KEYSIGHT TECHNOLOGIES

Bench and Power Products Catalog

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Let Keysight Surround Your Device

AS DEVICES HAVE CHANGED, SO HAVE YOUR TESTING NEEDS.

Today's designs are increasingly portable and connected. Troubleshooting DC to radio-frequency (RF) technologies requires a variety of instruments, and Keysight offers the deepest bench in the industry. Our instruments offer a common user experience, so you have to learn only once — which allows you to spend more time characterizing your device. As you gain insight, you need to document and share your understanding. Graphical interfaces across Keysight bench products make it easy to display your results and share them with others.

Sick of redundant tasks?

Automate your tests using modern PC interfaces and software such as Keysight PathWave BenchVue, which requires zero programming.

When it comes time to create a fully automated test system, know that Keysight products are rack-mountable and use industry-standard SCPI. For automated test equipment applications, Keysight offers products which take less rack space, change states rapidly, and maintain their temperature with air vents ideally located for a test rack. PathWave test automation software is at the heart of a maintainable system, providing flexibility and extendibility.

Keysight provides service and support worldwide. When your test solutions deploy to the far ends of the globe, KeysightCare will be there.

Take a look at what Keysight offers.

A New Era of Data Acquisition

As feature sets expand, electromechanical devices become more complex in terms of design, integration, and characterization. When you need to test the physical and electrical parameters of your product, you need high precision, complete communication interface flexibility, and the simplest way to automate test sequences. Combine the precision of Keysight's DAQ970A / DAQ973A multichannel data acquisition (DAQ) system with the PathWave BenchVue DAQ software capability to get the following:

- fastest reading measurements — up to 50,000 readings / sec — and scan rates up to 450 channels / sec
- dynamic data acquisition with new four-channel simultaneous sampling digitizer—up to 800 kSa/s sampling rate per channel (viewing graphs in time and frequency domain)
- ability to measure up to 300 V
- ability to measure wide temperature ranges (from -200 °C to 1,800 °C) for many high-performance applications

A complete selection of plug-in modules gives you a choice of high-quality measurement, switching, and control capabilities. Modules include a few flavors of general-purpose switch multiplexers, an RF multiplexer, a matrix switch, a digitizer module, and a multifunction module with digital input / output, analog output, and totalizer capabilities. Mix and match modules to get just the functionality you need right now. Modules for the DAQ970A / DAQ973A make testing easier, faster, and more reliable. Buy only what you need — and add more modules as your application grows.

So, whether you are an R&D engineer characterizing your latest design or a manufacturing engineer building a test system or troubleshooting a process, the Keysight DAQ system offers the best value and measurement performance.

DC Power Supplies

LOW NOISE, ACCURACY, AND SPEED

Our broad selection of bench-friendly and system-ready instruments meets your test challenges, from basic to complex.

View all of Keysight's power supplies

DC BENCH POWER SUPPLIES

Enhance your bench with a low-noise power supply that is easy to view from any angle.

Products	Number of models	Number of outputs	Total power	Common applications	
E36100B Series	5 models	1 output	30 to 40 W	testing low-power devices	GET A QUOTE
E36300 Series	3 models	3 outputs	80 or 160 W	power and characterizing devices	GET A QUOTE
E36200 Series	4 models	1 or 2 outputs	200 or 400 W	testing high-power devices	GET A QUOTE
E3630 Series	3 models	1 output	120 to 200 W	low noise testing	GET A QUOTE
E3640 Series	10 models	1 or 2 outputs	30 to 100 W	testing low-power devices	GET A QUOTE
U8000 Series	2 models	1 output	90 to 150 W	economical power source	GET A QUOTE
U8030 Series	2 models	3 outputs	375 W	simple front-panel testing	GET A QUOTE
E36311A	1 model	3 outputs	90 W	educational environment and general troubleshooting	GET A QUOTE

PathWave BenchVue power supply control and automation application included with all programmable power supplies

E36312A Triple Output
Programmable DC Power Unit

DC SYSTEM POWER SUPPLIES

Reduce integration and test times with a compact programmable power supply.

