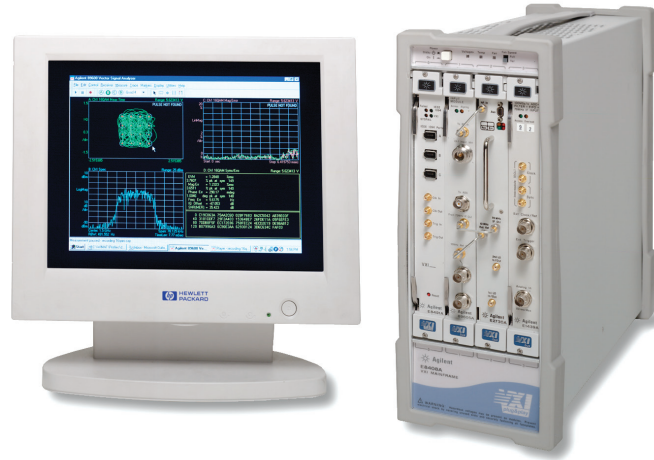# Agilent 89600S Series VXI-Based Vector Signal Analyzers

Configuration Guide

The 89600S Series vector signal analyzers (VSA) are VXI-based modular instruments that are integrated at the factory before shipping to you. There are four basic configurations:
- 89610 baseband vector signal analyzer (DC to 40 MHz)
- 89611 IF vector signal analyzer (DC to 36 MHz, 52 to 88 MHz)
- 89640 RF vector signal analyzer (DC to 2.7 GHz)
- 89641 RF vector signal analyzer (DC to 6.0 GHz)

This configuration guide will help you through the process of configuring a system to meet your vector signal measurement and analysis needs.

Contents

Note:

The 89600S VXI-based hardware will be discontinued for sale beginning 30 November 2009.

Agilent Technologies

Configuring Your 89600S VSA

The following questions will guide you through configuring your 89600S VSA system. Answer all of the questions including the Basic Information questions at the end. Please refer to Appendix A for an explanation and additional information for each question.

1. Which system configuration do you want?

Note: Choice required. Select only one.

89641 6.0 GHz RF vector signal analyzer	*Consists of*	*Qty*
☐ One RF channel	• 89600S-041 6.0 GHz RF channel, includes DC to 36 MHz baseband input	1
	• 89600S-003 RF system bundle discount	1
☐ One RF channel with two baseband channels	• 89600S-041 6.0 GHz RF channel, includes DC to 36 MHz baseband input	1
	• 89600S-011 70 MHz IF channel, includes DC to 36 MHz baseband input	1
	• 89600S-610 cabling for second baseband/IF channel	1
	• 89600S-003 RF system bundle discount	1
☐ Two RF channels	• 89600S-041 6.0 GHz RF channel, includes DC to 36 MHz baseband input	2
	• 89600S-642 cabling for second RF channel	1
	• 89600S-003 RF system bundle discount	1

89640 2.7 GHz RF vector signal analyzer	*Consists of*	*Qty*
☐ One RF channel	• 89600S-040 2.7 GHz RF channel, includes DC to 36 MHz baseband input	1
	• 89600S-003 RF system bundle discount	1
☐ One RF channel with two baseband channels	• 89600S-040 2.7 GHz RF channel, includes DC to 36 MHz baseband input	1
	• 89600S-011 70 MHz IF channel, includes DC to 36 MHz baseband input	1
	• 89600S-610 cabling for second baseband/IF channel	1
	• 89600S-003 RF system bundle discount	1
☐ Two RF channels	• 89600S-040 2.7 GHz RF channel, includes DC to 36 MHz baseband input	2
	• 89600S-642 cabling for second RF channel	1
	• 89600S-003 RF system bundle discount	1

89611 70 MHz IF vector signal analyzer	*Consists of*	*Qty*
☐ One IF channel	• 89600S-011 70 MHz IF channel, includes DC to 36 MHz baseband input	1
	• 89600S-611 cable adapter kit	1
	• 89600S-002 IF system bundle discount	1
☐ Two IF channels	• 89600S-011 70 MHz IF channel, includes DC to 36 MHz baseband input	2
	• 89600S-611 cable adapter kit	2
	• 89600S-610 cabling for second baseband/IF channel	1
	• 89600S-002 IF system bundle discount	1

89610 baseband vector signal analyzer	*Consists of*	*Qty*
☐ One DC to 40 MHz baseband channel	• 89600S-010 DC to 40 MHz baseband channel	1
	• 89600S-001 baseband system bundle discount	1
☐ Two DC to 40 MHz baseband channels for baseband IQ	• 89600S-010 DC to 40 MHz baseband channel	1
	• 89600S-012 second DC to 40 MHz baseband input	1
	• 89600S-610 cabling for second baseband/IF channel	1
	• 89600S-001 baseband system bundle discount	1

2. What time capture memory do you want for the system?

Note: Choice required. Select only one. All channels in the system must have the same size memory installed.

	Consists of	Qty
☐ 144 MB RAM memory	• 89600S-144 144 MB channel time capture memory	1 per chan
☐ 288 MB RAM memory	• 89600S-288 288 MB channel time capture memory	1 per chan
☐ 1.2 GB RAM memory	• 89600S-120 1.2 GB channel time capture memory	1 per chan

3. Do you want Z540 ANSI standard calibration data or commercial calibration data?

Note: Optional.

	Consists of	Qty
☐ ANSI Z540	• 896xxA-6J (xx = 10, 11, 40, 41)	1
☐ Commercial calibration with data	• 896xxA-UK6 (xx = 10, 11, 40, 41)	1

4. What mainframe would you like?

Note: Choice required. Select only one. Not all systems will fit in the smaller mainframes. See Appendix A, Question 4, for more information.

	Consists of	Qty
☐ 89600S-304 E8408A 4-slot VXI mainframe with E8408A-001 enhanced –5.2 V power supply and E8408-80900 connector shields	• E8408A 4-slot mainframe	1
☐ 89600S-313 E8403A 13-slot VXI mainframe with E1401-80918 connector shields	• E8403A 13-slot mainframe	1

5. What kind of PC are you planning on using with the system?

Note: Choice required. Select only one.

	Consists of	Qty
☐ 89600S-201 IEEE 1394 cable and VXI interface for use with user-supplied laptop PC	• E8491B IEEE 1394 PC link to VXI module	
☐ 89600S-202 IEEE 1394 PC link use with a user-supplied desktop PC	• E8491B IEEE 1394 PC link to VXI module with E8491B-001 OHCI-based IEEE 1394 PCI card	

6. What kind of software licensing would you like?

Note: Choice required. Select only one. See Appendix A, Question 6 for descriptions of licensing choices. Put the number of 12-month floating license packages desired in the "Qty" blank.

	Consists of	Qty
☐ Hardware only system. No software included		1
☐ 89601A node-locked (locked to a particular PC but transferable via floppy or LAN)	• 89601A VSA software	1
☐ 89601AN floating license (locked to one network server)	• 89601AN VSA software (floating license for 1 server)	1
☐ 89601N12 12-month floating license for one server 89601N12-801 Qty _____	• 89601N12 VSA software 89601N12-801	1 1 or qty specified

7. What software options do you want?

Note: At least one Option 200 and 300 must be selected. For 89601AN (floating license) select quantity of options per server. The 89601N12 includes all options, so for the 89601N12, skip to #9.

		Consists of	Qty
☐ _____	Basic VSA software (no hardware connectivity)	• 89601x-200 (x = A, AN)	1 or qty specified
☐ _____	Hardware connectivity	• 89601x-300 (x = A, AN)	1 or qty specified
☐ _____	Flexible vector modulation analysis	• 89601x-AYA (x = A, AN)	1 or qty specified
☐ _____	3G modulation analysis bundle (This is an ordering convenience equivalent to Options B7T, B7U, B7W, B7X)	• 89601x-B7N (x = A, AN)	1 or qty specified
☐ _____	cdma2000®/1xEV-DV modulation analysis	• 89601x-B7T (x = A or AN)	1 or qty specified
☐ _____	W-CDMA/HSPA modulation analysis	• 89601x-B7U (x = A or AN)	1 or qty specified
☐ _____	1xEV-DO modulation analysis	• 89601x-B7W (x = A or AN)	1 or qty specified
☐ _____	TD-SCDMA modulation analysis	• 89601x-B7X (x = A or AN)	1 or qty specified
☐ _____	WLAN modulation analysis	• 89601x-B7R (x = A, AN)	1 or qty specified
☐ _____	IEEE 802.16-2004 OFDM modulation analysis	• 89601x-B7S (x = A or AN)	1 or qty specified
☐ _____	IEEE 802.16 OFDMA modulation analysis	• 89601x-B7Y (x = A or AN)	1 or qty specified
☐ _____	IEEE 802.11n MIMO modulation analysis	• 89601x-B7Z (x = A or AN)	1 or qty specified
☐ _____	TETRA modulation analysis & test	• 89601x-BHA (x-A, AN)	1 or qty specified
☐ _____	MB-OFDM ultra-wideband modulation analysis	• 89601x-BHB (x = A, AN)	1 or qty specified
☐ _____	RFID modulation analysis	• 89601x-BHC (x = A, AN)	1 or qty specified
☐ _____	LTE FDD modulation analysis	• 89601x-BHD (x = A, AN)	1 or qty specified
☐ _____	LTE TDD modulation analysis	• 89601x-BHE (x = A, AN)	1 or qty specified
☐ _____	Link to ADS/SystemVue software	• 89601x-105 (x = A, AN)	1 or qty specified
☐ _____	Link to MathWorks Simulink Simulation and Model-Based Design	• 89601x-106 (x=A, AN)	1 or qty specified

