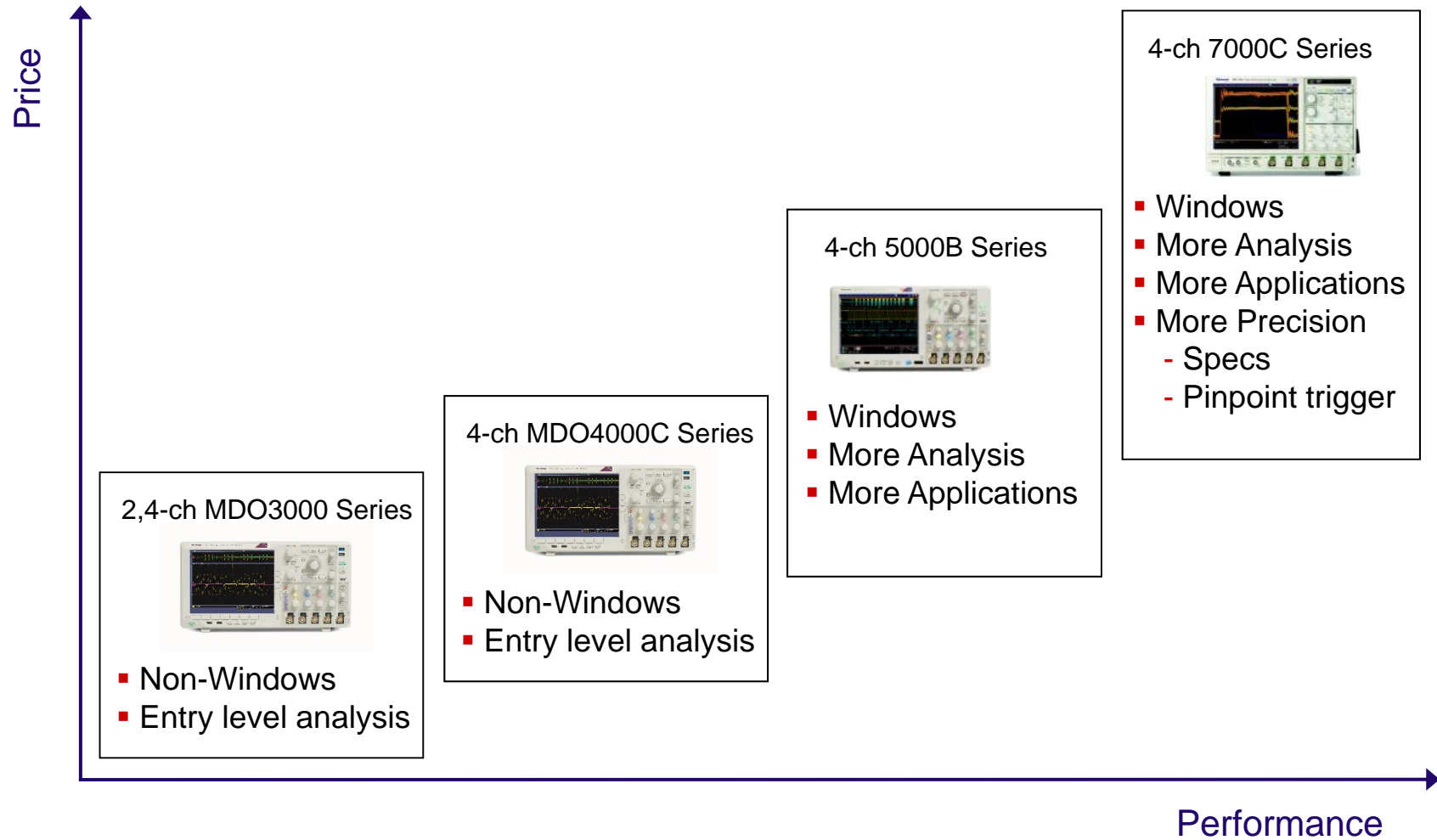


Choosing the Right Mid-Range Oscilloscope



Basic Comparison – 1 GHz Models



MSO/DPO Series: Choosing the Right Oscilloscope



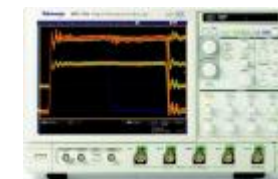
MDO3000



MDO4000C



MSO/DPO5000B



DPO7000C

| | MDO3000 | MDO4000C | MSO/DPO5000B | DPO7000C |
|--------------------------------------|---|---|--|--|
| <i>Bandwidth</i> | 1 GHz, 500 MHz, 350 MHz, 200 MHz, 100 MHz | 1 GHz, 500 MHz, 350 MHz, 200 MHz | 2 GHz, 1 GHz, 500 MHz, 350 MHz | 3.5 GHz, 2.5 GHz, 1 GHz, 500 MHz |
| <i>Channels</i> | 2, 4 | 4 | 4 | 4 |
| <i>Record Length</i> | 10 M | 20 M | 25 M, 250 M (opt.) | 25 M, 500 M (opt.) |
| <i>MSO</i> | Yes (optional) | Yes (optional) | Yes (MSO Series) | N/A |
| <i>AFG</i> | Yes (optional) | Yes (optional) | N/A | N/A |
| <i>DVM</i> | Yes (optional) | Yes (optional) | N/A | N/A |
| <i>Spec An</i> | Yes | Yes (optional) | N/A | N/A |
