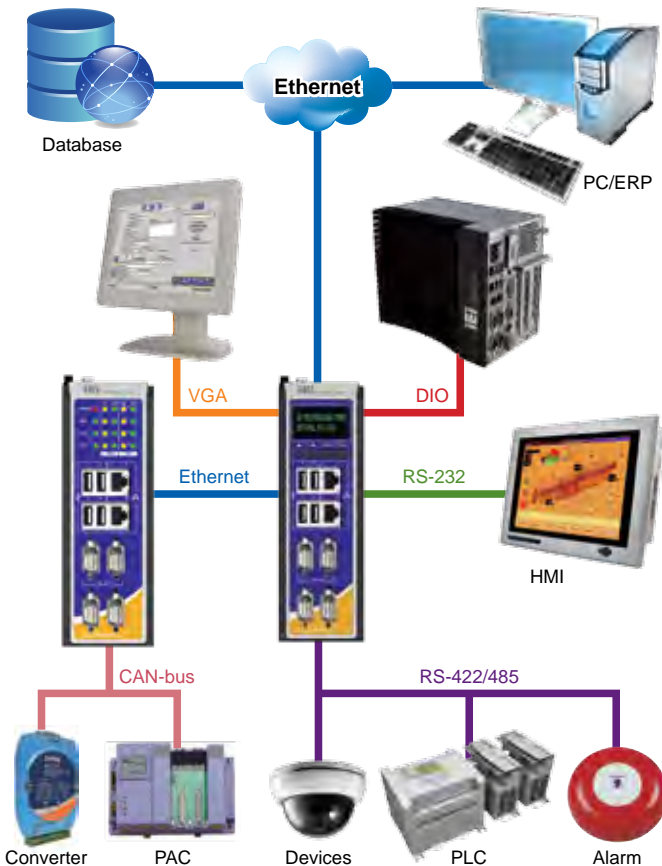
- ◆ Intel® Atom™ N2800 processor supported
- ◆ Low power consumption [N2800 + NM10 (6.5w +1.5w)]
- ◆ Intel® GMA 3650 with 640 MHz and supports Blu-ray 2.0, DirectX 9, MPEG-2, H.264, C-1 and 1080p decoding
- ◆ Supports 1066 MHz DDR3 SO-DIMM (up to 4 GB)
- ◆ Supports one mSATA, one SATA DOM and one CompactFlash®
- ◆ Wide range (9V~28V) DC power input
- ◆ One PCIe Mini expansion slot for add-on function purpose
- ◆ Supports two GbE, four USB 2.0, two RS-232, two RS-422/485, two CAN-bus and one 8-bit DIO
- ◆ Serial, CAN-bus and Digital I/O interfaces with isolation protection
- ◆ Extended temperature fanless design supports -25°C to 65°C (with SSD)
- ◆ Dual PCIe GbE LAN for high speed network application
- ◆ Programmable OLED Display



DRPC-100 is designed for harsh environment applications, such as high surge ESD automation environments, factory automation, heavy vehicle application and building automation (elevator, warehouse with air-conditioning control system and environment monitoring).

## Communication Gateway

For high surge ESD automation environments, the DRPC-100 provides isolated digital IO, CAN-bus and serial communication ports.



## Micro Controller for Building Automation

With rich I/O ports, such as COM, USB, Ethernet, CAN-bus, DIO and VGA, the DRPC-100 is able to be like a micro controller for building automation.

## Fanless

The DRPC-100 series provides the best components for generating less heat, while maintaining high system performance. With the fanless design, the DRPC-100 reduces system failure caused by fans and extends the lifetime of the device.



## Wide Range DC Power Input

The DRPC-100 series accepts a wide range DC power input, allowing it to be powered anywhere, no matter if a 12V, 24V DC source or 19V power adapter is available.

## Wide Range Temperature

The DRPC-100 series is designed to withstand wide temperature ranges. With this design, the DRPC-100 series can even be installed in a high-temperature roadside cabinet.

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A DIN rail is a metal rail of a standard type widely used for mounting circuit breakers and industrial control equipment inside equipment racks. These products are typically made from cold rolled carbon steel sheet with a zinc-plated and chromated bright surface finish. The term derives from the original specifications having been published by Deutsches Institut für Normung (DIN) in Germany, which have since been adopted as European (EN) and international (ISO) standards.



## Rich I/O Function

- **Four USB Ports**

Four USB ports can completely satisfy other USB devices or access requirements.

- **Dual GbE Ethernet Ports**

Dual GbE Ethernet ports offer a diverse range of network communication options, helping users easily create an integrated industrial application that requires Ethernet protocols.

- **Serial Ports Interface with Isolation**

Serial ports help millions of serial devices connect to the network for industrial applications. Our RS-232/422/485 serial ports provide powerful communication performance for all industrial device connectivity.

- **CAN-bus Interface with Isolation**

Controller Area Network (CAN or CAN-bus) is a vehicle bus standard designed to communicate or detect errors with each other within a vehicle, industrial automation and medical equipment. This drastically reduces the chance of data loss and ensures system reliability and is suitable for intelligent networking I/O devices such as sensors or actuator of machines or plants.

- **8-bit Digital I/O, 4-bit input/4-bit output Interface with Isolation**

The DIO channels are quite useful for remote controlling, such as device power on/off, LEDs on/off, counter and cash drawer control.

## OLED indicator Function

- **Programmable OLED Display**

Users can program their own APIs to show any information by the OLED display.

- **Programmable Function Keys**

Users can program the four keys to control DRPC-100 & OLED display.

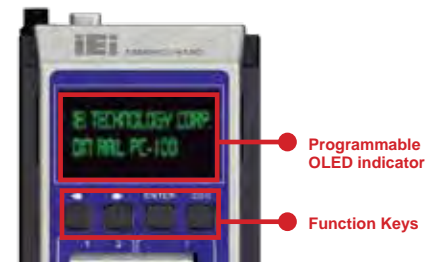
- **Terminal Screen & Status Display**

It not only shows text format but also graphic forma.

- **Protocol & Demo Source code Open**

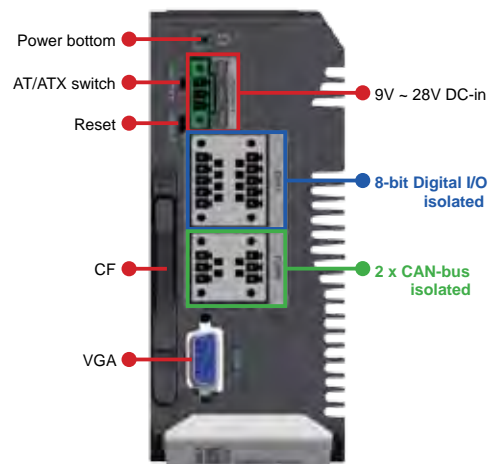
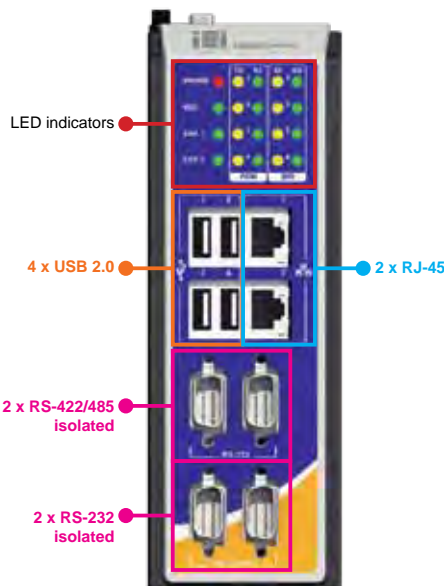
IEI provides the protocol & demo source code for uses to program their own usage.

OLED indicator



DRPC-100 LED Front View

DRPC-100 OLED Front View



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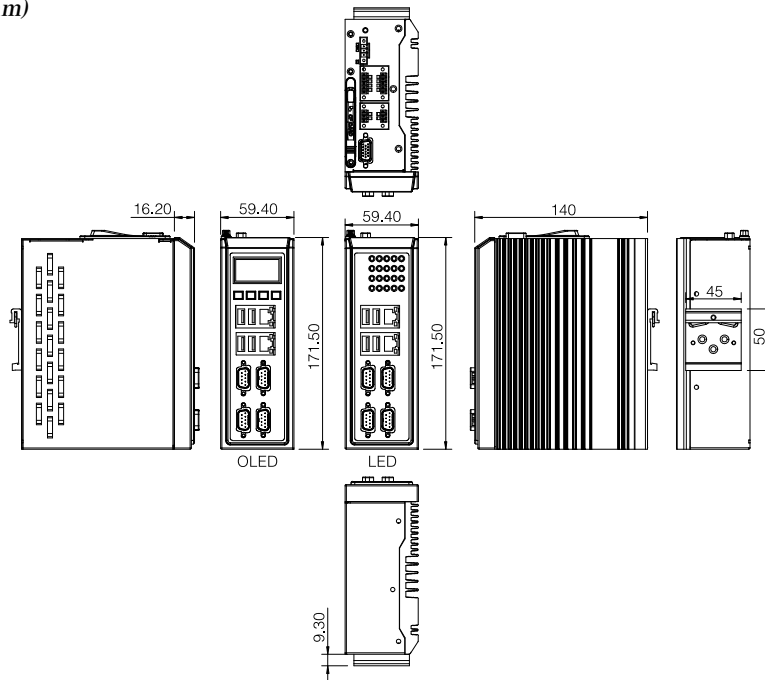
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**Dimensions (Unit: mm)**



**Specifications**

Model Name		DRPC-100
Chassis	Chassis Construction	Extruded aluminum alloy for fanless support move to next line
	Chassis Dimensions (WxDxH)	59.4 x 140 x 170 mm
	Chassis Color	Black
Motherboard	Fanless	Yes
	Processor	Intel® Atom™ N2800 dual core 1.86 GHz
	System Chipset	Intel® NM10
	Memory	One 2G 204-pin1066 MHz DDR3 SO-DIMM (max. 4 GB capacity)
	Ethernet	Dual GbE by RTL8111E controllers
Storage	SATA	mSATA & SATA DOM support CF card support (top side)
	USB	4 x USB 2.0 (front side)
System Function	Ethernet	2 x RJ-45
	RS-232	2 x DB-9 with 3KV isolation protection (front side)
	RS-422/485	2 x DB-9 with 3KV isolation protection (front side)
	Display	1 x VGA port (Top side , Up to 1920 x 1200 @ 60Hz)
	DIO	1 x Phoenix terminal block w / 3KV isolation protection, 8 bit Digital I/O, 4 bit input / 4 bit output
	CAN-bus	1 x Phoenix terminal block with 3KV isolation protection, supporting 2-port CAN-bus (top side)
	Interior Expansions	1 x PCIe Mini slot
	Buttons	Power on, reset button (top side)
Power	Power Input	PWR1 : 9 to 28 VDC (3-pin terminal block)
	Power Consumption	12V@1.85A (Intel® Atom™ N2800 dual core 1.86 GHz & DDR3 1066MHz 2GB memory)
	ATX/AT Mode	ATX/AT switch (top side)
Reliability	Mounting	DIN rail
	Operation Temperature	-25°C to 65°C (SSD)
	Humidity	5% ~ 95%, non-condensing
	Storage Temperature	-25°C to 70°C
	Operating Shock	Half-sine shock test 5G/11ms, 3 shocks per axis
	Operating Vibration	MIL-STD-810F 514.5 C-1 (HDD), MIL-STD-810F 514.5 C-2 (SSD)
	Weight (Net/Gross)	1Kg / 2Kg
	Safety & EMC	CE/FCC

**Packing List**

1 x DRPC-100	
5 x terminal block ( 3 x 3-pin, 2 x 5pin)	1 x Utility CD
1 x DIN rail mounting bracket	1 x One Key Recovery CD

**Ordering Information**

Part No.	Description
DRPC-100-CV-LED-R10	Extended temperature fanless embedded system with Intel® Atom™ N2800, with 2GB DDR3 memory, two GbE, four USB 2.0, two RS-232, two RS-422/485, two CAN-bus, one 8-bit DIO, 9V~28V DC, -20°C to 65°C, LED indicators, RoHS
DRPC-100-CV-OLED-R10	Extended temperature fanless embedded system with Intel® Atom™ N2800, with 2GB DDR3 memory, two GbE, four USB 2.0, two RS-232, two RS-422/485, two CAN-bus, one 8-bit DIO, 9V~28V DC, -20°C to 65°C, OLED indicator, RoHS
32102-026500-100-RS	Power cable 200mm, (A)DC JACK to (B) 3-pin terminal block P=3.5
63000-FSP036RAB610-RS	Adapter power, FSP, FSP036-RAB, Vin : 90~264VAC, 36W, Erp (NO LOAD 0.3W), Vout : 12VDC, Φ2.1/Φ5.5/lock, CCL, RoHS
32000-000002-RS	17.5cm European Standard power cord
32000-000025-RS	18.3cm American Standard power cord
IPE-5200IM-xxx	Flash disk, mSATA, SLC, 0°C ~70°C, R : 160MB/s, W : 150MB/s, 2GB~32GB
IPE-5200VM-xxx	Flash disk, mSATA, SLC, -40°C~85°C, R : 160MB/s, W : 150MB/s, 2GB~32GB

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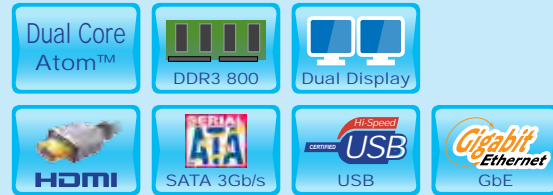
# uIBX-210-CV-N2600

Fanless embedded system with Intel® Atom™ N2600 DC 1.6GHz, Intel® NM10 chipset, 2GB DDR3 memory



## Features

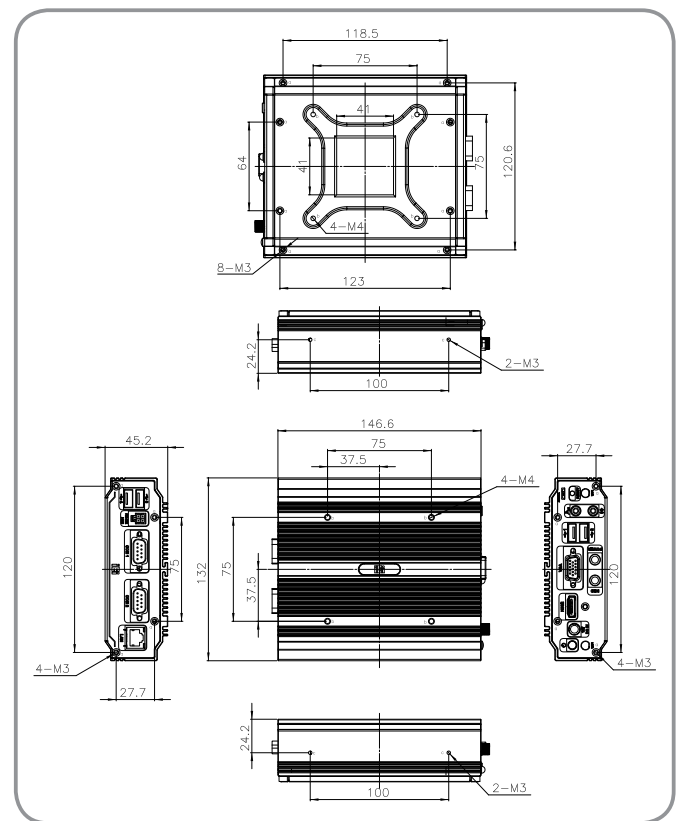
- ◆ Slim and compact embedded system design with Intel® 3rd Gen Atom™ N2600 dual-core processor, supports DDR3 memory (system max. 2GB)
- ◆ 12V only single voltage design, supports AT/ATX power mode selection
- ◆ Flexible VGA and HDMI with dual-display support
- ◆ Support PCIe Mini card slot
- ◆ Fully I/O with four USB, one VGA, one HDMI, three COM and audio



## Specifications

Model Name		uIBX-210-CV-N2600	
Chassis	Color	Silver	
	Dimension( WxDxH)	146.6 x 132 x 45.2 mm	
	System Fan	Fanless	
	Chassis Construction	Aluminum Alloy	
Motherboard	CPU	Intel® Atom N2600 1.6GHz	
	Chipset	Intel® NM10	
	System Memory	1 x 204 pin DDR3 SO-DIMM (System Max 2GB) Pre-installed 2GB	
Storage	Hard Drive	1 x 2.5" SATA HDD Bay	
I/O interfaces	USB 2.0	4	
	Ethernet	1 x RJ-45 Realtek 8111E PCIe GbE	
	RS-232	2 x DB-9	
	RS-422/485	1 x RJ-45	
	Display	1 x VGA 1 x HDMI	
	Resolution	VGA : Up to 1920 x 1200 HDMI : Up to 1920 x 1080	
	Audio	1 x Line-out, 1 x Mic-in	
	Wireless	1 x 802.11 b/g/n (optional)	
	Expansions	PCIe Mini	1 x Full size (reserved for Wi-Fi module)
	Power	Power Input	12V DC
Power Consumption		12V@1.57A (with DDR3 2GB)	
Reliability	Mounting	VESA 75 / 100	
	Operating Temperature	0°C ~50°C with air flow	
	Operating Shock	Half-sine wave shock 3G 11ms, 3 shocks per axis	
	Operation Vibration	Meet MIL-STD-810F 514.5C-1	
	Weight ( Net/Gross)	980g/1.8Kg	
OS	Safety / EMC	CE/FCC	
	Supported OS	Microsoft® WES7E Microsoft® Windows® XP Embedded Microsoft® Windows® CE 6.0	

## Dimensions (Unit: mm)



## Packing List

1 x uIBX-210-CV-N2600-R10	1 x One Key Recovery CD
1 x Adaptor 12V/5A	1 x Utility CD
1 x Screw set	1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
uIBX-210-CV-N2600/2GB-R10	Fanless embedded system with Intel® Atom™ N2600 DC 1.6GHz, Intel® NM10 chipset, 2GB DDR3 memory, 12VDC-In, with 60W power adaptor PSE adaptor, black, RoHS
uIBX-210W-CV-N2600/2GB-R10	Fanless embedded system with Intel® Atom™ N2600 DC 1.6GHz, Intel® NM10 chipset, 2GB DDR3 memory, built-in 2T2R 802.11b/g/n wireless, 12VDC-In, with 60W power adaptor PSE adaptor, black, RoHS
UIBXVK-210B	VESA 75 mount kit for uIBX-210, black
VK-75100B	VESA mount 75 to100 adapter, black

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# uIBX-200 Series



## uIBX-200-Z510P

- ◆ Internal dual SD card slot for storage expansion
- ◆ Ultra low power processor Intel® Atom™ Z510P
- ◆ Built-in H.264, MPEG1/2/4, VC1/WMV9 decoding



## uIBX-200-VX800

- ◆ VIA® Eden™ ULV 1GHz/500 MHz processor
- ◆ Supports MPEG2, WMV9/VC1 decoding
- ◆ Internal SATA connector (SATA DOM)



On Board Memory



Ultra Compact Size

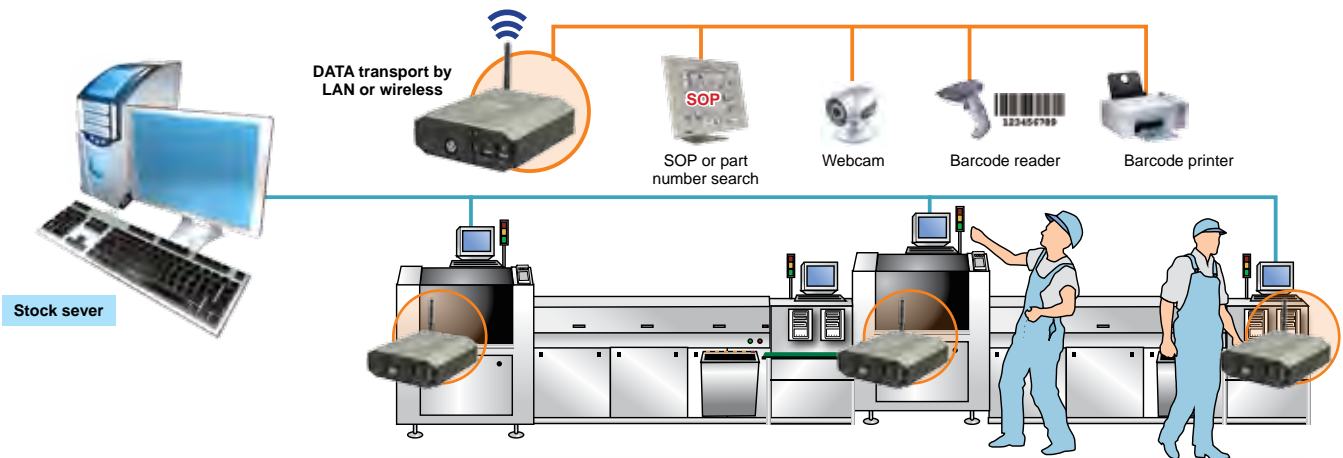


500g only

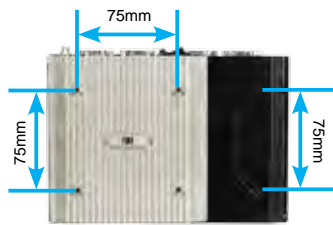


## uIBX-200-VX800 at Production Line

The uIBX-200-VX800 has all the essential functions to work as a thin client on the production line. Operators can read the assembly SOP and search for part numbers online, get constant production schedule updates and other instructions from management. During production, the component barcode can be collected by the barcode scanner and updated to the production server either by batch or via LAN or Wi-Fi connection. Webcam can also be installed to collect image data during the production process.



## Smart Mounting Design



### A. Wall mount

VESA 75 support. Easy to mount TOP or BOTTOM side.



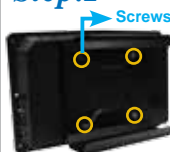
AFLWK-12

uIBX-200 can be mounted directly on the wall with VESA 75 mounting kit



### B. VESA mount 75

#### Step.1



Install the mount kit on the back of the monitor.

#### Step.2



Assemble the uIBX-200, stand and panel.

#### Step.3



The direction of the installation can be adjusted for different applications.

### C. VESA mount 100



Secure the VK-75100B and panel using screws.



Mount it on the back of an LCD monitor to save even more space and create an all-in-one PC at the same time.

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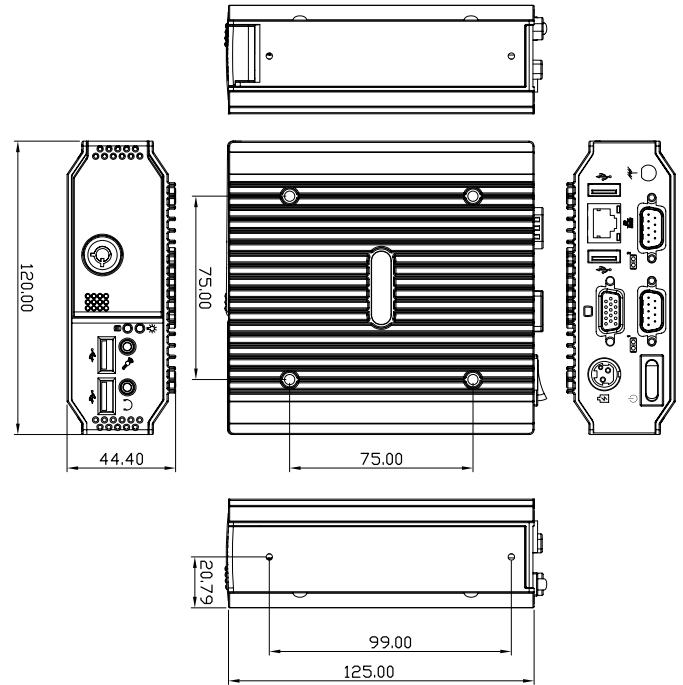
Panel Solutions Introduction



## Specifications

Model Name		uIBX-200-VX800A	uIBX-200-Z510P
Chassis	Color	Silver	
	Dimension (WxDxH)	120 x 120 x 44.4 mm	
	System Fan	Fanless	
	Chassis Construction	Aluminum Alloy	
Motherboard	CPU	VIA® Eden ULV 500MHz	Intel® Atom Z510P 1.1 GHz
	Chipset	VIA® VX800	Intel® US15WP
	System Memory	On-board DDR2 512MB memory	On-board DDR2 1GB memory
Storage	Compact Flash	1 x CF Type II	
I/O interfaces	USB 2.0	4	
	Ethernet	1 x RJ-45 Realtek 8111CP PCIe GbE	
	RS-232	2 x DB-9	
	Display	1 x VGA	
	Resolution	Up to 1920 x 1440 @ 60Hz	Up to 1600 x 1200 @ 60Hz
	Audio	1 x Line-out, 1 x Mic-in	
	Wireless	1 x 802.11 b/g/n (optional)	
Expansions	PCIe Mini	1 x Full size (reserved for Wi-Fi module)	
Power	Power Input	5V DC	
	Power Consumption	5V@2.52A (VIA Eden 500MHz DDR2 512MB) 5V@3.2A (VIA Eden 1GHz DDR2 1GB)	12V@1.98A (with DDR2 1GB)
Reliability	Mounting	VESA 75 / 100	
	Operating Temperature	0°C ~50°C with air flow	
	Operating Shock	Half-sine wave shock 3G, 11ms, 3 shocks per axis	
	Operation Vibration	Meet MIL-STD-810F 514.5C-2	
	Weight (Net/Gross)	480g/1.5Kg	
	Safety / EMC	CE/FCC	
OS	Supported OS	Microsoft® Windows® XP Embedded Microsoft® Windows® CE 5.0	Microsoft® Windows® XP Embedded Microsoft® Windows® CE 5.0

## Dimensions (Unit: mm)



## Packing List

1 x QIG
1 x Driver CD
2 x Keys (P/N: 457007-003103-00-RS)
1 x Screw set
1 x 5V 25W Power adapter (with ERP/PSE certificate) (P/N: 3000-FSP025DGAA1702-RS)
1 x 2dbi Wireless antenna (for wireless model only)
1 x One Key Recovery CD

## Ordering Information

### uIBX-200-Z510P

Part No.	Description
<b>UIBX-200-R11/Z510P/1GB</b>	Fanless embedded system with Intel® Atom™ Z510P 1.1GHz CPU, US15WP system chipset, onboard 1GB DDR2 memory, 5VDC in, 25W power adapter with ERP & PSE certificate, RoHS
<b>UIBX-200W-R11/Z510P/1GB</b>	Fanless embedded system with Intel® Atom™ Z510P 1.1GHz CPU, US15WP system chipset, onboard 1GB DDR2 memory, built-in 802.11b/g/n wireless, 5VDC in, 25W power adapter with ERP & PSE certificate, RoHS

### uIBX-200-VX800

<b>UIBX-200-R21/VX800A/512MB</b>	Fanless embedded system with VIA Eden ULV 500Hz CPU, VX800 chipset, onboard 512MB DDR2 memory, 5VDC-In, 25W power adapter with ERP & PSE certificates, black, ROHS
<b>UIBX-200W-R21/VX800A/512MB</b>	Fanless embedded system with VIA Eden ULV 500Hz CPU, VX800 chipset, onboard 512MB DDR2 memory, built-in 802.11b/g/n wireless, 5VDC-In, 25W power adapter with ERP & PSE certificates, black, ROHS
<b>UIBX-200-R21/VX800B/1GB</b>	Fanless embedded system with VIA Eden ULV 1GHz CPU, VX800 chipset, onboard 1GB DDR2 memory, 5VDC-In, 25W power adapter with ERP & PSE certificates, black, ROHS
<b>UIBX-200W-R21/VX800B/1GB</b>	Fanless embedded system with VIA Eden ULV 1GHz CPU, VX800 chipset, onboard 1GB DDR2 memory, built-in 802.11b/g/n wireless, 5VDC-In, 25W power adapter with ERP & PSE certificates, black, ROHS

## Embedded OS options

<b>UIBXCF-200-US15WP-CE060</b>	Windows® CE 6.0 OS image, for uIBX-200-US15WP, with 128 MB CompactFlash® memory card, RoHS
<b>UIBXCF-200-US15WP-XPE</b>	Windows® XP Embedded OS image, for uIBX-200-US15WP, with 1GB CompactFlash® memory card, RoHS
<b>UIBXCF-200-VX800-CE060</b>	Windows® CE 6.0 OS image, for uIBX-200-VX800, with 128 MB CompactFlash® memory card, RoHS
<b>UIBXCF-200-VX800-XPE</b>	Windows® XP Embedded OS image, for uIBX-200-VX800, with 1GB CompactFlash® memory card, RoHS

## Mounting kit

<b>UIBXVK-200B</b>	VESA 75 mount kit for uIBX-200, black
<b>VK-75100B</b>	VESA mount 75 to100 adapter, black

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# IBX-530B-N270

Fanless Intel® Atom™ Embedded System



## Features

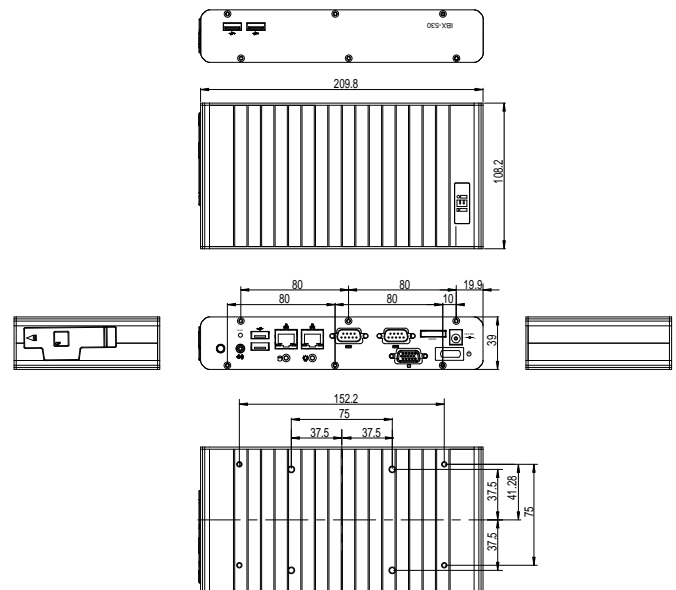
- ◆ Intel® Atom™ N270 1.6GHz solution
- ◆ Intel® Graphics Media Accelerator 950 for better graphic performance
- ◆ Supports Hyper-Threading Technology
- ◆ Fanless operation under -10°C to 50°C



## Specifications

Model Name		IBX-530B-N270
Chassis	Color	Black
	Dimension( WxDxH)	210 x 108.2 x 39 mm
	System Fan	Fanless
	Chassis Construction	Aluminum Alloy
Motherboard	CPU	Intel® Atom N270 1.6GHz
	Chipset	Intel® 945GSE + ICH7M
	System Memory	1 x 200 pin DDR2 SO-DIMM (System Max 2GB) Pre-installed 1GB
Storage	Compact Flash	1 x CF Type II
I/O interfaces	USB 2.0	4
	Ethernet	2 x RJ-45 Realtek 8111CP PCIe GbE
	RS-232	2 x DB-9
	Display	1 x VGA
	Resolution	Up to 1900 x 1200 @ 60Hz
	Audio	1 x Line-out
	Other	1 x eSATA
	Wireless	1 x 802.11 b/g/n (optional)
Expansions	PCIe Mini	1 x Full size (reserved for Wi-Fi module)
Power	Power Input	12V DC
	Power Consumption	12V@1.28A (with DDR2 1GB)
Reliability	Mounting	Din-rail, VESA 75, Wall mount
	Operating Temperature	-10°C ~50°C with air flow
	Operating Shock	Half-sine wave shock 3G, 11ms, 3 shocks per axis
	Operation Vibration	Meet MIL-STD-810F 514.5C-2
	Weight ( Net/Gross)	645g/1.8Kg
	Safety / EMC	CE/FCC
OS	Supported OS	Microsoft® Windows® XP Embedded Microsoft® Windows® CE 6.0

## Dimensions (Unit: mm)



## Packing List

1 x 36W 12V Power adapter (P/N : 63000-FSP036RAB608-RS)	
1 x Wall mount kit (P/N : AFLWK-12)	
1 x Screw set	1 x Power cord
4 x Foot pad with screws	1 x Driver & manual CD
1 x One Key Recovery CD	1 x 2dbi Wireless antenna



AFLWK-12

## Ordering Information

Part No.	Description
IBX-530B-R30/N270/1GB	Fanless embedded system Intel® Atom™ Processor N270 1.6GHz CPU, Intel® 945GSE, built in 1GB DDR2 memory, 12VDC in, with 36W adapter, with ERP and PSE certificates, black, RoHS
IBX-530W-R30/N270/1GB	Fanless embedded system Intel® Atom™ Processor N270 1.6GHz CPU, Intel® 945GSE, built in 1GB DDR2 memory, built-in 802.11b/g/n wireless, 12VDC in, with 36W adapter, with ERP and PSE certificates, black, RoHS
IBXCF-530-945GSE-CE060	WINCE 6.0 OS Image for IBX-530-945GSE, with 128MB CompactFlash® memory card, RoHS
IBXCF-530-945GSE-XPE	Windows® XPE OS image, for IBX-530-945GSE, with 1GB CompactFlash® memory card, RoHS

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# SBC Embedded System

**New**



Model Name	ECW-281B-D2550	ECW-281B-D525 (ECW-281B2-D525)	ECW-281B-R21/N270 (ECW-281B2-R21/N270)	ECN-581A-QM57	
<b>Chassis</b>	<b>Color</b>	Black	Black	Black	Cool Gray+Blue
	<b>Dimensions (W x D x H)</b>	229 x 132 x 64 mm	229 x 132 x 64 mm	229 x 132 x 64 mm	180 x 138 x 50 mm
	<b>System Fan</b>	Fanless	N/A	N/A	2 x 4cm
	<b>Chassis Construction</b>	Aluminum Alloy with heavy duty metal	Aluminum alloy with heavy duty meta	Aluminum alloy with heavy duty meta	Heavy duty metal
<b>Motherboard</b>	<b>Motherboard Model</b>	WAFER-CV-D25501	WAFER-PV-D5252	WAFER-945GSE	NANO-QM57A
	<b>Processor CPU</b>	Intel® Atom D2550 Dual core 1.86GHz / 1MB L2 cache	Intel® Atom™ D525 Processor 1.8GHz/1MB L2 cache	Intel® Atom™ N270 1.6GHz/512KB L2 Cache	Intel® Core™ i5-520M 2.4GHz/4MB L2 cache
	<b>Chipset</b>	Intel® NM10	ICH8M	Intel® 945GSE + ICH7M	Intel® QM57
	<b>System Memory</b>	2GB DDR3 204-pin SO-DIMM memory pre-installed	1 GB DDR3 204-pin SODIMM memory pre-installed	1 GB DDR2 200-pin SODIMM memory pre-installed	2 GB DDR3 204-pin SODIMM memory pre-installed
<b>Storage</b>	<b>Hard Drive</b>	1 x 2.5" SATA HDD Bay	1 x 2.5" SATA HDD Space	1 x 2.5" SATA HDD Space	1 x 2.5" SATA HDD Space
	<b>CompactFlash®</b>	N/A	1	1	N/A
<b>I/O Interfaces</b>	<b>PS2 (KB/MS)</b>	N/A	N/A	N/A	N/A
	<b>USB 3.0</b>	N/A	N/A	N/A	N/A
	<b>USB 2.0</b>	4	4	4	4
	<b>Ethernet</b>	2 x Realtek RTL8111E PCIe GbE controller	2 x Realtek 8111E PCIe GbE	2 x Realtek 8111CP PCIe GbE	1 x Intel® 82577LM PCIe PHY with AMT 6.0 support
	<b>RS-232</b>	3 x DB-9	6 (5)	6 (5)	2
	<b>Display</b>	1 x VGA	1 (2) x VGA	1 (2) x VGA	1 x DVI-I (DVI-D + VGA) 1 x DVI-D
	<b>Resolution</b>	Up to 1920 x 1200 @ 60Hz	2048 x 1536 @ 60Hz (1024x768 @ 60Mhz)	1920 x 1200 @ 60Hz (1024x768 @ 60Mhz)	1920 x 1200 @ 60 Hz (Digital) 2048 x 1536 @ 75 Hz (Analog)
	<b>Audio</b>	1 x Line-out	1 x Speaker out	1 x Speaker out	1 x Mic-in, 1 x Line-out, 1 x Line-in
	<b>Other</b>	8-bit digital I/O (4-bit input, 4-bit output)	N/A	N/A	N/A
	<b>Wireless</b>	1 x 802.11 b/g/n (optional)	1 x 802.11 b/g/n	1 x 802.11 b/g/n	1 x 802.11 b/g/n
<b>Expansions</b>	1 x Full size (support mSATA) 1 x Half size	1 x PCIe Mini card slot (reserved for Wi-Fi)	1 x PCIe Mini card slot (reserved for Wi-Fi)	1 x PCIe Mini card slot (reserved for Wi-Fi)	
<b>Power</b>	<b>Power Input</b>	DC Jack : 12V DC 3 pin terminal block : 9~ 36VDC (WD model)	12VDC in 9-36V (WD Model)	12VDC in 9-36V (WD Model)	12V DC in
	<b>Power Consumption</b>	12V@1.53A (with DDR3 1GB)	12V@1.79A (Intel® Atom™ D525 1.8GHz with DDR3 1GB)	12V@1.25A (Intel® Atom™ N270 1.6GHz with DDR2 1GB)	12V@4.18A (Intel® Core™ i5-520M 2.66G, DDR3 2GB)
<b>Reliability</b>	<b>Mounting</b>	DIN-rail, VESA 100, wall mount	DIN mount, VESA 75 mount, wall mount	DIN mount, VESA 75 mount, wall mount	Desktop, wall mount, VESA mount
	<b>Operating Temperature</b>	-10°C~50°C with hard drive	-20°C ~ 65°C with CompactFlash®/SSD -10°C ~ 50°C with HDD	-10°C ~ 70°C with CompactFlash®/SSD -10°C ~ 50°C with HDD	-10°C ~ 50°C with SSD
	<b>Operating Shock</b>	Half-sine wave shock 3G, 11ms, 3 shocks per axis			
	<b>Operating Vibration</b>	MIL-STD-810F 514.5C-1 (HDD)	* MIL-STD-810F 514.5C-1 MIL-STD-810F 514.5C-2		MIL-STD-810F 514.5C-1
	<b>Weight (Net/Gross)</b>	2.1Kg / 3.9 Kg	2.1kg/3.9kg	2.1kg/3.9kg	1.1kg/2kg

\*Systems with hard drive meet MIL-STD-810F 514.5C-1 specifications. SSD/CF systems meet MIL-STD-810F 514.5C-2 specifications.

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# ECW-281B/D2550

Fanless Embedded System for Intel® Atom™ dual-core D2550



## Features

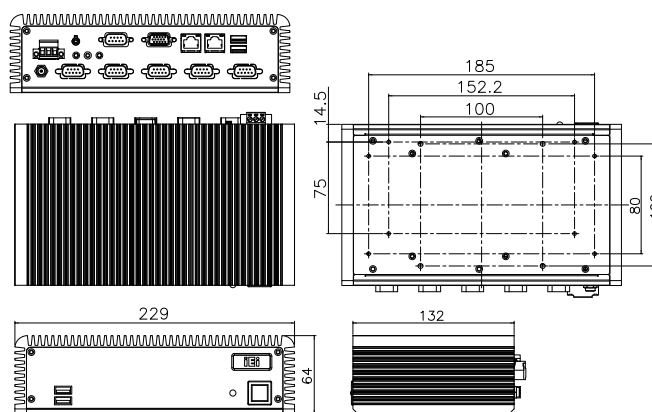
- ◆ Fanless system with Intel® Atom D2550 Dual core 1.86GHz
- ◆ Supports 4 COM ports ( 3 x RS-232 , 1 x RS-422/485)
- ◆ 2 PCIe mini slots ( 1 x full size , 1 x half size )
- ◆ 12V DC and 9~36V DC model available
- ◆ 2T2R 802.11 b/g/n wireless model available



## Specifications

Model Name		ECW-281B-D2550
Chassis	Color	Black
	Dimensions (WxDxH)	229 x 132 x 64 mm
	System Fan	Fanless
	Chassis Construction	Aluminum Alloy with heavy duty metal
Motherboard	Motherboard Model	WAFER-CV-D25501
	Processor CPU	Intel® Atom D2550 Dual core 1.86GHz / 1MB L2 cache
	Chipset	Intel® NM10
	System Memory	2GB DDR3 204-pin SO-DIMM memory pre-installed
Storage	Hard Drive	1 x 2.5" SATA HDD Bay
I/O interfaces	USB 2.0	4
	Ethernet	2 x Realtek RTL8111E PCIe GbE controller
	RS-232	3 x DB-9
	RS-422/485	1 x DB-9
	Display	1 x VGA
	Resolution	Up to 1920 x 1200 @ 60Hz
	Audio	1 x Line-out
	Other	8-bit digital I/O (4-bit input, 4-bit output)
	Wireless	1 x 802.11 b/g/n (optional)
	Expansions	1x Full size (support mSATA) 1 x Half size
Power	Power Input	DC Jack : 12V DC 3 pin terminal block : 9~ 36VDC (WD model)
	Power Consumption	12V@1.53A (with DDR3 1GB)
Reliability	Mounting	DIN-rail, VESA 100, wall mount
	Operating Temperature	-10°C~50°C with hard drive
	Operating Shock	Half-sine wave shock 3G, 11ms, 3 shocks per axis
	Operating Vibration	MIL-STD-810F 514.5C-1 (HDD)
	Weight (Net/Gross)	2.1Kg / 3.9 Kg

## Dimensions (Unit: mm)



## Packing List

1 x QIG	1 x Driver & user manual CD
1 x Screw set	1 x 12V 60W power adapter (optional for WD model) (P/N : 63000-FSP060DBAB1552-RS)
1 x DIN mount	1 x Power cord (optional for WD model)
1 x Hard drive thermal pad	1 x Wireless antenna (for wireless model)
2 x Wall mount bracket	1 x One Key Recovery CD

## Ordering Information

Part No.	Description
12V DC input	<b>ECW-281B-R10/D2550/2GB</b> Fanless embedded system with WAFER-CV-D25501, with dual core Intel ATOM D2550 1.86G, 4 serial ports, with 2GB DDR3 pre-installed SO-DIMM memory, 12VDC in, 60W power adapter, black, RoHS
	<b>ECW-281BW-R10/D2550/2GB</b> Fanless embedded system with WAFER-CV-D25501, with dual core Intel ATOM D2550 1.86G, built-in 802.11 b/g/n 2T2R wireless module, 4 serial ports, with 2GB DDR3 pre-installed SO-DIMM memory, 12VDC in, 60W power adapter, black, RoHS
9~36V DC input	<b>ECW-281BWD-R10/D2550/2GB</b> Fanless embedded system with WAFER-CV-D25501, with dual core Intel ATOM D2550 1.86G, 4 serial ports, with 2GB DDR3 pre-installed SO-DIMM memory, 9~36VDC in, 60W power adapter, black, RoHS
	<b>ECW-281BWDW-R10/D2550/2GB</b> Fanless embedded system with WAFER-CV-D25501, with dual core Intel ATOM D2550 1.86G, built-in 802.11 b/g/n 2T2R wireless module, 4 serial ports, with 2GB DDR3 pre-installed SO-DIMM memory, 9~36VDC in, 60W power adapter, black, RoHS

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# ECW-281B/B2 Series Fanless Embedded System for Intel® Atom™ dual-core D525/N270



**Extended Temperature**



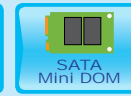
**6 COM**  
COM2 for ECW-281B Series



**Dual VGA**  
2nd VGA for ECW-281B2 Series

## Features

- ◆ Fanless system with
  - » 1.8 GHz Intel® Atom™ D525 dual-core CPU
  - » 1.6 GHz Intel® Atom™ N270 CPU
- ◆ Supports four USB 2.0 ports and six COM ports
- ◆ Dual GbE LAN ideal for high speed network applications
- ◆ Supports CompactFlash®, 2.5" SATA HDD and SSD storage devices
- ◆ 12 VDC and 9 VDC - 36 VDC power input models available
- ◆ Supports dual VGA display (B2 model only)



## Specifications



Model Name	ECW-281B-D525 (ECW-281B2-D525)	ECW-281B-N270 (ECW-281B2-N270)	ECW-281B-N270-WT
Platform	Intel®		
Color	Black		
Dimensions (WxDxH)	229 x 132 x 64 mm		
Chassis Construction	Aluminum alloy with heavy duty metal		
Motherboard Model	WAFER-PV-D5252	WAFER-945GSE-N270	WAFER-945GSE-N270W2
Processor CPU	Intel® Atom™ D525 Processor 1.8GHz/1MB L2 cache	Intel® Atom™ N270 1.6GHz/512KB L2 cache	
Chipset	ICH8M	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M
System Memory	1 x 204-pin 1GB DDR3 SODIMM (2GB for optional)	1 x 200-pin 1GB DDR2 SODIMM (2GB for optional)	1 x 200-pin 1GB DDR2 SODIMM (2GB for optional)
Hard Drive	1 x 2.5" SATA HDD space		
Compact Flash	1	1	1
USB 2.0	4	4	4
Ethernet	2 x Realtek RTL8111E PCIe GbE		
RS-232	6 RS-232 ports for ECW-281B-D525 (COM2: Default RS-232, RS422/485 optional) 5 RS-232 ports for ECW-281B2-D525	6 RS-232 ports for ECW-281B-N270 (COM2: Default RS-232, RS422/485 optional) 5 RS-232 ports for ECW-281B2-N270	6 RS-232 ports for ECW-281B-N270 (COM2: Default RS-232, RS422/485 optional) 5 RS-232 ports for ECW-281B2-N270
Display	1 (2) x VGA	1 (2) x VGA	1 x VGA
Resolution	2048 x 1536 @ 60Hz	1920 x 1200 @ 60Hz	1920 x 1200 @ 60Hz
Audio	1 x Speaker out		
Wireless	1 x 802.11 b/g/n	1 x 802.11 b/g/n	N/A
Expansions	1 x PCIe Mini card slot (reserved for Wi-Fi)		
Power Consumption	12V@1.79A (Intel® Atom™ D525 1.8GHz with DDR3 1GB)	12V@1.25A (Intel® Atom™ N270 1.6G with 1GB DDR2)	12V@1.25A (Intel® Atom™ N270 1.6G with 1GB DDR2)
Power input	12VDC in 9-36V (WD Model)	12VDC in 9-36V (WD Model)	12VDC in
Mounting	DIN mount, VESA 75 mount, wall mount		
Operating Temperature	-20°C ~ 65°C with CF/SSD -10°C ~ 50°C with HDD	-10°C ~ 60°C with CF/SSD -10°C ~ 50°C with HDD	-20°C ~ 70°C with CF/SSD
Operating Shock	Half-sine wave 3G, 11ms 3 shocks per axis		
Operating Vibration	* MIL-STD-810F 514.5C-1 MIL-STD-810F 514.5C-2	MIL-STD-810F 514.5C-2	MIL-STD-810F 514.5C-2
Weight (Net/Gross)	2.1kg/3.9kg		

\*Systems with hard drive meet MIL-STD-810F 514.5C-1 specifications. SSD/CF systems meet MIL-STD-810F 514.5C-2 specifications.

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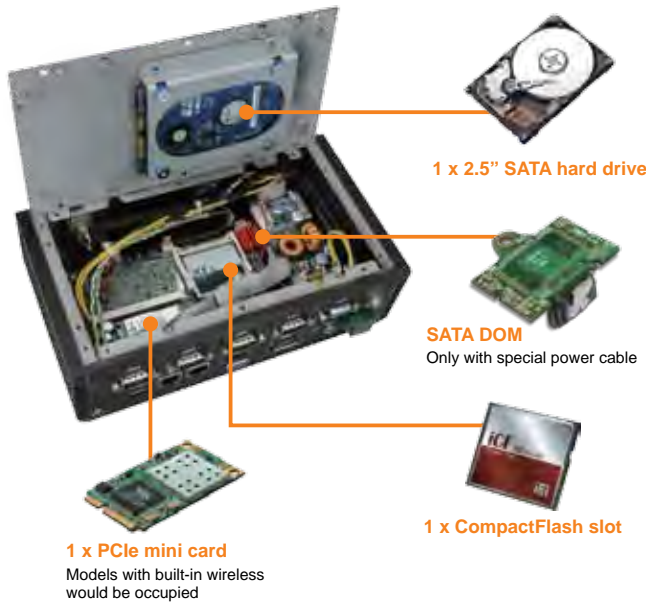
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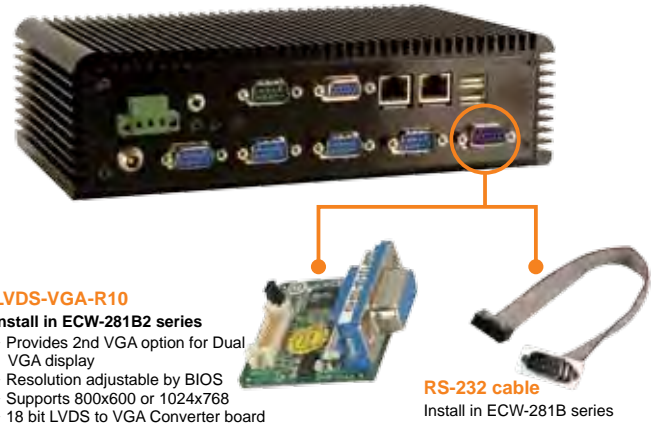
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## Storage & Expansions



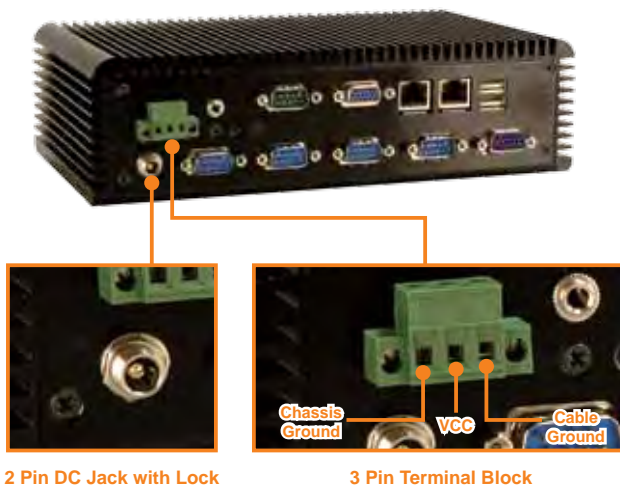
## Dual Display

The models of the ECW-281B series, either with Intel® Atom™ N270 single-core processor or D525 dual-core processor, all support dual VGA display through the optional LVDS to VGA converter module. The first VGA output signal comes from the on-board chipset and supports resolutions up to 2048x1536 (D525), while the second display output is made through the LVDS to VGA converter board (LVDS-VGA-R10) through the LVDS interface and supports resolutions up to 1024x768.



## Extended Voltage Input

The ECW-281B rear panel has two types of power input connectors which support either single 12 V DC input or 9–36 VDC input depending on the power module installed in the system.



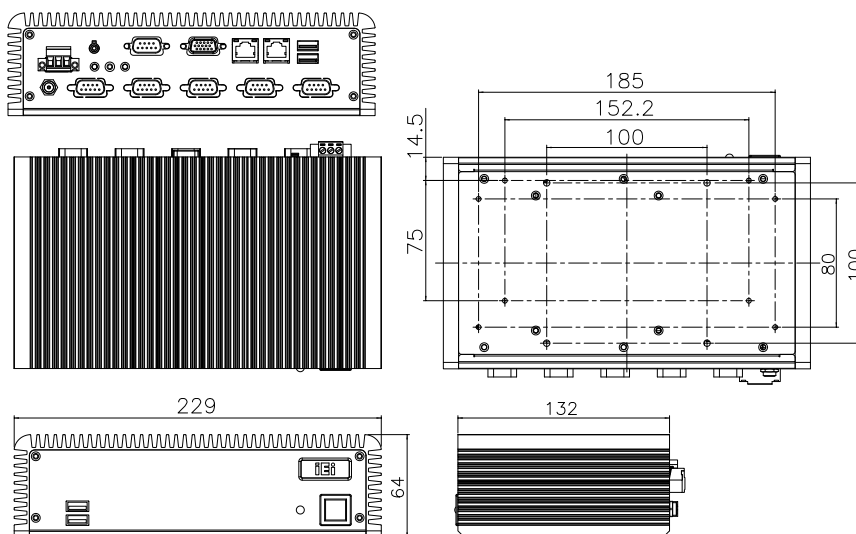
### IDD-936260

- » Install in 9–36V DC in model (ECW-281B/B2WD series)
- » Input range: 9-36VDC
- » Output:
  - 12 V @ 3 A (Max.)
  - 5 V @ 10 A (Max.)
  - 5 VSB @ 0.5 A (Max.)

### IDD-12250

- » Install in 12V DC in model (ECW-281B/B2-N270 series)
- » Input range: 12VDC
- » Output:
  - 12 V @ 5 A (Pass thr.)
  - 5 V @ 10 A (Max.)
  - 5 VSB @ 0.5 A (Max.)

## Dimensions (Unit: mm)



## Packing List

1 x QIG
1 x Screw set
1 x DIN mount
1 x Hard drive thermal pad
2 x Wall mount bracket
1 x Driver & user manual CD
1 x 12V 60W power adapter (optional for WD model) (P/N : 63000-FSP060DBAB1552-RS)
1 x Power cord (optional for WD model)
1 x Wireless antenna (for wireless model)
1 x One Key Recovery CD



DK-84MB

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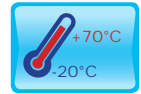
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## Extended Temperature

The ECW-281B series with Intel® Atom™ N270 single-core processor is a fanless system which supports a wide range of temperatures from -20°C to 70°C. The ECW-281B series industrial computer is powerful and can meet customers' needs with its various add-on functions. The table below is a model selection guide for the ECW-281B series.



### Spec Comparison table

Model	ECW-281B	ECW-281B2	ECW-281BWD	ECW-281B2WD	ECW-281B-WT
Wireless model	ECW-281BW	ECW-281B2W	ECW-281BWDW	ECW-281B2WDW	N/A
Main board	WAFER-945GSE-N270 WAFER-PV-D5252	WAFER-945GSE-N270 WAFER-PV-D5252	WAFER-945GSE-N270 WAFER-PV-D5252	WAFER-945GSE-N270 WAFER-PV-D5252	WAFER-945GSE-N270W2
COM port	6	5	6	5	6
VGA display	1	2	1	2	1
Power input	12V DC in	12V DC in	9~36V DC in	9~36V DC in	12V DC in
Adapter	60W	60W	N/A	N/A	N/A

### Ordering Information

D525	12VDC input	ECW-281B-R10/D525/1GB	Fanless embedded system with WAFER-PV-D5252, with dual-core Intel® Atom™ D525 1.8G, with 6 serial ports, with 1GB DDR3 memory, 12VDC in, 60W power adapter with ERP and PSE certificates, black, RoHS
		ECW-281BW-R10/D525/1GB	Fanless embedded system with WAFER-PV-D5252, with dual-core Intel® Atom™ D525 1.8G, with 6 serial ports, built-in 802.11b/g/n wireless, with 1GB DDR3 memory, 12VDC in, 60W power adapter with ERP and PSE certificates, black, RoHS
		ECW-281B2-R10/D525/1GB	Fanless embedded system with WAFER-PV-D5252, with dual-core Intel® Atom™ D525 1.8G, with dual VGA display and 5 serial ports, with 1GB DDR3 memory, 12VDC in, 60W power adapter with ERP and PSE certificates, black, RoHS
		ECW-281B2W-R10/D525/1GB	Fanless embedded system with WAFER-PV-D5252, with dual-core Intel® Atom™ D525 1.8G, with dual VGA display and 5 serial ports, built-in 802.11b/g/n wireless, with 1GB DDR3 memory, 12VDC in, 60W power adapter with ERP and PSE certificates, black, RoHS
	9~36VDC input	ECW-281BWD-R10/D525/1GB	Fanless embedded system with WAFER-PV-D5252, with dual-core Intel® Atom™ D525 1.8G, with 6 serial ports, with 1GB DDR3 memory, 9-36VDC in, w/o power adapter, black, RoHS
		ECW-281BWDW-R10/D525/1GB	Fanless embedded system with WAFER-PV-D5252, with dual-core Intel® Atom™ D525 1.8G, with 6 serial ports, built-in 802.11b/g/n wireless, with 1GB DDR3 memory, 9-36VDC in, w/o power adapter, black, RoHS
		ECW-281B2WD-R10/D525/1GB	Fanless embedded system with WAFER-PV-D5252, with dual-core Intel® Atom™ D525 1.8G, with dual VGA display and 5 serial ports, with 1GB DDR3 memory, 9-36VDC in, w/o power adapter, black, RoHS
		ECW-281B2WDW-R10/D525/1GB	Fanless embedded system with WAFER-PV-D5252, with dual-core Intel® Atom™ D525 1.8G, with dual VGA display and 5 serial ports, built-in 802.11b/g/n wireless, with 1GB DDR3 memory, 9-36VDC in, w/o power adapter, black, RoHS
N270	12VDC input	ECW-281B-R30/N270/1GB	Fanless embedded system with Intel® Atom™ N270 1.6GHz CPU, 945GSE, built-in 1GB DDR2 memory, 12VDC in, 60W power adapter with ERP and PSE certificates, black, RoHS
		ECW-281BW-R30/N270/1GB	Fanless embedded system with Intel® Atom™ N270 1.6GHz CPU, 945GSE, built-in 802.11b/g/n wireless, with 1GB DDR2 memory, 12VDC in, 60W power adapter with ERP and PSE certificates, black, RoHS
		ECW-281B2-R30/N270/1GB	Fanless embedded system with Intel® Atom™ N270 1.6GHz CPU, 945GSE, dual VGA, built-in 1GB DDR2 memory, 12VDC in, with 60W power adapter with ERP and PSE certificates, black, RoHS
		ECW-281B2W-R30/N270/1GB	Fanless embedded system with Intel® Atom™ N270 1.6GHz CPU, 945GSE, dual VGA, built-in 802.11b/g/n wireless, with 1GB DDR2 memory, 12VDC in, 60W adapter with ERP and PSE certificates, black, RoHS
	9~36VDC input	ECW-281B-WT-R30/N270/1GB	Extend temperature fanless embedded system with Intel® Atom™ N270 1.6GHz CPU, 945GSE, built-in 1GB DDR2 memory, 12VDC in, w/o power adapter, -20°C ~ 70°C degree, black, RoHS
		ECW-281BWD-R30/N270/1GB	Fanless embedded system with Intel® Atom™ N270 1.6GHz CPU, 945GSE, built-in 1GB DDR2 memory, 9-36VDC in, w/o power adapter, black, RoHS
		ECW-281BWDW-R30/N270/1GB	Fanless embedded system with Intel® Atom™ N270 1.6GHz CPU, 945GSE, built-in 802.11b/g/n wireless, with 1GB DDR2 memory, 9-36VDC in, w/o power adapter, black, RoHS
		ECW-281B2WD-R30/N270/1GB	Fanless embedded system with Intel® Atom™ N270 1.6GHz CPU, 945GSE, dual VGA, built-in 1GB DDR2 memory, 9-36VDC in, w/o power adapter, black, RoHS
		ECW-281B2WDW-R30/N270/1GB	Fanless embedded system with Intel® Atom™ N270 1.6GHz CPU, 945GSE, dual VGA, built-in 802.11b/g/n wireless, with 1GB DDR2 memory, 9-36VDC in, w/o power adapter, black, RoHS
		32205-003200-100-RS	Flat cable, RS-232/422/485, RS-422/485 cable, 2, 100mm, 28AWG, (A) D-SUB 9-pin male, (B) DU pont 2x7P P=2.0, female, IDIOT-PROOF, 32200-074600-RS substitute, hwalong, RoHS

### Embedded OS

ECWCWF-281B-D525-XPE	Windows XP Embedded OS image, for ECW-281B-D525, with 1GB CompactFlash® memory card, RoHS
ECWCWF-281B-D525-CE060	Windows CE 6.0 OS image, for ECW-281B-D525, with 128MB CompactFlash® memory card, RoHS
ECWCWF-281B-945GSE-XPE	Windows XP Embedded OS image, for ECW-281B-N270, with 1GB CompactFlash® memory card, RoHS
ECWCWF-281B-945GSE-CE060	Windows CE 6.0 OS image, for ECW-281B-N270, with 128MB CompactFlash® memory card, RoHS

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# ECN-581A-QM57

Intel® Mobile Core™ i5 Dual DVI Display Multimedia Box

The ECN-581A Series has a high performance graphics engine with full AVC, VC-1 and MPEG2 decoding acceleration as well as 1080p HD digital output for large-sized panels which makes it an ideal system for digital signage.