8. Would you like to order additional software update service?

Note: Optional choice. One year of the software update subscription service is included with every 89600 VSA you order (see step 6). You may purchase up to one additional year, for a total of two years coverage for each license. You may purchase up to two. This service is included in the 89601N12 12-month floating license and you cannot purchase additional service. The number you put in the "The number of licenses to cover" blank should equal the quantity of basic VSA software options (89601x-200) that you specified in step 7.

Special note: When you order the 89600 software, the price of one year of update service will be automatically added and then subtracted using Option D12: Discount on first 12 months of update service.

	Notes
☐ Yes	
_____ Number months (total) coverage	• 89601A-0xx or 89601AN-0xx (xx equals number of months coverage, and is equal to 12 or 24). Note: You get 12 months bundled in your first order of the 89600 VSA. Order Option 024 to get an additional year of coverage.
_____ Number of licenses to cover	• "Number of licenses to cover" is needed when ordering the update service for floating licenses. This quantity should match the quantity of Option 200 you ordered in section 7. This quantity will become the quantity of the Option 89601AN-0xx (where xx= 12 or 24).
☐ No	

9. Do you want any associated software products?

Note: Optional. The license type (node-locked or floating) must match the type you specified in step 6.

	Consists of	Qty
☐ 89607A WLAN test suite (node-locked)	• 89607A WLAN test suite software 89607A-100 basic WLAN test suite	1 1
☐ 89604A distortion suite (node-locked)	• 89604A distortion test suite software, 89604A-100 basic distortion test suite	1 1
☐ 89604AN distortion suite (floating license) Quantity _____	• 89604AN distortion test suite software 89604AN-100 basic distortion test suite	1 1 or qty specified

10. Do you want productivity assistance or other engineering services?

Note: Optional. One day of start-up assistance is recommended at initial order.

	Consists of	Qty
☐ PS-S10, remote scheduled productivity assistance. Select 1 to 999 hours	• PS-S10	Qty ordered
☐ PS-S20-01, 1 day of start-up assistance. Recommended 1 day	• PS-S20-01	1
☐ PS-S20, daily productivity assistance. Select 1 to 999 days	• PS-S20	Qty ordered
☐ PS-T10-896xx, 89600 Series VSA users' course, 8 students, customer site	• PS-T10-896xx	1
☐ PS-T11-896xx, digital radio troubleshooting, 8 students, customer site	• PS-T11-896xx	1
☐ PS-T12-896xx, wireless LAN tech fund, 8 students, customer site	• PS-T12-896xx	1
☐ PS-X10-896xx, VSA wireless LAN measurements consulting service	• PS-X10-896xx	1

Basic information

Select a warranty

Note: The shortest term is standard. Additional coverage is recommended

	Consists of	Qty
☐ 1 year	• R-51B-001-C	1
☐ 3 years	• R-51B-001-3C	1
☐ 5 years	• R-51B-001-5C	1

What type of calibration would you like?

Note: See Appendix A for an explanation of the calibration plans. Choose only one, then choose plan length.

	Consists of	Qty
☐ Agilent calibration upfront planplan (Requires Option 896xxA-UK6. See question 3.)		
☐ 3 years	• R-50C-011-3	1
☐ 5 years	• R-50C-011-5	1
☐ Z540 calibration upfront plan (Requires Option 896xxA-A6J. See question 3.)		
☐ 3 years	• R-50C-021-3	1
☐ 3 years	• R-50C-021-5	1
☐ None		

Configuration Examples

Example 1: Configuring an 89610

This example configures an 89610 baseband VSA with two baseband channels, 1.2 GB of memory in each channel, a commercial data report on the factory calibration, a four-slot VXI mainframe, to be used with a laptop PC (customer-supplied, must have a IEEE-1394 FireWire® interface) with a node-locked (PC) license for the software. The software will include the WLAN modulation analysis option in addition to the required options for hardware connectivity and basic vector software. Twelve months of software support (added on to the 12 months included with every 89600 VSA) are also included. No associated software is ordered and start-up training is ordered. The basic information is: a three-year warranty, no calibration. However, this customer is requesting one-time calibration data from the factory calibration.

1. Which system configuration do you want?

Note: Choice required. Select only one.

89641 6.0 GHz RF vector signal analyzer	Consists of	Qty
☐ One RF channel		
☐ One RF channel with two baseband channels		
☐ Two RF channels		

89640 2.7 GHz RF vector signal analyzer	Consists of	Qty
☐ One RF channel		
☐ One RF channel with two baseband channels		
☐ Two RF channels		

89611 70 MHz IF vector signal analyzer	Consists of	Qty
☐ One IF channel		
☐ Two IF channels		

89610 baseband vector signal analyzer	Consists of	Qty
☐ One DC to 40 MHz baseband channel		
√ Two DC to 40 MHz baseband channels for baseband IQ	• 89610S	1
	• 89600S-010 DC to 40 MHz baseband channel	1
	• 89600S-012 second DC to 40 MHz baseband input	1
	• 89600S-610 cabling for second baseband/IF channel	1
	• 89600S-001 baseband system bundle discount	1

2. What time capture memory do you want for the system?

Note: Choice required. Select only one. The smallest memory is standard. All channels in the system must have the same size memory installed.

	Consists of	Qty
☐ 144 MB RAM memory		
☐ 288 MB RAM memory		
√ 1.2 GB RAM memory	• 89600S-120 1.2 GB channel time capture memory	2

3. Do you want Z540 ANSI standard calibration data or commercial calibration data?

Note: Optional.

	Consists of	Qty
☐ ANSI Z540		
√ Commercial calibration with data	• 89610A-UK6	1

4. What mainframe would you like?

Note: Choice required. Select only one. Not all systems will fit in the smaller mainframes. See Appendix A, Question 4, for more information.

	Consists of	Qty
√ 89600S-304 E8408A 4-slot VXI mainframe with E8408A-001 enhanced –5.2 V power supply and E8408-80900 connector shields	• E8408A 4-slot mainframe	1
☐ 89600S-313	• E8403A 13-slot VXI mainframe	

5. What kind of PC are you planning on using with the system?

Note: Choice required. Select only one.

	Consists of	Qty
√ 89600S-201 IEEE 1394 cable and VXI interface for use with a user-supplied laptop PC	• E8491B IEEE 1394 PC link to VXI module for use with a user-supplied laptop PC	1
☐ 89600S-202 IEEE 1394 PC link for use with a user-supplied desktop PC	• E8491B IEEE 1394 PC link to VXI module with E8491B-001 OHCI-based IEEE 1394 PCI card for use with a user-supplied desktop PC	

6. What kind of software licensing would you like?

Note: Choice required. Select only one. See Appendix A, Question 6, for descriptions of licensing choices. Put the number of 12-month floating license packages desired in the "Qty" blank.

	Consists of	Qty
☐ Hardware only system. No software included		
√ 89601A node-locked license (locked to particular PC but transferable a via floppy or LAN)	• 89601A VSA software	1
☐ 89601AN floating license (locked to one network server)		
☐ 89601N12 12-month floating license for one server Qty _____		

7. What software options do you want?

Note: At least one Option 200 and 300 must be selected. For 89601AN (floating license) select quantity of options per server.

