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**Right Instrument. Right Expertise.
Delivered Right Now.**

Agilent

Distribution
Products
Catalog

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Breakthrough technologies that
accelerate your test bench

Agilent Technologies

Contents

*All prices USD. All pricing and
technical data subject to change.*

What's New

▪ **Looking for answers but getting only raw data? See how a new
wave of instrument designs offer deeper insights for faster
decision making.
See pages 16 -17.**

▪ **U1730 Series handheld LCR meters—now with twice the accuracy,
twice the battery life, and powerful new features.
See page 15.**

▪ **N9342C/43C/44C series handheld spectrum analyzers (HSA)—
field testing just got easier. Now up to 20 GHz!
See page 28.**

▪ **E5061BEP and E5071CEP ENA network analyzers—high-productivity
testing of today's complex RF components and circuits, with
express configurations for fast delivery of popular option packages
See page 30.**

▪ **Agilent Advantage Services Packs:
Add a premium warranty to your
instrument order and receive
the most comprehensive
coverage in the industry.
See page 24.**

Agilent & Our Distributor Network

**Right Instrument.
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**Agilent and our network of Agilent Authorized Distributors have teamed
up to provide fast, easy access to the world's largest selection of off-the-
shelf T&M instruments. It's the best of both worlds: Agilent's measure-
ment expertise and product breadth combined with speed, convenience
and same-day shipping from our distribution partners. It's never been
easier to get the right instrument in the right hands, right away.**

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www.agilent.com/find/distributors**

Agilent Technologies

Authorized Distributor

InfiniiVision

2000 and 3000 X-Series Oscilloscopes

Oscilloscopes redefined: Breakthrough technology delivers more scope for the same budget

SEE MORE of your signal more of the time with the biggest screen in its class, the deepest memory and the fastest waveform update rates

DO MORE with the power of up to 4 instruments in 1: oscilloscope, logic timing analyzer (optional), protocol analyzer (optional) and WaveGen built-in function generator (optional)

GET MORE investment protection with the industry's only fully-upgradable scope, including bandwidth

Industry exclusives in this scope class

- Only integrated low-cost MSO
- Only integrated function generator
- Biggest display
- Only completely upgradable oscilloscope
- Only compatible probe interface with other vendors
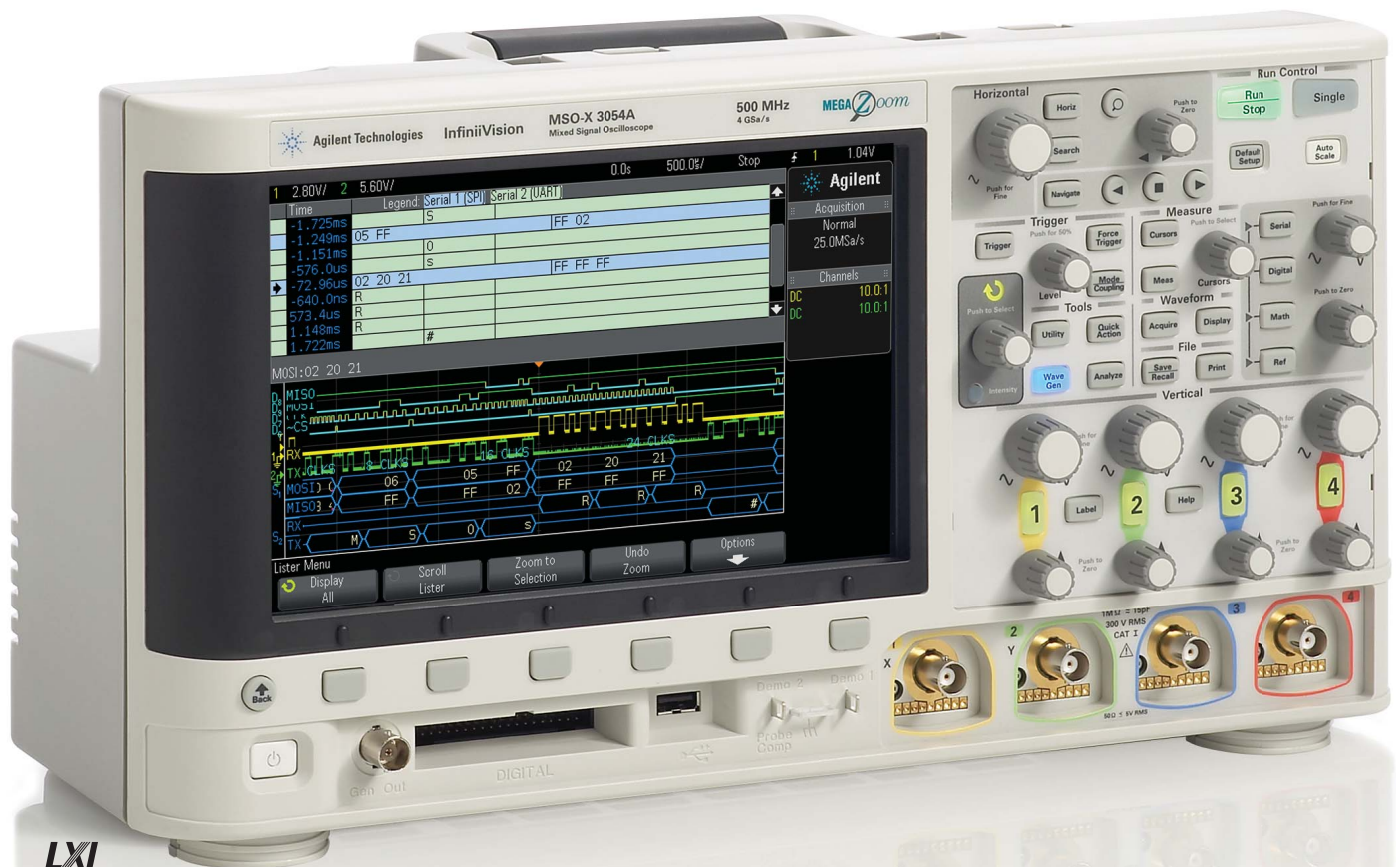
2000 X-Series Oscilloscopes

Do more with more data: large screen, deep memory, mixed signals and WaveGen

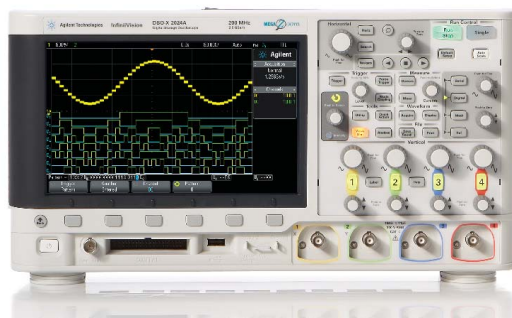- 70 to 200 MHz bandwidth, both DSO and MSO models
- Only economy-class scopes with mixed signal capability
- Only 20 MHz built-in WaveGen function generator
- 8.5-inch WVGA display offers 2x the viewing area and 5x the resolution of competitive scopes
- Up to 50,000 waveform updates/second
- Fully upgradable—bandwidth, MSO, measurement applications, and WaveGen

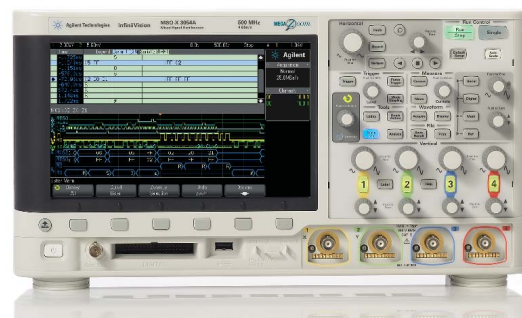*Add Advantage Pack & extend your warranty (R1602A/B)*
SEE PAGE 24

Model	BW	Max SR & Mem	Channels	Price from (US)
DSO/MSO X2002A	70 MHz	2 GSa/s 100 Kpts	2/2+8	**$1,230/$1,930**
DSO/MSO X2004A			4/4+8	**$1,875/$2,575**
DSO/MSO X2012A	100 MHz		2/2+8	**$1,494/$2,194**
DSO/MSO X2014A			4/4+8	**$2,215/$2,915**
DSO/MSO X2022A	200 MHz		2/2+8	**$2,125/$2,825**
DSO/MSO X2024A			4/4+8	**$2,616/$3,316**

3000 X-Series Oscilloscopes

All the capabilities of the 2000 X-Series, plus expanded memory, ultra-fast waveform updates and serial analysis

- 100 to 500 MHz bandwidth, both DSO and MSO models
- Hardware-based measurement applications including serial decode
- Only 20 MHz built-in WaveGen function generator
- 8.5-inch WVGA display offers 50% larger and 3x the resolution of competitive scopes
- Up to 1,000,000 waveform updates/second
- Fully upgradable—bandwidth, MSO, memory, measurement applications, and WaveGen

Add Advantage Pack & extend your warranty (R1602C/D)
SEE PAGE 24

Model	BW	Max SR & Mem	Channels	Price from (US)
DSO/MSO X3012A	100 MHz	4 GSa/s 4 Mpts	2/2+16	**$2,810/$3,960**
DSO/MSO X3014A			4/4+16	**$3,380/$4,530**
DSO/MSO X3024A	200 MHz		4/4+16	**$4,060/$5,210**
DSO/MSO X3032A	350 MHz		2/2+16	**$6,381/$7,531**
DSO/MSO X3034A			4/4+16	**$7,677/$8,827**
DSO/MSO X3052A	500 MHz		2/2+16	**$8,000/$9,150**
DSO/MSO X3054A			4/4+16	**$10,440/$11,590**

For even more performance: Agilent InfiniiVision 7000B Series oscilloscopes

Engineered for the best signal visibility

- 12.1-inch display—nearly 40% larger than comparable scopes
- DSO and MSO models from 100 MHz to 1 GHz
- 8 Mpts memory
- Broadest range of upgradable measurement applications

|	DSO7012B MSO7012B	DSO7014B MSO07014B	DSO7032B MSO07032B	DSO7034B MSO07034B	DSO7052B MSO07052B	DSO7054B MSO07054B	DSO7104B MSO07104B
Bandwidth	100 MHz		350 MHz		500 MHz		1 GHz
Channels	2/2 + 16	4/4 + 16	2/2 + 16	4/4 + 16	2/2 + 16	4/4 + 16	4/4 + 16
Price from (US)	**$5,494**	**$6,666**	**$7,671**	**$9,609**	**$9,856**	**$12,725**	**$15,466**

Agilent benchtop oscilloscopes

1000 Series portable oscilloscopes

23 automatic measurements and advanced triggering deliver more answers in less time

- Six models ranging from 60 to 200 MHz

Price from (US) $1,257
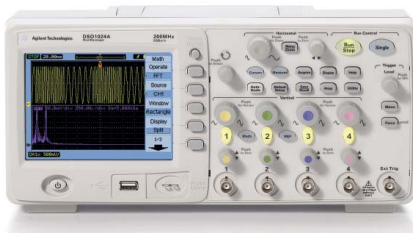
InfiniiVision 5000 Series oscilloscopes