Products	Number of models	Number of outputs	Max power per output	Common applications	
N6700 Series	30+ modules	1 to 4 outputs per mainframe	50 to 500 W	modular flexibility to expand and change with your testing needs over time	GET A QUOTE
N5700 Series	24 models	1 output	750 or 1,500 W	meets your test needs up to 1,500 W in a compact 1 U size	GET A QUOTE
N8700 Series	21 models	1 output	3,300 or 5,000 W	meets your high-power test needs in a compact size	GET A QUOTE
N8900 Series	28 models	1 output	5,000, 10,000, or 15,000 W	flexibility to expand up to 100 kW to meet your highest-power test needs	GET A QUOTE
N6900 Series	12 models	1 output	1,000 or 2,000 W	advance testing higher-power devices, and optional power dissipater	GET A QUOTE
N7900 Series	12 models	1 output	1,000 or 2,000 W	advanced characterization capabilities and optional power dissipater	GET A QUOTE
RP7900 Series	18 models	1 output	5,000, 10,000, or 20,000 W	regenerative power system, sources and sinks current with seamless transition	GET A QUOTE

PathWave BenchVue power supply control and automation application included with all programmable power supplies, except RP7900

N6700 Series Modular System Power

DC POWER SOLUTIONS

Solve your power challenges with hardware and customized software.

Products	Number of Models	Number of outputs	Software	Common applications	
N6705 DC power analyzer	30+ modules	1 to 4 outputs 50 to 500 W	BV9201B	simplifies DC power sourcing, loading, and measurements up to four outputs	GET A QUOTE
B2961/62A low-noise source	2 models	1 or 2 outputs 32 W	-	component testing, low-noise voltage / current source 10 µVrms	GET A QUOTE
PV8900 PV Simulator, 20 kW	2 models	1 output 20 kW	DG9000	test string inverters with curve or table mode	GET A QUOTE

PathWave BenchVue software included with instrument

PV8921A Photovoltaic Array Simulator

POWER SELECTION GUIDE

Keysight offers more than 300 power products to meet your specific needs

The Keysight Power Products Selection Guide helps you choose your instrument by the number of outputs, output power characteristics, packaging, special features, and application-specific solutions.

View the Power Selection Guide

BV9201B PathWave BenchVue Advanced Power Control and Analysis Software

DELIVER EXCEPTIONAL BATTERY LIFE IN YOUR DEVICES

The N6705C, loaded with N6780 series source / measure units (SMUs), use seamless ranging to accurately capture dynamic current usage and predict battery life of IOT devices and smart phones.

CAPTURE VOLTAGE AND CURRENT WAVEFORMS

Data log voltages and current with a power or load module. To accurately measure power select a module with simultaneous voltage and current measurements.

DYNAMICALLY TEST DEVICES

Create power arbitrary waveforms to test a devices behavior to a change in voltage. Perform a load regulation test using an arbitrary waveform and N6790 load module.

NOW TEST HIGHER POWER WITH THE SAME SOFTWARE

Keysight BV9201B can also analyze dynamic voltage and current waveforms from the N7900 Series advanced power system, which can source and dissipate up to 2,000 W. For applications requiring more than 5,000 W, use our RP7900 regenerative power system.

Learn more

BV9201B BenchVue Advanced Control and Analysis software

N6705C DC Power Analyzer

AC Single-Phase Power Sources

Products	Number of models	Power Output	Interfaces	Measurements	
AC6800 Series	4 models	500 to 4,000 VA	LAN (LXI core), USB, optional GPIB	19 built-in power measurements, including inrush current	GET A QUOTE
6800 Series	3 models	375 to 1,750 VA	LAN(LXI core), USB, GPIB, and RS232)	built-in arbitrary waveforms and advanced measurements, including harmonics	GET A QUOTE

