DATEL®
INNOVATION and EXCELLENCE

CPCI-520

4 Channel, 16-Bit, Analog Output Board for the CompactPCI® Bus

PRELIMINARY PRODUCT DATA

FEATURES

- **4 output channels**
- **Five 12-bit ranges plus two 16-bit ranges**
- **+10, +5, ±10, ±5, ±2.5 VDC at 12-bit**
- **±10 VDC, and 4 - 20 mA (source) at 16-bit**
- **Interrupt interface circuitry (A through D)**
- **Simultaneous updating on all channels**
- **Available external clock and trigger**

The CPCI-520 is an analog output board for the CompactPCI bus providing 4 channels of 12- and 16-bit resolution with simultaneous update capability for a wide variety of applications. The board also provides an external gate and trigger for synchronization to external systems. One 16-bit counter is also available for user control.

Gains are set globally for the 4 DACs via software for the ranges of 0 to +10, 0 to +5, ±10, ±5, and ±2.5 VDC in 12-bit mode, and ±10 VDC and 4 to 20 mA in true 16-bit mode. Settling time is typically less than 5 microseconds to 0.05% for a full scale step.

An on-board counter and crystal dedicated to internal pacing and timing allow for DAC update rates from 50 microseconds to 3.3 seconds. Full access to an additional 16-bit counter is also available.

The CPCI-520 includes a Windows 95/98® and Windows NT® control panel. Also available are sample programs, source code, and an ActiveX control for all popular programming languages and packages.

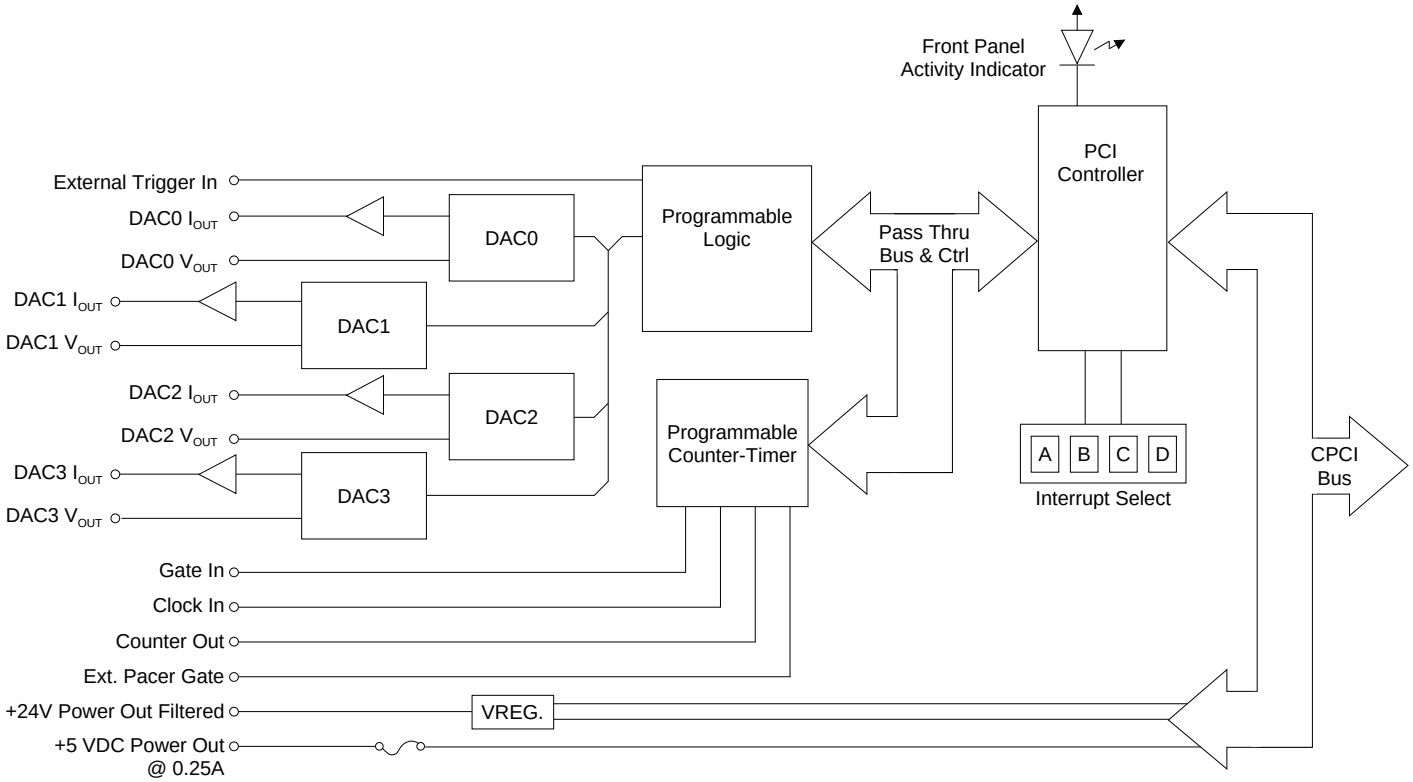

Figure 1. Simplified Block Diagram

Input/Output Connector

The I/O connector for the CPCI-520 is a standard 25-pin female type D connector and is accessible at the front of the CPCI chassis.