InfiniiVision versatility in a compact package

- Six models from 100 to 500 MHz
- 8 Mpts memory
- Compact form factor with built-in probe storage

Price from (US) $5,005

InfiniiVision 6000 Series oscilloscopes

Integrated measurements for analog, digital, and serial designs

- 16 models both DSO and MSO from 100 MHz to 1 GHz
- Stackable form factor with built-in storage
- Battery option available
- 1U high version available for manufacturing applications

Price from (US) $5,462

Infiniium 9000 Series oscilloscopes

Scope, logic and protocol analysis with widest range of debug and compliance applications

- Three instruments in one:
  - **Oscilloscope:** Fast sample and update rates let you see a precise representation of your signal. Scope is packed with features and analysis capabilities
  - **Logic analyzer:** Fast, deep-memory digital channels show critical data values and timing relationships
  - **Protocol analyzer:** World's first scope based protocol viewer with multi-tab viewing so you can quickly move between protocol and physical layers
- Widest range of application-specific software for debug, analysis, and compliance testing
- Sized to fit your environment with the largest display, 38.1 cm (15 in), a smaller depth, 22.9 cm (9 in), and lighter weight, 11.8 kg (26 lbs), than any other scope in its class
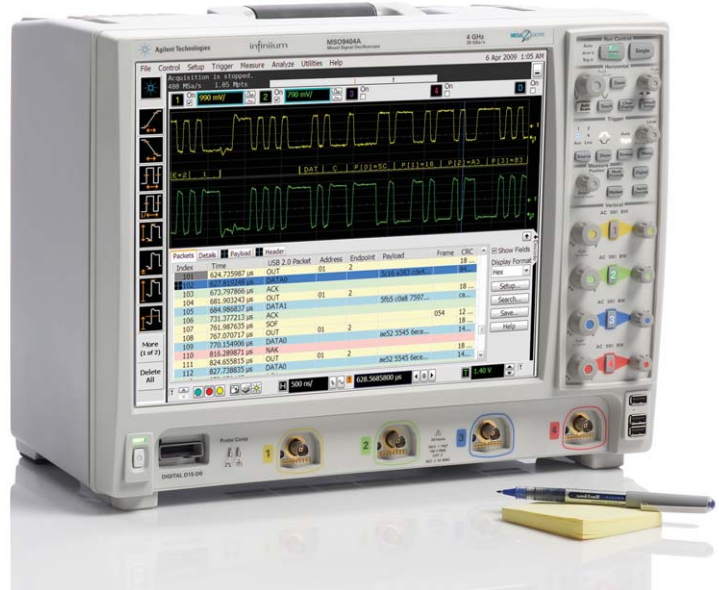
	DSO9064A	MSO9064A	DSO9104A	MSO9104A	DSO9254A	MSO9254A	DSO9404A	MSO9404A
Bandwidth	600 MHz		1 GHz		2.5 GHz		4 GHz	
Channels	4	4+16 digital	4	4+16 digital	4	4+16 digital	4	4+16 digital
Price from (US)	**$16,200**	**$19,000**	**$20,600**	**$24,600**	**$26,200**	**$30,200**	**$35,000**	**$39,000**

5

Probes

Easier access and more accurate probing for more meaningful answers

Reliable measurements start with the probe. Agilent offers an innovative family of oscilloscope probes that are engineered for signal access and measurement accuracy.
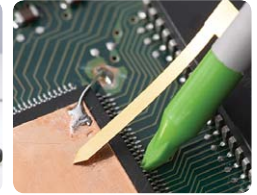
	2000 X-Series	3000 X-Series	7000 Series	9000 Series
Scope bandwidth	70 to 200 MHz	100 to 500 MHz	100 MHz to 1 GHz	600 MHz to 4 GHz
Probe interface	BNC	AutoProbe Lite	AutoProbe Lite	AutoProbe
Standard probe (scope bandwidth)	N2862B (70 MHz/100 MHz) N2863B (200 MHz)	N2862B (100 MHz) N2863B (200 MHz) N2890A (350 MHz/500 MHz)	10074D (100 MHz) 10073D (350 MHz−1 GHz)	N2873A (all)
Passive probe 1:1	10070D	10070D, N2870A	10070D, N2870A	10070D, N2870A
Passive probe 10:1	N2862B, N2863B	N2862B, N2863B, N2889A, N2890A	10073D, N2871A, N2873A	N2873A
High-voltage passive probe 100:1	10076B	10076B	10076B	10076B
High-voltage passive probe 1000:1	N2771B	N2771B	N2771B	N2771B
Low Z passive probe		N2874A, N2876A	N2874A, N2876A	N2874A, N2876A
Active single-ended probe		N2795A	N2795A/96A, 1144A[1], 1145A[1], 1156A, or 1130A[3] with SE probe accessory	N2795A/96A, 1156A-58A, 1130A-32A[3] with SE probe accessory
Active differential probe (high speed)		1141A[1], 1130A[3]	1141A[1], 1130A[3]	1130A/31A/32A[3]
Active differential probe (high voltage)	N2791A, N2891A	N2790A, N2791A, N2792A, N2793A, N2891A	N2790A, N2791A, N2792A, N2793A, N2891A	N2790A, N2791A, N2792A, N2793A, N2891A
Current probe	1146A, N2780A/81A/82A/83A[2]	1146A, 1147A, N2893A, N2780A/81A/82A/83A[2]	1146A, 1147A, N2893A, N2780A/81A/82A/83A[2]	1146A, 1147A, N2893A, N2780A/81A/82A/83A[2]
Rackmount kit	N6456A	N6456A	N2732A	N2902A
Carrying case	N6457A	N6457A	N2733A	

1. Requires 1142A power supply   2. Requires N2779A power supply   3. Order one or more InfiniiMax probe heads or connectivity kits required per amplifier model shown

Tek to Agilent Probe Adapter

- An easy-to-use plug-on adapter to the Agilent oscilloscope's AutoProbe interface
- Provides necessary probe power, offset control and calibration as needed to the attached TekProbe probe

N2744A Price from (US) $480

InfiniiVision applications

Gain even greater insight into your problem with this wide variety of application-specific measurement options and PC-based software packages. They are all for the InfiniiVision oscilloscopes and will make debugging and characterizing your designs more efficient.

1. Order N2741A for DSO701xB, N2735A for DSO703xB, N2736A for DSO705xB, and N2737A for DSO710xB.

2. Available on 4 channel DSO models and 4+16 chanel MSO models only.

3. Available on MSO models only.

Description	2000 X-Series	Price from (US)	3000 X-Series	Price from (US)	7000 Series	Price from (US)
Mask/waveform limit testing	DSOX2MASK	$300	DSOX3MASK	$715	N5455A	$750
Segmented memory	DSOX2SGM	$300	DSOX3SGM	$715	N5454A	$1,500
WaveGen function generator	DSOX2WAVEGEN	$500	DSOX3WAVEGEN	$715	NA	
Education training kit	DSOXEDK	$500	DSOXEDK	$500	NA	
DSO to MSO upgrade kit	DSOX2MSO	$700	DSOX3MSO	$1,150	See note[1]	
I²C/SPI trigger and decode			DSOX3EMBD	$715	N5423A[2]	$1,500
RS-232/UART trigger and decode			DSOX3COMP	$715	N5457A[2]	$1,500
CAN/LIN trigger and decode			DSOX3AUTO	$715	N5424A[2]	$1,500
I²S trigger and decode			DSOX3AUDIO	$715	N5468A[2]	$1,500
Mil-Std 1553 trigger and decode					N5469A[2]	$1,500
FlexRay trigger and decode					N5432C[2]	$4,500
Xilinx FPGA dynamic probe					N5406A[3]	$1,700
Altera FPGA dynamic probe					N5434A[3]	$1,700
Power measurement and analysis			U1881A	$1,700	U1881A	$1,700

53200 Series frequency counters/timers

Faster measurements and faster analysis with histograms, trend charts and statistics

- 350 MHz, with options to 15 GHz
- 20 ps single-shot time interval measurements
- Continuous, gap-free measurements, with time stamps on signal edges
- Advanced capabilities: Histograms, trending, datalogging, optional pulse/burst microwave measurements
- Onboard memory for 1 M readings
- Standard USB, LAN (LXI class C), and GPIB
- 53131A, 53132A, 53181A counter emulation mode

Model	53210A	53220A	53230A
Type	1 channel RF; optional channel 2	2 channel universal; optional channel 3	
Measurements	Frequency, frequency ratio, period, max/min/peak-to-peak input voltage		
		Time interval, rise/fall time, single period, pulse width, duty cycle, phase, totalize	
			Timestamp/MDA
Analysis	Math: smoothing (reading moving average), scaling, Δ-change, null		
	Statistics: mean, standard deviation, max, peak-to-peak, count; full color display for trendline, histograms		
			Allan deviation
Frequency range (optional)	DC to 350 MHz (6 or 15 GHz)		
Frequency resolution	10 digits/s	12 digits/s	
Time interval	NA	100 ps	20 ps
Connectivity	LXI/Ethernet, USB, GPIB		
Price from (US)	$1,963	$2,273	$3,552
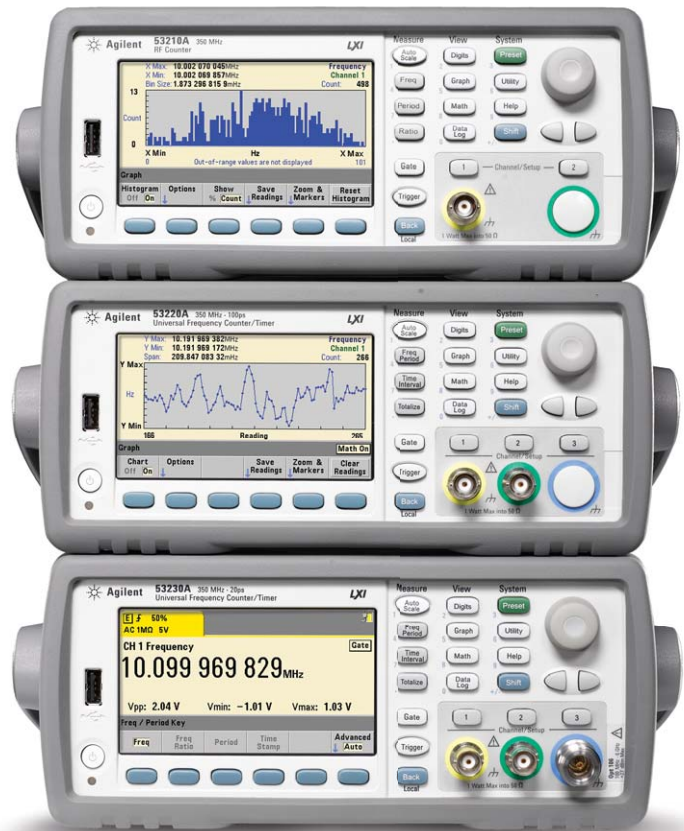
Add Advantage Pack & extend your warranty (R1601B/C)

