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Test & Measurement

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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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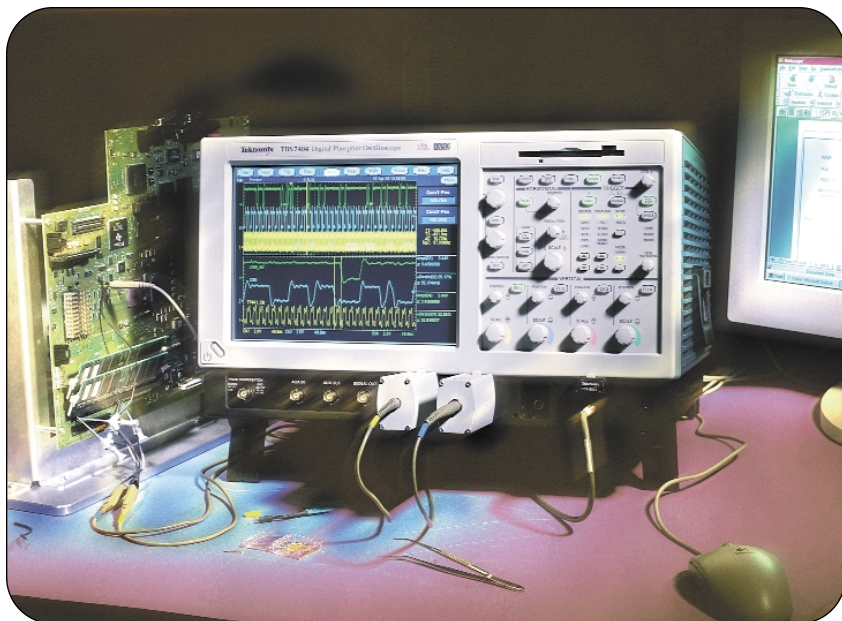


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TekConnect™ Adapters

► TCA-BNC • TCA-SMA • TCA-N



Tektronix award-winning TDS7000, CSA7000 and TDS6000 Series oscilloscopes allow engineers to make high-speed measurements quickly and efficiently. In addition to these high-speed measurements, many of today's designers also face the challenges of measuring high voltage, current, power or even micro-volt level signals to gain a more complete understanding of their designs.

The TekConnect family of amplifiers, probes and adapters make it the ideal solution for such challenges, delivering a variety of acquisition capabilities through the use of existing compatible TekConnect and TEKPROBE measurement tools.

TekConnect TCA Series Adapters Expand the Functionality of Tektronix High-performance Oscilloscopes

This family of three different adapter systems provides less signal distortion and better performance than traditional connections used to move a signal from one environment to another, such as BNC to N or BNC to SMA.

TCA-BNC Adapter (50 Ω only)

A direct 50 Ω input with TEKPROBE BNC 50 Ω capability is available with the TCA-BNC adapter. This adapter may be used as a direct 50 Ω BNC input or with Tektronix high-speed active and differential probes requiring the TEKPROBE BNC 50 Ω interface.

► Features & Benefits

TCA-BNC – TekConnect-to-TEKPROBE™ BNC 50 Ω

- DC to ≥ 4 GHz (Instrument Dependent)
- 50 Ω Input (Only)
- Probe Control TEKPROBE BNC (50 Ω)
- Standard with TDS7154 and TDS7254

TCA-SMA – TekConnect-to-SMA

- DC to ≥ 18 GHz (Instrument Dependent)
- 50 Ω Input (Only)
- Standard with TDS7404

TCA-N – TekConnect-to-N

- DC to ≥ 11 GHz (Instrument Dependent)
- 50 Ω Input (Only)

TekConnect Interface Delivers Superior Signal Fidelity, Unparalleled Versatility and Ease-of-use

► Applications

Verification, Characterization and Debug of Sophisticated Designs in Communications, Computer, and Semiconductor Electronics Environments, Such As:

