

Basic Instruments

Design for Better Battery Life

April 2023 – June 2023

KEYSIGHT

CATALOG

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Three years of KeysightCare Technical Support included on all Basic Instruments

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SPOTLIGHT

Design for Better Battery Life

Current drain and battery run-down testing present many challenges. The manual process of charging and discharging a battery is time consuming, but it is crucial to test your device at various charge levels as battery characteristics vary. Furthermore, battery parameters and charge levels must be identical when comparing test results. Achieving this is particularly challenging with physical batteries. Additionally, it can be difficult to determine how long a device can last on a single charge, and often battery life claims do not match reality.

Keysight designed the E36731A to solve these challenges. The integrated electronic load and power supply were designed to be used with Keysight PathWave BenchVue battery emulation and test software. An emulated battery provided a known good reference, boosting trust in your test results. Plus, you can quickly assess the effect of design or software changes on battery life by instantly transitioning the battery's charge state. These abilities enable you to enhance your designs to achieve longer battery life and smaller size.

In addition, the hardware plus software solution enables you to accurately estimate battery life by automating battery run-down using the simulated device current drain. This method is more accurate than using the constant current to drain a battery. Also, the automated process is more straightforward than manually draining a battery through device usage.

Accelerates current drain analysis and battery life testing

- Streamlines testing process with integrated profiling and emulation capabilities: software generates accurate battery profiles utilizing the simulated current drain of a device. Then it employs the resulting profiles for emulation, thus saving time and simplifying the process.
- Automates battery run-down and cycle testing. Automating battery run-down enables engineers to estimate battery life more accurately, while automating cycle testing allows engineers to estimate battery aging effects more accurately.

Power and accuracy in measuring a wide range of applications

- Power up to 200W, 30V, 20A.
- Offers wide dynamic measurement range and can measure from microamps to amps. This capability is required to test today's applications that rapidly transition from low to high-power states.



WATCH THE DEMO VIDEO

LEARN MORE ABOUT THE E36731A

Remove the Barriers to Your Success with KeysightCare

Access to experts

- In addition to your three-year warranty, you will receive three years of KeysightCare Technical Support on all basic instruments in this catalog.

Keysight support

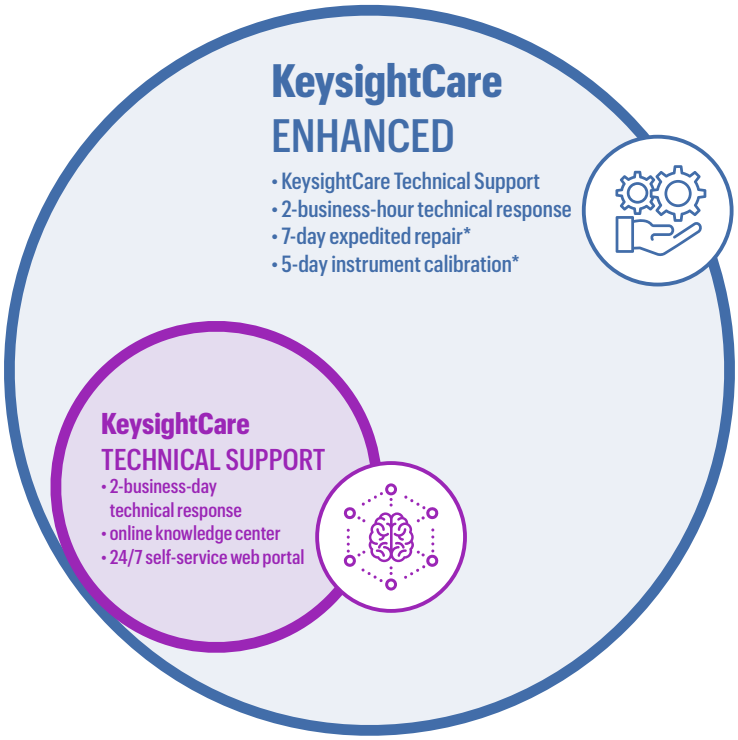
- Receive personalized, proactive, and priority support. Find answers in the knowledge center, manage service requests, and interact with Keysight experts.

  Start here

Lock in price and peak performance

- Extend your peace of mind and eliminate budgetary surprises for up to 5 years with KeysightCare Enhanced. Trust your test results with calibrated in tolerance instruments and accurate measurements. Available in select countries.

  Learn more



Three years of KeysightCare Technical Support included on all Basic Instruments

START HERE



SPECIAL OFFERS AND EVENTS

Limited Time Offers

Save 25% on InfiniiVision Oscilloscopes

These power, automotive, and jitter pre-configured bundles are available on the InfiniiVision 3000G, 4000, and 6000 X-Series oscilloscopes.

