Agilent 89600 Series Vector Signal Analyzers

Configuration Guide

For engineers working with today's emerging broadband communication systems, the Agilent 89600 series vector signal analyzers (VSAs) are the indispensable tool for basic research, product development, manufacturing and even field testing.

The 89000 VSAs may be ordered as pre-configured standard vector signal analyzers or as user-configured, factory integrated systems. This configuration guide contains the instructions and information required to configure a factory integrated VSA system. Configuring a system provides maximum flexibility for customers who want to determine the configuration of each piece of hardware and software that goes into their system. Pre-configured analyzers are designed to meet the needs of users who want the convenience of turnkey instrument-like ordering. Details of the pieces provided in the pre-configured, standard systems are included later in this guide.

Contents

Agilent Technologies

Custom configuring your 89600

If the standard VSA systems do not meet your needs, you can configure a VSA system that does and Agilent will integrate it for you.
The following steps will help you configure your system. We recommend you read the instructions for each step carefully. If you have questions, please contact your local Agilent representative.

Step 1 – Specify system reference model number

By including the no-cost system reference model number 89600S (quantity 1), you insure your order is integrated at the factory before it is shipped to you. Integration includes loading the operating system and analysis software on the system disk (if a controller is included in your configuration), setting all module addresses, inserting the modules in the mainframe and testing the system.

Step 2 – Choose one system controller

You have three choices for a system controller. If you already own a PC (desktop or laptop) and want to use it to control your system, go to step 2A. If you want to purchase a laptop PC from Agilent to use as a controller, go to step 2C. If you want the portability and compactness provided by housing the controller in the VXI mainframe, go to step 2B.

Step 2A – To use your own PC as a controller select from the following:
You can control the 89600S VSA system with your desktop or laptop PC as long as it meets the requirements outlined in the "User-supplied controller requirements" section of this configuration guide. You must also order one of the IEEE-1394 PC link to VXI interface configurations shown. *Go to step 3.*

Component	Order number	Notes
VSA system reference	89600S	Required

Component	Order number	Notes
VXI I/O (required):		
IEEE-1394 PC link to VXI	E8491B	Required to link user-supplied laptop or desktop PC with a VSA system. Provides VXI module and cable, assumes your PC has IEEE-1394 I/O built-in.
IEEE-1394 PC link to VXI with PCI interface	E8491B-001	Links user-supplied desktop PC with a VSA system. Provides VXI module, cable, and PCI card for desktop. Required for desktop PC only. (For laptop links, see www.agilent.com/find/iolib)

Step 2B – To use a VXI embedded controller, select from the following: This VXI form factor PC fits in the system's VXI mainframe. Agilent loads the software and tests the controller with the 89600 VSA system before shipment. A user interface kit (keyboard, mouse, etc.) and a monitor must also be ordered. All other choices are optional. *Go to step 3.*

Component	Order number	Notes
Controller (required):		
VXI embedded controller	E9851A	This controller requires a 6- or 13-slot VXI mainframe.
Add 128 MB RAM memory	E9851A-001	Must be ordered with controller for proper software operation.
User interface kit (one required):		
Windows PC user interface kit	UIKITPC	Provides localized keyboard and two-button mouse. Localization option must also be ordered
Taiwan - Chinese localization	UIKITPC-ABO	
U.S. - English localization	UIKITPC-ABA	
German localization	UIKITPC-ABD	
French localization	UIKITPC-ABF	
Japanese localization	UIKITPC-ABJ	
Norwegian localization	UIKITPC-ABN	
Swedish localization	UIKITPC-ABS	
UK English localization	UIKITPC-ABU	
Monitor (one required):		
17″ color monitor	MON17	
19″ color monitor	MON19	
21″ color monitor	MON21	
15″ LCD monitor	MONLCD1	
Peripherals (optional):		
External desktop disk module	EXTHD	
External desktop DVD/ CDROM drive	EXTDVD	

Step 2C – To use an Agilent supplied laptop PC as a controller, select the following (available in the U.S. only): This selection is for customers who want Agilent to provide a laptop PC to control their VSA system. Agilent loads the software and tests the laptop with the 89600 VSA system before shipment. You must also order an IEEE-1394 PC link to VXI interface to link the laptop to the VSA system. *Go to step 3.*

Component	Model number	Options	Notes
Controller (required):			
Agilent supplied laptop PC controller with IEEE-1394 interface	LTPC1		Available most places, worldwide.
IEEE-1394 PC link to VXI	E8491B		Required to link laptop PC and VSA system.

