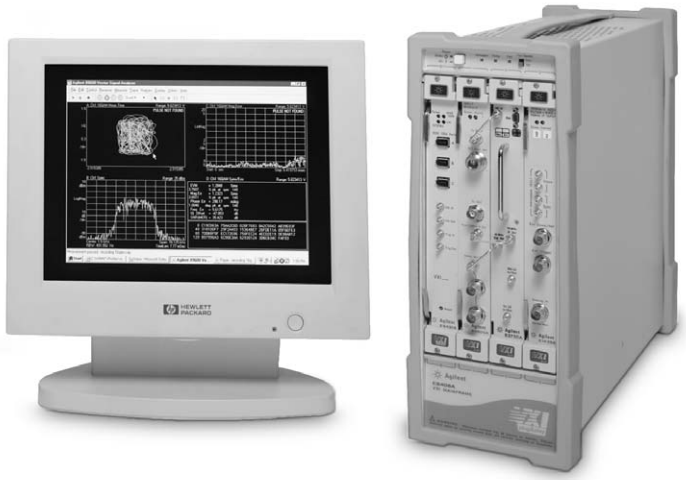
Agilent 89600 Series Vector Signal Analyzers

VXI Configuration Guide



The 89600 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.

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Agilent Technologies

Configuring Your 89600 VSA

The following questions will guide you through configuring your 89600 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	• 896xx-A6J (xx = 10, 11, 40, 41)	1
❑ Commercial calibration with data	• 896xx-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-306 E1421B 6-slot VXI mainframe with E1421-80921 connector shields	• E1421B 6-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	
❑ 89600S-204 laptop PC with VSA SW, IEEE 1394 I/F; 90 day warranty only	• E8491B IEEE 1394 PC link to VXI module and LTPC1 laptop 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		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/HSDPA 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
❑ _____	Link to ADS 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 node-locked license you order (see step 6). You may purchase up to one additional year, for a total of two years coverage for each node-locked license. This service is NOT included in the floating license. You may purchase up to two years coverage per floating 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 quantity of basic VSA software (89601X-200) you specified in step 7.

	Notes
❑ Yes	
_____ Number months (total) coverage	• 89601A-0xx or 89601ASN-0xx (xx equals number of months coverage, max 24) Note: You get 12 months included free when you first order the 89601A node-locked license. Order qty 1 Option 89601A-024 to get an additional year of coverage. The 89601AN floating license does not include this service, but it is strongly recommended.
_____ Number of licenses to cover	• "Number of licenses to cover" is needed when ordering the 89601ASN update service for floating licenses. This quantiy should match the quantity of Option 200 you ordered in section 7. This quantity will become the quantity of the Option 89601ASN-0xx.
❑ 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. Three years is recommended

	Consists of	*Qty*
❑ 1 year	• R-51B-001-C	1
❑ 3 years	• R-51B-001-3C	1

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	• R-50C-011-3 (3 year)	1
❑ Z540 calibration upfront plan	• R-50C-021-3 (3 year)	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	• 89610-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-306	• E1421B 6-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	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	
❑	89600S-204 laptop PC with VSA SW, IEEE 1394 I/F; 90 day warranty only	• E8491B IEEE 1394 PC link to 1 VXI module and LTPC1 laptop 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/HSDPA 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__ Link to ADS 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 node-locked license you order (see step 6). You may purchase up to one additional year, for a total of two years coverage for each node-locked license. This service is NOT included in the floating license. You may purchase up to two years coverage per floating 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.

	Notes	*Qty*
✓ Yes	• 89601A-024 24 months software update subscription service (includes 1 year free)	1
___24___ Number months (total) coverage		
❑ 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. Three years is recommended

	Consists of	*Qty*
❑ 1 year		
✓ 3 years	• R-51B-001-3C	1

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		
❑ Z540 calibration upfront plan		
✓ 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 89600 VSA systems), 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-306 E1421B 6-slot VXI mainframe with E1421-80921 connector shields	• E1421B 6-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	
✓ 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
❑ 89600S-204 laptop PC with VSA SW, IEEE 1394 I/F; 90 day warranty only	• E8491B IEEE 1394 PC link to 1 VXI module and LTPC1 laptop 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)		
✓ 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 (This is an ordering convenience equivalent to Options B7T, B7U, B7W, B7X)	• 89601AN-B7N	1
❑ __0__cdma2000/1xEV-DV modulation analysis		
❑ __0__W-CDMA/HSDPA 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		
✓ __2__Link to ADS 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 node-locked license you order (see step 6). You may purchase up to one additional year, for a total of two years coverage for each node-locked license. This service is NOT included in the floating license. You may purchase up to two years coverage per floating 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.

