## CPCI 16 channel, 16-Bit D/A

## Features

- 16 channel, 16-bit, 10 µsec D/A converters with buffered outputs
- 3U high Compact PCI module
- Two banks of 256Kbyte SRAM for waveform tables
- ± 10 V outputs
- Buffered outputs, 40 or 250 mA options
- Automated state machine and buffer RAM to minimize impact to HOST
- High current outputs for control applications
- Front panel I/O accessible
- Selectable external or internal power supply input option
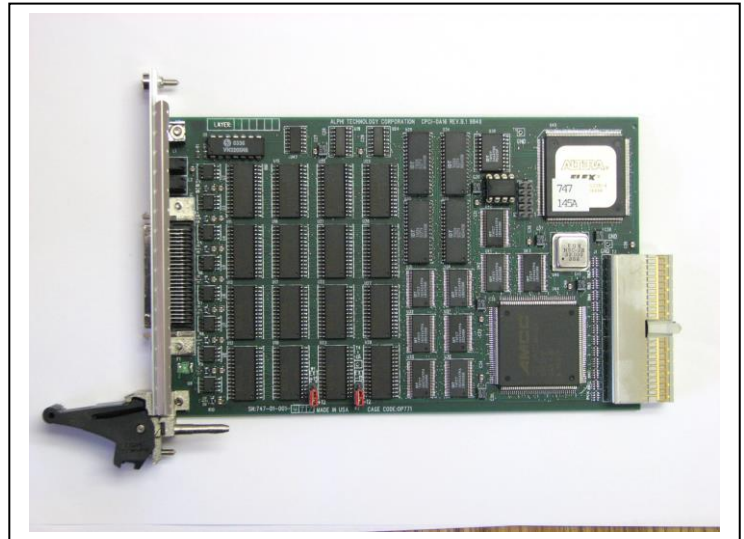
Block Diagram Overview

The CPCI-DA16 is a slave Digital to Analog board that is managed by the host processor on the CPCI bus. The card contains a state machine that performs most of the work of outputting data, in order to minimize the impact to the HOST system. The SRAM can also be used as a waveform table for output control.
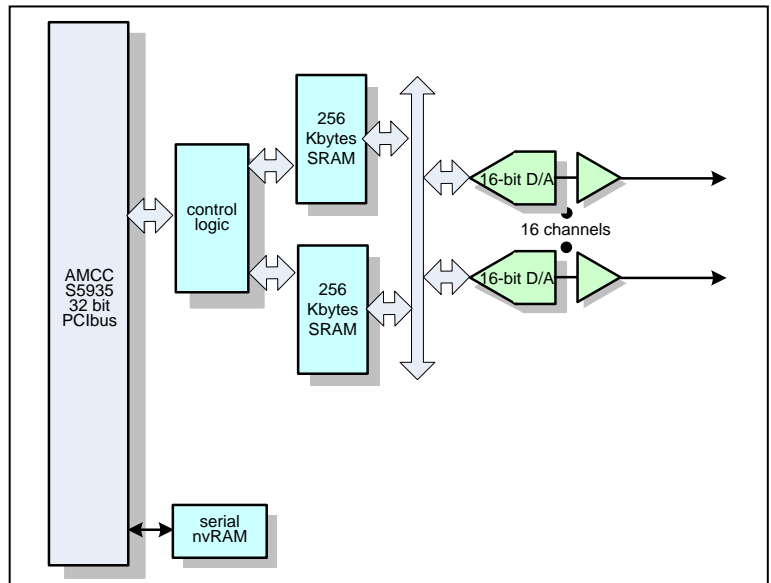
Available Software Drivers and Software Tools:

The **CPCI-DA16** is supported by ALPHI Technology under *Windows NT* by a **Board Support Package** which is supplied with the card.

Applications:

The CPCI-ADDA supports P.I.D. loop closure frame rates of up to 4 KHz per channel. The CPCI host can download gain and setpoint changes on the fly. The CPCI host can read back the current values for feedback, error, set-point and output drive on each channel. The local DSP processor can be used for data processing such as digital filters and FFT's. The DSP can also be used as a waveform generator to drive the 16 bit DAC.

Rev. 3.0

PCI Bus Controller Features:

- Uses the AMCC S5935 PCI controller
- PCI 2.1 compliant master/slave
- 132 Mbytes/sec transfer rate
- Supports Windows NT service pack 2 & 3
- PCI bus operation DC to 33 MHz
- Four definable pass-through data channels
- Two 32 byte internal FIFOs with DMA
- Four mail box registers with byte level status and data strobe/interrupts
- Direct PCI and add-on interrupt pins
- Serial nvRAM interface or byte-wide non-volatile memory interface
- Performs Big Endian/Little Endian conversion

TI DAC712UB D/A Specifications:

- 16 channel, 16-bit D/A
- Voltage output ± 10 V
- Binary 2's Complement Format
- DAC712 has a precision +10V temperature compensated voltage reference
- The digital interface is fast, 60ns minimum write pulse width, is double-buffered and has a CLEAR function that resets the analog output to bipolar zero.
- GAIN and OFFSET adjustment inputs are arranged so that they can be easily trimmed by external D/A converters as well as by potentiometers.
- The DAC712 is specified at power supply voltages of ±12V and ±15V.

Operating Environment:

- Operating temperature
    - Commercial: 0 to +70 ºC
    - Optional: -25 ºC to +80 ºC
- Non-operating: -40 ºC to +85 ºC
- Airflow requirement – 5 CFM
- Humidity – 5 to 90% (non-cond)
- Altitude – 0 to 10,000 feet

Mechanical Environment:

- Size – 3U CPCI module
    - 100mm x 160mm
- Power – 1.5 watt
- Vibration – 0.5G, 20-2000 Hz rand
- Shock – 20G, 11 msec, ½ sine
- Weight – tbd
- MTBF – >250,000 hours

Ordering Information:	
CPCI-DA16-1	3U compact PCI with 16 16-bit D/A with 40 mA output
CPCI-DA16-2	3U compact PCI with 16 16-bit D/A with 250 mA output
Optional Accessories	
CBL-SCSI-50	50-pin SCSI cable
TB-50	50-pin terminal block with cable