SEE PAGE 24

53210A
53220A
53230A

LXI
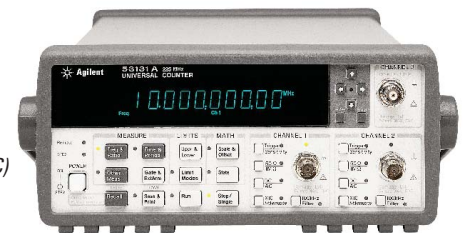
Transitioning from the 53131A, 53132A or 53181A frequency counters to the 53200 Series*

Deciding on the best model and options

Add Advantage Pack & extend your warranty (R1601B/C)

SEE PAGE 24

53181A

If you use/order:	Now – order this: NEW 53200 Series Replacements
53181A 225 MHz RF frequency counter (10 digit/sec) 1 channel with optional 2nd microwave channel	**53210A** 350 MHz RF frequency counter (10 digit/sec) 1 channel with optional 2nd microwave channel
53131A 225 MHz universal counter (10 digit/sec, 500 psec) 2 channels with optional 3rd microwave channel	**53220A** 350 MHz universal frequency counter/timer (12 digit/sec, 100 ps) 2 channels with optional 3rd microwave channel
53132A 225 MHz universal counter (12 digit/sec, 150 psec) 2 channels with optional 3rd microwave channel	**53220A** 350 MHz universal frequency counter/timer (12 digit/sec, 100 ps) or **53230A** 350 MHz universal frequency counter/timer (12 digit/sec, 20 ps) 2 channels with optional 3rd microwave channel

***Last sale date for 53131A, 53132A, 53181A frequency counters is November 1, 2011.**

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34970A/72A data acquisition/switch unit

Modular flexibility and universal channels for a wide range of measurements with no external signal conditioning

Get the flexibility you need with a 3-slot mainframe and your choice of 8 plug-in modules. Interface with this acquisition and switch unit by either its intuitive front panel and task-oriented, self-guiding menus, or by USB and LAN (34972A) or GPIB and RS-232 (34970A).

- 6½-digit (22-bit) internal DMM measures 11 functions without external signal conditioning
- 50 k readings of non-volatile memory holds data when power is removed
- Battery-backed real-time clock for pacing scans and time stamped readings
- HI/LO alarm limits on each input channel, plus 4 TTL alarm outputs

2 mainframes to choose from:

34970A: GPIB and RS-232 standard

Price from (US) $1,597

34972A: 1Gbit LAN and USB 2.0 standard, USB memory port for extended memory and file transfer, graphical web interface for easy configuration and control
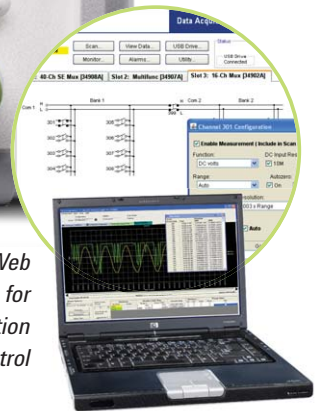
Price from (US) $1,845

Add Advantage Pack & extend your warranty (R1601B)

SEE PAGE 24

Advanced data logging without spending hours programming

For a convenient way to collect and analyze your data, expand the capabilities of Agilent 34970A/34972A data acquisition/switch units with **Agilent BenchLink 34830A Data Logger Pro software**

New 34972A includes Web interface capabilities for remote configuration and control

8 modules to choose from:

	34901A	34902A	34903A	34904A	34905A	34906A	34907A			34908A
Description	20-channel multiplexer	16-channel multiplexer	20-channel actuator/ GP switch	4x8 matrix	Dual 4-channel RF mux, 50 Ω	Dual 4-channel RF mux, 75 Ω	Multifunction module			40-channel single-ended
Type	2-wire armature (4-wire selectable)	2-wire reed (4-wire selectable)	SPDT/ Form C	2-wire armature	Common low (untermi-nated)	Common low (untermi-nated)	Two 8-bit digital I/O ports	26-bit, 100-kHz event counter	Two 16-bit analog outputs	40-channel single-ended multiplexer
Speed (ch/sec)	60	250	120	120	60	60	NA	NA	NA	60
Max voltage	300 V	300 V	300 V	300 V	42 V	42 V	42 V	42 V	±12 V	300 V
Max current	1 A	50 mA	1 A	1 A	0.7 A	0.7 A	400 mA	NA	10 mA	1 A
Price from (US)	**$481**	**$585**	**$414**	**$519**	**$758**	**$758**	**$388**			**$495**

Add Advantage Pack & extend your warranty (R1601A)
SEE PAGE 24

## 34980A multifunction data acquisition switch/measure unit

Maximum versatility in a minimum footprint

This 8-slot mainframe includes a choice of 21 optional plug-in modules for custom configurations. As a one-box solution it is ideal for medium to high-density switch/measure applications in design verification, automated test, and data acquisition applications.

- High-performance switching—up to 560 2-wire multiplexer channels or 4092 matrix cross-points in one mainframe

- Optional built-in 6½ digit DMM—make 11 measurements with more than 3000 readings/s

- Built-in LAN, USB 2.0, and GPIB

- BenchLink Data Logger software (34826A) for high-speed data logging with no programming

Price from (US) $2,591

For a convenient way to collect and analyze your data, expand the capabilities of Agilent 34980A data acquisition/switch units with **Agilent BenchLink 34832A Data Logger Pro software**

Advanced data logging without spending hours programming
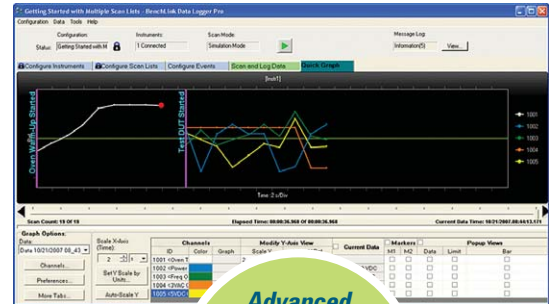
LXI

21 modules to choose from:

Model	Description	Key specifications	Price from (US)
34921A-25A	Multiplexers	Up to 300 V/1 A	**$876**
34931A-33A	Matrix switches	Up to 128 crosspoints	**$1,023**
34934A	High-density switch	512-crosspoint reed matrix	**$5,262**
34939A	High-density switch	64-channel Form A channels up to 60 W	**$1,233**
34937A/38A	GP switches	1 A and 5 A	**$986**
34941A/42A	RF switches	50 or 75 ohms	**$1,660**
34945A	µW switch/attenuation driver	Drive 64 coils	**$1,239**
34946A/47A	µW switches	SPDT switch to 26.5 GHz	**$842**
34950A-34959A	System control	Choose from D/A, DIO, counter and breadboard	**$519**

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Choose the best benchtop DMM for your application

Lab accuracy at production-line speeds

U3606A multimeter/DC power supply

Half the space, twice the test and measurement functionality

Allows simultaneous supply-and-measure operations

- DMM: 120,000 count resolution with DCV accuracy 0.025%
- Power supply: Dual range 30 V/1 A or 8 V/3 A output with OVP and OCP protection. Ability to source constant-current directly
- Securable with PC-grade physical lock

5½ digit U3606A

U3401A/2A low-cost DMMs

Dual display and solid feature set

- 120,000 count resolution (50,000 count for U3401A)
- Up to 0.012% DCV accuracy
- 11 basic measurements
- 6 built-in math functions
- Securable with PC-grade physical lock

4½ digit U3401A

34405A 5½ digit economy DMM

Expanded capabilities with more resolution

- 16 measurement functions including temperature and capacitance
- 120,000 count resolution
- 0.025% DC voltage accuracy

5½ digit 34405A

34410A/11A/01A 6½ digit high-performance DMM

Broad feature set, including automated data logging and network transfers*

- 0.0030% basic DC accuracy
- Capacitance and temperature measurements
- Data logger with 50,000 reading non-volatile memory*
- Built-in LAN (LXI class C), USB 2.0, and GPIB interfaces standard
- Intuilink software included for easy data logging*
- 1U high version available for manufacturing applications

6½ digit 34411A

* 34410A/11A only

	U3401A	U3402A	U3606A	34405A	34401A	34410A	34411A
Digits of resolution	4½	5½	5½	5½	6½	6½	6½
Measurement speed (readings/s)	NA	NA	37	19	1,000	10,000	50,000
Temperature	NA	NA	NA	Thermistor	NA	Thermistor, RTD	Thermistor, RTD
Connectivity	NA	NA	USB 2.0, GPIB, USBTMC 488.2 Class device	USB 2.0	GPIB, RS-232	LAN, USB 2.0, GPIB, plus LXI class C compliant	
				IntuiLink software—provides a toolbar in Microsoft Word and Excel to import multimeter data for further analysis			
Voltage	DC, true RMS AC, AC+DC		DC, true RMS AC	DC, AC			
Current	DC, true RMS AC, AC+DC		DC, true RMS AC	DC, AC			
Resistance	2-wire	2-wire, 4-wire	2-wire, 4-wire mΩ	2-wire	2-wire, 4-wire	2-wire, 4-wire	
Other	Frequency, diode, continuity		Capacitance, frequency, diode, continuity	Frequency, period		Capacitance, frequency, period	
Price from (US)	**$450**	**$600**	**$1,201**	**$750**	**$1,072**	**$1,298**	**$2,067**

Add Advantage Pack & extend your warranty (R1601A/B)
SEE PAGE 24

34401A 6½ digit

An optimum balance of performance, capability, and value: why thousands of engineers rely on it year after year

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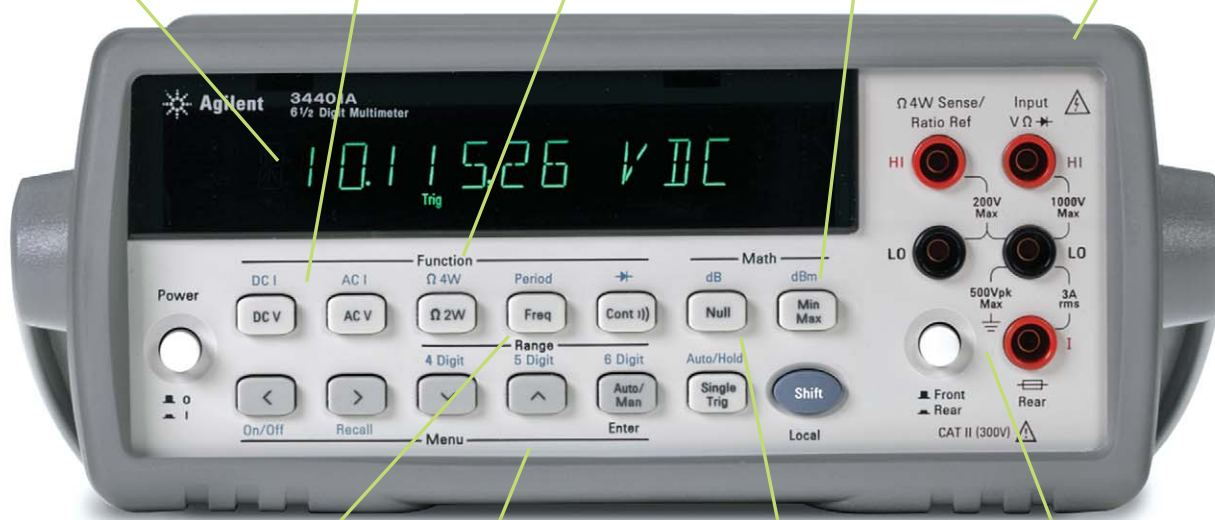
1,000 readings/s in ASCII format across the GPIB bus at 4½ digits continuous

