



FEATURES

- Up to 50 MSPS digitization rate for each channel with user-selectable 8 or 10-bit resolution
- Simultaneous data acquisition for selected channels or all channels
- Supports up to 16 channels per board and many boards per computer
- Wide-range dynamic gain for different input voltage ranges
- Adjustable DC offset
- Oscilloscope software for Windows 2000/XP
- Windows software development kits for C/C++, Visual BASIC, and LabVIEW
- Optional encoder counters for position-based data acquisition
- Optional distance amplitude correct (DAC) for all the channels

DESCRIPTION

PCIAD850 and **PCIAD1650** are analog to digital data converter boards with simultaneous acquisition. The **PCIAD850** supports 8 channels while the **PCIAD1650** supports 16 channels. At each trigger event (software trigger or external trigger), all the channels will simultaneously convert the analog signals to digital data with user selected post trigger delay and waveform length. Other programmable parameters include sampling rate, trigger source, trigger rate, gain, DC offset, low and high pass filters. Both boards feature user-selectable 8 or 10-bit resolution and up to 50 mega samples per second.

Multiple boards can be installed in the same computer for a data acquisition system with more than one hundred channels. With one board set as the master and remaining set to slave mode, all channels on the slave boards will start taking data upon receiving a trigger signal from the master board. The jitter between channels is less than 2 nanoseconds.

The gain adjustment can be calibrated to a specified range in the factory. It can also be adjusted for ultrasonic testing purposes.

Working with US Ultratek's **PHA8(T)** and **PHA16(T)**, the **PCIAD850** and **PCIAD1650** boards become a simultaneous multi-channel ultrasonic testing system with phased array capabilities. The phased array system has both single pulse and tone burst pulse capabilities.

The optional distance amplitude gain (DAC) sets various gains at different times during the acquisition. This is useful for the ultrasonic inspections.

Up to 2 encoder counters can be added to the board to enable position-based data acquisition.

SPECIFICATIONS

Global Parameters

Sampling Rate:	50, 25, 12.5, 6.25, 3.125, 1.5625, 0.78125 and 0.390625 MHz
ADC Resolution:	8 or 10 bits (software selectable)
Trigger Source:	Internal, +External or -External
Data Acquisition:	All-channel simultaneous acquisition
Trigger Delay:	32k samples
Waveform Length:	4 to maximum memory samples/channel in 4 sample steps
Memory:	4k samples/channel (up to 32k samples optional)
Auto Trigger Rate:	Programmable 10 to 5000 Hz in 10 Hz increments
Low Pass Filter:	All, 16, 7.3, and 4.8 MHz
High Pass Filter:	4.8, 1.6, 0.6, and 0.016 MHz

Channel Based Parameters

Input Range:	+/-1, +/-0.5, and +/-0.1 volts software selectable, or continuous gain adjustment
Gain:	-12 to 84 dB (0.01 dB steps)
DC Offset:	-0.625V to +0.625V in 5mV increment for each channel

Others

Jitter:	2 ns between channels on different boards
Data Transfer Rate:	80 MBPS from on-board memory to computer RAM
Computer Interface:	PCI bus
Operating System:	Windows 98/2000/XP
Software Support:	Software development kit for C/C++, LabVIEW, and Visual BASIC
Interconnection:	Board to board interconnection for trigger and sync clock via a ribbon cable
Connectors:	Standard 16 BNC socket connectors or user specified

Options:

Distance amplitude correction (DAC)
 Up to 2 encoder counters
 Up to 512K memory for each channel
 Trigger in and sync out connector
 Matching ultrasonic simultaneous firing boards and phased array boards PHA8, PHA8T, PHA16, and PHA16T