Tektronix

1.5 GHz Active Probe

TAP1500 and TAP1500L Datasheet



TAP1500 and TAP1500L Single-ended Active FET Probe provides excellent high-speed electrical and mechanical performance required for today's digital system designs.

Key features

- Outstanding electrical performance
  - ≥1.5 GHz probe bandwidth
  - <267 ps rise time
  - ≤1 pF input capacitance
  - 1 MΩ input resistance
  - -8 V to +8 V input dynamic range
  - -10 V to +10 VDC input offset range
- Versatile mechanical performance
  - Small compact probe head for probing small geometry circuit elements
  - DUT attachment accessories enable connection to SMDs as small as 0.5 mm pitch
  - Robust design for reliability
- Easy to use
  - Connects directly to oscilloscopes with the TekVPI™ probe interface
  - Provides automatic units scaling and readout on the oscilloscope display
  - Easy access to oscilloscope probe menu display for probe status/diagnostic information, and to control probe DC offset
  - Remote GPIB/USB probe control through the oscilloscope
- Applications
  - High-speed Digital Systems Design
  - Component Design and Characterization
  - Manufacturing Engineering and Test
  - Educational Research
  - Signals with Voltage Swings up to 16 V

1.5 GHz active probes for TekVPI™ probe interface

Specifically designed for use and direct connection to oscilloscopes with the TekVPI™ probe interface, the TAP1500 Active FET probe achieves high-speed signal acquisition and measurement fidelity by solving three traditional problems:

- Lower DUT loading effects with ≤1 pF input capacitance and 1 MΩ input resistance
- Versatile DUT connectivity for attaching to small SMDs
- Preserves instrument bandwidth at the probe tip for ≤1 GHz oscilloscopes

Specifications

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

Power requirements

The probe is powered directly by oscilloscopes with the TekVPI probe interface.

Warranted electrical characteristics

Attenuation (probe only)	10X ±2%

Typical characteristics

Bandwidth (probe only)	≥1.5 GHz TAP1500L only: Requires Tektronix-recommended DSP filter. The DSP filter is compatible with 4, 5, and 6 Series oscilloscopes only.
Rise time (probe only)	<267 ps TAP1500L only: Requires Tektronix-recommended DSP filter. The DSP filter is compatible with 4, 5, and 6 Series oscilloscopes only.
Input capacitance	<1 pF
Input resistance	1 MΩ
Linearity	±8 V (16 V_{p-p})
Input offset range	±10 V
Maximum non-destructive input voltage	±15 V (DC + peak AC)
Propagation delay	5.3 ns (TAP1500)/28.9 ns (TAP1500L)

EMC, environment, and safety

Temperature	
Operating	0 °C to +50 ° (+32 °F to 122 °F)
Nonoperating	-40 ° C to +71 °C (-40 °F to 160 °F)
Humidity	
Operating	5% to 95% Relative Humidity up to +30 °C (+86 °F) 5% to 85% Relative Humidity at 30 °C to +50 °C (+86 °F to +122 °F) noncondensing
Nonoperating	5% to 95% Relative Humidity up to +30 °C (+86 °F) 5% to 85% Relative Humidity at 30 °C to +75 °C (+86 °F to +167 °F) noncondensing
Altitude	
Operating	Up to 4,400 m (14,436 ft)
Nonoperating	Up to 12,192 m (40,000 ft)
Regulatory	
Compliance labeling	WEEE (European Union)

Physical characteristics

Probe head size

Height	4.83 mm (0.19 in)
Width	7.87.1 mm (0.31 in)
Length	59.18 mm (2.30 in)

Other dimensions

Cable lengths	1300 mm (51 in) 7000 mm (275 in) TAP1500L

Weight

Net	0.45 kg (1.0 lbs) 1.0 kg (2.2 lbs) TAP1500L

Ordering information

TAP1500 models

TAP1500	1.5 GHz Active Probe
TAP1500X2	1.5 GHz Active Probe. Discounted two TAP1500 probe package
TAP1500L	1.5 GHz Active Probe. 7 m cable length (7000 mm/275 in)

