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Test & Measurement

- sales
- rentals
- calibration
- repair
- disposal

Complimentary Reference Material

This PDF has been made available as a complimentary service for you to assist in evaluating this model for your testing requirements.

TMG offers a wide range of test equipment solutions, from renting short to long term, buying refurbished and purchasing new. Financing options, such as Financial Rental, and Leasing are also available on application.

TMG will assist if you are unsure whether this model will suit your requirements.

Call TMG if you need to organise repair and/or calibrate your unit.

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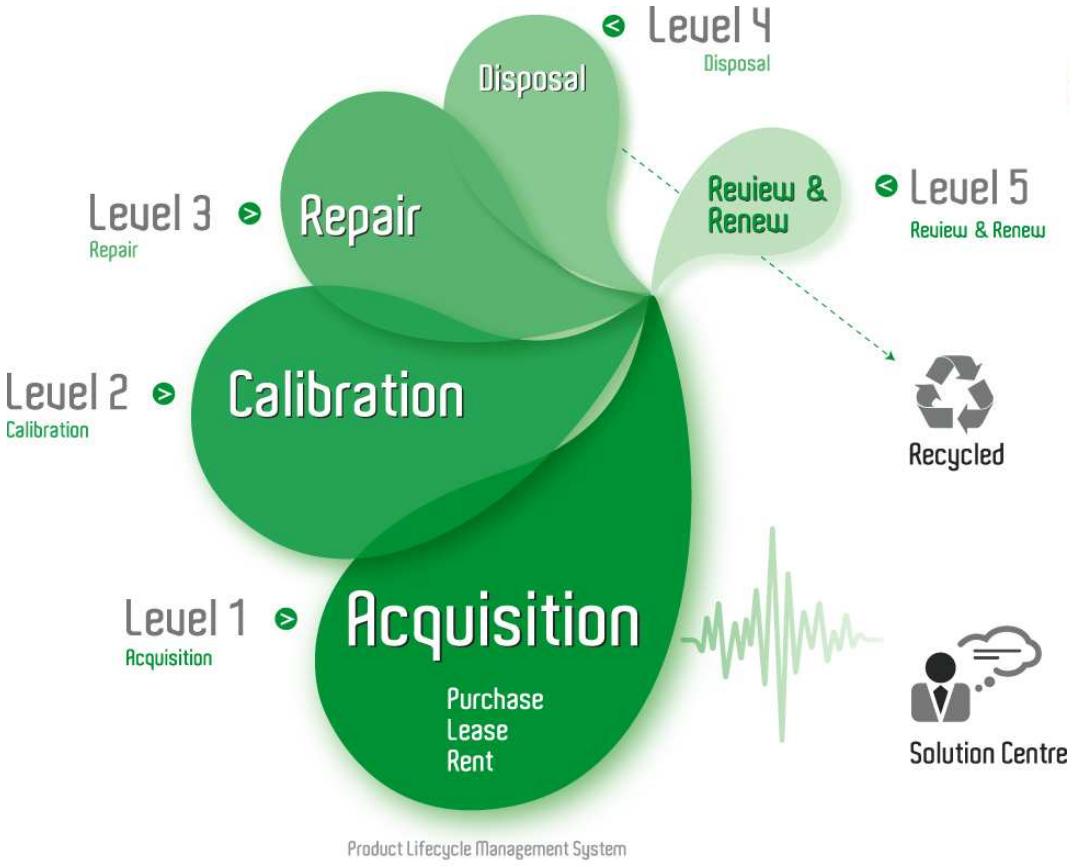

Differential SMA Probe Family

▶ **P7313SMA • P7380SMA**

▶ Features & Benefits

- >13.0 GHz Bandwidth (P7313SMA Only, Typical)
- >8.0 GHz Bandwidth (P7380SMA Only, Typical)
- 50Ω Termination Network, Differential SMA Inputs
- Industry Leading Differential Return Loss and VSWR
- High Bandwidth Differential Amplifier with Excellent CMRR
- Internal Termination Voltage Generator Controlled by Internal by Oscilloscope,*1 External Source or Automatically by the Probe
- Phase Matched SMA Cables (38-inch Length, <1 ps Skew) with Cable Loss Compensation
- Switchable Gain for Extended Dynamic Range
- Auxiliary (Inverted) Output for Use with Spectrum Analyzers, Network Analyzers or as a Clock Recovery Trigger Source
- TekConnect™ Interface

▶ Applications

Validation and Compliance Testing of Serial Data Standards Including, but Not Limited to:

- PCI-Express I and II
- Serial ATA
- FBDIMM
- DDR
- XAUI
- HDMI/DVI (P7313SMA Only)

*1 Not available on all oscilloscopes.

Tektronix continues to demonstrate its proven leadership in differential probing with a significant addition to our Differential SMA Probe Family. Differential SMA Probes are designed for measuring differential signals in a 50Ω signaling environment, providing the ability to convert from a differential SMA signal path to a single oscilloscope input channel. Many of the today's high-speed serial data standards employ differential signaling on multiples lanes that are challenging to measure simultaneously on a single oscilloscope. The Tektronix Differential SMA Probes provide the ability to measure a high-speed differential signal on each channel of a multiple-channel oscilloscope. The right oscilloscope can simultaneously acquire up to four high-speed differential signals with the use of four differential SMA probes. As an added benefit, the SMA inputs on the probes connect to high-quality 50Ω terminations that offer industry leading return loss, a critical specification that is very important in compliance testing as frequencies increase.

