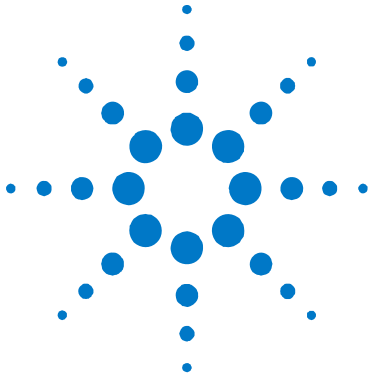

Agilent V2920A
Vector Signal Generator

Installation and
Quick Start Guide

Agilent Technologies

Notices

Manual Part Number

V2920-90001

Edition

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Sales and Technical Support

To contact Agilent for sales and technical support, refer to the "support" links on the following Agilent web resources:

- www.agilent.com/find/V2920A (product-specific information and support)
- www.agilent.com/find/assist (worldwide contact information for repair and service)

Information on preventing damage to your Agilent equipment can be found at www.agilent.com/find/tips.

Warranty

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Regulatory Compliance

This product has been designed and tested in accordance with accepted industry standards, and has been supplied in a safe condition. The documentation contains information and warnings that must be followed by the user to ensure safe operation and to maintain the product in a safe condition.

EMC COMPLIANCE:

- Complies with European EMC Directive 2004/108/EC
- IEC/EN 61326-1 or IEC/EN 61326-2-1
- CISPR Pub 11 Group 1, class A
- AS/NZS CISPR 11
- ICES/NMB-001: This ISM device complies with Canadian ICES-001. (Cet appareil ISM est conforme a la norme NMB du Canada.)

SAFETY COMPLIANCE:

- Complies with European Low Voltage Directive 2006/95/EC
- IEC/EN 61010-1, 2nd Edition
- Canada: CSA C22.2 No. 61010-1-04
- USA: UL std no. 61010-1, 2nd Edition
- This instrument is in conformance with the German Regulation on Noise Declaration for Machines (Laermangabe nach der Maschinenlaermrerordnung -3.GSGV Deutschland).

Acoustic noise emission	Geraeuschemission
LpA < 70 dB	LpA < 70 dB
Operator position	Am Arbeitsplatz
Normal position	Normaler Betrieb
Per ISO 7779	Nach DIN 45635 t.19

Safety Notices

The following safety precautions should be observed before using this product and any associated instrumentation.

This product is intended for use by qualified personnel who recognize shock hazards and are familiar with the safety precautions required to avoid possible injury. Read and follow all installation, operation, and maintenance information carefully before using the product. Refer to the user documentation for complete product specifications.

WARNING **If this product is not used as specified, the protection provided by the equipment could be impaired. This product must be used in a normal condition (in which all means for protection are intact) only.**

The types of product users are:

- **Responsible body** is the individual or group responsible for the use and maintenance of equipment, for ensuring that the equipment is operated within its specifications and operating limits, and for ensuring that operators are adequately trained.
- **Operators** use the product for its intended function. They must be trained in electrical safety procedures and proper use of the instrument. They must be protected from electric shock and contact with hazardous live circuits.
- **Maintenance personnel** perform routine procedures on the product to keep it operating properly (for example, setting the line voltage or replacing consumable materials). Maintenance procedures are described in the user documentation. The procedures explicitly state if the operator may perform them. Otherwise, they should be performed only by service personnel.

- **Service personnel** are trained to work on live circuits, perform safe installations, and repair products. Only properly trained service personnel may perform installation and service procedures.

Agilent products are designed for use with electrical signals that are rated Measurement Category I and Measurement Category II, as described in the International Electrotechnical Commission (IEC) Standard IEC 60664. Most measurement, control, and data I/O signals are Measurement Category I and must not be directly connected to mains voltage or to voltage sources with high transient over-voltages. Measurement Category II connections require protection for high transient over-voltages often associated with local AC mains connections. Assume all measurement, control, and data I/O connections are for connection to Category I sources unless otherwise marked or described in the user documentation.

Exercise extreme caution when a shock hazard is present. Lethal voltage may be present on cable connector jacks or test fixtures. The American National Standards Institute (ANSI) states that a shock hazard exists when voltage levels greater than 30V RMS, 42.4V peak, or 60VDC are present. A good safety practice is to expect that hazardous voltage is present in any unknown circuit before measuring.

Operators of this product must be protected from electric shock at all times. The responsible body must ensure that operators are prevented access and/or insulated from every connection point. In some cases, connections must be exposed to potential human contact. Product operators in these circumstances must be trained to protect themselves from the risk of electric shock. If the circuit is capable of operating at or above 1000V, no conductive part of the circuit may be exposed.

Do not connect switching cards directly to unlimited power circuits. They are intended to be used with impedance-limited sources. NEVER connect switching cards directly to AC mains. When connecting sources to switching cards, install protective devices to limit fault current and voltage to the card.

Before operating an instrument, ensure that the line cord is connected to a properly-grounded power receptacle. Inspect the connecting cables, test leads, and jumpers for possible wear, cracks, or breaks before each use.

When installing equipment where access to the main power cord is restricted, such as rack mounting, a separate main input power disconnect device must be provided in close proximity to the equipment and within easy reach of the operator.

For maximum safety, do not touch the product, test cables, or any other instruments while power is applied to the circuit under test. ALWAYS remove power from the entire test system and discharge any capacitors before: connecting or disconnecting cables or jumpers, installing or removing switching cards, or making internal changes, such as installing or removing jumpers.

Do not touch any object that could provide a current path to the common side of the circuit under test or power line (earth) ground. Always make measurements with dry hands while standing on a dry, insulated surface capable of withstanding the voltage being measured.

The instrument and accessories must be used in accordance with its specifications and operating instructions, or the safety of the equipment may be impaired.

Do not exceed the maximum signal levels of the instruments and accessories, as defined in the specifications and operating information, and as shown on the instrument or test fixture panels, or switching card.

When fuses are used in a product, replace with the same type and rating for continued protection against fire hazard.

Chassis connections must only be used as shield connections for measuring circuits, NOT as safety earth ground connections.

If you are using a test fixture, keep the lid closed while power is applied to the device under test. Safe operation requires the use of a lid interlock.

CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a **CAUTION** notice until the indicated conditions are fully understood and met.

WARNING

A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

Instrumentation and accessories shall not be connected to humans.

Before performing any maintenance, disconnect the line cord and all test cables.

To maintain protection from electric shock and fire, replacement components in mains circuits – including the power transformer, test leads, and input jacks – must be purchased from Agilent. Standard fuses with applicable national safety approvals may be used if the rating and type are the same. Other components that are not safety-related may be purchased from other suppliers as long as they are equivalent to the original component (note that selected parts should be purchased only through Agilent to maintain accuracy and functionality of the product). If you are unsure about the applicability of a replacement component, call an Agilent office for information.

WARNING **No operator serviceable parts inside. Refer servicing to qualified personnel. To prevent electrical shock do not remove covers. For continued protection against fire hazard, replace fuse with same type and rating.**

FRONT AND REAR PANEL SYMBOLS:

The CE mark is a registered trademark of the European Community.

N10149 The C-Tick mark is a registered trademark of the Australian Spectrum Management Agency.

ICES/NMB-001
ISM GRP.1 CLASS A
This symbol indicates product compliance with the Canadian Interference-Causing Equipment Standard (ICES-001). It also identifies the product is an Industrial Scientific and Medical Group 1 Class A product (CISPR 11, Clause 4).

This symbol indicates separate collection for electrical and electronic equipment, mandated under EU law as of August 13, 2005. All electric and electronic equipment are required to be separated from normal waste for disposal (Reference WEEE Directive, 2002/96/EC).

This symbol on an instrument means caution, risk of danger. You should refer to the operating instructions located in the user documentation in all cases where the symbol is marked on the instrument.

This symbol indicates the instrument requires AC input power.

This symbol on the rear panel power switch indicates that power is turned OFF when the rocker switch is push in that direction.

This symbol on the rear panel power switch indicates that power is turned ON when the rocker switch is push in that direction. The rear panel power (LINE) switch disconnects the mains circuits from the mains supply.

This symbol on the front panel power button is illuminated amber if the instrument is in STANDBY power mode, green if the power button is turned on, or OFF (not illuminated) if the rear panel power switch is turned OFF or the mains power is removed to the instrument.

40 This symbol indicates the time period during which no hazardous or toxic substance elements are expected to leak or deteriorate during normal use. Forty years is the expected useful life of the product.

IP20 As defined by IEC 60529, IP20 indicates that the enclosure protects a finger or similar object (12 mm in diameter and 80 mm long) from entering any opening and touching dangerous internal parts, and there is no protection against water intrusion.

C SA US The CSA mark is a registered trademark of the CSA International.

CLEANING PRECAUTIONS:

WARNING To prevent electrical shock, disconnect the Agilent Technologies instrument from mains before cleaning. Use a dry cloth or one slightly dampened with water to clean the external case parts. Do not attempt to clean internally. To clean the connectors, use alcohol in a well-ventilated area. Allow all residual alcohol moisture to evaporate, and the fumes to dissipate prior to energizing the instrument.

Table of Contents

Section 1

Installing the System

In this section

Introduction

If you have any questions after reviewing this information, please contact your local Agilent Technologies Inc. representative or contact us through our website at www.agilent.com/find/V2920A.

Unpacking and inspecting the system

Inspection for damage

After unpacking the Agilent Series V2900 Vector Signal Generator, carefully inspect the unit for any shipping damage. Report any damage to the shipping agent immediately, as such damage is not covered by the warranty (warranty information can be found at the beginning of this manual).

NOTE: Information on preventing damage to your Agilent equipment can be found at www.agilent.com/find/tips.

Shipment contents

The following items are included with every Series V2900 Vector Signal Generator order:

- Series V2900 Vector Signal Generator Product Information CD-ROM (containing software, drivers, the Series V2900 Help system, and all product printed documentation in PDF format.
- AC power cord
- Series V2900 Vector Signal Generator Installation and Quick Start Guide
- Calibration certificate

NOTE: The V2920A must be ordered with specific frequency, mounting, and RF input designations.

Frequency options for the V2920A:

- V2920A-504 (RF VSG: 400 MHz to 4.0 GHz)
- V2920A-506 (RF VSG: 400 MHz to 6.0 GHz)

Mounting options for the V2920A:

- V2920A-1CM (RF VSG: rack mount
- V2920A-BTK (RF VSG: bench mount

RF output options for the V2920A

- V2920A-FPC (RF VSG: Front panel RF output connection)
- V2920A-RPC (RF VSG: Rear panel RF output connector)

Available license options for the Series V2900

For a list of potential license options for your instrument, and for instructions to verify which licenses are installed on your instrument, refer to *Verifying license options* on page 1-10.

