

Selection guide

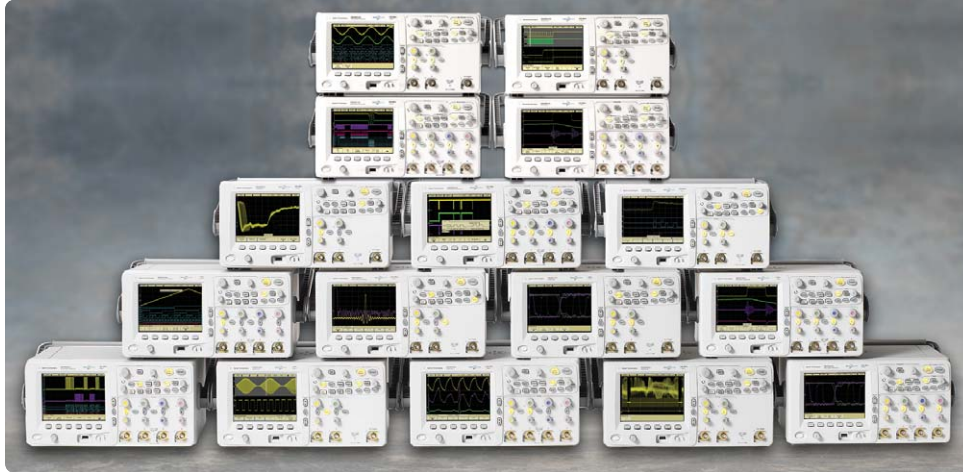


Figure 1. The 6000 Series family shown with 2+16-channel, 4+16-channel MSO and 2- and 4-channel DSO models.

Agilent focuses on developing products that help you do your job better. Agilent's 6000 Series scopes are optimized for your measurement needs. Choose the one that's right for your application and your budget.

Selection guide

Model	Bandwidth	Maximum sample rate	Memory	Channels
DSO6012A	100MHz	2GSa/s		2 scope
MSO6012A	100MHz	2GSa/s		2 scope + 16 logic
DSO6014A	100MHz	2GSa/s		4 scope
MSO6014A	100MHz	2GSa/s		4 scope + 16 logic
DSO6032A	300MHz	2GSa/s		2 scope
MSO6032A	300MHz	2GSa/s		2 scope + 16 logic
DSO6034A	300MHz	2GSa/s	MegaZoom III 1 Mpts standard, 2 Mpts and 8 Mpts optional	4 scope
MSO6034A	300MHz	2GSa/s		4 scope + 16 logic
DSO6052A*	500MHz	4GSa/s		2 scope
MSO6052A*	500MHz	4GSa/s		2 scope + 16 logic
DSO6054A*	500MHz	4GSa/s		4 scope
MSO6054A*	500MHz	4GSa/s		4 scope + 16 logic
DSO6102A*	1GHz	4GSa/s		2 scope
MSO6102A*	1GHz	4GSa/s		2 scope + 16 logic
DSO6104A*	1GHz	4GSa/s		4 scope
MSO6104A*	1GHz	4GSa/s		4 scope + 16 logic

* Maximum sample rate and memory are achieved when 2 channels are interleaved.

Agilent responded to customer inputs and we are proud to present these additional reasons to buy the new Agilent 6000 Series.

New Agilent 6000 Series = older Agilent 54620/40 Series **PLUS**

- + 4/4+16 channel models and 1 GHz models
- + 2x - 10x sampling rate (up to 4 GSa/s scope and 2 GSa/s logic)
- + MSO-upgradeable DSOs
- + MegaZoom III deep memory combining fast and deep memory, new ultra-high definition color LCD display with XGA resolution and 256 levels of intensity
- + Faster waveform update rates (100,000 waveforms/sec)
- + Standard analog HDTV/EDTV and either edge triggering
- + Built-in front panel USB port replaces floppy drive
- + Standard USB, LAN and GPIB
- + XGA video output
- + AutoProbe interface (on 300 MHz - 1 GHz models)
- + 10 MHz reference clock in/out
- + Signal frequency feedthrough
- + 8-digit hardware frequency counter (when using external 10 MHz reference input)
- + Built-in storage compartment
- + Lighter weight

Performance characteristics (continued)

