

# **Basic Instruments**

**KeysightCare: Access to Expertise 24/7** 

August - October 2022



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## **KeysightCare: Access to Expertise 24/7**

According to a survey by Dimensional Research, 62% of technical companies polled reported that incorrect setup of test instruments impacts their business results. Furthermore, 89% of the companies said they would be more efficient with faster access to test experts and knowledge resources. Of these test professionals, 95% seek technical support every month.

The findings from Dimensional Research underscore the importance of access to expertise. KeysightCare Technical Support provides that access.

Your newly purchased basic instruments include three years of KeysightCare Technical Support and a three-year warranty. The KeysightCare knowledge center and our technical experts are available to provide in-depth knowledge on leading-edge technologies, industry standards, compliance, applications, and the instruments and software used in your test systems.

## **Access technical expertise**

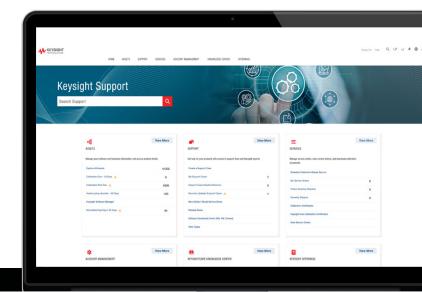
- Unlimited access to experts with a committed response time in ≤ two business days.
- Online knowledge center available 24/7.
- · Easy and direct access to the Keysight support portal for case management tracking.

## **Operate on your schedule**

- Access the Keysight support portal for personalized, real-time access to all your support needs.
- Find technical articles, application notes, or FAQs, or talk with support engineers.
- Create new support cases and view real-time asset repair status.

### Save time

- · Faster, predictable access to technical experts.
- Faster resolution of technical support issues.
- · Prevention of potential support issues.



LOG INTO THE KEYSIGHT SUPPORT PORTAL

## **Smart Bench Essentials**

## 4 instruments; 1 connected interface



### **EDU36311A DC power supply**

90 W, triple output, and programmable for clean, reliable power



## Keysight PathWave BenchVue software

Integrated, smart software to test, analyze, and share results remotely



#### EDUX1052G oscilloscope

50 MHz, 2 analog channels, and 1 GSa/s sample rate for accurate capture and analysis



### EDU34450A 5.5-digit multimeter

Measures 11 input signals at up to 110 readings/s for speed-critical tests



### EDU33211A/EDU33212A function generators

17 arbitrary waveforms and 6 built-in modulations to get you set up and testing quickly

## **PATHWAVE**

#### BenchVue instrument application

- instrument set up and test
- data logging and screen capture
- data logging and screen capture
   data export to several file types



#### **PATHWAVE**

#### PW9111EDU lab manager

- lab configuration
- asset tracking
- mass firmware update



### **PATHWAVE**

### PW9112EDU remote learning

- lab scheduling and resource booking
- remote access and authentication
- browser-based lab work



KeysightCare 24/7 Technical Support

# **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
	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	N9320B	N9321C	N9322C	N9323C	N9324C
Frequency	9 kHz to 3 GHz	9 kHz to 4 GHz	9 kHz to 7 GHz	1 MHz to 13.6 GHz	1 MHz to 20 GHz
Overall amplitude accuracy	±0.5 dB	±0.6 dB	±0.6 dB	±0.7 dB	±0.7 dB
DANL at 1 GHz	-145 dBm	-152 dBm	-152 dBm	-144 dBm	-144 dBm
Maximum analysis bandwidth	1 MHz	1 MHz	1 MHz	1 MHz	1 MHz
Phase Noise at 1 GHz	-90 dBc / Hz	-90 dBc / Hz	-90 dBc / Hz	-92 dBc / Hz	-92 dBc / Hz
	DATA SHEET	DATA SHEET	DATA SHEET	DATA SHEET	DATA SHEET
	Get a Quote >	Get a Quote >			

