Keysight Technologies
Power Products Solutions

A guide to selecting power products to match your test and measurement needs

Selection Guide
April 2018

KEYSIGHT TECHNOLOGIES

Introduction

Power your next insight -

Today, your products are changing the way we all work and play – wearables, electric vehicles, and beyond. For more than 50 years, Keysight system and benchtop DC power supplies have been changing the way engineers prove their design, understand the issues and ensure product quality. On a bench or in a system, our supplies are ready for your application, offering optimal choices in voltage, current, capability and performance. Test with confidence with Keysight – and power your next insight.

BenchVue Software: Control. Automate. Simplify.

Keysight BenchVue software for the PC eliminates the many of the issues around bench testing. By making it simple to connect, control instruments, and automate test sequences you can quickly move past the test development phase and access results faster than ever before. Dedicated instrument apps allow you to quickly configure the most commonly used measurements and setups for each instrument family. Rapidly build custom test sequences with the integrated Test Flow app to automate and visualize test results without the need for instrument programming. Powerful BenchVue apps enable you to significantly reduce test development time.

Use BenchVue apps to:

- Configure the most commonly used controls and measurements from your Keysight instruments
- Visualize multiple measurements simultaneously
- Easily log and export data and screen images in just a few clicks for faster analysis
- Create automated test sequences fast with minimal instrument knowledge
- Access deeper instrument controls and measurement solutions
- Save time with software that offers multiple instrument apps in one platform

BenchVue software works with hundreds of Keysight digital multimeters, power supplies, function/waveform generators, spectrum analyzers, data acquisition units, network analyzers, oscilloscopes, power meters, power sensors, electronic loads, universal counters and more – look for the BenchVue enabled icon for compatible products.

Start accelerating your workflow today and download a 30-day trial version at **www.keysight.com/find/BenchVue**

For the specific BenchVue power highlights for:

- BenchVue Power Supply app
- BenchVue eLoad app
- BenchVue power analyzer app
- 14585A software
- BenchVue SAS

Power product software

Software products	Model number	Key features
BenchVue Power Supply Control and Automation app	BV0003B	Easily set parameters, build automated tests, and visualize power output and voltage/current over time.
BenchVue Electronic Load Control and Automation app	BV0012B	Easily set parameters, build automated tests, and visualize power output and voltage/current over time for better device characterization.
Control and Analysis Software for Advanced Power Supplies	14585A	Utilize advanced PC controls and easily create complex waveforms and data log (gapless) measurements for DC power analyzers.
BenchVue Solar Array Simulator Control app	DG8901A	Conveniently view and control your N8900APV Series PV Simulator. Quickly create and download photovoltaic I-V curves.
BenchVue Power Analyzer Control and Analysis app	N/A	Control your AC power analyzers, quickly visualize measurements and easily log data.

Look For This Icon

throughout the catalog to identify BenchVue software enabled products.

In This Guide:

Power Supply Categories

E36312A DC power supply

Basic

Affordable, quiet and stable power supplies for both manual and simple computer-controlled operation. The Keysight line of basic bench power supplies is optimized to provide DC power in applications where speed and accuracy are a low consideration. These power supplies are a high-value fit for the bench and in a system rack.

Performance

Speed, precision and advanced programming features make the performance power supplies the right choice when the DC power supply is a factor in test performance. With features such as DUT protection, fast programming times and downloadable V and I sequences, these DC power supplies can reduce your risk during test and system development.

N6705C DC power analyzer

Specialty

Sometimes it is best to have a power supply with unique capabilities that are tailored to a specific application. For example, the Keysight 66300 Mobile Communications DC Sources are designed to emulate the unique characteristics of a battery for mobile device testing and maintain those characteristics even when using long load leads, such as in an ATE system. The Keysight E4360 Solar Array Simulator simulates solar panel I-V characteristics for satellite development and testing.

6811C AC power source/analyzer

Modular

Keysight offers fully programmable power supplies in a modular format: the N6700 low-profile modular power system, N6705C DC power analyzer, and 66000 modular power system series. With this feature, you now have an extensive choice of power options—from basic through performance. Additionally, all modules interact in the same way at a single interface node, which simplifies system architecture and reduces cost when the test system inevitably changes.

DC electronic load mainframe

AC sources

Keysight provides a full line of basic and performance AC sources to help you test a variety of AC-powered devices. Basic sources provide reliable power while performance sources provide advanced measurements and waveform generation.

DC electronic loads

Electronic loads sink current and dissipate power in an accurate and controlled manner. Connected to circuit under test, an electronic load provides a convenient way to vary the load on the circuit's output in order to understand the circuit's performance. Keysight offers two families of electronic loads—a single output family and a modular, multiple output family.

Selecting the Right System and Benchtop DC Power Supply For Your Application

When you need just a basic power supply, it's quite easy to pick the right one based on your voltage and current requirements. The voltage and current tables are found on pages 10 and 11. From there you can go to the product page(s) for more detail.

When you have specialized requirements that need features such as source and measure, it is quite easy to select from a set of power supplies that are designed exactly for those requirements. Refer to page 21 for specialty power products.

But when you have more complex requirements and you know the power supply is an important part of your test bench, where do you start and what do you need to consider?

Of course you need to select the right voltage and current, but there are other factors to consider when selecting a benchtop DC power supply for your applications. This guide gives a definition of the feature, states why it's important, and tells you how to use that feature when specifying the right power supply. In addition, the product families are listed so you can quickly see which product best fits your application. With that information, you can go to the product pages for detailed specifications.

Use the following information to help select the features you need in a DC power supply. Then go to the product page(s) for more detail.

Output characteristics

		LOW ripple and noise < 10 mVp-p		**MEDIUM ripple and noise 10 to 500 mVp-p**	
Ripple and noise Use the ripple and noise specification to determine what, if any, affects these variations will have on your circuit or device.	Ideally, an output is free from any variations in voltage. In practice, there are periodic variations, called ripple, and random variations, called noise. Typically specified as either Vrms or Vp-p, the most useful spec is Vp-p. With Vp-p you will know the maximum variation away from the DC setpoint.	6611C-55A 66309B-32A B2961A-62A E3600 Series E36300 Series N6751A-66A N6781A-84A N6900 Series N7900 Series U8031A-32A	p37 p30 p15 p12 p12 p17 p22 p16 p16 p12	66101A-06A 6671A-92A E36100 Series N5700 Series N6731B-46B N6773A-77A N6785A-86A N8700 Series N8900 Series RP7900 Series U8001A-02A	p38 p37 p12 p13 p17 p17 p22 p13 p14 p21 p12
		HIGH accuracy < 0.03%		**MEDIUM accuracy > 0.05%**	
Programming accuracy Use programming accuracy to determine if the power supply can produce a voltage and current within the precision needed by your device.	Programming accuracy is a measure of how closely the output will be to the setpoint. Specified as a percent of output plus an offset, you can calculate whether or not the power supply has the precision required. In addition, many power supplies have built-in voltmeters and ammeters to measure its output.	B2961A-62A N6751A-66A N6781A-82A N6784A-86A N6900 Series N7900 Series	p15 p17 p22 p22 p16 p16	6600 Series 66100 Series E3600 Series E36100 Series E36300 Series N5700 Series N6731B-46B N6773A-77A N6783A N8700 Series N8900 Series RP7900 Series U8000 Series	p37 p38 p12 p12 p12 p13 p17 p17 p22 p13 p14 p21 p12

Selecting the Right System and Benchtop DC Power Supply For Your Application (Continued)

Output characteristics (Continued)

		FAST output response < 15 ms		MEDIUM output response < 200 ms	
Output response Use this specification to select the power supply that is fast enough for your application.	When the setpoint changes it will take some time before the output reaches the setting. How fast it reaches the setpoint is a result of its regulation design and the output bandwidth. The specifications are typically for a voltage change from 10 to 90% of its rated output or a load change of 50 to 100%.	6610A-55A 66300 Series B2961A-62A N6751A-66A N6781A-86A N6900 Series N7900 Series	p37 p30 p15 p17 p22 p16 p16	66101A-06A 6671A-92A E36100 Series E36300 Series N5700 Series N6731B-46B N6773A-77A N8700 Series N8900 Series RP7900 Series U8001A-02A	p38 p37 p12 p12 p13 p17 p17 p13 p14 p21 p12

Control

		Manual only		Computer and manual control
Computer interface Specify power supplies with the appropriate hardware and software interface for computer control.	Many DC power supplies have both manual and computer control. Some are only manually controlled. Hardware interfaces for DC power supplies include GPIB, USB, and LAN (LXI Core). Software interfaces include the SCPI language and drivers such as IVI-C, IVI-COM, and VXI plug&play.	E3620A-30A U8000 Series	p12 p12	All others

		WITH analog input		WITHOUT analog input
Analog voltage control signal Specify a power supply with an analog input whenever you need to amplify the power or need to track an analog voltage.	Some power supplies provide an analog voltage control input to cause the voltage output to follow this input. Essentially, it amplifies the power since the power supply can provide current up to its rated maximum.	6640 Series 6650 Series N5700 Series N8700 Series N8900 Series	p37 p37 p13 p13 p14	All others

Output measurements

		Built-in measurement
Measure V & I output Specify power supplies with built-in measurements whenever you need to check the actual voltage and current.	Many power supplies have a built in voltmeter and ammeter to read back their own output. The measurements can be displayed on the front panel or queried by a computer connected to the interface. These measurements are particularly useful in computer- controlled systems. Measurement (or read back) accuracy is specified as a percent of full scale plus an offset.	All others

Selecting the Right System and Benchtop DC Power Supply For Your Application (Continued)

Packaging

		QUARTER rack		**HALF rack**		**FULL rack**
Physical size Use the size specification to match bench or system use.	Keysight power supplies have standard EIA 19-inch rack dimensions. The width is either half rack width or full rack width while the height ranges from 1U to 5U (1.75 to 8.57 in). While any size can be used on the bench or in a system rack, the half rack width is generally better for bench applications while the full rack width works well in system racks. Of special note is the 1U height of the N5700 and N6700 Series.	E36100 Series	p12	6610 Series B2961A-62A E3600 Series E36300 Series U8000 Series	p37 p15 p12 p12 p12	All others
		FRONT terminals		**REAR terminals**		
Front or rear output terminals Select the model with its output terminals in the best location for your application on either the bench or in a system rack.	The output terminals can be located on the front of the power supply or the rear. System and high-current power supplies have their outputs located on the rear panel while bench and some low current power supplies have outputs on the front.	6610A-55A B2961A-62A E3620A-30A E36100 Series N6705C U8000 Series	p37 p15 p12 p12 p18 p12	All others		
		SINGLE outputs		**MULTIPLE outputs**		
Number of outputs Specify multiple outputs per unit when you need to save space on the bench or in a system rack.	Keysight power supplies are configured with 1 to 8 outputs per unit. Multiple output power supplies can save space on the bench or in a rack. Of special note are the 66000 and N6700 modular mainframes that can hold up to 8 and 4 modules respectively.	All others		66000 mfr B2961A-62A E3620-31A E3646A-49A E36300 Series E4360 mfg N6700 mfr N6705C mfr U8031A-32A	p38 p15 p12 p12 p12 p31 p17 p22 p12	

mfr = mainframes for the E4360, N6700, N6707C, N6705C and 66000 modular power supplies

Selecting the Right System and Benchtop DC Power Supply For Your Application (Continued)

Specialty

		WITH DUT protection		WITHOUT DUT protection	
DUT protection Select power supplies with DUT protection whenever your load may be damaged by over voltage or over current.	Many power supplies can be set for a maximum voltage and current to protect the device under test (DUT). When set, the power supply will limit the voltage and/or current regardless of the load. This feature provides a margin of safety when something goes wrong.	All others		E3620A-31A	p12
		WITH LIST memory		**WITHOUT LIST memory**	
Computer Interface Specify power supplies with the appropriate hardware and software interface for computer control.	Many DC power supplies have both manual and computer control. Some are only manually controlled. Hardware interfaces for DC power supplies include GPIB, USB, and LAN (LXI Core). Software interfaces include the SCPI language and drivers such as IVI-C, IVI-COM, and VXI plug&play.	66000 Series B2961A-62A E4360 Series N6700 Series N6705C N6900 Series N7900 Series RP7900 Series	p38 p15 p31 p17 p18 p16 p16 p21	All others	
		WITH optional relays		**WITHOUT optional relays**	
Output disconnect or polarity reversal Select power supplies with optional output relays when your application requires power to be physically disconnected from the device.	Automatic connect, disconnect, and polarity reversal can be accomplished with programmable output relays. By doing so, you will eliminate an external relay and have an easy method to programmatically actuate the relay.	66000 Series 6630 Series 66300 Series N6700 Series N7900 Series	p38 p37 p30 p17 p16	All others	