## Features

- ◆ Supports Socket G Intel® 32nm mobile processor Intel® Core™ i5-520M
- ◆ Dual DVI independent display support
- ◆ DDR3 800/1066 MHz SDRAM supported up to 4GB
- ◆ Intel® GbE LAN with Intel® AMT 6.0 supported
- ◆ 12V DC power input
- ◆ Optional wireless by PCIe mini card



## Specifications

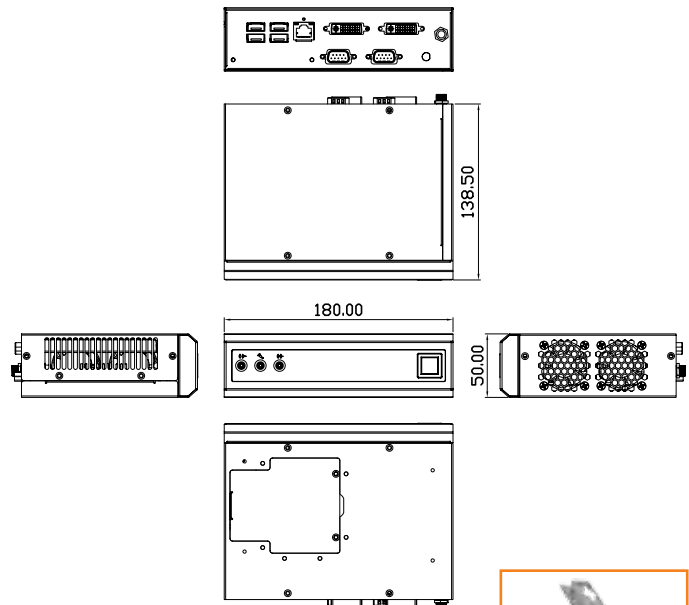
Model Name	ECN-581A-QM57
SBC	NANO-QM57A
Processor	Intel® Core™ i5-520M
Chipset	Intel® Mobile QM57
System Memory	Pre-installed 1 x 2 GB DDR3 SDRAM SO-DIMM (max : 4GB)
Ethernet	One Intel® 82577 PCIe LAN controller (with Intel® AMT 6.0)
Display	1 x DVI-D (1920x1200) 1 x DVI-I (supports VGA by DVI to VGA adapter)
USB 2.0	4
Serial Port	2 x RS-232
Audio	1 x Mic-in, 1 x Line-out, 1 x Line-in (front panel)
Storage	Supports 1 x 2.5" SATA HDD space
Expansions	1 x PCIe Mini card slot, reserved for Wi-Fi
Power Input	12 V DC in
Power Consumption	12V@4.18A (Intel® Core™ i5-520M 2.66G, DDR3 2GB)
Operating Temperature	-10°C ~ 50°C (with HDD) with air flow*
Operating Shock	Half-sine wave shock 3G, 11ms, 3 shocks per axis (SSD)
Operating Vibration	MIL-STD-810F 514.5C-2 (SSD)
Weight (Net/Gross)	1.1 kg/2 kg
Dimensions (WxDxH)	180 mm x 138 mm x 50 mm
Mounting	Desktop, wall mont

## Intel® AMT 6.0

The ECN-581A-QM57 is integrated with an Intel® QM57 Express Chipset that supports Intel® Active Management Technology for remote management. The Intel® AMT allows IT personnel to better monitor and protect networked computing assets. Benefits include enhanced asset management, fewer desk side visits and downtime reduction.



## Dimensions (Unit: mm)



Wall Mount bracket

## Packing List

1 x QIG	1 x Screw set
2 x Wall mount bracket	1 x Driver CD
1 x 60W 12V power adapter (P/N : 63000-FSP060DBAB1552-RS)	1 x Power cord
1 x 2dbi Wireless antenna (for wireless model only)	1 x One Key Recovery CD

## Ordering Information

Part No.	Description
ECN-581A-R11/QM57-I5/2GB	Embedded system with NANO-QM57A, Intel® Core i5-520M Processor 3M Cache 2.40 GHz, with dual DVI display support Intel® AMT6.0, with 2GB DDR3 memory, 12VDC, 60W power adapter with ERP and PSE certificates, Reflex Blue C + 8403C, RoHS
ECN-581AW-R11/QM57-I5/2GB	Embedded system with NANO-QM57A, Intel® Core i5-520M Processor 3M Cache, 2.40 GHz, with dual DVI display support Intel® AMT6.0, built-in 802.11b/g/n wireless, with 2GB DDR3 memory, 12VDC, 60W power adapter with ERP and PSE certificates, Reflex Blue C + 8403C, RoHS

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# Embedded Chassis Series



Model Name	EBC-3680	EBC-3220	EBC-3200	EBC-3100	EBC-3000	EBC-2102	EBC-2101	EBC-2100	
<b>Platform</b>	Case Only	Case Only	Case Only	Case Only	Case Only	Case Only	Case Only	Case Only	
<b>Chassis</b>	<b>Color</b>	Cool Gray	Black	Black	Black	Black	Cool Gray	Cool Gray	
	<b>Dimensions (W x D x H)</b>	200 x 335 x 270 mm	190 x 180 x 55 mm	260 x 180 x 55 mm	260 x 250 x 156 mm	280 x 230 x 88 mm	262 x 134 x 56 mm	262 x 134 x 56 mm	
	<b>System Fan</b>	1 x 12cm	1 x 4 cm	2 x 4cm	1 x 8cm	1 x 6cm	*1 x 4cm	*1 x 4cm	
	<b>Chassis Construction</b>	Aluminum	Heavy duty metal	Heavy duty metal	Heavy duty metal with plastic front panel	Heavy duty metal with plastic front panel	Aluminum alloy with heavy duty metal	Aluminum alloy with heavy duty metal	
	<b>Motherboard Model</b>	KINO-AQ670 KINO-AH611 KINO-AH612 KINO-G410 KINO-PV-D4253/ D5253 KINO-945GSE	KINO-QM770 KINO-CV/D25501/ N26001 KINO-QM670 KINO-QM57A KINO-HM551 KINO-PV-D525 KINO-945GSE2	KINO-QM770 KINO-CV/D25501/ N26001 KINO-QM670 KINO-QM57A KINO-HM551 KINO-PV-D525 KINO-945GSE2	KINO-AQ670 KINO-AH611 KINO-AH612 KINO-G410 KINO-CVR-D27002 KINO-PV-D4253/ D5253 KINO-945GSE	KINO-AQ670 KINO-AH611 KINO-AH612 KINO-G410 KINO-CVR-D27002 KINO-PV-D4253/ D5253 KINO-945GSE	KINO-AQ670 KINO-AH611 KINO-AH612 KINO-G410 KINO-CVR-D27002 KINO-PV-D4253/ D5253 KINO-945GSE	NANO-PV-D5251 NANO-PV-D4251 NANO-PV-N4551	NANO-945GSE
<b>Motherboard</b>	<b>M/B Size</b>	Mini-ITX (170 x 170mm)	Mini-ITX (170 x 170 mm)	Mini-ITX (170 x 170mm)	Mini-ITX (170 x 170mm)	Mini-ITX (170 x 170mm)	EPIC (165 x 115mm)	EPIC (165 x 115mm)	EPIC (165 x 115mm)
	<b>Storage</b>	<b>Hard Drive</b>	4 x 3.5" SATA HDD space	1 x 2.5" SATA HDD Bay	2 x 2.5" SATA HDD space	1 x 3.5" SATA HDD space	1 x 3.5" SATA HDD space	1 x 2.5" SATA HDD space	1 x 2.5" SATA HDD space
		<b>CompactFlash®</b>	N/A	N/A	refer to optional module	refer to SBC	refer to SBC	1	1
<b>System Function</b>	<b>SD Card</b>	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	N/A	N/A	N/A
	<b>PS2 (KB/MS)</b>	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	1	N/A	N/A
	<b>USB 3.0</b>	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	N/A	N/A	N/A
	<b>USB 2.0</b>	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	6	2	4
	<b>Ethernet</b>	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	2	2	1
	<b>RS-232</b>	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	4	1 + *2	1 + *2
	<b>RS-232/422/485</b>	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	N/A	N/A	N/A
	<b>LPT</b>	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	1	N/A	*1
	<b>Display</b>	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	1 x VGA	1 x VGA	1 x VGA
	<b>Resolution</b>	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	N/A	N/A
<b>Power</b>	<b>Audio</b>	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	3 x Audio jack	1 x AC-KIT08-R10	*3 x Audio jack
	<b>Wireless</b>	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	1 x 802.11 b/g/n	*1 x 802.11 b/g/n	N/A
	<b>Video Capturing</b>	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	N/A	N/A	N/A
	<b>Mini-PCIe/PCI</b>	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC	refer to SBC
<b>Reliability</b>	<b>Expansions</b>	*1 x low profile expansion slot	N/A	*1 x low profile expansion slot	1 x full high expansion slot	N/A	1 x PCI-104	1 x PCI-104	1 x PCI-104
	<b>Power Input</b>	90~264V AC	12V DC	12V DC in	90~264V AC	90~264V AC	12V DC in	12V DC in	12V DC in
	<b>Power Supply</b>	ACE-A130B	12V DC	12V DC in	ACE-A618A 180W ACE-A627A 270W	ACE-A618A 180W ACE-A627A 270W	12VDC in, AT mode only, w/60W power adapter	12VDC in, AT mode only, w/60W power adapter	12VDC in, AT mode only, w/60W power adapter
<b>Reliability</b>	<b>Mounting</b>	N/A	VESA 100 , wall mount	Desktop, wall mount	Desktop, wall mount	Desktop, wall mount	Desktop, wall mount	Desktop, wall mount	Desktop, wall mount
	<b>Operating Temperature</b>	0°C ~ 50°C	-10°C~50°C	0°C ~ 50°C	0°C ~ 50°C	0°C ~ 50°C	0°C ~ 50°C	0°C ~ 50°C	0°C ~ 50°C
	<b>Operating Shock</b>	Half-sine wave 3G, 11ms 3 shocks per axis							
	<b>Operating Vibration</b>	MIL-STD-810F 514.5C-1							
	<b>Weight (Net/ Gross)</b>	1kg/3kg	1Kg/2Kg	1.1kg/2kg	2.5kg/3.9kg	2.5kg/3.9kg	1kg/3kg	1kg/3kg	1kg/3kg

\* Optional items

\*\* Systems with hard drive meet MIL-STD-810F 514.5C-1 specifications. SSD/CF systems meet MIL-STD-810F 514.5C-2 specifications.

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# EBC-3680 Mini-ITX Chassis for Hot-swappable Drive Bay Application

**New**



## Features

- ◆ Small chassis for Mini-ITX form factor - Similar A4 size (front view)
- ◆ Excellent in thermal & acoustic simulation
- ◆ Uses low noise PWM fan
- ◆ 4 x Removable 3.5" HDD drive bay (Front side) and 2 x Internal 2.5" HDD drive bay.
- ◆ Additional air duct
- ◆ Side door security alert - Intrusion switch

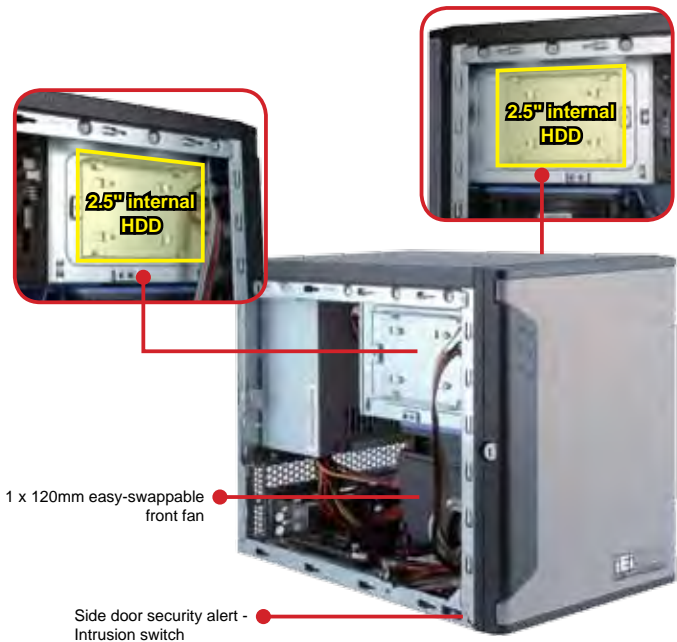


## Specifications

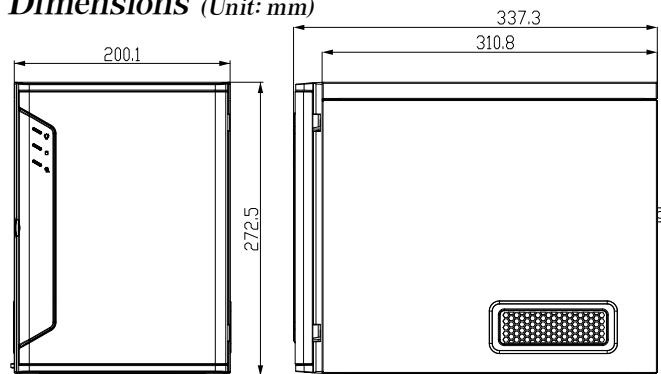
<b>Model Name</b>	<b>EBC-3680</b>
<b>Platform</b>	Case only
<b>Color</b>	Black
<b>SBC Form Factor</b>	Mini-ITX SBC
<b>Cooling Fan</b>	1 x 120mm
<b>Drive Bays</b>	4 x 3.5" Removable 2 x 2.5" HDD
<b>PSU</b>	PS2
<b>Power Input</b>	90 ~ 264VAC
<b>Switch/Controls</b>	Power On/Off System Reset Power LED
<b>Indicators</b>	HDD Activity LED Error LED
<b>Access I/O</b>	2 x USB 2.0
<b>Operating Temperature</b>	0°C ~ 50°C
<b>Dimensions (mm) (W x D x H)</b>	200 x 335 x 270
<b>Expansion Slot type</b>	Low profile type

## Compatible SBC

Model	Expansion Type	SATA	CPU Cooler
KINO-AQ670	1 x PCIe x16 slot	2 x SATA 3Gb/s 2 x SATA 6Gb/s with RAID 0/1/5/10 support	CF-1156A-RS CF-1156B-RS CF-1156C-RS CF-1156D-RS
KINO-AH611	1 x PCIe x16 slot	3 x SATA 3Gb/s	CF-1156A-RS CF-1156B-RS CF-1156C-RS CF-1156D-RS
KINO-AH612	1 x PCIe x4 slot	4 x SATA 3Gb/s	CF-1156A-RS CF-1156B-RS CF-1156C-RS CF-1156D-RS
KINO-G45A	1 x PCI	6 x SATA 3Gb/s	CF-775A-RS CF-520-RS-R11
KINO-G410	1 x PCIe x16 slot	4 x SATA 3Gb/s	CF-775A-RS CF-520-RS-R11 CF-775B-RS
KINO-780AM2	1 x PCIe x16	4 x SATA 3Gb/s with RAID 0/1/10 support	CF-478D-RS-R11 CF-478E-RS-R11
KINO-PV-D4253/D5253	1 x PCI slot 1 x PCIe x1 slot	2 x SATA 3Gb/s	Fanless
KINO-945GSE	1 x PCI	2 x SATA 1.5Gb/s	Fanless



## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
<b>EBC-3680-R10</b>	Mini-ITX embedded chassis, compatible two 2.5" HDD, 4 x 3.5" H/S HDD, w/o power, black, RoHS
<b>ACE-A130B-R10</b>	300W AC-DC PS/2 ATX power supply with ErP/PFC, 80 PLUS bronze certified

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# EBC-3220 Compact Embedded Chassis for IEI Single Voltage Mini-ITX SBC

**New**



## Features

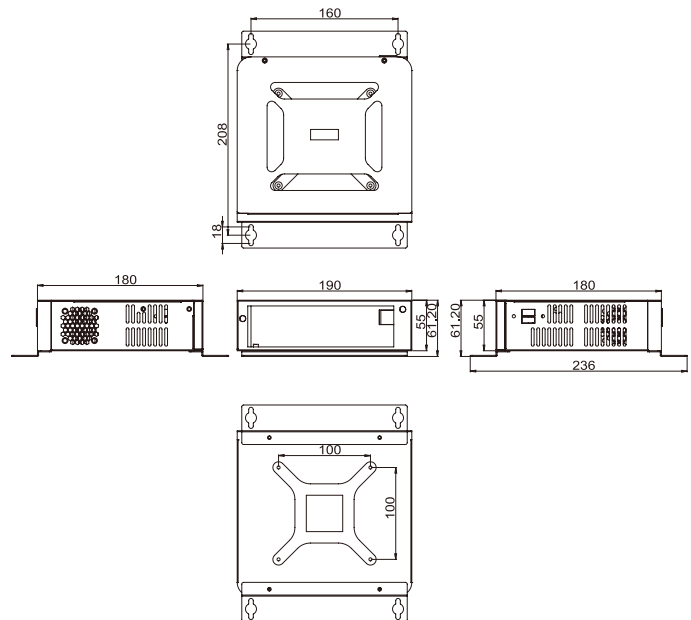
- ◆ Design for Mini-ITX SBC with single voltage input
- ◆ Space critical application
- ◆ One 2.5" hard drive capacity
- ◆ Cost-effective, RoHS compatible design

## Specifications

Model Name	EBC-3220
SBC Form Factor	Mini-ITX SBC (Single Voltage input)
Cooling Fan	1 x 4 cm
Storage	1 x 2.5" HDD Bracket
Buttons	Power switch
Color	Black
Dimensions (W x D x H)	190mm x 180mm x 55mm
Weight	1KG / 2KG
Operating temperature	-10°C ~ 50°C with air flow*
Mounting	Desktop, wall mount, VESA mount

\*Ambient air speed pre IEC-68-2-2 standard

## Dimensions (Unit: mm)



## Compatible Mini-ITX SBC

Part No.	CPU cooler	Recommend Power Adapter	PCIe Mini Supported
KINO-QM670	CF-989A-RS-R12	63000-FSP084DMBA1308-RS ( 84W )	Yes
KINO-QM57A	CF-989A-RS-R12	63000-FSP084DMBA1308-RS ( 84W )	Yes
KINO-HM551	CF-989A-RS-R12	63000-FSP084DMBA1308-RS ( 84W )	Yes
KINO-GM45A	CF-479B-RS-R11	63000-FSP084DMBA1308-RS ( 84W )	Yes
KINO-CV-D2550	Fanless	63040-010060-050-RS ( 60W )	Yes
KINO-CV-N2600	Fanless	63040-010060-050-RS ( 60W )	Yes
KINO-PVN-D5251	On Board CPU Fan	63040-010060-050-RS ( 60W )	Yes
KINO-PV-D5252	Fanless	63040-010060-050-RS ( 60W )	Yes
KINO-945GSE2	Fanless	63040-010060-050-RS ( 60W )	Yes
eKINO-945GSE	Fanless	63040-010060-050-RS ( 60W )	Yes
KINO-780EB	On Board CPU Fan	63040-010060-050-RS ( 60W )	Yes

## Packing List

- 1 x QIG
- 1 x Wall mount bracket kit
- 1 x Screw set

## Ordering Information

Part No.	Description
<b>EBC-3220-R10</b>	Mini-ITX embedded chassis, for DC input model only, with one 2.5" HDD, w/o power adapter, Black, RoHS
<b>EBC-3220W-R10</b>	Mini-ITX embedded chassis, for DC input model only, with one 2.5" HDD drive bay, 802.11b/g/n 2T2R wireless lan, w/o power adapter, Black, R10, RoHS
<b>63040-010060-050-RS</b>	Adapter Power, FSP060-DBAE1, 90~264VAC, 60W, 1500mm, 12VDC, Din 4Pin/lock, CCL, RoHS
<b>63000-FSP084DMBA1308-RS</b>	Adapter Power, FSP084-DMBA1, 90~264VAC, 84W, 1800mm, 12VDC, Din 4Pin/lock, CCL, RoHS
<b>32001-010800-100-RS</b>	Dual port USB cable, 200mm, w/o bracket
<b>19FR124010BL-000003-RS</b>	Fan Module, L=200MM, 4cm, 3 pin, CCL, RoHS
<b>EBC-3220-DH610-R10</b>	Embedded chassis with KINO-DH610, support Intel Core i7/i5/i3, Pentium, Celeron CPU, one 2.5" HDD drive bay, w/ 19V/6.32A 120W power adapter (support up to 65W CPU), Black, R10, RoHS
<b>EBC-3220W-DH610-R10</b>	Embedded chassis with KINO-DH610, support Intel Core i7/i5/i3, Pentium, Celeron CPU, one 2.5" HDD drive bay, 802.11b/g/n 2T2R wireless lan, w/ 19V/6.32A 120W power adapter (support up to 65W CPU), Black, R10, RoHS
<b>CPU-DT-i5-2500T</b>	Intel Core i5-2500T processor, LGA1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156D-RS CPU cooler
<b>CPU-DT-i5-2390T</b>	Intel Core i5-2390T processor, LGA1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156D-RS CPU cooler
<b>CPU-DT-i3-2100T</b>	Intel Core i3-2100T processor, LGA1155, dual core 2.5GHz, 3M cache, 35W, compatible with CF-1156D-RS CPU cooler
<b>CPU-DT-P-G620T</b>	Intel Pentium G620T processor, LGA1155, dual core 2.2GHz, 3M cache, 35W, compatible with CF-1156D-RS CPU cooler
<b>CPU-DT-C-G440</b>	Intel Celeron G440 processor, LGA1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156D-RS CPU cooler
<b>CF-1156D-RS</b>	LGA1155/LGA1156 cooler kit, 1U chassis compatible 65W

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Panel Solutions Introduction

# EBC-3200

Embedded Chassis for IEI Single Voltage Mini-ITX SBC



## Features

- ◆ Design for Mini-ITX SBC with single voltage input
- ◆ Flexible storage with CF or 2.5" HDD (optional)
- ◆ One PCI or PCIe expansion slot (optional)



## Flexible design with five optional module for storage and expansion slot



### Flexible storage by Optional module

2 x internal 2.5" HDD (Default)



1 x Internal 2.5" HDD  
1 x CF slot



1 x Expansion slot (PCI/PCIe)  
1 x Internal 2.5" HDD



1 x Expansion slot (PCI/PCIe)  
1 x CF slot

## Specifications

<b>Model Name</b>	<b>EBC-3200</b>
<b>SBC Form Factor</b>	Mini-ITX SBC (Single Voltage input)
<b>Cooling Fan</b>	2 x 4cm
<b>Storage</b>	2 x 2.5" HDD (Default) or support by optional module
<b>Indicates</b>	Power, HDD LED
<b>Buttons</b>	Power switch, reset
<b>Expansions</b>	1 x Low Profile PCI/PCIe (support by Optional module) Max Dimension : 147mm (L) x 10.5mm (D)
<b>Color</b>	Black
<b>Dimensions (WxDxH)</b>	260mm x 180mm x 55mm
<b>Weight (Net/Gross)</b>	1.1KG/2KG
<b>Operating temperature</b>	-10°C ~ 50°C with air flow*
<b>Mounting</b>	Desktop, wall mount, VESA mount

(\*Ambient air speed pre IEC-68-2-2 standard)

## Compatible SBC

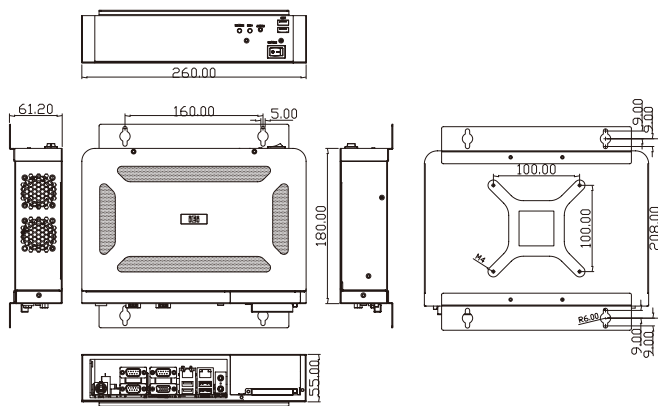
Part No.	Expansion Type (optional)	CPU Cooler
KINO-945GSE2	PCI	Fanless
eKINO-945GSE	PCI	Fanless
KINO-780EB	PCI	On Board CPU Fan
KINO-GM45A	PCI	CF-479B-RS
KINO-QM57A	PCIe x16	CF-989A-RS-R11
KINO-PVN-D5251	PCI or PCIe x1	On board CPU Fan
KINO-PV-D5252	PCI or PCIe x1	Fanless
KINO-HM551	PCIe x16	CF-989A-RS-R11

## Ordering Information

Part No.	Description
EBC-3200-R10	Mini-ITX embedded chassis, compatible two 2.5" HDD, w/o power adapter, Black, RoHS
63000-FSP060DBAB1554-RS	Power Adapter, FSP060-DBAB1554, VAC:90V~264V, 12V/5A, 60W, DIN 4 PIN/WITH LOCK, 1800MM, FSP, RoHS
32000-000002-RS	European standard power cord, 1830mm
32000-000025-RS	American standard power cord, 1830mm

Optional Module	
Part No.	Description
EBCKIT-01-R10/PCI-HDD	EBC-3200 optional module with 1 x PCI slot and 1 x 2.5" HDD, RoHS
EBCKIT-02-R10/PCIe-HDD	EBC-3200 optional module with 1 x PCIe x1 slot and 1 x 2.5" HDD, RoHS
EBCKIT-03-R10/PCI-CF	EBC-3200 optional module with 1 x PCI slot and 1 x CompactFlash® slot, RoHS
EBCKIT-04-R10/PCIe-CF	EBC-3200 optional module with 1 x PCIe x1 slot and 1 x CompactFlash® slot, RoHS
EBCKIT-05-R10/CF-HDD	EBC-3200 optional module with 1 x CompactFlash® slot and 1 x 2.5" HDD, RoHS
EBCKIT-06-R10/PCIe16-HDD	EBC-3200 optional module with 1 x PCIe x16 slot and 1 x 2.5" HDD, RoHS
EBCKIT-07-R10/PCIe16-CF	EBC-3200 optional module with 1 x PCIe x16 slot and 1 x CompactFlash® slot, RoHS

## Dimensions (Unit: mm)



## Packing List

1 x QIG	1 x Screw set
2 x Wall mount brackets	1 x Driver CD
1 x Power cord	1 x One Key Recovery CD

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Panel Solutions Introduction

# EBC-3100 Mini-ITX Chassis for High Power Consumption Application



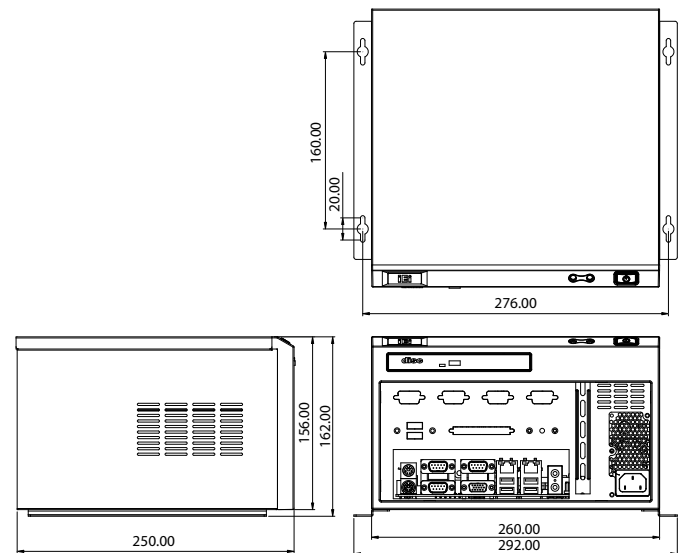
## Features

- ◆ Designed for high performance applications, bundled with 270W high efficiency ATX power supply
- ◆ Front accessible I/O design
- ◆ Supports one expansion slot
- ◆ One 3.5" hard drive, one slim type optical drive capacity

## Specifications

<b>Model Name</b>	<b>EBC-3100</b>
<b>Platform</b>	Case Only
<b>Color</b>	Black
<b>Dimensions (WxDxH)</b>	260 x 250 x 156 mm
<b>System Fan</b>	1 x 8cm
<b>Chassis Construction</b>	Heavy duty metal with plastic front panel
<b>Motherboard Model</b>	KINO-G45A, KINO-9652, KINO-780AM2, KINO-G410
<b>M/B Size</b>	Mini-ITX (170 x 170mm)
<b>ODD</b>	1 x 5.25" slim
<b>Hard Drive</b>	1 x 3.5" SATA HDD Space
<b>Expansions</b>	1 x full high expansion slot Max Dimension: 220mm (L) x 27mm (D)
<b>Power Input</b>	90~264V AC
<b>Power Model</b>	ACE-A618A 180W, ACE-A627A 270W
<b>Mounting</b>	Desktop, wall mount
<b>Operating Temperature</b>	0°C ~ 50°C
<b>Weight (Net/Gross)</b>	2.5kg/3.9kg

## Dimensions (Unit: mm)



## Compatible SBC

Part No.	Expansion Type	Recomand CPU Cooler
KINO-G410	PCIe x16	CF-520-RS-R11, CF-775A-RS, CF-775B-RS
KINO-G45A	PCI	CF-520-RS-R11, CF-775A-RS, CF-775B-RS
KINO-9652	PCI	CF-479B-RS
KINO-780AM2	PCIe x16	CF-478D-RS-R11

1U AC Input									
Products	Model No.	Watt AT/ATX PFC	Input Voltage	Output Current Range					Efficiency
				+3.3 V	+5 V	+12 V	-12 V	+5 Vsb	
	ACE-A627A	270W ATX PFC	90 ~ 264 VAC	16 A (0.5A min)	18A (0.5A min)	V1:16 A (1A) V2:10A (1A)	0.8A	2.5A	80%
	ACE-A618A	180W ATX PFC	90 ~ 264 VAC	14 A (0.3 A min)	16 A (0.3 A min)	14 A (1.5 A min)	0.5 A	2 A	68%

## Packing List

1 x EBC-3100	
1 x Wall mount kit	1 x Screw set
1 x SATA slim ODD cable	1 x Power cord
1 x One Key Recovery CD	1 x QIG

## Ordering Information

Part No.	Description
EBC-3100-R11/ACE-A627A	Mini-ITX embedded chassis, one 3.5" hard drive and one slim ODD bay, with ACE-A627A-RS-R11 270W ATX power supply, black, RoHS
EBC-3100-R11/ACE-A618A	Mini-ITX embedded chassis, one 3.5" hard drive and one slim ODD bay, with ACE-A618A-RS-R11 180W ATX power supply, black, RoHS

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# EBC-3000 Mini-ITX Chassis for High Power Consumption Application



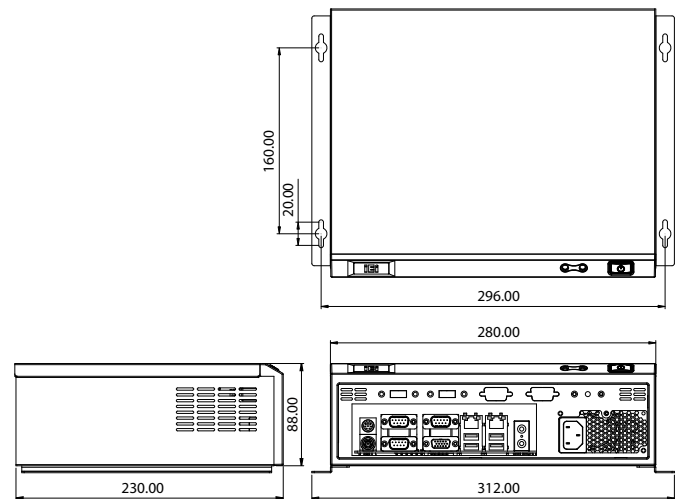
## Features

- ◆ Designed for high performance applications, bundled with 270W high efficiency ATX power supply
- ◆ Front accessible I/O design
- ◆ One 3.5" hard drive capacity

## Specifications

<b>Model Name</b>	<b>EBC-3000</b>
<b>Platform</b>	Case Only
<b>Color</b>	Black
<b>Dimensions (WxDxH)</b>	280 x 230 x 88mm
<b>System Fan</b>	1 x 6cm
<b>Chassis Construction</b>	Heavy duty metal with plastic front panel
<b>Motherboard Model</b>	KINO-G45A, KINO-9652, KINO-780AM2, KINO-G410
<b>M/B Size</b>	Mini-ITX (170 x 170mm)
<b>Hard Drive</b>	1 x 3.5" SATA HDD Space
<b>Power Input</b>	90~264V AC
<b>Power Model</b>	ACE-A618A 180W, ACE-A627A 270W
<b>Mounting</b>	Desktop, wall mount
<b>Operating Temperature</b>	0°C ~ 50°C
<b>Weight (Net/Gross)</b>	2.5kg/3.9kg

## Dimensions (Unit: mm)



## Compatible SBC

Part No.	Recomand CPU Cooler
KINO-G410	CF-520-RS-R11, CF-775B-RS
KINO-G45A	CF-520-RS-R11, CF-775B-RS
KINO-9652	CF-479B-RS
KINO-780AM2	CF-478D-RS-R11

## Packing List

1 x EBC-3000	1 x QIG
1 x Wall mount kit	1 x Screw set
1 x Power cord	1 x One Key Recovery CD

## Ordering Information

Part No.	Description
<b>EBC-3000-R11/ACE-A627A</b>	Mini-ITX embedded chassis, one 3.5" hard drive bay, with ACE-A627A-RS-R11 270W ATX power supply, black, RoHS
<b>EBC-3000-R11/ACE-A618A</b>	Mini-ITX embedded chassis, one 3.5" hard drive bay, with ACE-A618A-RS-R11 180W ATX power supply, black, RoHS

		1U AC Input							
Products	Model No.	Watt AT/ATX PFC	Input Voltage	Output Current Range					Efficiency
				+3.3 V	+5 V	+12 V	-12 V	+5 Vsb	
	ACE-A627A	270W ATX PFC	90 ~ 264 VAC	16 A (0.5A min)	18A (0.5A min)	V1:16 A (1A) V2:10A (1A)	0.8A	2.5A	80%
	ACE-A618A	180W ATX PFC	90 ~ 264 VAC	14 A (0.3 A min)	16 A (0.3 A min)	14 A (1.5 A min)	0.5 A	2 A	68%

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Panel Solutions Introduction

# EBC-2102 Embedded Chassis for EPIC NANO Series



## Features

- ◆ Fanless system with Intel® Atom™ D525 1.8GHz dual-core processor
- ◆ Complete I/O Interfaces, including dual GbE, four COM, six USB, LPT
- ◆ Single 12V DC power input support AT/ATX mode
- ◆ DDR3 supports up to 4GB (D525/D425)



## Specifications

Model Name	EBC-2102	
Chassis	Color	Cool Gary
	Dimensions (WxDxH)	262 x 134 x 56 mm
	System Fan	1 x 4cm (Optional)
	Chassis Construction	Aluminum alloy with heavy duty metal
Motherboard	Motherboard Model	NANO-PV-D5251-R10, NANO-PV-D4251-R10, NANO-PV-N4551-R10
	M/B Size	EPIC (165mm x 115mm)
	Processor	refer to SBC
	Chipset	refer to SBC
Storage	System Memory	D525/D425 Memory supports up to DDR3 4GB, N455 memory supports up to DDR3 2GB
	Hard Drive	1 x 2.5" SATA HDD bay
System Function	CompactFlash®	1
	USB 2.0	6
	Ethernet	Dual Realtek 8111E GbE
	RS-232	4
	LPT	1
	Display	1 x VGA
	Audio	3 x Audio jack (Line-in, Line-out, Mic-in)
Power	Wireless	1 x 802.11 b/g/n (optional for wireless model)
	Expansions	1 x PCI-104, 1x PCIe Mini card slot reserved for wi-fi module
	Power Input	12VDC in, AT mode (default)
Reliability	Power Consumption	2.21A @ 12V (Intel® Atom™ D525 with 2GB 1066MHz DDR3) 2.11A @ 12V (Intel® Atom™ D425 with 2GB 1066MHz DDR3) 2.00A @ 12V (Intel® Atom™ N455 with 2GB 1066MHz DDR3)
	Mounting	Desktop, wall mount
	Operating Temperature	-10°C ~ 50°C fanless, -10°C ~ 60°C with CPU fan or system fan
	Operating Shock	Half-sine wave 3G, 11ms 3 shocks per axis
	Operating Vibration	Meet MI-STD-810F 514.5C-1
Weight (Net/Gross)	1kg	

## Packing List

1 x EBC-2102 Chassis
1 x 12V 60W power adapter (P/N: 63000-FSP060DBAB1552-RS)
1 x Power cord
1 x Wall mount kit
1 x Screw set
1 x Utility CD/QIG
1 x One Key Recovery CD

## Ordering Information

Part No.	Description
EBC-2102-R10	Embedded Chassis for NANO-D5251/D4251/N4551, compatible with 2.5" SATA/CFII hard drive, 4x COM, 6x USB, 1x LPT, 60W power adapter silver, RoHS
EBC-2102W-R10	Embedded Chassis for NANO-D5251/D4251/N4551, compatible with 2.5" SATA/CFII hard drive, 4x COM, 6x USB, 1x LPT, 802.11 b/g/n wireless, 60W power adapter silver, RoHS
19100-00027-RS	4010 system Fan, +12V ball bearing
NANO-PV-D5251-R10	EPIC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF II, audio and SATA 3Gb/s, RoHS
NANO-PV-D4251-R10	EPIC with Intel® Atom™ D425 1.8GHz, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF II, audio and SATA 3Gb/s, RoHS
NANO-PV-N4551-R10	EPIC with Intel® Atom™ N455 1.66GHz, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF II, audio and SATA 3Gb/s, RoHS

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# EBC-2100/2101 Embedded Chassis for EPIC NANO Series



EBC-2100

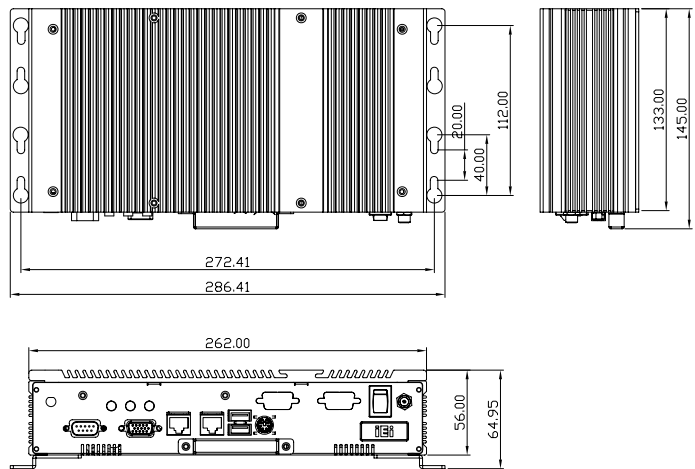
EBC-2101

## Specifications

Model Name		EBC-2100	EBC-2101	
Platform		Case Only		
Chassis	Color	Cool Gray		
	Dimensions (WxDxH)	262 x 134 x 56 mm		
	System FAN	*1 x 4cm		
	Chassis Construction	Aluminum alloy with heavy duty metal		
Motherboard	Motherboard Model	NANO-LX	NANO-945GSE	
	M/B Size	EPIC (165 x 115mm)		
	Processor CPU	refer to SBC	Intel® Atom™ N270 1.6GHz	
	Chipset	refer to SBC		
	System Memory	refer to SBC		
Storage	Hard Drive	1 x 2.5" SATA HDD Space		
	CompactFlash®	1		
System Function	USB 2.0	4	2	
	Ethernet	1	2	
	RS-232	1 + *2	1 + *2	
	LPT	*1	N/A	
	Display	1 x VGA		
	Audio	*3 x Audio jack	1 x AC-KIT08-R10	
	Wireless	N/A	*1 x 802.11 b/g/n	
	Expansions	1 x PCI-104		
	Power	Power Input	12VDC in, AT mode only	
	Reliability	Mounting	Desktop, wall mount	
Operating Temperature		0°C ~ 50°C		
Operating Shock		Half-sine wave 3G, 11ms 3 shocks per axis		
Operating Vibration		Meet MIL-STD-810F 514.5C-1		
Weight (Net/Gross)		1kg/3kg		

\*Optional items  
 \*\*The system that with Hard drive can meet the Standard testing MIL-STD-810F 514.5C-1. and with SSD/CF can pass MIL-STD-810F 514.5C-2

## Dimensions (Unit: mm)



## Packing List

- 1 x EBC-2101/EBC-2100 chassis
- 1 x 12V 60W power adapter (P/N: 63000-FSP060DBAB1552-RS)
- 1 x Power cord
- 1 x Wall mount kit
- 1 x Screw set
- 1 x QIG
- 1 x One Key Recovery CD



Wall Mount bracket

## Ordering Information

Part No.	Description
EBC-2100-R40	Embedded chassis for NANO-LX, compatible with 2.5" SATA hard drive, 60W power adapter with ERP and PSE certificates, silver, RoHS
EBC-2101-R20	Embedded chassis for NANO-945GSE-N270, compatible with SATA hard drive, w/60W power adapter with ERP and PSE certificates, silver, RoHS
32000-114001-RS	2.5" SATA HDD cable with 2-pin WAFER 2.0mm power cable, for NANO-945GSE-N270 in EBC-2101, 20cm
19100-000027-RS	4010 system fan, +12V ball bearing
32200-000037-RS	44-pin IDE cable for 2.5" hard drive

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# ECN-581A for HM55/D525

Embedded Compact Chassis for NANO Series

## Features

### ECN-581A-R10-HM551

- ◆ Socket G1 for Intel® 32nm mobile Core processor
- ◆ VGA + HDMI Dual display
- ◆ One 204-pin DDR3 SO-DIMM SDRAM supported up to 4GB

### ECN-581A-R10-D5251

- ◆ Intel® Atom™ Processor D525 1.8GHz/1 MB L2 Cache
- ◆ One 204-pin DDR3 SO-DIMM SDRAM, system support up to 2GB



## Specifications

Model Name		ECN-581A-R10-D5251 <span style="color:red">Fanless</span>	ECN-581A-R10-HM551
Chassis	Color	Cool Gray+Blue	Cool Gray+Blue
	Dimensions (WxDxH)	180 x 138 x 50mm	180 x 138 x 50mm
	System Fan	N/A	2 x 4cm
	Chassis Construction	Heavy duty metal	Heavy duty metal
Motherboard	Motherboard Model	NANO-PV-D5251/D4521/N4551	NANO-HM551
	M/B Size	EPIC (165 x 115mm)	EPIC (165 x 115mm)
	Processor CPU	Intel® Atom™ D525	Intel® Core™ i5/i3/Celeron® M Mobile Processor
	Chipset	ICH8M	HM55
	System Memory	1 x 204-pin DDR3 SODIMM support up to 2GB	1 x 204-pin DDR3 SODIMM support up to 4GB
Storage	Hard Drive	1 x 2.5" SATA HDD space	1 x 2.5" SATA HDD space
	Compact Flash	1	N/A
System Function	PS2 (KB/MS)	1/1	N/A
	USB 2.0	4	4
	Ethernet	2 x Realtek 8111E PCIe GbE	2 x Realtek 8111E PCIe GbE
	Serial Port	1 x RS-232 1 x RS-232/422/485 (Default RS-232)	1 x RS-232 1 x RS-232/422/485 (Default RS-232)
	Display	1 x VGA	1 x VGA+ 1 x HDMI
	Resolution	2048 x 1536 @ 60 Hz	2048 x1536 @ 60 Hz (VGA) 1080 p (HDMI)
	Audio	1 x Mic-in, 1 x Line-out, 1 x Line-in	1 x Mic-in, 1 x Line-out, 1 x Line-in
	PCIe Mini Card	1 x PCIe Mini card slot (PCIe + SATA+USB) Reserve for Wi-Fi or IEI Mini DOM	1 x PCIe Mini card slot (PCIe + SATA+USB) Reserve for Wi-Fi or IEI Mini DOM
	Power	Power Input	12 VDC in
Reliability	Mounting	Desktop, wall mont	Desktop, wall mont
	Operating Temperature	-20°C~50°C (SATA SSD/CF) with Air flow* -10°C~50°C (Wi-Fi model with SATA SSD/CF) with Air Flow*	-20°C~50°C (SATA SSD) with Air flow* -10°C~50°C (Wi-Fi model with SATA SSD) with Air Flow*
	Operating Shock	*Ambient air speed pre IEC-68-2-2 standard	*Ambient air speed pre IEC-68-2-2 standard
	Operating Vibration	Half-sine wave 3G, 11ms 3 shocks per axis	Half-sine wave 3G, 11ms 3 shocks per axis
	Weight (Net/Gross)	Meet MIL-STD-810F 514.5C-1 with SATA HDD MIL-STD-810F 514.5C-2 with SATA SSD/CF	Meet MIL-STD-810F 514.5C-1 with SATA HDD MIL-STD-810F 514.5C-2 with SATA SSD
	Weight (Net/Gross)	1.1kg/2kg	1.1kg/2kg

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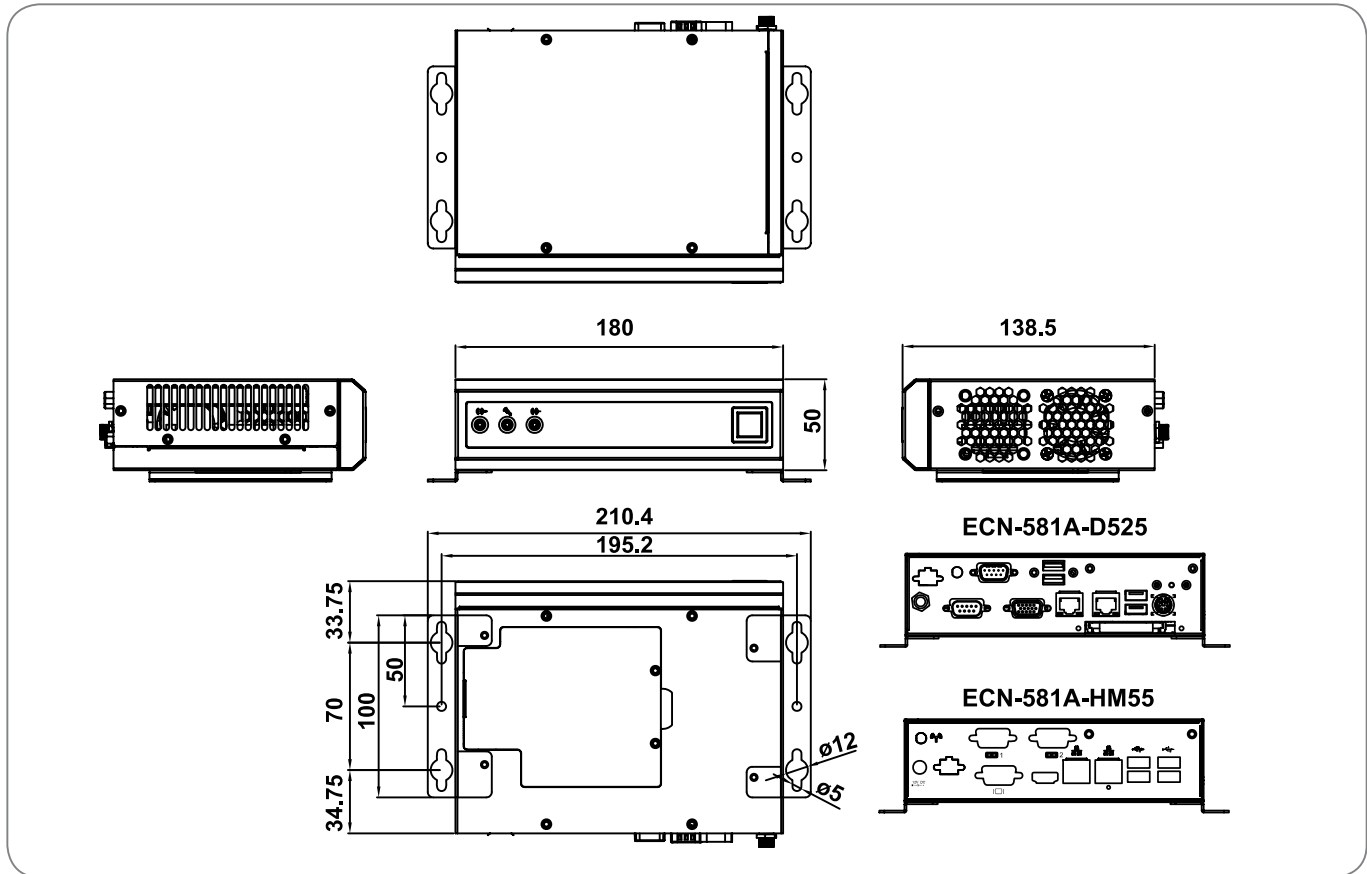
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**Dimensions** (Unit: mm)



**Packing List**

1 x QIG
1 x Screw set
2 x Wall mount bracket
1 x Driver CD
1 x 12V DC 60W power adapter (with ErP and PSE certificates)
1 x Power cord
1 x 2dbi Wireless antenna (for wireless model only)
1 x One Key Recovery CD



1 x 2.5" SATA HDD space



**Ordering Information**

Part No.	Description
<b>NANO-PV-D5251-R10</b>	EPIC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF II, audio and SATA II, RoHS
<b>NANO-PV-D4251-R10</b>	EPIC with Intel® Atom™ D425 1.8GHz, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF II, audio and SATA II, RoHS
<b>NANO-PV-N4551-R10</b>	EPIC with Intel® Atom™ N455 1.66GHz, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF II, audio and SATA II, RoHS
<b>ECN-581A-R10-D5251</b>	Embedded chassis for NANO-PV-D5251, Support Intel® Atom™ D525 Processor, DDR3 SO-Dimm memory, 12VDC, 60W power adapter with ERP and PSE certificates, Reflex Blue C + 8403C, RoHS, w/o MB
<b>ECN-581AW-R10-D5251</b>	Embedded chassis for NANO-PV-D5251, Support Intel® Atom™ D525 Processor, DDR3 SO-Dimm memory, 802.11b/g/n wireless, 12VDC, 60W power adapter with ERP and PSE certificates, Reflex Blue C + 8403C, RoHS, w/o MB
<b>NANO-HM551-R10</b>	EPIC SBC supports Socket G1 for Intel® Core™ i7 CPU, VGA/HDMI, Dual PCIe GbE, USB 2.0, Mini PCIe, SATA II and Audio, RoHS
<b>ECN-581A-R10-HM551</b>	Embedded chassis for NANO-HM551, Support Intel® Core i5/i3/Celeron® Processor, DDR3 SO-Dimm memory, 12VDC, 60W power adapter with ERP and PSE certificates, Reflex Blue C + 8403C, RoHS, w/o MB
<b>ECN-581AW-R10-HM551</b>	Embedded chassis for NANO-HM551, Support Intel® Core i5/i3/Celeron® Processor, DDR3 SO-Dimm memory, 802.11b/g/n wireless, 12VDC, 60W power adapter with ERP and PSE certificates, Reflex Blue C + 8403C, RoHS, w/o MB
<b>CF-989A-RS-R11</b>	CPU cooler for mobile socket-G (PGA988) up to 55W processor, copper, 60 x 60 x 27.6 mm, RoHS

Note: Above Part No. is for chassis only without MB.

# Chassis Selection Guide

Model No.	Type	Board Type		Max. slots	Drive Capacity				Fan Spec.			
		Slot SBC	Motherboard		5.25" F.P.	3.5" F.P.	2.5" Int	3.5" Int	4 cm	6 cm	8 cm	12 cm
RACK-1150G	1U	PICMG 1.0 full-size/ PICMG 1.3 full-size		3	1			1	3			
RACK-220G	2U	PICMG 1.0 full-size	*MicroATX, Mini-ITX	6	1	1		1			2	
RACK-2100G	2U	PICMG 1.3 full-size		6	1	1		1			2	
RACK-305G	4U	full-size	*ATX, MicroATX, Mini-ITX	14	2	1		1		***2	2	
RACK-360G	4U	full-size	*ATX, MicroATX, Mini-ITX	14	2	1		1		***2		1
RACK-3000G	4U	full-size	*ATX, MicroATX, Mini-ITX	14	3	2		1		***2	2	
RACK-500G	5U	full-size		5		1		1			1	
PAC-1000G		full-size		6	1	1		1			1	
PAC-106G		full-size		6		1		1			1	
PAC-1700G		full-size		7	1	1		2			1	
PAC-125G		full-size		10	2	1		1			1	
PAC-53GH		half-size		3			1					
PAC-42GH		half-size		4		△1		△1			1	
PR-1500G		half-size		5	◇1	1		1			1	
PAC-400G		half-size		5				△1			1	
PAC-700G		half-size		7	1	△1		1			1	

Model No.	Indicators		Front Panel Control					PSU	Dimensions(mm)			Color	
	Power	HDD	Power	Reset	KB	USB	Keylock		Depth	Height	Width	Black	White
RACK-1150G	○	○	○	○		2		1U	449	44	431	○	
RACK-220G	○	○	○	○		2	○	PS/2	487.5	88	431	○	○
RACK-2100G	○	○	○	○		2	○	PS/2, redundant	576.9	88	431	○	
RACK-305G	○	○	○	○	○	2	○	PS/2 or mini redundant	413	176	431	○	○
RACK-360G	○	○	○	○	○	2	○	PS/2 or mini redundant	435.5	176	431	○	○
RACK-3000G	○	○	○	○			○	PS/2 or mini redundant	520	176	431	○	○
RACK-500G	○	○	○	○		2		1U	440.2	221.3	110.6	○	○
PAC-1000G	○	○	○	○				PS/2	421	176	232	○	
PAC-106G	○	○	○	○		2		1U	400	175.5	166		○
PAC-1700G	○	○	○	○				PS/2	433	253.7	192.4	○	
PAC-125G	○	○	○	○		2	○	PS/2	420	176	321		○
PAC-53GH	○	○	○	○		2		1U	218	200	95		○
PAC-42GH	○	○	○	○		2		1U	269	230	140		○
PR-1500G	○	○	○	○		2		1U	254	132	286		○
PAC-400G	○	○	○	○		2		1U	269	230.5	140		○
PAC-700G	○	○	○	○		2	○	1U	279	176	321	○	

■ Rackmount chassis  
■ Full-size wall mount chassis  
■ Half-size wall mount chassis

\* For ATX model      ◇ Slim-type CD-ROM  
 \*\*\* Optional fans for ATX model      △ Please refer to datasheet for detail information

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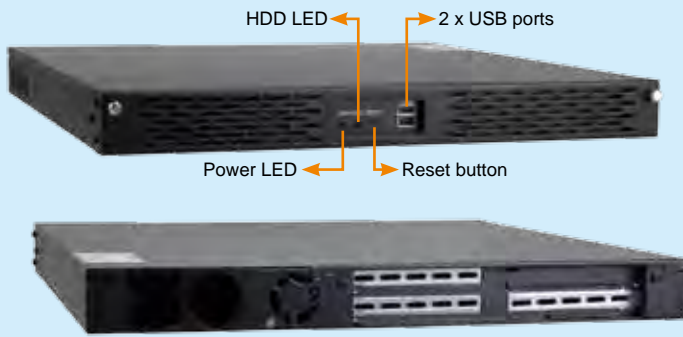
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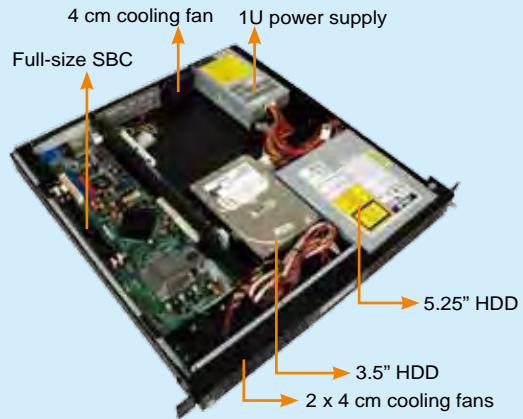
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# RACK-1150G/1150G-PE 1U Full-size Rackmount Chassis



**CD-ROM, and HDD are not included in package.**



## Features

- ◆ RoHS compliant design
- ◆ Two front-accessible USB ports
- ◆ One 5.25" drive bay
- ◆ One 3.5" internal hard drive bay
- ◆ Three, 4 cm cooling fans

## Specifications

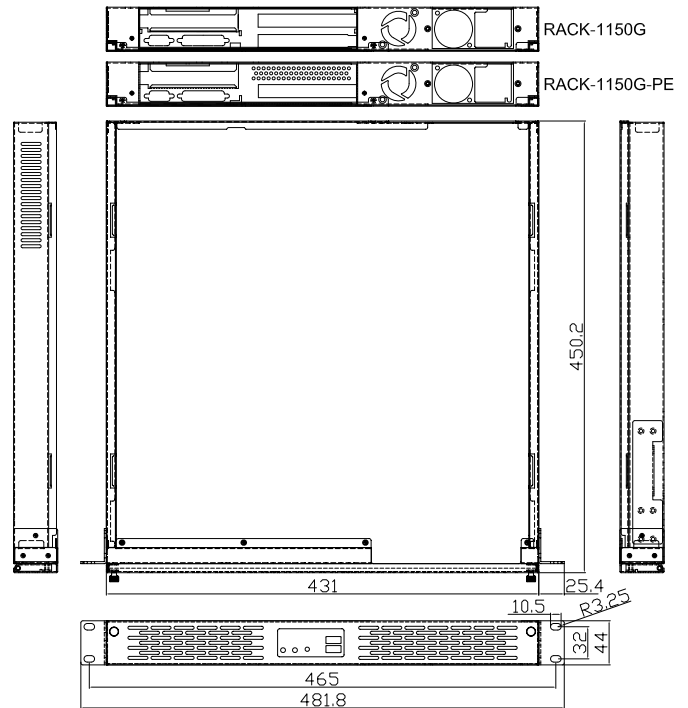
◆ Construction	Heavy duty metal
◆ SBC Form Factor	Full-size, slot CPU card
◆ Drive Bays	1 x 5.25" 1 x 3.5" HDD (internal)
◆ Cooling Fans	3 x 4 cm
◆ I/O Ports	2 x USB
◆ I/O Openings	1 x COM, 1 x LPT
◆ Expansion Slots	3 slots/2 slots (PE)
◆ Indicators	Power, HDD
◆ Buttons	Power switch, reset button
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	B: Black
◆ Weight (Net/Gross)	7.5 kg/9.5 kg
◆ Dimensions (DxWxH)	449 mm x 431 mm x 44 mm

RACK-1150G and RACK-1151G support processors with a maximum TDP of 31 W only.

