PathWave BenchVue Software

Control. Automate. Simplify.

Simplified Measurement Viewing, Control and Capture

Keysight's PathWave 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. With the Test Flow 1 enabled apps help you drastically shorten your development of automated programs and further streamline your workflow.

KEYSIGHT

PATHWAVE

Use PathWave 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 [1]
- Access deeper instrument controls and solutions [1]

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

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.

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[1] Available only on pre 2021 versions.

BenchVue Apps

Keysight's BenchVue software platform provides access to a wide array of instrument control, automation and analysis 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 Fieldfox Handheld Analyzer apps allow you to easily control and build custom automated sequences using BenchVue Test Flow [1].

Technology-specific apps such as Solar Array Simulation software are dedicated apps for a specialized type of application or industry.

Lab management apps provide centralized lab instrument configuration, ability to track assets, and more lab administration features.

Important note: Keysight's BenchVue software apps are always ensured to provide the best user experience and functionality to enhance your productivity. The new Pathwave BenchVue Digital Multimeter, BenchVue Function Generator, BenchVue Power Supply and BenchVue Oscilloscope apps will run as a standalone application and supports all new and some existing [2] instrument models.

 BenchVue Digital Multimeter   BenchVue Function Generator

 BenchVue Power Supply   BenchVue Oscilloscope

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[1] Available only on pre 2021 versions.
[2] For the most current supported instrument list, visit: www.keysight.com/find/BenchVueInstruments.

BenchVue apps and collections

- Complete Control Collection (BV9001B)
- Digital Multimeter (BV0001B) NEW
- Function Generator (BV0002B) NEW
- Power Supply (BV0003B) NEW
- Oscilloscope (BV0004B) NEW
- Data Acquisition (BV0006B)
- Power Meter (BV0007B)
- FieldFox Analyzer (BV0010B)
- Universal Counter (BV0011B)
- Electronic Load (BV0012B)
- Current Analyzer (BV0013B)
- LCR Meter (BV0014B)
- USB Modular Digital Multimeter App (BV0021B)
- USB Modular Function Generator App (BV0022B)
- USB Modular SMU App (BV0023B)
- USB Modular Oscilloscope App (BV0024B)
- USB Modular DAQ App (BV0025B)
- USB Modular Chassis (N/A) [1]
- USB Modular Switch Matrix (N/A) [1]
- Lab Manager (BV0110B)
- Lab Client (BV0111B)
- Spectrum Analyzer (available in BV9001B)
- Network Analyzer (available in BV9001B)
- Signal Generator (available in BV9001B)
- Power Analyzer (N/A) [1]
- Education Control Collection (BV9111B)
- Solar Array Simulation (DG8901A) [1]

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

Many instruments now include a BenchVue app license with a new purchase.

Visit: www.keysight.com/find/IncludedBenchVue for more information

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[1] The instrument-included version of these apps does not require a paid license.

BenchVue Complete Control Collection

Access 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

- Digital multimeter app
- Function generator app
- Power supply app Oscilloscopes app
- Data acquisition app
- Power meters/sensors app
- FieldFox App
- Universal counter app
- Electronic load app Current analyzer app

- LCR meter app
- USB digital Multimeter app
- USB function generator app
- USB modular SMU app
- USB modular oscilloscopes app
- USB modular data acquisition app
- Lab client app
- Spectrum analyzer app
- Signal generator app
- Network analyzer app
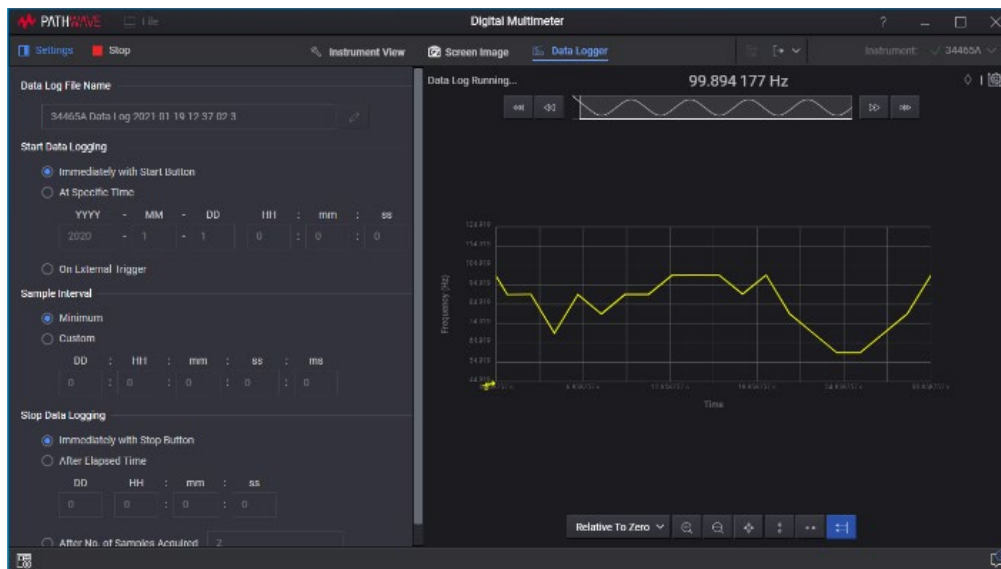
BenchVue Digital Multimeter Control App

Model: BV0001B

Easily control your DMM and acquire log measurements for quick analysis.

- All new standalone application
- High resolution with newly designed user-friendly Interface

Supports the following models:

- 34401A,
- 34405A,
- 34410A,
- 34411A,
- 34420A [1],
- 34450A [1],
- 34460A [1],
- 34461A [1],
- 34465A [1],
- 34470A [1],
- EDU34450A [1]

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[1] New Instrument purchases include a Node locked perpetual BenchVue app license.

BenchVue Function Generator Control App

Model: BV0002B

Intuitively control your function generators and design custom waveforms.