DC Voltage and Current At a Glance

			Voltage ranges: 5 to 40 V		
Model numbers	**Page**	**Outputs**	**5 to 9 V**	**12 to 20 V**	**21 to 40 V**
6611C-14C	37	1	0 to 8 V, 5 A (6611C)	0 to 20 V, 2 A (6612C)	
6631B-34B	37	1	0 to 8 V, 10 A (6631B)	0 to 20 V, 5 A (6632B)	
6641A-45A	37	1	0 to 8 V, 20 A (6641A)	0 to 20 V, 10 A (6642A)	0 to 35 V, 6 A (6643A)
6651A-55A	37	1	0 to 8 V, 50 A (6651A)	0 to 20 V, 25 A (6652A)	0 to 35 V, 15 A (6653A)
6671A-75A	37	1	0 to 8 V, 220 A (6671A)	0 to 20 V, 100 A (6672A)	0 to 35 V, 60 A (6673A)
6680A-84A	37	1	0 to 5 V, 875 A (6680A) 0 to 8 V, 580 A (6681A)	0 to 21 V, 240 A (6682A)	0 to 32 V, 160 A (6683A) 0 to 40 V, 128 A (6684A)
6690A-92A	37	1		0 to 15 V, 440 A (6690A)	0 to 30 V, 220 A (6691A)
66001A-6A	38	1 to 8 [1]	0 to 8 V, 16 A (66601A)	0 to 20 V, 7.5 A (66602A) 0 to 20, 5 A (66603A)	0 to 35, 4.5 A (66603A)
66309B-32A	30	1 to 2		0 to 15 V, 3 A (all 663xx)	
E36102B-06B	12	1	0 to 6 V, 5 A (E36102B)	0 to 20 V, 2 A (E36103B)	0 to 35 V, 1A (E36104B)
E3620A	12	2			0 to 25 V, 1 A (E3620A x2)
E36311A-13A	12	3	0 to 6 V, 5 A (E36311A-12A) 0 to 6 V, 10 A (E36313A)		0 to ± 25 V, 1 A (E36311A x 2) 0 to 25 V, 1 A (E36312A x 2) 0 to 25 V, 2 A (E36313A x 2)
E3630A-31A	12	3	0 to 6 V, 2.5 (E3630A x1) 0 to 6 V, 5 A (E3631A x1)	0 to ± 20 V, 0.5 A (E3630A x2)	0 to ± 25 V, 1 A (E3631A x2)
E3632A-34A [2]	12	1	0 to 8 V, 20 A (E3633A r1)	0 to 15 V, 7 A (E3632A r1) 0 to 20 V, 10 A (E3633A r2)	0 to 30 V, 4 A (E3632A r2) 0 to 25 V, 7 A (E3634A r1)
E3640A-45A [2]	12	1	0 to 8 V, 3 A (E3640A r1) 0 to 8 V, 5 A (E3642A r1) 0 to 8 V, 8 A (E3644A r1)	0 to 20 V, 1.5 A (E3640A r2) 0 to 20 V, 2.5 A (E3642A r2) 0 to 20 V, 4 A (E3644A r2)	0 to 35 V, 0.8 A (E3641A r1) 0 to 35 V,1.4 A (E3643A r1) 0 to 35 V, 2.2 A (E3645A r1)
E3646A-49A [2]	12	2	0 to 8 V, 3 A (E3646A r1) 0 to 8 V, 5 A (E3648A r1)	0 to 20 V, 1.5 A (E3646A r2) 0 to 20 V, 2.5 A (E3648A r2)	0 to 35 V, 0.8 A (E3647A r1) 0 to 35 V, 1.4 A (E3649A r1)
N5741A-52A	13	1	0 to 6 V, 100 A (N5741A) 0 to 8 V, 90 A (N5742A)	0 to 12.5 V, 60 A (N5743A) 0 to 20 V, 38 A (N5744A)	0 to 30 V, 25 A (N5745A) 0 to 40 V, 19 A (N5746A)
N5761A-72A	13	1	0 to 6 V, 180 A (N5761A) 0 to 8 V, 165 A (N5762A)	0 to 12.5 V, 120 A (N5763A) 0 to 20 V, 76 A (N5764A)	0 to 30 V, 50 A (N5765A) 0 to 40 V, 38 A (N5766A)
N6731B-36B	17	1 to 4 [1]	0 to 5 V, 10 A (N6731B) 0 to 8 V, 6.25 A (N6732B)	0 to 20 V, 2.5 A (N6733B)	0 to 35 V, 1.5 A (N6734B)
N6741B-46B	17	1 to 4 [1]	0 to 5 V, 20 A (N6741B) 0 to 8 V, 12.5 A (N6742B)	0 to 20 V, 5 A (N6743B)	0 to 35 V, 3 A (N6744B)
N6751A-52A N6761A-62A N6773A-77A	17	1 to 4 [1]		0 to 20 V, 15 A (N6773A)	0 to 35 V, 8.5 A (N6774A)
N6753A-56A N6763A-66A	17	2 [1]		0 to 20 V, 50 A (N6753A) 0 to 20 V, 50 A (N6755A) 0 to 20 V, 50 A (N6763A) 0 to 20 V, 50 A (N6765A)	
N6781A-86A	22	1 to 4 [1]	0 to 6 V, +3 to-2 A (N6783A-MFG) 0 to 8 V, +3 to-2 A (N6783A-BAT)	0 to 20 V, ± 3 A (N6781A-82A) 0 to ±20 V, ± 3 A (N6784A) 0 to 20V, ± 8 A (N6785-86A)	
N6950A-52A, N6970A-72A N7950A-52A, N7970A-72A	16 16	1 1	0 to 9 V, 100 A (N69/N7950A) 0 to 9 V, 200 A (N69/N7970A)	0 to 20 V, 50 A (N69/N7951A) 0 to 20 V, 100 A (N69/N7971A)	0 to 40 V, 25 A (N69/N7952A) 0 to 40 V, 50 A (N69/N7972A)
N8731A-42A	13	1	0 to 8 V, 400 A (N8771A)	0 to 10 V, 300 A (N8732A) 0 to 15 V, 220 A (N8733A) 0 to 20 V, 165 A (N8734A)	0 to 30 V, 110 A (N8735A) 0 to 40 V, 85 A (N8736A)
N8754A-62A	13	1		0 to 20 V, 250 A (N8754A)	0 to 30 V, 170 A (N8755A) 0 to 40 V, 125 A (N8756A)
U8001A	12	1			0 to 30 V, 3 A
U8002A	12	1			0 to 30 V, 5 A
U8031A	12	3			0 to 30 V, 6 A (Output 1 and 2); 5 V, 3 A (Output 3)

1. Power modules that require a modular mainframe (66000 Series, N6700 Series, N6705).
2. Dual range power supplies; r1 denotes range 1; r2 denotes range 2.

DC Voltage and Current At a Glance (Continued)

			Voltage ranges: 50 to 1500 V		
Model numbers	**Page**	**Outputs**	**50 to 80 V**	**100 to 210 V**	**300 to 1500 V**
6611C-14C	37	1	0 to 50 V, 1 A (6613C)	0 to 100 V, 0.5 A (6614C)	
6631B-34B	37	1	0 to 50 V, 2 A (6633B)	0 to 100 V, 1 A (6634B)	
6641A-45A	37	1	0 to 60 V, 3.5 A (6644A)	0 to 120 V, 1.5 A (6645A)	
6651A-55A	37	1	0 to 60 V, 9 A (6654A)	0 to 120 V, 4 A (6655A)	
6671A-75A	37	1	0 to 60 V, 35 A (6674A)	0 to 120 V, 18 A (6675A)	
6690A-92A	37	1	0 to 60 V, 110 A (6692A)		
66101A-6A	38	1 to 8 [1]	0 to 60 V, 2.5 A (66104A)	0 to 120 V, 1.25 A (66105A) 0 to 200 V, 0.75 A (66106A)	
B1500A	27	1 to 10 [3]	50 to 80 V: 0 to ± 200 V, ± 0.1 A to ± 1 A	100 to 210 A: 0 to ± 200 V, ± 0.1 A to ± 1 A	
B2901A/02A/11A/12A	23	1 to 2	0 to ± 210 V, ± 0.105 A to ± 3 A	0 to ± 210 V, ± 0.105 A to ± 3 A	
B2961A-62A	15	1 to 2	0 to ± 210 V, ± 0.105 A to ± 3 A	0 to ± 210 V, ± 0.105 A to ± 3 A	
E36102B-06B	12	1	0 to 60 V, 0.6A (E36105B)	0 to 100 V, 0.4 A (E36106B)	
E3632A-34A [2]	12	1	0 to 50 V, 4 A (E3634A r2)		
E3640A-45A [2]	12	1	0 to 60 V, 0.5 A (E3641A r2) 0 to 60 V, 0.8 A (E3643A r2) 0 to 60 V, 1.3 A (E3645A r2)		
E3646A-49A [2]	12	2	0 to 60 V, 0.5 A (E3647A r2) 0 to 60 V, 0.8 A (E3649A r2)		
E4361A-62A	31	1 to 2 [1]	0 to 65 V, 8.5 A (E4361A)	0 to 130 V, 5 A (E4362A)	
E5260/70	25	1 to 8 [1]	50 to 80V: 0 to ± 200 V, ± 0.1 A to ± 1 A	100 to 210 A: 0 to ± 200 V, ± 0.1 A to ± 1 A	
E5262/63	25	2	50 to 80 V	0 to ± 200 V, ± 0.2 A (E5262A); 0 to ± 200 V, ± 0.2 A to ± 1 A (E5263A)	
			100 to 210 A	0 to ± 200 V, + 0.2 A to 1 A	
				0 to ± 200 V, ± 0.2 A (E5262A); 0 to ± 200 V, ± 0.2 A to ± 1 A (E5263A)	
N5741A-52A	13	1	0 to 60 V, 12.5 A (N5747A) 0 to 80 V, 9.5 A (N5748A)	0 to 100 V, 7.5 A (N5749A) 0 to 150 V, 5 A (N5750A)	0 to 300 V, 2.5 A (N5751A) 0 to 600 V, 1.3 A (N5752A)
N5761A-72A	13	1	0 to 60 V, 25 A (N5767A) 0 to 80 V, 19 A (N5768A)	0 to 100 V, 15 A (N5769A) 0 to 150 V, 10 A (N5770A)	0 to 300 V, 5 A (N5771A) 0 to 600 V, 2.6 A (N5772A)
N6731B-36B	17	1 to 4 [1]	0 to 60 V, 0.8 A (N6735B)	0 to 100 V, 0.5 A (N6736B)	
N6741B-46B	17	1 to 4 [1]	0 to 60 V, 1.6 A (N6745B)	0 to 100 V, 1 A (N6746B)	
N6751A-52A N6761A-62A N6773A-77A	17	1 to 4 [1]	0 to 50 V, 5 A (N6751A) 0 to 50 V, 10 A (N6752A) 0 to 50 V, 1.5 A (N6761A) 0 to 50 V, 3 A (N6762A) 0 to 60 V, 5 A (N6775A)	0 to 100 V, 3 A (N6776A) 0 to 150 V, 2 A (N6777A)	
N6753A-56A N6763A-66A	17	2 [1]	0 to 60 V, 20 A (N6754A) 0 to 60 V, 17 A (N6756A) 0 to 60 V, 20 A (N6764A) 0 to 60 V, 17 A (N6766A)		
N6953A-54A N6973A-77A N7953A-54A N7973A-77A	16 16 16 16	1 1 1 1	0 to 60 V, 16.7 A (N69/N7953A) 0 to 60 V, 33.3 A (N69/N7973A) 0 to 80 V, 12.5 A (N69/N7954A) 0 to 80 V, 25 A (N69/N7974A)	0 to 120 V, 16.7 A (N69/N7976A) 0 to 160 V, 12.5 A (N69/N7977A)	
N8731A-42A	13	1	0 to 60 V, 55 A (N8737A) 0 to 80 V, 42 A (N8738A)	0 to 100 V, 33 A (N8739A) 0 to 150 V, 22 A (N8740A)	0 to 300 V, 11 A (N8741A) 0 to 600 V, 5.5 A (N8742A)
N8754-62A	13	1	0 to 60 V, 85 A (N8757A) 0 to 80 V, 42 A (N8738A)	0 to 100 V, 50 A (N8759A) 0 to 150 V, 34 A (N8760A)	0 to 300 V, 17 A (N8761A) 0 to 600 V, 8.5 A (N8762A)
N8920A-57A N8937APV/57APV	14 14	1 1	0 to 80 V, 170 A (N8920A/40A) 0 to 80 V, 340 A (N8925A/45A) 0 to 80 V, 510 A (N8931A/51A)	0 to 200 V, 70 A (N8921A/41A) 0 to 200 V, 140 A (N8926A/46A) 0 to 200 V, 210 A (N8932A/52A)	0 to 500 V, 30 A (N8923A/43A) 0 to 500 V, 60 A (N8928A/48A) 0 to 500 V, 90 A (N8934A/54A) 0 to 750 V, 20 A (N8924A/44A) 0 to 750 V, 40 A (N8929A/49A) 0 to 750 V, 60 A (N8935A/55A) 0 to 1000 V, 30 A (N8930A/50A) 0 to 1500 V, 30 A (N8937A/57A/APV)
RP7951A-53A RP7961A-63A	21 21	1 1			0 to 500 V, ± 20 A (RP7951A/61A) 0 to 500 V, ± 40 A (RP7952A/62A) 0 to 950 V, ± 20 A (RP7953A/63A)
U8032A	12	3	0 to 60 V, 3 A (Output 1 and 2); 5 V, 3 A (Output 3)		

1. Power modules that require a modular mainframe (66000 Series, N6700 Series, N6705).
2. Dual range power supplies; r1 denotes range 1; r2 denotes range 2.
3. Maximum number of modules depends on the configuration.