## Ordering Information

Part No.	Description
<b>RACK-1150GB-PE-R11/A618A</b>	1U 2-slot full-size rackmount chassis for PICMG 1.3 backplane, Black, 3 x 4cm fan, with ACE-A618A-RS-R11 (180W ATX model), RoHS
<b>RACK-1150GB-R11/A618A</b>	1U 3-slot full-size rackmount chassis for PICMG 1.0 backplane, Black, 3 x 4cm fan, with ACE-A618A-RS-R11 (180W ATX model), RoHS

## Dimensions (measurement units: millimeter)



## Backplane Options

Model No.	SBC Type	PCI	ISA	PCIe			PSU Connector
				x1	x4	x16	
PCI-2SD2-RS	PICMG 1.0	2	0	0	0	0	ATX
PE-2SD1*	PICMG 1.3	0	0	0	0	1	ATX
PE-2SD2*	PICMG 1.3	1	0	0	0	0	ATX

Adapter cable 32100-040600-RS is required when connecting PCI-2SD2-RS to a standard ATX supply.

\* For RACK-1150G-PE

## Power Supply Options

Type	Model No.	Watt
ATX	ACE-A618A-RS-R11	180W
	ACE-A225A-RS	250W
	ACE-4520C-RS	200W

RACK-1150G supports single 1U height PSU. For more IEI PSU models, please refer to section 5 or visit [www.ieiworld.com](http://www.ieiworld.com).

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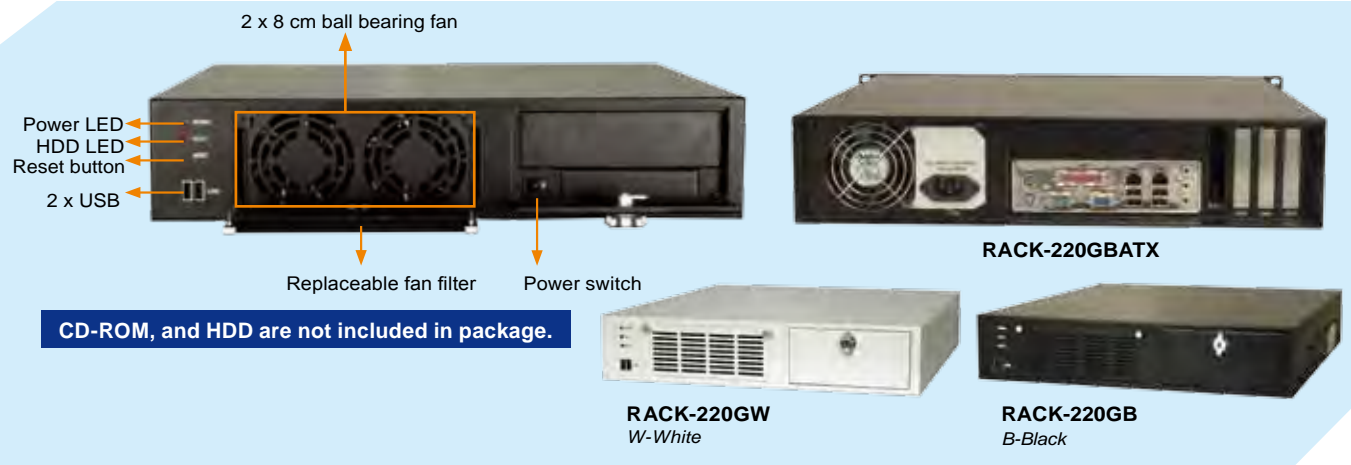
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Panel Solutions Introduction

# RACK-220G 2U 6-slot Full-size Rackmount Chassis



## Features

- ◆ RoHS compliant design
- ◆ Two USB ports on the front panel
- ◆ Two, 8 cm cooling fans with replaceable fan filter
- ◆ One 5.25" and one 3.5" drive bay
- ◆ One 3.5" internal hard drive bay
- ◆ Lockable door prevents unauthorized access

## Specifications

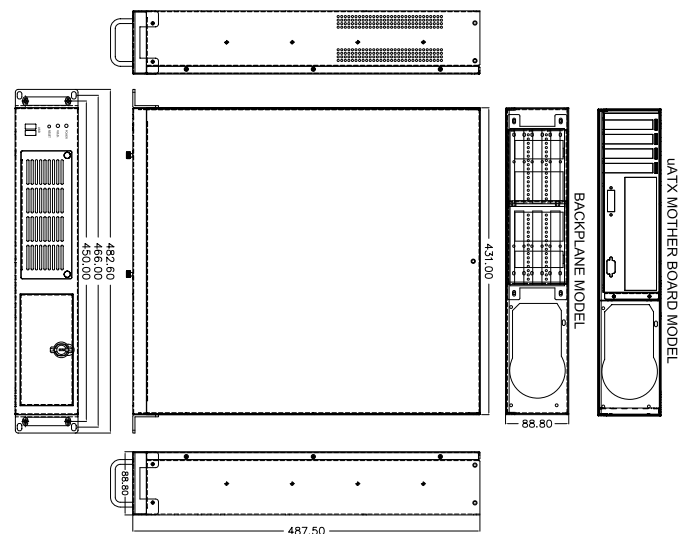
◆ Construction	Heavy duty metal
◆ SBC Form Factor	Full-size, slot CPU card
◆ Drive Bays	1 x 5.25" 1 x 3.5" 1 x 3.5" HDD (internal)
◆ Cooling Fans	2 x 8 cm
◆ I/O Ports	2 x USB
◆ Expansion Slots	6 slots
◆ Indicators	Power, HDD
◆ Buttons	Power switch, reset button
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	W: White/B: Black
◆ Weight (Net/Gross)	8.2 kg/12.4 kg
◆ Dimensions (DxWxH)	487.5 mm x 431 mm x 88 mm

## Ordering Information

Part No.	Description
RACK-220G [C] /A130B	2U 6-slot full-size rackmount chassis for PICMG 1.0 SBC, (Black/White), 2 x 8 cm fan, with ACE-A130B-R10 (300W ATX model), RoHS
RACK-220G [C] ATX/A130B	2U microATX motherboard rackmount chassis, (Black/White), 2 x 8 cm fan, with ACE-A130B-R10 (300W ATX model), RoHS

[C] Color Code: B-Black W-White  
Full-size card cannot be installed in chassis because of the height limitation.

## Dimensions (measurement units: millimeter)



## Selection Guide

Model No.	SBC Type	PSU Type	Color Options
RACK-220G [C]	PICMG 1.0	PS/2	black/white
RACK-220G [C] ATX	microATX MB	PS/2	black/white

## Backplane Options

Model No.	SBC Type	PCI	ISA	PCIe			PSU Connector
				x1	x4	x16	
PCI-5SDA-RS	PICMG 1.0	L2+R2	0	0	0	0	AT/ATX
PCI-5SD5-RS	PICMG 1.0	L2+R2	0	0	0	0	AT
PCI-5SD6-RS	PICMG 1.0	L2+R2	0	0	0	0	ATX
PCI-6SD-RS	PICMG 1.0	L1+R1	L1+R1	0	0	0	ATX

## Power Supply Options

Type	Model No.	Watt
AT	ACE-925AP-U-RS	250W
	ACE-935AL-RS	300W
ATX	ACE-A130B-R10	300W
	ACE-A140A-S-R10	400W

RACK-220G supports single PS/2 PSU. For more IEI PSU models, please refer to section 5 or visit www.ieiworld.com.

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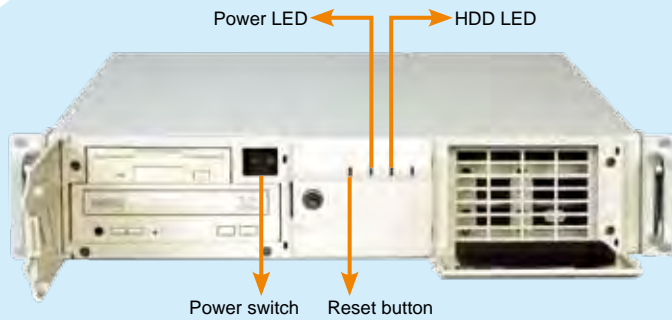
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# RACK-2100G 2U 6-slot Full-size Rackmount Chassis



RACK-2100GB

**CD-ROM, and HDD are not included in package.**

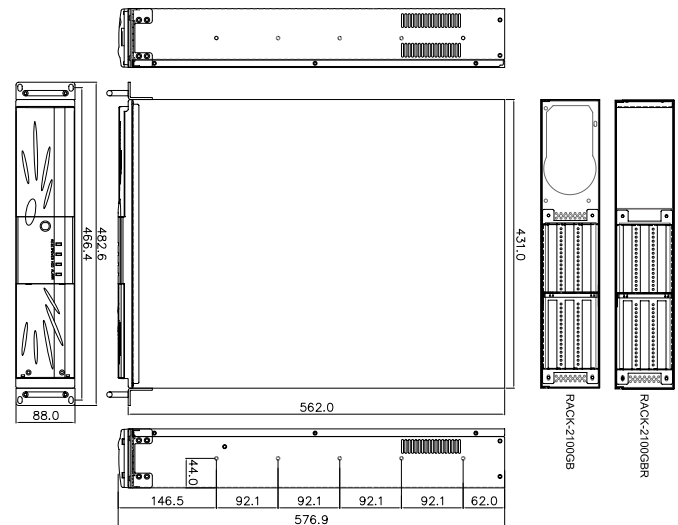
## Features

- ◆ RoHS compliant design
- ◆ Stylish front panel with keylock
- ◆ One 5.25" and one 3.5" drive bay
- ◆ Two 8 cm cooling fans with easy replaceable fan filter
- ◆ Lockable door prevents unauthorized access

## Specifications

◆ Construction	Heavy duty metal with plastic front panel
◆ SBC Form Factor	Full-size, slot CPU card
◆ Drive Bays	1 x Front accessible 3.5" 1 x 3.5" HDD (internal) 1 x 5.25"
◆ Cooling Fans	2 x 8 cm
◆ Expansion Slots	6 slots
◆ Indicators	Power, HDD
◆ Buttons	Power switch, reset button
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	W: White/B: Black
◆ Weight (Net/Gross)	7.8 kg/11.8 kg
◆ Dimensions (DxWxH)	576.9 mm x 431 mm x 88 mm

## Dimensions (measurement units: millimeter)



## Backplane Options

Model No.	SBC Type	PCI	ISA	PCIe			PSU Connector
				x1	x4	x16	
PE-6SD	PICMG 1.3	0	0	3	0	1	ATX
PE-6SD2	PICMG 1.3	1	0	2	0	1	ATX
PE-6SD3-RS	PICMG 1.3	2	0	0	1	1	ATX

## Selection Guide

Model No.	SBC Type	PSU Type	Color Options
RACK-2100G	PICMG 1.3	PS/2	black/white
RACK-2100GBR	PICMG 1.3	redundant	black

## Power Supply Options

Type	Model No.	Watt
AT	ACE-925AP-U-RS	250W
	ACE-935AL-RS	300W
ATX	ACE-A130B-RS	300W
	ACE-A140A-S-RS	400W
ATX Redundant*	ACE-R4130AP-RS	300W
	ACE-R4140AP-RS	400W

\*Only RACK-2100GBR can support ATX redundant power supply.  
For more IEI PSU models, please refer to section 5 or visit [www.ieiworld.com](http://www.ieiworld.com).

## Ordering Information

Part No.	Description
<b>RACK-2100GB/A130B</b>	2U 6-slot full-size rackmount chassis for PICMG 1.3 SBC, White, 2 x 8 cm fan, with ACE-A130B-RS (300W ATX model), RoHS
<b>RACK-2100GBR/ACE-R4130AP</b>	2U 6-slot full-size rackmount chassis for PICMG 1.3 SBC, black, with ACE-R4130AP-RS, RoHS

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# RACK-305G 4U 14-slot Full-size Rackmount Chassis



## Features

- ◆ RoHS compliant design
- ◆ Two USB ports on the front panel
- ◆ Dual reset buttons for dual systems
- ◆ Two 8 cm cooling fans with replaceable fan filters
- ◆ Lockable door prevents unauthorized access

## Specifications

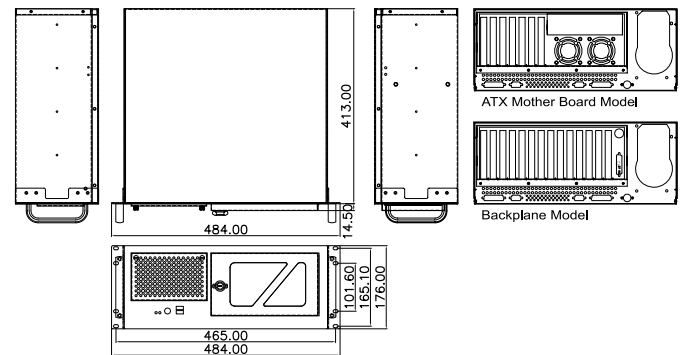
◆ Construction	Heavy duty metal
◆ SBC Form Factor	Full-size, slot CPU card
◆ Drive Combinations	3 x 5.25" + 1 x 3.5" HDD or 2 x 5.25" + 2 x 3.5" HDD or 2 x 5.25" + 1 x 3.5" HDD + 1 x front accessible 3.5" or 2 x 5.25" + 2 x front accessible 3.5"
◆ Cooling Fans	2 x 8 cm
◆ I/O Ports	2 x USB
◆ Expansion Slots	14 slots for RACK-305G 7 slots for RACK-305GATX
◆ Indicators	Power, HDD
◆ Buttons	1 x Power switch, 2 x reset buttons
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	W: White/B: Black
◆ Weight (Net/Gross)	10.4 kg/15 kg
◆ Dimensions (DxWxH)	413 mm x 431 mm x 176 mm

## Ordering Information

Part No.	Description
<b>RACK-305G</b> -R22/ACE-935AL	4U 14-Slot rackmount chassis, USB, (Black/White), W/ACE-935AL-RS PSU (300W), RoHS
<b>RACK-305G</b> -R22/A130B	4U 14-slot rackmount chassis, (Black/White), 2 x 8 cm fan, with ACE-A130B-R10 (300W ATX model), RoHS
<b>RACK-305G</b> ATX-R22/A130B	4U ATX motherboard rackmount chassis, (Black/White), 2 x 8 cm fan, with ACE-A130B-R10 (300W ATX model), RoHS

Color Code: B-Black W-White

## Dimensions (measurement units: millimeter)



## Backplane Options

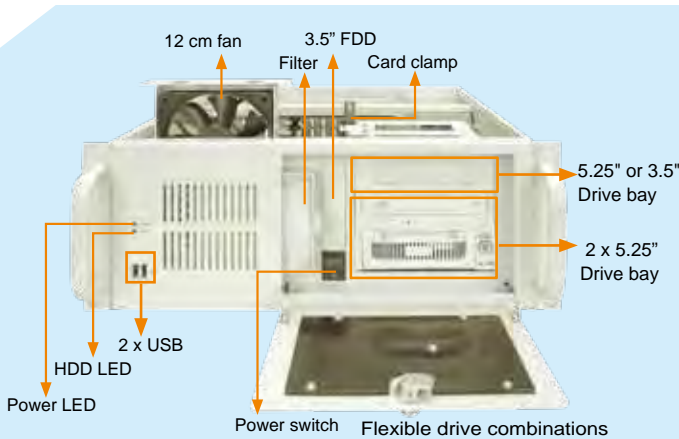
Model No.	SBC Type	PCI	ISA	PCIe				PSU Connector
				x1	x4	x16	PCI-X	
PCI-13SD-RS	PICMG 1.0	3+4	3+3	0	0	0	0	AT/ATX
PCI-14S2-RS	PICMG 1.0	4	8	0	0	0	0	AT/ATX
PCI-14S3-RS	PICMG 1.0	4	9	0	0	0	0	AT/ATX
PX-14S3-RS	PICMG 1.0	12	2	0	0	0	0	AT/ATX
PX-14S5-RS	PICMG 1.0	7	6	0	0	0	0	AT/ATX
BP-14S-RS	ISA	0	14	0	0	0	0	AT
PE-6S	PICMG 1.3	2	0	2	0	1	0	ATX
PE-10S	PICMG 1.3	4	0	4	0	1	0	ATX
PE-10S2	PICMG 1.3	4	0	4	0	1	0	ATX
PXE-12S	PICMG 1.3	4	0	0	0	1	6	ATX
PE-13SD	PICMG 1.3	4	0	4	1	2	0	ATX
PXE-13S	PICMG 1.3	8	0	3	0	1	0	ATX
SPXE-14S	PICMG 1.3	0	0	12	0	0	0	ATX

## Power Supply Options

Type	Model No.	Watt
AT	ACE-935AL-RS	300W
	ACE-T140A-RS	400W
ATX	ACE-A130B-R10	300W
	ACE-A140A-S-R10	400W
	ACE-A160A-R10	600W
ATX Redundant	ACE-R4130AP-RS	300W
	ACE-R4140AP-RS	400W

RACK-305G supports single PS/2 PSU. For more IEI PSU models, please refer to section 5 or visit www.ieiworld.com.

# RACK-360G 4U 14-slot Full-size Rackmount Chassis



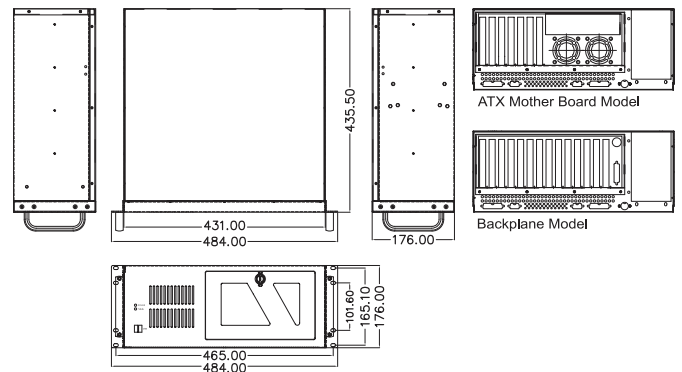
## Features

- ◆ Cost-effective, RoHS compatible design
- ◆ Flexible drive combinations
- ◆ Two USB ports on the front panel
- ◆ 12 cm cooling fan with replaceable fan filter
- ◆ Lockable door prevents unauthorized access

## Specifications

◆ Construction	Heavy duty metal
◆ SBC Form Factor	Full-size, slot CPU card
◆ Drive Combinations	3 x 5.25" + 1 x 3.5" HDD or 2 x 5.25" + 2 x 3.5" HDD or 2 x 5.25" + 1 x 3.5" HDD + 1 x front accessible 3.5" or 2 x 5.25" + 2 x front accessible 3.5"
◆ Cooling Fans	1 x 12 cm
◆ I/O Ports	2 x USB
◆ I/O Openings	2 x COM, 2 x LPT
◆ Expansion Slots	14 slots for RACK-360G 7 slots for RACK-360GATX
◆ Indicators	Power, HDD
◆ Buttons	Power switch, reset button
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	B: Black/W: White
◆ Weight (Net/Gross)	11 kg/15.4 kg
◆ Dimensions (DxWxH)	435.5 mm x 431mm x 176 mm

## Dimensions (measurement units: millimeter)



## Backplane Options

Model No.	SBC Type	PCI	ISA	PCIe				PSU Connector
				x1	x4	x16	PCIIX	
PCI-13SD-RS	PICMG 1.0	3+4	3+3	0	0	0	0	AT/ATX
PCI-14S2-RS	PICMG 1.0	4	8	0	0	0	0	AT/ATX
PCI-14S3-RS	PICMG 1.0	4	9	0	0	0	0	AT/ATX
PX-14S3-RS	PICMG 1.0	12	2	0	0	0	0	AT/ATX
PX-14S5-RS	PICMG 1.0	7	6	0	0	0	0	AT/ATX
BP-14S-RS	ISA	0	14	0	0	0	0	AT
PE-6S	PICMG 1.3	2	0	2	0	1	0	ATX
PE-10S	PICMG 1.3	4	0	4	0	1	0	ATX
PE-10S2	PICMG 1.3	4	0	4	0	1	0	ATX
PXE-12S	PICMG 1.3	4	0	0	0	1	6	ATX
PE-13SD	PICMG 1.3	4	0	4	1	2	0	ATX
PXE-13S	PICMG 1.3	8	0	3	0	1	0	ATX
SPXE-14S	PICMG 1.3	0	0	12	0	0	0	ATX

## Power Supply Options

Type	Model No.	Watt
AT	ACE-935AL-RS	300W
	ACE-T140A-RS	400W
ATX	ACE-A130B-R10	300W
	ACE-A140A-S-R10	400W
	ACE-A160A-R10	600W
ATX Redundant	ACE-R4130AP-RS	300W
	ACE-R4140AP-RS	400W

RACK-360G supports single PS/2 PSU. For more IEI PSU models, please refer to section 5 or visit [www.ieiworld.com](http://www.ieiworld.com).

## Ordering Information

Part No.	Description
RACK-360G [C] -R22/ACE-935AL	4U 14-Slot rackmount chassis, USB, (Black/White), W/ACE-935AL-RS PSU (300W), RoHS
RACK-360G [C] -R22/A130B	4U 14-slot rackmount chassis, (Black/White), 1 x 12 cm fan, with ACE-A130B-R10 (300W ATX model), RoHS
RACK-360G [C] ATX-R22/A130B	4U ATX motherboard rackmount chassis, (Black/White), 1 x 12 cm fan, with ACE-A130B-R10 (300W ATX model), RoHS

[C] Color Code: B-Black W-White

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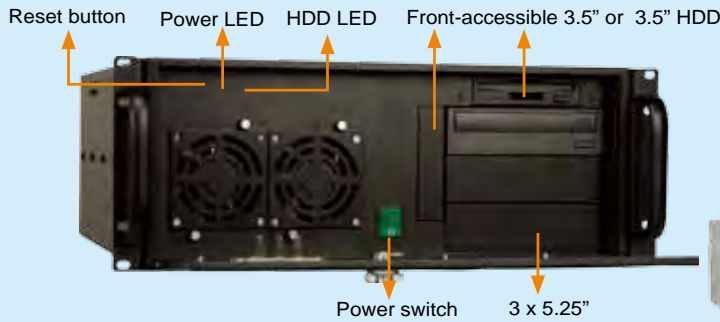
Power Supply/Peripherals

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Panel Solutions Introduction



# RACK-3000G 4U 14-slot Full-size Rackmount Chassis



RACK-3000GBATX



RACK-3000GW



RACK-3000GB

CD-ROM and HDD are not included in package.

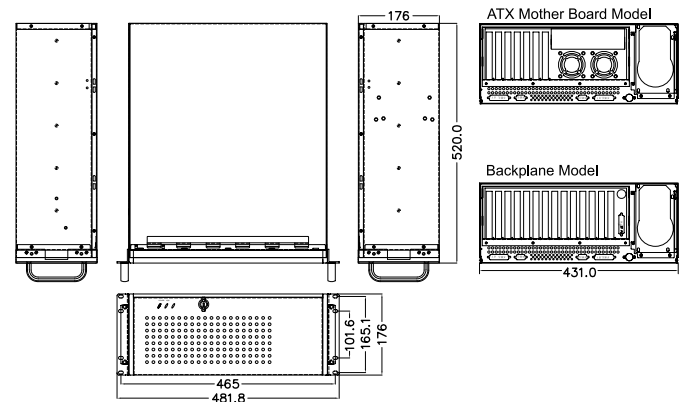
## Features

- ◆ RoHS compliant design
- ◆ Compatible with ATX and microATX form factor motherboards
- ◆ Three 5.25" and three 3.5" drive bays
- ◆ Two 8 cm cooling fans
- ◆ Lockable door prevents unauthorized access

## Specifications

◆ Construction	Heavy duty metal
◆ SBC Form Factor	Full-size, slot CPU card
◆ Drive Bays	3 x 5.25" + 1 x front-accessible 3.5" + 2 x 3.5" HDD
	or 3 x 5.25" + 2 x front-accessible 3.5" + 1 x 3.5" HDD
	or 3 x 5.25" + 3 x 3.5" HDD
◆ Cooling Fans	2 x 8 cm
◆ I/O Openings	2 x COM, 2 x LPT, 1 x PS2
◆ Expansion Slots	14 slots for RACK-3000G 7 slots for RACK-3000GATX
◆ Indicators	Power, HDD
◆ Buttons	Power switch, reset button
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	W: White/B: Black
◆ Weight (Net/Gross)	13 kg/18 kg
◆ Dimensions (DxWxH)	520 mm x 431 mm x 176 mm

## Dimensions (measurement units: millimeter)



## Backplane Options

Model No.	SBC Type	PCI	ISA	PCIe				PSU Connector
				x1	x4	x16	PCIX	
BP-14S-RS	ISA	0	14	0	0	0	0	AT
PCI-13SD-RS	PICMG 1.0	3+4	3+3	0	0	0	0	AT/ATX
PCI-14S2-RS	PICMG 1.0	4	8	0	0	0	0	AT/ATX
PCI-14S3-RS	PICMG 1.0	4	9	0	0	0	0	AT/ATX
PX-14S3-RS	PICMG 1.0	12	2	0	0	0	0	AT/ATX
PX-14S5-RS	PICMG 1.0	7	6	0	0	0	0	AT/ATX
PE-6S	PICMG 1.3	2	0	2	0	1	0	ATX
PE-10S	PICMG 1.3	4	0	4	0	1	0	ATX
PE-10S2	PICMG 1.3	4	0	4	0	1	0	ATX
PXE-12S	PICMG 1.3	4	0	0	0	1	6	ATX
PE-13SD	PICMG 1.3	4	0	4	1	2	0	ATX
PXE-13S	PICMG 1.3	8	0	3	0	1	0	ATX
SPXE-14S	PICMG 1.3	0	0	12	0	0	0	ATX

## Power Supply Options

Type	Model No.	Watt
AT	ACE-935AL-RS	300W
	ACE-T140A-RS	400W
ATX	ACE-A130B-R10	300W
	ACE-A140A-S-R10	400W
	ACE-A160A-R10	600W
ATX Redundant	ACE-R4130AP-RS	300W
	ACE-R4140AP-RS	400W

RACK-3000G supports single PS/2 PSU. For more IEI PSU models, please refer to section 5 or visit www.ieiworld.com.

## Ordering Information

Part No.	Description
RACK-3000G  -R21/A130B	4U 14-slot rackmount chassis, (Black/White), 2 x 8 cm fan, with ACE-A130B-R10 (300W ATX model), RoHS
RACK-3000G  ATX-R21/A130B	4U ATX motherboard rackmount chassis, (Black/White), 2 x 8 cm fan, with ACE-A130B-R10 (300W ATX model), RoHS

Color Code: B-Black W-White

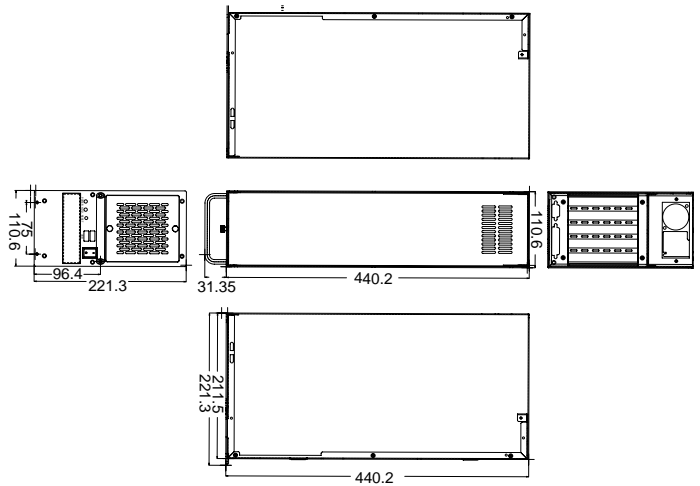
# RACK-500G 5U 5-slot Full-size Rackmount Chassis



## Features

- ◆ RoHS compliant design
- ◆ 2 x USB ports on front panel
- ◆ 1 x front-accessible 3.5" and 1 x 3.5" HDD drive capacity
- ◆ Hot-swappable 8 cm cooling fan
- ◆ 19" rack-mountable carrier (optional)

## Dimensions (measurement units: millimeter)



## Specifications

◆ Construction	Heavy duty metal
◆ SBC Form Factor	Full-size, slot CPU cards
◆ Drive Bays	1 x front-accessible 3.5" 1 x 3.5" HDD
◆ Cooling Fans	1 x 8 cm
◆ I/O Ports	2 x USB
◆ I/O Openings	1 x LPT, 1 x COM
◆ Expansion Slots	5 slots
◆ Indicators	Power, HDD
◆ Buttons	Power switch, reset
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	W: White/B: Black
◆ Weight (Net/Gross)	6 kg/9 kg
◆ Dimensions (DxWxH)	440.2 mm x 110.6 mm x 221.3 mm

## Backplane Options

Model No.	SBC Type	PCI	ISA	PCIe			PSU Connector
				x1	x4	x16	
PCI-5S2-RS	PICMG 1.0	4	1	0	0	0	AT
PCI-5S2A-RS	PICMG 1.0	4	1	0	0	0	ATX
PE-5S2	PICMG 1.3	0	0	3	0	1	ATX
PE-5S	PICMG 1.3	2	0	0	1	1	ATX
HPE-5S1	PCI/PICOe	4	0	0	0	0	ATX
HPE-5S2	PCI/PICOe	4	0	0	0	0	ATX
HPE-5S3	PCI/PICOe	2	0	2	0	0	ATX

Only R20 or later versions support PICMG 1.3 backplane.

## Ordering Information

Part No.	Description
<b>RACK-500G</b> -R21/A618A	5U 5-slot full-size chassis, (Black/White), 1 x 8 cm fan, with ACE-A618A-RS-R11 (180W ATX model), RoHS PSU
<b>CA-950G</b>	19" Rack carrier for RACK-500G and RACK-900G, (Black/White), RoHS

Color Code: B-Black W-White

## Power Supply Options

Type	Model No.	Watt
AT	ACE-916AP-RS	150W
	ACE-A618A-RS-R11	180W
ATX	ACE-A225A-RS	250W

RACK-500G supports single 1U height AT type PSU. For more IEI PSU models, please refer to section 5 or visit www.ieiworld.com.

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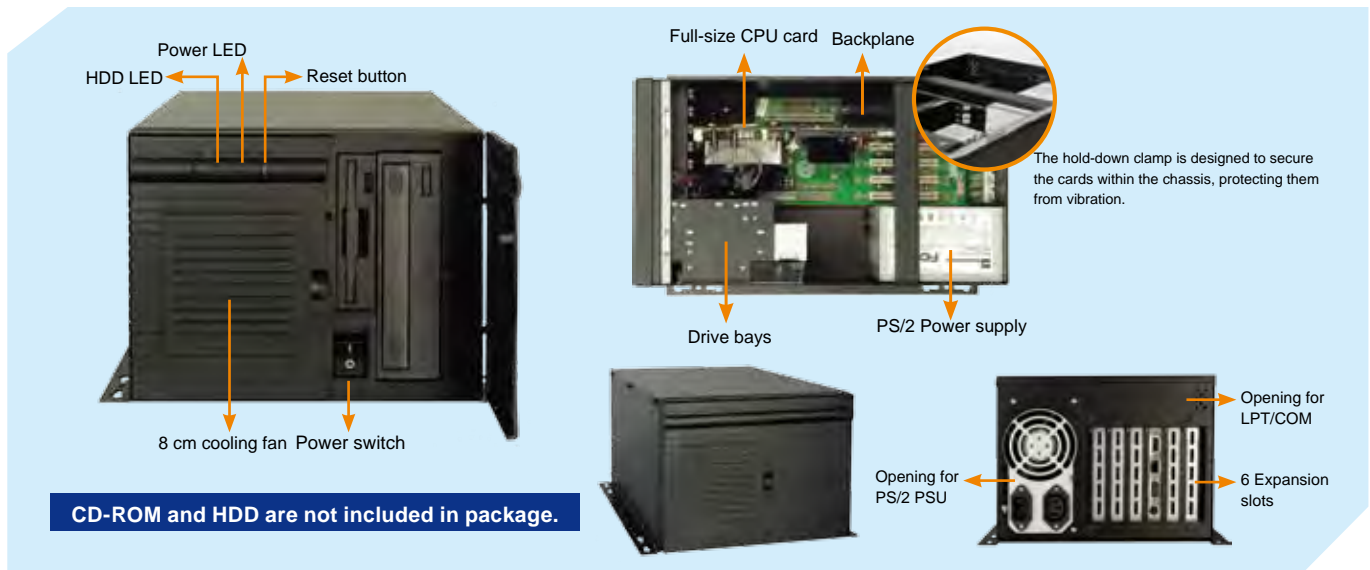
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Panel Solutions Introduction

# PAC-1000G 6-slot Full-size Compact Chassis



## Features

- ◆ RoHS compliant design
- ◆ One, 8 cm cooling fan with replaceable fan filter
- ◆ Plastic front panel with cover door

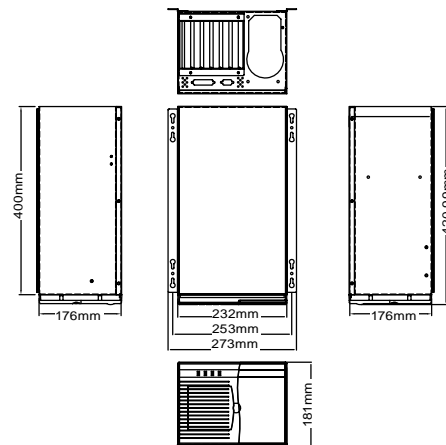
## Specifications

◆ Construction	Metal with plastic front panel
◆ SBC Form Factor	Full-size, slot CPU card
◆ Drive Bays	1 x front-accessible 3.5"
	1 x 5.25"
	1 x 3.5" HDD
◆ Cooling Fans	1 x 8 cm
◆ I/O Openings	1 x LPT, 1 x COM
◆ Expansion Slots	6 slots
◆ Indicators	Power, HDD
◆ Buttons	Power switch, reset
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	B: Black
◆ Weight (Net/Gross)	5.6 kg/8.8 kg
◆ Dimensions (DxWxH)	421 mm x 232 mm x 176 mm

## Ordering Information

Part No.	Description
PAC-1000GB-R20/A130B	6-Slot full-size compact chassis, white, 1 x 8 cm fan, with ACE-A130B-R10 (300W ATX model), RoHS

## Dimensions (measurement units: millimeter)



## Backplane Options

Model No.	SBC Type	PCI	ISA	PCIe				PSU Connector
				x1	x4	x8	x16	
BP-6S-RS	ISA	0	6	0	0	0	0	AT
IP-6S-RS	PCISA	3	2	0	0	0	0	AT
IP-6SA-RS	PCISA	3	2	0	0	0	0	ATX
PCI-6S-RS	PICMG 1.0	4	2	0	0	0	0	AT/ATX
PCI-5S-RS	PICMG 1.0	3	1	0	0	0	0	AT/ATX
1PE-6S2	PICMG 1.3	3	0	0	1	0	1	ATX
1PE-6S3	PICMG 1.3	1	0	3	0	0	1	ATX
SPE-4S	PICMG 1.3	0	0	0	1	2	0	ATX
SPE-6S	PICMG 1.3	0	0	0	5	0	0	ATX

\*Only R20 or later versions support PICMG 1.3 backplane

## Power Supply Options

Type	Model No.	Watt
AT	ACE-925AP-U-RS	250W
	ACE-T140A-RS	400W
ATX	ACE-A130B-R10	300W
	ACE-A140A-S-R10	400W
	ACE-828V-RS	250W

PAC-1000G supports single PS/2 PSU. For more IEI PSU models, please refer to section 5 or visit www.ieiworld.com.

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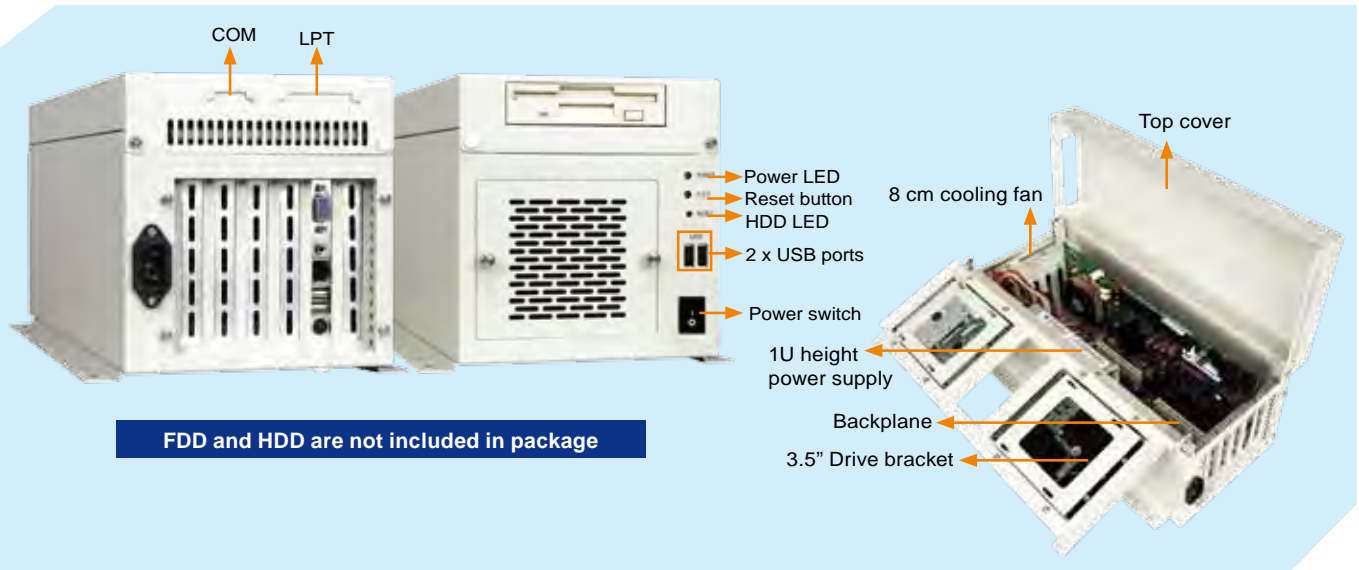
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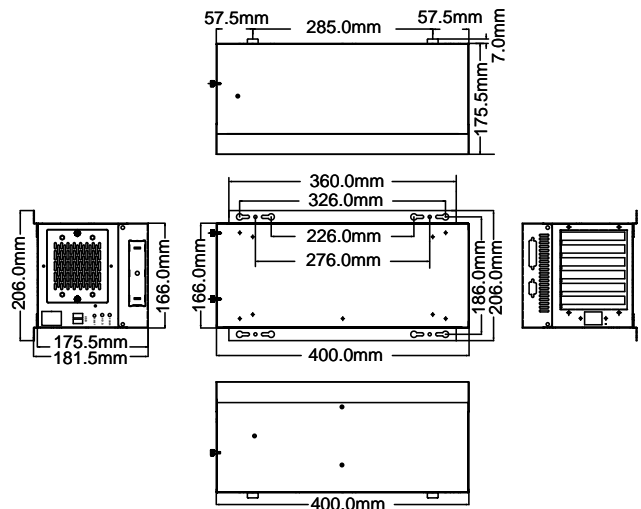
# PAC-106G 6-slot Full-size Compact Chassis



## Features

- ◆ RoHS compliant design
- ◆ Two USB ports on the front panel
- ◆ One 3.5" drive bay and one internal 3.5" HDD bay
- ◆ One, 8 cm cooling fan

## Dimensions (measurement units: millimeter)



## Specifications

◆ Construction	Heavy duty metal
◆ SBC Form Factor	Full-size, slot CPU card
◆ Drive Bays	1 x front-accessible 3.5"
	1 x 3.5" HDD
◆ Cooling Fans	1 x 8 cm
◆ I/O Ports	2 x USB
◆ I/O Openings	1 x COM, 1 x LPT
◆ Expansion Slots	6 slots
◆ Indicators	Power, HDD
◆ Buttons	Power switch, reset
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	W: White
◆ Weight (Net/Gross)	5.2 kg/7.8 kg
◆ Dimensions (DxWxH)	400 mm x 166 mm x 175.5 mm

## Backplane Options

Model No.	SBC Type	PCI	ISA	PCIe				PSU Connector
				x1	x4	x8	x16	
BP-6S-RS	ISA	0	6	0	0	0	0	AT
IP-6S-RS	PCISA	3	2	0	0	0	0	AT
IP-6SA-RS	PCISA	3	2	0	0	0	0	ATX
PCI-6S-RS	PICMG 1.0	4	2	0	0	0	0	AT/ATX
1PE-6S2	PICMG 1.3	3	0	0	1	0	1	ATX
1PE-6S3	PICMG 1.3	1	0	3	0	0	1	ATX
SPE-4S	PICMG 1.3	0	0	0	1	2	0	ATX
SPE-6S	PICMG 1.3	0	0	0	5	0	0	ATX

\*Only R20 or later versions support PICMG 1.3 backplane

## Power Supply Options

Type	Model No.	Watt
AT	ACE-916AP-RS	150W
ATX	ACE-A618A-RS-R11	180W

PAC-106G supports single 1U height PSU. For more IEI PSU models, please refer to section 5 or visit [www.ieiworld.com](http://www.ieiworld.com).

## Ordering Information

Part No.	Description
PAC-106GW-R21/A618A	6-Slot full-size compact chassis, white, 1 x 8 cm fan, with ACE-A618A-RS-R11 (180W ATX model), RoHS

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# PAC-1700G 7-slot Full-size Compact Chassis



CD-ROM and HDD are not included in package.

## Features

- ◆ RoHS compliant design
- ◆ One 5.25" and one 3.5" drive bay
- ◆ Two 3.5" internal HDD bays
- ◆ Seven expansion slots, compatible with full-size SBC
- ◆ 7 expansion slots, compatible with full-size SBC

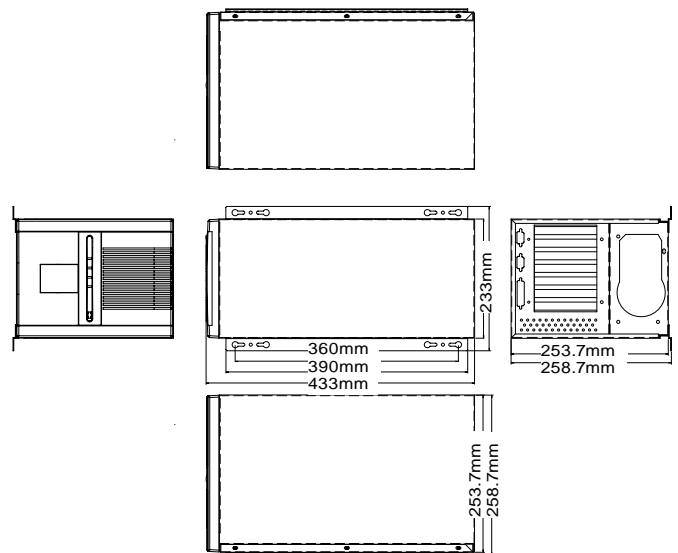
## Specifications

◆ Construction	Metal with plastic front panel
◆ SBC Form Factor	Full-size, slot CPU card
◆ Drive Bays	1 x front-accessible 3.5"
	1 x 5.25"
	2 x 3.5" HDD
◆ Cooling Fans	1 x 8 cm
◆ I/O Openings	1 x LPT, 2 x COM
◆ Expansion Slots	7 slots
◆ Indicators	Power, HDD
◆ Buttons	Power switch, reset
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	B: Black
◆ Weight (Net/Gross)	6 kg/8.4 kg
◆ Dimensions (DxWxH)	433 mm x 233 mm x 253.7 mm

## Ordering Information

Part No.	Description
PAC-1700GB-R20/A130B	7-Slot full-size compact chassis, black, 1 x 8 cm fan, with ACE-A130B-R10 (300W ATX model), RoHS

## Dimensions (measurement units: millimeter)



## Backplane Options

Model No.	SBC Type	PCI	ISA	PCIe			PSU Connector
				x1	x4	x16	
IP-7SA-RS	PCISA	4	2	0	0	0	AT
PCI-7S-RS	PICMG 1.0	4	3	0	0	0	AT/ATX
<sup>1</sup> PE-7S	PICMG 1.3	3	0	2	0	1	ATX
<sup>1</sup> PE-7S2	PICMG 1.3	1	0	4	0	1	ATX
HPE-7S1	PCI/PIC0e	4	0	2	0	0	ATX

<sup>1</sup>Only R20 or later versions support PICMG 1.3 backplane

## Power Supply Options

Type	Model No.	Watt
AT	ACE-925AP-U-RS	250W
	ACE-T140A-RS	400W
ATX	ACE-A130B-R10	300W
	ACE-A140A-S-R10	400W

PAC-1700G supports single PS/2 PSU. For more IEI PSU models, please refer to section 5 or visit [www.ieiworld.com](http://www.ieiworld.com).

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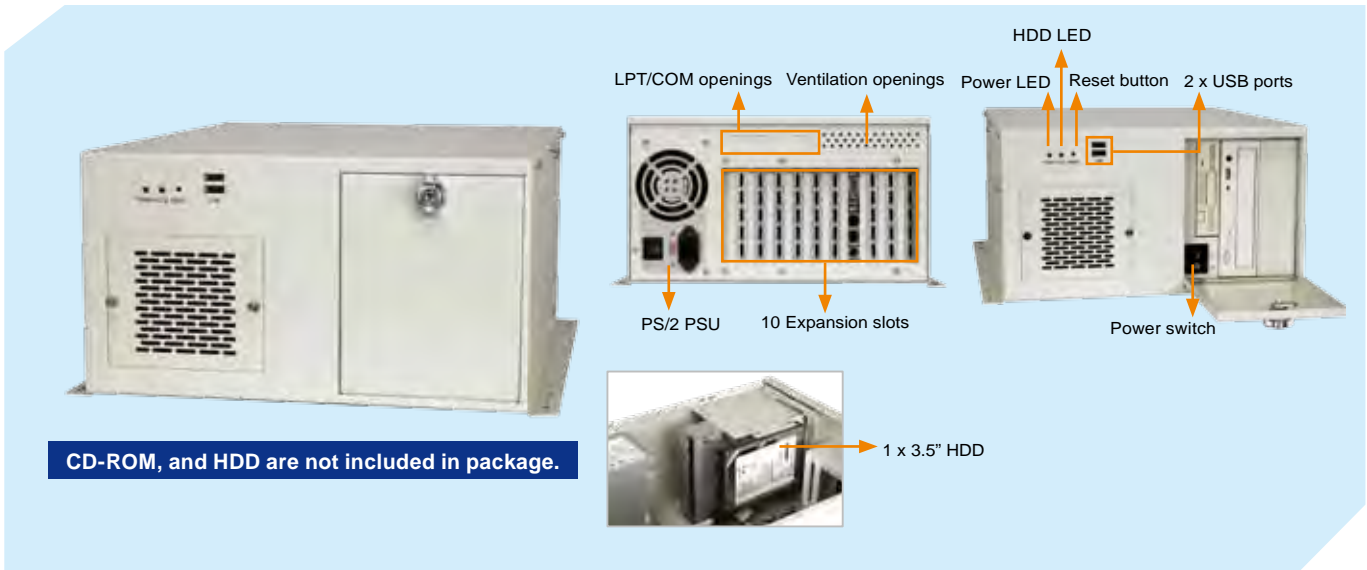
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# PAC-125G 10-slot Full-size Compact Chassis



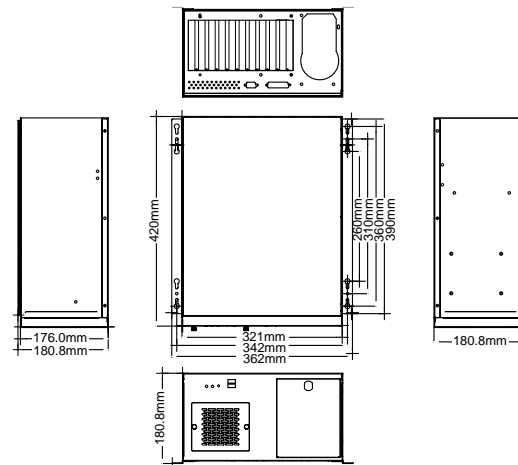
## Features

- ◆ RoHS compliant design
- ◆ Two USB ports on the front panel
- ◆ One, 8 cm hot swappable cooling fan with fan filter
- ◆ 2 x 5.25", 1 x 3.5" HDD, 1 x front-accessible 3.5"
- ◆ Lockable door prevents unauthorized access

## Specifications

◆ Construction	Heavy duty metal
◆ SBC Form Factor	Full-size, slot CPU card
◆ Drive Bays	2 x 5.25"
	1 x Front accessible 3.5"
	1 x 3.5" HDD
◆ Cooling Fans	1 x 8 cm
◆ I/O Ports	2 x USB
◆ I/O Openings	1 x LPT, 1 x COM
◆ Expansion Slots	10 slots
◆ Indicators	Power, HDD
◆ Buttons	Power switch, reset
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	W: White
◆ Weight (Net/Gross)	7.2 kg/10.4 kg
◆ Dimensions (DxWxH)	420 mm x 321 mm x 176 mm

## Dimensions (measurement units: millimeter)



## Backplane Options

Model No.	SBC Type	PCI	ISA	PCIe					PSU Connector
				x1	x4	x8	x16	PCIX	
BP-10S-RS	ISA	0	10	0	0	0	0	0	AT
PCI-10S-RS	PICMG 1.0	4	5	0	0	0	0	0	AT/ATX
PX-10S-RS	PICMG 1.0	7	3	0	0	0	0	0	AT/ATX
IP-8S-RS	PCISA	4	3	0	0	0	0	0	AT/ATX
IP-10S-RS	PCISA	4	5	0	0	0	0	0	AT/ATX
IPX-9S-RS	PCISA	8	0	0	0	0	0	0	AT/ATX
HPE-8S	PCI/PIC0e	4	0	2	0	0	0	0	ATX
PE-6S	PICMG 1.3	2	0	2	0	0	1	0	ATX
PE-8S <sup>1</sup>	PICMG 1.3	3	0	3	0	0	1	0	ATX
SPXE-9S	PICMG 1.3	2	0	0	2	1	0	2	ATX
SPE-9S	PICMG 1.3	3	0	0	3	1	0	0	ATX

<sup>1</sup>Only R20 or later versions support PICMG 1.3 backplane

## Power Supply Options

Type	Model No.	Watt
AT	ACE-925AP-U-RS	250W
	ACE-935AL-RS	300W
ATX	ACE-A130B-R10	300W
	ACE-A140A-S-R10	400W
	ACE-A160A-R10	600W

PAC-125G supports single PS/2 PSU. For more IEI PSU models, please refer to section 5 or visit www.ieiworld.com.

## Ordering Information

Part No.	Description
<b>PAC-125GW-R22/A130B</b>	10-slot full-size compact chassis, white, 1 x 8cm fan, with ACE-A130B-R10 (300W ATX model), RoHS
<b>PAC-125GW-R22/ACE-925AP</b>	10-Slot full-size chassis, white, W/ACE-925AP PSU (200W), RoHS

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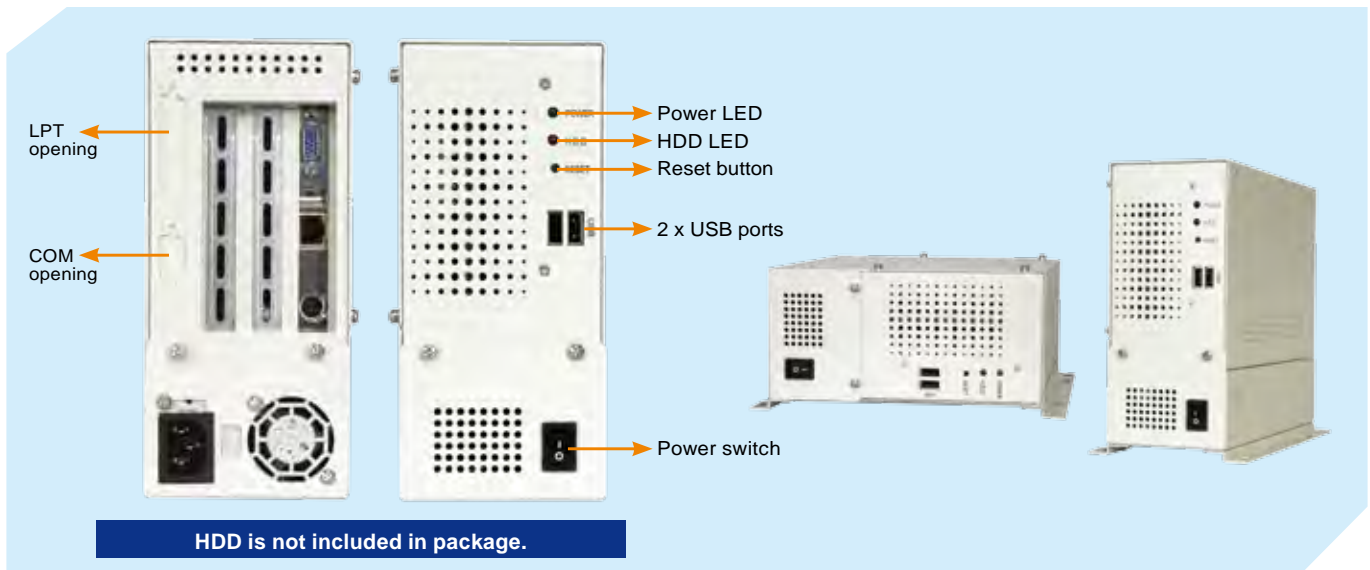
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# PAC-53GH

3-slot Half-size Compact Chassis



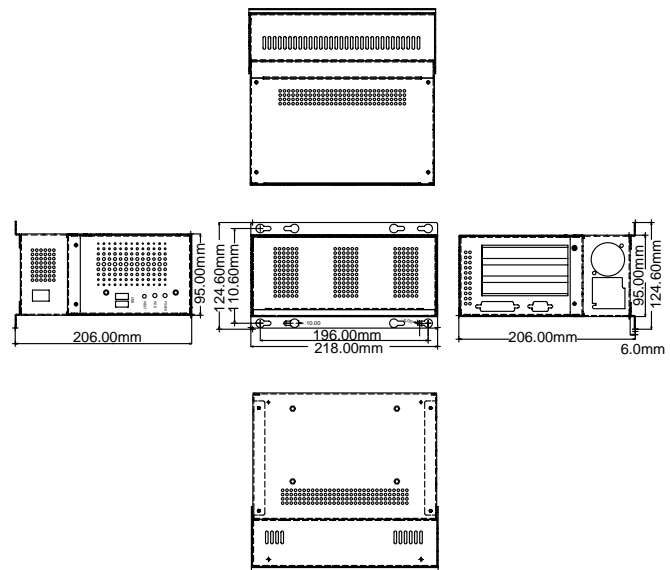
## Features

- ◆ RoHS compliant design
- ◆ Two USB ports on the front panel
- ◆ One 2.5" internal HDD bay

## Specifications

◆ Construction	Heavy duty metal
◆ SBC Form Factor	Half-size, slot CPU cards
◆ Drive Bays	1 x 2.5" HDD
◆ I/O Ports	2 x USB
◆ I/O Openings	1 x LPT, 1 x COM
◆ Expansion Slots	3 slots
◆ Indicators	Power, HDD
◆ Buttons	Power switch, reset
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	W: White
◆ Weight (Net/Gross)	2 kg/3.8 kg
◆ Dimensions (DxWxH)	218 mm x 95 mm x 200 mm

## Dimensions (measurement units: millimeter)



## Backplane Options

Model No.	SBC Type	PCI	ISA	PCIe			PSU Connector
				x1	x4	x16	
BP-3S-RS	ISA	0	3	0	0	0	AT
IP-3S-RS	PCISA	2	0	0	0	0	AT
IP-3SA-RS	PCISA	2	0	0	0	0	ATX

## Ordering Information

Part No.	Description
PAC-53GHW-R11/916AP/IP-3S	3-slot half-size chassis, with ACE-916AP-RS and IP-3S-RS-R40, RoHS
PAC-53GHW-R11/916AP/BP-3S	3-slot half-size chassis, with ACE-916AP-RS and BP-3S-RS-R40, RoHS
PAC-53GHW-R11/A618A	3-slot half-size compact chassis, white, with ACE-A618A-RS-R11 (180W ATX model), RoHS

## Power Supply Options

Type	Model No.	Watt
AT	ACE-916AP-RS	150W
ATX	ACE-A618A-RS-R11	180W
	ACE-4520C-RS	200W

PAC-53GH supports single 1U height PSU. For more IEI PSU models, please refer to section 5 or visit www.ieiworld.com.

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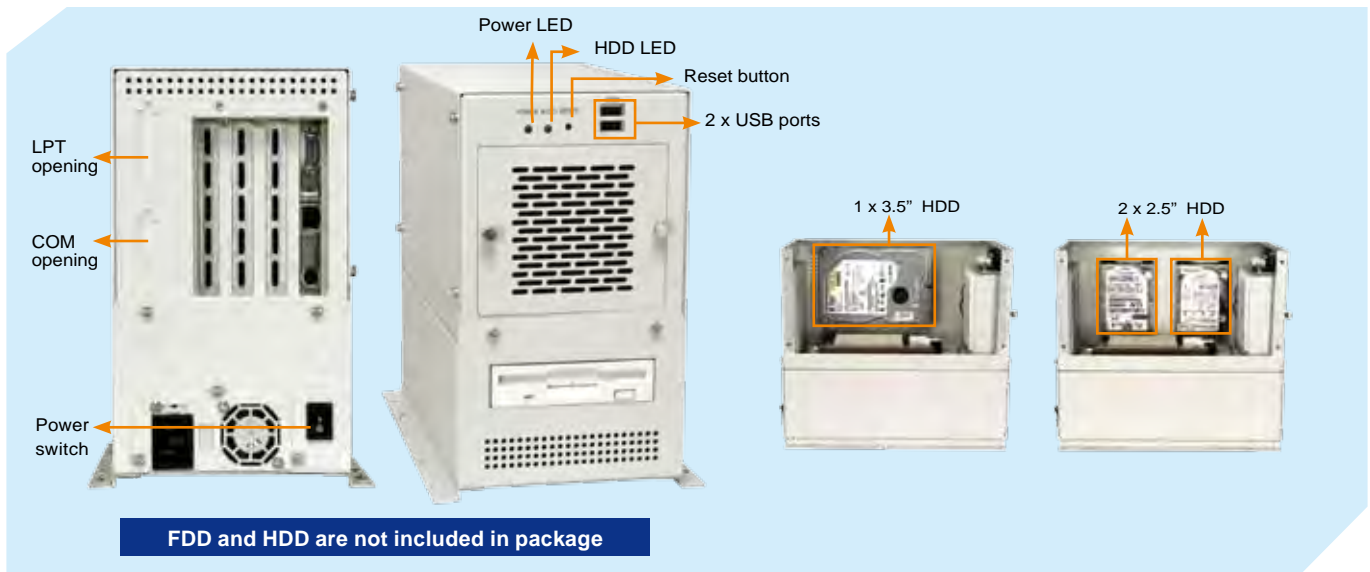
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Panel Solutions Introduction

# PAC-42GH 4-slot Half-size Compact Chassis



## Features

- ◆ Two USB ports on the front panel
- ◆ One, 8 cm cooling fan with replaceable filter
- ◆ Supports one 3.5" HDD or two 2.5" HDDs

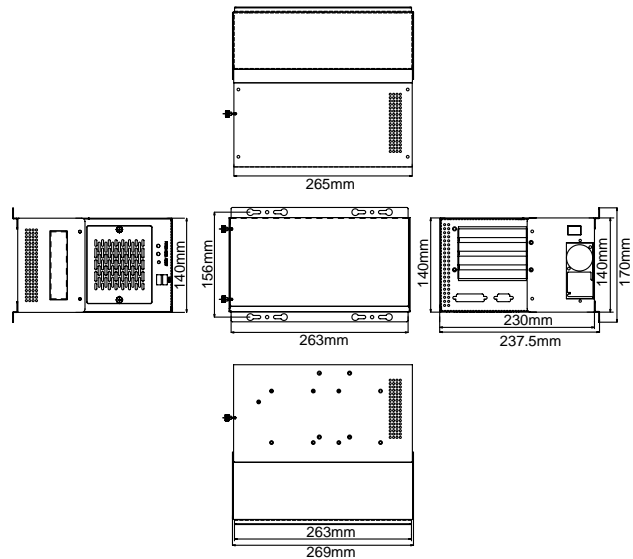
## Specifications

◆ Construction	Heavy duty metal
◆ SBC Form Factor	Half-size, slot CPU cards
◆ Drive Combinations	1 x Front-accessible 3.5" and 1 x 3.5" HDD or 1 x Front-accessible 3.5" and 2 x 2.5" HDD
◆ Cooling Fans	1 x 8 cm
◆ I/O Ports	2 x USB
◆ I/O Openings	1 x LPT, 1 x COM
◆ Expansion Slots	4 slots
◆ Indicators	Power, HDD
◆ Buttons	Power switch, reset
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	W: White
◆ Weight (Net/Gross)	3.9 kg/6.1 kg
◆ Dimensions (DxWxH)	269 mm x 140 mm x 230 mm

## Ordering Information

Part No.	Description
PAC-42GHW-R11/916AP/IP-4S	4-slot half-size chassis with ACE-916AP-RS and IP-4S-RS-R40, RoHS
PAC-42GHW-R11/916AP/BP-4S	4-slot half-size chassis with ACE-916AP-RS and BP-4S-RS-R40, RoHS
PAC-42GHW-R11/916AP/IP-4S2	4-slot half-size chassis with ACE-916AP-RS and IP-4S2-RS-R40, RoHS
PAC-42GHWPX-R11/A618A	4-slot half-size compact chassis, white, 1 x 8 cm fan, with ACE-A618A-RS-R11 (180W ATX model), RoHS

## Dimensions (measurement units: millimeter)



## Backplane Options

Model No.	SBC Type	PCI	ISA	PCIe			PSU Connector
				x1	x4	x16	
BP-4S-RS	ISA	0	4	0	0	0	AT
IP-4S-RS	PCISA	3	0	0	0	0	AT
IP-4S2-RS	PCISA	2	1	0	0	0	AT
IP-4S3-RS	PCISA	0	3	0	0	0	AT
IP-4S4-RS	PCISA	0	3	0	0	0	AT
IP-4SA-RS	PCISA	3	0	0	0	0	ATX
HPE-4S1	PCI/PICoE	3	0	0	0	0	ATX
HPE-4S2	PCI/PICoE	2	0	0	1	0	ATX

## Power Supply Options

Type	Model No.	Watt
AT	ACE-916AP-RS	150W
ATX	ACE-A618A-RS-R11	180W

PAC-42GH supports single 1U height PSU. For more IEI PSU models, please refer to section 5 or visit [www.ieiworld.com](http://www.ieiworld.com).

