Keysight Technologies
BenchVue Software v3.0 (BV0000A)
Data capture simplified. Click. Capture. Done.

Data Sheet

KEYSIGHT
TECHNOLOGIES

Unlocking Measurement Insights

Simplified Measurement Viewing, Control and Capture

Keysight BenchVue software for the PC reinvents your bench testing by making it simple to connect and record results with your instruments with no programming. You will derive answers faster than ever by easily viewing, logging and exporting measurement data and screen images with a few clicks from a single environment.

Use BenchVue to:
– Visualize multiple measurements simultaneously
– Easily log data, screen images and system state
– Recall past state of your bench to replicate results

Save time with:
– Fast measurement data export in desired formats
– Rapidly prototype custom test sequences
– Quickly access manuals, drivers, FAQs and videos

From anywhere:
– Monitor and control your bench from mobile devices

Measurement Viewing

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.

Integrated Applications

BenchVue consists of different applications tailored to streamline your measurement tasks, and the most commonly used are included in every no cost download of BenchVue (BV0000A). Additional apps can be easily downloaded and installed via the Apps tab within BenchVue.

BenchVue Capabilities and Available Apps

BenchVue provides a wide array of capabilities depending on the instrument application within BenchVue being used. These capabilities will automatically vary based on the functionality of the instrument types and models connected to your PC running BenchVue software. Optional Pro version upgrades are available to extend BenchVue's functionality.

BenchVue app name	No cost version	Optional Pro upgrade
Test Flow	Included in BV0000A (demo mode only)	BV1001A
Digital Multimeter	Included in BV0000A	BV0001A
Function Generator	Included in BV0000A	BV0002A
Power Supply	Included in BV0000A	BV0003A
Oscilloscope	Included in BV0000A	BV0004A
Spectrum Analyzer	Available in BV0000A	BV0005A
Data Acquisition	Available in BV0000A	BV0006A
Power Meter	Available in BV0000A	BV0007A
Network Analyzer	Available in BV0000A	N/A
Electronic Load	Available in BV0000A	N/A

BenchVue Test Flow App

Rapidly prototype automated tests in BenchVue

Enhance your workflow with the BenchVue Test Flow app by creating custom test procedures within BenchVue software. The intuitive drag-and-drop interface enables you to quickly create simple test procedures or sequences that used to require days using traditional programming languages. Obtain a deeper understanding of your data using the built-in analysis tools that log and graph the data with selectable x-axis and y-axis formats. The BenchVue Test Flow app is installed with the BenchVue platform software.

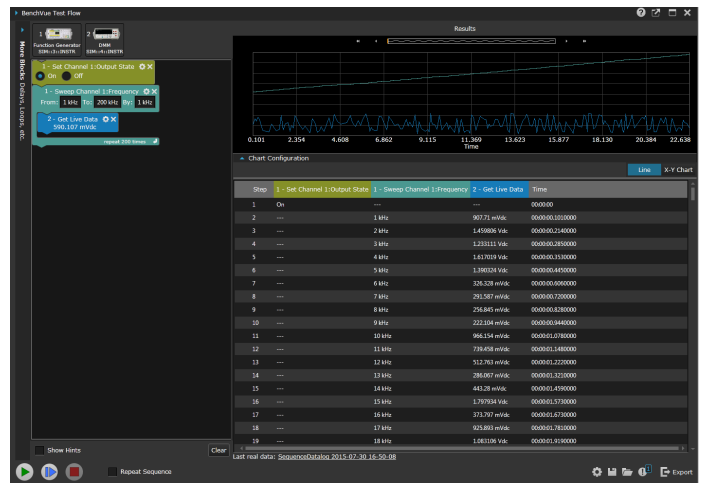With BenchVue Test Flow you can:
- Create custom test sequences fast and intuitively
- Combine multiple instruments into a sequence for better DUT characterization
- Drag-and-drop controls and for rapid test prototyping