Returning the instrument for service

Should it become necessary to return the Series V2900 for repair, carefully pack the entire unit in its original packing carton or the equivalent, and perform the following:

1. Review the warranty information located at the front of this manual.
2. Contact Agilent to obtain a Return Material Authorization (RMA) and return address. If you need assistance finding Agilent contact information go to www.agilent.com/find/assist (worldwide contact information for repair and service) or refer to the “Support” information on the product web page at www.agilent.com/find/V2920A.
3. Write the following information on a tag and attach it to the malfunctioning equipment.
   - Name and address of owner
   - Product model number (for example, V2920A)
   - Product serial number (for example, MYXXXXXXXX). The serial number label is located on the rear panel of the instrument. The serial number can also be read from the instrument front panel interface by selecting **Menu > Help > About Agilent V2920A…**
   - Description of failure or service required
4. Carefully pack the entire unit in its original packing carton. If the original carton is not available, use bubble wrap or packing peanuts and place the instrument in a sealed container and mark the container “FRAGILE”.

5 On the shipping label, write ATTENTION REPAIR DEPARTMENT and the RMA number.

NOTE: If any correspondence is required, refer to the product by serial number and model number.

Specifications

Complete specifications for the Series V2900 Vector Signal Generators are included on the Product Information CD that came with your instrument. Please check the Agilent website at www.agilent.com/find/V2920A for the latest updates to the specifications.

Locating the instrument in the proper environment

Locate the Series V2900 such that it will operate within an ambient temperature of 0°C to +50°C (+23°C is optimal).

NOTE: Accuracy specifications are based on operation at 23°C ±5°C and between 5% and 70% RH. Refer to the product specifications for derating factors outside these ranges. Air-conditioned environments are highly recommended.

CAUTION: To avoid overheating, operate the unit only in an area with proper ventilation. Allow at least eight inches of clearance at the back of the instrument to assure sufficient airflow, and adhere to the following:

- Operate the unit in a clean, dust-free environment.
- Keep the rear exhaust vent free of any obstructions. Even partial blockage may impair proper cooling. Also keep at least one vent at the front of the instrument free of obstruction.
- Allow at least 1U (1.75 in.) of space at the top and bottom of the instrument.
- Make sure there is adequate airflow around at least one side of the instrument. Adequate air flow ensures that air temperatures around the instrument remain within specified limits under all operating conditions.
- To ensure proper cooling in rack environments with only convection cooling, position the hottest equipment at the top of the rack. Place precision equipment, such as the Series V2800, as low as possible in the rack, where temperatures are the coolest. Add spacer panels below the unit to help ensure adequate airflow.
- When installing the product in a cabinet, the convection into and out of the product must not be restricted. The ambient temperature (outside the cabinet) must be less than the maximum operating temperature of the product by 4°C for every 100 watts dissipated in the cabinet. If the total power dissipated in the cabinet is greater than 800 watts, then forced convection must be used.

Installing the instrument in a rack

If you have an Agilent V2920A-1CM Dual Fixed Rack-Mounting Kit with flanges, refer to the document (part number: 5972-3316) that accompanied the kit for installation instructions. Perform the rack-mounting kit installation now.

Powering the Series V2900 Vector Signal Generator

The Series V2900 operates within the following ranges:

- Line voltage of 100 VAC to 240 VAC
- Frequency of 50 Hz or 60 Hz

Connect and power the Series V2900 as follows:

1 BEFORE switching on this instrument, observe the following precautions:

CAUTION: This product is designed for use in INSTALLATION CATEGORY II and POLLUTION DEGREE 2, per IEC 61010 Second Edition.

This instrument has auto-ranging line voltage input of 100 VAC to 240 VAC, be sure the supply voltage is within the specified range.

The Mains wiring and connectors shall be compatible with the connector used in the premise electrical system. Failure to ensure adequate earth grounding by not using the correct components may cause product damage, and serious injury. Operating the instrument on an incorrect line voltage may cause damage, possibly voiding the warranty

Operate the Series V2900 from a dedicated power source to avoid possible problems caused by electrical transients or line voltage fluctuations.

2 Before plugging in the power cord, ensure that the rear-panel power switch is OFF (0).

3 Connect the female end of the supplied power cord to the AC receptacle on the rear panel.

WARNING: ***Use only the supplied, grounded line cord to assure proper safety grounding.***

4 Connect the other end of the supplied line cord to a grounded AC line power receptacle.

WARNING: ***The power cord supplied with the unit contains a separate ground for use with grounded outlets. When proper connections are made, the instrument chassis is connected to power line ground through the ground wire in the power cord. Failure to use a grounded outlet may result in serious personal injury due to electric shock.***

5 Switch the rear-panel power switch to the ON (|) position. The front-panel power button displays an amber illumination.

6 Switch the instrument on by pressing the front-panel power button. The power button now displays a green illumination. The Series V2900 performs a series of self-tests. If it detects a failure, the unit displays an error message.

NOTE: The V2920A VSG has a feature that enables you to bypass step 7. After initially powering up the instrument, select **Menu > Global Settings > Advanced** and check **Auto Power Up**. Once this feature is enabled, and the rear panel **On/Standby** switch is set to **On** (|), the instrument can be powered by applying AC power to the rear panel line module. This feature is useful with racked systems.

NOTE: If you notice that the power button is not illuminated or the Series V2900 seems completely unresponsive after three minutes, you may need to change the fuse. In this case, refer to *Replacing a fuse* (page 1-5). If a problem develops, return the Series V2900 to Agilent for repair. Refer to *Returning the instrument for service* (page 1-2) for more information on returning the Series V2900 to the factory.

7 When the Series V2900 passes the self-tests, it automatically boots the system software and displays the start-up screen.

8 Warm-up the instrument. The Series V2900 can be used immediately after being switched ON. However, to achieve specified performance, warm-up the instrument for at least 30 minutes.

Replacing a fuse

If the line fuse needs to be replaced, perform the following steps:

WARNINGS: ***Verify that the instrument is disconnected from the AC line and other equipment before changing line fuse.***

For continued protection against fire hazard, replace fuses, and or circuit breakers only with same type and ratings. The use of other fuses, circuit breakers or materials is prohibited. If the instrument repeatedly blows fuses, return the unit to Agilent.

9 Using a small flat-blade screwdriver, release the fuse holder assembly.

10 Pull the fuse holder out of the power module.

11 Remove the blown fuse and replace it with Agilent part number 2110-0587. Fuse specifications: 2.0 Amp, 250 VAC, 5x20 mm slow-blow fuse (Schurter 0034.3120 UL and VDE approved fuse).

CAUTION: For continued protection against fire or instrument damage, only replace fuses with the type and rating listed. If the instrument repeatedly blows fuses, return the unit to Agilent.

Battery Information

The instrument uses a lithium battery located on the CPU board. **This is not an operator replaceable part.** See *Returning the instrument for service* on page 1-2.

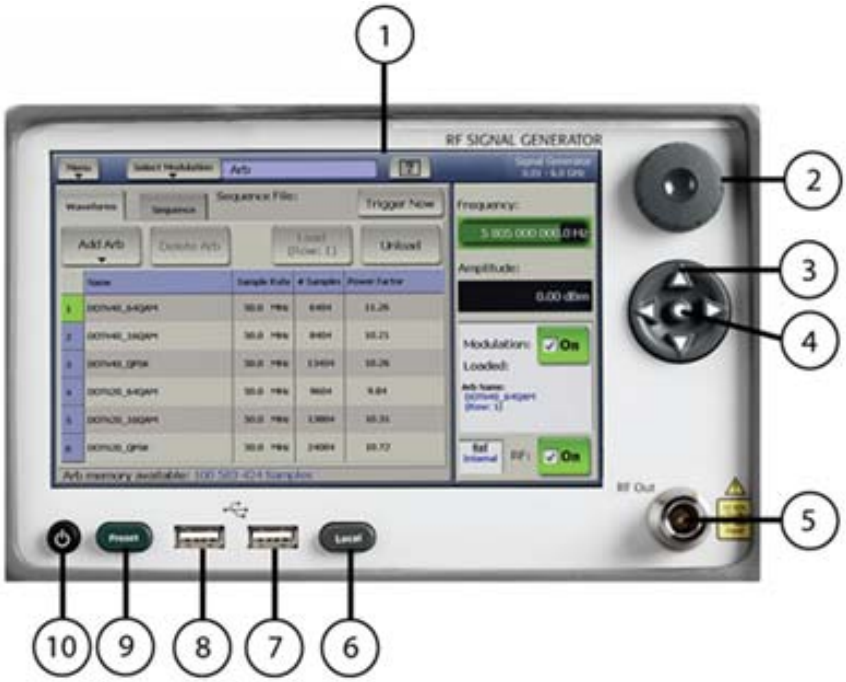
WARNING: ***Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended. Discard used batteries according to manufacturer's instructions.***

Do not throw batteries away but collect as small chemical waste.

Becoming familiar with the instrument

WARNING: ***The safe procedure to power-up the Series V2900 is provided in Powering the Series V2900 Vector Signal Generator (page 1-4). Do not turn on the Series V2900 until you have reviewed that information. Also, please review the Safety Notices at the beginning of this manual.***

Front-panel features



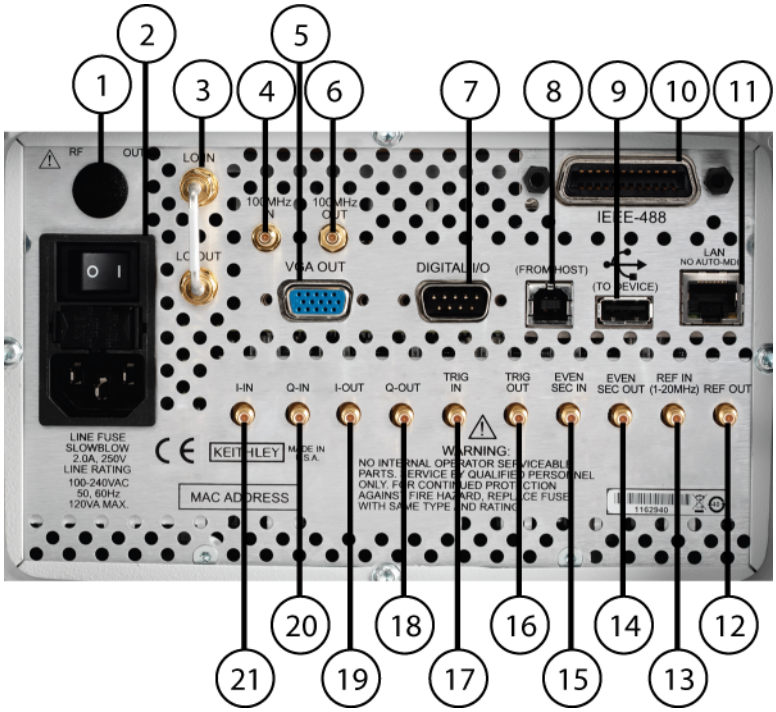
NOTE: When the *Desktop Control Panel software* is running (controlling the instrument), the following physical instrument features are disabled:

- Display/touch-screen
- Local button
- Preset button
- USB ports
- Rotary knob
- Puck/arrow keys

Item	Description
1	Display/touch screen displays the state of the instrument, allows input of settings, and is the primary mechanism for entering data.
2	Rotary knob changes the value of the selected numeric parameter.
3	Puck/arrow keys change the value of the selected numeric parameters incrementally, or in a user-defined step.
4	Puck center button brings up the on-screen numeric entry keypad.
5	RF Out connector outputs the RF signal from instruments that have a front Type-N RF output (V2920A-FPC).This output generates signals in one of the following ranges, depending on the instrument frequency option: ▪ V2920A-504: 400 MHz to 4 GHz ▪ V2920A-506: 400 MHz to 6 GHz
6	Local button switches the instrument to front panel control after remote use.