	Consists of	Qty
√ __1__ Basic VSA software (no hardware connectivity)	• 89601A-200	1
√ __1__ Hardware connectivity	• 89601A-300	1
☐ __0__ Flexible vector modulation analysis		
☐ __0__ 3G modulation analysis bundle (This is an ordering convenience equivalent to Options B7T, B7U, B7W, B7X)		
☐ __0__ cdma2000/1xEV-DV modulation analysis		
☐ __0__ W-CDMA/HSPA modulation analysis		
☐ __0__ 1xEV-DO modulation analysis		
☐ __0__ TD-SCDMA modulation analysis		
√ __1__ WLAN modulation analysis	• 89601A-B7R	1
☐ __0__ IEEE 802.16-2004 OFDM modulation analysis		
☐ __0__ IEEE 802.16 OFDMA modulation analysis		
☐ __0__ IEEE 802.11n MIMO modulation analysis		
☐ __0__ TETRA modulation analysis & test		
☐ __0__ MB-OFDM ultra-wideband modulation analysis		
☐ __0__ RFID modulation analysis		
☐ __0__ LTE FDD modulation analysis		
☐ __0__ LTE TDD modulation analysis		
☐ __0__ Link to ADS/SystemVue software		
☐ __0__ Link to MathWorks Simulink Simulation and Model-Based Design		

8. Would you like to order additional software update service?

Note: Optional choice. One year of the software update subscription service is included with every license you order (see step 6). You may purchase up to one additional year, for a total of two years coverage for each license. This service is included in the 89601N12 12-month floating license and you cannot purchase additional service. The number you put in the "The number of licenses to cover" blank should equal the number of basic VSA software (89601A-200) you specified in step 7.

Special note: When you order the 89600 software, the price of one year of update service will be automatically added and then subtracted via Option D12: Discount on first 12 months of update service.

	Consists of	Qty
√ Yes		
___24___ Number months (total) coverage	• 89601A-024 24 months bundled software update subscription service (qualifies for 12 month discount)	1
___1___ Number of licenses to cover	• 89601A-D12 Discount on first 12 months of bundled software update service	1
☐ No		

9. Do you want any associated software products?

Note: Optional. The license type (node-locked or floating) must match the type you specified in step 6.

	Consists of	Qty
☐ 89607A WLAN test suite (node-locked)		
☐ 89604A distortion suite (node-locked)		
☐ 89604AN distortion suite (floating license) Quantity ___0___		

10. Do you want productivity assistance or other engineering services?

Note: Optional. One day of start-up assistance is recommended at initial order.

	Consists of	Qty
☐ PS-S10 remote scheduled productivity assistance. Select 1 to 999 hours		
√ PS-S20-01, 1 day of start-up assistance. Recommended 1 day	• PS-S20-01	1
☐ PS-S20, daily productivity assistance. Select 1 to 999 days		
☐ PS-T10-896XX, 89600 Series VSA users' course, 8 students, customer site		
☐ PS-T11-896XX, digital radio troubleshooting, 8 students, customer site		
☐ PS-T12-896XX, wireless LAN tech fund, 8 students, customer site		
☐ PS-X10-896XX, VSA wireless LAN measurements consulting service		

Basic information

Select a warranty

Note: The shortest term is standard. Additional coverage is recommended

	Consists of	Qty
☐ 1 year		
√ 3 years	• R-51B-001-3C	1
☐ 5 years		

What type of calibration would you like?

Note: See Appendix A for an explanation of the calibration plans. Choose only one, then choose plan length.

	Consists of	Qty
☐ Agilent calibration upfront plan (Requires Option 896xxA-UK6. See question 3.)		
☐ Z540 calibration upfront plan (Requires Option 896xxA-A6J. See question 3.)		
√ None		

Example 2: Configuring an 89611

This example configures a two channel 89611 IF VSA with 144 MB of memory in each channel (this comes standard in all 89600S), no data from the factory calibration, and a six-slot mainframe. The system will be used with a user-supplied desktop PC. A floating license has been specified so the software can be conveniently shared with other users. The user wants three licenses for the server so the order includes three basic VSA software options. The software also includes one hardware connectivity option to control the VXI hardware, one 3G modulation analysis option bundle (equivalent to Options B7T, B7U, B7W, B7X), two links to ADS, and three WLAN modulation analysis options. The customer will load the software on several PCs with the help of an easy to follow installation wizard. Twelve months of software support for the three floating licenses round out the configuration. The basic information is: three-year warranty with no calibration.

Prior to operation the customer will install the PCI IEEE 1394 FireWire interface supplied with this system in the PC designated to control the VXI hardware. The customer will also install the license on a network server, using the installation instructions provided.

1. Which system configuration do you want?

Note: Choice required. Select only one.

89641 6.0 GHz vector signal analyzer	Consists of	Qty
☐ One RF channel		
☐ One RF channel with two baseband channels		
☐ Two RF channels		

89640 2.7 GHz RF vector signal analyzer	Consists of	Qty
☐ One RF channel		
☐ One RF channel with two baseband channels		
☐ Two RF channels		

89611 70 MHz vector signal analyzer	Consists of	Qty
☐ One IF channel		
√ Two IF channels	• 89611S	1
	• 89600S-011 70 MHz IF channel, includes DC to 36 MHz baseband input	2
	• 89600S-611 cable adapter kit	2
	• 89600S-610 cabling for second baseband/IF channel	1
	• 89600S-002 IF system bundle discount	1

89610 baseband vector signal analyzer	Consists of	Qty
☐ One DC to 40 MHz baseband channel		
☐ Two DC to 40 MHz baseband channels for baseband IQ		

2. What time capture memory do you want for the system?

Note: Choice required. Select only one. All channels in the system must have the same size memory installed.

	Consists of	Qty
√ 144 MB RAM memory	• 89600S-144 144 MB channel time capture memory	2
☐ 288 MB RAM memory		
☐ 1.2 GB RAM memory		

3. Do you want Z540 ANSI standard calibration data or commercial calibration data?

Note: Optional.

	Consists of	Qty
☐ ANSI Z540		
☐ Commercial calibration with data		

4. What mainframe would you like?

Note: Choice required. Select only one. Not all systems will fit in the smaller mainframes. See Appendix A, Question 4, for more information.

	Consists of	Qty
☐ 89600S-304	• E8408A 4-slot VXI mainframe	
√ 89600S-313	• E8403A 13-slot VXI mainframe	

5. What kind of PC are you planning on using with the system?

Note: Choice required. Select only one.

	Consists of	Qty
☐ 89600S-201 IEEE 1394 cable and VXI interface for use with a user-supplied laptop PC	• E8491B IEEE 1394 PC link to VXI module for use with a user-supplied laptop PC	
√ 89600S-202 IEEE 1394 PC link for use with a user-supplied desktop PC	• E8491B IEEE 1394 PC link to VXI module with E8491B-001 OHCI-based IEEE 1394 PCI card for use a with user-supplied desktop PC	1

6. What kind of software licensing would you like?

Note: Choice required. Select only one. See Appendix A, Question 6, for descriptions of licensing choices. Put the number of 12-month floating license packages desired in the "Qty" blank.

	Consists of	Qty
☐ Hardware only system. No software included		
☐ 89601A node-locked license (locked to a particular PC but transferable via floppy or LAN)		
√ 89601AN floating license (locked to a network server)	• 89601AN VSA software (floating license for one server)	1
☐ 89601N12 12-month floating license for one server Qty _____		

7. What software options do you want?

Note: At least one Option 200 and 300 must be selected. For 89601AN (floating license) select quantity of options per server.

	Consists of	Qty
√ __3__ Basic VSA software (no hardware connectivity)	• 89601AN-200	3
√ __1__ Hardware connectivity	• 89601AN-300	1
☐ __0__ Flexible vector modulation analysis		
√ __1__ 3G modulation analysis bundle	• 89601AN-B7N	1
(This is an ordering convenience equivalent to Options B7T, B7U, B7W, B7X)		
☐ __0__ cdma2000/1xEV-DV modulation analysis		
☐ __0__ W-CDMA/HSPA modulation analysis		
☐ __0__ 1xEV-DO modulation analysis		
☐ __0__ TD-SCDMA modulation analysis		
√ __3__ WLAN modulation analysis	• 89601AN-B7R	3
☐ __0__ IEEE 802.16-2004 OFDM modulation analysis		
☐ __0__ IEEE 802.16 OFDMA modulation analysis		
☐ __0__ IEEE 802.11n MIMO modulation analysis		
☐ __0__ TETRA modulation analysis & test		
☐ __0__ MB-OFDM ultra-wideband modulation analysis		
☐ __0__ RFID modulation analysis		
☐ __0__ LTE FDD modulation analysis		
☐ __0__ LTE TDD modulation analysis		
√ __2__ Link to ADS/SystemVue software	• 89601AN-105	2
☐ __0__ Link to MathWorks Simulink Simulation and Model-Based Design		

8. Would you like to order additional software update service?

Note: Optional choice. One year of the software update subcription service is included with every license you order (see step 6). You may purchase up to one additional year, for a total of two years coverage for each license. This service is included in the 89601N12 12-month floating license and you cannot purchase additional service. The number you put in the "The number of licenses to cover" blank should equal the number of basic VSA software (89601AN-200) you specified in step 7.

