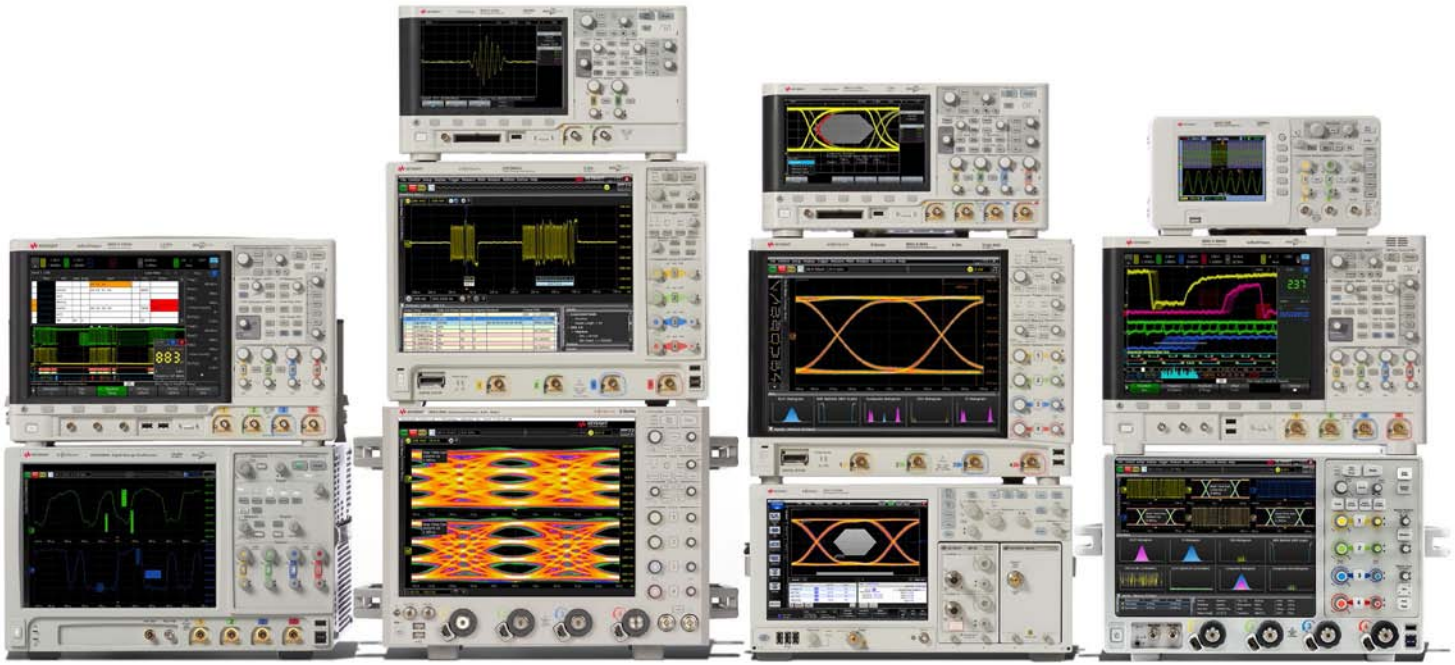

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Томск (3822)98-41-53
Тула (4872)74-02-29
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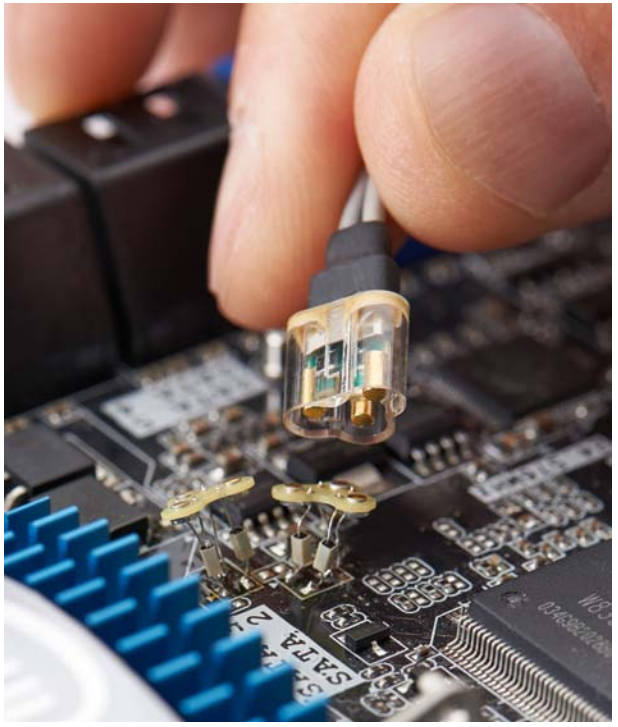
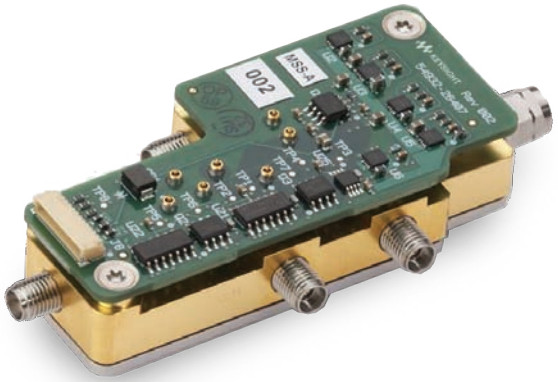
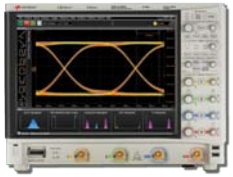




Model Comparison Chart

	U1600 Series	U2700 Series	1000 Series	2000 X-Series	3000T X-Series	4000 X-Series	6000 X-Series
							
Bandwidth	20 MHz to 200 MHz	100 MHz to 200 MHz	50 MHz to 200 MHz	70 MHz to 200 MHz	100 MHz to 1 GHz	200 MHz to 1.5 GHz	1 GHz to 6 GHz
Channels	2	2	2, 4	2, 2+8, 4, 4+8	2, 2+16, 4, 4+16	2, 2+16, 4, 4+16	2, 2+16, 4, 4+16
Sample rate	Up to 2 GSa/s	Up to 1 GSa/s	Up to 2 GSa/s	Up to 2 GSa/s	Up to 5 GSa/s	Up to 5 GSa/s	Up to 20 GSa/s
Memory depth	Up to 2 Mpts	32 Mpts, std.	Up to 20 kpts	Up to 1 Mpts	4 Mpts and segmented memory std.	4 Mpts and segmented memory std.	4 Mpts and segmented memory std.
Standard warranty	3 years	3 years	3 years	5 years	3 years	3 years	3 years
Calibration period	N/A	N/A	1 year	2 years	3 years	2 years	2 years
Built-in instruments	– 10,000-count resolution DMM – Datalogger	None	None	– 8 digital channels – 20 MHz FG – 5-digit counter – 3-digit DVM	– 16 digital channels – 20 MHz AWG – 8-digit counter – 3-digit DVM	– 16 digital channels – Dual 20 MHz AWG – 5-digit counter – 3-digit DVM	– 16 digital channels – Dual 20 MHz AWG – 10-digit counter – 3-digit DVM
Special triggers	None	None	None	– Serial protocol – Zone touch	– Serial protocol – Digital channels – Zone touch	– Serial protocol – Digital channels – Zone touch	– Serial protocol – Digital channels – Zone touch
Key features	– Handheld device – Dual window zoom and math – FFT – PC link software – Indoor, outdoor and night-vision viewing modes	– Portable – USB connected, PC hosted device – Waveform zoom and math – FFT – Advanced triggering; edge, pulse width, TV	– Portable – Most economical – FFT – Simultaneous viewing of main and zoomed waveforms	– Basic R&D bench – 50,000 waveforms/sec update rate – 8.5-inch display – Serial bus options – Fully upgradeable – 5 year warranty	Everything the 2000X has plus – 1,000,000 wfms/s update rate – Advanced math & power analysis – Capacitive touch	Everything the 3000T has plus – 12.1-inch capacitive touch screen – FFT, USB 2.0 pre-compliance and FPGA applications – Up to four active probes	– 450,000 wfms/s update rate Everything the 4000X has plus – Multi-touch display – Voice control – Jitter and real-time eye diagram analysis

Model Comparison Chart

	9000 Series	S-Series	90000A Series	V-Series	Z-Series	86100D DCA-X Series
						
Bandwidth	600 MHz to 4 GHz	500 MHz to 8 GHz	2.5 GHz to 13 GHz	8 GHz to 33 GHz	20 GHz to 63 GHz	65 GHz optical [1] 90 GHz electrical [1]
Channels	4 , 4+16	4 , 4+16	4	4, 4+16	4	Up to 16
Sample rate	Up to 20 GSa/s	Up to 20 GSa/s	Up to 40 GSa/s	Up to 80 GSa/s	Up to 160 GSa/s	Up to 250 kSa/s [1]
Memory depth	Up to 1 Gpts	Up to 800 Mpts	Up to 1 Gpts	Up to 2 Gpts	Up to 2 Gpts	Limited by hard drive
ADC bits	8	10	8	8	8	14 to 16 [1]
Special triggers	– InfiniiScan – Digital channels	– InfiniiScan – Digital channels	– InfiniiScan – A-B HW	– InfiniiScan – A-B HW – Digital channels – HW serial	– InfiniiScan – A-B HW	None
Key features	– Mid range R&D bench – Up to 16 independent/ cascaded math functions – More than 42 applications for compliance, debug and analysis	Everything the 9000 has plus – 15-inch capacitive touch display – Low-noise front-end – Industry's highest ENOB	– Ideal for high-speed digital & RF applications – More than 38 applications for compliance, debug, and analysis	– Best-in-class signal integrity – Longest 160-bit hardware serial trigger – More than 50 applications for compliance, debug, and analysis	– Best-in-class signal integrity – Industry's lowest noise and jitter measurement floors – More than 50 applications for compliance, debug, and analysis – RF, optical applications and emerging technologies analysis	– Multi-function sampling scope – Digital communication analyzer – Automated eye diagram analysis – Jitter and interference analyzer – TDR/TDT for impedance and S-parameter analysis

1. Module dependent.

U1600 Series Oscilloscopes

20 MHz to 200 MHz handheld scopes

Engineered for performance in rugged and portable applications

- See more clearly and differentiate simultaneous signals from both channels more easily with a 5.7-inch VGA TFT LCD display or 4.5-inch LCD color display [1]
- Up to 4 hours battery life and robust package – makes an ideal companion for installation and maintenance personnel and those on the go
- Scopes isolated channels enable floating measurements capability on the U1610A/20A
- Up to 1 GSa/s per channel real-time sampling rate and 1 Mpts recording length ensure you get high performance, even on a handheld
- 3-in-1 solution: Dual-channel scope, true RMS DMM and real-time data logger
- High-speed USB port for a quick and convenient way to save data into USB flash drive and/or to remote access using the scope [2]

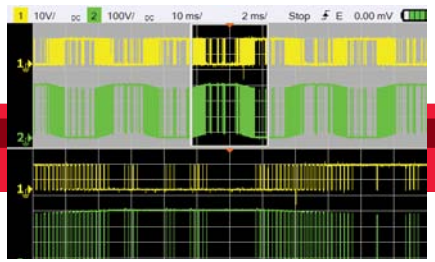
1. 5.7-inch VGA TFT LCD display for U1610A/ 20A and 4.5-inch LCD color display for U1602B/04B
2. USB host- Opt 001 is optional for U1602B/U1604B only

Models and specifications

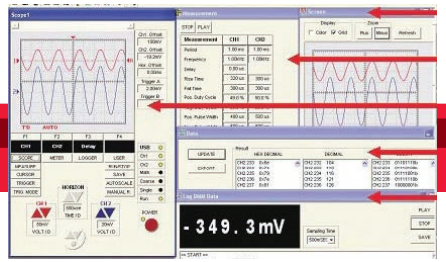
	U1602B	U1604B	U1610A	U1620A
Bandwidth	20 MHz	40 MHz	100 MHz	200 MHz
Sample rate	Up to 200 MSa/s [1]		Up to 1 GSa/s [1]	Up to 2 GSa/s [1]
Record length	Up to 125 Kpts		Up to 120 Kpts	Up to 2 Mpts
Channels	2			
Display	4.5” color CSTN LCD (320x240)		5.7” VGA TFT LCD	
Channel isolation	N/A		Yes	
Vertical resolution	8 bits			
Vertical sensitivity	5 mV/div to 100 V/div		2 mV/div to 50 V/div	
Maximum input	CAT III 300 Vrms (up to 400 Hz) from terminal to ground		CAT III 600 Vrms (with 10:1 probe)	
			CAT III 300 Vrms (direct 1:1 probe)	
Input impedance	1 MΩ II < 20 pF		1 MΩ ± 1% ≈ 22 pF ± 3 pF	
Timebase range	50 ns to 50 s/div	10 ns to 50 s/div	5 ns/div to 50 s/div	2 ns/div to 50 s/div
Triggering	Edge, pattern, pulse width, video		Edge, glitch, TV, Nth edge , CAN, LIN	
Dimensions	24.1 cm high x 13.8 cm wide x 6.6 cm deep		27 cm high x 18.3 cm wide x 6.5 cm deep	
Weight	1.5 kg (3.3 lbs)		< 2.5 kg (5.5 lbs)	
Battery life	Up to 4 hours		Up to 3 hours	

1. Single-channel operation.

Handheld high performance. In-plant or off-site, take advantage of a full-featured scope with 22 automatic measurement functions, advanced triggering, high sampling rate and deep memory.



