Digital Phosphor Oscilloscopes

TDS 3012 * TDS 3014 * TDS 3032 * TDS 3034 * TDS 3052 * TDS 3054

**This product is discontinued.
View alternative products**.

Check product support status.

CHARACTERISTICS

Features
> **Specs**

TDS 3000 Series Electrical Characteristics

	TDS 3012	TDS 3032	TDS 3052	TDS 3014	TDS 3034	TDS 3054
Bandwidth	100 MHz	300 MHz	500 MHz	100 MHz	300 MHz	500 MHz
Channels	2	2	2	4	4	4
Sample Rate on Each Channel	1.25 GS/s	2.5 GS/s	5 GS/s	1.25 GS/s	2.5 GS/s	5 GS/s
Maximum Record Length	10K points on all models					
Vertical Resolution	9-bits on all models					
Vertical Sensitivity (/div)	1 mV-10 V on all models					
Vertical Accuracy	± 2% on all models*					
Max Input Voltage (1 megaohm)	150V RMS CAT I on all models					
Position Range	± 5 div on all models					
BW Limit	20 MHz	20, 150 MHz	20, 150 MHz	20 MHz	20, 150 MHz	20, 150 MHz
Input Coupling	AC, DC, GND on all models					
Input Impedance Selections	1 megaohm in parallel with 13 pF, or 50 Ohm					
Time Base:						
Range (/div)	4 ns - 10 s/div	2 ns - 10 s/div	1 ns - 10 s/div	4 ns - 10 s/div	2 ns - 10 s/div	1 ns - 10 s/div
Accuracy	200 ppm	200 ppm	200 ppm	200 ppm	200 ppm	200 ppm
Display Monitor	Color LCD					

* Derated at 0.07%/°C for temperatures above +28°C and below +18°C.

Acquisition Modes

DPO - Captures and displays complex waveforms, random events, and subtle patterns in actual signal behavior. DPOs are able to provide 3 dimensions of signal information, in real-time; amplitude, time, and the distribution of amplitude over time.

Peak Detect - High frequency and random glitch capture. Captures glitches as narrow as 1 ns.

Sample - Sample data only.

Envelope - Max/Min values acquired over one or more acquisitions.

Average - Waveform data from 2 to 572 (selectable) acquisitions is averaged.

Single Sequence - Use SINGLE SEQUENCE button to capture a single triggered acquisition sequence at a time.

Trigger System

Main Trigger Modes - Auto (supports Roll Mode for 40 ms/div and slower), Normal.

B Trigger - Trigger after time or events.

Trigger After Time Range - 13.2 ns to 50 s.

Trigger After Events Range - 1 to 9,999,999 events.

External Trigger Input (available on TDS 30X2 only) **-** >1 megaohm in parallel with 17 pF; Max input voltage is 150 V RMS.

Trigger Types

Edge - Conventional level-driven trigger. Positive or negative slope on any channel. Coupling selections: DC, noise reject, HF reject, LF reject.

Video - Trigger on all lines or individual line, odd/even or all fields, or analog HDTV formats (1080i, 1080p, 720p, 480p). See optional TDS 3VID and TDS 3SDI application modules for extended video triggering and measurement features.

Logic - (Standard on TDS 30X4, must purchase TDS 3TRG for TDS 30X2)
PATTERN: Specifies AND, OR, NAND, NOR when true or false for a specific time.
STATE: Any logic state. Triggerable on rising or falling edge, of a clock.

Note: Logic triggers can only be used on combinations of 2 inputs.

Pulse - (Standard on TDS 30X4, must purchase TDS 3TRG for TDS 30X2)
WIDTH (or GLITCH): Trigger on pulse width less than, greater than, equal to, or not equal to a selectable time limit ranging from 39.6 ns to 50s.
RUNT: Trigger on a pulse that crosses one threshold but fails to cross a second threshold before crossing the first again.
SLEW RATE: Trigger on pulse edge rates that are either faster or slower than a set rate. Edges can be rising, falling, or either.

Comm - (must purchase TDS 3TMT) - provides isolated pulse triggering required to perform DS1/DS3 telecommunications mask testing per ANSI T1.102 standard.

