DIAMOND SYSTEMS CORPORATION

DIAMOND-MM-32x-AT

Analog I/O PC/104 Module with Advanced Automatic Autocalibration

- 32 16-bit A/D with 250KHz sample rate, programmable input ranges and 1024 sample FIFO
- Autocalibration of A/D and D/A for high accuracy
- 4 12-bit D/A
- 8 digital inputs and 8 digital outputs
- Counter / timers for A/D control and general use

DESCRIPTION

DMM-32X-AT is Diamond Systems' most advanced embedded A/D board. It includes a comprehensive suite of analog and digital features to fit a wide variety of embedded application needs:

* The 32 A/D input channels feature high-accuracy 16-bit resolution, 250KHz maximum sampling rate, programmable input ranges, and user-selectable single-ended / differential configuration.

* The 4 D/A output channels feature user-selectable output ranges as well as a programmable waveform generator feature.

* The 24 digital I/O feature bit by bit direction programmability as well as buffers for enhanced output current of -15mA (logic 1) / 64mA (logic 0).

* The on-board programmable counter/timer circuitry includes a 32-bit counter/timer for A/D and D/A sample timing, as well as a 16-bit counter/timer for general counting, timing, and programmable interrupt functions.

* Extended temperature operation of -40 to +85oC is tested and guaranteed. Using our patented auto-autocalibration technology, DMM-32X-AT will provide accurate analog measurements across its entire rated operating temperature range, ensuring reliable performance for critical applications.

SPECIFICATIONS

Analog Inputs	
Number of inputs	32 16-bit
Input Modes	Single-ended, Differential
Input Ranges	±10V, ±5V, ±2.5V, ±1.25V, ±0.625V, 0-10V, 0-5V, 1.25V, 0-.625V
Max Sample Rate	250KHz
Nonlinearity	±3LSB, no missing codes
On-board FIFO	1024, prog. threshold
Calibration	Automatic autocalibration
Analog Outputs	4, 12-bit resolution
Output Ranges	±5V, ±10V, 0-5V, 0-10V
Output Current	±5mA max per channel
Settling Time	6µS max to 0.01%
Analog Outputs	
Relative Accuracy	±1 LSB
Digital I/O Lines	24 programmable direction
DIO Input Voltage	Logic 0: 0.0V min, 0.8V max Logic 1: 2.0V min, 5.0V max
DIO Output Voltage	Logic 0: 0.0V min, 0.33V max Logic 1: 2.4V min, 5.0V max
Counter / Timers	1 - 32-bit; 1 - 16-bit
Clock Source	10MHz clock or external signal
Power Supply	+5VDC±10%@410mA
Operating Temp	-40°C to +85°C
Weight	3.4oz / 96g

* Our advanced Universal Driver software is included free with DMM-32X-AT and all our CPU and I/O boards. Universal Driver provides a programming library that simplifies control of all the board's features and enables you to develop your application software quickly.

Digital and Counter/Timer I/O Features

DMM-32X-AT features 24 digital I/O lines and 2 82C54-type counter/timers just like its predecessor DMM-32X-AT. The I/O lines can be programmed for input or output in groups of 8 bits. In output mode the lines are buffered for enhanced output current capability. All DIO lines feature jumper-selectable pull-up / pull-down resistors as well as ESD protection devices to help prevent field failures.

The counter/timers emulate an 8254. Counter 0 is standalone and can be used for general purpose counting, timing, or timer-based interrupts. Counters 1 and 2 are joined together to provide a 32-bit timer for A/D sample rate control or D/A waveform output control.

ORDERING INFORMATION

Part No.	Description
DMM-32X-AT	Analog I/O PC/104 Module with Auto-Autocalibration
WK-D32X-01	Web Development Kit

FOR MORE INFORMATION

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