AC6801B AC Power Source

DC Electronic Loads

Products	Number of modules	Power per input	Tests	Measurements	
N3300A Series	7 modules	150 to 600 W	Static or dynamic tests with arbitrary waveforms	measure voltage and current simultaneously in constant current, constant voltage, and constant resistance mode	GET A QUOTE
N6700 Series	2 (N6791A, N6792A)	100 or 200 W	Static or dynamic tests with arbitrary waveforms	measure voltage and current simultaneously in constant current, constant voltage, constant resistance, constant power mode	GET A QUOTE

PathWave BenchVue software included with instrument

N6791A DC Electronic Load Module

Semiconductor Device Analyzer

B1500A SEMICONDUCTOR DEVICE ANALYZER AND B1505A / B1506A POWER DEVICE ANALYZERS

- Integrated SMU enables accurate characterization of advanced devices and emerging high-power devices
- Flexible and configurable advanced modules and accessories enable capacitance measurements, pulsed I/V measurements, automated testing, and more.
- Easy-to-use GUI software is embedded in the Windows 10 operating system.

Learn more

SEMICONDUCTOR DEVICE ANALYZERS

Model	Description	Current range	Voltage range	Advanced capabilities	Application	
B1500A	Semiconductor device analyzer	0.1 fA to 1 A	500 nV to 200 V	• capacitance measurement • ultra-fast pulsed and transient I/V down to 100 ns • powerful data analysis and robust data management	Advanced material research and device R&D	GET A QUOTE
B1505A	Power device analyzer / curve tracer	10 fA to 1,500 A	500 nV to 10 kV	• capacitance measurement • pulsed I/V down to 10 µs • thermal test • GaN current collapse measurement • gate charge measurement • on-wafer measurements • semi-automated IV/CV switching • powerful data analysis and robust data management	Power device characterization for device manufacturers	GET A QUOTE
B1506A	Power device analyzer for circuit design	10 fA to 1,500 A	500 nV to 3 kV	• capacitance measurement • pulsed I/V down to 10 µs • thermal test • gate charge measurement • on-wafer IV measurement • fully automated IV/CV switching • quick and automatic device datasheet generation	Power device characterization for device users	GET A QUOTE

B1500A Semiconductor Device Analyzer

Precision Bench Instruments

B2900 SERIES PRECISION SOURCE/MEASURE UNIT (SMU)

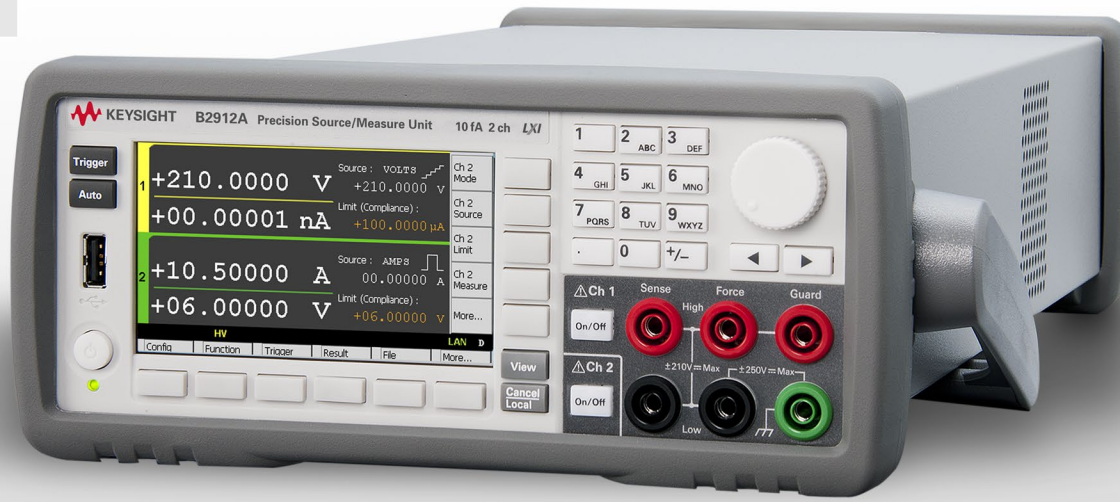
- Integrated four-quadrant sourcing and measuring capabilities
- Min 50 µs programmable pulse width
- User-friendly front-panel GUI with 4.3-inch color LCD
- BenchVue and EasyEXPERT software support