- All new standalone application
- High resolution with newly designed user-friendly Interface

Supports the following models:

- 33600 Series [1] (4)
- 33509B [1], 33510B1, 33519B [1], 33520B [1], 33511B [1], 33512B [1], 33521B [1], 33522B [1]
- EDU33212A [1], EDU33211A [1]
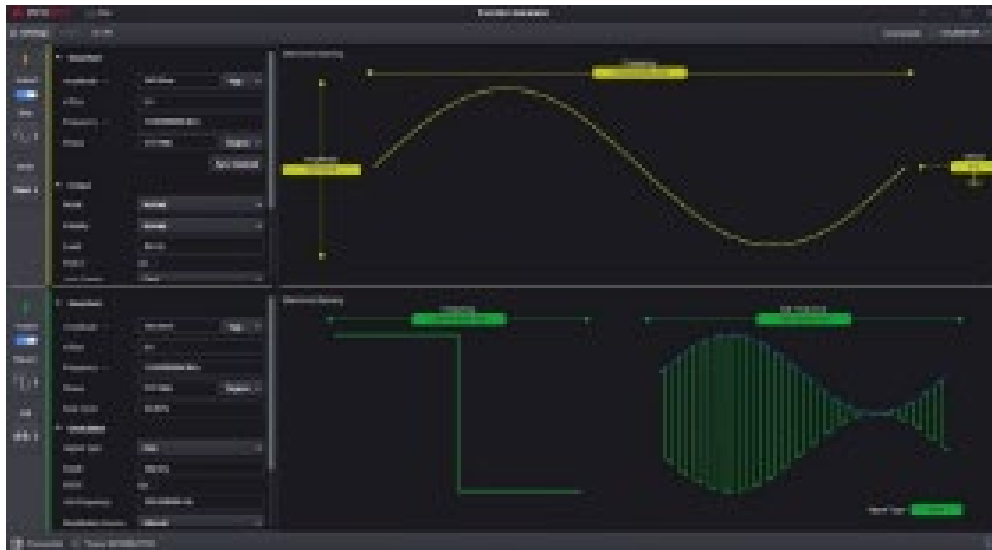
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[1] New Instrument purchases include a Node locked perpetual BenchVue app license.

BenchVue Power Supply Control App

Model: BV0003B
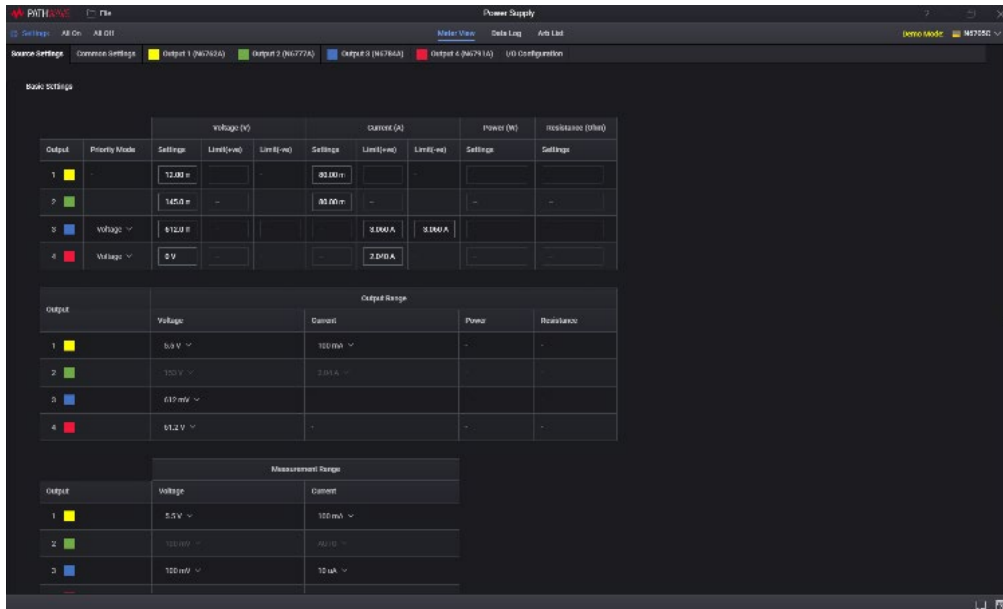
Easily control your power supplies to set parameters.

- All new standalone application
- High resolution with newly designed user-friendly Interface
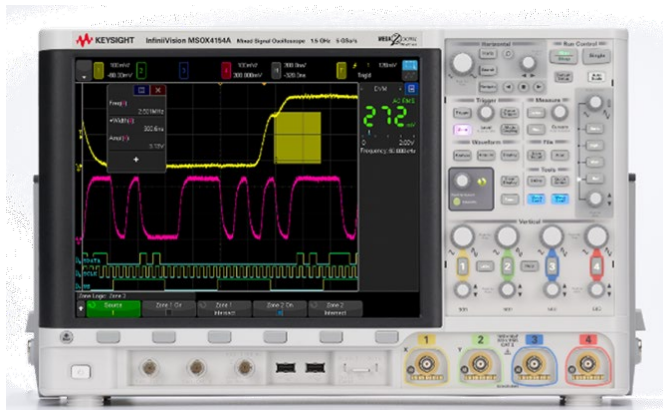
Supports the following models:

- B29xxA Series [1] (4)
- B2961A/62A [1]
- E3600 Series [1] (14)
- E36100 Series [1] (10)
- E36200 Series [1] (4)
- E36300 Series [1] (3)
- N5700 Series [1] (24)
- N6700A/B/C [1], N6701A/C [1], N6702A/C [1], N6705A/B/C [1]
- N6785A [1], N6786A [1]
- N6900 Series [1] (12)
- N7900 Series [1] (12)
- N8700 Series [1] (21)
- N8900 Series [1] (36)
- RP7900 Series (6)
- B29xxB [1] (7)
- B2901BL [1], B2910BL [1]
- N67xxA [1] (21)
- N67xxB [1] (12)
- RP7972A [1], RP7973A [1]
- EDU36311A [1]

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[1] New Instrument purchases include a Node locked perpetual BenchVue app license.

BenchVue Oscilloscope Control App

Model: BV0004B

Conveniently control your oscilloscopes and quickly acquire log data for analysis.

- All new standalone application
- High resolution with newly designed user-friendly Interface

Supports the following models:

- 1000-X Series [1] (10)
- 2000-X Series [1] (12)
- 3000-X Series [1] (18)
- 3000T Series [1] (19)
- 4000-X Series [1] (16)
- 6000 Series (8)
- 7000 Series (14)
- 9000 Series (8)
- 90000 Series (6)
- 90000 X-Series (17)
- 90000 DSA Series (16)
- P924xA Series (3)
- S Series (14)
- V Series (18)
- Z Series (10)

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[1] New Instrument purchases include a Node locked perpetual BenchVue app license.

