MDO4000C Series Mixed Domain Oscilloscopes
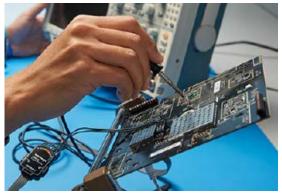## Versatility PLUS High Performance in One Powerful Oscilloscope

Designed to make your work easier

Up to six built-in instruments, each with exceptional performance to address your toughest design and debug challenges

Featuring:
- 4 analog channels
  - 200 MHz, 350 MHz, 500 MHz and 1 GHz models
  - Standard voltage probes with 3.9 pF loading and up to 1 GHz bandwidth
- 16 digital channels (optional)
  - Up to 60.6 ps timing resolution with MagniVu™
- 1 spectrum analyzer channel (optional)
  - 3 GHz or 6 GHz frequency range models
  - Up to 3.75 GHz ultra-wide capture bandwidth
  - Automated peak markers and RF measurements
  - Spectrogram display
- >340,000 wfm/sec maximum waveform capture rate
- 20 M standard record length on all channels, all settings
- Over 135 available trigger combinations
- 45 automated time and frequency domain measurements
- Front-panel USB host ports for data storage
- Serial bus triggering and analysis options
- Parallel bus triggering and analysis, including multi-channel set-up and hold triggering
- 3-year warranty

Features	Benefits
Best in class oscilloscope with 20 Mpoint record length	Deep, selectable record length lets the user optimize recording time and resolution. 20 M record length on all channels allowing users to see more of the signal.
Wave Inspector® Navigation	Navigate long records easily with intuitive front-panel controls. Automatically search to find and mark every occurrence of an event.
FastAcq™ fast waveform capture rate	Identify glitches and other infrequent transient signals quickly with more than 340,000 waveforms/s. Understand events of interest with the color-graded display.
Integrated spectrum analyzer (Optional)	Up to 3.75 GHz ultra-wide capture bandwidth to see your entire spectrum at the same time. Perform vector signal analysis with SignalVu-PC software.
Simultaneous and synchronized analog, digital and RF	Get a more complete understanding of what's going on in your design. Easily measure latencies between control signals and radio transmissions. See time-domain signals along with EMI emissions.
Integrated arbitrary/function generator (Optional)	Easily capture real signals, edit them, and replay them with the integrated arbitrary waveform generator. And always have a function generator close at hand.
Integrated logic analyzer (MSO) (Optional)	Debug the digital portions of embedded designs with timing resolution down to 60.6 ps. Trace system timing issues with broader system visibility.
Serial bus triggering and analysis (Optional)	Automates triggering and decode on up to three serial buses at once. Save time locating events of interest and avoid hand-translating bits.
Integrated digital voltmeter and frequency counter	*Free with product registration!* Enables quick measurements of DC voltage, AC+DC RMS, AC RMS and frequency.
Future-proof your investment with instrument upgradability	Add analog bandwidth, spectrum analyzer, function generator, digital channels (MSO), protocol analysis, and more – ensuring usefulness for years to come.

www.tektronix.com/mdo4000

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MDO4000C Series Mixed Domain Oscilloscopes
Key specifications and ordering information

Models	Analog Channels	Analog Bandwidth	Spectrum Analyzer (Opt. SA3 or SA6)	AFG Channels (Opt. MDO4AFG)	Digital Channels (Opt. MDO4MSO)	Protocol Analysis (Optional)	Digital Voltmeter & Frequency Counter (Free with Registration)
MDO4024C	4	200 MHz	1 channel at 9 kHz – 3 GHz or 9 kHz – 6 GHz	1 channel at 50 MHz max	16 channels at 16.5 GS/s max	I^2C, SPI, RS232/UART, CAN, LIN, FlexRay, USB, Ethernet, MIL-STD-1553, Audio	4-digit AC_{rms}, DC, $AC+DC_{rms}$ 5-digit Frequency
MDO4034C	4	350 MHz					
MDO4054C	4	500 MHz					
MDO4104C	4	1 GHz					