Tektronix Differential SMA Probes also provide a common mode DC voltage input to the termination network. The termination voltage can be supplied either externally by the user or internally by the oscilloscope. In addition, there is also an automatic mode that senses the common mode voltage of the input signal and automatically sets the termination voltage to match. The P7313SMA has an extended termination voltage range that makes it ideal for testing differential standards with high common mode – voltages like HDMI and DVI.

Taken together, the high-speed differential amplifier, superior 50Ω terminations, low return loss, flexible termination voltage and quality phase-matched SMA cables create a world-class differential acquisition system when used with Tektronix oscilloscopes.

Tektronix
Enabling Innovation

▸ Characteristics

	P7380SMA	P7313SMA
Bandwidth (typical)	>8 GHz	> 13.0 GHz
Rise Time (10% to 90%) (guaranteed)	<55 ps	< 40 ps
Rise Time (20% to 80%) (typical)	<35 ps	< 25 ps
Attenuation	2.5X or 12.5X, user selectable	
Differential Input Range	0.625 V_{pk-pk} (2.5X) 3.0 V_{pk-pk} (12.5X)	0.800 V_{pk-pk} (2.5X) 3.6 V_{pk-pk} (12.5X)
Common Mode Input Range	±2.5 V	+3.6/-2.5 V
Termination Voltage Range	±2.5 V	+3.6/-2.5 V
Noise, Referred to Input	<13 nV/√Hz (2.5X); <40 nV/√Hz (12.5X)	
Differential Return Loss	<27 dB to 5 GHz (VSWR<1.09:1) <20 dB to 8 GHz (VSWR<1.22:1)	<30 dB to 500 MHz (VSWR<1.065:1) <20 dB to 6.5 GHz (VSWR<1.22:1) <15 dB to 10 GHz (VSWR<1.43:1) <12 dB to 13 GHz (VSWR<1.67:1)
CMRR	>50 dB to 100 MHz >35 dB to 1 GHz >20 dB to 5 GHz >15 dB to 8 GHz	>50 dB to 1 GHz >35 dB to 2.5 GHz >25 dB to 5 GHz >20 db to 10 GHz >15 dB to 13 GHz
Max Voltage (non-destruct)	±5 V (DC + peak AC)	
Interface	TekConnect®	

▸ Ordering Information

P7313SMA

>13.0 GHz Differential SMA Probe for TekConnect® Interface.

Includes: Standard Accessories see table, Calibration Data Report (Opt. D1), Certificate of Traceable Calibration.

P7380SMA

>8.0 GHz Differential SMA Probe for TekConnect Interface.

▸ Standard Accessories

Description	P7380SMA	P7313SMA	Reorder Part Number
Pouch, Nylon Carrying Case with Inserts	1 each	1 each	016-1952-xx
Instruction Manual	1 each	—	071-1392-xx
User Manual – Printed. Includes Reply Card and CD	—	1 each	020-2720-xx English 020-2737-xx Simplified Chinese 020-2738-xx Japanese
Phase Matched Dual SMA Cables (38 inches long)	1 pair	1 pair	174-4944-xx
SMA 50Ω Terminator	3 each	3 each	015-1022-xx
SMA Short	1 each	1 each	015-1020-xx
SMA Female to BNC Male Adapter	1 each	1 each	015-0572-xx
Banana Plug to 0.080 in. Diameter Pin Jack Cable Adapter, Red (4 ft. long)	1 each	1 each	012-1674-xx
Banana Plug to 0.080 in. Diameter Pin Jack Cable Adapter, Black (4 ft. long)	1 each	1 each	012-1675-xx
0.040 in. Diameter Pin Jack to 0.08 in. Diameter Pin Plug Adapter, Black	2 each	2 each	012-1676-xx
Anti-Static Wrist Strap	1 each	1 each	006-3415-xx

▸ Recommended Accessories

Description	P7380SMA	P7313SMA	Part Number
Phase Adjuster (2 required)	Yes	Yes	015-0708-xx
8000 Series TekConnect Probe Interface	Yes	Yes	80A03
Real Time Spectrum Analyzer TekConnect Probe Adapter	Yes	Yes	RTPA2A

Service Options

Opt. CA1 – A single calibration event or coverage for the designated calibration interval, whichever comes first.

Opt. C3 – Calibration Service 3 years.

Opt. C5 – Calibration Service 5 years.

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

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

Opt. R3 – Repair Service 3 years.

Opt. R5 – Repair Service 5 years.

Language Options

Opt. L0 – English manual.

Opt. L5 – Japanese manual.

Opt. L7 – Simplified Chinese manual.

Differential SMA Probe Family

▶ **P7313SMA • P7380SMA**

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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.

10/06 HB/WOW 51W-17350-1

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