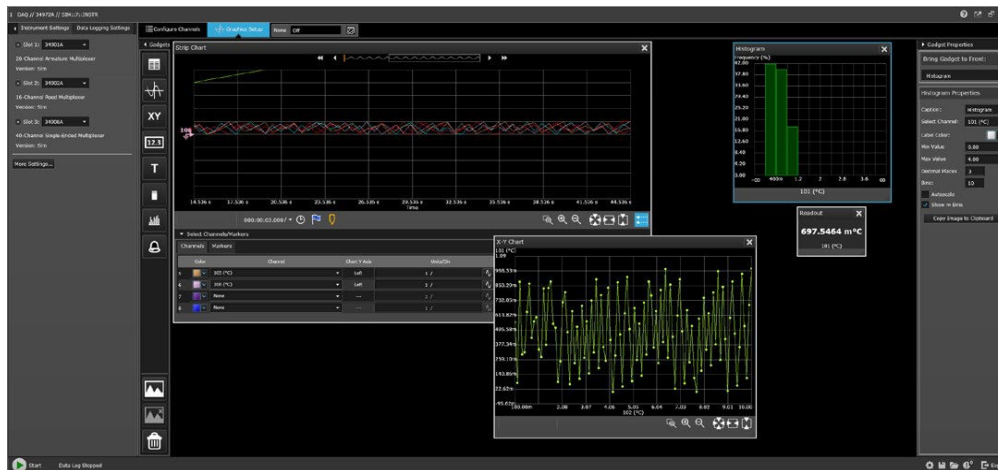# BenchVue Data Acquisition Control & Analysis App

Model: BV0006B

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

Supports the following models:

- 34970A [1]
- 34972A [1]
- 34980A [1]
- DAQ970A [1]
- DAQ973A [1]

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[1] New Instrument purchases include a Node locked perpetual BenchVue app license.

BenchVue Power Meter/Power Sensor Control & Analysis App

Model: BV0007B

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

Supports the following models:

- U2021XA [1], U2022XA [1]
- U204x XA [1] (5)
- U205x XA [1] (4)
- U206x XA [1] (4)
- U2000 Series [1] (9)
- U2053/63 Series [1]
- L2050/60 Series [1] (11)
- U848x Series [1] (5)
- N191xA [1] (4)
- N8262A [1]

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[1] New Instrument purchases include a Node locked perpetual BenchVue app license.

BenchVue FieldFox Handheld Analyzer Control & Automation App
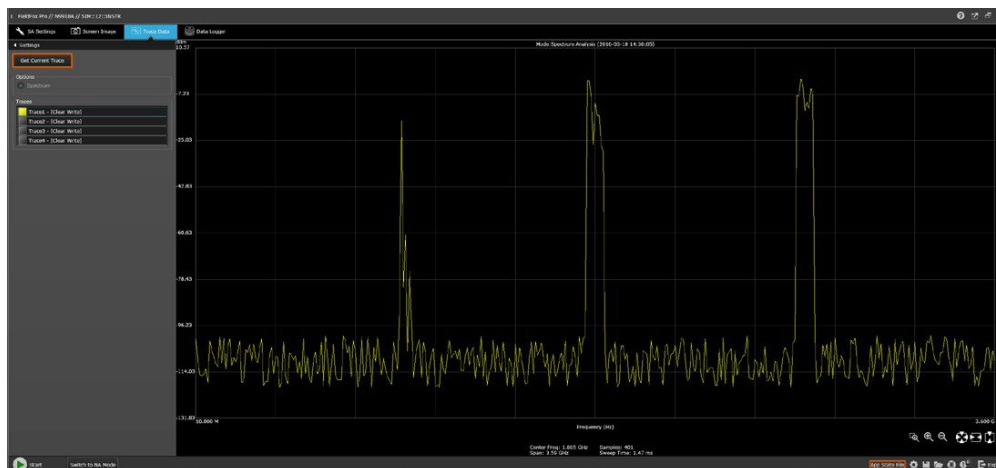

Model: BV0010B

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

Supports the following models:

- N9912A-N9918A [1] (7)
- N9923A-N9928A [1] (5)
- N9935A-N9938A [1] (4)
- N9950A-N9952A [1] (3)
- N9960A-N9962A [1] (3)

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[1] New Instrument purchases include a Node locked perpetual BenchVue app license.

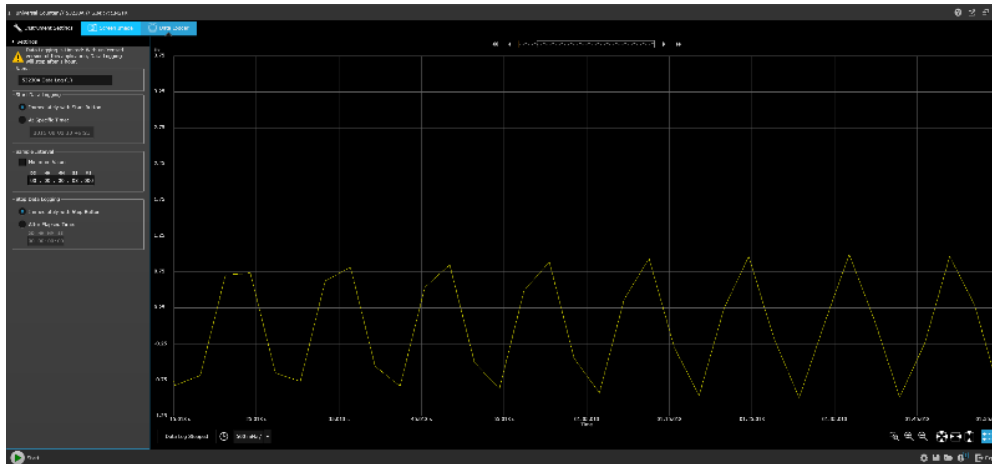# Universal Counter Control & Automation App

Model: BV0011B

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

Supports the following models:

- 53210A [1]
- 53220A [1]
- 53230A [1]

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[1] New Instrument purchases include a Node locked perpetual BenchVue app license.