Step 3 – Select software configuration

Component	Order number	Notes
VSA software (required):		
VSA software	89601A	Includes one year of software support
	89601A-100	Basic vector signal analysis option. One required per system. Note: not required for upgrades.
To add VSA software options, choose from the following:		
Vector modulation analysis	89601A-AYA	
CDMA modulation analysis	89601A-B7N	Requires 89601A-AYA.
802.11A and HIPERLAN/2 OFDM modulation analysis	89601A-B7R	Requires 89601A-AYA.
Dynamic link to EEsof/ADS	89601A-105	Requires 89601A-AYA.
To add VSA software support contract:		
89601AS		Software support service. One year of software support included automatically with purchase of 89601A VSA software
Software support contract	89601A-0RU	One month of software support. Must order at least 12 months but no more than 23 months. Provides automatic upgrade to all revisions released during length of contract. If you already own a VSA, this option also provides immediate upgrade of your 89601A software and options to current release.

Step 4 – Select a baseband, IF or RF configuration

Step 4A – For a VXI baseband (DC – 40 MHz) VSA, select from the following:

A baseband VSA system must have one baseband input module (89606B) and at least one digitizer (E1438A) with a minimum of 144 MB of memory. Continue to step 4B if you also want a RF unit.

Component	Order number	Notes
Baseband input module (required):		
Baseband input module	89606B	For 1 or 2 baseband channels
Baseband digitizer (one required):		
100 MSa/s ADC, 144 MB memory	E1438A-144	Same as option 89610-144
100 MSa/s ADC, 288 MB memory	E1438A-288	Same as option 89610-288
100 MSa/s ADC, 1.2 GB memory	E1438A-001	Same as option 89610-001
To add a second DC-40 MHz baseband input channel, with necessary additional cables, choose one (memory size must match first channel):		
100 MSa/s ADC with standard 18 MB memory Add 144 MB time capture memory Cabling for second channel	E1438A E1438A-144 E1438A-610	Equivalent to 89610A-145
100 MSa/s ADC with standard 18 MB memory Add 288 MB time capture memory Cabling for second channel	E1438A E1438A-288 E1438A-610	Equivalent to 89610A-289
100 MSa/s ADC with standard 18 MB memory Add 1.2 GB time capture memory Cabling for second channel	E1438A E1438A-001 E1438A-610	Equivalent to 89610A-002

Step 4B – For a VXI IF (52 MHz–88MHz) VSA, select from the following:

An IF VSA system must have one digitizer module (E1439A) with a minimum of 144 MB of memory.

Component	Order number	Notes
RF input module	89605B	One required. Tuner module not required.
IF cable set	89605B-611	Includes SMA cable and BNC to SMA adapter.
RF digitizer (one required):		
95 Msa/s ADC	E1439A	Standard 89611A-144
Add 144 MB memory	E1439A-144	
95 Msa/s ADC	E1439A	Standard 89611A-288
Add 288 MB memory	E1439A-288	
95 Msa/s ADC	E1439A	Standard 89611A-001
Add 1.2 GB memory	E1439A-001	
RF modules (both required):		
20-2700 MHz RF tuner module	E2730A	
RF input module	89605B	

Step 4C – For a VXI RF (dc–2700 MHz) VSA, select from the following:

A RF VSA system must have one RF input module (89605), one RF tuner module (E2730A), and one digitizer module (E1439A) with a minimum of 144 MB of memory.

RF digitizer (one required):		
95 Msa/s ADC	E1439A	Standard 89640A-144
Add 144 MB memory	E1439A-144	
95 Msa/s ADC	E1439A	Standard 89640A-288
Add 288 MB memory	E1439A-288	
95 Msa/s ADC	E1439A	Standard 89640A-001
Add 1.2 GB memory	E1439A-001	
RF modules (both required):		
20-6000 MHz RF tuner module	E2731A	
RF input module	89605B	

Step 4D – For a VXI RF (dc–6000 MHz) VSA, select from the following:

A RF VSA system must have one RF input module (89605B), one RF tuner module (E2731A), and one digitizer module (E1439A) with a minimum of 144 MB of memory.