Item	Description
7	USB port connects to USB devices: mouse, keyboard, or USB flash drives.
8	USB port connects to USB devices: mouse, keyboard, or USB flash drives.
9	Preset button sets the instrument to a state of initialized default settings.
10	Power button switches the instrument power on and off.

Rear-panel features



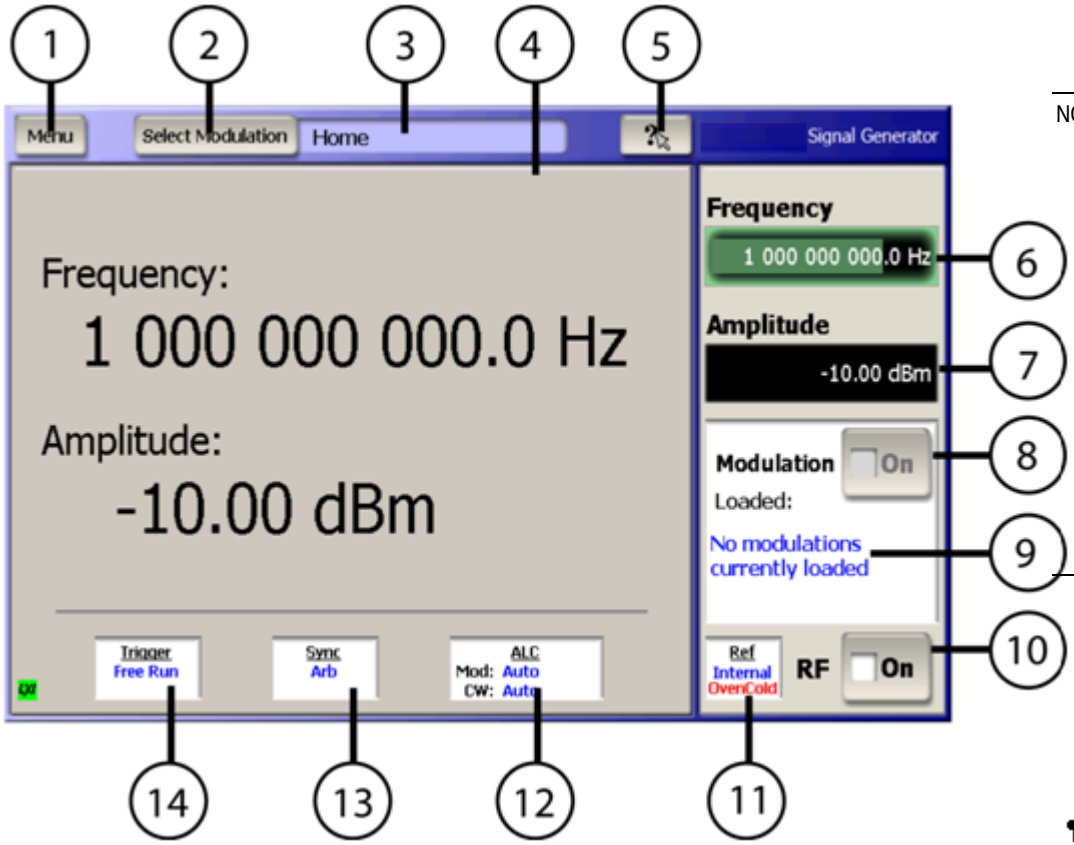
NOTE: When the *Desktop Control Panel software* is running (controlling the instrument), the following physical instrument features are disabled:

- Digital I/O (#7)
- Communication with the instrument over GPIB, USB, and LAN at the instrument's IP address (communication via LAN [socket only] at the PC's IP address is still supported)

Item	Description
1	RF OUT outputs the RF signal to instruments that have a rear Type-N RF input. This output (V2920A-RPC) provides signals in one of the following ranges, depending on the instrument frequency option: ▪ V2920A-504: 400 MHz to 4 GHz ▪ V2920A-506: 400 MHz to 6 GHz
2	Power inlet/switch, fuse module connects the instrument to AC power.
3	LO IN / LO OUT is for future use.
4	100 MHz IN inputs the 100 MHz reference signal.
5	VGA OUT connects the instrument display to an external monitor.

Item	Description
6	100 MHz OUT outputs the 100 MHz reference signal.
7	Digital I/O outputs four programmable TTL signals.
8	USB (from host) connects to a USB port on a computer. The computer can then remotely control the instrument.
9	USB (to device) connects to a USB device such as a mouse, keyboard, or flash drive.
10	IEEE-48 connects to the GPIB control bus for remote operation.
11	LAN connects to an Ethernet network for remote operation.
12	REF OUT provides a frequency reference to synchronize other instruments (10 MHz).
13	REF IN synchronizes the internal frequency reference to an external frequency reference (programmable from 1 MHz to 20 MHz in 10 Hz increments).
14	EVEN SEC OUT provides an even-second clock to synchronize other instruments.
15	EVEN SEC IN synchronizes the internal frequency reference to an even-second clock.
16	TRIG OUT provides a signal for synchronizing events. It is often used in conjunction with the trigger input signal to notify another device that the requested event has been performed.
17	TRIG IN accepts a trigger from an external device to initiate an event in the Series V2900.
18	Q-OUT outputs the Q signal that is coupled off from the input of the I/Q modulator.
19	I-OUT outputs the I signal that is coupled off from the input of the I/Q modulator.
20	Q-IN accepts an external signal to directly drive the Q-input of the I/Q modulator
21	I-IN accepts an external signal to directly drive the I-input of the I/Q modulator.

Instrument graphical interface features



NOTE: The *Desktop Control Panel software* has the same user interface features shown here, and includes the Preset and Local buttons. When the Desktop Control Panel software is running (controlling the instrument), the instrument's physical Preset and Local buttons are disabled.

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Item	Description
1	Menu displays a drop-down menu that allows you to choose from File, Global Settings, Utilities, and Help.
2	Select Modulation displays a drop-down menu that allows you to choose from the various modulation formats.
3	Modulation screen display indicates the modulation personality that is displayed in the modulation personality field.
4	Modulation personality field displays the modulation format window that allows waveform editing and control.
5	What's This Help displays help information for the screen shown.
6	Frequency field shows the frequency setting. Select to edit the value.
7	Amplitude field shows the RF power level. Select to edit the value.
8	Modulation state switches the modulation on and off
9	Loaded: shows the modulation waveform currently loaded and output from the RF Output

Item	Description
10	RF state field allows you to switch the RF output on and off.
11	Ref state field shows the frequency reference source. Select to edit the setting.
12	ALC state field shows the ALC setting. Select to edit the setting.
13	Sync state field shows the sync out setting. Select to edit the setting.
14	Trigger state field shows the trigger setting. Select to edit the setting.

Verifying license options

The Series V2900 Vector Signal Generator requires a license file to access the modulation waveforms in the source. To view the current licenses, select Menu > Utilities > Licensing.

Available (for purchase) licenses for your V2920A instrument

License option	Description	Dependencies *	Waveform creation tool
V2900A-101	Flexible analog modulation signal generation license	none	Embedded in Series V2900 instrument
V2900A-102	Flexible digital modulation signal generation license	none	Embedded in Series V2900 instrument
V2900A-103	GSM, GPRS, and EDGE signal generation license	V2920A-Bxx (xx = any)	Embedded in Series V2900 instrument
V2900A-104	cdma2000®, IS-95A forward link signal generation license	V2920A-Bxx (xx = any)	Embedded in Series V2900 instrument
V2900A-105	W-CDMA FDD downlink signal generation license (includes WCDMA-D)	V2920A-Bxx (xx = any	Embedded in Series V2900 instrument
V2900A-106	PS signal generation license	V2920A-Bxx (xx = any)	Embedded in Series V2900 instrument
V2900A-201	SignalMeister™ license for cdma2000®, 1XEV-DV forward, reverse (includes 2900-CDMA-F)	V2920A-Bxx (xx = any)	SignalMeister™ version 2.0 or later
V2900A-202	SignalMeister™ license for W-CDMA FDD up/down link	V2920A-Bxx (xx = any) V2900A-105	SignalMeister™ version 2.0 or later
V2900A-203	SignalMeister™ license for HSPA, including HSPA+	V2920A-Bxx (xx = any) V2900A-202	SignalMeister™ version 2.0 or later
V2900A-204	3GPP Channel Model Signal Generation SignalMeister™ license	none	SignalMeister™ version 3.0 or later
V2900A-205	SignalMeister™ license for 802.11a,b,g,j WLAN	V2920A-Bxx (xx = any)	SignalMeister™ version 2.0 or later

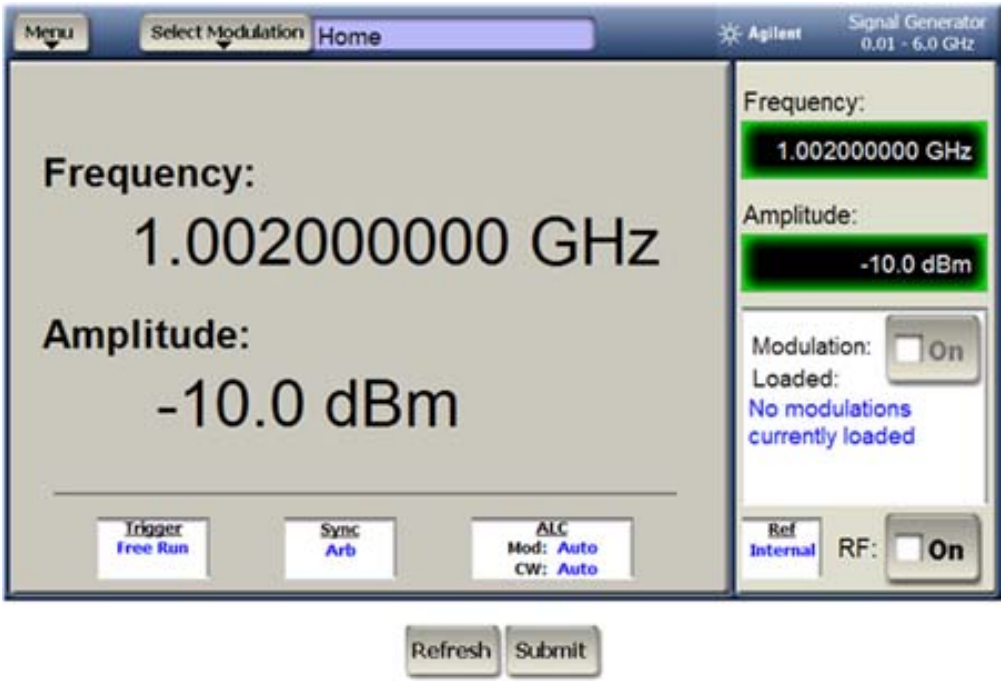
License option	Description	Dependencies *	Waveform creation tool
V2900A-206	SignalMeister™ license for 802.11n WLAN	V2900A-205 V2920A-Bxx (xx ³ 40)	SignalMeister™ version 2.0 or later
V2900A-207	SignalMeister™ license for WLAN channel models	V2920A-Bxx (xx = any)	SignalMeister™ version 3.0 or later
V2900A-208	SignalMeister™ license for 802.16e WiMAX, WIBRO	V2920A-Bxx (xx ³ 40)	SignalMeister™ version 2.0 or later
V2900A-209	WiMAX Channel Model signal generation SignalMeister™ license	none	SignalMeister™ version 3.0 or later
V2900A-212	SignalMeister™ license for TD-SCDMA	V2920A-Bxx (xx = any)	SignalMeister™ version 1.02
V2900A-213	SignalMeister™ license for digital video broadcasting (DVB) signal generation, (DVB-H, DVB-T, and ISDB-T signals)	V2920A-Bxx (xx = any)	SignalMeister™ version 3.0 or later
V2900A-214	MIMO Channel Sounding Signal Generation License	none	n/a
V2920A-B20	100 mega-sample arbitrary waveform generation license, 20 MHz bandwidth	none	n/a
V2920A-B40	100 mega-sample arbitrary waveform generation license, 40 MHz bandwidth	none	n/a
V2920A-B80	100 mega-sample arbitrary waveform generation license, 80 MHz bandwidth **--- Not available for Model 2910 ---**	none	n/a
V2920A-BBA	Baseband analog I-Q inputs and outputs **--- Not available for Model 2910 ---**	none	n/a
V2920A-LAR	Low amplitude range, <-110 dBm, down to-130	none	n/a
V2920A-UPN	Generator ultra low phase noise option	none	n/a