Store up to 512 readings in internal memory

12 measurement functions including 4-wire Ω, continuity and diode test

Limit testing ratio and min/max average

IntuiLink PC connectivity software included, GPIB and RS-232 standard, USB with adaptor, SCPI commands for easy system use

6½ digit 34401A

3 Hz to 300 kHz AC bandwidth

System capable with configuration rates starting at 26/s and autorange rate (DCV) >30/s

Null allows you to remove lead resistance and other fixed offsets in your measurements

0.0035 1-year DCV accuracy
0.060 1-year ACV accuracy
0.010 basic Ω accuracy

34420A 7½ digit nanovolt/micro-ohm meter

High sensitivity for low-level measurements, plus resistance and temperature

- 0.1-ppm transfer accuracy
- Low-noise voltage measurements with resistance and temperature functions
- 100 pV/100 nΩ sensitivity

Price from (US) $3,942

7½ digit 34420A

3458A high-speed DMM

High accuracy, high throughout and high-speed math and statistics

- 0.1-ppm transfer accuracy
- 8-ppm 1-year DCV accuracy, optional 4-ppm
- 0.05 ppm DCV transfer accuracy
- Superior AC voltage measurement

Price from (US) $8,673

8½ digit 3458A

Agilent function/arbitrary waveform generators

The features and performance that fit your needs—with no need to sacrifice quality

Produce clean, low-distortion signals with THD less than 0.04% and flatness as low as ±0.1 dB

33220A: Low-cost and full-featured function generator provides arbitrary waveforms at no extra cost. Includes a 64 K point arbitrary waveform generator standard as well as sine and square waves up to 20 MHz

33250A: Competitively-priced 80 MHz function/arbitrary waveform generator—if you need higher frequency than the 33220A offers

Add Advantage Pack & extend your warranty (R1601B/C)

SEE PAGE 24

	33210A	33220A	33250A
Sine wave frequency	10 MHz	20 MHz	80 MHz
Standard waveforms	Sine, square, ramp, pulse, noise, DC volts	Sine, square, pulse, triangle, ramp, noise, sin(x)/x, exponential rise and fall, cardiac, DC volts	
Arbitrary waveforms	Optional 8 K points, sin(x)/x, exponential rise and fall, cardiac	2 to 64 K points	
Sample rate	50 MSa/s	50 MSa/s	200 MSa/s
Modulation	AM, FM PWM, sweep and burst (all internal/external)	AM, FM, PM, FSK, PWM, sweep and burst (all internal/external)	AM, FM, FSK, sweep and burst (all internal/external)
Burst	Gated, N-cycle	Gated, N-cycle	
Noise generation	7 MHz	9 MHz	50 MHz
Pulse width range	40 ns	20 ns	
Connectivity	GPIB, USB, LAN, LXI class C compliant (IntuiLink software included)	GPIB, USB, LAN, LXI class C compliant (IntuiLink software included)	GPIB/RS-232
Price from (US)	**$1,221**	**$2,050**	**$4,579**

33210A: When a basic 10 MHz function generator is needed along with the flexibility to upgrade at any time

Standard waveforms—including sine and square wave, ramp, pulse, noise and burst 10, 20, or 80 MHz

Arbitrary waveforms 2 points to 64 K points at 50 MSa/s or 200 MSa/s standard on the 33220A and 33250A. Arbitrary waveforms with 8 K points optional for the 33210A

External frequency reference synchronizes to an external 10 MHz clock or another 33210A, 33220A, 33250A—optional for the 33210A and 33220A, standard on the 33250A (back panel)

Add Advantage Pack & extend your warranty (R1601B)

SEE PAGE 24

Amplify your signal up to 50 Vp-p

Add an external output amplifier to your Agilent function generator to provide low distortion, higher voltage outputs for demanding applications.

Agilent 33502A 2-ch, 50 Vp-p isolated amplifier

Intuitive, task-oriented front panel

Pulse generation with variable edge

33500 Series function/arbitrary waveform generators

Create realistic, robust test signals with true point-by-point arbitrary waveforms, variable BW noise and pseudorandom binary sequences

33521A: 30 MHz function generator, arbitrary waveform generator, and pulse generator in one instrument
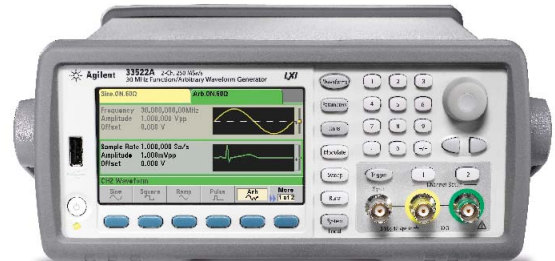
33522A: A dual-channel 30 MHz function generator, arbitrary waveform generator, and pulse generator in one instrument
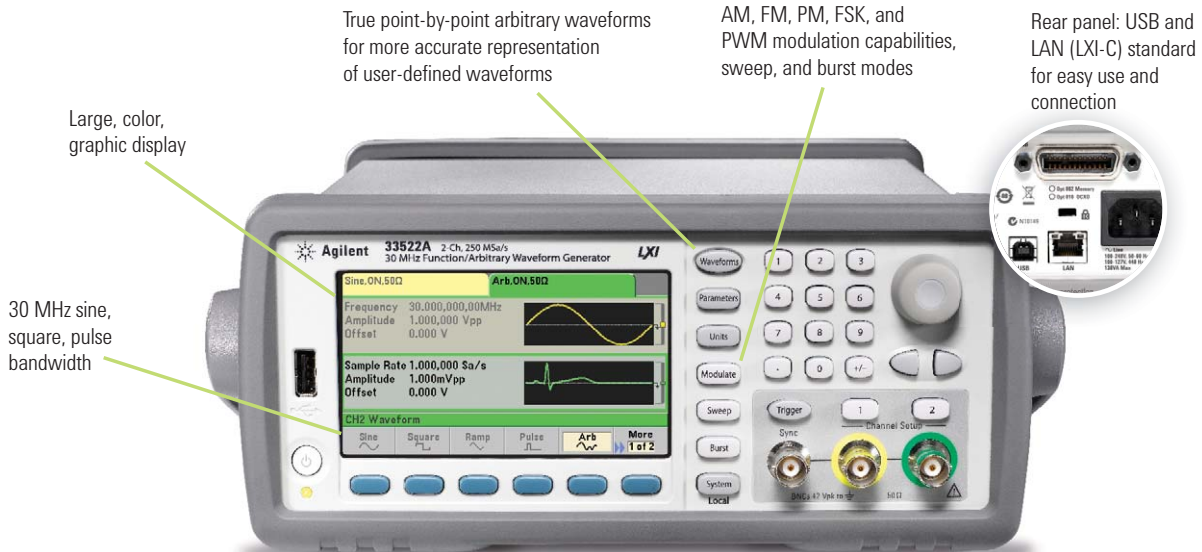
Add Advantage Pack & extend your warranty (R1601B)

SEE PAGE 24

	33521A (1 channel)	33522A (2 channels)
Sine, square, pulse bandwidth	30 MHz	
Standard waveforms	Sine, square, ramp, pulse, triangle, Gaussian noise, PRBS (pseudorandom binary sequence), DC	
Arbitrary waveforms	Point-by-point arbitrary waveforms with sequencing, 1 MSa/channel standard, 16 MSa/channel optional	
Sample rate	250 MSa/s sampling with 16 bits resolution	
Modulation	AM, FM, PM, FSK, BPSK, PWM, sum (carrier + modulation)	
Burst	Counted or gated	
Noise generation	30 MHz	
Pulse width range	16 ns minimum	
Connectivity	GPIB, USB, LXI class C compliant	
Signal fidelity	0.04% THD and <40 ps jitter	
Timebase	TCXO standard, OCXO optional for ultra-high stability	
Price from (US)	$1,930	$2,950

True point-by-point arbitrary waveforms for more accurate representation of user-defined waveforms

AM, FM, PM, FSK, and PWM modulation capabilities, sweep, and burst modes

Rear panel: USB and LAN (LXI-C) standard for easy use and connection

Large, color, graphic display

30 MHz sine, square, pulse bandwidth

Agilent & Our Distributor Network
The Right Instrument. The Right Expertise. Delivered Right Now

U1271A/72A dual display industrial handheld multimeters
Shaped to fit, tailored to perform, and built to last

- Intelligent features: Low impedance mode, Smart Ω, LPF, Qik-V, visual and audible continuity indicator for noisy environments
- Ergonomic design: Better grip, large knob and buttons
- Rugged build: Dust and water resistant casing (certified to IP 54)
- Easy fuse replacement via battery access
- Easy data logging to PC and internal memory

Price from (US) $340

U1272A

Add Advantage Pack & extend your warranty (R1601A)

SEE PAGE 24

U1210 Series handheld clamp meters
Handle big currents—more safely

Unlike most clamp meters, the U1210 Series includes DMM capabilities—resistance, capacitance, frequency, and temperature—to simplify troubleshooting during installation and maintenance.

- Large 52 mm (2 in) clamp opening
- CAT IV 600 V and CATIII 1000 V safety rating
- Measures current as low as 0.01 mA to 1000 A
- High measurement capability of up to 1000 A for AC, DC, or AC+DC
- Peak hold capability

Price from (US) $250

U1213A

U1230 Series handheld digital multimeters
Works better in the conditions you work in

- 6,000-count display
- Built-in flashlight to illuminate your test area and flashing backlight alert
- VSENSE non-contact voltage detection
- Data hold modes
- CAT III 600 V rating
- PC connectivity

Price from (US) U1231A $99 / U1232A $135 / U1233A $165

NEW

U1233A

Agilent handheld DMMs
Check more, fix more, spend less

These affordable, rugged handhelds put precision measurements in the palm of your hand.

