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Tektronix®

Tektronix Logic Analyzer Probes

P6800/P6900 Series Datasheet



Verification and debug of today's high speed, low voltage digital signals requires probing solutions that can accurately acquire from a wide variety of electronic designs and protect signal fidelity. Tektronix logic analyzer probes contain a variety of connectivity options that are engineered to ensure that signal acquisition is a true reflection of your design's performance.

Notice to EU customers

This product is not updated to comply with the RoHS 2 Directive 2011/65/EU and will not be shipped to the EU. Customers may be able to purchase products from inventory that were placed on the EU market prior to July 22, 2017 until supplies are depleted. Tektronix is committed to helping you with your solution needs. Please contact your local sales representative for further assistance or to determine if alternative product(s) are available. Tektronix will continue service to the end of worldwide support life.

Key features

- <0.7 pF total capacitive loading minimizes intrusion on circuits
- 20 kΩ input resistance
- 6.5 V_{p-p} dynamic range supports a broad range of logic families
- General-purpose probing allows flexible attachment to industry-standard connections
- Connectorless probing system eliminates need for onboard connectors

Applications

- Hardware debug and verification
- Processor/Bus debug and verification
- Embedded software integration, debug, and verification

Leading probe solutions for real-time digital systems analysis

P6800 and P6900 series probes

With the industry's lowest capacitance, the P6800 and P6900 Series logic analyzer probes for the TLA7000 Series protect the integrity of your signal - critical for connecting to fast buses where low intrusion is key to the proper operation of your design. Select from single-ended and differential probes and a variety of attachment mechanisms.

For applications where circuit board space is at a premium, the high-density P6900 Series with D-Max® Probing Technology offers the industry's smallest available footprint. For debugging the signal integrity glitches common on fast buses, the P6900 Series works with the TLA7Bxx and TLA7ACx modules and their iLink™ Tool Set capability to provide iCapture™ simultaneous digital-analog acquisition. This allows you to clearly see the time-correlated digital and analog behavior of your design, without the extra capacitance and setup time of double probing.

For differential signaling applications where signal integrity is critical, the high-fidelity P6980 and P6982 are perfect for those applications where noise performance is critical. In addition, the P6980 and P6982 can support the small voltage swings that differential signaling often requires. For board designs that do not include high-density probe footprints, the P6960 with its companion flying leadset or the P6910 provide the flexibility required to meet many different debug needs.

Specifications

All specifications are guaranteed unless noted otherwise. All specifications apply to all models unless noted otherwise.

Compatible with TLA7AAx, TLA7ACx, TLA7NAx, TLA7BBx, TLA7BCx, and TLA6200

	P6860	P6910	P6960	P6962/P6964	P6980	P6982
Data	Single-ended	Differential	Single-ended	Single-ended	Differential	Differential
Clock	Differential					
Number of channels	34	34	34	34	34	17
Recommended use	Good signal density and quick reliable attachment. Not recommended for new designs. Use P6960 for new designs.	General-purpose applications	Best signal density and quick reliable attachment. Flying leads for general-purpose probing is optional.	Data rates in excess of 750 MHz (TLA7Bxx) or 450 MHz (TLA7ACx) with the best signal density.	Full differential probing with the best signal density.	Full differential with the best signal density for data rates in excess of 750 MHz (TLA7Bxx) or 450 MHz (TLA7ACx).
Attachment to target system	Compression Elastomer	Fits 0.100 in. square pin configurations; flying-leads, solder-in	D-Max® probing technology compression cLGA	D-Max® probing technology compression cLGA	D-Max® probing technology compression cLGA	D-Max® probing technology compression cLGA

Probe specifications

Input resistance 20 kΩ to Ground, typical

Input capacitance

P6860 <0.7 pF

P6910 1.3 pF

All others 0.5 pF

Minimum digital swing

TLA7AAx/TLA7ACx

P6910	P6860, P6960, P6962, P6964	P6980, P6982
150 mV single-ended	300 mV single-ended	150 mV differential each side

TLA7BBx/TLA7BCx

P6910	P6860, P6960, P6962, P6964	P6980, P6982
100 mV single-ended	200 mV single-ended	100 mV differential each side

Analog bandwidth[1]

With TLA7Bxx module 3 GHz through iCapture™ to analog out BNCs

With TLA7ACx module 2 GHz through iCapture™ to analog out BNCs

Operating range -2 V to +5 V

Maximum nondestructive voltage ±15 V

Cable length 1.8 m (6 ft.)

1 Analog bandwidth of the P6960 probe is less with the flying lead set attached.

Ordering information

P6800 models

Models	Description
P6860	34-channel High-density Compression Probe, with Differential Clock, Single-ended Data, and Accessories

P6900 models

Model	Description
P6910	34-channel General-purpose Probe with Differential Clock, Differential Data, and Accessories
P6960	34-channel Single-ended High-density Compression Probe with D-Max® Probing Technology, with Differential Clock, Single-ended Data, and Accessories Opt 01: 34-channel General-purpose Flying Lead Set (196-3494-xx)
P6962	34-channel (optimized for half-channel mode) Single-ended High-density Compression Probe with D-Max® Probing Technology with Differential Clock, Single-ended Data, and Accessories
P6964	34-channel (optimized for quarter-channel mode) Single-ended High-density Compression Probe with D-Max® Probing Technology with Differential Clock, Single-ended Data, and Accessories
P6980	34-channel Differential High-density Compression Probe with D-Max® Probing Technology, with Differential Clock, Differential Data, and Accessories
P6982	17-channel (optimized for half-channel mode) Differential High-density Compression Probe with D-Max® Probing Technology, with Differential Clock, Differential Data, and Accessories

