Keysight Technologies
BenchVue Software 2017 (BV0000A)

Control. Automate. Simplify.

Technical Overview

KEYSIGHT
TECHNOLOGIES

Unlocking Measurement Insights

Simplified Measurement Viewing, Control and Capture

Keysight BenchVue software for the PC eliminates 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. Additionally, Test Flow enabled apps help you drastically shorten your development of automated programs and further streamline your workflow.

Use BenchVue Apps to:
– Configure the most commonly used controls and measurements from instruments
– Visualize multiple measurements simultaneously
– Easily log and export data and images in a few clicks for faster analysis
– Quickly create automated test sequences with minimal instrument knowledge
– Access deeper instrument controls and solutions

Save time by:
– Analyzing results within BenchVue or with built-in data exports
– Learning software quickly with common look and feel apps
– Utilizing multiple instrument apps in one easy to use software platform

See your measurements across instruments in one place to quickly correlate measurement activities and obtain actionable insight. Depending on your measurement task, BenchVue provides extensive data, trace and measurement logging capabilities all from within one piece of software.

Plug and Play Instrument Control

Connecting and controlling an instrument to BenchVue is as simple as plugging it in and launching the BenchVue instrument application. No programming or separate instrument drivers required. BenchVue will automatically detect GPIB, USB and LAN instrument connections.

BenchVue Apps

BenchVue software provides a wide array of apps with different capabilities to enhance your productivity. These capabilities vary based on the functionality of the types of instruments, apps, and models that are connected to your PC running BenchVue software. All instrument control apps such as BenchVue Digital Multimeter or BenchVue Oscilloscope apps allow you to easily control and build custom automated sequences using BenchVue Test Flow (for more details see page 5). Technology-specific apps such as Solar Array Simulation software are dedicated apps for a specialized type of application or industry.

Current BenchVue Apps

– Complete Control Collection (BV9001B)
– Digital Multimeter (BV0001B)
– Function Generator (BV0002B)
– Power Supply (BV0003B)
– Oscilloscope (BV0004B)
– Data Acquisition (BV0006B)
– Power Meter (BV0007B)
– FieldFox Analyzer (BV0010B)
– Universal Counter (BV0011B)
– Electronic Load (BV0012B)
– Spectrum Analyzer (Available in BV9001B)
– Network Analyzer (Available in BV9001B)
– Signal Generator (Available in BV9001B)
– Power Analyzer (N/A) [1]
– Education Control Collection (BV9101B)
– Solar Array Simulation (DG8901A) [1]

1. The no-cost version of these apps do not require a paid license.

For the latest applications with free 30-day trials, check out the BenchVue Apps tab within BenchVue or visit: **www.keysight.com/find/benchvue_apps**

Faster Test Automation Development

Instrument programming can be time consuming and laborious. With Test Flow enabled apps, you can build automated test sequences without needing in-depth instrument knowledge or programming. Also access advanced instrument controls for specialized testing with integrated Command Expert command sequences.

BenchVue Software Platform Features

Apps Tab
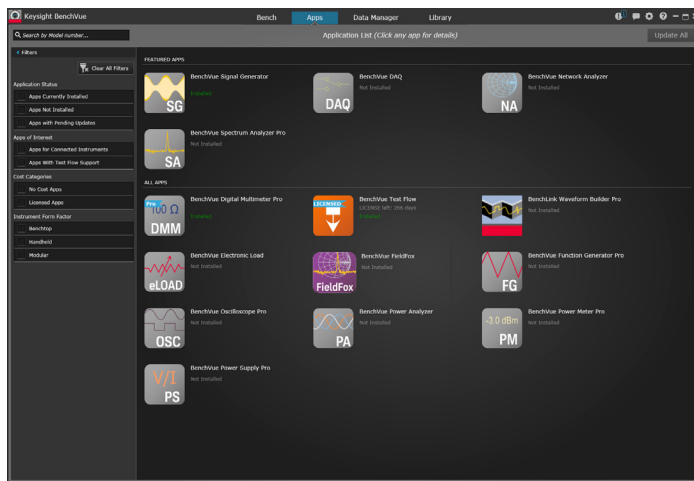
Example of BenchVue's applications tab.

Additional Apps can be easily viewed, downloaded and installed via the Apps tab within BenchVue.

Filters can also be used to help you easily find Apps of interest. You can get a description of your app, start a free trial, install/remove Apps, and even license your app all within the Apps tab.

Keysight recommends checking the Apps tab on a regular basis as existing Apps are updated constantly and new Apps are added all the time.

Bench Tab

As BenchVue's main interface, you will do most of your instrument work in this tab. The instrument Apps launch into this tab, allowing you to control, data log or automate sequences with the BenchVue Test Flow app. Apps from this tab can also be expanded for better viewing. With the Bench Tab, you can view and control up to 4 instruments in BenchVue. Even more instruments can be controlled by expanding them into their own windows. To try out some of the BenchVue apps for instruments you don't currently have on your bench, use BenchVue's Demo mode.

Instrument Tool Bar

Located at the bottom of BenchVue's interface, the Instrument Tool bar shows all instruments connected to your PC. Simply double click on any of your instruments to start interacting with that instrument in BenchVue. Click on the configuration icon to open up Keysight's IO libraries, toggle BenchVue's Demo mode on and off, and access other helpful configurations for the Instrument tool bar.