RF digitizer (one required):		
95 Msa/s ADC	E1439A	Standard 89641A-144
Add 144 MB memory	E1439A-144	
95 Msa/s ADC	E1439A	Standard 89641A-288
Add 288 MB memory	E1439A-288	
95 Msa/s ADC	E1439A	Standard 89641A-001
Add 1.2 GB memory	E1439A-001	

Step 5 – Select a mainframe

All VXI VSA systems must have a mainframe. To select a mainframe, you must know the number of mainframe slots your custom system will use. The worksheet below will help you determine the minimum number of slots needed for your configuration. Step 5A will guide you through selecting a mainframe with enough slots.

Component		Model number	Slots per module	X	Quantity of modules ordered	=	Slots needed
Controller	VXI embedded controller (step 2B)	E9851A	2	X		=	
	IEEE-1394 PC link to VXI with or without E8491B-001 (step 2A or C)	E8491B	1	X		=	
Baseband input module (from Step 4A)	Baseband input module	89606B	1	X		=	
Baseband digitizer (from Step 4A)	100 MSa/s ADC with or without options E1438A-144, -288, -001, or -610	E1438A	1	X		=	
RF modules	20-6000 MHz RF tuner module	E2731A	1	X		=	
(from Step 4B/C/D)	20-2700 MHz RF tuner module	E2730A	1	X		=	
	RF input module	89605B	1	X		=	
RF digitizer (from Step 4B/C/D)	95 MSa/s ADC, with options E1439A-144, -288, or -001	E1439A	1	X		=	
			Total number of mainframe slots required (sum of slots needed)				

Step 5A – Select a mainframe

Use the "total number of mainframe slots required" determined in the worksheet, to guide your selection of a mainframe. The number of slots provided in the mainframe is given in the Component column.

Component	Order number	Notes
Mainframe (one required): (All options listed are required))		
4-slot portable VXI mainframe	E8408A	133 mmH x 362mmW x 558 mmD; 8.6 kg
Installed backplane connector	E8408-80900	
Enhanced current supply	E8408A-001	175 W usable power. Does not support E9851A embedded controller, step 2B.
6-slot C-size VXI mainframe	E1421B	222mmH x 234mmW x 426mmD; 13.9 kg. 450 W (maximum) power supply
Backplane connector shield	E1421-80921	
13-slot C-size VXI mainframe	E8401A	352 mmH x 428 mm W x 631 mm D; 20 kg; 550 W power supply
Backplane connector shield	E1401-80918	
13-slot C-size VXI mainframe	E8403A	352 mmH x 428 mm W x 631 mm D; 20 kg; 1000 W power supply
Backplane connector shield	E1401-80918	
13-slot C-size VXI mainframe	E8404A	352 mmH x 428 mm W x 631 mm D; 20 kg; 1000 W power supply, including status display
Backplane connector shield	E1401-80918	

Configuration examples

Example 1:

To configure a 2.7 GHz VSA system with a VXI embedded PC, for use in the UK, that includes vector modulation analysis software, one RF channel, and the maximum high-speed digitizer memory, order:

Quantity	Order	Slots number	Description required
1	**89600S**	**0**	**Integrate one 89600S VSA consisting of:**
1	E9851A	2	VXI embedded PC
1	E9851A-001	0	Add 128 MByte RAM (total of 256 MB)
1	UIKITPC	0	Windows PC user interface kit
1	UIKITPC-ABU	0	UK localization
1	MON17	0	17" color monitor
1	89601A	0	Vector signal analysis software
1	89601A-100	0	Basic vector signal analysis
1	89601A-AYA	0	Vector demodulation analysis
1	89605B	1	RF input module
1	E2730A	1	20-2700 MHz RF tuner module
1	E1439A	1	95 MSa/s ADC
1	E1439A-001	0	Add 1.2 Gbyte time capture memory
1	E1421B	n/a	6-slot, C-size VXI mainframe
1	E1421-80921	n/a	Backplane connector shield

Example 2:

To configure a VSA system for use with your desktop PC, that includes the vector modulation analysis, 2 baseband channels, one 6 GHz RF channel, and maximum high-speed digitizer memory, order:

Quantity	Order number	Slots required	Description
1	**89600S**	**0**	**Integrate one VSA consisting of:**
1	E8941B	1	IEEE-1394 PC link to VXI
1	E8941B-001	0	OHCI-based IEEE-1394/PCI card
1	89601A	0	Vector signal analysis software
1	89601A-100	0	Basic vector signal analysis
1	89601A-AYA	0	Vector demodulation analysis
1	89606B	1	Baseband input module
1	E1438A	1	100 MSa/s ADC (first channel)
1	E1438A-001	0	Add 1.2 Gbyte time capture memory
1	E1438A	1	100 MSa/s ADC (second channel)
1	E1438A-001	0	Add 1.2 Gbyte time capture memory
1	E1438A-610	0	Cabling for second channel
1	89605B	1	RF input module
1	E2731A	1	20-6000 MHz RF tuner module
1	E1439A	1	95 MSa/s ADC
1	E1439A-001	0	Add 1.2 Gbyte time capture memory
1	E8404A	n/a	13 slot C-size VXI mainframe,
1	E1401-80918	n/a	Backplane connector shield

Adding to a system

You can add software and hardware to your 89600 Series Vector Signal Analyzer as long as you follow the rules given in the custom configuration section.

Adding VXI hardware modules to the 89600 VSA

To retrofit a second baseband input with 288 MB memory (option 89610A-288) to an existing 89610A, order:

Quantity	Order number	Slots required	Description
1	E1438A	1	100 MSa/s ADC
	E1438A-288	0	Add 288 Mbytes of time capture memory
	E1438A-610	0	Cabling to add second channel

To add an E2731A 6.0 GHz RF tuner module to an existing 89611A, order:

Quantity	Order number	Slots required	Description
1	E2731A	1	20-6000 MHz RF tuner

To add an E2371A 6.0 GHz RF tuner module to an exisiting 89640A, order:

Quantity	Order number	Slots required	Description
1	E2731A	1	20-6000 MHz RF tuner
1	89605A-69201		Exchange program that updates an 89605A module to 6.0 GHz operation. Not required for serial number prefix 4211 or greater, or for any 89605B.

Adding/updating software to the 89600 VSA

To retrofit 802.11A OFDM modulation analysis software (option 896x0A-B7R) to an existing 89610A or 89640A, order:

Quantity	Order number	Slots required	Description
1	89601A-B7R	0	Adds 802.11A OFDM modulation analysis to 89610A/11A/40A. Requires 89601A-AYA (vector modulation analysis).

To update the 89601A vector signal analysis software and all installed options order:

Quantity	Order number	Slots required	Description
1	89601AS	0	Software support service
12	89601AS-ORU	0	One year software support contract purchased in monthly increments (12 month minimum order). Provides immediate upgrade of 89601A software and options to current release. Also provides automatic upgrade to all revisions released during length of contract.

Adding an Agilent ESG RF signal generator to a 89600 VSA

Any VSA system, with version 2.00 software or above, can control the Agilent ESG-D or DP series signal generators. This control expands the usefulness of the VSA for stimulus/response measurements. The VSA controls the signal type, frequency, and level features of the ESG and downloads files to the ESG modulation source to simulate a wide range of digitally modulated signals. The files can be 89600 signal captures or even simulated waveforms from ADS design software.

Playback requires that the arbitrary waveform generator (option E4438B-UND) be installed in the ESG. Signal playback bandwidth is limited by the bandwidth of the arbitrary waveform generator (about 12 MHz).

The ESG can be controlled via GPIB or LAN I/Os. The items you will need to create a GPIB connection are shown in the table to the right.

Component	Order number	Notes
Digital RF signal generator Dual arb generator	E4433B E4438B-UND	All Agilent ESG-D and ESG-DP series signal generator are supported. They must have firmware version B.03.50, or later, and must include the arbitrary waveform generator option UND (firmware version 1.2.92 or later).
PCI high performance GPIB interface card for Window 95/98/NT/2000 Add paper (hard copy) manuals	82350A 82350A-0B1	Required if VSA controller is a desktop PC. Requires one empty PCI slot in PC. GPIB cable (10833A) required.
GPIB cable	10833A	1-meter GPIB cable for connecting ESG to VSA controller.
GPIB Cardbus interface	NI778034-02	Required if VSA controller is a laptop PC. Requires one empty PCMCIA slot. Comes with 2-meter cable. (Available from National Instruments).

