

## Summary

This module allows outputting waveforms at a continuous compounded rate of 500 Ksps. A state machine is extracting the output data from a 1 Mword 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, each has about 64 kSamples.

Writing to the FIFO supports DMA access, allowing fast transfer rates to the board.

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

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

## Software Programmable 2 $\mu$ Second DACs Up to 32 Channel 16 bit DAC with programmable outputs



PMC-SOFTDAC-32F

### 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: 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
- 1 MWords x 32 bits dynamically allocatable between channels
- 500 KSPS throughput
- Power-On Reset to 0V
- Flash ram for configuration file
- Two stage buffers
- Global output buffer w/ internal or external triggering
- 4 User Digital I/O, (TTL levels, outputs: 48 mA sinking, 12 mA sourcing)
- Optional A/D for reading back

### Applications

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

### PMC interface

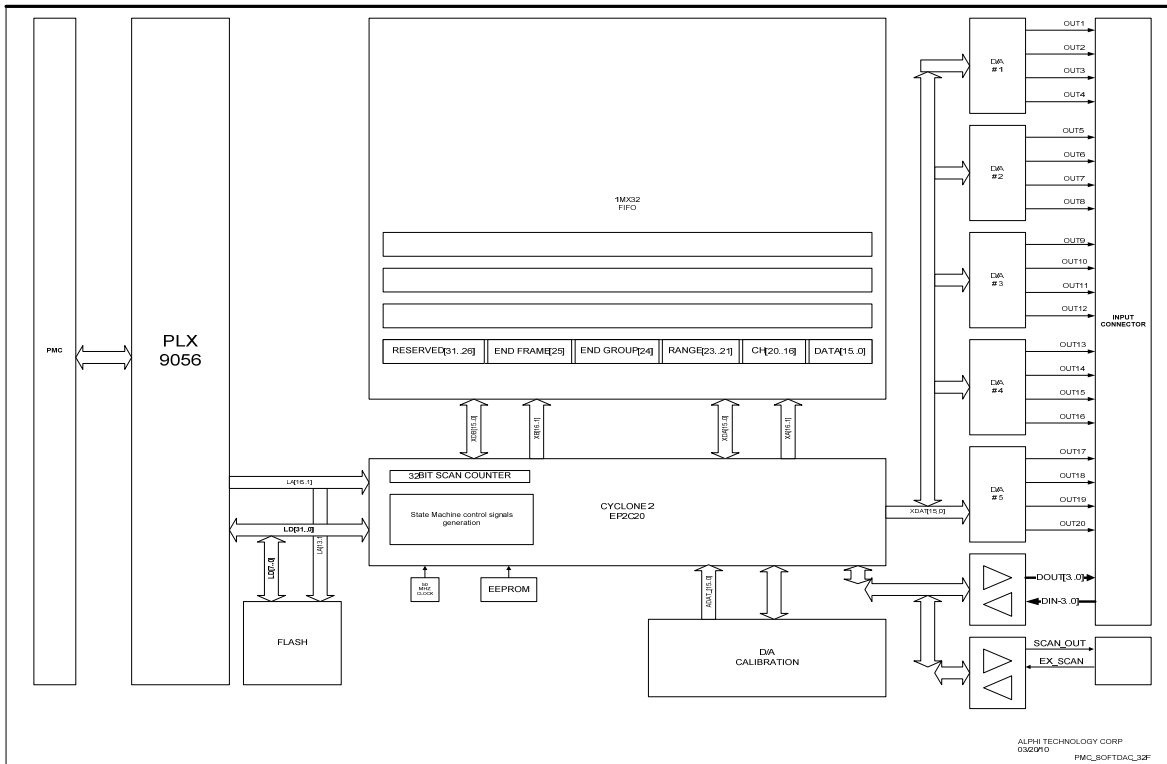
- PLX 9056- VIO 3.3/5.0 Volts
- 32 Bit, 33/66 MHz
- DMA for maximum throughput from the host

### Operating: Environmental

- Operating temperature
  - Commercial: 0 to +55  $^{\circ}$ C
  - Optional: -40 $^{\circ}$ C to +85 $^{\circ}$ C
- Non-operating: -55 $^{\circ}$ C to 95  $^{\circ}$ C
- Airflow requirement: .5 CFM
- Humidity: 5 to 90% (non-cond.)
- Altitude: 0 to 10'000 ft

### Mechanical: Environmental

- Power: +5/+3.3V, +12, -12 volts
- Vibration: 0.5G RMS
  - 20-2000 Hz rand
- Shock: 20 G, 11 ms,  $\frac{1}{2}$  sine
- Weight: 3 oz.
- MTBF: >250000 hours



### ORDERING INFORMATION

Part Number:	PMC-SoftDAC-xxF	32 Channels with Memory DAC, output buffers, 2 microsecond
	-08	8 Channels
	-16	16 Channels
	-20	20 Channels
	-24	24 Channels
	-32	32 Channels

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

### Optional Accessories

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

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