- CAT III 1000 V CAT IV 600 V overvoltage protection for assurance of your safety while you go about your tasks
- Standard functions—voltage, current, resistance, frequency, continuity with beeper, diode test, min/max, hold, capacitance, temperature, and % scale of 4 to 20 mA

U1240 Series handheld DMMs feature true RMS readings on a 10,000-count display. Adjustable backlighting helps you do your job even in low lighting conditions, while prolonging battery life.

Price from (US) $201

U1250 Series handheld DMMs combine the functions of a full-featured DMM and frequency counter, so you can make temperature measurements and output square waves with one unit. Accessories are included at no extra cost.

Price from (US) $402

World's first handheld DMM Organic LEDdisplay with approximately 160° viewing angle and high contrast ratio of 2000:1 for crystal-clear viewing

Add Advantage Pack & extend your warranty (R1601A)

SEE PAGE 24

U1253B

U1600 Series handheld oscilloscopes

Get maximum versatility for troubleshooting in the factory or field

Use this full-featured, dual-channel scope with built-in DMM and data logger capability for high-performance troubleshooting on the go.

- See and differentiate signals easily with 11.43 cm (4½ in) color LCD display
- Capture glitches easily with flexible triggering up to 200 MSa/s maximum sampling rate
- Available in 20 and 40 MHz bandwidths
- Deep memory to uncover subtle details and higher resolution zoom-ins, with up to 125,000 points recording length
- Perform quick waveform analysis with waveform math
- Document results easily using the standard USB 2.0 interface for PC connectivity or optional USB host capability for quick saving to a USB flash drive

Price from (US) $1,358

U1604B

Add Advantage Pack & extend your warranty (R1601A)

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U1700 Series handheld capacitance and LCR meters

Quick, convenient LCR checks

U1701B handheld capacitance meter features a dual display with 11,000 counts resolution and a wide measurement range from 0.1 pF to 199.99 mF. Sort capacitors easily by utilizing the visible and audible tolerance mode.
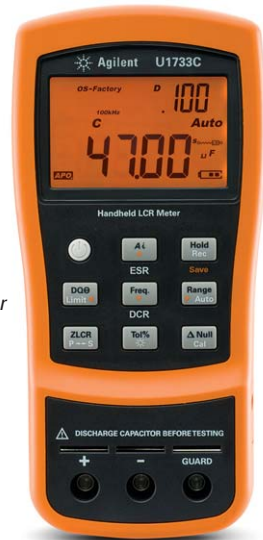
U1731/32/33C handheld LCR meters offer one-button access to measurements with 20,000-count resolution; new models feature twice the accuracy; twice the battery life; auto-identification of L, C and R; and detailed Z, ESR, and DCR component analysis.

Price from (US) $158

NEW

U1733C

Add Advantage Pack & extend your warranty (R1601A)

SEE
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U1401B handheld calibrator

Carry two tools in one and calibrate while you measure

Now you can travel light, whether you're doing calibration for validation, troubleshooting, or service and maintenance.

- 50,000-count resolution on dual display
- Simultaneous source and measure capabilities
- Bipolar voltage and current, square-wave, auto scan, and ramp outputs
- Full-span DMM measurement and recording functions
- Built-in charging capability
- Includes protective holster, a rechargeable battery pack, power adapter and cord, calibrator/meter test lead kit, mA simulation test lead, certificate of calibration, and quick start guide

Price from (US) $701

U1401B

Add Advantage Pack & extend your warranty (R1601A)

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PAGE 24

Agilent **&** Our Distributor Network
The Right Instrument. The Right Expertise. Delivered Right Now

▶▶

Fast Forward with Agilent

Breakthrough technologies that
accelerate your test bench

1. 53230A Universal Counter

▶▶ Get high-level answers, not low-level data, with math, statistics, histograms, trend/stripchart, datalogging and more **See page 7**

2. 33522A Function/Arbitrary Waveform Generator

▶▶ Create realistic test signals with true point-by-point arbitrary waveforms, modulation, deep memory and two-channel coupling **See page 12-13**

3. 3000 X-Series Oscilloscopes

▶▶ Find out what's really going on down there with breakthrough scope technology that shows you more of your signals more of the time **See pages 3-4**

The Agilent Bench

4. 34411A DMM

▶▶ LAN-connected instruments with built-in Web servers let you configure, monitor and control tests remotely. Lower V/I ranges, built-in data logging and up to 50,000 readings per second ***See pages 10-11***

5. 34972A Data Acquisition/Switch Unit

▶▶ Versatile modular approach with built-in conditioning for 11 different kinds of signals makes it easy to set up ad hoc tests ***See page 8-9***

6. Power Supplies

▶▶ LAN-connected instruments with built-in Web servers let you configure, monitor and control tests remotely. Lower V/I ranges, built-in data logging and up to 50,000 readings per second ***See pages 10-11***
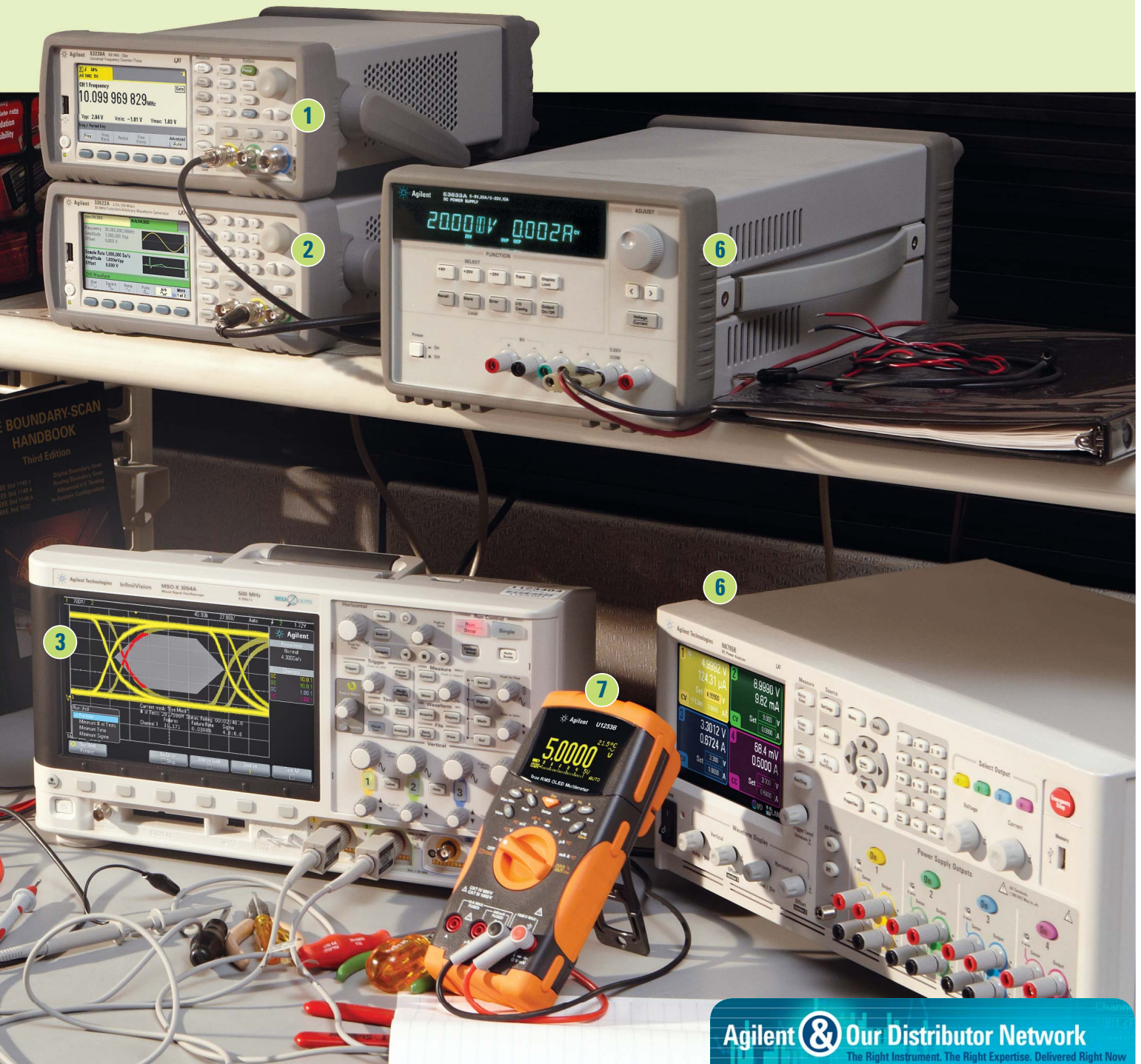
7. Handheld DMMs

▶▶ Full set of DMM features, frequency counter and square wave generator all in one compact instrument ***See page 14***

17

Agilent DC power supplies

Power to advance your test

Whether your device needs a quick check or a detailed assessment, ensure great measurements with the precision, reliability, and flexibility of Agilent DC power supplies.

- Test confidently with clean, precise DC power that's fully specified and guaranteed
- Safeguard loads from potential harm with robust output protection and fault detection capabilities

Add Advantage Pack & extend your warranty (R1601A)

SEE PAGE 24

Over 200 models of power supplies—30 W up to 6.6 kW. Here are a few of the most popular models:

Power	U8000 Series	E3600 Series	N5700 Series	N8700 Series	N6700 Series	6600 Series	6030 Series
0-50 W		X			X	X	
51-175 W	X	X			X	X	
176-1200 W		X			X	X	X
200-2000 W			X			X	X
1201-6600 W			X	X		X	
Price from (US)	$316	$451	$2,497	$4,699	$1,126 /output	$2,244	$4,625

U8000 Series DC power supplies

Get extra features and functions without spending more

U8000 Series 90- to 150-W single-output, non-programmable DC power supplies include extra features—typically found only in more-expensive supplies.

- Low output noise (as low as 1 mVrms) minimizes interference into your device-under-test (DUT)
- Excellent 0.01% load and line regulation for steady output power levels
- Fast load transient response time (50 µs) reduces test time and manufacturing cost
- Fully integrated over-voltage and over-current protection to prevent damage to your DUT

Add Advantage Pack & extend your warranty (R1601A)

SEE PAGE 24

Security feature: physical lock mechanism

	Voltage	Current	Power	Price from (US)
U8001A	30 V	3 A	90 W	**$316**
U8002A	30 V	5 A	150 W	**$396**

E3600 Series DC power supplies

Reliable power, repeatable results

For environments that need to watch test costs as closely as they watch test results.

