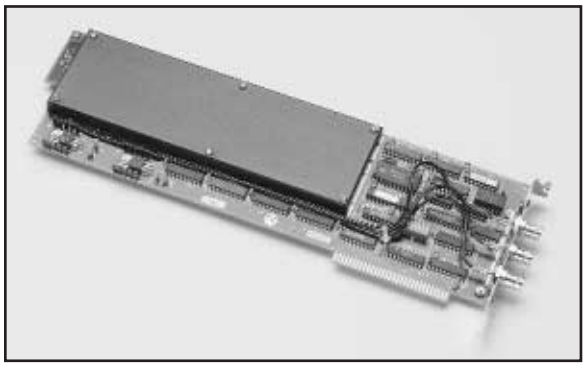
PCIP-SCOPE

ISA-Bus Digital Storage Oscilloscope with VisualSCOPE for Windows

Functional Description

The PCIP-SCOPE with VisualSCOPE for Windows is a full-featured digital storage oscilloscope on a plug-in board for ISA-bus PCs. The intuitive Windows interface operates in the same manner as the front panel on a traditional oscilloscope, making the instrument easy to use and understand. If you know how to use an oscilloscope, then you already know how to use the PCIP-SCOPE. In many cases, the PCIP-SCOPE will meet all your data acquisition requirements.

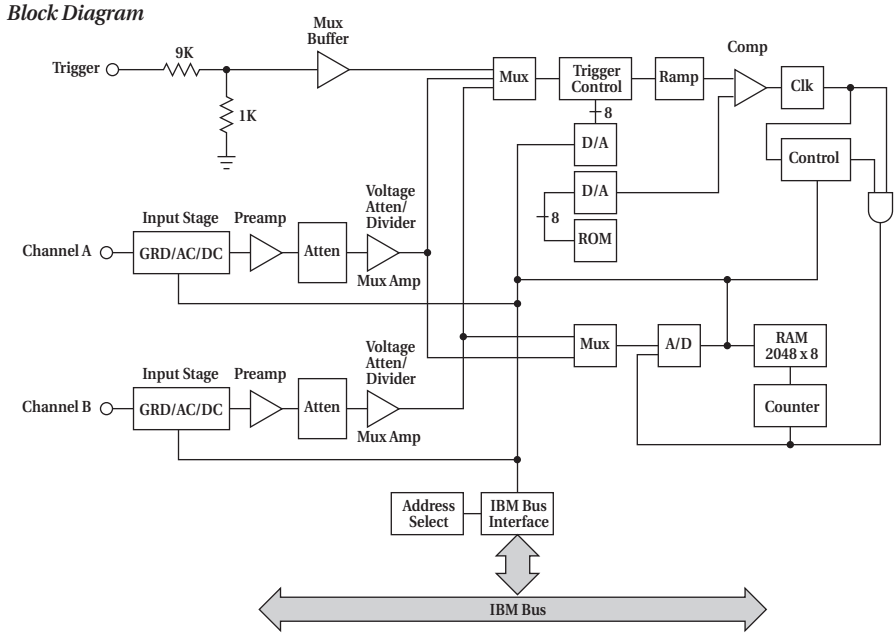


The PCIP-SCOPE features 2 input channels with real-time sample rates up to 20MHz and a bandwidth of 10MHz. For repetitive, high-speed signals, an interlace sampling mode increases the effective sample rate by as much as 25 times. You can use the trigger channel or either input channel to trigger via slope, level or under computer command. A 2048-sample memory is allocated to one channel or split evenly between two channels.

The Windows control panel allows you to display up to 4 channels at once. Previously saved or calculated waveforms can be displayed for comparison to live inputs. Using cursors, you can directly measure time, amplitude, and frequency values of signals. Dual timebase windowing allows you to zoom in on a particular segment of a waveform. Captured waveforms can be easily stored to disk or exported to other applications by cut/copy/paste or DDE. In addition, VisualSCOPE supports 14 automatic, real-time waveform measurements (including Vrms,Vmax, Vmin, Vpp, Vavr, period, freq, width, rise/fall time, and duty cycle) as well as statistics on the measurements. The built-in Signal Calculator allows you take interactive waveform measurements, perform vector and scalar arithmetic, or perform user defined functions—all without programming.

