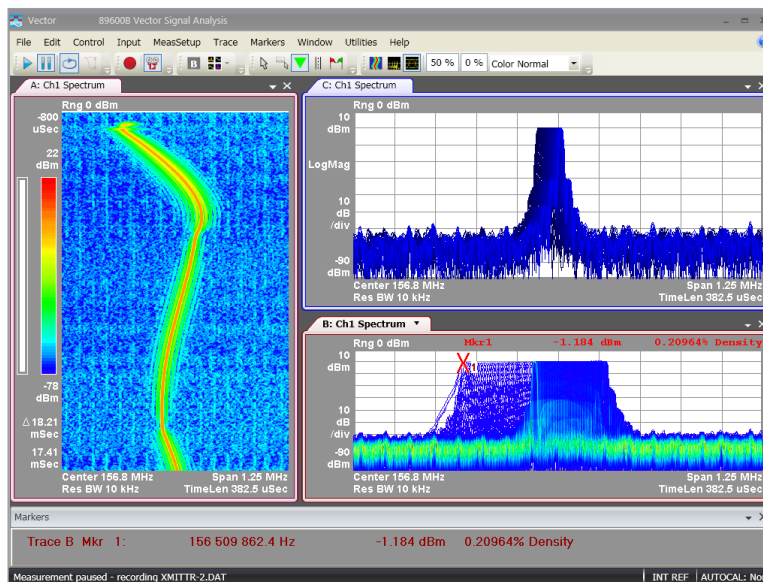


# Keysight Technologies

89600 VSA Software for Simulation  
Environments 89601 BE/89601 BNE



The Keysight Technologies, Inc. 89601BE/BNE VSA software is an essential simulation-only visualization companion to Keysight dataflow simulators in both SystemVue and ADS. It is designed for system architects, baseband modelers, and RF component designers doing virtual design verification in wireless, defense, and academic environments.

### See through the complexity in early stage design

A trusted modulated measurement experience for the simulation domain allows for higher productivity and greater insight

- Upgradeable to the full 89600 VSA software which comes with connectivity to more than 30 hardware platforms
- Superior use model brings measurement savvy into the simulation world, saving time and providing greater insight across workgroups
- Additional modulated trace types and measurements that supplement ADS or SystemVue
- Value-added signal processing for superior results that remain consistent with the test bench

## 89600 VSA Software for Simulation Environments (89601BE)

On the leading edge of design, signal interactions can cause unexpected results. Knowing there's a problem is relatively easy. Achieving the clarity to find the root cause is the real challenge.

Look to the Keysight 89600 VSA software for simulation environments, a complement to your SystemVue and ADS design solutions, for a window into what's happening inside complex wireless devices. With views of virtually every facet of a problem, our VSA tools let you find the "why?" behind unexpected signal interactions.

## Choosing between 89600 VSA software for simulation environments (89601BE/89601BNE) and 89600 VSA Software (89601B/89601BN)

The 89600 VSA software for simulation environments (89601BE/BNE) is ideal for evaluating and troubleshooting wireless signals in software-based simulation environments. The 89600 VSA software (89601B/89601BN) supports numerous hardware measurement platforms, provides the flexibility for more than 70 demodulation types, and includes sophisticated measurement tools essential to finding and fixing signal problems.

### Try before you buy!

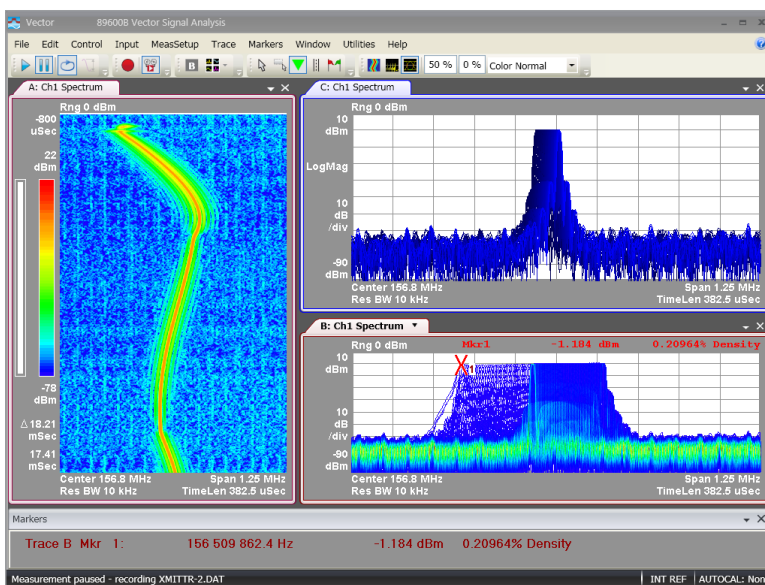
Download the 89601BE VSA software for simulation environments and use it free for 45 days to do analysis along with Keysight SystemVue or Keysight Ptolemy, or use our recorded Help signals by selecting File > Recall > Help > on the software toolbar. Request your free trial license today at