LEARN MORE

Save 40% on Oscilloscopes Software

You can get a qualifying InfiniiVision software package at 40% off discount!

LEARN MORE

Essential RF Signal Analyzer and Signal Generator Bundle

Save up to 20% on essential RF signal analyzer and signal generator bundles.

LEARN MORE

Save Up to 10% on E36150 Series Bundles

Keysight offers two types of value bundles for Keysight E36150 Series DC bench power supply.

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Software FieldFox Promotion

Purchase any qualifying A-Series FieldFox Handheld Analyzer and get two of our most popular software options for free.

LEARN MORE

Keysight World: Live from the Lab

An engineering event unlike any other, Live from the Lab is bigger and better. Now a bi-monthly LIVE event series featuring tips and tricks and Q&A sessions with industry experts, take your engineering skills to the next level.

Don't miss out!

May 16th – Power for IoT

REGISTER NOW



X-Series Signal Generators

The Keysight X-Series creates signals capable of testing your very best devices. From the pure and precise MXG to the cost-effective EXG and general-purpose CXG, the X-Series helps you generate true performance.

	MXG-Analog	EXG-Analog	CXG-Analog
Model number	**N5181B**	**N5171B**	**N5166B**
Frequency range	9 kHz to 6 GHz	9 kHz to 6 GHz	9 kHz to 6 GHz
Maximum output power	+24 dBm	+21 dBm	+18 dBm
Frequency switching (list mode)	800 µs	800 µs	5 ms
Level accuracy	±0.6 dB	±0.6 dB	±0.6 dB
SSB phase noise (1 GHz, 20 kHz offset)	-146 dBc/Hz	-122 dBc/Hz	-119 dBc/Hz
Harmonics (at 1 GHz)	-35 dBc	-35 dBc	-35 dBc
Analog modulation	AM, FM, PM, and pulse modulation	AM, FM, PM, and pulse modulation	AM, FM, PM, and pulse modulation
Digital modulation	N/A	N/A	120 MHz bandwidth
Service and support	3-year warranty and 3-year KeysightCare Technical Support included		
	DATA SHEET	DATA SHEET	DATA SHEET
	Get a Quote >	**Get a Quote >**	**Get a Quote >**



Basic Spectrum Analyzers (BSAs)*

The BSAs define value-priced general-purpose instruments up to 20 GHz. You can rely on the BSA for proven testing efficiency, usability, and the flexibility to adapt to new requirements.

Model	N9321C	N9322C	N9323C	N9324C
Frequency	9 kHz to 4 GHz	9 kHz to 7 GHz	1 MHz to 13.6 GHz	1 MHz to 20 GHz
Overall amplitude accuracy	±0.6 dB	±0.6 dB	±0.7 dB	±0.7 dB
DANL at 1 GHz	-152 dBm	-152 dBm	-144 dBm	-144 dBm
Maximum analysis bandwidth	1 MHz	1 MHz	1 MHz	1 MHz
Phase Noise at 1 GHz	-90 dBc / Hz	-90 dBc / Hz	-92 dBc / Hz	-92 dBc / Hz
Service and support	3-year warranty and 3-year KeysightCare Technical Support included			
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* From selected distributors only



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SOFTWARE INCLUDED

InfiniiVision Oscilloscopes

- Experience up to 1,000,000 waveforms / second update rate.
- Get MegaZoom IV and measure with uncompromised, responsive smart memory.
- Test using multiple instrument functionality.
- Expand your platform with upgradable bandwidth, a mixed-signal oscilloscope (MSO), serial analysis, and a built-in waveform function generator.



Get more functionality with available software packages

	Automobile	Aerospace & Defense	Embedded	Power	USB	Ultimate Bundle
1000X	Standard (DSOX)	NA	Standard	NA	NA	NA
2000X	D2000AUTB	NA	D2000GENB	NA	NA	D2000BDLB
3000X	D3000AUTB	D3000AERB	D3000GENB	D3000PWRB	D3000USBB	D3000BDLB
4000X	D4000AUTB	D4000AERB	D4000GENB	D4000PWRB	D4000USBB	D4000BDLB
6000X	D6000AUTB	D6000AERB	D6000GENB	D6000PWRB	D6000USBB	D6000BDLB

