DPO/DSA/MSO70000 Series Oscilloscopes

The World's Most Accurate Oscilloscope

Product Fact Sheet

Features	Benefits
Analog bandwidth of 33 GHz	Accurate characterization, jitter characterization and compliance testing of designs like 32 Gbaud Optical and PCIe 3.0 with data rates up to 12.5 Gb/sec without DSP boosting.
Industry leading sample rate of 100 GS/sec	Enables thorough analysis, channel to channel, and multi-lane measurements. Capture more details (ie, fast edges) and achieve 10 Terasamples/s using equivalent time sampling on 4 channels.
Industry's highest waveform capture rate of >300K Wfms/sec on all 4 channels	Efficient discovery & capture of intermittent (rare) faults or events.
16 logic channels with 80 psec timing resolution (MSO70000 Series only)	Precisely understand logic circuit performance with correlated analog/digital signal views.
Analog/Digital Probing with a variety of connectivity support options	Flexible probing solutions for small component leads or board vias that remove the need for special fixturing/costs. Industry's only 20 GHz TriMode probe and 2.5 GHz differential logic probe.
Pinpoint® triggering, Visual Trigger and high-speed serial pattern triggering up to 6.25 Gb/s	Speed up debug of buses like PCIe, SATA, USB, DDR and others through standards-specific trigger functions.
Comprehensive digital serial analysis solution – probing, triggering, decode and analysis	Faster design and compliance testing with a toolset engineered to automate setup, acquisition and analysis of high-speed serial data signals like SATA and DisplayPort.
Automated Serial Trigger and Decode Options for I2C, SPI, RS-232/422/485/UART, USB 2.0, MIPI® D-PHY DSI-1 and CSI-2, 8b/10b	Enables automated capture and viewing of where control and data packets begin and end as well as identify subpacket components such as address, data, CRC, etc. for common serial bus traffic.

Performance, productivity & insight for challenging design tasks

Exceptional signal acquisition performance and analysis

Performance – Productivity – Insight

- 33 GHz and 100 GS/s on 2 channels (22.5 GHz and 50 GS/s on all 4 channels)
- 250 mega points record length on all 4 channels
- Low noise floor <750μV_{rms} and higher ENOB of ≥5.5 effective bits at 33 GHz
- Synchronize to another DPO/DSA/MSO70000 Series for 4 channel, 100 GS/s acquisition with an external reference clock jitter < 2 ps_{rms}
- Jitter noise floor <250fs and Sample clock jitter <250fs
- Visual Trigger delineates user-defined screen areas for differentiation of read & write memory transactions
- 8b/10b serial pattern triggering up to 6.25 Gb/s and NRZ pattern triggering up to 1.25 Gb/s
- Serial data analysis and compliance test packages for serial data standards
- Spectrum analysis capability for wideband RF/microwave applications
- Automated Serial Trigger & Decode Option for standards such as I^2C, USB 2.0, MIPI, 8b/10b

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Key specifications and ordering information

Product Fact Sheet

Models	Channels	Bandwidth	Record Length	Sample Rate
DPO73304D DSA73304D	4	33 GHz	10M 31 M	50 GS/s 100 GS/s – 2ch
DPO72504D DSA72504D	4	25 GHz	10M 31M	50 GS/s 100 GS/s – 2ch
DPO72004C DSA72004C MSO72004C	4 16 Logic*	20 GHz	10M 31M 10M	50 GS/s 100 GS/s – 2ch
DPO71604C DSA71604C MSO71604C	4 16 Logic*	16 GHz	10M 31M 10M	50 GS/s 100 GS/s – 2ch
DPO71254C DSA71254C MSO71254C	4 16 Logic*	12.5 GHz	10M 31M 10M	50 GS/s 100 GS/s – 2ch
DPO70804C DSA70804C MSO70804C	4 16 Logic*	8 GHz	10M 31M 10M	25 GS/s
DPO70604C DSA70604C MSO70604C	4 16 Logic*	6 GHz	10M 31M 10M	25 GS/s
DPO70404C DSA70404C MSO70404C	4 16 Logic*	4 GHz	10M 31M 10M	25 GS/s

Recommended Probes and Accessories

A wide variety of probes are recommended, including:

P75xx	20/16/13/8/6/4 GHz TriMode™ probes
P7313SMA	13 GHz TekConnect® differential SMA probe
P73x0A	8/6/4 GHz Z-Active® differential probes
P7380SMA	8 GHz TekConnect® differential SMA probe
P6780	16 Channel Logic Probe *
P6750	D-MAX™ Technology Logic Probe*

Recommended Service Plans:

Opt. C5/R5	5 year calibration or repair service plans
Opt. G3/G5	3 or 5 year Gold Care service plans

Digital Serial Analyzer (DSA)

DSA models include these options as standard

Opt. ST6G	Protocol triggering & decoding for 8b/10b-encoded serial signals up to 6.25 Gb/s
Opt. MTH	Mask testing for serial standards up to 6.25 Gb/s w/ hardware clock recovery
Opt. ASM	Advanced event search and mark

Mixed Signal Oscilloscope (MSO)

MSO models include the below as standard

16 Logic Channels

Opt. SR-EMBD	Embedded Serial Trigger & Analysis (I2C, SPI)

Record Length and Signal Analysis Options

Opt. 2XL	31M points/ch (DPO models only)
Opt. 5XL	50M points/ch
Opt. 10XL	100M points/ch
Opt. 20XL	200M points/ch (≥ 12.5 GHz models only)
Opt. DSAH	MSO Digital Signal Analysis (<12 GHz)
Opt. DSAU	MSO Digital Signal Analysis (>12 GHz)
Opt. ERRDT	Frame and Bit Error Rate Detector
Opt. VET	Visual Trigger

Key Software Analysis Options

Opt. DDRA	DDR memory bus analysis
Opt. DJA	DPOJET jitter and eye analysis tools
Opt. SLA	Serial data link analysis
Opt. SVE	Vector signal analysis
Opt. UWB	Ultra wideband spectral analysis

Serial Data Compliance and Analysis Modules

Opt. DSPT	DisplayPort compliance test solution
Opt. ET3	Ethernet compliance test software
Opt. HT3	HDMI compliance test software
Opt. PCE3	PCI Express compliance module (PCIe 1.0, 1.1, 2, 3.0)
Opt. SST	SATA and SAS analysis module
Opt. SR-DPHY	MIPI D-PHY Serial Analysis & Decode
Opt. USB3	USB3.0 compliance test software

Key Applications	Benefits
▪ High speed serial data compliance test	▪ Scope signal integrity ensures maximum measurement margin when testing standards conformance for PCIe, SATA, Ethernet, HDMI, DisplayPort, DVI, USB and more
▪ DDR System Memory Analysis	▪ Accelerate the validation of memory systems based on DDR, LP-DDR, or DDR variants such as GDDR3
▪ RF Subsystem Test	▪ Capture and analyze broadband RF signals with SignalVu vector signal analysis functions
▪ High Speed Embedded System Debug	▪ Debug high speed mixed signals on designs that contain HSS busses alongside LSS busses like I²C
▪ Optical Modulation Analysis	▪ 100GS/s sample rate and highly accurate wide bandwidth acquisition engine ideal for capture of up to 32 Gbaud DP-QPSK and QAM signals in Optical Transport

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* MSO models only

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