

TEKTRONIX

P7516

The Tektronix P7516 is a high-performance 16 GHz TriMode™ differential oscilloscope probe designed for use with Tektronix TekConnect® real-time oscilloscopes. It features the unique TriMode measurement capability, enabling differential, single-ended, and common-mode measurements through a single connection setup. Combined with the TekFlex™ connector system, it provides exceptional signal fidelity and minimal loading for high-speed serial bus analysis.

SPECIFICATIONS

General

Interfaces	TekConnect
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Physical

Power Supply	Powered directly by host oscilloscope through TekConnect interface
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Operating Temperature	0 °C to +40 °C °C
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Electrical Performance

Bandwidth	16 GHz
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Rise Time (10% to 90%)	<= 32 ps
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Rise Time (20% to 80%)	<= 22 ps
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Attenuation Settings	5x, 12.5x
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DC Input Resistance (Differential)	100 kΩ
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DC Input Resistance (Single-Ended)	50 kΩ
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Input Voltage & Dynamic Range

Differential Dynamic Range (5x setting)	0.75 Vp-p
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Differential Dynamic Range (12.5x setting)	2.0 Vp-p
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Common Mode Operating Voltage Window	+3.0 V to -2.0 V
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DC Offset Range	+2.5 V to -1.5 V
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Maximum Non-Destructive Input Voltage (DC + Peak AC)	±15 V
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Signal Fidelity & Rejection

Common Mode Rejection Ratio (CMRR) at DC	> 60 dB
Common Mode Rejection Ratio (CMRR) at 50 MHz	> 45 dB
Common Mode Rejection Ratio (CMRR) at 1 GHz	> 30 dB
Common Mode Rejection Ratio (CMRR) at 10 GHz	> 18 dB
Common Mode Rejection Ratio (CMRR) at 16 GHz	> 15 dB

Measurement Modes & Control

Measurement Modes	TriMode™ (Differential (A-B), Single-Ended A, Single-Ended B, Common Mode)
DSP Support	DSP filter support on compatible Tektronix oscilloscopes for nominal channel flatness and phase response correction

Connectivity & Interface

Host Interface Type	TekConnect®
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Physical Characteristics

Attached Cable Length	1.0 m (3.3 feet)
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Environmental Specifications

Non-Operating Temperature Range	-40 °C to +71 °C
Operating Altitude	Up to 3,000 m (9,843 feet)
Non-Operating Altitude	Up to 12,192 m (40,000 feet)

Electrical Characteristics

DC Gain Accuracy (Differential)	±2.0%
DC Gain Accuracy (Single-Ended)	±2.0%
DC Gain Accuracy (Common Mode)	±2.0%
DC Offset Accuracy	±(1.5% of offset setting + 10 mV)
Input Coupling	DC
Output Termination	50 Ω
Propagation Delay (Typical)	5.3 ns
Single-Ended Dynamic Range (12.5x setting)	0.8 Vp-p
Common Mode Dynamic Range (5x setting)	0.31 Vp-p
Common Mode Dynamic Range (12.5x setting)	0.8 Vp-p

Environmental

Operating Humidity	5% to 95% RH at up to +30 °C, 5% to 85% RH above +30 °C up to +50 °C, non-condensing
Non-Operating Humidity	5% to 95% RH at up to +30 °C, 5% to 85% RH above +30 °C up to +75 °C, non-condensing

Noise Characteristics

Probe Noise (RTI, 5x setting)	< 1.4 mV_rms (typical)
Probe Noise (RTI, 12.5x setting)	< 3.0 mV_rms (typical)

System Performance

System Bandwidth (with DPO/MSO71604)	16 GHz
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TECHNOLOGY

Active Differential TriMode

APPLICATIONS

High-speed serial bus design, debugging, and characterization (PCI Express, Serial ATA, DDR, HDMI, DisplayPort)

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