Save 25% ON INFINIIVISION OSCILLOSCOPES

Save 40% ON OSCILLOSCOPES SOFTWARE

Model	1000 X-Series	2000 X-Series	3000G X-Series	4000 X-Series	6000 X-Series	Infiniium EXR-Series
Description	Professional-level capabilities in an entry-level oscilloscope • Protocol analysis • Bode plots • Fast Fourier transform (FFT)	Entry-level with more capabilities • Serial bus options • Mixed-signal oscilloscope options	Advanced capabilities simplified • Advanced math • Standard embedded software** • Waveform and measurement histograms**	Everything the 3000G has plus see more of your signal • Higher bandwidth • Larger touch screen • Up to four active probes	Dive deeper and analyze more signal detail • Voice control • Advanced jitter analysis, time interval error plots, histograms, and eye diagrams	Engineered for power and high-speed analysis • Extra large touch screen • Advanced Fault Hunter debugging software • Multiscope capability
Bandwidth	50 MHz to 200 MHz	70 MHz to 200 MHz	100 MHz to 1 GHz	200 MHz to 1.5 GHz	1 GHz to 6 GHz	500 MHz to 2.5 GHz
Channels (analog + digital)	2, 4	2, 2+8, 4, 4+8	2, 2+16, 4, 4+16			4, 4+16, 8, 8+16
Sample rate	Up to 2 GSa/s		Up to 5 GSa/s		Up to 20 GSa/s	Up to 16 GSa/s
Memory depth	Up to 2 Mpts and segmented memory standard	Up to 1 Mpts and segmented memory standard	Up to 4 Mpts and segmented memory standard			Up to 3.2 Gpts
Waveform update rate	>200,000 wfms/s	>200,000 wfms/s	>1,000,000 wfms/s		>450,000 wfms/s	>200,000 wfms/s
Display	7-inch	8.5-inch	8.5-inch capacitive touch screen	12.1-inch capacitive touch screen	12.1-inch capacitive multi-touch screen	15.6-inch capacitive touchscreen
Built-in instruments	20-MHz function generator, 5-digit counter, frequency response analyzer*	20-MHz function generator, 5-digit counter*	20-MHz AWG, 8-digit counter, frequency response analyzer*	Dual 20-MHz AWG, 5-digit counter, and frequency response analyzer*	Dual 20-MHz AWG, 10-digit counter, and frequency response analyzer*	50 MHz AWG and frequency response analyzer, 10-digit counter, DVM, and protocol analyzers
Service and support	3-year warranty and 3-year KeysightCare Technical Support included					
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* All X-Series models have a built-in protocol analyzer and 3-digit digital voltmeter (DVM)

** Only standard on the 3000G X-Series models

Featured Resource

5 Mistakes People Make When Getting a Low-Cost Scope

Choosing the right oscilloscope is a difficult task, especially if you're on a budget. You want to make the best decision for your needs while saving money and maintaining quality.

Avoid five common mistakes people make when selecting a low-cost oscilloscope so you — and your wallet — are happy with your decision.

DOWNLOAD THE WHITE PAPER



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SOFTWARE INCLUDED

DAQ970A and DAQ973A Data Acquisition System

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

- Features an advanced 6.5-digit internal DMM with improved accuracy and faster measurement speed (50,000 readings / second) to sample more signals.
- Measures very low current ranges (1 µA DC and 100 µA AC) and higher resistance range (1,000 MΩ).
- Compensates using new auto-calibration for internal drifts caused by time and temperature changes.
- Comes with additional GPIB for the DAQ973A; easy connectivity to your PC with LAN and USB.
- Code compatible with Keysight 34970A / 34972A.
- Each module updated with improved switching speeds and accuracies.
- Fast Keysight DAQM900A solid-state multiplexer with scan rate speed of up to 450 channels / second.
- New Keysight DAQM909A 4-channel simultaneous sampling digitizer module with a sampling rate of up to 800 kSa / second.



DATA SHEET

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DAQ970A/73A Modules	Description	Key specifications	
DAQM900A	20-channel solid-state multiplexer	Up to 450 ch/s, 2 / 4 wire, up to 120 V	Get a Quote >
DAQM901A	20-channel multiplexer plus 2 current channels	Armature 2 / 4 wire, 80 ch/s, up to 300 V, 1 A	Get a Quote >
DAQM902A	16-channel high-speed multiplexer	Reed 2 / 4 wire, 250 ch/s, up to 300 V, 50 mA	Get a Quote >
DAQM903A	20-channel actuator / GP switch	SPDT / Form C, 120 ch/s, up to 300 V, 1 A	Get a Quote >
DAQM904A	4 x 8 two wire matrix switch	Armature 2-wire, 120 ch/s, up to 300 V, 1 A	Get a Quote >
DAQM905A	2 GHz, dual 4-channel, RF mux, 50Ω	SWR 1.4 @2GHz, 60 ch/s up to 42 V, 0.7 A	Get a Quote >
DAQM907A	Multifunction module	• Two 16-bit digital I/O ports, up to 42 V, 400 mA • 26-bit 100 kHz event counter, up to 42 Vpk • Two analog outputs, up to ±12 V (voltage mode), ±24 mA (current mode)	Get a Quote >
DAQM908A	40-channel single-ended multiplexer	Common low (without 4-wire measurements) 80 ch/s, up to 300 V, 1 A	Get a Quote >
DAQM909A	4-channel simultaneous sampling digitizer	Differential inputs, up to 800 kSa/s sampling rate, 24-bit resolution	Get a Quote >