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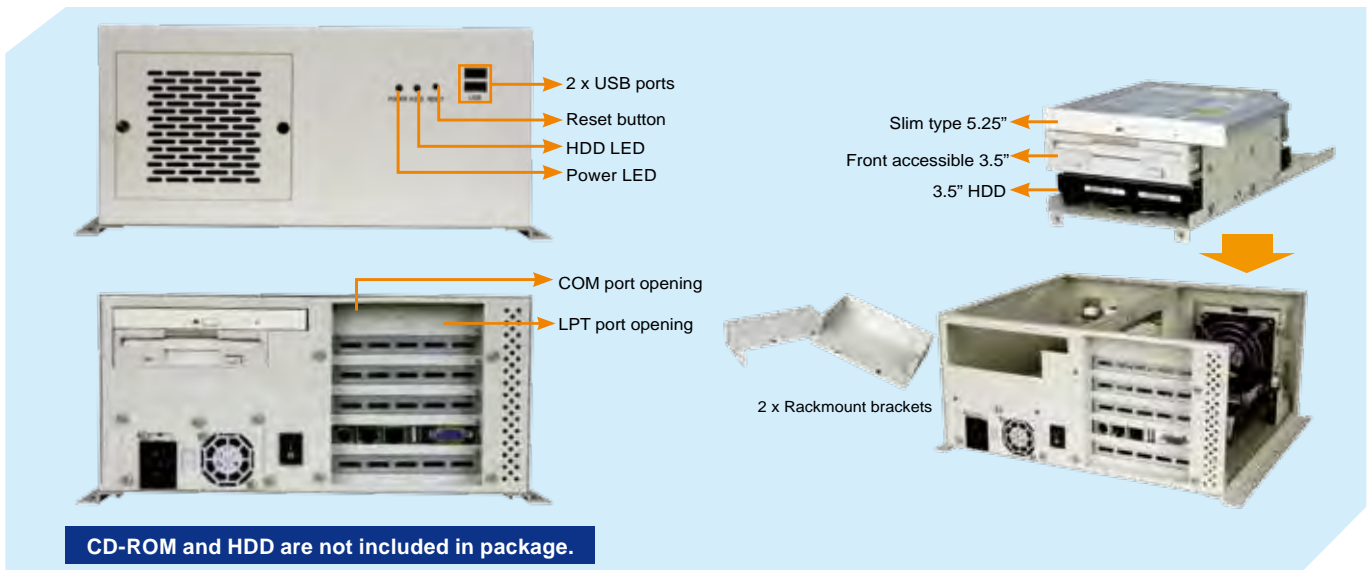
Power Supply/Peripherals

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Panel Solutions Introduction



# PR-1500G 5-slot Half-size Compact Chassis



CD-ROM and HDD are not included in package.

## Features

- ◆ RoHS compliant design
- ◆ One slim type 5.25" drive bay
- ◆ One 3.5" drive bay and one internal 3.5" HDD bay
- ◆ Two USB ports on the front panel
- ◆ One 8 cm cooling fan

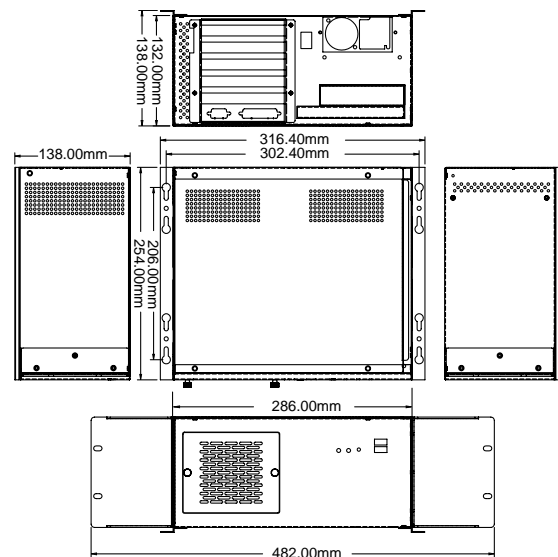
## Specifications

◆ Construction	Heavy duty metal
◆ SBC Form Factor	Half-size, slot SBC
◆ Drive Bays	1 x 3.5" HDD
	1 x Front accessible 3.5"
	1 x Slim 5.25"
◆ Cooling Fans	1 x 8 cm
◆ I/O Ports	2 x USB
◆ I/O Openings	1 x LPT, 1 x COM
◆ Expansion Slots	5 slots
◆ Indicators	Power, HDD
◆ Buttons	Power switch, reset
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	W: White
◆ Weight (Net/Gross)	3.6 kg/6.2 kg
◆ Dimensions (DxWxH)	254 mm x 286 mm x 132 mm

## Ordering Information

Part No.	Description
PR-1500GW-R12/916AP	5-slot half-size chassis, white, with ACE-916AP-RS, RoHS
PR-1500GW-R12/A618A	5-slot half-size compact chassis, white, 1 x 8 cm fan, with ACE-A618A-RS-R11 (180W ATX model), RoHS

## Dimensions (measurement units: millimeter)



## Backplane Options

Model No.	SBC Type	PCI	ISA	PCIe			PSU Connector
				x1	x4	x16	
BP-5S-RS	ISA	0	5	0	0	0	AT
IP-5S2-RS	PCISA	4	0	0	0	0	AT
IP-5SA-RS	PCISA	3	1	0	0	0	ATX
IP-5SA2-RS	PCISA	4	1	0	0	0	ATX
HPE-5S1	PICO/PICoE	4	0	0	0	0	ATX
HPE-5S2	PICO/PICoE	3	0	0	1	0	ATX
HPE-5S3	PICO/PICoE	2	0	2	0	0	ATX

## Power Supply Options

Type	Model No.	Watt
ATX	ACE-916AP-RS	150W
	ACE-A618A-RS-R11	180W
	ACE-A225A-RS	250W

PR-1500G supports single 1U height PSU. For more IEI PSU models, please refer to section 5 or visit www.ieiworld.com.

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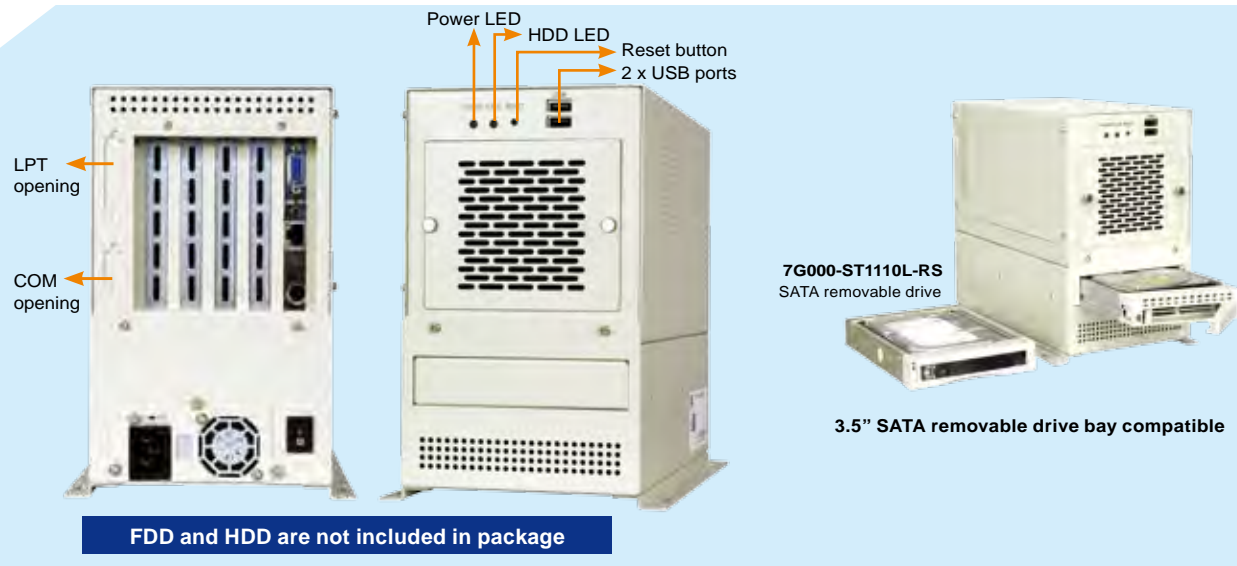
Power Supply/ Peripherals

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Panel Solutions Introduction

# PAC-400G

5-slot Half-size Compact Chassis



## Features

- ◆ RoHS compliant design
- ◆ Two USB ports on the front panel
- ◆ One, 8 cm hot swappable fan
- ◆ One 3.5" internal HDD bay
- ◆ One 3.5" drive bay, for optional removable drive
- ◆ Supports Pentium 4 half-size CPU card

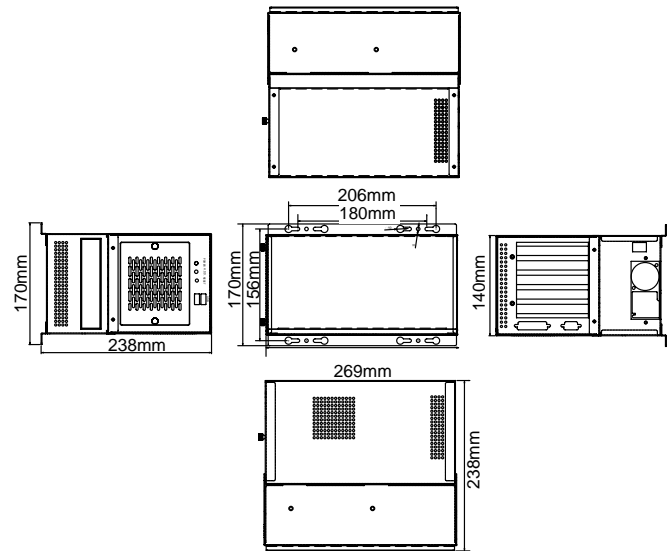
## Specifications

◆ Construction	Heavy duty metal
◆ SBC Form Factor	Half-size, slot SBC
◆ Drive Bays	1 x 3.5" HDD
◆ Cooling Fans	1 x 8 cm
◆ I/O Ports	2 x USB
◆ I/O Openings	1 x LPT, 1 x COM
◆ Expansion Slots	5 slots
◆ Indicators	Power, HDD
◆ Buttons	Power switch, reset
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	W: White
◆ Weight (Net/Gross)	3.8 kg/5.6 kg
◆ Dimensions (DxWxH)	269 mm x 140 mm x 230.5mm

## Ordering Information

Part No.	Description
PAC-400GW-R11/916AP	5-slot half-size chassis, white, with ACE-916AP-RS, RoHS
PAC-400GW-R11/A618A	5-slot half-size compact chassis, white, 1 x 8 cm fan, with ACE-A618A-RS-R11 (180W ATX model), RoHS
7G000-ST1110L-RS	3.5" SATA removable drive bay with keylock, white, RoHS

## Dimensions (measurement units: millimeter)



## Backplane Options

Model No.	SBC Type	PCI	ISA	PCIe			PSU Connector
				x1	x4	x16	
BP-4S-RS	ISA	0	4	0	0	0	AT
IP-4S-RS	PCISA	3	0	0	0	0	AT
IP-4S2-RS	PCISA	2	1	0	0	0	AT
IP-4S3-RS	PCISA	0	3	0	0	0	AT
IP-4S4-RS	PCISA	0	3	0	0	0	AT
IP-4SA-RS	PCISA	3	0	0	0	0	ATX
IP-4S2A-RS	PCISA	3	0	0	0	0	ATX
HPE-4S1	PCI/PICoE	3	0	0	0	0	ATX
HPE-4S2	PCI/PICoE	2	0	0	1	0	ATX

## Power Supply Options

Type	Model No.	Watt
AT	ACE-916AP-RS	150W
ATX	ACE-A618A-RS-R11	180W

PAC-400G supports single 1U height PSU. For more IEI PSU models, please refer to section 5 or visit [www.ieiworld.com](http://www.ieiworld.com).

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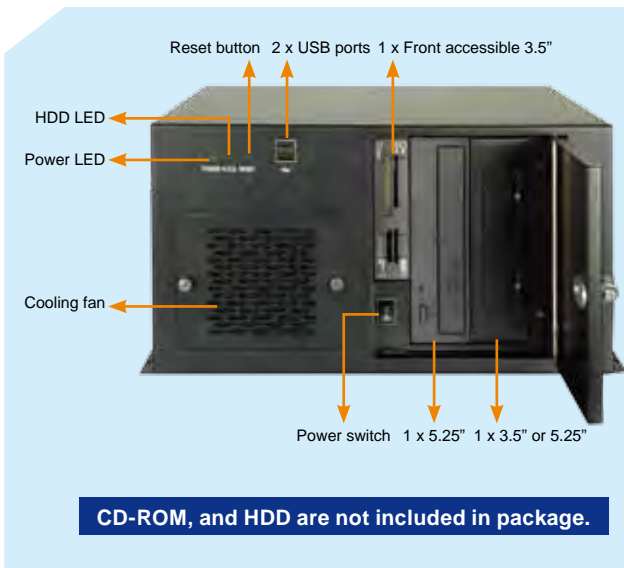
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Power Supply/Peripherals

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Panel Solutions Introduction

# PAC-700G 7-slot Half-size Compact Chassis



**CD-ROM, and HDD are not included in package.**



### Easy hot-swappable fan



**Step 1:** Loosen the thumb screws  
**Step 2:** Pull the fan out gently  
**Step 3:** Unplug the power connector

## Features

- ◆ RoHS compliant design
- ◆ Two USB ports on the front panel
- ◆ One, 8 cm cooling fan with fan filter
- ◆ Easy access design for quick fan replacement
- ◆ Lockable door prevents unauthorized access

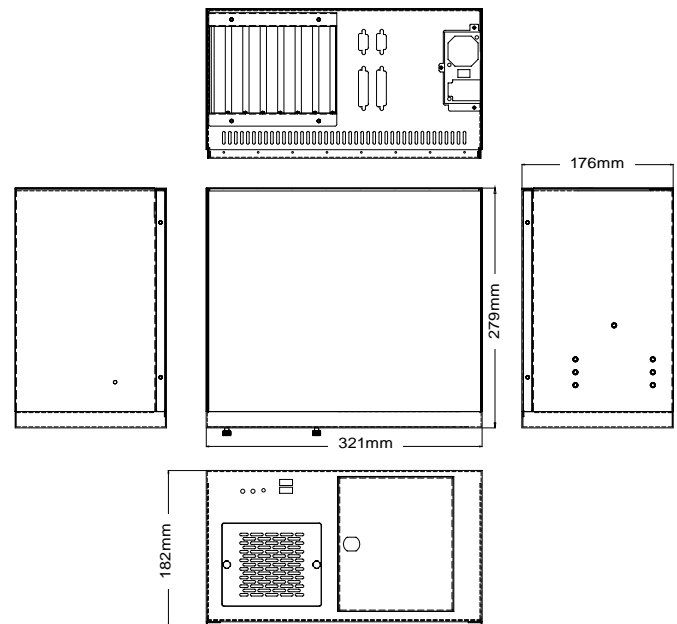
## Specifications

◆ Construction	Heavy duty metal
◆ SBC Form Factor	Half-size, slot CPU card
◆ Drive Combinations	2 x 5.25" + 1 x Front accessible 3.5"
	or 1 x 5.25" + 2 x Front accessible 3.5"
	or 1 x 5.25" + 1 x Front accessible 3.5" + 1 x 3.5" HDD
◆ Cooling Fans	1 x 8 cm
◆ I/O Ports	2 x USB on front panel
◆ I/O Openings	2 x LPT, 2 x COM
◆ Expansion Slots	7 slots
◆ Indicators	Power, HDD
◆ Buttons	Power switch, reset
◆ Operating Temperature	0°C ~ 50°C
◆ Operation Humidity	10% ~ 90%
◆ Color	B: Black
◆ Weight (Net/Gross)	6.2 kg/9 kg
◆ Dimensions (DxWxH)	279 mm x 321 mm x 176 mm

## Ordering Information

Part No.	Description
PAC-700GB-R11/BP-7S/916AP	7-slot half-size chassis, with BP-7S-RS-R30 and ACE-916AP-RS
PAC-700GB-R11/IP-7S/916AP	7-slot half-size chassis, with IP-7S-RS-R30 and ACE-916AP-RS
PAC-700GB-R11/A618A	7-Slot half-size compact chassis, black, 1 x 8 cm fan, with ACE-A618A-RS-R11 (180W ATX model), RoHS

## Dimensions (measurement units: millimeter)



## Backplane Options

Model No.	SBC Type	PCI	ISA	PCIe			PSU Connector
				x1	x4	x16	
BP-7S-RS	ISA	0	7	0	0	0	AT
IP-7S-RS	PCISA	4	2	0	0	0	AT
IP-7SA-RS	PCISA	4	2	0	0	0	ATX
HPE-7S1	PCI/PIC0e	4	0	2	0	0	ATX

## Power Supply Options

Type	Model No.	Watt
AT	ACE-916AP-RS	150W
	ACE-A618A-RS-R11	180W
ATX	ACE-A225A-RS	250W

PAC-700G supports single 1U height PSU. For more IEI PSU models, please refer to section 5 or visit [www.ieiworld.com](http://www.ieiworld.com).

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# Power Supply

IEI power supply solutions are complete and flexible. Normal (PS2, 1U, 2U) or redundant form, close or open frame, DC or AC input, AT or ATX model, 10 to 600 watts or higher, all of these features are available within a reliable and highly efficient power solution.

IEI's embedded system power supply solution is efficient and stable. IEI also provides customized power supply services to meet your demands.

## Selection

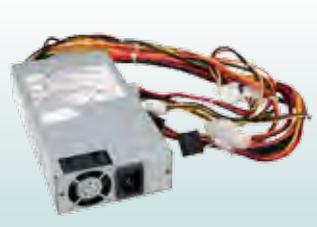
### ■ Open Frame

- Fanless Chassis



### ■ 1U Series

- 1U Chassis



### ■ 2U Series

- 1U ~ 2U Chassis



### ■ PS2 Series

- 2U ~ 4U Chassis



### ■ Redundant

- 2U ~ 4U Chassis



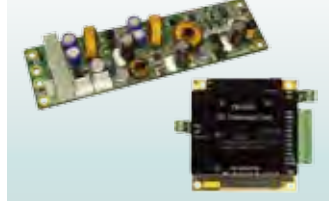
### ■ Adapter

- LCD Monitor
- AFL Series
- Embedded System



### ■ DC to DC Module

- Battery Backup System
- Embedded System
- Mobile Auto Solution

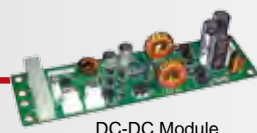


AC-DC Adapter



Type	Temperature
AC-DC Adapter	0°C ~ 40°C

### Current



DC-DC Module



AC-DC Adapter



AC

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# Wide Temperature

## 0°C ~ 70°C

Item	Model	Watt	AC/DC
PS/2	ACE-828V	250W	12 DC
1U	ACE-717CX	170W	24 DC
Open Frame	ACE-855A	55W	AC
	ACE-855C	55W	24 DC

## -20°C ~ 70°C

Item	Model	Watt	AC/DC
PS/2	ACE-A160A	600W	AC
	ACE-A140A	400W	AC
	ACE-A130B	300W	AC
	ACE-932A	300W	AC
	ACE-828A	280W	AC
	ACE-828M	280W	AC
1U	ACE-932T	300W	48 DC
	ACE-A225A	250W	AC
	ACE-716A	150W	AC
	ACE-716AP	150W	AC
	ACE-716C	150W	24 DC
2U	ACE-540A	40W	AC
	ACE-723A	200W	AC
	ACE-723B	200W	AC
	ACE-723C	200W	24 DC
Open Frame	ACE-723T	200W	48 DC
	ACE-713APM	130W	AC
	ACE-663A	60W	AC

## Medical

Item	Model	Watt	AC/DC
PS/2	ACE-4840APM	400W	AC
	ACE-828M	280W	AC
1U	ACE-818APM	180W	AC
Open Frame	ACE-713APM	130W	AC
	ACE-706AM	60W	AC

# 80 PLUS & ErP

## 80 PLUS

The 80 PLUS power supply saves energy and money to keep up with the latest market trends.



## Efficiency Trend

Multiple output for computers and server  
Eff. ≥ 80% at 20%, 50% and 100%  
of rated load PFC ≥ 0.9



	80 PLUS	80 PLUS BRONZE
20% (loading)	80%	82%
50% (loading)	80%	85%
100% (loading)	80%	82%

### Energy Saving

A high efficiency power supply saves energy by reducing the amount of energy used during the current transferring process.

### System Reliability

Reducing the heat output helps to lower the system temperature and increase system reliability.

### Cost Saving

A high efficiency power supply reduces energy consumption, which means savings on your electric bills.

### Noise Reducing

A high efficiency power supply can achieve a lower operating temperature. When the fan operates at a lower speed it produces less noise.

### Longer Lifetime

A high efficiency power supply can reduce heat generated inside the power supply and increase its operating hours.

## ErP

### ErP → Energy-Related Products

These products are aimed at improving energy efficiency and reducing energy consumption.

Scope: Anything that is Class B EMC (Class A out of scope)



### Adapter

Maximum Energy Consumption in No-Load Mode

Output power	AC-DC external power supplies, except low voltage external power supplies	Low voltage external power supplies
≤ 51W	0.30W	0.30W
Po > 51W	0.50W	N/A

### Power Supply

Off mode & Standby mode

Off mode	≤ 1.0 W
Standby mode	≤ 1.0 W

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# Open Frame Selection Guide

**Safety (ITE Standard)** - CB IEC 60950, UL 60950, CSA C 22.2 No. 60950, TUV EN 60950

**Safety (Medical Standard)** - CB IEC 60601, UL 60601, CSA C 22.2 No. 60601, TUV EN 60601

**EMI** - Meets EN 55022, FCC Part 15, CISPR 22.

Meets EN 61000-3-2, EN 61000-3-3 (PFC function)

**EMS** - Meets EN 55024, EN 61000-4-2/ 3/ 4/ 5/ 6/ 8/ 11

\* For detailed specs., please refer to official certification

AC Input													
Product	Model No.	Watt AT/ATX PFC	Input range	Output current range					Efficiency	Operating Temperature	Safety	Dimensions (mm)	
			Voltage	+5 V	+12 V	-5 V	-12 V	+5 Vsb					
	<b>Medical</b> ACE-713APM	130W ATX PFC	85 ~ 264 VAC	10 A (0.2 A min)	6 A			0.5 A	0.5 A	80%	-20°C ~ 70°C	CB UL TUV CCC CE	152.4 x 89 x 39
	ACE-A406A	60W ATX -	90~264 VAC	1 A	4.5 A (0.5 A min)				1 A	75%	0°C ~ 50°C	CB UL TUV CCC CE	76 x 90 x 32
	ACE-890A	86W AT -	85 ~ 264 VAC	10 A	2.5 A			0.5 A		70%	0°C ~ 50°C	CSA CE	152.4 x 89 x 39
	ACE-870A	70W AT -	85 ~ 264 VAC	7 A	2.5 A	0.3 A	0.3 A			70%	0°C ~ 50°C	UL	127 x 81 x 50
	ACE-663A	60W AT -	85 ~ 264 VAC	6 A	2 A					81%	-20°C ~ 70°C	CB UL TUV CCC CE	95 x 100 x 36
	<b>Medical</b> ACE-706AM	60W AT -	90 ~ 264 VAC	3 A	3 A			0.3 A		82%	0°C ~ 70°C	CB UL TUV CCC CE	63.5 x 114.3 x 32.4
	ACE-855A	55W AT -	85 ~ 264 VAC	8 A	1.2 A					70%	0°C ~ 60°C	UL CE	177.5 x 50.5 x 37
DC Input													
	ACE-890C	86W AT -	24 VDC (18 ~ 36 VDC)	10 A	2.5 A			0.5 A		70%	0°C ~ 50°C	UL CSA TUV CE	152.4 x 89 x 39
	ACE-890P	86W AT -	110 VDC (70 ~ 132 VDC)	10 A	2.5 A			0.5 A		70%	0°C ~ 50°C	UL CSA TUV CE	152.4 x 89 x 39
	ACE-890T	86W AT -	48 VDC (36 ~ 72 VDC)	10 A	2.5 A			0.5 A		70%	0°C ~ 50°C	UL CSA TUV CE	152.4 x 89 x 39
	ACE-890V	72W AT -	12 VDC (9 ~ 16 VDC)	9 A	2 A			0.3 A		70%	0°C ~ 50°C	UL CSA TUV CE	152.4 x 89 x 39
	ACE-870C	70W AT -	24 VDC (18 ~ 36 VDC)	7 A	2.5 A	0.3 A	0.5 A			70%	0°C ~ 50°C	UL TUV CE	127 x 81 x 50
	ACE-855C	55W AT -	24 VDC (16 ~ 32 VDC)	8 A	1.2 A					70%	0°C ~ 60°C	UL TUV CE	177.5 x 50.5 x 37

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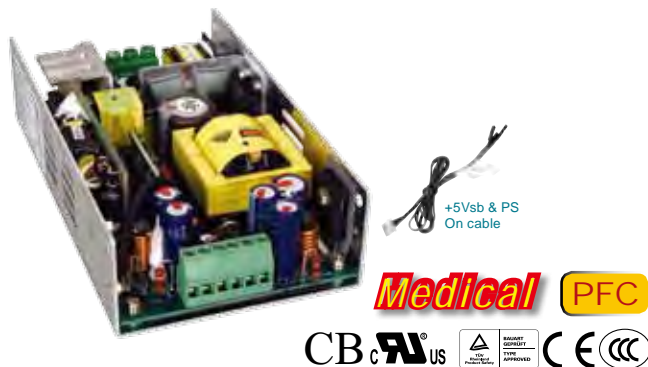
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# Open Frame AC Input ATX Type

## ACE-713APM

130 W Medical Type ATX Power Supply with PFC



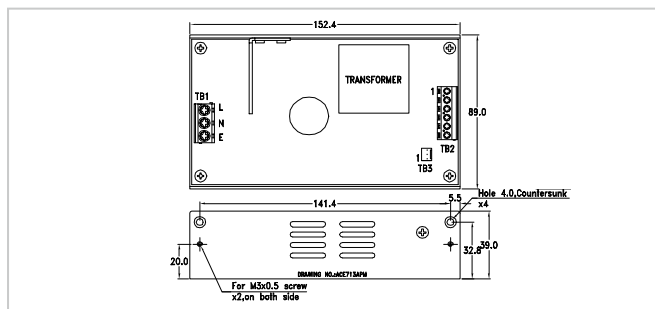
**Medical PFC**  
**CB** **UL** **US** **CE** **CCC**

<b>Input Type</b>	85 ~ 264VAC Full Range					
<b>Output Voltage</b>	+3.3V	+5V	+12V	-5V	-12V	+5Vsb
		10A (0.2A min)	6A		0.5A	0.5A
<b>Efficiency</b>	80%					
<b>Temperature</b>	Operating: -20°C ~ 70°C (50°C ~ 70°C derating curve) Storage: -40°C ~ 75°C					
<b>MTBF (hrs)</b>	143,000					
<b>Output Connector</b>	5VSB & PS_ON cable					
<b>Dimensions</b>	152.4 x 89 x 39 mm					

### Ordering Information

Part No.	Description
ACE-713APM-RS	130W AC-DC ATX Power Supply with PFC, meets medical standards

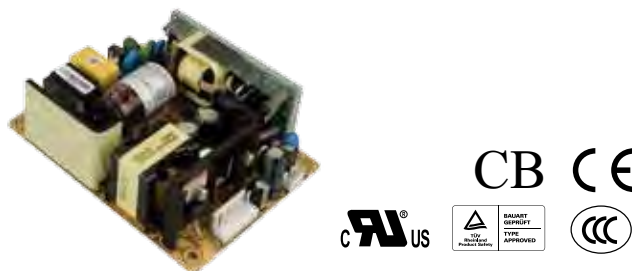
### Dimensions (Unit: mm)



<b>Option 1</b>	<b>AC Input Solution</b>
	<b>PN: CB-643EC-RS</b> 20 cm AC input cable with I/O connector and fuse
<b>Option 2</b>	<b>Embedded Solution</b>
	<b>PN: CB-709EB-RS</b> 30 cm DC cable to backplane, with 20-pin ATX, HDD and SATA connectors
<b>Option 3</b>	<b>ATX Backplane Solution</b>
	<b>PN: CB-709BP-RS</b> 30 cm DC cable to backplane, with 20-pin ATX, HDD and SATA connectors

## ACE-A406A

60 W AC-DC ATX Open Frame Power Supply



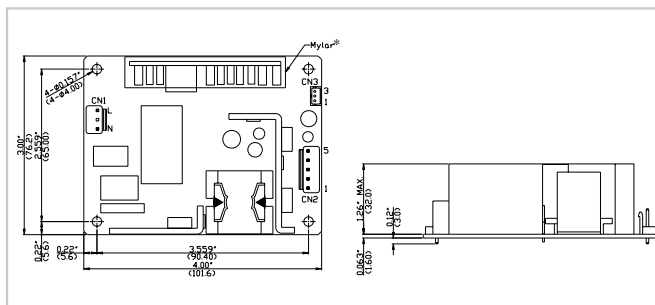
**CB** **CE**  
**UL** **US** **CCC**

<b>Input Type</b>	90 ~ 264 VAC Full Range			
<b>Input Frequency</b>	47~63Hz			
<b>Input Current</b>	1.6A (RMS) Max.			
<b>Inrush Current</b>	60A/230VAC Max.			
<b>Output Voltage</b>	<b>Voltage</b>	<b>Min.load</b>	<b>Max.load</b>	<b>Ripple &amp; Noise</b>
	+12V	0.5A	4.5A	120mV
	+5V	0A	1A	50mV
	+5Vsb	0A	1A	50mV
<b>Efficiency</b>	75%			
<b>Temperature</b>	Operating: 0°C ~ 50°C, Storage: -30°C ~ 70°C			
<b>MTBF (hrs)</b>	100,000			
<b>Output Connector</b>	Optional cable			
<b>Dimensions</b>	76.2 (W) x 101.6 (H) x 32 (D)mm			

### Ordering Information

Part No.	Description
ACE-A406A-RS	60W AC-DC ATX open frame power supply

### Dimensions (Unit: mm)



<b>Option 1</b>	<b>AC Input Solution</b>
	<b>PN: CB-704EC-RS</b> 20 cm AC input cable with fuse
<b>Option 2</b>	<b>PN: CB-5PSBC-RS</b>
5-pin connector to DC/DC Power Modules CN4	Std 4-pin 12V, 5V I/O Connector for WAFER, NOVA, Enano Series SBC or I/O devices
12V only connector for NANO Series SBC	
Cable for SATA HDD	

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# Open Frame AC Input AT Type

## ACE-890A

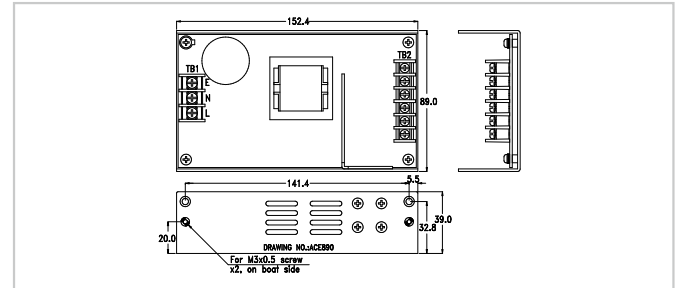
86 W AC-DC Open Frame AT Power Supply



PFC



### Dimensions (Unit: mm)



<b>Input Type</b>	85 ~ 264 VAC Full Range (ACE-890A)				
<b>Output Voltage</b>	+5 V	+12 V	-5 V	-12 V	+24 V
<b>ACE-890A</b>	10 A	2.5 A		0.5 A	
<b>Efficiency</b>	70%				
<b>Temperature</b>	ACE-890A: 0°C ~ 50°C (Operating), -20°C ~ 85°C (Storage)				
<b>MTBF (hrs)</b>	268,000 (ACE-890A)				
<b>Output Connector</b>	Optional Cable				
<b>Dimensions</b>	152.4 x 89 x 39 mm				

### Ordering Information

Part No.	Description
ACE-890A-RS	86W AC-DC Open Frame AT Power Supply

<b>Option 1</b>	<b>AC Input Solution</b>
	<b>PN: CB-643EC-RS</b> 20 cm AC input cable with fuse
<b>Option 2</b>	<b>Embedded Solution</b>
	<b>PN: CB-643EB-RS</b> 30 cm DC cable to CPU card, with 20-pin ATX, HDD and SATA connectors
<b>Option 3</b>	<b>ATX Backplane Solution</b>
	<b>PN: CB-890BP-RS</b> 30 cm DC cable to backplane, with 20-pin ATX, HDD and SATA connectors
<b>Option 4</b>	<b>AT P8P9 Backplane Solution</b>
	<b>PN: CB-890P8P9-RS</b> 30 cm DC cable AT power to P8P9, HDD and SATA connectors

## ACE-870A

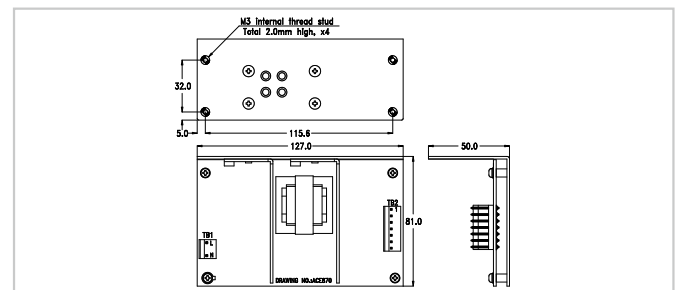
70 W AC-DC Open Frame AT Power Supply



PFC



### Dimensions (Unit: mm)



<b>Input Type</b>	85 ~ 264VAC Full Range				
<b>Output Voltage</b>	+5V	+12V	-5V	-12V	+24V
<b>ACE-870A</b>	7A	2.5A	0.3A	0.3A	
<b>Efficiency</b>	70%				
<b>Temperature</b>	0°C ~ 50°C (Operating), -20°C ~ 85°C (Storage)				
<b>MTBF (hrs)</b>	296,000 (ACE-870A), 238,000 (ACE-870AP)				
<b>Output Connector</b>	Optional Cable				
<b>Dimensions</b>	127 x 81 x 50 mm				

### Ordering Information

Part No.	Description
ACE-870A-RS	70W AC-DC Open Frame AT Power Supply

<b>Option 1</b>	<b>AC Input Solution</b>
	<b>PN: CB-870EC-RS</b> 20 cm AC input cable with fuse
<b>Option 2</b>	<b>Embedded Solution</b>
	<b>PN: CB-870EB-RS</b> 30 cm DC cable to CPU card, with 20-pin ATX, HDD and SATA connectors
<b>Option 3</b>	<b>ATX Backplane Solution</b>
	<b>PN: CB-870BP-RS</b> 30 cm DC cable to backplane, with 20-pin ATX, HDD and SATA connectors
<b>Option 4</b>	<b>AT P8P9 Backplane Solution</b>
	<b>PN: CB-870P8P9-RS</b> 30 cm DC cable AT power to P8P9, HDD and SATA connectors

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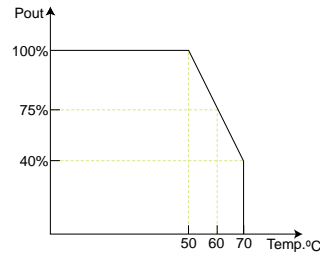
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# ACE-663A 60 W AC Input AT Power Supply



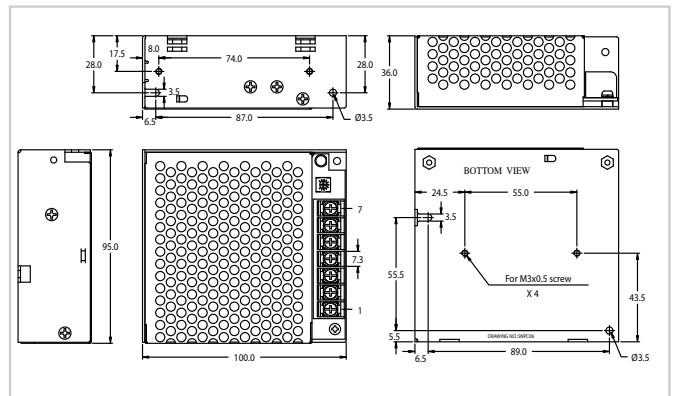
## Features

1. Meets ITE safety standards
2. 1.41 inch height
3. Power good LED
4. Output adjustable trimmer
5. High efficiency 83%
6. Operation from -20°C to 70°C by convection

## Specifications

Input	Voltage		85 ~ 264 VAC Full Range	
	Frequency		47 Hz ~ 63 Hz	
	Input Current		1.5 A (RMS) @115V 0.8 A (RMS) @230V	
	Inrush Current		30 A Max for 115VAC 60 A Max for 230VAC	
Output	Voltage	Min. load	Max. load	Ripple & Noise
	+5 V	0 A	6 A	50 mV
	+12 V	0 A	2 A	120 mV
	Overvoltage protection		latch off	
Short Circuit protection		auto recovery		
General Specifications	Watt		60 W	
	PFC		-	
	Hold-up time		14 ms Min.	
	Efficiency		81%	
	MTBF		100,000 hours	
	Temperature		Operation: -20°C ~ 70°C Storage: -40°C ~ 75°C	
	Dimensions		95 x 100 x 36 (mm) 3.74 x 3.93 x 1.41 (inch)	
	Outline Connector		Optional cable	

## Dimensions (Unit: mm)



Option 1	AC Input Solution
	<b>PN: CB-643EC-RS</b> 20 cm AC input cable with fuse
Option 2	Embedded Solution
	<b>PN: CB-643EB-RS</b> 30 cm DC cable to CPU card, with 20-pin ATX, HDD and SATA connectors
Option 3	ATX Backplane Solution
	<b>PN: CB-643BP-RS</b> 30 cm DC cable to backplane, with 20-pin ATX, HDD and SATA connectors
Option 4	AT P8P9 Backplane Solution
	<b>PN: CB-643P8P9-RS</b> 30 cm DC cable AT power to P8P9, HDD and SATA connectors



12V only connector (CB-643EB-RS)



SATA device connector



IDE device connector



ATX backplane connector (CB-643BP-RS)

## Ordering Information

Part No.	Description
ACE-663A-RS	60W AC Input AT Power Supply, RoHS

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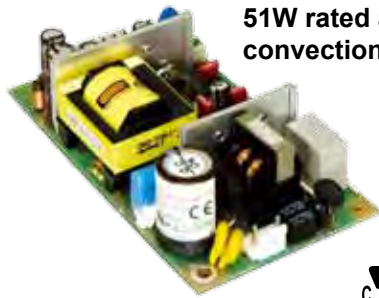
Power Supply/ Peripherals

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Panel Solutions Introduction

# ACE-706AM

60 W AC-DC Open Frame Medical AT Power Supply



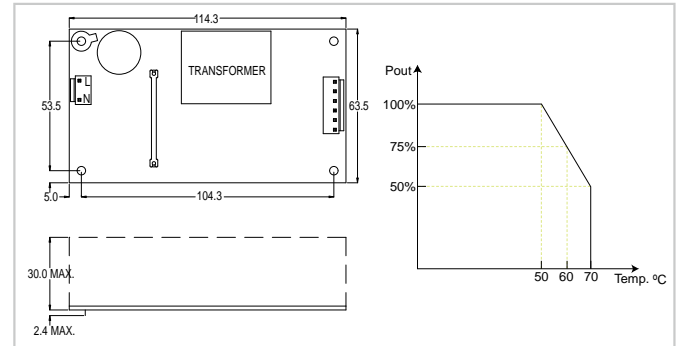
51W rated and 80W peak under convection cooling environment

**Medical**

CB CE



## Dimensions (Unit: mm)



<b>Input Type</b>	90 ~ 264 VAC Full Range			
<b>Input Frequency</b>	47 Hz~ 63 Hz			
<b>Input Current</b>	2 A (RMS)@115V, 1 A (RMS)@230V			
<b>Inrush Current</b>	30 A Max for 115VAC, 60 A Max for 230VAC			
<b>Output Voltage</b>	<b>Voltage</b>	<b>Min.load</b>	<b>Max.load</b>	<b>Ripple &amp; Noise</b>
	+5 V	0 A	4.5 A	1%
	+12 V	0 A	4 A	1%
	-12 V	0 A	0.3 A	1%
<b>Efficiency</b>	82%			
<b>Temperature</b>	Operation: 0°C ~ 70°C, Storage: -40°C ~ 85°C			
<b>MTBF (hrs)</b>	100,000 hours			
<b>Outline Connector</b>	Optional Cable			
<b>Dimensions</b>	63.5 x 114.3 x 32.4 (mm), 2.5 x 4.5 x 1.28 (inch)			

Option 1	AC Input Solution	Option 2	Embedded Solution
	<b>PN: CB-704EC-RS</b> 20 cm AC input cable with fuse		<b>PN: CB-704EB-RS</b> 30 cm DC cable to CPU board, with 4-pin 12 V CPU, HDD and SATA connectors
	<b>PN: CB-704BP-RS</b> 30 cm DC cable to CPU board, with 4-pin 12 V CPU, HDD and SATA connectors		<b>PN: CB-704P8P9-RS</b> 30 cm DC cable AT power to P8P9, HDD and SATA connectors

## Ordering Information

Part No.	Description
ACE-706AM-RS	60W AC-DC Open Frame Medical AT Power Supply, RoHS



12V only connector (CB-704EB-RS)



IDE device connector



SATA device connector



ATX backplane connector (CB-704BP-RS)

# Open Frame DC Input AT Type

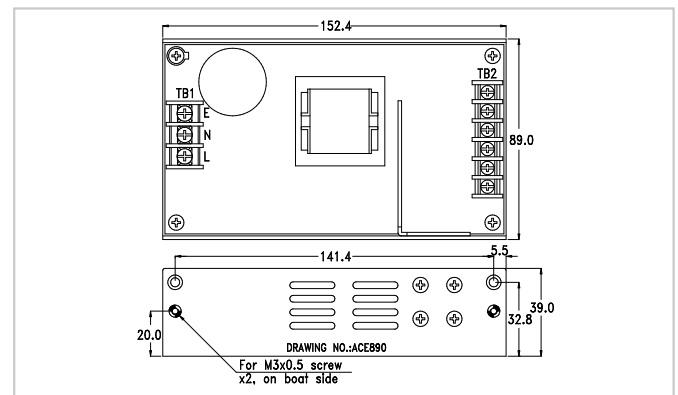
# ACE-890V/C/T/P

DC Input Open Frame AT Power Supply



<b>Input Type</b>	9 ~ 16 VDC (ACE-890V), 18 ~ 36 VDC (ACE-890C), 36 ~ 72 VDC (ACE-890T), 70 ~ 132 VDC (ACE-890P)				
<b>Output Voltage</b>	<b>+5 V</b>	<b>+12 V</b>	<b>-5 V</b>	<b>-12 V</b>	<b>+24 V</b>
	9 A	2 A		0.3 A	
	10 A	2.5 A		0.5 A	
<b>Efficiency</b>	70%				
<b>Temperature</b>	0°C ~ 50°C (Operating), -20°C ~ 85°C (Storage)				
<b>MTBF (hrs)</b>	245,000 (ACE-890V), 251,000 (ACE-890C), 269,000 (ACE-890T), 265,000 (ACE-890P)				
<b>Output Connector</b>	Options Cable				
<b>Dimensions</b>	152.4 x 89 x 39 (mm)				

## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
ACE-890V-RS	72W 12V DC Input Open Frame AT Power Supply
ACE-890C-RS	86W 24V DC Input Open Frame AT Power Supply
ACE-890T-RS	86W 48V DC Input Open Frame AT Power Supply
ACE-890P-RS	86W 110V DC Input Open Frame AT Power Supply

Option 1	Embedded Solution	Option 2	ATX Backplane Solution	Option 3	AT P8P9 Backplane Solution
	<b>PN: CB-643EB-RS</b> 30 cm DC cable to CPU card, with 20-pin ATX, HDD and SATA connectors		<b>PN: CB-890BP-RS</b> 30 cm DC cable to backplane, with 20-pin ATX, HDD and SATA connectors		<b>PN: CB-890P8P9-RS</b> 30 cm DC cable AT power to P8P9, HDD and SATA connectors

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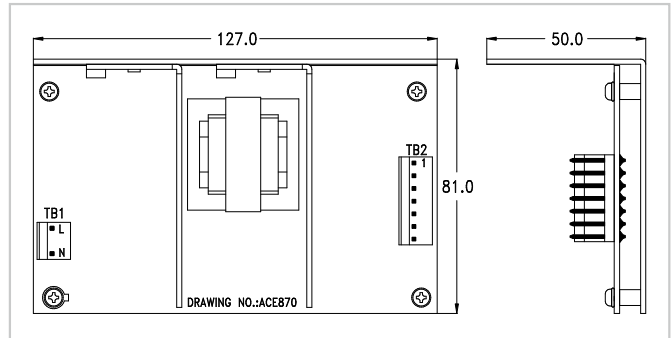
6 Panel Solutions Introduction

# ACE-870C DC Input Open Frame



<b>Input Type</b>	18 ~ 36 VDC				
<b>Output Voltage</b>	<b>+5 V</b>	<b>+12 V</b>	<b>-5 V</b>	<b>-12 V</b>	<b>+24 V</b>
	7 A	2.5 A	0.3 A	0.5 A	
<b>Efficiency</b>	70%				
<b>Temperature</b>	0°C ~ 50°C (Operating), -20°C ~ 85°C (Storage)				
<b>MTBF (hrs)</b>	276,000				
<b>Output Connector</b>	Optional Cable				
<b>Dimensions</b>	127 x 81 x 50 (mm)				

## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
ACE-870C-RS	70W 24V DC Input Open Frame AT Power Supply

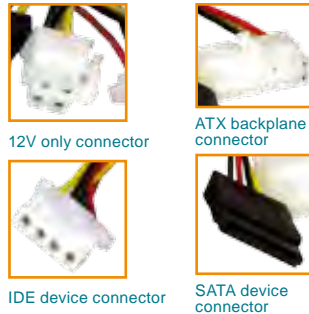
Option 1	Embedded Solution	Option 2	ATX Backplane Solution	Option 3	AT P8P9 Backplane Solution
	<b>PN: CB-870EB-RS</b> 30 cm DC cable to CPU card, with 20-pin ATX, HDD and SATA connectors		<b>PN: CB-870BP-RS</b> 30 cm DC cable to backplane, with 20-pin ATX, HDD and SATA connectors		<b>PN: CB-870P8P9-RS</b> 30 cm DC cable to backplane, with 20-pin ATX, HDD and SATA connectors

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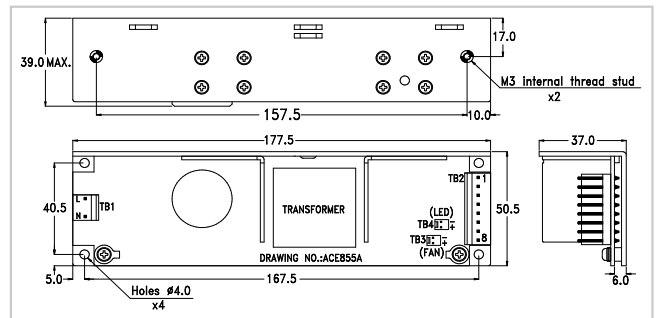
# ACE-855A/855C DC Input Open Frame



ACE-855A



## Dimensions (Unit: mm)



<b>Input Type</b>	85 ~ 264 VAC Full Range (ACE-855A), 16 ~ 32VDC (ACE-855C)				
<b>Output Voltage</b>	<b>+5 V</b>	<b>+12 V</b>	<b>-5 V</b>	<b>-12 V</b>	<b>+24 V</b>
	8 A	1.2A			
<b>ACE-845V</b>	6 A	1.1 A			
	<b>ACE-855C</b>	8 A	1.2 A		
<b>Efficiency</b>	70%				
<b>Temperature</b>	ACE-855A/855C: 0°C ~ 60°C (Operating), -20°C ~ 85°C (Storage) ACE-845V: 0°C ~ 50°C (Operating), -20°C ~ 85°C (Storage)				
<b>MTBF (hrs)</b>	335,000 (ACE-855A), 364,000 (ACE-845V), 358,000 (ACE-855C)				
<b>Output Connector</b>	Optional Cable				
<b>Dimensions</b>	177.5 x 50.5 x 37 (mm)				

Option 1	AC Input Solution
	<b>PN: CB-855EC-RS</b> 20 cm AC input cable with fuse
Option 2	Embedded Solution
	<b>PN: CB-855EB-RS</b> 30 cm DC cable to CPU card, with 20-pin ATX, HDD and SATA connectors
Option 3	ATX Backplane Solution
	<b>PN: CB-855BP-RS</b> 30 cm DC cable to backplane, with 20-pin ATX, HDD and SATA connectors
Option 4	AT P8P9 Backplane Solution
	<b>PN: CB-855P8P9-RS</b> 30 cm DC cable AT power to P8P9, HDD and SATA connectors

## Ordering Information

Part No.	Description
ACE-855A-RS	55W AC-DC Open Frame AT Power Supply
ACE-855C-RS	55W 24V DC Input Open Frame AT Power Supply

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# 1U/2U Type Selection Guide

**Safety (ITE Standard)** - CB IEC 60950, UL 60950, CSA C 22.2 No. 60950, TUV EN 60950

**Safety (Medical Standard)** - CB IEC 60601, UL 60601, CSA C 22.2 No. 60601, TUV EN 60601

**EMI** - Meets EN 55022, FCC Part 15, CISPR 22.

Meets EN 61000-3-2, EN 61000-3-3 (PFC function)

**EMS** - Meets EN 55024, EN 61000-4-2/ 3/ 4/ 5/ 6/ 8/ 11

\* For detailed specs., please refer to official certification

1U AC Input															
Products	Model No.	Watt AT/ ATX PFC	Input range Voltage	Output current range							Efficiency	ErP	Operating Temperature	Safety	Dimensions (mm)
				+3.3 V	+5 V	+12 V	-5 V	-12 V	+5 Vsb	+24 V					
	<b>Medical</b> ACE-818APM	180W ATX PFC	90 ~ 265 VAC	16.8 A (0.3 A min)	12 A (0.5 A min)	12 A (1.5A min)		0.8 A	2 A		68%		0°C ~ 50°C	CB UL CCC VDE BSMI CE FCC	190 x 81.5 x 40.5
	ACE-A627A	270W ATX PFC	90 ~ 264 VAC	16 A (0.5A min)	18A (0.5A min)	V1: 16 A (1A) V2: 10A (1A)		0.8A	2.5A			V	0°C ~ 50°C	CB UL TUV CCC CE FCC	150 x 81 x 40
	ACE-A225A	250W ATX PFC	90 ~ 264VAC	14.0A (0.3A)	16.0A (0.3A)	V1: 16.0A(0.5A) V2: 16.0A(0.5A)	0.3A	0.5A	3A			V	-5°C ~ 50°C	CB UL TUV CCC CE FCC	190 x 100 x 40
	ACE-A622A	220W ATX PFC	90 ~ 264 VAC	14 A (0.5 A min)	16 A (0.5A min)	V1: 16 A (1A) V2: 10 A (1A)		0.8 A	2.5 A			V	0°C ~ 50°C	CB UL TUV CCC CE FCC	150 x 81 x 40
	ACE-A618A	180W ATX PFC	90 ~ 264 VAC	14 A (0.3 A min)	16 A (0.3 A min)	14 A (1.5 A min)		0.5 A	2 A		68%	V	0°C ~ 50°C	CB UL TUV CCC CE FCC	150 x 81 x 40
	ACE-A615A	150W ATX PFC	90 ~ 264 VAC	10 A (0.3 A min)	13 A (0.3A min)	10A (1A min)		0.5 A	2 A		68%	V	0°C ~ 50°C	CB UL TUV CCC CE FCC	150 x 81 x 40
	ACE-916AP	150W AT PFC	90 ~ 264 VAC		16 A (1 A min)	6 A (0.5 A min)		0.3 A			68%		0°C ~ 35°C	CB UL CSA TUV CCC NEMKO BSMI CE FCC	150 x 81.5 x 40.5
	ACE-716A	150W AT -	85 ~ 135 VAC 180 ~ 265 VAC		18 A (1 A min)	4 A	0.5 A	1 A			75%		-20°C ~ 70°C	UL	198 x 97 x 40.5
	ACE-716AP	150W AT PFC	85 ~ 265 VAC		18 A (1 A min)	4 A	0.5 A	1 A			75%		-20°C ~ 70°C	UL TUV CE	198 x 97 x 40.5
	ACE-540A	40W AT -	85 ~ 264 VAC							1.7 A	70%		-20°C ~ 70°C		161 x 100 x 40

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# 1U/2U Type Selection Guide

**Safety (ITE Standard)** - CB IEC 60950, UL 60950, CSA C 22.2 No. 60950, TUV EN 60950  
**Safety (Medical Standard)** - CB IEC 60601, UL 60601, CSA C 22.2 No. 60601, TUV EN 60601  
**EMI** - Meets EN 55022, FCC Part 15, CISPR 22.  
 Meets EN 61000-3-2, EN 61000-3-3 (PFC function)  
**EMS** - Meets EN 55024, EN 61000-4-2/ 3/ 4/ 5/ 6/ 8/ 11

\* For detailed specs., please refer to official certification

1U DC Input														
Products	Model No.	Watt AT/ ATX PFC	Input range		Output current range						Efficiency	Operating Temperature	Safety	Dimensions (mm)
			Voltage	+3.3 V	+5 V	+12 V	-5 V	-12 V	+5 Vsb	+24V				
	<b>ACE-830CU1</b>	300W ATX -	24 VDC (19 ~ 36 VDC)	20 A	25 A (3A min)	22 A (1A min)	0.8 A	1 A	1.5 A		70%	0°C ~ 50°C	CB UL TUV CCC CE	220 x 100 x 40.5
	<b>ACE-717CX</b>	170W ATX -	24 VDC (19 ~ 32 VDC)	6 A	8 A (1A min)	8 A (1A min)		0.5 A	1 A		75%	0°C ~ 70°C	CB UL TUV CCC CE	198 x 97 x 39
	<b>ACE-4520C</b>	200W ATX -	12 VDC 24 VDC 48 VDC	12 A	12 A (1A min)	15.4 A (0.5A min)		0.5 A	2 A		78%	0°C ~ 50°C	CB UL TUV CCC NEMKO CE FCC	150 x 81.5 x 40.5
	<b>ACE-716C</b>	150W AT -	24 VDC (19 ~ 30 VDC)		18 A (2A min)	4 A	0.5 A	1 A			70%	-20°C ~ 70°C	UL TUV CE	198 x 97 x 40.5
2U AC Input														
	<b>ACE-D825A</b>	252W AT PFC	90 ~ 264 VAC			15 A (0.1A min)				8 A	80%	0°C ~ 50°C	CB UL TUV CCC CE FCC	140 x 150 x 86
	<b>ACE-723A</b>	200W AT -	85 ~ 135 VAC 180 ~ 265 VAC		22 A (3A min)	6 A	1 A	1 A			75%	-20°C ~ 70°C	UL	203 x 112 x 51
	<b>ACE-723B</b>	200W AT -	85 ~ 135 VAC 180 ~ 265 VAC		21 A (3A min)	5 A		1 A		1 A	75%	-20°C ~ 70°C	UL	203 x 112 x 51
2U DC Input														
	<b>ACE-723C</b>	200W AT -	24 VDC (19 ~ 30 VDC)		22 A (3A min)	6 A	1 A	1 A			70%	-20°C ~ 70°C	UL TUV CE	203 x 112 x 51
	<b>ACE-723T</b>	200W AT -	-48 VDC (-36 ~ -72 VDC)		22 A (3A min)	6 A	1 A	1 A			75%	-20°C ~ 70°C	UL TUV CE	203 x 112 x 51

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# 1U AC Input ATX Type

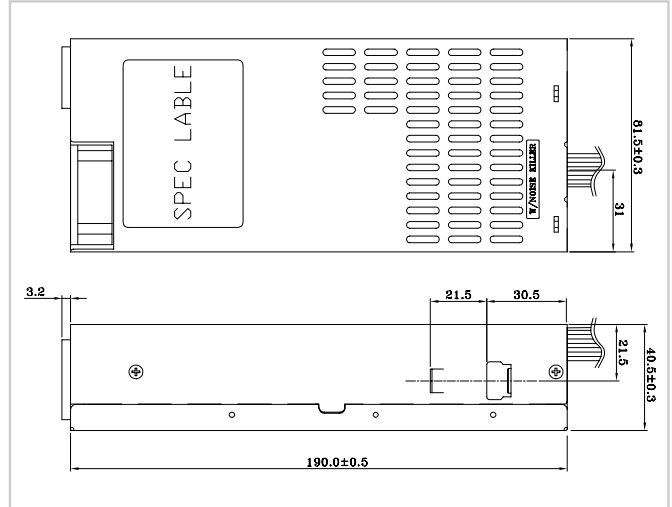
## ACE-818APM 180W 1U Type ATX Power Supply



**Medical**



### Dimensions (Unit: mm)



### Specifications

Input Type	90 ~ 265 VAC Full Range					
Output Voltage	+3.3 V	+5 V	+12 V	-5 V	-12 V	+5 Vsb
	16.8 A (0.3 A min)	12 A (0.5 A min)	12 A (1.5 A min)		0.8 A	2 A
Efficiency	68%					
Temperature	Operating: 0°C ~ 50°C, Storage: -20°C ~ 80°C					
MTBF (hrs)	100,000					
Output Connector	20-pin ATX, 4-pin 12 V CPU, 2 x FDD, 3 x HDD					
Dimensions	190 x 81.5 x 40.5 (mm)					