High-precision zoom-in capability. Deep memory and a high sampling rate let you capture long time spans and non-repeating signals, then zoom in to the segment of interest to scrutinize subtle details.



Easy connections. PC Link software handles your data collection, storage and documentation needs – or lets you control the unit remotely – using a USB 2.0 full-speed connection.

Scope additions and enhancements

Probes

Improve your measurement reliability with our comprehensive selection of probes:

- All models come with the U1561A CAT III 600 V probe
- See our complete list of compatible probes on pages 30 to 31

Accessories

Don’t forget options such as the CAT III 600 V 100:1 probe, desktop charger and Li-Ion battery pack, AC current clamp, temperature adapter, carrying case and USB host capability.

1000 Series Oscilloscopes

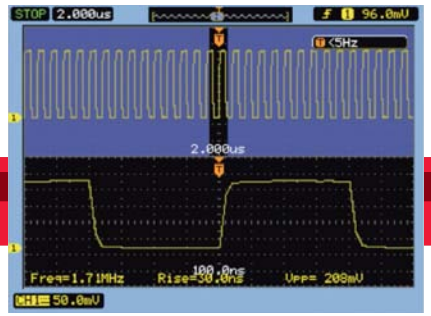
50 MHz to 200 MHz entry scopes

Engineered to give you more scope than you thought you could afford

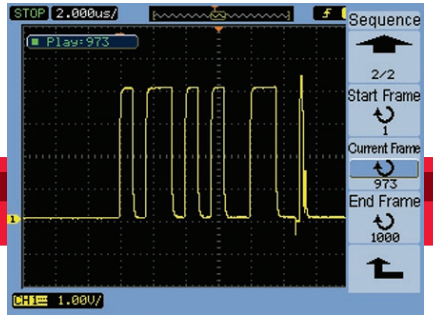
- The most affordable oscilloscope brings you the quality and support that ultimately increases your measurement confidence.
- 23 automatic measurements give you quick access to powerful functions
- Sequence mode allows easy debug with waveform recording, playback and storage
- Go/no-go mask testing automatically detects waveforms that deviate from the standard you set
- 3-year standard warranty extendable to 5-years to protect your investment

Models and specifications

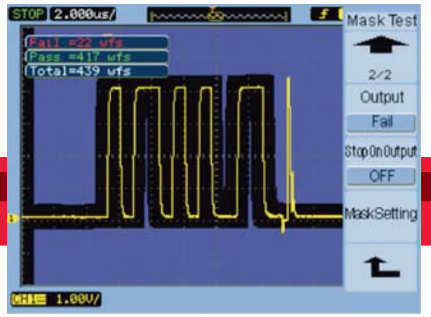
	1052B	1072B	1102B	1152B	1004A	1014A	1024A
Bandwidth	50 MHz	70 MHz	100 MHz	150 MHz	60 MHz	100 MHz	200 MHz
Sample rate	1 GSa/s				2 GSa/s		
Channels DSO	2				4		
Memory	16 Kpts standard				20 Kpts standard		
Vertical resolution	8 bits						
Vertical sensitivity	2 mV/div to 10 V/div						
Maximum input	CAT I 300 Vrms, 400 Vpk; transient overvoltage 1.6 kVpk						
Input impedance	1 MΩ ± 2% in parallel with 15 pF ± 3 pF				1 MΩ ± 1% in parallel with 18 pF ± 3 pF		
Timebase range	5 nsec/div to 50 sec/div		2 nsec/div to 50 sec/div	5 nsec/div to 50 sec/div		2 nsec/div to 50 sec/div	1 nsec/div to 50 sec/div
Time scale accuracy	50 ppm						
Triggering	Edge, video, pulse width, alternate, pattern (A models only)						
Dimensions	30.3 cm wide x 15.4 cm high x 13.3 cm deep				32.46 cm wide x 15.78 cm high x 12.92 cm deep		
Warranty	3 years standard						
Weight	2.4 kgs (5.3 lbs)				3.03 kgs (6.7 lbs)		



With True Zoom mode you can view a long record and the details of a zoom window simultaneously.



Use sequence mode to record up to 1000 trigg review in playback mode to find anomalies.



Mask testing provides a quick pass/fail comparison incoming signal to a test envelope you define.

Scope additions and enhancements

Probes

Improve your measurement reliability with our comprehensive selection of probes:

- DSO1052B, DSO1072B, DSO1102B, DSO1004A and DSO1014A come with the N2826B 150 MHz 10:1 passive probe
- DSO1152B and DSO1024A comes with N2863B 300 MHz 10:1 passive probe
- See our complete list of compatible probes on pages 30 to 31

Accessories

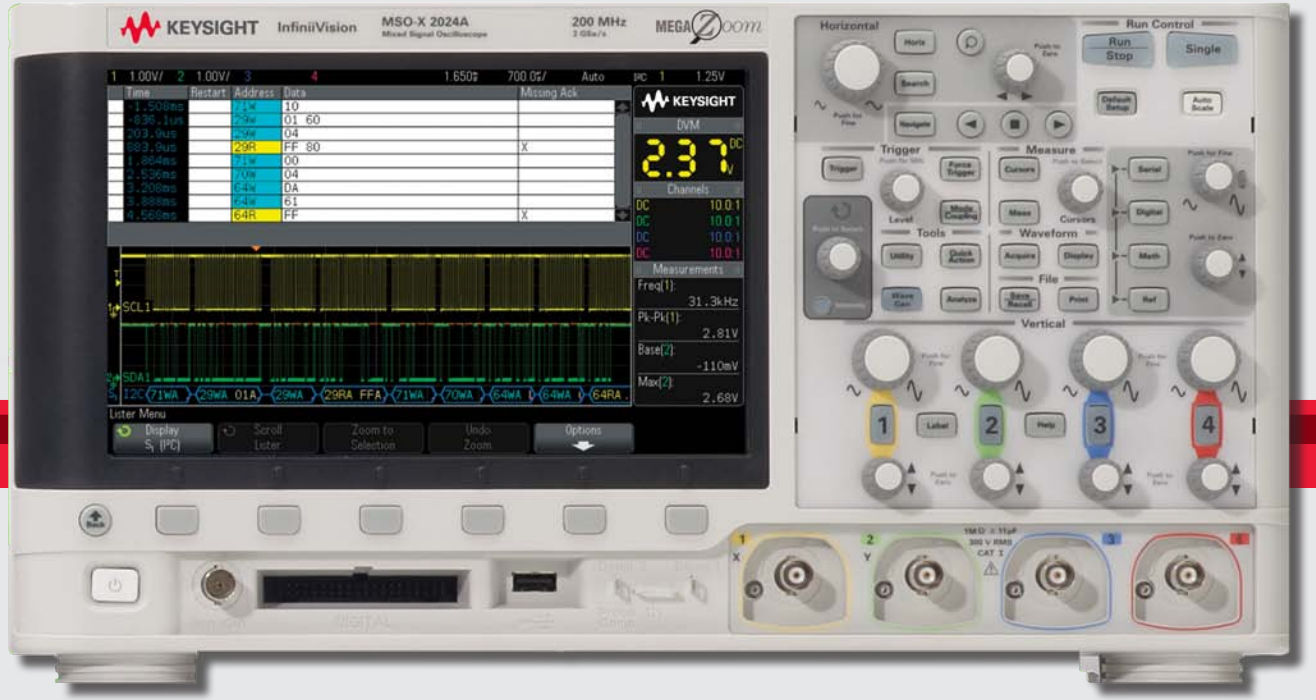
Don't forget options that make measurements faster and more convenient, such as the rackmount kit, education training kit and soft carrying case.

InfiniiVision 2000 X-Series Oscilloscopes

70 MHz to 200 MHz economy scopes

Breakthrough technology delivers more scope for the same budget

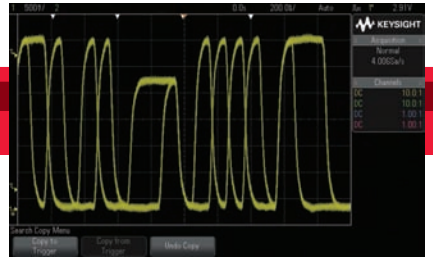
- 8.5-inch WVGA display is the largest in this class
- 50,000 waveforms per second update rate lets you see more of your signal detail and infrequent anomalies more of the time
- 5 instruments in 1: oscilloscope, mixed-signal oscilloscope, WaveGen function generator, serial protocol analyzer and integrated digital voltmeter
- First fully upgradable oscilloscope: bandwidth, memory, MSO, WaveGen and measurement applications
- Supports BenchVue for logging measurement data and screen shots and Infiniium Offline analysis software



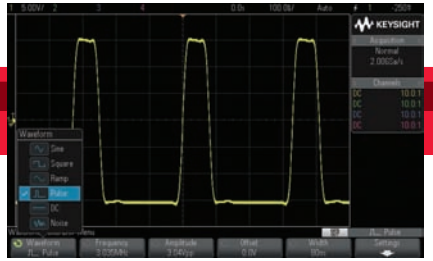
Models and specifications

		2002A	2004A	2012A	2014A	2022A	2024A
Bandwidth		70 MHz		100 MHz		200 MHz	
Sample rate		2 GSa/s half channels, 1 GSa/s full channels					
Channels	DSOX	2	4	2	4	2	4
	MSOX	2 + 8	4 + 8	2 + 8	4 + 8	2 + 8	4 + 8
Memory		100 kpts, std. 1 Mpts and segmented memory, opt.					
Display		8.5-inch display					
Waveform update rate		> 50,000 waveforms per second					
Vertical resolution		8 bits (up to 12 bits with averaging or high-resolution mode)					
Vertical sensitivity		1 mV/div ~ 5 V/div					
Integrated instruments		Optional MSO, function generator, protocol analyzer, DVM					
Bandwidth limit		Approximately 20 MHz					
Maximum input voltage		CAT I 300 Vrms, 400 Vpk, CAT II 300 Vrms, 400 Vpk					
Input impedance		1 MΩ ± 2% (11 pF)					
Timebase range		5 ns/div to 50 s/div				2 ns/div to 50 s/div	
Time scale accuracy		25 ppm ± 5 ppm per year					
Triggering		Edge, pulse width, pattern, video, I²C*, SPI [1], CAN [1], LIN [1], UART/RS-232/422/485 [1]					
Connectivity		USB Device x2, USB host x 1, std. LAN, VGA, GPIB, opt.					
Dimensions		38.1 cm wide x 20.4 cm high x 14.1 cm deep					
Weight		3.85 kg (8.5 lbs)					
Warranty		5 years standard					

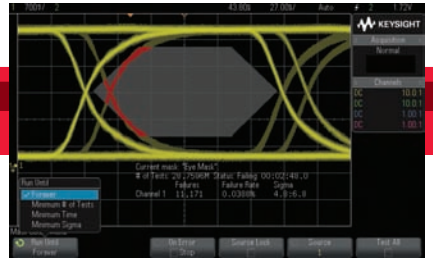
1. Optional. Protocol decodes and digital channels (MSO) will not work simultaneously.