Standard Probes and Accessories

- Four TPP0500B (≤500 MHz models) or TPP1000 (1 GHz models) Passive Voltage Probes
- One P6616 16 Channel Logic Probe (with MDO4MSO)
- N-to-BNC Adapter (103-0045-00) (with SA3 or SA6)
- Calibration Certificate
- Front Panel Cover, Power Cord
- Installation and Safety Manual
- 3-year Warranty

Application Modules

Serial Bus Triggering and Protocol Analysis
DPO4AERO	Aerospace (MIL-STD-1553)
DPO4AUDIO	Audio (I^2S, LJ, RJ and TDM)
DPO4AUTO	Automotive (CAN, LIN)
DPO4AUTOMAX	Automotive (CAN, LIN, FlexRay)
DPO4COMP	Computer (RS-232/422/485)
DPO4EMBD	Embedded (I^2C, SPI)
DPO4ENET	Ethernet (10BASE-T,100BASE-TX)
DPO4USB	USB 2.0 (LS, FS, HS)

Additional Analysis
DPO4LMT	Limit and Mask Testing
DPO4PWR	Power Analysis
MDO4TRIG	Adv. RF Power Level Triggering (Requires SA3 or SA6)
DPO4VID	HDTV & Custom Video Triggering and Video Picture

Recommended Probes and Accessories

Passive Voltage Probes
TPP0500B	500 MHz, 10X, 300V TekVPI Low C (3.9 pF)
TPP0502	500 MHz, 2X, 300V TekVPI Low C (12.7 pF)
TPP1000	1 GHz, 10X, 300V TekVPI Low C (3.9 pF)

Active Voltage Probes
TAP1500	1.5 GHz, 10X, ±8V TekVPI, Single-ended
TAP2500	2.5 GHz, 10X, ±4V TekVPI, Single-ended
TAP3500	3.5 GHz, 10X, ±4V TekVPI, Single-ended

Differential Voltage Probes
TDP0500	500 MHz, 50X/5X, ±42V TekVPI, Differential
TDP1000	1 GHz, 50X/5X, ±42V TekVPI, Differential
TDP1500	1.5 GHz, 10X/1X, ±8V TekVPI, Differential
TDP3500	3.5 GHz, 5X, ±2V TekVPI, Differential
THDP0100	100 MHz, 1000X/100X, ±6kV TekVPI, Diff.
THDP0200	200 MHz, 500X/50X, ±1.5kV TekVPI, Diff.
TMDP0200	200 MHz, 250X/25X, ±750V TekVPI, Diff.

Current Probes
TCP0020	50 MHz, 20A AC/DC TekVPI
TCP0030A	120 MHz, 30A AC/DC TekVPI
TCP0150	20 MHz, 150A AC/DC TekVPI

Spectrum Analyzer Accessories
TPA-N-PRE	Preamplifier, 12 dB gain, 9kHz – 6 GHz
TPA-N-VPI	N-to-TekVPI Adapter
119-4146-00	Near Field Probe Set, 100 kHz – 1 GHz
119-6609-00	Flexible Monopole Antenna

Service Options

C3, 5	Calibration Service 3 Years/5 years
D1, D3, D5	Calibration Data Report 1 year/3 years/5 years
R5	Repair Service 5 Years
T3,T5	Total Protection Plan 3 years/5 years

Key Applications / Benefits

Key Applications	Benefits
Embedded system design, validation, and debug	Discover and solve issues quickly by performing system level debug on mixed signal systems including today's most common serial bus and wireless technologies.
Power Design	Make reliable and repeatable voltage, current, and power measurements using automated power quality, switching loss, harmonics, ripple, modulation, and safe operating area measurements with a wide selection of power probes.
EMI Troubleshooting	Quickly track down the source of EMI in an embedded system by determining which time domain signals may be the cause. See in real-time, the effects time domain signals have on system EMI emissions.
Wireless Troubleshooting	For Bluetooth, WiFi, ZigBee, or other wireless technology, easily perform synchronized analysis of analog, digital, and RF signals to provide better understanding of system behavior. Capture an ultra-wide band in a single capture to view interactions among multiple wireless technologies, or to view an entire broadband transmission from a modern standard like 802.11/ad.

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