

## 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
    - $\geq 1.5$  GHz probe bandwidth
    - $< 267$  ps rise time
    - $\leq 1$  pF input capacitance
    - $1\text{ M}\Omega$  input resistance
    - $-8\text{ V}$  to  $+8\text{ V}$  input dynamic range
    - $-10\text{ V}$  to  $+10\text{ VDC}$  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  $0.5\text{ mm}$  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  $16\text{ V}$

#### 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  $\leq 1$  pF input capacitance and  $1\text{ M}\Omega$  input resistance
- Versatile DUT connectivity for attaching to small SMDs
- Preserves instrument bandwidth at the probe tip for  $\leq 1$  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  $\pm$ 2%

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### Typical characteristics

Bandwidth (probe only)	$\geq$ 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 M $\Omega$
Linearity	$\pm$ 8 V (16 V <sub>p-p</sub> )
Input offset range	$\pm$ 10 V
Maximum non-destructive input voltage	$\pm$ 15 V (DC + peak AC)
Propagation delay	5.3 ns (TAP1500)/28.9 ns (TAP1500L)

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### 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)
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## 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

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## 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](http://www.tek.com).

## Warranty

One-year warranty covering all parts and labor.



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

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\* 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](http://www.tek.com).

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12 Aug 2024 51W-19043-12  
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