	Notes	*Qty*
✓ Yes ____12____Number months (total) coverage _____3____Number of licenses to cover	• 89601ASN-012 12 months software update coverage for Option 200 and associated options	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. Three years is recommended

	Consists of	*Qty*
❑ 1 year		
✓ 3 years	• R-51B-001-3C	1

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		
❑ Z540 calibration upfront plan		
✓ 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 included standard 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	• 89600A-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	• 89640-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-306		
✓ 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	
❑ 89600S-204 laptop PC with VSA SW, IEEE 1394 I/F; 90 day warranty only	• E8491B IEEE 1394 PC link to 1 VXI module and LTPC1 laptop 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/HSDPA 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		
✓ __1__Link to ADS 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 node-locked license you order (see step 6). You may purchase up to one additional year, for a total of two years coverage for each node-locked license. This service is NOT included in the floating license. You may purchase up to two years coverage per floating 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.

	Notes	*Qty*
✓ Yes ___24___ Number months (total) coverage _____ Number of licenses to cover	• 89601A-024 24 months of software subscription service (includes 1 year free)	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. Three years is recommended

	Consists of	*Qty*
❑ 1 year		
✓ 3 years	• R-51B-001-3C	1

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	• R-50C-011-3 (3 year)	1
❑ Z540 calibration upfront plan		
❑ 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 PC for the system is a laptop PC purchased with the system. 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. Eighteen 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		
❑ 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-306		
✓ 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	
❑ 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	
✓ 89600S-204 laptop PC with VSA SW, IEEE 1394 I/F; 90 day warranty only	• E8491B IEEE 1394 PC link to VXI module and LTPC1 laptop 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*
❑ 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/HSDPA 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		
✓ __1__Link to ADS 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 node-locked license you order (see step 6). You may purchase up to one additional year, for a total of two years coverage for each node-locked license. This service is NOT included in the floating license. You may purchase up to two years coverage per floating 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.

	Notes	*Qty*
✓ Yes ____18____ Number months coverage _____1_____ Number of licenses to cover	• 89601ASN-018 18 months software update coverage for Option 200 and associated options	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 ___1___	• 89604AN distortion test suite software 89604AN-100 basic distortion test suite	1 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. Three years is recommended

	Consists of	*Qty*
❑ 1 year		
✓ 3 years	• R-51B-001-3C	1

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		
✓ Z540 calibration upfront plan	• R-50C-021-3 (3 year)	1
❑ None		

The 89600 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 89600 Series system, contact your local Agilent representative.

Additional Ways to Order VXI Systems or Modules

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.

Characteristic	Desktop	Laptop
CPU	600 MHz Pentium® or AMD-K6 (>2 GHz recommended)	> 600 MHz Pentium or AMD-K6 (> 2 GHz recommended)
Empty slots	1 PCI-bus slot (Two recommended – VXI hardware only)	1 CardBus Type II slot (Integrated FireWire® recommended for VXI hardware only)
RAM	512 MB (1 GB recommended)	512 MB (1 GB recommended)
Video RAM	4 MB (16 MB recommended)	4 MB (16 MB recommended)
Hard disk	500 MB available	500 MB available
Operating system	Microsoft® Windows® 2000 SP2 or XP Professional	Microsoft Windows 2000 SP2 or XP Professional
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	FireWire[1] interface	FireWire[1] interface

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 89600 Series 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 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 that permanently locks the software to a specific piece of hardware: typically a PC. Whether in the office, or away, your software will always be licensed to run.

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 Series VSA current with new enhancements. This product provides automatic notification and shipment of new software upgrades as soon as they become available. Purchase the length of coverage that best meets your needs. Coverage is available for as short as 12 months or as long as 24 months, in monthly increments. Twelve months of coverage is provided as a standard part of every 89600 VSA Series system ordered with a node-locked or 12-month limited-term license.

The 89601ASN software update service provides software subscription service for a 89601AN floating license. Coverage is available from 2 to 24 months in monthly increments.

For more information, go to **www.agilent.com/find/89600** and click on "Software update subscription service".

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 89600 VSA Series 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 89600 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 89600 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.

Question 4:

What mainframe would you like?

The 89600 VSA works in three different VXI mainframes sizes: 4-slot, 6-slot, and 13-slot. The table below shows the mainframe recommended for each 89600 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	6-slot
89640	1RF	4-slot
	1RF, 2BB/IF	6-slot
	2RF	13-slot
89641	1RF	4-slot
	1RF, 2BB/IF	6-slot
	2RF	13-slot

The mainframe you select will be configured to include all features needed to support full 89600 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 89600 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).