E36300, E36100, E3600 and U8000 Series Bench Power Supplies

When you need reliable power with minimal features, you can rely on the E36300, E36100, E3600 and U8000 Series bench power supplies.

NEW E36100B Series Bench Power Supplies

The NEW E36100B series will impress you from every angle, size, display and I/O.

- Small footprint 2U 1/4 rack
- Up to 100V, up to 5A
- Clean and stable DC power
- Excellent programming and readback accuracy
- LAN (LXI Core), and USB
- Rack mount up to 4 units

E36300 Series Bench Power Supplies

The triple output E36300 Series gives you the performance of system power supplies at an affordable price. Three models (E36311A, E36312A and E36313A) are available.

- 4.3" color LCD Display
- Color-coded channels and display for fast and error-free control
- Individual voltage/current knobs with rotary encoder control for precise setting
- Intuitive, easy-to-use front panel interface
- Meter view to display more info on a selected channel
- Auto series/parallel connection

E3600 and U8000 Series bench power supplies

The E3600 Series offers an extensive choice of voltages, programmability, and number of outputs.

The U8000 Series offers more affordable DC power and provides features typical only found in programmable power supplies (like output sequencing, save/recall, and more).

- 30 to 375 W outputs, 6 to 60 V, and 0.5 to 20 A
- Single- to triple-output models
- Low noise, linear regulation
- Dual range outputs to provide more current at lower voltage settings

	Model	Power (W)	Maximum V (V)	Maximum I (A)	Number of outputs	Number of ranges	Computer interface	Ripple and noise mVp-p	Program. or meter res. mV	Size [2]
Basic	E36311A	80	6 V/+25 V/-25 V	5 A/1 A/1 A	3	1	USB	2	1	½ RU w x 3 RU h
	E36312A	80	6 V/25 V/25 V	5 A/1 A/1 A	3	1	LAN, USB, GPIB	2	1	
	E36313A	160	6 V/25 V/25 V	10 A/2 A/2 A	3	1		2	1	
	NEW E36102B	30	6	5	1	1	LAN, USB	10	1	¼ RU w x 2 RU h
	NEW E36103B	40	20	2	1	1		30	1	
	NEW E36104B	35	35	1	1	1		60	2	
	NEW E36105B	36	60	0.6	1	1		100	3	
	NEW E36106B	40	100	0.4	1	1		150	6	
	E3632A	120	15 V r1 / 30 V r2	7 A r1 / 4 A r2	1	2	GPIB	2	1	½ RU w x 3 RU h
	E3633A	200	8 V r1 / 20 V r2	20 A r1 / 10 A r2	1	2		3	1	
	E3634A	200	25 V r1 / 50 V r2	7 A r1 / 4 A r2	1	2		3	3	
	E3640A	30	8 V r1 / 20 V r2	3 A r1 / 1.5 A r2	1	2	GPIB	5	5	½ RU w x 2 RU h
	E3641A	30	35 V r1 / 60 V r2	0.8 A r1 / 0.5 A r2	1	2		8	5	
	E3642A	50	8 V r1 / 20 V r2	5 A r1 / 2.5 A r2	1	2		5	5	
	E3643A	50	35 V r1 / 60 V r2	1.4 A r1 / 0.8 A r2	1	2		8	5	
	E3644A	80	8 V r1 / 20 V r2	8 A r1 / 4 A r2	1	2		5	5	
	E3645A	80	35 V r1 / 60 V r2	2.2 A r1 / 1.3 A r2	1	2		8	5	
	E3646A	60	8 V r1 / 20 V r2	3 A r1 / 1.5 A r2	2	2	GPIB	5	5	½ RU w x 3 RU h
	E3647A	60	35 V r1 / 60 V r2	0.8 A r1 / 0.5 A r2	2	2		8	5	
	E3648A	100	8 V r1 / 20 V r2	5 A r1 / 2.5 A r2	2	2		5	5	
	E3649A	100	35 V r1 / 60 V r2	1.4 A r1 / 0.8 A r2	2	2		8	5	
	U8001A	90	30	3	1	1	No	12	10	½ RU w x 2 RU h
	U8002A	150	30	5	1	1		12	10	
	U8031A	375	30	6	3	1	No	10	10	½ RU w x 4 RU h
	U8032A	375	60	3	3	1		10	10	

1. Output 1 / Output 2 / Output 3.
2. NOTE: RU refers to rack unit of a standard 19" EIA equipment rack. The width is either 1/2 or full The height is in number of rack units which are 1.75" (44.4 mm) each. For example: a 3 RU h has a height of 5.25" (133.3 mm).

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N5700 and N8700 Series Basic DC Power Supplies

Space-saving basic power with modern interfaces

Now get up to 5200 W in a compact, 2U package with the N8700 Series or up to 1560 W in a compact, 1U package with the N5700 Series. Both series offers solid performance and a variety of basic and enhanced capabilities.

- Remote programming via GPIB, LAN and USB interfaces with the SCPI command set (drivers available)
- Analog control and monitoring of output voltage and current
- Connect multiple supplies in parallel or series for greater output current or voltage respectively
- Built-in measurements
- Front panel control and advanced programmable features
- Built-in protection features such as OVP, OCP, UVL, and OTP
- LXI Core compliant

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N8731A: Front/back

N5749A: Front/back

	Model	Power (W)	Maximum V (V)	Maximum I (A)	Number of outputs	Number of ranges	Ripple and noise mVp-p	Programming accuracy % + mV	Transient response (ms)	Size [1]
Basic	N5741A	600	6	100	1	1	60	0.5 + 3	≤ 1.5	Full RU w x 1 RU h
	N5742A	720	8	90	1	1	60	0.5 + 4	≤ 1.5	
	N5743A	750	12.5	60	1	1	60	0.5 + 6.25	≤ 1.5	
	N5744A	760	20	38	1	1	60	0.5 + 10	≤ 1	
	N5745A	750	30	25	1	1	60	0.5 + 15	≤ 1	
	N5746A	760	40	19	1	1	60	0.5 + 20	≤ 1	
	N5747A	750	60	12.5	1	1	60	0.5 + 30	≤ 1	
	N5748A	760	80	9.5	1	1	80	0.5 + 40	≤ 1	
	N5749A	750	100	7.5	1	1	80	0.5 + 50	≤ 1	
	N5750A	750	150	5	1	1	100	0.5 + 75	≤ 2	
	N5751A	750	300	2.5	1	1	150	0.5 + 150	≤ 2	
	N5752A	780	600	1.3	1	1	300	0.5 + 300	≤ 2	
	N5761A	1080	6	180	1	1	60	0.5 + 3	≤ 1.5	Full RU w x 1 RU h
	N5762A	1320	8	165	1	1	60	0.5 + 4	≤ 1.5	
	N5763A	1500	12.5	120	1	1	60	0.5 + 6.25	≤ 1.5	
	N5764A	1520	20	76	1	1	60	0.5 + 10	≤ 1	
	N5765A	1500	30	50	1	1	60	0.5 + 15	≤ 1	
	N5766A	1520	40	38	1	1	60	0.5 + 20	≤ 1	
	N5767A	1500	60	25	1	1	60	0.5 + 30	≤ 1	
	N5768A	1520	80	19	1	1	80	0.5 + 40	≤ 1	
	N5769A	1500	100	15	1	1	80	0.5 + 50	≤ 1	
	N5770A	1500	150	10	1	1	100	0.5 + 75	≤ 2	
	N5771A	1500	300	5	1	1	150	0.5 + 150	≤ 2	
	N5772A	1560	600	2.6	1	1	300	0.5 + 300	≤ 2	
	N8731A	3200	8	400	1	1	60	0.05 + 4	< 1	Full RU w x 2 RU h
	N8732A	3300	10	330	1	1	60	0.05 + 5	< 1	
	N8733A	3300	15	220	1	1	60	0.05 + 7.5	< 1	
	N8734A	3300	20	165	1	1	60	0.05 + 10	< 1	
	N8735A	3300	30	110	1	1	60	0.05 + 15	< 1	
	N8736A	3400	40	85	1	1	60	0.05 + 20	< 1	
	N8737A	3300	60	55	1	1	60	0.05 + 30	< 1	
	N8738A	3360	80	42	1	1	80	0.05 + 40	< 1	
	N8739A	3300	100	33	1	1	100	0.05 + 50	< 1	
	N8740A	3300	150	22	1	1	100	0.05 + 75	< 2	
	N8741A	3300	300	11	1	1	300	0.05 + 150	< 2	
	N8742A	3300	600	5.5	1	1	500	0.05 + 300	< 2	
	N8754A	5000	20	250	1	1	75	0.025 + 15	< 1	Full RU w x 2 RU h
	N8755A	5100	30	170	1	1	75	0.025 + 22.5	< 1	
	N8756A	5000	40	125	1	1	75	0.025 + 30	< 1	
	N8757A	5100	60	85	1	1	75	0.025 + 45	< 1	
	N8758A	5200	80	65	1	1	100	0.025 + 60	< 1	
	N8759A	5000	100	50	1	1	100	0.025 + 75	< 1	
	N8760A	5100	150	34	1	1	120	0.025 + 112.5	< 2	
	N8761A	5100	300	17	1	1	300	0.025 + 225	< 2	
	N8762A	5100	600	8.5	1	1	500	0.025 + 450	< 2	

1. RU refers to rack unit of a standard 19" EIA equipment rack. The width is either ½ or full. The height is in number of rack units which are 1.75" (44.4 mm) each. For example: a 3 RU h has a height of 5.25" (133.3 mm).

N8900 Series Autoranging System DC Power Supplies

High-power, autoranging output does the job of multiple supplies

The N8900 Series autoranging DC power supplies provide unprecedented flexibility by offering a wide range of voltage and current combinations at full power. Just one N8900 does the job of multiple power supplies! It's like having many power supplies in one!

- Up to 1500 V, up to 510 A
- 5 kW, 10 kW and 15 kW models in a small 3U package
- Easily parallel to create "one" power supply with > 100 kW of power
- Protection from over-voltage, over-current and over-temperature
- Control via GPIB, USB, LAN (LXI Core), and analog programming

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	Model	Power (W)	Maximum V (V)	Maximum I (A)	Number of outputs	Number of ranges	Ripple and noise mVp-p	Programming accuracy 0.1% mV	Transient response (ms)	AC input voltage (VAC)	Size [1]
Basic	N8920A	5000	80	170	1	1	200	≤ 80	≤ 1.5	208	Full RU w x 3 RU h
	N8921A	5000	200	70	1	1	300	≤ 200	≤ 1.5	208	
	N8923A	5000	500	30	1	1	350	≤ 500	≤ 1.5	208	
	N8924A	5000	750	20	1	1	800	≤ 750	≤ 1.5	208	
	N8925A	10000	80	340	1	1	200	≤ 80	≤ 1.5	208	
	N8926A	10000	200	140	1	1	300	≤ 200	≤ 1.5	208	
	N8928A	10000	500	60	1	1	350	≤ 500	≤ 1.5	208	
	N8929A	10000	750	40	1	1	800	≤ 750	≤ 1.5	208	
	N8930A	10000	1000	30	1	1	800	≤ 1000	≤ 1.5	208	
	N8931A	15000	80	510	1	1	200	≤ 80	≤ 1.5	208	
	N8932A	15000	200	210	1	1	300	≤ 200	≤ 1.5	208	
	N8934A	15000	500	90	1	1	350	≤ 500	≤ 1.5	208	
	N8935A	15000	750	60	1	1	800	≤ 750	≤ 1.5	208	
	N8937A	15000	1500	30	1	1	1000	≤ 1500	≤ 1.5	208	
	N8940A	5000	80	170	1	1	200	≤ 80	≤ 1.5	400	Full RU w x 3 RU h
	N8941A	5000	200	70	1	1	300	≤ 200	≤ 1.5	400	
	N8943A	5000	500	30	1	1	350	≤ 500	≤ 1.5	400	
	N8944A	5000	750	20	1	1	800	≤ 750	≤ 1.5	400	
	N8945A	10000	80	340	1	1	200	≤ 80	≤ 1.5	400	
	N8946A	10000	200	140	1	1	300	≤ 200	≤ 1.5	400	
	N8948A	10000	500	60	1	1	350	≤ 500	≤ 1.5	400	
	N8949A	10000	750	40	1	1	800	≤ 750	≤ 1.5	400	
	N8950A	10000	1000	30	1	1	800	≤ 1000	≤ 1.5	400	
	N8951A	15000	80	510	1	1	200	≤ 80	≤ 1.5	400	
	N8952A	15000	200	210	1	1	300	≤ 200	≤ 1.5	400	
	N8954A	15000	500	90	1	1	350	≤ 500	≤ 1.5	400	
	N8955A	15000	750	60	1	1	800	≤ 750	≤ 1.5	400	
	N8957A	15000	1500	30	1	1	1000	≤ 1500	≤ 1.5	400	

1. RU refers to rack unit of a standard 19" EIA equipment rack. The width is either ½ or full. The height is in number of rack units which are 1.75" (44.4 mm) each. For example: a 3 RU h has a height of 5.25" (133.3 mm).

