

TEKTRONIX

TDS540B

The Tektronix TDS540B is a 4-channel digitizing oscilloscope offering a 500 MHz analog bandwidth and real-time sampling rate up to 2 GS/s on a single channel. Designed for digital design, debugging, and electronic engineering applications, the TDS540B features an 8-bit vertical resolution (expandable to 12-bit in Hi-Res mode), 50,000 points standard record length per channel, advanced triggering modes, automated measurements, and an integrated 3.5-inch floppy disk drive alongside standard GPIB, RS-232, and parallel printer interfaces.

SPECIFICATIONS

Physical

Power Supply	90 to 250 VAC, 45 to 440 Hz, 300 W max
Operating Temperature	0 to +50 °C °C

Vertical System

Number of Channels	4
Analog Bandwidth (-3dB)	500 MHz
Calculated Rise Time	700 ps
Vertical Sensitivity Range	1 mV/div to 10 V/div
Input Coupling	AC, DC, GND
Input Impedance	1 MΩ ±0.5% in parallel with 10 pF, or 50 Ω ±1%
Maximum Input Voltage (1 MΩ)	400 V (DC + peak AC)
Maximum Input Voltage (50 Ω)	5 V RMS
DC Gain Accuracy	±1%
Offset Range	±1 V (1–99.5 mV/div), ±10 V (100–995 mV/div), ±100 V (1–10 V/div)
Vertical Position Range	±5 divisions

Horizontal System

Max Real-Time Sample Rate (1 Channel)	2 GS/s
Simultaneous Max Sample Rate per Channel	500 MS/s
Standard Record Length	50,000 points per channel
Time Base Range	500 ps/div to 10 s/div

Acquisition Modes

Sample Mode	Acquires sample data in real time
Peak Detect Mode	Captures glitches down to 1 ns at all sweep speeds
Averaging Mode	Averages waveform data from 2 to 10,000 acquisitions
FastFrame Segmented Memory	Divides record length into segments to capture rapid burst events

Trigger System	
Trigger Modes	Auto, Normal, Single Sequence
Trigger Coupling	DC, AC, Noise Reject, HF Reject, LF Reject
Pulse Width / Glitch Triggering	Triggers on pulses narrower or wider than specified limit (1 ns to 1 s)
Runt Triggering	Triggers on pulses that cross one threshold but fail to cross a second threshold
Logic Pattern Triggering	Triggers on specified combination of high, low, or don't care across channels

Display & User Interface	
Display Type	Monochrome CRT
Display Size	7 in (178 mm) diagonal

Storage & Data Handling	
Internal Waveform Storage	4 reference waveform memories
Floppy Disk Drive	3.5-inch 1.44 MB High-Density floppy drive

Interfaces & Connectivity	
GPIO Interface	IEEE-488.2 fully programmable interface

Power Supply	
Power Consumption	300 W max

Options & Accessories	
Option 05	Video Triggering (NTSC, PAL, SECAM, HDTV formats)
Option 2F	Advanced DSP Math (FFT, Integration, Differentiation)
Option 1R	Rackmount Kit for 19-inch rack mounting

Acquisition Modes & Performance	
InstaVu Acquisition Rate	Up to 400,000 wfm/s

Memory & Storage	
Reference Waveform Memories	4 internal locations (Ref1-Ref4)

TECHNOLOGY

Digital Storage Oscilloscope (DSO)

APPLICATIONS

Electronic Design, Signal Integrity Testing, Troubleshooting, R&D

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