

## **PCI-Bus Multi-Function Data Acquisition Card CE** **Model PCI-1731**

The PCI-1731 is a multi-function data acquisition card for the PCI bus. Advanced circuitry allows the user to use measurement and control functions such as 12-bit A/D conversion, digital input, digital output, and counter/timer.

The card features an automatic channel/gain scanning circuit. This circuit (rather than your software) controls multiplexer switching during sampling. The on-board SRAM stores different gain values and configurations for each channel. This design lets you perform multi-channel high-speed sampling (up to 100 kHz) with different gains for each channel.

The PCI-1731 has an on-board FIFO buffer that can store up to 1 k A/D samples. The user can either enable or disable the interrupt request feature of the FIFO buffer. While the interrupt request for FIFO is enabled, the user can specify whether the interrupt request will be sent whenever one sampling takes place or when the FIFO buffer is half-full. This enables a continuous high-speed data transfer with more predictable performance on Windows systems.

The PCI-1731 is equipped with a programmable counter that can serve as a pacer trigger for A/D conversion. The counter chip is an 82C54 or equivalent, which includes three 16-bit counters on a 10 MHz clock. One counter is used as an event counter for counting events coming from the input channels. The other two are cascaded together to make a 32-bit timer for a pacer trigger.



### **Applications:**

Process monitoring and control  
Transducer and sensor measurement  
Multi-channel DC voltage measurement

### **Specifications:**

#### Analog Input

Channels:	16 single-ended
Resolution:	12-bit
On-board FIFO:	1K samples
Conversion Time:	10 $\mu$ s
Input Range:	$\pm 10$ V, $\pm 5$ V, $\pm 2.5$ V, $\pm 1.25$ V, 0.625 V
Maximum Input over Voltage:	$\pm 15$ V
Maximum Sampling Rate:	100 kHz
DC Accuracy:	
INLE:	$\pm 0.5$ LSB
Monotonicity:	12 bits
Offset Error:	Adjustable to zero
Gain Error:	0.005% FSR (Gain = 1)
AC Accuracy:	
SNR:	68 dB
ENOB:	11 bits
Input Protect:	30 Vp-p
Input Impedance:	2M ohm, 5pF
Trigger Mode:	Software, on-board programmable pacer or external

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Digital Input

Channels: 16  
Input Voltage: Low: 0.8 V max.  
High: 2.0 V min.

Digital Output

Channels: 16  
Output Voltage: Low: 0.8 V max. @ 8.0 mA (sink)  
High: 2.0 V min. @ -0.4 mA (source)

Programmable Timer/Counter

Channels: 1  
Counters: 16 bits  
Compatibility: TTL level  
Base Clock: 10 MHz  
Max. Input Frequency: 10 MHz

General

I/O Connector: 68-pin SCSI-II female connector  
Operating Temperature: 32 to 140 °F (0 to 60 °C)  
Storage Temperature: -4 to 158 °F (-20 to 70 °C)  
Humidity: 5 to 95% (RH non-condensing)  
Power: 5 V @ 700 mA (typical)  
5 V @ 1 A (max.)  
Dimensions: 6.9 x 3.9 in (17.5 x 10 cm)  
Compliances: CE

Accessory Items:

PCL-10168-2 ..... 68-pin SCSI-II Shielded Cable, 2m  
ADAM-3968 ..... 68-pin SCSI-II Wiring Terminal Board, DIN Rail Mount