

TEKTRONIX

2440

The Tektronix 2440 is a high-performance 300 MHz digital storage oscilloscope designed for demanding analog and digital design, troubleshooting, and testing environments. Renowned for its precision and reliability, the 2440 delivers dual-channel 500 MS/s real-time digitizing capability, 2 ns glitch capture, and comprehensive automated measurement functions.

SPECIFICATIONS

General

Interfaces	GPIO (IEEE-488) standard
Display	Electrostatic CRT with internal graticule (8×10 divisions)
Warm-up Time	20 minutes

Physical

Power Supply	90 - 250 V AC, 48 - 440 Hz, 180 W maximum
Operating Temperature	-15°C to +55°C °C
Dimensions (W×H×D)	329 mm × 190 mm × 478 mm mm
Weight	10.9 kg kg

Vertical System

Number of Channels	2
Analog Bandwidth (-3 dB)	300 MHz
Rise Time	1.17 ns
Vertical Resolution	8 bits (up to 11 bits with averaging)
Input Coupling	AC, DC, GND
Input Impedance	1 MΩ (±1%) or 50 Ω (±1%)
Input Capacitance	15 pF (±2 pF)
Maximum Input Voltage	400 V (DC + peak AC) at 1 MΩ, 5 V RMS at 50 Ω
Vertical Sensitivity Range	2 mV/div to 5 V/div
DC Vertical Accuracy	±2%
Common Mode Rejection Ratio (CMRR)	At least 20:1 (26 dB) at 50 MHz

Horizontal System

Time Base Range	2 ns/div to 5 s/div
Horizontal Resolution	10 bits

Acquisition System

Maximum Real-Time Sample Rate	500 MS/s (simultaneous on both channels)
Record Length	1024 points per channel
Acquisition Modes	Sample, Peak Detect (Glitch), Envelope, Average
Glitch Capture / Peak Detect Width	2 ns
Envelope Mode	Yes (2 to 256 acquisitions, or continuous)
Averaging Modes	Yes (2 to 256 acquisitions)
Waveform Storage Capacity	4 reference waveforms (non-volatile RAM)
Digitizing Technology	Dual CCD (Charge-Coupled Device) analog shift registers

Triggering System

Trigger Sources	Ch 1, Ch 2, Line, External 1, External 2
Trigger Modes	Auto, Normal, Single Sequence, Auto Level
Trigger Coupling	AC, DC, Noise Reject, HF Reject, LF Reject
Internal Trigger Sensitivity	0.35 div from DC to 50 MHz
External Trigger Input Impedance	1 M Ω
External Trigger Maximum Input Voltage	400 V (DC + peak AC) at 1 M Ω

Waveform Measurements & Analysis

Cursor Measurements	Volts, Time, Frequency, Phase
Automatic Measurements	Frequency, Period, Width, Rise Time, Fall Time, Peak-to-Peak, Amplitude
Waveform Processing Operations	Add, Subtract
Auto Setup Mode	Yes (single-button auto setup)
Sequence Programming	Yes (AutoStep sequence programming)

Display & Front Panel Controls

Display Type	Electrostatic CRT
Graticule Area	8 $\times$ 10 divisions
CRT Phosphor Type	P31
Intensity Controls	Separate trace, readout, and graticule intensity controls

Connectivity & Interfaces

GPIO (IEEE-488) Interface	Standard (full talk/listen compliance)
Word Trigger Output	Yes
BNC Calibration Output	Yes
External Clock Input	Yes

Power Supply

Line Voltage Range	90 V to 250 V AC
Line Frequency Range	48 Hz to 440 Hz
Power Consumption	180 W maximum

Environmental Specifications

Operating Temperature Range	-15°C to +55°C
Storage Temperature Range	-62°C to +85°C
Operating Humidity	Up to 95% relative humidity (MIL-T-28800C)
Maximum Operating Altitude	15,000 feet (4,570 m)
Vibration Resistance	MIL-T-28800C Class 3, Style C
Shock Resistance	MIL-T-28800C Class 3, Style C

Physical Characteristics

Width	329 mm (excluding handle)
Height	190 mm (with feet)
Depth	478 mm (excluding front cover)
Cooling Fan Airflow	Forced air cooling with fan

Ordering Information & Options

Standard Probes Included	Two P6137 10X passive probes
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Memory & Storage

Front Panel Setup Storage	20 non-volatile setups
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Triggering

Delay by Events Range	1 to 65,535 events
Delay by Time Range	16 ns to 100 s

Display

CRT Accelerating Voltage	16 kV
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Maintenance & Diagnostics

Self-Calibration	Automatic self-calibration of vertical, horizontal, and trigger systems
Diagnostics	Power-up self-tests and interactive menu-driven diagnostics

Environmental & Compliance

Environmental Military Specification	Meets MIL-T-28800C Type III, Class 3, Style C limits
Safety Standards	UL 1244, CSA C22.2 No. 231, VDE 0411

Options

Video Trigger Option (Option 05)	Adds NTSC, PAL, and SECAM video triggering with line and field selection
Word Recognizer Option (Option 09)	Adds P6407 17-bit word recognizer probe interface
Probe Power Option (Option 11)	Provides two rear-panel power connectors ($\pm 5\text{ V}$, $\pm 15\text{ V}$) for active probes
Rackmount Option (Option 1R)	Configures instrument for mounting in a standard 19-inch rack (5.25 inches high)
Option 05 Video Formats Supported	NTSC, PAL, SECAM
Option 09 Word Recognizer Inputs	17 data inputs (D0-D15, WDQ) and 1 clock input
Option 11 Probe Power Outputs	Provides $\pm 5\text{ V}$ and $\pm 15\text{ V}$ to power up to two active probes

Time Base

Time Base Accuracy	$\pm 0.0015\%$
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Acquisition

Pre-Trigger Selection	Selectable in 1/8 record increments (0% to 100%)
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Power & Reliability

Memory Backup Battery Life	Typically 5 years minimum
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TECHNOLOGY

Digital Storage Oscilloscope (DSO)

APPLICATIONS

Electronic Design and Troubleshooting, Analog and Digital Testing, Calibration

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