All PCIP-SCOPE signals are brought in through BNC connectors located at the rear of the board. In addition to the two input channels, a trigger input is provided. Options for the PCIP-SCOPE include a standard scope probe with built-in attenuator and various lengths of shielded BNC cable.

Block Diagram



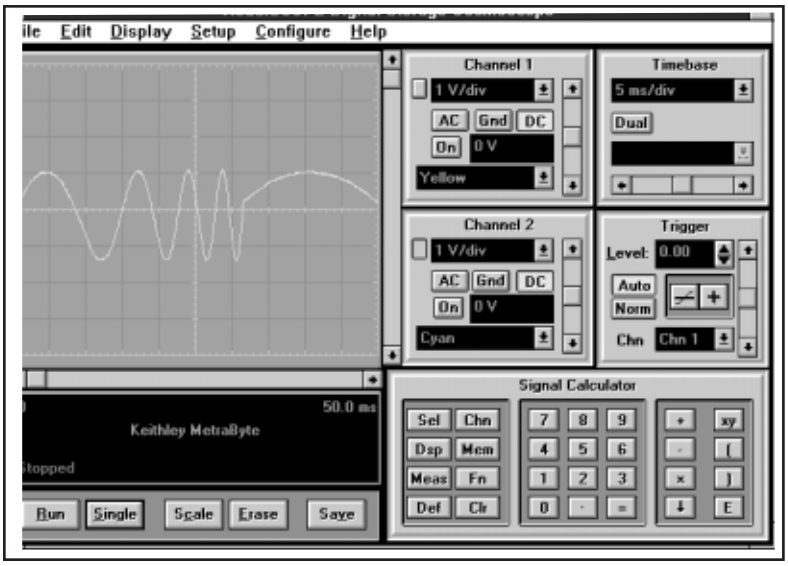
FEATURES

- Intuitive Windows interface—no programming required
- 2 channel input; 1, 2 or 4 channel display
- 20MHz sampling rate; 500MHz interlace sampling for repetitive waveforms
- Trigger on ± edge; internal, external or software
- Dual timebase windowing
- Instrument setups can be saved to disk
- Easily transfer data to other Windows applications
- Scroll the signal in time and voltage
- Cursors for precise time and voltage measurements
- Supports 14 automatic measurements as well as statistics on the measurements
- Signal calculator performs interactive, waveform math and user defined functions
- Windows 3.1/95/98 - VisualSCOPE
- Windows 95/NT/2000- ActiveX controls

APPLICATIONS

- High speed/portable data acquisition
- Component/circuit analysis
- General research
- Production test

PCIP-SCOPE



Software

Software available for the PCIP-SCOPE board supports applications in all Windows operating environments. All the software listed below is included with the board.

- PCIP-SCOPE Custom Control
- VisualSCOPE for 16-bit applications in Windows 3.1/95 applications
- ActiveX controls for 32-bit custom applications in Windows 95/NT
- VBX custom controls for 16-bit applications in Windows 3.1/95

PCIP-SCOPE Custom Control

You can easily develop custom Windows applications for the PCIP-SCOPE by using the PCIP-SCOPE Custom Control. The control is easily added to the Visual Basic Toolbox where it becomes as simple to use as any standard Visual Basic custom control. You control the state of the PCIP-SCOPE hardware by assigning values to properties of the control and responding to events. The PCIP-SCOPE Custom Control handles all low-level hardware interfacing in the Windows environment, allowing you to concentrate on the high-level aspects of the application.

VisualScope

VisualSCOPE is an intuitive Windows interface that captures and analyzes waveforms, and transfers data and graphic images to other Windows applications without programming. VisualSCOPE's displays are the same as a standard benchtop oscilloscope. And, VisualSCOPE gives you the flexibility to make up to 14 automatic measurements and to tailor the measurements to your needs.

ActiveX Control

The PCIP-SCOPE can be programmed using the supplied industry standard ActiveX controls for 32-bit Windows applications. You can create a virtual full-featured oscilloscope instrument that fits 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 standard programming languages such as C++.