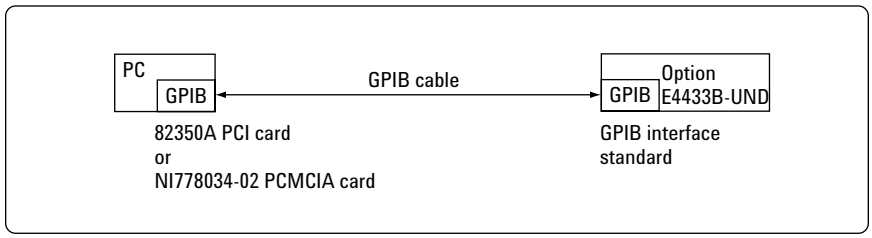


Figure 1. GPIB connection to 89600. Installation instructions provided in the 89600 installation guide.

The items you will need to create a LAN connection are shown in the table to the right.

Component	Order number	Notes
Digital RF signal generator Dual arb generator	E4433B E4433B-UND	Agilent 4 GHz signal generator with GPIB interface and arbitrary waveform generator option. (All ESG-D and ESG-DP series signal generators are supported).
E2050B LAN/GPIB gateway MS Windows I/O libraries	E2050B E2050B-AG6	LAN/GPIB gateway
LAN cross-over cable	8121-0545	
GPIB cable	10833A	1-meter GPIB cable for connecting ESG to VSA controller

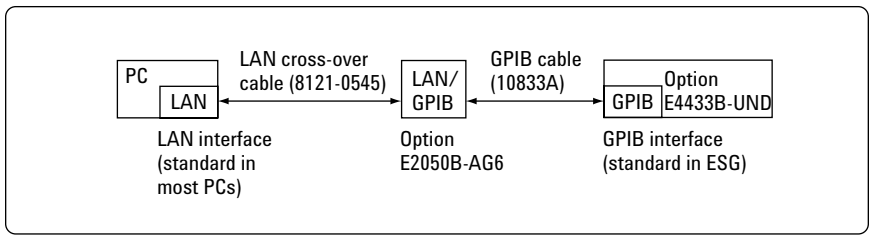


Figure 2. LAN connection to 89600. Installation instructions provided in the 89600 installation guide.

Controlling other Agilent analyzers using 89601A signal analysis software

The 89601A vector signal analysis software used in the 89600 vector signal analyzers can link to several other Agilent analyzers via GPIB or LAN. This teaming adds the 89601A advanced vector modulation analysis capabilities to the feature set of the analyzer.

The following tables list the analyzers the software can link with and the cables and PC interfaces needed to complete the links.

See the figures on page 11 for typical connections.

Compatible analyzers

Analyzers	Models	Connection
ESA-E series Spectrum Analyzers	E4402B, E4404B E4405B, E4407B	GPIB[1]
PSA series High Performance Spectrum Analyzers	E4440A, E4443A, E4445A	LAN
VSA Transmitter Tester	E4406A	GPIB/LAN
Infiniium Scopes	54810A, 54845A/B, 54846A/B, 54830B, 54831B, 54832B	GPIB/LAN

PC interface and cables (GPIB and LAN)

Component	Model number	Options	Notes
PCI High performance GPIB interface card for Windows® 95/98/NT/2000	82350A 82350-A-0B1		Use when controller is a desktop PC. Requires one PCI slot in PC. Must also order GPIB cable (10833A).
GPIB Cardbus interface	N1778034-2		Use when controller is a laptop PC. Requires one empty PCMCIA slot and Windows® 2000 OS. Includes 2-meter cable. Order from National Instruments Company.
GPIB cable	10833A		1 meter GPIB cable for connecting the analyzer to the PC. Not needed if PC GPIB card comes with a cable.
LAN cross-over cable	8121-0545		
LAN/GPIB gateway I/O libraries for MS Windows	E2050B E2050B-AG6		LAN/GPIB gateway for MS Windows®

Note 1: LAN connection available using E2050A LAN/GPIB gateway

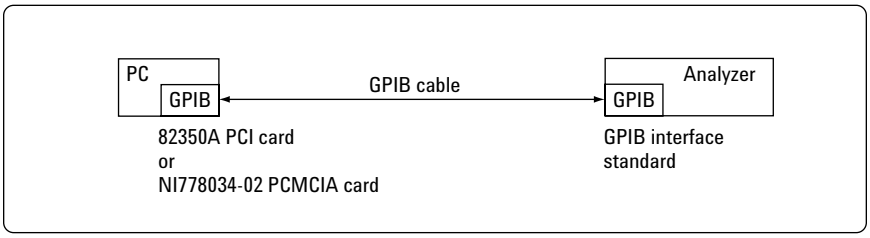


Figure 3. Typical GPIB connection (see 89600 user manual for detailed installation instructions)