Measurement features

Automatic measurements	Measurements are continuously updated. Cursors track last selected measurement.
Voltage (scope channels only)	Peak-to-peak, maximum, minimum, average, amplitude, top, base, overshoot, preshoot, RMS
Time	Frequency, period, + width, – width and duty cycle on any channel Rise time, fall time, X at max Y (time at max volts), X at min Y (time at min volts), delay, and phase on scope channels only
Counter	Built-in 5-digit frequency counter on any channel. Counts up to the scope's bandwidth (1 GHz max). The counter resolution can be increased to 8 digits with an external 10 MHz reference.
Threshold definition	Variable by percent and absolute value; 10%, 50%, 90% default for time measurements
Cursors	Manually or automatically placed readout of Horizontal (X, ΔX , $1/\Delta X$) and Vertical (Y, ΔY). Additionally logic or scope channels can be displayed as binary or hex values.
Waveform math	One function of 1-2, 1x2, FFT, differentiate, integrate. Source of FFT, differentiate, integrate: scope channels 1 or 2, 1-2, 1+2, 1x2.

FFT

Points	Fixed at 1000 points
Source of FFT	Scope channels 1 or 2 (or 3 or 4 on MSO/DSO6xx4A only), 1+2, 1-2, 1*2
Window	Rectangular, flattop, hanning
Noise floor	–50 to –90 dB depending on averaging
Amplitude	Display in dBV, dBm at 50 Ω
Frequency resolution	0.05/time per div
Maximum frequency	50/time per div

Storage

Save/recall (non-volatile)	10 setups and traces can be saved and recalled internally
Storage type and format	USB 1.1 host ports on front and rear panels Image formats: BMP (8-bit), BMP (24-bit) Data formats: X and Y (time/voltage) values in CSV format Trace/setup formats: Recalled

I/O

Standard ports	USB 2.0 high speed device, two USB 1.1 host ports, 10/100-BaseT LAN, IEEE488.2 GPIB, XGA video output
Max transfer rate	IEEE488.2 GPIB: 500 kbytes/sec USB (USBTMC-USB488): 3.5 Mbytes/sec 100 Mbps LAN (TCP/IP): 1 Mbytes/sec
Printer compatibility	Selected HP Deskjet, Officejet, Laserjet, color Laserjet and HP PCL 3.0 compatible printers

Performance characteristics (continued)

General characteristics

Physical size	35.4 cm wide x 18.8 cm high x 28.2 cm deep (without handle) 39.9 cm wide x 18.8 cm high x 28.2 cm deep (with handle)
Weight	Net: 4.9 kgs (10.8 lbs) Shipping: 9.4 kgs (20.7 lbs)
Probe comp output	Frequency ~2 kHz; Amplitude ~5 V
Trigger out	When Triggers is selected (delay ~17 ns) 0 to 5 V into high impedance 0 to 2.5 V into 50 Ω When Source Frequency or Source Frequency/8* is selected 0 to 580 mV into high impedance 0 to 290 mV into 50 Ω Max frequency output: 350 MHz (in source frequency mode when terminated in 50 Ω) 125 MHz (in source frequency/8 mode when terminated in 50 Ω)
10 MHz ref in/out	TTL out, 180 mV to 1 V amplitude with 0 to 2 V offset
Kensington lock	Connection on rear panel for security

Power requirements

Line voltage range	~Line 120 W max, 96-144 V/48-440 Hz, 192-228 V/48-66 Hz, automatic selection
Line frequency	50/60 Hz, 100-240 VAC; 440 Hz, 100-132 VAC
Power usage	110 W max

Environmental characteristics

Ambient temperature	Operating -10 °C to +55 °C; non-operating -51 °C to +71 °C
Humidity	Operating 95% RH at 40 °C for 24 hr; non-operating 90% RH at 65 °C for 24 hr
Altitude	Operating to 4,570 m (15,000 ft); non-operating to 15,244 m (50,000 ft)
Vibration	Agilent class B1 and MIL-PRF-28800F; Class 3 random
Shock	Agilent class B1 and MIL-PRF-28800F; (operating 30 g, 1/2 sine, 11-ms duration, 3 shocks/axis along major axis. Total of 18 shocks)
Pollution degree2	Normally only dry non-conductive pollution occurs. Occasionally a temporary conductivity caused by condensation must be expected.
Indoor use	Rated for indoor use only

Other

Measurement categories	CAT I: Mains isolated CAT II: Line voltage in appliance and to wall outlet
Regulatory information	Safety IEC 61010-1:2001 / EN 61010-1:2001 Canada: CSA C22.2 No. 1010.1:1992 UL 61010B-1:2003
Supplementary information	The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC, and carries the CE-marking accordingly. The product was tested in a typical configuration with HP/Agilent test systems.