B2961A/B2962A 6.5 Digit Low Noise Power Source

The Keysight B2961A/B2962A 6.5 Digit Low Noise Power Source is an advanced low cost power supply/source offering:

- 6.5 digit precision, wide and bipolar (4-quadrant) output
- Both voltage(100 nV to 210 V) and current(10 fA – 3A DC/10.5 A pulsed) source modes
- 10 µVrms (1 nVrms/√Hz at 10 kHz) output noise with external ultra-low noise filter
- 100 nV/10 fA sourcing resolution
- Precision arbitrary waveform generation capability (1 MHz to 10 kHz)
- Programmable output resistance and emulation
- Time domain voltage/current monitoring on the front panel

BenchVue software enabled

These superior capabilities allow tests and evaluation that conventional power supply/sources cannot do. They make the B2961A and B2962A ideal companion instruments for use with other instruments such as oscilloscopes, network analyzers, spectrum analyzers, frequency counters, digital multi meters, nanovoltmeters, etc. The Keysight B2961A/B2962A can support the difficult measurement challenges faced by researchers, electronic development engineers and electronic technicians working on advanced devices and materials.

Since the Keysight B2961A and B2962A are highly stable current/voltage sources ideal for evaluating the physical properties of materials and many types of samples, they ensure that you can detect all tiny signal variations emanating from materials under test.

B2961A/62A

	Model			B2961A/62A	B2961A/62A with HC-ULNF (High current ultra low noise filter)	B2961A/62A with ULNF (Ultra low noise filter)	B2961A/62A with LNF (Low noise filter)
Performance	Number of channels			1 or 2	1 or 2	1 or 2	1 or 2
	Max output	Voltage		± 210 V	± 21 V	± 42 V	± 210 V
		Current	DC	± 3.03 A	± 500 mA	± 105 mA	± 3.03 A
			Pulsed	± 10.5 A	± 500 mA	± 105 mA	± 10.5 A
		Power		31.8 W	10.5 W	4.4 W	31.8 W
	Source	Max digits	Digits	6 ½	6 ½	6 ½	6 ½
		Min resolution	Voltage	100 nV	100 nV	100 nV	100 nV
			Current	10 pA	1 nA	10 pA	10 pA
	Noise	0.1 Hz to 10 Hz		< 5 µVpp	< 5 µVpp	< 5 µVpp	< 5 µVpp
				< 1 pApp	< 1 pApp	< 1 pApp	< 1 pApp
		10 Hz to 20 MHz		3 mVrms	10 µVrms	10 µVrms	350 µVrms
					1 nVrms/√Hz at 10 kHz	1 nVrms/√Hz at 10 kHz	
	Measurement	Max digits	Digits	4 ½	4 ½	4 ½	4 ½
	Min programmable interval for arbitrary waveform			10 µs (100,000 pts/s)	10 µs (100,000 pts/s)	10 µs (100,000 pts/s)	10 µs (100,000 pts/s)

N6900 and N7900 Advanced Power System (APS)

Overcome your toughest power test challenges

With Advanced Power System (APS) 1 kW and 2 kW system power supplies, you get a new level of power supply performance. VersaPower architecture delivers industry-leading specifications and innovative features for today's advanced ATE power testing needs—the fastest, most accurate, integrated power system.

- Accelerate test-system throughput with industry-leading speed
- Capture your DUT's current profile with accurate measurements
- Reduce your ATE development time and cost with highly integrated capabilities

BenchVue software enabled

Need high performance in your ATE system?

Choose the Keysight N6900 Series APS DC Power Supply.

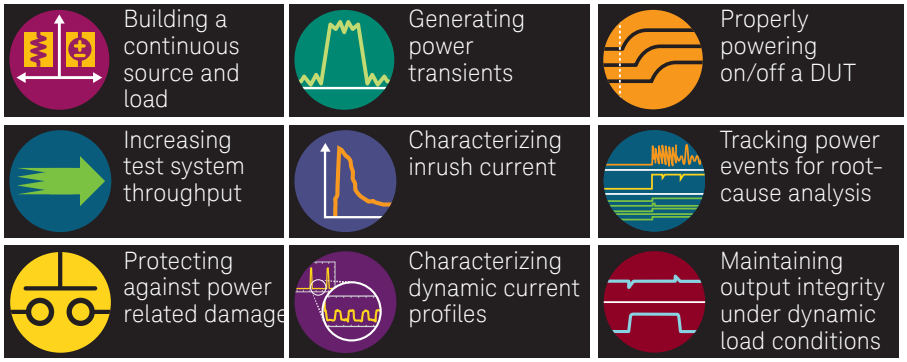
Need high speed dynamic sourcing and measurement?

Choose the Keysight N7900 Series APS Dynamic DC Power Supply.

Get lots of power in a small test-system footprint

Two power ranges deliver a large amount of power in a small test-system footprint.

Overcome a wide variety of power test challenges with the APS.



	Model	Power (W)	Maximum V (V)	Maximum I (A)	Number of outputs	Number of ranges	Ripple and noise mVp-p	Programming accuracy % mV	Transient response (µs)	Size [1]
Performance	N6950A	1000	9	100	1	1	9	0.03 + 1.5	100	Full RU w x 1 RU h
	N6951A	1000	20	50	1	1	9	0.03 + 3	100	
	N6952A	1000	40	25	1	1	9	0.03 + 6	100	
	N6953A	1000	60	16.7	1	1	9	0.03 + 9	100	
	N6954A	1000	80	12.5	1	1	9	0.03 + 12	100	
	N6970A	2000	9	200	1	1	9	0.03 + 1.5	100	Full RU w x 2 RU h
	N6971A	2000	20	100	1	1	9	0.03 + 3	100	
	N6972A	2000	40	50	1	1	9	0.03 + 6	100	
	N6973A	2000	60	33	1	1	9	0.03 + 9	100	
	N6974A	2000	80	25	1	1	9	0.03 + 12	100	
	N6976A	2000	120	16.7	1	1	30	0.03 + 17	100	
	N6977A	2000	160	12.5	1	1	30	0.03 + 24	100	
	N7950A	1000	9	100	1	1	9	0.03 + 1	100	Full RU w x 1 RU h
	N7951A	1000	20	50	1	1	9	0.03 + 2	100	
	N7952A	1000	40	25	1	1	9	0.03 + 4	100	
	N7953A	1000	60	16.7	1	1	9	0.03 + 6	100	
	N7954A	1000	80	12.5	1	1	9	0.03 + 8	100	
	N7970A	2000	9	200	1	1	9	0.03 + 1	100	Full RU w x 2 RU h
	N7971A	2000	20	100	1	1	9	0.03 + 2	100	
	N7972A	2000	40	50	1	1	9	0.03 + 4	100	
	N7973A	2000	60	33	1	1	9	0.03 + 6	100	
	N7974A	2000	80	25	1	1	9	0.03 + 8	100	
	N7976A	2000	120	16.7	1	1	30	0.03 + 11	100	
	N7977A	2000	160	12.5	1	1	30	0.03 + 14	100	

1. RU refers to rack unit of a standard 19" EIA equipment rack. The width is either 1 or 2 or full. The height is in number of rack units which are 1.75" (44.4 mm) each. For example: a 3 RU h has a height of 5.25" (133.3 mm).

N6700 Low-Profile Modular Power System

Extensive family of modular power in a 1U package

The N6700 Series 1U-high, multiple-output programmable DC power supply system gives you the flexibility to optimize performance, power and price to match your test needs.

- Small size: Up to 4 outputs in 1U of rack space
- Mainframes are available with 400 W, 600 W, or 1200 W capability
- Mix and match from 36 different DC power modules, ranging 50 W, 100 W, 300 W, or 500 W
- Streamline your tasks with built-in measurements, output sequencing, and optional LIST mode, built-in digitizer and disconnect relays
- Ultra fast command processing time (< 1 ms) reduces test time
- Computer control via GPIB, USB, and LAN (LXI Core)

BenchVue software enabled

N6702C

N6700 low-profile modular power system mainframe

Model	Power (W)	Max # modules	Physical size [1]
N6700C	400	4	Full RU w x 1 RU h
N6701C	600	4	
N6702C	1200	4	

	Model	Power (W)	Maximum V (V)	Maximum I (A)	Number of outputs	Number of slots occupied	Number of ranges	Ripple and noise mVp-p	Programming accuracy % + mV	Transient response (µs)
Basic	N6731B	50	5	10	1	1	1	10	0.1 + 19	< 200
	N6732B	50	8	6.25	1	1	1	12	0.1 + 19	< 200
	N6733B	50	20	2.5	1	1	1	14	0.1 + 20	< 200
	N6734B	50	35	1.5	1	1	1	15	0.1 + 35	< 200
	N6735B	50	60	0.8	1	1	1	25	0.1 + 60	< 200
	N6736B	50	100	0.5	1	1	1	30	0.1 + 100	< 200
	N6741B	100	5	20	1	1	1	11	0.1 + 19	< 200
	N6742B	100	8	12.5	1	1	1	12	0.1 + 19	< 200
	N6743B	100	20	5	1	1	1	14	0.1 + 20	< 200
	N6744B	100	35	3	1	1	1	15	0.1 + 35	< 200
	N6745B	100	60	1.6	1	1	1	25	0.1 + 60	< 200
	N6746B	100	100	1	1	1	1	30	0.1 + 100	< 200
	N6773A	300	20	15	1	1	1	20	0.1 + 20	< 250
	N6774A	300	35	8.5	1	1	1	22	0.1 + 35	< 250
	N6775A	300	60	5	1	1	1	35	0.1 + 60	< 250
	N6776A	300	100	3	1	1	1	45	0.1 + 100	< 250
	N6777A	300	150	2	1	1	1	68	0.1 + 150	< 250
Performance	N6751A	50	50	5	1	1	Autoranging	4.5	0.06 + 19	< 100
	N6752A	100	50	10	1	1	Autoranging	4.5	0.06 + 19	< 100
	N6753A	300	20	50	1	2	Autoranging	5	0.06 + 10	< 100
	N6754A	300	60	20	1	2	Autoranging	6	0.06 + 25	< 100
	N6755A	500	20	50	1	2	Autoranging	5	0.06 + 10	< 100
	N6756A	500	60	17	1	2	Autoranging	6	0.06 + 25	< 100
Precision	N6761A	50	50	1.5	1	1	Autoranging	4.5	0.016 + 6	< 100
	N6762A	100	50	3	1	1	Autoranging	4.5	0.016 + 6	< 100
	N6763A	300	20	50	1	2	Autoranging	5	0.03 + 5	< 100
	N6764A	300	60	20	1	2	Autoranging	6	0.03 + 12	< 100
	N6765A	500	20	50	1	2	Autoranging	5	0.03 + 5	< 100
	N6766A	500	60	17	1	2	Autoranging	6	0.03 + 12	< 100
Specialty	Additional N6780 series source measure unit modules and application specific modules available, see page 23.									

1. RU refers to rack unit of a standard 19" EIA equipment rack. The width is either ½ or full. The height is in number of rack units which are 1.75" (44.4 mm) each. For example: a 3 RU h has a height of 5.25" (133.3 mm).

N6705C DC Power Analyzer

Quickly understand your device's power consumption

Gain insight into your device's power consumption in minutes without writing a single line of code. The N6705C combines one to four DC power supplies, a DMM, an oscilloscope, an arbitrary waveform generator, and a data logger in one integrated package.

- Saves time—no programming required and it eliminates the need to gather multiple instruments
- Flexible, modular system—mix and match power modules to optimize your testing
- Uses the same modules as the N6700 Series low-profile modular power supply—see page 17
- Computer control via GPIB, USB, and LAN (LXI Core)

BenchVue software enabled

Function	Description
Output speed	Voltage changes as fast as 160 µs per step voltage change
Voltmeter accuracy	Up to 0.025% + 50 µV, up to 18-bit resolution
Ammeter accuracy	Up to 0.025% + 8 nA, up to 18-bit resolution
Arbitrary waveform	Bandwidth up to 100 kHz, output power up to 300 W
Scope function	Digitizes voltage and current at up to 200 kHz, up to 512 k points, up to 18-bits resolution
Data logger function	Measurement interval from 20 µs to 60 s, maximum of 500 Mreadings per data log
Non-volatile data storage	4 GB

N3300 Series DC Electronic Loads

Programmable loads with measurements

The N3300 Series DC electronic loads give you flexibility for testing power supplies and other devices requiring a load. The built-in measurement system provides both accuracy and convenience and eliminates the need for a DMM, external shunts and wiring. The N3300 multiple-input models are fast, accurate, and ideal for high-volume manufacturing.