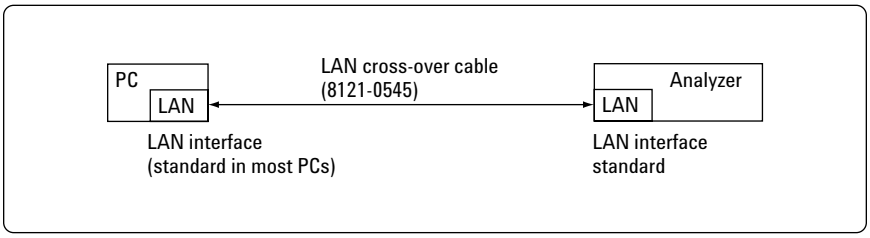


Figure 4. Typical LAN connection (see 89600 user manual for detailed installation instructions)

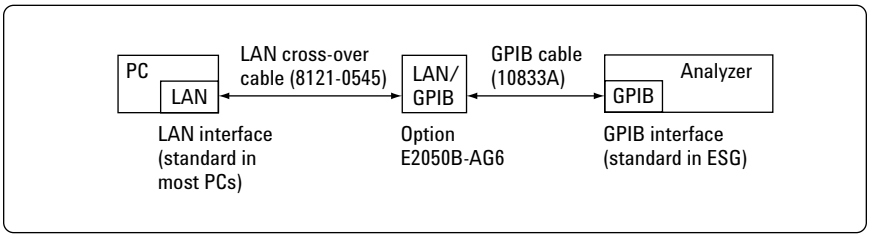


Figure 5. Typical GPIB to LAN connection (see 89600 user manual for detailed installation instructions)

Standard vector signal analyzers

Agilent's pre-configured standard VSA systems come with factory-configured and tested hardware. Simply install the software and I/O card on your PC, and you're ready to start making measurements.

The 89600 VSAs include three pre-configured instruments.

89610A DC–40 MHz Baseband Vector Signal Analyzer

89611A 52–88 MHz IF Vector Signal Analyzer

89640A DC–2700 MHz RF Vector Signal Analyzer

89641A DC–6000 MHz RF Vector Signal Analyzer

These analyzers include the following:

- Pre-configured measurement front-end hardware in a compact 4-slot VXI mainframe.
- Agilent VSA software, on CD-ROM.
- IEEE-1394 high-speed interface PCI card, to be installed in user's PC. Includes 4.5 meter cable. *Other VXI controller interfaces, such as GPIB and MXI-2, are currently unsupported for 89600 VSAs.*
- Complete user documentation and getting-started video.

	89610A	**89611A**	**89640A**	**89641A**
Frequency range	DC–40 MHz	52–88 MHz	DC–2700 MHz	DC-6000 MHz
Max instantaneous bandwidth	39 MHz	36 MHz	36 MHz	36 MHz
Input channels allowed	2	1	1	
Components				
E8408A Four slot VXI with E8408A-001 mainframe (enhanced current for –5.2V supply)	X	X	X	X
E8491B IEEE–1394 Controller/Interface module with E8491B-001 (OHCI based PCI card)	X	X	X	X
E1438A 100 MSa/sec Digitizer module with 144 MB memory	X			
E1439A 95 MSa/sec Digitizer module with 144 MB memory		X	X	X
E2730A RF tuner module			X	
E2731A RF tuner module				X
89605B RF input/calib module		X	X	X
89606B baseband input/calib module	X			
89601A vector signal analysis software	X	X	X	X

Vector signal analyzer options

Vector modulation analysis:

Provides comprehensive analysis of a wide variety of digitally modulated signals, ranging from simple BPSK to 256 QAM and more.

Vector modulation analysis 896xxA-AYA
Where xx = 01, 10, 11, 40, 41

3G and 3GPP modulation analysis:

Provides flexible analysis of W-CDMA and cdma2000 communication formats. (Requires option 896xxA-AYA.)

CDMA modulation analysis 896xxA-B7N
Where xx = 01, 10, 11, 40, 41

802.11a and HiperLAN2 OFDM modulation analysis:

Provides analysis of 802.11a and HiperLAN2 WLAN signaling formats.