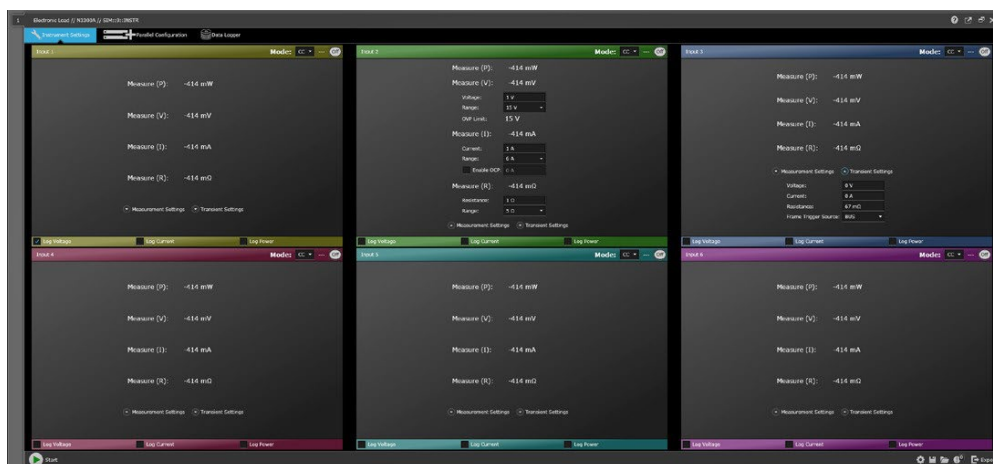# BenchVue Electronic Load Control & Automation App

Model: BV0012B

Easily control your electronic loads, build automated tests, and visualize measurements over time.
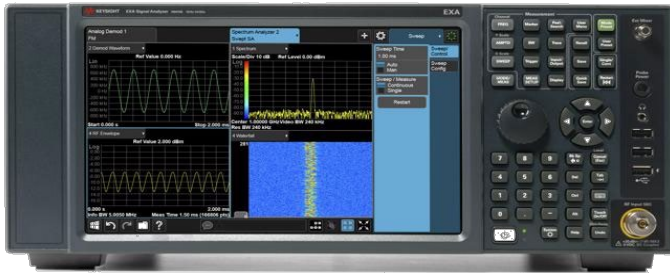
Supports the following models:

- N3300A [1]
- N3301A [1]
- 6060B
- 6063B
- EL33133A
- EL34143A [1]
- EL34243A [1]

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[1] New Instrument purchases include a Node locked perpetual BenchVue app license.

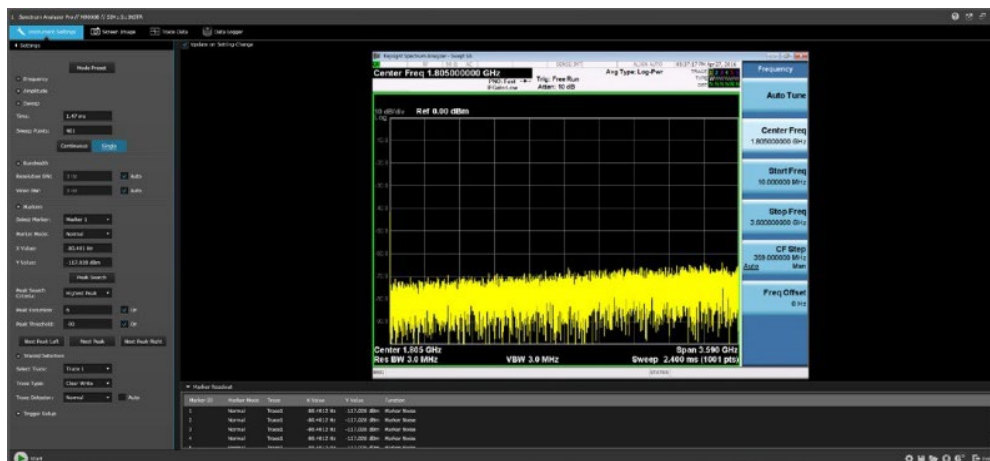# BenchVue Spectrum Analyzer Control & Automation App

Model: BV9001B

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

Supports the following models:

- X-Series
  - N9040B UXA
  - N9030A/B PXA
  - N9020A/B MXA
  - N9010A/B EXA
  - N9000A/B CXA
  - M9290A CXA-m
- HSA N934xC (3)
- ESA E440xB (4)
- ESA L44xxB (3)
- PSA E444x (6)
- BSA N932xB/C (2)

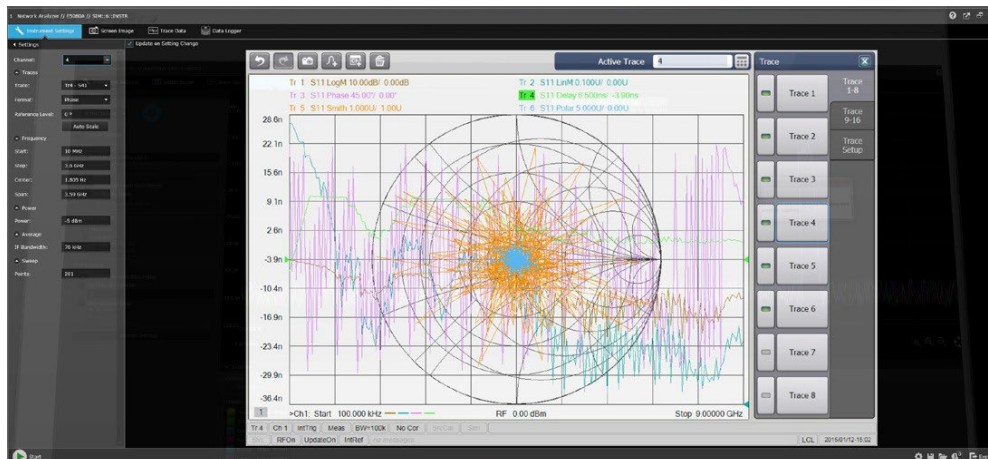# BenchVue Network Analyzer Control & Automation App

Model: BV9001B

(Exclusively available in the BenchVue Complete Control Collection)
Intuitively control your network analyzers, quickly build automated tests and acquire trace data.