Selecting "Agilent-supplied laptop PC" will provide a laptop configured to operate with a VXI system pre-loaded with the 89600 Series VSA software and a FireWire interface. Contact your local Agilent sales representative for more information or search for LTPC1 laptop PC on the Agilent Web site (**www.agilent.com**).

Question 6:

What kind of software licensing would you like?

The 89600 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.

A floating license resides on a secure network server. It is permanently valid. The software may be loaded on any number of PCs. 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 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 Series VSA software. These front-ends include the Agilent PSA and ESA spectrum analyzers, the 54830 and 54850 Series Infiniium oscilloscopes, the 89600 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 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/**.

Dynamic link to Advanced Design System (ADS)

Link the 89600 VSA Series software directly to Agilent's ADS software to measure simulation results (no measurement hardware is required). The 89600 Series 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 search for ADS on the Agilent Web site (**www.agilent.com**).

Flexible modulation analysis

Supports evaluation and troubleshooting of standards-based and proprietary signals. Provides over 20 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.

3G modulation analysis bundle
Supports evaluation and troubleshooting of 3G modulation formats including: W-CDMA/HSPDA, 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/HSDPA modulation analysis
Measure, evaluate and troubleshoot your W-CDMA and HSDPA signals. Automatically identifies active channels and detects HSDPA modulation formats. 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. 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 89600 VSA VXI-based systems, including both 20 and 40 MHz IEEE 802.11n-compliant signal demodulation. 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. 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.

Question 8:

Would you like to order additional software update service?
Software update subscription service provides automatic notification and shipment of software upgrades as soon as they become available. Coverage ranges from 12 months to 24 months in one-month increments. Twelve-month coverage is included standard with any configuration of the 89610/11/40/41 if you order the node-locked license. This service is not included with the floating license but may be ordered and is highly recommended. 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/89600** and click on "Software update subscription service".

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 set-up 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 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 3 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):

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.

Z540 calibration upfront plan (three 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.

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	82357A	Requires USB port and Windows 2000 or XP Professional
LAN cross-over cable	8121-0545	
LAN/GPIB gateway I/O libraries for MS Windows	E5810A	LAN/GPIB gateway

1. E4438C requires version 4.00 or higher 89600 software.

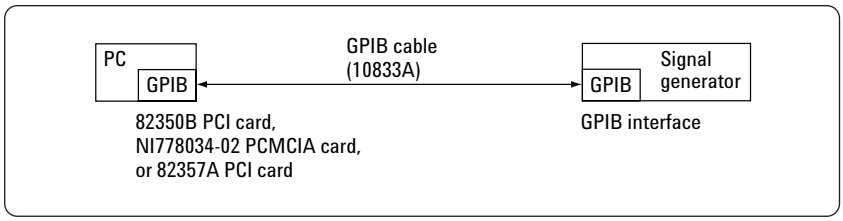

Figure 1. Typical GPIB connection (see 89600 user manual for detailed installation instructions)

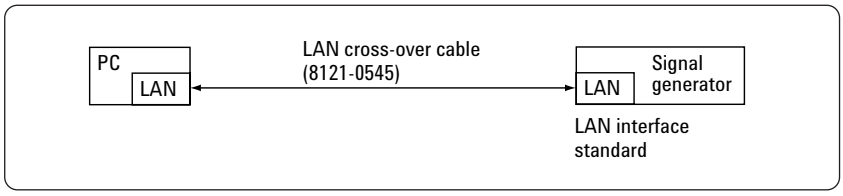

Figure 2. Typical LAN connection (see 89600 user manual for detailed installation instructions)

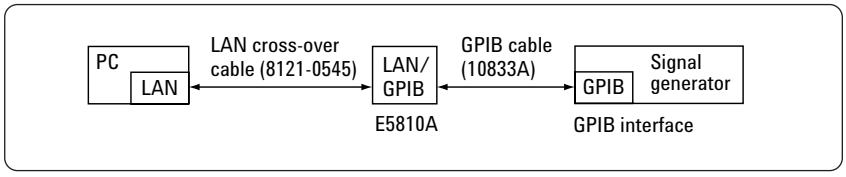

Figure 3. Typical GPIB to LAN connection (see 89600 user manual for detailed installation instructions)

Related Literature List

89600S Vector Signal Analyzer 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

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	*0.14 /minute
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Revised: May 7, 2007

Product specifications and descriptions in this document subject to change without notice.

Printed in USA, May 8, 2007
5968-9350E

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