

TEKTRONIX

TDS3014B

The Tektronix TDS3014B is a 100 MHz, 4-channel Digital Phosphor Oscilloscope (DPO) from the TDS3000B series. It combines a real-time sample rate of 1.25 GS/s on all channels, a 9-bit vertical resolution, and advanced analysis tools with a portable design and optional battery compatibility.

SPECIFICATIONS

General

Interfaces	Standard: Ethernet (10Base-T RJ-45), Centronics parallel port; Optional via TDS3GV: GPIB (IEEE 488.2), RS-232, VGA video out
Display	6.4 in (162.6 mm) active-matrix color TFT LCD, 640 x 480 pixels (VGA)

Physical

Power Supply	100 V to 240 V AC $\pm 10\%$ (47 Hz to 440 Hz at 100-120 V, 47 Hz to 63 Hz at 115-240 V), 75 W max; optional TDS3BATB battery pack
Operating Temperature	0 to +50 °C °C
Dimensions (W×H×D)	375 mm × 176 mm × 149 mm mm
Weight	3.2 kg (instrument only) kg

Vertical System

Number of Channels	4
Analog Bandwidth (-3 dB)	100 MHz
Calculated Rise Time (10% to 90%)	3.5 ns
Hardware Bandwidth Limits	20 MHz
Input Coupling	AC, DC, GND
Input Impedance	1 M Ω $\pm 1\%$ in parallel with 13 pF ± 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
Vertical Resolution	9 bits
DC Gain Accuracy	$\pm 2\%$
Maximum Input Voltage (1 M Ω)	150 V RMS CAT I (derated at 20 dB/decade above 100 kHz to 13 V peak AC at 3 MHz and above)
Maximum Input Voltage (50 Ω)	5 V RMS
Position Range	± 5 divisions
Channel-to-Channel Isolation	$\geq 100:1$ at 100 MHz for any two channels with equal Volts/div settings

Horizontal System

Maximum Real-time Sample Rate	1.25 GS/s
Maximum Record Length	10k points per channel
Timebase Range	4 ns/div to 10 s/div
Timebase Accuracy	±20 ppm
Acquisition Modes	Sample, Peak Detect (1 ns), Envelope, Average, Single Sequence

Trigger System

Trigger Modes	Auto, Normal, Single
Trigger Coupling	AC, DC, HF Reject, LF Reject, Noise Reject
Trigger Sensitivity (Internal)	0.35 div from DC to 50 MHz, increasing to 1 div at 100 MHz
Trigger Level Range (Internal)	±8 divisions from center of screen
Edge Triggering	Conventional level-driven trigger. Positive or negative slope on any channel.
Video Triggering	Triggers on all lines or individual lines, odd/even or all fields in NTSC, PAL, and SECAM
Runt Triggering	Trigger on a pulse that crosses one threshold but fails to cross a second threshold before crossing the first again
Slew Rate Triggering	Trigger on pulse edge rates that are faster or slower than a set limit
Trigger Source Selection	CH1, CH2, CH3, CH4, Line

Waveform Measurements & Analysis

Waveform Anomaly Detection	WaveAlert™ automatic waveform anomaly detection
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Display & User Interface

Display Type	Color active-matrix TFT LCD
Display Resolution	640 × 480 pixels (VGA)
Waveform Styles	Vectors, Dots, Variable Persistence, Infinite Persistence
Graticules	Full, Grid, Crosshair, Frame
User Interface Languages	English, French, German, Italian, Spanish, Portuguese, Russian, Japanese, Traditional Chinese, Simplified Chinese, Korean

Connectivity, Storage & Ports

Removable Media Type	3.5 in 1.44 MB floppy disk
LAN Port (Ethernet)	Standard 10Base-T Ethernet (RJ-45)
GPIB Interface	Optional via TDS3GV module
RS-232 Serial Port	Optional via TDS3GV module
VGA Video Output Port	Optional via TDS3GV module
Centronics Parallel Printer Port	Standard parallel port

Power Specifications

AC Input Voltage Range	100 V to 240 V AC $\pm 10\%$
Power Consumption	75 W maximum
Battery Operation Compatibility	Compatible with TDS3BATB rechargeable battery pack
Battery Operating Time	Up to 3 hours

Physical Characteristics

Height	176 mm (6.9 in)
Width	375 mm (14.8 in)
Depth	149 mm (5.9 in)
Net Weight	3.2 kg (7.0 lbs) without battery; 4.4 kg (9.8 lbs) with battery
Rackmount Configuration Support	Optional via RM3000 rackmount kit

Environmental & Safety Compliance

Operating Altitude	Up to 3,000 m
Non-Operating Altitude	Up to 15,000 m
Regulatory/Safety Standards	UL61010B-1, CAN/CSA-C22.2 No. 1010.1, EN61010-1

Calibration & Warranty

Recommended Calibration Interval	1 year
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Accessories

Standard Probes	Four P3010 10X passive probes
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Inputs & Outputs

Probe Interface	TekProbe Level II interface
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Storage

Reference Waveform Storage	4 reference waveforms
Setup Storage	10 front-panel setups

Connectivity

Web Remote Control	e*Scope built-in web server via RJ-45 LAN interface
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Environmental

Operating Shock	50 g, 11 ms, half-sine
Operating Vibration	0.31 g RMS, 5 Hz to 500 Hz
Non-operating Vibration	2.46 g RMS, 5 Hz to 500 Hz

Performance

Waveform Capture Rate	3,600 wfm/s
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Triggering

Trigger Delay by Time	16 ns to 250 s
Trigger Delay by Events	1 to 9,999,999 events

Optional Features

Supported Application Modules	TDS3AAM, TDS3LIM, TDS3TMT, TDS3VID, TDS3SDI
Optional Thermal Printer	TDS3PRT

Waveform Measurements

Measurement Statistics	Mean, Minimum, Maximum, Standard Deviation (requires TDS3AAM)
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Power

Optional Battery Model	TDS3BATB (Lithium-Ion)
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TECHNOLOGY

Digital Phosphor Oscilloscope

APPLICATIONS

General Electronic Troubleshooting, Research and Development, Education, Manufacturing Test

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