- Increase test throughput with short command processing time and stored command sequences
- Test multiple power supply outputs with up to 6 modules with 150 to 600 W capability
- Operate in constant current, constant voltage, or constant resistance modes
- Measure voltage and current simultaneously
- Use in parallel for greater current sinking capability
- Computer control with GPIB

BenchVue software enabled

N3300 mainframes		
Model	**Max # modules**	**Physical size [1]**
N3300A	6	Full RU w x 4 RU h
N3301A	2	½ RU w x 4 RU h

	N3300 modules								
Loads	Model	Input power, W	Maximum input, V	Maximum input, I	Constant current accuracy, % + mA	Constant voltage accuracy, % + mV	Current measurement accuracy, % + mA	Voltage measure-ment accuracy, % + mV	Width, slot
	N3302A	150	60	30	0.1 + 10	0.1 + 8	0.05 + 6	0.05 + 8	1
	N3303A	250	240	10	0.1 + 7.5	0.1 + 40	0.05 + 5	0.05 + 20	1
	N3304A	300	60	60	0.1 + 15	0.1 + 8	0.05 + 10	0.05 + 8	1
	N3305A	500	150	60	0.1 + 15	0.1 + 20	0.05 + 10	0.05 + 16	2
	N3306A	600	60	120	0.1 + 37.5	0.1 + 8	0.05 + 20	0.05 + 8	2
	N3307A	250	150	30	0.1 + 15	0.1 + 20	0.05 + 6	0.05 + 16	1

1. RU refers to rack unit of a standard 19" EIA equipment rack. The width is either ½ or full. The height is in number of rack units which are 1.75" (44.4 mm) each. For example, a 3 RU h has a height of 5.25" (133.3 mm).

AC Single-Phase Power Sources

An integrated AC power solution

Keysight offers two families of AC power sources to meet your AC test challenges—from basic to complex. The AC6800 Series of basic AC sources offer stable, reliable power with models available up to 4000 VA. The 6800C series of performance AC sources provide a complete AC test solution with built in arbitrary waveform generator to simulate many types of power waveforms, at power levels up to 1750 VA. Both families may also be used to produce DC power, either alone or as a DC offset to an AC waveform. All models are backed with global support.

NEW! 6800C Series

NEW AC6800B Series

NEW AC6800B Series Basic AC Power Sources

The quality and capability you need.

- Models up to 4000 VA are available to meet your basic AC power source and measurement requirements
- An intuitive user interface tested over time
- LAN/LXI Core and USB (standard), and GPIB (optional plug-in card)
- Built-in remote sensing

6800C Series Performance AC Power Sources/Analyzers

The complete AC power test solution.

- Models up to 1750 VA are available to meet your performance AC source requirements
- Extensive built-in power measurement capabilities
- LAN, USB and GPIB
- Integrated transient waveform generation and harmonic capabilities to simulate and analyze your AC environment

	Model	RMS power	RMS voltage	RMS current	Output frequency	Peak current	DC power	DC voltage
Basic	AC6801B	500 VA	310 V	5 A	500 Hz	7.5 A	400 W	380 V
	AC6802B	1000 VA	310 V	10 A	500 Hz	15 A	800 W	380 V
	AC6803B	2000 VA	310 V	20 A	500 Hz	30 A	1600 W	380 V
	AC6804B	4000 VA	310 V	40 A	500 Hz	60 A	3200 W	380 V
Performance	6811C	375 VA	300 V	3.25 A	1 kHz	40 A	285 W	425 V
	6812C	750 VA	300 V	6.5 A	1 kHz	40 A	575 W	425 V
	6813C	1750 VA	300 V	13 A	1 kHz	80 A	1350 W	425 V

NEW RP7900 Series Regenerative Power System

The RP7900 Series regenerative power system reduces the cost of test with highly integrated capabilities. The regenerative function enables the energy consumed to be put back onto the grid cleanly.

- Up to 950 V, up to ± 40 A
- Compact 3U-high size
- Fast output speed and command-processing time
- Two-quadrant operation: use as a DC power supply or regenerative electronic load
- Emulate high-voltage, high-power battery with programmable resistance up to 50 Ω (model dependent)
- Do the work of multiple power supplies with auto-ranging output capability
- Create up to 100 kW power or loading through easy parallel connections
- Reduce cost for cooling and electricity with eco-friendly, regenerative design
- GPIB, USB and LAN (LXI Core) standard

RP7952A Regenerative Power System

Performance	Model	Power (W)	Maximum V (V)	Maximum I (A)	Number of outputs	Ripple and noise mVp-p	Programming accuracy % + mV	Transient response (ms)	AC input voltage (VAC)	Size [1]
	RP7951A	5000	500	± 20		500	0.03 + 60			Full RU
	RP7952A	10000	500	± 40	1	500	0.03 + 60	≤ 0.5	200/208	w x 3
	RP7953A	10000	950	± 20		1000	0.03 + 120			RU h
	RP7961A	5000	500	± 20		500	0.03 + 60			Full RU
	RP7962A	10000	500	± 40	1	500	0.03 + 60	≤ 0.5	400/480	w x 3
	RP7963A	10000	950	± 20		1000	0.03 + 120			RU h

1. RU refers to rack unit of a standard 19" EIA equipment rack. The width is either ½ or full.The height is in number of rack units which are 1.75" (44.4 mm) each. For example: a 3 RU h has a height of 5.25" (133.3 mm).

N6780 Series Source Measure Units (SMUs)

Deliver exceptional battery life

The N6781A and N6785A are 2-quadrant SMUs for battery drain analysis. They offer advance features to accurately capture the power consumption of portable, battery-powered devices from 20 to 80 W. Whether the DUT is a mobile phone, "phablet," tablet, or pacemaker, the N6781A and N6785A's seamless measurement ranging, programmable output resistance, and auxiliary DVM helps you deliver exceptional battery life.

The N6782A and N6786A are 2-quadrant SMUs for function test of a device from 20 to 80 W. It has the ability to modulate its output up to 100 kHz along with the capability to source and sink current.

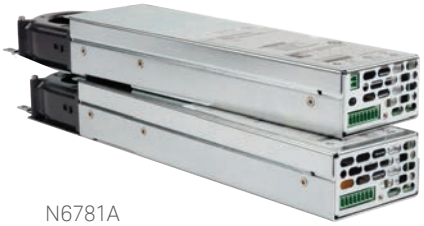
The N6784A is a 4-quadrant SMU that provides precise sourcing and measurement for general purpose applications.

The N6780 source measure units (SMUs) are modules for the N6705C DC power analyzer mainframe for R&D, and the N6700 low-profile mainframes for ATE.

- Seamless, dynamic measurements down to nA and µV (N6781A/82 and N6785A/86 only)
- Glitch-free operation—change sourcing ranges or measurement ranges without any glitches
- Excellent transient response for stable output voltage with dynamic loads
- 2 or 4-quadrant operation: use as a DC power supply or electronic load
- Fast modulation of DC output to create arbitrary waveforms up to 100 kHz
- Computer control via GPIB, USB, and LAN (LXI Core)

BenchVue software enabled

N6705C



N6781A
N6782A

N6785A

N6705C DC power analyzer	
	Flexible/reconfigurable
Available slots	Mainframe accepts up to 4 DC power modules
Power	600 W total DC module output power
Instrument control	GPIB, USB, LAN (LXI Class C Compliant)

N6780 SMU modules

Specialty	Model	Power (W)	Max voltage (V)	Max current (A)	Ripple and noise (mVp-p)	Programming accuracy % + µV	Transient response (µs)
	N6781A	20	20	± 3	12	0.025 + 200	≤ 35
	N6782A	20	20	± 3	12	0.025 + 200	≤ 35
	N6784A	20	± 20	± 3	12	0.025 + 200	≤ 35
	N6785A	80	20	± 8	15	0.025 + 1800	≤ 35
	N6786A	80	20	± 8	15	0.025 + 1800	≤ 35

14585A control and analysis software

The software for the DC power analyzer compliments the front panel of the N6705 mainframe, offering advanced functionality and PC control. It is a flexible R&D tool for any application. When used to control an N6781A or N6785A SMU, it can be used for advanced battery drain analysis applications.

- Control and analyze data from up to four N6705 DC power analyzer and any installed modules at once
- Easily create complex waveforms to stimulate or load down a DUT by inputting a formula, choosing from built-in, or importing waveform data.
- Data log (gapless) measurements directly to a PC
- Perform statistical analysis of power consumption

B2900A Series Precision Source/Measure Units

The Keysight B2900A Series of Precision Source/Measure Units are compact and cost-effective bench-top Source/Measure Units (SMUs). The SMU combines the capabilities of a current source, a voltage source, a current meter and a voltage meter along with the capability to switch easily between these various functions into a single instrument. It offers:

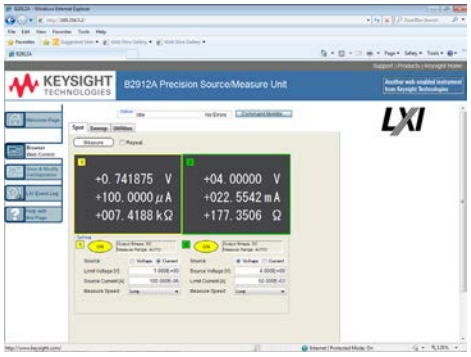
- Test capability up to 210 V and 3 A (DC) or 10.5 A (pulsed) with a single instrument
- Best-in-class 6.5 digit source and measurement resolution down to 10 fA and 100 nV
- 10 µs digitizing capability
- Innovative GUI facilitate fast bench-top test, debug and characterization
- Ultrafast throughput for lower cost-of-test
- Four software control options

BenchVue software enabled

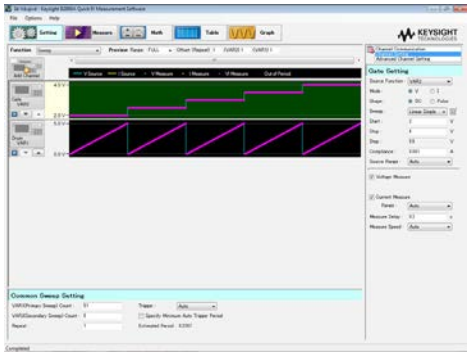
These capabilities are ideal for a wide variety of IV (current versus voltage) measurement tasks that require both high resolution and accuracy. The innovative graphical user interface with four viewing modes (single view, dual view, graph view and roll view) improves usability and productivity of bench-top tests, debug and characterization dramatically. The Keysight B2900A series of SMU is also well-suited for production with the fast measurement speed.

				B2901A	B2902A	B2911A	B2912A
Specialty	Number of channels			1	2	1	2
	Max output	Voltage		± 210 V	± 210 V	± 210 V	± 210 V
		Current	DC	± 3.03 A	± 3.03 A	± 3.03 A	± 3.03 A
			Pulsed	± 10.5 A	± 10.5 A	± 10.5 A	± 10.5 A
		Power		31.8 W	31.8 W	31.8 W	31.8 W
	Source	Max digits	Digits	5 ½	5 ½	6 ½	6 ½
		Min resolution	Voltage	1 µV	1 µV	100 nV	100 nV
			Current	1 pA	1 pA	10 fA	10 fA
	Measurement	Max digits	Digits	6 ½	6 ½	6 ½	6 ½
		Max resolution	Voltage	100 nV	100 nV	100 nV	100 nV
			Current	100 fA	100 fA	10 fA	10 fA
	Min programmable interval for List sweep/ AWG waveform			20 µs	20 µs	10 µs	10 µs
	Min trigger interval for digitizing (Max sample rate)			20 µs (50,000 pts/s)	20 µs (50,000 pts/s)	10 µs (100,000 pts/s)	10 µs (100,000 pts/s)

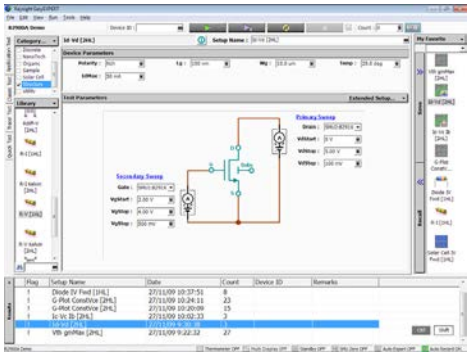
BenchVue



Graphical Web Interface



Quick I/V Measurement Software



EasyEXPERT group+

U2720 USB Modular Source Measure Units

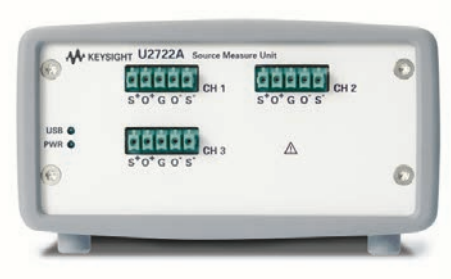
Source and measure DC voltage/current reliably

The Keysight USB modular source measure unit (SMU) allows you to perform sweeps and make measurements using a single device. The SMU offers voltage and current programming/readback with high accuracy measurement capabilities. You can configure each of the three channels separately or in a matrix—in series or parallel—for increased power. It comes bundled with Keysight Measurement Manager (AMM) software that includes a command logger function to help you convert SCPI commands into snippets of VEE, V, C+ and C# code.