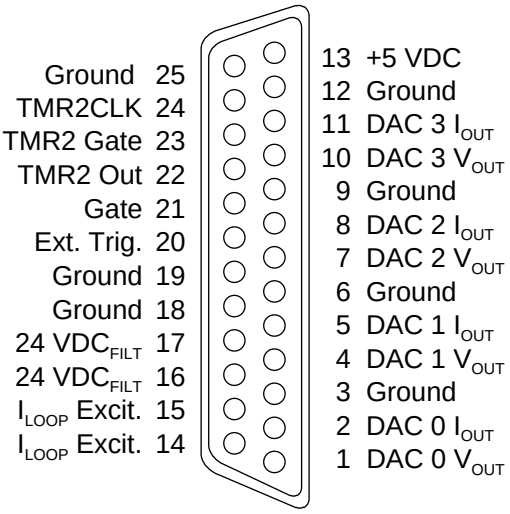

Figure 2. I/O Connector

Software

Windows 95/98/NT have become the platforms of choice for many data acquisition, test, measurement, and control applications. These feature rich, 32-bit operating systems exploit huge amounts of memory, secure multi-threading, and hardware plug-n-play (PnP) to provide high performing, user friendly working environments.

CPCI-520WIN

Each CPCI-520 includes installation software for hardware detection and initialization under Windows 95/98 and Windows NT. The control panel provides an easy to use, point and click graphical user interface (GUI) allowing access to all DACs, including range selection, simultaneous update mode, calibration, and reading and writing data to the counter.

CPCI-520WINS

The CPCI-520WINS includes all the features of the CPCI-520WIN software plus the complete source code to the GUI application (Microsoft Visual Basic) and DLLs (Visual C++), and allows you to communicate with the CPCI-520 from the familiar environment of your favorite high level language - C/C++, Visual Basic, Delphi, LabVIEW®, etc. Its standard Windows ActiveX control facilitates custom software development of the CPCI-520 into other applications. The source code also contains some simple example program samples in Visual Basic, Visual C++, Quick C, and National Instruments' LabVIEW.

LabVIEW Support

Included with the CPCI-520WINS, is a tutorial on how to convert the CPCI-520 ActiveX control to a LabView VI (Virtual Insturment) that allows complete hardware control under LabVIEW. This software also allows for the control of multiple CPCI-520s in one system and includes complete functional VI sample programs.

FUNCTIONAL SPECIFICATIONS (typical at +25°C unless noted)

Number of Channels	Four, non-isolated
D/A Resolution	12-bit and 16-bit (±10 range only)
Voltage Ranges	±10, ±5, ±2.5, 0 to +10, 0 to +5V
Current Ranges	4 to 20 mA at 16 bits
Current Loop Excitation	+24 VDC filtered at 125 mA max.
Load Current (Voltage Mode)	5 mA min.
Output Resistance	0.1Ω typ.
Settling Time (to 0.05% full-scale step)	<5 µs typ.
Accuracy	±0.05%
Span	adjustable to zero
Offset	adjustable to zero
At Power-Up Unipolar/Bipolar Output	Zero Volts
Pacer Clock Sources	
Hardware	Internal or external clock
Software	Internal
On-board Pacer/Timer	50 µs to 3.3 seconds, software programmable
PCI Interrupt Source	An input port ready bit may generate a PCI bus interrupt. Internal pacer timer or external trigger input, software selectable.
Interrupt Line	Int A (default), B, C, or D (user selectable)
Interrupt Timer Clock Source	10 MHz crystal
Front Panel LED	User programmable lamp
PCI Controller	AMCC S5920
Outline Dimensions	CPCI 3U size, 4 PH single width 100 x 160 x 20.32 mm
Channel Update Mode	All channels simultaneous. In parallel or individual, selected by software.

ORDERING INFORMATION

CPCI-520	4 channel, 12- and 16-bit analog output board for the CPCI bus (includes CPCI-520WIN).
CPCI-520WIN	Windows 95/98/NT software application for the CPCI-520. Includes Windows device drivers and DLLs. (Included with CPCI-520.)
CPCI-560WINS	Source code for CPCI-520WIN. Includes the source code to the GUI application ActiveX (Microsoft Visual Basic) and DLL sources (Visual C++), plus sample programs in C/C++, Visual Basic, and National Instruments' LabVIEW
PC-8401	Recommended Screw Terminal Panel
PC-8503-x	Recommended cable 25 pin, male to female (specify 'x' as length 2, 3, or 5 feet).