802.11a OFDM analysis 896xxA-B7R
Where xx = 01, 10, 11, 40, 41

Memory expansion:

Provides additional high-speed RAM for increased depth of real-time signal capture.

144 MB time capture memory 896xxA-144

288 MB time capture memory 896xxA-288

1.2 GB time capture 896xxA-001

Where xx = 10, 11, 40, 41

Second baseband channel:

Provides a second DC-40 MHz input channel for dual channel measurements and complex (I + jQ) inputs. *Available on 89610A only; channels 1 and 2 must have the same memory size.*

2nd input channel, 144 MB memory 89610-145

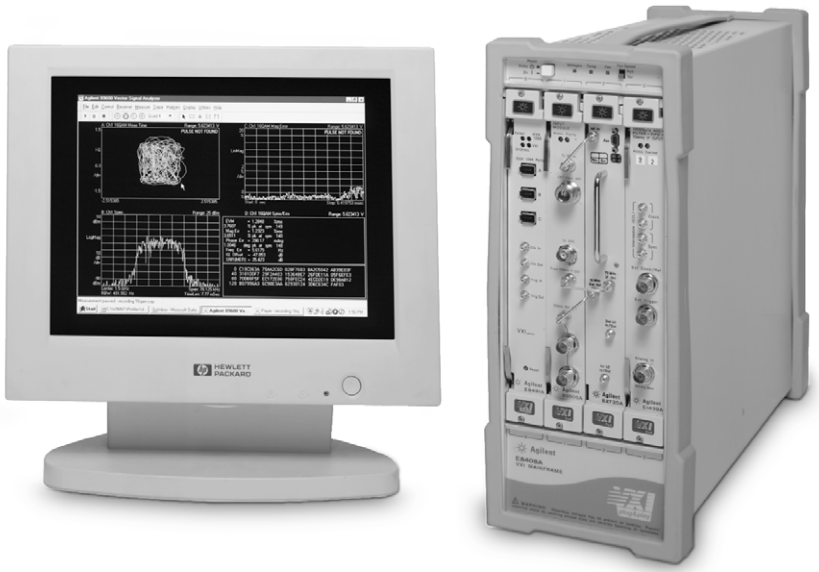
2nd input channel, 288 MB memory 89610-289

2nd input channel, 1.2 GB memory 89610-002

Dynamic link to EESof/ADS:

Allows your Agilent vector signal analyzer to operate both as a stand-alone instrument and as an embedded “virtual” instrument for the Agilent/EEsof Advanced Design System EDA software. *Requires option AYA, Vector Modulation Analysis.*

Dynamic link to EESof/ADS 896xxA-105
Where xx = 01, 10, 11, 40, 41



User supplied controller requirements

The 89600 VSAs require a PC to control the hardware and computer and display results. You can use your PC for this task. The following are the minimum requirements for a user supplied PC.

For best immunity to electrostatic discharge (ESD), use a desktop PC.

	Desktop	Laptop
CPU	180 MHz Pentium, or AMD-K6 (> 300 MHz recommended)	> 300 MHz Pentium, or AMD-K6
Empty slots	1 PCI-bus slot (two recommended)	1 CardBus Type II slot (two recommended)
RAM	192 MB (256 MB recommended)	192 MB (256 MB recommended)
Video RAM	4 MB (8 MB recommended)	4 MB (8 MB recommended)
Hard disk space	100 MB available	100 MB available
Operating system	Microsoft Windows 2000 or Windows NT 4.0 (service pac 5 or greater required)	MIcrosoft Windows 2000
Additional drives	CDROM or 3.5 inch floppy (if no network access available)	CDROM or 3.5 inch floppy (if no network access available)
Interface support		Supported IEEE-1394-1995[1]

1. For a list of supported interfaces, see www.agilent.com/find/iolib or contact your local Agilent call center or sales office.

Licensing

Agilent VSA software is licensed for use on a single PC. During installation, you will be provided an immediate 14-day license, longer for a software upgrade, plus instructions for contracting Agilent to obtain your permanent license. Networked and site licenses are currently unavailable.

Software support contracts

Software support contracts for Agilent VSA systems are available. Refer to step 3, "Select software configuration," for ordering instructions or contact your local Agilent representative.