VBX Custom Controls

The PCIP-Scope can be programmed using the supplied industry standard VBX custom controls for 16-bit Windows applications. You can create a virtual, full-featured oscilloscope instrument that fits your exact needs. You can develop these virtual instruments in any environment that supports VBX custom controls. This includes most of today's popular rapid-application-development environments, such as Microsoft's Visual Basic and standard programming languages such as C++.

PCIP-SCOPE

SPECIFICATIONS

INPUTS

CHANNELS: 2
TYPICAL ACCURACY: ±1% of F.S. range @ Cal temp
TYPICAL DRIFT: ±0.12% of F.S. range per °C
RESOLUTION: 8-bits vertical
BANDWIDTH: DC coupling, DC to 10MHz
AC coupling, 0 Hz to 10MHz
OVERSHOOT: 5% typ
RISE TIME: 30ns typ
IMPEDANCE: 1MΩ/40pF (dependent on probe)
MAX SAFE INPUT: 175VDC, 120VAC rms on 5mV range

HORIZONTAL SWEEP

SAMPLES PER CHANNEL: 1024 in dual-channel mode
2048 in single-channel mode
MAX SAMPLE RATE: 20MHz (50ns sample period)
500MHz (interlace mode, repetitive waveforms only)

TIME/ DIV	SWEEP TIME	SAMPLE PERIOD	SAMPLE MODE
200 ns	2 µs	2 ns	Repetitive waveforms
500 ns	5 µs	5 ns	Repetitive waveforms
1 µs	10 µs	10 ns	Repetitive waveforms
2 µs	20 µs	20 ns	Repetitive waveforms
5 µs	50 µs	50 ns	Alternate
10 µs	100 µs	100 ns	Alternate
20 µs	200 µs	200 ns	Alternate
50 µs	500 µs	500 ns	Alternate
100 µs	1 ms	1 µs	Chopped
200 µs	2 ms	2 µs	Chopped
500 µs	5 ms	5 µs	Chopped
1 ms	10 ms	10 µs	Chopped
2 ms	20 ms	20 µs	Chopped
5 ms	50 ms	50 µs	Chopped
10 ms	100 ms	100 µs	Chopped
20 ms	200 ms	200 µs	Chopped
50 ms	500 ms	500 µs	Chopped
100 ms	1 s	1 ms	Chopped
200 ms	2 s	2 ms	Chopped
500 ms	5 s	5 ms	Chopped

VERTICAL SENSITIVITY (VOLTS/DIVISION)

(1X PROBE): 5.0V, 2.0V, 1.0V, 500mV, 200mV, 100mV.
50mV, 20mV, 10mV, 5mV.

TRIGGER

INTERNAL

SOURCE: Channel A or B
SLOPE: positive (+) or negative (–)
LEVEL: ± full-scale (8-bit resolution)

EXTERNAL

SOURCE: External rear connector (BNC)
LEVEL: ±5 volts (8-bit resolution)
COUPLING: DC
SLOPE: positive (+) or negative (–)
MAXIMUM INPUT: ±25V
INPUT IMPEDANCE: 10kΩ

SOFTWARE MODES

Automatic, normal & sweep

ENVIRONMENTAL

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

POWER REQUIREMENTS

+5V: 1.45A typ, 1.8A max
+12V: 315mA typ, 425mA max
–12V: 185mA typ, 235mA max

PHYSICAL

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

(Note: Optimum high frequency response requires a 10X probe. The PRB-110X is recommended to ensure proper operation.)

ORDER	DESCRIPTION
PCIP-SCOPE	Digital Storage Oscilloscope with VisualSCOPE software and VBX/ActiveX controls

OPTIONS

PRB-110X	X1/X10 Scope Probe & Cable
C-BMM-5	5 ft BNC-to-BNC Cable
C-BMM-15	15 ft BNC-to-BNC Cable
VSCOPE-U	VisualSCOPE software for previous PCIP-SCOPE users
MS-PCIP-SCOPE	Additional hardware manual and ActiveX controls

See page 479 for descriptions of all accessories.