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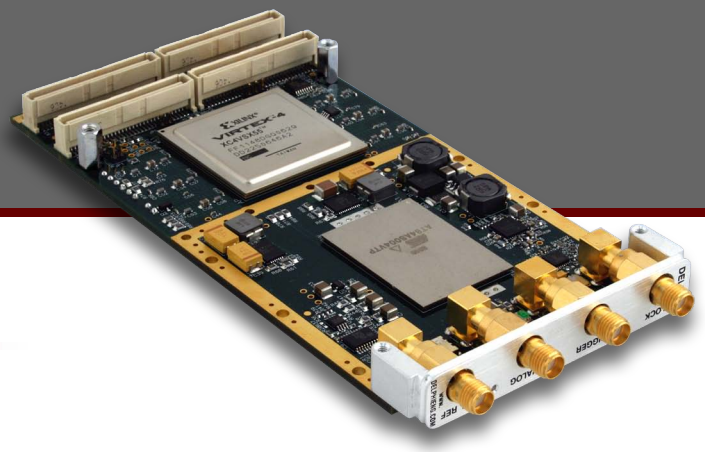
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Find the *Delphi Engineering ADC3255* at our website: ***Click HERE***

DELPHI
Engineering Group, Inc.

High Performance, Real-Time Acquisition Solutions for the Aerospace, Defense and Communication Industries.





2 Gsps 10-Bit ADC Module

ADC3255 With Virtex 4

Features

General

- 192 or 384 MB SDRAM Buffer (128 or 256 MSample Storage Capacity)
- Xilinx Virtex 4 FPGA XC4V5SX55
- Programmable Sampling Delay/Length
- VITA-35 Compliant Pn4 Interface With 32 LVDS Pairs
- Onboard Sample Buffering
- DSP Processing
- VxWorks, Linux, Windows Software Drivers
- 32/64-bit Up to 100 MHz, 3.3V, PCI 2.2 or PCI-X Compliant Bus
- Onboard DMA Engine
- Industry Standard PMC Format
- Conduction/Convection Cooled
- Available Temperature Versions:
  - Commercial
  - Industrial

Performance

- Analog Input: 100 KHz to 3.0 GHz
- Sampling Rate: 200 Msps to 2 Gsps
- ENOB = 7.5 Effective Bits, F_{IN} = 2 GHz
- SNR = 50 dBc, SFDR = -54 dBc, F_{IN} = 2

Applications

- RADAR
- LiDAR
- SATCOM
- Data Analysis Systems
- Preprocessing Systems
- Direct RF Down-Conversion
- Multi-Carrier Power Amplifiers
- High-Speed Test and Instrumentation

Description

Delphi Engineering Group's ADC3255 is a PMC, analog to digital converter module designed for digitizing wide bandwidth analog signals at 10 bits, at sampling rates of up to 2 Gsps. Buffering of the digitized data samples is provided onboard. Samples can be transferred to the host board via the PCI-X bus at a high rate using the built-in DMA controller.

A Xilinx Virtex 4 FPGA provides continuous sampling, buffering, and timing. Delphi also offers an FPGA design kit which allows custom development of the onboard FPGA. FPGA design can be customized for specific applications such as digital filtering, data preprocessing and DSP functions such as FFT.

For systems running Microsoft Windows, Delphi offers ADCView, a signal visualization application which displays sampled data graphically. Through ADCView's graphical user interface, users can configure sampling parameters such as: start/stop vectors, IRQ operation, and triggering options. Sample data exportable to analysis applications such as Matlab.

The ADC3255 is a PMC based technology that has been rigorously tested to operate on leading PowerPC, PC, and DSP host processor systems. Delphi has a proven track-record of delivering high-performance PMC modules for mission-critical applications.

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Interfaces

Analog Input

An analog single-ended input signal is accepted through an SMA female type connector on the front edge of the module.

Clock Input

An analog single-ended clock input of -10 dBm to +10 dBm is accepted through an SMA female type connector on the front edge of the module.