Warranty

Agilent warrants our hardware, accessories and supplies to be free from defects in materials and workmanship. Agilent will, at its option, either repair or replace products that prove to be defective. In general, products must be returned to Agilent for repair. On-site service contracts are available. Please contact your Agilent representative for more information.

Agilent also warrants our software will not fail to execute its programming instructions after the date of purchase, for the period specified in the following table, due to defects in material and workmanship. Agilent will replace software media which does not execute its programming instructions due to such defects. The warranty periods for the products contained in a custom configured 89600S VSA system vary. Consult the table for information on specific products .

Warranty period in months

Item	Description	Warranty period (months)
89601A	VSA software and options	3
89605	RF input module	36
89606	Baseband input module	36
E1421B	VXI mainframe and options	36
E1438A	100 MSa/s baseband digitizer and options	36
E1439A	95 MSa/s RF digitizer and options	36
E2730A	2.7 GHz RF tuner	36
E2731A	6 GHz RF tuner	36
E8401A	VXI mainframe and options	36
E8403A	VXI mainframe and options	36
E8404A	VXI mainframe and options	36
E8408A	VXI mainframe and options	36
E8491B	IEEE-1394 PC link to VXI and options	36
E9851A	VXI embedded controller and options	12
EXTDVD	External DVD drive	3
EXTHD	External hard-drive	3
LTPC1	Laptop PC	3
MON 17	17-in color monitor	3
MON 19	19-in color monitor	3
MON 21	21-in color monitor	3
MONLCD1	15-in LCD monitor	3
UIKTIPC	Windows PC user interface kit and options	3
82350A	GPIB interface	36
89610A	Standard VSA system (0–40 MHz)	36
89640A	Standard VSA system (20–2700 MHz)	36
89611A	70 MHz IF standard VSA system (52–88 MHz)	36

Agilent Email Updates

www.agilent.com/find/emailupdates
Get the latest information on the products and applications you select.

Agilent Technologies' Test and Measurement Support, Services, and Assistance
Agilent Technologies aims to maximize the value you receive, while minimizing your risk and problems. We strive to ensure that you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Support is available for at least five years beyond the production life of the product. Two concepts underlie Agilent's overall support policy: "Our Promise" and "Your Advantage."

Our Promise
Our Promise means your Agilent test and measurement equipment will meet its advertised performance and functionality. When you are choosing new equipment, we will help you with product information, including realistic performance specifications and practical recommendations from experienced test engineers. When you use Agilent equipment, we can verify that it works properly, help with product operation, and provide basic measurement assistance for the use of specified capabilities, at no extra cost upon request. Many self-help tools are available.

Your Advantage
Your Advantage means that Agilent offers a wide range of additional expert test and measurement services, which you can purchase according to your unique technical and business needs. Solve problems efficiently and gain a competitive edge by contracting with us for calibration, extra-cost upgrades, out-of-warranty repairs, and onsite education and training, as well as design, system integration, project management, and other professional engineering services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity, optimize the return on investment of your Agilent instruments and systems, and obtain dependable measurement accuracy for the life of those products.

Agilent T&M Software and Connectivity
Agilent's Test and Measurement software and connectivity products, solutions and developer network allows you to take time out of connecting your instruments to your computer with tools based on PC standards, so you can focus on your tasks, not on your connections. Visit
www.agilent.com/find/connectivity
for more information.

By internet, phone, or fax, get assistance with all your test & measurement needs
Online Assistance:
www.agilent.com/find/assist

Phone or Fax
United States:
(tel) 800 452 4844
Canada:
(tel) 877 894 4414
(fax) 905 282 6495
China:
(tel) 800 810 0189
(fax) 800 820 2816
Europe:
(tel) (31 20) 547 2323
(fax) (31 20) 547 2390
Japan:
(tel) (81) 426 56 7832
(fax) (81) 426 56 7840
Korea:
(tel) (82 2) 2004 5004
(fax) (82 2) 2004 5115
Latin America:
(tel) (305) 269 7500
(fax) (305) 269 7599
Taiwan:
(tel) 0800 047 866
(fax) 0800 286 331
Other Asia Pacific Countries:
(tel) (65) 6375 8100
(fax) (65) 6836 0252
Email:
tm_asia@agilent.com

Printed in U.S.A., July 15, 2002
5968-9350E

Agilent Technologies