Small Icons, Big Impact

Tucked away in the corners of the BenchVue interface and each of the apps, are unobtrusive icons that can be very useful in enhancing your BenchVue experience.

Comment Icon – Use this menu to send feedback, report an issue or contact support.

Gear Icon – Use this menu to access additional settings and other configurations for the BenchVue platform, or license your BenchVue app.

Question Icon – Press this icon to load the Help file. Note that each app has its own help icon, which provides "help" information specifically for that app.

Save, Open Icons – With these icons you can save the state of your app for easier configuration and recall.

Export All – This icon allows you to export the data from all of the apps. Individual apps export their data with their own export button found in the app.

**Cell Phone Icon** [1] – Toggle mobile device support for BenchVue with this icon.
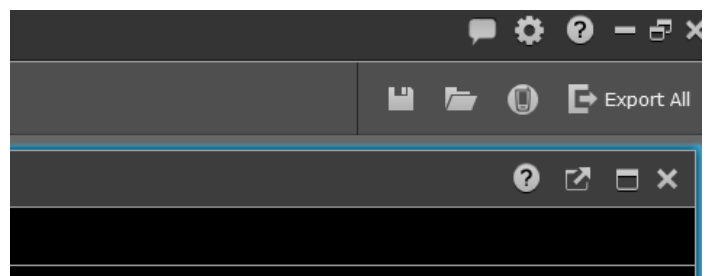
1. Mobile support is not included with all BenchVue apps.

BenchVue Software Platform Features (Continued)

Data Manager Tab

The Data Manager tab is used to find past data logs. BenchVue automatically stores the data logs that you take; an especially useful feature if you've neglected to save critical data. This data repository allows you to filter based on either date range or app.
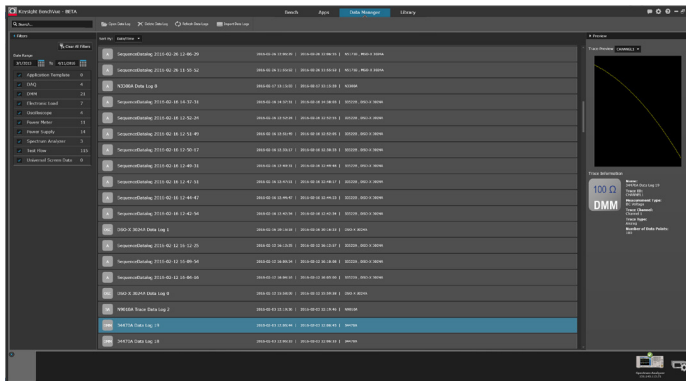
Library Tab

You can find all the documentation for your Keysight instrument in the Library tab. App notes, datasheets, user guides, and even videos are aggregated on the Library tab for easier access than ever before. Simply click on your instrument on the Instrument tool bar and additional documentation relating to that instrument is automatically loaded. Example Test Flow sequences and BenchVue videos are also available in the Library.
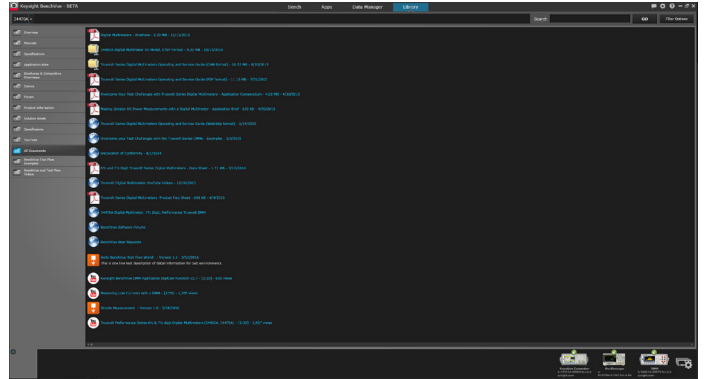
BenchVue Test Flow App

Rapidly build automated tests in BenchVue

Build custom test sequences within BenchVue software using Test Flow. The intuitive drag-and-drop interface enables you to accomplish in minutes what can require days using traditional programming languages. Test Flow controls are integrated into most BenchVue apps. BenchVue Test Flow is enabled with each licensed BenchVue control app.
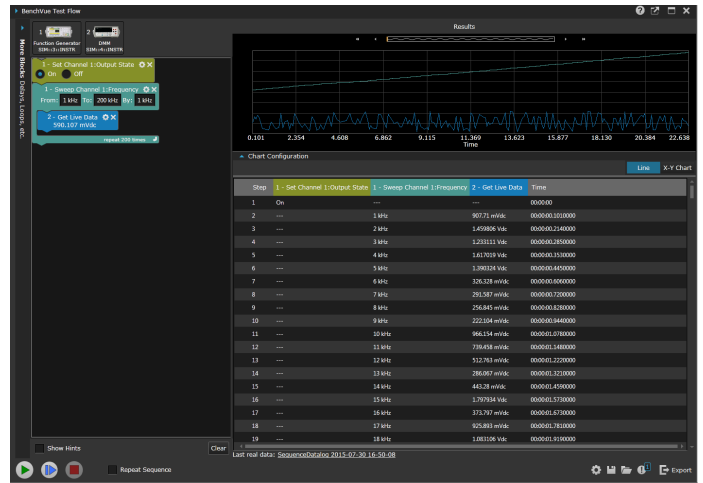
With BenchVue Test Flow you can:
  – Create custom test sequences fast and intuitively
  – Combine multiple instruments into a sequence for better DUT characterization
  – Drag-and-drop controls for rapid test prototyping
  – View data logs in tabular or graphical form

Interpret results more quickly by:
  – Customizing your X-axis and Y-axis on graphs to view measurements
  – Exporting data to popular tools such as MATLAB or Microsoft Excel and Word for documentation or further analysis


Visualize your Test Flow results in chart or tabular form.