[www.keysight.com/find/89601BE](http://www.keysight.com/find/89601BE)

## Key Capabilities for EEs of EDA Users

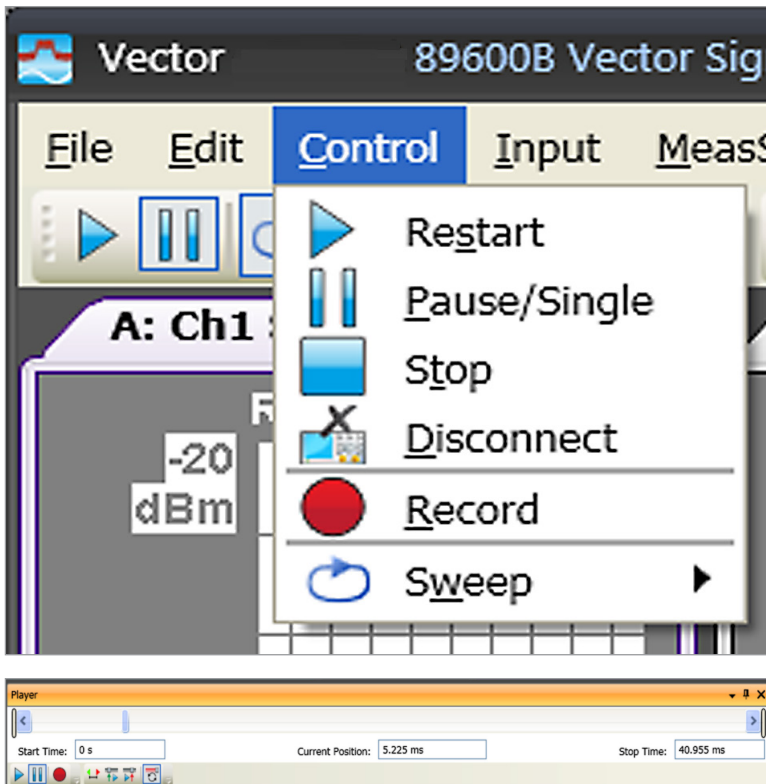
Superior use model brings measurement savvy into the simulation world, saving time and providing greater insight across workgroups

- Directly compare simulation vs. test results using identical algorithms and assumptions
- Tools like digital persistence, cumulative history, and spectrograms provide superior visualization and plotting, for easier troubleshooting, documentation, and design insight



Powerful visualization and measurement tools highlight subtle and transient events like this radio turn-on event. The spectrogram (Trace A) is well-suited for evaluating spectrum changes. Digital persistence (Trace C) is well-suited for analyzing repeating signal events. Cumulative history (Trace B) has a much longer buffer and works well for capturing infrequent signal events.

