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Find the *Keithley / MetraByte PCIP-CNTR* at our website: *Click HERE*

PCIP-CNTR

80MHz, Two-Channel Counter/Timer

Functional Description

The PCIP-CNTR is a two-channel 80MHz Counter/Timer that plugs directly into any ISA bus of an IBM PC or compatible computer. The operating modes of the PCIP-CNTR include: frequency A, frequency B, frequency A/B, period average A, period average B, period A, period B, pulse width A, count A, count A gated by B and count A started and stopped by B. Two PCIP-CNTR models are available: The PCIP-CNTR offers 100ppm overall measurement accuracy for general applications. For high-precision measurements, the PCIP-CNTR/TCXO version offers 1ppm accuracy.

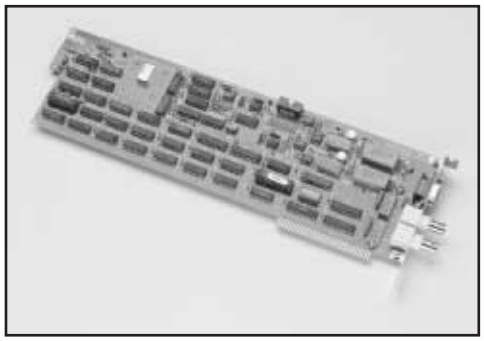
FEATURES

- Frequency, pulse width, period and count measurements
- 8-digit display resolution
- 100ppm or 1ppm accuracy (two models)
- 80MHz frequency range
- Two channels
- Windows 95/98/NT/2000
- 32-bit ActiveX control

APPLICATIONS

- Automatic test
- General purpose bench instrumentation
- Production test
- Laboratory automation

The PCIP-CNTR provides all the features you expect from a conventional GPIB Counter/Timer. However, instead of using mechanical control knobs and switches, you program the PCIP-CNTR using the industry-standard ActiveX control interface.



Software

Software available for the PCIP-CNTR and -CNTR/TCXO boards supports 32-bit applications in Windows 95/98/NT/2000. It includes the following:

- ActiveX control – 32-bit
- PCIP-CNTR Control Panel Application

ActiveX Control

The PCIP-CNTR is programmed using the supplied industry standard ActiveX control 32-bit interface. You can create virtual, universal counter/timer instruments that fit your exact needs. You can develop these virtual instruments in any environment that supports ActiveX controls. This includes most of today's popular rapid-application-development environments, such as Microsoft's Visual Basic and Borland's Delphi, as well as standard programming languages such as C++.

PCIP-CNTR Control Panel Application

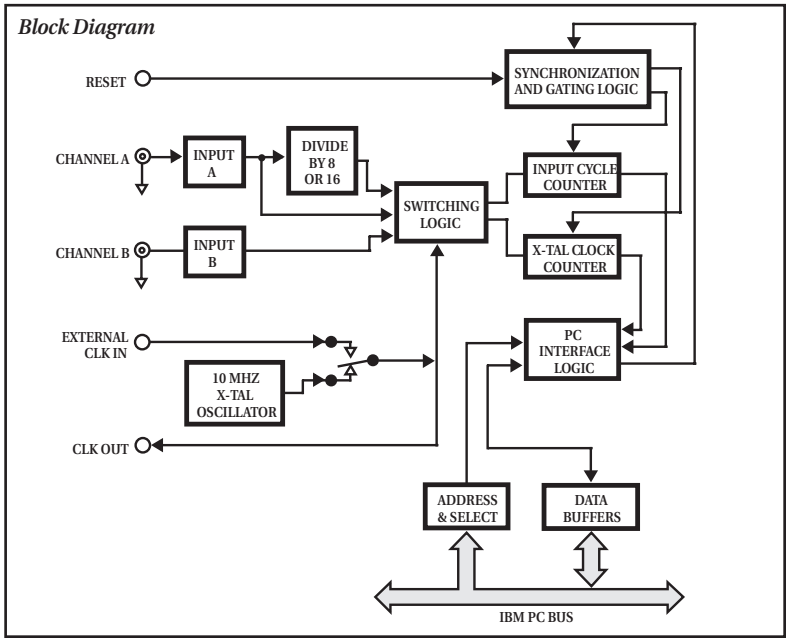
If you require out-of-the-box functionality, the PCIP-CNTR comes with the PCIP-CNTR Control Panel application. This application turns your PC into a fully functional, virtual universal counter/timer. This instrument displays its "front panel" in a window on your PC's display, and you interact with its controls using your computer's mouse and keyboard. The PCIP-CNTR Control Panel implements all of the PCIP-CNTR's features. You can select measurement, input mode, coupling, filtering, and attenuation options. You can specify triggering level and slope. For frequency, period, and pulse-width measurements, you can select either internal or external clocking. For count measurements, you can set gating mode.

We developed the PCIP-CNTR Control Panel using Microsoft's Visual Basic. You get all of the source code and project files for this application, which you can use as the basis for your own virtual instruments. The PCIP-CNTR also includes the source code for three very simple Visual Basic applications. These simple examples clearly illustrate the programming techniques that you use to control the PCIP-CNTR.