- Three-channel, four-quadrant operation (± 20 V, ± 120 mA)
- High measurement sensitivity of 100 pA with 16-bit resolution
- 0.1% basic accuracy
- Low current measurement capability down to nA levels
- Embedded test script able to support three channels with coherent source and measurement capabilities (for U2723A)
- IV Curve support in the Keysight BenchVue USB Modular SMU software application (for U2723A)
- Faster rise/fall time (for U2723A)
- Hi-Speed USB 2.0 (480 Mbps)

Model	U2722A/23A
Number of outputs	3
Output ratings (at 0 to 50 °C)	
Voltage	–20 to 20 V per channel
Current	–120 to 120 mA per channel

	Model		U2722A/23A	
		Range	Accuracy [1]	Resolution
Specialty	Voltage programming/ readback	± 2 V	0.075% + 1.5 mV	0.1 mV
		± 20 V	0.05% + 10 mV	1 mV
	Current programming/ readback	± 1 µA	0.085% + 0.85 nA	100 pA
		± 10 µA	0.085% + 8.5 nA	1 nA
		± 100 µA	0.075% + 75 nA	10 nA
		± 1 mA	0.075% + 750 nA	100 nA
		± 10 mA	0.075% + 7.5 µA	1 µA
		± 120 mA	0.1% + 100 µA	20 µA



U2722A

	Model		U2722A	U2723A
	Rise/fall time (ms) [1]	Range	Accuracy [1]	Accuracy [1]
Specialty	For resistive measurement [2]	± 1 µA	170.0	15.0
		± 10 µA	18.0	5.0
		± 100 µA	6.0	1.0
		± 1 mA	1.0	1.0
		± 10 mA	1.0	1.0
		± 120 mA	1.0	1.0

1. Drive 50% of 1 V or 10 V output with a resistive load. Rise time is from 10 to 90% of program voltage change at maximum current. Fall time is from 90 to 10% of program voltage change at maximum current.
2. Measurements obtained are per default bandwidth setting.

E5260A/E5270B Precision IV Analyzer/Source Monitor Unit Mainframe Series

Keysight Precision IV Analyzer Series (E5262A, E5263A, E5260A and E5270B) is the complete solution for currentvoltage characterization. It supports multiple SMUs (Source/Monitor Units) for voltage/current sourcing and voltage/current measurement with the best in the class current measurement performance. It's modular architecture allows you to configure or upgrade SMU modules for available eight slots (E5260A/E5270B)

The EasyEXPERT group+ GUI based characterization software is furnished and available on your PC. It supports efficient and repeatable device characterization in the entire characterization process from measurement setup and execution to analysis and data management either by interactive manual operation or automation across a wafer in conjunction with a semiautomatic wafer prober. EasyEXPERT group+ makes it easy to perform currentvoltage characterization immediately with the ready-touse measurements (application tests) furnished, and allows you the option of storing test condition and measurement data automatically after each measurement in a unique built-in database (workspace), ensuring that valuable information is not lost and that measurements can be repeated at a later date.

Powerful integration of SMU's versatile measurement capabilities and GUI based characterization software makes it the best solution for characterization and evaluation of devices, materials, semiconductors, active/passive components, or virtually any other type of electronic device with uncompromised measurement reliability and efficiency.

The Precision IV Analyzer Series is also available as a system component SMU for a rack and stuck test system. It provides the scalability and the highest measurement accuracy in the class for current-voltage measurement. It can be controlled remotely by the FLEX command set supporting the powerful measurement capabilities.

8 slot mainframe SMU configurable model (E5260A/E5270B)

Two SMU pre-fixed configuration model (E5262A/E5263A)

		Precision IV analyzer series			
		E5262A	**E5263A**	**E5260A**	**E5270B**
MPSMU	Max. output	100 V/200 mA	100 V/200 mA	100 V/200 mA	100 V/100 mA
(Medium Power SMU)	Min. resolution	5 pA/100 µV	5 pA/100 µV	5 pA/100 µV	10 fA/0.5 µV
HPSMU	Max. output	NA	200 V/1 A	200 V/1 A	200 V/1 A
(High Power SMU)	Min. resolution	NA	5 pA/100 µV	5 pA/100 µV	10 fA/2 µV
HRSMU	Max. output	NA	NA	NA	100 V/100 mA
(High Resolution SMU)	Min. resolution	NA	NA	NA	1 fA/0.5 µV
ASU [1]	Max. output	NA	NA	NA	100 V/100 mA
(Atto-sense Switch Unit)	Min. resolution	NA	NA	NA	0.1 fA/0.5 µV

1. One ASU requires one HRSMU module to connect it.

B1500A Semiconductor Device Analyzer

Keysight B1500A Semiconductor Device Analyzer of Precision Current-Voltage Analyzer Series is an all in one analyzer supporting IV, CV, pulse/dynamic IV and more, which is designed for all-round characterization from basic to cutting-edge applications. It provides a wide range of measurement capabilities to cover the electrical characterization and evaluation of devices, materials, semiconductors, active/passive components, or virtually any other type of electronic device with uncompromised measurement reliability and efficiency.

In addition, the B1500A's modular architecture with ten available slots allows you to add or upgrade measurement modules if your measurement needs change over time.

Keysight EasyEXPERT group+ GUI based characterization software is available either on the B1500A's embedded Windows 7 platform with 15-inch touch screen or on your PC to accelerate the characterization tasks. It supports efficient and repeatable device characterization in the entire characterization process from measurement setup and execution to analysis and data management either interactive manual operation or automation across a wafer in conjunction with a semiautomatic wafer prober. EasyEXPERT group+ makes it easy to perform complex device characterization immediately with hundreds of ready-to-use measurements (application tests) furnished, and allows you the option of storing test condition and measurement data automatically after each measurement in a unique built-in database (workspace), ensuring that valuable information is not lost and that measurements can be repeated at a later date. Keysight B1500A provides the complete solution for device characterization with these versatile capabilities.

B1500A

Specialty

Test coverage	Supported module	Key specifications	Key features
For DC and pulsed IV measurement	B1510A High Power Source/ Measure Unit (HPSMU)	– Up to 200 V/1 A – Min 10 fA/2 µV resolution	– Min 100 µs Sampling (time domain) measurement – Min 500 µs pulse width with 100 µs resolution – Quasi-static capacitance voltage (QSCV) measurement with leakage current compensation – 4 quadrant operation – Kelvin (4-wire) connection – Spot, sweep and other capabilities
	B1511B Medium Power Source/ Measure Unit (MPSMU)	– Up to 100 V/0.1 A – Min 10 fA/0.5 µV resolution – Optional ASU for 0.1 fA and IV/ CV switching	
	B1517A High Resolution Source/ Measure Unit (HRSMU)	– Up to 100 V/0.1 A – Min 1 fA/0.5 µV resolution – Optional ASU for 0.1 fA and IV/ CV switching	
	B1514A 50 µs Pulse Medium Current Source/Measure Unit (MCSMU)	– Up to 30 V/1 A (0.1 A DC)	– Min 50 µs pulse width with 2 µs resolution – Oscilloscope view for precision pulsed measurement
For capacitance measurement	B1520A Multi-Frequency Capacitance Measurement Unit (MFCMU)	– 1 kHz to 5 MHz frequency range – 25 V built-in DC bias and 100 V DC bias with SMU and SCUU	– AC impedance measurement (C-V, C-f, C-t) – Easy, fast and accurate IV and CV measurements with automated switching via SCUU
For ultra-fast pulsed and transient IV measurement	B1530A Waveform Generator/ Fast Measurement Unit (WGFMU)	– 10 ns programmable resolution for waveform generation – 200 MSa/s simultaneous high-speed measurement – 10 V peak-to-peak output	– No load line effects; accurate pulsed IV measurement using SMU-based technology – Enabled for advanced applications, such as NBTI/PBTI, RTN, etc.
For pulse generation	B1525A High Voltage Semiconductor Pulse Generator Unit (HV-SPGU)	– Up to ± 40 V high voltage output	– Two-level and three-level pulsing and arbitrary waveform generation capability on each channel – Ideal for non-volatile memory testing
For ultra-fast pulsed high-k/SOI evaluation	B1542A 10 ns pulsed IV parametric test solution	– Min 10 ns gate pulse width with 2 ns rise and fall times – 1 µs current measurement resolution	– Accurate Id-Vd and Id-Vg measurement – Easy switching between DC and pulsed measurements

B1505A Power Device Analyzer/Curve Tracer

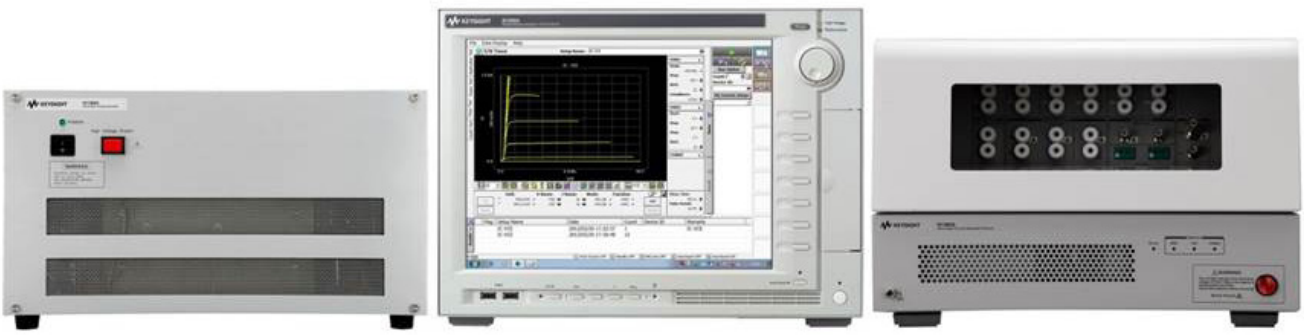
The B1505A Power Device Analyzer/Curve Tracer is a single box solution for power device evaluation. Its broad measurement range from sub-pA to 10 kV/1500 A enables precise µΩ on-resistance measurements. Additionally, its 10 µs fast pulse capability enables complete power device characterization. This allows evaluation of new power devices such as IGBT and wide band-gap materials such as silicon carbide (SiC) and gallium nitride (GaN).

- Very wide current, voltage operating range up to 1500 A,10 kV
- Supporting package and on-wafer device
- Accurate sub-picoamp level current measurement and µΩ on-resistance measurement
- 10 µs high power narrow pulse measurement
- Three-terminal capacitance (Ciss, Coss, Crss) measurement at up to 3000 V DC bias voltages and independent terminal capacitance (Cgs, Cgd, Cds) measurement
- Gate charge (Qg) measurement for NcH MOSFET and IGBT
- GaN current collapse measurement
- Automated thermal test from –50 °C to +250 °C
- Upgradable and scalable hardware architecture
- Oscilloscope View for current and voltage pulse verification
- EasyEXPERT software simplifies data management and data analysis

B1505A modules	Description	Key specification	Max number
B1510A	High power SMU	200 V, 1 A (DC)	4
		10 fA resolution	
B1511B	Medium power SMU	100 V, 100 mA (DC)	10
		10 fA resolution	
B1512A	High current SMU	20 V, 20 A (pulsed)	2
		30 V, 1 A (DC)	
B1513C	High voltage SMU	3000 V, 8 mA (pulse and DC)	5
B1514A	Medium current SMU	30 V, 1 A (pulsed)	5
		30 V, 100 mA (DC)	
B1520A	Multi-frequency CMU	1 kHz to 5 MHz, ± 25 V (internal bias)	1

External modules	Description	Key specification
N1265A	Ultra high current expander/Fixture	± 1500 A/60 V (pulsed)
N1266A	HVSMU current expander	± 1500 V/2.5 A (pulsed)
		± 2200 V/1.1 A (pulsed)
N1267A	High voltage/high current fast switch	± 3000 V, ± 20 A (pulsed)
		Minimum transition (OFF to ON): 20 µs
N1268A	Ultra high voltage unit	10 kV/10 mA (DC)
		10 kV/20 mA (pulsed)

Accessories	Description
N1258A	Module selector
N1259A	Test fixture
N1260A	High voltage bias-T
N1271A	Thermal test enclosure
N1272A	Device capacitance selector
N1273A	Capacitance test fixture
N1274A	On-wafer gate charge measurement adapter for 20 A/3 kV
N1275A	On-wafer gate charge measurement adapter for N1265A



B1506A Power Device Analyzer for Circuit Design

The B1506A Power Device Analyzer for Circuit Design is a complete solution that can help power electronic circuit designers maximize the value of their power electronics products by enabling them to select the correct power devices. It can evaluate all relevant device parameters under a wide range of operating conditions, including IV parameters such as breakdown voltage and on-resistance, as well as three terminal FET capacitances, gate charge and power loss.

The prices of the IV packages (H20, H50, H70) are comparable to those of conventional curve tracers, and with the B1506A you get additional advanced features. You can also upgrade any of the B1506A IV packages (H20, H50, H70) to either increase the current range or add CV/Qg measurement capability (options H21, H51, H71).