Use blocks to control your test workflow

Create your test procedures in BenchVue Test Flow by dragging and dropping blocks into a test sequence. This intuitive method of test design allows you to understand the order of operations within your test sequence. Simply use the instrument controls and measurements that are available from integrated instrument controls in the BenchVue apps. For added flexibility, several utility blocks are available in BenchVue Test Flow including step controls, loops, and the ability to run SCPI commands, integrated Command Expert sequence blocks, or external programs.

BenchVue Test Flow is integrated into the BenchVue framework and occupies the right-hand panel of the user interface.
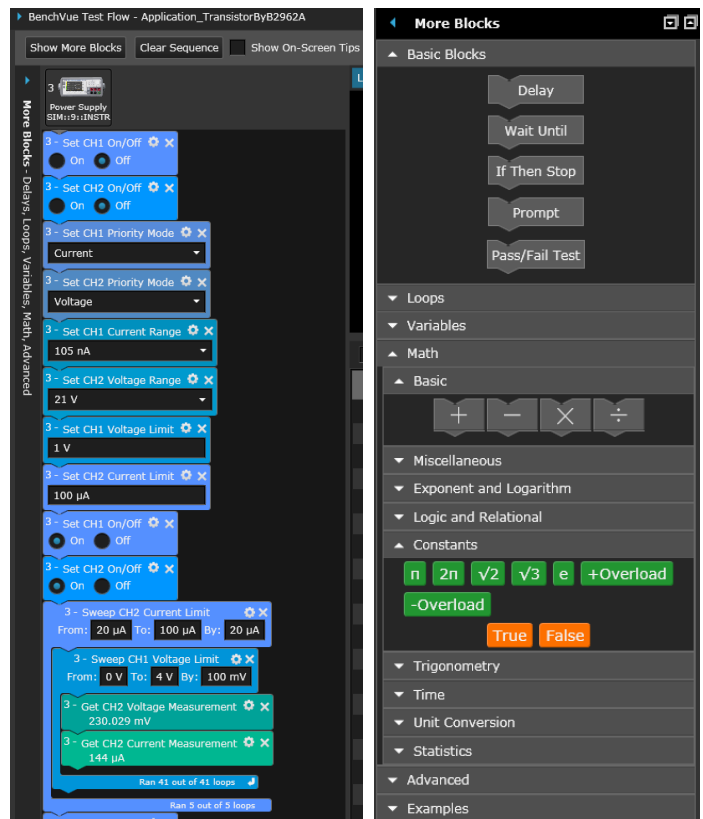
Arrange the BenchVue Test Flow blocks in sequence in the order you want to run them. Top to bottom.

Built-in blocks add flexibility for your test sequences.

BenchVue Complete Control Collection

Contains a complete collection of all BenchVue instrument control, automation and analysis apps. Including exclusive access to the Network Analyzer, Spectrum Analyzer and Signal Generator apps.
Model: BV9001B

BenchVue Digital Multimeter Control & Automation App
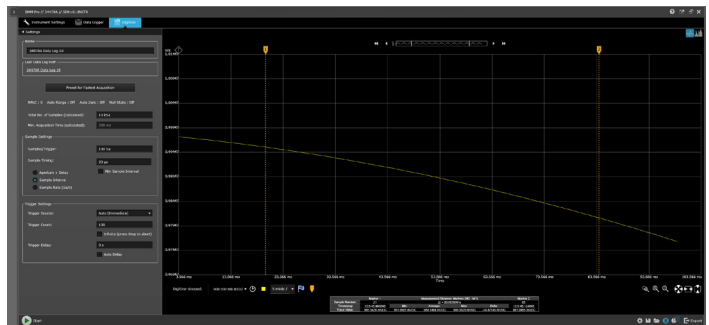
Easily control your DMM to quickly build automated tests, log measurements, and save valuable time.
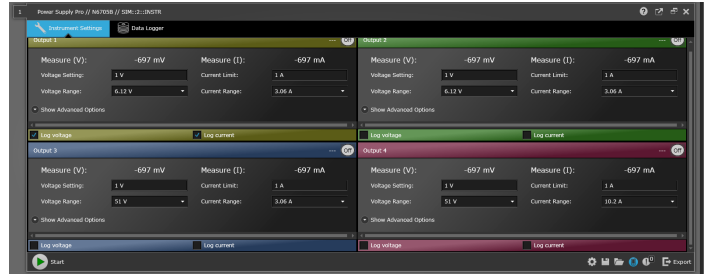Model: BV0001B

