



# Connecting Things Connecting Future

2019 Korenix Selection Guide

Industrial Data Communication

**korenix** | A Beijer Group  
company

# Table of Contents

<b>Company Profile</b> .....	2
<b>Key Features</b>	
Cyber Security .....	3
Redundancy .....	5
Power over Ethernet .....	9
Full Network Management .....	10
Software Tool .....	11
Industrial Certificates .....	12
<b>Application</b>	
Smart City .....	13
Surveillance .....	14
Transportation .....	15
Industry 4.0 .....	16
IIoT .....	17
<b>Highlight Products</b> .....	18
<b>Selection Guide</b>	
JetNet .....	25
JetNet (PoE) .....	28
JetCon .....	31
JetWave .....	32



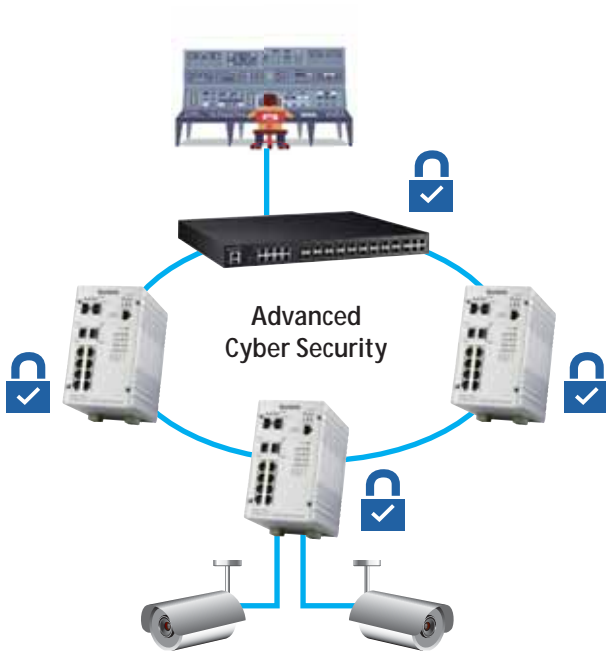
## Company Profile

**Korenix Technology**, a Beijer group company within the industrial communication business area, is a global leading manufacturer since 2004. We provides innovative, market-oriented, value-focused industrial wired and wireless networking solutions including various product lines:

- Industrial Ethernet Switch
- Industrial Power-over-Ethernet Switch
- Industrial Wi-Fi/Cellular Solution
- Industrial Media Converter
- Industrial Connectivity
- Network Management Software

# Key Features – Cyber Security

The trends of Internet of things (IoT) and Industrial 4.0 brings more devices to be connected to networks. Security issues and hack attacks become even more critical nowadays. Korenix developed “Cyber Security” features that meet IEC-62443-4-2 which provide more safety and reliable network infrastructure.



## Network Level Defense

- DHCP Snooping
- Dynamic ARP Inspection
- IP Source Guard

## Traffic Level Defense

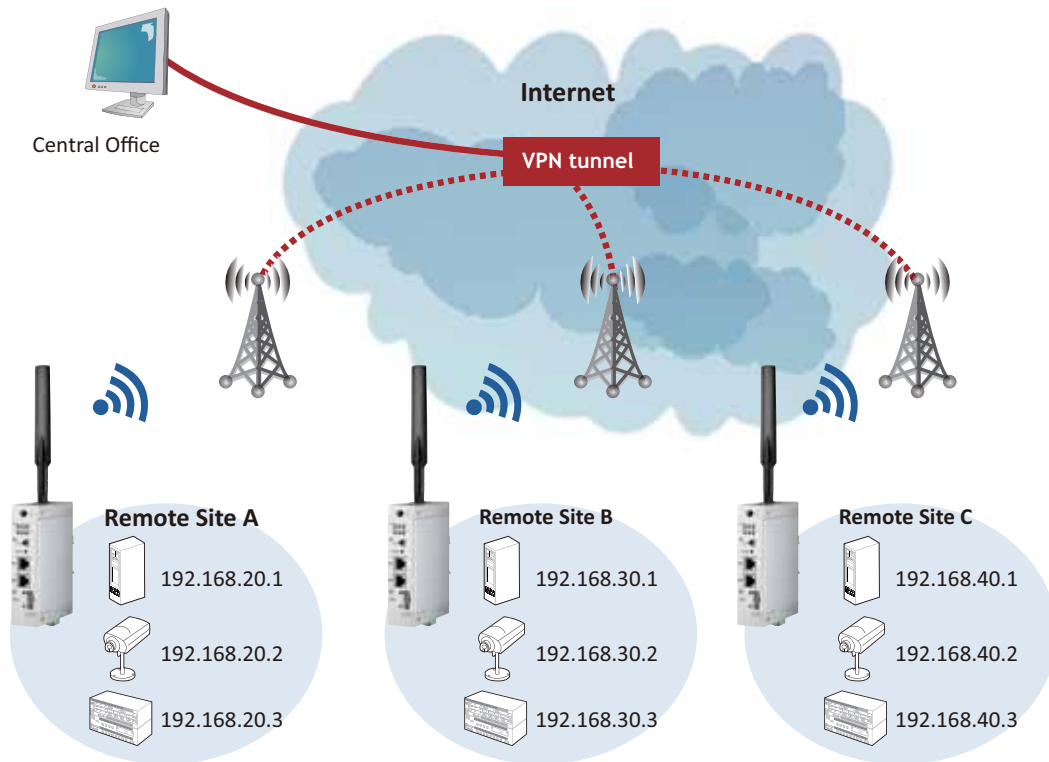
- L3/L4 ACL block untrusted traffic from a trusted device
- Precise video stream isolation

## Device Level Defense

- L2 ACL identifies and authorizes a device
- Only trusted devices can access the network

Function	Application	Benefits
DHCP Snooping	Ensure clients obtain IP from authorized server	Preventing unauthorized DHCP attack
Dynamic ARP Inspection(DAI)	Binding IP + MAC on devices	Only authorized devices can access into the network
IP Source Guard(IPSG)	Validates incoming packets	Prevents IP address spoofing
Multi-Level Authentication	Different levels users' authentication	Different privileges according to different levels
TACACS+	Remote authentication for network access control	One-time authentication on devices, higher security

**VPN (Virtual Private Network)** extends a private network across a public network as if it were directly connected to the private network. It provides security by the use of tunneling protocol and often through procedures such as encryption.



# Key Features – Redundancy

## Multiple Super Ring

Beyond Fast Recovery

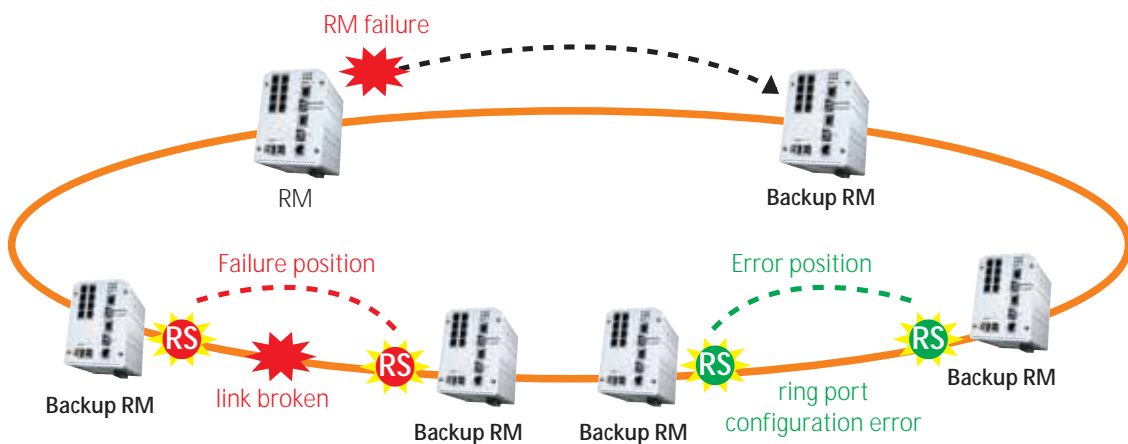
It's reliable, stable, quality and broadcast-storm-free.

### RM Redundancy

While RM is the only manager in the ring, Korenix-patented **RM Redundancy** solves the critical point problem and guarantees the ring is always well-controlled.

### Backup RMs All Standby

Every switch other than the RM is **Backup RM**. One of the backup RM will immediately take over the role if the RM happens to fail. No manual configuration is required.



### 5 ms\* Failure Recovery 0 ms Link Restoration

Korenix-patented **Seamless Restoration** introduces the most stable restoration process to the world:

- No packet loss
- No broadcast storm
- No influence to the network



Seamless Restoration

Packet loss

Broadcast storm

### Failure Positioning Failure Identification

Korenix NMS and the RS LED (Ring Status) help administrators and field engineers to identify the type and location of a failure, which quickens troubleshooting.

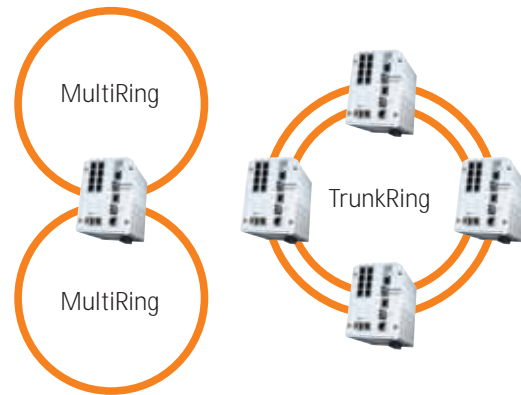


Korenix NMS points out the failure position

\*Note: support on target models

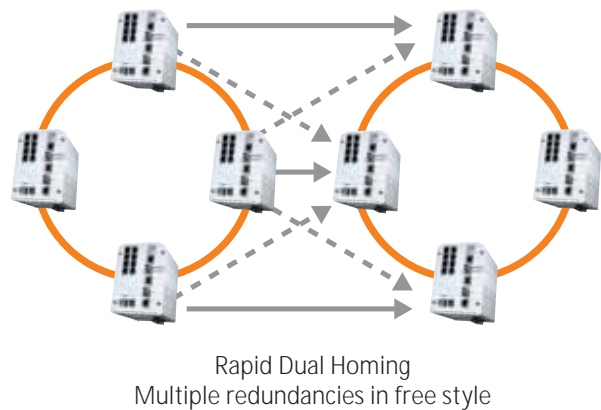
## MultiRing, TrunkRing Flexible Ring Deployment

MultiRing provides the simplest way to connect multiple rings together. TrunkRing combines port trunk and MSR technologies, which doubles the network bandwidth and the link redundancy.



