

TEKTRONIX

TDS5032B

The Tektronix TDS5032B is a 350 MHz, 2-channel Digital Phosphor Oscilloscope (DPO) from the TDS5000B Series. Featuring a real-time sample rate of up to 5 GS/s and up to 16 M record length, it integrates a 10.4-inch touchscreen display running on the Windows 2000-based OpenChoice platform to combine powerful signal acquisition with advanced analysis capabilities.

SPECIFICATIONS

General

Interfaces	LAN, GPIB, RS-232, USB, PS/2, Parallel (Centronics), VGA Out
Display	10.4 in (264 mm) Color Active Matrix Liquid Crystal Display with Touch Screen, 640 x 480 pixels

Physical

Power Supply	100 to 240 V RMS $\pm 10\%$ (47 to 63 Hz), 115 V RMS $\pm 10\%$ (360 to 440 Hz); < 220 W
Operating Temperature	+5 °C to +45 °C °C
Dimensions (W×H×D)	447 mm × 363 mm × 288 mm mm
Weight	11.2 kg

Vertical System - Analog Channels

Analog Bandwidth (-3 dB)	350 MHz
Calculated Rise Time (10% to 90%)	1.15 ns
Number of Input Channels	2
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%
Vertical Resolution	8 bits (up to 11 bits with Hi-Res)
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
Maximum Input Voltage (1 M Ω)	150 V CAT I (derate at 20 dB/decade above 1 MHz to 13 V peak at 340 MHz)
Maximum Input Voltage (50 Ω)	5 V RMS, with peaks less than $\pm$ 30 V
DC Gain Accuracy	$\pm$ 1.5% for 2 mV/div to 10 V/div; $\pm$ 2.5% for 1 mV/div
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
Hardware Bandwidth Limits	20 MHz, 150 MHz
Channel-to-Channel Isolation	$\geq$ 100:1 at $\leq$ 150 MHz

Horizontal System

Timebase Range	200 ps/div to 1000 s/div
Timebase Accuracy	$\pm$ 15 ppm
Channel-to-Channel Deskew Range	$\pm$ 75 ns
Maximum Post-Trigger Delay Time	10,000,000 divisions
Maximum Pre-Trigger Delay Time	100% of record length
Record Length with Option 3M (1 Channel)	16 M
Record Length with Option 3M (2 Channels)	8 M

Acquisition System

Maximum Real-Time Sample Rate (1 Channel)	5 GS/s
Maximum Real-Time Sample Rate (2 Channels)	2.5 GS/s
Standard Record Length (1 Channel)	8 M
Standard Record Length (2 Channels)	4 M
Maximum Record Length (with Option 3M)	16 M (1-ch), 8 M (2-ch)
Waveform Capture Rate	Up to 100,000 wfms/s
Acquisition Modes	Sample, Peak Detect, Averaging, High Resolution, Envelope, Waveform Database

Trigger System

Trigger Sources	CH1, CH2, Line, External
Trigger Modes	Auto, Normal, Single
Trigger Coupling	DC, AC, HF Reject, LF Reject, Noise Reject
Trigger Holdoff Range	250 ns to 12 s
Trigger Sensitivity (Main, Edge)	0.35 div at ≤50 MHz, 1 div at 350 MHz
Standard Trigger Types	Edge, Video, Glitch, Width, Runt, Window, Timeout, Transition (Slew Rate), Pattern, State, Setup/Hold
Optional Trigger Types	Comm (with Option SM), ITU-T/ANSI Mask (with Option SM)
Trigger Jitter	15 ps RMS (typical)
Auxiliary Trigger Input Impedance	1 MΩ ±1% in parallel with 11.5 pF ±2 pF
Auxiliary Trigger Maximum Input Voltage	150 V CAT I

Waveform Measurements and Analysis

Automatic Measurements	53 standard measurements
Waveform Math Operators	Add, Subtract, Multiply, Divide, Integrate, Differentiate, FFT
FFT Window Types	Rectangular, Hamming, Hanning, Kaiser-Bessel, Blackman-Harris, Gaussian, Flattop, TekExponential
Limit / Mask Testing	Standard with option-dependent masks

Display and User Interface

Display Type	Active Matrix Color TFT LCD
Display Size	10.4 in (264 mm)
Display Resolution	1024 x 768 pixels (XGA)
Touchscreen	Built-in resistive touch screen
Waveform Display Formats	YT, XY
Operating System	Windows 2000 (OpenChoice Platform)

Connectivity and Interfaces

USB Ports	USB ports (1 front, 3 rear)
LAN Interface	10/100 Base-T RJ-45 LAN port
GPIB Interface	IEEE 488.2 GPIB port
RS-232 Interface	9-pin D-sub male serial port
Centronics Interface	DB-25 female parallel printer port
External Trigger Input	Rear panel BNC
Auxiliary Output	Trigger Out, Reference Clock Out
Reference Clock Input	Yes
Video Output Port	VGA DB-15 female connector
PS/2 Ports	Two PS/2 ports for mouse and keyboard

Power Specifications

Power Supply Voltage	100 to 240 V RMS $\pm 10\%$
Power Supply Frequency	47 to 63 Hz (100 to 240 V), 360 to 440 Hz (115 V)
Power Consumption	< 220 W

Environmental and Compliance

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 +45 °C
Operating Altitude	Up to 3,000 m (10,000 ft.)
Storage Altitude	Up to 15,000 m (50,000 ft.)
Safety Certifications	UL 3111-1, CSA 22.2 No. 1010.1, EN61010-1

Physical Characteristics

Form Factor	Benchtop (rackmount option available)
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PC System

PC Processor	Intel Celeron, 2.0 GHz
PC System Memory	512 MB standard, expandable to 1 GB
Hard Disk Drive Capacity	≥ 40 GB
CD-RW Drive	Standard CD-RW drive

Signal Inputs

Input Connector	TekProbe BNC (Level 2) interface
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Signal Outputs

Probe Compensator Output Voltage	1.0 V $\pm 1\%$ into ≥ 10 k Ω
Probe Compensator Output Frequency	1 kHz $\pm 5\%$
Reference Clock Output	10 MHz, ≥ 1.2 V pk-pk into 50 Ω

Triggering

Trigger Level Range (Internal)	± 12 divisions from center of screen
Trigger Level Range (External)	± 5 V (1X), ± 50 V (10X)

Vertical System

Hardware Bandwidth Limit Settings	150 MHz, 20 MHz
DC Vertical Gain Accuracy (1 mV/div to 2 mV/div)	$\pm 2.5\%$
DC Vertical Gain Accuracy (5 mV/div to 10 V/div)	$\pm 1.5\%$

Environmental

Operating Vibration	0.22 g RMS (5 Hz to 500 Hz)
Non-operating Vibration	2.28 g RMS (5 Hz to 500 Hz)
Operating Shock	15 g (11 ms, half-sine)

Measurement System

Measurement Statistics	Mean, Minimum, Maximum, Standard Deviation, Population
Cursor Types	Amplitude, Time, Screen

TECHNOLOGY

Digital Phosphor Oscilloscope (DPO)

APPLICATIONS

Electronic design, debugging, manufacturing test, and research

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