Learn more

Model	Source	Measurement	Sampling rate	
B2901A/02A	1 µV to 210 V 1 pA to 10 A	100 nV to 210 V 100 fA to 10 A	50 kSa/s	GET A QUOTE
B2911A/12A	100 nV to 210 V 10 fA to 10 A	100 nV to 210 V 10 fA to 10 A	100 kSa/s	GET A QUOTE

PathWave BenchVue software included with instrument

B2912A Source/Measuring Unit



B2960 / B2980 SERIES PRECISION BENCH INSTRUMENTS

B2960 Series enables 6½-digit precision and wide and bipolar (four-quadrant) output at the best-in-class noise floor (10 µVrms, 1 nVrms/√Hz) with external filter.

Learn more

B2980 Series enables an ultra-low current down to 0.01 fA and high resistance measurements up to 10 PΩ.

Learn more

Model	Description	Source	Measurement	
B2961A/62A	6½-digit low-noise power source	100 nV to 210 V 10 fA to 10 A	10 µV to 210 V 10 pA to 10 A	GET A QUOTE
B2981A/83A	Femto / picoammeter	-	0.01 fA to 20 mA	GET A QUOTE
B2985A/87A	Electrometer / high-resistance meter	700 µV to 1000 V	0.01 fA to 20 mA	GET A QUOTE

PathWave BenchVue software included with instrument

PXIe SMU MODULES

- The M9111A provides high-speed testing for power amplifiers. It delivers up to 18 W of power at up to 13 V, ±1 A, or up to 6 V, ±3 A.
- The M9601A is Keysight's first precision SMU to enable faster measurement broadly from DC to 20 µs pulse width. It offers best-in-class 10 fA resolution, a high sampling rate of 1.25 MSa/s, and low noise.
- Keysight M9614A and M9615A are the single-slot PXIe 5-channel precision SMUs meant for broad applications requiring high channel density with wide output up to 30 V / 500 mA and fast throughput at a low cost per channel.

Learn more

M9614A/15A 5-channel
Source/Measure Unit

Device Current Waveform Analyzer

MEASURE DYNAMIC CURRENT AND VOLTAGE WITH CONFIDENCE

- Make precise measurements with a wide dynamic range with high-resolution and high-speed sampling at 14-bit (1 GSa/s)/16-bit (75 MSa/s)
- Visualize precise measurements thanks to low noise and a wide dynamic range with high sensitivity from a sub-nA and sub-µV
- Take advantage of long-duration measurement capability of up to 100 hours
- Accelerate characterization, validation and debugging with waveform analytics, current profiler and efficient analysis functions on both mainframe and PC
- Easily identify and analyze intermittent anomalous signals with the included Anomalous Waveform Analytics technology
- Choose from a wide variety of current and differential sensor options