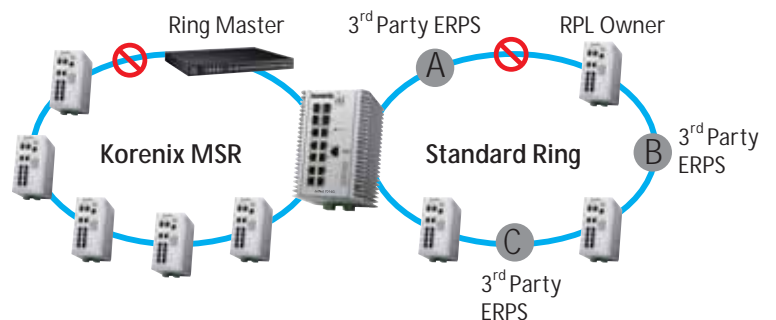
## Rapid Dual Homing Double, Triple... Redundancy

Simply enable the function and connect two rings through multiple links in free style without complex configurations such as master, slave, coupler port and so on. The failover time is less than 50ms and restoration time is 0.



***Korenix offers both proprietary and open technologies to meet various requirements.***

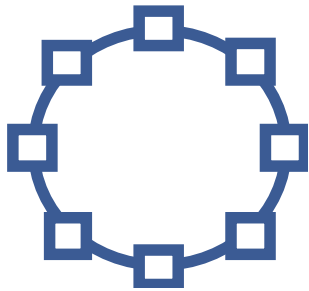
- Korenix Proprietary: MSR (Multiple Super Ring)
- Standard Network Redundancy
  - IEEE 802.1d Rapid Spanning Tree (RSTP)
  - IEEE 802.1s Multiple Spanning Tree (MSTP)
  - ITU-T G.8032 ERPS



## Korenix MSR

### Ultra Fast Recovery Without Single Point Of Failure

One of the best redundant technology, 5ms\* fast recovery, 0ms seamless restoration, without risk of the single point of failure on RM.

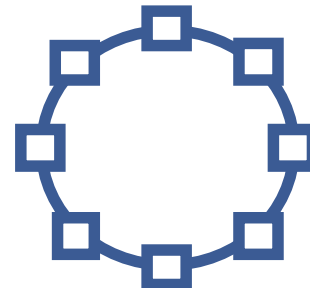


\*Note: support on target models

## ERPS V1

### Single Ring With Multiple Vendors Mixed

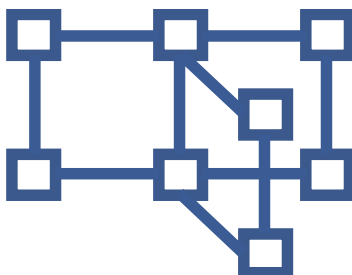
Takes the advantage of the openness, the switches in a ring will not be tied to specific supplier any more. Moderate failover time, 50ms recovery, 50ms restoration.



## ERPS V2

### Flexible In Topology Without Compromise On Recovery Time

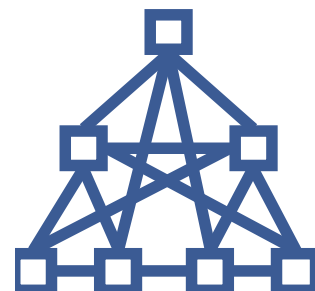
Future proof, easy expansion by adding unlimited levels of rings. Each ring operates independently, and the recovery time in all rings are deterministic, 50ms recovery, 50ms restoration.



## RSTP

### Any Topology, Multi- Vendors, Recovery Time Is Not Critical

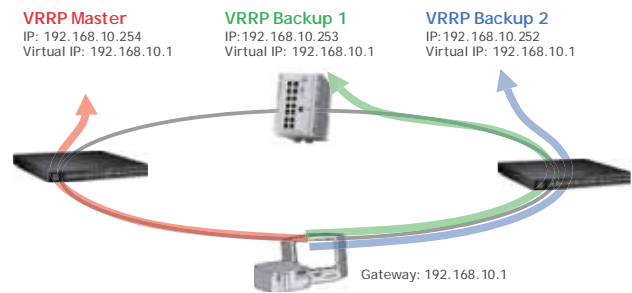
The main purpose of RSTP is for connecting switches from different vendors into any kind of topology. It's flexible and safe, however, the recovery time is not deterministic, depends on the size and topology.





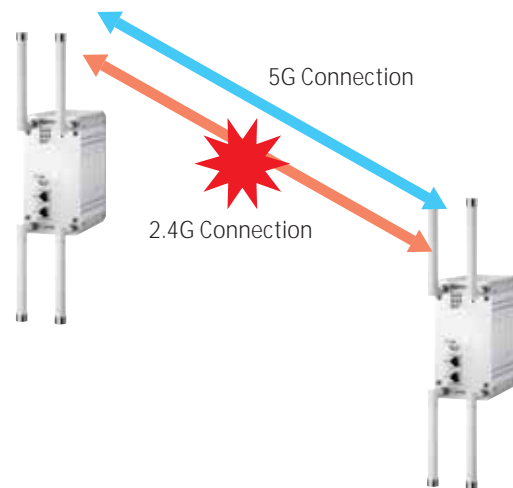
# VRRP (Virtual Router Redundancy Protocol)

VRRP increases the availability and reliability of routing paths via automatic default gateway selections on an IP subnetwork group. If one router goes down, one of the other group members can take place for the responsibilities for forwarding the traffic.



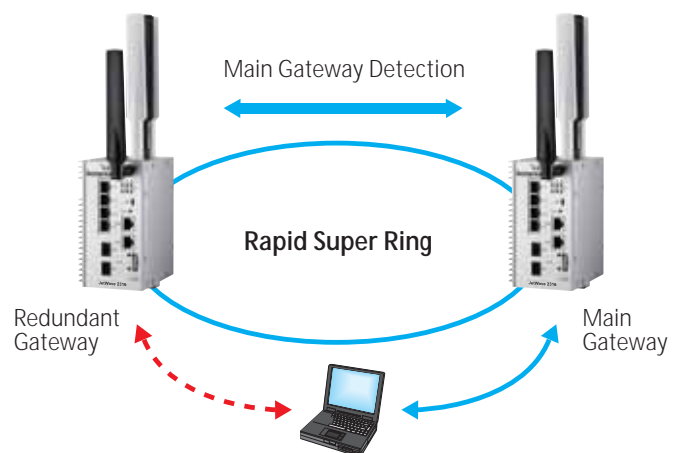
# Dual Radios for wireless Redundancy

JetWave 3220 supports two Wifi interfaces that can be configured as 802.11a/b/g/n/ac and 2.4G/5G band. By connecting the two Wifi interfaces to the same peer, the two links backup with each other. Users can assign primary link on one interface and backup link on the other.



# RSR Redundant Gateway

JetWave products support RSR Redundant Gateway design: the main and redundant gateway exchanges the same gateway settings with each other while the RSR ring is normal. Once the main gateway is shutdown or the RSR ring abnormal, the backup gateway is activated to ensure the edge client devices still can access the internet through backup gateway.



# Key Features – Power over Ethernet

## Per Port Power Budget

Defines an upper bound of the PoE output of each port to prevent over consumption from a malicious or malfunctioning PD.

Port Configuration

Port	PoE Mode	Powering Mode	Power Budget(W)	Power Priority
1	Disable	802.3af	32.0	Critical
2	Enable	802.3af	15.4	Critical
3	Enable	802.3af(2-Event)	32.0	Critical
4	Enable	802.3af(LLDP)	32.0	Critical
5	Enable	Force	32.0	Critical

## PoE On Demand

**PoE scheduling** turns on/off a PD according to the user defined schedule, **802.1AB LLDP PoE** negotiates with PD to give power on demand. It's simply green and efficient.

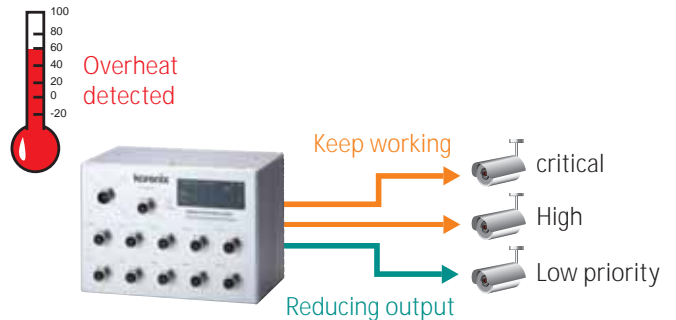
Power over Ethernet Schedule

PoE Schedule on Port 1 is Enabled

Time	Sunday	Monday	Tuesday	Wed
00:00				
01:00				
02:00				
03:00				
04:00				
05:00				
06:00				
07:00				
08:00				
09:00				

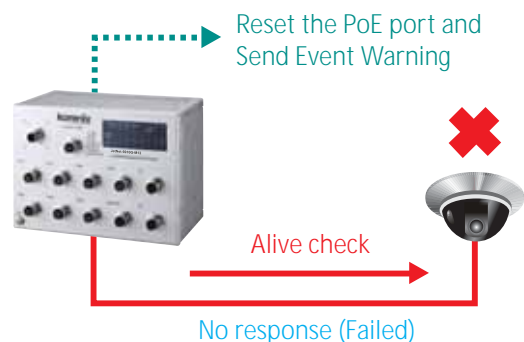
## Overheat Protection

An embedded thermal sensor warns of overheating. The PoE output of less important ports will be reduced to ensure critical PD functioning in abnormal conditions.



## PD Keep-Alive Check

LPLD does a keep-alive check on PD periodically and resets the PoE port to bring the PD back to life if a PD failure is detected.



# Key Features – Full Network Management

## Full Network Management Features with Lite Managing Interface

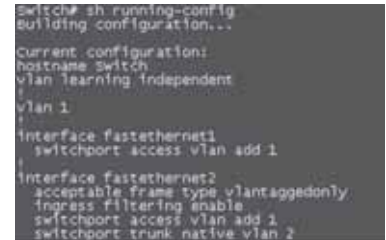
Korenix managed switches support the most commonly used network management features such as MSR, RSTP, VLAN, QoS, IGMP snooping and so on. Users who do not need advanced group management features or SNMP can benefit from this cost effective solution in their projects.



User-friendly web interface



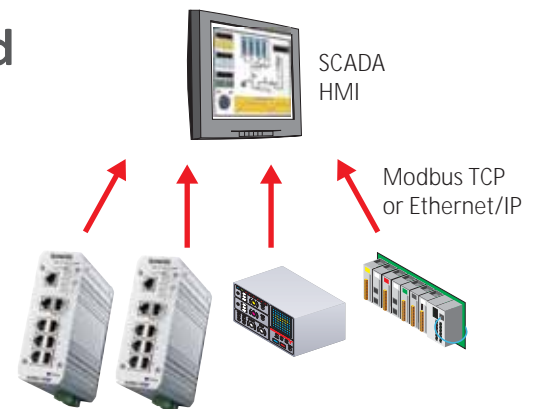
utility



Cisco-like CLI

## Modbus TCP, Ethernet/IP Managed for Industrial Integration

Industrial engineers are able to include JetNet switches and monitor the network status on their SCADA or HMI systems through Modbus TCP or Ethernet/IP without the need of IT knowledge or an additional network management system.