Standard accessories

Description	Quantity with TAP1500, TAP1500L or TAP1500X2	Reorder part number	Reorder quantity
Low-inductance 1 in. Z-Ground lead	2 each	196-3439-xx	1 each (Pkg of 10)
3 in. Ground lead	2 each	196-3437-xx	1 each (Pkg of 2)
6 in. Ground lead	2 each	196-3436-xx	1 each (Pkg of 2)
Y-Lead adapter	2 each	196-3463-xx	1 each (Pkg of 2)
Color-coding clips	2 each of 5 colors	016-1315-xx	2 each of 5 colors
Solderable probe tips,	10 each	131-5638-xx	1 each (Pkg of 10)
Micro CKT test tip,	4 each	206-0569-xx	1 each
Right angle square pin adapter	2 each	214-4227-xx	1 each
0.1 in square pin ground adapter	2 each	131-5777-xx	1 each
User manual (Manual language must be specified when ordering.)	1 each	071-1809-xx (English), 071-1810-xx (Japanese), or 071-1811-xx (Simplified Chinese)	1 each
Nylon carrying case (The TAP1500X2 does not include individual probe cases. Users who desire the individual probe case should order the TAP1500 probe.)	1 each	016-1952-xx	1 each

Manual options

Opt. L5	Japanese manual
Opt. L7	Simplified Chinese manual

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 Opt. C3)
Opt. D5	Calibration Data Report 5 Years (with Opt. C5)
Opt. R3	Repair Service 3 Years (including warranty)
Opt. R5	Repair Service 5 Years (including warranty)
Opt. SILV600	Standard warranty extended to 5 years

Recommended accessories

013-0309-xx	IC Micro-grabber, Qty 2
006-3415-xx	Antistatic wrist strap
067-1707-xx	TekVPI calibration fixture (for Performance Verification)

Recommended oscilloscopes

Oscilloscopes with the TekVPI™ probe interface.

Tektronix 4, 5 and 6-series TekVPI™ Oscilloscopes (TAP1500L only)

For best probe support, download and install the latest version of the oscilloscope software from www.tek.com.

Warranty

One-year warranty covering all parts and labor.

Tektronix is ISO 14001:2015 and ISO 9001:2015 certified by DEKRA.

ASEAN / Australasia (65) 6356 3900
Belgium 00800 2255 4835*
Central East Europe and the Baltics +41 52 675 3777
Finland +41 52 675 3777
Hong Kong 400 820 5835
Japan 81 (120) 441 046
Middle East, Asia, and North Africa +41 52 675 3777
People's Republic of China 400 820 5835
Republic of Korea +82 2 565 1455
Spain 00800 2255 4835*
Taiwan 886 (2) 2656 6688

Austria 00800 2255 4835*
Brazil +55 (11) 3759 7627
Central Europe & Greece +41 52 675 3777
France 00800 2255 4835*
India 000 800 650 1835
Luxembourg +41 52 675 3777
The Netherlands 00800 2255 4835*
Poland +41 52 675 3777
Russia & CIS +7 (495) 6647564
Sweden 00800 2255 4835*
United Kingdom & Ireland 00800 2255 4835*

Balkans, Israel, South Africa and other ISE Countries +41 52 675 3777
Canada 1 800 833 9200
Denmark +45 80 88 1401
Germany 00800 2255 4835*
Italy 00800 2255 4835*
Mexico, Central/South America & Caribbean 52 (55) 56 04 50 90
Norway 800 16098
Portugal 80 08 12370
South Africa +41 52 675 3777
Switzerland 00800 2255 4835*
USA 1 800 833 9200

* European toll-free number. If not accessible, call: +41 52 675 3777

For Further Information. Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit *www.tek.com*.

Copyright © 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.

12 Aug 2024 51W-19043-12
tek.com