- Extremely low output noise—as low as 1 mVp-p/0.2 mVrms
- Tight 0.01% load and line regulation for steady output power levels
- Fast load transient response time (<50 μs)
- Choice of models from 30 to 200 W output power
- Convenient front-panel, GPIB, and RS-232 programming

E3610A-17A/20A/30A manual DC power supplies

- Up to 120 V and 6 A—just the power you need
- 30 to 60 W—single, dual, and triple outputs
- 10-turn pots—make fine adjustments easily

E3631A-34A programmable DC power supplies

- System-level performance without the high price
- 80 to 200 W—single or triple output for more power options
- Rotary knob and self-guiding keypads—precise adjustments for output resolution

Add Advantage Pack & extend your warranty (R1601A/B)

SEE PAGE 24

E3610A-17A/20A/30A

	GPIB, RS-232	Output	Range	Voltage	Current	Power	Price from (US)
E3610A	N	1	2	8 V 15 V	3 A 2 A	30 W	**$451**
E3611A	N	1	2	20 V 35 V	1.5 A 0.85 A	30 W	**$451**
E3612A	N	1	2	60 V 120 V	0.5 A 0.25 A	30 W	**$451**
E3614A	N	1	1	8 V	6 A	48 W	**$707**
E3615A	N	1	1	20 V	3 A	60 W	**$707**
E3616A	N	1	1	35 V	1.7 A	60 W	**$707**
E3617A	N	1	1	60 V	1 A	60 W	**$707**
E3620A	N	2	1	25 V	1 A	50 W	**$615**
E3630A	N	3	1	6 V 20 V -20 V	2.5 A 0.5 A 0.5 A	35 W	**$615**

E3640A-49A programmable DC power supplies

- Remote sensing—eliminate voltage regulation errors due to drop in load leads
- Front and rear output terminals—flexible measurement setup
- Internal non-volatile memory—store and recall setups fast

E3640A-49A

	GPIB, RS-232	Output	Range	Voltage	Current	Power	Price from (US)
E3640A	Y	1	2	8 V 20 V	3 A 1.5 A	30 W	**$739**
E3641A	Y	1	2	35 V 60 V	0.8 A 0.5 A	30 W	**$739**
E3642A	Y	1	2	8 V 20 V	5 A 2.5 A	50 W	**$788**
E3643A	Y	1	2	35 V 60 V	1.4 A 0.8 A	50 W	**$788**
E3644A	Y	1	2	8 V 20 V	8 A 4 A	80 W	**$962**
E3645A	Y	1	2	35 V 60 V	2.2 A 1.3 A	80 W	**$962**
E3646A	Y	2	2	8 V 20 V	3 A 1.5 A	60 W	**$1,033**
E3647A	Y	2	2	35 V 60 V	0.8 A 0.5 A	60 W	**$1,033**
E3648A	Y	2	2	8 V 20 V	5 A 2.5 A	100 W	**$1,235**
E3649A	Y	2	2	35 V 60 V	1.4 A 0.8 A	100 W	**$1,235**

E3631A-34A

	GPIB, RS-232	Output	Range	Voltage	Current	Power	Price from (US)
E3631A	Y	3	1	25 V -25 V 6 V	1 A 1 A 5 A	80 W	**$1,294**
E3632A	Y	1	2	15 V 30 V	7 A 4 A	120 W	**$1,131**
E3633A	Y	1	2	8 V 20 V	20 A 10 A	200 W	**$1,368**
E3634A	Y	1	2	25 V 50 V	7 A 4 A	200 W	**$1,368**

E3631A
Agilent's most popular low-cost DC supply

Add Advantage Pack & extend your warranty (R1601A/B)

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N5700 and N8700 Series DC system power supplies

Minimum rack space requirements, maximum flexibility

- 45 affordable models in compact 1U (750 and 1500 W) and 2U (3.3 and 5 kW) packages
- LAN (LXI-C), USB, and GPIB to simplify test-system development
- Easy front-panel operation
- Outputs of up to 600 V or up to 400 A

*Add Advantage Pack &
extend your warranty (R1601B/C)*

SEE
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750 W models Price from (US) $2,497		1500 W models Price from (US) $2,959		3.3 kW models Price from (US) $4,699		5.5 kW models Price from (US) $6,112	
N5741A	6 V, 100 A, 600 W	N5761A	6 V, 180 A, 1080 W	N8731A	8 V, 400 A, 3200 W	N8754A	20 V, 250 A, 5000 W
N5742A	8 V, 90 A, 720 W	N5762A	8 V, 165 A, 1320 W	N8732A	10 V, 330 A, 3300 W	N8755A	30 V, 170 A, 5100 W
N5743A	12.5 V, 60 A, 750 W	N5763A	12.5 V, 120 A, 1500 W	N8733A	15 V, 220 A, 3300 W	N8756A	40 V, 125 A, 5000 W
N5744A	20 V, 38 A, 760 W	N5764A	20 V, 76 A, 1520 W	N8734A	20 V, 165 A, 3300 W	N8757A	60 V, 85 A, 5100 W
N5745A	30 V, 25 A, 760 W	N5765A	30 V, 50 A, 1500 W	N8735A	30 V, 110 A, 3300 W	N8758A	80 V, 65 A, 5200 W
N5746A	40 V, 19 A, 760 W	N5766A	40 V, 38 A, 1520 W	N8736A	40 V, 85 A, 3300 W	N8759A	100 V, 50 A, 5000 W
N5747A	60 V, 12.5 A, 750 W	N5767A	60 V, 25 A, 1500 W	N8737A	60 V, 55 A, 3300 W	N8760A	150 V, 34 A, 5100 W
N5748A	80 V, 9.5 A, 760 W	N5768A	80 V, 19 A, 1520 W	N8738A	80 V, 42 A, 3300 W	N8761A	300 V, 17 A, 5100 W
N5749A	100 V, 7.5 A, 750 W	N5769A	100 V, 15 A, 1500 W	N8739A	100 V, 33 A, 3300 W	N8762A	600 V, 8.5 A, 5100 W
N5750A	150 V, 5 A, 750 W	N5770A	150 V, 10 A, 1500 W	N8740A	150 V, 22 A, 3300 W		
N5751A	300 V, 2.5 A, 750 W	N5771A	300 V, 5 A, 1500 W	N8741A	300 V, 11 A, 3300 W		
N5752A	600 V, 1.3 A, 780 W	N5772A	600 V, 2.6 A, 1560 W	N8742A	600 V, 5.5 A, 3300 W		

6600 Series high performance single output DC system power supplies

6611C

Speed and accuracy for test optimization

- 40 W to 6600 W outputs, up to 120 V, and up to 875 A
- Fast, low-noise outputs increases test throughput
- Extensive programming capability for flexible system design
- Built-in measurements and advance programming features simplifies system design
- Computer control via GPIB

*Add Advantage Pack &
extend your warranty (R1601B/C)*

SEE
PAGE 24

Model	Max power	Max voltage (V)	Max current (A)	Price from (US)
6611-14C	40-50	8-100	0.5-5	**$2,244**
6631-34B	80-100	8-100	1-10	**$2,518**
6641-45A	160-200	8-120	1.5-20	**$2,834**
6651-55A	400-540	8-120	4-50	**$3,484**
6671-75A	1760-2100	8-120	18-220	**$4,998**
6680-84A	4375-5120	5-40	128-875	**$8,474**
6690-92A	6600	15-60	110-440	**$9,441**

N6700 Series DC system power supplies

Small, flexible, and fast

- Multiple-output power supply system lets you mix and match from 22 different 50 W, 100 W, or 300 W DC power modules
- LAN (LXI-C), USB, and GPIB—to simplify test-system development
- Improve your throughput with fast settling times and fast command processing (<1 ms)

Add Advantage Pack & extend your warranty (R1601A/B/C)

SEE PAGE 24

Mainframes

Model	Description	Price from (US)
N6700B	Low-profile MPS (400 W)	$2,434
N6701A	Low-profile MPS (600 W)	$2,761
N6702A	Low-profile MPS (1200 W)	$3,644

Modules

50 W models Price from (US) $517		100 W models Price from (US) $953		300 W models Price from (US) $1,382	
N6731B	5 V, 10 A	N6741B	5 V, 20 A	N6773A	20 V, 15 A
N6732B	8 V, 6.25 A	N6742B	8 V, 12.5 A	N6774A	35 V, 8.5 A
N6733B	20 V, 2.5 A	N6743B	20 V, 5 A	N6775A	60 V, 5 A
N6734B	35 V, 1.5 A	N6744B	35 V, 3 A	N6776A	100 V, 3 A
N6735B	60 V, 0.8 A	N6745B	60 V, 1.6 A	N6753A HiPerform	20 V, 50 A
N6736B	100 V, 0.5 A	N6746B	100 V, 1 A	N6754A HiPerform	60 V, 20 A
N6751A HiPerform	50 V, 5 A	N6752A HiPerform	50 V, 10 A	*Modules must be installed in one of the N6700 mainframes, sold separately.*	
N6761A Precision	50 V, 1.5 A	N6762A Precision	50 V, 3 A		

Agilent N6705B DC power analyzer

Gain insights into your DUT's power consumption—in minutes, not hours—without writing a single line of code

- Save time and increase your productivity for sourcing and measuring DC voltage and current into your DUT—this instrument integrates up to four advanced power supplies with DMM, scope, arb, and data logger features
- Tailor the N6705B to meet your needs using the same modules for the N6700 (listed above)
- **NEW** 14585A control and analysis PC software for the DC power analyzer (free 30 day trial)

The most award-winning product in Agilent's history!

Price from (US) $6,908

6030 Series basic auto-ranging DC power supplies

Auto-ranging to do the job of multiple power supplies

- 240 W to 1200 W outputs, up to 500 V, and up to 120 A
- Built-in measurements and advance programming features simplify system design
- Full protection from over-voltage and over-current
- Computer control via GPIB

Add Advantage Pack & extend your warranty (R1601C)

SEE PAGE 24

6032A

Model	Max power	Max voltage (V)	Max current (A)	Price from (US)
6030A	1200	200	17	$6,163
6031A	1064	20	120	$6,163
6032A	1200	60	50	$6,163
6033A	242	20	30	$4,625
6035A	1050	500	5	$6,789
6038A	240	60	10	$4,625

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6800 Series AC power source/analyzer

Generation, measurement, and AC analysis in one box

- Up to 1750 VA of single phase AC power and 1350 W of DC power in a single instrument

- Over-current, over-voltage, over-power, over-temperature protection, output disconnect relays, and remote inhibit capabilities to protect valuable DUTs

- Free graphical user interfaces (GUIs) with the AC source graphical user interface software and Microsoft® Excel Link connected through GPIB

Add Advantage Pack & extend your warranty (R1601C/D/E)

SEE PAGE 24

Output ratings (maximum)	6811B	6812B	6813B
Power	375 VA	750 VA	1750 VA
Voltage (rms)	300 V	300 V	300 V
Current (rms)	3.25 A	6.5 A	13 A
Repetitive and non-repetitive peak current	40	40	80
Crest factor	12	6	6
Load power factor capability	0 to 1	0 to 1	0 to 1
DC power	285 W	575 W	1350 W
DC voltage	±425 V	±425 V	±425 V
Price from (US)	**$6,865**	**$8,381**	**$11,539**

N3300 Series DC electronic loads

Increase your manufacturing test throughput with fast electronic loads

This series consists of 2 mainframes and 6 modules. The N3300A mainframe is full rack width with 6 slots. The N3301A mainframe is half rack width with 2 slots. Any assortment of the 6 different modules can be configured into these mainframes, up to the slot capacity.

