

>8 GHz Differential Signal Acquisition System with SMA Inputs

► P7380SMA



Tektronix' proven expertise in differential probing brings you our newest high-speed differential signal acquisition system. This acquisition system utilizes our new SiGe probe ASIC developed with today's most advanced technology. The P7380SMA is designed for measuring differential signals in a 50 Ω signaling environment, providing the ability to convert from a dual-SMA signal path to a single oscilloscope input channel. Many of the new high-speed serial data standards employ differential signaling on multiple lanes. The P7380SMA provides the ability to measure a high-speed differential signal on each channel of a multiple channel oscilloscope.

The P7380SMA also provides a common mode DC voltage input to the termination network. The termination voltage can be supplied either externally or internally. In addition, there is an automated mode where the termination voltage is supplied automatically to match the common mode voltage of the input signal.

The P7380SMA employs the patented TekConnect[®] Interface, which preserves signal integrity to 18 GHz and beyond to meet present and future bandwidth needs.

► Characteristics

Bandwidth (Differential Signal Acquisition System) – >8 GHz (typical).

Rise Time – <55 ps 10% to 90% (guaranteed).

Rise Time – <35 ps 20% to 80% (typical).

Dual SMA Input

Gain Attenuation – 0.40 (2.5 X) and 0.08 (12.5 X).

Differential Input Dynamic Range – 625 mV_{p-p} (2.5 X) and 3.0 V_{p-p} (12.5 X).

Common Mode Voltage Range – ± 2.5 V.

Termination Voltage Range – ± 2.5 V.

Max Voltage (Non-destruct) – ± 5 V (DC plus peak AC).

CMRR –

DC >60 dB.

100 MHz >50 dB.

1 GHz >35 dB.

5 GHz >20 dB.

8 GHz >15 dB.

Differential Return Loss –

<30 dB to 5 GHz (VSWR <1.065:1)

<20 dB to 8 GHz (VSWR <1.22:1)

Noise, Referred To Input – <13 nV/ $\sqrt{\text{Hz}}$ (2.5 X) and <40 nV/ $\sqrt{\text{Hz}}$ (12.5 X).

Interface – TekConnect[®].

► Features & Benefits

>8 GHz Bandwidth (typical)

<55 ps 10% to 90% Rise Time (guaranteed)

<35 ps 20% to 80% Rise Time (typical)

Dual SMA Inputs to Internal 50 Ω Termination Network

High Bandwidth Differential Amplifier with Excellent CMRR

Internal Termination Voltage Generator Controlled by Internal (oscilloscope)¹, External Source or Automatically

Switchable Gain for Extended Dynamic Range

Low Differential Input VSWR

Phase Matched SMA Cables (1 m length) with Cable Loss Compensation

Excellent Pulse Response for Optimum Eye Pattern Measurements

Low Pulse Response Aberrations for Optimum Eye Pattern Measurements

Compatible with 80A03 for Sampling Applications

Auxiliary (inverted) Output for Use with Spectrum Analyzers, Network Analyzers or as a Clock Recovery Trigger Source

TekConnect[®] Interface

► Applications

Analog Validation and Compliance Testing of Emerging Serial Data Standards Including:

- PCI Express
- InfiniBand
- Serial ATA
- 10GbE XAUI
- FibreChannel

Communications (Gigabit Ethernet, FibreChannel, InfiniBand)

Semiconductor Characterization and Validation (PCI Express, Serial ATA, IEEE 1394, USB 2.0, RAMBUS, DDR)

¹ Not available on all oscilloscopes.

COMPUTING

COMMUNICATIONS

VIDEO

>8 GHz Differential Signal Acquisition System with SMA Inputs

▶ P7380SMA

▶ Ordering Information

P7380SMA

>8 GHz Differential Signal Acquisition System with SMA Inputs.

Service Options

Opt. C3 – Calibration Service 3 Years.

Opt. C5 – Calibration Service 5 Years.

Opt. D1 – Calibration Data Report.