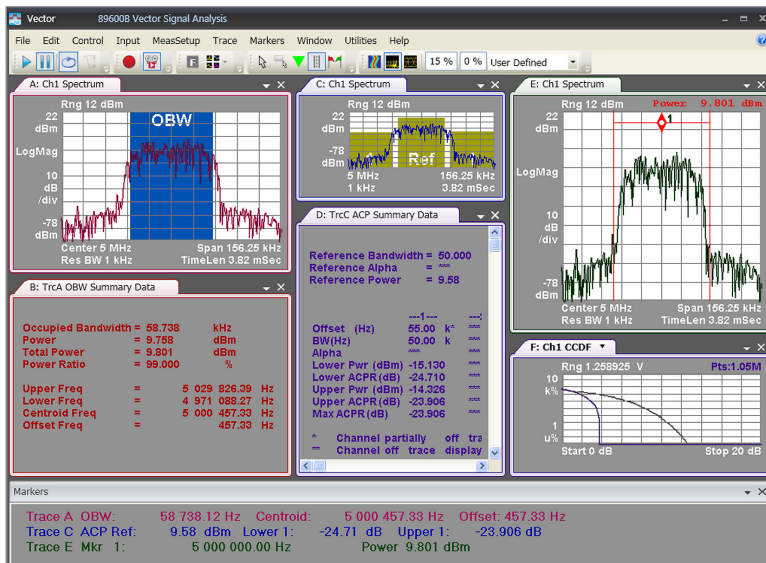
- Enable dynamic, interactive “run-time tuning” in both SystemVue and ADS Ptolemy – just like on a real test bench
- Especially useful in early R&D, you can capture and record transient events and compare signal output after design iterations. You can even play back captured waveforms as simulation signal sources for both RF and DSP verification
- Share anywhere on a simulation network or take it with you- you don't need to be chained to the physical testing environment
- Pinpoint problems with arbitrary arrangement and sizing of trace windows. You can also assign any measurement to any trace. The new multi-measurement capability gives you the power to save/run multiple measurements at the same time with unlimited traces and unlimited markers on each trace.



The 89600 VSA software lets you record signals. Using familiar recording controls, you can replay and analyze the signal as though it were a live measurement.

## Additional modulation trace types and measurements that supplement ADS or SystemVue

- Constellation, trellis, IQ trajectory, and eye
- EVM, EVM spectrum, I-Q errors, and group delay
- PDF, CDF, CCDF, and auto-correlation
- Spectrogram
- 3D waterfall
- Gated, mirrored, and corrected time and frequency domain traces
- Trace persistence and trace history for dynamic events
- Measure multiple parameters off the same complex envelope data stream
- Integrated bandwidth functions
  - Total band power
  - Occupied bandwidth
  - Adjacent channel power



The 89600 VSA software includes a range of flexible markers to measure signal performance. Choose from fixed, normal, delta, band power and gate time marker functions, plus special markers providing additional tabular information for ACP, OBW, and limits.

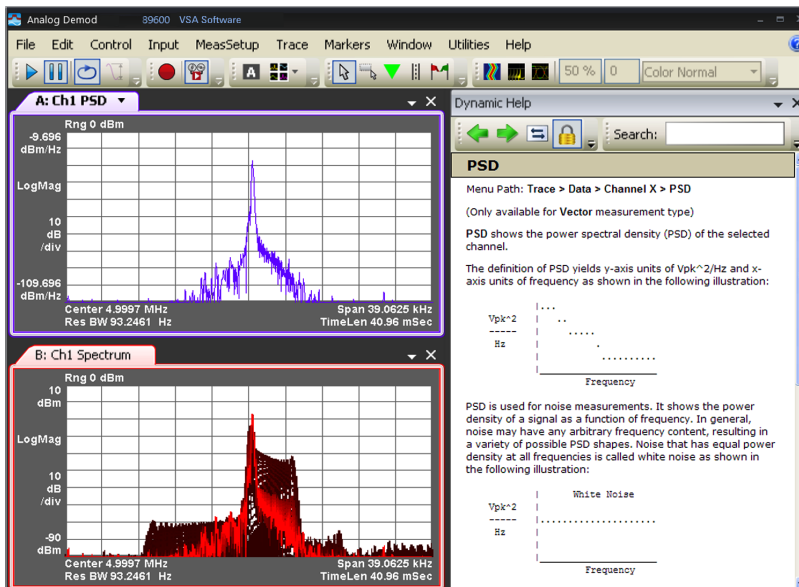
- Save & recall .setx configuration files for convenience and consistency