Learn more

CX3300A Device Current Waveform Analyzer

CX3300A DEVICE CURRENT WAVEFORM ANALYZERS

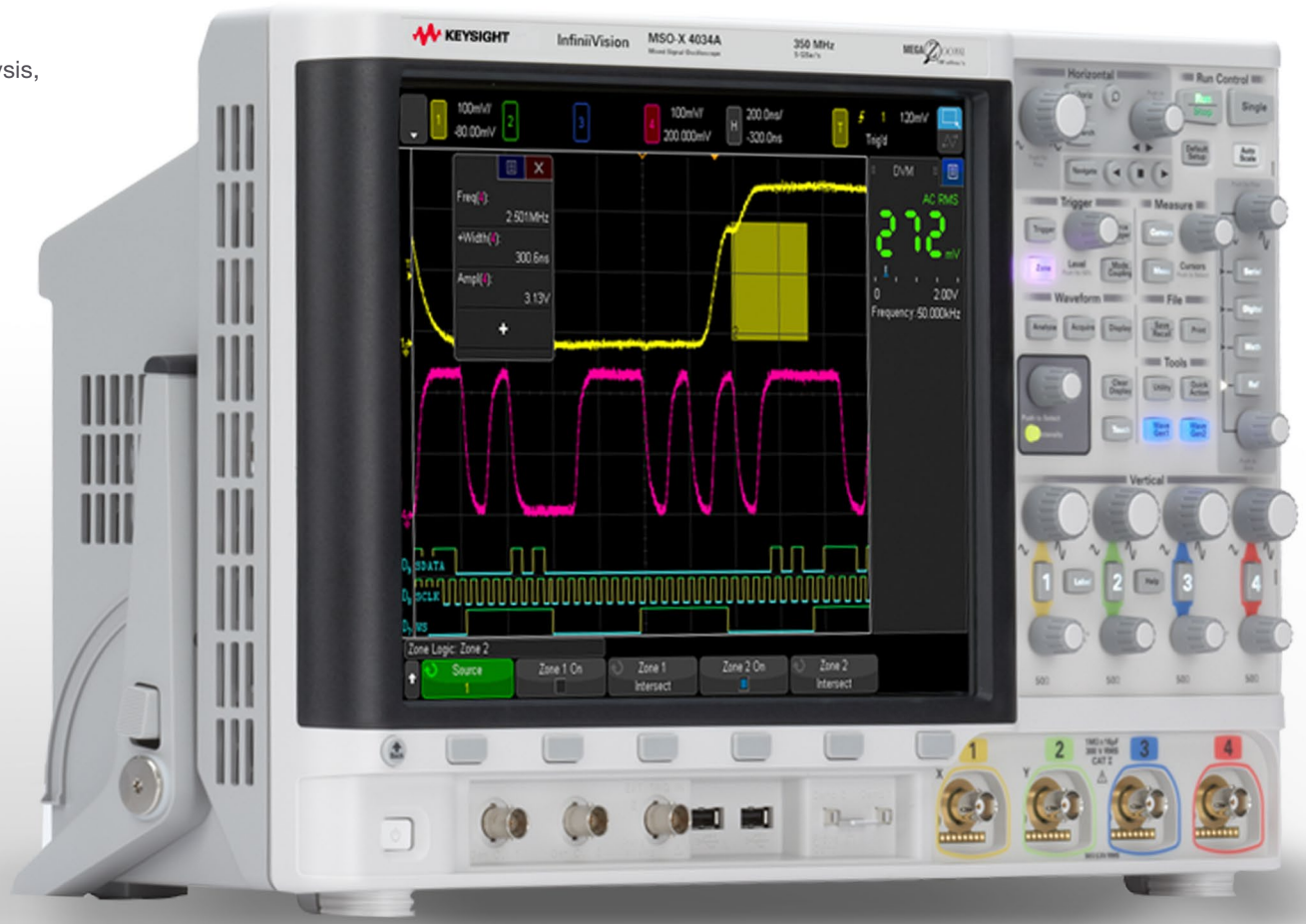
Model	Channels (analog / digital)	Maximum bandwidth	Maximum memory depth	Current and voltage sensor options						
				CX1101A Single-channel current sensor	CX1102A Dual-channel current sensor	CX1103A Low-side current sensor	CX1104A Selectable shunt current sensor	CX1105A Ultra-low noise differential sensor	CX1151A Passive probe interface adapter	
CX3322A	2 analog / no digital	50 MHz, 100 MHz or 200 MHz	4 Mpts, 16 Mpts, 64 Mpts or 256 Mpts	40 nA to 1 A (10 A with CX1206A) >80 dB dynamic range 100 MHz maximum bandwidth	40 nA to 1 A >100 dB dynamic range 100 MHz maxim bandwidth	150 pA to 20 mA >80 dB dynamic range 200 MHz maximum bandwidth	1 µA to 15 A >80 dB dynamic range 20 MHz maximum bandwidth	Non-intrusive current measurement 1 µ A to 100 A (depending on a shunt resistor) >80 dB dynamic range 100 MHz maximum bandwidth	Max. 8V (Max 80V with 10:1 probe) >80 dB dynamic range 300 MHz maximum bandwidth (with no passive probe)	GET A QUOTE
CX3324A	4 analog / 8 digital									GET A QUOTE