Purchasing modulation licenses

You can purchase modulation license files when you order your instrument or at any time after you have received your instrument.

Contact your local Agilent sales representative or use the contact information at www.agilent.com/find/V2920A.

Installation instructions for the Series V2900 RF VSG Desktop Control Panel Software



About the Desktop Control Panel software

The Agilent Series V2900 Desktop Control Panel software provides full control of your Series V2900 Vector Signal Generator from the convenience of your PC – set the parameters for a measurement, play and analyze the waveform, view the results on your PC, and so on. Using the Series V2900 Desktop Control Panel, you have the same control of the instrument as you would by using the instrument's touch screen user interface. Likewise, you have the same remote control capability with the SCPI interface.

NOTE: Presently, only the V2920A is capable of interfacing with the Series V2900 Desktop Control Panel software.

Installation instructions for Windows XP

NOTE: These instructions are for Windows XP 32-bit systems only.

What you will need

- Latest version of Agilent Series V2900 VSG Desktop Control Panel software
- Agilent Series V2900 Vector Signal Generator
- Desktop or laptop PC with at least one available USB port, running Windows® XP® (32-bit)
- USB cable with standard Female A and Female B connectors. Length is determined by the proximity of the instrument to the PC. Do not to exceed 15 feet; longer extensions require signal amplification.

Obtain the Desktop Control Panel software using one of the following methods:

- Download the software from the Agilent website at www.agilent.com/find/V2920A.
- Install the software directly from the Agilent Series V2900 CD.
- Contact your Agilent representative.

NOTE: Be certain you are downloading and installing the correct software for your PC. There are two types of installation files available; one for the Agilent Desktop Control Panel application (*.exe file type) and one for the Agilent Series V2800 VSAs and Series V2900 VSGs (*.cab file type). The installation file for the Desktop Control Panel must end with the file extension .exe. If you attempt to install the wrong file type, an error is displayed and the installation procedure aborts.

Part 2. Install the software

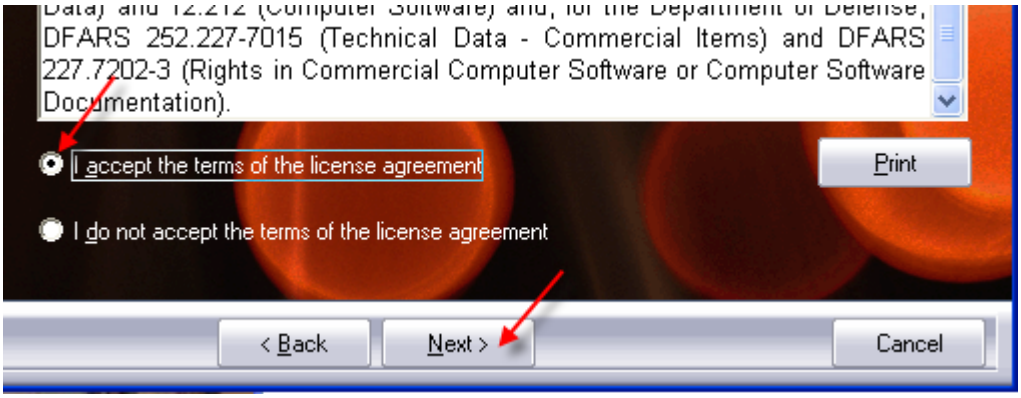
1 Disconnect any Agilent USB devices from the PC.

2 Launch the Desktop Control Panel installer by using one of the following methods:

- Double-click the Agilent_2910_ xxxxxxxx.exe file
- Select Start > Run then use the Browse button to navigate to the Agilent_2910_ xxxxxxxx.exe file. Select that file then click OK.

3 When the Series V2900 RF Signal Generator installation wizard opens, click Next.

4 Read the license agreement and accept the terms, then click Next.

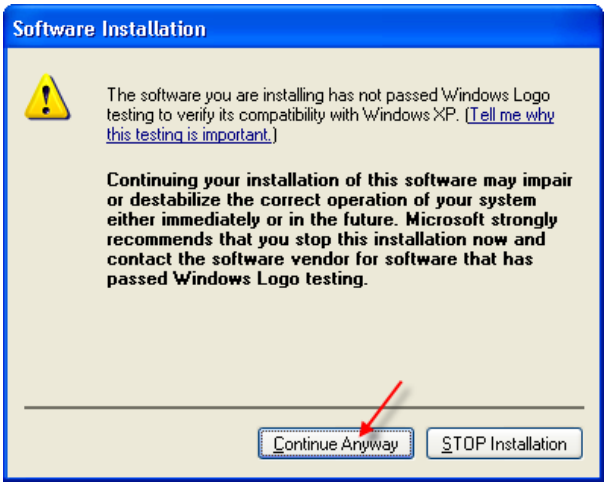


5 Select Complete from the Setup Type installation screen.

6 Click Next from the Ready to Install dialog.

7 If you have not already removed all Agilent Instruments USB devices from your PC, do so now, then click Next to dismiss the warning.

8 There are several "Windows Logo testing" warning dialogs displayed during this phase of the installation process, and will take several minutes to complete. Please click Continue Anyway on each of them.



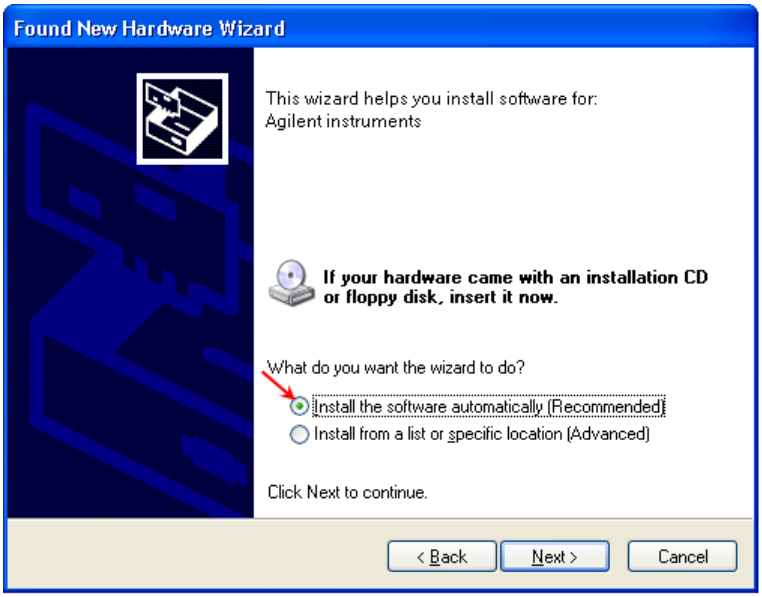
9 Click Finish on the Agilent Installation Wizard when prompted.

Part 3. Connect your hardware

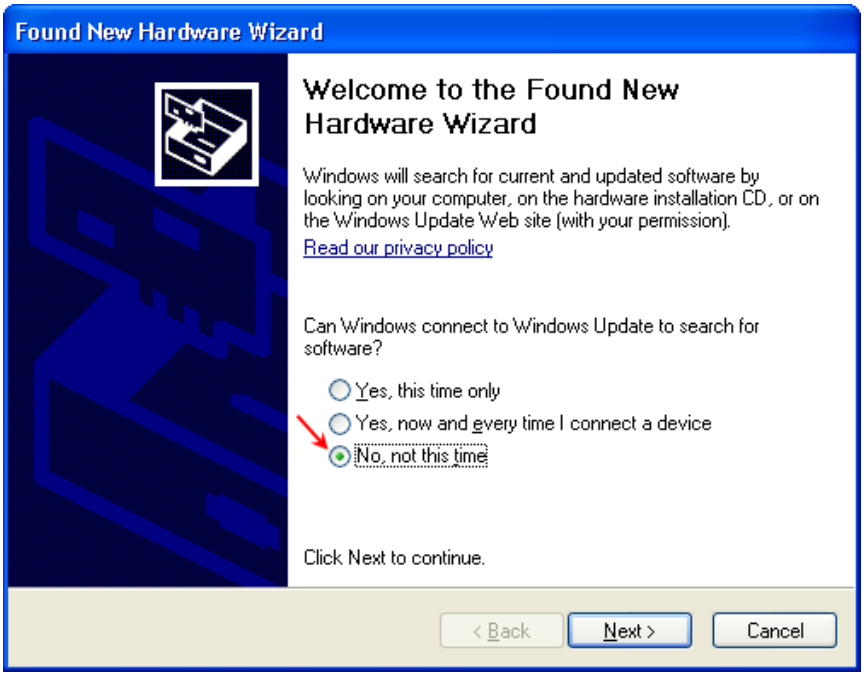
1 Power up your Agilent Series V2900 VSG.

2 Connect the instrument to an available USB port on the PC and to the USB port on the rear panel of the signal Generator labeled (FROM HOST).

