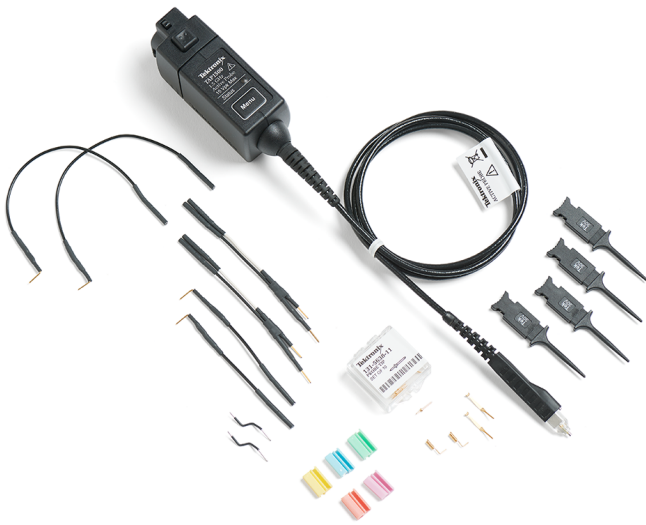


## 1.5 GHz Active Probe

### 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)

### 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

## 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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