<sup>\*</sup> From selected distributors only





# 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

Model	1000 X-Series	2000 X-Series	3000G X-Series	4000 X-Series	6000 X-Series	Infiniium EXR-Series
	Professional- level capabilities in an entry-level oscilloscope	Entry-level with more capabilities	Advanced capabilities simplified	Everything the 3000G has plus see more of your signal	Dive deeper and analyze more signal detail	Simplify data gathering and analysis
Description	<ul> <li>Protocol analysis</li> <li>Bode plots</li> <li>Fast Fourier transform (FFT)</li> </ul>	Serial bus options     Mixed-signal oscilloscope options	<ul> <li>Advanced math</li> <li>Standard embedded software**</li> <li>Waveform and measurement histograms**</li> </ul>	<ul> <li>Higher bandwidth</li> <li>Larger touch screen</li> <li>Up to four active probes</li> </ul>	Voice control     Advanced jitter analysis, time interval error plots, histograms, and eye diagrams	<ul> <li>25% lower noise than S-Series</li> <li>New Fault Hunter feature</li> <li>Multiscope application</li> </ul>
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 mei	mory standard	Up to 3.2 Gpts
Waveform update rate	>200,000 wfms/s	>200,000 wfms/s	>1,000,00	00 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*	10-digit counter, DVM, and protocol analyzers
	DATA SHEET	DATA SHEET	DATA SHEET	DATA SHEET	DATA SHEET	DATA SHEET
	Get a Quote>	Get a Quote >	Get a Quote >	Get a Quote >	Get a Quote >	Get a Quote >

<sup>\*</sup> All X-Series models have a built-in protocol analyzer and 3-digit digital voltmeter (DVM)

<sup>\*\*</sup> 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.







# 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  $\mu$ A DC and 100  $\mu$ A AC) and higher resistance range (1,000 M $\Omega$ ).
- 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.





DAQ970A/73A Modules	Description	Key specifications	
DAQM900A	20-channel solid-state multiplexer	Up to 450 ch/s	Get a Quote >
DAQM901A	20-channel multiplexer plus 2 current channels	Armature 2 / 4 wire, 80 ch/s with DAQ970A/ DAQ973A, up to 300 V, 1 A	Get a Quote >
DAQM902A	16-channel 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 matrix	Armature 2-wire, 120 ch/s, up to 300 V, 1 A	Get a Quote >
DAQM905A	$2$ GHz, dual 4-channel, RF mux, $50\Omega$	Common low (not terminated), 60 ch/s up to 42 V, 0.7 A	Get a Quote >
DAQM907A	Multifunction module	<ul> <li>Two 8-bit digital I/O ports, up to 42 V, 400 mA</li> <li>26-bit 100 kHz event counter, up to 42 V</li> <li>Two 16-bit analog outputs, up to ±12 V, 10 mA</li> </ul>	Get a Quote >
DAQM908A	40-channel single-ended multiplexer	Common low (without 4-wire measurements) 60 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.







# **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.



**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.





# E36300 Series Triple-Output DC Power Supplies



- · 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	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
Rating (0 to 40°C)	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
	Get a Quote >		Get a Quote >		Get a Quote >				







## **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	l	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	
	Get a Q	Get a Quote >		Get a Quote >		Get a Quote >		Get a Quote >	





## **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.







# **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



# **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	
EL34143A	1	350 W	150 V	60 A	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 200 and 400 W autoranging power supplies.

- DATA SHEET
- ELECTRONIC LOAD
   FUNDAMENTALS WHITE PAPER



# 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.

			F		Arbitrary waveforms			
Model	lodel Description		Frequency range	Pulse	Std/Opt arb	# Bits	Sample rate	Memory/ Channel
33509B 33510B		1 2	20 MHz	20 MHz	Optional		160	
33511B 33512B	Exclusive Trueform waveform technology with < 40 ps jitter and < 0.04% THD.	1 2	20 MHZ	20 MHz	Standard	16	MSa/s	1 M Standard,
33519B 35520B		1 2	30 MHz	00.1411	Optional	10	16 M Optiona 250	16 M Optional
33521B 33522B		1 2	30 MH2	30 MHz	Standard		MSa/s	
33611A 33612A	Exclusive Trueform waveform technology at higher	1 2	80 MHz	80 MHz	Ctondord	14	660 MSa/s	4 M Standard,
frequency ranges with < 1 ps jitter < 0.03% THD.		1 2	120 MHz	100 MHz	Standard	14	1 GSa/s	64 M Optional