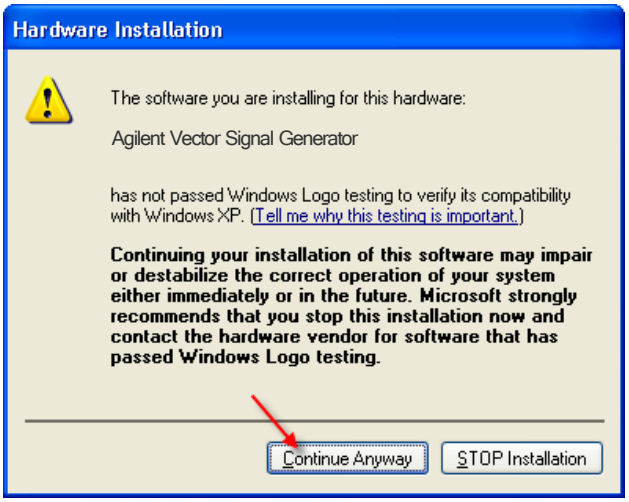
3 The "Welcome to the Found New Hardware Wizard" is displayed. Choose "Install the software automatically (Recommended)" then click Next to continue.



4 Select “No, not this time” then click Next.



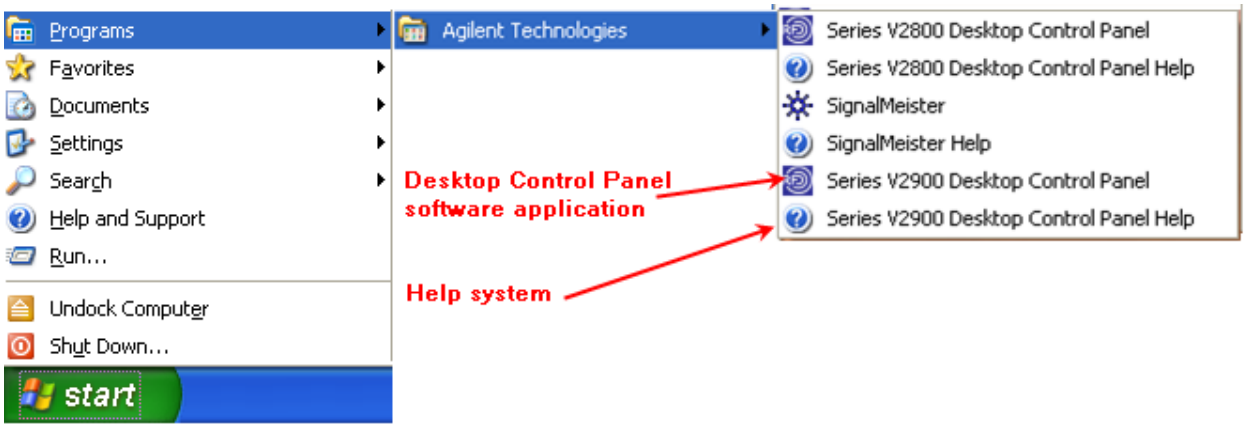
5 When the Windows Logo testing dialog is displayed, click Continue Anyway.



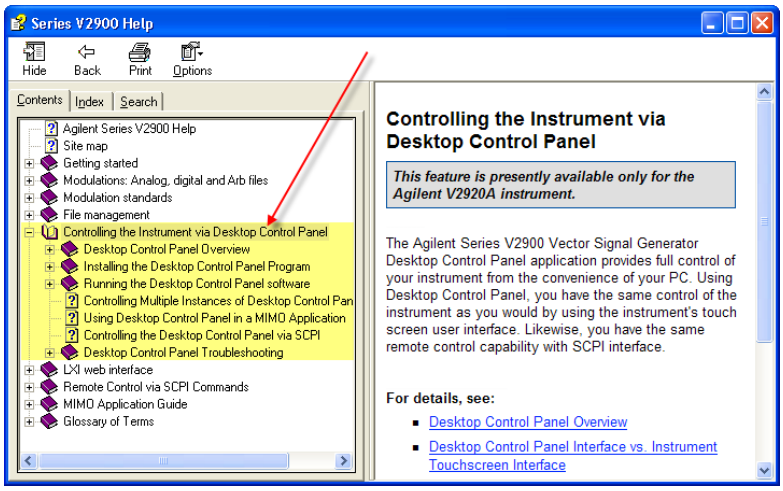
6 Repeat Steps 3, 4 and 5 until the "Found New Hardware Wizard" and "Windows Logo testing" cautions are no longer displayed. This occurs several times and is a normal part of the installation process. There are several USB drivers and driver updates being installed at this time.

7 Watch for the hardware installation icon  in the System Tray (lower-right corner of the screen), as it will disappear when the hardware installation is complete. It may take a few moments for this process to complete.

8 You can now start the Desktop Control Panel software and connect your equipment.



See the “Controlling the Instrument via Desktop Control Panel” topic group in the Series V2900 help system for information about operating the software.



NOTE: If you have problems installing the Desktop Control Panel software or drivers, please refer to “Troubleshooting the Series V2900 Desktop Control Panel Installation” topic in the Series V2900 help for more information.

Installation instructions for Windows Vista

What you will need

- Latest version of Agilent Series V2900 VSG Desktop Control Panel software
- Agilent Series V2900 Vector Signal Generator
- Desktop or laptop PC with at least one available USB port, running Windows® XP® (32-bit)
- USB cable with standard Female A and Female B connectors. Length determined by proximity of instrument to the PC but not to exceed 15 feet. Longer extensions require signal amplification.

Part 1. Get the software

Obtain the Desktop Control Panel software using one of the following methods:

- Download the software from the Agilent website at www.agilent.com/find/V2920A.
- Install the software directly from the Agilent Series V2900 CD.
- Contact your Agilent representative.

NOTE	Be certain you are downloading and installing the correct software for your PC. There are two types of installation files available; one for the Agilent Desktop Control Panel application (*.exe) and one for the Agilent Series V2800 VSA and Series V2900 VSG instruments (*.cab). The installation file for the Desktop Control Panel must end with the file extension .exe. If you attempt to install the wrong file type, an error is displayed and the installation procedure aborts.

Part 2. Install the software

NOTE:	Windows Vista has an additional security feature called User Account Control. This prevents unauthorized installation of programs on your PC, and requires you to approve each step of the installation. To disable this feature, go to Start > Control Panel > User Accounts> Turn User Account Control On or Off then select Off.

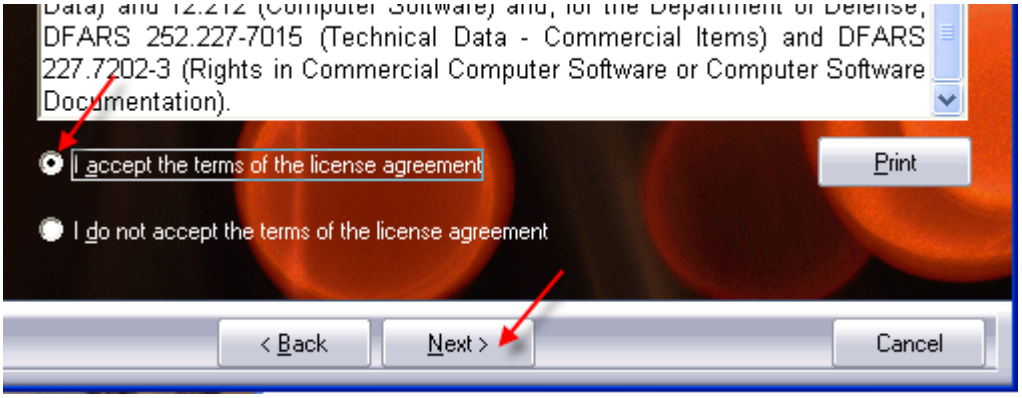
1 Disconnect any Agilent USB devices from the PC.

2 Launch the <HostOnPC> installer by using one of the following methods:

- Double-click the Agilent_2910_xxxxxxxx.exe file
- Select Start > Run then use the Browse button to navigate to the Agilent_2910_xxxxxxxx.exe file, then click OK.

3 When the Agilent Series V2900 RF Signal Generator installation wizard opens, click Next.

4 Read the license agreement and accept the terms, then click Next.

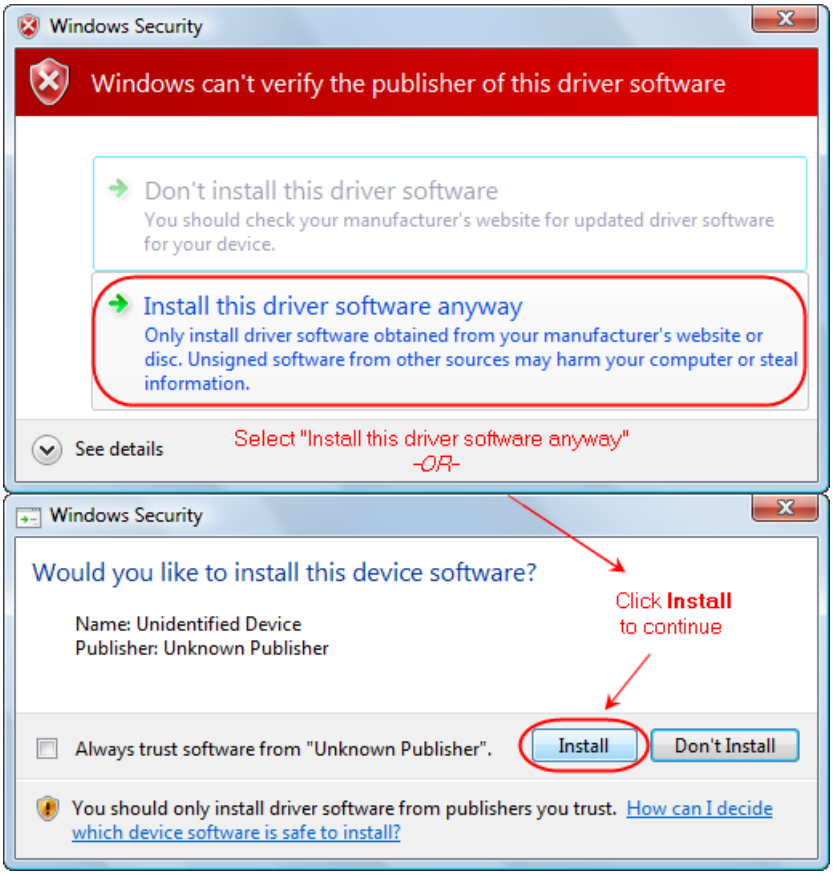


5 Select Complete from the Setup Type installation screen then click Next.

6 Click Install from the Ready to Install dialog.

7 If you have not already removed all Agilent USB devices from your PC, do so now, then click OK to dismiss the warning.

8 There are several "Windows Security" warning dialogs displayed during this phase of the installation process. Please click Install this driver software anyway or Install on each of them.



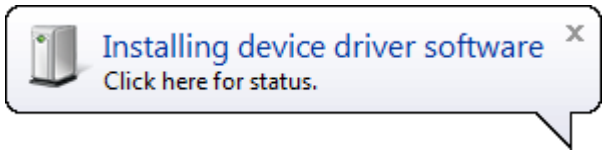
9 Click Finish on the Agilent installation wizard when prompted.