## Value-added signal processing for superior results that remain consistent with the test bench

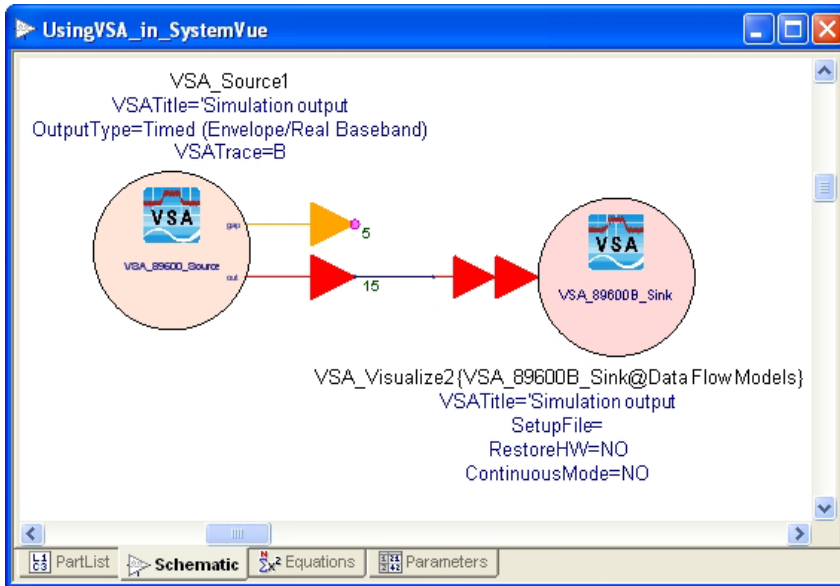
- Limit testing
- Coordinated marker and marker-search functions across up to 20 windows
- User-controlled digital filtering and decimation
- Demodulation of 37 common digital modulation formats, plus AM, FM, FSK, Zigbee, shaped offset QPSK, and more
- Averaging, smoothing, and resolution bandwidth effects
- Optional symbol clock recovery, adaptive signal equalization, and IQ re-normalization correct basic linear errors to give a truer picture of received signal performance – critical for analog designers who don't have their own baseband reference receiver in the ADS or SystemVue environment.

## Use the Dynamic context-sensitive help to answer your “how to” questions:

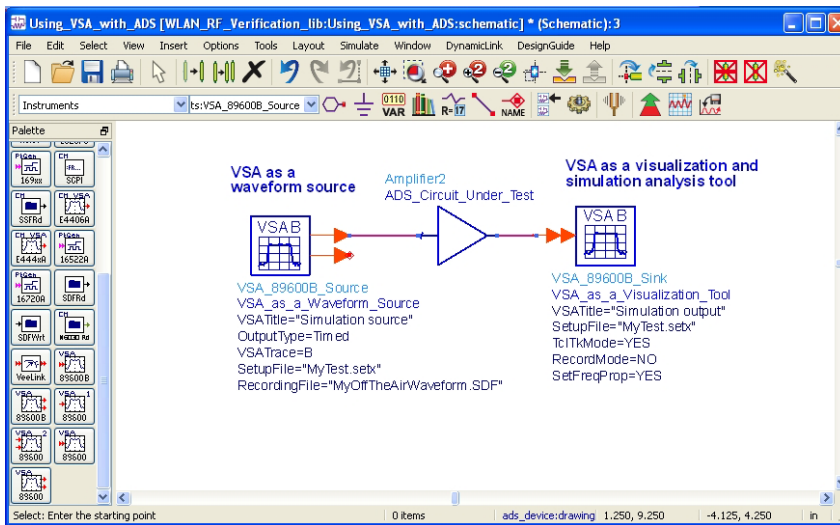
- The built in Dynamic help guides you through the product and its features. Just hover your mouse on the “area of interest” and the relevant help appears on the screen
- The help text includes information about new demodulations, parameters to consider, setting up the measurements and even what to expect in the results



Hover your mouse over a trace or menu and Dynamic Help will provide you with an instant display of user documentation. The content can be locked to show your desired information, and the Help window detached and placed anywhere on your workspace.



Simplify design using the 89600 VSA software within the SystemVue environment.



Keysight ADS with the 89600 VSA software.