BenchVue Function Generator Control & Automation App
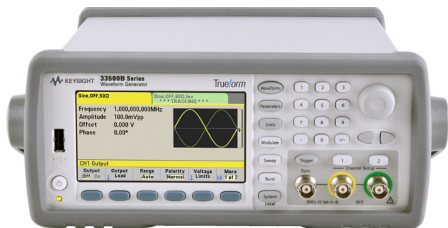
Intuitively control your function generators, build automated tests, and design custom waveforms.
Model: BV0002B

V/I PS

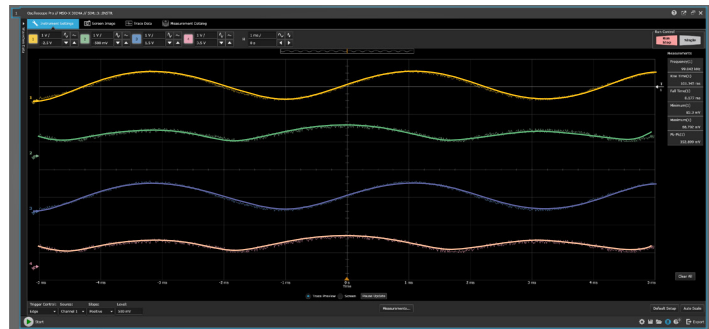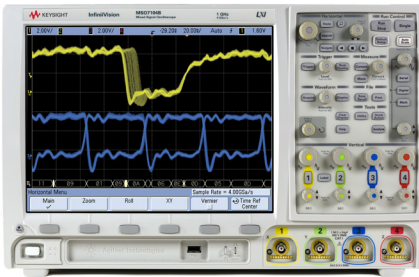# BenchVue Power Supply Control & Automation App

Easily control your power supplies to set parameters and quickly build automated tests.
Model: BV0003B

OSC
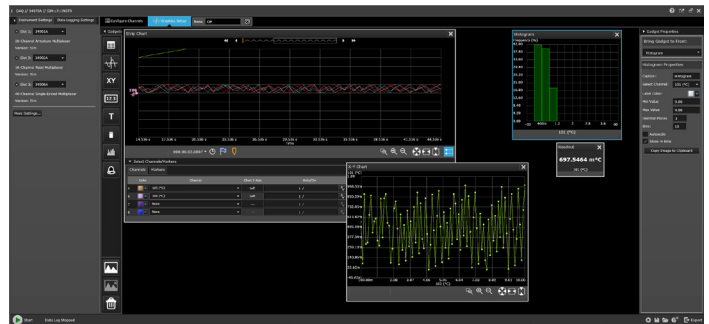
BenchVue Oscilloscope Control & Automation App

Conveniently control your oscilloscopes to quickly build automated tests and log data for analysis.
Model: BV0004B

DAQ

BenchVue Data Acquisition Control & Analysis App

Conveniently control your data acquisition units, easily visualize measurements and log data.
Model: BV0006B

BenchVue Power Meter/Power Sensor Control & Analysis App

Conveniently control your power meters and power sensors, analyze RF power measurements, and quickly log data.
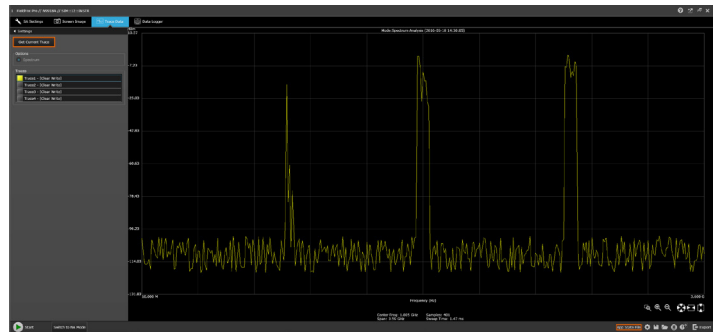Model: BV0007B

BenchVue FieldFox Control & Automation App

Use your FieldFox in spectrum analyzer or network analyzer modes to quickly control parameters, capture measurements over time and build automated tests.
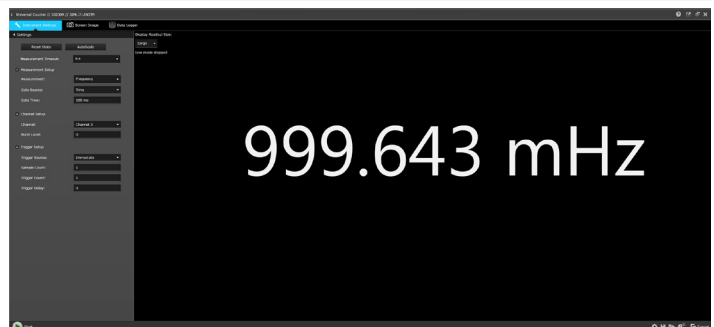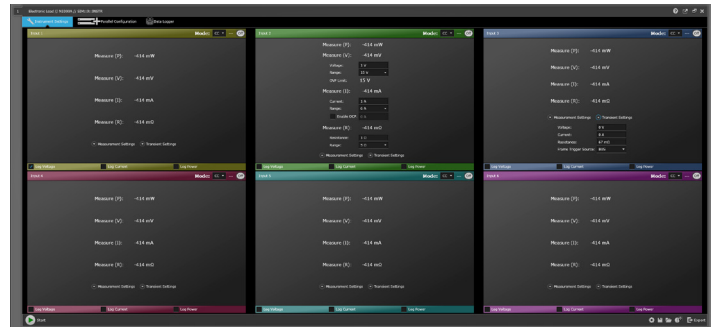Model: BV0010B