- Jitter and Timing Analysis (Computer Systems)
- Disk Drive Analysis
- Investigation of Transient Phenomena
- Spectral Analysis
- Power Supplies/Inverters (Switching and Linear)
- Semiconductor Devices (SCRs, IGBTs, FETs, CMOS)
- Electronic Ballasts
- Industrial/Consumer Electronics
- Mobile Communications (Phone, Satellite, Relay Stations)
- Motor Drives
- Transportation Systems (Electronic Vehicles, Electric Trains, Locomotives, Avionics)

COMPUTING

COMMUNICATIONS

VIDEO

TekConnect™ Adapters

► TCA-BNC • TCA-SMA • TCA-N

TCA-SMA and TCA-N Adapters (50 Ω only)

The high-speed SMA and N type adapters allow a more direct connection to the signal under test requiring N or SMA connections without losing performance by adding other external conversion adapters.

TekConnect Interface Delivers Superior Signal Fidelity, Unparalleled Versatility and Ease-of-use

The TekConnect interface ensures superior signal fidelity with useful bandpass up to 18 GHz at the oscilloscope input, while offering unparalleled versatility with the world's widest array of accessory signal acquisition solutions for high-performance, real-time oscilloscopes. This interface delivers a more robust oscilloscope interface for next-generation products with multi-GHz analog bandwidths, overcoming many of the inherent bandwidth limitations of BNC-based interfaces. The TekConnect interface preserves a low voltage standing wave ratio (VSWR) 50 Ω environment as well as a reliable electrical connection. A convenient, one-button release and locking mechanism provides quick, easy installation and removal of probes, amplifiers and adapters.

► Characteristics

► Model Specifications

	TCA-BNC	TCA-SMA	TCA-N
Bandwidth (–3 dB)	DC to 4 GHz (Maximum Frequency) (Limited By Host Instrument)	DC to ≥ 18 GHz (Maximum Frequency) (Limited By Host Instrument)	DC to ≥ 11 GHz (Maximum Frequency) (Limited By Host Instrument)
Probe Tip Bandwidth (with P6139A at –3 dB)	N/A		
BW Limit	N/A		
DC Gain Accuracy	Refer to Host Instrument Specification		
Propagation Delay (Input-to-Output)	< 200 ps		
Input Impedance	50 Ω		
Maximum Input Voltage (Derated with Frequency)	Refer to Host Instrument Specification		

► Typical

	TCA-BNC	TCA-SMA	TCA-N
Displayed System Input Offset	N/A		
RMS Noise	Refer to Host Instrument Specification		
RF Insertion Loss	0.25 dB Max (Adapter Only)	0.06 *SQ Root F (GHz) (Adapter Only)	0.3 dB Max (Adapter Only)
Rise Time (calculated small signal $t_r = 0.4/F_{-3\text{ dB}}$)	≤ 100 ps (Minimum Rise Time) (Limited By Host Instrument)	≤ 22 ps (Minimum Rise Time) (Limited By Host Instrument)	≤ 36 ps (Minimum Rise Time) (Limited By Host Instrument)
Linear Dynamic Range	Refer to Host Instrument Specification		
Linearity	N/A		

► Nominal

	TCA-BNC	TCA-SMA	TCA-N
Inputs	1 (TEKPROBE BNC 50 Ω)	1 (SMA Type Connection)	1 (N Type Connection)
Input Coupling	Refer to Host Instrument Specification		
Safety Certifications	UL3111-1		
U.S. NRTL Listing	UL3111-2-032		
Canadian Certification	CAN/CSA C22.2 No.1010.1 CAN/CSA C22.2 No.1010.2.032		
European Union Compliance	EN61010-1/A2 EN61010-2-032		
Other	IEC61010-1/A2 IEC61010-2-032		
GPIO Programmable	Through Host Instrument Commands		
Power Requirements	TekConnect		
Adapter Model Compatibility	Refer to TDS7000 Series TekConnect Adapters Compatibility Table		
Warranty	1 Year		

