

Oscilloscope Selection Chart



| | MSO/DPO4000 Series | DP03000 Series | MSO/DPO2000 Series | TDS3000C Series | TPS2000 Series | TDS1000B/2000B Series |
|---|--|---|---|--|---|--|
| Channels | Analog Digital | 2*, 4 | 2, 4 | 2, 4 | 2, 4 Isolated | 2, 4* |
| | | 16** (MSO Series) | – | 16** (MSO Series) | – | – |
| Bandwidth | 350 MHz to 1 GHz | 100 MHz to 500 MHz | 100 MHz to 200 MHz | 100 MHz to 500 MHz | 100 MHz to 200 MHz | 40 MHz to 200 MHz |
| Rise Time | 1.0 ns to 350 ps | 3.5 ns to 700 ps | 3.5 ns to 2.1 ns | 3.5 ns to 700 ps | 3.5 ns to 2.1 ns | 8.4 ns to 2.1 ns |
| Sample Rate (Real-time) | 2.5 GS/s to 5 GS/s | 2.5 GS/s | 1 GS/s | 1.25 GS/s to 5 GS/s | 1 GS/s to 2 GS/s | 500 MS/s to 2 GS/s |
| Display Size | 10.4 in. (264 mm) XGA | 9.0 in. (229 mm) WVGA | 7.0 in. (178 mm) WVQVGA | 6.4 in. (163 mm) VGA | 5.6 in. (142 mm) QVGA | 5.6 in. (142 mm) QVGA |
| Record Length (Max) | 10 M | 5 M | 1 M | 10 k | 2.5 k | 2.5 k |
| Digital Channel⁴ Characteristics (MSO Series) | Main: 500 MS/s, 10 M record length MagniVu™: 16.5 GS/s, 10 k record length (centered at the trigger) | – | Main: 1 GS/s (8 Ch) 500 MS/s (16 Ch) 1 M record length (8 Ch) 500 k record length (16 Ch) | – | – | – |
| Trigger Types | Edge, Sequence, Logic, Pulse Width, Runt, Multi-channel Set-up and Hold, Rise/Fall Time, Video, I ² C ² , SPI ² , CAN ² , LIN ² , FlexRay ² , RS-232/422/485/UART ² , I ² S/LJ/RJ/TDM ² , Extended Video ² , Parallel ⁴ | Edge, Sequence, Logic, Pulse Width, Runt, Set-up and Hold, Rise/Fall Time, Video, I ² C ² , SPI ² , CAN ² , LIN ² , RS-232/422/485/UART ² , I ² S/LJ/RJ/TDM ² , Extended Video ² | Edge, Logic, Pulse Width, Runt, Set-up and Hold, Rise/Fall Time, Video, I ² C ² , SPI ² , CAN ² , LIN ² , RS-232/422/485/UART ² | Edge, Logic, Pulse, Video, Extended Video ² , Comm ¹ | Edge, Pulse, Video | Edge, Pulse, Video |
| Connectivity and Storage | USB host for storage, USB device for PC connectivity or direct print, CompactFlash, LAN, GPIB ² , Video out | USB host for storage, USB device for PC connectivity or direct print, LAN, GPIB ² , Video out | USB host for storage, USB device for PC connectivity or direct print, LAN ² , GPIB ² , Video out ² | USB host for storage, LAN, RS-232 ² , GPIB ² , Video out ² | RS-232, Centronics, CompactFlash | USB host for storage, USB device for PC connectivity or direct print, GPIB ² |
| Waveform Math and Analysis | Waveform math (+, -, x, /), FFT, Arbitrary expression math, Connect to a PC for extended analysis on OpenChoice [®] or NI LabVIEW SignalExpress™ Tektronix Edition software | Waveform math (+, -, x, /), FFT, Arbitrary expression math, Connect to a PC for extended analysis on OpenChoice [®] or NI LabVIEW SignalExpress™ Tektronix Edition software | Waveform math (+, -, x), Connect to a PC for extended analysis on OpenChoice [®] or NI LabVIEW SignalExpress™ Tektronix Edition software | Waveform math (+, -, x, /), DPO math ³ , Arbitrary expression math ³ , FFT, Connect to a PC for extended analysis on OpenChoice [®] or NI LabVIEW SignalExpress™ Tektronix Edition software | Waveform math (+, -, x), FFT, Connect to a PC for extended analysis on OpenChoice [®] software and MS Windows software | Waveform math (+, -, x), FFT, Connect to a PC for extended analysis on OpenChoice [®] or NI LabVIEW SignalExpress™ Tektronix Edition software and MS Windows software |
| Applications | Embedded design & debug, Investigation of transient phenomena, Automotive electronics design & debug, Manufacturing test & quality control, Industrial control | Embedded design & debug, Investigation of transient phenomena, Power measurements, Video design & debug, Automotive electronics design & debug, Manufacturing test & quality control, Industrial control | Embedded design & debug, Power measurements, Video design & debug, Automotive electronics design & debug, Manufacturing test & quality control, Industrial control, Education and Training | Telecomm mask testing and manufacturing, Digital troubleshooting, Video design and service, Power supply design | Industrial power design and installation, Advanced electronics design and installation, Education, Automotive | Design and debug, Service and repair, Education and training, Manufacturing test and quality control |
| Dimensions | 17.3 in. (439 mm) wide x 9.0 in. (229 mm) high x 5.4 in. (137 mm) deep | 16.4 in. (417 mm) wide x 8.0 in. (203 mm) high x 5.4 in. (137 mm) deep | 14.9 in. (377 mm) wide x 7.1 in. (180 mm) high x 5.3 in. (134 mm) deep | 14.8 in. (375 mm) wide x 6.9 in. (176 mm) high x 5.9 in. (149 mm) deep | 13.2 in. (336 mm) wide x 6.3 in. (161 mm) high x 5.1 in. (130 mm) deep | 12.9 in. (326 mm) wide x 6.2 in. (158 mm) high x 4.9 in. (124 mm) deep |
| Weight | 11.0 lbs. (5.0 kg) | 9.0 lbs. (4.1 kg) | 7.9 lbs. (3.6 kg) | 7.0 lbs. (3.2 kg) | 7.0 lbs. (3.2 kg) with one battery installed | 4.4 lbs. (2.0 kg) |
| Serial Decode^{4,2} and Analysis | I ² C, SPI, CAN, LIN, RS-232/422/485/UART, FlexRay | I ² C, SPI, CAN, LIN, RS-232/422/485/UART | I ² C, SPI, CAN, LIN, RS-232/422/485/UART | – | – | – |
| Power Measurements^{4,2} and Analysis | Power Quality, Switching Loss, Safe Operating Area, Harmonics, Ripple, Modulation, Slew Rate | Power Quality, Switching Loss, Safe Operating Area, Harmonics, Ripple, Modulation, Slew Rate | | | Power Quality, Switching Loss, Harmonics, Slew Rate | |

