

TEKTRONIX

MDO3054

The Tektronix MDO3054 is a 4-channel, 500 MHz Mixed Domain Oscilloscope from the highly integrated MDO3000 series. Designed as a versatile 6-in-1 bench instrument, it combines an oscilloscope, spectrum analyzer, arbitrary function generator, logic analyzer, protocol analyzer, and digital voltmeter/counter into a single compact device. The base model features 2.5 GS/s analog sample rates, a 10 Mpoint record length on all channels, and a built-in RF analyzer capable of analyzing signals up to 500 MHz. Its fully upgradeable architecture allows for the addition of 16 digital channels, a 3 GHz spectrum analyzer module, and comprehensive serial bus analysis to meet evolving debugging requirements.

SPECIFICATIONS

General

Interfaces	USB 2.0 Host/Device, 10/100 LAN, SVGA Video Out
Display	9-inch WVGA display

Physical

Power Supply	100-240 V (50/60 Hz), 115 V (400 Hz), 120 W max
Operating Temperature	-10 °C to +55 °C °C
Dimensions (W×H×D)	416.6 x 203.2 x 147.4 mm
Weight	4.2 kg (9.2 lb) kg
Cooling Clearance	2 in. (51 mm) required on left side and rear of instrument

Vertical System - Analog Channels

Number of Analog Channels	4
Analog Bandwidth	500 MHz (upgradable to 1 GHz)
Calculated Rise Time	700 ps (typical)
Hardware Bandwidth Limits	20 MHz or 250 MHz
Input Coupling	AC, DC
Vertical Resolution	8 bits (11 bits with Hi Res)

Horizontal System - Analog Channels

Time Base Range	1 ns/div to 1000 s/div
Maximum Duration at Highest Sample Rate	4 ms
Channel-to-Channel Deskew Range	±125 ns
Record Length	10 M points

Acquisition System

Maximum Sample Rate	2.5 GS/s
Maximum Waveform Capture Rate	>280,000 wfm/s

Spectrum Analyzer

Number of RF Channels	1
Frequency Range	9 kHz - 500 MHz (standard); 9 kHz - 3 GHz (with MDO3SA option)
Capture Bandwidth	Up to 3 GHz
Resolution Bandwidth (RBW)	20 Hz to 150 MHz
Maximum Operating Input Power	+20 dBm (Continuous Average)
Maximum DC Input	±40 V DC

Logic Analyzer - Digital Channels

Number of Digital Channels	16 (with MDO3MSO option)
Minimum Voltage Swing	500 mV
Input Impedance	101 k Ω 8 pF
Digital Vertical Resolution	1 bit
Maximum Sample Rate (Main)	500 MS/s (2 ns resolution)
Maximum Record Length (Main)	10 M points
Maximum Sample Rate (MagnaVu)	8.25 GS/s (121.2 ps resolution)
Maximum Record Length (MagnaVu)	10k points centered on the trigger
Channel-to-Channel Skew	500 ps (typical)

Arbitrary Function Generator

Number of Output Channels	1 (with MDO3AFG option)
Standard Waveforms	13 predefined waveform types
Maximum Waveform Generation Frequency	50 MHz
Arbitrary Waveform Record Length	128k points
Sample Rate	250 MS/s

Digital Voltmeter and Frequency Counter

Measurement Types	AC RMS, DC, AC+DC RMS, Frequency
Voltage Resolution	4 digits
Counter Resolution	5 digits

Analog Inputs

Vertical Sensitivity Range (1 M Ω)	1 mV/div to 10 V/div
Vertical Sensitivity Range (50 Ω / 75 Ω)	1 mV/div to 1 V/div

Horizontal System

Time Base Accuracy	±10 ppm over any ≥1 ms interval
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Triggering

Trigger Modes	Auto, Normal, Single
Trigger Holdoff Range	20 ns to 8 s
Trigger Level Range (Any Channel)	±8 divisions from center of screen

Arbitrary/Function Generator

AFG Amplitude Range (50 Ω)	10 mVp-p to 2.5 Vp-p (MDO3AFG option)
AFG Amplitude Range (High-Z)	20 mVp-p to 5.0 Vp-p (MDO3AFG option)
AFG Output Impedance	50 Ω

Environmental

Non-Operating Temperature	-40 °C to +71 °C
Operating Altitude	Up to 3,000 meters (9,843 feet)
Non-Operating Altitude	Up to 12,000 meters (39,370 feet)

Acquisition

Acquisition Modes	Sample, Peak Detect, Averaging, Envelope, HiRes, Roll, FastAcq
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Waveform Math

Arithmetic Math	Add, subtract, multiply, and divide waveforms
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Power

Line Voltage Range	100 to 240 V ±10% (50/60 Hz), 115 V ±10% (400 Hz)
Maximum Power Consumption	120 W

TECHNOLOGY

Mixed Domain Oscilloscope

APPLICATIONS

Embedded Systems Debug, RF Analysis, Mixed Signal Troubleshooting, Education, Hardware Validation

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