CP266

Single-width, 6U CompactPCI module

The CP266 is a single-width, 6U, CompactPCI module with 32 or 64, 16-bit analog output channels.

These independent analog channels provide ±10 V full-scale outputs. The channel update rate is 2ms, and each output is accurate to ±1mV.

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TYPICAL APPLICATIONS

Automotive test cells

Industrial control

Automatic Test Equipment (ATE)

FEATURES

- 32 or 64 independent analog output channels
- 16-bit resolution
- ±10 V full-scale output
- Low drift
- Single gain and offset adjustments
- 2-pole, Bessel output filter on each channel
- Power-on reset to zero volts

GENERAL DESCRIPTION

The CP266 is a single-width, 6U, CompactPCI module with 32 or 64, 16-bit analog output channels. These independent analog channels provide ±10 V full-scale outputs. The channel update rate is 2ms, and each output is accurate to ±1mV. The power-up state of the analog outputs can be set to independent user-defined values. Paired output signals are provided to eliminate ground offset effects. The analog outputs are available at a single 68-pin SCSI II shielded connector (32-channel option) or a pair of 68-pin SCSI II shielded connectors (64-channel option).
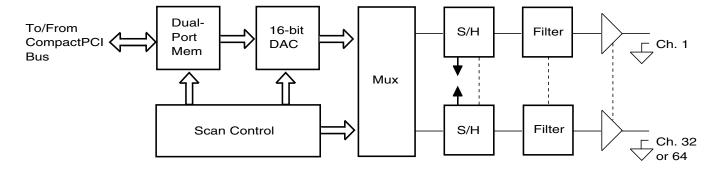
BASIC CIRCUIT OPERATION

Data values for each channel are written to a 16-bit wide, dual-port memory. This memory is sequentially scanned, and the values are applied to a single 16-bit digital-to-analog converter. The DAC output is then multiplexed to separate high precision sample-and-hold circuits (one for each channel), and the outputs of these circuits pass through active, 2-pole, low-pass Bessel filters before being brought to the front panel connector(s). Bessel filters are provided because of their optimum step response. The nominal cutoff frequency of each filter is set at 500Hz. Since the voltage outputs of all circuits are accurate to within 1mV of each other, only one offset and one gain potentiometer are needed to adjust the DAC. Data can be written to or read from the CP266 in either offset binary or two's complement format. During power-on, the module initiates a sequence to restore the memory contents to user-defined values or to the zero default.

SOFTWARE

The CP266 comes with a Plug and Play driver for configuring and using the device and application examples to illustrate its basic functionality.

This and other tools, including their source code, are provided.

CP266 Block Diagram

Item	Specifications
Number of Channels	32 or 64 (depending on option)
Output Signal Range	±10 V, 5mA maximum per channel
Resolution	16-bits
Monotonicity	16 bits
Absolute Accuracy	±1 mV max
Channel Tracking	±1 mV max
Output Impedance	0.5 W typ
Capacitive Load Drive	1,000 pF
Output Protection	Short-circuit to ground
Output Filter	2-pole Bessel, 500Hz cutoff
Channel Update Rate (latency)	2.176 ms (34μs x 64 channels)
Settling time to ±1mV accuracy (20V step)	TBD
Power-up State	Independent, user-defined values
On-board Memory	32 or 64 16-bit words (depending on option)
Output Connector Type	68S High Density
Power Requirements	
+5 V	2.4 A (64 channels with maximum 5mA load)
+3.3V	35 mA
+12 V	1 A maximum - auxiliary power connector
-12 V	1 A maximum - auxiliary power connector
Environmental and Mechanical	
Temperature range	
Operational	0°C to +50°C
Storage	-25°C to +75°C
Relative humidity	0 to 85%, non-condensing to 40°C
Cooling requirements	10 CFM
Dimensions	233.35 mm x 160 mm (6U CompactPCI module)
Front-panel potential	Chassis ground

Technical specifications contained within this publication are subject to change without notice.

RELATED PRODUCTS

V765-ZA11	Rack Mount Termination Panel
5868-Axyz	Cable- 68P High Density SCSI to Unterminated
5868-Cxyz	Cable- 68P High Density SCSI to 68P High Density SCSI (for use with V765)
5868-Dxyz	Cable- 68S High Density SCSI to 68P High Density SCSI

ORDERING INFORMATION

CP266-ZA11	32-channel, 16-bit DAC, ±10 V output
CP266-ZA21	64-channel, 16-bit DAC, ±10 V output

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