Interpret results more quickly by:
- Validating your sequence setup using the preview tool
- Customizing your graphs to view measurements with different X-axis and Y-axis information
- Viewing data logs in tabular form
- Exporting data to popular tools such as Microsoft Excel, Microsoft Word and MATLAB for documentation or further analysis
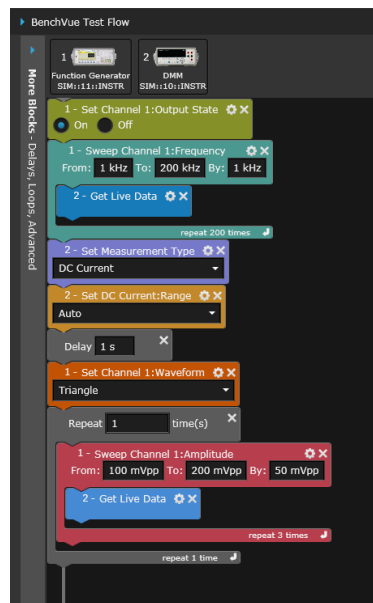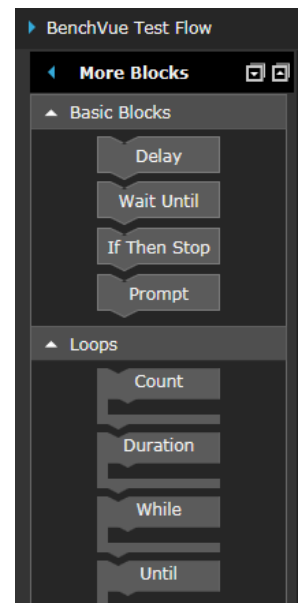

Visualize your Test Flow results in chart or tabular form.

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 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.

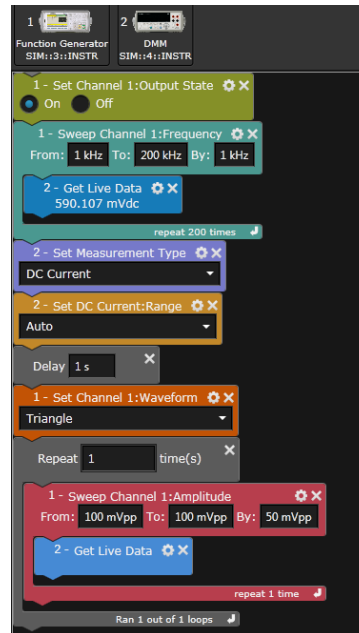Built-in blocks add flexibility for your test sequences.

BenchVue Test Flow App

Rapidly prototype automated tests with your BenchVue enabled instruments, log data, and analyze measurements.

BenchVue Test Flow Instrument App Support

BenchVue Test Flow has support for four instrument applications in BenchVue. Pro and Basic versions of the instrument apps are supported. More instruments and capabilities are added regularly. Update your instrument apps via the apps tab in BenchVue to get the latest features.

App name	Optional Pro upgrade model number
Digital Multimeter	BV0001A
Function Generator	BV0002A
Power Supply	BV0003A
Oscilloscope	BV0004A
Electronic Load	N/A

Supported functionality	
Sequence creation	– Unlimited blocks with simulated instruments (demo version)
	– Unlimited blocks with live instruments (Pro licensed version)
	– Start/step/stop sequence
Data visualization	– Line chart with mouse-over data points, pan
	– X-Y chart with selectable X-axis and Y-axis formats
	– Table
Measurement data log	– Unlimited measurement data logging
Export screen image	– Clipboard
	– File (PNG/JPEG/BMP)
Export data	– MATLAB
	– Microsoft Excel
	– Microsoft Word
	– CSV
Save and recall sequence	
Demo mode capabilities	Sequence creation with simulated instruments only.

Licensed version capabilities	
	Unlimited sequence creation with live instruments. Yearly renewable license.