Featured Resource

4 Considerations for Data Acquisition Systems

There is a growing trend across all industries to design feature-rich products. However, you know that the more features added, the more complex the test development becomes.

Explore four considerations for a DAQ that will help you develop a test system optimized for speed and accuracy.

DOWNLOAD THE EBOOK



PATHWAVE
SOFTWARE INCLUDED

N6700 Modular Power System

N6700: DC power supply — ideal for automated test systems.

- Small 1U mainframe (400, 600, 1200 W) holds up to four output modules.
- Over 35 programmable DC modules offer unique capabilities, performance, voltage, and current combinations.
- Multiple DC electronic load modules, 100 and 200 W, allow current to be sourced and sinked in the same mainframe.
- 3-year warranty and 3-year KeysightCare Technical Support included



N6705C: DC power analyzer — deep insight without a complex test system.

- Holds and uses up to four N6700 Series modules (600 W total).
- Integrates digital multimeter (DMM), oscilloscope, arb, and data logger capabilities.
- Characterizes and improves battery run time with a source / measure unit (SMU) and BV9200B analysis software.
- 3-year warranty and 3-year KeysightCare Technical Support included



N6700C, N6701C, & N6702C DATA SHEET

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N6705C DATA SHEET

Get a Quote >

E36300 Series Triple-Output DC Power Supplies

PATHWAVE SOFTWARE INCLUDED

- Large display with voltages and currents for all three outputs
- Accurate programming / readback as low as 0.03%
- Low output ripple and noise less than 2 mVpp / 350 uVrms
- Precise data logging plus output sequencing and coupling
- Convenient front and rear output terminals
- Color-coded outputs and individual knobs for voltage and current
- LAN (LXI Core), USB, and GPIB (optional)

Model	E36311A			E36312A			E36313A		
	Economy model			Most popular			Twice the current		
Power	80 W			80 W			160 W		
Channels	1	2	3	1	2	3	1	2	3
DC output Rating (0 to 40 °C)	0 to 6 V	0 to +25 V	0 to -25 V	0 to 6 V	0 to 25 V	0 to 25 V	0 to 6 V	0 to 25 V	0 to 25 V
	0 to 5 A	0 to 1 A	0 to 1 A	0 to 5 A	0 to 1 A	0 to 1 A	0 to 10 A	0 to 2 A	0 to 2 A
Service and support	3-year warranty and 3-year KeysightCare Technical Support included								
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DATA SHEET

E36200 Series DC Power Supplies

- Single or dual outputs; easily combine the dual outputs into a single output with 400 W
- Auto-parallel the Keysight E36233A 400 W autoranging dual output power supply to create a single 40 A (30 V) output
- Auto-series the E36233A to create a single 120 V (10A) output
- Programming / readback accuracy as low as 0.03%
- Output ripple and noise < 350 µVrms
- Data logging plus output sequencing and coupling
- Front and rear output terminals
- Color-coded outputs and individual knobs for voltage and current
- LAN, USB, and GPIB (optional)

Model	E36231A		E36232A		E36233A		E36234A	
Power	200 W		200 W		400 W		400 W	
Channels	1		1		1	2	1	2
DC output Rating (0 to 40 °C)	0 to 30 V	0 to 20 A	0 to 60 V	0 to 10 A	0 to 30 V	0 to 20 A	0 to 60 V	0 to 10 A
Service and support	3-year warranty and 3-year KeysightCare Technical Support included							
	Get a Quote >		Get a Quote >		Get a Quote >		Get a Quote >	

DATA SHEET



E36150 Series Autoranging Benchtop Power Supplies

- Peak power that handles up to three times the maximum power rating to accommodate start-up power surge requirements from electromechanical and high capacitance devices under test
- High performance with precise output accuracy, minimal noise, and excellent load / line regulation
- Adjustable slew rate, data logging, voltage and current meter, four-wire remote sensing, LIST output programming, and digital controls
- Comprehensive overvoltage, overcurrent, and overtemperature provide device protection
- Flexible Keysight BV0003B PathWave BenchVue power supply application and test flow automation support
- Inclusive Keysight BV9200B / BV9201B PathWave BenchVue advanced power control and analysis software assistance
- Scalable and upgradable with Keysight Option E36150ADVU for scope view and arbitrary waveform generator (AWG) functions that offer advanced characterization and power simulation
- Adaptable LAN / LXI, USB, and general purpose interface bus (GPIB) (upgrade option) interfaces