* Source Frequency/8 is supported on 300 MHz - 1 GHz 6000 Series only.

Ordering information

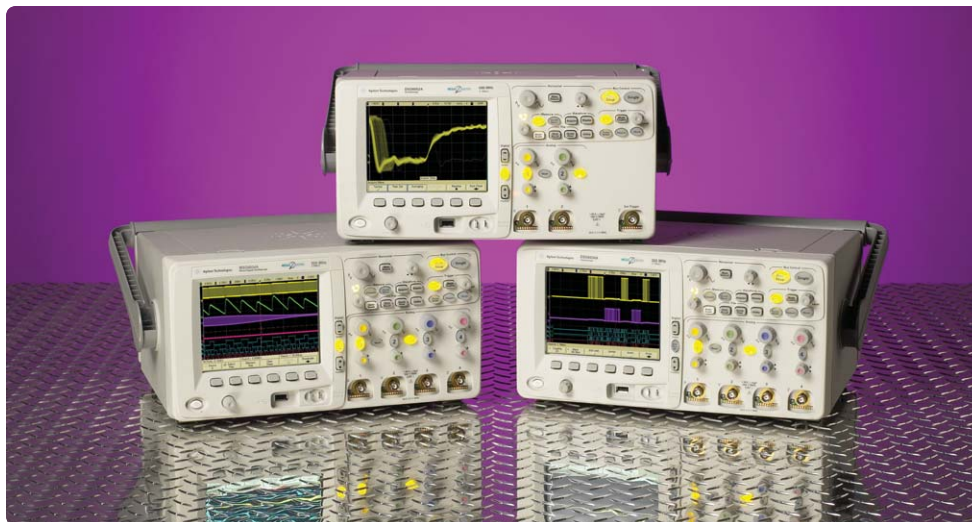
Model number	Description
DSO6012A	100 MHz 2-ch DSO
MSO6012A	100 MHz 2+16-ch MSO
DSO6014A	100 MHz 4-ch DSO
MSO6014A	100 MHz 4+16-ch MSO
DSO6032A	300 MHz 2-ch DSO
MSO6032A	300 MHz 2+16-ch MSO
DSO6034A	300 MHz 4-ch DSO
MSO6034A	300 MHz 4+16-ch MSO
DSO6052A	500 MHz 2-ch DSO
MSO6052A	500 MHz 2+16-ch MSO
DSO6054A	500 MHz 4-ch DSO
MSO6054A	500 MHz 4+16-ch MSO
DSO6102A	1 GHz 2-ch DSO
MSO6102A	1 GHz 2+16-ch MSO
DSO6104A	1 GHz 4-ch DSO
MSO6104A	1 GHz 4+16-ch MSO

Accessories included:

Model number	DSO600xA	MSO600xA
User's guide (localized), Service guide, Programmer's guide	√	√
Power cord	√	√
10:1 divider passive probe per scope channel	√	√
Front panel cover	√	√
Agilent IO libraries suite 14.0	√	√
16:2 x 8 input logic probe		√
MSO logic cable tray		√
Standard 1-year warranty	√	√

Note:

IntuiLink Data Capture software available free on web at www.agilent.com/find/intuilink



Ordering information (continued)

Available options

Option number	Description	MSO/DSO603xA	MSO/DSO605xA	MSO/DSO610xA
Option 2ML	2 Mpts memory for MSO/DSO601xA/603xA models	√		
Option 8ML	8 Mpts memory for MSO/DSO601xA/603xA models	√		
Option 2MH	2 Mpts memory for MSO605xA/610xA models		√	√
Option 8MH	8 Mpts memory for MSO605xA/610xA models		√	√
N2910A	2 Mpts memory for MSO/DSO601xA/603xA models (after purchase)	√		
N2911A	8 Mpts memory for MSO/DSO601xA/603xA models (after purchase)	√		
N2912A	2 Mpts memory for MSO605xA/610xA models (after purchase)		√	√
N2913A	8 Mpts memory for MSO605xA/610xA models (after purchase)		√	√
N2914A*	MSO upgrade kit for MSO/DSO601xA/603xA models	√ (for DSOs only)		
N2915A*	MSO upgrade kit for DSO605xA/610xA models		√ (for DSOs only)	√ (for DSOs only)