Specifications may vary based on the model selected within the product families listed above.

* Requires TDS3TMT module. † Optional. ‡ Requires TDS3AAM module. ** MSO Series only. †† TDS2000B Series only.

For further assistance in choosing the right Tektronix oscilloscope for your needs, please contact your local Tektronix representative, or visit www.tektronix.com/oscilloscopes

Want advice on which oscilloscope will best fit your particular needs?
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Recommended Accessories

MSO/DPO4000 Series Accessories

| | |
|---------------------------|---|
| DPO4AUTO Module | Automotive serial triggering and analysis module (CAN, LIN) |
| DPO4AUTOMAX Module | Automotive serial triggering and analysis module (CAN, LIN, FlexRay) |
| DPO4EMBD Module | Embedded serial triggering and analysis module (FC, SPI) |
| DPO4COMP Module | Computer serial triggering and analysis module (RS-232/422/485/UART) |
| DPO4AUDIO Module | Audio serial triggering and analysis module (FSLJ/RJ/TDM) |
| DPO4VID Module | HDTV and custom (non-standard) video triggering module |
| DPO4PWR Module | Adds analysis capability for power quality, switching loss, harmonics, safe operating area (SOA), modulation, ripple, and slew rate (di/dt, dv/dt) |
| TPA-BNC | TekVPI to TekProbe BNC adapter |
| TEK-USB-488 | GPIO to USB adapter |
| ACD4000 | Soft transit case |
| HCTEK4321 | Hard carrying case (requires ACD4000) |
| RM4000 | Rackmount kit |
| TEK-DPG | Deskew Pulse Generator |
| DPO4PWRBND Bundle | Includes P5205 and TDP0500 differential voltage probes, TCP0030 current probe, TPA-BNC adapter, deskew pulse generator (TEK-DPG), deskew fixture, and power analysis module (DPO4PWR) in a hard-sided carrying case. Bundle discount included in price. |