Supports the following models:

- ENA E50xxA/B/C (5)
- PNA N522xA/B (10)
- PNA-L N523xA/B/C (11)
- PNA-X N524xA/B (12)
- PXI VNAs M937xA (6)
- PXIe multiport VNA M9485A

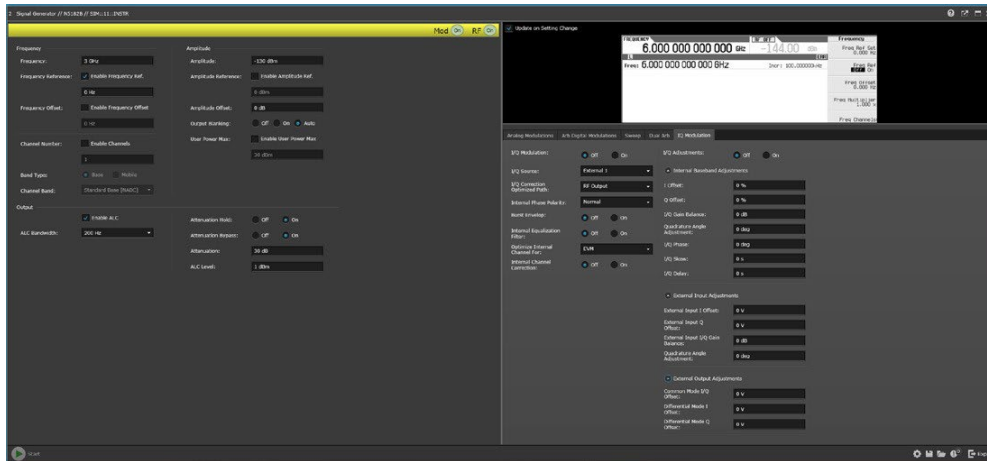# BenchVue Signal Generator Control & Automation App

Model: BV9001B

(Exclusively available in the BenchVue Complete Control Collection)

Supports the following models:

- E4428C, E4438C
- E8257D, E8267D, E8663D
- EXG X-Series N517xB (3)
- MXG X-Series
  - N518xB (3)
  - N518xA (3)

BenchVue Power Analyzer Control & Automation App

Available to download for free

Conveniently control your power analyzers, quickly visualize measurements, and easily log data.

Supports the following models:

- PA2201A
- PA2203A

Solar Array Simulator Control
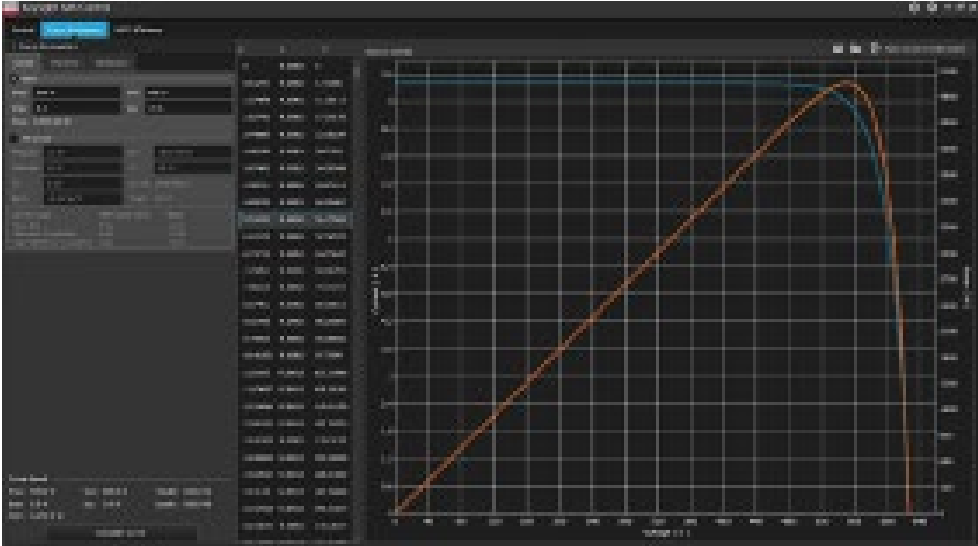

Model: DG8901A

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

BenchVue Current Analyzer Control and Analysis App

Model: BV0013B

Conveniently connect and control your current analyzers to quickly view measurements, build automated tests, and log data for analysis.

Supports the following models:

- CX3322A
- CX3324A
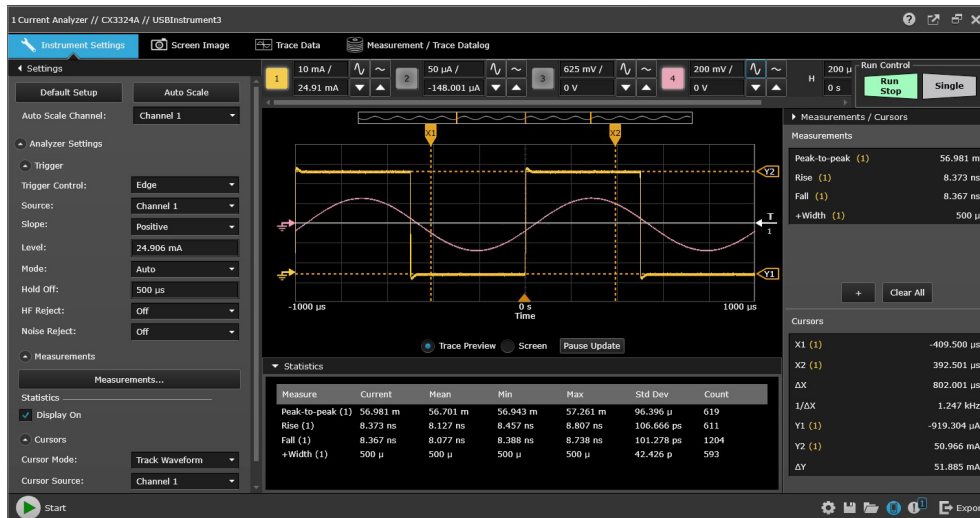
BenchVue LCR Meter Control and Automation App

Model: BV0014B

Connect and control your LCR meters to quickly view measurements, configure sweeps, build automated tests, and log data for analysis.

Supports the following models:

- E4980A
- E4980AL

USB Modular Digital Multimeter Control Pro App

Model: BV0021B

Connect and control your USB Modular DMM to view measurements and plot or log data.

Supports the following model:

- U2741A 1[1]
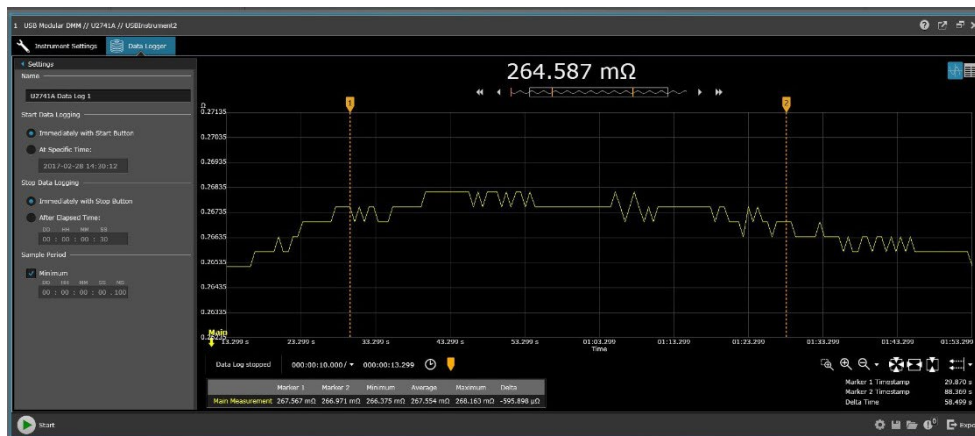
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[1] New Instrument purchases include a Node locked perpetual BenchVue app license.