Model	E36154A	E36155A
Output	1	
Power	800 W	
Voltage	0 to 30 V	0 to 60 V
Current	0 to 80 A	0 to 40 A
Service and support	3-year warranty and 3-year KeysightCare Technical Support included	
	Get a Quote >	Get a Quote >



DATA SHEET

E36731A Battery Emulator and Profiler

Designed to operate with Keysight PathWave BenchVue BV9210/11B battery emulation and test software.

- Use software plus hardware solution to:
  - Profile batteries through charge / discharge to create a unique battery model.
  - Emulate charge states to reduce test time, improve safety, and test repeatability.
  - Automates battery run-down testing to accurately determine battery life.
  - Automates battery cycling to determine aging effects
- Integrates a power supply and an electronic load.
- Power up to 200W, 30V, and 20A.
- Offers a wide dynamic measurement range and measures from microamps to amps.

Model		E36731A
Output		1
Power supply	Power	200 W
	Voltage	0 to 30 V
	Current	0 to 40 A
Electronic load	Power	250 W
	Voltage	0 to 60 V
	Current	0 to 40 A
Service and support		3-year warranty and 3-year KeysightCare Technical Support included
		Get a Quote >



DATA SHEET

Featured Resource

4 Ways to Build Your Power Supply Skills

Today's designs place higher demands on the systems that power them. You may find that more of your design problems are created by these power systems.

Use these four practical tips to ensure you deliver reliable power during the design phase and get the most out of your power supply.

DOWNLOAD THE EBOOK



PATHWAVE
SOFTWARE INCLUDED

B2900 Series Precision Source Measure Units (SMUs)

B2900B/BL Series precision SMUs

- Minimum source resolution at 10 fA / 100 nV;
- Minimum measurement resolution at 10 fA / 100 nV
- Maximum output at 210 V, 3.03 A DC
- Waveform generation (arbitrary) and digitizing capabilities from 10 µs interval
- Integrated 4-quadrant source and measurement capabilities
- 4.3-inch color display supports graphical and numerical view modes
- Application software to facilitate PC-based instrument control (free)
- High throughput and SCPI command supporting conventional SMU command set

B2960B/BL Series low-noise power source

- 6.5 digit 2-channel, wide and bipolar voltage / current sourcing (100 nV - 210 V / 10 fA - 10.5 A, 31.8 W)
- Noise performance at 10 µVrms, 1nVrms / √Hz with external filter
- Precision arbitrary waveform capability with support for seven built-in functions and user-defined waveforms (1 MHz – 10 kHz)
- 4.3-inch color display supports both graphical and numerical view modes
- Application software to facilitate PC-based instrument control (free)
- High throughput and SCPI command supporting conventional SMU command set

3-year warranty and 3-year KeysightCare Technical Support included

B2900B DATA SHEET

B2960B DATA SHEET

Get a Quote >



EL30000 Series Bench DC Electronic Loads

The Keysight EL30000 Series bench DC electronic loads provide superior performance in a compact bench form factor.

- Test up to 600 W, 1 or 2 inputs.
- Operate in constant current (CC), constant voltage (CV), constant resistance (CR), or constant power (CP) modes.
- Make accurate measurements with excellent programming / feedback accuracy.
- Perform static and dynamic tests.
- View measurements on a 4.3-inch LCD color display.
- Transfer data via USB drive, LAN, USB, or GPIB.

Model	Number of inputs	Input power	DC Input voltage	DC Input current	Service and support	
EL34143A	1	350 W	150 V	60 A	3-year warranty and 3-year KeysightCare Technical Support included	Get a Quote >
EL34243A	2	600 W	150 V	60 A per input, 120 A parallel		Get a Quote >

Need more power?

See the Keysight E36200 Series and Keysight E36150 Series autoranging power supplies.