DPO3000 Series Accessories

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|--------------------------|---|
| DPO3AUTO Module | Automotive serial triggering and analysis module (CAN, LIN) |
| DPO3EMBD Module | Embedded serial triggering and analysis module (FC, SPI) |
| DPO3COMP Module | Computer serial triggering and analysis module (RS-232/422/485/UART) |
| DPO3AUDIO Module | Audio serial triggering and analysis module (FSLJ/RJ/TDM) |
| DPO3VID Module | HDTV and custom (non-standard) video triggering module |
| DPO3PWR Module | Adds analysis capability for power quality, switching loss, harmonics, safe operating area (SOA), modulation, ripple, and slew rate (di/dt, dv/dt) |
| TPA-BNC | TekVPI to TekProbe BNC adapter |
| TEK-USB-488 | GPIO to USB adapter |
| ACD4000 | Soft transit case |
| HCTEK4321 | Hard carrying case (requires ACD4000) |
| RMD3000 | Rackmount kit |
| TEK-DPG | Deskew Pulse Generator |
| DPO3PWRBND Bundle | Includes P5205 and TDP0500 differential voltage probes, TCP0030 current probe, TPA-BNC adapter, deskew pulse generator (TEK-DPG), deskew fixture, and power analysis module (DPO3PWR) in a hard-sided carrying case. Bundle discount included in price. |

MSO/DPO2000 Series Accessories

| | |
|------------------------|--|
| DPO2AUTO Module | Automotive serial triggering and analysis module (CAN, LIN) |
| DPO2EMBD Module | Embedded serial triggering and analysis module (FC, SPI) |
| DPO2COMP Module | Computer serial triggering and analysis module (RS-232/422/485/UART) |
| DPO2CONN Module | LAN and Video Out connectivity module |
| TPA-BNC | TekVPI to TekProbe BNC adapter |
| TEK-USB-488 | GPIO to USB adapter |
| ACD2000 | Soft transit case |
| HCTEK4321 | Hard carrying case (requires ACD2000) |
| RMD2000 | Rackmount kit |
| 119-7465-XX | TekVPI External Power Supply |

TDS3000C Series Accessories

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|---|--|
| TDS3GV Communication Module | GPIO, VGA and RS-232 interfaces. Includes TDSPCS1 OpenChoice® software |
| TDS3AAM Advanced Analysis Module | Adds extended math capability, arbitrary math expressions, measurement statistics and additional automated measurements |
| TDS3LIM Limit Testing Module | Offers fast, accurate Go/No Go verification that tested circuits are operating within intended parameters |
| TDS3TMT Telecommunications Mask Testing Module | Pass/Fail compliance testing of ITU-T G.703 and ANSI T1.102 standards, custom mask editing and more |
| TDS3VID Extended Video Analysis Module | Adds Video QuickMenu, Autoset, Holdoff, Line Count Trigger, Video Picture mode, Vectorscope mode, HDTV format triggering, graticules and more |
| TDS3SDI 601 Serial Digital Video Module | Identify and analyze ITU-R BT.601 video signals, video picture mode with bright line select, Vectorscope mode, HDTV format triggering and more |
| TDS3BATC | Battery pack for up to 3 hours of continuous operation without line power |
| AC3000 | Soft carrying case |
| HCTEK4321 | Hard carrying case (requires AC3000) |
| RM3000 | Rackmount kit |

TPS2000 Series Accessories

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|--------------------------------|---|
| TPS2PBND Power Bundle | Includes (4) P5120 passive, high-voltage probes and TPS2PWR1 power measurement and analysis software |
| TPS2PWR1 Power Software | Offers instantaneous power waveform analysis, harmonics analysis, switching loss, phase angles, di/dt and dv/dt cursors |
| TPSBAT | Instrument ships standard with one battery pack for up to 4 hours battery operation Optional second battery offers hot-swappability for 8+ hours continuous battery operation |
| TPSCHG | External battery charger |
| AC2100 | Soft carrying case |
| HCTEK4321 | Hard carrying case (requires AC2100) |

TDS2000B and TDS1000B Series Accessories

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|--------------------|--------------------------------------|
| TEK-USB-488 | GPIO to USB adapter |
| AC2100 | Soft carrying case |
| HCTEK4321 | Hard carrying case (requires AC2100) |
| RM2000B | Rackmount kit |