* Includes a 54620-68701 logic cable kit, a label and an upgrade license to activate the MSO features

Warranty and calibration options

All models include a standard 1-year warranty.

Option number	Description
R-51B-001-3C	1-year return-to-Agilent warranty, extended to 3-years
R-51B-001-5C	1-year return-to-Agilent warranty, extended to 5-years
A6J	ANSI Z540-compliant calibration

Ordering information (continued)

High-voltage probes

Product number	Description
10076A	100:1, 4 kV, 250 MHz probe with ID
N2771A	1000:1, 15 kV, 50 MHz high-voltage probe

Logic probes

Product number	Description
10085-68701	16:16 logic cable and terminator
54620-68701	16:2 x 8 logic input probe assembly (shipped standard with all MSO6000A)

Active single-ended probes

Product number	Description
1144A	800 MHz active probe
1145A	2-channel 750 MHz active probe
1142A	Power supply for 1144A and 1145A
1156A	1.5 GHz active probe with AutoProbe interface

Active differential probes

Product number	Description
N2772A	20 MHz differential probe
N2773A	Differential probe power supply for N2772A
1141A	200 MHz differential probe
1142A	Probe control and power module for 1141A
1130A	1.5 GHz InfiniiMax differential probe amplifier with AutoProbe interface (Order one or more InfiniiMax probe heads or connectivity kits per amplifier.)

Cable

Product number	Description
10833A	GPIB cable, 1 m long

Manual

Option number	Description
ABA	Printed user's guide in English
ABJ	Printed user's guide in Japanese
AB2	Printed user's guide in simplified Chinese

Ordering information (continued)

Applications

Product number	Description
N5406A	FPGA dynamic probe for 6000 Series scope (One option listed below must be ordered.)
Option 001	Oscilloscope-locked license
Option 002	PC-locked license
E2690B N5385B	Oscilloscope tools software (US and Canada) Oscilloscope tools software (International) (One option listed below must be ordered.)
Option 004	Scope advisor for MSO/DSO610xA
Option 005	Scope guide for MSO/DSO603xA/605xA
E2693B E5388B	1 year subscription for oscilloscope tools (US and Canada) 1 year subscription for oscilloscope tools (International) (One option listed below must be ordered.)
Option 004	Subscription service for scope advisor
Option 005	Subscription service for scope guide

Related Literature

Publication Title	Publication Type	Publication Number
<i>Agilent Technologies 6000 and 54600 Series Oscilloscope Probes and Accessories</i>	Data Sheet	5968-8153EN/EUS
<i>Agilent Technologies Infiniium 54830 Series Oscilloscopes</i>	Data Sheet	5988-3788EN/ENUS
<i>Agilent Technologies FPGA Dynamic Probe for Mixed-Signal Oscilloscopes</i>	Data Sheet	5989-1848EN
<i>E2690B Oscilloscope Tools</i>	Data Sheet	5989-3525EN
<i>Improve Your Ability to Capture Elusive Events: Why Oscilloscope Waveform Update Rates are Important</i>	Application Note 1551	5989-2002EN
<i>Debugging Embedded Mixed-Signal Designs Using Mixed Signal Oscilloscopes</i>	Application Note 1562	5989-3702EN
<i>Oscilloscope Display Quality Impacts Ability to Uncover Signal Anomalies</i>	Application Note 1552 Application Note 1553	5989-2003EN 5989-2004EN
<i>Deep Memory Oscilloscopes: The New Tools of Choice</i>	Application Note 1446	5988-9106EN
<i>Evaluating Oscilloscope Vertical Noise Characteristics</i>	Application Note 1558	5989-3020EN
<i>Ten Things to Consider When Selecting Your Next Oscilloscope</i>	Application Note 1490	5989-0552EN