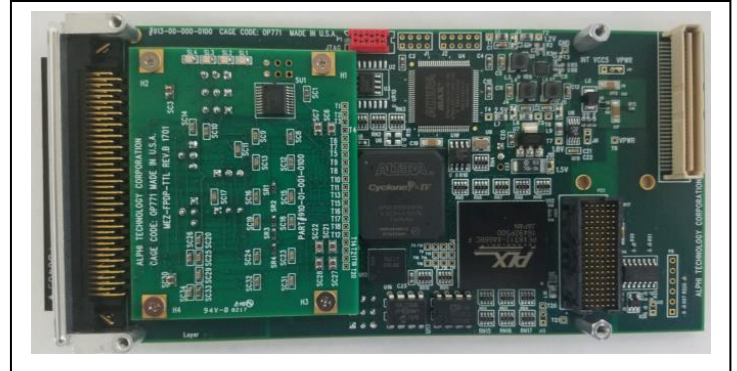


**XMC with Software Programmable 2 $\mu$ s DACs  
 Up to 32 Channel 16-bit DACs with Programmable Outputs**

**Features**

- 2 $\mu$ s settling time, 0-5V range
- Six programmable output ranges per channel
- Up to 30mA output drive
- Output Specification:
  - 16 bits settling time: 700ns (typ)
  - Low offset: 125 $\mu$ V (typ)
  - Offset drift: 0.35 $\mu$ V/ $^{\circ}$ C (typ)
- Unipolar mode: 0V to 5V, 0V to 10V
- Bipolar mode:  $\pm$ 5V,  $\pm$ 10V,  $\pm$ 2.5V,  $-$ 2.5V to 7.5V,  $\pm$ 10 mA continuous,  $\pm$ 30 mA max
- 1LSB max DNL and INL over the Industrial Temperature Range
- 1M words x 32 bits dynamically allocatable among channels
- 500K samples/second throughput
- Power-on reset to 0V
- Flash RAM for configuration file
- Two-stage buffers
- Global output buffer with internal or external triggering
- 4-user digital I/O (TTL levels, outputs: 48mA sinking, 12mA sourcing)
- Optional A/D for reading back
- Internal  $\pm$ 15V



**Applications**

- Process Control and Industrial Automation
- Precision Instrumentation
- Direct Digital Waveform Generation
- Software-Controlled Gain Adjustment

**XMC Interface**

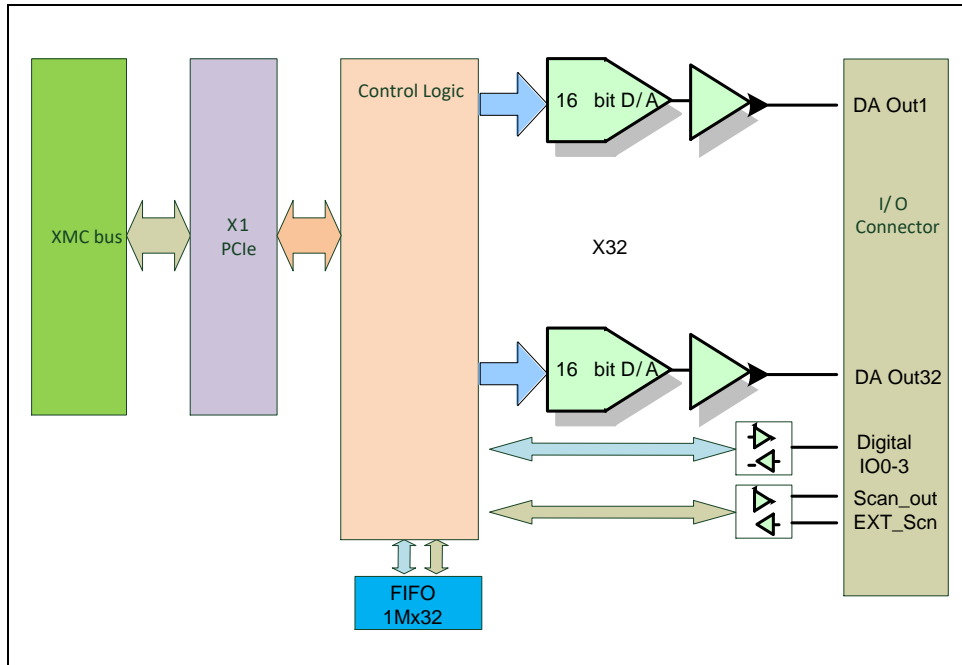
- PLX 8311-
- 32 Bit, 33/66 MHz
- DMA for maximum throughput from the host

**Available Software Drivers**

- C library dll's
- Linux<sup>®</sup> drivers
- Windows<sup>®</sup> drivers
- VxWorks<sup>®</sup> drivers

**Mechanical and Environmental**

- Operating temperature
  - Commercial: 0 $^{\circ}$ C to +55 $^{\circ}$ C
  - Optional: -40 $^{\circ}$ C to +85 $^{\circ}$ C
- Non-operating: -55 $^{\circ}$ C to +95 $^{\circ}$ C
- Airflow requirement: .5CFM
- Humidity: 5% to 90% (non-cond.)
- Altitude: 0 to 10,000 ft
- Power: +5Volts :55mA  
 +3.3Volts: 72mA  
 +12Volts: 500mA
- Vibration: 0.5G RMS, 20-2000Hz rand
- Shock: 20G, 11ms, 1/2 sine
- Weight: 3 oz
- Size: XMC single-width (74mm x 149mm)
- Front panel I/O



## Block Diagram and Operational Overview

The **XMC-SoftDAC-32F** allows the output of waveforms at a continuous compounded rate of 500k samples per second. A state machine extracts the output data from a 1M word FIFO buffer. The buffer space is only used by the channels updated by the state machine (i.e., if only 16 channels use the FIFO, then each channel has about 64k samples).

Writing to the FIFO supports DMA access, which allows high speed transfer rates to the board.

The onboard state machine allows recycling the FIFO data to produce a continuous recurring waveform with no processor intervention once the data has been input to the FIFO.

Additional information in the data words contains the destination channel as well as range and gain instructions for the state machine. These instructions allow smooth changes from one set of data to the next. This scheme also supports faster refresh rates on some channels compared to others.

### **ORDERING INFORMATION**

Part Number: XMC-SoftDAC-xxF	XX Channels with Memory DAC, output buffers, 2 microsecond
-08	8 Channels
-16	16 Channels
-32	32 Channels

XMC-SoftDAC-xxF-I Same as above with -40°C to +85°C

### Optional Accessories

Part Number : TB-68-SCSI	68 pin terminal block and 1 meter SCSI cable
CBL-68-SCSI	68 pin, 1 meter SCSI cable