- Wide current and voltage operating range up to 1500 A, 3000 V
- 10 µs high power narrow pulse measurement
- Automated thermal test from –50 °C to +250 °C
- Three-terminal capacitance (Ciss, Coss, Crss) measurement at up to 3000 V DC bias voltages and independent terminal capacitance (Cgs, Cgd, Cds) measurement
- Gate charge (Qg) measurement for NcH MOS and IGBT
- Power loss calculation
- Menu driven easy-to-use user interface (Easy Test Navigator – ETN)
- Quick and automatic device datasheet generation
- Oscilloscope view for current and voltage pulse verification
- Cost effective IV package (H20, H50, H70)

Category	Parameters
Threshold voltage	V(th), Vge(th)
Transfer characteristics	Id-Vgs, Ic-Vge, gfs
On resistance	Rds-on, Vce(sat)
Gate leakage current	Igss, Iges
Output leakage current	Idss, Ices
Output characteristics	Id-Vds, Ic-Vce
Breakdown voltage	BVds, BVces
Gate charge (for NcH MOS and IGBT) [1]	Qg, Qg(th), Qgs, Qgd, Qsw, Qsync, Qoss
Device capacitance [1]	Ciss, Coss, Crss, Cgs, Cgd, Cies, Coes, Cres
Power loss calculation [1]	Driving loss, Switching loss, Conduction loss

1. Only available on B1506A-H21/H51/H71.

Model number	Option	Description
B1506A		Power Device Analyzer for Circuit Design
	H20	Opt H20 - 20 A/3 kV/Thermal Fixture Package
	H50	Opt H50 - 500 A/3 kV/Thermal Fixture Package
	H70	Opt H70 - 1500 A/3 kV/Thermal Fixture Package
	H21	Opt H21 - 20 A/3 kV/C-V/Gate Charge/Thermal Fixture Package
	H51	Opt H51 - 500 A/3 kV/C-V/Gate Charge/Thermal Fixture Package
	H71	Opt H71 - 1500 A/3 kV/C-V/Gate Charge/Thermal Fixture Package
	T01	Thermal Test Enclosure (Thermostream Compatible)

N6783A Application-Specific Modules

The Keysight N6783A-BAT Battery Charge/Discharge Module is a basic, 2-quadrant module designed to be used by battery-powered (mobile) device designers. The N6783A-BAT's 2-quadrant operation allows it to act as a power supply to charge the battery or as an electronic load to discharge the battery. When used in the N6705C DC Power Analyzer mainframe along with the 14585A Control and Analysis software, short-and long-term measurements for battery validation are made easy.

The Keysight N6783A-MFG Mobile Communications DC Power Module offers advanced features specifically for testing battery-powered (mobile) devices in manufacturing. The N6783A-MFG offers fast, accurate measurements and excellent voltage transient response to address the unique challenges associated with testing mobile wireless devices.

The N6783A-BAT and N6783A-MFG modules can be used with the N6700 low-profile mainframes for ATE and with the N6705C DC power analyzer mainframe for R&D.

- Optimized for basic battery charge/discharge application (N6783A-BAT)
- Optimized for mobile device manufacturing test (N6783A-MFG)
- Fast transient response ensures stable power supply output voltage
- Digitizing measurement system for flexible, accurate current measurements
- USB, LAN (LXI Core), and GPIB interfaces

N6700C

N6700 modular power system mainframe		
Model	**Power, (W)**	**Max # modules**
N6700C low-profile (ATE)	400	4
N6701C low-profile (ATE)	600	4
N6702C low-profile (ATE)	1200	4
N6705C DC power analyzer (R&D)	600	4

	N6783 application-specific modules						
Specialty	**Model**	**Power (W)**	**Max voltage (V)**	**Max current (A)**	**Ripple and noise (mVp-p)**	**Programming accuracy % + µV**	**Transient response (µs)**
	N6783A-BAT	24	8	+3 to –2 A	8	0.1 + 10	≤ 45
	N6783A-MFG	18	6	+3 to –2 A	8	0.1 + 10	≤ 45

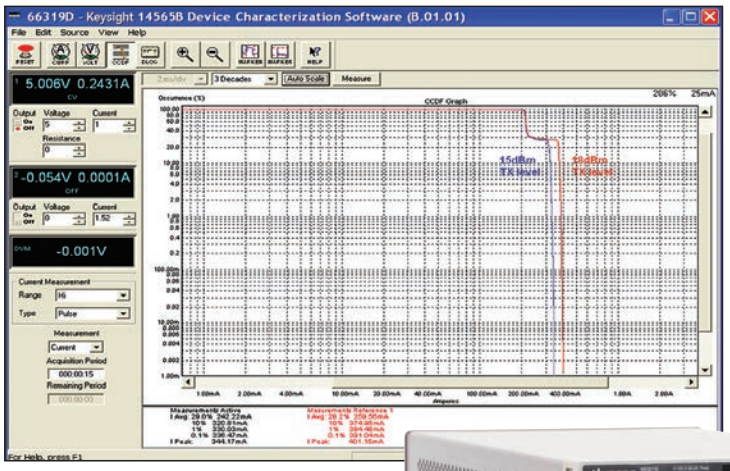
N6705C

BenchVue software enabled

66300 Mobile Communications DC Sources

66300 mobile communications power supplies are designed and optimized to help you test mobile wireless devices. They provide the DC sourcing, current sinking, and measurement capabilities to address the unique challenges of simulating batteries and battery packs and measuring the current drawn by your device under test.

- Fast DC power source to replace and simulate the battery during testing
- Fast voltage transient response ensures maximum test-system throughput by minimizing device shutdowns
- Dynamic measurement system enables accurate current measurement from µA to A
- When the 66319B/D and 66321B/D are coupled with the 14565B Software, it gives you a powerful analysis tool to optimize your device designs for long battery life



14565B

66321B
66319B

Keysight 14565B device characterization software

- Graphical user software—no programming required
- 3 modes of operation: waveform capture, data logging, CCDF statistical analysis
- Visualization and analysis tools to help you identify anomalies and characterize and quantify battery drain to optimize your design
- Automation capability allows you to control the 14565B from other programs to automate and synchronize DUT activity with current drain measurements

Specialty	Model	Power (W)	Maximum V (V)	Maximum I (A)	Number of outputs	Number of ranges	Ripple and noise mVp-p	Programming accuracy % + mV	Transient response (µs)	Size [1]
	66309B/D	45	15	3 (5 A peak)	2	1	6	0.05 + 10	< 35	½ RU w x 2 RU h
	66311B	45	15	3 (5 A peak)	1	1	6	0.05 + 10	< 35	
	66319B/D	45	15	3 (5 A peak)	2	1	6	0.05 + 10	< 20	
	66321B/D	45	15	3 (5 A peak)	1	1	6	0.05 + 10	< 20	
	66332A	100	20	5	2	1	3	0.05 + 10	< 100	

1. RU refers to rack unit of a standard 19" EIA equipment rack. The width is either ½ or full. The height is in number of rack units which are 1.75" (44.4 mm) each. For example: a 3 RU h has a height of 5.25" (133.3 mm).

E4360 Modular Solar Array Simulation

The modular solar array simulator (SAS) is a DC power source that simulates the output characteristics of a solar array. The SAS is primarily a current source with very low output capacitance. It is capable of simulating the I-V curve of different arrays under different environmental conditions (temperature, age, etc.). You can set the I-V curve from the front panel or program it over GPIB, LAN (LXI Core) or USB.

- Accurate simulation of any type of solar array
- Small size: up to 2 outputs in 2U of rack space
- High output power—up to 600 W per output
- Fast I-V curve changes to simulate eclipse or spin
- 14360A System Control Tools software included to simplify control of multiple solar array simulators in a system
- Custom turn-key system or individual instruments available

E4360A
SAS mainframe

E4360A modules

E4360 modular solar array simulator mainframes

Specialty	Model	Power, W	Modules	Max # of modules	Physical size [1]
	E4360A	1200	Choose from E4361A and E4362A	2	Full RU w x 2 RU h
	E4367A	1200	Pre-configured with 2x E4361A	2	Full RU w x 1 RU h
	E4368A	1200	Pre-configured with 2x E4362A	2	Full RU w x 1 RU h

1. RU refers to rack unit of a standard 19" EIA equipment rack. The width is either ½ or full. The height is in number of rack units which are 1.75" (44.4 mm) each. For example: a 3 RU h has a height of 5.25" (133.3 mm).

E4360 modules

Specialty	Model	Power, W	Max Voc	Max Isc	Number of outputs	Ripple and noise mVp-p	Programming accuracy % + mV
	E4361A	510	65	8.5	1	125	0.075 + 10
	E4362A	600	130	5	1	195	0.075 + 20

N8937APV and N8957APV Photovoltaic Array Simulators

Quickly test and optimize inverter MPPT algorithms for improved solar power production

The Keysight N8937APV and N8957APV Photovoltaic Array Simulator helps engineers develop, verify and maximize the performance of inverter maximum power point tracking algorithms. With its 1500 Vdc output, the N8937APV and N8957APV enables designers to test to emerging solar panel technologies.

- 15 kW (1500 Vdc, 30 A) in 3 RU Chassis
- Parallel supplies up to 90 kW
- Curve and Table PV Simulation Modes
- Measure inverter efficiency over a variety of simulated conditions (varying temperature and irradiance)
- Verify the ability of the inverter to produce grid-level power from low to high voltage extremes
- PC based Software

BenchVue software enabled

N8937APV

N8957APV

Model	Power (W)	Maximum V (V)	Maximum I (A)	Number of outputs	Ripple and noise mVp-p	Programming accuracy 0.1% + mV	AC output voltage (VAC)	Size [1]
N8937APV	15000	1500	30	1	2400	≤ 1500	208	Full RU w
N8957APV	15000	1500	30	1	2400	≤ 1500	400	x 3 RU h

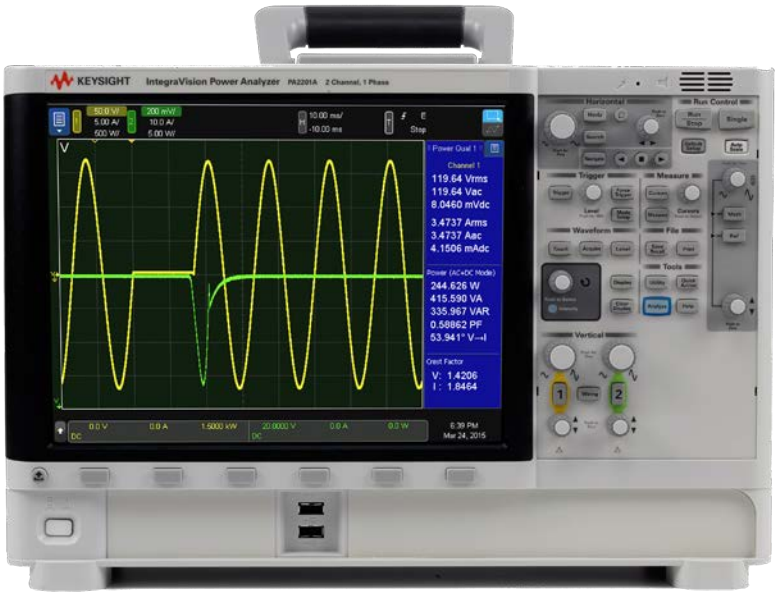
1. RU refers to rack unit of a standard 19" EIA equipment rack. The width is either ½ or full. The height is in number of rack units which are 1.75" (44.4 mm) each. For example: a 3 RU h has a height of 5.25" (133.3 mm).

PA2201A and PA2203A IntegraVision Power Analyzers

PA2201A 2-channel

PA2203A 4-channel

The Keysight IntegraVision power analyzer is an intuitive combination of accurate power measurements and touch-driven oscilloscope visualization. Within a single instrument, it delivers the dynamic views you need to see, measure and prove the performance of your design.



Make all of your critical power measurements with one instrument

- Achieve power analyzer accuracies and scope-like waveform visualization with reduced setup time
- Address multiple test scenarios with the flexibility of wide-ranging, isolated inputs
- Visualize transients, in-rush currents and state changes with a high-speed digitizer that captures voltage, current and power in real-time
- Analyze voltage, current and power in the time and frequency domains
- Explore your design and gain new insights through the 12.1”/310 mm high-resolution display with touch interface
- Save space on your bench with minimum-depth form factor

BenchVue software enabled

Function	Description
Basic power accuracy (50/60 Hz)	0.05% of reading + 0.05% of range
Power channels (voltage and current)	PA2201A: 2 channels
	PA2203A: 4 channels
Voltage measurement bandwidth (–3 dB)	2.5 MHz (–3 dB)
Current measurement bandwidth (2 A or 50 A Input)	100 kHz (–3 dB)
Current measurement Bandwidth (External Input)	2.5 MHz (–3 dB)
Maximum voltage	1000 Vrms (2000 V peak)
Maximum current	Direct input: 2 Arms (6 A peak) or 50 Arms (100 A peak)
	External transducer: 10 Vrms (30 V peak)
Record size	Maximum 1.5 M points on each waveform simultaneously
Digitizing speed	Maximum 5 M samples/second at 16 bits on each waveform simultaneously
Display size and type	12.1-inch capacitive multi-touch/gesture enabled display

DC Power Supply Discontinuance and Replacement Products

Keysight power products have been available for more than 50 years, and DC power supplies have been changing the way engineers prove their design, understand the issues and ensure product quality. Our power products are continually upgraded and ready for your application – and we are now offering optimal replacement choices in voltage, current, capability and performance.