Test Flow Application Support

App control/measurement blocks	

Test Flow app	Controls
	– Basic blocks
	  – Delay
	  – Wait until
	  – If then stop
	  – Prompt
	– Loops
	  – Count
	  – Duration
	  – While
	  – Until
	Advanced
	  – SCPI
	  – External

Digital Multimeter app	Controls
	– Instrument settings
	  – Measurement function and range selection
	  – Integration time (NPLC/resolution)
	  – Input impedance
	  – Auto zero
	  – Null state
	– App state
	Measurements
	– Measurement value

Function Generator app	Controls – Output control – Waveform selection – Instrument settings – Waveform: amplitude, offset, frequency, pulse width, edge timing, and phase – App state
Power Supply app	Controls – Output control – Instrument settings – App state Measurements – Channel voltage – Channel current
Oscilloscope app	Controls – Default setup – Auto scale – Channel toggle – App state Measurements – Frequency – Rise/fall time – Min/max – Peak to peak
Electronic Load app	Controls – Instrument settings – App state Measurements – Channel voltage, current, resistance

100 Ω DMM

BenchVue Digital Multimeter App

Control your digital multimeter to visualize measurements, perform data logging and annotate captured data.

Supported functionality

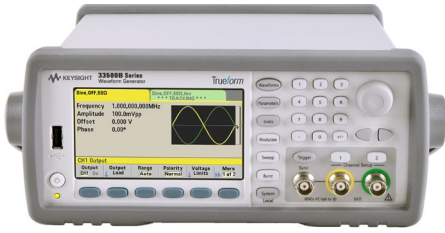| Instrument settings	– Measurement function and range selection
	– Integration time (NPLC/resolution)
	– Input impedance
	– Auto zero
	– Null state
Data visualization	– Chart with annotation, zoom in/out, auto scroll and markers
	– Histogram (Pro version only)
	– Table
Measurment data log	– Measurement data logging (1 hour duration)
	– Unrestricted logging with Pro version
	– Logger control
	– Limit testing with alerts (Pro version only)
Export screen image	– Clipboard
	– File (PNG/JPEG/BMP)
Export data	– MATLAB
	– Microsoft Excel
	– Microsoft Word
	– CSV
Save and recall instrument state	
Benchvue mobile support	

Supported models (10)

34401A   34405A   34410A   34411A   34420A   34450A   34460A   34461A   34465A   34470A

Pro version capabilities

Upgrading to the Pro version (model # BV0001A) provides histograms, digitizer capability (34410A, 34411A, 34460A, 34461A, 34465A and 34470A) and unrestricted data logging with limit checking and alerts.

BenchVue Function Generator App

Control your function generator to set waveform properties and load custom arbitrary waveforms from files or drag-and-drop from an oscilloscope.

Supported functionality

	– Output control
	– Waveform selection
	– Sine
	– Square
	– Ramp
	– Pulse
	– Arb
	– Triangle
	– Noise
	– PRBS (pseudo-random binary sequence)
	– DC
Instrument settings	– Waveform: amplitude, offset, frequency, and phase
	– Mode select:
	– Modulation:
	–– Type: AM/FM/PM/FSK/BPSK/SUM
	–– Source (INT/EXT/CH2)
	–– Shape (Sin/Squ/Tri/Ramp/Nramp/Noise/PRBS/Arb)
	–– DSSC (double sideband suppressed carrier)
	–– Depth and AM frequency settings
	– Sweep:
	–– Type (linear/log)
	–– Frequency set: start/center and stop/span
	–– Time set: sweep, hold and return
	– Burst:
	–– N cycle mode/gated mode, start phase, number of cycles, and period
	– Output:
	– Mode (normal/gated), polarity (normal/inverted) and load (discrete/Hi-Z)
	– Trigger:
	– Source (IMM/ext/bus/timer), delay
	– Sync output
	– Enable (on/off), polarity (normal/inverted), source (Ch1/Ch2) and mode (normal/carrier)
Export instrument properties to Microsoft Word	
Save and recall instrument state	

Supported models (17)

