

TEKTRONIX

TDS3032C

The Tektronix TDS3032C is a 300 MHz, 2-channel Digital Phosphor Oscilloscope (DPO) from the TDS3000C Series. Combining a compact, portable design with advanced features like 2.5 GS/s real-time sampling per channel, standard USB host and LAN ports, and optional battery operation, the TDS3032C delivers high-performance digital debugging and analysis capabilities in any environment.

SPECIFICATIONS

General

Interfaces	USB 2.0 host port (front panel), LAN (10Base-T Ethernet, RJ-45), GPIB (optional TDS3GV module), RS-232 (optional TDS3GV module), VGA video output (optional TDS3GV module)
Display	6.5-inch (165.1 mm) active-matrix color TFT LCD, 640 × 480 pixels (VGA)
Recommended Calibration Interval	1 year
Optional Application Modules	TDS3AFT, TDS3LIM, TDS3TMT, TDS3VID
Acoustic Noise	< 40 dBA
User Interface Languages	English, French, German, Italian, Spanish, Portuguese, Japanese, Korean, Simplified Chinese, Traditional Chinese, Russian

Physical

Power Supply	100 V to 240 V AC ±10% (47 Hz to 440 Hz for 100 V to 120 V AC, 47 Hz to 63 Hz for 115 V to 240 V AC), 75 W maximum power consumption; optional internal rechargeable battery
Operating Temperature	0 to +50 °C °C
Dimensions (W×H×D)	375 mm × 176 mm × 149 mm mm
Weight	3.2 kg kg
Optional Battery Weight	0.85 kg (1.9 lbs)

Key Performance Specifications

Bandwidth	300 MHz
Calculated Rise Time (10-90%)	1.2 ns
Number of Channels	2
Real-time Sample Rate	2.5 GS/s on all channels
Record Length	10 kpts on all channels
Vertical Resolution	9 bits
Continuous Waveform Capture Rate	3,600 wfms/s

Vertical System

Input Coupling	AC, DC, GND
Input Impedance (1 M Ω)	1 M Ω $\pm$ 1% in parallel with 13 pF $\pm$ 2 pF
Input Impedance (50 Ω)	50 Ω $\pm$ 1%
Input Sensitivity Range (1 M Ω)	1 mV/div to 10 V/div in 1-2-5 sequence
Input Sensitivity Range (50 Ω)	1 mV/div to 1 V/div in 1-2-5 sequence
Vertical Gain Accuracy	$\pm$ 2% ($\pm$ 1.5% for fine gain)
Maximum Input Voltage (1 M Ω)	150 V RMS CAT I (derated at 20 dB/decade above 100 kHz to 13 V peak at 3 MHz and above)
Maximum Input Voltage (50 Ω)	5 V RMS with peaks less than $\pm$ 30 V
Offset Range (1 mV/div to 9.9 mV/div)	$\pm$ 100 mV
Offset Range (10 mV/div to 99 mV/div)	$\pm$ 1 V
Offset Range (100 mV/div to 990 mV/div)	$\pm$ 10 V
Offset Range (1 V/div to 10 V/div)	$\pm$ 100 V
Bandwidth Limit Filters	20 MHz, 150 MHz
Channel-to-Channel Isolation	$\geq$ 100:1 at 150 MHz
Probe Attenuation Settings	1X, 10X, 20X, 50X, 100X, 500X, 1000X
Probe Interface	TekProbe Level II interface (supports active, differential, and current probes)

Horizontal System

Timebase Range	2 ns/div to 10 s/div
Timebase Accuracy	$\pm$ 20 ppm
Horizontal Zoom	Horizontal zoom function with magnification up to 10,000X
Channel-to-Channel Deskew Range	$\pm$ 10 ns

Trigger System

Trigger Modes	Auto, Normal, Single
Trigger Coupling	AC, DC, HF Reject, LF Reject, Noise Reject
Trigger Source	CH1, CH2, Line, External
Trigger Holdoff Range	250 ns to 8 s
Trigger Sensitivity (Internal)	0.35 div from DC to 50 MHz, increasing to 1 div at 300 MHz
Trigger Sensitivity (External)	50 mV from DC to 50 MHz, increasing to 150 mV at 300 MHz
Edge Triggering	Conventional level-driven trigger on rising or falling edge
Video Triggering	Triggers on all lines or individual lines, odd/even or all fields on NTSC, PAL, and SECAM video signals
Pulse Width Triggering	Triggers on pulse width <, >, =, or ≠ a specified time (39.6 ns to 8 s)
Runt Triggering	Triggers on a pulse that crosses one threshold but fails to cross a second threshold before crossing the first again
Logic Pattern Triggering	AND, OR, NAND, NOR logic states
Logic State Triggering	Any logic pattern triggered on a clock edge