Monitor and control the network and the industrial devices through one single management interface

# Key Features – Software Tool

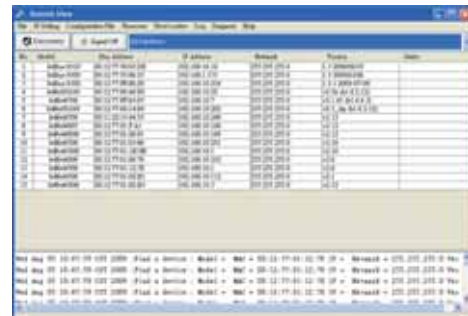
## Korenix NMS

Korenix NMS (Industrial Intelligent Network Management System) provides a comprehensive platform for monitoring, configuring, and maintaining mission-critical IP-based communication networks.



## Korenix View

Korenix View is a client/server architecture based management tool that will discover Korenix devices on all network interfaces or the specific one. Group management is supported. With group assign IP address, firmware upgrade..., it can help to achieve an efficient management.



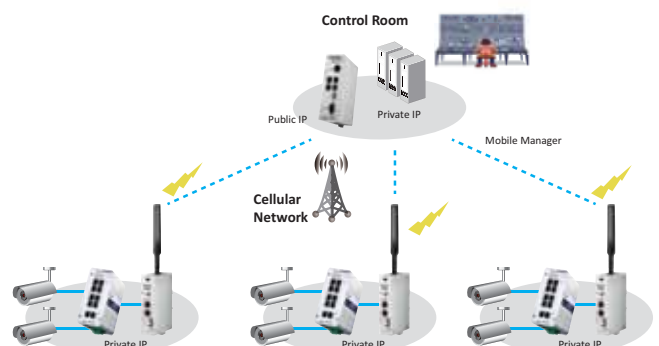
## JetWave Smart Remote(JSR) APP

- Easy way to monitor your WiFi environment
- AP/Client Status Visualization
- Antenna Deployment Assistant



## Korenix Mobile Manager

Korenix Mobile Manager is a simple utility to resolve the issue of mobile devices' inability to be accessed from the internet. The utility provides maintenance capacity on the cellular routers. Therefore, it can simplify the inconvenience of remote management.



# Industrial Certificates



## I.T.S/ Road Side

Ind. EMC  
NEMA-TS2



On Vehicle

## Surveillance/ Track Board

EN50155  
EN50121-2-3/-4



Surveillance/  
Track Board

## On Vehicle

Ind. EMC  
E-Mark



Petrochemical

## Petrochemical

Ind. EMC  
C1D2



Power Feeding

## Power Feeding

IEC61850-3  
IEEE1613

# Application – Smart City



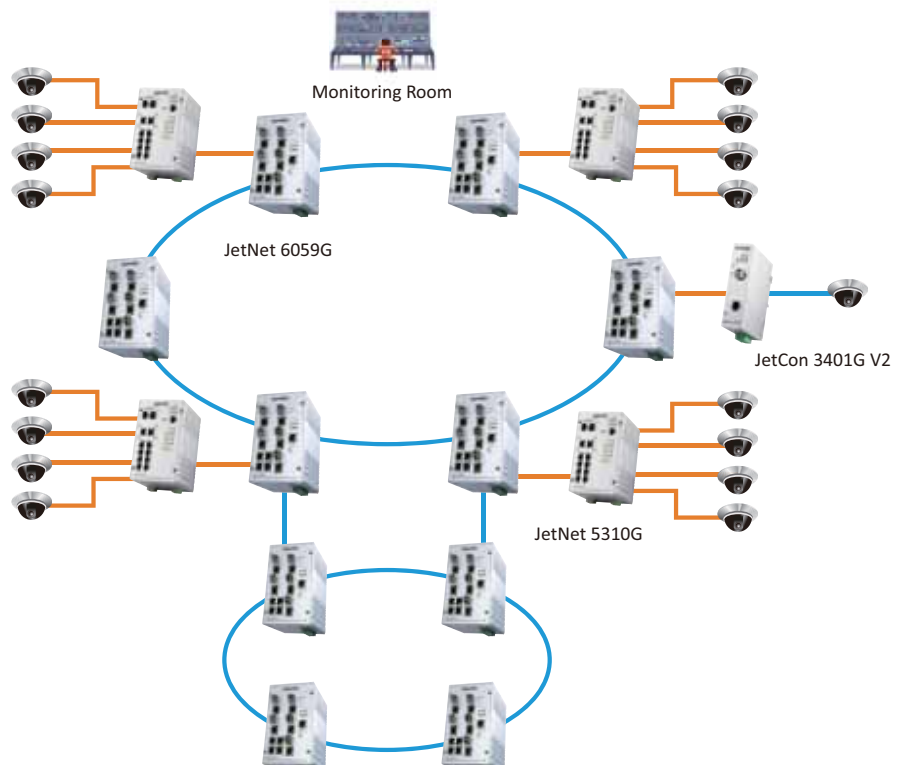
## Sports Complex Surveillance

This sports complex in Middle East occupies more than 800,000 sqm, and contains two football stadiums, training fields, hotels, and apartments which make this location absolutely critical in terms of security. High quality and live video with no time delay is the main objective of video surveillance projects.

## Korenix Solution

High definition IP cameras have been installed in most of locations in the sport complex - main gates, entrances, parking zones, auditoriums, corridors and storage areas. A reliable network infrastructure with minimum possibility down time, fast recovery from disasters and centralizing management system was a big challenge for project managers. Korenix Ring and PoE switches provided reliable

network solution connecting long distance between buildings and central monitor room, solved the power supply problem to the cameras. It works reliably even the temperature in summer is higher than 60°C.



## Applied Models

**JetNet 6059G**  
Industrial 9 Gigabit  
Managed Switch



**JetCon 3401G V2**  
Industrial Gigabit  
Media Converter



**JetNet 5310G**  
Industrial 8+2G  
PoE Switch



# Application – Surveillance

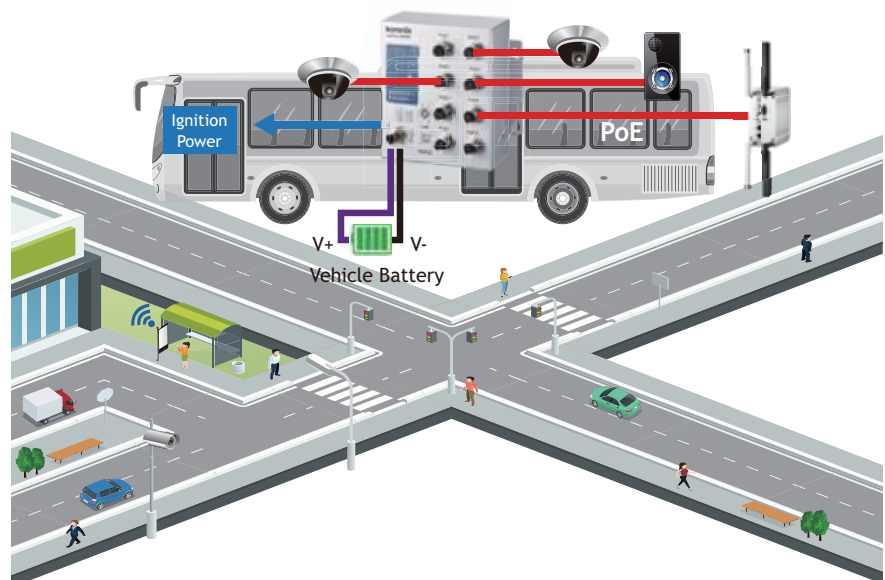


## Bus Surveillance

Surveillance in public transportation ensures the safety of passengers and driver, and plays an important role in criminal investigation. PoE camera is commonly used on bus since it can be powered by PoE switch through the Ethernet cable and achieve data transmission. A bus company chose Korenix's E-Mark compliant PoE switch for their project. It is rugged, plug-and-play unmanaged switch equipped with robust M12 connector design in order to be used well in the vibrating environment.

## Korenix Solution

JetNet 3808G-M12 was implemented DC-to-DC power booster technology. It can take power input range from 9 to 36V and boost to 54V to provide stable power feeding for the powered devices. Another special power design for bus application is "power ignition." In a case that only engine is turned off but the entire vehicle system is on, the feature will set the switch automatically power off after



a certain time to prevent the battery from running out.

Certifications includes EN50155, E-Mark and EN50121-4 to ensure high availability and wide usage particularly for bus, train and track side application.

## Applied Models

**JetNet 3808G-M12**  
Industrial  
Unmanaged  
Booster PoE Switch



# Application – Transportation

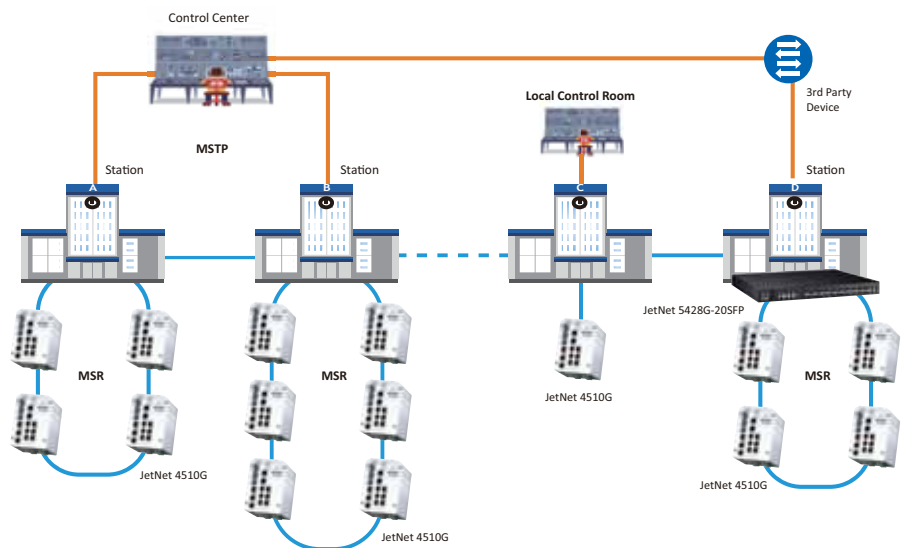


## Qinghai - Tibet Railway

The Qinghai-Tibet railway is the highest plateau railway in the world. To ensure a reliable operation in the extreme environment, the authority built a monitoring and control system on its power SCADA system along all the track line.

## Korenix Solution

Korenix was chosen as its main network system for the ability to work stably in extreme conditions - strong winds, heavy sandstorms and more than a 30°C temperature variation during one day. The IP31 aluminum housing offers great cooling effect, and protects the device from heavy sandstorms. EN50121-4 EMC level compliance ensures to protect the switches from the frequent thunderstorms.



114 pieces of JetNet 5428G and 96 pieces of JetNet 4510 were installed in 22 railway stations and the 96 field sites. Two levels of rings are designed for better scalability. Each field-level ring consists of several JetNet 4510 that run Korenix MSR for fast recovery. The JetNet 5428G at the station-level connected with the 3rd party core switches by MSTP. Korenix NMS is a visualized management system for monitoring and control over large networks. It is used to report failures and helps the customer reduce troubleshooting efforts to a minimum.