Recommended Software

MSO/DPO4000, DPO3000, MSO/DPO2000, TDS3000C, TDS1000B/2000B Series Software

| | |
|-------------------------|--|
| SIGEXPT Software | NI LabVIEW SignalExpress™ Tektronix Edition - Fully interactive measurement software environment optimized for the MSO4000, DPO4000, DPO3000, MSO2000, DPO2000, TDS3000C, TDS2000B and TDS1000B Series (Full Version). |
| IVI Driver | Provides a standard instrument programming interface for common applications such as LabVIEW, LabWindows/CVI, Microsoft .NET and MATLAB. |

Complete Probe Solutions

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|-------------------------------|--|
| Passive Probes | P2220 - 1/10X, 7MHz/200 MHz passive probe |
| | P2221 - 1/10X, 7MHz/200 MHz passive probe |
| | P3010 - 10X, 100 MHz passive probe |
| | P6101B - 1X, 15 MHz passive probe |
| | P6139A - 10X, 500 MHz passive probe |
| Low-capacitance Probes | P6158 - 20X, 3 GHz low-capacitance probe |
| Active Probes | P6205 - 10X, 750 MHz active probe ^{2,7,9} |
| | P6243 - 10X, 1 GHz active probe ^{1,7,9} |
| | TAP1500 - 1.5 GHz TekVPI™ active probe ^{3,9} |
| Differential Probes | ADA400A - 100X/10X/1X/0.1X, 1 MHz differential preamplifier ^{2,3,7,9} |
| | P5205 - 1.3 kV, 100 MHz high-voltage differential probe ^{2,7,9} |
| | P5210 - 5.6 kV, 50 MHz high-voltage differential probe ^{2,7,9} |
| | P6246 - 1X/10X, 400 MHz differential probe ^{1,7,9} |
| | P6247 - 1X/10X, 1 GHz differential probe ^{1,7,9} |
| | TDP0500 - 500 MHz TekVPI 42V differential probe ^{3,9} |
| | TDP1000 - 1 GHz TekVPI 42V differential probe ^{3,9} |
| Current Probes | A621 - 1000 A _{RMS} , 50 kHz current probe |
| | A622 - 70 A _{RMS} , 100 kHz current probe |
| | P6021 - 5 A _{RMS} , 60 MHz current probe |
| | P6022 - 2 A _{RMS} , 120 MHz current probe |
| | TCP202 - 15 A, DC to 50 MHz current probe ² |
| | TCP312 - 30 A, DC to 100 MHz current probe ⁴ |
| | TCP305 - 50 A, DC to 50 MHz current probe ⁴ |
| | TCP303 - 150 A, DC to 15 MHz current probe ⁴ |
| | TCP404XL - 750 A, DC to 2 MHz current probe ⁵ |
| | TCP0030 - 120 MHz TekVPI 30 Ampere AC/DC current probe ^{3,9} |
| | TCP0150 - 20 MHz TekVPI 150 Ampere AC/DC current probe ^{3,9} |
| | TCPA300/400 - Current measurement systems ⁷ |
| High-Voltage Probes | P5100 - 100X, 250 MHz, passive high-voltage probe |
| | P5120 - 20X, 200 MHz, passive high-voltage probe |
| | P6015A - 1000X, 75 MHz passive high-voltage probe |
| | P5200 - 50X/500X, 25 MHz, high-voltage differential probe ⁸ |
| | P5205 - 50X/500X, 100 MHz, high-voltage differential probe ^{2,7} |
| | P5210 - 100X/1000X, 50 MHz high-voltage differential probe ^{2,7} |
| Probe Accessories | NEX-HD2HEADER - Mictor connector breakout to 0.1" header pins |

¹ Requires 1103 TEKPROBE power supply when used with TDS1000B, TDS2000B, TDS3000C or TPS2000 Series. ² Requires 1103 TEKPROBE power supply when used with TDS1000B, TDS2000B or TPS2000 Series. ³ Bandwidth limits: 100 Hz, 3 kHz and 100 kHz. ⁴ Used with TCPA300 amplifier. ⁵ Used with TCPA400 amplifier. ⁶ Not compatible with TPS2000 Series. ⁷ Requires TekVPI to TekProbe™ BNC adapter for use with MSO/DPO4000, DPO3000, and MSO/DPO2000 Series. ⁸ MSO/DPO4000, DPO3000, and MSO/DPO2000 Series only. ⁹ Requires TekVPI external power supply 119-7465-XX for use with MSO/DPO2000 Series.

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