# **Truevolt Digital Multimeters**

- 6.5- and 7.5-digit performance
- graphical capabilities such as trend 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
- 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	
34460A	Display DMM results in histogram, bar, and trend charts	6.5	300	USB; optional GPIB, LAN	
34461A	on color graphical display for easy monitoring and to speed up statistical analysis	0.5	1,000	USB, LAN; optional GPIB	
34465A	Comes with a digitizer and advanced triggering capability so you can make more measurements with higher speed,	6.5	50.000	USB, LAN;	
34470A	better accuracy, and more memory	7.5	30,000	optional GPIB	



# 3458A Digital Multimeter, 8.5-Digit

- Get 8.5-digit resolution with 0.1 ppm transfer accuracy.
- Perform accurate measurements with 8 ppm (0.0008%) DCV accuracy (4 ppm optional).
- 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.





## **Featured Resource**

# **Choosing the Right DMM for Your Sensor Measurement Needs**

The use of sensors continues to grow as electronic devices become more intelligent and play essential roles in our daily lives. There are hundreds of types of sensors in the market and the right digital multimeter (DMM) will help you design accurate and robust products.

Learn the essential concepts of sensor functionality, and considerations for selecting the right DMM.







# 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

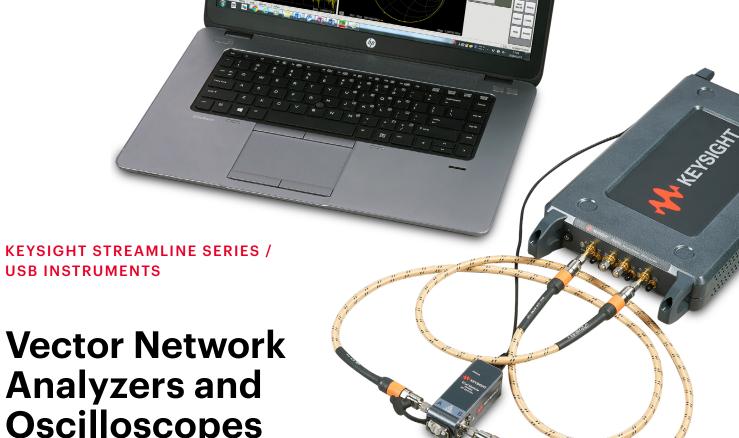
#### **ENA Series E5063A**

Frequency	100 kHz to 500 M, 1.5, 3, 4.5, 6.5, 8.5, 14 or 18 GHz
Test port Test port	2-port 50 $\Omega$ S-parameter test set
<b>D</b> ynamic 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 <sup>1</sup> , Wireless power transfer analysis <sup>1</sup> , and Materials measurement <sup>2</sup>
Interface	LAN, USB (front 2, rear 4), USBTMC, GPIB¹, Handler I/O¹

- 1. Optional capability.
- 2. External software; Keysight N1500A Material Measurement Suite required.
- \* From selected distributors only







- **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	<ul> <li>Full 2-port (P937xA/B) and 4-port (P938xB) VNA</li> <li>Ability to extend the number of ports</li> <li>Same calibration and metrology as all trusted Keysight VNAs</li> </ul>		<ul> <li>2 analog channels</li> <li>5 GSa/s</li> <li>1,000,000 wfms/s</li> <li>Zone triggering</li> <li>6-in-1 instrument: arbitrary waveform generator, frequency response analyzer, digital voltmeter, counter, protocol analyzer</li> </ul>	
	P397XA DATA SHEET	P93XXB DATA SHEET	DATA SHEET	
	Get a Quote>		Get a Quote>	

<sup>\*</sup> 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



# Save 25% on InfiniiVision Oscilloscope

Save 25% on InfiniiVision oscilloscope application bundles! These power and jitter pre-configured bundles are available on the InfiniiVision 3000T, 4000, and 6000 X-Series oscilloscopes.