## Applied Models

**JetNet 4510**  
Industrial 10-ports  
Managed Switch



**JetNet 5428G-20SFP**  
Industrial 8FE+16SFP+4G  
Gigabit Managed Switch



**Korenix NMS**  
Intelligent Network  
Management System





# Application – Industry 4.0

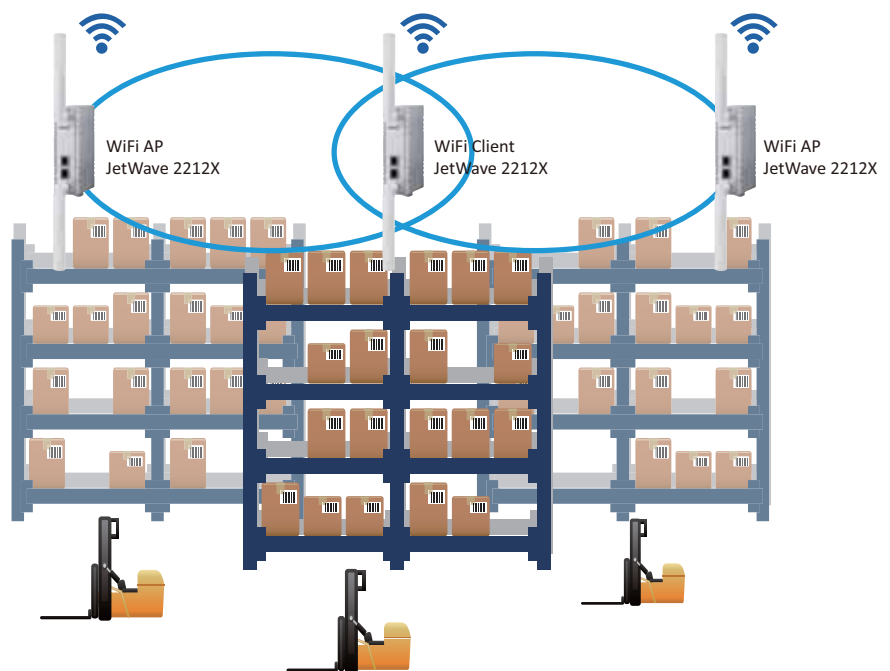


## Automated warehouse

Automated warehouse reduces the cost, time and accelerates efficiency. It is a good example of new industrial era. AGV(Automated Guided Vehicle) delivers goods through following the wire or marks on the floor in warehouses. It receives instruction, orders and provides the material status and operational condition back to the control center.

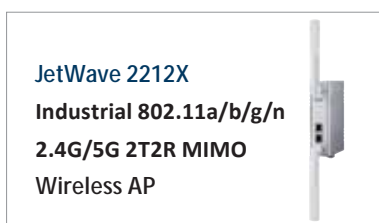
## Korenix Solution

An e-commerce company installed Korenix JetWave 2212X on the AGV. The biggest challenge is the roaming reliability. While AGV moving around, the WiFi client will roam to another AP if it is under its network coverage. Faster processing time can reduce packet loss during handover. JetWave was designed with a unique fast roaming mechanism with just 100ms roaming time. Ideal for automated warehousing and mobile related applications.



Another winning point is the compact size of JetWave2212X. It can move easily between the storage racks, and occupied not much space in AGV, which is designed to load goods.

## Applied Models



# Application – IIoT

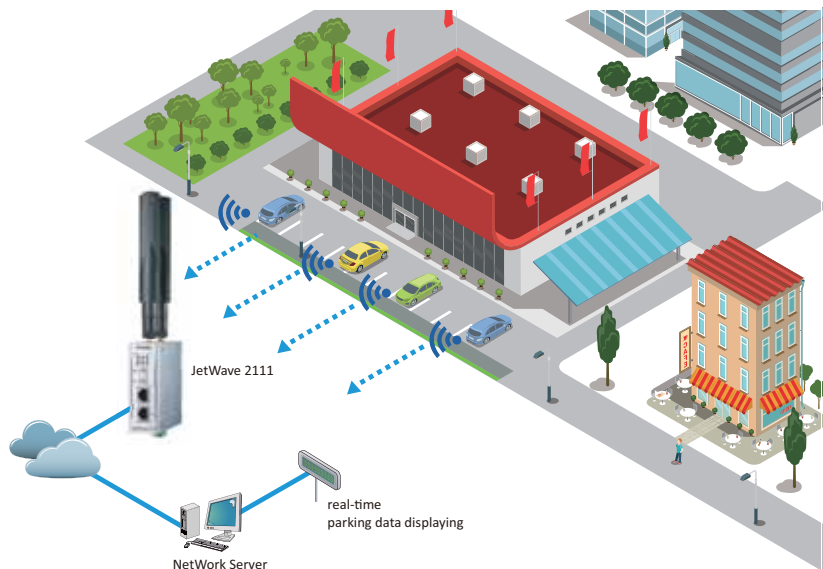


## Smart Parking

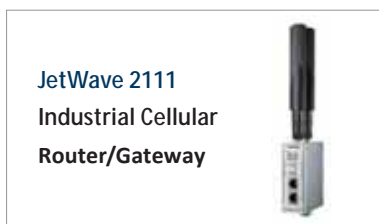
Smart parking is a popular topic in each city. Sensors installed in the parking lot to detect the real-time parking status, and the data will be updated to electronic signage. With the instant display of remaining parking spaces, it significantly eased congestion issue and air pollution by guiding drivers directly to find the vacant parking space.

## Korenix Solution

The data needed to be transferred from sensors is tiny. Therefore, JetWave 2111 – Low Data Rate Cellular Router, was chosen as the solution for data transmission. JetWave 2111 come with serial, Ethernet and LTE Cat.1 interfaces. It connected to the field sensors by serial port and transmit the data through LTE network. The LTE Cat.1 is with low bandwidth behavior – 10Mbps for download and 5Mbps for upload. The JetWave product cannot only transmit these small amounts of data stably, but also effectively save cellular communication costs.



## Applied Models



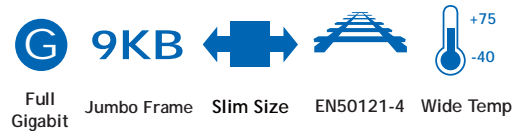
JetWave 2111  
Industrial Cellular  
Router/Gateway

# Highlight Products – Industrial Switches

## JetNet 3205G / 3205GP Series Industrial Full Gigabit Unmanaged Switch

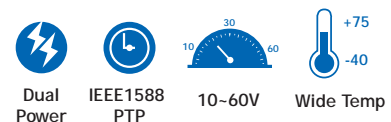
- 4 PoE ports compliance with IEEE802.3af/at standard with total power budget 120W (JetNet 3205GP series)
- Industrial Slim Size Design
- 9K bytes Jumbo Frame for large file transmission
- Power Event Alarm

Model Name	10/100/1000 Base-TX	1000 Base-FX
JetNet 3205G	5	
JetNet 3205GP	5 ( 4 PoE )	
JetNet 3205G-1F	4	1
JetNet 3205GP-1F	4 ( 4 PoE )	1



## JetNet 5210G Industrial 8FE + 2G RJ/SFP Combo Managed Switch

- 8 10/100TX, 2 Gigabit RJ/SFP combo ports
- Network Redundancy – MSR, ERPS, RSTP, MSTP, Super Chain
- Advanced Security – Port Security, IP Access list, SSH and HTTPS



## JetNet 5612G/7612G Series

Model Name	10/100/1000 Base-TX	Giga Ports	Power Budget	Remark
JetNet 5612G-4F	8	4 SFP	Non-PoE	Layer 2
JetNet 7612G-4F	8	4 SFP	Non-PoE	Layer 3
JetNet 5612GP-4F	8	4 SFP	240w	Layer 2
JetNet 7612GP-4F	8	4 SFP	240w	Layer 3



Coming Soon



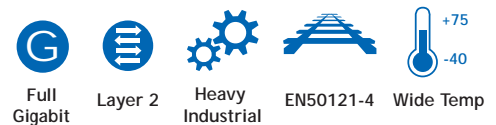
## JetNet 5620G

- 16G RJ + 4 Gigabite RJ/SFP combo ports
- Advanced Security system by Port Security, Access IP list, SSH, HTTPS Login, IEEE 802.1x / Radius Server authentication
- Advanced management by LACP/VLAN/GVRP/QoS/IGMP/ Private VLAN/QinQ/Snooping/Rate Control/Online Multi-Port Mirroring/DHCP

Model Name	10/10/1000 Base-TX	Giga Ports	Power Budget	Remark
JetNet 5620G-4C	16	4 Combo	Non-PoE	Layer 2



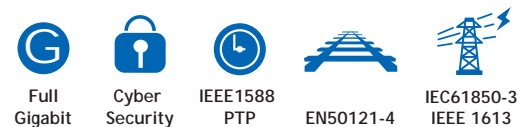
Coming Soon



## JetNet 6828Gf

### Industrial 16G + 8G Combo + 4G SFP Gigabit Managed Switch

- 16 100/1000TX, 8 100/1000 RJ-45/SFP combo ports, 4 Gigabit SFP ports
- Advanced L3 – Static Routing, Dynamic Routing: RIP V1/V2, OSPF V1/V2, VRRP V2
- Advanced Cyber Redundancy –MSR, ERPS, RSTP, MSTP, SuperChain
- -40 to 85°C Operating Temperature



## JetNet 3810G V2 Industrial Booster PoE Switch

- Vehicle PoE: DC 8-32V, deliver 8 port PoE @48V
- IEEE802.3af compliant PoE: Total power budget is 80W with max. 15.4W per port



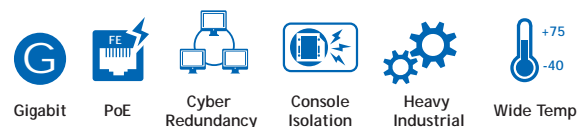
## JetNet 3808G-M12 Industrial 7FE + 1 GbE Un-Managed Booster PoE Switch

- 1 Gigabit/PSE M12 X-code, 7 100M/PSE M12 D-code, M12-A Power
- Power System design with 120W PoE budget and compliance with safety requirement
- Embedded DC 54V Booster
- Power Ignition Management
- -40 to 75°C Operating Temperature



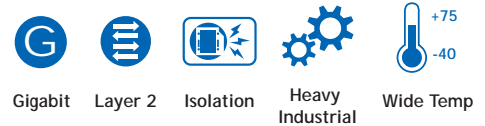
## JetNet 5310G Industrial Gigabit Managed PoE Switch

- IEEE 802.3af 15.4W / IEEE 802.3at 30W High Power PoE
- 240W total power budget for High-power PoE camera
- SFP ports support 100/1000 Mbps with Digital Diagnostic Monitoring (DDM) to monitor long distance fiber quality