| <i>Serial Bus Trigger and Decode</i> | I ² C, SPI, USB 2.0, RS-232/422/485/UART, CAN, LIN, FlexRay, MIL-STD-1553, I ² S, LJ, RJ, TDM | I ² C, SPI, USB 2.0, Ethernet, RS-232/422/485/UART, CAN, LIN, FlexRay, MIL-STD-1553, I ² S, LJ, RJ, TDM | I ² C, SPI, USB 2.0, Ethernet, RS-232/422/485/UART, CAN, LIN, FlexRay, MIL-STD-1553 | I ² C, SPI, USB 2.0, RS-232/422/485/UART, CAN, LIN, FlexRay, MIL-STD-1553, NRZ Serial pattern trigger |
| <i>Decode Only</i> | | | MIPI DSI-1/CSI-2, 8b/10b, PCI Express | Ethernet, MIPI DSI-1/CSI-2, 8b/10b, PCI Express |
| <i>Analysis</i> | Power measurements Limit/mask test | Power measurements Limit/mask test | Jitter/Eye diagram analysis Serial compliance testing Power measurements RF analysis Limit/Mask test | Jitter/Eye diagram analysis Serial compliance testing Power measurements RF analysis Limit/Mask test |
| <i>Standard Probes</i> | TPP0250, TPP0500B, or TPP1000 – 1GHz , 3.9pF, 10X | TPP0500B – 500 MHz or TPP1000 – 1GHz , 3.9pF, 10X | TPP0500B – 500 MHz or TPP1000 – 1GHz , 3.9pF, 10X | P6139B – 500 MHz, 8pF, 10X passive probes |