InfiniiVision Oscilloscopes

- Up to 1 million waveforms / sec update rate
- MegaZoom IV responsive, uncompromised smart memory
- Multiple instrument functionality
- Zone trigger
- Frequency response analysis (Bode plots)
- Upgradable: bandwidth, MSO, serial analysis, built-in WaveGen function generator

View all of Keysight's oscilloscopes

InfiniiVision
MSO-X 4034A



INFINIIVISION OSCILLOSCOPES

Model	Description	Bandwidth	Channels	Sample rate	Memory depth	Standard warranty	Calibration period	Built-in instruments	
1000 X-Series	• Basic R&D bench • 200,000 wfms/s update rate • 7-inch display • serial protocol analysis standard	50 MHz to 200 MHz	2, 4	Up to 2 GSa/s	Up to 2 Mpts and segmented memory standard	3 years	5 years	20 MHz FG, DVM, frequency counter, serial protocol analyzer, frequency response analyzer	GET A QUOTE
2000 X-Series	Everything the 1000X has plus • 8.5-inch display • digital channels	70 MHz to 200 MHz	2, 2+8, 4, 4+8	Up to 2 GSa/s	1 Mpts and segmented memory standard	5 years	2 years	20 MHz FG, DVM, 5-digit counter, digital channels, serial protocol analysis	GET A QUOTE
3000T X-Series	Everything the 2000X has plus: • 1 million wfms/s update rate • Zone trigger • advanced math and power analysis • capacitive touch screen	100 MHz to 1 GHz	2, 2+16, 4, 4+16	Up to 5 GSa/s	4 Mpts and segmented memory standard	3 years	3 years	20 MHz AWG, 8-digit counter, DVM, digital channels, serial protocol analyzer, and frequency response analyzer	GET A QUOTE
4000 X-Series	Everything the 3000T has plus: • 12.1-inch capacitive touch screen • USB 2.0 pre-compliance • up to four active probes	200 MHz to 1.5 GHz	2, 2+16, 4, 4+16	Up to 5 GSa/s	4 Mpts and segmented memory standard	3 years	2 years	Dual 20 MHz AWG, 5-digit counter, DVM, digital channels, serial protocol analyzer, and frequency response analyzer	GET A QUOTE
6000 X-Series	Everything the 4000X has plus: • 450,000 wfms/s update rate • multitouch display • voice control • jitter and real-time eye diagram analysis	1 GHz to 6 GHz	2, 2+16, 4, 4+16	Up to 20 GSa/s	4 Mpts and segmented memory standard	3 years	2 years	Dual 20 MHz AWG, 10-digit counter, DVM, digital channels, serial protocol analyzer, and frequency response analyzer	GET A QUOTE
Infiniium S-Series	• R&D analysis bench • 10-bit ADC for highest signal integrity • deep analysis toolkit for power, serial data, jitter • support for >100 probes • up to 40 analog channels with MultiScope app	500 MHz to 8 GHz	4, 4+16	Up to 20 GSa/s	Up to 800 Mpts	3 years	1 year	Digital channels, digital signal analysis (DSA)	GET A QUOTE

VALUE SOFTWARE PACKAGES — NOW GET MORE FUNCTIONALITY

Model	Automobile	Aerospace & Defense	Embedded	Power	USB	NFC	Ultimate Bundle
1000X	Standard (DSOX)	NA	Standard	NA	NA	NA	NA
2000X	D2000AUTA	NA	D2000GENA	NA	NA	NA	D2000BDLA
3000X/T	D3000AUTA	D3000AERA	D3000GENA	D3000PWRA	NA	D3000NFCA	D3000BDLA
4000X	D4000AUTA	D4000AERA	D4000GENA	D4000PWRA	D4000USBA	D4000NFCA	D4000BDLA
6000X	D6000AUTA	D6000AERA	D6000GENA	D6000PWRA	D6000USBA	NA	D6000BDLA
P9240A	P9240AUTB	P9240AERB	P9240GENB	NA	NA	P9240NFCB	P9240BDLB
M9240A	M9240AUTB	M9240AERB	M9240GENB	M9240PWRB	NA	M9240NFCB	M9240BDLB