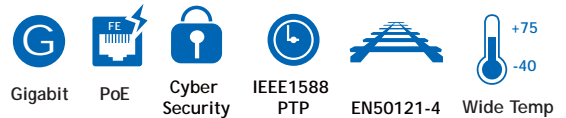
## JetNet 5810G Industrial 8FE + 2G Combo DC Booster Switch

- 8 10/100TX, 2 Gigabit RJ/SFP combo ports
- Total PoE Budget 240W @ 75°C ambient temperature
- Advanced Security system by Port Security, Access IP list, SSH, HTTPS Login, IEEE 802.1x / Radius Server authentication
- Advanced management by LACP/VLAN/GVRP/QoS/IGMP/ Private VLAN/QinQ/Snooping/Rate Control/Online Multi-Port Mirroring/DHCP



## JetNet 5728G Industrial 20FE+8G Managed PoE Ethernet Switch

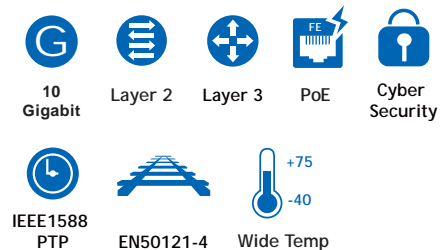
- Advanced Cyber Redundancy – MSR, SuperChain, ITU-T G.8032 ERPS
- Isolated redundant power inputs with VDC power or 110/220 VAC power



## JetNet 6628X / 7628X series

- 24 100/1000Base-TX + 4 10 Gigabit SFP ports
- Diverse product portfolio including L2/L3, PoE/Non-PoE

Model Name	Layer	PoE
JetNet 6628XP-4F	L2	PoE
JetNet 7628XP-4F	L3	PoE
JetNet 6628X-4F	L2	Non-PoE
JetNet 7628X-4F	L3	Non-PoE



# Highlight Products – Industrial Converters

## JetCon 3701G

### Industrial Gigabit Ethernet PoE Media Converter

- Converts 10/100/1000TX to 100/1000FX
- Flexible SFP Fiber transceiver design
- High Power 30W PoE PSE Media Converter
- IEEE 802.3af / IEEE 802.3at Compliance
- Fault Alert for power
- Two way Link Loss Forwarding



Full Gigabit



Dual Power



10-60V



EN50121-4



Wide Temp

## JetCon 1701GP-U

### Industrial Gigabit High Power PoE Injector

- 10/100/1000TX 1-port PoE Injector
- High Power 90W PoE power output
- IEEE 802.3af/at/bt Compliance
- Slim Case with IP-31 grade protection
- Industrial Slim Size Design
- Power Redundancy with 44-57V voltage input



Gigabit

9KB

Jumbo Frame



Slim Size



Wide Temp

# Highlight Products – Wireless Solution

## JetWave 2212 Series Industrial Wireless AP/Client

- 2T2R MIMO doubles data rate up to 300Mbps (JetWave2212G up to 867Mbps)
- Dual 24V DC Redundant
- 1 x Digital input design

Model Name	WIFI Standard	Ethernet Ports	Serial Port
JetWave 2212X	802.11 a/b/g/n	2x FE	
JetWave 2212S	802.11 a/b/g/n	2x FE	2 x Serial (RS232/422/485 3 in 1)
JetWave 2212G	802.11 a/b/g/n/ac	2x GbE	



## JetWave 2111 / 2411 JetWave 2114 / 2414 Industrial Cellular Router/Gateway

- LTE Cat 1 / Cat 4 technology, DL-MIMO
- One MicroSD card slot support
- RS232/422/485 3-in-1 (RJ45 type)
- 24V DC power input
- Passive PoE(JW2114/2414)
- GPS (Optional)

Model Name	LTE Category	Fast Ethernet Ports	RS 232/422/485	DI + DO	SIM Card
JetWave 2111	Cat 1 (max. 10M DL/5M UL )	1	1	1 DI + 1 DO	1
JetWave 2411	Cat 4 (max. 150M DL/50M UL )	1	1	1 DI + 1 DO	1
JetWave 2114	Cat 1 (max. 10M DL/5M UL )	4	2	2 DI + 2 DO	2
JetWave 2414	Cat 4 (max. 150M DL/50M UL )	4	2	2 DI + 2 DO	2





## JetWave 2111L/2411L Industrial Cellular Gateway

- JetWave2411L (LTE Cat 4) max. 150M DL/50M UL
- JetWave2111L (LTE Cat 1) max. 10M DL/5M UL
- 1 DI + 1 DO
- 1 Fast Ethernet Port
- 24V(9~48V) DC power input
- Metal housing



Model Name	LTE Category	Fast Ethernet Ports	RS 232/422/485	DI + DO	SIM Card
JetWave 2111L	Cat 1 (max. 10M DL/5M UL )	1	n/a	1 DI + 1 DO	1
JetWave 2411L	Cat 4 (max. 150M DL/50M UL )	1	n/a	1 DI + 1 DO	1

## JetWave 4110L Industrial LoRa Private Gateway

- LoRa Wireless data link provide stable data stream.
- High output RF Power and high sensitivity provide more than 40KM transmission distance.
- Multi-Interface support RS-485 / Analog or Digital Input / Digital Output.
- Resist the water, dust, temperature and shock and meet with the IP68 standard.
- Analog Input support 0~10 V / 4~20 mA / ADC
- Digital Output support PWM / Latch Mode.
- AUX I/O support remote setup/status inquiry function.





JetNet 7628X-4F



JetNet 6828Gf  
(-AC/2AC/2DC24/  
2DC48/AC-DC24)



JetNet 6628X-4F



JetNet 6528Gf  
(-AC/2AC/2DC24/  
2DC48/AC-DC24)



JetNet 5428G V2-AC  
JetNet 5428G V2-2DC



JetNet 5428G-20SFP-AC  
JetNet 5428G-20SFP-2DC

Rackmount Gigabit Core Switches				Rackmount Ethernet Switches		
Interface						
Total ports number	28	28	28	28	28	28
10/100TX Ports					24	8
10/100/1000TX Ports	24	16	24	16		
100/1000M Combo		8		8	4	4
SFP Ports	4 x 10GbE/1G	4 x 1000M	4 x 10GbE/1G	4 x 1000M		16 x 1000M
Console/USB	RS232/USB	RS232/USB	RS232/USB	RS232/USB	RS232/USB	RS232/USB
DC Power input	2x44-57VDC	DC24(18-36VDC) DC48(36-75VDC)	2x44-57VDC	DC24(18-36VDC) DC48(36-75VDC)	2 x DC24/48 (18-75VDC)	2x DC24/48V(18-75VDC)
AC Power input	1x90-264 VAC	AC110/220 (90-264VAC)	1x90-264 VAC	AC110/220 (90-264VAC)	1xAC110/220 (90-264VAC)	1xAC110/220 (90-264VAC)
Features						
MSR, MultiRing, TrunkRing, RDH SuperChain, ERPS	●	●	●	●	●	●
Broadcast Storm/Loop Protection	●	●	●	●	●	●
L2+ Security (L2/3/4 ACL)	●	●	●	●	●	●
DHCP Server (Opt82, Port Based)	●	●	●	●	●	●
korenix View / korenix NMS	●	●	●	●	●	●
L3 Protocols						
L3 Routing	Static/Dynamic routing, RIP v1/v2, OSPF v2	Static/Dynamic routing, RIP v1/v2, OSPF v2				
VRRP Gateway Redundancy	●	●				
SW/Protocol						
IPv6 Management	●	●	●	●	●	●
RSTP/MSTP	●	●	●	●	●	●
Traffic Priority (QoS)	8 Queues/port	8 Queues/port	8 Queues/port	8 Queues/port	8 Queues/port	8 Queues/port
VLAN,P-VLAN, QinQ, GVRP	4k VLANs	4k VLANs	4k VLANs	4k VLANs	4k VLANs	4k VLANs
IGMP Query, Snooping, GMRP	●	●	●	●	●	●
IEEE 802.1AB LLDP Network Discovery	●	●	●	●	●	●
IEEE 802.3ad LACP, Static Trunk	●	●	●	●	●	●
IEEE 1588 PTP v1/v2	●	●	●	●	●	●
Jumbo Frame/MAC Address	9.2Kbytes/16K	9.2Kbytes/16K	9.2Kbytes/16K	9.2Kbytes/16K	9.2Kbytes/16K	9.2Kbytes/16K
Port Mirroring	●	●	●	●	●	●
DDM SFP	●	●	●	●	●	●
IEEE 802.1x, IP/Port Security/SSL/HTTPS,SSH/Telnet	●	●	●	●	●	●
TACACS+, Radius	●	●	●	●	●	●
Ind. Protocol (ModBus/TCP,EtherNet/IP)	●	●	●	●	●	●
SNMP/RMON/Trap	●	●	●	●	●	●
CLI/Web/Telnet	●	●	●	●	●	●
HW/ME						
Housing Protection (IP)	IP40	IP40	IP40	IP40	IP30	IP40
Dimension (HxWxD mm)	44 x 440 x 378.5	44 x 440 x 378.5	44 x 440 x 378.5	44 x 438 x 375	44 x 438 x 170	43.6 x 431 x 375
Mounting	Rackmount	Rackmount	Rackmount	Rackmount	Rackmount	Rackmount
Operating Temperature	-40~75°C	-40~85°C	-40~75°C	-40~75°C	-40~75°C	-40~75°C
MTBF (hrs)	>202,000	>445,000	>202,000	>445,000	>234,000	>234,000
Certification						
Regulatory/Approval	CE/FCC/EN50121-4	CE/FCC/EN50121-4 /IEEE1613 /IEC61850-3	CE/FCC/EN50121-4	CE/FCC/EN50121-4 /IEEE1613 /IEC61850-3	CE/FCC/UL/ NEMA TS2	CE/FCC/EN50121-4

● Supported



JetNet 7020G



JetNet 7014G V2

JetNet 6059G  
JetNet 6059G-w

JetNet 5210G



JetNet 5020G

JetNet 5010G  
JetNet 5010G-wJetNet 4510  
JetNet 4510-w

## DIN-Rail Managed Ethernet Switches

## Interface

Total ports number	20	14	9	10	20	10	10
10/100TX Ports				8	16	7	7
10/100/1000TX Ports	16	10	4				
100/1000M Combo	4		5	2	4	3	3 x 100M
SFP Ports		4 x 100/1000M					
DI/DO (Dry Relay)	1 DI, 1 DO	1 DI, 1 DO	1 DI, 1 DO	1 DI, 1 DO	1 DI, 1 DO		2 DI, 2 DO
DC Power Input	2 x DC24V (10-60V)	2 x DC24V (10-36V)	2 x DC24V (10.5-60V)	2 x DC24V (10-60V)	2 x DC24V (9.6-60V)		2 x DC24V (10.5-60V)
Console	RS-232	RS-232	RS-232	RS-232	RS-232		RS-232