Universal Counter Control & Automation App

Easily control your counters to quickly build automated tests and log data for faster analysis.
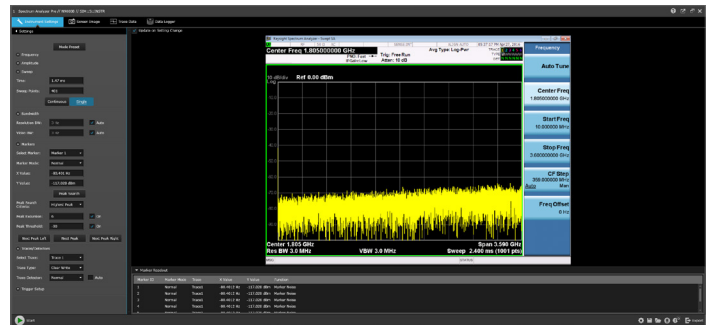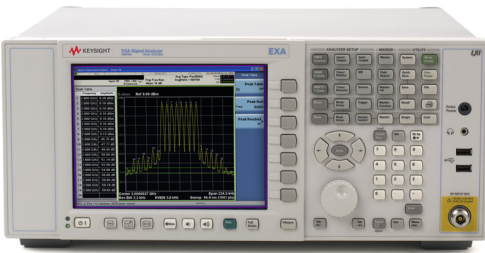Model: BV0011B

BenchVue Electronic Load Control & Automation App

Easily control your electronic loads, build automated tests, and visualize measurements over time.
Model: BV0012B

BenchVue Spectrum Analyzer Control & Automation App

Intuitively control your spectrum or signal analyzers, build automated tests, and log trace data.
Model: BV9001B (Exclusively available in the BenchVue Complete Control Collection)

BenchVue Network Analyzer Control & Automation App
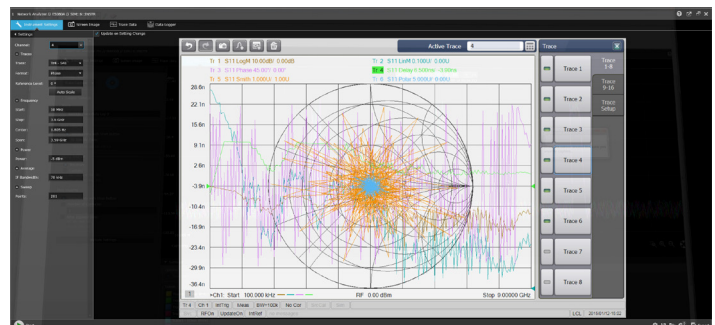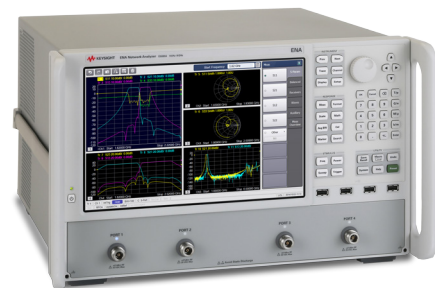
Intuitively control your network analyzers, quickly build automated tests, and acquire trace data.
Model: BV9001B (Exclusively available in the BenchVue Complete Control Collection)

BenchVue Signal Generator Control & Automation App
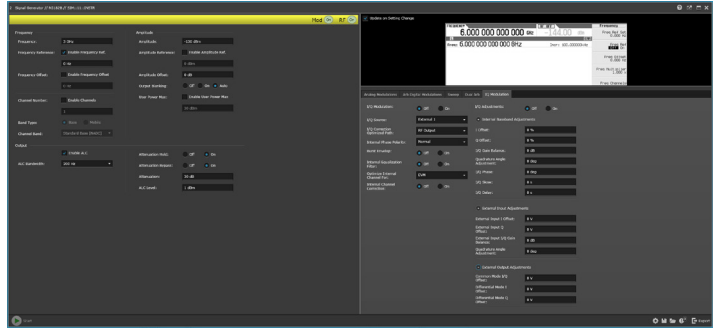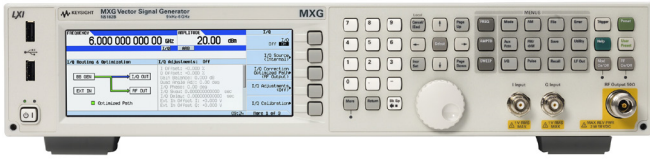
Easily control signal generators to build automated tests, set parameters for faster analysis and load customer arbitrary waveforms from files.