Acquisition System

Peak Detect Minimum Pulse Width	1 ns
Averaging Count	2 to 512 waveforms
WaveAlert Waveform Anomaly Detection	Monitors active input channels and highlights any acquired waveform that differs from normal

Waveform Measurements and Math

Automatic Waveform Measurements	Period, Frequency, +Width, -Width, Rise Time, Fall Time, +Duty Cycle, -Duty Cycle, +Overshoot, -Overshoot, High, Low, Max, Min, Peak-to-Peak, Amplitude, Mean, Cycle Mean, RMS, Cycle RMS, Burst Width, Delay, Phase, Area, Cycle Area
Number of Automatic Measurements	25
Measurement Gating	Gating by display, cursors, or full record length
Cursor Types	Amplitude, Time
Waveform Math Operators	Add, Subtract, Multiply, Divide
FFT Window Types	Rectangular, Hanning, Hamming, Blackman-Harris
Advanced Analysis Modules (Optional)	None. TDS3000C series has no application module slots; TDS3AAM, TDS3LIM, and TDS3VID features are built-in.

Display Characteristics

Display Type	Color active-matrix liquid crystal display (TFT)
Display Resolution	640 × 480 pixels (VGA)
Display Size	6.5 inches (165.1 mm) diagonally
Graticule Options	Full, Grid, Crosshair, Frame
Waveform Styles	Dots, Vectors
Color Palettes	Normal, Reverse, Monochrome, Green, Temperature, Spectral

Physical Characteristics

Width	375 mm
Height	176 mm
Depth	149 mm
Net Weight	3.2 kg

Power Specifications

Line Power Source Voltage	100 to 240 V AC ±10%
Line Power Source Frequency	47 Hz to 440 Hz (100 to 120 V AC), 47 Hz to 63 Hz (115 to 240 V AC)
Power Consumption	75 W maximum
Battery Operation Support	Yes, with optional TDS3BATC rechargeable Li-Ion battery pack
Battery Life (Typical)	Up to 3 hours continuous operation

Environmental and Safety

Non-operating Temperature	-20 °C to +60 °C
Operating Humidity	Up to 95% RH at or below +30 °C; up to 45% RH from +30 °C to +50 °C
Operating Altitude	Up to 3,000 meters (9,843 feet)
Non-operating Altitude	Up to 15,000 meters (49,212 feet)
Safety Certifications	UL61010-1, CAN/CSA-C22.2 No. 61010-1, EN61010-1
Electromagnetic Compatibility (EMC)	EN61326 Class A, FCC Part 15 Subpart B Class A, AS/NZS 2064

Accessories

Standard Probes	P6139A 10X Passive Probes (one per channel)
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Triggering

External Trigger Input Impedance	1 MΩ in parallel with 17 pF
External Trigger Maximum Input Voltage	150 V RMS CAT I (400 V Peak)
Trigger Level Range (Internal)	±8 divisions from center of screen
Trigger Level Range (External)	±8 V
Trigger Level Resolution (Internal)	0.02 division
Trigger Level Resolution (External)	5 mV
Trigger Level Accuracy (Internal, typical)	±(0.2 div + 5% of trigger level setting)
Trigger Level Accuracy (External, typical)	±(15% of setting + 50 mV)

Software & Connectivity

Included Software	OpenChoice Desktop, NI LabVIEW SignalExpress Tektronix Edition
Standard Ports	1x USB 2.0 Host (front), 1x RJ-45 10Base-T Ethernet (rear)
Optional Connectivity Ports	GPIO, RS-232, VGA (requires TDS3GV communication module)
Direct Printing Support	PictBridge-compatible printers via USB host port

Power

Optional Battery Pack	TDS3BATC Lithium-Ion Battery Pack
Optional Battery Charge Time	3 hours (fast charge with instrument off) / 32 hours (trickle charge)
Optional Battery Type	Lithium-Ion (TDS3BATC)

Environmental

Operating Vibration	0.31 g RMS, 5 Hz to 500 Hz
Non-operating Vibration	2.46 g RMS, 5 Hz to 500 Hz

Performance

Internal Waveform Storage	4 waveforms
Internal Setup Storage	9 setups

Inputs & Outputs

Probe Compensator Output Voltage	5.0 V into ≥1 MΩ load
Probe Compensator Output Frequency	1 kHz

TECHNOLOGY

Digital Phosphor Oscilloscope (DPO)

APPLICATIONS

Electronic design, debugging, manufacturing test, service, and installation

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