## Features

Network Redundancy (MSR, RDH, TrunkRing, MultiRing, SuperChain, ITU-T G.8032 ERPS, RSTP/MSTP, LACP)	●	●	●	●	●	●	●
Broadcast Storm/ Loop Protection	●	●	●	●	●	●	●
L2+Security (L2/3/4 ACL)	●	●			●		
DHCP Server (Opt82, Port Based)	●	●	●	●	●	●	●
korenix View/ korenix NMS	●	●	●	●	●	●	●

## SW/Protocol

IPv6 Management	●	●			●		
RSTP/MSTP	●	●	●	●	●	●	●
Traffic Priority (QoS)	●	●	●	●	●	●	●
VLAN, P-VLAN, QinQ, GVRP	●	●	●	●	●	●	●
IGMP Query, Snooping, GMRP	●	●	●	●	●	IGMP Query, Snooping	
IEEE802.1AB LLDP Network Discovery	●	●	●	●	●	●	●
IEEE802.3ad LACP, Static Trunk	●	●	●	●	●	●	●
IEEE 1588 PTP v1	●	●	●	●	●	●	●
Jumbo Frame	●	●			●		
Port Mirroring	●	●	●	●	●	●	●
DDM SFP	●	●	●	●	●	●	●
IEEE 802.1x, IP/ PortSecurity, SSL/HTTPS, SSH/Telnet	●	●	●	●	●	●	●
User Security	●	●	●	●	●	●	●
Ind. Protocol (ModBus/ TCP, Ethernet /IP)	●	●	●	●	●	●	●
SNMP/RMON/ Trap	●	●	●	●	●	●	●
CLI/Web/Telnet	●	●	●	●	●	●	●

## HW/ME

Housing Protection (IP)	IP31/Aluminum	IP31/Aluminum	IP31/Aluminum	IP31/Aluminum	IP31/Aluminum	IP31/Aluminum	
Dimension(HxWxD mm)	147 x 97 x 112	160 x 108 x 127	160 x 95 x 127.2	160 x 95 x 127.2	160 x 108 x 127	137 x 96 x 119	
Mounting	DIN Rail/ Wall Mounting	DIN Rail/ Wall Mounting	DIN Rail/ Wall Mounting	DIN Rail/ Wall Mounting	DIN Rail/ Wall Mounting	DIN Rail/Wall Mounting	
Operating Temperature	-40~75°C	-40~75°C	-25~70°C / -40~75°C(-w)	-40~75°C	-40~75°C	-25~70°C/ -40~75°C(-w)	
MTBF (hrs)	308,000	578,000	425,000	472,000	290,000	425,000	

## Certification

Regulatory/Approval	CE/FCC/ EN50121-4	CE/FCC/ EN50121-4	CE/FCC/ UL/NEMA(-w)	CE/FCC/ EN50121-4	CE/FCCCE/FCC/ UL/EN50121-4	CE/FCC/UL/NEMA	
Compliance Standard	Heavy Ind. EMC	Heavy Ind. EMC	Heavy Ind. EMC	Heavy Ind. EMC	Heavy Ind. EMC	Heavy Ind. EMC	

● Supported



JetNet 3212G    JetNet 3205G    JetNet 3018G    JetNet 3010G    JetNet 3008G V2    JetNet 3005G V2    JetNet 3008    JetNet 3008f    JetNet 2005    JetNet 2005f

JetNet 3205G-1F    JetNet 3010G-w    JetNet 3008-w    JetNet 3008f-w    JetNet 2005-w    JetNet 2005f-w

### Din-Rail Unmanaged Ethernet Switches

#### Interface

Total ports number	12	5	18	10	8	5	8	8	5	5
10/100TX Ports			16	7			8	6	5	4
10/100/1000TX Ports	8	5 (3205G) 4 (3205G-1F)			8	5				
100/1000M Combo	2		2	3 x 1000M						
SFP Ports	2 x 100/1000M	1 X1000M (3205G-1F)						2 x 100M(SC)		1 x 100M(SC)
DI/DO (Dry Relay)	1 DO	1 DO	2 DO		1 DO	1 DO	1 DO	1 DO	1 DO	1 DO
DC Power input	2 x DC 24 (10-60V)	2 x DC 24 (10-60V)	2 x DC 24 (10-60V)	2 x DC 24 (12-48V)	2 x DC 24 (9-60V)	2 x DC 24 (10-60V)	2 x DC 24 (10-60V)	2 x DC 24 (10-60V)	1 x DC24V (18-32V)	1 x DC24V (18-32V)

#### Features

Qos traffic Priority	4 Queues		4 Queues	4 Queues	4 Queues	4 Queues	2 Queues	2 Queues		
Broadcast Storm filtering	●		● (DIP Switch)		●	●	●	●		
Port/Power Event Alarm	Power Alarm	Power Alarm	Port 17, 18 Alarm			●	●	●	Port Alarm	Port Alarm
Jumbo Frame	10K Bytes	9K Bytes	9K Bytes		10K Bytes	9K Bytes				

#### HW/ME

Housing Protection (IP)	IP31/Metal	IP31/Metal	IP31/Aluminum	IP31/Aluminum	IP31/Aluminum	IP30/Metal	IP31/Aluminum	IP31/Aluminum	IP31/Aluminum	IP31/Aluminum
Dimension (HxWxD mm)	135 x 74 x 132	120 x 30 x 99	137 x 96 x 129	137 x 96 x 132	120 x 55 x 112	111.8 x 30 x 89.5	120x55x108	120x55x108	111.8 x 30 x 98.2	111.8 x 30 x 98.2
Mounting	DIN Rail	DIN Rail	DIN Rail/ Wall Mounting	DIN Rail/ Wall Mounting	DIN Rail/ Wall Mounting	DIN Rail/ Wall Mounting	DIN Rail/ Wall Mounting	DIN Rail/ Wall Mounting	DIN Rail/ Wall Mounting	DIN Rail/ Wall Mounting
Operating Temperature	-40~75°C	-40~75°C	-40~70°C(-w)	-20~70°C/ -40~70°C(-w)	-40~70°C	-40~75°C	-25~70°C/ -40~75°C(-w)	-10~70°C/ -40~75°C(-w)	-25~70°C/ -40~75°C(-w)	-10~60°C/ -40~75°C(-w)
MTBF (hrs)		380,000	>200,000	>250,000	382,000	810,458	400,000	400,000	818,646	713,506

#### Certification

Regulatory/ Approval	CE/FCC/ EN50121-4	CE/FCC/ EN50121-4	CE/FCC	CE/FCC/UL 508	CE/FCC	CE/FCC	CE/FCC/UL/ UL C1D2 (3008-w)	CE/FCC/UL/UL C1D2 (3008f-w)	CE/FCC/UL508/ UL C1D2 (2005-w)	CE/FCC/UL508/ UL C1D2 (2005f-w)
Compliance Standard	Heavy Ind. EMC	Heavy Ind. EMC								

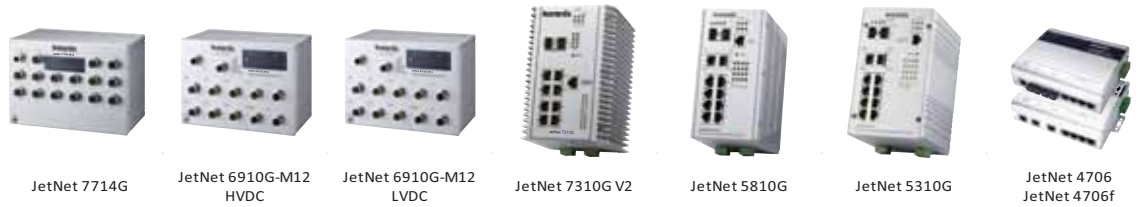
● Supported



### Rackmount Managed PoE Switch

Interface						
Total Ports Number	28	28	28	28	28	28
10/100/1000TX Ports	24(PoE+)	24(PoE+)	24(PoE+)	24(16 PoE+)	4(PoE+)	4
10/100TX Ports					20(PoE+)	20(16 PoE+)
100/1000M Combo						
SFP Ports	4 x 10GbE/1G	4 x 10GbE/1G		4 x 1000M	4 x 1000M	4 x 1000M
DI/DO (Dry Relay)	DO		DO		DO	
Console/USB	RS232/USB		RS232/USB		RS232/USB	
DC Power input	2x44-57VDC(IEEE 802.3af) 2x50-57VDC(IEEE 802.3at)		2x44-57VDC(IEEE 802.3af) 2x50-57VDC(IEEE 802.3at)		2x44-57VDC(IEEE 802.3af) 2x50-57VDC(IEEE 802.3at)	
AC Power input	1x90-264 VAC		1x90-264 VAC		1x90-264 VAC	
Features						
Korenix Cyber Redundancy+ (MSR, MultiRing, TrunkRing, RDH, SuperChain, ITU-T G.8032 ERPS)	●	●	●	●		●
Korenix Cyber Security+ (DHCP Snooping, IP Source Guard, DAI, DOS)	●	●	●	●		●
IPv4/IPv6 ACL(L2/L3/L4) Security	●	●	●	●		●
Industrial Protocol (ModBus/TCP, EtherNet/IP)	●	●	●	●		●
EEE Energy Saving	●	●	●	●		●
Korenix View/Korenix NMS	●	●	●	●	●	●
PoE Features						
PoE Wiring	1,2,3,6		1,2,3,6		1,2,3,6	
PoE Specification	IEEE802.3af, IEEE802.3at		IEEE802.3af, IEEE802.3at		IEEE802.3af, IEEE802.3at	
PoE Technology	PoE Priority Control, PD keep alive checking, PoE Scheduling		PoE Priority Control, PD keep alive checking, PoE Scheduling		PoE Priority Control, PD keep alive checking, PoE Scheduling	
Embedded AC power	300W		300W		300W	
Total Power Budget	230W@AC(75°C), 300W@AC(-40~60°C), 720W@DC(-40~75°C)	230W@AC(75°C), 300W@AC(-40~60°C), 480W@DC(-40~75°C)	230W@AC(75°C), 300W@AC(-40~60°C), 720W@DC(-40~75°C)	230W@AC(75°C), 300W@AC(-40~60°C), 480W@DC(-40~75°C)	180W@AC(75°C), 270W@AC(-40~60°C), 650W@DC(-40~75°C)	180W@AC(75°C), 270W@AC(-40~60°C), 480W@DC(-40~75°C)
SW/Protocol						
IPv6 Management	●	●	●	●	●	●
RSTP/MSTP	●	●	●	●	●	●
Traffic Priority (QoS)	8 Queues/port		8 Queues/port		8 Queues/port	
VLAN,P-VLAN, QinQ, GVRP	4k VLANs		4k VLANs		4k VLANs	
IGMP Query, Snooping, GMRP	●	●	●	●	●	●
IEEE 802.1AB LLDP Network Discovery	●	●	●	●	●	●
IEEE 802.3ad LACP	●	●	●	●	●	●
IEEE 1588 PTP v1/v2	HW time stamping		HW time stamping		SW based	
Jumbo Frame/MAC Address	9.2Kbytes/16K		9.2Kbytes/16K		9.2Kbytes/16K	
Broadcast Storm Protection	●	●	●	●	●	●
DDM SFP	●	●	●	●	●	●
IEEE 802.1x, IP/Port Security SSL/HTTPS, SSH/Telnet	●	●	●	●	●	●
TACACS+, Radius	●	●	●	●	●	●
SNMP/RMON/Trap	●	●	●	●	●	●
CLI/Web/Telnet	●	●	●	●	●	●
HW/ME						
Ingress Protection/Housing	IP40		IP40		IP40	
Dimension (HxWxD mm)	44 x 440 x 378.5		44 x 440 x 378.5		44 x 431 x 375	
Mounting	Rackmount		Rackmount		Rackmount	
Operating Temperature	-40~75°C (fanless)		-40~75°C (fanless)		-40~75°C (fanless)	
MTBF (hrs)	>202,000		>202,000		>202,000	>202,000
Certification						
Regulatory/Approval	CE/FCC/EN50121-4		CE/FCC/UL/EN50121-4		CE/FCC/UL/CB/EN50121-4	

