



## AL83xGTe PCI Express Digitizer

### Overview

AL83XGTe is a dual-channel, high resolution, 8 bit 3 GS/s PCI Express Digitizer board supporting the PCI Express x1 bus. Onboard memory options range from 512M samples to 4Gsamples Memory operation allows acquisition to continue while data is being transferred to the PC.

The AL83XGTe KIT Includes a sample application that allows users to immediately begin data acquisition. Labview™ VI is included with the product at no additional charge. Integration of the AL83XGTe into customer specific software is simplified by a Windows based software development kit that is included at no additional charge. The SDK includes support of C# or C/C++ and VB, LabVIEW™ for Windows.

### Analog Section

The AL83XGTe features two analog input channels with

- Each channel can be run at 1.5GSamples/sec Simultaneously
- A single channel (either input A or B software selectable) can be run at 3.0GSamples/sec
- Each channel has 1 GHz bandwidth.
- Input ranges are 2V, 1V, 500 mV, 250mV, 125mV

### Acquisition System

The AL83XGTe digitizer utilizes a dual 1.5GS/s 8-bit ADC to digitize the input signals. The sampling rate ranges from 3GS/s to 250KS/s. The two channels are synchronous since they have a common clock. The acquisition is capable of being triggered by software, BNC, Quadrature encoder input, or internal TTL connection. Acquisition can consist of multiple data records; each record is the result of a trigger event. Records can have both pre-trigger and post-trigger data.

Acquisition system is capable of being re-armed by the hardware within 1uS of the previous trigger.

- 2 channels 1.5 GS/s simultaneous real-time sampling rate on each input 8-bit resolution
- 1 channels 3 GS/s real-time sampling rate on a single input sampled at 8-bit resolution
- 125mV to 2V input rage
- Up to 2 Billion samples of on-board acquisition memory
- Dual Ported Memory Architecture for simultaneous collection and processing/download.
- Trigger Input/Output Connector

## IO Connectors

- BNC CH A
- BNC CH B
- TRIG IN/TRIG OUT
- Clock
- BNC female connectors

## Acquisition System

- Resolution 8 bits
- Bandwidth (-3dB)
- DC-coupled, 50 $\Omega$  DC - 1000 MHz
- AC-coupled, 50 $\Omega$  100KHz - 1000 MHz
- Number of channels 2 simultaneously sampled
- Maximum Sample Rate 1.5 GS/s single shot 2 simultaneous channels
- Maximum Sample Rate 3.0 GS/s single shot 1 channel
- Minimum Sample Rate 250 KS/s single shot for internal clocking
- Full Scale Input ranges
  - 50  $\Omega$  input impedance - 125mV, 250mV, 500mV, 1V, 2V software selectable
- DC accuracy  $\pm 5\%$  of full scale in all input ranges
- Input coupling AC or DC, software selectable
- Input impedance 50 $\Omega$
- Input protection 50 $\Omega$   $\pm 5V$

## Memory

- Onboard acquisition memory
  - 512 MB for AL83xGTe (Standard)
  - 2 GB for AL83xGTeG2 (Extra Memory)

## Time base

- Internal Clock
- External Reference Clock

## Computer Requirements

- **Power Requirements**
  - +5V 3.5 A
  - + 3.3V 2.4 A
  - +12V .01A
  - 12V .01A
- **Physical Dimensions**
  - Single slot PCI Express card (4.25 inches x 9.375 inches)
  - Weight 210g
- **Environmental**
  - Operating temperature 0 to 55 o C
  - Storage temperature -20 to 70 o C
  - Relative humidity 5 to 95%, non-condensing

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