Opt. D3 – Calibration Data Report 3 Years (with Option C3).

Opt. D5 – Calibration Data Report 5 Years (with Option C5).

Opt. R3 – Repair Service 3 Years.

Opt. R5 – Repair Service 5 Years.

▶ Included Accessories

Product Name/Description	Part Number	Quantity
Dual SMA Cables (38 inches long)	174-4944-00	1 set
SMA 50 Ω Terminator	015-1022-01	3 each
SMA Short	015-1020-00	1 each
SMA Female to BNC Male Adapter	015-0572-00	1 each
Banana Plug to 0.080 in. Diameter Pin Jack Cable Adapter, Red (4 ft. long)	012-1674-00	1 each
Banana Plug to 0.080 in. Diameter Pin Jack Cable Adapter, Black (4 ft. long)	012-1675-00	1 each
0.040 in. Dia Pin Jack to 0.08 in. Diameter Pin Plug Adapter, Black	012-1676-xx	2 each
Wrist Strap	006-3415-xx	1 each
Instruction Manual	071-1392-xx	1 each

▶ Optional Accessories

Product Name/Description	Part Number	Quantity
Phase Adjuster (2 Required)	015-0708-XX	1 each
TekConnect® Interface Calibration Adapter	067-0422-XX	1 each
P6150 Probe Assy (Includes 1 each 1X probe tip, 2 each 10X probe tip, accessory kit)	P6150	1 each
P6150 Probe Head Assy: 1X, Res. Network, 50 Ω (Recommend to order 2)	206-0398-00	1 each
P6150 Probe Head Assy: 10X, Res. Network, 450 Ω (Recommend to order 2)	206-0399-03	1 each
Accessory Package for the P6150	020-1708-00	1 set
80A03: 8000 Series TekConnect Probe Interface	80A03	1 each

2 Accessories • www.tektronix.com/accessories

Contact Tektronix:

ASEAN / Australasia / Pakistan (65) 6356 3900

Austria +43 2236 8092 262

Belgium +32 (2) 715 89 70

Brazil & South America 55 (11) 3741-8360

Canada 1 (800) 661-5625

Central Europe & Greece +43 2236 8092 301

Denmark +45 44 850 700

Finland +358 (9) 4783 400

France & North Africa +33 (0) 1 69 86 80 34

Germany +49 (221) 94 77 400

Hong Kong (852) 2585-6688

India (91) 80-2275577

Italy +39 (02) 25086 1

Japan 81 (3) 6714-3010

Mexico, Central America & Caribbean 52 (55) 56666-333

The Netherlands +31 (0) 23 569 5555

Norway +47 22 07 07 00

People's Republic of China 86 (10) 6235 1230

Poland +48 (0) 22 521 53 40

Republic of Korea 82 (2) 528-5299

Russia, CIS & The Baltics +358 (9) 4783 400

South Africa +27 11 254 8360

Spain +34 (91) 372 6055

Sweden +46 8 477 6503/4

Taiwan 886 (2) 2722-9622

United Kingdom & Eire +44 (0) 1344 392400

USA 1 (800) 426-2200

USA (Export Sales) 1 (503) 627-1916

For other areas contact Tektronix, Inc. at: 1 (503) 627-7111

Updated 23 December 2003

Our most up-to-date product information is available at:
www.tektronix.com



Product(s) are manufactured in ISO registered facilities.

Product(s) complies with IEEE Standard 488.1-1987, RS-232-C, and with Tektronix Standard Codes and Formats.

Copyright © 2004, Tektronix, Inc. All rights reserved. Tektronix products are covered by U.S. and foreign patents, issued and pending. Information in this publication supersedes that in all previously published material. Specification and price change privileges reserved. TEKTRONIX and TEK are registered trademarks of Tektronix, Inc. All other trade names referenced are the service marks, trademarks or registered trademarks of their respective companies.

02/04 HB/WWW

51W-17350-0

Tektronix
Enabling Innovation