33210A   33220A   33250A   33521A   33522A   33509B   33510B   33511B   33512B   33519B   33520B   33521B   33522B
33611A   33612A   33621A   33622A
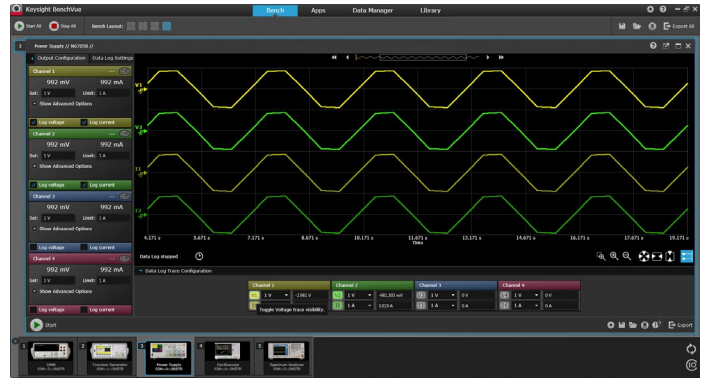
Pro version capabilities

Upgrading to the Pro version (Model # BV0002A) provides advanced waveform creation capabilities by linking to Keysight Waveform Builder Pro Software from BenchVue.

| V/I |
| PS |

BenchVue Power Supply App

Control your power supply to set parameters, visualize power output and data log changing voltage and current over time.

Supported functionality	
Output control	
Instrument settings	– Set voltage output and range
	– Set current limit, limit mode and range
	– Enable/disable over voltage protection with limits
Supply output data log	– Output data logging (1 hour duration)
	– Unrestricted logging with Pro version
	– Logger controls
	– Enable/disable voltage and current log
	– Output status alerts (Pro version only)
Export screen image	– Clipboard
	– File (PNG/JPEG/BMP)
Export data	– MATLAB
	– Microsoft Excel
	– Microsoft Word
	– CSV
Save and recall instrument state	
BenchVue mobile support	

Supported models (138)

E3631A, E3632A, E3633A, E3634A, E3640A, E3641A, E3642A, E3643A, E3644A, E3645A, E3646A, E3647A, E3648A, E3649A, E36102A, E36103A, E36104A, E36105A, E36106A, N6700A/B [1], N6701A [1], N6702A [1], N6705A/B [1], N6785A, N6786A, N6950A, N6951A, N6952A, N6953A, N6954A, N6970A, N6971A, N6972A, N6973A, N6974A, N6976A, N6977A, N7950A, N7951A, N7952A, N7953A, N7954A, N7970A, N7971A, N7972A, N7973A, N7974A, N7976A, N7977A, N5741A, N5742A, N5743A, N5744A, N5745A, N5746A, N5747A,N5748A, N5749A, N5750A, N5751A, N5752A,N5761A, N5762A, N5763A, N5764A, N5765A, N5766A, N5767A, N5768A, N5769A, N5770A, N5771A, N5772A, N8731A, N8732A, N8733A, N8734A, N8735A, N8736A, N8737A, N8738A, N8739A, N8740A, N8741A, N8742A, N8754A, N8755A, N8756A, N8757A, N8758A, N8759A, N8760A, N8761A, N8762A, N8920A, N8921A, N8922A, N8923A, N8924A, N8925A, N8926A, N8927A, N8928A, N8929A, N8930A, N8931A, N8932A, N8933A, N8934A, N8935A, N8936A, N8937A, N8940A, N8941A, N8942A, N8943A, N8944A, N8945A, N8946A, N8947A, N8948A, N8949A, N8950A, N8951A, N8952A, N8953A, N8954A, N8955A, N8956A, N8957A

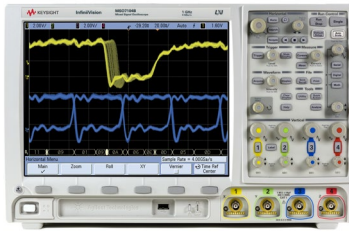SMUs: B2901A, B2902A, B2911A, B2912A, B2961A, B2962A

Pro version capabilities

Upgrading to the Pro version (model # BV0003A) provides unrestricted data logging and status alerts.

1. Modules that are compatible with these mainframes are supported.

BenchVue Oscilloscope App

Control your oscilloscope to quickly capture and annotate screen images, record trace data and data log measurements.