● Supported



**M12 Giga Managed Industrial PoE Switch**

**Managed Industrial PoE Switch**

Interface		M12 Giga Managed Industrial PoE Switch		Managed Industrial PoE Switch		JetNet 4706/JetNet 4706f	
Total Ports Number	14	10	10	10	10	10	6
100/1000TX Ports	4 x M12-A	1 x M12-X (PoE+) 2 x M12-X (w/Bypass)		8			
10/100TX Ports	10 X M12-D	7 x M12-D			8	8	6 (4706) 4 (4706f)
100/1000M Combo					2	2	
SFP Ports				2 x 100/1000M			2 x 100M SC/ST (4706f)
DI/DO (Dry Relay)				1 x DI, 1 x DO	1 x DI, 1 x DO		1 DO
Console	M12-ARS-232, USB	M12-A RS-232, USB		RS-232	RS-232		RS-232
Power Input	2 x DC 110V (77-154V)	2 x DC 110V (77-154V)	2 x DC 24V (16.8-30V)	2x DC 54V (46-57V)	2x DC 24V (12-24V)	2 x DC 48V (48-57V)	2 x DC 48V (48-57V)
<b>Features</b>							
Network Redundancy (MSR, RDH, TrunkRing, MultiRing, SuperChain, ITU-T.G.8032 ERPS, RSTP/MSTP,LACP)	●	MSR, RSTP/MSTP,LACP		●	●	●	MSR, RSTP/MSTP, LACP
Network Security (Port, IEEE802.1x Port w/Radius Server, IEEE802.1x MAB, SSL/HTTPS,SSH/Telnet)	Port, IEEE 802.1x Port w/Radius Server, SSL/HTTPS, SSH/Telnet	Port, IEEE 802.1x Port w /Radius Server, SSL/HTTPS, SSH/Telnet		●	●	●	Port Security
Advanced Security (L2/3/4 ACL) DHCP Snooping, IP Source Guard, DAI,DoS,IPv6 RA Guard, IPv6 ACL)	●			●			
Korenix View/Korenix NMS	●	●	●	●	●	●	●
Industrial Protocol (Modbus/TCP, Ethernet/IP)				●	●	●	
<b>Power over Ethernet</b>							
PoE Ports	8 (FE)	8 (7x FE, 1 GbE)		8	8		4
Power Feeding Mode	M12-D (1,2,3,4)	M12-D (1,2,3,4) M12-A (1,2,3,6)		1,2,3,6 (A)	1,2,3,6 (A)		RJ-45 (4,5,7,8) (B)
PoE Mode	IEEE 802.3af/at	IEEE 802.3af/at		IEEE 802.3af/at	IEEE 802.3af/at		IEEE 802.3af
PoE Scheduling	●	●	●	●	●	●	●
System PoE Budget	100W/70°C	100W/70°C		240W/75°C	240W/75°C	240W/75°C	80W/60°C
<b>L3 Protocols</b>							
L3 Routing	●			●			
Multicast Routing	●			●			
VRRP Gateway Redundancy	●			●			
<b>SW/Protocol</b>							
Management (SNMP V1/2c/3, CLI, Web, Trap,RMON)	●	●	●	●	●	●	●
Traffic Priority (QoS)	●	●	●	●	●	●	●
VLAN,P-VLAN, QinQ, GVRP	●	VLAN,GVRP		●	●	●	Port Based VLAN
IGMP Query, Snooping, GMRP	●	IGMP Query, Snooping		●	●	●	IGMP Query, Snooping
IEEE 802.1AB LLDP	●	●	●	●	●	●	●
IEEE 1588 PTP v1/v2	IEEE 1588 PTP V1	IEEE 1588 PTP V1		●	IEEE 1588 PTP V1		
Jumbo Frame	9.2Kbytes			9Kbytes			
DHCP (Server, Client, Opt 82, Port Based Server)	●	●	●	●	●	●	
<b>HW/ME</b>							
Housing Protection (IP)	IP30	IP30		IP31	IP31		IP31
Dimension (HxWxD mm)	145.2 x 198 x 120	145.2 x 198 x 120		198 x 120 x 121.7	160 x 96.2 x 132	160 x 95 x 127	46.5 x 147.8 x 136
Mounting	Wall Mount	Wall Mount		DIN Rail	DIN Rail		DIN Rail/ Wall Mount
Operating Temperature	-40~70°C	-40~70°C		-40~75°C	-40~75°C		-40~60°C
MTBF (hrs)	>375,000	>365,000		499,000	446,000		>272,000
<b>Certification</b>							
Regulatory/Approval	CE/FCC/EN50155/ IEC 61373/ EN50121-3-2	CE/FCC/EN50155/ IEC 61373/EN50121-3-2		CE/FCC/EN50121-4	CE/FCC	CE/FCC/UL/ EN50121-4	CE/FCC/UL
Compliance Standard					Heavy Industrial		

● Supported



JetNet 3908G-M12



JetNet 3808G-M12



JetNet 3906G



JetNet 3810G V2/  
3806G/3810Gf/3810f



JetNet 3710G



JetNet 3705  
JetNet 3705f



JetNet 3205GP  
JetNet 3205GP-1F

### Unmanaged Industrial PoE Switch

#### Interface

Total Ports Number	8	8	6	10/6	10	5	5
100/1000TX Ports	8 x M12-X	1 x M12-X	5 x RJ-45	2 x RJ-45 (3810G/3806G)	2		5 (3205GP-1F) 4 (3205GP)
10/100 TX Ports		7 x M12-D		8 x (3810G) / 4 (3806G)	8	5 (3705) / 4 (3705f)	
SFP Ports			1 x 100/1000M	2 x 1000M (3810Gf) 2 x 100M (3810f)		1 x 100M (SC)	1 x 1000M (JetNet 3205GP-1F)
DI/DO (Dry Relay)			1 x DO	1 x DO		1 x DO	1 x DO
DC Power input	1 x DC 12-24V		2 x 12-36V	1 x 12-24V 1 x 8-32V (3810G V2)	1 x 48V	2 x 48V	2 x 44V-57V
Hi-Pot	AC 1KV		AC 1.5KV	AC 1.5KV		AC 1.2KV	AC 1.2KV

#### Power Over Ethernet

PoE Ports	8	8	4	8 / 4 (3806G)	8	4	4
Power Feeding Mode	M12 X-Code (Port 1): V+ (1,2), V- (3,4)	M12 X-Code (Port 1): V+ (1,2), V- (3,4) M12 D-Code (Port 2~8): V+ (1,3), V- (2,4)	1,2,3,6 (A)	4,5,7,8 (B)	4,5,7,8 (B)	4,5,7,8 (B)	1,2,3,6 (A)
PoE Mode	IEEE 802.3af/at		IEEE 802.3af/at	IEEE 802.3af	IEEE 802.3af	IEEE 802.3af	IEEE 802.3af/at
System PoE Budget	180W @ 24V	120W @ 24V 60 W @ 12V	121W@24V, 65 °C 90W@24V, 75 °C	65W@24V, 60 °C 80W@24V, 70 °C (3810G v2)	65W@48V, 70 °C	60W	120W

#### Features

PoE Power Booster	9-36 V		12-36V	12-24V	46-57V		
QoS	●	●	●	●	●		
Failure Alarm			Port, Power	Port		Port, Power	Power
Jumbo Frame	10Kbytes		9Kbytes				

#### HW/ME

Housing Protection (IP)	IP41 Steel Metal IP54 Steel Metal by request	IP31 Steel Metal	IP31 Aluminum	IP31 Aluminum	IP31 Aluminum	IP31 Metal
Dimension (HxWxD mm)	116 x 58 x 146	140 x 55 x 105	149 x 66 x 131.2	108 x 164.8 x 33.8	120 x 99 x 30	
Mounting	Wall Mount	DIN Rail	DIN Rail	DIN Rail	DIN Rail	
Operating Temperature	-40~75 °C	-40~75 °C	-25~60 °C	-25~70 °C	-20~70 °C (3705) -10~70 °C (3705f)	-40~75 °C

#### Certification

RoHS	●	●	●	●	●	●	●
Regulatory/Approval	CE/FCC/EN50155/ EN50121-4/E-Mark 13		CE/FCC/UL	CE/FCC/UL	CE/FCC/UL	CE/FCC/UL	CE/FCC
Compliance Standard	Heavy Industrial		NEMA TS2				