► TekConnect™ Amplifier, Adapters and Probes Compatibility*¹

Accessory Type	Oscilloscope			TekConnect Amplifiers, Adapters and Probes			
	TDS6604 6 GHz	TDS7154 / CSA7154 / TDS7254 1.5 GHz / 1.5 GHz / 2.5 GHz	TDS7404 / CSA7404 4 GHz / 4 GHz	TCA-1MEG High Impedance Buffer Amplifier (P6139A Included)	TCA-BNC Adapter (Standard w/ TDS7154 / TDS7254 / CSA7154)	TCA-SMA Adapter (Standard w/TDS7404 / CSA7404)	TCA-N Adapter
Instrument Input Connection	TekConnect	TekConnect	TekConnect	TEKPROBE BNC 1 M Ω -to-TekConnect	TEKPROBE BNC 50 Ω -to- TekConnect	SMA-to- TekConnect	N-to- TekConnect
Instrument Input Impedance	TekConnect Probes, Amplifier and Adapter Dependent	TekConnect Probes, Amplifier and Adapter Dependent	TekConnect Probes, Amplifier and Adapter Dependent	1 M Ω /10 pF	50 Ω	50 Ω	50 Ω
Passive Voltage Probes (1X)	P6101B w/TCA-1MEG	P6101B w/TCA-1MEG	P6101B w/TCA-1MEG	P6101B	N/A	N/A	N/A
Passive Voltage Probes (10X)	P6139A w/TCA-1MEG	P6139A w/TCA-1MEG	P6139A w/TCA-1MEG	P6139A	N/A	N/A	N/A
50 Ω Divider Voltage Probes	P6150 w/TCA-SMA P6158 w/TCA-BNC	P6150 w/TCA-SMA P6158 w/TCA-BNC	P6150 w/TCA-SMA P6158 w/TCA-BNC	N/A	P6158	P6150	N/A
Active Voltage Probes General	P6245 w/TCA-BNC P6243 w/TCA-BNC	P6245 w/TCA-BNC P6243 w/TCA-BNC	P6245 w/TCA-BNC P6243 w/TCA-BNC	N/A	P6245 P6243	N/A	N/A
Active Voltage Probes < 3.3 V Logic	P7260* ² P7240* ² P6249 w/TCA-BNC	P7260* ² P7240* ² P6249 w/TCA-BNC	P7260* ² P7240* ² P6249 w/TCA-BNC	N/A	P6249	N/A	N/A
Differential Voltage Probes < 3.3 V Logic	P7330 P6330 w/ TCA-BNC	P7330 P6330 w/ TCA-BNC	P7330 P6330 w/ TCA-BNC	N/A	P6330	N/A	N/A
Differential Voltage Probes < 8 V Logic	P6248 w/TCA-BNC P6247 w/TCA-BNC P6246 w/TCA-BNC	P6248 w/TCA-BNC P6247 w/TCA-BNC P6246 w/TCA-BNC	P6248 w/TCA-BNC P6247 w/TCA-BNC P6246 w/TCA-BNC	N/A	P6248 P6247 P6246	N/A	N/A
Differential Voltage Probes Micro-volt	ADA400A w/TCA-1MEG	ADA400A w/TCA-1MEG	ADA400A w/TCA-1MEG	ADA400A	N/A	N/A	N/A
High Voltage Probes Differential	P5205 w/ TCA-1MEG P5210 w/TCA-1MEG	P5205 w/ TCA-1MEG P5210 w/TCA-1MEG	P5205 w/ TCA-1MEG P5210 w/TCA-1MEG	P5205 P5210	N/A	N/A	N/A
High Voltage Probes Single-ended	P5100 w/TCA-1MEG P6015A w/TCA-1MEG	P5100 w/TCA-1MEG P6015A w/TCA-1MEG	P5100 w/TCA-1MEG P6015A w/TCA-1MEG	P5100 P6015A	N/A	N/A	N/A
Current Probe AC/DC < 15 A	TCP202 w/TCA-BNC	TCP202 w/TCA-BNC	TCP202 w/TCA-BNC	N/A	TCP202	N/A	N/A
Current Probe AC/DC 5 mA to 20 A	AM503S w/ TCA-BNC or TCA-1MEG	AM503S w/ TCA-BNC or TCA-1MEG	AM503S w/ TCA-BNC or TCA-1MEG	AM503S	AM503S	N/A	N/A
Current Probe AC High Frequency	CT6 w/TCA-BNC CT1 w/TCA-1MEG	CT6 w/TCA-BNC CT1 w/TCA-1MEG	CT6 w/TCA-BNC CT1 w/TCA-1MEG	N/A	CT6 CT1	N/A	N/A
Current Probe AC Low Frequency	P6021 w/TCA-1MEG P6022 w/TCA-1MEG	P6021 w/TCA-1MEG P6022 w/TCA-1MEG	P6021 w/TCA-1MEG P6022 w/TCA-1MEG	P6021 P6022	N/A	N/A	N/A
O/E Converter Probes	P6701B w/TCA-BNC P6703B w/TCA-BNC	P6701B w/TCA-BNC P6703B w/TCA-BNC	P6701B w/TCA-BNC P6703B w/TCA-BNC	N/A	P6701B P6703B	N/A	N/A