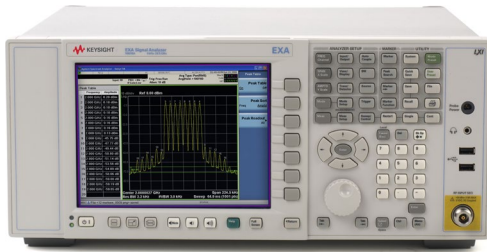| Supported functionality	
Instrument settings	– Auto scale – Measurements toggle – Run control – Vertical scale and offset – Channel toggle – Trigger controls – Default setup
Screen image	– Get current screen with image options – Auto refresh control – Annotation (drawing/color/font)
Trace data	– Get current traces – Display selection (ch/func/mem/digital bus) – Set requested points
Measurement data log	– Measurement data logging (1 hour duration) – Unrestricted logging with Pro version – Logger control – Limit testing (Pro version only) – Data log configuration
Export data log data	– MATLAB – Microsoft Excel – Microsoft Word – CSV
Export screen images	– Clipboard – File (PNG/JPEG/BMP) – E-mail – Microsoft Word
Export trace data	– HDF5 – MATLAB – Microsoft Excel – Microsoft Word – CSV
Wavegen capabilities for selected scopes	2000 X-Series, 3000 X-Series, 3000 T-Series, 4000 X-Series, 6000 X-Series
Save and recall instrument state	
BenchVue Mobile support	

Supported models (164) (MSO & DSO)

2000 X-Series, 3000 X-Series, 3000 T-Series, 4000 X-Series, Most 5000 Series, 6000 Series, 6000 X-Series, 7000A/B Series, 9000A Series, S-Series, most 90000 Series

Pro version capabilities

Upgrading to the Pro version (model # BV0004A) provides unrestricted measurement data logging with limit checking and alerts.

BenchVue Spectrum Analyzer App

Control your spectrum or signal analyzer to quickly capture and annotate screen images and log trace data.

Supported functionality	
Instrument settings	– Frequency
	– Bandwidth
	– Amplitude
	– Sweep
	– Mode preset
	– Sweep control
Screen image	– Get current screen with image options
	– Screen image logging (1 hour duration)
	– Unrestricted logging with Pro version
	– Annotation (drawing/color/font)
Trace data	– Get current traces
	– Trace data logging (1 hour duration)
	– Unrestricted logging with Pro version
	– Save trace data (CSV)
Export screen images	– Clipboard
	– File (PNG/JPEG/BMP)
	– E-mail
	– Microsoft Word
Export trace data	– MATLAB
	– Microsoft Excel
	– Microsoft Word
	– CSV
Save and recall instrument state	
BenchVue mobile support	

Supported models (26)
UXA N9040B, PXA N9030A, MXA N9020A, EXA N9010A, CXA N9000A, PSA E444xx, ESA E440xx and E4411B, BSA N9320B, N9322C, N9000B, N9010B, N9020B, N9030B, N9040B

Pro version capabilities
Upgrading to the Pro version (model # BV0005A) provides deep memory capture and unrestricted data logging of screen images and trace data.

DAQ

BenchVue Data Acquisition App

Control your 34970 or 34972 to data log and visualize measurements in a wide array of display options.

Supported functionality	
Module settings	– Slot selection
	– Mode control (scan, switch, inactive)
Configure channels	– Enable channel
	– Toggle
	– Naming
	– Measurement configuration
	– Function (DC voltage, AC voltage, period, frequency, 2-wire ohms, 4-wire ohms,
	temp types B, E, J, K, N, R, S, T, 2-wire RTD, 4-wire RTD, 2.2K therm, 5K therm, 10K therm
	– Range
	– Scaling
	– Toggle
	– Gain
	– Offset
	– Label
	– Alarm limits
	– Test condition
	– Test parameters
Measurement display options	– Data grid
	– Strip charts
	– High visibility readout display
	– Bar meter
	– Histogram
	– Alarm light panel
	– Background settings
Measurement data log	– Measurement data logging (8 hour duration)
	– Unrestricted logging with Pro version
	– Logger control
Export screen image	– Clipboard
	– File (PNG/JPEG/BMP)
Export data	– MATLAB
	– Microsoft Excel
	– Microsoft Word
	– CSV
Save and recall instrument state	

Supported models (2)	
34970A, 34972A	(Modules that are compatible with these mainframes are supported)

Pro version capabilities	
	Upgrading to the Pro version (model # BV0006A) provides unrestricted data logging.

