

TEKTRONIX

TPS2024B

The Tektronix TPS2024B is a 200 MHz, 4-channel Digital Storage Oscilloscope featuring IsolatedChannel™ technology for ground-isolated and floating measurements. It combines battery power, high-performance sampling, and portable operation designed for demanding field and laboratory environments.

SPECIFICATIONS

General

Interfaces	USB 2.0 host port (front panel), RS-232, Centronics parallel printer port
Display	5.7 in. (144 mm) active-color TFT LCD (320 × 240 pixels)
Warranty	3 years (excluding probes and batteries)

Physical

Power Supply	100 to 240 V AC ±10% (45 to 66 Hz) or Battery power; Power consumption: < 40 W
Operating Temperature	0 °C to +50 °C °C
Dimensions (W×H×D)	336 mm × 161 mm × 130 mm mm
Weight	2.7 kg kg

Vertical System

Analog Bandwidth	200 MHz
Number of Channels	4 isolated channels
Input Coupling	AC, DC, GND
Input Impedance	1 MΩ ±2% in parallel with 20 pF ±3 pF
Input Sensitivity Range	2 mV/div to 5 V/div
Vertical Resolution	8 bits
DC Vertical Gain Accuracy	±3%
Maximum Input Voltage	300 VRMS CAT II (from BNC signal to BNC shell)
Maximum Floating Voltage (Channel to Earth Ground)	600 VRMS CAT II or 300 VRMS CAT III (from BNC shell to earth ground)
Maximum Floating Voltage (Channel to Channel)	600 VRMS CAT II or 300 VRMS CAT III (between BNC shells)

Horizontal System

Time Base Range	2.5 ns/div to 50 s/div
Time Base Accuracy	±50 ppm
Horizontal Zoom	Yes

Acquisition System

Maximum Real-Time Sample Rate (All Channels)	2.0 GS/s
Maximum Record Length	2.5k points
Acquisition Modes	Sample, Peak Detect, Average, Single Sequence
Peak Detect Duration	12 ns
Waveform Averaging Range	4, 16, 64, 128

Trigger System

Trigger Modes	Auto, Normal, Single
Trigger Coupling	AC, DC, Noise Reject, HF Reject, LF Reject
Trigger Source Options	CH1, CH2, CH3, CH4, AC Line
Trigger Holdoff Range	500 ns to 10 s
Edge Triggering Conditions	Rising or falling
Video Trigger Standard Support	NTSC, PAL, SECAM
Trigger Level Range	± 8 divisions from screen center
Trigger Level Accuracy	$\pm(0.2 \text{ div} + 5 \text{ mV})$ for signals within ± 4 divisions from screen center
External Trigger Input	None (4-channel models utilize internal channel triggers only)

Waveform Measurements and Analysis

Automatic Waveform Measurements	11 measurements
Cursor Types	Amplitude, Time
Waveform Math Operators	+, -, $\times$, FFT
FFT Windows	Hanning, Flat Top, Rectangular

Storage and Connectivity

Removable Media Storage Support	USB Flash Drive (FAT/FAT32)
Internal Waveform Storage Capacity	4 reference waveforms
Internal Setup Storage Capacity	10 front-panel setups

Power System

Battery Type	Lithium-Ion rechargeable battery (TPSBAT)
Battery Operating Time	Up to 4 hours per battery (8 hours total with two batteries)
Number of Battery Slots	2
Battery Hot-Swap Capability	Yes

Physical Characteristics

Weight (Without Battery)	2.7 kg
Weight (With 1 Battery)	3.2 kg
Weight (With 2 Batteries)	3.7 kg
Kensington Lock Slot	Yes

Environmental and Safety

Storage Temperature	-40 °C to +71 °C
Operating Humidity	90% RH at or below +30 °C, 60% RH up to +50 °C
Operating Altitude	Up to 3,000 m
Storage Altitude	Up to 15,000 m
Safety Certifications	UL61010-1, CSA C22.2 No. 61010-1, EN61010-1

Standard Accessories

Standard Passive Probes	4× TPP0201 (200 MHz, 10x passive probes)
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Performance

Rise Time	1.8 ns
Channel-to-Channel Isolation	>= 100:1 at 60 Hz, >= 30:1 at 200 MHz
Bandwidth Limit	20 MHz
Waveform Limit Testing	Compares active signals against user-defined template
Common Mode Rejection Ratio (CMRR)	1000:1 at 60 Hz, 100:1 at 1 MHz (with TPP0201 passive probes)

Frequency Counter

Integrated Frequency Counter Resolution	6 digits
Integrated Frequency Counter Range	10 Hz to 200 MHz
Integrated Frequency Counter Accuracy	+/- 51 ppm

Triggering

Pulse Width Trigger Range	33 ns to 10 s
Pulse Width Trigger Conditions	<, >, =, !=

Power

Power Consumption	< 40 W
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Environmental

Vibration (Operating)	0.31 g RMS, 5 Hz to 500 Hz, 10 minutes per axis
Shock (Operating)	50 g, 11 ms, half-sine
Pollution Degree	Pollution Degree 2

Software & Options

Optional Power Analysis Software Compatibility	TPS2PWR1
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Software

Included Software	OpenChoice® Desktop, National Instruments LabVIEW SignalExpress™ Tektronix Edition
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TECHNOLOGY

Digital Storage Oscilloscope (DSO)

APPLICATIONS

Isolated and floating electrical measurements, industrial power design, and field service troubleshooting

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