Model: BV9001B (Exclusively available in the BenchVue Complete Control Collection)

BenchVue Power Analyzer Control & Automation App
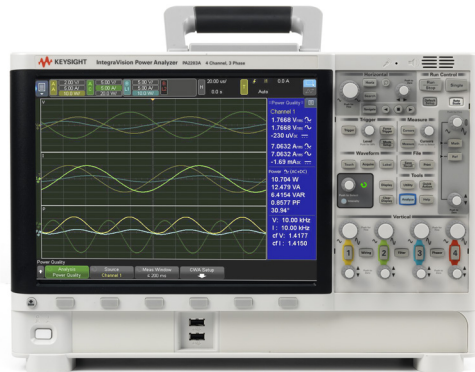
Conveniently control your power analyzers, quickly visualize measurements, and easily log data.

Model: No cost download.

BenchVue Education Control Collection

Exclusively for schools and universities. Multiple networked licenses, free student access, designed to fit into an education budget.
Model: BV9101B

Solar Array Simulator Control

Easily create, manipulate, view, and execute photovoltaic I-V curves for testing PV inverters.
Model: DG8901A

Application Comparisons

BenchVue software supports many Keysight instrument types and hundreds of models all from one platform. Choose from a variety of powerful apps below to accelerate your workflow.

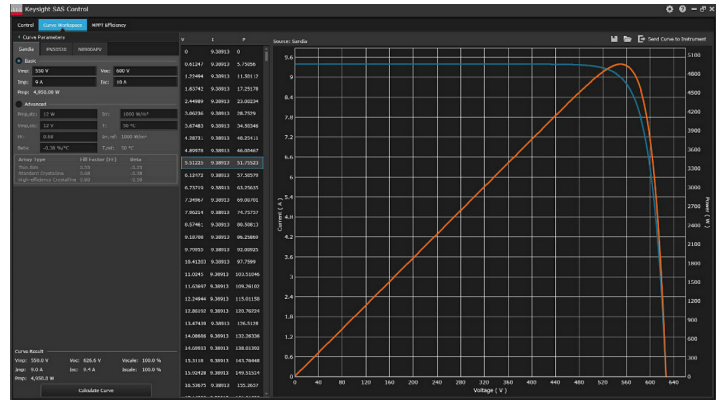| Control, Automation and Analysis apps	App Type	Features	Test Flow Automation Capabilities	Mobile Support
BenchVue Complete Control Collection (BV9001B)	Control, automation, analysis	– Access to all BenchVue control, automation, or analysis apps – Exclusive access to Spectrum Analyzer, Network Analyzer, Signal Generator apps	– Controls integrated in app – Using Command Expert instrument controls	Depends on app used
Digital Multimeter App (BV0001B)	Control & automation	– Instrument control and measurements – Data logging with graphing – Digitizer functions – Limit testing and alerts	– Controls integrated in app – Using Command Expert instrument controls	Yes
Function Generator App (BV0002B)	Control & automation	– Instrument control and measurements – Waveform editing capabilities	– Controls integrated in app – Using Command Expert instrument controls	Yes
Power Supply App (BV0003B)	Control & automation	– Instrument control and measurements – Log output V&I data with graphing – Status alerts	– Controls integrated in app – Using Command Expert instrument controls	Yes
Oscilloscope App (BV0004B)	Control & automation	– Instrument control and measurements – Get screen images and trace data – Log measurements with graphing – Limit testing and alerts	– Controls integrated in app – Using Command Expert instrument controls	Yes
Data Acquisition App (BV0006B)	Control & analysis	– Instrument control and measurements – Data graphing tools – In depth analysis – Log measurements	– Using Command Expert instrument controls	No
Power Meter App (BV0007B)	Control & analysis	– Instrument control and measurements – Data visualization tools – Multi-unit control	– Controls integrated in app – Using Command Expert instrument controls	No
FieldFox App (BV0010B)	Control & automation	– Instrument control and measurements – Support for SA and NA personalities – Log trace data and screen images	– Controls integrated in app – Using Command Expert instrument controls	No
Universal Counter App (BV0011B)	Control & automation	– Instrument control and measurements – Log frequency or time interval data	– Controls integrated in app – Using Command Expert instrument controls	No
Electronic Load App (BV0012B)	Control & automation	– Instrument control and measurements – Log power, V, I – Parallel channel config	– Controls integrated in app – Using Command Expert instrument controls	No
Spectrum Analyzer App (BV9001B)	Control & automation	– Instrument control and measurements – Log screen Images – Log trace data	– Controls integrated in app – Using Command Expert instrument controls	Yes
Network Analyzer App (BV9001B)	Control & automation	– Instrument control and measurements – Log screen Images – Log trace data	– Controls integrated in app – Using Command Expert instrument controls	No
Signal Generator App (BV9001B)	Control & automation	– Instrument control and measurements – Arbitrary waveform setting	– Controls integrated in app – Using Command Expert instrument controls	No
Power Analyzer App (N/A)	Control & analysis	– Instrument control and measurements – Log measurements – Screen captures	NA	No
Solar Array Simulator Control App (DG8901A)	Technology specific	– Simple solar array simulator controls – View I-V, power curves – Create PV curves (in licensed version only)	NA	No

BenchVue Software Supported Instruments

Each of the BenchVue apps support certain Keysight instrument models. These apps are updated regularly with additional models as shown below. For the most current supported instrument list, visit: www.keysight.com/find/BenchVueInstruments

