

TEKTRONIX

MDO4104C

The Tektronix MDO4104C is a 1 GHz, 4-channel mixed-domain oscilloscope from the versatile MDO4000C series. It features a high 5 GS/s maximum sample rate and 20 Mpoints of standard record length on all channels. Engineered as a highly integrated "6-in-1" instrument, it can be optionally configured with a built-in hardware spectrum analyzer (up to 3 GHz or 6 GHz), a 16-channel logic analyzer, a 50 MHz arbitrary/function generator, and protocol analysis tools, while offering standard 4-digit digital voltmeter and 5-digit frequency counter capabilities upon registration.

SPECIFICATIONS

General

Interfaces	USB 2.0 Host (x4), USB 2.0 Device, 10/100/1000 LAN, Video Out
Display	10.4 in (264 mm) XGA active-matrix TFT color LCD (1024 × 768)

Physical

Power Supply	100 - 240 V ±10% (50/60 Hz), 115 V ±10% (400 Hz); 225 W maximum
Operating Temperature	0 to +50 °C
Dimensions (W×H×D)	439 × 229 × 147 mm
Weight	5.1 kg

Vertical System (Analog Channels)

Number of Analog Channels	4
Analog Bandwidth	1 GHz
Calculated Rise Time	350 ps
Hardware Bandwidth Limits	20 MHz, 250 MHz
Input Coupling	AC, DC
Input Impedance	1 MΩ ±1% (13 pF ±2 pF), 50 Ω ±1%
Input Sensitivity Range (1 MΩ)	1 mV/div to 10 V/div
Input Sensitivity Range (50 Ω)	1 mV/div to 1 V/div
Vertical Resolution	8 bits (11 bits with HiRes)
Maximum Input Voltage (1 MΩ)	300 VRMS CAT II with peaks ≤ ±425 V
Maximum Input Voltage (50 Ω)	5 VRMS with peaks ≤ ±20 V

Acquisition System

Maximum Sample Rate	5 GS/s
Maximum Record Length	20 Mpoints per channel
FastAcq Maximum Waveform Capture Rate	> 340,000 wfms/s
Standard Acquisition Modes	Sample, Peak Detect, Averaging, Envelope, HiRes, Roll

Trigger System

Standard Trigger Types	Edge, Sequence, Pulse Width, Timeout, Runt, Logic, Setup and Hold, Rise/Fall Time, Video
Trigger Holdoff Range	20 ns to 8 s
Trigger Level Range (Internal)	± 8 divisions from center of screen

Logic Analyzer (Digital Channels)

Number of Digital Channels	16 (with MDO4MSO option)
Maximum Sample Rate (Main)	500 MS/s
Maximum Sample Rate (MagneVu)	16.5 GS/s

Spectrum Analyzer

Frequency Range	9 kHz to 3 GHz (Option SA3) or 6 GHz (Option SA6)
Input Connectors	Type N, female, 50 Ω (with SA3 or SA6 option)

Arbitrary/Function Generator

Number of Output Channels	1 (with MDO4AFG option)
Sine Frequency Range	0.1 Hz to 50 MHz
Square/Pulse Frequency Range	0.1 Hz to 25 MHz
Sample Rate	250 MS/s
Arbitrary Waveform Length	128 kpoints
Amplitude Range	20 mVp-p to 5 Vp-p into open circuit (10 mVp-p to 2.5 Vp-p into 50 Ω)

Digital Voltmeter and Frequency Counter

Measurement Functions	AC RMS, DC, AC+DC RMS (Voltage), Frequency
Voltage Resolution	4 digits
Frequency Counter Resolution	5 digits

Connectivity and Interfaces

USB Host Ports	4 (2 front, 2 rear)
USB Device Port	1 (rear)
LAN Port	10/100/1000BASE-T Ethernet

Display

Display Size	10.4 inch (264 mm)
Display Resolution	1024 x 768 pixels (XGA)

Measurements & Math

Number of Automatic Measurements	30 standard
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Arbitrary Function Generator (Optional)

AFG Output Impedance	50 Ω
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Connectivity

LAN Speed	10/100/1000 Mb/s
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Power

Line Frequency	50/60 Hz (100-240V); 400 Hz (115V)
Power Consumption	225 W maximum

Waveform Math & Analysis

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

Digital Phosphor / Mixed Domain

APPLICATIONS

Embedded System Design, RF/Wireless Debug, EMI Troubleshooting, IoT Development, Power Supply Design

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