

TEKTRONIX

TDS3032

The Tektronix TDS3032 is a 2-channel, 300 MHz Digital Phosphor Oscilloscope (DPO) designed for electronic design, debug, and troubleshooting. By combining the continuous real-time sample rate of 2.5 GS/s on all channels with high-performance digital phosphor technology, it provides engineers and technicians with rapid visualization of transient signals and complex waveforms.

SPECIFICATIONS

General

Interfaces	Centronics (Parallel) standard; GPIB, RS-232, LAN, and VGA output available via optional communication modules
Display	6.5-inch (165 mm) color active-matrix TFT LCD, 640 x 480 pixels
Required Warm-up Time	20 minutes

Physical

Power Supply	100 V to 240 V AC $\pm 10\%$, 47 Hz to 440 Hz, 75 W maximum
Operating Temperature	0 °C to +50 °C °C
Dimensions (W×H×D)	375 mm x 176 mm x 149 mm mm
Weight	3.2 kg kg
Required Cooling Clearance	2 in (51 mm) on left and rear

Vertical System

Analog Bandwidth	300 MHz
Number of Channels	2
Calculated Rise Time	1.2 ns
Vertical Resolution	9 bits
Input Coupling	AC, DC, GND
Input Impedance	1 M Ω $\pm$ 1% in parallel with 13 pF $\pm$ 2 pF, or 50 Ω $\pm$ 1%
Input Sensitivity Range (1 M Ω)	1 mV/div to 10 V/div
Input Sensitivity Range (50 Ω)	1 mV/div to 1 V/div
DC Gain Accuracy	$\pm$ 2%
Maximum Input Voltage (1 M Ω)	150 V RMS CAT I (derate at 20 dB/decade above 100 kHz to 13 V peak at 3 MHz)
Maximum Input Voltage (50 Ω)	5 V RMS
Hardware Bandwidth Limits	20 MHz, 150 MHz
Offset Range (1 mV/div to 99.5 mV/div)	$\pm$ 1 V
Offset Range (100 mV/div to 995 mV/div)	$\pm$ 10 V
Offset Range (1 V/div to 10 V/div)	$\pm$ 100 V
Probe Interface	TekProbe Level II (provides automatic scaling and units for active, differential, and current probes)
Channel-to-Channel Isolation	$\geq$ 100:1 at 100 MHz (with equal Volts/Div settings)

Horizontal System

Max Real-Time Sample Rate	2.5 GS/s
Record Length	10k points per channel
Time Base Range	1 ns/div to 10 s/div
Time Base Accuracy	$\pm$ 20 ppm
Horizontal Delay Range	Pre-trigger: 0% to 100% of record; Post-trigger: 0 to 10,000 divisions

Trigger System

Trigger Modes	Auto, Normal, Single
Trigger Source	CH1, CH2, Line, External
Trigger Coupling	AC, DC, Noise Reject, HF Reject, LF Reject
Trigger Level Range	$\pm$ 8 divisions from center of screen
Pulse Width Trigger Range	39.6 ns to 8.4 s
Slew Rate Trigger Range	1.25 ns/V to 800 μ s/V
Setup and Hold Trigger Setup Time Range	-1.5 ns to 8.5 s
Setup and Hold Trigger Hold Time Range	2 ns to 8.5 s
Supported Video Formats	NTSC, PAL, SECAM

Acquisition Modes

Sample Mode	Standard sample acquisition mode
Peak Detect Mode	Captures high-frequency and random glitches down to 2 ns pulse width
Envelope Mode	Min/max values acquired over 1 to infinite acquisitions
Average Mode	Averages selectable from 2 to 512 waveforms
Single Sequence Mode	Single acquisition sequence triggered by a single event
Roll Mode	Active at sweep speeds slower than or equal to 40 ms/div

Waveform Measurements

Automatic Measurements	28 automatic measurements
Waveform Math Operators	Add, Subtract, Multiply, Divide
Cursor Types	Amplitude, Time

Display & User Interface

Waveform Graticules	Full, Grid, Crosshair, Frame
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Storage & Memory

Internal Waveform Storage	4 reference waveforms
Internal Setup Storage	10 instrument setups
Removable Storage Media Type	3.5-inch 1.44 MB floppy disk

Connectivity & Ports

Standard Printer Port	Centronics Parallel (IEEE 1284)
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Power Requirements

Battery Chemistry Option	Lithium-Ion (TDS3BAT rechargeable battery pack)
Battery Run Time	Up to 2 hours of continuous operation with TDS3BAT

Environmental & Physical

Storage Temperature Range	-20 °C to +60 °C
Operating Humidity	Up to 95% RH at or below +30 °C; up to 75% RH up to +50 °C
Operating Altitude	Up to 3,000 meters
Net Weight (without Battery)	3.2 kg (7.0 lbs)
Net Weight (with Battery)	4.3 kg (9.5 lbs)

Compliance & Standards

Safety Certifications	UL3111-1, CSA1010.1, EN61010-1
Electromagnetic Compatibility	89/336/EEC, EN55011 Class A, FCC Part 15 Subpart B Class A

Options & Accessories

Application Modules (Optional)	TDS3FFT (FFT), TDS3TMT (Telecommunications Mask Testing), TDS3VID (Extended Video)
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Performance

Waveform Capture Rate	Up to 3,600 wfm/s
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Triggering

External Trigger Input Impedance	1 M Ω in parallel with 13 pF $\pm$ 2 pF
External Trigger Max Input Voltage	150 V RMS CAT I
Internal Trigger Sensitivity (DC Coupled)	0.35 div from DC to 50 MHz, increasing to 1 div at 300 MHz
External Trigger Sensitivity (DC Coupled)	150 mV from DC to 50 MHz, increasing to 500 mV at 300 MHz
Trigger Holdoff Range	250 ns to 8 s

Accessories

Standard Probes	Two P6139A 10X Passive Probes
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Interfaces

Optional Communication Modules	TDS3GM (GPIO/RS-232), TDS3VM (VGA/RS-232), TDS3EM (Ethernet/RS-232), TDS3GV (GPIO/VGA/RS-232)
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Power Supply

AC Power Line Voltage Range	90 V to 250 V AC
AC Power Line Frequency Range	47 Hz to 440 Hz (at 90 V to 121 V), 47 Hz to 63 Hz (at 121 V to 250 V)
Power Consumption	75 W maximum

Display

Display Size	6.5 in (164 mm) diagonal
Display Resolution	640 x 480 pixels
Display Type	Color active matrix TFT LCD

Waveform Math

FFT Window Types	Rectangular, Hanning, Hamming, Blackman-Harris
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Storage

Floppy Disk Storage	3.5 in., 1.44 MB MS-DOS format
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Control & Setup

Autoset Function	Single-button, automatic setup on all channels for vertical, horizontal, and trigger systems, with undo autoset
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Environmental

Mechanical Shock	50 g, 11 ms, half-sine
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TECHNOLOGY

Digital Phosphor Oscilloscope (DPO)

APPLICATIONS

Electronic Design, Troubleshooting, and Education

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