View all of Keysight's oscilloscope software

Learn 6 key tips for getting the most out of your oscilloscope in this eBook

Download the ebook

Data Acquisition / Switch Units

DAQ970A AND DAQ973A DATA ACQUISITION SYSTEM

Get the next-generation DAQ system with a three-slot mainframe and your choice of nine plug-in modules. Interface with the DAQ using Keysight BenchVue software; the intuitive graphical front panel with task-oriented, self-guiding menus; or a web browser.

- Advanced 6½-digit internal DMM with improved accuracy and faster measurement speed
- Ability to measure very low current ranges (1 µA DC and 100 µA AC) and higher resistance range (1000 MΩ)
- New auto-calibration that compensates for internal drifts caused by time and temperature changes
- 3497XA-compatible, program, and configuration
- LAN and USB for easy connectivity to your PC (DAQ973A comes with additional GPIB)

PLUS

- All modules updated with improved switching speeds and accuracies
- DAQM900A solid-state multiplexer with scan rate speed of up to 450 channels / sec
- New DAQM909A four-channel simultaneous sampling digitizer module with a sampling rate of up to 800 kSa/s

View all of Keysight's DAQs

DATA ACQUISITION / SWITCH UNITS

Description	DAQ970A/ 73A modules	Key specifications	
20-Channel solid-state multiplexer	DAQM900A	Up to 450 ch/s	GET A QUOTE
20-Channel multiplexer + 2 current channels	DAQM901A	Armature 2/4 wire, 80 ch/s with DAQ970A / DAQ973A, up to 300 V, 1 A	GET A QUOTE
16-Channel multiplexer	DAQM902A	Reed 2/4 wire, 250 ch/s, up to 300 V, 50 mA	GET A QUOTE
20-Channel actuator / GP switch	DAQM903A	SPDT / Form C, 120 ch/s, up to 300 V, 1 A	GET A QUOTE
4x8 Matrix	DAQM904A	Armature 2-wire, 120 ch/s, up to 300 V, 1 A	GET A QUOTE
2 GHz, Dual 4-channel, RF mux, 50 Ω	DAQM905A	Common low (not terminated), 60 ch/s up to 42 V, 0.7 A	GET A QUOTE
Multifunction module	DAQM907A	• two 8-bit digital I/O ports, up to 42 V, 400 mA • 26-bit 100 kHz event counter, up to 42 V • two 16-bit analog outputs, up to ±12 V, 10 mA	GET A QUOTE
40-Channel single-ended multiplexer	DAQM908A	Common low (no 4-wire meas.) 60 ch/s, up to 300 V, 1 A	GET A QUOTE
4 Channel simultaneous sampling digitizer	DAQM909A	Differential inputs, up to 800 kSa/s sampling rate, 24-bit resolution	GET A QUOTE

Choose the DAQ system that will work best for you, download the white paper Effective Monitoring and Streamline Testing Using a DAQ

Download White Paper

Waveform Generators

33500B AND 33600A SERIES WAVEFORM GENERATORS

- Generate True*form* arbitrary waveforms with high fidelity and less jitter and harmonic distortion.
- Benefit from ease-of-use features, such as modulation, sweep, burst, dual-channel coupling, and IQ baseband signal player.

