

High Performance Instrumentation in a PC

Passive Oscilloscope Probes

A high performance oscilloscope requires a wide bandwidth oscilloscope probe in order to make accurate measurements on today's high frequency waveforms. The probe not only needs to have wide bandwidth, but it must also have good fidelity (i.e. minimal ripples in the passband and a smooth corner frequency transition) and be mechanically reliable. The following table lists the available passive probes and their associated characteristics.

Model	Atten	Cable Length	Max Input (V)	Scope Input Resistance	R	C	Probe Bandwidth	Probe Risetime
PCI-900	X10	1.2 m	600	1 M	10 M	15 pF	300 MHz	1.2 ns
PCI-901 X1/X10 Switchable	X1	1.2 m	600	1 M	1 M	55 pF	15 MHz	35 ns
	X10	1.2 m	600	1 M	10 M	16 pF	100 MHz	3 ns
PCI-902	X100	1.5 m	1200	1 M	100 M	6.5 pF	250 MHz	1.4 ns
PCI-903	X10	1.5 m	30	50	500	1 pF	1 GHz	350 ps
PCI-906	X10	1.5m	600	1 M	10M , 0.2%	15 pF	250 MHz	1.4 ns

PCI-904 Differential Oscilloscope Probe

The PCI-904 Differential Input Oscilloscope Probe is an active probe that is capable of making isolated, differential measurements. Applications requiring a differential measurement include switch mode power supplies, motor controllers, current shunts, SCRs, and power MOSFET circuits. The PCI-904 provides an alternative to "floating" the computer by providing a safe method which does not create an impedance imbalance to the circuit under test.

Measurements up to 1000 Volts from ground can be made with this battery-powered probe. A DC input for a wall-mount transformer is also provided (the transformer is not included). Connections to test points are made with standard probes, alligator clips, or spring tip probes (all included) which push on to banana plug leads.

PCI-904 Specifications

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Bandwidth	15 MHz	CMRR	80 dB @ 100 kHz
Attenuation	X10 or X100	Accuracy	±2%
Input Resistance	2 M	Power	4 AA Batteries
Input Capacitance	12 pF (each lead to ground)	Size	16.5 cm x 6.4 cm x 2.0 cm (6.5" x 2.5" x 0.8")
Maximum Input Voltage	400 V	Weight	0.3 kg (10 oz.)
Maximum Voltage to Ground	1000 V		



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