USB Modular Function Generator Control Pro App

Model: BV0022B

Connect and configure your USB Modular function generator to create waveforms.

Supports the following model:

- U2761A [1]
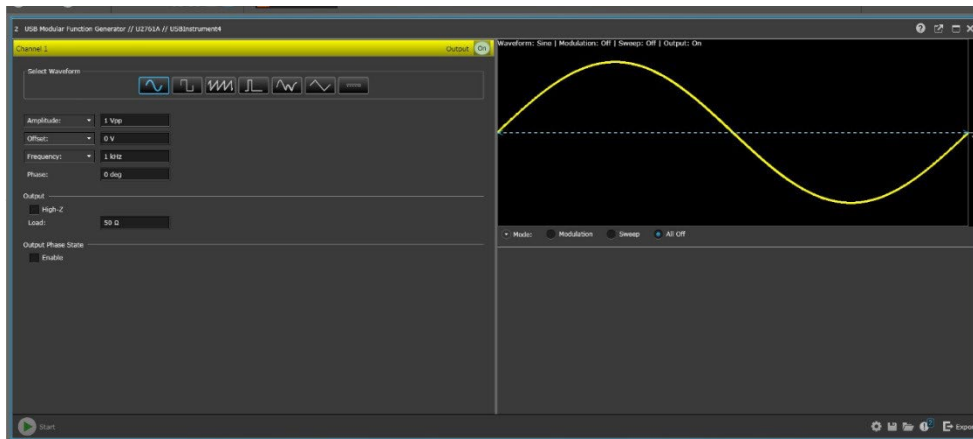
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[1] New Instrument purchases include a Node locked perpetual BenchVue app license.

USB Modular Source Measure Unit (SMU) Control Pro App

Model: BV0023B

Configure voltage and current source, range, and limits for USB Modular SMU channels and log data.

Supports the following models:

- U2722A [1]
- U2723A [1]
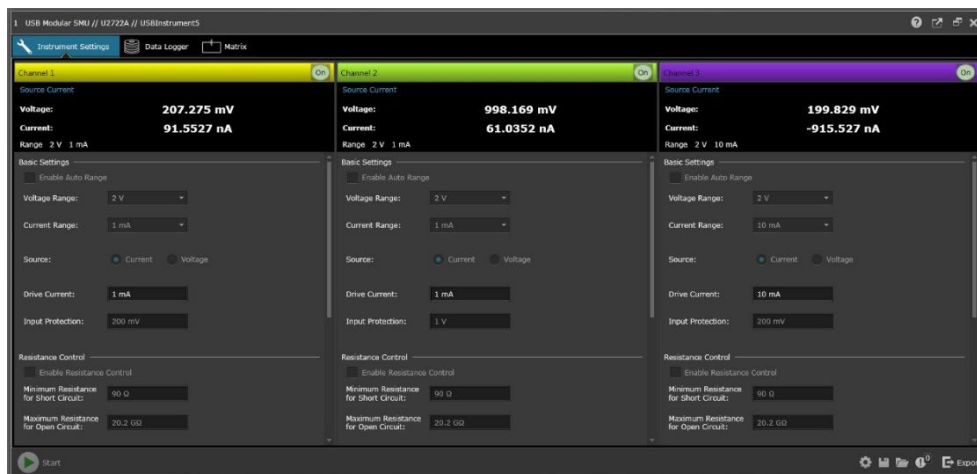
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[1] New Instrument purchases include a Node locked perpetual BenchVue app license.

USB Modular Oscilloscope Control Pro App

Model: BV0024B

Configure and control your USB Modular oscilloscope to capture screen images, record trace data and log measurements.

Supports the following models:

- U2701A [1]
- U2702A [1]
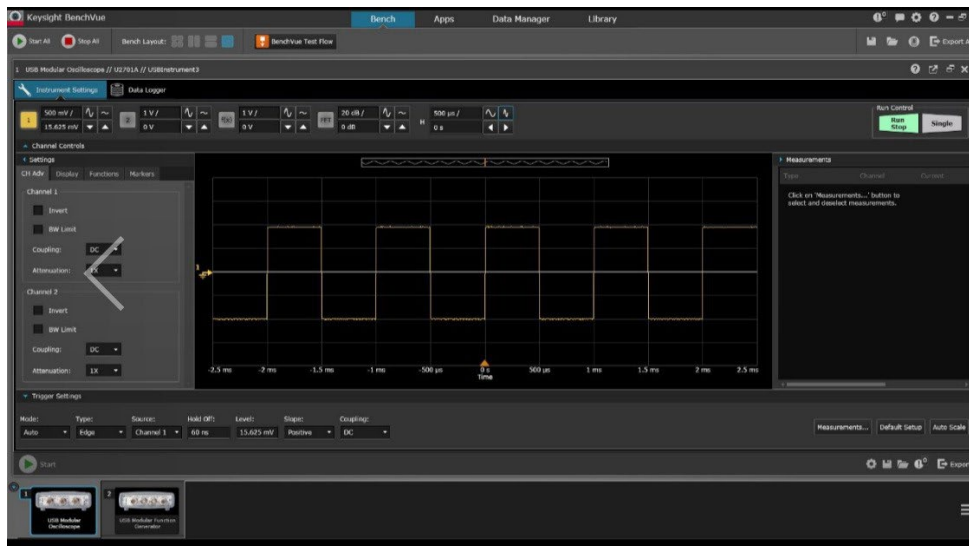
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[1] New Instrument purchases include a Node locked perpetual BenchVue app license.

USB Modular Data Acquisition Control Pro App

Model: BV0025B

Connect and configure your USB Modular DAQ channels to make measurements and log data.