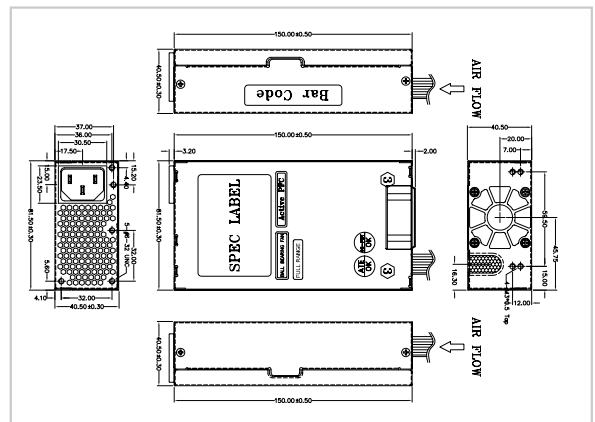
### Ordering Information

Part No.	Description
ACE-818APM-RS	180W AC-DC 1U ATX Power Supply with PFC, meets Medical standard

## ACE-A627A 270 W 1U Type ATX Power Supply



### Dimensions (Unit: mm)



### Specifications

Input Type	90~264 VAC Full Range					
Output Voltage	+3.3 V	+5 V	+12 V	+12 V 2	-12 V	+5 Vsb
	16 A (0.5 A min.)	18 A (0.5 A min.)	16 A (1 A min.)	10 A (1 A min.)	0.8 A (0 A min.)	2.5 A (0 A min.)
Efficiency	80%					
Temperature	Operating: 0°C ~ 50°C, Storage: -20°C ~ 80°C					
MTBF (hrs)	100,000 hr					
Output Connector	20-pin ATX, 4-pin 12 V, FDD and three HDD					
Dimensions	150 x 81.5 x 40.5 (mm)					

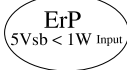
### Ordering Information

Part No.	Description
ACE-A627A-RS-R11	270W AC-DC 1U flex ATX Power Supply, with PFC/ErP, meet 80 PLUS

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# ACE-A225A

1U 250 Watts ATX Power Supply with ErP



## Specifications

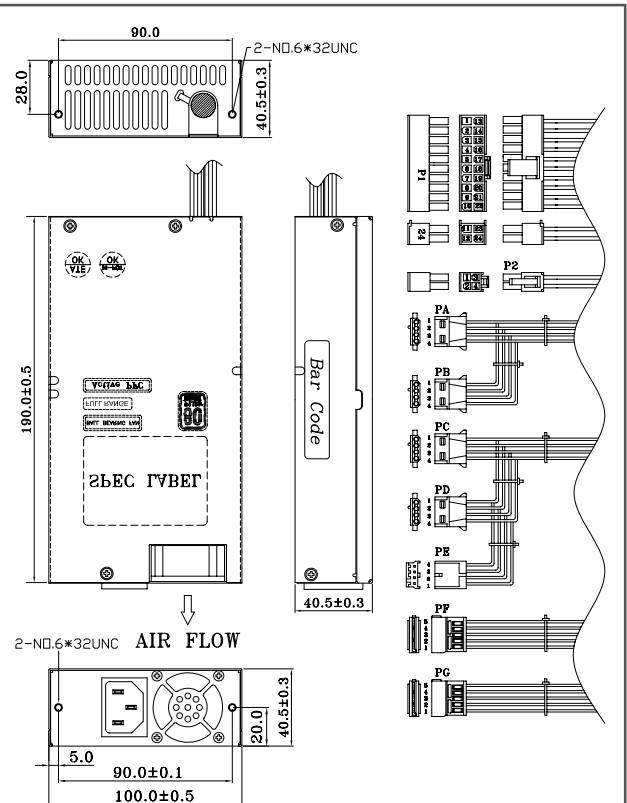
Input	Voltage	90~264 VAC Full Range		
	Frequency	47~63Hz		
	Input Current	4A (RMS)@115VAC, 2A (RMS)@230VAC		
	Inrush Current	50A max for 115VAC 100A max for 230VAC		
Output	Voltage	Min. load	Max. load	Ripple & Noise
	+3.3V	0.3A	14.0A	50mV
	+5V	0.3A	16.0A	50mV
	+12V1	0.5A	16.0A	120mV
	+12V2	0.5A	16.0A	120mV
	-12V	0A	0.5A	120mV
	+5VSB	0A	3.0A	50mV
	-5V	0A	0.3A	100mV
	The +3.3V and +5V total output shall not exceed 110 watts. Total output for this subject power supply is 250 watts.			
General Specifications	Over Voltage Protection	+3.3V: 3.5V-4.8V +5V: 5.5V-7V +12V1 ~ +12V2: 13.4V-16V		
	Short Circuit Protection	+3.3V, +5V, +12V shutdown and latch off		
	Watt	250W		
	PFC	Active		
	Hold-up Time	17 ms Min.		
	Efficiency	85%		
	MTBF	100000 hours		
Temperature	Operating: -5°C ~ 50°C Storage: -20°C ~ 80°C			
Dimensions	100 x 190 x 40 (mm)			
Output Connector	20+4-pin ATX, 4-pin 12V, 4 x HDD, 2 x SATA, 1 x FDD			

## Ordering Information

Part No.	Description
ACE-A225A-R10	250W AC-DC 1U ATX Power Supply with ErP, Meet 80 PLUS (Bronze)

## Dimensions (Unit: mm)

REF. ID.	PIN NO.	SIGNAL	WIRE COLOR	CABLE LENGTH
P1 / 24	1	+3.3VDC	ORANGE	500±15mm
	2	+3.3VDC	ORANGE	
	3	COM	BLACK	
	4	+5VDC	RED	
	5	COM	BLACK	
	6	+5VDC	RED	
	7	COM	BLACK	
	8	PW-OK	GRAY	
	9	+5Vsb	PURPLE	
	10	+12V2	YELLOW	
	11	+12V2	YELLOW	
	12	+3.3VDC	ORANGE	
	13	+3.3VDC	ORANGE	
	14	+3.3V sense	BROWN	
	15	-12VDC	BLUE	
	16	PS-ON	GREEN	
17	COM	BLACK		
18	COM	BLACK		
19	COM	BLACK		
20	-5V	WHITE		
21	+5VDC	RED		
22	+5VDC	RED		
23	+5VDC	RED		
24	COM	BLACK		
P2	1	COM	BLACK	500±15mm
	2	COM	BLACK	
	3	+12V1	YELLOW/BLACK	
	4	+12V1	YELLOW/BLACK	
REF. ID.	PIN NO.	SIGNAL	WIRE COLOR	CABLE LENGTH
PA	1	+12V2	YELLOW	500±15mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5V	RED	
PB	1	+12V2	YELLOW	200±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5V	RED	
PD	1	+12V2	YELLOW	200±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5V	RED	
PC	1	+12V2	YELLOW	300±15mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5V	RED	
PE	1	+5V	RED	200±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+12V2	YELLOW	
PF	1	+3.3VDC	ORANGE	500±15mm
	2	COM	BLACK	
	3	+5V	RED	
	4	COM	BLACK	
	5	+12V1	YELLOW/BLACK	
PG	1	+3.3VDC	ORANGE	500±15mm
	2	COM	BLACK	
	3	+5V	RED	
	4	COM	BLACK	
	5	+12V1	YELLOW/BLACK	



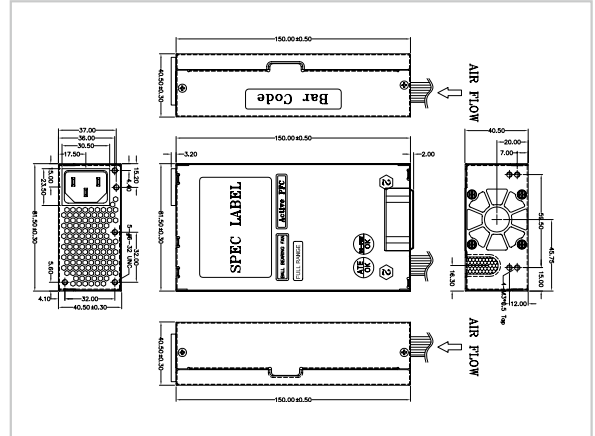
- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/ Peripherals
- 6 Panel Solutions Introduction

# ACE-A622A

220W 1U Type ATX Power Supply



## Dimensions (Unit: mm)



## Specifications

<b>Input Type</b>	90~264 VAC Full Range					
<b>Output Voltage</b>	<b>+3.3 V</b>	<b>+5 V</b>	<b>+12 V</b>	<b>+12 V 2</b>	<b>-12 V</b>	<b>+5 Vsb</b>
	14 A (0.5 A min.)	16 A (0.5 A min.)	16 A (1 A min.)	10 A (1 A min.)	0.8 A (0 A min.)	2.5 A (0 A min.)
<b>Efficiency</b>	80%					
<b>Temperature</b>	Operating: 0°C ~ 50°C, Storage: -20°C ~ 80°C					
<b>MTBF (hrs)</b>	100,000 hr					
<b>Output Connector</b>	20-pin ATX, 4-pin 12 V, three HDD and one FDD					
<b>Dimensions</b>	150 x 81.5 x 40.5 (mm)					

## Ordering Information

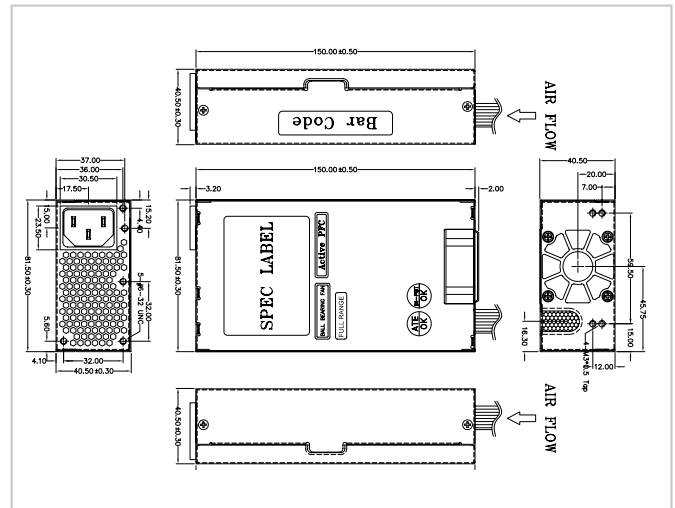
Part No.	Description
ACE-A622A-RS-R11	220W AC-DC 1U flex ATX Power Supply, with PFC/ErP, meet 80 PLUS

# ACE-A618A

180W 1U Type ATX Power Supply



## Dimensions (Unit: mm)



## Specifications

<b>Input Type</b>	90~264 VAC Full Range				
<b>Output Voltage</b>	<b>+3.3 V</b>	<b>+5 V</b>	<b>+12 V</b>	<b>-12 V</b>	<b>+5 Vsb</b>
	14 A (0.3 A min.)	16 A (0.3 A min.)	14 A (1.5 A min.)	0.5 A (0 A min.)	2.0 A (0 A min.)
<b>Efficiency</b>	68%				
<b>Temperature</b>	Operating: 0°C ~ 50°C, Storage: -20°C ~ 80°C				
<b>MTBF (hrs)</b>	100,000 hr				
<b>Output Connector</b>	1 x 20-pin ATX, 1 x 4-pin 12V CPU, 3 x HDD, 1 x FDD				
<b>Dimensions</b>	150 x 81.5 x 40.5 (mm)				

## Ordering Information

Part No.	Description
ACE-A618A-RS-R11	180WAC-DC 1U flex ATX Power Supply, with PFC/ErP

1

Industrial Computing Solutions

2

Video Capture Solutions

3

Embedded Computing Solutions

4

ORing Network Communication

5

Power Supply/ Peripherals

6

Panel Solutions Introduction



# ACE-A615A

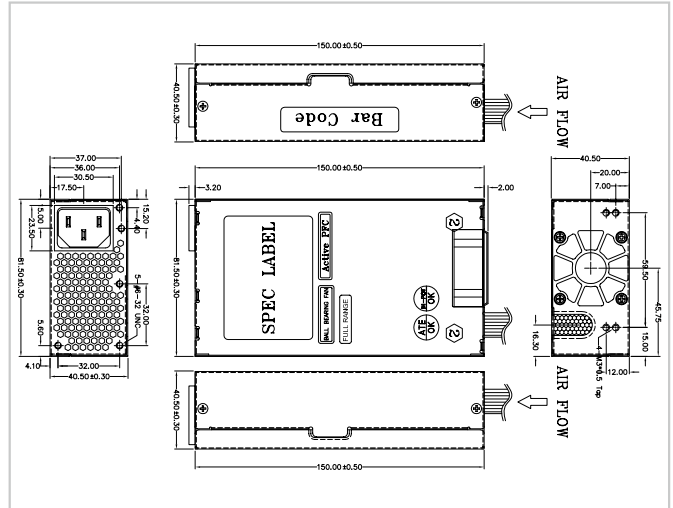
150W 1U Type ATX Power Supply



## Specifications

Input Type	90~264 VAC Full Range				
Output Voltage	+3.3 V	+5 V	+12 V	-12 V	+5 Vsb
	10 A (0.3 A min.)	13 A (0.3 A min.)	10 A (1 A min.)	0.5 A (0 A min.)	2.0 A (0 A min.)
Efficiency	68%				
Temperature	Operating: 0°C ~ 50°C, Storage: -20°C ~ 80°C				
MTBF (hrs)	100,000 hr				
Output Connector	20-pin ATX, 4-pin 12 V CPU, FDD, 3 x HDD				
Dimensions	150 x 81.5 x 40.5 (mm)				

## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
ACE-A615A-RS-R11	150W AC-DC 1U flex ATX Power Supply, with PFC/ErP

1 Industrial Computing Solutions

# 1U AC Input AT Type

2 Video Capture Solutions

# ACE-916AP

150W 1U Type AT Power Supply



3 Embedded Computing Solutions



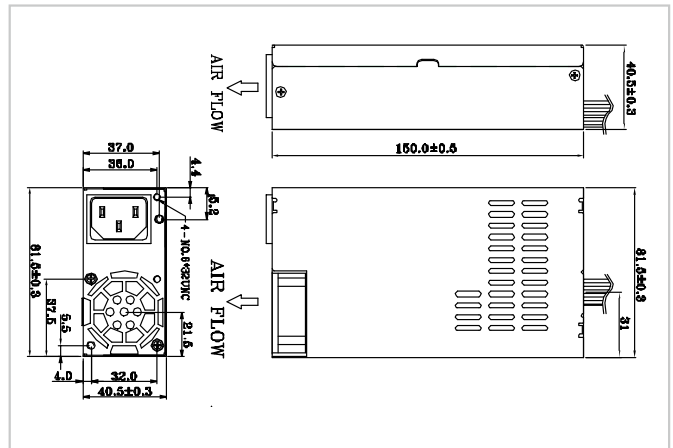
4 ORing Network Communication

5 Power Supply/ Peripherals

## Specifications

Input Type	90 ~ 264VAC Full Range (ACE-916AP)				
Output Voltage	+5V	+12V	-5V	-12V	+24V
	16A (1A min)	6A (0.5A min)		0.3A	
Efficiency	68%				
Temperature	0°C ~ 50°C (Operating), -20°C ~ 80°C (Storage)				
MTBF (hrs)	100,000				
Output Connector	P8P9, FDD, 3 x HDD				
Dimensions	150 x 81.5 x 40.5 mm				

## Dimensions (Unit: mm)



6 Panel Solutions Introduction

## Ordering Information

Part No.	Description
ACE-916AP-RS	150W AC-DC AT Power Supply, with PFC

# ACE-716A/AP

150W 1U Type AT Power Supply



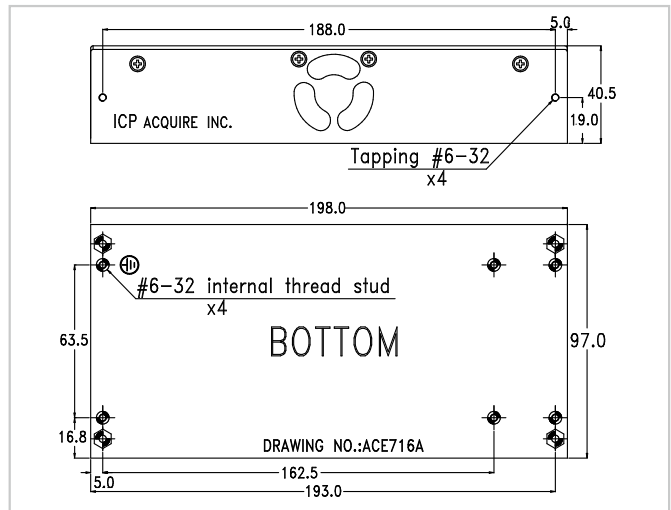
## Specifications

<b>Input Type</b>	85 ~ 135VAC, 180 ~ 265VAC Auto Range (ACE-716A) 85 ~ 265VAC Full Range (ACE-716AP)			
<b>Output Voltage</b>	<b>+5V</b>	<b>+12V</b>	<b>-5V</b>	<b>-12V</b>
	18A (1A min)	4A	0.5A	1A
<b>Efficiency</b>	75%			
<b>Temperature</b>	Operating: -20°C ~ 70°C (50°C ~ 70°C derating curve) Storage: -20°C ~ 85°C			
<b>MTBF (hrs)</b>	149,000			
<b>Output Connector</b>	Optional cable			
<b>Dimensions</b>	198 x 97 x 40.5 mm			

## Ordering Information

Part No.	Description
ACE-716A-RS	150W AC-DC AT Power Supply
ACE-716AP-RS	150W AC-DC AT Power Supply, with PFC

## Dimensions (Unit: mm)



Option 1	Embedded Solution	Option 2	ATX Backplane Solution
	<b>PN: CB-716EB-RS</b> 30 cm DC cable to CPU card with 4-pin 12 V CPU, HDD and SATA connectors		<b>PN: CB-716BP-RS</b> 30 cm DC cable to backplane with 20-pin ATX, HDD, SATA and HDD connectors
	<b>Option 3 AT P8P9 Backplane Solution</b> <b>PN: CB-716P8P9-RS</b> 30 cm DC cable AT power to P8P9 with HDD and SATA connectors		<b>Option 4 AT P8P9 Backplane Solution</b> <b>PN: CB-643EC-RS</b> 20 cm AC input cable with I/O connector and fuse

# ACE-540A

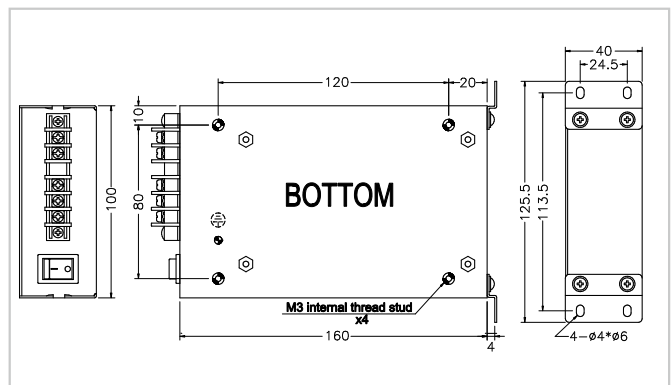
40W AC-DC AT Power Supply



## Specifications

<b>Input Type</b>	85 ~ 264VAC Full Range				
<b>Output Voltage</b>	<b>+5V</b>	<b>+12V</b>	<b>-5V</b>	<b>-12V</b>	<b>+24V</b>
					1.7A
<b>Efficiency</b>	70%				
<b>Temperature</b>	Operating: -20°C ~ 70°C (50°C ~ 70°C derating curve) Storage: -40°C ~ 85°C				
<b>MTBF (hrs)</b>	370,000				
<b>Output Connector</b>	N/A				
<b>Dimensions</b>	161 x 100 x 40 mm				

## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
ACE-540A-RS	40W AC-DC AT Power Supply, only output +24V

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

4 ORing Network Communication

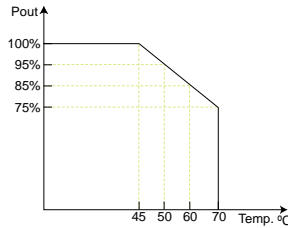
5 Power Supply/ Peripherals

6 Panel Solutions Introduction

# 1U DC Input ATX Type

## ACE-830CU1

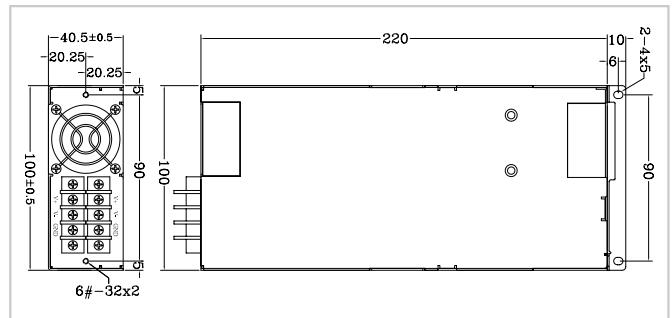
300 W 24V DC input 1U ATX Power Supply



### Specifications

<b>Input Type</b>	19 ~ 36VDC					
<b>Input Current</b>	30A (RMS) @ 24VDC					
<b>Output Voltage</b>	<b>+3.3V</b>	<b>+5V</b>	<b>+12V</b>	<b>-5V</b>	<b>-12V</b>	<b>+5Vsb</b>
	20A	25A (3A min)	22A (1A min)	0.8A	1A	1.5A
	*+3.3V, +5V, total current not exceed 180W *+3.3V, +5V, +12V total current not exceed 296W					
<b>Overvoltage Protection</b>	+5V output 5.74V ~ 7.0V, +12V output 13.4V ~ 15.6V					
<b>Efficiency</b>	70%					
<b>Temperature</b>	0°C ~ 50°C (Operating), -20°C ~ 80°C (Storage)					
<b>Relative Humidity</b>	10% ~ 90% RH non-condensing					
<b>MTBF (hrs)</b>	100,000					
<b>Output Connector</b>	20+4-pin ATX, 4-pin 12 V CPU, 5 V (P10), 2 x SATA, 3 x HDD					
<b>Dimensions</b>	220 x 100 x 40.5 mm					

### Dimensions (Unit: mm)



### Ordering Information

Part No.	Description
ACE-830CU1-RS-R20	300W 24V DC input 1U ATX Power Supply

1

Industrial Computing Solutions

2

Video Capture Solutions

3

Embedded Computing Solutions

4

ORing Network Communication

5

Power Supply/Peripherals

6

Panel Solutions Introduction

## ACE-717CX

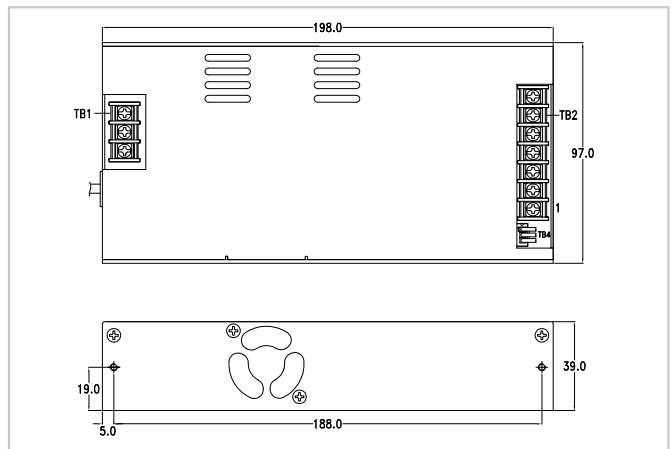
1U ATX 24V DC Input



### Specifications

<b>Input Type</b>	9 ~ 18VDC (ACE-715VX), 19 ~ 32VDC (ACE-717CX)					
<b>Output Voltage</b>	<b>+3.3V</b>	<b>+5V</b>	<b>+12V</b>	<b>-5V</b>	<b>-12V</b>	<b>+5Vsb</b>
	6A	8A (1A min)	8A (1A min)	0.5A	1A	
<b>Efficiency</b>	70% (ACE-715VX), 75% (ACE-717CX)					
<b>Temperature</b>	Operating: 0°C ~ 70°C (can be started up at -20°C) Storage: -40°C ~ 75°C					
<b>MTBF (hrs)</b>	100,000					
<b>Output Connector</b>	5VSB & PS_ON cable					
<b>Dimensions</b>	198 x 97 x 39 mm					

### Dimensions (Unit: mm)



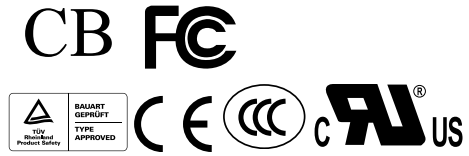
### Ordering Information

Part No.	Description
ACE-717CX-RS	170W 24V DC input ATX Power Supply

Option 1	Embedded Solution	Option 2	ATX Backplane Solution
	<b>PN: CB-643EB-RS</b> 30 cm DC cable to CPU card with 4-pin 12 V CPU, HDD and SATA connectors		<b>PN: CB-717BP-RS</b> 30 cm DC cable for ACE-715VX/717CX power to backplane, with 20-pin ATX, HDD and SATA connector

# ACE-4520C

200 W 24V DC input 1U ATX Power Supply



**High power capacity 200W in 1U size!!**  
**Meets ATX revision 2.0 with 20+4-pin ATX power and SATA**

## Features

1. High efficiency
2. Low ripple & noise
3. Output overvoltage protection
4. Short circuit protection on all output
5. 100% burn-in under high ambient temperature (50°C)
6. Vacuum-impregnated transformer
7. MTBF: 100K hours at 25°C
8. 100% Hi-pot tested
9. Line input fuse protection

## Specifications

Input	Voltage	ACE-4520C: 18 ~ 36 VDC Input		
	Input Current	ACE-4520C: 15 A(RMS) @ -24 VDC		
	Inrush Current	ACE-4520C: 100 A Max for -24 VDC		
Output	Voltage	Min. Load	Max. Load	Ripple & Noise
	+5 V	1 A	12 A	50 mV P-P
	+12 V	0.5 A	15.4 A	120 mV P-P
	-12 V	0 A	0.5 A	120 mV P-P
	+3.3 V	0 A	12 A	50 mV P-P
	+5 Vsb	0 A	2 A	50 mV P-P
	+3.3V, +5V, +12V total current not exceed 184W			
Overvoltage Protection	+5 V output 5.7 V ~ 6.5 V			
	+12 V output 13.1 V ~ 14.5 V			
	+3.3 V output 3.7 V ~ 4.1 V			
Over Circuit Protection	+5 V output 13.2 V ~ 18 V			
	+12 V output 17.6 V ~ 24 V			
	+3.3 V output 13.2 V ~ 18 V			
Short Circuit Protection	+3.3 V, +5 V, +12 V Shut down and latch off			
General Specifications	Output Rise Time	20 ms Max.		
	Efficiency	78%		
	MTBF	100,000 hours on max load at +25°C		
	Temperature	Operating: 0°C ~ 50°C		
		Storage: -20°C ~ 80°C		
	Relative Humidity	5% ~ 95% RH non-condensing		
Output Connector	20+4-pin ATX, 4-pin 12 V CPU, FDD, SATA, 2 x HDD			

PICMG1.0 Form Factor Backplane



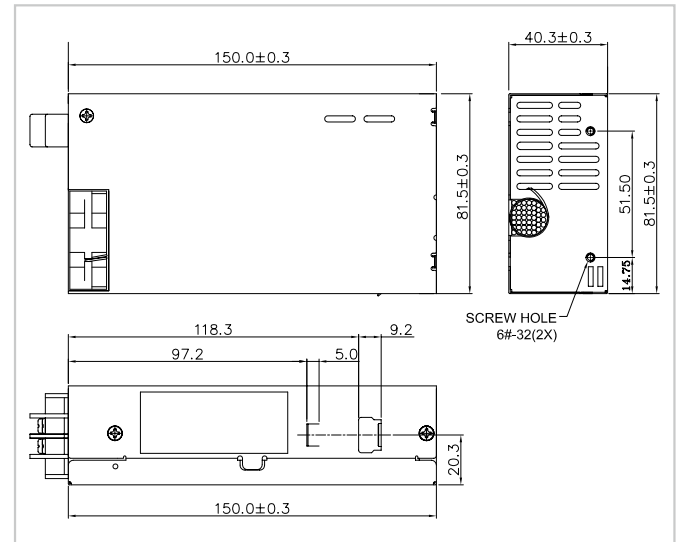
20+4 pin-ATX power connector



PICMG1.3 Form Factor Backplane PE-10S/6S



## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
ACE-4520C-RS	200W 24 V DC input 1U ATX Power Supply

- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/Peripherals
- 6 Panel Solutions Introduction

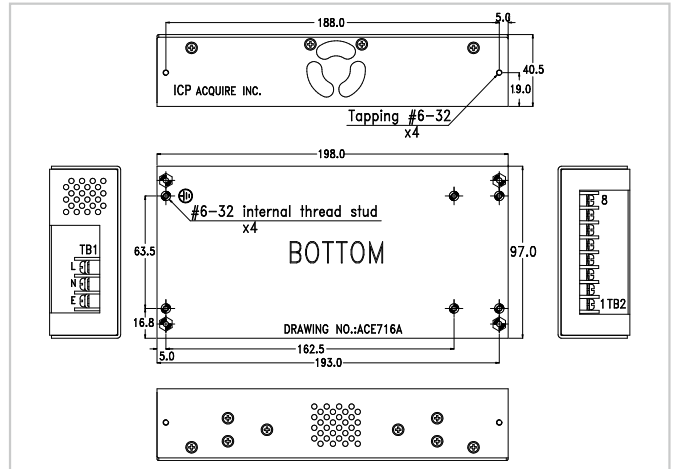
# ACE-716C

150 W 24V DC input AT Power Supply



<b>Input Type</b>	19 ~ 30 VDC				
<b>Output Voltage</b>	<b>+5 V</b>	<b>+12 V</b>	<b>-5 V</b>	<b>-12 V</b>	<b>+24 V</b>
	18 A (2 A min)	4 A	0.5 A	1 A	
<b>Efficiency</b>	70%				
<b>Temperature</b>	Operating: -20°C ~ 70°C (50°C ~ 70°C derating curve) Storage: -20°C ~ 85°C				
<b>MTBF (hrs)</b>	210,000				
<b>Output Connector</b>	Optional Cable				
<b>Dimensions</b>	198 x 97 x 40.5 mm				

## Dimensions (Unit: mm)



## Output terminal block connectors

Pin 1, 2	Pin 3, 4	Pin 5	Pin 6	Pin7	Pin8
5 V	GND	-5 V	-12 V	GND	+12 V

## Ordering Information

Part No.	Description
ACE-716C-RS	150 W 24 V DC input AT Power Supply

Option 1	Embedded Solution	Option 2	ATX Backplane Solution	Option 3	AT P8P9 Backplane Solution
	<b>PN: CB-716EB-RS</b> 30 cm DC cable to CPU card with 4-pin 12 V CPU, HDD and SATA connectors		<b>PN: CB-716BP-RS</b> 30 cm DC cable to backplane with 20-pin ATX, HDD, SATA and HDD connectors		<b>PN: CB-716P8P9-RS</b> 30 cm DC cable AT power to P8P9 with HDD and SATA connectors

1 Industrial Computing Solutions

# 2U AC Input ATX Type

2 Video Capture Solutions

# ACE-D825A

252 W Flex Power Supply



**ACE-D825A-H:**  
Rubber sleeve exterior ideal for desktop applications, such as AC-DC power adaptor.

ACE-D825A

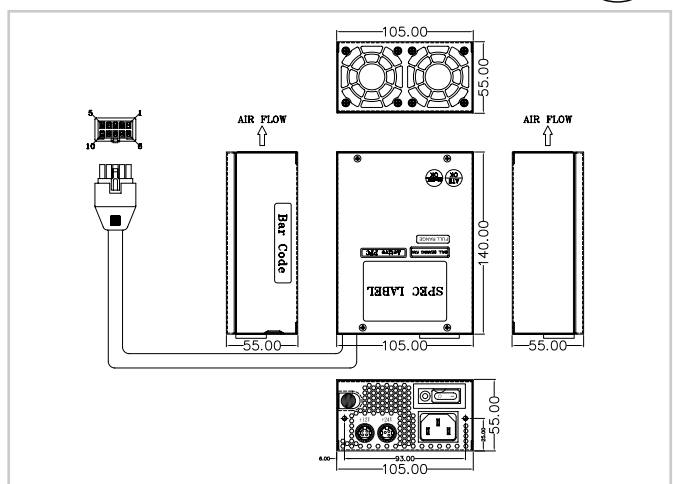
3 Embedded Computing Solutions

## Specifications

<b>Input Type</b>	90~264 VAC Full Range	
<b>Output Voltage</b>	<b>+12 V</b>	<b>+24 V</b>
	15.0 A (1.0 A min.)	3 A (0.0A min.) peak load 8 A
<b>Efficiency</b>	80%	
<b>Temperature</b>	Operating: 0°C ~ 50°C Storage: -20°C ~ 80°C	
<b>MTBF (hrs)</b>	100,000	
<b>Output Connector</b>	1 x 5-pin molex 39-01-2100 1 x 4-pin power mini-DIN for +12 VC 1 x 3-pin power mini-DIN for +24 VDC	
<b>Dimensions</b>	140 x 150 x 86 (mm)	

4 ORing Network Communication

## Dimensions (Unit: mm)



5 Power Supply/ Peripherals

## Output Pin Definitions

<b>Pin</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
	COM	COM	COM	COM	+24V +24Vs	+12V +12Vs	+12V	+12V	+12V	+24V

6 Panel Solutions Introduction

## Ordering Information

Part No.	Description
ACE-D825A-RS	252W Flex power supply
ACE-D825A-H-RS	252W Flex power supply, with rubber sleeve

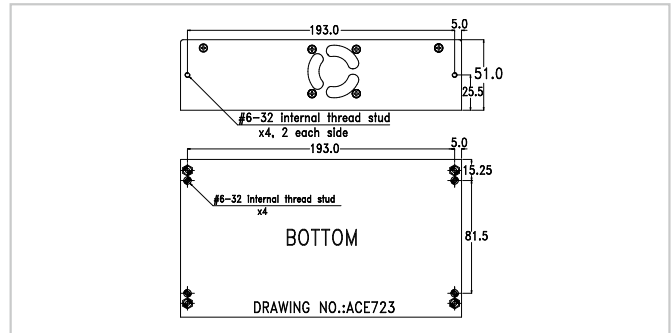
# ACE-723A/B

200 W AC-DC AT Power Supply



<b>Input Type</b>	85 ~ 135 VAC, 180 ~ 265 VAC Auto Range				
<b>Output Voltage</b>	<b>+5 V</b>	<b>+12 V</b>	<b>-5 V</b>	<b>-12 V</b>	<b>+24 V</b>
<b>ACE-723A</b>	22 A (3 A min)	6 A	1 A	1 A	
<b>ACE-723B</b>	21 A (3 A min)	5 A		1 A	1 A
<b>Efficiency</b>	75%				
<b>Temperature</b>	Operating: -20°C ~ 70°C (40°C ~ 70°C derating curve) Storage: -20°C ~ 85°C				
<b>MTBF (hrs)</b>	150,000 (ACE-723A), 148,000 (ACE-723B)				
<b>Output Connector</b>	Optional Cable				
<b>Dimensions</b>	203 x 112 x 51 (mm)				

## Dimensions (Unit: mm)



## Ordering Information

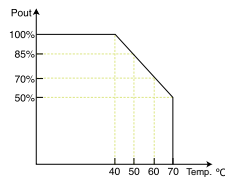
Part No.	Description
ACE-723A-RS	200W AC-DC AT Power Supply
ACE-723B-RS	200W AC-DC AT Power Supply, with +24V output

Option 1	Embedded Solution	Option 3	AT P8P9 Backplane Solution
	<b>PN: CB-716EB-RS</b> 30 cm DC cable to CPU card with 4-pin 12 V CPU, HDD and SATA connectors		<b>PN: CB-716P8P9-RS</b> 30 cm DC cable AT power to P8P9 with HDD and SATA connectors
Option 2	Embedded Solution	Option 4	AT P8P9 Backplane Solution
	<b>PN: CB-716EB-RS</b> 30 cm DC cable to CPU card with 4-pin 12 V CPU, HDD and SATA connectors		<b>PN: CB-643EC-RS</b> 20 cm AC input cable with I/O connector and fuse

# 2U DC Input AT Type

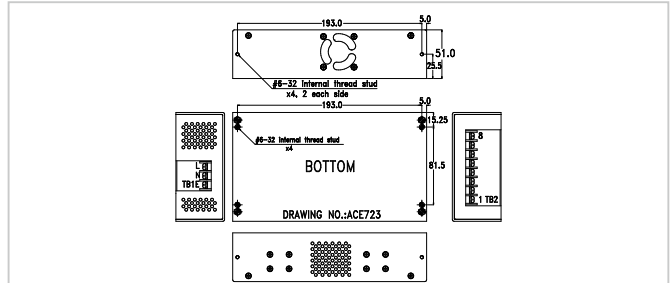
# ACE-723C/T

200W 24V/-48V DC input AT Power Supply



<b>Input Voltage</b>	ACE-723C: 19 ~ 30 VDC, ACE-723T: -36 ~ -72 VDC			
<b>Input Current</b>	ACE-723C: 16 A (RMS) for 24 VDC ACE-723T: 8 A (RMS) for -48 VDC			
<b>Output Voltage</b>	<b>Voltage</b>	<b>Min. load</b>	<b>Max. load</b>	<b>Ripple &amp; Noise</b>
	+5 V	3 A	22 A	100 mV
	+12 V	0 A	6 A	100 mV
	-5 V	0 A	1 A	100 mV
<b>Overload Protection</b>	+5 V output ±1%, +12 V output ±4%, -12 V output ±1%, -5 V output ±1%			
	Operating: -20°C ~ 70°C (40°C ~ 70°C derating curve) Storage: -20°C ~ 85°C			
<b>Temperature</b>	Operating: -20°C ~ 70°C (40°C ~ 70°C derating curve) Storage: -20°C ~ 85°C			
<b>Efficiency</b>	ACE-723C: 70%, ACE-723T: 75%			
<b>Input Protection</b>	Protection against wrong polarity if -48V volts inverse by mistake.			
<b>Thermal Protection</b>	Thermal protection used build in 110°C ±5°C thermal switch in HS1.			
<b>Vibration</b>	10 ~ 55 Hz at 2G 3minutes period, 30 minutes along X, Y and Z axis.			
<b>Impact</b>	10G for 20ms once on each X, Y and Z axis.			
<b>MTBF (hrs)</b>	ACE-723C: 138,000, ACE-723T: 174,000			
<b>Dimensions</b>	203 x 112 x 51 (mm)			
<b>Output Connector</b>	Optional Cable			

## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
ACE-723C-RS	200W 24V DC input AT Power Supply
ACE-723T-RS	200W -48V DC input AT Power Supply

## AC terminal block

Pin 1	Pin 2	Pin 3
E	N	L

## Output terminal block

Pin 1, 2	Pin 3, 4	Pin 5
5V	GND	-5V
Pin 6	Pin 7	Pin 8
-12V	GND	+12V

Option 1	Embedded Solution
	<b>PN: CB-716EB-RS</b> 30 cm DC cable to CPU card with 4-pin 12 V CPU, HDD and SATA connectors
Option 2	ATX Backplane Solution
	<b>PN: CB-716BP-RS</b> 30 cm DC cable to backplane with 20-pin ATX, HDD, SATA and HDD connectors
Option 3	AT P8P9 Backplane Solution
	<b>PN: CB-716P8P9-RS</b> 30 cm DC cable AT power to P8P9 with HDD and SATA connectors

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# PS/2 Selection Guide

**Safety (ITE Standard)** - CB IEC 60950, UL 60950, CSA C 22.2 No. 60950, TUV EN 60950

**Safety (Medical Standard)** - CB IEC 60601, UL 60601, CSA C 22.2 No. 60601, TUV EN 60601

**EMI** - Meets EN 55022, FCC Part 15, CISPR 22.

Meets EN 61000-3-2, EN 61000-3-3 (PFC function)

**EMS** - Meets EN 55024, EN 61000-4-2/ 3/ 4/ 5/ 6/ 8/ 11

\* For detailed specs., please refer to official certification

AC Input														
Product	Model No.	Watt AT/ATX PFC	Input range Voltage	Output current range					Efficiency	ErP	Operating Temperature	Safety		
				+3.3 V	+5 V	+12 V	-5 V	-12 V					+5 Vsb	
	<b>ACE-A160A</b>	600W ATX PFC	90-264VAC	25.0A (1.5A)	25.0A (1.0A)	V1: 16.0A (1A) V2: 16.0A (1A) V3: 16.0A (1A) V4: 16.0A (0.5A)		0.5A	4A	 85%	v	-5°C ~ 50°C	CB / UL / TUV CCC / CE / FCC	
	<b>ACE-4860AP</b>	600W ATX PFC	90 ~ 264 VAC	24 A	30 A	V1: 12 A (1 A min) V2: 12 A (1 A min) V3: 18 A (0.5A min) V4: 18 A		1 A	3 A	70%		0°C ~ 50°C	CB / UL / TUV CCC / BSMI CE / FCC	
	<b>Medical ACE-4840APM</b>	400W ATX PFC	90 ~ 265 VAC	30 A (0.5 A min)	30A (0.3 A min)	V1: 17 A (1 A min) V2: 17 A (1 A min)		0.3 A	0.8 A	2 A	68%		0°C ~ 50°C	CB / UL CCC / VDE
	<b>ACE-A140A</b>	400W ATX PFC	90 ~ 264VAC	21.0A (0.1A)	20.0A (0.2A)	V1: 16.0A (0.1A) V2: 16.0A(0.5A)		0.3A	0.5A	3.0A	 85%	v	-5°C ~ 50°C	CB / UL / TUV CCC / CE / FCC
	<b>ACE-A130B</b>	300W ATX PFC	90 ~ 264VAC	19.0A (0.3A)	16.0A (0.5A)	V1: 17.0A (0.5A) V2: 17.0A (0.5A)		0.2A	0.3A	3A (0.1A)	 85%	v	-5°C ~ 50°C	CB / UL / TUV CCC / CE / FCC
	<b>ACE-828A</b>	280W ATX -	90 ~ 130 VAC 180 ~ 260 VAC	8 A	25 A (2 A min)	10 A (0.1 A min)		0.5 A	0.5 A	0.72 A	65%		-20°C ~ 70°C	CSA / TUV / CE
	<b>Medical ACE-828M</b>	280W ATX -	90 ~ 130 VAC 180 ~ 260 VAC	8 A	25 A (2 A min)	10 A (0.1 A min)		0.5 A	0.5 A	0.72 A	65%		-20°C ~ 70°C	UL / TUV / CE
	<b>ACE-T140A</b>	400W AT PFC	95 ~ 264 VAC		42 A (2 A min)	15 A (1 A min)		0.3 A	0.8 A		75%		0°C ~ 50°C	CB / UL / TUV CCC / CE / FCC
	<b>ACE-932A</b>	300W AT -	85 ~ 130 VAC 180 ~ 265 VAC		33 A (3 A min)	8 A (0.1 A min)		0.5 A	3 A		68%		-20°C ~ 70°C	UL / CSA
	<b>ACE-925A</b>	200W AT -	85 ~ 265 VAC		22 A (1 A min)	7 A (0.1 A min)		0.5 A	0.7 A		68%		0°C ~ 50°C	UL
	<b>ACE-935AL</b>	300W AT -	85 ~ 140 VAC 170 ~ 270 VAC		40 A (3 A min)	8 A (0.1 A min)		0.3 A	0.7 A		68%		0°C ~ 50°C	UL / CE
	<b>ACE-925AP-U</b>	250W AT PFC	90 ~ 265 VAC		22 A (1 A min)	11 A (1 A min)		0.5 A	0.7 A		70%		0°C ~ 50°C	CB / UL / TUV CCC / CE
DC Input														
	<b>ACE-828V</b>	250W ATX -	12 VDC (9 ~ 16 VDC)	8 A	25 A (2 A min)	8 A (0.1 A min)		0.5 A	1 A	0.72 A	65%		0°C ~ 70°C	
	<b>ACE-828C</b>	250W ATX -	24 VDC (18 ~ 32 VDC)	8 A	25 A (2 A min)	7 A (0.1 A min)		0.5 A	1 A	0.72 A	65%		0°C ~ 50°C	CB / CSA TUV / CCC CE
	<b>ACE-828T</b>	250W ATX -	-48 VDC (-40 ~ -72 VDC)	8 A	25 A (2 A min)	7 A (0.1 A min)		0.5 A	1 A	0.72 A	65%		0°C ~ 50°C	CB / TUV CCC / CE
	<b>ACE-932T</b>	300W AT -	-48 VDC (-40 ~ -70 VDC)		33 A (1 A min)	8 A		0.5 A	3 A		70%		-20°C ~ 70°C	UL / CSA TUV / CE
	<b>ACE-925C</b>	220W AT -	24 VDC (19 ~ 30 VDC)		25 A (4 A min)	6 A		1 A	2 A		65%		0°C ~ 50°C	UL / TUV CE

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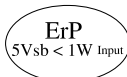
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Panel Solutions Introduction

# PS/2 AC Input ATX Type

## ACE-A160A

600W PS/2 ATX Power Supply with ErP



### Ordering Information

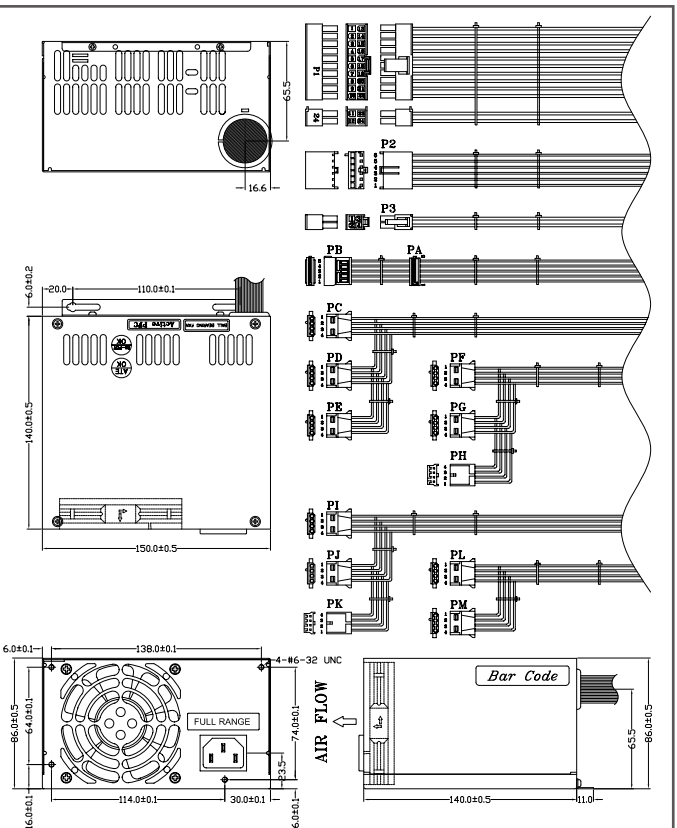
Part No.	Description
ACE-A160A-R10	600W AC-DC PS/2 ATX Power Supply with ErP, Meet 80 PLUS (Bronze)

### Dimensions (Unit: mm)

REF. ID.	PIN NO.	SIGNAL	WIRE COLOR	CABLE LENGTH
P1 24	1	+3.3VDC	ORANGE	400±15mm
	2	+3.3VDC	ORANGE	
	3	COM	BLACK	
	4	+5VDC	RED	
	5	COM	BLACK	
	6	+5VDC	RED	
	7	COM	BLACK	
	8	PW-OK	GRAY	
	9	+5Vsb	PURPLE	
	10	+12V3	Yel/Blue	
	11	+12V3	Yel/Blue	
	12	+3.3VDC	ORANGE	
	13	+3.3VDC	ORANGE	
	13	+3.3V <sub>Sense</sub>	BROWN	
	14	-12VDC	BLUE	
	15	COM	BLACK	
	16	PS-ON	GREEN	
	17	COM	BLACK	
	18	COM	BLACK	
	19	COM	BLACK	
	20	-5V	WHITE	
	21	+5VDC	RED	
	22	+5VDC	RED	
	23	+5VDC	RED	
24	COM	BLACK		
P2	1	COM	BLACK	400±15mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5VDC	RED	
P3	1	COM	BLACK	500±15mm
	2	COM	BLACK	
	3	+12V1	YELLOW	
	4	+12V1	YELLOW	
PA	1	+3.3VDC	ORANGE	400±15mm
	2	COM	BLACK	
	3	+5V	RED	
	4	COM	BLACK	
PB	1	+12V3	Yel/Blue	155±10mm
	2	COM	BLACK	
	3	+5V	RED	
	4	COM	BLACK	
PI	1	+12V4	Yel/White	400±15mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5V	RED	
PJ	1	+12V4	Yel/White	155±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5V	RED	
PK	1	+5V	RED	150±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+12V4	Yel/White	
PC	1	+12V2	Yel/Black	400±15mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5V	RED	
PD	1	+12V2	Yel/Black	155±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5V	RED	
PE	1	+5V	RED	150±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+12V2	Yel/Black	
PH	1	COM	BLACK	150±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+12V2	Yel/Black	

### Specifications

Input	Voltage	90-265 VAC Full Range		
	Frequency	47-63Hz		
	Input Current	10A(RMS)@115VAC, 5A(RMS)@230VAC		
	Inrush Current	40A max for 115VAC 80A max for 230VAC		
Output	Voltage	Min. load	Max. load	Ripple & Noise
	+3.3V	1.5A	25.0A	50mV
	+5V	1A	25.0A	50mV
	+12V1	1A	16.0A	120mV
	+12V2	1A	16.0A	120mV
	+12V3	1A	16.0A	120mV
	+12V4	0.5A	16.0A	120mV
	-12V	0A	0.5A	120mV
	+5VSB	0A	4.0A	50mV
	Maximum continuous combined load on +3.3VDC and +5VDC outputs shall not exceed 150watts.			
Maximum continuous total DC output power should not exceed 600W				
Over Voltage Protection	5V: 5.7V-6.5V 12V1 ~ 12V4: 13.3V-16.7V 3.3V: 3.9V-4.5V			
	Short Circuit Protection			
+3.3V, +5V, +12V1, +12V2, +12V3, +12V4, 24V or -12V shutdown and latch off				
General Specifications	Watt	600W		
	PFC	Active		
	Hold-up time	16 ms Min.		
	Efficiency	85%		
	MTBF	100000 hours		
	Temperature	Operating: -5°C ~ 50°C Storage: -40°C ~ 80°C		
	Dimensions	140 x 150 x 86 (mm)		
	Output Connector	1 x 20+4-pin ATX, 1 x 4-pin 12V CPU, 9 x HDD/CDROM, 2 x FDD, 2 x SATA, 1 x Extra +5V (P10)		



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# ACE-4860AP

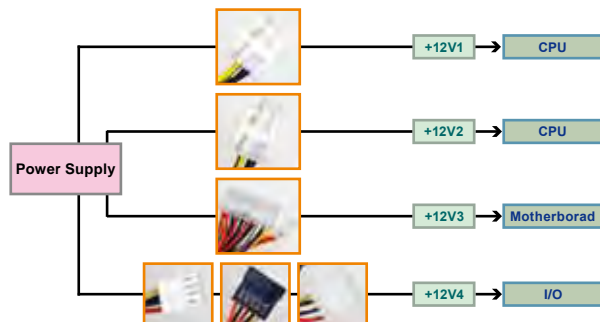
600 W PS/2 Type ATX Power Supply



## Features

1. 600 W for high power consumption RAID / multi-core system
2. High efficiency
3. ATX 2.0 standard with new 20+4-pin ATX power and SATA connector design
4. Overvoltage and overcurrent protection
5. 100% Hi-pot tested
6. Multiple safety and EMC certifications
7. Total +12 V output up to 40 A

### Power Connector + 12 V



## Specifications

Input	Voltage	90 – 264 VAC Full Range		
	Frequency	47 – 63 Hz		
	Input Current	12 A (RMS)@115 VAC, 6 A (RMS)@230VAC		
	Inrush Current	60 A max for 115 VAC, 150 A max for 230 VAC		
Output	Voltage	Min. load	Max. load	Ripple & Noise
	+5 V	0 A	30 A	50 mV P-P
	+12 V1	1 A	12 A	120 mV P-P
	+12 V2	1 A	12 A	120 mV P-P
	+12 V3	0.5 A	18 A	120 mV P-P
	+12 V4	0 A	18 A	120 mV P-P
	-12 V	0 A	1 A	120 mV P-P
	+3.3 V	0 A	24 A	50 mV P-P
	+5 Vsb	0 A	3 A	50 mV P-P
	Over Voltage Protection	+12 V: 14.6 V ±10% +5 V: 6.2 V ±10% +3.3 V: 4 V ±10%		
Short Circuit Protection	+3.3 V, +5 V, +12 V shut down and latch off			
General Specifications	Watt	600 W		
	PFC	Active		
	Hold-up Time	16 ms Min.		
	Efficiency	70%		
	MTBF	100,000 hours		
	Temperature	Operating: 0 ~ 50°C (40 ~ 50°C derating curve) Storage: -40 ~ 70°C		
	Dimensions	140 x 150 x 86 (mm), 5.51 x 5.91 x 3.39 (inch)		
	Output Connector	1 x 20+4-pin ATX, 1 x 4-pin 12V CPU, 9 x HDD/CDROM, 1 x FDD, 2 x SATA		

## Ordering Information

Part No.	Description
ACE-4860AP-R11-RS	600 W AC-DC PS/2 ATX power supply, with PFC

# ACE-4840APM

400 W PS/2 Medical Type ATX Power Supply



New Version 20+4 Pins Power Supply



PICMG1.0 Form Factor Backplane



20+4-pin ATX power connector

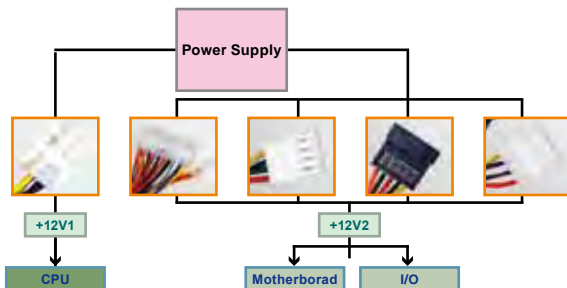
PICMG1.3 Form Factor Backplane PE-10S/6S



## Features

1. Internal 8 cm fan
2. Meets medical safety standards
3. Line input fuse protection
4. Output overvoltage protection
5. Short circuit protection on all outputs
6. Total +12 V output up to 34 A

### Power Connector + 12 V



## Specifications

Input Voltage	90 – 265 VAC Full Range				
Input Frequency	47 – 63 Hz				
Input Current	8 A (RMS) for 115 VAC, 4 A (RMS) for 230 VAC				
Inrush Current	60 A MAX. for 115 VAC, 100A MAX. for 230 VAC				
Output Voltage	Voltage	Min. load	Max. load	Ripple & Noise	
	+3.3 V	0.5 A min	30 A	50 mV	
	+5 V	0.3 A min	30 A	50 mV	
	+12 V1	1 A min	17 A	120 mV	
	+12 V2	1 A min	17 A	120 mV	
	-5 V		0.3 A	100 mV	
	-12 V		0.8 A	120 mV	
	+5 V sb		2 A	50 mV	
	+3.3 V & +5 V total output not exceed 180 W +3.3 V & +5 V & +12 V total output not exceed 380 W				
	Overvoltage Protection	+5 V 5.7 V ~ 6.5 V +3.3 V 3.7 V ~ 4.5 V +12 V 13.3 V ~ 15.6 V			
Hold Up Time	20 ms min.				
MTBF	100,000 hours				
Operating Temperature	0°C ~ 50°C				
Storage Temperature	-20°C ~ 80°C				
Efficiency	68%				
Dimensions	140 mm x 150 mm x 86 mm				
Outline Connector	1 x 20+4-pin ATX, 1 x 4-pin 12V CPU, 5 x HDD/CDROM, 2 x FDD, 2 x SATA, 1 x Extra +5V (P10)				

## Ordering Information

Part No.	Description
ACE-4840APM-RS	400 W AC-DC PS/2 ATX Power Supply, meets Medical standard, with PFC

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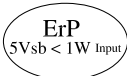
Power Supply/ Peripherals

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Panel Solutions Introduction

# ACE-A140A

400W PS/2 ATX Power Supply with ErP



## Ordering Information

Part No.	Description
ACE-A140A-R10	400W AC-DC PS/2 ATX Power Supply with ErP, Meet 80 PLUS (Bronze)
ACE-A140A-S-R10	400W PS/2 ATX Power Supply with ErP & on/off switch, Meet 80 PLUS (Bronze)

## Specifications

Input	Voltage	90-264 VAC Full Range		
	Frequency	47-63Hz		
	Input Current	6A (RMS)@115VAC, 3A (RMS)@230VAC		
	Inrush Current	65A max for 115VAC 147A max for 230VAC		
Output	Voltage	Min. load	Max. load	Ripple & Noise
	+3.3V	0.1A	21.0A	50mV
	+5V	0.2A	20.0A	50mV
	+12V1	0.1A	16.0A	120mV
	+12V2	0.5A	16.0A	120mV
	-12V	0A	0.5A	120mV
	-5V	0A	0.3A	50mV
+5VSB	0A	3.0A	50mV	
The +3.3V and +5V total output shall not exceed 130watts. Total output for this subject power supply is 400 watts.				
General Specifications	Over Voltage Protection	+3.3V: 3.5V-4.5V +5V: 5.5V-6.82V +12V1 and +12V2: 13.4V-15.6V		
	Short Circuit Protection	+3.3V, +5V, +12V or -12V shutdown and latch off		
	Watt	400W		
	PFC	Active		
	Hold-up Time	17 ms Min.		
	Efficiency	85%		
	MTBF	100000 hours		
	Temperature	Operating: -5°C ~ 50°C Storage: -20°C ~ 80°C		
	Dimensions	140x150x86(mm)		
	Output Connector	1 x 20-pin ATX, 1 x 4-pin 12V CPU, 8 x HDD/CDROM, 2 x FDD, 1 x Extra +5V (P10)		

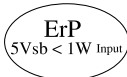
## Dimensions (Unit: mm)

REF. ID.	PIN NO.	SIGNAL	WIRE COLOR	CABLE LENGTH
P1	1	+3.3VDC	ORANGE	500±15mm
	2	+3.3VDC	ORANGE	
	3	COM	BLACK	
	4	+5VDC	RED	
	5	COM	BLACK	
	6	+5VDC	RED	
	7	COM	BLACK	
	8	PW-OK	GRAY	
	9	+5Vsb	PURPLE	
	10	+12V2	YELLOW	
	11	+3.3VDC	ORANGE	
			+3.3Vsense	
	12	-12VDC	BLUE	
	13	COM	BLACK	
	14	PS-ON	GREEN	
	15	COM	BLACK	
	16	COM	BLACK	
	17	COM	BLACK	
	18	-5V	WHITE	
	19	+5VDC	RED	
	20	+5VDC	RED	
P2	1	COM	BLACK	500±15mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+3.3VDC	ORANGE	
	5	+3.3VDC	ORANGE	
	6	+5VDC	RED	
P3	1	COM	BLACK	500±15mm
	2	COM	BLACK	
	3	+12V1	Yel/Black	
PA	1	+12V1	Yel/Black	500±15mm
	2	+12V2	YELLOW	
PE	1	COM	BLACK	400±15mm
	3	COM	BLACK	
PB	1	+5V	RED	200±10mm
	2	+12V2	YELLOW	
	3	COM	BLACK	
	4	+5V	RED	
PC	1	+5V	RED	200±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+12V2	YELLOW	
PD	1	+12V1	Yel/Black	400±15mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5V	RED	
PF	1	+12V1	Yel/Black	400±15mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5V	RED	
PG	1	+12V1	Yel/Black	200±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5V	RED	
PH	1	+12V1	Yel/Black	200±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5V	RED	
PI	1	+12V1	Yel/Black	200±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5V	RED	
PJ	1	+5V	RED	200±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+12V1	Yel/Black	