Bundle option	Discount	Power	Jitter
Better	25%	<ul> <li>DSOX3054PWR</li> <li>DSOX3054T: 4-channel, 500-MHz oscilloscope</li> <li>D3000PWRB: power analysis software option</li> <li>DSOX3WAVEGEN: function / arbitrary waveform generator</li> <li>N2790A: 100-MHz high-voltage differential active probe</li> <li>1147B: 50-MHz current probe</li> <li>U1880A: deskew fixture</li> <li>DSOXLAN: LAN / VGA module</li> </ul>	<ul> <li>DSOX6004JIT</li> <li>DSOX6004A: 4-channel, 1-GHz oscilloscope</li> <li>D6000BDLB: ultimate bundle software option</li> <li>DSOX6WAVEGEN2: 2-channel function / arbitrary waveform generator</li> <li>N2750A: 1.5-GHz differential active probe</li> </ul>
Best	25%	<ul> <li>MSOX4154PWR</li> <li>MSOX4154A: 4+16 channel, 1.5-GHz mixed-signal oscilloscope</li> <li>D4000BDLB: ultimate bundle software option</li> <li>DSOX4WAVEGEN2: 2-channel function / arbitrary waveform generator</li> <li>N2790A: 100-MHz high-voltage differential active probe</li> <li>N7026A: 150-MHz high-sensitivity current probe</li> <li>U1880A: deskew fixture</li> </ul>	<ul> <li>MSOX6004JIT</li> <li>MSOX6004A: 4+16 channel, 1-GHz mixed-signal oscilloscope</li> <li>DSOX6004A-02G: 2.5-GHz bandwidth option</li> <li>D6000BDLB: ultimate bundle software option</li> <li>DSOX6WAVEGEN2: 2-channel function / arbitrary waveform generator</li> <li>N2751A: 3.5-GHz differential active probe</li> </ul>



# RF Signal Analyzer and Signal Generator Bundle

Save up to 20% on essential RF signal analyzer and signal generator bundles. The Keysight N9000B CXA signal analyzer and Keysight N5166B CXG signal generator provide an easy-to-use, solid foundation for accurate, cost-effective RF testing in general-purpose applications.



Bundle option	Discount	N9000B CXA	N5166B CXG
Good	10%	<ul><li>Frequency range, 3 GHz</li><li>Preamplifier, 3 GHz</li><li>Fine resolution attenuator</li><li>Precision frequency reference</li></ul>	<ul><li>Frequency range, 3 or 6 GHz</li><li>RF bandwidth, 60 MHz</li><li>Waveform memory size, 32 MSa</li></ul>
Better	15%	<ul> <li>Frequency range, 7.5 GHz</li> <li>Preamplifier, 7.5 GHz</li> <li>Fine resolution attenuator</li> <li>Precision frequency reference</li> </ul>	<ul><li>Frequency range, 3 or 6 GHz</li><li>RF bandwidth, 120 MHz</li><li>Waveform memory size, 32 MSa</li></ul>
Best	20%	<ul> <li>Frequency range, 26.5 GHz</li> <li>Preamplifier, 26.5 GHz</li> <li>Fine resolution attenuator</li> <li>Precision frequency reference</li> </ul>	<ul> <li>Frequency range, 6 GHz</li> <li>RF bandwidth, 120 MHz</li> <li>Waveform memory size, 512 MSa</li> <li>AM, FM, phase modulation</li> <li>Waveform license 5-pack</li> </ul>

## **Expert Technical Support**

In addition to your three-year warranty, you will receive three years of KeysightCare Technical Support when you purchase Keysight products through your Keysight distribution partner.

You have 24/7 access to the KeysightCare support portal that contains a prolific knowledge center and self-service web portal. The knowledge center contains thousands of programming examples and detailed technical articles based on decades of R&D and test experience. The self-service web portal enables you to log support requests and track your cases for faster response. Or submit a support case and get a two business day committed technical response from our experts.

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