- DATA SHEET
- ELECTRONIC LOAD FUNDAMENTALS WHITE PAPER

PATHWAVE SOFTWARE INCLUDED

33500B and 33600A Series Trueform Waveform Generators

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

Model	Description	Channels	Frequency range	Pulse	Arbitrary waveforms				Service and support
					Std/Opt arb	# Bits	Sample rate	Memory/ Channel	
33509B 33510B	Exclusive Trueform 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	3-year warranty and 3-year KeysightCare Technical Support included
33511B 33512B		1 2			Standard				
33519B 35520B		1 2	30 MHz	30 MHz	Optional		250 MSa/s		
33521B 33522B		1 2			Standard				
33611A 33612A	Exclusive Trueform waveform technology at higher frequency ranges with < 1 ps jitter < 0.03% THD.	1 2	80 MHz	80 MHz	Standard	14	660 MSa/s	4 M Standard, 64 M Optional	
33621A 33622A		1 2	120 MHz	100 MHz			1 GSa/s		



DATA SHEET

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PATHWAVE
SOFTWARE INCLUDED

Truevolt Digital Multimeters

- 6.5- and 7.5-digit performance
- Graphical capabilities such as bar, trend, histogram and histogram charts
- Measure very low current, 1 µA range with pA resolution, enabling measurements on very low power devices
- Auto-calibration to compensate for temperature drift to maintain measurement accuracy
- Basic measurements such as DCV, ACV, DCI, ACI, 2- and 4-wire resistance, frequency, period, continuity, diode, temperature, and capacitance

Model	Description	Digits of resolution	Max reading rate at 4½ digits (RDGS/S)	Built-in PC interfaces	Service and support
34460A	Display DMM results in histogram, bar, and trend charts on color graphical display for easy monitoring and to speed up statistical analysis	6.5	300	USB; optional GPIB, LAN	3-year warranty and 3-year KeysightCare Technical Support included
34461A			1,000	USB, LAN; optional GPIB	
34465A	Comes with a digitizer and advanced triggering capability so you can make more measurements with higher speed, better accuracy, and more memory	6.5	50,000	USB, LAN; optional GPIB	
34470A		7.5			



DATA SHEET

Get a Quote >

3458A Digital Multimeter, 8.5-Digit

- Get 8.5-digits resolution and 0.1 ppm transfer accuracy.
- Perform accurate measurements with 8 ppm (0.0008%) 1-year DCV accuracy (4 ppm with option).
- Experience a maximum reading rate of 100,000 readings / second.
- Execute measurements that include DC and AC voltage, DC and AC current.
- Measure using 2- and 4-wire resistance, frequency, and period.
- Use the 148K reading memory for prolonged data logging (now comes standard).
- RoHS compliant.
- 3-year warranty and 3-year KeysightCare Technical Support included.



DATA SHEET

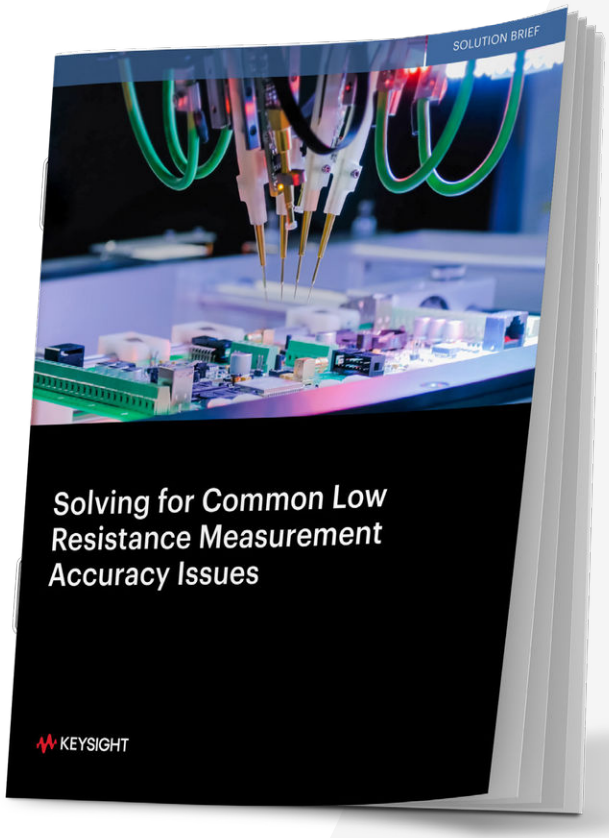
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Featured Resource

Solving for Common Low Resistance Measurement Accuracy Issues

A 4-wire measurement method is the most accurate method to measure small resistances, especially in ranges below 100 ohms. The 4-wire method eliminates measurement errors that long leads and switches introduce in your test setups. The method is also very useful when you need to monitor for accurate and precise temperature changes. This solution brief will examine various applications that require a 4-wire measurement approach and help you make an informed decision for your testing needs.