- Mix and match up to 6 modules as single, parallel, or series outputs for up to 1800 W in a single mainframe

- Measure voltage and current on each electronic load module simultaneously in constant current (CC), constant voltage (CV), and constant resistance (CR) mode

- Observe transient behavior using waveform digitization and 4096 data point buffer

- Automatically execute stored command sequences

Add Advantage Pack & extend your warranty (R1601B)

SEE PAGE 24

Input ratings	N3302A	N3303A	N3304A	N3305A	N3306A	N3307A
Current	0–30 A	0–10 A	0–60 A	0–60 A	0–120 A	0–30 A
Voltage	0–60 V	0–240 V	0–60 V	0–150 V	0–60 V	0–150 V
Maximum power at 40°C	150 W	250 W	300 W	500 W	600 W	250 W
Price from (US)	**$1,653**	**$2,354**	**$2,044**	**$3,014**	**$2,900**	**$2,194**

4263B LCR meter; 100 Hz to 100 kHz

Cost effective LCR meter for production line and fundamental impedance testing

- 0.1% basic accuracy

- High-speed measurement: 25 ms

- 6 test frequencies: 100 Hz, 120 Hz, 1 kHz, 10 kHz, 20 kHz, 100 kHz

- Measurement parameters
  (Z, Y, Theta, R, X, G, B, C, L, D, Q, Rdc, N, M)

- Transformer measurement capability: N (turns ratio),
  M (mutual inductance)

Price from (US) $2,583
NEW PRICE

*Add Advantage Pack & extend
your warranty (R1601C)*

SEE
PAGE 24

E4980A precision LCR meter, 20 Hz to 2 MHz

A new standard for precise impedance measurements

- 0.05% basic accuracy

- High-speed measurement: 5.6 ms at 1MHz
  (five times faster than the Agilent 4284A LCR meter)

- 201 pts sweep measurement supported
  (Sweep type: Frequency, OSC level, DC bias, DC source)

- Measurement parameters (Z, Y, Theta, R, X, G, B, C, L, D, Q, Rdc)

- PC connectivity: LAN/USB–LAN connection enables control
  over Web browser on PC

Price from (US) $16,302

USB Modular Products

Quickly configure and reconfigure versatile, portable test systems

- Consist of USB modular instruments, and USB data acquisition
  and switching modules

- The DAQ and instrument modules can be used standalone
  or integrated

- Provide the flexibility of standalone or chassis-based operation

- U2781A USB modular product chassis can host up to six modules
  and synchronize multiple instruments

- Hi-speed USB 2.0 interfaces for easy setup, plug-and-play,
  and hot swappable connectivity

- Bundled Agilent Measurement Manager software lets you
  configure and control a system with no programming

*Add Advantage Pack & extend
your warranty (R1601A/B/C)*

SEE
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USB Modular Instruments		Price from (US)
U2701A/02A	100/200 MHz oscilloscope	$1,358
U2722A/23A	3-channel source measure unit	$2,213
U2741A	5½-digit digital multimeter (DMM)	$1,054
U2761A	20 MHz function generator	$1,686
U2751A	4x8 switch matrix	$957
USB Modular Data Acquisition		
U2300A Series	USB modular multifunction DAQ devices	$1,136
U2500A Series	USB modular simultaneous-sampling multifunction DAQ devices	$1,642
U2100A Series	USB digital I/O devices	$444
U2600A Series	USB modular isolated digital I/O devices	$460
U2121A-based	RF switch driver	$444
U2802A	31-channel thermocouple input module	$1,204

Agilent & Our Distributor Network
The Right Instrument. The Right Expertise. Delivered Right Now

GPIB, LAN, and USB tools for PC/instrument connectivity

GET HOOKED! with Agilent GPIB and instrument control products

Converters

Mix and match virtually any combination of instruments and interfaces.
Easily establish error-free connections in less than 15 minutes using Agilent IO Libraries Suite.

From...	To converter...	To PC via...	Features
GPIB...	**82357B USB/GPIB interface**	**...USB**	• High-speed USB 2.0 with auto configuration • GPIB transfer rate of more than 1.15 MB/s • Connect up to 14 GPIB instruments (daisy-chained) **Price from (US) $541**
GPIB...	**E5810A LAN/GPIB gateway** *Add Advantage Pack & extend your warranty (R1601B)* SEE BELOW	**...LAN**	• Share equipment and collaborate globally • 10 Base-T/100 Base-TX LAN for remote control of GPIB instruments • Digital display and built-in Web browser for easy setup/configuration **Price from (US) $1,112**

GPIB cards

Easily control instruments and exchange data with maximum throughput.

82350B
PCI high-performance GPIB interface card

Speed	Built-in buffering: speeds up to 900 KB/s
Size	Full PCI height
Power	5 V
Price from (US)	$531

82351A
PCIe® GPIB interface card

Speed	1.4 MB/s transfer rate
Size	Compact half-height
Power	3.3 V
Price from (US)	$551

GPIB cables and adapters

10833A/B/C/D/F or G GPIB cables: Easily connect your GPIB instruments with a PC GPIB interface using reliable and durable Agilent GPIB cables. These cables are available in various lengths ranging from 0.5 meter (1.6 ft) to 8 meters (26.2 ft). Daisy-chain multiple cables together if necessary.

Price from (US) $80

10834A GPIB to GPIB adapter: The adapter extends the cable approximately 2.3 cm (0.9 in) away from the rear panel to provide clearance for other connectors, switches, and cables.

Price from (US) $41

Agilent Advantage Services Packs

Maintain high productivity with expert services from Agilent

• Priority Repair: Fastest turnaround time in the industry
• Full Calibration: Equipment returned calibrated after repair
• Extended Protection: Add 2-years to existing Agilent warranty
• Control Expenses: Purchase with product or add-on after purchase
• Expert Service: Measurement integrity by Agilent personnel

This symbol identifies products covered by the Advantage Services Packs.

Contact your distributor for details.

Microwave and RF attenuators

The best reliability and repeatability in the industry

Manual and programmable step attenuators

- Fast, precise signal-level control up to 50 GHz
- High reliability and exceptional repeatability reduce downtime
- Attenuation range of 121 dB in 1 dB steps can be achieved by cascading 2 attenuators in series
- Broad portfolio of attenuation and connector options provide configuration flexibility

Fixed attenuators

- Precise attenuation, flat frequency response, and low SWR over broad frequency range
- Available in nominal attenuations of 3, 6, 10, 20, 30, 40, 50, and 60 dB to cater to various applications and setups
- High accuracy
- Small size

Agilent's most popular attenuator models

Model	Frequency range (DC to)	Type	Attenuation	Price from (US)
8494A	4 GHz	Manual	0 to 11 dB, 1 dB steps	$1,011
8494G	4 GHz	Programmable	0 to 11 dB, 1 dB steps	$1,349
8491A	12.4 GHz	Fixed	3, 6, 10, 20, 30, 40, 50, 60 dB	$248
8495B	18 GHz	Manual	0 to 70 dB, 10 dB steps	$1,100
8495H	18 GHz	Programmable	0 to 70 dB, 10 dB steps	$1,482
8493C	26.5 GHz	Fixed	3, 6, 10, 20, 30, 40 dB	$429
8495D	26.5 GHz	Manual	0 to 110 dB, 10 dB steps	$1,432
8497K	26.5 GHz	Programmable	0 to 90 dB, 10 dB steps	$2,119
84904L	40 GHz	Programmable	0 to 11 dB, 1 dB steps	$3,855
8490G	67 GHz	Fixed	3, 6, 10, 20, 30, 40 dB	$840

J7211A/B/C attenuation control unit

Simple, flexible operation for benchtop and ATE applications from DC to 26.5 GHz

- 0 to 121/101 dB with 1 dB step size
- Guaranteed 0.03 dB RF repeatability per section
- Long operating life time (> 5 million cycles)
- Agilent calibrated data correction display
- GPIB, USB, and LAN connectivity

Price from (US) $6,249

Agilent RF and microwave test accessories

Over 200 accessories— the key to getting great performance, accuracy, and flexibility

High quality accessories

Ask for a MTA catalog to explore all the possibilities: **www.agilent.com/find/MTAproductguide**

U1818A/B active differential probe, 100 kHz to 7 or 12 GHz

- Broad bandwidth with flat frequency response, ± 1.5 dB, ensures excellent measurement accuracy and helps you achieve the best product specifications
- Low noise floor, less than -130 dBm/Hz at 10 MHz to 7 GHz, allows measurements to be made at a low signal amplitude

Price from (US) $5,511

11713B/C switch driver

- 8 plugs and 4 Viking connectors
- Outputs configured as 2 independent banks
- Multiple connectivity: GPIB, USB, LAN (LXI class C compliance)

Price from (US) $2,778

778D coaxial dual-directional coupler, 100 MHz to 2 GHz

- Nominal coupling and variation: 20 ±1.0 dB
- Directivity: >36 dB to 1 GHz
- Maximum SWR: 1.1

Price from (US) $2,763

N1810/11/12 DC to 40/50/67 GHz Switches

- Terminated and unterminated SPDT switches
- 4- and 5-port bypass switches
- High reliability: 0.03 dB RF repeatability
- Long life: 5 million cycles guaranteed
- High isolation: > 60 dB at 67 GHz

N1913A/14A EPM Series power meters

Direct replacement for the popular E4418B/19B with higher speeds, modern connectivity, and up to four channels

- Get up to four channels to speed and simplify RF average power measurements
- Measure faster with improved measurement speed of 400 readings/s with the Agilent E-Series sensors
- View test results more easily with the industry's first color LCD readout in an average power meter
- Go beyond GPIB with USB and LAN/LXI-C interfaces
- Automate frequency/power sweep measurements with the optional external trigger in/out feature

Price from (US) $3,888

V3500A handheld RF power meter

- Broad 10 MHz to 6 GHz frequency range enables use in a wide variety of applications
- Wide dynamic range of -63 to +20 dBm
- Integrated power sensor eliminates the need to carry a separate power sensor
- Internal power reference enables self calibration

Price from (US) $1,808

EPM-P Series power meters (E4416A/17A)

Advanced capabilities for advanced power measurements.

- Accurately profile complex modulation formats of up to 5 MHz video bandwidth with 20 MSa/s continuous sampling rate
- PC software included for power and statistical analysis
- High throughput—up to 1,000 corrected readings/s via GPIB

Price from (US) $4,763

P-Series power meters (N1911A/12A)

Accurate, fast, and repeatable power measurements for R&D and manufacturing environments.