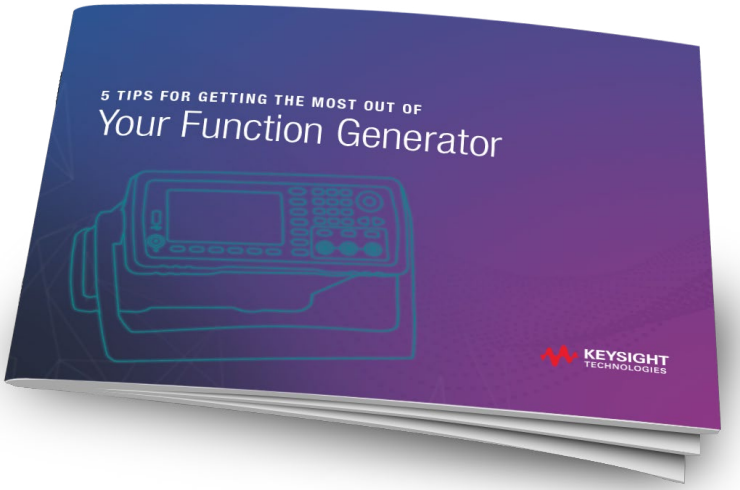
PathWave BenchVue software included with instrument

View Keysight's function generators

WAVEFORM GENERATORS

					ARBITRARY WAVEFORMS			
Model	**Description**	**Channels**	**Frequency range**	**Pulse**	**Std / opt arb**	**# BITS**	**Sample rate**	**Memory / channel**
33509B **33510B**	Exclusive True*form* waveform technology with < 40 ps jitter and < 0.04% THD	1 2	20 MHz	20 MHz	Optional	16	160 MSa/s	1 M standard, 16 M optional
33511B **33512B**		1 2	20 MHz	20 MHz	Standard	16	160 MSa/s	
33519B **35520B**		1 2	30 MHz	30 MHz	Optional	16	250 MSa/s	
33521B **33522B**		1 2	30 MHz	30 MHz	Standard	16	250 MSa/s	
33611A **33612A**	Exclusive True*form* waveform technology at higher frequency ranges with < 1 ps jitter < 0.03% THD	1 2	80 MHz	80 MHz	Optional	14	660 MSa/s	4 M standard, 64 M optional
33621A **33622A**		1 2	120 MHz	120 MHz	Standard	14	1 GSa/s	

GET A QUOTE



Learn 5 function generator tips to help improve testing and save you time in the lab in this eBook

Download the eBook

Digital Multimeters

True*Volt* DIGITAL MULTIMETERS

- 6½- and 7½-digit performance
- Graphical capabilities such as trend and histogram charts
- Ability to measure very low current, 1 µA range with pA resolution, allowing measurements on very-low-power devices
- Auto-calibration to compensate for temperature drift
- Basic measurements: DCV, ACV, DCI, ACI, two- and four-wire resistance, frequency, period, continuity, diode, temperature, capacitance

PathWave BenchVue software included with instrument

View Keysight's DMMs

True*Volt* Digital Multimeters

DIGITAL MULTIMETERS

Model	Description	Digits of resolution	Max reading rate at 4½ digits (RDGS/s)	Built-in PC interfaces	
34460A	New industry standard. Display DMM results in ways you never have before and measure with unquestioned Truevolt confidence.	6½	300	USB, optional GPIB	GET A QUOTE
34461A			1,000	USB, LAN, optional GPIB	GET A QUOTE
34465A	More measurements, higher speed, better accuracy, and more memory than the 34461A. Comes with digitizer and advanced triggering capability.	6½	50,000	USB, LAN, optional GPIB	GET A QUOTE
34470A		7½	50,000	USB, LAN, optional GPIB	GET A QUOTE

3458A DIGITAL MULTIMETER, 8½ DIGIT

- 8½-digit resolution with 0.05 ppm transfer accuracy
- 8 ppm (0.0008%) DCV accuracy (4 ppm optional)
- Performance leader with max reading rate of 100,000 readings / sec
- Measurements include DC and AC
- Two- and four-wire resistance, frequency, and period
- RoHS-compliant
- 148k reading memory for prolonged data logging (now comes standard)
- 34137A deluxe test lead kit and calibration certificate

PathWave BenchVue software included with instrument

3458A Digital Multimeter

View Keysight's 3458A

IMPROVE YOUR DMM THROUGHPUT

See 7 steps to improve your DMM measurement throughput in this white paper

Download the white paper