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# ACE-A130B

300W PS/2 ATX Power Supply with ErP



## Ordering Information

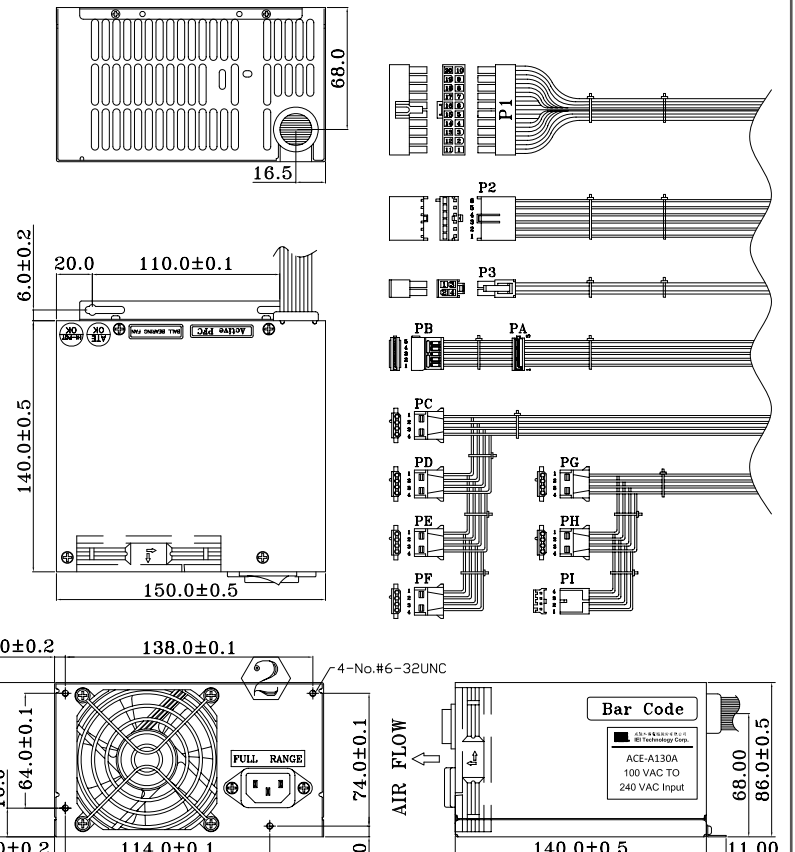
Part No.	Description
ACE-A130B-R10	300W AC-DC PS/2 ATX Power Supply with ErP/PFC, Meet 80 PLUS (Bronze)
ACE-A130B-S-R10	300W AC-DC PS/2 ATX Power Supply with ErP/PFC & on/off switch, Meet 80 PLUS(Bronze)

## Specifications

Input	Voltage	90-264 VAC Full Range			
	Frequency	47-63Hz			
	Input current	6A(RMS)@115VAC, 3A(RMS)@230VAC			
	Inrush current	80A max for 115VAC, 160A max for 230VAC			
Output	Voltage	Min. load	Max. load	Ripple & Noise	
	+3.3V	0.3A	19.0A	50mV	
	+5V	0.5A	16.0A	50mV	
	+12V1	0.5A	17.0A	120mV	
	+12V2	0.5A	17.0A	120mV	
	-12V	0A	0.3A	120mV	
	+5VSB	0.1A	3A	50mV	
	-5V	0A	0.2A	100mV	
	Total combined output of +3.3V and +5V is ≤105W				
	Total output for this subject power supply is 300 watts				
General Specifications	Over voltage protection	+3.3V: 3.7V-4.8V +5V: 5.7V-7.0V +12V1 and +12V2: 13.3V-16V			
	Short circuit protection	+3.3V, +5V, +12V shutdown and latch off			
	Watt	300W			
	PFC	Active			
	Hold-up time	13 ms Min.			
	Efficiency	85%			
	MTBF	100000 hours			
	Temperature	Operating: -5°C ~ 50°C Storage: -40°C ~ 70°C			
	Dimensions	140 x 150 x 86 (mm)			
	Output connector	1 x 20-pin ATX, 1 x 4-pin 12V CPU, 6 x HDD/CDROM, 1 x FDD, 1 x Extra +5V (P10), 2 x SATA			

## Dimensions (Unit: mm)

REF. ID.	PIN NO.	SIGNAL	WIRE COLOR	CABLE LENGTH
P1	1	+3.3VDC	ORANGE	500±15mm
	2	+3.3VDC	ORANGE	
	3	COM	BLACK	
	4	+5VDC	RED	
	5	COM	BLACK	
	6	+5VDC	RED	
	7	COM	BLACK	
	8	PW-OK	GRAY	
	9	+5Vsb	PURPLE	
	10	+12V1	YELLOW	
	11	+3.3VDC	ORANGE	
	12	+3.3V sense	BROWN	
	13	-12VDC	BLUE	
	14	COM	BLACK	
	15	PS-ON	GREEN	
	16	COM	BLACK	
	17	COM	BLACK	
P2	1	+5VDC	RED	500±15mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+3.3VDC	ORANGE	
P3	1	COM	BLACK	500±15mm
	2	COM	BLACK	
	3	+12V2	YEL/BLACK	
	4	+12V2	YEL/BLACK	
PA	1	+3.3VDC	ORANGE	400±15mm
	2	COM	BLACK	
	3	+5V	RED	
	4	COM	BLACK	
	5	+12V2	YEL/BLACK	
PB	1	+3.3VDC	ORANGE	200±10mm
	2	COM	BLACK	
	3	+5V	RED	
	4	COM	BLACK	
	5	+12V2	YEL/BLACK	
PC	1	+12V1	YELLOW	400±15mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5V	RED	
PD	1	+12V1	YELLOW	200±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+5V	RED	
PE	1	+5V	RED	200±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+12V1	YELLOW	
PF	1	+5V	RED	200±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+12V1	YELLOW	
PH	1	+5V	RED	200±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+12V1	YELLOW	
PI	1	+5V	RED	200±10mm
	2	COM	BLACK	
	3	COM	BLACK	
	4	+12V1	YELLOW	



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# ACE-828A



## Specifications

Input Type	90 ~ 130VAC, 180 ~ 260VAC Auto Range					
Output Voltage	+3.3V	+5V	+12V	-5V	-12V	+5Vsb
	8A	25A (2A min)	10A (0.1A min)	0.5A	0.5A	0.72A
Efficiency	65%					
Temperature	Operating: -20°C ~ 70°C (40°C ~ 70°C derating curve) Storage: -40°C ~ 75°C					
MTBF (hrs)	110,000					
Output Connector	1 x 20-pin ATX, 5 x HDD/CDROM, 2 x FDD					

## Ordering Information

Part No.	Description
ACE-828A-RS	280W AC-DC PS/2 ATX Power Supply

# ACE-828M



## Specifications

Input Type	90 ~ 130VAC, 180 ~ 260VAC Auto Range					
Output Voltage	+3.3V	+5V	+12V	-5V	-12V	+5Vsb
	8A	25A (2A min)	10A (0.1A min)	0.5A	0.5A	0.72A
Efficiency	65%					
Temperature	Operating: -20°C ~ 70°C (40°C ~ 70°C derating curve) Storage: -40°C ~ 75°C					
MTBF (hrs)	170,000					
Output Connector	1 x 20-pin ATX, 5 x HDD/CDROM, 2 x FDD					

## Ordering Information

Part No.	Description
ACE-828M-RS	280W AC-DC PS/2 ATX Power Supply, meets Medical standard

# PS/2 AC Input AT Type

# ACE-T140A



## Specifications

Input Type	95~264VAC Full Range			
Output Voltage	+5 V	+12 V	-5 V	-12 V
	42.0 A (2.0 A min.)	15 A (1.0 A min.)	0.3 A (0 A min.)	0.8 A (0 A min.)
Efficiency	75%			
Temperature	Operating: 0°C ~ 50°C, Storage: -20°C ~ 80°C			
MTBF	100,000 hr			
Output Connector	1 x P8+P9, 6 x HDD, 2 x FDD			
Dimensions	140 mm x 150 mm x 86 mm			

## Ordering Information

Part No.	Description
ACE-T140A-RS	400 W AC-DC PS2 AT Power Supply, with PFC

# ACE-932A



## Specifications

Input Type	85 ~ 130 VAC, 180 ~ 265 VAC Auto Range					
Output Voltage	+3.3 V	+5 V	+12 V	-5 V	-12 V	+5 Vsb
		33A (3 A min)	8A (0.2 A min)	0.5 A	3 A	
Efficiency	68%					
Temperature	Operating: 0°C ~ 50°C (50°C ~ 70°C derating curve) Storage: -40°C ~ 75°C					
MTBF (hrs)	120,000					
Output Connector	1 x P8+P9, 1 x Extra +5V (P10), 4 x HDD/CDROM, 2 x FDD					

## Ordering Information

Part No.	Description
ACE-932A-RS	300 W AC-DC PS/2 AT Power Supply

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# ACE-935AL

300 W PS/2 Type AT Power Supply



## Specifications

Input Type	85 ~ 140 VAC, 170 ~ 270 VAC Auto Range					
Output Voltage	+3.3 V	+5 V	+12 V	-5 V	-12 V	+5 Vsb
		40 A (3A min)	8 A (0.1A min)	0.3 A	0.7 A	
Efficiency	68%					
Temperature	0°C ~ 50°C (Operating), -40°C ~ 75°C (Storage)					
MTBF (hrs)	100,000					
Output Connector	1 x P8+P9, 1 x Extra +5V (P10), 5 x HDD/CDROM, 2 x FDD					

## Ordering Information

Part No.	Description
ACE-935AL-RS	300 W AC-DC PS/2 AT Power Supply, AC select switch

# ACE-925AP-U

250 W PS/2 Type AT Power Supply



**High reliability magnetic bearing cooling system features low noise, high operating temperature and longer MTBF**



## Specifications

Input	Voltage	90 ~ 265 VAC Full Range			
	Frequency	47 ~ 63 Hz			
Output	Voltage	+5 V	+12 V	-5 V	-12 V
	Max. load	22 A	11 A	0.5 A	0.7 A
General	MTBF	100,000 hours			
	Temperature	Operating: 0°C ~ 50°C Storage: -25°C ~ 70°C			
	Dimensions	140 x 150 x 86 (mm)			
	Output Connector	1 x P8+P9, 4 x HDD/CDROM, 2 x FDD, 2 x SATA			

## Ordering Information

Part No.	Description
ACE-925AP-U-RS	250 W AC-DC PS/2 AT Power Supply, with PFC

# ACE-925A

200 W PS/2 Type AT Power Supply



## Specifications

Input Type	85 ~ 265VAC Full Range					
Output Voltage	+3.3 V	+5 V	+12 V	-5 V	-12 V	+5 Vsb
		22 A (1A min)	7 A (0.1A min)	0.5 A	0.7 A	
Efficiency	68%					
Temperature	0°C ~ 50°C (Operating), -40°C ~ 75°C (Storage)					
MTBF (hrs)	130,000					
Output Connector	1 x P8+P9, 5 x HDD/CDROM, 2 x FDD					

## Ordering Information

Part No.	Description
ACE-925A-RS	200 W AC-DC PS/2 AT Power Supply

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# PS/2 DC Input ATX Type

## ACE-828V/C/T

PS/2 12V/24V/48V DC Input ATX Type



ACE-828V

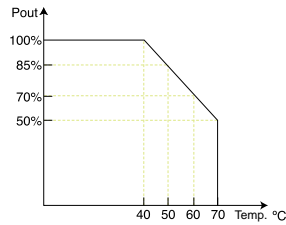


ACE-828C

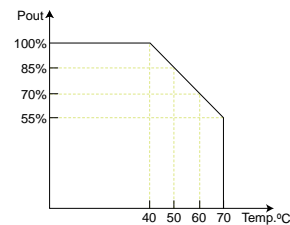


ACE-828T

ACE-828V



ACE-828C / ACE-828T



Product	ACE-828V	ACE-828C	ACE-828T
Input Type	9 ~ 16 VDC	18 ~ 32 VDC	40 ~ 72 VDC
Input Current	50 A (RMS)@12VDC	20 A (RMS)@24VDC	10 A (RMS)@-48VDC
Inrush Current	-	5A Max for 24VDC	5A Max for -48VDC
Output Voltage	+3.3 V	8 A	8 A
	+5 V	25 A (2 A min)	25 A (2 A min)
	+12 V	8 A (0.1 min)	7 A (0.1 min)
	-5 V	0.5 A	0.5 A
	-12 V	1 A	1 A
	+5 Vsb	0.72 A	0.72 A
Ripple & Noise	+5 V, +3.3 V output are less than 50mV +12 V, -5 V, -12 V, +5 Vsb output are less than 100mV		
Overvoltage Protection	+5 V: 5.7 V ~ 7.0 V		
Short Circuit Protection	Yes		
Overload Protection	Yes		
Efficiency	65%		
Temperature	-20°C ~ 70°C (Operating), -40°C ~ 75°C (Storage)		
MTBF (hrs)	97,000	120,000	110,000
Power Good Signal	Turn on delay time 100 ms to 500 ms		
Output Connector	ACE-828V: 1 x 20-pin ATX, 1 x 4-pin 12V CPU, 3 x HDD/CDROM, 2 x FDD, 1 x Extra +5V (P10) ACE-828C/T: 1 x 20-pin ATX, 5 x HDD/CDROM, 2 x FDD		

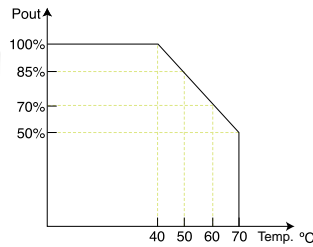
### Ordering Information

Part No.	Description
ACE-828V-RS	250 W 12V DC input PS/2 Type ATX Power Supply
ACE-828C-RS	250 W 24V DC input PS/2 Type ATX Power Supply
ACE-828T-RS	250 W 48V DC input PS/2 Type ATX Power Supply

# PS/2 DC Input AT Type

## ACE-932T

PS/2 -48V DC Input AT Type



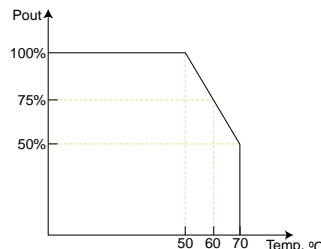
Input Type	-40 ~ -70 VDC					
Output Voltage	+3.3 V	+5 V	+12 V	-5 V	-12 V	+5 Vsb
		33 A (1A min)	8 A	0.5 A	3 A	
Efficiency	70%					
Temperature	-20°C ~ 70°C (Operating), -40°C ~ 75°C (Storage)					
MTBF (hrs)	140,000					
Output Connector	1 x P8+P9, 1 x Extra +5V (P10), 4 x HDD/CDROM, 2 x FDD					

### Ordering Information

Part No.	Description
ACE-932T-RS	300W -48 V DC input PS/2 Type AT Power Supply

## ACE-925C

PS/2 24 V DC DC Input AT Type



Input Type	19 ~ 30VDC					
Output Voltage	+3.3 V	+5 V	+12 V	-5 V	-12 V	+5 Vsb
		25 A (4 A min)	6 A	1 A	2 A	
Efficiency	65%					
Temperature	0°C ~ 50°C (Operating), -40°C ~ 75°C (Storage)					
MTBF (hrs)	200,000					
Output Connector	1 x P8+P9, 3 x HDD/CDROM, 2 x FDD					

### Ordering Information

Part No.	Description
ACE-925C-RS	220 W 24 V DC input PS/2 Type AT Power Supply

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# Optional Power Supply Cables

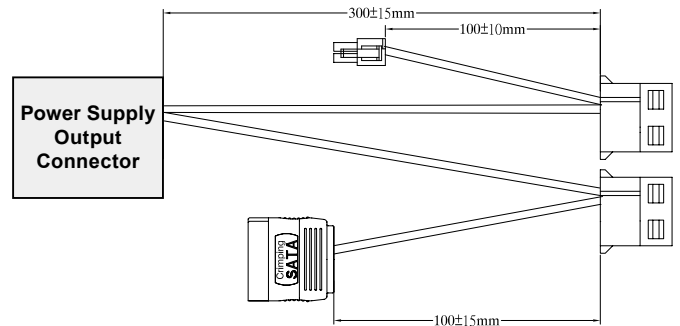
## ■ AC Input Solution

20 cm AC input cable with I/O connector and fuse



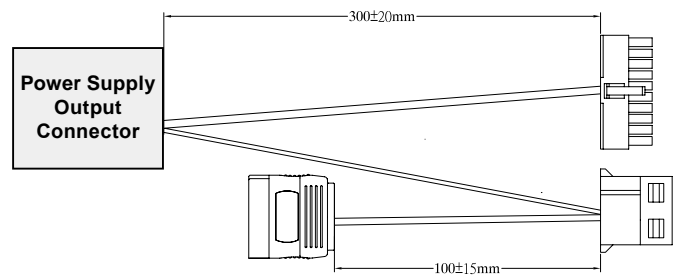
## ■ Embedded Solution

30 cm cable with SATA, 12 V and IDE device connector



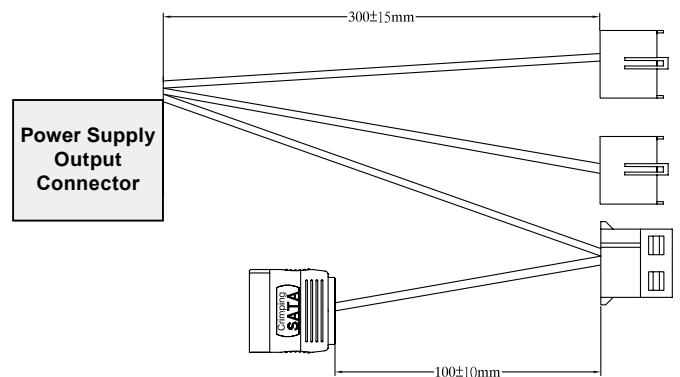
## ■ ATX Backplane Solution

30 cm cable with IDE, ATX and SATA device connector



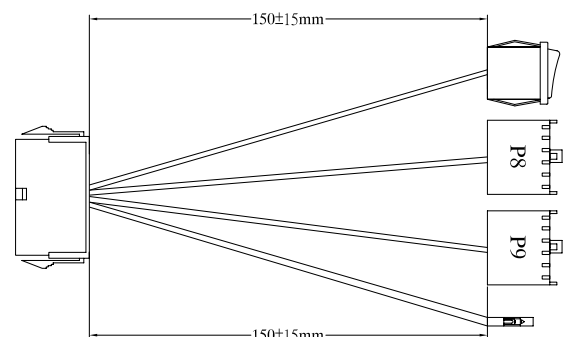
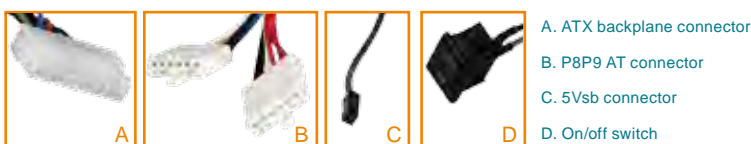
## ■ AT P8P9 Backplane Solution

30 cm cable with SATA, IDE and P8P9 AT device connector



## ■ AT Backplane with ATX Power Supply Solution

15 cm cable with ATX, P8P9 and 5VSB connector and on/off switch



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# Optional Power Supply Cables

CB-704EC-RS



CB-855EC-RS



CB-870EC-RS



CB-704EB-RS



CB-709EB-RS



CB-710EB-RS



CB-870EB-RS



CB-716EB-RS



CB-855EB-RS



CB-ATXP8P9-RS



CB-870BP-RS



CB-855BP-RS



CB-717BP-RS



CB-709BP-RS



CB-704BP-RS



CB-890BP-RS



CB-890P8P9



CB-704P8P9



CB-716P8P9



CB-855P8P9



CB-870P8P9



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# Redundant Type Selection Guide

AC Input														
Product	Model No.	Watt ATX/ATX PFC	Input range Voltage	Output current range							Efficiency	Operating Temperature	Safety	Dimensions (mm)
				+3.3 V	+5 V	+12 V	-5 V	-12 V	+5 Vsb	24V				
	ACE-R4140AP	400W ATX PFC	90 ~ 264 VAC	25 A (2A min)	25 A (2 A min)	30 A (2.5 A min)		0.8 A (0.1A min)	2 A (0.1A min)		65%	0°C ~ 40°C	UL, TUV, CCC, BSMI, CE, FCC	150 x 85 x 190
	ACE-R4130AP	300W ATX PFC	90 ~ 264 VAC	18 A (1A min)	25 A (3 A min)	16 A (2 A min)	0.5A	0.5 A	2 A (0.1A min)		65%	0°C ~ 50°C	CB, UL, TUV, CCC, CE, FCC	185 x 150 x 86
	<b>New</b> DRP-R150C	150W	90~264 VAC							6.25A	87%	-10°C~ 70°C	CE, CB, CCC	210 x 85.6 x 133.5

## ACE-R4140AP

400 W ATX Mini Redundant Power Supply



Dimensions (Unit: mm)



## ACE-R4130AP

300 W ATX Mini Redundant Power Supply



Dimensions (Unit: mm)

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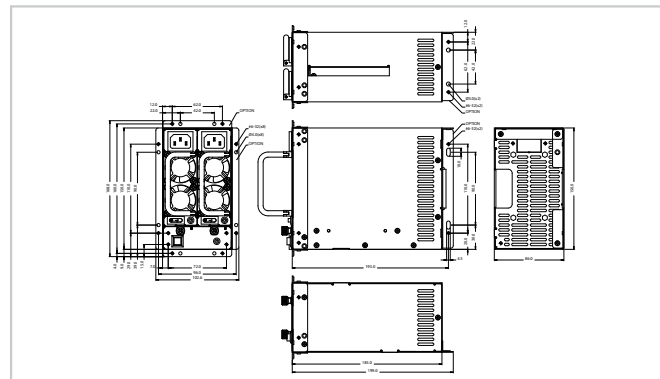
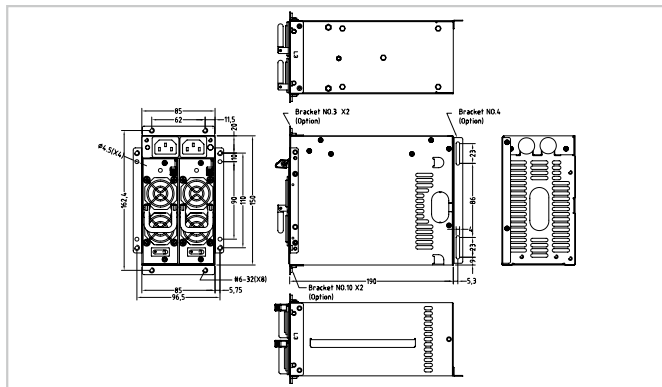
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### Specifications

Input	Voltage	90 ~ 264 VAC Full Range		
	Frequency	47 Hz ~ 63 Hz		
Input Current	8 A (RMS) @ 100 VAC, 4 A (RMS) @ 240 VAC			
Inrush Current	80 A Max for 100 VAC, 120 A Max for 240 VAC			
Output	Voltage	Min.load	Max.load	Ripple & Noise
	+5 V	2 A	25 A	50 mV P-P
	+12 V	2.5 A	30 A	120 mV P-P
	-12 V	0.1 A	0.8 A	120 mV P-P
	+3.3 V	2 A	25 A	50 mV P-P
	+5 Vsb	0.1 A	2 A	50 mV P-P
General Specification	+5 V, +12 V total current not exceed 150 W +3.3 V, +5 V, +12V total current not exceed 440 W			
	Hold up Time	17 ms Min.		
	Efficiency	65% Min.		
	MTBF	100,000 hours on max load at +25°C		
	Temperature	Operating: 0°C ~ 50°C, Storage: -40°C ~ 70°C		
Dimensions	150 x 85 x 190 (mm)			
Output Connector	1 x 20+4-pin ATX, 1 x 4-pin 12V CPU, 8 x HDD/CDROM, 2 x FDD, 2 x SATA, 1 x Buzzer reset, 1 x T.T.L signal, 1 x LED power			

### Specifications

Input	Voltage	90 ~ 264 VAC Full Range		
	Frequency	47 Hz ~ 63 Hz		
	Input Current	6 A (RMS) @110 VAC, 3 A (RMS) @220 VAC		
	Inrush Current	60 A Max for 110 VAC, 80 A Max for 220 VAC		
Output	Voltage	Min. load	Max. load	Ripple & Noise
	+5 V	3 A	25 A	50mV P-P
	+12 V	2 A	16 A	120mV P-P
	-5 V	0 A	0.5 A	150mV P-P
	-12 V	0 A	0.5 A	150mV P-P
	+3.3 V	1 A	18 A	50mV P-P
	+5 Vsb	0.1 A	2 A	60mV P-P
General Specifications	*Total current of +5 V and + 3.3 V not exceed 35 A *Total current of +5 V, +3.3 V and +12 V not exceed 282 W			
	Watt	300 W		
	Hold-up Time	16 ms Min.		
	Efficiency	65% Min.		
	MTBF	160,000 hours		
	Temperature	Operating: 0°C ~ 50°C, Storage: -20°C ~ 80°C		
	Dimensions	185 x 150 x 86 (mm), 7.28 x 5.91 x 3.39 (inch)		
Output Connector	1 x 20+4-pin ATX, 1 x 4-pin 12V CPU, 8 x HDD/CDROM, 2 x FDD, 2 x SATA, 1 x Buzzer reset, 1 x T.T.L signal, 1 x LED power			

### Ordering Information

Part No.	Description
ACE-R4140AP-RS	400W Mini Redundant ATX Power Supply, with PFC
ACE-R4140AP1-RS	400W AC-DC ATX Redundant module, for ACE-R4140AP, with PFC

### Ordering Information

Part No.	Description
ACE-R4130AP-RS	300 W Mini Redundant ATX Power Supply, with PFC
ACE-R4130AP1-RS	300 W AC-DC ATX Redundant module, for ACE-R4130AP, with PFC

# DRP-R150C

150W, single output 24V continuous output power, power sharing, redundancy function and Din-Rail mounting.



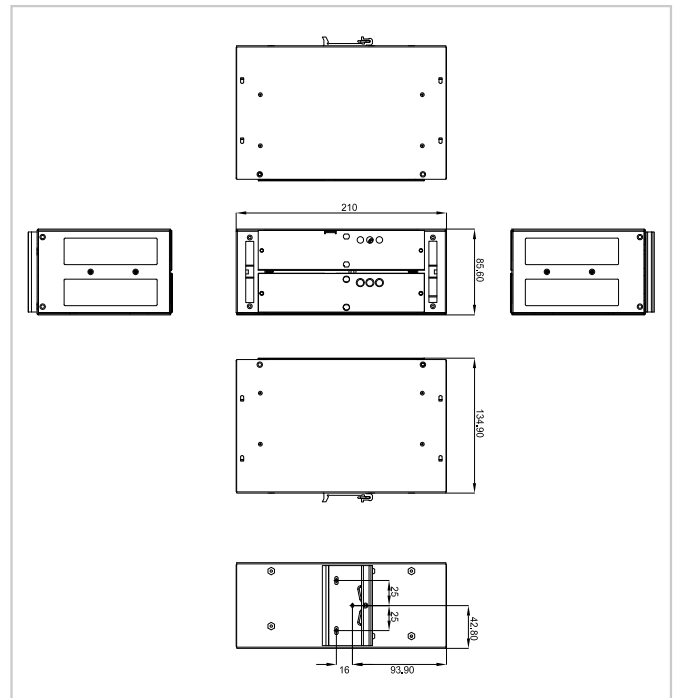
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## Specifications

Input	<b>Voltage</b>	The range of input voltage is from 90VAC to 264VAC
	<b>Frequency</b>	The range of input frequency is from 47Hz to 63Hz.
	<b>Input Current</b>	The input current is 115VAC/4A, 230V/2A at rated load.
	<b>Inrush Current</b>	The maximum inrush current will not exceed 30A at 115VAC input or 60A at 230VAC input, cold start, 25°C.
Output	<b>Load Range</b>	
	<b>output</b>	+24V
	<b>Min. Load</b>	0A
	<b>Max. Load</b>	6.25A (At factory, the +24V is setting to 23.80V to 24.20V at 60% rated load and nominal line.)
	<b>Voltage accuracy</b>	23.52V to 24.48V
	<b>Line regulation</b>	The line regulation is less than + -1% while measuring at rated load and + -10% of input voltage
	<b>Load regulation</b>	The load regulation for +24V is less than + -2%, which is measured by changing the tested output load from 0% to 100% of the rated load, and nominal line.
General Specification	<b>Watt</b>	150W
	<b>Hold up Time</b>	Hold up time is longer than 32ms at 115VAC input, rated load which is measuring from the end of the last charging pulses to when the main output drops down to 95% of output voltage.
	<b>Efficiency</b>	The efficiency is 87% typical by measured at nominal line and rated load
	<b>MTBF</b>	304,592 hours on max load at +25°C
	<b>Power sharing &amp; Redundancy</b>	Power sharing means that the load can be shared the output load in 45-55% connected redundancy means that when one power supply fail, the other power supply will take over. N+1 unit is the idea for redundancy
	<b>Temperature</b>	Operating temperature : -10°C ~ 70°C, Storage : -40°C ~ 80°C,
	<b>Derating</b>	-10°C~50°C full loading; 70°C 70% loading
	<b>Dimensions</b>	210 x 85.6 x 133.5 (mm)

## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
DRP-R150C-R10	150W, single output 24V continuous output power, power sharing, redundancy function and Din-Rail mounting.
DRP-R150C1-R10	150W continuous output redundant power module for DRP-R150C-R10.

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# Adapter Type Selection Guide

**Safety (ITE Standard)** - CB IEC 60950, UL 60950, CSA C 22.2 No. 60950, TUV EN 60950

**Safety (Medical Standard)** - CB IEC 60601, UL 60601, CSA C 22.2 No. 60601, TUV EN 60601

**EMI** - Meets EN 55022, FCC Part 15, CISPR 22.

Meets EN 61000-3-2, EN 61000-3-3 (PFC function)

**EMS** - Meets EN 55024, EN 61000-4-2/ 3/ 4/ 5/ 6/ 8/ 11

\* For detailed specs., please refer to official certification

AC Input											
Product	Model No.	Watt	Input range	Output current range			Plug Type	Efficiency	Operating Temperature	Safety	Dimensions (mm)
			Voltage	+5V	+12 V	+19 V					
	FSP150AHAN1	150W	90-264VAC		12.5A			87%	0°C ~ 40°C	CB / UL TUV / CCC BSMI / CE / FCC	171 x 72 x 40
	FSP120AAB	120W	90-265VAC			6.32A		86%	0°C ~ 40°C	CB / UL / CCC NEMKO / BSMI CE	167 x 65 x 37
	<b>New</b> 63040-010096	96W	90-264VAC		8A			87%	0°C ~ 40°C	CB / UL TUV / CCC BSMI / CE / FCC	106 x 32 x 58
	<b>New</b> 63040-010090	90W	90-264VAC			4.74A		86%	0°C ~ 60°C	CB / UL TUV / CCC BSMI / CE	51 x 129 x 30.9
	FSP084DMBA	84W	90-264VAC		7A			83%	0°C ~ 40°C	CB / UL TUV / CCC BSMI / CE / FCC	134 x 58 x 32
	<b>New</b> 63040-010065	65W	90-264VAC			3.42A		87%	0°C ~ 40°C	CB / UL TUV / CCC BSMI / CE / FCC	46.3 x 108.3 x 30
	<b>New Medical</b> 63040-010060-020	60W	90-264VAC		5V			85%	0°C ~ 60°C	CB / UL TUV / CCC BSMI / CE / FCC	147 x 75 x 49
	<b>New</b> 63040-010060	60W	90 ~ 264 VAC		5V			87%	0°C ~ 40°C	CB / UL / TUV CCC / BSMI CE / FCC	110 x 31 x 62
	FSP040DGAA1	40W	90-264VAC		3.3A			82%	0°C ~ 40°C	CB / UL TUV / CCC BSMI / CE / FCC	110 x 32 x 50
	FSP036RAB	36W	90 ~ 264 VAC		3A			85%	0°C ~ 40°C	CB / UL TUV / CCC BSMI / CE FCC	91.5 x 37.5 x 26
	FSP025DGAA1	25W	90-264VAC	5A				70%	0°C ~ 40°C	CB / UL TUV / CCC BSMI / CE / FCC	110 x 32 x 50

1

Industrial  
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Panel  
Solutions  
Introduction

# FSP150AHAN1

150 W AC/DC Adapter



Plug Type: Power mini-DIN (4P)

**\*\*Meet ErP**



## Specifications

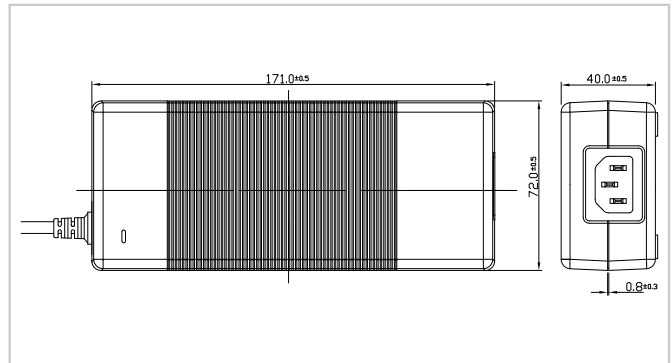
- Input Voltage Range: 90-264 VAC
- Input Frequency: 47-63 Hz
- Output Voltage: 12 V
- Output Current: 12.5 A
- Output Watts: 150 W
- Efficiency: 87%
- Operating Temperature: 0°C ~ 40°C
- Storage Temperature: -20°C ~ 80°C

## Optional Cable



**PN: CB-MD4P4-RS**  
16 cm cable for power mini-DIN connector adapter

## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
63000-FSP150AHAN1808-RS	12V 150W power adapter with DIN 4-pin+LOCK 90~264 VAC input, ErP

# FSP120AAB

120W AC/DC Adapter



Plug Type: Power mini-DIN (4P)

**\*\*Meet ErP**



## Specifications

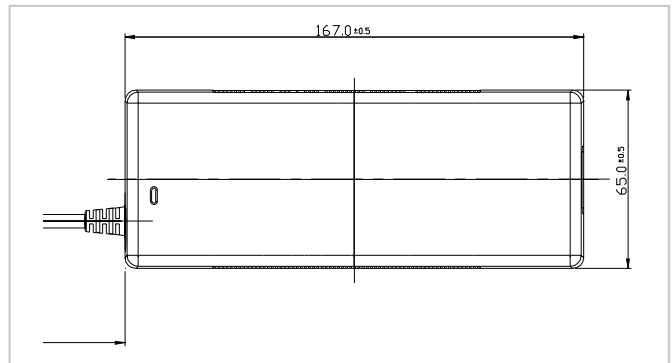
- Input Voltage Range: 90-264 VAC
- Input Frequency: 47-63 Hz
- Output Voltage: 19 V
- Output Current: 6.32 A
- Output Watts: 120 W
- Efficiency: 86%
- Operating Temperature: 0°C ~ 40°C
- Storage Temperature: -40°C ~ 85°C

## Optional Cable



**PN: CB-MD4P4-RS**  
16 cm cable for power mini-DIN connector adapter

## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
63000-FSP120AAB-RS	19 V 120W Power adapter, 90~264 VAC input

# 63040-010096

96W AC/DC Adapter



**New**



Plug Type: øin 2.5 mm / øout 5.5 mm

**\*\*Meet ErP**



## Specifications

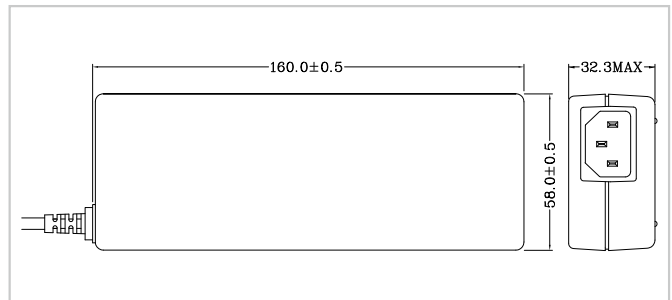
- Input Voltage Range: 90-264 VAC
- Input Frequency: 47-63 Hz
- Output Voltage: 12 V
- Output Current: 8 A
- Output Watts: 96 W
- Efficiency: 87%
- Operating Temperature: 0°C ~ 40°C
- Storage Temperature: -30°C ~ 60°C

## Optional Cable



**PN: CB-MD4P4-RS**  
16 cm cable for power mini-DIN connector adapter

## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
63040-010096-010-RS	12V 96W power adapter with Din 4-pin/lock 90~264 VAC input, ErP

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Industrial Computing Solutions

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Video Capture Solutions

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Power Supply/ Peripherals

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Panel Solutions Introduction

# 63040-010090

90W AC/DC Adapter



**New**



Plug Type: Power mini-DIN (4P)

**\*\*Meet ErP**



## Specifications

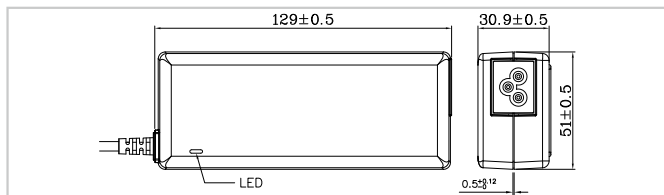
- Input Voltage Range: 90-264 VAC
- Input Frequency: 47-63 Hz
- Output Voltage: 19 V
- Output Current: 4.74 A
- Output Watts: 90 W
- Efficiency: 86%
- Operating Temperature: 0°C ~ 60°C
- Storage Temperature: -30°C ~ 60°C

## Optional Cable



PN: CB-MD4P4-RS  
16 cm cable for power mini-DIN connector adapter

## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
63040-010090-020-RS	19V 90W power adapter with Din 4-pin/lock 90~264 VAC input, ErP

# FSP084DMBA

84W AC/DC Adapter



Plug Type: Power mini-DIN (4P)

**\*\*Meet ErP**



## Specifications

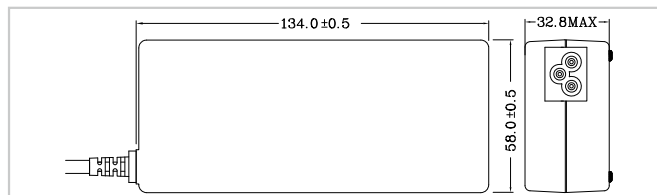
- Input Voltage Range: 90-264 VAC
- Input Frequency: 47-63 Hz
- Output Voltage: 12 V
- Output Current: 7 A
- Output Watts: 84 W
- Efficiency: 83%
- Operating Temperature: 0°C ~ 40°C
- Storage Temperature: -30°C ~ 60°C

## Optional Cable



PN: CB-MD4P4-RS  
16 cm cable for power mini-DIN connector adapter

## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
63000-FSP084DMBA1308-RS	12V 84W power adapter with Din 4-pin/lock 90~264 VAC input, ErP

# 63040-010065

65W AC/DC Adapter



**New**



Plug Type: øin 2.1 mm / øout 5.5 mm

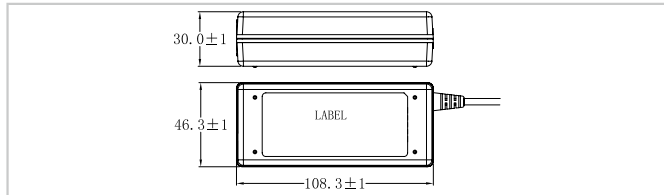
**\*\*Meet ErP**



## Specifications

- Input Voltage Range: 90-264 VAC
- Input Frequency: 47-63 Hz
- Output Voltage: 19 V
- Output Current: 3.42 A
- Output Watts: 65 W
- Efficiency: 87%
- Operating Temperature: 0°C ~ 40°C
- Storage Temperature: -25°C ~ 70°C

## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
63040-010065-010-RS	19V 65W power adapter with Φ2.1/Φ5.5/lock 90~264 VAC input, ErP

# 63040-010060-020

60W AC/DC Adapter



**New**

**Medical**



Plug Type: øin 2.5 mm / øout 5.5 mm

**\*\*Meet ErP**



## Specifications

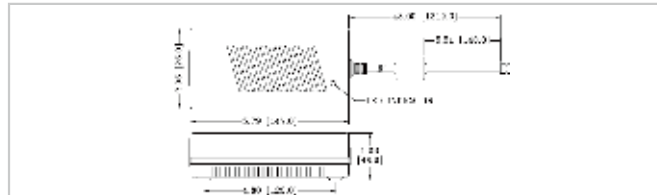
- Input Voltage Range: 90-264 VAC
- Input Frequency: 47-63 Hz
- Output Voltage: 12 V
- Output Current: 5 A
- Output Watts: 60 W
- Efficiency: 85%
- Operating Temperature: 0°C ~ 60°C
- Storage Temperature: -40°C ~ 85°C

## Optional Cable



PN: CB-P1LP4-RS  
20 cm cable for 5.5 x 2.5 DC Plug with screw

## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
63040-010060-020-RS	12V 60W medical power adapter with Φ2.5/Φ5.5 90~264 VAC input, ErP

1 Industrial Computing Solutions

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# 63040-010060

60 W AC/DC Adapter



**New**



Plug Type:  $\phi$ in 2.5 mm /  $\phi$ out 5.5 mm

**\*\*Meet ErP**



## Specifications

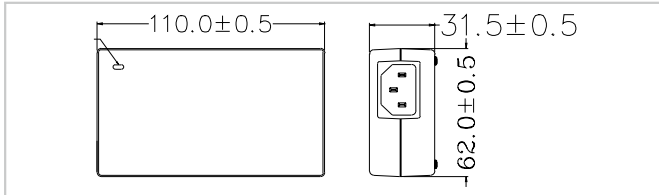
- Input Voltage Range: 90-264 VAC
- Input Frequency: 47-63 Hz
- Output Voltage: 12 V
- Output Current: 5 A
- Output Watts: 60 W
- Efficiency: 87%
- Operating Temperature: 0°C ~ 40°C
- Storage Temperature: -20°C ~ 65°C

## Optional Cable



PN: **CB-P1LP4-RS**  
20 cm cable for 5.5 x 2.5 DC Plug with screw

## Dimensions (Unit: mm)

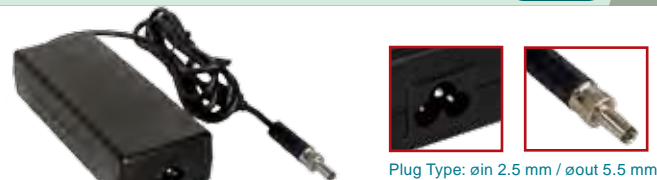


## Ordering Information

Part No.	Description
63040-010060-040-RS	12 V 60W power adapter with lock screw 90-264 VAC input, ErP
63040-010060-030-RS	12V 60W power adapter with none lock 90-264 VAC input, ErP

# FSP036RAB

36W AC/DC Adapter



Plug Type:  $\phi$ in 2.5 mm /  $\phi$ out 5.5 mm

**\*\*Meet ErP**



## Specifications

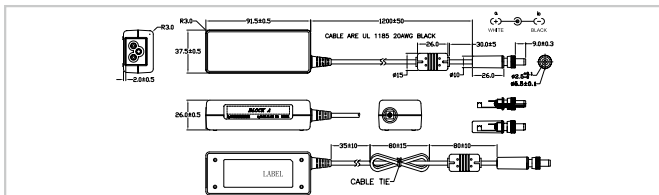
- Input Voltage Range: 90-264 VAC
- Input Frequency: 47-63 Hz
- Output Voltage: 12 V
- Output Current: 3 A
- Output Watts: 36 W
- Efficiency: 84.7%
- Operating Temperature: 0°C ~ 40°C
- Storage Temperature: -20°C ~ 80°C

## Optional Cable



PN: **CB-P1LP4-RS**  
20 cm cable for 5.5 x 2.5 DC Plug with screw

## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
63000-FSP036RAB610-RS	12V 36W Power adapter with lock screw, 90-264VAC input, ErP
63000-FSP036RAB608-RS	12V 36W Power adapter without lock, 90-264VAC input, ErP

# FSP040DGAA1

40W AC/DC Adapter



Plug Type:  $\phi$ in 2.5 mm /  $\phi$ out 5.5 mm

**\*\*Meet ErP**



## Specifications

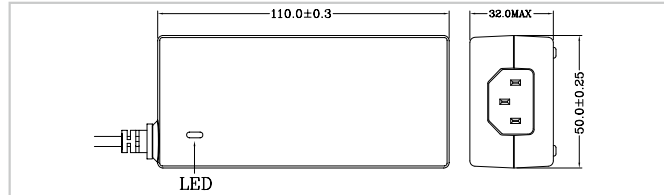
- Input Voltage Range: 90-264 VAC
- Input Frequency: 47-63 Hz
- Output Voltage: 12 V
- Output Current: 3.3 A
- Output Watts: 40 W
- Efficiency: 82%
- Operating Temperature: 0°C ~ 40°C
- Storage Temperature: -20°C ~ 60°C

## Optional Cable



PN: **CB-P1LP4-RS**  
20 cm cable for 5.5 x 2.5 DC Plug with screw

## Dimensions (Unit: mm)

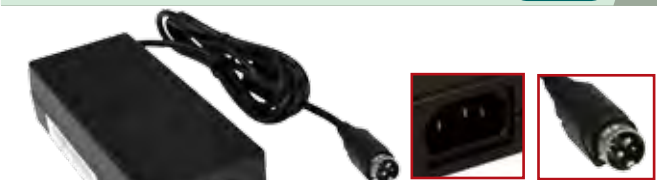


## Ordering Information

Part No.	Description
63000-FSP040DGAA1107-RS	12V 40W power adapter with $\phi$ 2.5/ $\phi$ 5.5/lock 90-264 VAC input, ErP

# FSP025DGAA1

25W AC/DC Adapter



Plug Type: Power mini-DIN (4P)

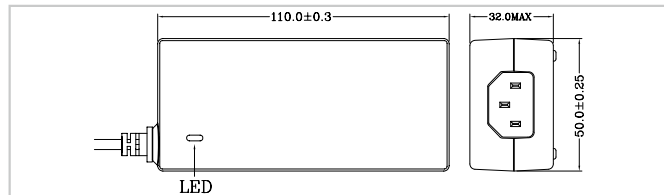
**\*\*Meet ErP**



## Specifications

- Input Voltage Range: 90-264 VAC
- Input Frequency: 47-63 Hz
- Output Voltage: 5 V
- Output Current: 5 A
- Output Watts: 25 W
- Efficiency: 70%
- Operating Temperature: 0°C ~ 40°C
- Storage Temperature: -20°C ~ 60°C

## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
63000-FSP025DGAA1702-RS	5V 25W power adapter with Din 3-pin/lock 90-264 VAC input, ErP

- 1 Industrial Computing Solutions
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- 3 Embedded Computing Solutions
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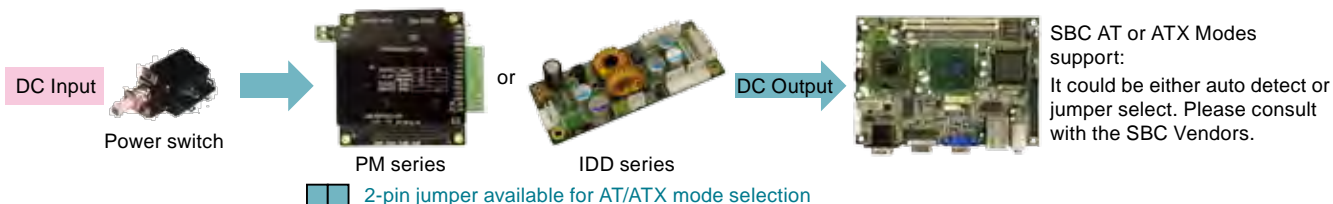
# How to Configure the IDD & PM\_P Series

## AT Mode

1. Power supply without any control signal
2. Power is controlled directly by the power supply's on/off switch.

### Installation

**Step 1.** Set the jumper on the power modules & SBC to AT mode (if available)



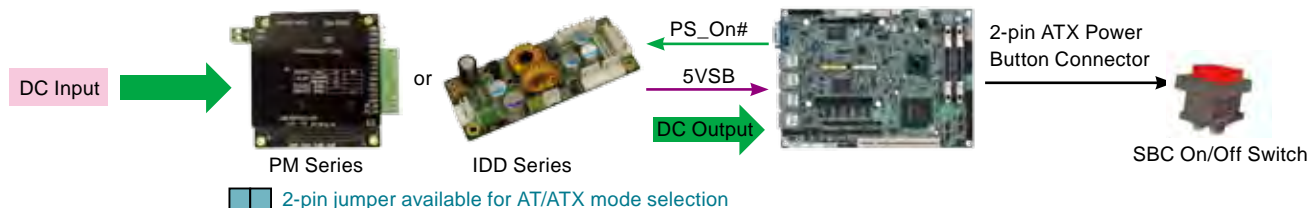
**Step 2.** Connect all input & output power cables    **Step 3.** Wire/Isolate DC input by power switch    **Step 4.** Power up by switch

## ATX Mode (Supports normal Windows® OS power down)

1. Required 5VSB (5V standby power) to SBC.
2. Power supply on/off control by "PS\_On#" signal.
3. PS\_On# is an active low signal that turns on all power rails.

### Installation

**Step 1.** Set the jumper on the power modules & SBC to ATX mode (if available)



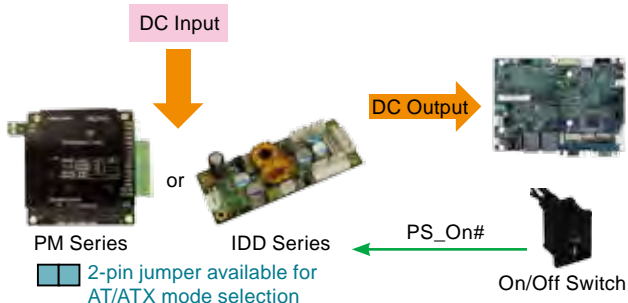
**Step 2.** Wiring 5VSB & PS\_ON# from power module to SBC    **Step 3.** Wiring all input, output power cables    **Step 4.** Power up system by SBC on/off switch

## Simulated AT Mode

1. The 5 Volt standby power is not provided to the SBC.
2. Power supply power is controlled by the "PS\_On#" signal.
3. The power switch is connected to the power supply.

### Installation

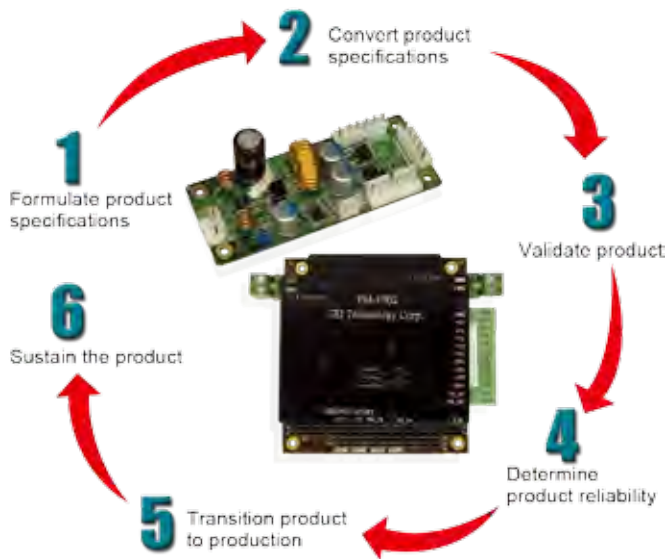
**Step 1.** Set the jumper on the power modules to ATX mode and SBC to AT mode (if available)



**Step 2.** Connect 5 VSB & PS\_ON# from the power module to the SBC.  
**Step 3.** Connect all input and output power cables.  
**Step 4.** Power up the system using the power switch connected to the SBC.

## From Scratch to Sustain - Commitment

A partnership with IEI does not end at product shipment. We're beside you with ongoing product support as your products evolve and change to meet emerging market requirements.

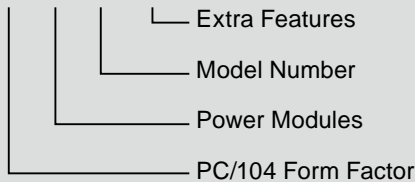


# Product List

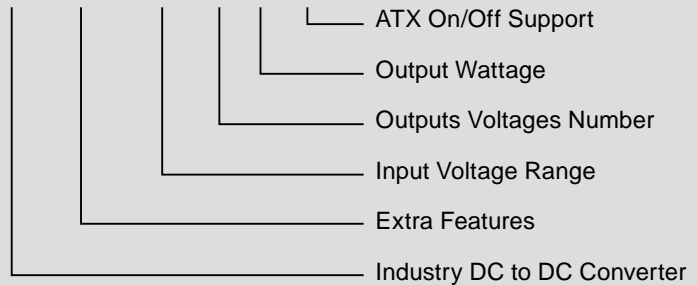
Model No.	Dimensions	Maximum Output Power	Input Voltage	Maximum Output Current							
				12V	5V	3.3V	-12V	5VSB	16V	20V	
IDDV-6304140A	45 mm x 160 mm	140 W	6 ~ 30 V	4 A	10 A	10 A	0.15 A	1.5 A	-	-	
IDDUPS-6364120A	60 mm x 160 mm	120 W	6 ~ 36 V	4 A	10 A	8 A	0.3 A	2 A	-	-	
IDD-9364120A	45 mm x 160 mm	120 W	9 ~ 36 V	4 A	10 A	8 A	0.3 A	2 A	-	-	
IDD-241100	40 mm x 100 mm	100 W	24 V	8.3 A	-	-	-	-	-	-	
IDD-481100	40 mm x 100 mm	100 W	48 V	8.3 A	-	-	-	-	-	-	
IDD-936160	25 mm x 82 mm	60 W	9 ~ 36 V	5 A	-	-	-	-	-	-	
PM-P006UPS	3.775 x 3.55"	65 W	6 ~ 36 V	4 A	10 A	8 A	-	1 A	-	-	
IDD-930160-KIT	42 mm x 103 mm x 31 mm	60 W	9 ~ 30 V	5 A	-	-	-	-	-	-	
IDD-936260A	40 mm x 100 mm	60 W	9 ~ 36 V	3 A	10 A	-	-	0.5 A	-	-	
IDD-12250A	40 mm x 100 mm	50 W + 60 W	12 V	5 A	10 A	-	-	0.5 A	-	-	

### Naming Conventions:

#### PM-P xxx yy



#### IDD xx - 630 4 120 A



### Output Power Calculation

$P$  (Wattage) =  $V$  (Voltage) x  $I$  (Current)

$P_t$  = Total Output Power

$I_1$  = Current of Output Voltage1

$I_n$  = Current of Output Voltagen

$V_1$  = Output Voltage1

$V_n$  = Output Voltagen

$P_t = V_1 \times I_1 + V_2 \times I_2 + \dots + V_n \times I_n$

$P_t$  must be less than max. output power and individual output current must not exceed max. output current.

## Dedicated Engineering Team - Professional

Our dedicated team offers application-specific integrated solutions and will design a customized product that will put you out in front of the competition.

Our solutions include standard/non-standard voltages, isolated/non-isolated, any form factor, power sequencing, battery chargers, electromechanical interference protection, thermal management, remote on/off and I/O interface.



## Advanced Test Equipment – Precision & Reliability



Timing/Noise Analyzer Chroma 6011



Electronic Load Chroma 6312 Series



Power Analyzer Chroma 6632

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Panel Solutions Introduction



# IDDV-6304140A

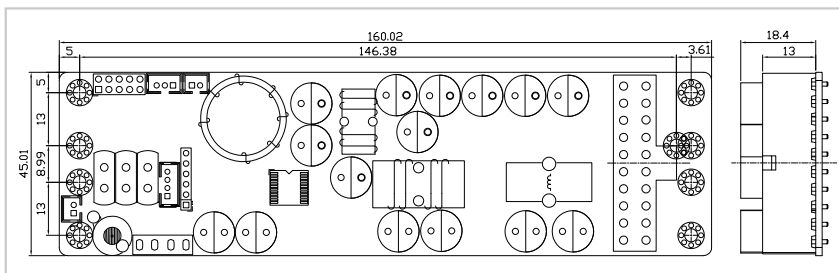
140 W DC/DC Smart ATX Converter Module for Vehicle



**Dedicated ATX Power for Car PC and Battery Powered Applications**

**Designed to provide power and to control power on/off switch of a motherboard based on the ignition status.**

## Dimensions (Unit: mm)

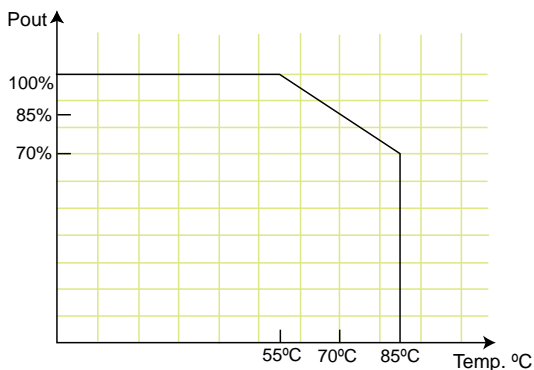


## Features

1. Wide input range: 6-30 VDC
2. Smart system on/off control
3. Six selectable power on/off timing modes
4. Load down protection
5. Over voltage protection
6. Short circuit protection
7. Over current protection
8. Battery voltage monitor
9. Amplifier on-delay control
10. RoHS compliant
11. Compact size
12. Infrared remote off (optional)

## Specifications

- Output (max.): 5 V@10 A, 3.3 V@10 A, 12 V@4 A, -12 V@0.15 A & 5 VSB@1.5 A
- Max. total output: 140 W
- Input: 6 VDC to 30 VDC  
Min. input operating voltage: 5.7 V  
Max. input operating voltage: 30 V
- Deep-discharge shut down voltage: 10.6 V
- Startup voltage: 8 V
- Efficiency: up to 90%
- Dimensions: 45 mm x 160 mm
- Weight: NW: 118 g
- Operating temperature: -20°C ~ 85°C
- Storage temperature: -25°C ~ 90°C



## Pin Assignments

### Input Power Connector

CN15	Batt (+)
CN16	ACC ON
CN17	Batt (-)

### Output Power Connector

J1	Standard 20-pin ATX
----	---------------------

## Wire Harness Selection Guide

### SBC Main Power (J1)



**PN: CB-ATX20PIO-RS**  
20-pin ATX to 20-pin ATX / SATA / HDD cables

### Input Power Connector (CN15, 16, 17)



**PN: CB-BATACC-RS**  
Wire to battery and ACC on

## Packing Information

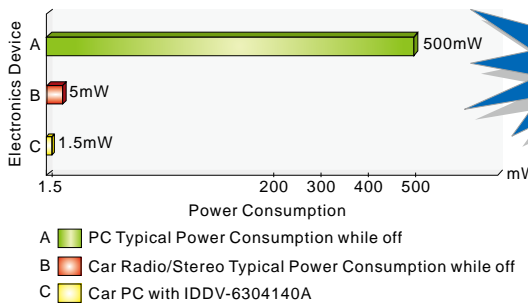
- 1 x IDDV-6304140A
- 1 x QIG
- 1 x Wire cable for PWR/SW and MB/SW (P/N: 32100-153400-RS)
- 1 x Wire cable for LED /AMP (P/N: 32100-153500-RS)

## Ordering Information

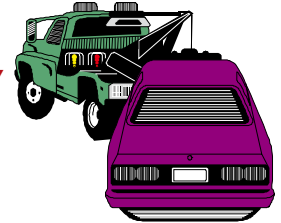
Part No.	Description
IDDV-6304140A-R10	140 W DC/DC 6-30 VDC input, vehicle converter module
CB-ATX20PIO-RS	30 cm, 20-pin ATX to 20-pin ATX / SATA (20 cm) / HDD cables
CB-BATACC-RS	30 cm, wire to battery and ACC on

### ■ PCs Still Consume Power While Off

A typical PC consumes 500mW of power when the system is powered off. The current computer market trend demands more and more standby power.