Supports the following models:

- U2351A [1]
- U2352A [1]
- U2353A [1]
- U2354A [1]
- U2355A [1]
- U2356A [1]
- U2331A [1]
- U2531A [1]
- U2541A [1]
- U2542A [1]
- U2651A [1]
- U2652A [1]
- U2653A [1]
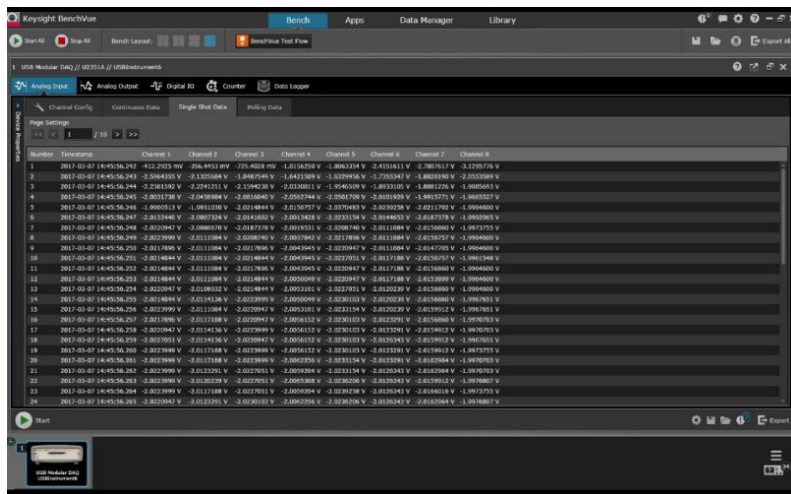
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[1] New Instrument purchases include a Node locked perpetual BenchVue app license.

USB Modular Switch Matrix App
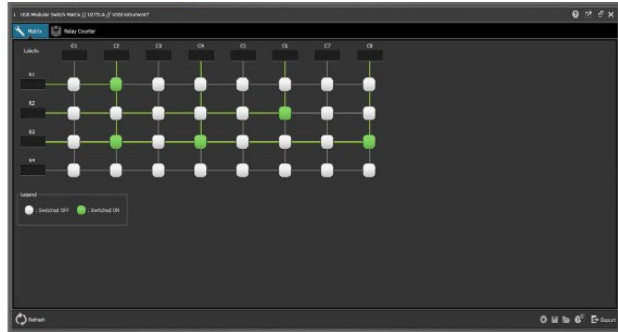
Easily open and close relays channels on your USB Modular switch matrix.

BenchVue Lab – Manager
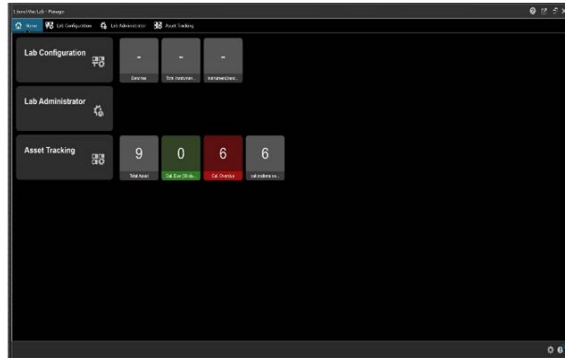
Centralized control and bench management of instruments in a lab environment. Model BV0110B.

BenchVue Lab – Client

Used with Lab Manager to control instruments and bench setups from a central PC Model: BV9111B.

BenchVue Education Lab and Control Collection

Model: BV9111B

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

Advanced Power Control and Analysis for a Single Instrument

Model: BV9201B

Connect easily and access your Power Supply's advanced sourcing and measurement features. Allows user to control a single instrument.

Supports the following models:

- N6705C
- N7900 Series
- RP7900 Series

Advanced Power Control and Analysis Supports up to Four Instruments

Model: BV9200B

Connect easily and access your Power Supply's advanced sourcing and measurement features. Allows user to control up to four instruments.

Supports the following models:

- N6705C
- N7900 Series
- RP7900 Series

Serial Control & Automation App

Available to download for free

Intuitively send receive commands from your serial devices to your PC. Control and automate serial devices within BenchVue along with your instruments.

BenchVue Software Supported Instruments

Each of the BenchVue apps support certain Keysight instrument models. These apps are updated regularly with additional models. For the most current supported instrument list,

visit: www.keysight.com/find/BenchVueInstruments

BenchVue Mobile [1]

Mobile apps let 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.

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[1] Available only on pre 2021 versions.

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 does not require 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.
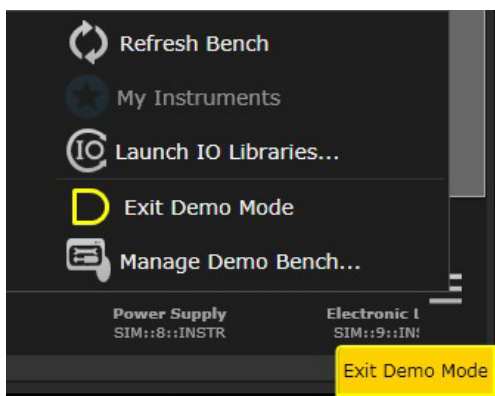
To assist in the evaluation of BenchVue with physical instruments, BenchVue includes an integrated help file and getting started guide to make setup quick and easy.

Supported Apps for BenchVue Mobile [1]

- 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
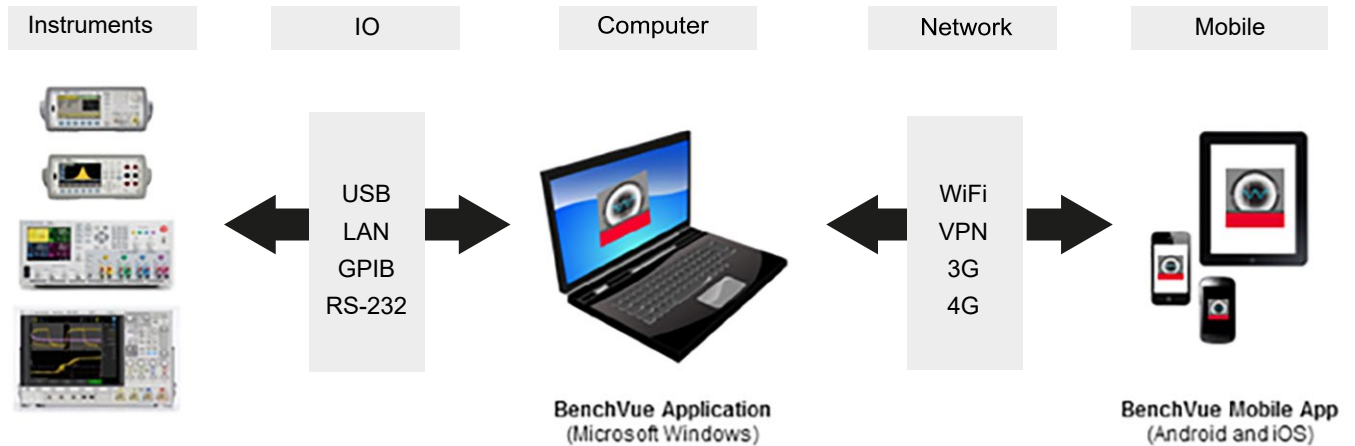VPN
3G
4G

BenchVue Application
(Microsoft Windows)

BenchVue Mobile App
(Android and iOS)

License Terms, License Types, and Support Subscriptions

You can now choose your license type (node-locked (fixed), transportable, floating (single site, single region, worldwide), or USB portable), license term (perpetual or subscription), and then choose the KeysightCare Software Support subscription period that best meets your needs. See more details below.

