

TEKTRONIX

TDS3012B

The Tektronix TDS3012B is a 2-channel, 100 MHz Digital Phosphor Oscilloscope (DPO) from the TDS3000B series. Known for its portable form factor, high waveform capture rate, and rich measurement capabilities, it combines 1.25 GS/s real-time sampling rate with standard Ethernet connectivity and 25 automatic measurements, making it ideal for electronic design, manufacturing test, and educational labs.

SPECIFICATIONS

General

Interfaces	10Base-T LAN (RJ-45), Centronics parallel port, 3.5-inch floppy drive (standard); GPIB, RS-232, and VGA out (optional via TDS3GV module)
Display	6.4-inch (162.6 mm) active-matrix color LCD, 640 × 480 resolution
Real-Time Clock	Built-in, provides time and date stamping for stored files

Physical

Operating Temperature	0 °C to +50 °C °C
Dimensions (W×H×D)	375 mm × 176 mm × 149 mm mm
Weight	3.2 kg kg

Vertical System

Analog Bandwidth	100 MHz
Calculated Rise Time (10% to 90%)	3.5 ns
Number of Input Channels	2
Input Impedance	1 MΩ ±1% in parallel with 13 pF ±2 pF, or 50 Ω ±1%
Input Coupling	AC, DC, GND
Input Sensitivity Range (1 MΩ)	1 mV/div to 10 V/div
Input Sensitivity Range (50 Ω)	1 mV/div to 1 V/div
Vertical Resolution (ADC)	9 bits
DC Gain Accuracy	±2%
Maximum Input Voltage (50 Ω)	5 V RMS
Channel-to-Channel Isolation	≥ 100:1 at 100 MHz
Hardware Bandwidth Limits	20 MHz
Vertical Position Range	±5 divisions
Input Capacitance (1 MΩ)	13 pF

Horizontal System

Maximum Real-Time Sampling Rate	1.25 GS/s per channel
Maximum Record Length	10k points per channel
Time Base Range	4 ns/div to 10 s/div
Time Base Accuracy	±20 ppm
Channel-to-Channel Deskew Range	±100 ns
Horizontal Zoom	Standard

Trigger System

Trigger Sources	CH1, CH2, Line, External
Trigger Modes	Auto, Normal, Single Sequence
Trigger Coupling	AC, DC, Noise Reject, HF Reject, LF Reject
Trigger Holdoff Range	250 ns to 8 s
Edge Triggering	Positive or negative slope on any channel
Advanced Triggering (Standard)	Pulse (Width, Runt, Slew Rate, Setup/Hold), Logic (Pattern, State), Video
Pulse Width Trigger Range	39.6 ns to 8.19 s
External Trigger Input Impedance	1 MΩ ±1% in parallel with 13 pF ±2 pF
Internal Trigger Level Range	±8 divisions from screen center
External Trigger Level Range	±1.2 V
Trigger Sensitivity (Edge, Internal)	0.35 div from DC to 50 MHz, increasing to 1 div at rated bandwidth
Trigger Sensitivity (Edge, External)	50 mV from DC to 50 MHz, increasing to 150 mV at rated bandwidth

Acquisition System

Acquisition Modes	Sample, Peak Detect, Envelope, Average, Single Sequence
Peak Detect Mode Min Pulse Width	4 ns
Averaging Factor Range	2 to 512
Waveform Capture Rate	Up to 3,600 wfms/s

Waveform Measurements and Analysis

Automatic Measurements	25 automatic measurements
Basic Math Functions	Add, Subtract, Multiply, FFT
FFT Window Types	Rectangular, Hamming, Hanning, Blackman-Harris
Waveform Histograms	Vertical or horizontal
WaveAlert™ Anomaly Detection	Automatic waveform anomaly detection and warning

Display and User Interface

Color Grading / Intensity Modulation	Digital Phosphor Display (DPO) with intensity-graded color
Waveform Display Formats	YT, XY

Physical Characteristics

Form Factor	Portable benchtop
Height	176 mm
Width	375 mm
Depth	149 mm

Environmental Specifications

Storage Temperature Range	-20 °C to +60 °C
Operating Humidity Range	Up to 95% RH at or below +30 °C, up to 45% RH up to +50 °C
Operating Altitude	Up to 3,000 m
Non-Operating Altitude	Up to 15,000 m

Compliance and Standards

Safety Certifications	UL61010B-1, CSA C22.2 No. 1010.1, EN61010-1
Electromagnetic Compatibility (EMC)	EN61326 Class A, FCC Part 15 Subpart B Class A

Standard Accessories

Standard Probe Model	P3010 (100 MHz, 10X passive probe, one per channel)
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Inputs & Outputs

Probe Interface	TekProbe Level II (supports active, differential, and current probes)
Built-in LAN Port	RJ-45, 10Base-T Ethernet
Parallel Printer Port	DB-25 female connector, Centronics compatible

Storage

Floppy Disk Drive	3.5 inch, 1.44 MB (MS-DOS format)
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Power & Battery

Optional Battery Pack	TDS3BATB Rechargeable Lithium-Ion battery pack
Battery Operating Time	Up to 3 hours (with TDS3BATB installed)

Triggering

Standard Video Triggering	NTSC, PAL, SECAM
Optional Video Triggering	HDTV/FlexFormat video triggering (requires TDS3VID module)

Display & User Interface

Display Resolution	640 × 480 pixels
Display Size	6.5 inches (165 mm)

Power Specifications

Power Consumption (Maximum)	75 W
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Storage & Setup

Internal Waveform Storage	4 reference waveforms
Internal Setup Storage	9 front-panel setups

General Features

Recommended Calibration Interval	1 year
Application Module Slots	4 slots

Auxiliary Ports & Signals

Probe Compensator Output Voltage	5.0 V into $\geq 1\text{ M}\Omega$ load
Probe Compensator Output Frequency	1 kHz

TECHNOLOGY

Digital Phosphor Oscilloscope (DPO)

APPLICATIONS

Electronic design, debug, manufacturing test, service, and education

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