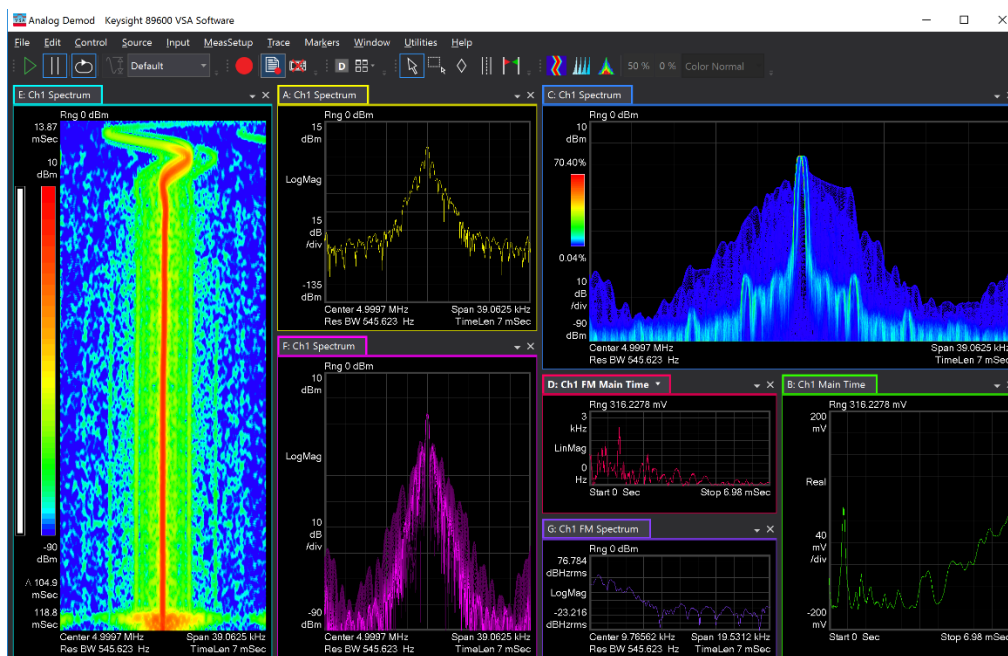# 89600 VSA Software

See Through the Complexity

Development becomes more complex when faster data rates intersect with today's crowded spectral environment. Finding a signal problem is essential—but achieving the clarity to pinpoint the answer is the crucial challenge. The 89600 VSA software is a comprehensive set of tools for demodulation and vector signal analysis. These tools enable you to explore virtually every facet of a signal and optimize your most advanced designs. As you assess the tradeoffs, the 89600 VSA helps you see through the complexity.

89600 VSA Software

Configure Your New Software

This step-by-step process will help you configure your new 89600 VSA software when making your initial order. See the upgrade section to learn how to add any of these options after initial purchase.

Beginning with **Step 1**, determine the license type you need.

Step 1: Select Desired License Type

Description	Basic vector signal analysis (VSA)	Requirements
License Type	Model-option	Option 200 is required. It provides: - Basic time and spectrum measurements - Analog demodulation of AM, FM, PM signals - Analysis of imported data files - Links to Keysight EDA SystemVue and ADS - Connectivity to hardware platforms - Power spectrum with PXIe VSA M9393A/M9391A
Transportable	89601B-200	
USB portable	89601BK-200	
Floating (single site)	89601BN-200	For floating license, the quantity of 89601BN-200 units purchased determines the maximum number of simultaneous users

Did you know…

Connectivity to over 45 Keysight instrument platforms, is a standard feature of Basic VSA (option 200). For a complete list of hardware platforms, visit www.keysight.com/find/89600_hardware.

License type definitions:

- **Transportable**: License may be used on one instrument/computer at a time but may be transferred to another using Keysight's online tools (Keysight Software Manager)

- **USB portable**: License may be used on one instrument/computer at a time but may be transferred to another using USB dongle. Purchase of the dongle, E8900-D10 hardware key-USB port FLEX10 is required along with 89601BK USB portable license. The non-writeable, not-memory dongle provides a unique host ID for license activation.

- **Floating** (single site): Networked instruments/computers can access a license from a server one at a time. For concurrent usage, multiple licenses may be purchased.

Step 2: Select Measurement Options

The quantity of any measurement option purchased should not exceed the option 200 (Basic VSA) quantity purchased.

Description	Option	Note
General Purpose		
Vector modulation analysis	AYA	Analysis of >40 modulation formats, including custom APSK and presets for communication formats like GSM/EDGE, ZigBee FSK, Bluetooth® BR, APCO25 and SOQPSK
Custom OFDM modulation analysis	BHF	Proprietary and pre-standard OFDM formats
Custom IQ modulation analysis	BHK	Proprietary and pre-standard, customized IQ constellation signals. Requires option AYA.
Channel quality measurements	BHL	Channel response measurements such as phase/magnitude response and multi-tone group delay.
Cellular Communications		
5G NR/Pre-5G modulation analysis	BHN	
LTE-Advanced FDD modulation analysis	BHG	Requires option BHD
LTE-Advanced TDD modulation analysis	BHH	Requires option BHE
LTE FDD modulation analysis	BHD	
LTE TDD modulation analysis	BHE	
NB-IoT modulation analysis	BHT	
3G modulation analysis bundle	B7N	Includes cdma2000, W-CDMA/HSPA+, 1xEV-DO, and TD-SCDMA/HSPA