DOWNLOAD THE SOLUTION BRIEF



PATHWAVE
SOFTWARE INCLUDED

E5063A ENA Vector Network Analyzer*

- Frequency options to suit your test needs and budget, upgradable at any time
- PCB manufacturing test capability with Option 011
- Support for six languages via softkey and the embedded help manual in English / Simplified Chinese
- Support all Keysight calibration kits, including the Keysight N755xA economy ECal module

ENA Series E5063A

Frequency	100 kHz to 500 M, 1.5, 3, 4.5, 6.5, 8.5, 14 or 18 GHz
Test port	2-port 50 Ω S-parameter test set
Dynamic range	117 dB (spec.), 122 dB (typ.)
Trace noise	0.005 dBrms (spec.), 0.015 dBrms (typ.)
Source power	–20 to 0 dBm
Key software capability	Fixture simulator, Time domain analysis/Test Wizard option[1], Wireless power transfer analysis[1], and Materials measurement[2]
Interface	LAN, USB (front 2, rear 4), USBTMC, GPIB[1], Handler I/O[1]
Service and support	3-year warranty and 3-year KeysightCare Technical Support included

1. Optional capability.

2. External software; Keysight N1500A Material Measurement Suite required.

*** From selected distributors only**



DATA SHEET

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PATHWAVE
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FieldFox Handheld RF and Microwave Analyzers

- DATA SHEET
- VIEW ALL MODELS

Carry precision with you

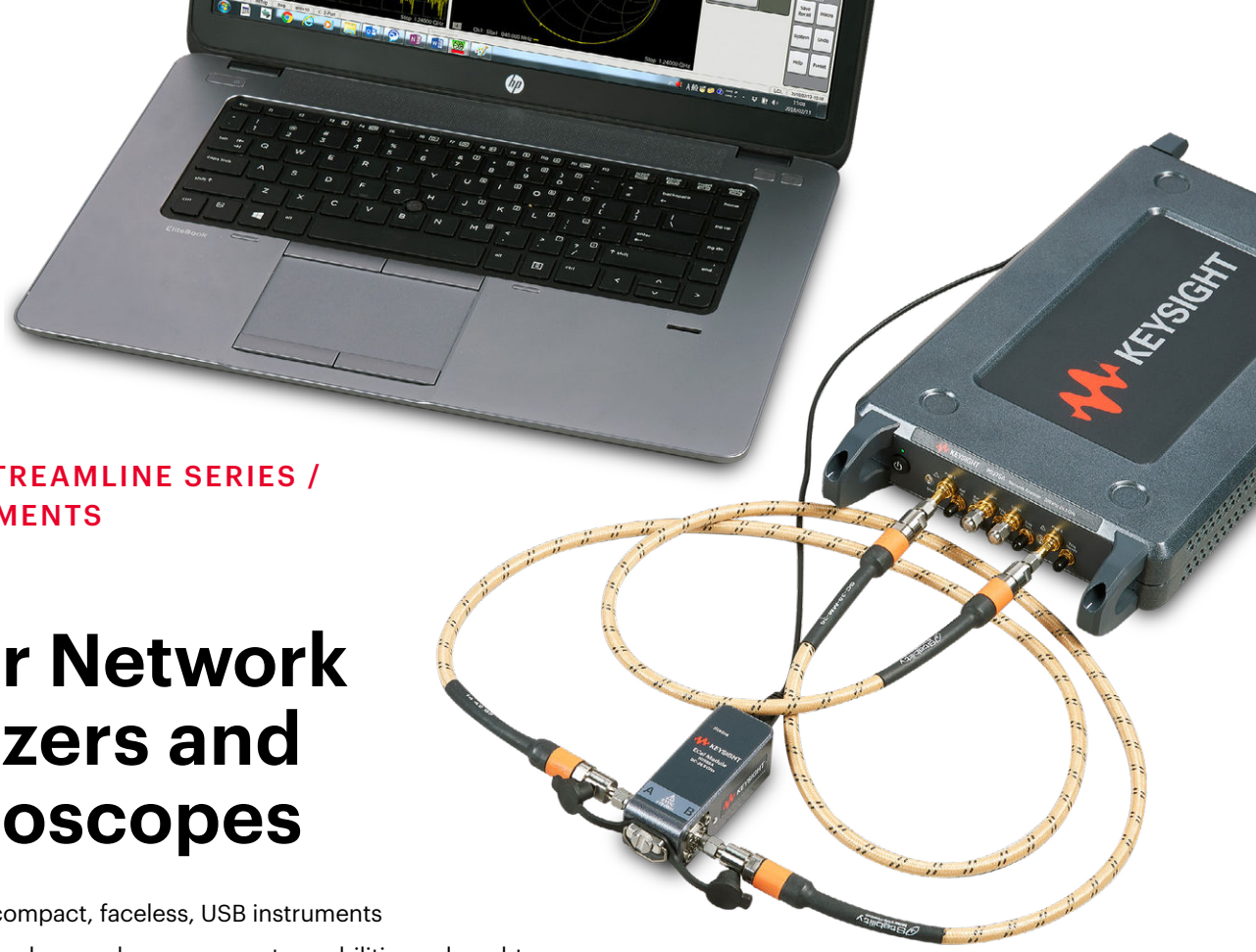
Use an all-in-one combination analyzer that performs cable and antenna testing, vector network analysis, spectrum analysis, signal analysis, and more.