Special note: When you order the 89600 VSA software, the price of one year of update service will be automatically added and then subtracted using Option D12: Discount on first 12 months of update service.

	Consists of	Qty
√ Yes		
____12____ Number months (total) coverage	• 89601AN-12 12 month SW update service for Option 200 and associated options (qualifies for 12 month discount)	3
_____3_____ Number of licenses to cover	• 89601AN-D12 Discount on first 12 months of bundled software update subscription service	3
☐ No		

9. Do you want any associated software products?

Note: Optional. The license type (node-locked or floating) must match the type you specified in step 6.

	Consists of	Qty
☐ 89607A WLAN test suite (node-locked)		
☐ 89604A distortion suite (node-locked)		
☐ 89604AN distortion suite (floating license) Quantity ___0___		

10. Do you want productivity assistance or other engineering services?

Note: Optional. One day of start-up assistance is recommended at initial order.

	Consists of	Qty
☐ PS-S10 remote scheduled productivity assistance. Select 1 to 999 hours		
☐ PS-S20-01, 1 day of start-up assistance. Recommended 1 day		
☐ PS-S20, daily productivity assistance. Select 1 to 999 days		
☐ PS-T10-896XX, 89600 Series VSA user's course, 8 students, customer site		
☐ PS-T11-896XX, digital radio troubleshooting, 8 students, customer site		
☐ PS-T12-896XX, wireless LAN tech fund, 8 students, customer site		
☐ PS-X10-896XX, VSA wireless LAN measurements consulting service		

Basic information

Select a warranty

Note: The shortest term is standard. Additional coverage is recommended

	Consists of	Qty
☐ 1 year		
√ 3 years	• R-51B-001-3C	1
☐ 5 year		

What type of calibration would you like?

Note: See Appendix A for an explanation of the calibration plans.

	Consists of	Qty
☐ Agilent calibration upfront plan (Requires Option 896xxA-UK6. See question 3.)		
☐ Z540 calibration upfront plan (Requires Option 896xxA-A6J. See question 3.)		
√ None		

Example 3: Configuring an 89640

This example configures a 2.7 GHz 89640 RF VSA with one RF channel and two baseband/IF channels, 1.2 GB of memory in each channel. A commercial calibration certificate with data is ordered for the system. A 13-slot mainframe (the only mainframe this system will fit in) is also called out and a laptop PC (customer-supplied, must have a IEEE-1394 FireWire interface) will be used to control the system. The license will be node-locked (PC). The software includes basic vector signal analysis option, the hardware connectivity option, flexible modulation analysis, 3G modulation analysis, WLAN modulation analysis software, and the link to the ADS design system. Twelve months of software support (to be added to the 12 months bundled with with every 89600 VSA) round out the configuration. No productivity assistance is ordered. The basic information is: a three-year warranty, with a three-year term calibration plus factory calibration data.

The customer will load the software on the PC with the help of the easy to follow installation wizard.

1. Which system configuration do you want?

89641 6.0 GHz vector signal analyzer	Consists of	Qty
☐ One RF channel		
☐ One RF channel with two baseband channels		
☐ Two RF channels		

89640 2.7 GHz RF vector signal analyzer	Consists of	Qty
☐ One RF channel		
√ One RF channel with two baseband channels	• 89640S	1
	• 89600S-040 2.7 GHz RF channel, includes DC to 36 MHz baseband input	1
	• 89600S-011 70 MHz IF channel, includes DC to 36 MHz baseband input	1
	• 89600S-610 cabling for second baseband/IF channel	1
	• 89600S-003 RF system bundle discount	1
☐ Two RF channels		

89611 70 MHz vector signal analyzer	Consists of	Qty
☐ One IF channel		
☐ Two IF channels for baseband IQ		

89610 baseband vector signal analyzer	Consists of	Qty
☐ One DC to 40 MHz baseband channel		
☐ Two DC to 40 MHz baseband channels for baseband IQ		

2. What time capture memory do you want for the system?

Note: Choice required. Select only one. All channels in the system must have the same size memory installed.

	Consists of	Qty
☐ 144 MB RAM memory		
☐ 288 MB RAM memory		
√ 1.2 GB RAM memory	• 89600S-120 1.2 GB channel time capture memory	2

3. Do you want Z540 ANSI standard calibration data or commercial calibration data?

Note: Optional.

	Consists of	Qty
☐ ANSI Z540		
√ Commercial calibration with data	• 89640A-UK6	1

4. What mainframe would you like?

Note: Choice required. Select only one. Not all systems will fit in the smaller mainframes. See Appendix A, Question 4, for more information.

	Consists of	Qty
☐ 89600S-304		
√ 89600S-313 E8403A 13-slot VXI mainframe with E1401-80918 connector shields	• E8403A 13-slot mainframe	1

5. What kind of PC are you planning on using with the system?

Note: Choice required. Select only one.

	Consists of	Qty
√ 89600S-201 IEEE 1394 cable and VXI interface for use with a user-supplied laptop PC	• E8491B IEEE 1394 PC link to VXI module for use with a user-supplied laptop PC	1
☐ 89600S-202 IEEE 1394 PC link for use with a user-supplied desktop PC	• E8491B IEEE 1394 PC link to VXI module with E8491B-001 OHCI-based IEEE 1394 PCI card for use with a user-supplied desktop PC	

6. What kind of software licensing would you like?

Note: Choice required. Select only one. See Appendix A, Question 6, for descriptions of licensing choices. Put the number of 12-month floating license packages desired in the "Qty" blank.

	Consists of	Qty
☐ Hardware only system. No software included		
√ 89601A node-locked license (locked to a particular PC but transferable via floppy or LAN)	• 89601A VSA software	1
☐ 89601AN floating license (locked to a network server)		
☐ 89601N12 12-month floating license for one server Qty _____		

7. What software options do you want?

Note: At least one Option 200 and 300 must be selected. For 89601AN (floating license) select quantity of options per server.

	Consists of	Qty
√ __1__ Basic VSA software (no hardware connectivity)	• 89601A-200	1
√ __1__ Hardware connectivity	• 89601A-300	1
√ __1__ Flexible vector modulation analysis	• 89601A-AYA	1
√ __1__ 3G modulation analysis bundle (This is an ordering convenience equivalent to Options B7T, B7U, B7W, B7X)	• 89601A-B7N	1
☐ __0__ cdma2000/1xEV-DV modulation analysis		
☐ __0__ W-CDMA/HSPA modulation analysis		
☐ __0__ 1xEV-DO modulation analysis		
☐ __0__ TD-SCDMA modulation analysis		
√ __1__ WLAN modulation analysis	• 89601A-B7R	1
☐ __0__ IEEE 802.16-2004 OFDM modulation analysis		
☐ __0__ IEEE 802.16 OFDMA modulation analysis		
☐ __0__ IEEE 802.11n MIMO modulation analysis		
☐ __0__ TETRA modulation analysis & test		
☐ __0__ MB-OFDM ultra-wideband modulation analysis		
☐ __0__ RFID modulation analysis		
☐ __0__ LTE FDD modulation analysis		
☐ __0__ LTE TDD modulation analysis		
√ __1__ Link to ADS/SystemVue software	• 89601A-105	1
☐ __0__ Link to MathWorks Simulink Simulation and Model-Based Design		

8. Would you like to order additional software update service?

Note: Optional choice. One year of the software update subscription service is included with every license you order (see step 6). You may purchase up to one additional year, for a total of two years coverage for each license. This service is included in the 89601N12 12-month floating license and you cannot purchase additional service. The number you put in the "The number of licenses to cover" blank should equal the number of basic VSA software (89601A-200) you specified in step 7.

Special note: When you order the 89600 software, the price of one year of update service will be automatically added and then subtracted using Option D12: Discount on first 12 months of update service.

	Consists of	Qty
√ Yes		
___24___ Number months (total) coverage	• 89601A-024 24 months bundled software update subscription service (qualifies for 12 month discount)	1
___1___ Number of licenses to cover	• 89601A-D12 Discount on first 12 months of bundled software update subscription service	1
☐ No		

9. Do you want any associated software products?

Note: Optional. The license type (node-locked or floating) must match the type you specified in step 6.

	Consists of	Qty
☐ 89607A WLAN test suite (node-locked)		
☐ 89604A distortion suite (node-locked)		
☐ 89604AN distortion suite (floating license) Quantity ___0___		

10. Do you want productivity assistance or other engineering services?

Note: Optional. One day of start-up assistance is recommended at initial order.

