AL81xGTe PCI Express Digitizer

Overview

AL81xGTe is a single-channel, high resolution, 8 bit 1 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 AL81xGTe 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 AL81xGTe 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 AL81xGTe features one analog input channel with:

- A single channel run at 1.0GSamples/sec
- 1 GHz bandwidth.
- Input ranges are 2V, 1V, 500 mV, 250mV, 125mV

Acquisition System

The AL81xGTe digitizer utilizes 8-bit ADC to digitize the input signals. The sampling rate ranges from 1GS/s to 250KS/s. 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.

- 1 channels 1.0 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 (Not used)
- TRIG IN/TRIG OUT
- Clock
- BNC female connectors

Acquisition System

- Resolution   8 bits
- Bandwidth (-3dB)
- DC-coupled, 50Ω   DC - 1000 MHz
- AC-coupled, 50Ω   100KHz - 1000 MHz
- Number of channels   1
- Maximum Sample Rate   1.0 GS/s single shot 1 channel
- Minimum Sample Rate   250 KS/s single shot for internal clocking
- Full Scale Input ranges
    - 50 Ω input impedance - 125mV, 250mV, 500mV, 1V, 2V software selectable
- DC accuracy   ±5% of full scale in all input ranges
- Input coupling   AC or DC, software selectable
- Input impedance   50Ω
- Input protection   50Ω   ±5V

Memory

- Onboard acquisition memory
    - 512 MB for AL81xGTe (Standard)
    - 2 GB for AL81xGTeG2 (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