## PC/Software Requirements

Any laptop or desktop PC may be used to run the

### 89601BE/89601BNE

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](http://www.keysight.com/find/89600-pc)

Operating system	Microsoft Windows XP Professional SP3 (32 bit), Microsoft Windows 7 Professional, Enterprise, or Ultimate (32 bit or 64 bit)
Cores	Multi Core (number of cores = number of concurrent measurements + 1)
Windows experience index	> 5 (recommended)
Hard disk	3 GB minimum available
Additional drives	DVD to load the software; license transfer requires network access or a USB memory stick
Interface support	LAN, GPIB, USB, or FireWire interface (VXI HW only) <sup>2</sup>
Browser	Internet explorer V7.0 or higher
Simulation software	SystemVue 2011.03 SP1 or later or ADS 2011.05 or later with the ADS Ptolemy option

1. For a list of supported IEEE-1394 (FireWire) interfaces, visit [www.keysight.com](http://www.keysight.com) and search the FAQ's for information on "What type of IEEE-1394 interface can I use in my computer to connect to the 89600S VXI hardware?"
2. If using VXI and Windows 7, only 32-bit operation supported.
3. Running the 89600 VSA software in a virtual machine environment is not supported.



## Ordering Information

Description	Product-option	
	Transportable License	Floating License
89600 VSA software for simulation environments	89601BE	89601BNE
Basic VSA and demodulation capability	89601BE-244	89601BNE-244
Upgrade 89601BE to 89601B	89601BE-245	89601BNE-245
Revision to current for Option 244	89601BE-R2C	89601BNE-R2C

## Additional Resources

### Literature

*89600 VSA Software, Brochure*, literature number 5990-6553EN

*89600 VSA Software, Configuration Guide*, literature number 5990-6386EN

*89601B/BN-200 Basic VSA and -300 Hardware Connectivity, Technical Overview*, literature number 5990-6405EN

*89601B/BN-105 Link to EEsof ADS/SystemVue, Technical Overview*, literature number 5990-6410EN

### Web

To learn more about the 89600, visit Keysight's website at [www.keysight.com/find/89601BE](http://www.keysight.com/find/89601BE)



**myKeysight**

[www.keysight.com/find/mykeysight](http://www.keysight.com/find/mykeysight)

A personalized view into the information most relevant to you.



[www.axiestandard.org](http://www.axiestandard.org)

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



[www.lxistandard.org](http://www.lxistandard.org)

LAN eXtensions for Instruments puts the power of Ethernet and the Web inside your test systems. Keysight is a founding member of the LXI consortium.



[www.pxisa.org](http://www.pxisa.org)

PCI eXtensions for Instrumentation (PXI) modular instrumentation delivers a rugged, PC-based high-performance measurement and automation system.



**Three-Year Warranty**

[www.keysight.com/find/ThreeYearWarranty](http://www.keysight.com/find/ThreeYearWarranty)

Keysight's commitment to superior product quality and lower total cost of ownership. The only test and measurement company with three-year warranty standard on all instruments, worldwide.



**Keysight Assurance Plans**

[www.keysight.com/find/AssurancePlans](http://www.keysight.com/find/AssurancePlans)

Up to five years of protection and no budgetary surprises to ensure your instruments are operating to specification so you can rely on accurate measurements.



[www.keysight.com/quality](http://www.keysight.com/quality)

Keysight Technologies, Inc.  
DEKRA Certified ISO 9001:2008  
Quality Management System

**Keysight Channel Partners**

[www.keysight.com/find/channelpartners](http://www.keysight.com/find/channelpartners)

Get the best of both worlds: Keysight's measurement expertise and product breadth, combined with channel partner convenience.

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](http://www.keysight.com/find/contactus)

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Mexico	001 800 254 2440
United States	(800) 829 4444

**Asia Pacific**

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Hong Kong	800 938 693
India	1 800 112 929
Japan	0120 (421) 345
Korea	080 769 0800
Malaysia	1 800 888 848
Singapore	1 800 375 8100
Taiwan	0800 047 866
Other AP Countries	(65) 6375 8100

**Europe & Middle East**

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Luxembourg	+32 800 58580
Netherlands	0800 0233200
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	Opt. 3 (IT)
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For other unlisted countries:  
[www.keysight.com/find/contactus](http://www.keysight.com/find/contactus)  
(BP-07-10-14)