BenchVue Power Meter App

-3.0 dBm
PM

Control your power meter to data log and visualize measurements in a wide array of display options.

Supported functionality

Instrument settings	– Preset select (DME, GSM, WCDMA, WLAN, LTE, etc.)
	– Instrument reset
	– Channel setup
	  – Mode, offset, frequency
	– Trace setup
	  – Units, scale configuration
	– Measurement setup
	  – Units, offset, feed setup, alerts, recorder
	– Trigger setup
	  – Mode, source, auto level, delay, slope type
	– Gate setup
	  – Start, length
	– Calibration
	  – Zero, calibration, calibration + zero
	– Corrections
	  – FDO, Gamma, S-parameter

Measurement display options	– Digital meter view – Analog meter view – Data log view – Trace view with markers and gate – Multilist view – Alert summary
Measurement data log	– Measurement data logging (1 hour duration) – Logger control
Export screen image	– Clipboard – File (PNG/JPEG/BMP) – E-mail
Export data	– MATLAB – Microsoft Excel – Microsoft Word – CSV
Save and recall instrument state	

Supported models (25)

U2021XA, U2022XA, U2041XA, U2042XA, U2043XA, U2044XA, U2049XA LAN

U2000A, U2001A, U2002A, U2004A, U2000B, U2001B, U2000H, U2001H, U2002H, U8481A, U8485A, U8487A , U8488A, N1911A, N1912A, N1913A, N1914A, N8262A [1]

Pro version capabilities

Upgrading to the Pro version (model # BV0007A) provides unrestricted data logging.

1.   These models will be supported April 1, 2016.

BenchVue Network Analyzer App

Quickly capture and annotate screen images and acquire trace data from your network analyzer for documentation and further analysis.
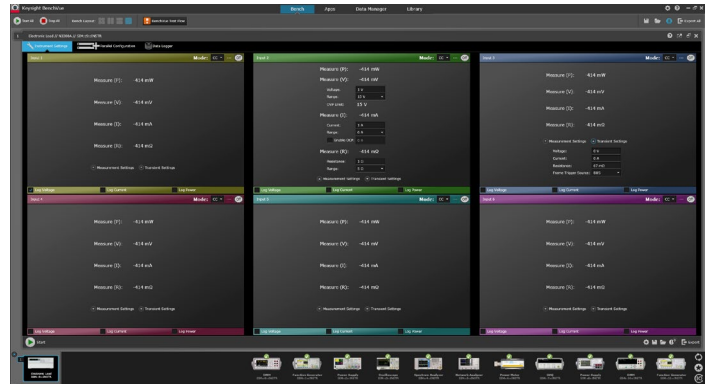
Supported functionality

Screen image	– Get current screen – Auto refresh control – Annotation (drawing/color/font)
Trace data	– Get current traces (16 upper limit) – Individual trace toggle – Formatted and corrected trace data selection – Formatted and corrected memory data selection
Export screen image	– Clipboard – File (PNG/JPEG/BMP) – E-mail – Microsoft Word
Export data	– MATLAB – Microsoft Excel – Microsoft Word – CSV
Save and recall instrument state	

Supported models (22)

ENA	E5080A, E5061B, E5063A, E5071C, E5072A
PNA	N5221A, N5222A, N5224A, N5245A, N5227A, N5225A
PNA-L	N5231A, N5232A, N5234A, N5235A, N5239A
PNA-X	N5241A, N5242A, N5244A, N5245A, N5247A, N5249A

BenchVue Electronic Load App

ELOAD

Control your electronic load to set parameters, visualize power input and data log changing voltage and current over time.