See more of your signal more of the time with the largest screen in its class, the deepest memory and the fastest waveform update rates.



Do more with the power of 5 instruments in 1: oscilloscope, logic timing analyzer (opt.), integrated WaveGen arbitrary-function generator (opt.), serial protocol analyzer (opt.), and integrated digital voltmeter (opt.).



Get more investment protection with this fully-upgradable scope, including bandwidth and memory.

Scope additions and enhancements

Probes

Improve your measurement reliability with our comprehensive selection of probes:

- DSO/MSOX2002A, 2004A, 2012A and2014A come with the N2862B 150 MHz passive probe, 10:1 attenuation
- DSO/MSOX2022A and 2024A come with the N2863B 300 MHz passive probe, 10:1 attenuation
- See our complete list of compatible probes on pages 30 to 31

Accessories

Don't forget options such as the VGA/LAN or GPIB modules, soft carrying case, and rackmount kit.

Memory, bandwidth, and DSO-to-MSO upgrades

Protect your investment with the flexibility to upgrade your memory, bandwidth, and add MSO channels at any time.

Applications

Expand your scope's capabilities with our powerful lineup of applications:

- Integrated feature options: WaveGen function generator, 3-digit voltmeter, mask testing, education training kit, and segmented memory
- General and serial protocol applications: I²C, SPI, CAN, LIN, UART/RS-232/422/485 (Serial is only available on analog channels with the 2000 X-Series.)
- See our list of applications on pages 26 to 29

InfiniiVision 3000T X-Series Oscilloscopes

100 MHz to 1 GHz digital storage and mixed signal scopes

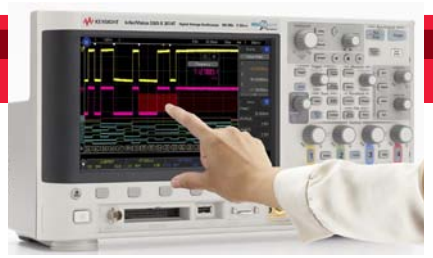
Touch, discover, solve

- 8.5-inch capacitive touch display: designed for touch interface - simplify use
- 1,000,000 waveforms per second update rate lets you see more of your signal detail and infrequent anomalies more of the time
- Exclusive Zone touch triggering simplifies complex triggering to a touch of the screen
- 6 instruments in 1: oscilloscope, mixed-signal oscilloscope, WaveGen function generator serial protocol analyzer, time/frequency correlated measurements with gated FFT, integrated digital voltmeter and 8-digit precision counter
- First fully-upgradable oscilloscope: bandwidth, MSO, WaveGen, DVM, and measurement application

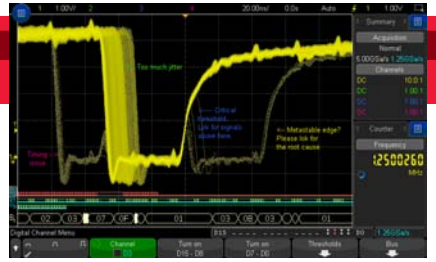
Models and specifications

		3012T	3014T	3022T	3024T	3032T	3034T	3052T	3054T	3102T	3104T
Bandwidth		100 MHz		200 MHz		350 MHz		500 MHz		1 GHz	
Sample rate		5 GSa/s on half channels, 2.5 GSa/s on full channels									
Channels DSO	DSOX	2	4	2	4	2	4	2	4	2	4
	MSOX	2 + 16	4 + 16	2 + 16	4 + 16	2 + 16	4 + 16	2 + 16	4 + 16	2 + 16	4 + 16
Memory		4 Mpts and segmented memory, std.									
Display		8.5-inch capacitive touch display									
Waveform update rate		> 1,000,000 waveforms per second									
Integrated instruments		Optional MSO, 20 MHz arbitrary waveform generator, protocol analyzer, DVM, 8 digit counter									
Vertical resolution		8 bits (up to 12 bits with averaging or high-resolution mode)									
Vertical sensitivity		1 MΩ = 1 mV/div to 5 V/div, 50 Ω = 1 mV/div to 1 V/div									
Bandwidth limits		Approximately 20 MHz									
Maximum input voltage		1 MΩ = CAT I 300 Vrms, 400 Vpk; transient overvoltage 1.6 kVpk, 50 Ω = ≤ 5 Vrms									
Input impedance		Selectable: 1 MΩ ± 1% (14 pF), 50 Ω ± 1.5%									
Timebase range		5 ns/div ~ 50 s/div		2 ns/div ~ 50 s/div				1 ns/div ~ 50 s/div		500 ps/div ~ 50 s/div	
Time scale accuracy		1.6 ppm + aging									
Triggering		Zone touch trigger, edge, edge then edge (B trigger), pulse width, pattern, OR, rise/fall time, Nth edge burst, runt, setup & hold, video, enhanced video (HDTV) [1], USB [1], ARINC429 [1], CAN [1], CAN-FD [1], CAN-dbc [1], FlexRay [1], SENT [1], I^2C [1], I^2S [1], LIN [1], LIN-symbolic [1], MIL-STD 1553 [1], SPI [1], UART/RS-232/422/485 [1]									
Connectivity		USB device x1, USB host x2, LAN [1], VGA [1], GPIB [1]									
Dimensions		38.1 cm wide x 20.4 cm high x 14.2 cm deep									
Weight		4.0 kg (9.0 lbs)									
Warranty		3 years standard, 5 years optional									
Standard calibration cycle		5 years									

1. Optional. Protocol decodes and digital channels (MSO) will not work simultaneously.



Touch
- Design for Touch: 8.5 in capacitive touch improves productivity
- Four annotation & touch simplifies documentation



Discover
- Identify with fast waveform update, isolate with zone trigger
- Uncompromised 1 M wfm/sec update rate
- Hardware zone touch trigger

Solve
- 6-in-1 fully upgradable instruments
- 12 low speed serial protocol trigger and decode
- Gated FFT time/frequency domain correlation

Scope additions and enhancements

Probes

Improve your measurement reliability with our comprehensive selection of probes:

- All 3000T X-Series models come with one standard N2843A 500-MHz passive probe (10:1 attenuation) per channel
- N2795A (1 GHz, 10:1, 1 pF, 1 MΩ) is the recommended singled end active probe.
- For your best power rail measurement, use N7020A 2 GHz power rail probe (1:1, ± 24 V offset range at 50 Ω)
- See complete list of compatible probes on pages 30 to 31

Accessories

Don't forget options such as the VGA/LAN or GPIB modules, soft carrying case, and rackmount kit.

Memory, bandwidth, and DSO-to-MSO upgrades

Protect your investment with the flexibility to upgrade your memory, bandwidth, and add MSO channels at any time.

Applications

Expand your scope's capabilities with our powerful lineup of applications:

- Integrated feature options: WaveGen function generator, 3-digit voltmeter, mask testing, education training kit, and segmented memory
- General and serial protocol applications: MIL-STD 1553/ARINC 429, audio serial (I^2S), CAN/CAN-FD, LIN, FlexRay, SENT, UART/RS-232/232/244/485, I^2C, SPI, and power analysis
- See our list of applications on pages 26 to 29

InfiniiVision 4000 X-Series Oscilloscopes

200 MHz to 1.5 GHz digital storage and mixed signal scopes

Oscilloscope experience redefined

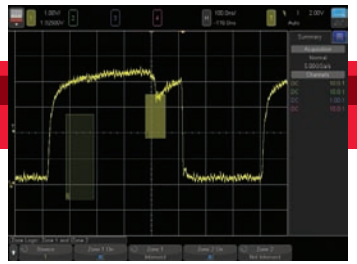
- Industry-exclusive 12.1-inch capacitive touch display is the largest display in this class of oscilloscopes
- 1,000,000 waveforms per second update rate means you can see more of your signal more of the time
- Exclusive Zone touch triggering simplifies complex triggering to a touch of the screen
- Get 5 instruments in 1: oscilloscope, mixed-signal oscilloscope, serial protocol analyzer, WaveGen dual-channel function/arbitrary generator and 3-digit voltmeter
- Fully upgradable: bandwidth, MSO WaveGen, DVM and measurement applications

Models and specifications

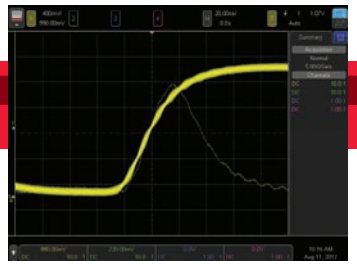
		4022A	4024A	4032A	4034A	4052A	4054A	4104A	4154A
Bandwidth		200 MHz		350 MHz		500 MHz		1 GHz	1.5 GHz
Sample rate		5 GSa/s half channels, 2.5 GSa/s full channels							
Channels	DSOX	2	4	2	4	2	4	4	4
	MSOX	2 + 16	4 + 16	2 + 16	4 + 16	2 + 16	4 + 16	4 + 16	4 + 16
Memory		4 Mpts and segmented memory, std.							
Display		12.1-inch capacitive touch display							
Waveform update rate		1,000,000 waveforms per second							
Vertical resolution		8 bits (up to 12 bits with averaging or high-resolution mode)							
Vertical sensitivity		1 mV/div to 5 V/div (1 MΩ and 50 Ω)						1 mV/div to 5 V/div (1 MΩ), 1 mV/div to 1 V/div (50 Ω)	
Integrated instruments		MSO, dual-channel waveform/function generator, protocol analyzer, DVM							
Bandwidth limit		Approximately 20 MHz							
Maximum input voltage		1 MΩ: 300 Vrms, 400 Vpk; transient overvoltage 1.6 kVpk, 50 Ω: ≤ 5 Vrms							
Input impedance		1 MΩ: Selectable 1 MΩ ± 1% (16 pF), 50 Ω ± 1.5%							
Timebase range		2 ns/div to 50 s/div				1 ns/div to 50 s/div		500 ps/div to 50 s/div	
Time scale accuracy		± 10 ppm							
Triggering		Zone touch trigger, edge, edge then edge (B trigger), pulse width, pattern, OR, rise/fall time, Nth edge burst, runt, setup & hold, video, enhanced video (HDTV) [1], USB 2.0 [1], ARINC429 [1], CAN/CAN-FD/CAN-dbc [1], FlexRay [1], SENT [1], I^2C [1], I^2S [1], LIN [1], MIL-STD 1553 [1], SPI [1], UART/RS-232/422/485 [1]							
Connectivity		LAN, VGA, USB device x1, USB host x3, std. GPIB, opt.							
Dimensions		45.4 cm wide x 29.8 cm high x 15.6 cm deep							
Weight		6.3 kg (13.9 lbs)							

1. Optional.

Experience the capacitive 12-inch touch screen. Drag measurements, cursors and sidebar panels for quick oscilloscope setup. Use the alpha-numeric touch pad for dramatically faster annotation.



Experience Zone touch trigger. Triggering has never been this easy before; simply draw a box around your signal of interest for instantaneous triggering.



Experience the speed. Industry's fastest waveform update rate uncovers infrequent anomalies other scopes may miss.

Experience the integration. Save your bench space and improve your measurement efficiencies with built-in optional protocol analyzer, MSO, dual-channel WaveGen and DVM.

Scope additions and enhancements

Probes

Improve your measurement reliability with our comprehensive selection of probes:

- All 4000 X-Series models come with one standard N2894A 700-MHz passive probe (10:1 attenuation) per channel
- See complete list of compatible probes on pages 30 to 31

Accessories

Don't forget options such as the rackmount kit and soft carrying case.

Bandwidth, and DSO-to-MSO upgrades

Protect your investment with the flexibility to upgrade your bandwidth and add MSO channels at any time.