*¹Firmware version 2.1 or greater required for all referenced oscilloscopes.

*²P7240, P7260 and P7330 are high-speed active and differential probing solutions for Tektronix oscilloscopes with TekConnect interface. These probes require no other adapters.

Please refer to TekConnect Amplifier data sheet for more information about amplifiers.

TekConnect™ Adapters

► TCA-BNC • TCA-SMA • TCA-N

► Ordering Information

TCA-BNC – TekConnect-to-BNC Adapter.

TCA-SMA – TekConnect-to-SMA Adapter.

Includes: SMA Type Adapter; Instruction Manual; Certificate of Compliance.

TCA-N – TekConnect-to-N Adapter.

Includes: N Type Adapter; Instruction Manual; Certificate of Compliance.

Recommended Accessories

Passive Voltage Probes

P6150 – (Use with TCA-SMA), 9 GHz, 1X/10X, 50 Ω divider probe.

P6158 – (Use with TCA-BNC), 3 GHz, 20X, 50 Ω divider probe.

High Speed Active Voltage Probes

P6205 – (Use with TCA-BNC), 750 MHz, 10X, <2 pF/10 M Ω .

P6243 – (Use with TCA-BNC), 1 GHz, 10X, <1 pF/1 M Ω .

P6245 – (Use with TCA-BNC), 1.5 GHz, 10X, <1 pF/1 M Ω .

P6249 – (Use with TCA-BNC), 4 GHz, 5X, <1 pF/20 k Ω .

High Speed Active Differential Voltage Probes

P6247 – (Use with TCA-BNC), 1 GHz, 1X/10X, <1 pF/200 k Ω diff.

P6248 – (Use with TCA-BNC), 1.5 GHz, 1X/10X, <1 pF/200 k Ω diff.

P6330 – (Use with TCA-BNC), 1.5 GHz, 1X/10X, <1 pF/200 k Ω diff.

Electrical Communication Adapters

AMT75 – (Use with TCA-BNC), 75 Ω to 50 Ω Video Adapter.

AFTDS – (Use with TCA-BNC), Differential Communications Adapter.

Current Measurement Tools

TCP202 – (Use with TCA-BNC), AC/DC, 20 Amps, TEKPROBE Interconnect Current Probe 20 Amps.

AM503S – (Use with TCA-BNC), AC/DC, 5 mA to 700 Amp, Current Amplifier Measurement System. (Extended Current Capability by ordering additional Current Probes).

CT-1 – (Use with TCA-BNC), 1 GHz, AC Current Transformer.

CT-2 – (Use with TCA-BNC), 200 MHz, AC Current Transformer.

CT-6 – (Use with TCA-BNC), 2 GHz, AC Current Transformer.

Cables and Terminations

012-0057-01 – (Use with TCA-BNC), 50 Ω BNC to BNC Coaxial Cable.

012-0482-00 – (Use with TCA-BNC), 50 Ω BNC to BNC Coaxial Cable, Precision 1%, Male to Male.

011-0049-02 – (Use with TCA-BNC), 50 Ω feed through termination.

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