Measurement System

Automatic Waveform Measurements - Period, Frequency, +Width, -Width, Rise Time, Fall Time, +Duty Cycle, -Duty Cycle, +Overshoot, -Overshoot, High, Low, Max, Min, Pk-Pk, Amplitude, Mean, Cycle Mean, RMS, Cycle RMS, Burst Width.

Display any four measurements from any combination of waveforms.

Thresholds - Settable in percentage or voltage.

Gating - Measurements can be gated using the screen or vertical cursors.

Waveform Processing

Deskew - Channel to channel deskew ± 10 ns may be manually entered for better timing measurements and more accurate math waveforms.

Arithmetic Operators - Add, Subtract, Multiply, Divide.

Autoset - Single-button, automatic setup on selected input signal for vertical, horizontal, and trigger systems.

Display Characteristics

Waveform Style - Dots, vectors, and variable persistence.

Graticules - Full, grid, cross-hair, frame, NTSC, PAL, SECAM, vectorscope 100% and 75% color bars (with optional TDS 3VID and TDS 3SDI video application modules).

Format - YT, XY and Gated XYZ (XY with Z-axis blanking available on TDS 30X4 only).

I/O Interface

Hardcopy Port (standard) - Centronics-type parallel.

TDS 3GM Communications Module -
GPIB (IEEE -488.2) Programmability: Full talk/listen modes; Control of all modes, settings, and measurements.
RS-232-C Interface Programmability: Full talk/listen modes; Control of all modes, settings, and measurements. Baud Rate up to 38,400. DB-9 male connector.
Programmer Manual: (071-0381-00).

TDS 3VM Communications Module -
VGA: Monitor output for direct display on large VGA-equipped monitors. DB-15 female connector, 31.6 kHz sync rate, EIA RS-343A compliant.
RS-232-C Interface Programmability: same as TDS 3GM.
Programmer Manual: same as TDS 3GM.

TDS 3EM Communications Module -
Ethernet Port: 10Base-T with RJ-45 connector. Provides local area network printing and programming interface.
RS-232-C Interface programmability: same as TDS 3GM.
Programmer Manual: same as TDS 3GM.

Note: Only one Communication Module may be installed at a time.
All Communication Modules include WaveStar^{TM} Software for oscilloscopes 30-day, full-functioning product demo.

Hard Copy Capability

Graphics File Formats - Interleaf (.img), TIF, PCX (PC Paintbrush), BMP (Microsoft Windows), and Encapsulated

Postscript (EPS).

Printer Formats - Bubblejet, DPU-3445, Thinkjet, Deskjet, Laserjet, Epson (9 and 24-pin).

Environmental and Safety

Temperature - +5 to +50° C (operating), -20 to +60° C (nonoperating).

Humidity - 20% to 80% RH below 32° C, derate to 30% RH at 45° C (operating), 5% to 90% RH below 41° C, derate to 30% RH at 60° C (nonoperating).

Altitude - to 3,000 m (operating), 15,000 m (nonoperating).

Electromagnetic Compatibility - Meets or exceeds EN55011 Class A Radiated and Conducted Emissions; EN50082-1; FCC 47 CFR, Part 15, Subpart B, Class A; Australian EMC Framework; Russian GOST EMC regulations.

Safety - UL3111-1, CSA1010.1, EN61010-1, IEC61010-1.

Physical Characteristics

Instrument		
Dimensions	**mm**	**in.**
Width	375.0	14.8
Height	176.0	6.9
Depth	149.0	5.9
Weight	**kg**	**lb.**
Instrument only	3.2	7.0
w/battery	5.2	11.5
Instrument Shipping Package		
Dimensions	**mm**	**in.**
Width	502.0	19.8
Height	375.0	14.8
Depth	369.0	14.5
Rackmount		
Dimensions	**mm**	**in.**
Width	484.0	19.0
Height	178.0	7.0
Depth	152.0	6.0

ISO 9001 Tektronix Measurement products are manufactured in ISO registered facilities.

Features
> **Specs**

CE

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