Applications

Expand your scope's capabilities with our powerful lineup of applications:

- Integrated feature options: Dual-channel WaveGen, 3-digit voltmeter, mask/limit testing and education training kit
- General and serial protocol applications: MIL-STD 1553, ARINC 429, USB 2.0 (low-, full-, and hi-speed), audio serial (I^2S), CAN/CAN-FD, LIN, FlexRay, SENT, UART/RS-232/232/244/485, I^2C, SPI, Xilinx FPGA dynamic probe, power analysis, USB 2.0 signal quality and HDTV
- See our list of applications on pages 26 to 29

InfiniiVision 6000 X-Series Oscilloscopes

1 GHz to 6 GHz digital storage and mixed signal scopes

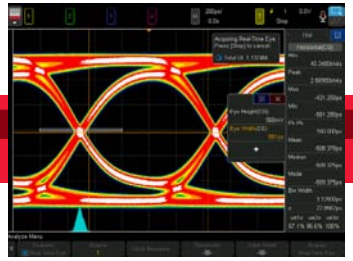
The new standard in price performance

- Industry-exclusive 12.1-inch capacitive multi-touch display with multi-language voice control
- Standard histogram and color grade features add depth to your signal analysis
- Jitter and real-time eye diagram analysis give you confidence in the signal integrity of your design
- Exclusive Zone simplifies complex triggering to a touch of the scope's screen
- 450,000 waveforms per second update rate gives you a high probability of capturing random and infrequent events
- Get 6 instruments in 1: oscilloscope, mixed-signal oscilloscope, serial protocol analyzer, WaveGen dual-channel function/arbitrary generator, 10-digit counter with totalizer and 3-digit voltmeter
- Fully upgradable: bandwidth, MSO, WaveGen, DVM and measurement applications

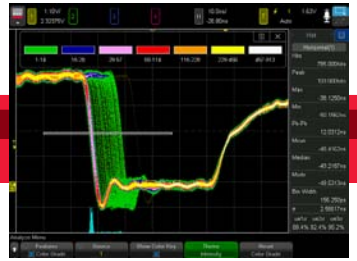
Models and Specifications

		6002A	6004A	6002A+ opt	6004+ opt	6002A+ opt	6004+ opt	6002A+ opt	6004+ opt
Bandwidth	Opt.	N/A	N/A	DSOX6B10T252BW	DSOX6B10T254BW	DSOX6B10T402BW	DSOX6B10T404BW	DSOX6B10T602BW	DSOX6B10T604BW
		1 GHz		2.5 GHz		4 GHz		6 GHz	
Sample rate		20 GSa/s half channels, 10 GSa/s full channels							
Channels	DSOX	2	4	2	4	2	4	2	4
	MSOX	2 + 16	4 + 16	2 + 16	4 + 16	2 + 16	4 + 16	2 + 16	4 + 16
Memory		≤ 2 GSa/s: 4 Mpts half, 2 Mpts all channels; segmented memory, std.							
		> 2 GSa/s: 1 Mpts half, 500 kpts all channels; segmented memory, std.							
Display		12.1-inch capacitive multi-touch display							
Waveform update rate		Up to 450,000 waveforms per second							
Vertical resolution		8 bits (up to 12 bits with averaging or high-resolution mode)							
Vertical sensitivity		1 mV/div to 5 V/div (1 MΩ); 1 mV/div ~ 1 V/div (50 Ω)							
Bandwidth limit		Selectable per channel: 20 MHz, 200 MHz (1 MΩ); 20 MHz, 200 MHz, 1.5 GHz, 3 GHz (50 Ω)							
Maximum input voltage		1 MΩ: 300 Vrms, 400 Vpk; transient overvoltage 1.6 kVpk 50 Ω: ± 5 Vpk max							
Input impedance		Selectable: 1 MΩ ± 1% (14 pF), 50 Ω ± 3%							
Timebase range		500 ps/div to 50 s/div		200 ps/div to 50 s/div		100 ps/div to 50 s/div			
Time scale accuracy		± 1.6 ppm + aging factor							
Triggering		Zone touch trigger, edge, edge then edge (B trigger), pulse width, pattern, OR, rise/fall time, Nth edge burst, runt, setup & hold, video, enhanced video (HDTV) [1], USB 2.0 [1], ARINC429 [1],CAN/CAN-FD/CAN-dbc [1], FlexRay [1], SENT [1], I^2C [1], I^2S [1], LIN [1], MIL-STD 1553 [1], SPI [1], UART/RS-232/422/485 [1]							
Connectivity		LAN, VGA, USB device x1, USB host x3, std. GPIB, opt.							
Dimensions		43.8 cm wide x 29.2 cm high x 15.5 cm deep							
Weight		6.8 kg (15 lbs)							

1. Optional.



New performance standard. Get both portability and performance with surprisingly low starting prices and standard hardware bandwidth limit control, achieving a noise floor of 210 uVrms at 1 mV/div (6 GHz) and 115 uVrms at 1 mV/div (1 GHz).



New visualization standard. Quickly troubleshoot your design with color grade to reveal how often a particular event occurs. See an infrequent signal or problematic waveform with a fast waveform update rate and then simply isolate it with Zone touch triggering.

New integration standard. Takes multi-ple-instrument integration to the next level by integrating six instruments in one. Use enhanced color FFT functions and multi-language voice control for hands-free oscilloscope operation.

Visualize signal integrity. Features jitter analysis with clock recovery. Use serial and clock TIE measurements, and view jitter in various plots including jitter: histograms, trend, spectrum and statistics. Application also includes color-graded real-time eye analysis.

Scope additions and enhancements

Probes

Improve your measurement reliability with our comprehensive selection of probes:

- All 6000 X-Series models come standard with one N2894A 700-MHz passive probe (10:1 attenuation) per channel
- For high bandwidth probing solutions, choose the award-winning InfiniiMax 1130 Series, N2750A-52A InfiniiMode probes or N2795A/96A single-ended active probes
- See complete list of compatible probes on pages 30 to 31

Accessories

Don't forget options such as the rackmount kit and soft carrying case.

Bandwidth, and DSO-to-MSO upgrades

Protect your investment with the flexibility to upgrade your bandwidth and add MSO channels at any time.

Applications

Expand your scope's capabilities with our powerful lineup of applications:

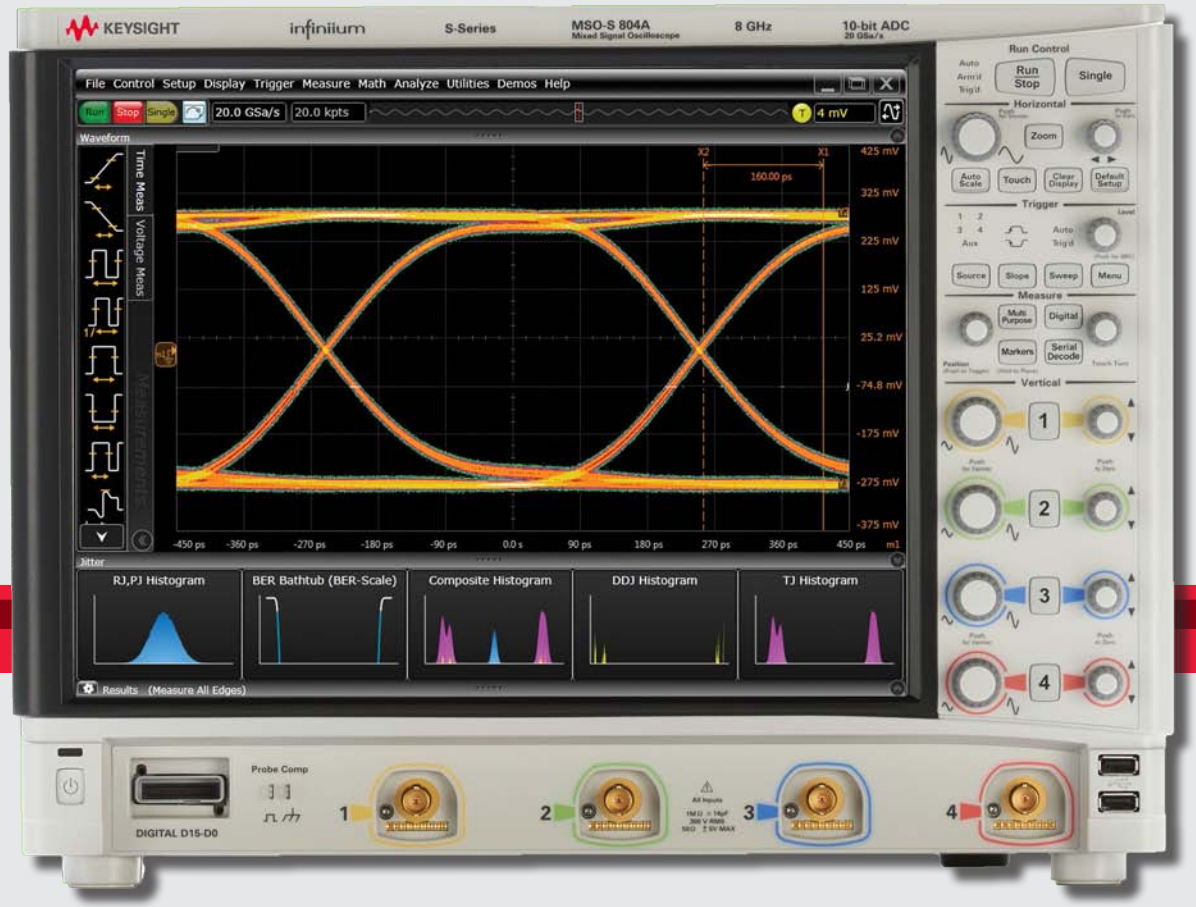
- Integrated feature options: dual-channel WaveGen, DVM, 10-digit counter (with totalizer), jitter analysis, mask/limit testing and education training kit
- General and serial protocol applications: MIL-STD 1553, ARINC 429, USB 2.0 (low-, full-, and hi-speed), I²S, CAN/CAN-FD, LIN, FlexRay, SENT, RS-232, UART, I²C, SPI, Xilinx FPGA dynamic probe, power analysis, USB 2.0 signal quality and HDTV
- See our list of applications on pages 26 to 29

Infiniium S-Series Oscilloscopes

500 MHz to 8 GHz digital storage and mixed signal scopes

The new standard in superior measurements

- The industry's fastest 10-bit ADC and low-noise front-end technology work together to provide the industry's best signal integrity
- The advanced frame with a solid state drive (SSD) speeds boot-up time
- Provides bandwidth, memory, triggering and signal fidelity for debugging, characterizing and analyzing a wide variety of analog, serial, digital and RF signals
- The large 15-inch capacitive touch screen provides easy multi-touch usability



Models and specifications

		054A	104A	204A	254A	404A	604A	804A
Bandwidth		500 MHz	1 GHz	2 GHz	2.5 GHz	4 GHz	6 GHz	8 GHz
Sample rate		20 GSa/s on half channels, 10 GSa/s on full channels						
Channels	DSOS	4	4	4	4	4	4	4
	MSOS	4 + 16	4 + 16	4 + 16	4 + 16	4 + 16	4 + 16	4 + 16
Memory (4-ch)		50 Mpts, std, 800 Mpts, opt.						
Display		15" XGA capacitive touch screen						
Vertical resolution		10 bits (Up to 12 bits with high-resolution mode)						
Vertical sensitivity		50 Ω: 1 mV/div to 1 V/div, 1 MΩ: 1 mV/div to 5 V/div						
Bandwidth limit		20 MHz, 200 MHz custom and increments of 500 MHz, up to max bandwidth						
Maximum input		50 Ω: 5 Vpp, 1 MΩ: 300 Vrms						
Input impedance		50 Ω: ± 3.5%, 1 MΩ: ± 1% (14 pF typical)						
Timebase range		5 ps/div to 50 s/div						
Time scale accuracy		± (100 + 75 [2]) ppb						
Triggering		3-stage sequence trigger: 2-stage A-B hardware and 1-stage InfiniiScan software trigger. Supported triggers: Edge, edge transition, edge then edge, glitch, line, pulse width, runt, timeout, patter/pulse range, state, setup/hold, window, protocol [1]						
Connectivity		LAN, VGA, DisplayPort, USB device x6, USB host x1						
Dimensions		43 cm wide x 33 cm high x 23 cm deep						
Weight		12 kg (26.5 lbs)						

1. Optional.
2. Years since calibration.

Industry's best signal integrity. A low-noise front end and correction filters ensure flat frequency response.

Most advanced platform. A next-generation user-interface and powerful motherboard provide fast computations even with advanced math and deep memory enabled.

Broadest range of capability. Features 16 MSO channels, more than 50 automated measurements, 16 math functions, gating and spectral viewer.