Supported functionality	
Electronic load control	
Instrument settings	– Set voltage/current/resistance values and range
	– Enable/disable over current
	– View over voltage protection with limits
	– Transient control with
	– Trigger sources: bus, line, hold, external, time
Eload data log	– Unrestricted voltage, current, power log
	– Logger controls
Export screen image	– Clipboard
	– File (PNG/JPEG/BMP)
Export data	– MATLAB
	– Microsoft Excel
	– Microsoft Word
	– CSV
Save and recall instrument state	
Parallel configuration	– SW configure load channels in parallel [1]
	– Pseudo naming of parallel channel for easy single setting/control

Supported models (4)
N3300A [2], N3301A [2], 6060B, 6063B

1. External hardware configuration necessary for parallel channels.
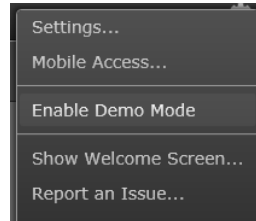2. Modules that are compatible with these mainframes are supported.

BenchVue Mobile

Mobile apps lets you monitor and respond to long running tests from anywhere. 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.
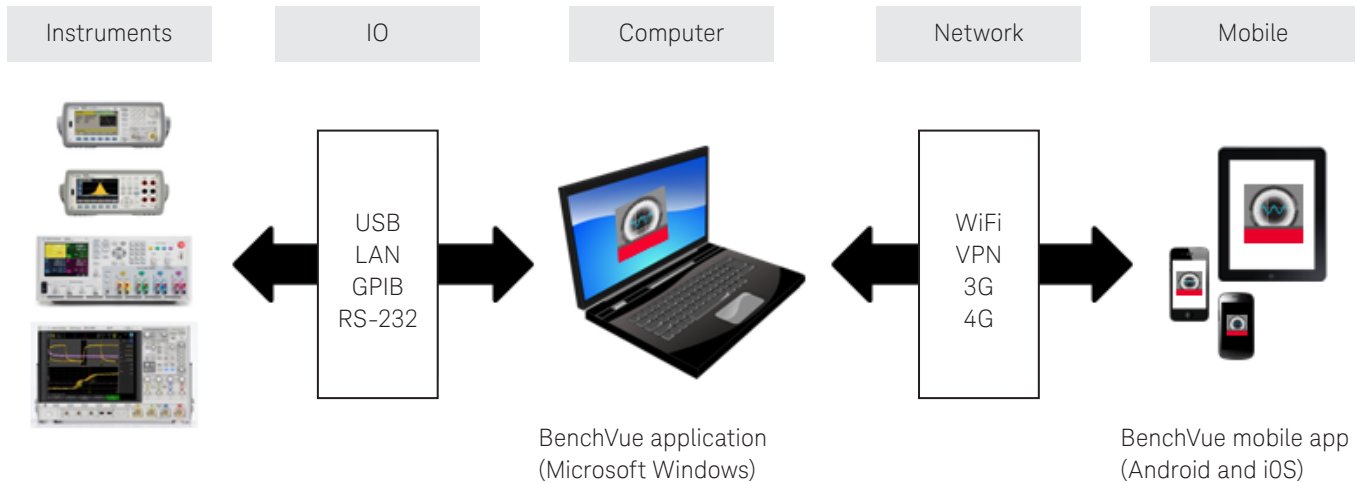
BenchVue Demonstration Mode

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 user manual 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)

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 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	1024 x 768 minimum for single instrument view (higher resolutions are recommended for multiple instrument view)

Additional requirements

BenchVue requires a VISA (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 16.3 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 6.0 and later. Android phone and tablets; Android 2.3.5 and later.

With BenchVue, It's as Simple as: Click. Capture. Done.

BenchVue software for PC

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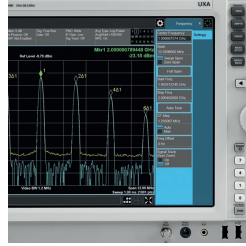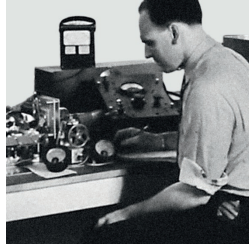– Utility software

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Singapore	1 800 375 8100
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