● Supported



Media Converter											Industrial Optical Bypass Switch
<b>Interface</b>											
Number of 10/100TX ports						1	2	1	2	1	
Number of 10/100/1000TX port	2	1	1	4	1						
Fiber Ports		1X 100/1000SFP	1X 100/1000SFP		1X 100/1000SFP		2 x 100FX/SC 2km (2302-m) 30km (2302-s)	1 x 100FX/SC 2km (2301S-m) 30km (2301S-s)	1 x 100FX/SC 2km (1302-m) 30km (1302-s)	1 x 100FX/SC 2km (1301-m) 30km (1301-s)	2 x Duplex/SC for Straight/Local 2 x Duplex/SC for Bypass/Line
other ports						1 x VDSL2 1 x ISDN / POTS					
IEEE 802.3 af/at	●	●	●	●							
Power Input	2 x DC 44-57V	2 x DC 44-57V	2 x DC 44-57V	2 x DC 44-57V	2 x DC 10-60V	2 x DC 12~48V (1 Terminal & 1 Power Jack)	2 x DC 10~60V	2 x DC 10~60V	DC 18~32V	DC 18~32V	2 x DC 10~60V
Event Alarm					●		●	●	Port Alarm		Port/Internal optical
Hi-Pot (AC 1.5KV)	●	●	●	●	●	●	●	●	●	●	●
<b>Power over Ethernet</b>											
PoE ports	1	1	1	2							
Power Feeding Mode			1,2,3,6 (A)	1,2,3,6 (A) 4,5,7,8 (B)							
PoE Mode	IEEE 802.3 af/at/bt	IEEE 802.3 af/at/bt	IEEE 802.3 af/at	IEEE 802.3 af/at							
System Power Budget	90W	90W	30W	60W							
<b>Features</b>											
QoS	●	●	●	1							
Failure Alarm	●	●	●								
<b>SW/Protocol</b>											
Link Loss Forwarding					●			●		●	Optical Switch
Switch Mode with					●	●	●	●	●	●	Optical Bypass Forward
Pure Converter Mode							2-Channel	●		●	Optical Straight Forward
Converter Mode with								●			
Modify Cut-through								●			
Quality of Service					●	●					
Broadcast storm						●					
<b>HW/ME</b>											
Housing Protection (IP)	IP 31 Steel	IP 31 Steel	IP 31 Steel	IP 30 Steel	IP 31 Steel	IP 30 Aluminum	IP 30 Aluminum	IP 31 Steel	IP31 Aluminum	IP31 Aluminum	IP 30 Steel
Dimension (HxWxD mm)	120 x 30 x 99	120 x 30 x 99	120 x 30 x 99	111.8 x 30 x 89.5	120 x 30 x 99	114.8 x 110 x 29.6	120 x 55 x 108	120 x 30 x 99	111.8 x 30 x 98.2	70 x 30 x 89	135x 45 x 105
Mounting	Din-rail	Din-rail	Din-rail	Din-rail	Din-rail	Din-rail Wall mount	Din-rail	Din-rail	Din-rail	Din-rail	Din-rail Wall mount
Operating Temperature	-40~75°C	-40~75°C	-40~75°C	-40~75°C	-40~75°C	-40~70°C	-25~75°C -40~75°C (-w)	-25~70°C -40~70°C (-w)	-10~70°C -40~70°C (-w)	-10~70°C -40~80°C (-w)	-40~75°C
MTBF (hours)			>313,000	>313,000	>313,000	>897,000	>813,000	>1,324,000	>632,000	>506,000	>1,663,000
<b>Certificate</b>											
Regulatory/Approval	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC
Compliance Standard	EN50121-4 Compliance	EN50121-4 Compliance	EN50121-4 Compliance		EN50121-4 Compliance		EN50121-4 Compliance	EN50121-4			EN50121-4 Compliance

● Supported





JetWave IWC 5630



JetWave 4020  
JetWave 4020E      JetWave 3220 V3  
JetWave 3220-M12      JetWave 2212X/S/G      JetWave 2211C      JetWave 2450 V2

Industrial WLAN Controller	
<b>Interface</b>	
Ethernet	4x GE RJ-45 1x 100/100 SFP
Power input	DC 9~36V
<b>Capacity</b>	
Managed APs	25
Concurrent Users	1000
WLAN Profile	8
AP management	Layer2/3 AP auto discovery/provision, AP firmware distribution
<b>Security</b>	
Standards	WPA, WPA2-personal and enterprise (802.1X/RADIUS), 802.11i
Encryption	WEP, TKIP, AES
Traffic Filtering	Layer 2 MAC ACL Layer 3 Firewall
RADIUS	Built-in RADIUS server
NAT/DMZ	●
<b>Feature</b>	
Roaming	Server-based Fast Roaming
Watchdog	Embedded Hardware Watchdog Timer
Network monitor	AP/Controller status AP/station list Traffic statistics
<b>Mechanical</b>	
Dimension (H x D x W mm)	160 x 118 x 47
Operating Temperature	-40~75°C
Housing	Metal Chassis
<b>Certification</b>	
CE/FCC	●
Railway EMC	EN50121-4

Wireless LAN Access Point					
<b>Interfaces</b>					
Ethernet	2x GE M12	2x GE RJ-45 (or M12)	2x FE RJ-45	1x FE RJ-45	1 x FE RJ45
WIFI	1x 2.4G 802.11n 1x 5G 802.11ac	2x 2.4G/5G 802.11n/ac	(2212X/S) 1x 2.4G/5G 802.11n	1x 2.4G/5G 802.11n	1x 2.4G 802.11n
Cellular					
WIFI Antenna Socket	4 (Dual 2T2R MIMO)	4 (Dual 2T2R MIMO)	2 (2T2R MIMO)	2 (2T2R MIMO)	2 (2T2R MIMO)
Serial			2x RS-232/ 422/485 JetWave 2212S only		
PoE			(2212G) Passive PoE	Passive PoE	
DI/DO		1/1	0/1	1/1	
Power Input	Passive PoE (GT1) Dual DC 24V 110V by option	802.3at PoE (Eth 1) Dual DC 24V(12~48V)	Dual DC 24V	DC 24V	24V
<b>Protocols</b>					
Wireless Mode	AP, Client, WDS-AP/Client	AP, Client, WDS-AP/Client, Redundant AP/Client	AP,Client, WDS-AP/Client Repeater	Client	AP, Client, Bridge, AP Repeater
Routing	LAN/WIFI to WAN	LAN/WIFI to WAN			
NAT/Firewall	●	●			●
VPN	OpenVPN/Ipsec	OpenVPN/Ipsec			
WAN Redundancy					
Link Fault Pass-Through	●	●			
Fast Roaming	●	●	●	●	
802.1x, MAC Access Control	●	●	●	●	
Configuration	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP	Web, SNMP
Link Test Tools	●	●			
Auto IP Report					
Event Alarm	E-mail, Syslog, SNMP Trap	DO, E-mail, Syslog, SNMP Trap	DO, E-mail, Syslog,	DO, E-mail, Syslog,	Syslog, SNMP Trap
<b>Mechanical</b>					
Dimension (H x D x W mm)	236.8 x 266.8 x 91.5	149 x 120.6 x 74	140 x 118 x 40	100 x 100 x 35	205 x 64 x 61
Operating Temperature	-40~70°C	-40~70°C	-40~70°C	-40~70°C	-20~70°C
Housing	Aluminum (IP67)	Aluminum (IP31)	Aluminum (IP31)	Iron (IP31)	Plastic (IP55)
<b>Certification</b>					
CE/FCC	●	●	●	●	●
Railway EMC	EN50121-4	EN50121-4 / EN50155	EN50121-4	EN50121-4	

**Standard**

WIFI IEEE802.11a/g/n/ac

3G 3GPP Release 4,6,7

LTE 3GPP Release 8,9

**Operating Frequency**

2.4G WIFI FCC: 2.412~2.462GHz; CE: 2.412~2.472GHz

5G WIFI WIFI FCC: FCC: 5.170~5.250GHz and 5.745~5.825GHz, CE: 5.170~5.250GHz

3G GSM/GPRS/EDGE: Quad band 850/900/1800/1900MHz,

UMTS/HSPA+: Five band 800/850/900/1900/2100MHz

LTE LTE-E: 800(20)/900(8)/1800(3)/2600(7)MHz

LTE-U: 700(17)/850(5)/AWS1700 and 2100(4)/1900(2)MHz

\*DI: Digital Input; DO: Digital Output



### Mobile Cellular Router / Gateway

Interfaces								
Ethernet	2x GERJ-45 (or M12)	2x GERJ-45 2x 100/1000 SFP	4 x GERJ-45	4x GERJ-45 2x 100/1000 SFP	2x GERJ-45	2x GERJ-45	1x FERJ-45	4x FERJ-45
WIFI	1x 2.4G 802.11n 1x 5G 802.11ac	1x 2.4G 802.11n 1x 5G 802.11ac	1x 2.4G 802.11n 1x 5G 802.11ac	1x 2.4G 802.11n (LTE-E Model only)	1x 2.4G 802.11n			
Cellular	LTE-E/U	LTE-E/U	LTE-E/U	LTE-E/U	HSPA+ or LTE-E/U	HSPA+ or LTE-E/U	LTE-E/U	LTE-E/U
WIFI Antenna Socket	2 (2T2R MIMO)	2 (2T2R MIMO)	2 (2T2R MIMO)	2 (2T2R MIMO)	Up to 3 (3T3R MIMO)			
Serial	1x RS-232/422/485			1x RS-232/422/485			1x RS-232/422/485	2x RS-232/422/485
PoE		2xRJ45 (PSE)	4xRJ45 (PSE)					Passive PoE
DI/DO	1/1	0/1	0/1		0/1		1/1	2/2
Power Input	802.3at PoE (Eth 1) Dual DC 24V(12~48V)	Dual DC 54V (48V-54V)	Dual DC 9~48V		Dual DC 24V (12~48V)		24V	24V
Protocols								
Wireless Mode	AP, Client, WDS-AP/Client	AP, Client, WDS-AP/Client	AP, Client, WDS-AP/Client	AP, Client, WDS-AP/Client	AP, Client, WDS-AP/Client			
Routing	LAN/WIFI to LTE/WAN	LAN to LTE	LAN to LTE	LAN to WAN/LTE	LAN to 3G or LTE	LAN to 3G or LTE	LAN to 3G or LTE	LAN to 3G or LTE
NAT/Firewall	●	●	●	●	●	●	●	●
VPN	OpenVPN/Ipsec	OpenVPN/IPSec	OpenVPN/IPSec	OpenVPN/IPSec	OpenVPN/IPSec	OpenVPN/IPSec	OpenVPN/IPSec	OpenVPN/IPSec
WAN Redundancy	WAN/LTE			WAN or LTE	WAN/3G or LTE	WAN/3G or LTE		
Link Fault Pass-Through	●			●	●	●		
Fast Roaming	●				●			
802.1x, MAC Access Control	●	●	●	●	●			
Configuration	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP
Link Test Tools	●							
Auto IP Report	●	●	●	●	●	●	●	●
Event Alarm	DO, E-mail, Syslog, SNMP Trap	DO, E-mail, Syslog, SNMP Trap	DO, E-mail, Syslog, SNMP Trap		DO, E-mail, Syslog, SNMP Trap		DI/DO, E-mail, Syslog,	DI/DO, E-mail, Syslog,
Mechanical								
Dimension (H x D x W mm)	149 x 120.6 x 74	140 x 115 x 55	140 x 115 x 55	140 x 115 x 75	140 x 110 x 33	140 x 110 x 33	100 x 100 x 35	100 x 100 x 55
Operating Temperature	-40~70°C	-40~75°C	-40~75°C	-40~70°C	-25~70°C	-25~70°C	-40~70°C	-40~70°C
Housing	Aluminum (IP31)	Aluminum (IP31)	Aluminum (IP31)		Aluminum		Aluminum (IP31)	Aluminum (IP31)
Certification								
CE/FCC	●	●	●	●	●	●	●	●
Railway EMC	EN50121-4 / EN50155	EN50121-4	EN50121-4				EN50121-4	EN50121-4

#### Standard

WIFI IEEE802.11a/g/n/ac

3G 3GPP Release 4,6,7

LTE 3GPP Release 8,9

#### Operating Frequency

2.4G WIFI FCC: 2.412~2.462GHz; CE: 2.412~2.472GHz

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LTE-U: 700(17)/850(5)/AWS1700 and 2100(4)/1900(2)MHz

\*DI: Digital Input; DO: Digital Output



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