Scope additions and enhancements

Probes

Improve your measurement reliability with our comprehensive selection of probes:

- All models come with four N2873A 10:1, 500 MHz miniature passive probes, and MSO models include a flying lead MSO cable set
- For high bandwidth probing solutions, choose the award-winning InfiniiMax 1130A Series, N2750A-52A InfiniiMode probes or N2795A/96A single-ended active probes
- See our complete list of compatible probes on pages 30 to 31

Accessories

Don't forget options such as the removable SSD and rackmount kit

Bandwidth, memory and DSO-to-MSO upgrades

Protect your investment with the flexibility to upgrade your bandwidth and add MSO channels at any time.

Applications

Expand your scope's capabilities with our powerful lineup of applications:

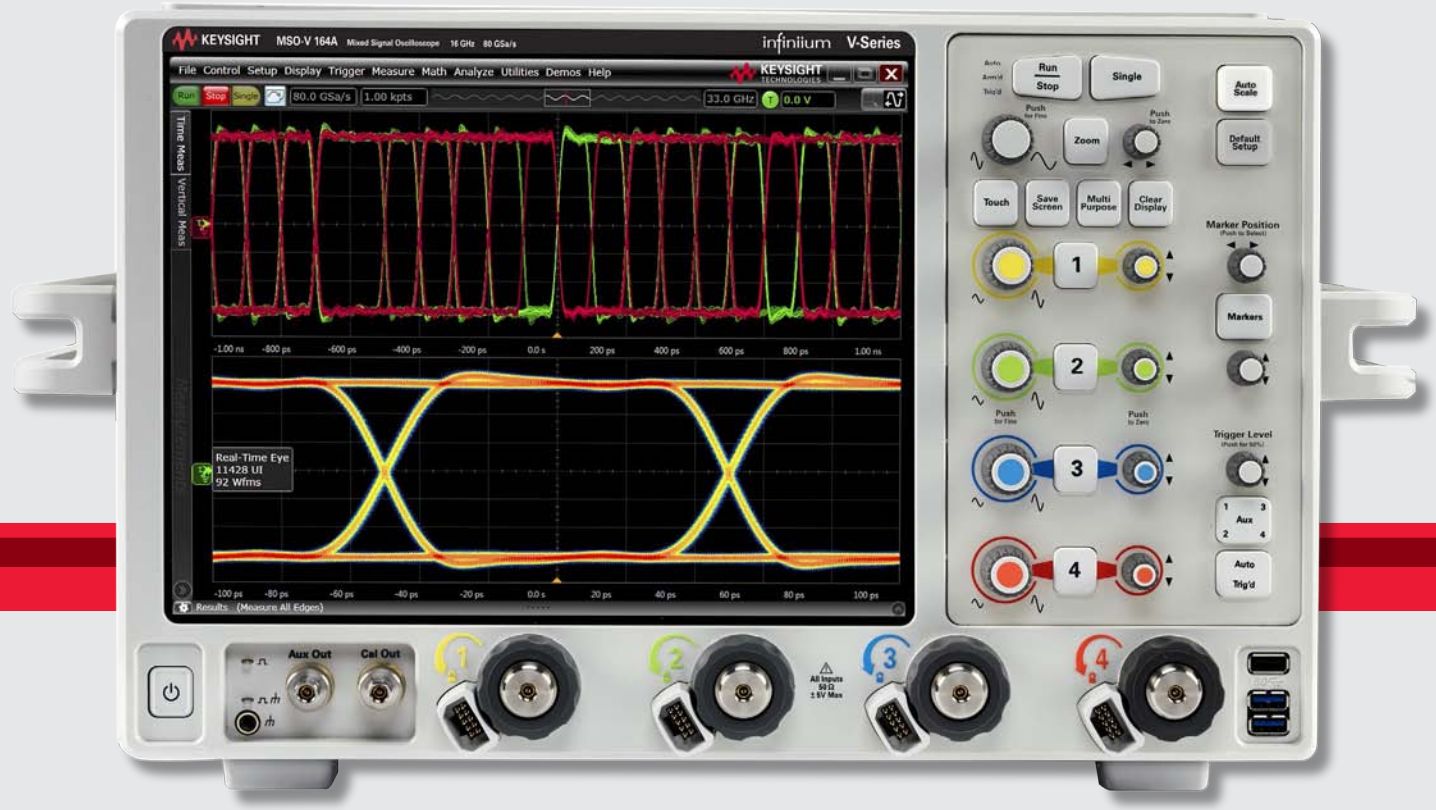
- Compliance testing: USB 2.0, Ethernet, DDR 1/2/3, MIPI D-PHY and more
- Protocol analysis: I²C, eSPI, CAN, RS-232/UART, USB, PCI Express, JTAG, 8B/10B, MIPI D-PHY, SVID, DigRF and others
- Other: Jitter, InfiniiScan, and VSA
- See our complete list of applications on pages 26 to 29

Infiniium V-Series Oscilloscopes

8 GHz to 33 GHz high-performance real-time lab scopes

Achieve clarity faster with your design validation

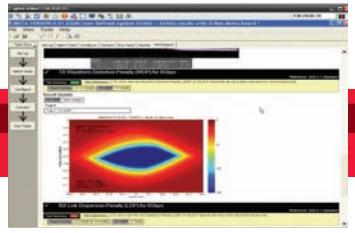
- Best-in-class signal integrity for superior measurement accuracy
- Industry's longest 160-bit hardware serial trigger
- Highest-performance digital channels at 20 GSa/s
- Industry's broadest software and application solutions
- Most advanced 30 GHz oscilloscope probing system



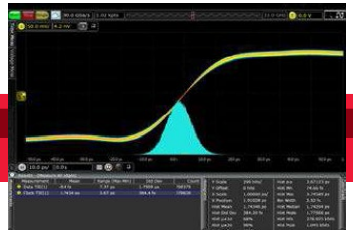
Models and specifications

DSO and DSA models		V084A	V134A	V164A	V204A	V254A	V334A
Bandwidth		8 GHz	13 GHz	16 GHz	20 GHz	25 GHz	33 GHz
Sample rate		80 GSa/s on half channels, 40 GSa/s on full channels					
Channels	DSO	4	4	4	4	4	4
	MSO	4 + 16	4 + 16	4 + 16	4 + 16	4 + 16	4 + 16
Display		12.1" XGA capacitive touch screen					
Display update rate		> 400,000 waveforms per second (in segmented memory mode)					
Memory		50 Mpts, std. Up to 2 Gpts, opt. (100 Mpts std. on DSA)					
Vertical resolution		8 bits (≥ 12 bits with high-resolution mode or averaging)					
Vertical sensitivity		> 50 mV/div to 100 mV/div					
Sample clock jitter		< 100 fs					
Maximum input voltage		± 5 V					
Input impedance		50 Ω, ± 3%					
Timebase range		2 ps/div to 5 s/div real-time					
Time scale accuracy		± 0.1 ppm (immediately after calibration), ± 0.1 ppm/year (aging)					
Triggering		3-stage sequence trigger: 2-stage A-B hardware and 1-stage InfiniiScan software trigger. Supported triggers: Edge, edge transition, edge then edge, glitch, pulse width, runt, timeout, pattern, state, setup and hold, window, bit serial, video, protocol [1]					
Typical noise floor		1.04	1.09	1.32	1.54	1.73	2.03
Maximum data transfer rate		200 MSa/s					
Dimensions		26.6 cm wide x 43.6 cm high x 49.2 cm deep					
Weight		23.7 kg (52.2 lbs)					
Power		100 to 240 VAC at 50/60 Hz; input power 800 Watts					

1. Optional.

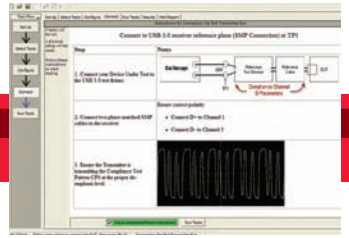


User-defined application software allows automated compliance testing on proprietary buses. Quickly program and automate any set of measurements with an interface similar to compliance test software while emerging test standards solidify.



Lowest real-time scope jitter measurement floor. Your signal rise times are more accurately depicted.

Quickly characterize and compensate the frequency response. PrecisionProbe uses its 200 GHz indium phosphide process to create a fast edge for characterization.



Certified compliance testing. Use one of the many available compliance application software packages (to test standards such as USB 3.0).

Scope additions and enhancements

Probes

Improve your measurement reliability with our comprehensive selection of probes:

- Industry's first 30 GHz InfiniiMax III probing system and new InfiniiMax III+ with InfiniiMode feature for measuring differential, single-ended and common mode measurements with a single probe connection
- See our complete list of compatible probes on pages 30 to 31

Accessories

Don't forget options such as the rackmount kit and transit case.

Memory

Increase memory depth at any time.

Bandwidth

Protect your investment with bandwidth upgrades after purchase.

Applications

Expand your scope's capabilities with our powerful lineup of applications:

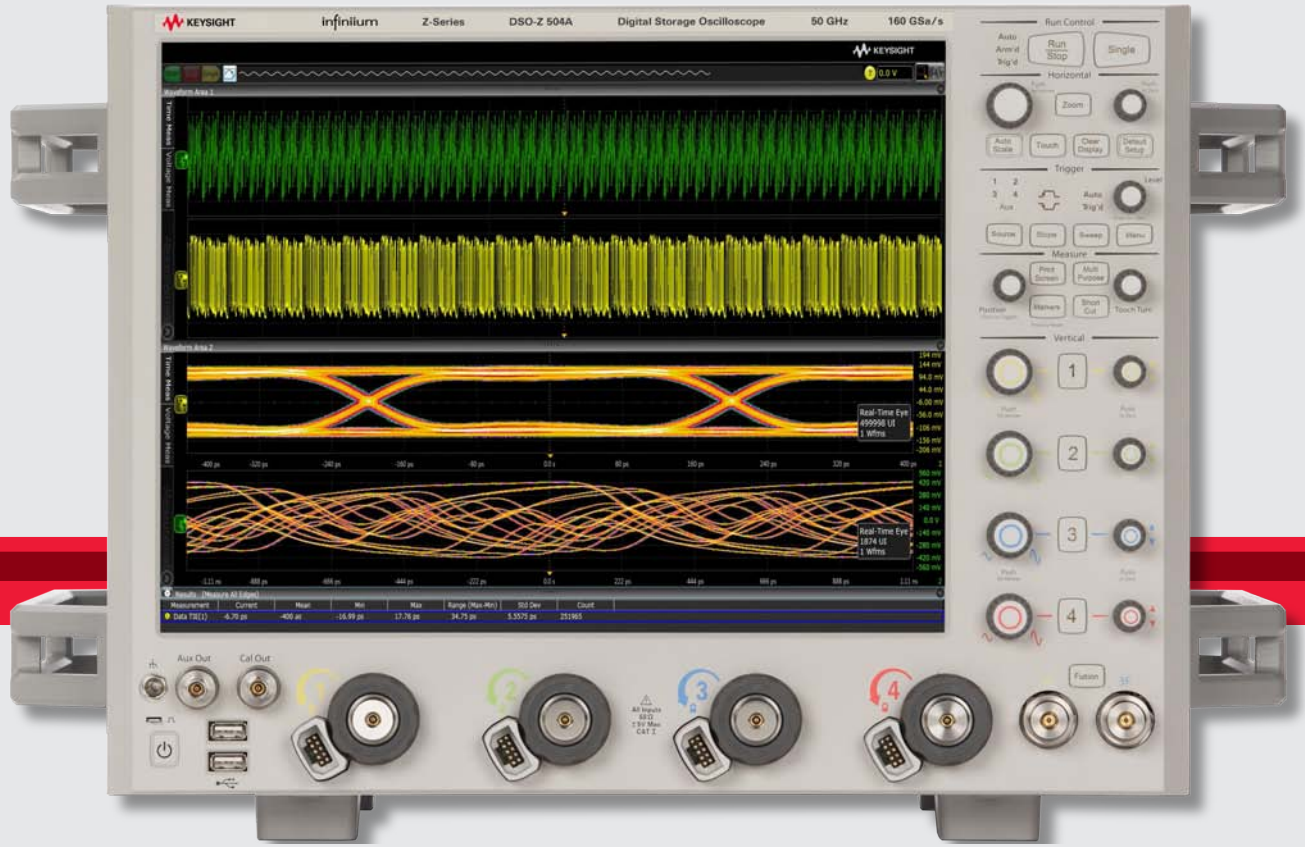
- Analysis options include jitter and eye analysis, user defined function, MATLAB and many more
- Compliance options include DDR 1/2/3/4, PCI Express, HDMI, DisplayPort, SATA, SAS, MIPI D-PHY and USB 3.0
- Transport your scope application license from one Infiniium to another with the application server license
- User-defined applications are available today for: LVDS, JESD204B, MIPI M-PHY, CPRI, InfiniBand and Fiber Channel 16/32G.
- See our complete list of applications on page 26 to 29