**Standard ATX Power Supply will Drain the Car Battery!**

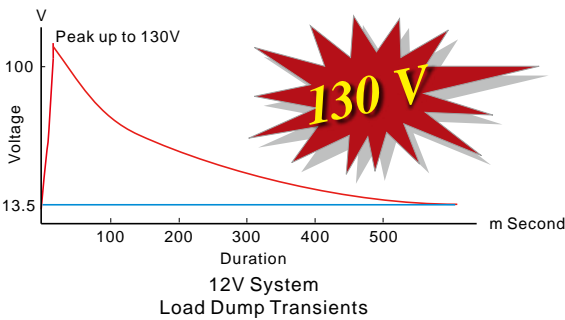


### How the IDDV-6304140A work to keep your battery alive.

- Step1. Ignition=Off**  
The IDDV-6304140A cuts off all the power rails including 5VSB, internal  $\mu$ P power consumption keep less than 1.5mW.
- Step2. Ignition=On (ACC On)**  
The IDDV-6304140A waits for 10 seconds then turns on the 5VSB rail.  
**Auto On** (jumper selectable) - After 1 sec. The  $\mu$ P sends an "ON" signal to the motherboard via the two wires connected to the motherboard's on/off pins.  
**Manual On** (jumper selectable) - Nothing happens until the power button on the IDDV-6304140A is pushed.
- Step3. Ignition=On**  
During driving: acts like a regular PC, turns on/off anytime by pushing the on/off button.
- Step4. Ignition=Soft Off.**  
The IDDV-6304140A waits for "10~40" seconds (jumper selectable) and then  $\mu$ P sends a signal to turn off the motherboard. The computer should turn off gracefully during the shutdown procedure. During this period, normal power will be available for the system to perform normal shutdown.
- Step5. Ignition=Hard Off.**  
5VSB is still available for 0 seconds, 45 seconds, 1 hour, or never (jumper selectable) before being cut off by  $\mu$ P. At this stage, the system will keep minimum power consumption so that the system won't drain the car battery.

### ■ 12V Battery Vehicle Load Dump Transients

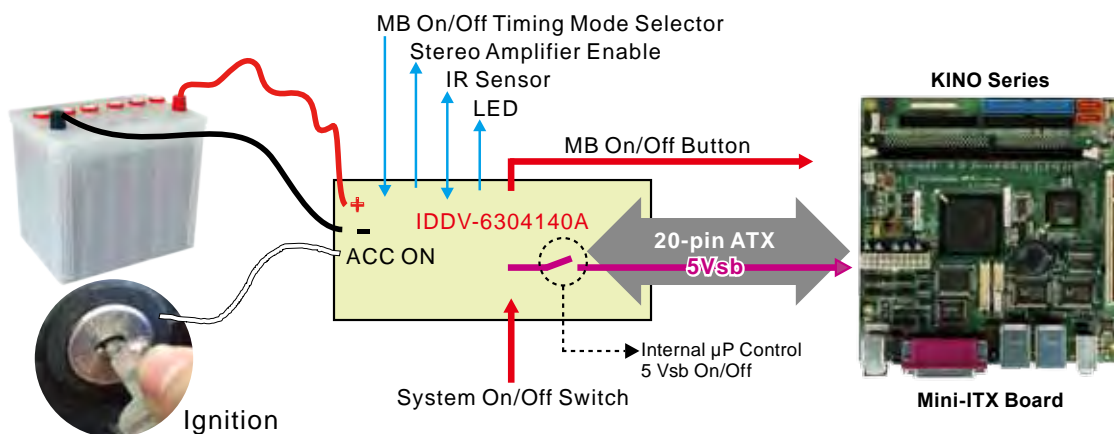
'Load dump' transients occur when a battery is disconnected from the charging system during charge. The alternator, with a finite response time of 40ms to 400ms, generates power with nowhere to go. This damages electronic devices.



**Load dump transients typically reach peak voltages of 130 volts in 12 volt systems with relatively slow rise times.**

EMI sprays and RFI sparking is everywhere. Electrical transients run zapping embedded electronics. Electronics located in a vehicle must withstand 600V transients and "load dump" situations.

### ■ IDDV-6304140A Wiring Diagram



- 1 Industrial Computing Solutions
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# IDDUPS-6364120A

120 W DC Converter Module, with UPS



• **BAT-LI-2S2P3000**  
Smart Battery, Lithium Ion,  
2S2P, 3000mAh

• **BAT-LI-2S2P3000**  
Smart Battery, Lithium Ion,  
2S2P, 3000mAh

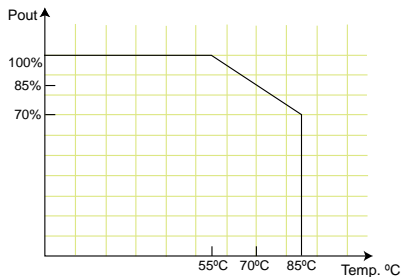
• **IDDUPS-6364120A**

## Features

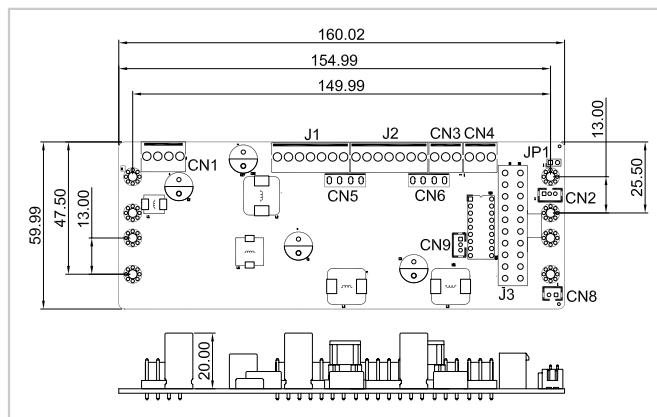
1. Load down protection
2. Over voltage protection
3. Short circuit protection
4. Over current protection
5. Smart battery charger for Lithium Ion
6. I/O interface: SMBus/I2C & RS-232
7. Support up to two battery packs
8. AT/ATX modes
9. Utility program: pull data out through RS-232 to system

## Specifications

- Output: Voltage (max load)  
» **IDDUPS-6364120A:**  
5 V@10 A, 12 V@4 A, -12 V@0.3 A, 3.3 V@8 A & 5 VSB@2 A
- Max. total output:  
IDDUPS-6364120A: 120 W
- Input: 6 VDC to 36 VDC
- Battery charge voltage: 12 V ~ 36 V
- Efficiency: up to 90%
- Dimensions: 60 mm x 160 mm
- Weight (NW):  
IDDUPS-6364120A: 98 g
- Operating temperature: -20°C ~ 85°C (without smart battery)  
Operating temperature: -10°C ~ 60°C (with smart battery)
- Storage temperature: -25°C ~ 90°C



## Dimensions (Unit: mm)



## Packing Information

1 x IDDUPS-6364120A	
1 x DB-9 pin connector cable (32100-157200-RS)	
1 x CD utility software	1 x QIG

## Ordering Information

Part No.	Description
IDDUPS-6364120A-R12	120 W ATX DC/DC 6-36 VDC input, 12 V, 5 V, 3.3 V, -12 V and 5 VSB power module with UPS
BAT-LI-2S2P3000-R10	Smart Battery, Lithium Ion, 2S2P, 3000 mAh
CB-5PSBC-RS	20 cm cable to SBC power input
CB-JST3PSW-RS	30 cm cable on/off switch
CB-JST3P001-RS	30 cm 5 VSB, PS_ON wire to SBC
CB-3PSATA-RS	10 cm cable for SATA power
CB-3PIDE-RS	10 cm cable for IDE HDD power
CB-P1LP4-RS	20 cm cable for FSP0601AD101C 60 W/ UP0451E12P 45 W/ UP0251E12PL 25 W AC-DC adapter
CB-MD4P4-RS	16 cm cable for 63000-FSP120AAB-RS 120 W AC-DC adapter
CB-NOLP4-RS	20 cm cable for terminal block DC input
CB-ATX20P-RS	30 cm 20-pin ATX to 20-pin ATX cable

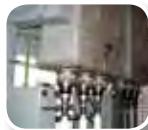
## Applications



Battery backup system



Portable equipment



Power sensitive equipment

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

4 ORing Network Communication

5 Power Supply/ Peripherals

6 Panel Solutions Introduction

## High Energy Density, Light Weight and Compact DC/DC UPS & Power Module

Protect your precious equipment from damage. Reduce the risk of losing valuable data.

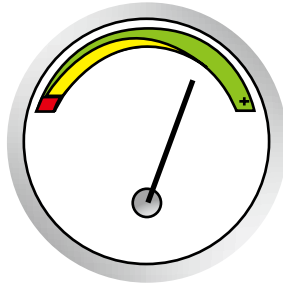
An uninterruptible power supply provides emergency backup power when the main power is lost.

### Benefit:

- Provides power for a certain amount of time after a power failure has occurred.
- Provides stable power to equipment during line sags and spikes.
- Absorbs power surges & transients.
- Smooths out noisy power sources.

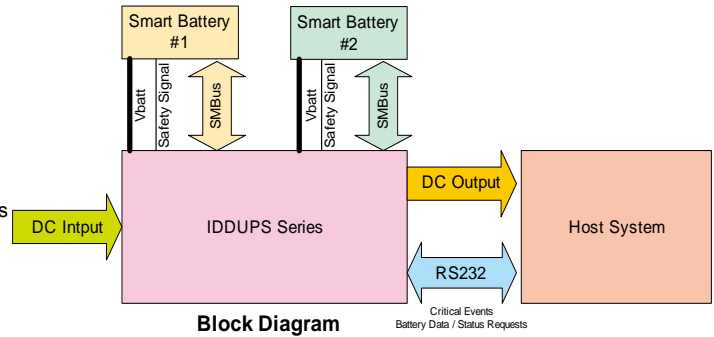
The utility software displays the following information:

- Current power source.
- Battery status.
- Charging status.
- Percentage remaining



Battery Capacity Status

## Level 2 Smart Battery Charger & Power Modules



## Battery Pack: Part # BAT-LI-2S2P3000



Battery Type	Lithium Ion			
Pout (W)	100	80	60	40
Time (min)	8	14	18	27
Dimensions	148 x 89 x 20 mm			
Capacity	3000 mAH			

## Pin Assignments

### Input Power Connector

CN1	Pin 1	Pin 2	Pin 3	Pin 4
	VIN	VIN	GND	GND

### ATX Mode Connector

CN2	Pin 1	Pin 2	Pin 3
	5 VSB	GND	PS_ON

### Output Power Connector

CN3 CN4	Pin 1	Pin 2	Pin 3
	+5 V	GND	+12 V

### Battery Connector

J1 J2	Pin1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
	BAT+	BAT+	Clock	Data	Temp	GND	GND

### For IDDUPS-6364120A

J3	Standard 20-pin ATX
----	---------------------

## Wire Harness Selection Guide

### DC Input



**Options 1.**  
**PN: CB-P1LP4-RS**  
 Cable for FSP0601AD101C 60 W/ UP0451E12P 45 W/UP0251E12PL 25 W AC-DC adapter



**Options 2.**  
**PN: CB-MD4P4-RS**  
 Cable for 63000-FSP120AAB-RS 120 W AC-DC adapter



**Options 3.**  
**PN: CB-NOLP4-RS**  
 Cable for terminal block

### SBC Main Power



**Options 1.**  
**PN: CB-ATX20P-RS**  
 20-pin ATX to 20-pin ATX cable

### I/O Power



**Options 1.**  
**PN: CB-3PSATA-RS**  
 Cable for SATA



**Options 2.**  
**PN: CB-3PIDE-RS**  
 Cable for IDE HDD or any STD 4-pin I/O devices

### Power On/Off



**Options 1.**  
**PN: CB-JST3PSW-RS**  
 Cable with on/off switch



**Options 2.**  
**PN: CB-JST3P001-RS**  
 Cable to SBC (5 VSB & PS\_ON)

1

Industrial Computing Solutions

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Video Capture Solutions

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Embedded Computing Solutions

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Power Supply/ Peripherals

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Panel Solutions Introduction

# IDD-9364120A

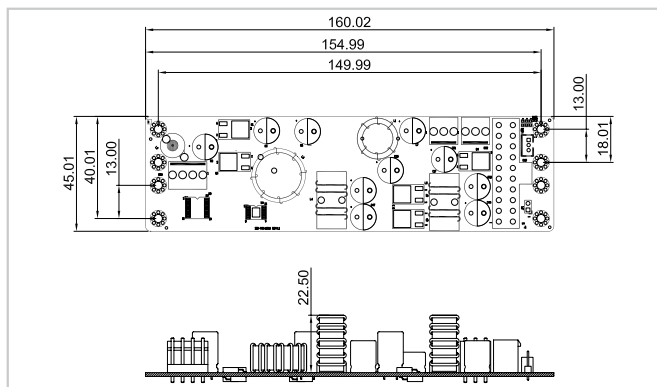
120 W DC/DC Converter Module



## Features

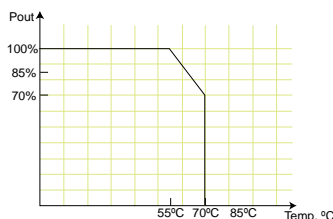
1. Wide input range: 9-36 VDC
2. AT or ATX mode on/off
3. Output voltage protection
4. Up to 90% efficiency
5. RoHS compliant
6. Compact size

## Dimensions (Unit: mm)



## Specifications

- Output (max.): 12 V@4 A, 5 V@10 A, 3.3 V@8 A, -12 V@0.3 A & 5 VSB@2 A  
Max. total output: 120 W
- Input: 9 VDC to 36 VDC
- Performance characteristics  
Noise & ripple: <240 mV  
Line regulation: <50 mV  
Load regulation: <100 mV  
Efficiency: Up to 90%
- Dimensions: 45 mm x 160 mm
- Weight: NW: 104 g
- Operating temperature: -20°C ~ 70°C
- Storage temperature: -25°C ~ 75°C



## Packing Information

1 x IDD-9364120A

1 x QIG

## Ordering Information

Part No.	Description
IDD-9364120A-R11	120 W DC/DC 9-36 V input, 12 V, 5 V, 3.3 V, -12 V & 5 VSB output
CB-JST3PSW-RS	30 cm cable on/off switch
CB-JST3P001-RS	30 cm 5 VSB, PS_ON wire to SBC
CB-3PSATA-RS	10 cm cable for SATA power
CB-3PIDE-RS	10 cm cable for IDE HDD power
CB-P1LP4-RS	20 cm cable for FSP0601AD101C 60 W/ UP0451E12P 45 W/ UP0251E12PL 25 W AC-DC adapter
CB-MD4P4-RS	16 cm cable for 63000-FSP120AAB-RS 120 W AC-DC adapter
CB-NOLP4-RS	20 cm cable for terminal block DC input
CB-ATX20P-RS	30 cm 20-pin ATX to 20-pin ATX cable

## Pin Assignments

### Input Power Connector

CN4	Pin 1	Pin 2	Pin 3	Pin 4
	VIN	VIN	GND	GND

### Output Power Connector

CN1 CN2	Pin 1	Pin 2	Pin 3
	+5 V	GND	+12 V
J1	Standard 2-pins ATX		

### ATX Mode Connector

CN3	Pin 1	Pin 2	Pin 3
	5 VSB	GND	PS_ON

## Wire Harness Selection Guide

### DC Input (CN4)



- Options 1.**  
**PN: CB-P1LP4-RS**  
 Cable for FSP0601AD101C 60 W/ UP0451E12P 45 W/UP0251E12PL 25W AC-DC adapter



- Options 2.**  
**PN: CB-MD4P4-RS**  
 Cable for 63000-FSP120AAB-RS 120 W AC-DC adapter



- Options 3.**  
**PN: CB-NOLP4-RS**  
 Cable for terminal block

### SBC Main Power (J1)



- Options 1.**  
**PN: CB-ATX20P-RS**  
 20-pin ATX to 20-pin ATX cable

### I/O Power (CN1 & CN2)



- Options 1.**  
**PN: CB-3PSATA-RS**  
 Cable for SATA



- Options 2.**  
**PN: CB-3PIDE-RS**  
 Cable for IDE HDD or any STD 4-pin I/O devices

### Power On/Off (CN3)



- Options 1.**  
**PN: CB-JST3PSW-RS**  
 Cable with on/off switch



- Options 2.**  
**PN: CB-JST3P001-RS**  
 Cable to SBC (5 VSB & PS\_ON)

# IDD-241100/IDD-481100

100 W DC/DC Converter Module

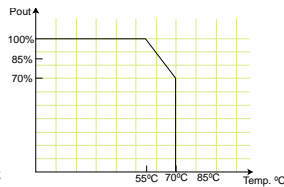


## Features

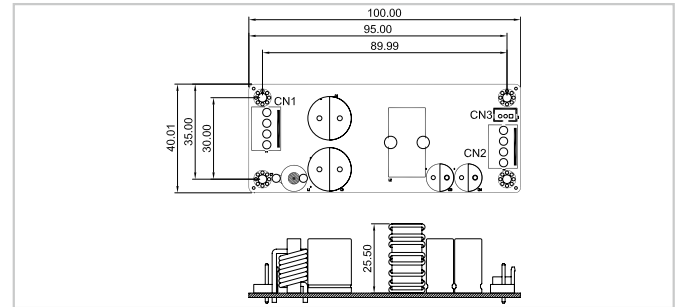
1. 100W total power
2. AT mode on/off
3. Up to 90% efficiency
4. RoHS compliant
5. Compact size

## Specifications

- Output (max.): 12 V@8.33 A
- Max. total output: 100 W
- Input: 24 VDC for IDD-241100, 48 VDC for IDD-481100
- Performance characteristics
- Noise & ripple: <240 mV
- Load regulation: <240 mV
- Efficiency: Up to 90%
- Dimensions: 40 mm x 100 mm
- Weight: NW: 60 g
- Operating temperature: -20°C ~ 70°C



## Dimensions (Unit: mm)



## Packing Information

1 x IDD-241100/IDD-481100      1 x QIG

## Ordering Information

Part No.	Description
IDD-241100-R10	100 W DC/DC 24 V input, 12 V output with 100W total power.
IDD-481100-R10	100 W DC/DC 48 V input, 12 V output with 100W total power.
CB-JST3PSW-RS	30 cm cable on/off switch
CB-NOLP4-RS	20 cm cable for terminal block DC input

## Wire Harness Selection Guide

### DC Input (CN1)

Options 3.

PN: CB-NOLP4-RS

Cable for terminal block

### Power On/off (CN1)

Options 1.

PN: CB-JST3PSW-RS

Cable with on/off switch



## Pin Assignments

### Input Power Connector

CN1	Pin 1	Pin 2	Pin 3	Pin 4
	VIN	VIN	GND	GND

### Output Power Connector

CN2	Pin 1	Pin 2	Pin 3	Pin 4
	+12 V	+12V	GND	GND

### Power on/off, LED Connector

CN3	Pin 1	Pin 2	Pin 3
	SHDN# (Shut down output power function, short Pin1 & Pin2)	GND	LEDA (Disable LED function, short Pin2 & Pin3)

# IDD-936160

60 W DC/DC Converter Module



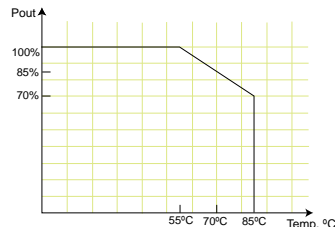
IDD-936160 60W DC/DC Converter Module is a high performance buck-boost switching regulator power module. The constant frequency current mode architecture allows a phaselockable frequency of up to 400kHz. With a wide 9V to 36V input and 12V output and seamless transfers between operating modes, the IDD-936160 is ideal for embedded systems with limited space.

## Features

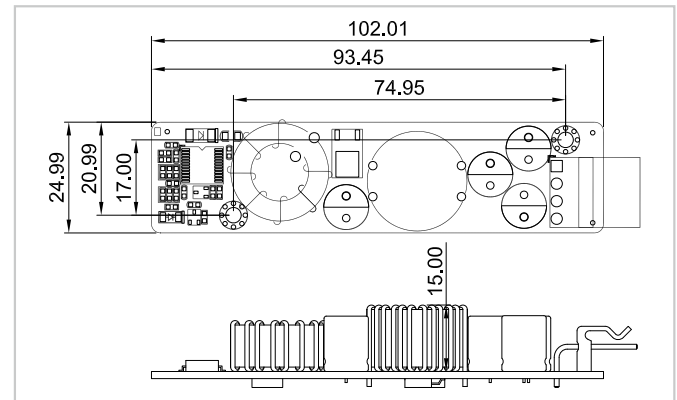
1. Wide input range: 9-36 VDC
2. 12 VDC output up to 5 Amp
3. Compact size
4. Efficiency up to 95%
5. RoHS compliant

## Specifications

- Output (max.): 12 V@5 A
- Max. total output: 60 W
- Input: 9 VDC to 36 VDC
- Performance characteristics
- Noise & ripple: <300 mV
- Line regulation: <300 mV
- Load regulation: <85 mV
- Efficiency up to 95%
- Dimensions: 82 mm x 25 mm
- Weight: NW: 28 g
- Operating temperature: -40°C ~ 85°C



## Dimensions (Unit: mm)



## Pin Assignments

### Input/Output Connector

VOUT1	Pin1	Pin2	Pin3
	+12 V Output	GND	Vin



P/N: 32102-015700-100-RS

## Packing Information

1 x IDD-936160      1 x QIG  
1 x 300 mm wire cable (P/N: 32102-015700-100-RS)

## Ordering Information

Part No.	Description
IDD-936160-R20	60 W DC/DC 9-36 V input, 12 V output

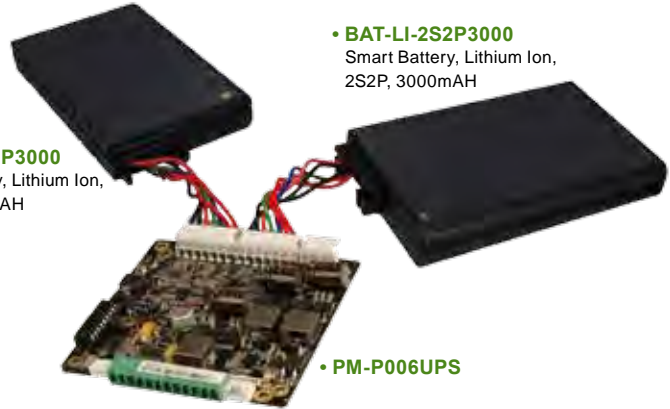
- 1 Industrial Computing Solutions
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- 6 Panel Solutions Introduction

# PM-P006UPS

65 W DC/DC Converter Module, with UPS



• **BAT-LI-2S2P3000**  
Smart Battery, Lithium Ion,  
2S2P, 3000mAH



• **BAT-LI-2S2P3000**  
Smart Battery, Lithium Ion,  
2S2P, 3000mAH

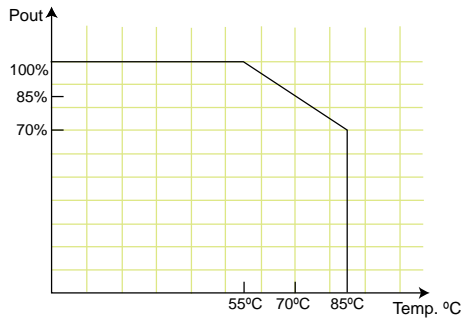
• **PM-P006UPS**

## Features

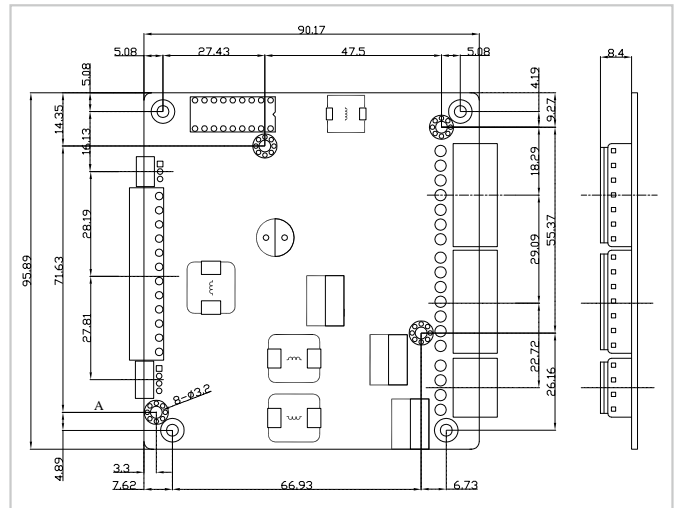
1. Load down protection
2. Over voltage protection
3. Short circuit protection
4. Over current protection
5. Smart battery charger for Lithium Ion
6. I/O interface: SMBus/I2C & RS-232
7. Support up to two battery packs
8. AT/ATX modes
9. Utility program: pull data out through RS-232 to a system

## Specifications

- Output (max.): 12 V@4 A, 5 V@10 A, 3.3 V@8 A, 5 VSB@1 A, & -12 V @0.1 A  
Max. total output: 65 W
- Input: 6 VDC to 36 VDC
- Battery charge voltage: 12 V ~ 36 V
- Efficiency: up to 90%
- Dimensions: 90 mm x 96 mm
- Weight: NW: 178 g
- Operating temperature: -20°C ~ 85°C (without smart battery)  
Operating temperature: -10°C ~ 60°C (w/With smart battery)
- Storage temperature: -35°C ~ 95°C



## Dimensions (Unit: mm)



## Packing Information

- 1 x PM-P006UPS
- 1 x QIG
- 1 x Utility CD
- 1 x DB-9 pin connector cable (32100-157200-RS)

## Ordering Information

Part No.	Description
PM-P006UPS-R10	65 W ATX DC/DC 6-36 VDC input, 12 V, 5 V, 3.3 V, -12 V and 5 VSB PC/104 power module with UPS
BAT-LI-2S2P3000-R10	Smart Battery, Lithium Ion, 2S2P, 3000 mAH
CB-JST3PSW001-RS	30 cm power on/off switch cable
CB-P1LP4-RS	20 cm cable for FSP0601AD101C 60 W/ UP0451E12P 45 W/ UP0251E12PL 25 W AC-DC adapter
CB-MD4P4-RS	16 cm cable for 63000-FSP120AAB-RS 120 W AC-DC adapter
CB-NOLP4-RS	20 cm cable for terminal block DC input

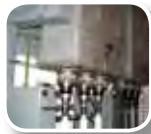
## Applications



Battery backup system



Portable equipment



Power sensitive equipment

1

Industrial Computing Solutions

2

Video Capture Solutions

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Embedded Computing Solutions

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Power Supply/ Peripherals

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Panel Solutions Introduction

## ■ High Energy Density, Light Weight and Compact DC/DC UPS & Power Module

Protect your precious equipment from damage. Reduce the risk of losing valuable data.

**An uninterruptible power supply provides emergency backup power when the main power is lost.**

### Benefits:

- Provides power for a certain amount of time after a power failure has occurred.
- Provides stable power to equipment during line sags and spikes.
- Absorbs power surges and transients.
- Smooths out noisy power sources.

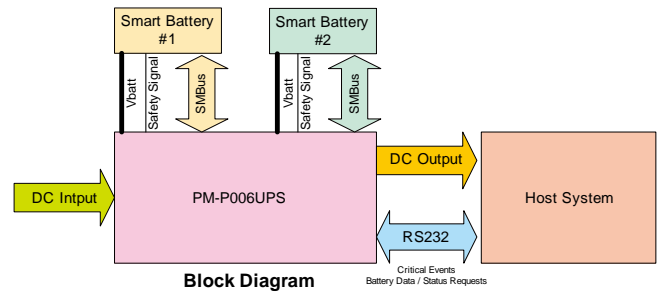
**The utility software displays the following information:**

- Current power source
- Battery status
- Charging status
- Remaining battery percentage



Battery Capacity Status

## ■ Level 2 Smart Battery Charger & Power Modules



Block Diagram



Battery Monitoring Utility



Battery Monitoring Connection Cable (PN: 32100-157200-RS)

## ■ Battery Pack (P/N: BAT-LI-2S2P3000)



Battery Type	Lithium Ion			
Pout (W)	100	80	60	40
Time (min)	8	14	18	27
Dimensions	148 x 89 x 20 mm			
Capacity	3000 mAH			

## ■ Pin Assignments

### Input Power Connector

CN1	Pin 1	Pin 2	Pin 3	Pin 4
	VIN	VIN	Gnd	Gnd

### I/O Interface RS-232 Connector

JP2	Pin 1	Pin 2	Pin 3
	Gnd	TX	RX

### Output Power Connector

CN7	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9	Pin 10	Pin 11	Pin 12
	N12V	Gnd	12 V	Gnd	3 V	3 V	Gnd	5 V	5 V	Gnd	5 VSB	Gnd

### ATX Mode Connector

CN2	Pin 1	Pin 2	Pin 3	Pin 4
	PWROK	5 VSB	Gnd	PS_ON

### Battery Connector

J1 J2	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
	BAT+	BAT+	Clock	Data	Temp	Gnd	Gnd

## ■ Wire Harness Selection Guide

### DC Input



**Options 1.**  
**PN: CB-P1LP4-RS**  
 Cable for FSP0601AD101C 60 W / UP0451E12P 45 W/UP0251E12PL 25 W AC-DC adapter



**Options 2.**  
**PN: CB-MD4P4-RS**  
 Cable for 63000-FSP120AAB-RS 120 W AC-DC adapter



**Options 3.**  
**PN: CB-NOLP4-RS**  
 Cable for terminal block

### Power On/Off



**Options 1.**  
**PN: CB-JST3PSW001-RS**  
 Cable to SBC(power ok & 5 VSB)  
 Pin1= Power ok  
 Pin2= 5 VSB  
 Pin3, 4= Connector switch

1

Industrial Computing Solutions

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Video Capture Solutions

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Panel Solutions Introduction



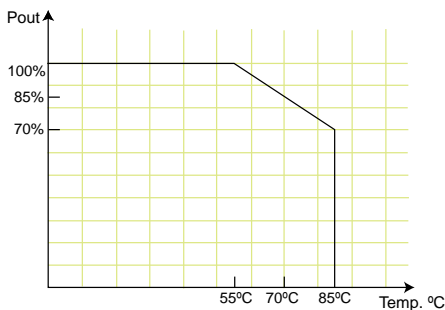
# IDD-930160-KIT

60 W DC/DC Converter Module for AFOLUX Panel PC and Monitor

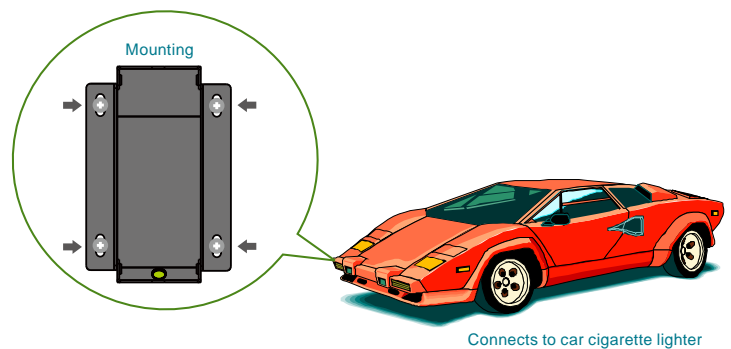


## Specifications

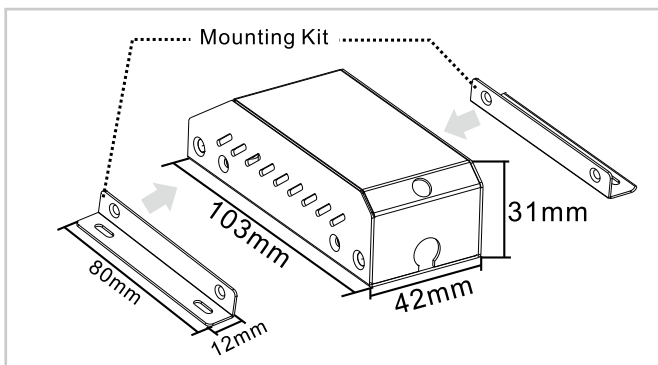
- Input voltage: 9-30 VDC
- Input current: Max. 8.2 A at 9 VDC
- Output: 12 V@5 A
- Max. total output: 60W
- Performance characteristics:  
Noise and ripple: <120 mV  
Line regulation: <2.5%  
Load regulation: <2.5%
- Transient toggle rate: 250 Hz (50% duty ratio)
- Transient current step:  
From 0% to 50% and 50% to 100% of max current
- Efficiency: typ. 95% (Vin=12 V, 80% of full load)
- Dimensions: 42 mm x 103 mm x 31 mm
- Mounting kit: 12 mm x 80 mm
- Cable length: 180 cm
- Operating temperature: -10°C ~ 55°C
- Load down protection



## Typical Applications



## Dimensions (Unit: mm)



## Packing Information

- 1 x IDD-930160-KIT-R20
- 1 x Mounting kit
- 1 x Screw kit
- 1 x Anti-slip strip
- 1 x Utility CD

## Ordering Information

Part No.	Description
IDD-930160-KIT-R20	60 W DC/DC 9-30 VDC input vehicle power adapter

1 Industrial Computing Solutions

2 Video Capture Solutions

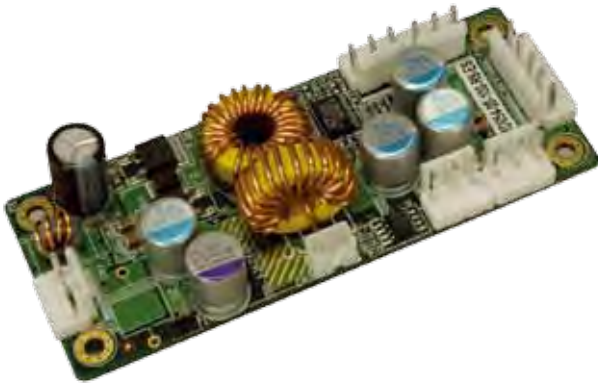
3 Embedded Computing Solutions

4 ORing Network Communication

5 Power Supply/ Peripherals

6 Panel Solutions Introduction

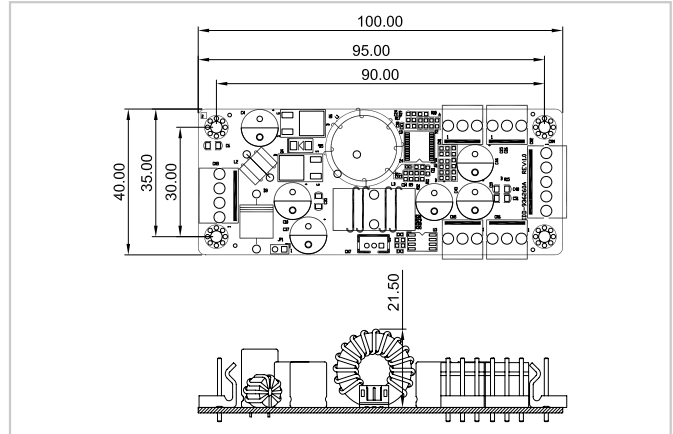
# IDD-936260A 60 W DC/DC Converter Module



## Features

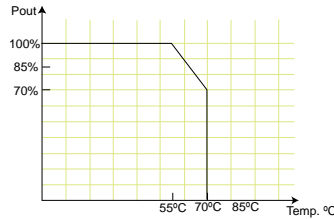
- 1. Wide input range: 9-36 VDC
- 2. AT or ATX mode on/off
- 3. Up to 90% efficiency
- 4. RoHS compliant
- 5. Compact size

## Dimensions (Unit: mm)



## Specifications

- Output (max.): 12 V@3 A, 5 V@10 A & 5 VSB@0.5 A  
Max. total output: 60 W
- Input: 9 VDC to 36 VDC
- Performance characteristics  
Noise & ripple: <240 mV  
Line regulation: <50 mV  
Load regulation: <100 mV  
Efficiency: Up to 90%
- Dimensions: 40 mm x 100 mm
- Weight: NW: 58 g
- Operating temperature: -20°C ~ 70°C



## Pin Assignments

### Input Power Connector

CN3	Pin 1	Pin 2	Pin 3	Pin 4
	VIN	VIN	GND	GND

### Output Power Connector

CN4	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
	+5 V	+5 V	GND	GND	+12 V

CN1 CN2 CN5 CN6	Pin 1	Pin 2	Pin 3
	+5 V	GND	+12 V

### ATX Mode Connector

CN7	Pin 1	Pin 2	Pin 3
	5 VSB	GND	PS_ON

## Wire Harness Selection Guide

### DC Input (CN3)

#### Options 1.

**PN: CB-P1LP4-RS**  
Cable for FSP0601AD101C 60 W/  
UP0451E12P 45 W/UP0251E12PL  
25 W AC-DC adapter

#### Options 2.

**PN: CB-MD4P4-RS**  
Cable for 63000-FSP120AAB-RS  
120 W AC-DC adapter

#### Options 3.

**PN: CB-NOLP4-RS**  
Cable for terminal block

### I/O Power (CN1, CN2, CN5 & CN6)

#### Options 1.

**PN: CB-3PSATA-RS**  
Cable for SATA

#### Options 2.

**PN: CB-3PIDE-RS**  
Cable for IDE HDD or any STD 4  
pins I/O devices

### SBC Main Power (CN4)

#### Options 1.

**PN: CB-5PSBC-RS**

5-pin connector to DC/DC power modules CN4  
Std 4-pin 12 V, 5 V I/O connector for WAFER, NOVA, Enano series SBC or I/O devices  
12 V only connector for NANO series SBC  
Cable for SATA HDD

### Power On/Off (CN7)

#### Options 1.

**PN: CB-JST3PSW-RS**  
Cable with on/off switch

#### Options 2.

**PN: CB-JST3P001-RS**  
Cable to SBC (5 VSB & PS\_ON)

## Packing Information

1 x IDD-936260A

1 x QIG

## Ordering Information

Part No.	Description
IDD-936260A-R11	60 W DC/DC 9-36 V input, 12 V, 5 V & 5 VSB output
CB-5PSBC-RS	20 cm cable to SBC power input
CB-JST3PSW-RS	30 cm cable oN/off switch
CB-JST3P001-RS	30 cm 5 VSB, PS_ON wire to SBC
CB-3PSATA-RS	10 cm cable for SATA power
CB-3PIDE-RS	10 cm cable for IDE HDD power
CB-P1LP4-RS	20 cm cable for FSP0601AD101C 60 W/ UP0451E12P 45 W/ UP0251E12PL 25 W AC-DC adapter
CB-MD4P4-RS	16 cm cable for 63000-FSP120AAB-RS 120 W AC-DC adapter
CB-NOLP4-RS	20 cm cable for terminal block DC input

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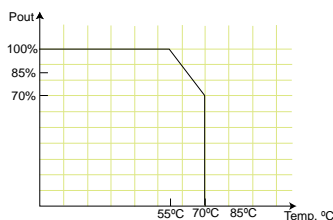
# IDD-12250A

50 W+60 W DC/DC Converter Module



## Specifications

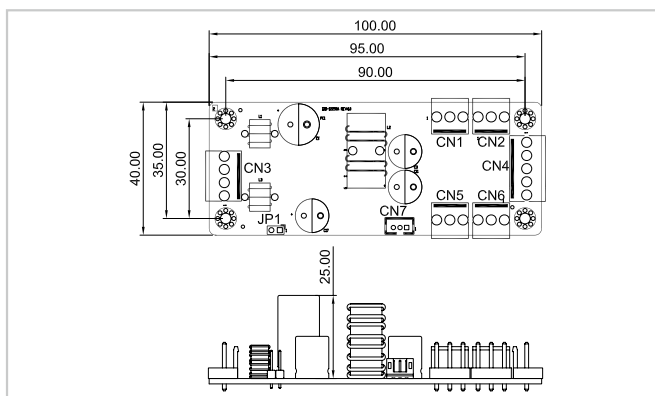
- Output (max.): 12 V@5 A (pass thru.), 5 V@10 A & 5 VSB@0.5 A  
Max. total output: 50 W plus 60 W (12 V pass through)
- Input: 12 VDC
- Performance characteristics  
Noise & ripple: <25 mV  
Load regulation: <120 mV  
Efficiency: Up to 90%
- Dimensions: 40 mm x 100 mm
- Weight: NW: 46 g
- Operating temperature: 0°C ~ 70°C



## Features

1. 50 W + 60 W (12 V pass thru.) total power 110 W
2. AT or ATX mode on/off
3. Up to 90% efficiency
4. RoHS compliant
5. Compact size

## Dimensions (Unit: mm)



## Packing Information

1 x IDD-12250A

1 x QIG

## Ordering Information

Part No.	Description
IDD-12250A-R10	50 W+60 W DC/DC 12 V input, 12 V, 5 V & 5 VSB output
CB-5PSBC-RS	20 cm cable to SBC power input
CB-JST3PSW-RS	30 cm cable on/off switch
CB-JST3P001-RS	30 cm 5 VSB, PS_ON wire to SBC
CB-3PSATA-RS	10 cm cable for SATA power
CB-3PIDE-RS	10 cm cable for IDE HDD power
CB-P1LP4-RS	20 cm cable for FSP0601AD101C 60 W/ UP0451E12P 45 W/ UP0251E12PL 25 W AC-DC adapter
CB-MD4P4-RS	16 cm cable for 63000-FSP120AAB-RS 120 W AC-DC adapter
CB-NOLP4-RS	20 cm cable for terminal block DC input

## Pin Assignments

### Input Power Connector

CN3	Pin 1	Pin 2	Pin 3	Pin 4
	VIN	VIN	GND	GND

### Output Power Connector

CN4	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
	+5 V	+5 V	GND	GND	+12V

CN1 CN2 CN5 CN6	Pin 1	Pin 2	Pin 3
	+5V	GND	+12V

### ATX Mode Connector

CN7	Pin 1	Pin 2	Pin 3
	5VSB	GND	PS_ON

## Wire Harness Selection Guide

### DC Input (CN3)

#### Options 1.

**PN: CB-P1LP4-RS**

Cable for FSP0601AD101C 60 W/ UP0451E12P 45 W/UP0251E12PL 25 W AC-DC adapter

#### Options 2.

**PN: CB-MD4P4-RS**

Cable for 63000-FSP120AAB-RS 120 W AC-DC adapter

#### Options 3.

**PN: CB-NOLP4-RS**

Cable for terminal block

### I/O Power (CN1, CN2, CN5 & CN6)

#### Options 1.

**PN: CB-3PSATA-RS**

Cable for SATA

#### Options 2.

**PN: CB-3PIDE-RS**

Cable for IDE HDD or any STD 4 pins I/O devices

### SBC Main Power (CN4)

#### Options 1.

**PN: CB-5PSBC-RS**

5-pin connector to DC/DC power modules CN4

12 V only connector for NANO series SBC

Cable for SATA HDD

Std 4-pin 12 V, 5 V I/O connector for WAFER, NOVA, Enano series SBC or I/O devices

### Power On/Off (CN7)

#### Options 1.

**PN: CB-JST3PSW-RS**

Cable with on/off switch

#### Options 2.

**PN: CB-JST3P001-RS**

Cable to SBC (5 VSB & PS\_ON)

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# CPU Cooler *High performance thermal solutions*

Choosing the wrong CPU cooler for a system can lead to serious overheating, resulting in system shutdowns and potential damage to CPUs. For industrial applications, the following CPU coolers fit the needs of various operating environments, where different levels of cooling are required.

	Desktop Core™ CPU Cooler				Desktop Core™ CPU Cooler
	<b>New</b> 60W	<b>New</b> 95W	<b>New</b> 130W	<b>New</b> 130W	73W
					
	LGA1355/1356/2011				LGA1155/LGA1156
Model Name	CF-1356A-RS	CF-1356B-RS	CF-2011A-RS	CF-2011B-RS	CF-1156A-RS-R11
Description	High performance LGA1355/1356/2011 cooler kit				High performance LGA1155/LGA1156 cooler kit, 1U chassis compatible
CPU Solution	Intel® Xeon® E5-2400		Intel® Xeon® processor E5-2600		Intel® Core™ i5/i3
Socket Solution	LGA1355/1356	LGA1355/1356	LGA2011	LGA2011	LGA1155/LGA1156
Dimensions (mm)	89 x 80 x 27	89 x 90 x 24	89 x 88 x 27.2	89 x 88 x 45.1	89 x 92.6 x 27.4
Material	Copper				Cu
Bearing Type	Two-ball	Ball and Sleeve	Two-ball	Ball and Sleeve	Two-ball
Capability (Watt)	60W	95W	130W	130W	73W
Fan Speed (RPM)	4500	5500	5500	4500	5500
Noise Level (dBA)	51	42	55	42	51
Life Expectancy (hrs)	50000	40000	50000	40000	50000
Weight	55g	50g	55g	50g	422g

	Desktop Core™ CPU Cooler			Desktop CPU Cooler	
	95W	45W	65W	130W	90W
					
	LGA1155/LGA1156			LGA775 Cooler	
Model Name	CF-1156B-RS-R11	CF-1156C-RS	CF-1156D-RS	CF-775A-RS	CF-775B-RS-R11
Description	High performance LGA1155/LGA1156 cooler kit	Low power LGA1155/LGA1156 cooler kit for Intel® CPU, 45W, 1U chassis compatible, CCL, RoHS		High performance Two copper pipes LGA 775 CPU cooler, RoHS	High performance 1U LGA 775 CPU cooler, w/ 7010 fan, copper, RoHS
CPU Solution	Intel® Xeon®/Core™ i7/i5/i3	Intel® Core™ i5/i3	Intel® Core™ i7/i5/i3	Intel® Core™2 Quad	Intel® Core™2 Duo
Socket Solution	LGA1155/LGA1156	LGA1155/LGA1156	LGA1155/LGA1156	LGA 775	LGA 775
Dimensions (mm)	90 x 90 x 64	90 x 90 x 33	90 x 90 x 33	92 x 92 x 73	80.5 x 81 x 28.2
Material	Al	Al	Cu+Al	Cu-Al	Cu
Bearing Type	Two-ball	Two-ball	Two-ball	Rifle	Two-ball
Capability (Watt)	95W	45W	65W	130W	90W
Fan Speed (RPM)	5500	3000	3000	3600	4250
Noise Level (dBA)	40.5	33.4	33.4	36.6-39.6	40
Life Expectancy (hrs)	50000	50000	50000	40000	50000
Weight	301g	192g	227g	492g	600g

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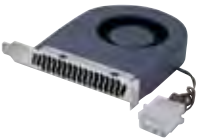




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# CPU Cooler *High performance thermal solutions*

	Desktop CPU Cooler	Desktop CPU Cooler			Desktop CPU Cooler
	<b>115W</b>	<b>115W</b>	<b>86W</b>	<b>86W</b>	<b>40W</b>
					
	<b>LGA775 Cooler</b>	<b>Pentium® 4 Cooler</b>			<b>Pentium® 3 Cooler</b>
<b>Model Name</b>	<b>CF-520-RS-R11</b>	<b>CF-478A-RS</b>	<b>CF-478B-RS-R11</b>	<b>CF-514-RS</b>	<b>CF-370A-RS</b>
<b>Description</b>	High performance LGA 775 CPU cooler, RoHS	High Performance Copper Socket 478 CPU Cooler, RoHS	High Performance Heat Pipes Socket 478 1U CPU Cooler, RoHS	High Performance Skiving Intel® Pentium® 4 CPU Cooler, RoHS	High Performance Slim Type Socket 370 CPU Cooler, RoHS
<b>CPU Solution</b>	Intel® Core™2 Duo	Intel® Pentium® 4	Intel® Pentium® 4	Intel® Pentium® 4	Intel® Pentium® 3
<b>Socket Solution</b>	LGA 775	Socket 478	Socket 478	Socket 478	Socket 370
<b>Dimensions (mm)</b>	115 x 115 x 67	92 x 92 x 67	89 x 76 x 26	83 x 70 x 55	50 x 52 x 20
<b>Material</b>	Aluminum Alloy	Cu	Cu-Al	Aluminum Alloy	Cu-Al
<b>Bearing Type</b>	Two-ball	Rifle	Two-ball	Two-ball	Two-ball
<b>Capability (Watt)</b>	115W	115W	86W	86W	40W
<b>Fan Speed (RPM)</b>	4500	3600	4800	4800	5500
<b>Noise Level (dBA)</b>	47.5-51.5	39.6	40	42.4	32.1
<b>Life Expectancy (hrs)</b>	70000	40000	50000	50000	40000
<b>Weight</b>	635g	390g	25g	284g	62g

	CPU cooler	Mobile Core™ i7 CPU Cooler		Mobile CPU Cooler	
		<b>55W</b>	<b>50W</b>	<b>50W</b>	<b>20W</b>
					
	<b>BLOWER</b>	<b>PGA989</b>		<b>Pentium® M Cooler</b>	
<b>Model Name</b>	<b>BF-02-RS</b>	<b>CF-989A-RS-R12</b>	<b>CF-989B-RS-R11</b>	<b>CF-479B-RS-R11</b>	<b>CF-518-RS</b>
<b>Description</b>	Bracket Cooling Fan, RoHS	High performance Socket-G (PGA989) smart fan CPU cooler, RoHS	High performance Socket-G (PGA989) CPU cooler, Aluminum, RoHS	High Performance Socket 479, M and P Intel® Pentium® M CPU Cooler, RoHS	High Performance Intel® Pentium® M CPU Cooler, RoHS
<b>CPU Solution</b>	Bracket cooling fan	Intel® Core™ i7/i5/i3	Intel® Core™ i7/i5/i3	Intel® Pentium® M, Core™2 Duo (Mobile)	Intel® Pentium® M
<b>Socket solution</b>		PGA989	PGA989	Socket 479	Socket 479
<b>Dimensions (mm)</b>	112 x 90 x 21	60 x 60 x 27.5	60 x 60 x 27.5	50 x 50 x 16	60 x 60 x 26
<b>Material</b>	Plastic	Cu	Al	Al	Aluminum Alloy
<b>Bearing Type</b>	One-ball	Two-ball	Two-ball	Two-ball	Two-ball
<b>Capability (Watt)</b>		55W	50W	50W	20W
<b>Fan Speed (RPM)</b>	2800	4800	4800	5500	5000
<b>Noise Level (dBA)</b>	28	40	40	30.1	36.1
<b>Life Expectancy (hrs)</b>	45000	50000	50000	50000	50000
<b>Weight</b>	107.5g	255g	26g	19g	116g

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# Industrial Flash Module Series (SATA & PATA Interface)

## IEI Industrial SSD Series

IEI SSDs bring a whole new level of high performance to memory storage. Our wide selection of SSDs are designed for different applications, including industrial/embedded, enterprise server, aerospace, defense, and other semi-industrial applications, such as thin clients, POS, and kiosks. Our SSDs come in SLC and MLC types, and support PATA/IDE 44 pin, SATA II 3.0G, and SATA III 6.0G.

## iCell Technology

iCell is a smart data protection technology that is built into IEI's SSDs. iCell is crucial for mission-critical applications, where working under extreme conditions and without backup power is unavoidable. Our iCell technology provides a mechanism to instantaneously discharge data stored in temporary volatile DRAM buffers to flash storage, to ensure the safety of data during power failures.



## TRIM Function

	1. User writes new data	2. User deletes file "C" and D, leaving "B" in place	3. User writes new file "E"
OS Logical View	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
SSD Logical View (SLC)	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
SSD Physical View	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Key Takeaways	SSD writes new data only SSD controller manages TRIM	TRIM from OS tells SSD to ignore the data in the sectors previously holding file "C" leaving "B"	OS writes new file to old location, SSD writes file to another free block

IEI's Garbage Collection/TRIM technology is used to maintain data consistency and perform continual data cleansing on SSDs. It runs as a background process, freeing up valuable controller resources while sorting good data into available blocks, and deleting bad blocks. It also significantly reduces write operations to the drive, thereby increasing the SSD's speed and lifespan. With IEI's Garbage Collection/TRIM technology, an SSD's health and performance are optimized.

Model Name	2.5" IFD-2510AC	2.5" IFD SATA 2510IS	2.5" IFD-2520IS	2.5" IFD-2520ISM	
Picture					
Key Features	iCell (UPS) technology, 100% avoid data loss during any unexpected power spikes, dips or failures	High speed R/W and main stream SLC SSD	1. Ultra low power consumption 2. 7mm ME slender design 3. Support synchronous NAND	1. Ultra low power consumption 2. 7mm ME slender design 3. Support synchronous NAND	
Interface	2.5" SATA 3Gb/s, 7+15P		2.5" SATA 6Gb/s, 7+15P		
Flash Type	SLC			MLC	
Capacity (GB)	8G/16G/32G/64G/128G/256G		8G/16G/32G/64G/128G/256G	16G/32G/64G/128G	
Sequential R/W (Max.)	250/200 MB/Sec	240/220 MB/Sec	500/480 MB/Sec (TBD)	480/450 MB/Sec (TBD)	
Power Consumption (Max.)	3.5 W (5Vx700mA)	2.8 W (5Vx560mA)	TBD	2.2 W (5Vx450mA)	
Dimensions (WxLxH)	69.8 x 100.1 x 9.3 mm		69.8 x 100.1 x 7.0 mm		
iCell Support (UPS)	*	*	*	*	
External Dram Buffer	*	*	*	*	
Trim	*	*	*	*	
Thermal Sensor	*	*	*	*	
iSMART	*	*	*	*	
Others	S.M.A.R.T. (for Self-Monitoring Analysis and Reporting Technology), ATA Security, Vibration: 20G @7-2000Hz, Shock 1500G @ 0.5ms, Storage Temperature : -55°C~+95°C, MTBF : 3 million hours				
DC Input Voltage	5V Single power supply operation				
P/N	STD (0°C~+70°C)	IFD-2510AC-256GB IFD-2510AC-128GB IFD-2510AC-64GB IFD-2510AC-32GB IFD-2510AC-16GB	IFD-2510IS-256GB-R20 IFD-2510IS-128GB-R20 IFD-2510IS-64GB-R20 IFD-2510IS-32GB-R20 IFD-2510IS-16GB-R20 IFD-2510IS-8GB-R20	IFD-2520IS-256G IFD-2520IS-128G IFD-2520IS-64G IFD-2520IS-32G IFD-2520IS-16G IFD-2520IS-08G	IFD-2520ISM-128G IFD-2520ISM-64G IFD-2520ISM-32G IFD-2520ISM-16G
	WT (-40°C~+85°C)	IFD-2510AW-256GB IFD-2510AW-128GB IFD-2510AW-64GB IFD-2510AW-32GB IFD-2510AW-16GB	IFD-2510WT-256GB-R20 IFD-2510WT-128GB-R20 IFD-2510WT-64GB-R20 IFD-2510WT-32GB-R20 IFD-2510WT-16GB-R20 IFD-2510WT-8GB-R20	IFD-2520WT-256G IFD-2520WT-128G IFD-2520WT-64G IFD-2520WT-32G IFD-2520WT-16G IFD-2520WT-08G	IFD-2520WTM-128G IFD-2520WTM-64G IFD-2520WTM-32G IFD-2520WTM-16G **-20°C~+85°C

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# Pin 7

Pin 7 is a Serial ATA device-to-host connection technology. It eliminates the need for power cables, making SSDs more shock-resistant and better suited for extreme environments. Pin 7 is the choice for system integrators who require flexibility, reliability, and space-maximization in the design of their systems. Pin 7 technology is used in IEI's SATADOM series, which is featured in Intel's Romley server boards and is currently the smallest flash storage device available.



## IEI SATADOM Pin Assignment

Pins	Signal	Function	Remark
Pin 1	GND	Shielding	SATA-IO Standard
Pin 2	A+	Differential signal to A	SATA-IO Standard
Pin 3	A-	Differential signal to A-	SATA-IO Standard
Pin 4	GND	Shielding	SATA-IO Standard
Pin 5	B-	Differential signal to B	SATA-IO Standard
Pin 6	B+	Differential signal to B	SATA-IO Standard
Pin 7	GND	Shielding	SATA-IO Standard
	VCC (+5V)	Power	Pin 7 Technology

### ■ SATADOM-IFM 3000/3300 Series

MoSATA 6Gb/s (SLC)	IFM-3300	IFM-3310	IFM-3000	IFM-3000	IFM-3010V
<b>Picture</b>		<b>New</b>			<b>New</b>
<b>Key Features</b>	Vertical, High Speed	Built-in Pin 7	Vertical, Low Profile SATADOM	Vertical, Slim SATADOM	Built-in Pin 7
<b>Interface</b>	SATA 3Gb/s	SATA 6Gb/s	SATA 3Gb/s	SATA 3Gb/s (SLC)	SATA 6Gb/s (SLC)
<b>Flash Type</b>	SLC				
<b>Capacity (GB)</b>	2G/4G/8G/16G/32G	2G/4G/8G/16G/32G/64G	128M/256M/512M 1G/2G/4G/8G	128M/256M/512M 1G/2G/4G/8G	2G/4G/8G/16G
<b>Sequential R/W (Max.)</b>	130/125 MB/Sec	180/120 MB/Sec	35/33 MB/Sec	35/33 MB/Sec	35/33 MB/Sec
<b>Power Consumption (Max.)</b>	1 W (5V@200 mA)	> 1W	0.83W (5V@166 mA)	0.83W (5V@166 mA)	> 0.5W
<b>Dimensions (WxLxH)</b>	25 x 39.4 x 6.5mm	TBD	32.9 x 29.5 x 8 mm	20.9 x 39.5 x 7.9 mm	TBD
<b>iSMART</b>	*	*	*	*	*
<b>Thermal Sensor</b>	*	*	*	*	*
<b>Others</b>	S.M.A.R.T. (for Self-Monitoring Analysis and Reporting Technology), ATA Security, Vibration : 20G @7~2000Hz, Shock : 1500G @ 0.5ms, Storage Temperature : -55°C~+95°C				
<b>P/N</b>	IFM-3300IS-32GB-R20 IFM-3300IS-16GB-R20 IFM-3300IS-8GB-R20 IFM-3300IS-4GB-R20 IFM-3300IS-2GB-R20	IFM-3310IS-64G IFM-3310IS-32G IFM-3310IS-16G IFM-3310IS-8GB-R20 IFM-3310IS-04G IFM-3310IS-02G	IFM-3000IL(X)S-8GB-R20 IFM-3000IL(X)S-4GB-R20 IFM-3000IL(X)S-2GB-R20 IFM-3000IL(X)S-1GB-R20 IFM-3000IL(X)S-512MB-R20 IFM-3000IL(X)S-256MB-R20 IFM-3000IL(X)S-128MB-R20	IFM-3000IS-8GB-R20 IFM-3000IS-4GB-R20 IFM-3000IS-2GB-R20 IFM-3000IS-1GB-R20 IFM-3000IS-512MB-R20 IFM-3000IS-256MB-R20 IFM-3000IS-128MB-R20	IFM-3010IS-16G IFM-3010IS-08G IFM-3010IS-04G IFM-3010IS-02G
	IFM-3300WS-32GB-R20 IFM-3300WS-16GB-R20 IFM-3300WS-8GB-R20 IFM-3300WS-4GB-R20 IFM-3300WS-2GB-R20	IFM-3310WS-64G IFM-3310WS-32G IFM-3310WS-16G IFM-3310WS-08G IFM-3310WS-04G IFM-3310WS-02G	IFM-3000WL(X)S-8GB-R20 IFM-3000WL(X)S-4GB-R20 IFM-3000WL(X)S-2GB-R20 IFM-3000WL(X)S-1GB-R20 IFM-3000WL(X)S-512MB-R20 IFM-3000WL(X)S-256MB-R20 IFM-3000WL(X)S-128MB-R20	IFM-3000WS-8GB-R20 IFM-3000WS-4GB-R20 IFM-3000WS-2GB-R20 IFM-3000WS-1GB-R20 IFM-3000WS-512MB-R20 IFM-3000WS-256MB-R20 IFM-3000WS-128MB-R20	IFM-3010WS-16G IFM-3010WS-08G IFM-3010WS-04G IFM-3010WS-02G

IFM-3000IL(X)S; X: V, P ; IFM-3000WL(X)S; X: V, P ; IFM-3300WL(X)PS; X: W, I

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# Industrial Flash SATA & PCIe Module Series

## ■ The PCIe Mini DOM Advantages



The PCIe Mini DOM designed for industrial PCs and embedded systems features standard PCI Express Mini interface, driverless and plug & play capabilities.