- Ideal for aerospace/defense, wireless communications, and wireless 802.11a/b/g networking
- Capture single-shot and repetitive events over a wide bandwidth with 30 MHz video bandwidth and 100 MSa/s, continuous sampling capability
- Comprehensive power, time, and statistical measurements

Price from (US) $7,516

Model number	Number of channels	Frequency range	N8480 Series sensors	P-Series sensors	E-Series E9320 sensors	E-Series E9300 sensors	E-Series CW sensors	8480D Series sensors	Standard interfaces
E4417A	2			NA	-65 to +20 dBm				GPIB, RS-232
E4416A	1			NA	-65 to +20 dBm				GPIB, RS-232
N1914A	2	9 kHz to 110 GHz	-35 to +44 dBm	NA	NA	-60 to +44 dBm	-70 to +20 dBm	-70 to -20 dBm	GPIB, LAN, USB
N1913A	1			NA	NA				GPIB, LAN, USB
N1912A	2			-35 to +20 dBm	-65 to +20 dBm				GPIB, LAN, USB
N1911A	1			-35 to +20 dBm	-65 to +20 dBm				GPIB, LAN, USB

Agilent power sensors

Stable, repeatable measurements for a wide variety of applications

- **N8480 Series:** Thermocouple-based sensors offer exceptional accuracy and superior usability
  - Built-in EEPROM feature for ease of calibration factor retrieval
  - Widest dynamic range of 55 dB with thermocouple technology
  - Best-in-class linearity of less than 1%
  - Backward compatibility with EPM, EPM-P, and P-Series power meters
- **8480 Series:** Average power sensors using diode (848xD Series) and thermocouple technology (8483A)
- **E-Series:** Includes E441x wide dynamic range CW sensors, E9300 wide dynamic range average power sensors, E9320 peak and average power sensors
- **P-Series:** Peak and average power measurements of wide-bandwidth modulated signals using diode technology

Price from (US) $1,395

U2000 Series USB average power sensors

Compact, lighweight power measurements without a power meter

Save bench space, travel lightly up base stations and still make high-performance CW and average measurements.

- Connect directly to a PC or selected Agilent RF analyzers
- Simple setup via USB plug-and-play—no external power adapter needed
- Internal zeroing saves time and reduces sensor wear-and-tear
- Time-gated measurements and frequency sweep (except U2004A)
- Built-in attenuator improves mismatch (B&H models)
- Long-distance measurements using USB-to-LAN hubs
- Easy monitoring, testing, and analysis with the N1918A power analysis manager software

Price from (US) $2,742

Model	Frequency range	Power range	Connector type
U2000A	10 MHz to 18 GHz	-60 to +20 dBm	Type-N
U2000B	10 MHz to 18 GHz	-30 to +44 dBm	Type-N
U2000H	10 MHz to 18 GHz	-50 to +30 dBm	Type-N
U2001A	10 MHz to 6 GHz	-60 to +20 dBm	Type-N
U2001B	10 MHz to 6 GHz	-30 to +44 dBm	Type-N
U2001H	10 MHz to 6 GHz	-50 to +30 dBm	Type-N
U2002A	50 MHz to 24 GHz	-60 to +20 dBm	3.5 mm
U2002H	50 MHz to 24 GHz	-50 to +30 dBm	3.5 mm
U2004A	9 kHz to 6 GHz	-60 to +20 dBm	Type-N

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Do more out there with Agilent's field-rugged handheld RF tools

N9342/43/44C
handheld spectrum analyzers (HSA)

Field testing just got easier

- N9344C: 1 MHz to 20 GHz (tunable to 9 kHz)

- N9343C: 1 MHz to 13.6 GHz (tunable to 9 kHz)

- N9342C: 100 kHz to 7 GHz (tunable to 9 kHz)

- Geographic information available from built-in GPS receiver and GPS antenna

- Innovative task planner reduces setup time by up to 95% while enabling test automation and improving consistency

- Built-in tracking generator, 5 MHz to 7 GHz

- Power suite, USB power sensor support, AM/FM modulation, time-gated sweep, spectrogram, interference analysis

- MIL-PRF Class 2 compliant, rugged, weather-resistant design and 3.5-hour battery life

N9344C price from (US) $19,963
N9343C price from (US) $16,979
N9342C price from (US) $11,113

NEW

N9344C

NEW

N9343C

N9340B
handheld spectrum analyzer (HSA)

Best-in-class performance and features

- 100 kHz to 3 GHz (tunable to 9 kHz) handheld spectrum analyzer with best-in-class specifications

- One-button measurement (channel power, ACPR, OBW, field strength, spectrum emission mask)

- Scalar network analysis: insertion loss, amplifier gain, filter passband (Option TG3)

- Interference analysis with spectrogram and N9311X-504 directional antenna

- Demodulation (AM/FM, ASK/FSK)

Price from (US) $7,987

Add Advantage Pack & extend your warranty (R1601D)

N9342C

N9340B

N9330B
handheld cable and antenna tester

Essential tests for RF installation and maintenance

- 25 MHz to 4 GHz handheld cable and antenna tester
- Measure SWR/return loss/cable loss, and distance-to-fault (DTF)
- Calibrate with the electronic calibrator for fast and hassle-free calibration
- Make high-accuracy power measurement with Agilent U2000 Series USB power sensor

Price from (US) $6,485

*Add Advantage Pack & extend
your warranty (R1601C)*

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N9330B

N9912A FieldFox RF analyzer, 4/6 GHz

World's most integrated handheld RF analyzer

- Cable and antenna analyzer, return loss, distance-to-fault, cable loss, QuickCal
- Vector network analyzer, S11 magnitude and phase, S21, Smith chart
- Spectrum analyzer, channel power, ACPR, OBW, field strength measurement, EMI
- Interference analyzer, spectrogram, playback and recording
- Independent signal source, CW and swept
- Vector voltmeter, cable trimming, phase comparison
- Power meter with USB power sensor
- MIL-PRF Class 2 compliant, light weight, rugged, indoor/outdoor display field replaceable battery

Price from (US) $7,614

N9912A

N9923A FieldFox RF vector network analyzer, 4/6 GHz

World's most accurate handheld vector network analyzer

- All four S-parameters, S11, S12, S12, S22
- Full 2-port Cal, QuickCal, Guided Cal
- Cable and antenna test, distance-to-fault, return loss, cable loss
- Vector voltmeter, cable trimming, single and dual channel
- Power meter with USB power sensor
- MIL-PRF Class 2 compliant, light weight, rugged, indoor/outdoor display, field replaceable battery

Price from (US) $12,000

N9923A

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Signal analyzer, network analyzer, and signal generator express configurations

New express configurations for the Agilent CXA and EXA signal analyzers, ENA network analyzers, and the MXG signal generators provide the fastest delivery of these popular economy solutions. Each express configuration gives you the RF or microwave performance products you need, delivered RIGHT NOW.

N9010AEP EXA signal analyzer express configuration (9 kHz to 3.6, 7, 13.6, or 26.5 GHz)

Maximize throughput

- Includes 3.6 or 7 GHz preamplifier and 3.6 GHz electronic attenuator as standard
- ±0.27 dB absolute amplitude accuracy
- +11 dBm third order intercept (TOI) at 1 GHz
- –161 dBm displayed average noise level (DANL) with standard preamplifier at 1 GHz
- 10 MHz (standard) analysis bandwidth

Price from (US) $17,847

Add Advantage Pack & extend your warranty (R1601E)

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N9000AEP CXA signal analyzer express configuration (9 kHz to 3 or 7.5 GHz)

Expect more

- Includes 3 or 7.5 GHz preamplifier and 3 or 6 GHz tracking generator as standard
- ±0.5 dB absolute amplitude accuracy (95% confidence)
- +13 dBm third order intercept (TOI) at 1 GHz
- –161 dBm displayed average noise level (DANL) with standard preamplifier at 1 GHz
- 10 MHz (standard) analysis bandwidth

Price from (US) $13,312

Add Advantage Pack & extend your warranty (R1601E)

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N9320B spectrum analyzer (9 kHz to 3 GHz)

Professional performance, compact size, and great value

- Optional tracking generator: 100 kHz to 3 GHz
- Optional AM/FM and ASK/FSK demodulation
- Optional EMC RBW filters (-6 dB)
- USB, LAN, GPIB connectivity; USB power sensor support
- Remote control PC software

Price from (US) $7,871

Add Advantage Pack & extend your warranty (R1601D)

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E5061BEP & E5071CEP

ENA network analyzers: express configurations

High-productivity testing of today's complex RF components and circuits

- E5061BEP: 1.5 or 3 GHz; available configurations: T/R test set, S-Parameter test set, 5 Hz to 3 GHz range
- E5071CEP: 4.5, 8.5, and 20 GHz configurations; >123 dB dynamic range (typ); low trace noise; fastest measurements in its class; integrated S-parameter test set
- Visual Basic for on-board automation
- ECal modules: more-accurate calibration in less time
- GPIB, USB, LAN

NEW

Price from (US) $13,780

The express configurations are fully upgradable, so you can evolve as technology changes.

From basic to advanced functionality; designed for the most demanding manufacturing and R&D testing

Each signal generator delivers benchmark performance in its class to address your test requirements in design and manufacturing.

N5181AEP MXG RF analog signal generator express configuration

- 100 kHz to 1, 3, or 6 GHz with AM/FM/phase modulation included as standard
- +23 dBm output power at 1 GHz (optional) to compensate for system losses or drive device into compression
- Accurate and repeatable output power for calibration and verification
- –121 dBc/Hz (typical) phase noise at 1 GHz and 20 kHz offset is useful for VCO substitution
- 5 ms frequency switching speed (typical) to increase throughput

Price from (US) $7,172

Add Advantage Pack & extend your warranty (R1601E)

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N5183AEP MXG microwave analog signal generator express configuration

- 100 kHz to 20 GHz with AM/FM/phase modulation and step attenuator included as standard
- +18 dBm output power at 1 GHz (optional) to compensate for system losses or drive device into compression
- Excellent power and level accuracy for calibration and verification
- –113 dBc/Hz (typical) phase noise at 1 GHz and 20 kHz offset is useful for VCO substitution
- 5 ms frequency switching speed to increase throughput

Price from (US) $23,444

Add Advantage Pack & extend your warranty (R1601E)

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N9310A signal generator

- Ideal for benchtop R&D, education, field measurements, and signal monitoring and manufacturing
- Rugged body, lightweight frame, large display, and full-size front panel
- Standard USB connectivity for test automation and memory stick support
- 9 kHz to 3 GHz frequency coverage with 0.1 Hz resolution
- Extensive analog modulation: AM, FM, phase, and pulse modulation
- Wide bandwidth (40 MHz) IQ modulator for generating digital modulated signals from your own custom IQ signals

Price from (US) $7,273

Add Advantage Pack & extend your warranty (R1601D)

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N9311X RF and microwave accessories kit

Assortment of antenna, filters, attenuators, cables and adapters provide a complete solution when using Agilent low-cost handheld and benchtop solutions.

Looking for real answers but getting only raw data?

▶▶ *Fast Forward with Agilent*

Breakthrough technologies that
accelerate your test bench

See pages 16-17