6060 Series	**Move to the N3300 DC Electronic Load Mainframe and Modules**
	If you have a **6060B** or **6063B**, your replacement product is the **N3301A** with **N3303/4A**

6030 Series	**Move to the N8700 basic performance, N6900/7900 series advanced capabilities or N6700 multiple output capabilities**
	If you have any 6030/1/2/3/4/5/8A models, your replacement product is: – **6030A** – recommended substitute products are **N8761A**, **N8921A**, **N8941A**, **N6977A**, **N7977A** – **6031A** – recommended substitut e products are **N8920A**, **N8940A**, **N8734A**, **N8756A**, **N6971A**, **N7971A** – **6032A** – recommended substitute products are **N8737A**, **N6972A**, **N6973A**, **N7972A**, **N7973A** – **6033A** – recommended substitute products are **N5744A**, **N6700C** w/1 x **N6753A** – **6035A** – recommended substitute product is **N8742A** – **6038A** – recommended substitute products are **N5747A**, **N6700C** w/1 x **N6754A**

6620 Series	**Move to the N6700 series offers a multiple output capability with range of performance with modern I/O – LAN, USB, GPIB**
	If you have any 6621/2/3/4/5/6/7/8/9A models, your replacement product is: – **6621A** - recommended substitute products are **N6700C** w/2 x **N6752A** – **6622A** - recommended substitute products are **N6700C** w/2 x **N6752A** – **6623A** - recommended substitute products are **N6700C** w/2 x **N6751A** and **N6752A** – **6624A** - recommended substitute products are **N6700C** w/4 x **N6751A** – **6625A** - recommended substitute products are **N6700C** w/1 x **N6761A** and 1 x **N6762A** – **6626A** - recommended substitute products are **N6700C** w/2 x **N6761A** and 2 x **N6762A** – **6627A** - recommended substitute products are **N6700C** w/4 x **N6751A** – **6628A** - recommended substitute products are **N6700C** w/2 x **N6762A** – **6629A** - recommended substitute products are **N6700C** w/4 x **N6762A**

DC Power Supply Discontinuance and Replacement Products (Continued)

66000 Series	Move to the N6700 series offers a multiple output capability with range of performance with modern I/O – LAN, USB, GPIB
	If you have any 66101A/102A/103A/104A/105A/106A models, your replacement product is: – **66101A** - recommended substitute products are **N6700C** w/N6753A, N6754A, N6763A or N6764A – **66102A** - recommended substitute products are **N6700C** w/N6753A, N6754A, N6763A, N6764A, N6773A or N6774A – **66103A** - recommended substitute products are **N6700C** w/N6754A, N6764A, N6774A or N6775A – **66104A** - recommended substitute products are **N6700C** w/N6754A, N6764A or N6775A – **66105A** - recommended substitute products are **N6700C** w/N6777A – **66106A** - recommended substitute products are **N6700C** w/2 x N6776A in series

66300 Series	Move to the N6700 series offers a multiple output capability with range of performance with modern I/O – LAN, USB, GPIB
	If you have any 66309B/309D/311B/319B/319D/321B/321D/332A models, your replacement product is: – **66309B** - recommended substitute products are **N6700C** w/2 x **N6783A-MFG** – **66309D** - recommended substitute products are **N6700C** w/2 x **N6783A-MFG** – **66311B** - recommended substitute products are **N6700C** w/**N6783A-MFG** – **66319B** - recommended substitute products are **N6700C** w/2 x **N6783A-MFG** – **66319D** - recommended substitute products are **N6700C** w/2 x **N6783A-MFG** – **66321B** - recommended substitute products are **N6700C** w/**N6783A-MFG** – **66321D** - recommended substitute products are **N6700C** w/**N6783A-MFG** – **66332A** - recommended substitute products are **N6700C** w/**N6783A-MFG**

6600 Series (661X, 663X, 664X, 665X)	Move to the N6700 series offers a multiple output capability with range of performance with modern I/O – LAN, USB, GPIB
	If you have any 661X/2X/3X/4X/5X models, your replacement product is: – **6611C** - recommended substitute products are **N6700C** w/**N6732B**, **N6751A** – **6612C** - recommended substitute products are **N6700C** w/**N6733B**, **N6751A** – **6613C** - recommended substitute products are **N6700C** w/**N6735B**, **N6751A** – **6614C** - recommended substitute products are **N6700C** w/**N6776A** – **6631B** - recommended substitute products are **N6700C** w/**N6742B** or **N6752A** – **6632B** - recommended substitute products are **N6700C** w/N6743B or **N6752A** – **6633B** - recommended substitute products are **N6700C** w/**N6752A** – **6634B** - recommended substitute products are **N6700C** w/**N6776A** – **6641A** - recommended substitute products are **N6700C** w/**N6754A** or **N6764A** – **6642A** - recommended substitute products are **N6700C** w/**N6753A**, **N6754A**, **N6763A**, **N6764A**, **N6773A** or **N6774A** – **6643A** - recommended substitute products are **N6700C** w/**N6754A**, **N6764A**, **N6774A** or **N6775A** – **6644A** - recommended substitute products are **N6700C** w/**N6754A**, **N6764A** or **N6775A** – **6645A** - recommended substitute products are **N6700C** w/**N6777A** – **6651A** - recommended substitute products are **N6700C** w/**N6755A** or **N6765A** – **6652A** - recommended substitute products are **N6700C** w/**N6755A** or **N6765A** – **6653A** - recommended substitute products are **N6700C** w/**N6756A** or **N6766A** (500 W only) – **6654A** - recommended substitute products are **N6700C** w/**N6756A** or **N6766A** (500 W only) – **6655A** - recommended substitute products are **N6700C** w/2 x **N6777A** in parallel

DC Power Supply Discontinuance and Replacement Products (Continued)

6600 Series (667X, 668X, 669X)	**Move to: N8700 Series offering basic performance at lower cost with modern I/O - LAN, USB, GPIB; or the N6900/7900 Series offers advanced capabilities and higher performance; or the N8900 Series offers high power and basic performance with modern I/O – LAN, USB and GPIB**
	If you have any 667X/8X/9X or E4356A models, your replacement product is: – **6671A** - recommended substitute products are **N8731A**, **N8732A**, **N8733A**, **N8925A**, **N8945A**, **N6970A** or **N7970A** – **6672A** - recommended substitute products are **N8734A**, **N8920A**, **N8940A**, **N6971A** or **N7971A** – **6673A** - recommended substitute products are **N8736A**, **N8920A**, **N8940A**, **N6972A** or **N7972A** – **6674A** - recommended substitute products are **N8737A**, **N8920A**, **N8940A**, **N6973A** or **N7973A** – **6675A** - recommended substitute products are **N8740A**, **N8921A**, **N8941A**, **N6976A** or **N7976A** – **6680A** - recommended substitute products are 2 x **N8931A** or 2 x **N8951A** in parallel – **6681A** - recommended substitute products are 2 x **N8925A** or 2 x **N8945A** in parallel – **6682A** - recommended substitute products are **N8754A**, **N8925A** or **N8945A** – **6683A** - recommended substitute products are **N8755A**, **N8920A** or **N8940A** – **6684A** - recommended substitute products are **N8756A**, **N8920A** or **N8940A** – **6690A** - recommended substitute products are **N8931A** or **N8951A** – **6691A** - recommended substitute products are **N8925A** or **N8945A** – **6692A** - recommended substitute products are **N8920A** or **N8940A** – **E4356A** - recommended substitute products are **N6974A** or **N7974A**

6800B Series	**Move to the 6800C series of performance AC sources that provides a complete AC test solution at power levels up to 1750 VA with additional I/O – USB and LAN**
	If you have any 6811B, 6812B or 6813B models, your replacement product is: – **6811B** - recommended substitute product is **6811C** – **6812B** - recommended substitute product is **6812C** – **6813B** - recommended substitute product is **6813C**

For more product information, visit www.keysight.com/find/PowerDiscontinuance.

6600 Series High-Performance DC Power Supplies

High-performance when the power supply matters to test

The 6600 Series high-performance power supplies are designed to meet your most demanding requirements. With an extensive feature set, the 6600 Series can help you reduce test time and simplify your test system design.

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

6651A

6631B

6680A

	Model	Power (W)	Maximum V (V)	Maximum I (A)	Number of outputs	Number of ranges	Ripple and noise mVp-p	Programming accuracy % mV	Transient response (µs)	Size [1]
Performance	6611C	40	8	5	1	1	3	0.05 + 5	< 100	½ RU w x 2 RU h
	6612C	40	20	2	1	1	3	0.05 + 10	< 100	
	6613C	50	50	1	1	1	4	0.05 + 20	< 100	
	6614C	50	100	0.5	1	1	5	0.05 + 50	< 100	
	6631B	80	8	10	1	1	3	0.05 + 5	< 100	Full RU w x 2 RU h
	6632B	100	20	5	1	1	3	0.05 + 10	< 100	
	6633B	100	50	2	1	1	3	0.05 + 20	< 100	
	6634B	100	100	1	1	1	3	0.05 + 50	< 100	
	6641A	160	8	20	1	1	3	0.06 + 5	< 100	Full RU w x 2 RU h
	6642A	200	20	10	1	1	3	0.06 + 10	< 100	
	6643A	210	35	6	1	1	4	0.06 + 15	< 100	
	6644A	210	60	3.5	1	1	5	0.06 + 26	< 100	
	6645A	180	120	1.5	1	1	7	0.06 + 51	< 100	
	6651A	400	8	50	1	1	3	0.06 + 5	< 100	Full RU w x 3 RU h
	6652A	500	20	25	1	1	3	0.06 + 10	< 100	
	6653A	525	35	15	1	1	4	0.06 + 15	< 100	
	6654A	540	60	9	1	1	5	0.06 + 26	< 100	
	6655A	480	120	4	1	1	7	0.06 + 51	< 100	
	6671A	1760	8	220	1	1	7	0.04 + 8	< 900	Full RU w x 3 RU h
	6672A	2000	20	100	1	1	9	0.04 + 20	< 900	
	6673A	2100	35	60	1	1	9	0.04 + 35	< 900	
	6674A	2100	60	35	1	1	11	0.04 + 60	< 900	
	6675A	2160	120	18	1	1	16	0.04 + 120	< 900	
	6680A	4375	5	875	1	1	10	0.04 + 5	< 900	Full RU w x 5 RU h
	6681A	4640	8	580	1	1	10	0.04 + 8	< 900	
	6682A	5040	21	240	1	1	10	0.04 + 21	< 900	
	6683A	5120	32	160	1	1	10	0.04 + 32	< 900	
	6684A	4800	40	128	1	1	10	0.04 + 40	< 900	
	6690A	6600	15	440	1	1	15	0.04 + 15	< 900	Full RU w x 5 RU h
	6691A	6600	30	220	1	1	25	0.04 + 30	< 900	
	6692A	6600	60	110	1	1	25	0.04 + 60	< 900	

1. RU refers to rack unit of a standard 19" EIA equipment rack. The width is either ½ or full. The height is in number of rack units which are 1.75" (44.4 mm) each. For example: a 3 RU h has a height of 5.25" (133.3 mm).

66000 Modular Power System

Speed and accuracy with up to eight outputs

The 66000 Series modular DC power supplies give you up to eight outputs per mainframe. The modular design conserves rack space and simplifies system cabling and assembly.

- Modular system permits up to 8 outputs of 150 W per output in 4U of rack space
- Modules are available with 150 W, 8 to 200 V, 0.75 A to 16 A
- Simplify reconfiguration or repair with easily swappable modules
- Streamline your tasks with built-in measurements, LIST mode, and optional keyboard for manual control
- Full protection from over voltage and over current
- Computer control via GPIB

66000 modular power system mainframe

Model	Power, (W)	Max # modules	Physical size [1]
66000A	1200	8	Full RU w x 4 RU h

66000 modules

Performance	Model	Power (W)	Maximum V (V)	Maximum I (A)	Number of outputs	Number of ranges	Ripple and noise mVp-p	Programming accuracy % + mV	Transient response (ms)
	66101A	128	8	16	1	1	5	0.03 + 3	< 1
	66102A	150	20	7.5	1	1	7	0.03 + 8	< 1
	66103A	150	35	4.5	1	1	10	0.03 + 13	< 1
	66104A	150	60	2.5	1	1	15	0.03 + 27	< 1
	66105A	150	120	1.25	1	1	25	0.03 + 54	< 1
	66106A	150	200	0.75	1	1	50	0.03 + 90	< 1

1. RU refers to rack unit of a standard 19" EIA equipment rack. The width is either ½ or full. The height is in number of rack units which are 1.75" (44.4 mm) each. For example: a 3 RU h has a height of 5.25" (133.3 mm).

www.axiestandard.org

AdvancedTCA® Extensions for Instrumentation and Test (AXIe) is an open standard that extends the AdvancedTCA for general purpose and semiconductor test. The business that became Keysight was a founding member of the AXIe consortium. ATCA®, AdvancedTCA®, and the ATCA logo are registered US trademarks of the PCI Industrial Computer Manufacturers Group.

www.lxistandard.org

LAN eXtensions for Instruments puts the power of Ethernet and the Web inside your test systems. The business that became Keysight was a founding member of the LXI consortium.

www.pxisa.org

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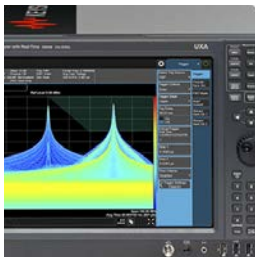

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