	Consists of	Qty
☐ PS-S10 remote scheduled productivity assistance. Select 1 to 999 hours		
☐ PS-S20-01, 1 day of start-up assistance. Recommended 1 day		
☐ PS-S20, daily productivity assistance. Select 1 to 999 days		
☐ PS-T10-896XX, 89600 Series VSA users' course, 8 students, customer site		
☐ PS-T11-896XX, digital radio troubleshooting, 8 students, customer site		
☐ PS-T12-896XX, wireless LAN tech fund, 8 students, customer site		
☐ PS-X10-896XX, VSA wireless LAN measurements consulting service		

Basic information

Select a warranty

Note: The shortest term is standard. Additional coverage is recommended

Consists of	Qty
☐ 1 year	
√ 3 years • R-51B-001-3C	1
☐ 5 year	

What type of calibration would you like?

Note: See Appendix A for an explanation of the calibration plans. Choose only one, then choose plan length.

	Consists of	Qty
√ Agilent calibration upfront plan (Requires Option 896xxA-UK6. See question 3.)		
√ 3 years	• R-50C-021-3	1
☐ 5 years		
☐ Z540 calibration upfront plan (Requires Option 896xxA-A6J. See question 3.)		
☐ None		

Example 4: Configuring an 89641

This example configures a 6.0 GHz 89641 VSA with two RF channels, 288 MB of memory in each channel. Calibration data is not requested. A 13-slot mainframe (the only mainframe a two RF channel 89641 will fit in) is specified and the system uses a laptop PC provided by the customer (requires FireWire interface). A floating license has been specified so the software can be conveniently shared with other users. In addition to the basic VSA option and the hardware connectivity option, the VSA system software options ordered included flexible modulation analysis, 3G modulation analysis, WLAN modulation analysis, and the link to the ADS design system. Twenty four months of software support, Distortion Test suite software, and the 89600 Series VSA user's course round out the configuration. The basic information is: a three-year warranty with a three-year term Z540 calibration upfront calibration type.

All software will be installed and tested in the laptop before the system is shipped. The customer will install the license server, using the installation instructions provided, prior to operating the VSA software.

1. Which system configuration do you want?

89641 6.0 GHz vector signal analyzer	Consists of	Qty
☐ One RF channel		
☐ One RF channel with two baseband channels		
√ Two RF channels	• 89641S	1
	• 89600S-041 6.0 GHz RF channel, includes DC to 36 MHz baseband input	2
	• 89600S-642 cabling for second RF channel	1
	• 89600S-003 RF system bundle discount	1
89640 2.7 GHz RF vector signal analyzer	Consists of	Qty
☐ One RF channel		
☐ One RF channel with two baseband channels		
☐ Two RF channels		
89611 70 MHz vector signal analyzer	Consists of	Qty
☐ One IF channel		
☐ Two IF channels		
89610 baseband vector signal analyzer	Consists of	Qty
☐ One DC to 40 MHz baseband channel		
☐ Two DC to 40 MHz baseband channels for baseband IQ		

2. What time capture memory do you want for the system?

Note: Choice required. Select only one. All channels in the system must have the same size memory installed.

	Consists of	Qty
☐ 144 MB RAM memory		
√ 288 MB RAM memory	• 89600S-288 288 MB channel time capture memory	2
☐ 1.2 GB RAM memory		

3. Do you want Z540 ANSI standard calibration data or commercial calibration data?

Note: Optional.

	Consists of	Qty
√ ANSI Z540	89641A-A6J	1
☐ Commercial calibration with data		

4. What mainframe would you like?

Note: Choice required. Select only one. Not all systems will fit in the smaller mainframes. See Appendix A, Question 4, for more information.

	Consists of	Qty
☐ 89600S-304		
√ 89600S-313 E8403A 13-slot VXI mainframe with E1401-80918 connector shields	• E8403A 13-slot mainframe	1

5. What kind of PC are you planning on using with the system?

Note: Choice required. Select only one.

	Consists of	Qty
√ 89600S-201 IEEE 1394 cable and VXI interface for use with a user-supplied laptop PC	• E8491B IEEE 1394 PC link to VXI module for use with a user-supplied laptop PC	1
☐ 89600S-202 IEEE 1394 PC link for use with a user-supplied desktop PC	• E8491B IEEE 1394 PC link to VXI module with E8491B-001 OHCI-based IEEE 1394 PCI card for use with a user-supplied desktop PC	

6. What kind of software licensing would you like?

Note: Choice required. Select only one. See Appendix A, Question 6, for descriptions of licensing choices. Put the number of 12-month floating license packages desired in the "Qty" blank.

	Consists of	Qty
☐ 89601A node-locked license (locked to a particular PC but transferable via floppy or LAN)		
√ 89601AN floating license (locked to one network server)	• 89601AN VSA software	1
☐ 89601N12 12-month floating license for one server. Qty _____		

7. What software options do you want?

Note: At least one Option 200 and 300 must be selected. For 89601AN (floating license) select quantity of options per server.

	Consists of	Qty
√ __1__ Basic VSA software (no hardware connectivity)	• 89601AN-200	1
√ __1__ Hardware connectivity	• 89601AN-300	1
√ __1__ Flexible vector modulation analysis	• 89601AN-AYA	1
√ __1__ 3G modulation analysis bundle (This is an ordering convenience equivalent to Options B7T, B7U, B7W, B7X)	• 89601AN-B7N	1
☐ __0__ cdma2000/1xEV-DV modulation analysis		
☐ __0__ W-CDMA/HSPA modulation analysis		
☐ __0__ 1xEV-DO modulation analysis		
☐ __0__ TD-SCDMA modulation analysis		
√ __1__ WLAN modulation analysis	• 89601AN-B7R	1
☐ __0__ IEEE 802.16-2004 OFDM modulation analysis		
☐ __0__ IEEE 802.16 OFDMA modulation analysis		
☐ __0__ IEEE 802.11n MIMO modulation analysis		
☐ __0__ TETRA modulation analysis & test		
☐ __0__ MB-OFDM ultra-wideband modulation analysis		
☐ __0__ RFID modulation analysis		
☐ __0__ LTE FDD modulation analysis		
☐ __0__ LTE TDD modulation analysis		
√ __1__ Link to ADS/SystemVue software	• 89601AN-105	1
☐ __0__ Link to MathWorks Simulink Simulation and Model-Based Design		

8. Would you like to order additional software update service?

Note: Optional choice. One year of the software update subscription service is included with every license you order (see step 6). You may purchase up to one additional year, for a total of two years coverage for each license. This service is included in the 89601N12 12-month floating license and you cannot purchase additional service. The number you put in the "The number of licenses to cover" blank should equal the number of basic VSA software (89601AN-200) you specified in step 7.

Special note: When you order the 89600 software, the price of one year of update service will be automatically added and then subtracted using Option D12: Discount on first 12 months of update service.

	Consists of	Qty
√ Yes		
___24___ Number months coverage	• 89601AN-024 24 months SW update service for Option 200 & associated options (qualifies for 12 month discount)	1
____1____ Number of licenses to cover	• 89601AN-D12 Discount on first 12 months of bundled software update subscription service	1
☐ No		

9. Do you want any associated software products?

Note: Optional. The license type (node-locked or floating) must match the type you specified in step 6.

	Consists of	Qty
☐ 89607A WLAN test suite (node-locked)		
☐ 89604A distortion suite (node-locked)		
√ 89604AN distortion suite (floating license)	• 89604AN distortion test suite software	1
Quantity ___1___	89604AN-100 basic distortion test suite	1

10. Do you want productivity assistance or other engineering services?

Note: Optional. One day of start-up assistance is recommended at initial order.

	Consists of	Qty
☐ PS-S10 remote scheduled productivity assistance. Select 1 to 999 hours		
☐ PS-S20-01, 1 day of start-up assistance. Recommended 1 day		
☐ PS-S20, daily productivity assistance. Select 1 to 999 days		
√ PS-T10-896XX, 89600 Series VSA user's course, 8 students, customer site	• PS-T10-896XX	1
☐ PS-T11-896XX, digital radio troubleshooting, 8 students, customer site		
☐ PS-T12-896XX, wireless LAN tech fund, 8 students, customer site		
☐ PS-X10-896XX, VSA wireless LAN measurements consulting service		

Basic information
Select a warranty
Note: The shortest term is standard. Additional coverage is recommended

	Consists of	Qty
☐ 1 year		
√ 3 years	• R-51B-001-3C	1
☐ 5 years		

What type of calibration would you like?
Note: See Appendix A for an explanation of the calibration plans. Choose only one, then choose plan length.