Part 3. Connect your hardware

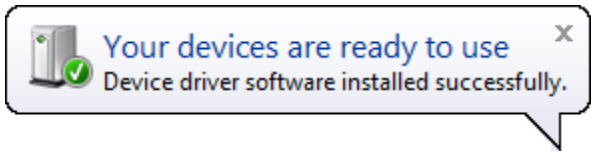
1 Power up your Agilent Series V2900 VSG.

2 Connect the instrument to an available USB port on the PC and to the USB port on the rear panel of the signal generator labeled (FROM HOST).

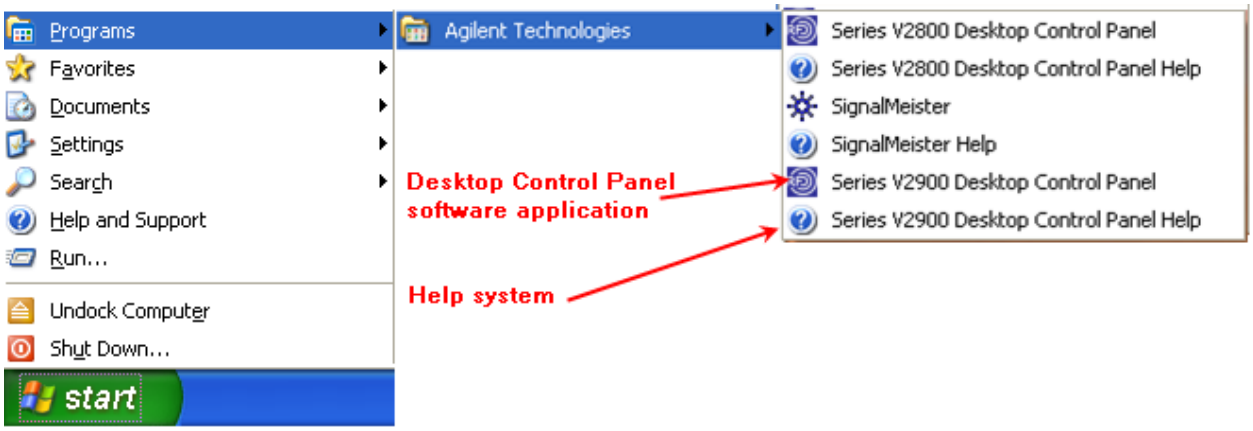
3 The "Installing device driver software" dialog is displayed.



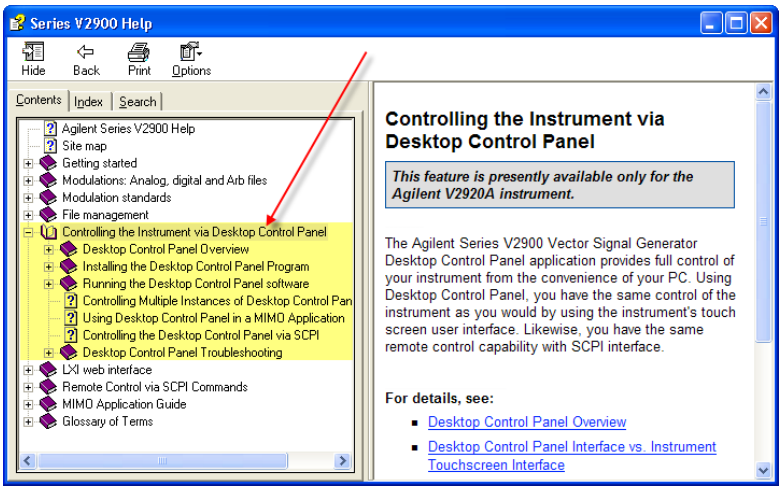
4 When the device drivers are installed, the “Your devices are ready to use” dialog is displayed.



5 You can now start the Desktop Control Panel software.



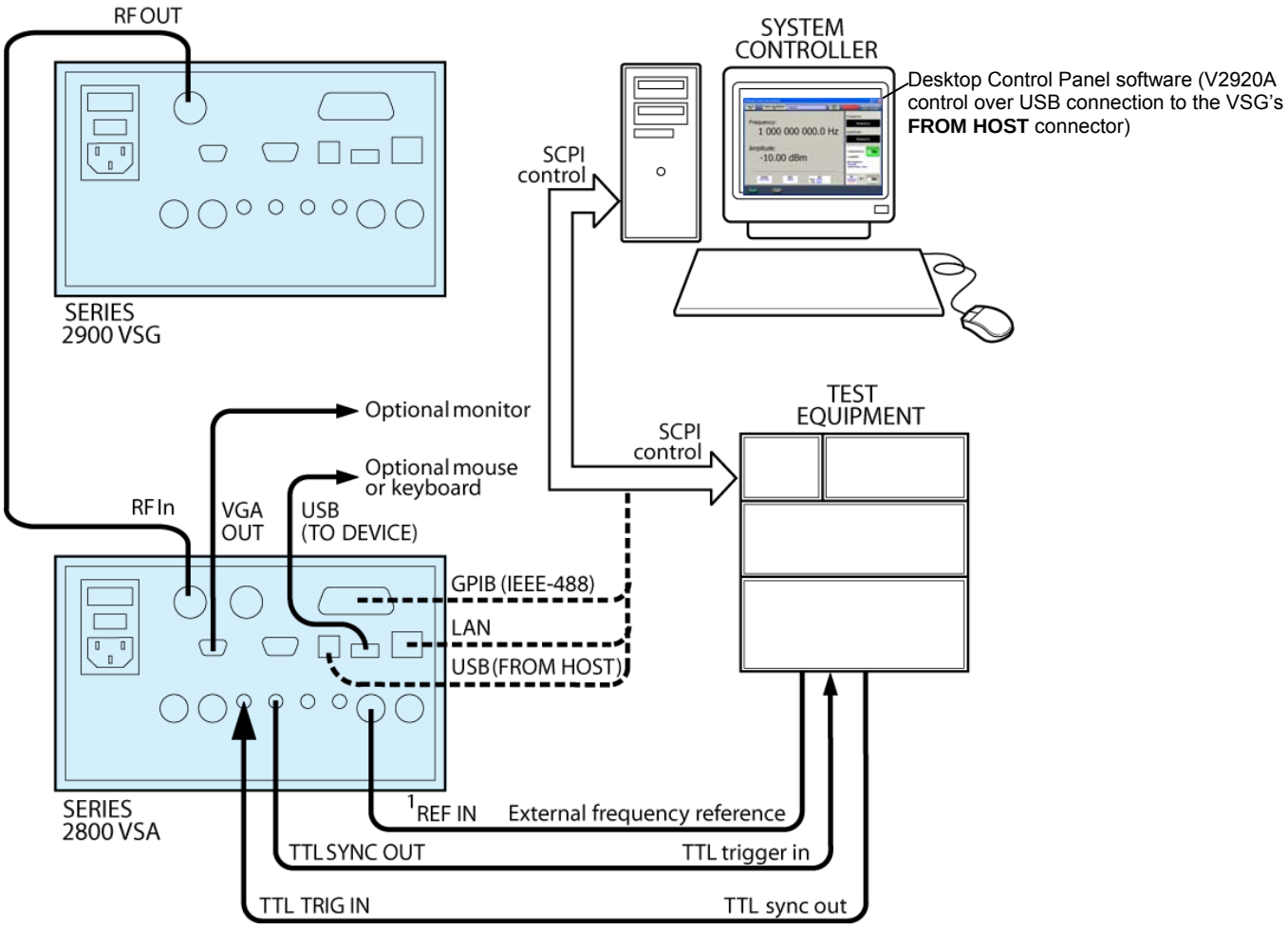
See the “Controlling the Instrument via Desktop Control Panel” topic group in the Series V2900 help system for information about operating the software.



NOTE: If you have problems installing the Desktop Control Panel software or drivers, please refer to the “Troubleshooting the Series V2900 Desktop Control Panel Installation” topic in the Series V2900 help.

Connecting system components

NOTE The figure below represents an alternate installation, with the Series V2900 connected to the system controller. This arrangement facilitates making screen captures of the VSG display. The rear-panel SCPI control connectors are the same on both instruments. Therefore, either or both of the instruments could be directly connected to the system controller for remote control. Connection by LAN enables use of the LXI web interface for licensing operations and other features. For V2920A systems, the *Series V2900 Desktop Control Panel* (page 1-13) software is shown installed on the System Controller, controlling the VSG instrument via the UI or via SCPI commands to the instrument over the USB interface.



1. REF IN can accept an input frequency reference of 1 to 60 MHz.

GPIB connections

- Connect a GPIB bus cable equipped with standard IEEE-488 connectors to the instrument back panel **IEEE-488** connector.

or

- Connect many instruments to one instrument, using parallel connections that stack the connectors.

CAUTION: To prevent physical damage, do not stack more than three connectors on any one unit.

Two screws are located on each connector to ensure that connections remain secure. Present standards call for metric threads, which are identified with dark-colored screws. Earlier versions have different screws, which are silver-colored. Do not use these silver-colored types of screws on the instrument; it is designed for metric threads.

To minimize interference caused by electromagnetic radiation, use only shielded IEEE-488 cables.

LAN (Ethernet) connections

- Connect the Series V2900 back panel **LAN** connector to an existing site network through a router, switch, or hub. Use a standard patch cable for this connection.

or

- Connect the Series V2900 back panel **LAN** connector directly to a computer. You must use a crossover cable for this connection to ensure that the computer transmit connections are input to the Series V2900 receive connections, and the other way around. The Ethernet crossover cable needs RJ-45 male connectors at both ends.

NOTE: The Ethernet crossover cable can be up to 100 meters in length.

USB connections

- Connect a computer controller to the Series V2900 back panel USB (FROM HOST) connector.
- Connect all other USB devices to the Series V2900 back panel USB (TO DEVICE) connector or to the two USB connectors on the front panel.

Configuring the system for remote control or network

After adding supported external instruments as described in the previous section, *Connecting system components* (external GPIB instruments, LAN/Ethernet network, and computers), you must properly configure the system so that the Series V2900 can operate correctly in one of the following system configurations:

- *GPIB interface configuration*
- *LAN (Ethernet) interface configuration*
- *USB interface configuration*

GPIB interface configuration

To avoid communication conflicts over the bus, each device in a GPIB system must have a unique primary address. If you want to verify the GPIB address or change it, perform the following steps:

1 Select Menu > Utilities > GPIB Address.

2 Use the front panel knob to change the GPIB address, if necessary.

3 Select Close.

NOTE: You may also want to install the Agilent IVI-COM/IVI-C Driver for the Series V2900 Vector Signal Generator. This instrument driver provides access to the functionality of the Series V2900 through a COM server or C API, which also complies with the IVI specifications. This driver works in any development environment that supports COM programming, including Microsoft® Visual Basic®, Microsoft Visual C++, Microsoft .NET, Agilent VEE Pro, National Instruments LabVIEW, National Instruments LabWindows™, and others. The IVI-COM driver can be installed from the Agilent website at www.agilent.com/find/V2820A

More about GPIB configuration and verification

For additional details about GPIB configuration and verification refer to the Agilent Connectivity Guide (http://cp.literature.agilent.com/litweb/pdf/E2094-90009.pdf).