Serial Bus Analysis by Series

| | Serial Standard | MDO3000 | MDO4000C | MSO/DPO5000 | DPO7000C |
|--|--------------------------------|--------------------|-------------|---------------------|---------------------|
| Serial Triggering <ul style="list-style-type: none"> Includes packet level triggering | <i>PC, SPI</i> | MDO3EMBD | DPO4EMBD | SR-EMBD | SR-EMBD |
| | <i>RS-232/422/485/UART</i> | MDO3COMP | DPO4COMP | SR-COMP | SR-COMP |
| | <i>USB 2.0 (LS, FS, HS)</i> | MDO3USB | DPO4USB | SR-USB | SR-USB (LS, FS) |
| | <i>Ethernet (10/100BASE-T)</i> | - | DPO4ENET | SR-ENET | - |
| | <i>CAN/LIN/FlexRay</i> | MDO3AUTO, MDO3FLEX | DPO4AUTOMAX | SR-AUTO | SR-AUTO |
| | <i>MIL-STD-1553</i> | MDO3AERO | DPO4AERO | SR-AERO | SR-AERO |
| | <i>Audio (PS, LJ, RJ, TDM)</i> | MDO3AUDIO | DPO4AUDIO | - | - |
| Serial Decode & Analysis <ul style="list-style-type: none"> Decoded bus/wfm view Automated Search Tabular data view with time stamps Sync data view with zoom window | <i>PC, SPI</i> | MDO3EMBD | DPO4EMBD | SR-EMBD | SR-EMBD |
| | <i>RS232/422/485/UART</i> | MDO3COMP | DPO4COMP | SR-COMP | SR-COMP |
| | <i>USB 2.0</i> | MDO3USB | DPO4USB | SR-USB | SR-USB |
| | <i>Ethernet (10/100BASE-T)</i> | - | DPO4ENET | SR-ENET | SR-ENET |
| | <i>CAN/LIN/FlexRay</i> | MDO3AUTO, MDO3FLEX | DPO4AUTOMAX | SR-AUTO | SR-AUTO |
| | <i>MIL-STD-1553</i> | MDO3AERO | DPO4AERO | SR-AERO | SR-AERO |
| | <i>Audio (PS, LJ, RJ, TDM)</i> | MDO3AUDIO | DPO4AUDIO | - | - |
| | <i>MIPI D-PHY</i> | - | - | SR-DPHY | SR-DPHY |
| | <i>8b/10b</i> | - | - | SR-810B | SR-810B |
| | <i>PCI Express</i> | - | - | SR-PCIE | SR-PCIE |
| Serial Bus Compliance | <i>USB 2.0</i> | - | - | USB2 | USB2 |
| | <i>Ethernet</i> | - | - | ET3 | ET3 |
| | <i>MIPI</i> | - | - | - | D-PHY |
| | <i>DDR Memory</i> | - | - | DDRA | DDRA |
| | <i>BroadR-Reach</i> | - | - | BRR | BRR |
| | <i>MOST</i> | - | - | MOST | MOST |
| | <i>Jitter Analysis</i> | - | - | DJA (DJE incl. std) | DJA (DJE incl. std) |

Power Analysis



MDO3000

with MDO3PWR



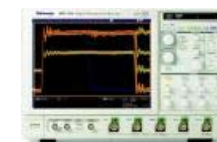
MDO4000C

with DPO4PWR



MSO/DPO5000B

with Opt. PWR



DPO7000C

with Opt. PWR

| | | | | | |
|---------------------------------|---------------------------------------|-----------------------------|-----------------------------|-----------------------------|----------------------|
| Specifications | Bandwidth | 200 MHz to 1 GHz | 200 MHz to 1 GHz | 350 MHz to 2 GHz | 500 MHz to 3.5 GHz |
| | Record Length | 10M | 20 M | Up to 250 M | Up to 500 M* |
| | Sample Rate | Up to 5 GS/s | Up to 5 GS/s | Up to 10 GS/s* | Up to 40 GS/s* |
| | Maximum Input Voltage | 300 V _{RMS} CAT II | 300 V _{RMS} CAT II | 300 V _{RMS} CAT II | 150 V _{RMS} |
| Special Features | Automated De-skew | X | X | X | X |
| | Windows Operating System and Desktop | | | X | X |
| | FFT Plots | X | X | X | X |
| Line Power Quality Measurements | VRMS, IRMS | X | X | X | X |
| | True (Real), Reactive, Apparent Power | X | X | X | X |
| | Power, Crest Factor | X | X | X | X |
| | Phase Angle | X | X | X | X |
| | Harmonics, Total Harmonic Distortion | X | X | X | X |
| I/O Analysis Measurements | Line Ripple | X | X | X | X |
| | Switching Noise | X | X | X | X |
| | Inrush Current | (manual measurement) | (manual measurement) | X | X |
| Emission Compliance Tests | Pre-Compliance Testing to EN61000-3-2 | X | X | X | X |
| | MIL Standard 1399 | X | X | X | X |
| Active Component Measurements | Switching Loss Measurements | X | X | X | X |
| | Safe Operating Area | X | X | X | X |
| | Dynamic Resistance (dv/dt, di/dt) | X | X | X | X |
| | Modulation Analysis | X | X | X | X |
| Passive Component Measurements | Magnetic Power Loss | | | X | X |
| | Flux Density | (manual measurement) | (manual measurement) | X | X |
| | B-H Plots | | | X | X |
| | Capacitance | | | X | X |

* On one channel