

TEKTRONIX

MSO64

The Tektronix MSO64 is a 6 Series Mixed Signal Oscilloscope designed for high-performance debug and validation of complex embedded systems. Featuring 4 FlexChannel inputs, an exceptional 25 GS/s sample rate across all channels, a 12-bit ADC architecture, and up to 8 GHz of analog bandwidth, it delivers unmatched signal fidelity and detailed multi-channel analysis on its large 15.6-inch capacitive touch screen.

SPECIFICATIONS

General

Display	15.6-inch (396 mm) TFT color LCD, Full HD (1920 x 1080) capacitive touch screen
Recommended Calibration Interval	1 year

Physical

Operating Temperature	0 °C to +50 °C °C
Dimensions (W×H×D)	454 mm × 309 mm × 204 mm mm
Weight	12.88 kg kg
Required Ventilation Clearance	2 in (50.8 mm) on left, right, and rear

Vertical System - Analog Channels

Analog Bandwidth	1 GHz, 2.5 GHz, 4 GHz, 6 GHz, or 8 GHz (upgradable)
Number of Analog Channels	4 FlexChannel inputs
ADC Resolution	12 bits (up to 16 bits in High Res mode)
Input Coupling	DC, AC
Input Impedance	50 Ω ± 1%, 1 MΩ ± 1%
Input Sensitivity Range (1 MΩ)	500 μV/div to 10 V/div
Input Sensitivity Range (50 Ω)	1 mV/div to 1 V/div
Maximum Input Voltage (1 MΩ)	300 V RMS, CAT II
Maximum Input Voltage (50 Ω)	5 V RMS, with peaks ≤ ±20 V

Horizontal System

Maximum Real-Time Sample Rate	25 GS/s on all channels
Standard Record Length	62.5 Mpoints
Maximum Record Length	1 Gpoints (option dependent)
Timebase Delay Range	-10 divisions to 5,000 s

Vertical System - Digital Channels

Number of Digital Channels	Up to 32 (8 per FlexChannel using TLP058 probes)
Threshold Accuracy	$\pm(100 \text{ mV} + 3\% \text{ of threshold setting})$
Maximum Input Toggle Rate	500 MHz
Minimum Detectable Pulse Width	1 ns
Digital Channel Input Impedance	100 k Ω 3 pF (with TLP058)
Digital Channel Vertical Resolution	1 bit

Trigger System

Trigger Modes	Auto, Normal, Single
Trigger Types	Edge, Pulse Width, Runt, Timeout, Window, Logic, Setup/Hold, Rise/Fall Time, Sequence, Visual Trigger
Trigger Coupling	DC, AC, HF Reject, LF Reject, Noise Reject

Acquisition Modes

Sample Mode	Acquires sampled values
Envelope Mode	Min/Max vertical values acquired over multiple acquisitions
Average Mode	From 2 to 10,240 waveforms averaged
FastAcq Waveform Capture Rate	>500,000 wfm/s
Roll Mode	Scrolls waveforms right to left at slow sweep speeds

Waveform Measurements and Analysis

Cursor Types	Waveform, V Bars, H Bars, V&H Bars
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Input / Output Ports

Analog Input Connectors	TekVPI probe interface
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Storage and Processor System

Operating System	Closed Embedded OS standard, Windows 10 optional
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Power and Environmental Specifications

Operating Humidity	5% to 90% relative humidity (% RH) at up to +40 °C; 5% to 55% RH above +40 °C up to +50 °C
Operating Altitude	Up to 3,000 meters (9,843 feet)
Non-Operating Altitude	Up to 12,000 meters (39,370 feet)

Signal Generator Options

Optional AFG Waveform Types	Sine, Square, Pulse, Ramp, Triangle, DC, Noise, Sin(x)/x, Exponential Rise, Exponential Decay, Gaussian, Lorentz, Haversine, Cardiac, Arbitrary
Optional AFG Sine Frequency Range	0.1 Hz to 50 MHz
Optional AFG Square and Pulse Frequency Range	0.1 Hz to 25 MHz
Optional AFG Arbitrary Waveform Record Length	128 k points
Optional AFG Arbitrary Waveform Sample Rate	250 MS/s

Digital Voltmeter (DVM)

Integrated DVM Resolution	4-digit
Integrated DVM Measurement Modes	DC, AC RMS, DC+AC RMS

Trigger Frequency Counter

Integrated Trigger Frequency Counter Resolution	8-digit
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Environmental

Non-Operating Temperature Range	-20 °C to +60 °C
Operating Vibration	0.31 g RMS, 5 Hz to 500 Hz, 10 minutes per axis, 3 axes
Non-Operating Vibration	2.46 g RMS, 5 Hz to 500 Hz, 10 minutes per axis, 3 axes
Operating Shock	50 g, 11 ms, half-sine, 3 shocks in each direction of each axis
Non-Operating Shock	50 g, 11 ms, half-sine, 3 shocks in each direction of each axis

Power

Power Input Voltage Range	100 to 240 V AC $\pm 10\%$
Power Input Frequency Range	50 Hz to 60 Hz (100 to 240 V), 400 Hz (115 V)

Compliance

Safety Certifications	UL 61010-1, CAN/CSA-C22.2 No. 61010-1, EN 61010-1, IEC 61010-1
Electromagnetic Compatibility (EMC)	EU Council Directive 2014/30/EU, EN 61326-1, EN 61326-2-1, CISPR 11 Class A

Vertical System

Vertical Position Range	± 5 divisions
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Interfaces

LAN Port	1x RJ45, 10/100/1000 Mb/s
GPIO Interface	Optional (via TEK-USB-488 adapter)
Programming Interface	USBTMC and LXI compliant, SCPI command set

User Interface

Screen Size and Resolution	15.6 in (396 mm) TFT LCD, 1920 x 1080 (FHD) resolution
Touchscreen Type	Capacitive multi-touch
Web-based Remote Control	e*Scope (via standard web browser)

Computer System

Optional Operating System Support	Windows 10 (removable SSD option)
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Arbitrary Function Generator

Optional AFG Amplitude Range	10 mVp-p to 2.5 Vp-p into 50 Ω ; 20 mVp-p to 5.0 Vp-p into 1 M Ω
Optional AFG Frequency Resolution	0.1 Hz

Measurements & Analysis

Measurement Statistics	Mean, Minimum, Maximum, Standard Deviation, Population
Measurement Reference Levels	User-definable in percent or volts; local or global

Accessories

Standard Probes Included	Four TPP1000 1 GHz passive probes (one per channel)
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TECHNOLOGY

Mixed Signal Oscilloscope

APPLICATIONS

High-speed embedded system design, power integrity, jitter analysis, serial bus compliance, and RF debugging

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