	Consists of	Qty
☐ Agilent calibration upfront plan (Requires Option 896xxA-UK6. See question 3.)		
√ Z540 calibration upfront plan (Requires Option 896xxA-A6J. See question 3.)		
√ 3 years	R-50C-021-3 (3 year)	1
☐ 5 years		
☐ None		

Additional Ways to Order VXI Systems or Modules

The 89600S vector signal analyzers (VSA) are VXI-based and can be configured in a number of ways not specified in this configuration guide. If the configurations provided here do not meet your needs, or if you want to upgrade your 89600S Series system, contact your local Agilent representative.

User-Supplied PC Requirements

Any laptop or desktop PC may be used to run the 89600 VSA software, as long as it meets or exceeds the following minimum requirements. For best immunity to electrostatic discharge (ESD), use a desktop PC.

Operating System	Microsoft® Windows® XP Professional, Service Pack 2	Microsoft Windows Vista Business, Enterprise, or Ultimate
CPU	600 MHz Pentium® or AMD-K6 > 600 MHz (>2 GHz recommended)	> 600 GHz32-bit (x86) or 64-bit (> 2 GHz recommended)
Empty slots (desktop)	1 PCI-bus slot (Two recommended – VXI hardware only)	1 PCI-bus slot (Two recommended – VXI hardware only)
Empty slots (laptop)	1 CardBus Type II slot (Integrated FireWire® recommended for VXI hardware only)	1 CardBus Type II slot (Integrated FireWire® recommended for VXI hardware only)
RAM	512 MB (1 GB recommended)	1 GB (2 GB recommended)
Video RAM	4 MB (16 MB recommended)	128 MB (512 MB recommended)
Hard disk	1 GB available	1 GB available
Additional drives	CD-ROM to load the software; license transfer requires a 3.5 inch floppy disk drive, network access, or USB memory stick	CD-ROM to load the software; license transfer requires a 3.5 inch floppy disk drive, network access, or USB memory stick
Interface support	LAN, GPIB, USB, or FireWire[1] interface (VXI HW only)	LAN, GPIB, USB, or FireWire[1] interface (VXI HW only)

1. For a list of supported IEEE-1394 (FireWire) interfaces, visit **www.agilent.com/find/89600** 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?"

Software License Choices

The 89600S VSAs offer a variety of software licenses. Depending on your need, you can select a floating license, a node-locked license, or a 12-month limited term floating license.

The floating license version of the 89600 software puts the "license-to-use" on your network rather than on a PC. Start by loading the software on as many networked PCs as you like. To use the software, you simply start the application. If a floating license is available, you application will acquire the license and then being running. When you exit the application, the floating license will be returned to the license server and become available for use by a network user. The license is permanently valid.

The 89600 VSA software floating license products (89601AN, 89601N12, 89604AN) require loading a vendor daemon on a license server. This server may be the same PC running the client software (89600 VSA software). Full installation instructions and support are provided for compatible operating systems. Compatible server operating systems include: Windows 2000, Windows 2000 Server, Windows XP Pro, and Windows Server 2003. For Agilent EEsof ADS customers utilizing floating licenses, a SUN™ Solaris-compatible vendor daemon is also available.

The 12-month limited term license, 89601N12, offers the benefits of the permanent floating license, at a significant price savings, with a license that expires in 12 months.

If a network is not available, or sharing is not desired, the 89600 software offers node-locked licensing, 89601A, that permanently locks the software to a specific piece of hardware: typically a PC. The 89600 software supports a wide range of front ends and may also be used to gather data from a wide range of Agilent spectrum and signal analyzers, oscilloscopes, logic analyzers, digitizers, and even simulation software. It may be easily transferred from PC to instrument, or PC to PC.

Software Update Subscription Service

The software update subscription service helps you get the most out of your vector signal analyzer investment by keeping your 89600 VSA software current with new enhancements. This product provides automatic notification and shipment of new software enhancements as soon as they become available. Purchase the length of coverage that best meets your needs. Coverage is available for 12 months or 24 months. Twelve months of coverage is provided bundled in every 89600S VSA system ordered.

For node-locked and floating licenses, the first year update service is automatically added to your order and then the price is subtracted via a discount Option D12. If you order 24 months of coverage, your order will include the update service with a 24 month price, and then the price of the first year of coverage will be discounted out, resulting in a net price equal to one year.

For more information, go to **www.agilent.com/find/VsaUpdate**

Spares and Upgrades

For spares and upgrades to existing 89600S systems, see **www.agilent.com/find/89600_upgrades**

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 due to defects in material and workmanship. Agilent will replace software media that does not execute its programming instructions due to such defects.

The warranty periods for the products contained in an 89600S VSA VXI-based system vary.

Appendix A: Explanations for Configuration Questions

Question 1:

Which system configuration do you want?

Select the configuration you want: Agilent 89641, 89640, 89611, or 89610. All of the configurations come with the same application software but offer different hardware capabilities. The following summarizes those capabilities.

89641 6.0 GHz RF vector signal analyzer

This configuration offers one RF channel that includes a baseband/IF input. A second baseband/IF input and a second RF input can be added to this configuration. The baseband/IF channels operate over DC to 36 MHz and 52 to 88 MHz frequency ranges with 36 MHz of analysis bandwidth. They are designed to work with baseband I/Q signals. The RF channel's frequency range is 18 MHz to 6.0 GHz also with 36 MHz maximum analysis bandwidth. A single RF channel configuration will fit in a four-slot mainframe. A two RF channel system requires a 13-slot mainframe. (See question 4, in this section.)

89640 2.7 GHz RF vector signal analyzer

This configuration offers one RF channel that includes a baseband/IF input. A second baseband/IF input and a second RF input can be added to this configuration. The baseband/IF channels operate over DC to 36 MHz and 52 to 88 MHz frequency ranges with 36 MHz of analysis bandwidth. They are designed to work with baseband I/Q signals. The RF channel's frequency range is 18 MHz to 2.7 GHz and offer a 36 MHz maximum analysis bandwidth. A single RF channel configuration will fit in a four-slot mainframe. A two RF channel system requires a 13-slot mainframe. (See question 4, in this section.)

89611 70 MHz IF vector signal analyzer

This configuration offers one or two baseband/IF channels. These IF channels operate over DC to 36 MHz and 52 to 88 MHz frequency ranges. They are designed to work with baseband I/Q signals and with tuners that have 70 MHz center frequency IFs. Their maximum analysis bandwidth is 36 MHz. A single channel 89611 fits in a four-slot mainframe, a two channel configuration requires at least a six-slot mainframe.

89610 baseband vector signal analyzer

This configuration offers one or two baseband only channels. Each channel has a frequency range of DC to 40 MHz with a 39 MHz maximum analysis bandwidth. Two channels are required to measure I/Q signaling. This is the only configuration that can fit two channels in a single four-slot mainframe.

Question 2:

What time capture memory do you want for the system?

The 89600S VSAs offer three sizes of signal capture memory: 144 MB (46 MSa,complex), 288 MB (92 MSa,complex), 1.2 GB (384 MSa, complex). The standard memory is 144 MB; the other sizes are optional. The memory resides in the input channels. Each channel must have memory and the memory size in each channel must match. If no selection is made each channel will have 144 MB installed.

A channel sampling at maximum analysis bandwidth (36 MHz) will take about 8 seconds to fill the 1.2 GB memory, about 2 seconds to fill the 288 MB memory, and about 800 ms to fill the 144 MB memory.

Each channel uses decimating filters. Therefore, each factor of two reduction in the span will double the time capture storage time.

Question 3:

Do you want Z540 ANSI standard calibration data or commercial calibration data?
This item is different from the calibration items contained in the basic information questions. All 89600S vector signal analysis systems are calibrated before they leave the factory. This calibration is included in the price of the system and is required to achieve the performance specifications in the data sheet. Check "commercial calibration with data," if your calibration department requires documentation for the calibration performed on the system. This supplies a calibration certificate and the data from the factory calibration of your system. Check "Z540 ANSI" to have your system calibrated using ANSI Z540 procedures and to receive Z540 compliant documentation. For continued coverage over 3 or 5 years for either calibration plan, order the corresponding extension. See Basic Information section.

Question 4:

What mainframe would you like?
The 89600S VSA works in two different VXI mainframes sizes: 4-slot and 13-slot. The table below shows the mainframe recommended for each 89600S VSA configuration. You can select a mainframe with more slots than the recommendation but you cannot select a mainframe with fewer slots.

Configuration	Channels	Recommended M/F
89610	1BB	4-slot
	2BB	4-slot
89611	1BB/IF	4-slot
	2BB/IF	13-slot
89640	1RF	4-slot
	1RF, 2BB/IF	13-slot
	2RF	13-slot
89641	1RF	4-slot
	1RF, 2BB/IF	13-slot
	2RF	13-slot

The mainframe you select will be configured to include all features needed to support full 89600S VSA system operation. The exact configuration is listed in the "Consists of" column.