Infiniium Z-Series Oscilloscopes

20 GHz to 63 GHz high-performance real-time lab scopes

Achieve new extremes with 63 GHz on 2 channels and 33 GHz on 4 channels

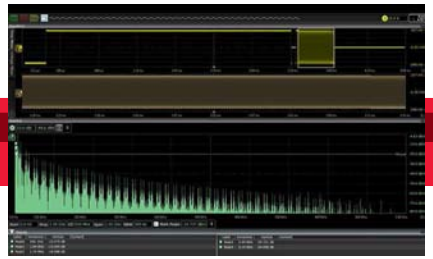
- Up to 2-channel 63 GHz or 4-channel bandwidth with 33 GHz in a single frame
- Join multiple Z-Series oscilloscopes together to form a system of 40 channels with less than 150 fs (rms) of inter-scope channel jitter
- The industry's lowest noise and jitter measurement floor
- The industry's deepest memory at 2 Gpts per channel
- Capacitive touch screen and touch-screen-friendly controls improve your user experience
- USB 3.0 offload capability enables more than 200 MB/s offload speed



Models and specifications

DSO and DSA models	Z204A	Z254A	Z334A	Z504A	Z594A	Z592A	Z632A	Z634A
Bandwidth	20 GHz	25 GHz	33 GHz	50 GHz	59 GHz	59 GHz	63 GHz	63 GHz
Sample rate	160 GSa/s on half channels, 80 GSa/s on full channels							
Channels	4					2		4
Display	15.4" color XGA TFT-LCD with multi-touch capacitive touch screen							
Display update rate	> 400,000 waveforms per second (in segmented memory mode)							
Memory	50 Mpts, std. Up to 2 Gpts, opt. (100 Mpts std. on DSA)							
Vertical resolution	8 bits (≥ 12 bits with averaging)							
Vertical sensitivity	1 mV/div to 1 V/div							
Maximum input voltage	± 5 V							
Input impedance	50 Ω, ± 3%							
Timebase range	2 ps/div to 5 s/div real-time							
Time scale accuracy	± [0.1 ppm (immediately after calibration) ± 0.1 ppm/year (aging)]							
Triggering	3-stage sequence trigger: 2-stage A-B hardware and 1-stage InfiniiScan software trigger. Supported triggers: Edge, edge transition, edge then edge, glitch, pulse width, runt, timeout, pattern/pulse range, state, window, video							
Typical noise floor (% of noise on screen)	0.39%	0.45%	0.54%	0.75%	0.80%	0.80%	0.83%	0.83%
Sample clock jitter	75 fs							
Dimensions	50.8 cm wide x 33.8 cm high x 49.2 cm deep							
Weight	32.20 kg (71 lbs)							
Power	100 - 240 VAC at 50/60 Hz; maximum input power 1350 Watts							

1. Optional.



Fast Fourier Transform (FFT) includes powerful tools for extreme frequency domain (spectrum) analysis. Use the FFT to compute both magnitude and phase, and use multiple FFT windows, peak search and navigation, amplitude modulation, FFT mask triggers and gated FFT measurements to analyze waveforms.

Use PrecisionProbe advanced to get full S21 characterization of cables up to 65 GHz, in addition to spectrum and complex modulation measurements. The simple network analysis saves you time and improves measurement accuracy by automatically compensating for both magnitude and phase loss caused by cables.

Get deep insight into your digital designs. EZJIT Plus features two methods to properly separate the jitter into random and deterministic components. If you have bounded uncorrelated jitter, simply use Keysight's new tail-fit algorithm; otherwise Keysight's spectral method and 75 fs of sample clock jitter ensure the most accurate measurement.

Scope additions and enhancements

Probes

Improve your measurement reliability with our comprehensive selection of probes:

- Industry's first 30 GHz InfiniiMax III probing system
- See our complete list of compatible probes on page 30 to 31

Accessories

Don't forget options such as the rackmount kit and transit case.

Memory

Increase memory depth at any time.

Bandwidth

Protect your investment with bandwidth upgrades after purchase.

Applications

Expand your scope's capabilities with our powerful lineup of applications:

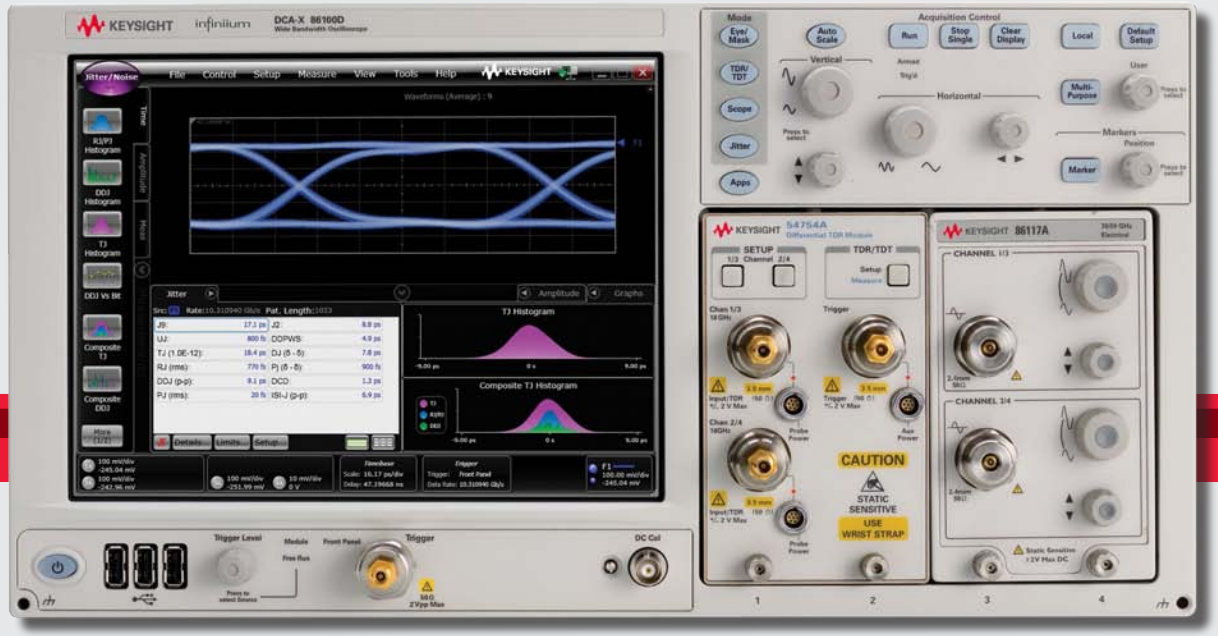
- Analysis options include jitter and eye analysis, user-defined function, MATLAB and many more
- Compliance options include DDR 1/2/3/4, PCI Express, HDMI, DisplayPort, SATA, SAS, MIPI D-PHY and USB 3.0
- Transport your scope application license from one Infiniium to another with Keysight's transportable licenses
- See our list of applications on page 26 to 29

Infiniium 86100D DCA-X Series Oscilloscopes

DC to > 90 GHz wideband sampling scopes

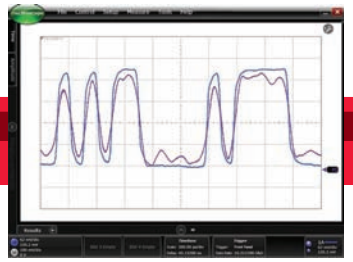
Engineered for precise, accurate high-speed electrical, TDR/TDT and optical analysis

- Four powerful instruments in one: High-bandwidth scope, digital communications analyzer, time domain reflectometer and jitter analyzer
- Wide bandwidth with the lowest residual jitter and noise for the highest precision waveforms
- The industry standard for analysis of optical communication signals
- Calibrated reference receivers for optical transceiver compliance test
- Modular platform enables optical, electrical, TDR/TDT and S-parameter measurements
- Advanced jitter and amplitude analysis at the push of a button
- Jitter spectrum, phase noise and jitter transfer measurements on both electrical and optical signals
- Integrated de-embedding, embedding and equalization capability
- Up to 16 electrical, 16 TDR or 8 optical channels per mainframe
- Ultra-low timebase jitter (random jitter < 100 fs rms typical) on up to 16 channels

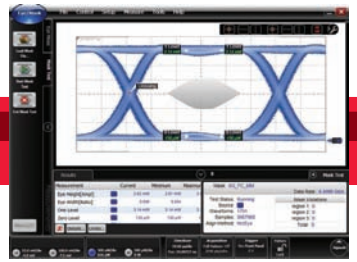


Models matching your applications

86100D Infiniium DCA-X mainframe	
Electrical 1 to 14.2 Gb/s	Highest precision view of serial bus waveforms
86112A	Dual channel electrical > 20 GHz
83496B	Electrical clock recovery (and PLL analysis)
86108B	Dual 35/50 GHz channels, jitter < 45 fs, internal clock recovery
Electrical 10 to > 43 Gb/s	Electrical signals for 40/100G Ethernet, SONET/SDH
86118A	Dual remote heads 70 GHz
86107A	Precision timebase (jitter < 100 fs)
86108B	Dual 35/50 GHz channels, jitter < 45 fs, internal CR to 32 Gb/s
86117A	Dual channel electrical > 50 GHz
N1045A	Dual/quad 60 GHz channels, remote heads
Optical 1 to 14.2 Gb/s	FibreChannel, Ethernet, SONET/SDH, PON
86105C	9 GHz optical channel, 20 GHz electrical channel
83496B	Optical clock recovery (single-mode and multimode)
86105D	20/34 GHz optical channel, 35/50 GHz electrical channel
86115D	20/35 GHz optical, multi-channel
Optical 10 to > 43 Gb/s	40/100G Ethernet, SONET/SDH
86116C	65 GHz optical channel, 90 GHz electrical channel
86107A	Precision timebase (jitter < 100 fs)
TDR	Serial bus standards – PCIe, SATA, SAS, USB, S-parameters
54754A	Differential TDR, dual 18 GHz channels
N1055A	Differential TDR, 35/50 GHz bandwidth, 2/4 channel, remote heads

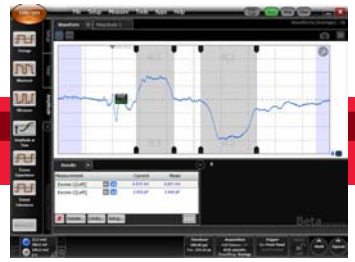


Full-function oscilloscope. Bandwidth of 65 GHz optical and > 90 GHz electrical ensures the most accurate waveform measurements.



Eye diagram analysis. Fast and accurate transmitter characterization using eye diagram analysis and automated mask margin measurements.

Advanced jitter and amplitude analysis. Accurate decomposition of impairments provides compliant total jitter (TJ) results and insight into root cause of eye closure.



Time domain reflectometer. Measure both impedance and S-parameters, and verify transmission quality on cables, components and channels.

Scope additions and enhancements

Probes

Improve your measurement reliability with our comprehensive selection of probes.

Options

Mainframe options include an enhanced trigger, precision timebase, GPIB interface, removable hard drive and signal processing capabilities such as equalization, de-embedding and embedding of waveforms.

Modules

Choose from an extensive list of optical, electrical, TDR/TDT, dual/quad electric channel, trigger and clock recovery modules.

Applications

Expand your scope's capabilities with our powerful lineup of applications:

- Analysis options include jitter and eye analysis, user-defined function, jitter transfer function (JTF), S-parameters, MATLAB and many more
- Compliance and debug options include OIF-CEI 3.1 covering 6G/11G/25G and 28G VSR/MR, SFF-8431 (SFP+) and IEEE 802.3 10G/40G/100G Ethernet

Applications: Engineered to Turn Measurements Into Answers

You need more than data from your scope – you want fast, accurate answers to your questions.