- Standard PCI Express
- Plug & Play
- Driverless
- 2GB~64GB within SLC flash
- Supports Windows® XP Embedded, Windows® 7 Embedded
- Customized function support



## ■ iSMART Tool

iSmart is a powerful, easy-to-use SSD and HDD health monitoring tool. It allows system integrators to track important disk information, such as temperature, storage space, bad blocks, lifespan, and firmware, All in one application. With iSmart, system integrators can better manage disk usage and predict a suitable timing to replace a disk, before SSDs run out their life cycle.

Model Name	IPE-5200IM	IPE-5300IM/WM	IPE-5310IM/WM
Picture		<b>New</b>	<b>New</b>
Key Features	High-performance with small form factor	build-in thermal sensor	Excellent C/P ratio with SATA III performance
Interface	SATA 3Gb/s	SATA6Gb/s	SATA 6Gb/s
Flash Type	SLC	SLC	MLC
Capacity (GB)	2G/4G/8G/16G/32G	2G/4G/8G/16G/32G/64G	8G/16G/32G/64G/128G
Sequential R/W (Max.)	150/140 MB/Sec	180/120 MB/S (TBD)	200/35 MB/Sec
Power Consumption (Max.)	>0.66W	>1W	>1W
Dimensions (WxLxH)	29.85 x 50.8 x 3.5mm	29.8 x 50.8 x 3.5 mm	29.8 x 50.8 x 3.5 mm
iSMART	x	v	v
Others	IPE5200/5300		
P/N	STD (0°C~+70°C)	IPE-5300IM-64G IPE-5300IM-32G IPE-5300IM-16G IPE-5300IM-8G IPE-5300IM-4G IPE-5300IM-2G	IPE-5310IM-128G IPE-5310IM-64G IPE-5310IM-32G IPE-5310IM-16G IPE-5310IM-8G
	WT (-40°C~+85°C)	IPE-5200WM-32G IPE-5200WM-16G IPE-5200WM-8G IPE-5200WM-4G IPE-5200WM-2G	IPE-5300WM-64G IPE-5300WM-32G IPE-5300WM-16G IPE-5300WM-8G IPE-5300WM-4G IPE-5300WM-2G

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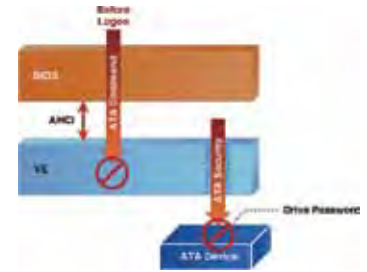
# Industrial Flash Module Series (IDE Interface)

## What's ATA Security?

The optional ATA Security Mode feature set is a password system that restricts access to user data stored on a device. The purpose is to:

- protect the storage for illegal access;
- prevent the unauthorized set of a new password (by a Virus or other malware).

When the security system is enabled, access to user data on the device is denied after a power cycle until the password is sent to the device with the SECURITY UNLOCK command.



## Industrial IDE Flash Module

Model Name	iCF 9000		iCF 1000+			
Picture						
Capacity	2GB~32GB		128MB~32GB		128MB~16GB	256MB~8GB
Interface	50-pin CompactFlash®		50-pin CompactFlash®		50-pin CompactFlash®	
Flash Type	SLC		SLC		SLC	
IDE Transfer Mode	PIO mode 0-6 MwDMA mode 0-4 UltraDMA mode 0-7		PIO mode 0-4 MwDMA mode 0-4 UltraDMA mode 0-4		PIO Mode 0-6 MwDMA Mode 0-4 UltraDMA Mode 0-4	
Operation Temp.	0°C~+70°C (Standard) /-40°C~+85°C (Industrial)					
Storage Temp.	-55°C~+95°C			-40°C~+100°C		
Humidity	10%~95% non-condensing					
Vibration/Shock (7/2000Hz)/(0.5ms)	1500G/0.5ms			1500G/0.5ms		
DC Power Input	ICF:+3.3V~+5V single power supply operation			Supply voltage: 3.3V & 5V		
Power Mode	Auto Stand-by and sleep mode					
Power Consumption (Max.)	1.05W (5V@210mA)			95 mA		
Dimensions (WxLxH)(mm)	42.8 x 36.4 x 3.3		42.8 x 36.4 x 3.3		42.8 x 36.4 x 3.3	
ATA Security	Yes		Yes			
iSMART	V		V			
P/N	STD (0°C~+70°C)	ICF-9000CD-32GB ICF-9000CD-16GB ICF-9000CD-8GB ICF-9000CD-4GB ICF-9000CD-2GB	ICF-1000IPD-32GB ICF-1000IPD-16GB ICF-1000IPD-8GB ICF-1000IPD-4GB ICF-1000IPD-2GB ICF-1000IPD-1GB	ICF-1000IPS-2GB ICF-1000IPS-1GB ICF-1000IPS-512MB ICF-1000IPS-256MB ICF-1000IPS-128MB	ICF-1000IAS-16GB ICF-1000IAS-2GB ICF-1000IAS-1GB ICF-1000IAS-512MB ICF-1000IAS-256MB ICF-1000IAS-128MB	ICF-1000IAD-8GB ICF-1000IAD-4GB ICF-1000IAD-2GB ICF-1000IAD-1GB ICF-1000IAD-512MB ICF-1000IAD-256MB
	WT (-40°C~+85°C)	ICF-9000WD-32GB ICF-9000WD-16GB ICF-9000WD-8GB ICF-9000WD-4GB ICF-9000WD-2GB	ICF-1000WPD-32GB ICF-1000WPD-16GB ICF-1000WPD-8GB ICF-1000WPD-4GB ICF-1000WPD-2GB ICF-1000WPD-1GB	ICF-1000WPS-2GB ICF-1000WPS-1GB ICF-1000WPS-512MB ICF-1000WPS-256MB ICF-1000WPS-128MB	ICF-1000WAS-16GB ICF-1000WAS-2GB ICF-1000WAS-1GB ICF-1000WAS-512MB ICF-1000WAS-256MB ICF-1000WAS-128MB	ICF-1000WAD-8GB ICF-1000WAD-4GB ICF-1000WAD-2GB ICF-1000WAD-1GB ICF-1000WAD-512MB ICF-1000WAD-256MB

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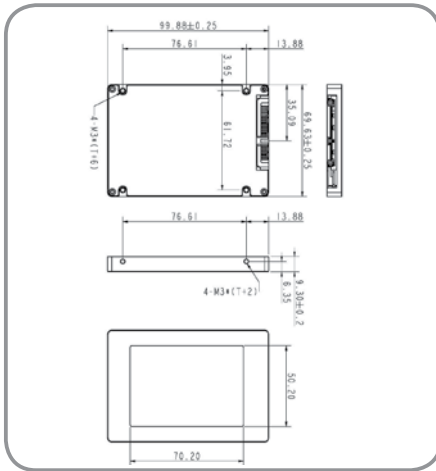
6

Panel Solutions Introduction

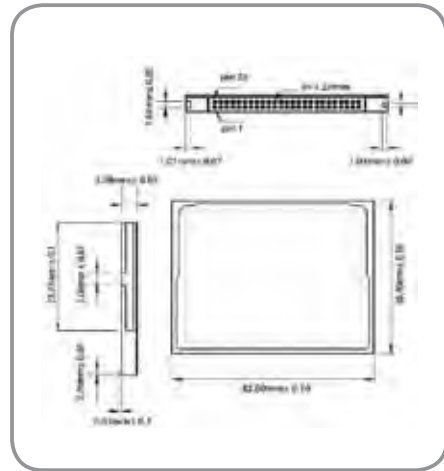
# IEI Industrial Flash Module Series

## ■ Dimension Drawing

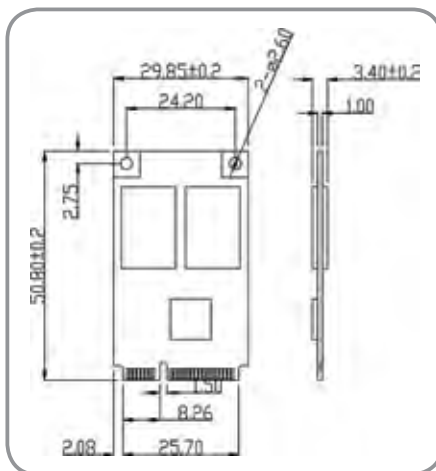
*IFD-2510IS / IFD-2510WT*



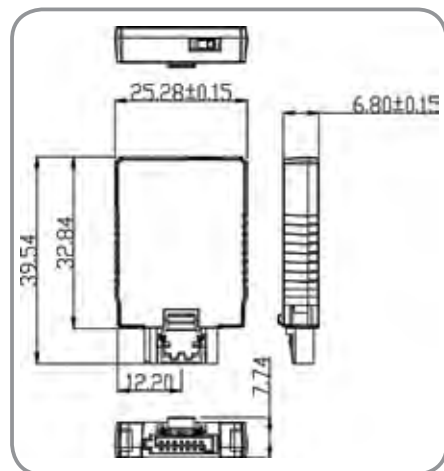
*iCF 9000*



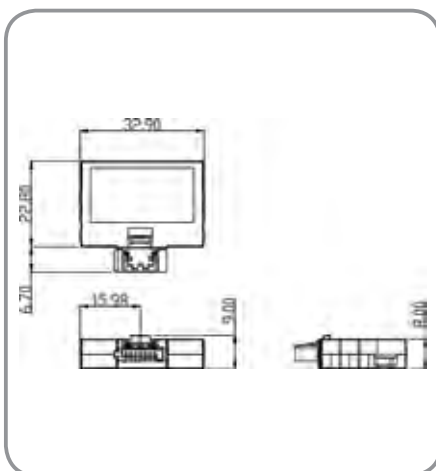
*IPE-5300IM/WM / IPE-5310IM/WM*



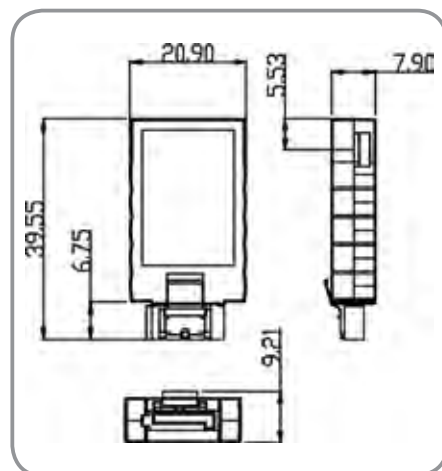
*IFM-3300IS / IFM-3300WS*



*IFM-3000ILVS / IFM-3000WLVS*



*IFM-3000IS / IFM-3000WS*



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Introduction

# Ensuring The Best System Performance

## ■ DDR3 1.35V iDIMM

### Features

- Low Power
- Major on 3rd
- Thermal Sensor Design Ready
- 100% System Level Test

### DDR3 1.35V iDIMM

Module Speed	1600 MHz	<b>1.35V</b>
DIMM	240-pin	
SO-DIMM	204-pin	
CAS Latency	CL9	

## ■ iDIMM + SO-DIMM

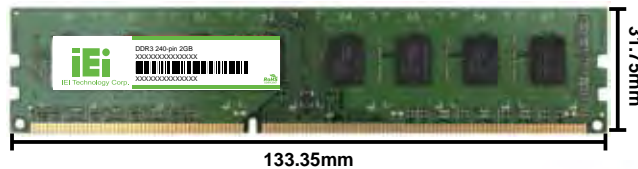


## Ordering Information **New**



1.35V DDR3 SO-DIMM	Description
79B00-G002-013-RS	DDR3 1600 2GB SO-DIMM CL9 256M*8
79B00-G004-008-RS	DDR3 1600 4GB SO-DIMM CL9 256M*8
1.35V DDR3 DIMM	Description
79A00-G002-016-RS	DDR3 1600 2GB LONG-DIMM CL9 256M*8
79A00-G004-011-RS	DDR3 1600 4GB LONG-DIMM CL9 256M*8

## ■ Long-DIMM



## ■ Complete product line of Industrial

IEI provide complete product line of industrial

### Features

- Refresh → TREFI=7.8ms from -40°C~+85°C
- 30ms Gold Finger
- Stern Test of parameter
- High reliability

**-40°C~+85°C  
Wide Temp.  
Available**



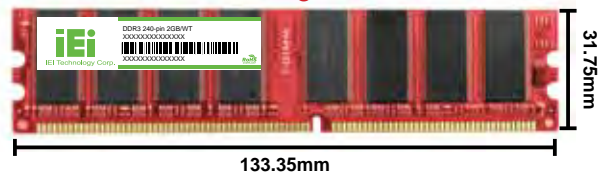
## DDR3 W/T Solution

Module Speed	1600 MHz
DIMM	240-pin
SO-DIMM	240-pin
CAS Latency	CL9

### DDR3 SO-DIMM



### DDR3 Long-DIMM



## Ordering Information

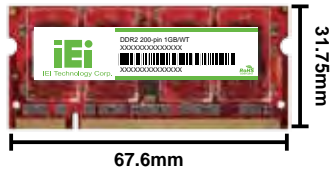
DDR3 SO-DIMM W/T	Description
79B00-G001-XXX-RS	DDR3 1600 1GB SO-DIMM CL9 128M*8
79B00-G002-XXX-RS	DDR3 1600 2GB SO-DIMM CL9 256M*8
79B00-G004-XXX-RS	DDR3 1600 4GB SO-DIMM CL9 256M*8

DDR3 DIMM W/T	Description
79A00-G002-XXX-RS	DDR3 1600 2GB DIMM CL9 256M*8

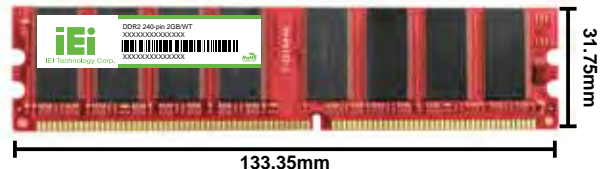
## DDR2 W/T Solution

Module Speed	800 MHz
DIMM	240-pin
SO-DIMM	200-pin
CAS Latency	CL6

### DDR2 SO-DIMM



### DDR2 Long-DIMM



## Ordering Information

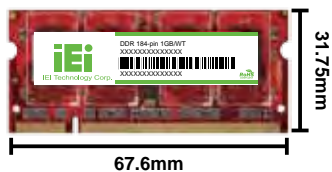
DDR2 SO-DIMM W/T	Description
79900-M512-XXX-RS	DDR 800 1GB SO-DIMM CL6 128M*8
79900-G001-XXX-RS	DDR 800 2GB SO-DIMM CL6 128M*8

DDR2 DIMM W/T	Description
79900-M512-XXX-RS	DDR 800 1GB DIMM CL6 128M*8
79900-G001-XXX-RS	DDR 800 2GB DIMM CL6 128M*8

## DDR W/T Solution

Module Speed	400 MHz
DIMM	184-pin
SO-DIMM	200-pin
CAS Latency	CL3

### DDR SO-DIMM



### DDR Long-DIMM



## Ordering Information

DDR 400 SO-DIMM	Description
79300-M512-XXX-RS	DDR 400 512MB SO-DIMM CL3 64M*8
79300-G001-XXX-RS	DDR 400 1GB SO-DIMM CL3 64M*8

DDR 400 DIMM	Description
79300-M512-XXX-RS	DDR 400 512MB DIMM CL3 64M*8
79300-G001-XXX-RS	DDR 400 1GB DIMM CL3 64M*8

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# Drive Cage *Standard 3.5" devices 5.25" Drive Bay Solutions*

Following the traditional industrial system needs for stability, durability and toughness for storage drive operating condition, IEI provides various kinds of standard 3.5" devices 5.25" removable drive bay and modules for each different demands.

SATA / IDE / SSD Solution		
		
<b>Model Name</b>	<b>XWC-410030507220-RS</b>	<b>XWC-410030507230-RS</b>
<b>Dimensions (L x W x H) (mm)</b>	150 x 146 x 42	150 x 146 x 42
<b>Material</b>	Aluminum	Aluminum
<b>Interface</b>	SATA / IDE / SSD	SATA / IDE / SSD
<b>Data Transfer Rate</b>		
<b>Drive Bay Space</b>	One 5.25" Device Bay	One 5.25" Device Bay
<b>HDD Type</b>	Internal 3.5" device bay	Internal 3.5" device bay
<b>Cooling Fan</b>		
<b>Hot Swap</b>	No	No
<b>Keylock</b>	No	No
<b>Signal Out</b>	No	No
<b>Color</b>	Black	White
<b>G.W.</b>	0.2kg	0.2kg

SATA Solution		
		
<b>Model Name</b>	<b>RD-03A-RS</b>	<b>RHD-302SATA-RS</b>
<b>Dimensions (L x W x H) (mm)</b>	190 x 148 x 42	220 x 148 X 85.8
<b>Material</b>	Aluminum alloy	Aluminum alloy
<b>Interface</b>	SATA	SATA
<b>Data Transfer Rate</b>	up to 300MB/Sec	up to 300MB/Sec
<b>Drive Bay Space</b>	One 5.25" Device Bay	2 x 5.25" drive bay for 3 x 3.5" HDD
<b>HDD Type</b>	3.5" SATA	3.5" SATA
<b>Cooling Fan</b>	4010 ball bearing	8020 ball bearing (Removable)
<b>Hot Swap</b>	Yes	Yes
<b>Keylock</b>	Yes	No
<b>Signal Out</b>	Power on signal out (high) HDD access signal out (high)	3 x HDD power signal out (+5V, GND) 1 x Temperature overheat signal out (5V, GND) 1 x Fan fail signal out (5V, GND) 3 x HDD access signal out (+5V, GND) 1 x Reset signal out (High, GND)
<b>Color</b>	White / Black	Black bezel and silver housing
<b>G.W.</b>	0.3kg	1.0kg

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# Drive Cage *Standard 3.5" devices 5.25" Drive Bay Solutions*

	SATA Solution		IDE Solution	SATA / IDE / SSD
<b>Model Name</b>	<b>RHD-101SATA-R10</b>	<b>RHD-104SATA-R10</b>	<b>RHF-21-SATA-R10</b>	<b>RHF-21-IDE-RS</b>
<b>Dimensions (L x W x H) (mm)</b>	135 x 101.6 x 25.6	170 x 146 x 41.3	151.5 x 102 x 25.7	151.5 x 102 x 25.7
<b>Material</b>	SECC	SECC	SECC	SECC
<b>Interface</b>	7-pin SATA x 2	7-pin SATA x 4	SATA	IDE
<b>Data Transfer Rate</b>	Up to 600 MB/sec	Up to 600 MB/sec	No	No
<b>Drive Bay Space</b>	One 3.5" Device Bay	One 5.25" Device Bay	Internal 3.5" device bay	Internal 3.5" device bay
<b>HDD Type</b>	2.5" SAS or SATA I / II / III 1 x HDD/SSD	2.5" SAS or SATA I / II / III 4 x HDD/SSD	2.5" SATA HDD	2.5" IDE HDD
<b>Cooling Fan</b>	Metal heat dispersion	2 x 40 mm rear outtake fan w/ aluminum heat dissipation	No	No
<b>Hot Swap</b>	Yes	Yes	Yes	Yes
<b>Keylock</b>	2 x segment key lock	No	Yes	Yes
<b>Signal Out</b>	1 x HDD power signal out 1 x HDD access signal out	4 x HDD power signal out 4 x HDD access signal out	1 x Female connector 1 x SATA LED signal connector 1 x Power LED connector 1 x Key on/off connector 1 x Power/SATA LED connector 1 x Male connector	1 x DC connector 1 x Power LED connector 1 x Access LED connector 1 x DC power on/off
<b>Color</b>	Black	Black	Black	Black
<b>G.W.</b>	0.483kg	0.95kg	0.3kg	0.3kg

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## FCD-301



- The most suitable USB cable for IEI's CPU boards
- Support standard 3.5" drive bay; 4-pin female connector to CPU boards' pin header; length: 60cm
- RoHS compliant
- Pin definition:

Pin 1	Pin 2	Pin 3	Pin 4
+5V	Data-	Data+	GND

**3.5" compact drive bay with USB port**

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## Ordering Information

Part No.	Description
<b>FCD-301[C]-RS</b>	3.5" compact drive bay with USB port, RoHS [C] Color Code: B=Black, W=White

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## AS-35A / AS-25A / AS-25C

**Anti-vibration Drive Kit**



AS-35A

AS-25A

AS-25C

- Resistant to shocks and vibrations from all directions
- Support 2.5" HDD into 3.5" drive bay (AS-25A/ 25C)
- Support 3.5" HDD into 5.25" drive bay (AS-35A)
- Meets the following standards:
  - MIL-SLD-810F 514.5C-1 standard
  - 5-20Hz, 1G peak to peak
  - 60-200Hz, 3G peak to peak
- RoHS compliant

## Ordering Information

Part No.	Description
<b>AS-35A-RS</b>	3.5" Drive Anti-vibration Kit, RoHS
<b>AS-25A-RS</b>	2.5" Drive Anti-vibration Kit, RoHS
<b>AS-25C-RS</b>	Enhanced 2.5" Drive Anti-vibration Kit, RoHS

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## LCM-02G

**16x2 LCD Message Module**

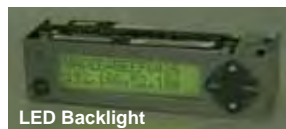


RS-232  
Function button  
Power LED

LCM-02G in RACK-1151G 1U rackmount chassis

Control buttons (Up/Down/Esc/Enter)

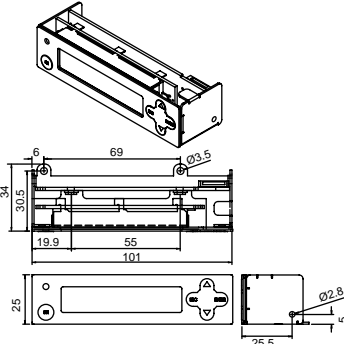
## Main Features



- ◆ RoHS compliant design
- ◆ One programmable welcome page
- ◆ Up to 8 messages auto rolling mode
- ◆ Adjustable back-light brightness
- ◆ Five programmable buttons (Four OSD buttons and One extra function button.)

## Dimensions

(measurement units: millimeter)



## Specifications

<b>Character Number</b>	16 characters x 2 lines
<b>Character Size (WxH)</b>	2.96 mm X 5.56 mm
<b>Dot Size (WxH)</b>	0.56 mm X 0.66 mm
<b>Back Light</b>	Yellow green LED with adjustable brightness
<b>LCD Size (WxH)</b>	60mm x 15mm
<b>Buttons</b>	UP / DOWN / ESC / ENTER / FN
<b>Control Interface</b>	RS-232
<b>GPIO</b>	4
<b>Power</b>	DC 5V
<b>Operating Temperature</b>	0~50°C
<b>Dimensions (WxHxD)</b>	101mm x 25mm x 34mm



## Packing List

1 x LCM-02G
1 x User manual
1 x Utility disk
1 x Power cable
1 x RS-232 cable
3 x LED, reset cable
1 x Screw set

## Ordering Information

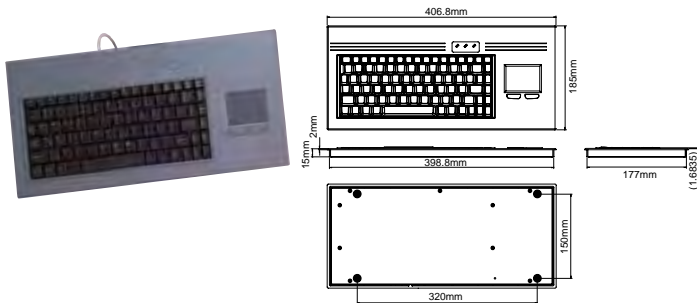
Part No.	Description
<b>LCM-02G</b>	16 x 2 LCD Message Module, RoHS

# Industrial Keyboard Series

Industrial Keyboard Series			
			
Model Name	<b>KM-088G</b>	<b>KM-088A-RS</b>	<b>MK-KTP5A</b>
Key Number	88-key	88-key	105-key
Mouse	Touchpad	Pointing Device	Touchpad
Connector	PS/2 type 6-pin mini-DIN	PS/2 type 6-pin mini-DIN	2 x PS/2 for KB/MS
Color	Black	Black	White
Waterproof	NA	IP-55	NA
Dimensions (mm)	D406.8 x W185 x H15	D370 x W139 x H16	D485 x W380 x H44

## KM-088G

### 88-key and Touchpad Module



### Main Feature

- Standard English keyboard layout
- Optional Japanese, German, French and Italian keyboard layout

### Ordering Information

Part No.	Description
<b>KM-088G - L</b>	L: Language Code EN: English JP: Japanese DE: German FR: French IT:Italian CH:Chinese/English

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## KM-088A-RS

### Main Feature

- IP55 Compliant dirt-, dust- and water-resistance
- Compact design with super low profile for easy fitting into 1U rackmount
- Specifically designed for IPC, military, Medical and other applications

### Ordering Information

Part No.	Description
<b>KM-088A-RS</b>	88 Keys IP55 Waterproof Keyboard with Point Device, RoHS. Notes: For other language K/B, please contact region sales.

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## MK-KTP5A

### 1U Rackmount Keyboard & Touchpad Drawer






### Ordering Information




Part No.	Description
<b>MK-KTP5A-RS</b>	1U Rackmount Keyboard/Touchpad Drawer, RoHS


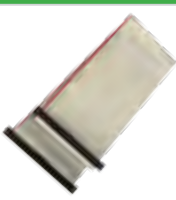

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# Cables and Connectors *FDD / HDD cable*

SATA HDD cable			
			
<b>Model Name</b>	<b>32801-000703-200-RS</b>	<b>32102-000100-200-RS</b>	<b>32000-080700-RS</b>
Cable type	SATA HDD cable	SATA power cable	SATA + Power cable
Connector	SATA 7-pin	4-pin model + 2 x SATA 15-pin	SATA 7-pin + 4-pin model
Connector type	Lockable	SATA power connector	
Length	50 cm	15 cm	SATA cable 20 cm Power cable 10 cm

SATA HDD cable		IDE HDD cable	
			
<b>Model Name</b>	<b>32801-000201-100-RS</b>	<b>32801-000100-100-RS</b>	<b>32200-000005-RS</b>
Cable type	SATA + Power cable	SATA + Power cable	IDE HDD flat cable
Connector	SATA 7-pin + 2-pin wafer 2.0mm	SATA 7-pin + 4-pin wafer 2.54mm	40p-40p-40p
Connector type	2-pin PH 2.0	4-pin PH 2.54 mm	2.54mm
Length	SATA cable 15 cm Power cable 15 cm	SATA cable 20 cm Power cable 20 cm	40 cm + 17 cm

IDE HDD cable			
			
<b>Model Name</b>	<b>32200-000009-RS</b>	<b>32200-000037-RS</b>	<b>32200-025001-RS</b>
Cable type	IDE HDD flat cable	IDE HDD flat cable	IDE HDD flat cable
Connector	44p-44p	44p-44p	44p-40p-40p
Connector type	2.0mm -2.0mm	2.0mm -2.0mm	2.0mm-2.54mm-2.54mm
Length	40 cm	25 cm	20 cm + 15 cm

IDE HDD cable			
			
<b>Model Name</b>	<b>32200-000052-RS</b>	<b>32200-008800-RS</b>	<b>CB-HD32-RS</b>
Cable type	ATA-66 HDD flat cable	ATA-33 HDD flat cable	IDE HDD flat cable
Connector	40p-40p-40p	44p-40p-40p	40p-44p
Connector type	2.54mm	2.0mm-2.54mm-2.54mm	2.54mm-2.0mm
Length	30 cm + 15 cm	20 cm + 15 cm	IDE cable: 39 cm Power cable: 20 cm
			
			<b>CVT-4044-RS</b>
			IDE adapter
			40p-44p
			2.54mm-2.0mm
			Power cable: 20 cm

Part numbers listed in the product catalog are for reference purposes. IEI reserves the right to implement substitution parts when the function is not affected.

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# Cables and Connectors *Paralle / Serial cable*

	Serial cable					
						
<b>Model Name</b>	<b>45002-008103-RS</b>	<b>19800-000300-100-RS</b>	<b>19800-000114-RS</b>	<b>19800-000047-RS</b>	<b>19800-000051-RS</b>	
Cable type	Serial port	Serial port cable	Serial port cable	Serial port cable	Serial port cable	
Board side	N/A	10-pin (2x5) connector (2.0 mm)	10-pin (2x5) connector (2.54 mm)	10-pin (2x5) connector (2.54 mm)	2 x 10-pin (2x5) connector (2.54 mm)	
Board side pitch	2.54 mm	2.0 mm	2.54 mm	2.54 mm	2.54 mm	
Device side	2 x DE9M	DE9M	DE9M	DE9M	2 x DE9M	
Bracket	Yes	Yes	Yes	Yes	Yes	
Length	9 CM	30 cm	50 cm	30 cm	23 cm	

	Serial cable					
						
<b>Model Name</b>	<b>19800-003600-100-RS</b>	<b>19800-000112-RS</b>	<b>32200-000015-RS</b>	<b>32205-002700-100-RS</b>	<b>32205-001203-100-RS</b>	<b>32100-147900-RS</b>
Cable type	Serial port cable	Serial port cable	Serial port cable	Serial port cable	Serial port cable	Serial port cable
Board side	2 x 10-pin (2x5) connector (2.54mm)	2 x 10-pin (2x5) connector (2.0 mm)	10-pin (2x5) connector (2.54 mm)	10-pin (2x5) connector (2.0 mm)	40-pin (2x20) connector (2.0 mm)	40-pin (2x20) connector (2.0 mm)
Board side pitch	2.54 mm	2.0 mm	2.54 mm	2.0 mm	2.54 mm	2.0 mm
Device side	2 x DE9M	2 x DE9M	DE9M	DE9M	4 x DE9M	4 x DE9M
Bracket	Yes	Yes	No	No	No	No
Length	40 cm	30 cm	23 cm	20 cm	40/40/40/40 cm	30 cm

	Serial cable					
						
<b>Model Name</b>	<b>32200-025401-RS</b>	<b>32200-026800-RS</b>	<b>19800-000058-RS</b>	<b>19800-004300-100-RS</b>	<b>32205-000300-100-RS</b>	<b>32205-003700-100-RS</b>
Cable type	Serial port cable	RS-422/485 cable	RS-232 & RS-422/485 cable	RS-232 & RS-422/485 cable	RS-232 & RS-422/485 cable	RS-232 & RS-422/485 cable
Board side	40-pin (2x20) connector (2.0 mm)	16-pin (2x8) connector (2.54 mm)	14-pin (2x7) connector (2.54 mm)	14-pin (2x7) connector (2.0 mm)	14-pin (2x7) connector (2.0 mm)	14-pin (2x7) connector (2.0 mm)
Board side pitch	2.0 mm	2.54 mm	2.54 mm	2.0 mm	2.0 mm	2.0 mm
Device side	4 x DE9M	4 x DE9M	2 x DE9M	2 x DE9M	2 x DE9M	2 x DE9M
Bracket	No	No	Yes	Yes	No	No
Length	30 cm	12 cm	25.5 cm	25 cm	29 cm	23 cm

	Serial cable		Paralle cable			
						
<b>Model Name</b>	<b>19800-000063-RS</b>	<b>32205-003800-100-RS</b>	<b>19800-000400-100-RS</b>	<b>19800-000142-00-RS</b>	<b>19800-000027-RS</b>	<b>32200-015100-RS</b>
Cable type	RS-232 & RS-422/485 cable	RS-422/485 cable	Parallel port cable	Parallel and serial port cable	Parallel and serial port cable	Parallel port cable
Board side	4-pin (1x4) connector (2.54 mm)	4-pin (1x4) connector (2.0 mm)	26-pin (2x13) connector (2.54 mm)	26-pin (2x13) connector (2.54 mm) 10-pin (2x5) connector (2.54 mm)	26-pin (2x13) connector (2.0 mm) 10-pin (2x5) connector (2.0 mm)	26-pin (2x13) connector (2.0 mm)
Board side pitch	2.54 mm	2.0 mm	2.54 mm	2.54 mm	2.0 mm	2.0 mm
Device side	DE9M	DE9M	DB25F	DB25F + DE9M	DB25F + DE9M	DB25F
Bracket	No	No	Yes	Yes	Yes	No
Length	40 cm	20 cm	24 cm	24 cm	24 cm	28 cm

Part numbers listed in the product catalog are for reference purposes. IEI reserves the right to implement substitution parts when the function is not affected.

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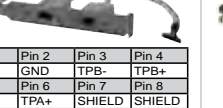

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# Cables and Connectors *USB / 1394 / Y Cable*

USB cable					
					
<b>Model Name</b>	<b>32001-010800-100-RS</b>	<b>32001-006404-100-RS</b>	<b>19800-000100-200-RS</b>	<b>19800-003100-200-RS</b>	<b>19800-003000-100-RS</b>
Cable type	USB cable	USB cable	USB cable	USB cable	USB cable
Board side	2 x 4pin connector (2.0mm)	2 x 4pin connector (2.0mm)	2 x 4-pin (2x4) connector (2.54mm)	2 x 4-pin (1x4) connector (2.54mm)	1 x 8-pin (2x4) connector (2.0mm)
Board side pitch	2.54mm	2.00mm	2.54mm	2.54mm	2.0mm
Device side	2 x USB	2 x USB	4 x USB	2 x USB	2 x USB
Bracket	No	No	Yes	Yes	Yes
Length	20cm	22cm	30 cm	30 cm	30 cm

USB cable			1394 cable		
					
<b>Model Name</b>	<b>32001-002700-200-RS</b>	<b>32001-004600-100-RS</b>	<b>32001-008600-100-RS</b>	<b>CB-IEEE1394-RS</b>	<b>19800-000103-RS</b>
Cable type	USB cable	USB cable	USB cable	1394 cable	1394 cable
Board side	1 x 8-pin (2x4) connector (2.54mm)	2 x 5-pin connector (2.0mm) for WAFER-8523, WAFER-945GSE3 only	1 x 8-pin (2x4) connector (2.0mm)	2 x 8-pin (1x8) connector (2.0mm)	1 x 8-pin (1x8) connector (2.0mm)
Board side pitch	2.54mm	2.0mm	2.0mm	2.0 mm	2.0 mm
Device side	2 x USB	2 x USB	2 x USB	2 x IEEE1394	1 x IEEE1394
Bracket	No	No	No	Yes	Yes
Length	21 cm	40 cm	21 cm	21 cm	25 cm

Pin 1	Pin 2	Pin 3	Pin 4
+12V	GND	TPB-	TPB+
Pin 5	Pin 6	Pin 7	Pin 8
TPA-	TPA+	SHIELD	SHIELD

Keyboard / Mouse cable					
					
<b>Model Name</b>	<b>19800-000066-RS</b>	<b>19800-000075-RS</b>	<b>32006-000300-100-RS</b>	<b>32000-043301-RS</b>	<b>32000-023800-RS</b>
Cable type	Keyboard and mouse cable	Y-Cable	Y-Cable	Y-Cable	Y-Cable
Board side	2 x 5-pin (1x5) connector (2.54mm)	1 x 6-pin (1x6) connector (2.0mm)	1 x male PS/2	1 x 6-pin (1x6) connector (2.54mm)	1 x 6-pin (1x6) connector (2.0mm)
Board side pitch	2.54mm	2.0mm		2.54mm	2.0mm
Device side	2 x Female PS/2	2 x Female PS/2	2 x Female PS/2	2 x Female PS/2	2 x Female PS/2
Bracket	Yes	Yes	No	No	No
Length	30 cm	22 cm	12 cm (KB) + 14 (MS)	60 cm	13 cm

Power cable					
					
<b>Model Name</b>	<b>32100-087100-RS</b>	<b>32100-052100-RS</b>	<b>32102-005100-200-RS</b>	<b>32100-192900-RS</b>	<b>32100-130300-RS</b>
Cable type	12V power cable	ATX function cable	12V power cable	12V power cable	Power cable for PC/104 CPU module
Board side	1 x 4-pin (2x2) connector	1 x 20-pin ATX power connector	1 x 4-pin (2x2) connector	1 x 4-pin (2x2) connector	1 x 4-pin (1x4) molex
Device side	2 x 4-pin (1x4) molex	1 x 4-pin (1x4) molex 1 x 3-pin PS_ON connector	with lock screw	4-pin 3.5 mm terminal block	3-pin 3.5 mm terminal block
Bracket	No	No	No	No	No
Length	13 cm	30 cm	25cm	25 cm	10 cm

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# Cables and Connectors *Audio / LAN / VGA / Adapter Cable*

Audio cable			
			
<b>Model Name</b>	<b>19800-000043-RS</b>	<b>19800-000800-100-RS</b>	<b>19800-000111-RS</b>
Cable type	Audio and Serial cable	Audio cable	Audio cable
Board side	Audio cable : 4-pin (1x4) connector (2.54mm) Serial cable : 10-pin (2x5) connector (2.0mm)	12-pin (2x6) connector (2.0mm)	10-pin (2x5) connector (2.0mm)
Board side pitch	Audio : 2.54mm Serial cable : 2.0mm	2.0mm	2.0mm
Device side	2 x Audio jacks / 1 x DE9M	4 x Audio jacks	3 x Audio jacks
Bracket	Yes	Yes	Yes
Length	30 cm	25 cm	30 cm

Audio cable				
				
<b>Model Name</b>	<b>32207-000100-100-RS</b>	<b>32007-002700-100-RS</b>	<b>32000-072100-RS</b>	<b>32000-028800-RS</b>
Cable type	Audio cable	Audio cable	Audio cable	Audio cable
Board side	10-pin (2x5) connector (2.54 mm)	16-pin (2x8) connector (2.0mm)	10-pin (2x5) connector (2.0mm)	12-pin (2x6) connector (2.54mm)
Board side pitch	2.54 mm	2.0mm	2.0mm	2.54mm
Device side	10-pin (2x5) dupon	3 x Audio jacks	3 x Audio jacks	4 x Audio jacks
Bracket	No	No	No	No
Length	40 cm	25 cm	30 cm	25 cm

LAN cable		VGA cable	
			
<b>Model Name</b>	<b>32000-055702-RS</b>	<b>32000-033800-RS</b>	<b>32000-033804-RS</b>
Cable type	LAN cable	VGA cable	VGA cable
Board side	10-pin (2x5) connector (2.0mm)	10-pin (2x5) connector (2.54mm)	10-pin (2x5) connector (2.0mm)
Board side pitch	2.0mm	2.54mm	2.0mm
Device side	1 x RJ-45	1 x DB15F	1 x DB15F
Bracket	No	No	No
Length	31 cm	30 cm	30 cm

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## Cables and Connectors *Audio / LAN / VGA / Adapter / TV / Round Cable*

	TV/HDTV-output cable				
					
<b>Model Name</b>	<b>19800-000056-RS</b>	<b>32000-132000-RS</b>	<b>32000-132100-RS</b>	<b>32010-000700-100-RS</b>	<b>32010-000400-100-RS</b>
Cable type	TV-out cable	HDTV cable	HDTV cable	HDTV cable	HDTV cable
Board side	6-pin (2x3) connector (2.54mm)	1 x Mini-DIN 7-pin connector	1 x Mini-DIN 7-pin connector	6-pin (2x3) connector (2.54mm)	6-pin (2x3) connector (2.0mm)
Board side pitch	2.54mm			2.54mm	2.0mm
Device side	1 x RCA jack 1 x S-video jack	3 x RCA jack 1 x S-video jack	3 x RCA jack	3 x RCA jack	3 x RCA jack
Bracket	Yes	No	No	No	No
Length	25 cm	15 cm	15 cm	20 cm	20 cm

Part numbers listed in the product catalog are for reference purposes. IEI reserves the right to implement substitution parts when the function is not affected.

## Rackmount Slide *Chassis optional Accessories*

	SLIDE		
			
<b>Model Name</b>	<b>SLIDE-18</b>	<b>SLIDE-24</b>	<b>EXTENDER-6</b>
<b>Specification</b>	18" rackmount slide	24" rackmount slide	6" extender
<b>Description</b>	For rackmount chassis w/ depth up to 500	For rackmount chassis w/ depth up to 500	For 18" or 24" slider

## DIN Rail Kit

	KIT	
		
<b>Model Name</b>	<b>DK-84MB</b>	<b>DK-100-R10</b>
<b>Specification</b>	168(W) X 96(D) mm	110(W) X 100(D) mm
<b>Description</b>	DIN mount kit for embedded system , black , RoHS	VESA 100 to DIN-Rail kit

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# V-STAND

## VESA Multi-Mounting Stand.

IEI patented multi-mounting V-Stand allows wall, ceiling, desk, rear and side mounting to meet diverse applications. Its 0° to 90° adjustable hinge design provides optimal viewing in various environment, such as kitchen, room or shelf.

VESA	Model
75 x 75mm	VSTAND-A07
75 x 75mm / 100 x 100mm	VSTAND-A10
	VSTAND-A12



**3.** 0° to 90° adjustable hinge design

**1.** Height adjustable and VESA 75/100 compliant mounting holes

**2.** Heat dissipation holes help to cool down the system

**Features:**

- 0° to 90° adjustable hinge design allows comfortable viewing
- Standard VESA 75/100 compliance
- Heat dissipation holes
- Compact size, easy to use in any places

### Space saving and easy installation

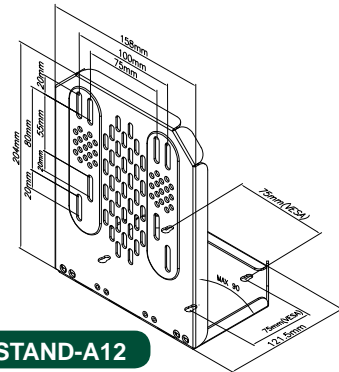
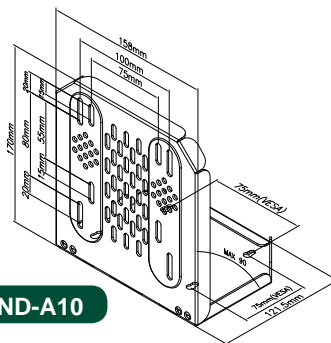
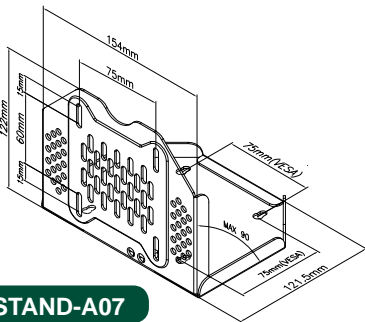


1: Tighten the screws in the rear of the system's VESA mounting holes

2: Select the position to mount the stand kit

3: Power up the system to operate

Compact size provides mobility



## Ordering Information

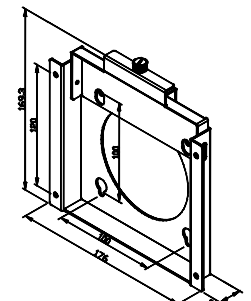
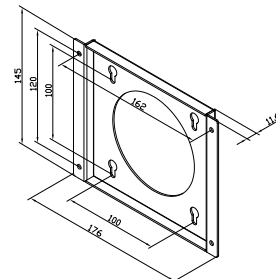
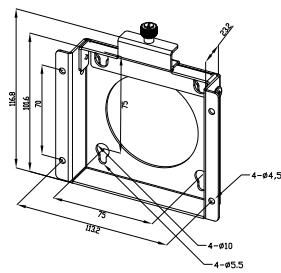
Part No.	Description
VSTAND-A07	LCD monitor / PPC stand V type, for AFL series, VESA 75, 0-90 degree adjustable hinge, support up to 2.5 kg, RoHS
VSTAND-A10	LCD monitor / PPC stand V type, for AFL series, VESA 75/100, 0-90 degree adjustable hinge, support up to 3 kg, RoHS
VSTAND-A12	LCD monitor / PPC stand V type, for AFL series, VESA 75/100, 0-90 degree adjustable hinge, support up to 3.5 kg, RoHS

## Wall Mounting

### VESA 75/100 Wall Mounting

Secure the panel by fastening the retention screw of the bracket.

VESA	Model
75 x 75mm	AFLWK-12
100 x 100mm	AFLWK-19
	AFLWK-19B



## Ordering Information

Part No.	Description
AFLWK-12	5.6"-12" VESA 75 x 75mm PPC/monitor wall mount kit with retention screw, silver color, RoHS
AFLWK-19	15"-19" VESA 100 x 100mm PPC/monitor wall mount kit, silver color, RoHS
AFLWK-19B	15"-19" VESA 100 x 100mm PPC/monitor wall mount kit with retention screw, silver color, RoHS

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# Stay Connected, Stay Informed, Stay Ahead



**IEIMobile**, established as an independent business unit by IEI Technology and the ICP group, is a professional mobile solution provider seeking to revolutionize the way people work. Our goal is to provide our customers with reliable, affordable and ready-to-use mobile devices by developing mobile industrial products with the most advanced communications and easy-to-use mobile applications.



## Tablet PC

### Tablet PC

**New**



#### ICEFIRE 2

##### Mobile Clinic Assistant

- 10.4" TFT XGA LCD
- Intel® Atom™ N2600 CPU
- Windows® Embedded Standard 7 OS



**New**

#### ICEFIRE-ET

##### Enterprise Tablet PC

- Intel® Atom™ D525 dual-core 1.8GHz CPU
- Microsoft® Windows Embedded Standard 7 P OS
- Wi-Fi, Bluetooth 2.1 and Ethernet LAN



**New**



#### ICECARE

##### Mobile Field Assistant

- TI OMAP3 AM3715 CPU and Android 2.3 OS
- 1D Laser/ 2D Imager Scan Engine, RFID Reader
- Bluetooth 2.1, Wi-Fi, 3.5G wireless with built-in GPS
- IP54 and 1M Drop Test



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### Industrial PDA

**Thermal Printer**

#### MODAT-100

##### 3.5" Mobile POS/Ticketing

- Marvell® PXA 310 624MHz CPU
- Built-in Windows® Mobile 6.5 OS
- 1D Barcode reader, SCR, MSR and 2" thermal Printer
- Wi-Fi, Bluetooth 2.1, 3.5G and GPS



#### MODAT-200

##### Order Entry PDA

- 667 MHz ARM11 CPU
- Built-in Windows® Mobile 6.5 OS/Windows® CE 6.0 Optional
- USB 1.1 Host/Client 2.0
- Built-in Wi-Fi and Bluetooth wireless communication



**New**



#### MODAT-335A

##### Field Service Terminal

- Marvell® PXA 310 624MHz CPU
- Built-in Windows® Mobile 6.5 OS
- 1D/2D Barcode reader, RFID, Handle Grip and UHF
- Wi-Fi, Bluetooth 2.1, 3.5G and GPS



### In-Vehicle Computing

**New**

#### VTT-1000-WiFi

##### Vehicle Tracking Terminal

- 3.5" TFT LCD touch screen
- Embedded with ARM9 400MHz CPU
- Pre-installed Windows® CE 6.0
- Built-in GSM/GPRS and Wi-Fi



**New**



#### iKarPC-Lite

##### 7" In-Vehicle Computer

- TI Sitarta ARM Cortex A8 CPU
- Android 2.3.4 OS
- Bluetooth, Wi-Fi, 3G and GPS
- CAN-bus supports OBD-II



#### GPS CAN UHF AVL-3000

##### Auto Data Server

- Intel® Atom™ N2600 Cedar View
- Microsoft® Windows Embedded Standard 7 E OS
- UHF RFID Reader and 4 Channel Video Capture
- CAN-bus support OBD-II/FMS/J1939



# Complete Line of Innovative Display Solutions

## Rich Variety to Match a Diverse Array of Applications

IEI invests significantly in research and development to provide more consumer-oriented and application-specific products. Extensive design and production experience allows IEI to create products for a wide range of industries including health care, retail, factory and home automation.



## Display Systems


### ■ X86-Based Panel PC

Light Industrial Panel PC	
General Purpose	Vertical Market
	
AFL2-W21A	AFL-412A
<b>New</b> <b>AFOLUX GEN 2 Series</b>	<b>AFOUX Vertical Market Series</b>
<ul style="list-style-type: none"> <li>• W7"~W21.5" stylish flat bezel design with plastic housing</li> <li>• Resistive touch or projected capacitive touch for option</li> <li>• EM/Mifare RFID reader built-in</li> <li>• Front panel IP 64 protection</li> </ul>	<ul style="list-style-type: none"> <li>• In-wall mounting easy to install with changeable front bezel</li> <li>• Webcam/speaker/digital microphone built-in</li> </ul>

Heavy Industrial Panel PC	
General Purpose	Vertical Market
	
PPC-5152A	UPC-V315
<b>PPC Series</b>	<b>PPC Vertical Market Series</b>
<ul style="list-style-type: none"> <li>• 8.4"~19" rugged Panel PC with metal housing</li> <li>• IP 64/IP65 protection</li> <li>• Flexible expansion interface</li> </ul>	<ul style="list-style-type: none"> <li>• Redundant power backup</li> <li>• Sunlight readable LCD</li> <li>• I65/I67 complete waterproof</li> </ul>

### ■ RISC-Based Panel PC

**4.3" Multi-Touch**



IOVU-430M

**IOVU series**

- RISC-based processor
- Built-in Windows® CE embedded OS
- Fanless system
- IP 64 front panel compliant

## Display Monitor

## Display Workstation

## Display Console



- **DM series** - Industrial monitors
- **SRM series** - Sunlight readable monitors
- **TDM series** - Extended temperature display monitors
- **LCD-KIT series** - Open frame LCD monitors
- **AFOLUX monitor** - Multiple video input monitors



- **WS series** - Heavy-duty and expandable with different CPU performance configuration
- **RPC/EC series** - Easy rack-mount industrial workstation



- **LKM series** - 1 or 8 port LCD KVM switch

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# IOVU Series PPC



**IOVU** (Input and Output Viewer) series enable the great embedded flexibility for RISC-based panel PC. Built with a XScale or Alchemy CPU, LCD display, touch screen, I/O peripherals, and pre-installed Windows® CE 5.0 or embedded Linux, the IOVU series provides the most cost-effective and stable solution for a diverse range of embedded RISC-based panel PC applications. The supported software includes thin client technology, remote management tool, embedded OS SDK (software development kit) and BSP (board support package).



- ▶ Equipped with RISC CPU and Windows® CE embedded OS, the IOVU series panel PCs are with high-performance computing power, fanless design, low-power consumption, wide operating temperature, and wide-input-voltage range.
- ▶ The IOVU is designed for high durability in harsh environments, due to its rugged, compact, low power consumption, and embedded system hardware design without failure-prone hard disk and fan. Each IOVU equips with an IP 65 or IP 64 compliant front panel to protect against accidental contacts of foreign bodies and against water.
- ▶ Each IOVU is driven by a powerful RISC CPU with built-in WDT (Watchdog Timer) functions, has a touch screen TFT display, and comes with a series of integrated external peripheral connectors including Ethernet ports, serial ports, USB ports, audio ports, CompactFlash® slot, and optional wireless communication modules supporting Wi-Fi 802.11 b/g, Bluetooth, GPS, or GSM/GPRS.



## IOVU Series Products

Model Name	IOVU-430M	IOVU-430S	IOVU-570M	IOVU-572M	IOVU-751R	IOVU-752S
<b>SYSTEM</b>						
CPU	XScale® PXA270 416 MHz	Samsung S3C2416 400MHz	XScale® PXA270 520 MHz	XScale® PXA310 624 MHz	Alchemy™ AU1250 500 MHz	Samsung S3C6410 ARM11 677 MHz
Operating System	Win CE 5.0	Win CE 6.0	Win CE 5.0	Win CE 6.0	Win CE 5.0	Win CE 6.0
Bootloader Storage	2 MB	128MB	2 MB	128 MB	2 MB	128 MB
RAM	128 MB SDRAM	128 MB SDRAM	128 MB SDRAM	256 MB DDR2	256 MB DDR2	256 MB DDR2
Program Storage Area	1GB miniSD card	Bootloader Storage	1GB SD card	Bootloader Storage	1GB SD card	Bootloader Storage
<b>DISPLAY</b>						
LCD Size	4.3"	4.3"	5.7"	5.7"	7"	7"
LCD Color	262 K	262 K	262 K	262 K	262 K	262 K
Display Resolution	WQVGA	WQVGA	VGA	VGA	WVGA	WVGA
LCD Brightness (cd/m <sup>2</sup> )	500	500	400	400	500	500
Dot Pitch (mm)	0.066(H) x 0.198(V)	0.066(H) x 0.198(V)	0.06(H) x 0.18(V)	0.06(H) x 0.18(V)	0.064(H) x 0.191(V)	0.1905(H) x 0.1905(V)
Viewing Angle (H-V)	100 / 60	140 / 120	140 / 100	140 / 100	140 / 100	140 / 130
Backlight MTBF	10000	20000	50000	50000	50000	50000
Touch Screen	1. Projected Capacitor Type 2. Resistor Type	Resistor Type	Resistor Type	Resistor Type	Resistor Type	Resistor Type
Multimedia Support	MPEG 1	MPEG-1/2/4/H.263	MPEG 1	MPEG 1	MPEG 1/2/4 and WMV9	MPEG-4/H.263/H.264
<b>I/O and COMMUNICATION</b>						
I/O Interface	1 x RS-232/422/485 (software controllable) 1 x Reset button 1 x 10/100Mbps LAN 1 x USB1.1 host 1 x CAN-bus 2.0b 6 x GPIO(voltage range 2.97V~3.63) 1 x 2-pin terminal block DC input 1 x miniSD card slot	1 x RS-232/422/485 COM port (software controllable) 1 x Reset button 1 x 10/100Mbps LAN 1 x USB1.1 host 1 x CAN bus 2.0b 6 x GPIO 1 x 2-pin terminal block DC input 1 x miniSD card slot	1 x RS-232/422/485 (software controllable) 2 x 10/100Mbps LAN 2 x USB1.1 host 1 x SD card slot 1 x Reset button 1 x AT mode power switch 1 x 2-pin terminal block DC input	1 x RS-232/422/485 (software controllable) 2 x 10/100Mbps LAN 2 x USB 1.1 host 1 x SD card slot 1 x Reset button 1 x AT mode power switch 1 x 2-pin terminal block DC input	1 x 4-wired RS-232/422/485 (software controllable) 1 x RS-232 2 x 10/100Mbps LAN (one supports PoE) 2 x USB 2.0 host 1 x Reset button 1 x AT mode power switch 1 x 2-pin terminal block DC input 1 x Power jack	1 x RS-232 COM port 1 x RS-232/422/485 COM port (software controllable) 1 x 10/100Mbps LAN (supports PoE) 2 x USB 2.0 host 1 x Reset button 1 x On/Off power switch 1 x Power jack
Audio	2 x 1W speaker	2 x 1W speaker	2 x 1.5W speaker	2 x 1.5W speaker	2 x 1.5W speaker	2 x 1.5W speaker
Wireless LAN	Optional	802.11 b/g	802.11 b/g	802.11 b/g	N/A	N/A

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# Celebrate Humanity with Technology

## PACSmate®

PACSmate Technology Inc.

PACSmate Technology Inc. is a professional medical solution provider, focusing on developing and manufacturing medical IT and medical device products which include high-resolution diagnostic displays, bedside all-in-one computers, medical panel PC and medication cart solutions. As a member of the ICP Group, the technology know-how and manufacturing expertise were inherited by PACSmate to fulfill the unique demands of the healthcare industry. PACSmate Technology Inc. is an ISO-9001 and ISO-13485 certified company since year 2011.



## Diagnostic Display



### PACS Diagnostic Application

High-Resolution Monochrome Monitor	MMD-5201M <b>12-bit 5MP</b>	MMD-3213M <b>12-bit 3MP</b>	MMD-2213M <b>12-bit 2MP</b>
LCD Size	20.1"	21.3"	21.3"
Resolution	2560 x 2048	2048 x 1536	1600 x 1200
Max. Luminance	Typical: 850cd/m <sup>2</sup> Calibrated: 600cd/m <sup>2</sup>	Typical: 800cd/m <sup>2</sup> Calibrated: 600cd/m <sup>2</sup>	Typical: 1000cd/m <sup>2</sup> Calibrated: 600cd/m <sup>2</sup>
High-Resolution Color Monitor	MMD-4300C <b>30-bit 4MP</b>	MMD-3213CH <b>30-bit 3MP</b>	MMD-2213CH <b>30-bit 2MP</b>
LCD Size	30"	21.3"	21.3"
Resolution	2560 x 1600	2048 x 1536	1600 x 1200
Max. Luminance	Typical: 370cd/m <sup>2</sup> Calibrated: 250cd/m <sup>2</sup>	Typical: 800cd/m <sup>2</sup> Calibrated: 550cd/m <sup>2</sup>	Typical: 950cd/m <sup>2</sup> Calibrated: 550cd/m <sup>2</sup>

## Clinical Review Display



### Modality/Clinical Reviewing Application

Monochrome Monitor	MMC-2201M	Color Monitor	MMC-2201C	MMC-1190C	MMC-1170C
LCD Size	20.1"	LCD Size	20.1"	19"	17"
Resolution	1600 x 1200	Resolution	1600 x 1200	1280 x 1024	1280 x 1024
Max.Luminance	700cd/m <sup>2</sup> (typical)	Max.Luminance	300cd/m <sup>2</sup> (typical)		

## Medication Cart



### Nursing Application

- Integrated Lead-acid or Li-Fe battery system
- Real-time battery status monitoring
- Easy-to-work and Easy-to-clean
- Flexible configuration of storage space

## Medical Panel PC



Model Name	POC- 19i Series	POC-5/A Series	POC-4/A Series	POC-3/B-A320 Series
Feature	High-Performance	Fanless	Fanless	With Back-Up Battery
LCD Size	17"/19"	17"	15"/17"/19"	17"
Chipset	Intel HM55	Intel® GM45	Intel® 910GMEL	Intel® GME965
CPU	Intel Core™ i7-620M 2.66G/ Core™ i5-520M 2.4G/ Core™ i3-350M 2.26G/ Celeron P4500 1.86G	Intel® Core™2 Duo T9400-2.53G/ T7500-2.2G/P8400 2.26G	Intel® Celeron® M373-1.0G/Atom™ N270	Intel® Core™2 Duo T7500-2.2G/CM550-2.0G
2nd Display	VGA/HDMI	VGA/HDMI/DisplayPort	VGA	VGA/DVI
Power	AC 110~240V to DC 12V power adapter	AC 110~240V to DC 12V power adapter	AC 110~240V to DC 12V power adapter	AC 110~240V to DC 12V power adapter

## Interactive Bedside Station



Model Name	IBS-19A Series
Feature	LED Dash Light System
LCD Size	19" PMVA wide viewing angle LED backlight
Chipset	Intel® H61
CPU	Intel® Core™ i5 2390T-2.5G/ i3 2100T-2.2G/Pentium® G620T 2.2G
2nd Display	HDMI
Power	AC 110~240V to DC 19V power adapter

- 1 Industrial Computing Solutions
- 2 Video Capture Solutions
- 3 Embedded Computing Solutions
- 4 ORing Network Communication
- 5 Power Supply/Peripherals

### 6 Panel Solutions Introduction