Question 5:

What kind of PC are you planning on using with the system?
The application and control software for the 89600S Series vector signal analyzers runs on a PC and is connected to the VXI system via an IEEE1394 (FireWire) interface. You can use your own PC as long as it meets the requirements outlined in the "User-supplied PC requirements" section of this guide.

Selecting "User-supplied desktop PC" will provide a FireWire-VXI interface module, plus a PCI-based FireWire interface card and a cable to go in your desktop.

Selecting "User-supplied laptop PC" will provide a FireWire-VXI interface module and a FireWire cable (see the FAQ's listed in the key library information at **www.agilent.com/find/89600** for a list of approved laptop FireWire I/O cards).

Question 6:

What kind of software licensing would you like?
The 89600S Series VSAs offer three types of software licenses: node-locked, floating, and 12-month limited-term floating license for one user.

A node-locked license attaches the software license to a specific piece of hardware, typically the PC it is running on, and the license is permanently valid. This type of license is the simplest to install. It is recommended for applications where the software will be operated away from the network or where it will be shared only by moving the PC and VXI hardware with it. Additionally, the license may be transferred to other supported Agilent front ends.

A floating license resides on a secure network server. It is permanently valid. The software may be loaded on any number of PCs or Agilent supported front ends. To use the software the user merely starts the application. As long as a valid floating license is available on the network, the application will run. Only one PC or other supported front end at a time may use the floating license. This type of licensing is more complex to install. It is recommended for applications requiring the software be shared among several users, perhaps for analyzing time capture files where no measurement hardware is needed, or with several of the list of hardware front-ends supported by the software or with the Agilent Advanced Design System simulators.

The 12-month limited-term floating license for one user offers networked-locked software at a lower price than the floating license but with restrictions:
1. The term of the license is limited to 12 months, after which the software is disabled. License renewals are available.
2. The software's configuration is fixed; all options are included in the package as is software update subscription service for the duration of the term.

The 12-month limited-term floating license includes access to all current options available at the time of order, so there are no software option selections.

Question 7:
Which software options do you want?
Basic VSA software (no hardware connectivity)
Provides the basic signal analysis tool set, operator interface, displays, and file management, required to perform basic vector signal analysis. This option is required.

►Hardware connectivity
Provides the I/O libraries needed to connect to and control the hardware front-ends compatible with the 89600 VSA software. These front-ends include the Agilent PSA and ESA spectrum analyzers, the 54830 and 54850 Series Infiniium oscilloscopes, the 89600S Series VXI-based vector signal analysis systems, and Agilent's ESG and PSG signal generators. This option is not required if the VSA software will not be connected to measurement hardware.

►Dynamic link to Advanced Design System (ADS)/SystemVue
Link the 89600 VSA software directly to Agilent's ADS or SystemVue software to measure simulation results (no measurement hardware is required). The 89600 software can be dynamically linked to any point in the digital model to analyze data by simply dragging the VSA icon to the designed spot in the schematic. Contact your local Agilent sales representative for more information, or get more information at **www.agilent.com/find/ads**.

►Dynamic link to The MathWorks Simulink Simulation and Model-Based Design package.
This option provides a blockset library to use the 89600 VSA software as a sink or source. Contact your local Agilent sales representative for more information or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication, literature publication number 5989-1679EN. For information on The MathWorks Simulink Simulation and Model-Based Design software, see **www.mathworks.com/products/simulink/**.

►Flexible modulation analysis
Supports evaluation and troubleshooting of standards-based and proprietary signals. Provides over 30 digital demodulators with programmable center frequency, symbol rate, filter type, and α/BT. Contact your local Agilent sales representative for more information or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication, literature number 5989-1679EN.

►3G modulation analysis bundle
Supports evaluation and troubleshooting of most 3G modulation formats including: W-CDMA/HSPA+, cdma2000, 1xEV-DV, TD-SCDMA, and 1x-EV-D0, forward and reverse links. This option is an ordering convenience equivalent in functionality to Options B7T, B7U, B7W, and B7X. Contact your local Agilent sales representative for more information or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication, literature publication number 5989-1679EN.

►cdma2000/1xEV-DV modulation analysis
Supports evaluation and troubleshooting of cdma2000/1xEV-DV signals, both forward and reverse links. Contact your local Agilent sales representative for more information or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication, literature publication number 5989-1679EN.

►W-CDMA/HSPA+ modulation analysis
Measure, evaluate and troubleshoot your W-CDMA and enhanced HSPA signals. Automatically identifies active channels and detects HSPA modulation formats. Also provides HSPA+ MIMO analysis. Contact your local Agilent sales representative for more information or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication, literature publication number 5989-1679EN.

►1xEV-DO modulation analysis
Measure and analyze 1xEV-DO modulated signals. Descrambles, despreads, and demodulates forward and reverse link signals. Contact your local Agilent sales representative for more information or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication, literature publication number 5989-1679EN.

►TD-SCDMA modulation analysis
Troubleshoot and analyze your TD-SCDMA modulation and RF performance. Contact your local Agilent sales representative for more information or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication, literature publication number 5989-1679EN.

►WLAN modulation analysis
Supports evaluation and troubleshooting, and standards-based pass/fail testing, of WLAN signals including: 802.11a/b/g/p/j. Contact your local Agilent sales representative for more information or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication.

►IEEE 802.16-2004 OFDM modulation analysis
Supports evaluation of the WiMAX IEEE 802.16-2004 OFDM standard signals, including: all channel bandwidths, 1.25 to 28 MHz; uplink and downlink; burst or continuous mode; auto detection of all modulated formats, BPSK, QPSK, 16QAM, 64QAM; all frame lengths, guard intervals, and sampling factors (Fs/BW); FDD, TDD and H-FDD signaling modes. Contact your local Agilent sales representative for more information or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication.

►IEEE 802.16 OFDMA modulation analysis
Supports evaluation and troubleshooting of the IEEE 802.16 OFDMA standard signals (also called mobile WiMAX or scalable WiMAX). Contact your local Agilent sales representative for more information or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication, literature publication number 5989-1679EN.

►IEEE 802.11n MIMO modulation analysis
Supports IEEE 802.11n modulation for 1 or 2 channel 89600S VSA VXI-based systems, including both 20 and 40 MHz IEEE 802.11n-compliant signal demodulation. This option supports 3 or 4 channel MIMO operation when used with other platforms, such as the Agilent Infiniium and Infiniivision oscilloscopes. Contact your local Agilent sales representative for more information or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication, literature number 5989-1679EN.

▶ **TEDS modulation analysis and test**
Perform modulation analysis and standards-based tests for TETRA Enhanced Data Service (TEDS) signals. Contact your local Agilent sales representative for more information or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication, literature number 5989-1679EN.

▶ **MB-OFDM ultra-wideband modulation and test**
Measure and analyze WiMedia-compliant multi-band OFDM ultra-wideband signals for wireless USB and other applications. Note: This option requires wider bandwidth than the 89600S VXI systems provide. However, it can be ordered for times when you want to use the software with other front ends. Contact your local Agilent sales representative for more information or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication, literature number 5989-1679EN.

▶ **RFID modulation analysis**
Supports a wide range of RFID standards along with their many encoding schemes for both the forward and return directions. Contact your local Agilent sales representative for more information or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication, literature number 5989-1679EN.

▶ **LTE FDD modulation analysis**
Measure and analyze 3GPP Long Term Evolution signals. Option BHD supports the LTE FDD generic frame structure as well as the FDD transmission mode. Contact your local Agilent sales representative for more information, or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication, literature number 5989-1679EN.

▶ **LTE TDD modulation analysis**
Measure and analyze LTE TDD signals, including uplink and downlink, plus 4x4 MIMO. Contact your local Agilent sales representative for more information, or go to the Agilent Web site at **www.agilent.com/find/89600** and request the software technical overview publication, literature number 5989-1679EN.

Question 8:
Would you like to order additional software update service?
Software update subscription service provides automatic notification and shipment of software enhancements as soon as they become available. Coverage ranges from 12 months to 24 months. Twelve-month coverage is bundled in with any configuration of the 89610/11/40/41. Update service is not available for the 89604A distortion test software, 89604AN distortion test software (floating) or the 89607A WLAN test suite. Contact your local Agilent sales representative for more information or go to **www.agilent.com/find/VsaUpdate.**

Question 9:
Do you want any associated software products?
▶ **89604A distortion test suite**
This application software measures AM/AM and AM/PM distortion of multichannel power amplifiers (MCPAs) with up to 36 MHz of RF measurement bandwidth. The stimulus signal can be narrowband CW or wideband complex modulation. Contact your local Agilent sales representative for more information or search for 89604A on the Agilent Web site (**www.agilent.com**).