Many scopes can churn out reams of data. But when you're looking for meaningful insight into designs under development, offers the broadest selection of oscilloscope application solutions in the industry.

We deliver more than 150 powerful application packages for debug, analysis, compliance and characterization.

Whether you're debugging low-speed serial bus operation or FPGA functionality; focused on signal integrity; or ensuring compliance to industry standards, has solutions to help you get to accurate answers more quickly.

Speed debug as you deploy FPGAs or debug serial bus designs with our innovative solutions.

Our integrated mixed-signal oscilloscope technology allows us to offer unique solutions like our FPGA dynamic probe to let you see inside your FPGA for faster debug. Also, our protocol level triggers and displays help you resolve the physical layer root cause of issues you discover at the protocol level.

Take advantage of the expertise gains by participating in key industry standards bodies.

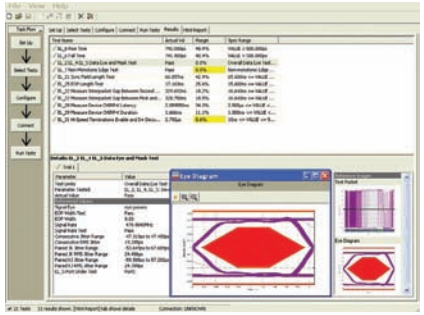
Our engineers participate with and sit on the board of directors of many standards groups, including the JEDEC Solid State Technology Association, the Video Electronics Standards Association (VESA) and the Peripheral Component Interconnect Special Interest Group (PCI-SIG). We help define the test standards so we can give you consistent measurement results and support you as you deploy these emerging technologies for your success.

Make your job simpler with automated setups and one-button compliance testing for more than 30 applications.

We make using our solutions easy so busy engineers can offload tedious characterization and still get accurate results. A test setup wizard guides you through selection, configuration, connection, execution and results reporting. The results reports include configuration, measurements made, pass/fail status, margin analysis and waveforms.

We also offer user-definable application software that allows automated measurements for compliance testing on proprietary buses or while emerging test standards solidify.

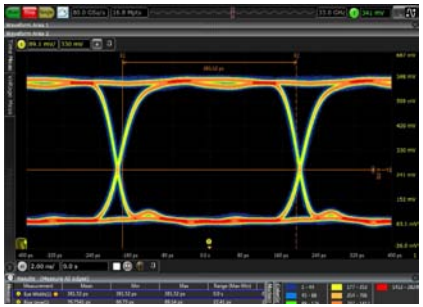
The PCI Express® electrical performance validation and compliance software lets you test devices to ensure compliance with the PCIe 1.1 and PCIe 2.0 electrical specs for add-in cards and motherboards.



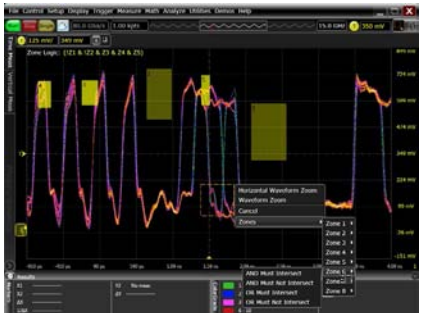
The USB 2.0 compliance test software makes USB signal integrity testing as simple as capturing the signals with your scope, eliminating the need to transfer waveforms to your PC.

Oscilloscope Compliance and Characterization Solutions

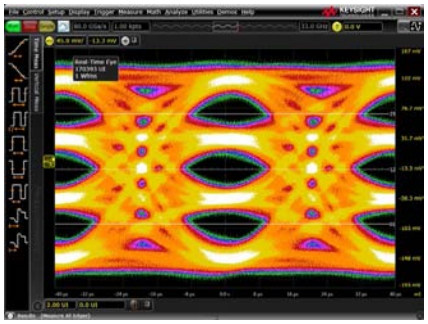
	Model number	Oscilloscope
10G attachment unit interface (XAUI)	N5431A/B	9000, S-Series, 90000, V-Series, Z-Series
10/40GBASE-KR/KR4	N8814B, N1081A	90000, V-Series, Z-Series, 86100D
100GBASE-CR4	N8830A, N1084A	90000, V-Series, Z-Series, 86100D
100GBASE-KR4	N8829A, N1084A	90000, V-Series, Z-Series, 86100D
40/100 GBASE-CR 4/10	N8828A, N1082A	90000, V-Series, Z-Series, 86100D
BroadR-Reach	N6467A/B	9000, S-Series, 90000, V-Series, Z-Series
DDR1 and LPDDR1	U7233A/B	9000, S-Series, 90000, V-Series, Z-Series
DDR2 and LPDDR2	N5413B/C	9000, S-Series, 90000, V-Series, Z-Series
DDR3 and LPDDR3	U7231B/C	9000, S-Series, 90000, V-Series, Z-Series
DDR4 and LPDDR4	N6462A/B	9000, S-Series, 90000, V-Series, Z-Series
DisplayPort	U7232C	90000, V-Series, Z-Series
DisplayPort 1.3	U7232E	90000, V-Series, Z-Series
eMMC	N6465A/B	9000, S-Series, 90000, V-Series, Z-Series
Ethernet 10GBase-T, MGBASE-T	U7236A/B	9000, S-Series, 90000, V-Series, Z-Series
Ethernet/EEE 10/100/1000Base-T	N5392B/C	9000, S-Series, 90000, V-Series, Z-Series
Ethernet XLAUI/CAUI/nPPI	N1083A	86100D
GDDR5	U7245A	9000, S-Series, 90000, V-Series, Z-Series
HDMI 2.0	N5399C/D	9000, S-Series, 90000, V-Series, Z-Series
HSIC	U7248A/B	9000, S-Series, 90000, V-Series, Z-Series
MHL 3.0	N6460B	90000, V-Series, Z-Series
MIPI® D-PHY℠	U7238C/D	9000, S-Series, 90000, V-Series, Z-Series
MIPI M-PHY®	U7249C/D	9000, S-Series, 90000, V-Series, Z-Series
MIPI C-PHY℠	U7250A	90000, V-Series, Z-Series
MOST	N6466A/B	9000, S-Series, 90000, V-Series, Z-Series
OIF-CEI 3.1 with 28G-VSR/MR	N1012A	86100D
PCI Express Gen 3	N5393D/E	S-Series, 90000, V-Series, Z-Series
SD UHS-I	U7246A/B	9000, S-Series, 90000, V-Series, Z-Series
SD UHS-II	N6461A/B	9000, S-Series, 90000, V-Series, Z-Series
Serial ATA Gen 3	N5411B	90000, V-Series, Z-Series
Serial attached SCSI (SAS-3)	N5412D	90000, V-Series, Z-Series
SFP+	N6468A, N1014A	90000, V-Series, Z-Series, 86100D
Thunderbolt	N6463B	90000, V-Series, Z-Series
USB 2.0	N5416A/B	9000, S-Series, 90000, Z-Series
USB 3.1	U7243B	90000, V-Series, Z-Series
PAM-4	N8836A, N1085A	90000, V-Series, Z-Series, 86100D



HDMI validation and compliance software gives you a fast way to verify and debug designs for set-top boxes, digital video recorders, DVD players, entertainment systems and motherboards.



The DDR2 compliance test application provides a fast and easy way to test, debug and characterize your DDR2 designs and includes crucial measurements, such as eye-diagram, mask testing and ringing.



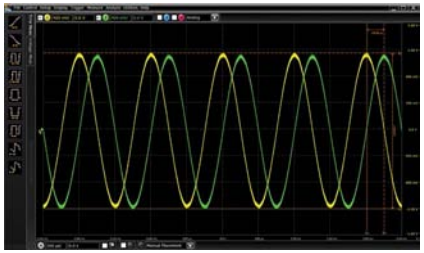
PAM4 compliance test application performs accurate analysis on electrical PAM-4 signals.

Oscilloscope Software Applications

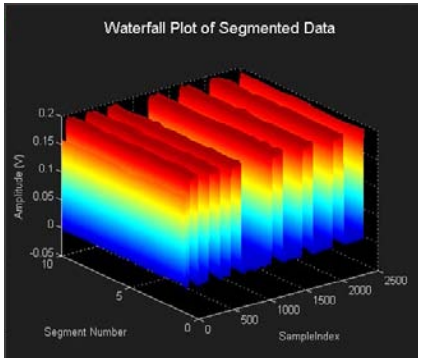
	Model number	Oscilloscope solutions
64b/66B 10GBase-KR Ethernet decode	N8815A	90000, V-Series, Z-Series
Advanced EYE analysis (jitter on PRBS31)	86100DU-401	86100D Series
BenchLink waveform builder pro and basic	33503A	2000X, 3000AX, 3000TX, 4000X Series
Built-in function and arbitrary waveform generator	DSOX2WAVEGEN, DSOX3WAVEGEN, DSOX4WAVEGEN2, DSOX6WAVEGEN2	2000X, 3000AX, 3000TX, 4000X (dual channel), 6000X (dual channel) Series
Calibration pulse generator	N2806A	9000, S-Series, 90000, V-Series, Z-Series
CAN/CAN-FD/LIN trigger and decode	DSOX2AUTO [1], DSOX3AUTO [1], DSOX3TAUTO, DSOX4AUTO, DSOX6AUTO, N8803A, N8803B	2000X [1], 3000AX [1], 3000TX, 4000X, 6000X, 9000, S-Series, 90000, V-Series, Z-Series
Communication mask test kit	E2625A	9000, S-Series, 90000, V-Series, Z-Series
Educators Training Kit	DSOXEDK	2000X, 3000AX, 3000TX, 4000X, 6000X Series
eSPI triggering and decode	N8835A	S-Series, 90000, V-Series
EZJIT, EZJIT Plus and EZJIT Complete jitter analysis	N8823A, E2681A, N5400A	9000, S-Series, 90000, V-Series, Z-Series
FlexDCA	N1010A	86100 Series
FlexRay	N8803A/B	9000, S-Series, 90000, V-Series, Z-Series
FlexRay triggering and decode	DSOX3FLEX, DSOX4FLEX, DSOX6FLEX, N5432C	3000AX, 3000TX, 4000X, 6000X Series
FPGA dynamic probe - Xilinx	DSOX4FPGAX, DSOX6FPGAX, N5406A, N5397A	4000X, 6000X, 9000, S-Series, 90000X Series
Frequency domain analysis	N8832A	9000, S-Series, 90000, V-Series, Z-Series
High-speed serial data analysis and clock recovery	E2688A, N5384A	9000, S-Series, 90000, V-Series, Z-Series
HSIC triggering and decode	N5464B, N5464A	9000, S-Series, 90000, V-Series, Z-Series
I^2C/SPI serial decode	DSOX2EMBD, DSOX3EMBD, DSOX4EMBD, DSOX6EMBD, N5391A, N5391B	2000X, 3000AX, 3000TX, 4000X, 6000X, 9000, S-Series, 90000, V-Series, Z-Series
I^2S triggering and decode	DSOX3AUDIO, DSOX4AUDIO, DSOX6AUDIO, N5468A	3000AX, 3000TX, 4000X, 6000X Series
InfiniiScan	N5414B, N5415B	9000, S-Series, 90000, V-Series, Z-Series (zone trigger is standard on 3000TX, 4000X and 6000X Series)
InfiniiSim waveform transformation	N5465A, 86100D-SIM, N1010A-SIM	9000, S-Series, 90000, V-Series, Z-Series, 86100 Series
Infiniium user-defined function	N8806A, N5430A/B	9000, S, 90000, V-Series, Z-Series
Infiniium Offline and bundles	N8900A	2000X, 3000AX, 3000TX, 4000X, 6000X, 9000, S-Series, 90000, V-Series, Z-Series
Integrated digital voltmeter	DSOXDVM, DSOXT3DVMCTR, DSOXDVMCTR	2000X, 3000AX, 3000TX, 4000X, 6000X Series (10-digit counter for 6000X)
Jitter and real-time eye analysis	DSOX6JITTER	6000X Series
Jitter and amplitude analysis	86100D-200/300	86100 Series
JTAG triggering and decode	N8817A/B	9000, S-Series, 90000, Z-Series
Mask/waveform limit testing	DSOX2MASK, DSOX3MASK, DSOX4MASK, DSOX6MASK	2000X, 3000AX, 3000TX, 4000X, 6000X Series (standard on Infiniium Series)
MATLAB data analysis	N6174A, N6175A, N8831A	9000, S-Series, 90000, Z-Series, 86100 Series
Multiscope	N8834A	S-Series, 90000, V-Series, Z-Series

1. Does not include CAN-FD.

CAN/LIN triggering and hardware-accelerated decode helps you quickly find and debug errors and signal integrity problems on CAN and LIN serial buses.