Wireless Connectivity		
WLAN 802.11ax modulation analysis	BHX	Requires option BHJ
WLAN 802.11n/ac modulation analysis	BHJ	
WLAN 802.11a/b/g modulation analysis	B7R	Includes WLAN 802.11j/p
WiMAX™ 802.16 modulation analysis	B7Y	Mobile and Fixed
Radar analysis		
FMCW radar analysis	BHP	For multi-chirp linear FM modulated signals or automotive radar
Pulse analysis	BHQ	
Other Standard formats		
DOCSIS 3.1 modulation analysis	BHM	Downstream and upstream
TEDS modulation analysis	BHA	Includes TETRA2
RFID modulation analysis	BHC	Includes NFC formats

Configuration Example

In this example with 89601BN, 5 people can use the 89600 VSA software at the same time because of quantity of 5 option 200 floating licenses have been purchased. This means that at any one time, two users can make LTE FDD measurements because two LTE FDD option BHD licenses have been purchased, one user can make 5G NR/Pre-5G measurements because one 5G NR/Pre-5G option BHN license has been purchased, and two more users can use 89600 VSA software to make basic time and spectrum measurements (without LTE FDD or 5G NR/Pre-5G).

Description	Option	Quantity
Basic vector signal analysis	200	5
LTE FDD modulation analysis	BHD	2
5G NR/Pre-5G modulation analysis	BHN	1

Step 3: Select License Terms

License Terms	Perpetual License	12-month time-based license (TBL)
Transportable	89601B-xxx	89601B-xxx-1TY
USB portable	89601BK-xxx	Not available
Floating (single site)	89601BN-xxx	89601BN-xxx-1NY

- **Perpetual**: Use the software indefinitely, license does not expire.
- **Time-based**: Use the software throughout the term of the license.

Note: 89601BK USB portable license is only available with perpetual license term, no time-based license offering.

Update and Subscription Service

Protect your software investment.

A 12-month subscription to 89600 VSA software is included with each 89601B/BK/BN option 200 initial purchase. You may also purchase an additional 12-month subscription at the time of initial purchase or after the initial purchase, to gain immediate access to the latest features and enhancements for the 89600 VSA software (v13.0 or higher), after the initial 12-month subscription period expires.

To check that your software and license are up to date, follow these steps:

- Check the version number of your software by selecting Help > About in the 89600 VSA software toolbar and comparing that to the current version number found at www.keysight.com/find/89600_updates.

- If you do not have the current version of the 89600 VSA software, check your license version (YYYY.MMDD) by selecting Utilities > Licenses… in the 89600 VSA software toolbar. Compare this to the license version required for the current version available at www.keysight.com/find/89600_updates.

- If your license version is greater than or equal to the current license version, no new license is need. Simply download and install the new software version.

- If your license version is lower than the current version, order the 89601BU/BKU/BNU software update subscription service to update your software to the latest version.

Upgrade your Existing Software

All 89600 VSA software options can be added after initial purchase and are license-key enabled. Some require the latest software version. To learn more and upgrade your software, visit https://www.keysight.com/find/89600_upgrades.

To determine if you already have a licensed measurement option: For transportable licenses, go to the 89600 VSA toolbar and select Utilities > Licenses… > Options. The options you have installed are indicated with a Yes.

For floating licenses, check with your network manager to determine the option 200 quantity in your system.

Description	12-month software update subscription service	Note
Transportable	89601BU-012	Immediately update software to current version and provide 12-month of update subscription.
USB portable	89601BKU-012	
Floating (single site)	89601BNU-012	

PC Requirements

Any laptop, desktop or Windows-based instrument may be used to run the 89600 VSA software, as long as it meets or exceeds the following minimum requirements. For a list of the most current requirements, see www.keysight.com/find/89600-pc.

Operating system[1]	Microsoft Windows 7 Professional, Enterprise or Ultimate (64-bit) Microsoft Windows 8 Professional, or Microsoft Windows 10 Professional, Enterprise or Educational (64-bit)
CPU	1 GHz (>2 GHz recommended)
RAM	2 GB (16 GB recommended)
Video RAM	128 MB minimum (1 GB recommended)
Windows experience index	>5 (recommended)
Hard disk	3 GB minimum available
Additional drives	DVD or network access to load the software; license transfer requires network access or a USB memory stick
Interface support	LAN, GPIB, USB For power spectrum measurement (former option SSA), PCIe Express card interface to PXIe mainframe or an embedded PC M9036A/37A must be used. For 89601BK USB portable license, a USB port is necessary for license activation with a dongle (USB hardware key).
Browser	Internet explorer v9.0 or higher required for more reliable context sensitive online help functionality

[1] Running the 89600 VSA software in a virtual machine environment is not supported.

Floating License Server Requirements

The 89601BN floating license requires loading a vendor daemon on a license server. This server may be the same PC running the 89600 VSA software. Full installation instructions and support are provided for compatible server operating systems: Windows 7 Professional, Enterprise, Ultimate (64-bit); Windows Server 2008.

Visit www.keysight.com/find/89600vsa

Learn more at: www.keysight.com

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

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