▶ **89604AN distortion test suite (floating license)**
This application software measures AM/AM and AM/PM distortion of MCPAs with up to 36 MHz of RF measurement bandwidth using complex modulated signals. This product offers the same measurement functionality as the 89604A product; its only difference is its floating license. Contact your local Agilent sales representative for more information or search for 89604AN on the Agilent Web site (**www.agilent.com**).

▶ **89607A WLAN test suite**
This standards-based test suite provides the convenience of automatic one button test setup and execution with the confidence of knowing your design is being tested based on the techniques, parameters, and specifications set down in the IEEE802.11a/b/g standards. This product is included in the WLAN modulation analysis Option B7R. Contact your local Agilent sales representative for more information or search for 89604AN on the Agilent Web site (**www.agilent.com**).

Question 10

Do you want engineering services?

Agilent provides both product-specific and application training, as well as specialized consulting services. Of particular interest are the following:

PS-S20-01	One day of start-up assistance (recommended)
PS-T10-896XX	89600 users' course
PS-T11-896XX	Digital radio troubleshooting
PS-T12-896XX	Wireless LAN technology fundamentals
R1362A-250	VSA wireless LAN measurements

The 89600 users' course and W-LAN technology fundamentals are classes available on-site at your location. The VSA wireless LAN measurements and productivity assistance products are consulting services tailored to your needs.

Basic information

Select warranty

The one-year warranty covers parts and labor and is included in the price of the system. A three-year or five-year warranty is available for an additional charge. All warranties require the equipment to be returned to Agilent for the repair.

What type of calibration would you like?

Extended calibration plans, called Upfront Calibration plans, are available for three years or five years of coverage. They provide the recommended number of calibrations for your 89600 series VSA over the selected term. They also provide for calibration in the event of a repair.

All 89600 Series VSAs are calibrated at the factory before they are shipped. Their calibration interval is two years. We offer calibration plans for our customers who want Agilent to help them maintain the calibration in the future.

Agilent calibration upfront plan (three years or five years):
Our most popular service, this plan provides significant savings over per-incident services. With this service, instruments found to be out-of-specification will be adjusted and returned to you in specification with one data report. The report will show the performance of the instrument as it was returned to you. The service also provides for an Agilent calibration certificate, label and seals, and full data report. If you order this, you must also order 896xxA-UK6. See Question 3 for more information.

Z540 calibration upfront plan (three years or five years):
This plan meets or exceeds Z540 standards. With this service, instruments found to be out of specification will be adjusted and returned to you in specification with two data reports showing the
• performance of the instrument as it was received, providing you with measurement performance history; and
• performance as it was returned to you for ongoing confidence

The test report will also include a measurement adequacy addendum if the test accuracy ratio is less than 4:1. An ANSI/NCSL Z540 compliant calibration certificate, label, and seals are also included with this service.

Note: If you order this, you must also order the 896xxA-A6J Z540 ANSI calibration data. See Question 3 for more information.

Appendix B: Controlling an Agilent Signal Generator from an 89600 Series VSA

Any VSA system, with version 3.00[1] software or above, can control certain Agilent 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 signal generator and downloads files to the signal generator 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 be installed in the signal generator. Signal playback bandwidth is limited by the bandwidth of the arbitrary waveform generator.

The signal generator can be controlled via GPIB or LAN.

See the figures on the next page for typical connections.

Compatible signal generators

Type	Models	Notes
ESG Series digital RF signal generators	E4431B, E4432B, E4433B, E4434B, E4435B, E4436B, E4437B, E4438C[1]	Requires firmware version B.03.50 or later and must include the arbitrary waveform generator Option E44xx-UND with firmware version 1.2.92 or later. E4438C with internal baseband generator Option E4438C-001, -002, -601, -602
PSG Series microwave signal generators	E8267C	Requires Option E8267C-002 or -602 internal baseband generator
MXG Series vector signal generators	N5182A	Requires Option N5182A-651, -652, or -654 internal baseband generator

PC interface and cables (GPIB and LAN)

Component	Model number	Notes
PCI high performance GPIB interface card for Windows 95/98/ 2000/XP Professional and Windows NT®	82350B	Use when controller is a desktop PC. Requires one PCI slot in PC. Must also order GPIB cable (10833A)
GPIB cardbus interface	NI778034-2	Use when controller is a laptop PC. Requires one empty PCMCIA slot and Windows 2000 or XP Professional OS. Includes a two-meter cable. Order from National Instruments Company
GPIB cable	10833A	One meter GPIB cable for connecting the analyzer to the PC. Not needed if PC GPIB card comes with a cable. Not needed with USB/GPIB interface
USB/GPIB interface	82357B	Requires USB port and Windows XP Professional or Vista
LAN cross-over cable	8121-0545	
LAN/GPIB gateway I/O libraries for MS Windows	E5810A	LAN/GPIB gateway

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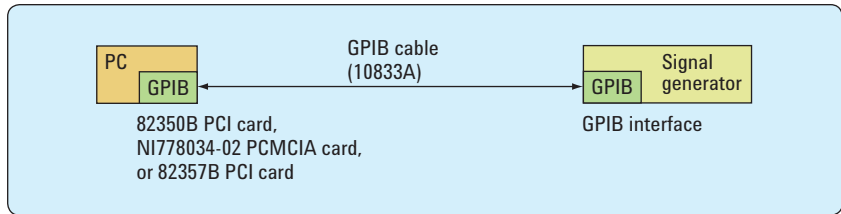1. E4438C requires version 4.00 or higher 89600 software.

PC
GPIB

GPIB cable
(10833A)

GPIB
Signal
generator

82350B PCI card,
NI778034-02 PCMCIA card,
or 82357B PCI card

GPIB interface

Figure 1. Typical GPIB connection (see 89600 user manual for detailed installation instructions)

PC
LAN

LAN cross-over cable
(8121-0545)

LAN
Signal
generator

LAN interface
standard
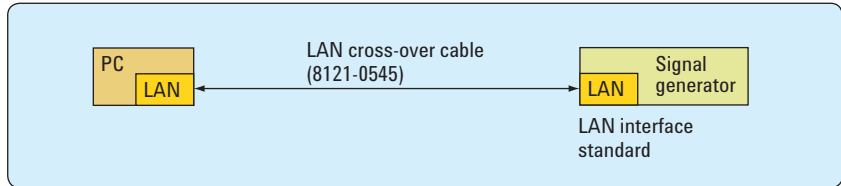
Figure 2. Typical LAN connection (see 89600 user manual for detailed installation instructions)

PC
LAN

LAN cross-over
cable (8121-0545)

LAN/
GPIB

GPIB cable
(10833A)

GPIB
Signal
generator

E5810A

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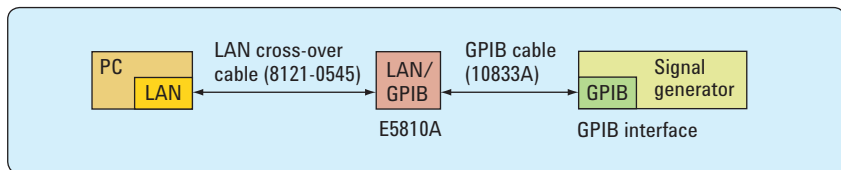
Figure 3. Typical GPIB to LAN connection (see 89600 user manual for detailed installation instructions)

Related Literature List

89600 Vector Signal Analysis Software CD, literature number 5980-1989E

89600 Series Vector Signal Analysis Software 89601A/89601AN/89601N12,
Technical Overview, literature number 5989-1679EN

89600 Series Vector Signal Analysis Software 89601A/89601AN/89601N12,
Data Sheet, literature number 5989-1786EN

*Hardware Measurement Platforms for the Agilent 89600 Series Vector Signal Analysis
Software*, Data Sheet, literature number 5989-1753EN

*89650S Wideband Vector Signal Analyzer System with High Performance Spectrum
Analysis*, Technical Overview, literature number 5989-0871EN

*89650S Wideband Vector Signal Analyzer System with High Performance Spectrum
Analysis*, Configuration Guide, literature number 5989-1435EN

89607A WLAN Test Suite Software, Technical Overview, literature number 5988-9574EN

89604A Distortion Test Suite Software, Technical Overview, literature number 5988-7812EN

Related Web Resources

For more information, visit: **www.agilent.com/find/89600**

www.agilent.com

For more information on Agilent Technologies' products, applications or services, please contact your local Agilent office. The complete list is available at:
www.agilent.com/find/contactus

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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) 375 8100

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Sweden	0200-88 22 55
United Kingdom	44 (0) 118 927 6201

For other unlisted countries:
www.agilent.com/find/contactus
(BP-09-27-13)

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