License terms

License term	Description
Perpetual	Licenses can be used indefinitely.
Subscription	Licenses can be used through the term of the subscription (6, 12, or 24 months).

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[1] Available only on pre 2021 versions.

License types

License type	Description
Node-locked	License can be used on one specified instrument/computer.
Transportable	License can be used on one instrument/computer at a time but may be transferred to another using Keysight Software Manager (internet connection required).
USB portable	License can be used on one instrument/computer at a time but can be transferred to another using a certified USB dongle (available for additional purchase, Keysight part number E8900-D10).
Floating	Networked instruments/computers can access a license from a server one at a time. Multiple licenses may be purchased for concurrent usage. Three types of floating license are available: **Single Site:** 1-mile radius from the server; **Single Region** [1]: Americas; Europe; Asia; **Worldwide** (export restriction identified in End User License Agreement (EULA))

KeysightCare Software Support subscriptions

Subscription	Description
KeysightCare Software Support	Perpetual licenses are sold with a 12 (default), 24, 36, or 60-month software support subscription. Support subscriptions may be renewed for a fee after that.
	Software subscription licenses include software support through the term of the license.

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[1] Americas (North, Central, and South America, Canada); Europe (European Continent, Middle Eastern Europe, Af rica, India); Asia (North and South Asia Pacif ic Countries, China, Taiwan, Japan)

Ordering New BenchVue Software Apps and Collections

Step 1: Choose your software product.

Step 2: Choose your license: perpetual or subscription.

Step 3: Choose your license type: node-locked, transportable, USB portable, or floating.

Step 4: Depending on the license term, choose your subscription or support duration.

Product	License type	License term			
		Perpetual			Subscription
		License		Support	License & support
S1234567A	Node-locked (fixed)	R-$x5y$-001-A	+	R-$x6y$-001-z	R-$x4y$-001-z
	Transportable	R-$x5y$-004-D	+	R-$x6y$-004-z	R-$x4y$-004-z
	USB Portable[1]	R-$x5y$-005-E	+	R-$x6y$-005-z	R-$x4y$-005-z
	Floating (single site)	R-$x5y$-002-B	+	R-$x6y$-002-z	R-$x4y$-002-z
	Floating (single region)	R-$x5y$-006-F	+	R-$x6y$-006-z	R-$x4y$-006-z
	Floating (worldwide)	R-$x5y$-010-J	+	R-$x6y$-010-z	R-$x4y$-010-z

z =	Duration	z =	Duration
L	12 months (default)	F	6 months
X	24 months	L	12 months
Y	36 months	X	24 months
Z	60 months	Y	36 months

[1] USB portable license requires a certified USB dongle (available for additional purchase, Keysight part number E8900-D10)

Additional Licensing Considerations

An Entitlement Certificate is delivered with each purchased software order. Follow the directions on the certificate to redeem your order for your license. License redemption requires an internet connection.

Many Keysight instruments include a Node-Locked Perpetual license with a new instrument purchase. These licenses are locked to your instrument and must be activated by connecting your instrument to BenchVue 2019 (or above) to activate. Visit www.keysight.com/find/IncludedBenchVue and www.keysight.com/find/find/benchvuelicensehelp for more information.

BenchVue Node-locked licenses purchased separately i.e., not included with an instrument, are node-locked to a PC and not to an instrument.

Floating License Server Requirements

Network Floating licenses require loading a vendor daemon on a license server. This server may be the same PC running BenchVue software or a separate server. Full installation instructions (5951-5739) and support are provided for compatible server operating systems:

Keysight license server software (lmgrd.exe and agileesofd.exe) is supported on: Microsoft Windows 7 Enterprise SP1(32-bit and 64-bit) Microsoft Windows 10 Creators Update (32-bit and 64-bit), 64-bit Red Hat Linux v7.0

Keysight License Manager 6 is supported on: 64-bit Microsoft Windows 7 Enterprise SP1, Microsoft Windows 10 Creators Update 64-bit

The license server software is supported on 32-bit and 64-bit Windows and 64-bit Linux systems, but the Keysight License Manager 6 utility is supported on 64-bit Windows systems only. To setup licensing on 32-bit Windows and on Linux systems, use the processes described in the Manual License Setup section of https://literature.cdn.keysight.com/litweb/pdf/5951-5739.pdf

System and Installation Requirements (get them R&D)

Computer operating system

Windows 10 & 8	Windows 10 32-bit and 64-bit (Professional, Enterprise, Education, Home versions) Windows 8, 8.1 32-bit and 64-bit (Professional, Enterprise, Core)
Windows 10 [1]	64-bit (version 1809 or later) [1]
Computer hardware	**Processor:** 1 GHz or faster (2 GHz or greater recommended), Intel Core i5 (or equivalent) **RAM:** 1 GB (32-bit) or 2 GB (64-bit) (3 GB or greater recommended) Intel Core i5 (or equivalent) [1] **RAM:** 8 GB [1] **Storage:** 900 MB free space for Windows [1]
Interfaces	USB, GPIB, LAN, RS-232
Display resolution	1280x1024 minimum recommended for single instrument view (higher resolution recommended for multiple instrument view) 1920 x 1080 minimum [1]
Data Exports to Excel or csv [1]	Pathwave supports Microsoft Office 2003 and later [1]

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[1] Applies to BenchVue Digital Multimeter, Oscilloscope, Power Supply and Function Generator apps only.

Additional requirements

BenchVue requires a VISA library 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 2021 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 9.0 and later. Android phone and tablets; Android 4.0.3 and later.

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

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
www.keysight.com/find/services

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