LAN (Ethernet) interface configuration

It is necessary to assign an IP address to the Series V2900. The IP address is a persistent state, and is not affected by an instrument preset or a power cycle. Ensure that you have connected the equipment as instructed in *Connecting system components* (page 1-20) before proceeding with the LAN configuration.

The appropriate procedure depends on the Series V2900 connection configuration. Refer to the procedure that applies to your system configuration:

- *Existing site network configuration*
- *Direct connection configuration*

NOTE: Ensure that the instrument is connected to the LAN using a CAT 5e or better patch cable before performing this procedure. You may also want to install the Agilent IVI-COM/IVI-C Driver for the Series V2900. This instrument driver provides access to the functionality of the Series V2900 through a COM server or C API, which also complies with the IVI specifications. This driver works in any development environment that supports COM programming, including Microsoft® Visual Basic®, Microsoft® Visual C++, Microsoft® .NET, Agilent VEE Pro, National Instruments LabVIEW, National Instruments LabWindows, and others. The IVI-COM driver can be installed from the Agilent website at www.agilent/find/V2920A.com.

Existing site network configuration

Contact your IT administrator to determine the preferred method of assigning IP addresses. Refer to the procedure that applies to your system:

- *Static IP address assignment in an existing site network*
- *DHCP address assignment*

Static IP address assignment in an existing site network:

Perform the following steps to assign a static IP address for an instrument in an existing site network:

1. From the Series V2900, select Menu > Utilities > Ethernet Settings.
2. Select the IP Address tab.
3. Enter an IP address:
   a) Select Specify an IP address.
   b) Select the IP Address field or the keyboard button next to it.
   c) Repeatedly select the ← (backspace) button to clear the current IP address.
   d) Select the desired IP address and then select Enter.
4. Enter a subnet mask:
   a) Select the Subnet Mask field or the keyboard button next to it.
   b) Repeatedly select the ← (backspace) button to clear the current subnet mask.
   c) Select the desired subnet mask and then select Enter.

5 Set the following values per your IT administrator's recommendations (you can leave the values blank if there are no recommendations):

- Default gateway
- Primary DNS
- Primary WINS

6 Select the Apply button.

7 Select Close to close the dialog.

NOTE: Ensure that the combination of Series V2900 IP address and subnet mask is within the range of directly addressable IP addresses of the computer.

For example:

Computer IP address: 192.168.1.50
Computer subnet mask: 255.255.255.0
Series V2800 IP address: 192.168.1.51
Series V2800 subnet mask: 255.255.255.0

DHCP address assignment in an existing site network:

If a DHCP server is on the LAN, you can choose to have a DHCP automatically assign an IP address:

1 From the Series V2900, select Menu > Utilities > Ethernet Settings.

2 Select the IP Address tab.

3 Select Obtain an IP address via DHCP.

4 Select the Apply button.

This configures the signal generator as a DHCP client. In DHCP mode, the signal generator requests a new IP address from the DHCP server. The assigned address appears in the IP Address field.

5 Select Close to close the dialog box.

Direct connection configuration

Assigning a static IP address is the preferred method of assigning an IP address for a configuration that has the Series V2900 directly connected to the computer. Optionally, you can use the DHCP method, which results in a Link Local Address (LLA) being assigned to the Series V2900. Refer to the procedure that applies to your system:

- *Static IP address assignment on a direct connection*
- *DHCP address assignment on a direct connection*

Static IP address assignment on a direct connection:

Perform the following steps to assign a static IP address for an instrument that has a direct connection to a computer:

1 From the Series V2900, select Menu > Utilities > Ethernet Settings.

2 Select the IP Address tab.

3 Enter an IP address:

a) Select Specify an IP address.

b) Select the IP Address field or the keyboard button next to it.

c) Repeatedly select the ← (backspace) button to clear the current IP address.

d) Select the desired IP address and then select Enter.

4 Enter a subnet mask:

a) Select the Subnet Mask field or the keyboard button next to it.

b) Repeatedly select the ← (backspace) button to clear the current subnet mask.

c) Select the desired subnet mask and then select Enter.

5 Set the following values per your IT administrator's recommendations (you can leave the values blank if there are no recommendations):

- Default gateway
- Primary DNS
- Primary WINS

6 Select the Apply button.

7 Select Close to close the dialog box.

NOTE: Ensure that the combination of Series V2900 IP address and subnet mask is within the range of directly addressable IP addresses of the computer.

For example:

Computer IP address: 192.168.1.50
Computer subnet mask: 255.255.255.0
Series V2900 IP address: 192.168.1.51
Series V2900 subnet mask: 255.255.255.0

DHCP address assignment on a direct connection:

Optionally, you can use the DHCP method to assign an IP address. Since there is no DHCP server in a configuration that directly connects the Series V2900 to a computer, the instrument will timeout and then automatically assign itself a Link Local Address (LLA). This process takes 60 to 90 seconds.

1 From the Series V2900, select Menu > Utilities > Ethernet Settings.

2 Select the IP Address tab.

3 Select Obtain an IP address via DHCP.

4 Select the Apply button. This attempts to configure the signal generator as a DHCP client.

5 Select Close to close the dialog box.

6 When the LAN error indicator disappears (60-90 seconds), select Menu > Utilities > Ethernet Settings. The LLA that was automatically assigned appears in the IP Address field.

7 Select Close to close the dialog box.

More about LAN configuration and verification

For additional details about LAN configuration and verification refer to the Agilent Connectivity Guide (http://cp.literature.agilent.com/litweb/pdf/E2094-90009.pdf).

LAN troubleshooting

The Series V2900 Vector Signal Generator defaults to an Ethernet setting of “Auto-negotiation On” to detect the speed of the network and set the instrument operation speed to match the network speed. If the auto-negotiation process fails, the operation speed must be set manually.

NOTE: If the instrument speed does not match the network speed, Auto-negotiation On is the recommended setting.

1 Select Menu > Utilities > Ethernet Settings.

2 Select the Advanced tab.

3 Select the appropriate speed:

- 10 Mbps
- 100 Mbps

4 Select Apply.

5 To ensure that both the instrument and the network recognize the speed change, you may need to disconnect and then reconnect the LAN cable.

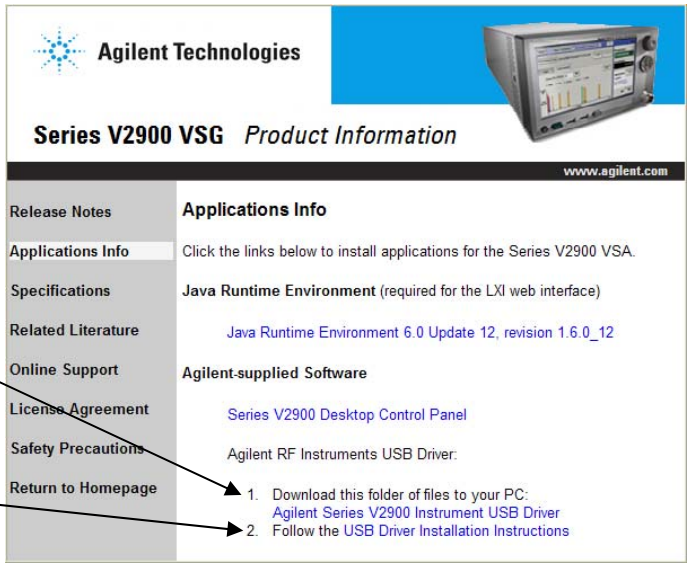
USB interface configuration

It is necessary to load a USB driver onto the computer that will be running the LXI web interface. For convenience, the USB driver can be installed from the Series V2900 Vector Signal Generator Product Information CD-ROM. Updates for the USB driver can be downloaded from the Agilent website at www.agilent.com/find/V2920A.

Installing the USB driver from the CD-ROM

Perform the following steps to install the USB driver to your computer:

1. With the Series V2900 powered on, connect a USB cable between the PC and the USB (FROM HOST) connector on the Series V2900 rear panel.
2. Insert the Series V2900 Vector Signal Generator Product Information CD-ROM into the disk drive of the computer.
3. On the CD-ROM, navigate to the Applications Info page and click **Agilent Series V2900** Instrument USB Driver, and copy the USB driver files to a known location on your computer.
4. Follow the installation instructions (provided on the CD-ROM) to install the USB driver.



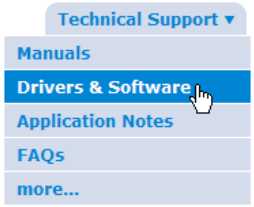
Installing the USB driver from the Agilent website

Perform the following steps to look for updates of the USB driver to install on your computer:

1. Using your internet browser, go the Drivers and Software portion of the product site at www.agilent/find/V2920A.com.

   – Or –

   Using the Series V2900 Vector Signal Generator CD-ROM, navigate to the Online Updates page and click the link for the relevant instrument. When you arrive at the instrument's web page, go the Drivers and Software section.



2. Click the USB Driver for Agilent RF Instruments link and save the zipped files to your hard drive.
3. Unzip the files on your hard driver and follow the installation instructions provided (see the USB Driver Installation Instructions PDF file).

More about USB configuration and verification

For additional details about USB configuration and verification refer to the Agilent Connectivity Guide (http://cp.literature.agilent.com/litweb/pdf/E2094-90009.pdf).

Access the Series V2900 from your PC (via LXI web interface)

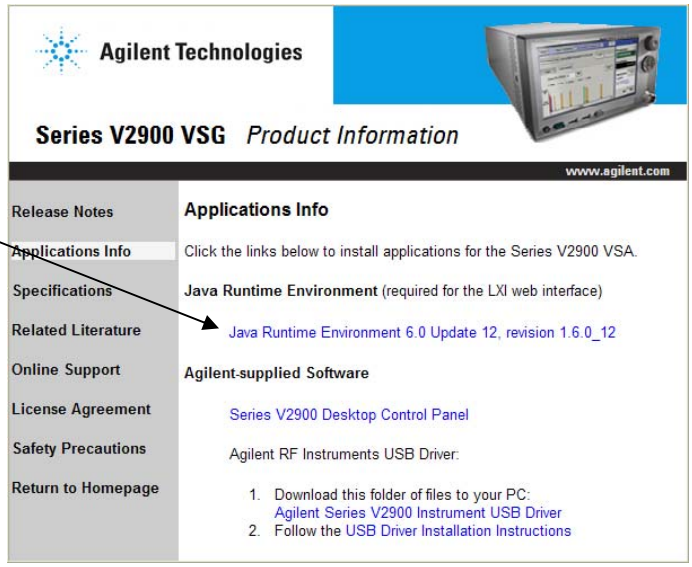
To access the instrument and control the operation over the LXI Web interface, you must install a Java Runtime Environment (JRE) in the computer that is connected to the instrument. This JRE contains the Java virtual machine, runtime class libraries, and Java applications launcher that are necessary to run the program that accesses and controls the instrument through the LXI Web interface.