Data acquisition units (2)	Power meters/ sensors (25)	Function generators (19)	Power supplies/SMUs (146)	Spectrum/signal analyzers (30)	Oscilloscopes (174)
34970A	U2021XA	332x0A (3)	B2900 Series (4)	X-Series	1000-X Series (4)
34972A	U2022XA	33500 Series (10)	B2961A/62A	N9040B UXA	2000-X Series (12)
Digital multimeters (10)	U2041XA	33600 Series (4)	E3600 Series (14)	N9030A/B PXA	3000-X Series (18)
344xxA	U2042XA	81150A	E36100 Series (5)	N9020A/B MXA	3000T Series (20)
Network analyzers (29)	U2043XA	81160A	E36300 Series (4)	N9010A/B EXA	4000-X Series (16)
ENA E50xxA/B/C (5)	U2044XA	**Power analyzers (2)**	N5700 Series (24)	N9000A/B CXA	5000 (5)
PNA N522xA (5)	U2049XA LAN	PA2201A	N6700A/B/C	M9290A CXA	6000A Series (16)
PNA-L N523xA/C (6)	U2000 Series (9)	PA2203A	N6701A/C	HSA N934xC (3)	6000L Series (3)
PNA-X N524xA (6)	U848x Series (4)		N6702A/C	ESA E440xB (4)	6000-X Series (4)
PXI VNAs	N191xA (4)	**Signal generators (14)**	N6705A/B/C	PSA E444x (6)	7000 Series (28)
M937xA (6)	N8262A		N6785A	BSA N932xB/C (2)	9000 Series (8)
PXIe multiport VNA		E4428C	N6786A	**Electronic loads (4)**	90000 (6)
M9485A		E4438C	N6900 Series (12)	N3300A	90000 Q-Series (5)
		E8257D	N7900 Series (12)	N3301A	90000 X-Series (12)
		E8267D	N8700 Series (21)	6060B	S Series (14)
		E8663D	N8900 Series (36)	6063B	
		EXG X-Series		**FieldFox analyzers (22)**	**Counters (3)**
		N517xB (3)		N9912A	53210A
		MXG X-Series		N9913A–N9918A (6)	53220A
		N518xB (3)		N9923A	53230A
		N518xA (3)		N9925A–N9928A (4)	
				N9935A–N9938A (4)	
				N9950A–N9952A (3)	
				N9960A–N9962A (3)	

Your bench. Just smarter.

Control, Automate and Simplify your workflow.

BenchVue Mobile

Mobile apps lets you monitor and respond to long running tests from anywhere for our most popular instrument families. Multimeters, oscilloscopes, function generators, spectrum analyzers and power supplies are all supported from one app.

BenchVue mobile is a mobile app that you can install on an Android or Apple iOS device to control BenchVue bench applications running on your Windows computer. BenchVue mobile connects to your computer as a client, and requires that your mobile device and computer be connected to the same local network or intranet (behind the same corporate firewall). This network connection can be made via a WiFi connection inside your work location or externally through a VPN connection.

BenchVue Demonstration Mode

BenchVue includes a demonstration mode that requires no instruments to be connected, making product evaluation quick and easy. Simply download and click "enable demo mode" under the global setting menu to begin exploring BenchVue functionality.
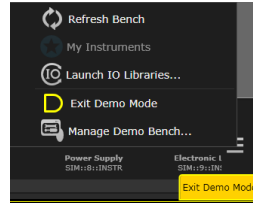
To assist in the evaluation of BenchVue with physical instruments, BenchVue includes an integrated help file and getting started guide to make setup quick and easy.

Supported Apps for BenchVue Mobile

– Digital Multimeter app
– Function Generator app
– Power Supply app
– Spectrum Analyzer app
– Oscilloscope app

Instruments	IO	Computer	Network	Mobile

USB
LAN
GPIB
RS-232

WiFi
VPN
3G
4G

BenchVue application
(Microsoft Windows)

BenchVue mobile app
(Android and i0S)
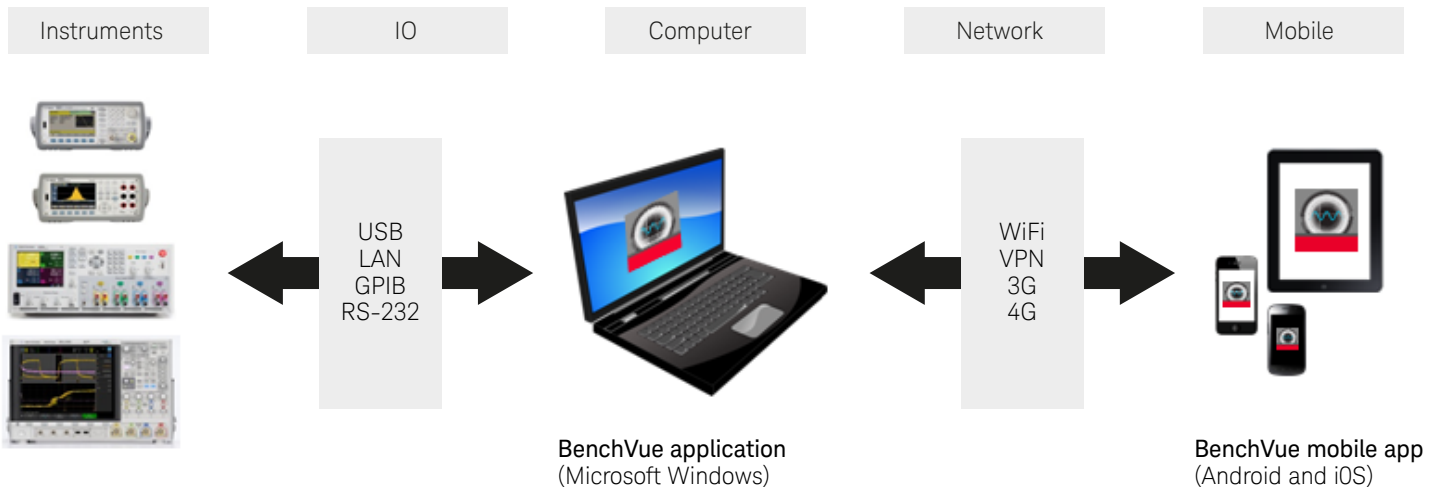
Selecting the Right License