Trigger Input

Trigger input is provided through an SMA female type connector on the front of the module.

All SMA inputs are 50 ohm terminated.

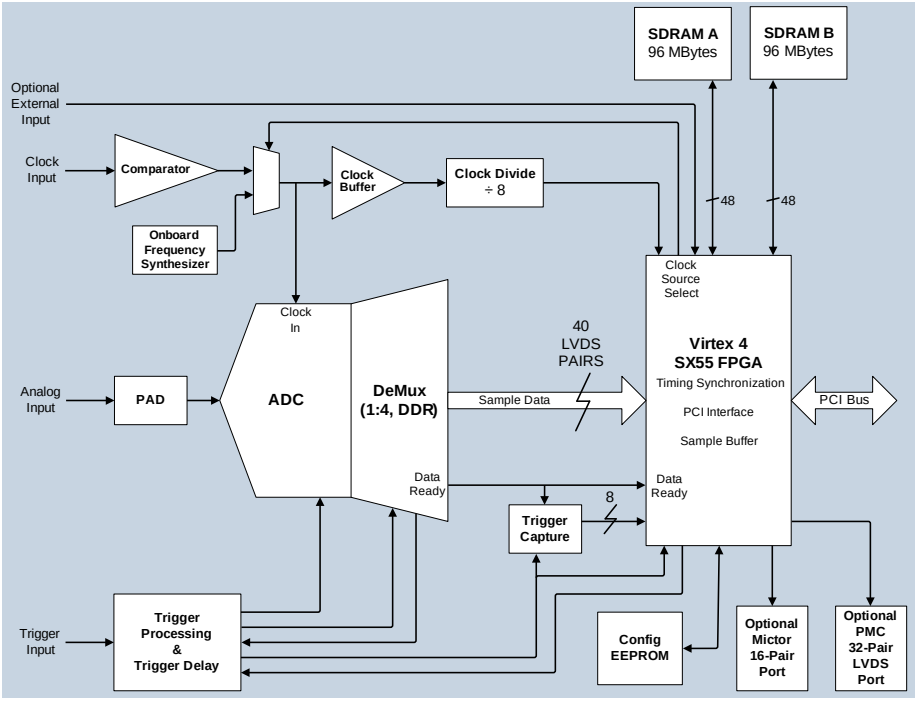
PCI Interface

Processed sample data is transferred to the host system through the PCI bus. Data collection timing and duration are fully programmable through the PCI bus. PCI interface is implemented in an onboard FPGA.

Onboard FPGA

The board's Xilinx Virtex 4 FPGA implements processing, buffering, timing, DRAM control, and the PCI interface.

Contact factory for custom FPGA design.



Top Level Block Diagram

Analog ADC Performance

- Full Power Analog Input Bandwidth: 3.0 GHz (-3 dBm)
- ENOB = 7.8 Effective Bits, F_{IN} = 1000 MHz
- SNR = 51 dBc, SFDR = -55 dBc, F_{IN} = 1000 MHz
- ENOB = 7.5 Effective Bits, F_{IN} = 2 GHz
- SNR = 50 dBc, SFDR = -54 dBc, F_{IN} = 2 GHz
- Sampling Rate: 200 Msps to 2 Gsps

Environmental Requirements

- Convection Cooled
  - Minimum Airflow: 400 LFM
  - Ambient Air Temp (Commercial): 0°C to +50°C
  - Ambient Air Temp (Industrial): -40°C to +70°C
- Conduction Cooled
  - Cold Wall Temp (Commercial): 0°C to +65°C
  - Cold Wall Temp (Industrial): -40°C to +70°C

Physical Characteristics

- Dimensions: 2.91" x 5.66"
- Weight: 4.5 oz.

Delphi Engineering Group, Inc.
485 East 17th Street, Suite 400
Costa Mesa, CA 92627
www.delphieng.com

For more detailed specifications contact us at:
Telephone: (949)515-1490
Fax: (949)515-1491
EMail: sales@delphieng.com

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