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XMC-MFIO-8

XMC Multi Function I/O board
8 Channels A/D 16 Bits 15Msps
8 Channels D/A 16 Bits 1µs +/-10V
16 Channel TTL Digital IO

XMC Module

Features

- 8 Channels 16-bit A/D converter Simultaneously Sampled
- Fast throughput rate: up to 15 Msps for all 8 channels
- 8 Channels true Differentials
- Instrumentation Amplifier per channel
- 8.192VP-P Differential Inputs
- Independent programable DDC per Channel (Decimations can be programmed from 2 to 256)
- 8 Channels 16-bit D/A converter 1µs settling time Full scale
- Programable Outputs:
  0 V to –10 V, 0 V to +10 V, or ±10 V outputs
- Two stage buffers
- Up to 30ma Output Drive
- Global output buffer w/ internal
- or external triggering
- 1Gbits :64MX16 LPDDR
- 8 Digital TTL Input with programable Pull up or Pull Down
- 8 Digital TTL Output Source/Sink -32mA/+64mA
- External trigger Trigger and Clock
- DMA capabilities
- XMC Bus
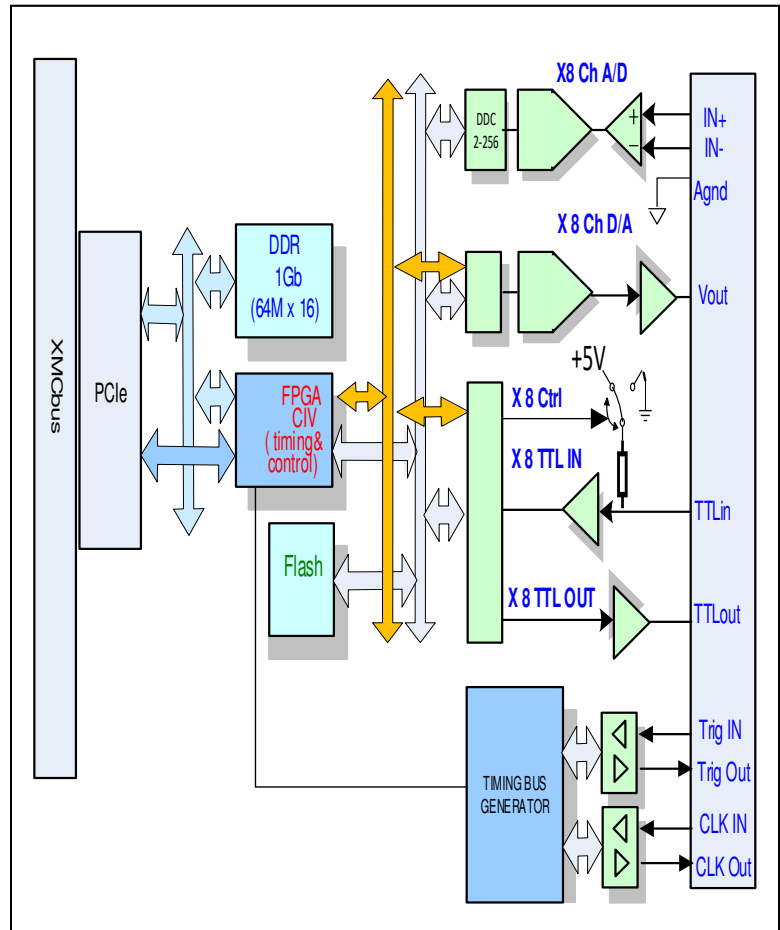
Block Diagram and Operational Overview

The XMC-MFIO-8 Simultaneously sampled A/D offers a mix of up to 8 Differential analog input channels at 8.192VP-P Fully Differential. All channel features handle analog input with a differential configuration for a rate up to 15Msps. The acquisition can be started by the host or by an on-board sequencer that uses a channel list to specify which channel to acquire. Each Channel has its own DDC that can be programmed independently for a decimation range from 2 to 256 programable in steps of 1.

DMA engine to host transfer the acquisition data.

The board has 8 Channels of 16-bit, 1µs multiplying voltage Output. These DACs can be software-programmed for either 0 V to –10 V, 0 V to +10 V, or ±10 V outputs.

The board also support 8 TTL Digital Inputs with programable selection for Pull up or Pull Down resistor. Each input has a programable Interrupt selection Each line can be programed to throw an interrupt at both positive and negative edges.

The board also support 8 TTL Digital output with up to -32/-48ma of drive.

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ADC Specifications:

- 16-bit, SAR analog-to-digital converter (ADC)
- 15Msps Throughput Rate
- 93.8dB SNR (Typ) at fIN = 1MHz
- 102dB SFDR (Typ) at fIN = 1MHz
- Nyquist Sampling Up to 7.5MHz Input
- Guaranteed 16-Bit, No Missing Codes
- ±0.8LSB INL (Max)
- 8.192VP-P Differential Inputs

DAC Specifications:

- 16-bit, 4-quadrant, 6.8 MHz BW multiplying DAC
- ±1 LSB DNL
- ±1 LSB INL
- Low noise: 12 nV/√Hz
- 1µs Settling Full Scale
- Buffered output +/-30ma

DIGITAL Input Specifications:

- TTL Input
- Programable Pull up or Pull down
- Interrupt support per Line
- Falling/Rising Edge Selection

DIGITAL Output Specifications:

- TTL Output
- Outputs Source/Sink -32mA/+64mA

Multi-Board Synchronization:

Multiple board synchronization via software control for clocks and triggers.
External trigger / Internal trigger

XMC Bus:

XMC Bus Interface x 4 PCIe Lane

I/O panel connectors:

Front Panel SMA Connectors Clock/Trigger
Front Panel 50 Pins SCSI Connector

Operating Environment:
- Operating temperature
    - Commercial: 0 to +70 ºC
    - Optional: -40 ºC to +85 ºC
- Non-operating: -45 ºC to +100 ºC
- Airflow requirement – 5 CFM
- Humidity – 5 to 90% (non-cond)
- Altitude – 0 to 10,000 feet

Mechanical Environment:
- Size – Single Wide XMC module
    - 74mm x 149mm
- Power – 1.5 watt
- Vibration – 0.5G, 20-2000 Hz rand
- Shock – 20G, 11 msec, ½ sine
- Weight – 3 ounces
- MTBF – >250,000 hours

Applications:
This is a perfect solution for a wide array of advanced real-time control applications such as:
- Digital servo controls
- Adaptive control
- Military SONAR-RADAR
- Vibration control systems
- Other high-speed acquisition & controls system

Advailable Drivers:
- Labview
- Linux
- Window XP
- VxWorks drivers

Ordering Information

Commercial Temp: 0 ºC to +70 ºC

Part number: XMC-MFIO-8   8 Channels Of A/D 15Msps, D/A 1Msps and DIO, 0+70˚C

Ext Temp: -40 ºC to +85 ºC

XMC-MFIO-8-I 8 Channels Of A/D 15Msps, D/A 1Msps and DIO,-40+85˚C