Hardware Interface

Connecting your signals to the PCIP-CNTR is as simple as connecting to a bench-top universal counter/timer. Channel A and B inputs are connected to the PCIP-CNTR through two BNC connectors. A 9-pin D connector is provided for Reset, External Clock Input, and Clock Output.

Block Diagram



KEITHLEY

PCIP-CNTR

SPECIFICATIONS

CHANNEL INPUTS

CHANNELS: 2.
FREQUENCY RANGE: Channel A (0–80MHz). Channel B (0–10MHz).
INPUT SIGNAL TYPES: AC or DC.
INPUT MODES: Frequency A, Frequency B, Frequency A/B, Period avg. A, Period avg. B, Period A, Period B, Pulse width A,Totalizer/Event Counter: A, B, A gated by B (can only be read at up to an 18Hz rate).
DISPLAY DIGITS: 8 (9 in count mode).
PULSE WIDTH RANGE: 100ns–100s.
INPUT IMPEDANCE: 1MΩ/18pF.
INPUT VOLTAGE RANGE: 450mV to 5V p–p; 4.5V to 50V p–p.

INPUT SENSITIVITY SINE WAVE INPUT

CHANNEL (A) AC COUPLING: 160mV rms (450mV p–p) (50Hz–80MHz).
DC COUPLING: 160mV rms (450mV p–p) (0Hz–80MHz).
CHANNEL (B) AC COUPLING: 160mV rms (450mV p–p) (50Hz–10MHz).
DC COUPLING: 160mV rms (450mV p–p) (0Hz–10MHz).

MAX INPUT VOLTAGE

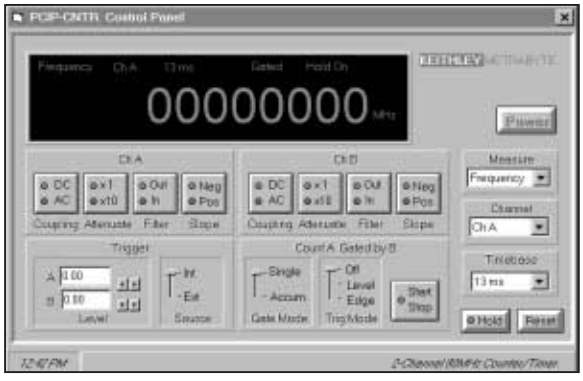
CH A, CH B: 100VDC or 70VAC rms.
ATTENUATION: ×1 and ×10.
NOISE FILTER: Switchable 50kHz low pass filter on channels A and B.
TRIGGER TYPE: ± edge .

TRIGGER THRESHOLD

AC COUPLED: 200mV hysteresis.
DC COUPLED: ±2.5V (with 8-bit DAC) ±25V (with 8-bit DAC).
CLOCK SELECTION: Internal or external.

CLOCK OUTPUT

FREQUENCY: 10MHz.
OUTPUT LEVEL: TTL.
IMPEDANCE: 150Ω.
COUPLING: DC.



PCIP-CNTR Pop-up control panel

EXTERNAL CLOCK INPUT

FREQUENCY: 10MHz.
SENSITIVITY: 500mV rms.
MAXIMUM INPUT: 25V rms.
IMPEDANCE: 2kΩ.
COUPLING: AC.

RESET INPUT

INPUT LEVEL: TTL
RESET ACTIVE: <0.8V (minimum pulse 100ns). Disabled when not connected.
MAXIMUM INPUT: –10 to +15VDC.

ACCURACY

STANDARD MODEL: 0.01% or 100ppm, 0 to 70°C.
TCXO MODE: 0.0001% or 1ppm, 0 to 70°C. 1ppm/year after 30 days.

ENVIRONMENTAL

OPERATING TEMPERATURE: 0 to +70°C.
STORAGE TEMPERATURE: –20 to +70°C.
HUMIDITY: 0 to 90%, non-condensing.

PHYSICAL

DIMENSIONS: 13.30in L × 4.25in H × 0.75in D (33.8cm × 10.8cm × 1.9cm).

POWER REQUIREMENTS

+5V: 420mA typ.
–12V: 42mA typ.

ORDER	DESCRIPTION
PCIP-CNTR	80MHz, 2-Channel Counter, 100ppm accuracy with ActiveX control
PCIP-CNTR/TCXO	80MHz, 2-channel Counter, 1ppm accuracy with ActiveX control

OPTIONS	
C-BMM-5	5ft BNC-to-BNC Cable
C-BMM-15	15ft BNC-to-BNC Cable
SMC-9	9-pin male solder cup connector
MS-PCIP-CNTR	Additional hardware manual and ActiveX control

See page 479 for descriptions of all accessories.

QUESTIONS?
1-800-552-1115 **(U.S. only)**
Call toll free for technical assistance, product support or ordering information, or visit our website at **www.keithley.com**.

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