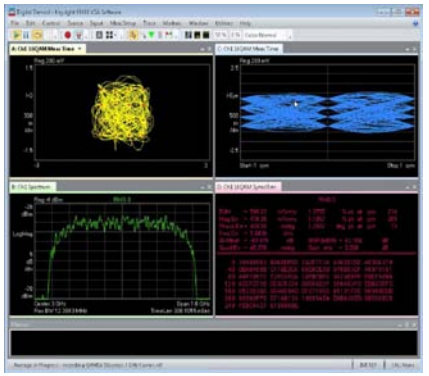
View and analyze waveforms anywhere your PC goes. Infiniium Offline includes powerful viewing and analysis tools based on Keysight's Infiniium scope user interface.



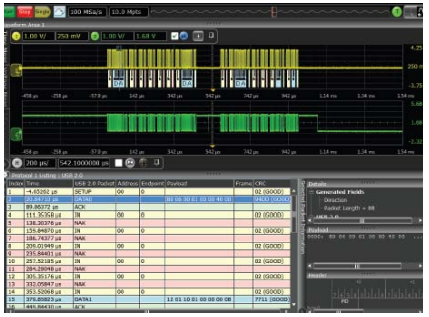
Install MATLAB on your oscilloscope, and add your favorite .m scripts as math function operators. Export and analyze oscilloscope data directly with MATLAB.

Oscilloscope software applications (Continued)

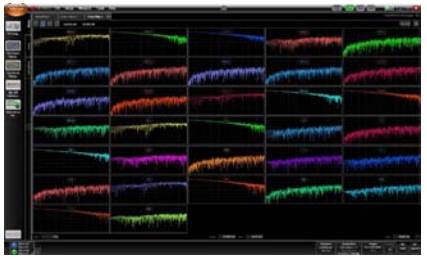
	Model number	Oscilloscope solutions
MIL-STD 1553 and ARINC429 serial triggering and analysis	DSOX3AERO, DSOX4AERO, DSOX6AERO	3000AX, 3000TX, 4000X, 6000X Series
MIPI DigRF® v4 (M-PHY) triggering and decode	N8807A/B	9000, S-Series, 90000, V-Series, Z-Series
MIPI D-PHY triggering and decode	N8802A/B	9000, S-Series, 90000, V-Series, Z-Series
MIPI LLI (M-PHY) triggering and decode	N8809A/B	9000, S-Series, 90000, V-Series, Z-Series
MIPI UniPro℠ (M-PHY) triggering and decode	N8808A/B	9000, S-Series, 90000, V-Series, Z-Series
MIPI UFS (M-PHY) triggering and decode	N8818A/B	9000, S-Series, 90000, V-Series, Z-Series
MIPI SSIC (M-PHY) triggering and decode	N8819A/B	9000, S-Series, 90000, V-Series, Z-Series
MIPI CSI-3 (M-PHY) triggering and decode	N8820A/B	9000, S-Series, 90000, V-Series, Z-Series
MIPI RFFE triggering and decode	N8824A/B	9000, S-Series, 90000, V-Series, Z-Series
PAM-4 analysis	N8827A/B	S-Series, 90000, V-Series, Z-Series
PCI Express Gen 3 protocol viewer	N8816A	90000, V-Series, Z-Series
PCI Express Gen 1 and 2 triggering and decode	N5463A/B	9000, S-Series, 90000, V-Series, Z-Series
Phase locked loop and jitter spectrum measurement software	86100DU-400	86100D Series
Power measurement and analysis	DSOX3PWR, DSOX4PWR, DSOX6PWR, U1882B	3000AX, 3000TX, 4000X, 6000X, 9000, S-Series, 90000, V-Series, Z-Series
Precison Probe	N2808A, N2809A	9000, S-Series, 90000, V-Series, Z-Series
RS-232/UART triggering and decode	DSOX2COMP, DSOX3COMP, DSOX4COMP, DSOX6COMP, N5464A, N5462B	2000X, 3000AX, 3000TX, 4000X, 6000X, 9000, S-Series, 90000, V-Series, Z-Series
SATA triggering and decode	N8801A/B	9000, S-Series, 90000, V-Series, Z-Series
Segmented memory	DSOX2SGM, DSOX3SGM	2000X, 3000AX (std. on Infiniium and InfiniiVision 3000TX/4000X/6000X Series)
Sensor (SENT) triggering and decode	DSOXT3SENSOR, DSOX4SENSOR, DSOX6SENSOR	3000TX, 4000X, 6000X Series
Serial data equalization	N5461A/B	9000, S-Series, 90000, V-Series, Z-Series
Signal analyzer	W2650A	9000, S-Series, 90000, V-Series, Z-Series
S-parameter measurements	86100D-202	86100D Series
Spectrum visualizer	64997A, 64996A	2000X, 3000AX, 3000TX, 4000X, 9000, S-Series, 90000, V-Series, Z-Series
SVID triggering and decode	N8812A/B	9000, S-Series, 90000, V-Series, Z-Series
TDR/TDT measurements	86100D, 54754A, N1055A	86100 Series
USB 2.0 full/low speed serial decode and triggering	DSOX4USBFL, DSOX6USBFL	4000X, 6000X Series
USB 2.0 high-speed serial decode and triggering	DSOX4USBH, DSOX6USBH	4000X, 6000X Series
USB 2.0 signal quality	DSOX4USBSQ, DSOX6USBSQ	4000X, 6000X Series
USB 2.0 triggering and decode	N5464A/B	9000, S-Series, 90000, V-Series, Z-Series
USB 3.0 triggering and decode	N8805A/B	9000, S-Series, 90000, V-Series, Z-Series
USB-PD triggering and decode	N8837A	S-Series, 90000, V-Series
USB 3.1 triggering and decode	N8821A/B	S-Series, 90000, V-Series
User-defined application	N1019A, N5467B/C	86100D, 9000, S-Series, 90000, V-Series, Z-Series
Vector signal analysis	89601B	3000AX, 3000TX, 4000X, 6000X, 9000, S-Series, 90000, V-Series, Z-Series
Video triggering and analysis	DSOX3VID, DSOX4VID, DSOX6VID	3000AX, 3000TX, 4000X, 6000X Series



Mask/waveform limit testing provides a fast and easy way to test your signals to specified standards and uncover unexpected signal anomalies such as glitches.



USB serial trigger and decode provides powerful time-correlated views of waveforms and symbols to the bit level, making it easy to isolate communication faults to logic or analog sources.



86100D Option 202 performs single-ended and mixed-mode S-parameter measurements on up to 16 ports. Quickly and easily save S-parameter files.

Probes & Accessories: Engineered for Signal Access and Measurement Accuracy

To get top performance from your scope, you need the right probe for your application

Selecting the best probe for the job ensures you can access your signals and make reliable measurements. To complement our scopes, offers a broad family of probes and accessories. Solutions range from simple, inexpensive passive probes to state-of-the-art high-frequency active probes that meet your toughest probing challenges.

Passive probes

These are the most durable, economical and widely-used probes for doing general-purpose probing with an oscilloscope.

Active probes

Single-ended or differential active probes handle higher bandwidths with lower signal loading. Single-ended active probes are typically used for measuring ground referenced, high- speed signals with low probe loading. With low loading, single-ended probes can be used on high-impedance, high-frequency circuits that would be overloaded with passive probes. Differential probes use a differential amplifier to subtract two input signals resulting in one differential signal for measurement by one channel of the oscilloscope. This allows you to use a standard ground referenced oscilloscope to measure signals that are not referenced to ground.

InfiniiMax Series

These specialized differential active probes complement the Infiniium Series scopes. The InfiniiMax III Series is the first 30 GHz probing system and gives you the industry's flattest frequency response and widest selection of probe heads and accessories. InfiniiMax probing systems span from 1.5 to 30 GHz bandwidth to measure high-speed signals with flexible connectivity solutions. InfiniiMax III+ probes offer InfiniiMode technology, which greatly expands the measurement capability and usability of the probe, letting it measure all the components of a differential signal.

Innovative probe accessories make connections a snap

Connecting to components like fine-pitch devices, surface-mount integrated circuits and DDR ball-grid arrays can be challenging. We remove this challenge by providing accessories that let you connect easily—even hands-free.

	U1600 Series	U2700 Series		1000 Series	2000 X-Series
Scope bandwidth	20 to 200 MHz	100 MHz	200 MHz	60 to 200 MHz	70 to 200 MHz
Probe interface	BNC				
Passive 1:1	U1560A	N2870A 10070D			
Passive 10:1	U1561A	10074D N2871A N2872A		N2862B N2863B	
High-voltage passive 100:1	U1562A	10076C			
Low Z passive (50 Ω terminated)					
Active single-ended					
Active differential (high speed)					
Active differential (high voltage)		N2791A N2891A			
Current	U1583B	1146B N2893A N2780B/81B/82B/83B [1]		1146B N2780B/81B/82B/83B [1]	
High-sensitivity current					
Rackmount kit				N2739A	N6456A
Carrying case	U1591A			N2738A	N6457A

1. Requires N2779A power supply.

For example the N7020A power rail probe is an active probe designed specifically to measure DC voltage rails. With low noise, low loading, a large DC offset range and 2 GHz of bandwidth it enables you see the details of your signal without added noise of your measurement system.

Probes & Accessories

	3000T X-Series	4000 X-Series	6000 X-Series	9000 Series	S-Series	90000A Series	V-Series	Z-Series
Scope bandwidth	100 MHz to 1 GHz	200 MHz to 1.5 GHz	1 to 6 GHz	1 to 4 GHz	500 MHz to 8 GHz	2.5 to 13 GHz	13 to 33 GHz	20 to 63 GHz
Probe interface	AutoProbe lite	AutoProbe		AutoProbe			AutoProbe II	
Passive 1:1	N2870A 10070D			N2870A		N2870A with E2697A [5]	N2870A with N5449A	
Passive 10:1	N2843A	N2894A		N2873A		N2873A (500MHz) with E2697A [5]	N2873A with N5449A	
High-voltage passive 100:1	10076C					10076C with E2697A	10076C with N5449A	
Low Z passive (50 Ω terminated)	N2874A (10:1) N2876A (100:1) 54006A (10:1, 20:1)						N2874A N2876A 54006A with N5442A	
Active single-ended	N2795A/96A/97A, N7020A	N2795A/96A/97A 1130A [2], N7020A	N2795A/96A/97A 1130A/31A/32A/34A [2], N7020A			N2795A/96A 1131/2/44 [2]	N2795A/96A/97A with N5442A	
Active differential (high speed)	N2750A 1130A [2]		N2750A/51A/52A, 1130A/31A/32A/34A [2]	N2750A/51A/52A 1130A/31A/32A/34A [2] N2830A/31A/32A [4]		N2751A/52A N2830A/31A/32A [4] 1131/2/44 [2] or 1168/69A5 [3] with differential probe accessory	N2800A/01A/02A/03A [4] N7000A/01A/02A/03A [4]	
Active differential (high voltage)	N2790A/91A/92A/93A, N2891A, N2818A/19A/04A/05A			N2790A/91A N2891A N2818A/19A/04A/05A		N2791A N2790A with E2697A [5]	N2790A/91A/891A with N5449A or N2792A/93A with N5442A	
Current	1146B 1147B N2893A, N2780B/81B/82B/83B [1]					1146B N2780B/81B/82B/83B [1] with E2697A [5]	1147B N2893A with N5449A	
High-sensitivity current	N2820A/21A							
Rackmount kit	N6456A	N2763A	N2111A	N2902B		N5470A		N2759A
Carrying case	N6457A	N2733B		N5475A			N2748A	

1. Requires N2779A power supply.
2. Order one or more InfiniiMax I probe head or connectivity kit. Order single-ended probe head for single-ended applications.
3. Order one or more InfiniiMax II probe heads or connectivity kits per amplifier.
4. Order one or more InfiniiMax III probe heads.
5. Includes one 10073D passive probe.