Model	N9913A	N9935A	N9925A	N9918A	N9960A	N9952A
Base model	Combo Analyzer	Spectrum Analyzer	Vector Network Analyzer	Combo Analyzer	Spectrum Analyzer	Combo Analyzer
Maximum frequency	4 GHz	9 GHz	9 GHz	26.5 GHz	32 GHz	50 GHz
DANL at 1 GHz	-155 dBm	-155 dBm	—	-155 dBm	-159 dBm	-159 dBm
Overall spectrum analyzer amplitude accuracy	±0.5 dB	±0.5 dB	—	±0.5 dB	±0.5 dB	±0.5 dB
Output power	Up to 1 dBm	Up to 1 dBm	Up to 1 dBm	Up to 1 dBm	Up to 4 dBm	Up to 4 dBm
Service and support	3-year warranty and 3-year KeysightCare Technical Support included					
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Buy One, Get Two SOFTWARE PROMOTION

FOR A LIMITED TIME, PURCHASE ANY QUALIFYING A-SERIES FIELDFOX HANDHELD ANALYZER AND GET TWO OF OUR MOST POPULAR SOFTWARE OPTIONS FOR FREE.



KEYSIGHT STREAMLINE SERIES / USB INSTRUMENTS

Vector Network Analyzers and Oscilloscopes

- Multiple new compact, faceless, USB instruments
- Common technology and measurement capabilities as benchtop and modular instruments
- Perfect for component and subassembly test, R&D labs, and light manufacturing
- Small footprint in size, weight, and power
- Ideal for a rack at 1U high

	Vector Network Analyzer (VNA)*		Oscilloscope
Models	P9370A/B, P9371A/B, P9372A/B, P9373A/B, P9374A/B P9375A/B, P9377B, P9382B, P9384B		P9241A, P9242A, P9243A
Bandwidth	300 kHz to 26.5 GHz (P937xA) 9 kHz to 20 GHz (P937xB/P938xB) 100 kHz to 44 GHz (P937xB)		200 MHz, 500 MHz, and 1 GHz
Capabilities	• Full 2-port (P937xA/B) and 4-port (P938xB) VNA • Ability to extend the number of ports • Same calibration and metrology as all trusted Keysight VNAs		• 2 analog channels • 5 GSa/s • 1,000,000 wfms/s • Zone triggering • 6-in-1 instrument: arbitrary waveform generator, frequency response analyzer, digital voltmeter, counter, protocol analyzer
Service and support	3-year warranty and 3-year KeysightCare Technical Support included		
	P397XA DATA SHEET	P93XXB DATA SHEET	DATA SHEET
	Get a Quote >		Get a Quote >

* From selected distributors only

Instrument Control Software Applications

PATHWAVE

- Use to connect instruments, record results quickly, and visualize measurements.
- Save time with automated test sequences.
- Analyze and export data in multiple formats.

TECHNICAL OVERVIEW

Get a Quote >

Control Multiple Instruments

Drag-and-drop your way to connect instruments, record results, and visualize measurements across multiple instruments simultaneously, without the need for programming.

Access Integrated Apps

Choose from a wide array of apps with powerful features to simplify your test workflow — from measurement setup and automation to exporting data and analyzing in-depth results — in one software application. The applications support hundreds of Keysight instruments and are continually expanding.

Automate Test Sequences

Rapidly build custom test sequences with an intuitive interface to quickly create tests that previously required days of traditional programming. The integrated Test Flow application makes it simple to drag and drop controls or measurements into a sequence for rapid test development.

Analyze and Export Data

Get easy access to extensive data, screen captures, trace, and measurement logging capabilities. Export your data in multiple formats in just a few clicks.

Instrument Compatibility

- Data acquisition units, digital multimeters, and electronic loads
- FieldFox handheld analyzers, function generators, and USB modular products
- Universal counters, oscilloscopes, and photovoltaic array simulators
- Power analyzers, power meters and power sensors, and power supplies
- Signal generators, spectrum analyzers, and network analyzers





Keysight enables innovators to push the boundaries of engineering by quickly solving design, emulation, and test challenges to create the best product experiences. Start your innovation journey at www.keysight.com.

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