Probe options

P6910 probe options

Option 1K Add 17-Chanel probing accessories <100 MHz typical probing performance (recommend 2 each for each P6910 probe)

Part number	Qty	Description
196-3470-xx	2	8 ch leadset
196-3471-xx	1	1 ch leadset
020-3042-xx	1	Probe Grouper Kit (includes 2 8-channel probe groupers + square pin header)
020-2896-xx	2	Package of 10 black grabber tips

Option 2K Add 17-Channel probing accessories, high-performance (recommend 2 each of this option for each P6910 probe)

Part number	Qty	Description
006-8271-xx	1	Accessory box, plastic
001-1510-xx	1	Color illustration sheet Insert
020-3021-xx	1	Heat strip wire kit (15' or 4.57 m)
020-3031-xx	2	Hand browser kit
020-3032-xx	17	25/55 degree holder kit
020-3033-xx	17	Flex adapter kit
020-3034-xx	17	Ferrite bead kit
020-3035-xx	17	Standard adapter kit
020-3036-xx	17	Wide body adapter kit
020-3037-xx	34	Wire tubing kit
020-3042-xx	2	Probe grouper kit ((includes 2 8-channel probe groupers + square pin header)

Language options

Opt. L0	English manual
Opt. L99	No manual

Service options

Customers who choose a Tektronix product receive a support partnership focused on making the deployment and operation of their products successful. Tektronix support teams are committed to providing rapid response. A broad range of flexible services is available at the time of product purchase to meet customer service needs.

The following service options are offered for the TLA logic analyzer probes.

Option	P6800 series	P6900 series
Opt. CA1 Single calibration event or coverage for the designated calibration interval, whichever comes first	X	X
Opt. C3 Calibration Service, 3 Years	X	X
Opt. C5 Calibration Service, 5 Years	X	X
Opt. R3 Repair Service, 3 Years	X	X
Opt. R5 Repair Service, 5 Years	X	X
Opt. R1PW Repair Service Coverage, 1-year Post Warranty	X	X (Not P6982)
Opt. R2PW Repair Service Coverage, 2-years Post Warranty	X	X (Not P6982)
Opt. R3DW Repair Service Coverage, 3 Years (includes product warranty period). 3-year period starts at time of instrument purchase	X	X (Not P6982)
Opt. R5DW Repair Service Coverage, 5 Years (includes product warranty period). 5-year period starts at time of instrument purchase	X	X (Not P6982)

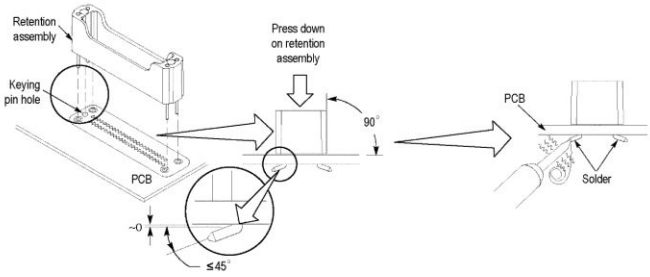
Standard accessories

P6800 standard accessories

Description	P6860 [2]	
	Qty per probe	Part number
Nut Bar (used on <0.093 in. thick PCB)	2	220-0255-xx
Nut Bar (used on <0.093 in. thick PCB)	1	020-2451-xx
Elastomer Holder Assembly, Thick (used on >0.093 in. thick PCB), bag of 2	1	020-2452-xx
Sheet of probe labels	1	335-0346-xx

2 Recommend PEM KFS-256 or equivalent for >0.093 in. thick PCB.

P6900 standard accessories

Description	P6960		P6962, P6964		P6980		P6982	
	Qty per probe	Part number	Qty per probe	Part number	Qty per probe	Part number	Qty per probe	Part number
Sheet of probe labels	1	335-1208-xx	1	P6962: 335-1772-xx P6964: 335-1315-xx	1	335-1209-xx	1	335-1313-xx
P6900 Series probe retention kit	1	020-2908-xx	1	020-2908-xx	2	020-2908-xx	1	020-2908-xx
								
Probe adjustment tool	1	003-1890-xx	1	003-1890-xx	1	003-1890-xx	1	003-1890-xx
Velcro cable manager (bag of 2)	1	346-0300-xx	1	346-0300-xx	1	346-0300-xx	1	346-0300-xx

Recommended accessories

P6800 recommended accessories

TLAHRA	High-resistance Adapter (18 channels) for P6810
020-2457-xx	Mictor-on-PCB to P6860 Probe Adapter
020-2453-xx	Nut Bar for Thin Elastomer Holder Assembly (Bag of 2)

P6900 recommended accessories

020-2539-xx	P6900 Series Probe mounting posts
020-2973-xx	High performance accessory kit for the P6910

Tektronix is registered to ISO 9001 and ISO 14001 by SRI Quality System Registrar.

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