

TEKTRONIX

TDS640

The Tektronix TDS640 is a high-performance 4-channel digitizing oscilloscope designed for precision high-speed electronic design and test applications. Offering a 500 MHz analog bandwidth alongside real-time sampling rates of up to 2 GS/s simultaneously across all channels, it provides clean, high-fidelity capture of transient events and fast rise times.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488.2) standard; RS-232 and Centronics (optional)
Display	7-inch monochrome CRT
Warm-up Time	20 minutes

Physical

Power Supply	90 to 250 V RMS, 45 Hz to 440 Hz, <300 W
Operating Temperature	0 to +50 °C °C
Dimensions (W×H×D)	445 mm × 193 mm × 434 mm mm

Vertical System

Analog Bandwidth (-3 dB)	500 MHz
Calculated Rise Time (10% to 90%)	≤ 700 ps
Number of Input Channels	4
Vertical Resolution (ADC)	8 bits (256 levels over 10.24 vertical divisions)
Input Impedance	50 ,
Input Coupling	DC or GND
Input Sensitivity Range	1 mV/div to 10 V/div
Hardware Bandwidth Limits	20 MHz, 100 MHz, and Full (500 MHz)
Maximum Input Voltage (50 Ω)	5 V RMS
DC Gain Accuracy	±1.5%
Channel Isolation	>100:1 at 100 MHz, >30:1 at 500 MHz
Offset Range	±1 V (1 mV to 99.5 mV/div), ±10 V (100 mV to 995 mV/div), ±24 V (1 V to 10 V/div)
Position Range	±5 divisions

Horizontal System

Maximum Real-Time Sampling Rate	2 GS/s (on 4 channels simultaneously)
Maximum Record Length (Points per Channel)	2000 points
Time Base Range	500 ps/div to 5 s/div
Time Bases	Main, Delayed
Timebase Accuracy	±100 ppm (±0.01%)

Trigger System

Trigger Sources	CH1, CH2, CH3, CH4, AC Line
Trigger Modes	Auto, Normal, Single
Edge Triggering	Supported
Pulse Width Triggering	Supported (including glitch and runt detection)
Trigger Sensitivity (Edge, DC Coupled)	0.35 div from DC to 50 MHz, 1.0 div at 500 MHz

Acquisition System

Acquisition Modes	Sample, Envelope, Average
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Waveform Measurements and Analysis

Automatic Voltage and Time Measurements	Supported (up to 25 automated parameters)
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Connectivity and Ports

GPIO (IEEE-488) Interface	Standard
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Power Specifications

Power Supply Voltage Range	90 to 250 V RMS
Power Supply Frequency Range	45 Hz to 440 Hz
Power Consumption	300 W maximum

Environmental Specifications

Storage Temperature Range	-40 °C to +75 °C
Operating Altitude	Up to 4,500 m (15,000 ft)

Physical Characteristics

Height	193 mm (7.6 in) with feet
Width	445 mm (17.5 in) with handle
Depth	472 mm (18.6 in) with handle

Display

Display Resolution	640 × 480 pixels
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Waveform Processing

Standard Math Functions	Addition, subtraction, multiplication, inversion
Advanced Math Functions	FFT, integration, differentiation (with Option 2F)

Storage & Connectivity

VGA Output	Standard, 15-pin D-sub
Floppy Disk Drive	3.5-inch 1.44 MB (with Option 1F)
RS-232 and Centronics Ports	Available with Option 13

Environmental & Reliability

Operating Humidity	Up to 95% RH at or below +40 °C, up to 75% RH from +41 °C to +50 °C
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Maintenance

Calibration Interval	1 year
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Accessories

Standard Probes	P6139A (four included)
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Storage

Setup Storage	10 setups
Waveform Storage	4 waveforms

Environmental

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

Compliance

Safety Standards	UL 1244, CSA C22.2 No. 231, EN 61010-1
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TECHNOLOGY

Digital Storage Oscilloscope (DSO)

APPLICATIONS

High-speed electronic circuit design, troubleshooting, and testing

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.