Keysight offers a variety of licensing options to fit your needs. Choose your type. Choose your term. Keep control of your budget. With every BenchVue app or bundle you may choose different licensing terms. The most common option is the Perpetual Transportable license.

	License Terms	
License Types	Perpetual	Time Based (1 year)
Fixed Node Locked	-1FP	-1FY
Transportable	-1TP*	-1TY
Network Floating	-1NP	-1NY

* Most popular license configuration

Terms

Perpetual – No time limit on software usage
Time Based – Software use limited to 1 year

Types

Fixed Node Locked– Software license for 1 PC
Transportable – Ability to transfer license from PC to another PC
Network Floating – Network-based license provides multiple users access to software license from server

Each BenchVue app is available with all 6 license types. Select which license type that is right for you.

Ordering your license

Your Keysight representative or favorite Keysight sales partner may help you with the ordering process. These are the typical steps when selecting a Keysight software product.

Step 1: Choose your apps/bundle.
"I want to use BenchVue for all my bench instruments, I want the BenchVue Complete Control Collection"
– Select BV9001B

Step 2: Choose your license terms and type.
"I want an app that can be used in my lab or my desk (2 computers) and we'll need the app indefinitely"
- Select -1TP

Step 3: For the complete order number combine the model and license term/type:
BV9001B-1TP

Step 4: Choose a paper or electronic delivery of your license entitlement certificates.

Step 5: Place your order.

System and Installation Requirements

Computer operating system	
Windows 10, 8, 7	– Windows 10 32-bit and 64-bit (Professional, Enterprise, Education, Home versions)
	– Windows 8 32-bit and 64-bit (Professional, Enterprise, Core)
	– Windows 7 SP1 and later 32-bit and 64-bit (Professional, Enterprise, Ultimate, Home Basic, Home Premium)
Computer hardware	Windows 10, 8, 8.1 and 7
	– Processor: 1 GHz or faster (2 GHz or greater recommended)
	– RAM: 1 GB (32-bit) or 2 GB (64-bit) (3 GB or greater recommended)
Interfaces	USB, GPIB, LAN, RS-232
Display resolution	1280x1024 minimum recommended for single instrument view (higher resolution recommended for multiple instrument view)

Additional requirements

BenchVue requires a VISA library (Keysight or National Instruments) when used to connect to physical instruments. Keysight IO Libraries Suite, which contains the necessary VISA, will be downloaded and installed automatically when BenchVue is installed if needed. IO Libraries Suite 17.3 or newer is recommended. IO Libraries Suite information is available at: www.keysight.com/find/iosuite

Mobile devices

Apple iPhone, iPad, iPod Touch all models; iOS 7.0 and later. Android phone and tablets; Android 4.0.3 and later.

Control. Automate. Simplify.

BenchVue software for PC

Download a free 30-day trial today at:
www.keysight.com/find/BenchVue

BenchVue software for mobile devices

Find BenchVue mobile for your respective device by visiting
www.keysight.com/find/BenchVueMobile

Premium Support and Consulting Services

Software support subscriptions include access to updates and call center experts during the subscription period. Perpetual licenses must order a one-year support subscription which can be optionally renewed every year. Annual licenses include a support subscription.

Keysight also offers a variety of optional start-up assistance and project consulting services to help you maximize your test development productivity. Contact your Keysight sales specialist or application engineer for more details.

www.keysight.com/find/services

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Keysight software is downloadable expertise. From first simulation through first customer shipment, we deliver the tools your team needs to accelerate from data to information to actionable insight.

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Evolving

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Keysight Channel Partners
www.keysight.com/find/channelpartners
Get the best of both worlds: Keysight's measurement expertise and product breadth, combined with channel partner convenience.

www.keysight.com/find/benchvue

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at:
www.keysight.com/find/contactus

Americas

Canada	(877) 894 4414
Brazil	55 11 3351 7010
Mexico	001 800 254 2440
United States	(800) 829 4444

Asia Pacific

Australia	1 800 629 485
China	800 810 0189
Hong Kong	800 938 693
India	1 800 11 2626
Japan	0120 (421) 345
Korea	080 769 0800
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