You can install the JRE from the Series V2900 Product Information CD-ROM, or you can download and install it from the web.

Installing the JRE from the CD-ROM

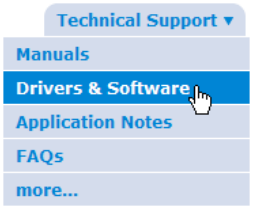
1 Insert the CD-ROM into your computer (the CD browser will launch automatically) and navigate to the "Applications Info" page.

2 Under "Java Runtime Environment," click the link for the JRE installer and follow the installer prompts.



Installing the JRE from the web

You can receive free future updates to this JRE by downloading them from the Agilent website. This JRE is appropriate only if you are operating in a Windows environment.



1 Using your internet browser, go the Drivers and Software portion of the product site at www.agilent.com/find/V2920A.

2 Download the Java™ Runtime Environment and install it on your computer.

If you are operating in a UNIX, Linux, or Solaris environment, you may download the appropriate JRE from the Sun Microsystems Website:

3 Using your internet browser, type in the following URL: http://java.sun.com/javase/downloads/index.jsp

4 Scroll to the Java Runtime Environment (JRE) and select Download.

5 From this page you are able to download the appropriate executable file.

Connect to the instrument

Launch a web browser and use the LAN-connected instrument IP address for the URL (for example, http://192.40.128.183).

NOTE: If you do not know the instrument IP address, you can find it from the instrument front panel interface by selecting Menu > Utilities > Ethernet Settings.

The LXI web interface should look similar to the following:

Section 2

Generating Signals

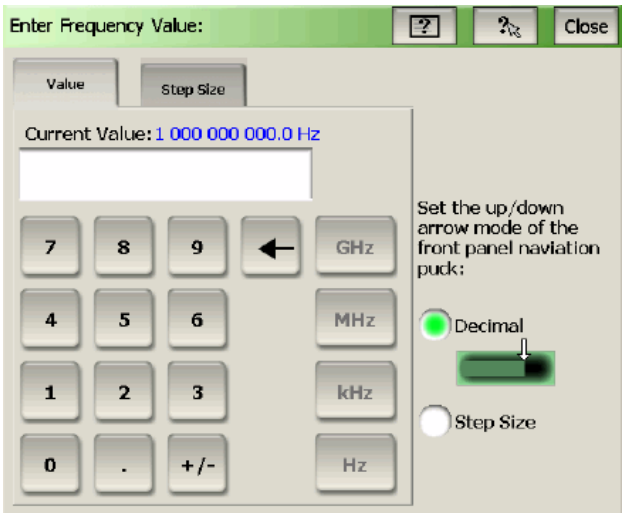
In this section

Setting up a basic signal with various input devices

This set of example procedures will show you how to set up the frequency and power of a signal with the following input devices:

Front-panel puck

Numeric keypad



Front-panel knob

Mouse

Setting up a carrier frequency

Following are optional methods for setting the carrier frequency.

Using the front-panel puck

1. Select the Frequency field to activate it.
2. Press the left arrow on the puck to change the frequency step to 1 GHz.
3. Press the up arrow on the puck to change the frequency to 2 GHz.
4. Press the right arrow on the puck to change the frequency step to 0.01 GHz.
5. Press the up arrow to change the frequency to 2.01 GHz.

Using the instrument screen

1. Select the Frequency field to activate it.
2. Bring up the instrument keypad, using one of the following methods:
   - Press the center button on the front-panel puck.
   - Double-select the Frequency field.
3. Select a new frequency value of 400 MHz and then select Enter.

Using the front panel knob

1. Select the Frequency field to activate it.
2. Adjust the front panel knob to lower the frequency to the minimum value.

Using an attached mouse

1. Double-click the Frequency field to activate it and to display the instrument keypad.
2. On the displayed instrument keypad, click the keys to select a frequency value of 2500 MHz.
3. Use the mouse wheel and the click-and-drag action to explore how you can also edit the frequency value. This method is similar to using the front-panel knob and left and right arrows on the puck.
4. On the displayed instrument keypad, click the Step Size tab.
5. Change the step size to 25 kHz. Now, when you use the up/down arrow keys on the puck, the frequency will increment or decrement by 25 kHz.

Setting up the RF power level

Following are optional methods for setting the RF power level.

Using the front-panel puck

1. Select the RF On button to switch on the RF output power.
2. Select the Amplitude field to activate it.
3. Press the left arrow on the front-panel puck to change the step value to 10 dB.
4. Press the down arrow on the puck to change the power to –10 dBm.
5. Press the right arrow on the puck to change the power increment to 0.1 dB.
6. Press the down arrow on the puck to change the power to –10.2 dBm.

Using the instrument screen

1. Select the Amplitude field to activate it.
2. Bring up the instrument keypad, using one of the following methods:
   - Press the center button on the front-panel puck.
   - Double-select the Amplitude field.
3. Select a new power value of –100 dBm and then select Enter.

Using the front-panel knob

1. Select the Amplitude field to activate it.
2. Adjust the front panel knob to lower the RF output power to the minimum value.

Using an attached mouse

1. Double-click the Amplitude field to activate it and display the instrument keypad.
2. On the displayed instrument keypad, click 10 dBm to select a power value.
3. Use the mouse wheel to set the power level to the maximum value.

Saving and recalling the instrument setup

1. Select Menu > File > Save Setup.
2. Select the keyboard button located next to the File Name: field.
3. Select the letters to spell the file name and select Enter.
4. Select Save.
5. Press the Preset button to return the instrument to the default setting values.
6. Select Menu > File > Load Setup.
7. Select (highlight) the file that you just saved.
8. Select Load.

Setting up a frequency and power sweep

This procedure demonstrates how to set up a frequency sweep and a power sweep from the front-panel interface.

1 Select the Preset button on the front panel.

2 Select Menu > Settings > Sweep.

3 Select the fields in the Sweep dialog box and enter values using one of the following methods:

- Adjust the with the front-panel puck to change the value.
- Double-click a value field and enter a value from the keypad, followed by the correct unit of measure.

4 Select the Start Frequency or Start Power field and enter a value. This is the frequency or power setting of the first step in the sweep.

5 Select the Stop Frequency or Stop Power field and enter a value. This is the frequency or power setting of the last step in the sweep.

6 Select the Number of steps field and enter a value (the default is 201 and the maximum is 2000). As the source sweeps the power or frequency range, it divides the range by this number, resulting in the number of individual instrument settings that the instrument makes when progressing through the sweep range.

7 Select the Dwell Time field and enter a value (the default is 0 seconds). This is the time the instrument stays at the specific settings for each step in the sweep range.

8 Select the Sweep Now button in the Sweep dialog box to start the sweep.

9 Select the Stop Sweep button in the Sweep dialog box to stop the sweep.

NOTE The main status area shows the “Sweeping” indication in both the Frequency and Amplitude fields.

Loading a modulation waveform

This procedure demonstrates how to load a GSM / EDGE modulation waveform.

1 Press the instrument Preset button.

2 Choose the Select Modulation button. Select GSM / EDGE.

3 Select Waveform File.

4 Select Open.

5 Navigate to the file to open a waveform file. The file for a GSM / EDGE waveform will have a *.csv notation indicating it is in a comma-separated value format.

6 Select the waveform file.

7 Select Load to place the file on the instrument display to allow for editing the waveform file, or to apply the waveform to the RF carrier signal.

8 Select Load to apply the waveform to the RF carrier signal. Notice that the waveform modulation details appear below the Modulation On button.

9 Ensure both the RF On and Modulation On buttons are selected.

More information about generating signals

To find detailed instructions about generating signals, refer to the *Help System* (page 3-1).

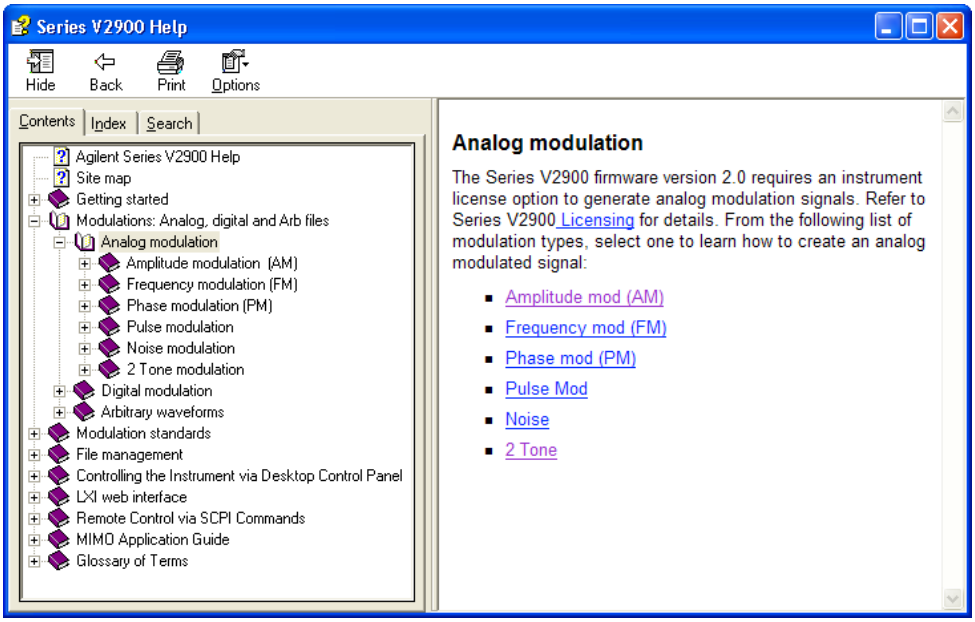
Section 3

Getting Information from Help

In this section

What does the Help System provide?

The Series V2900 Help system provides the following user information:

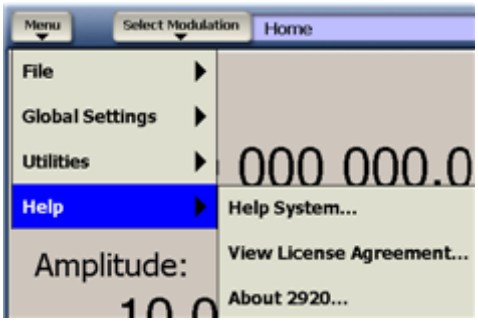


- Detailed information about the instruments, including the front panel, graphical user interface, and rear panel
- Procedures for making measurements
- How to control the instrument via the Series V2900 Desktop Control Panel
- SCPI remote programming reference
- LXI web interface details
- How to manage files and firmware upgrades
- Details on using your Series V2900 instrument in a MIMO application
- Troubleshooting
- Glossary of terms

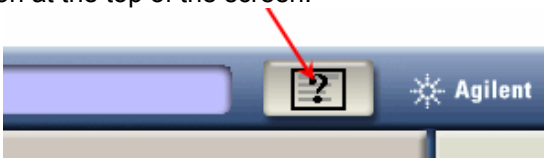
Accessing the Help System

Help from the graphical user interface

To access Help from the Series V2900 touch panel interface or the Series V2900 Desktop Control Panel software, select Menu > Help > Help System....

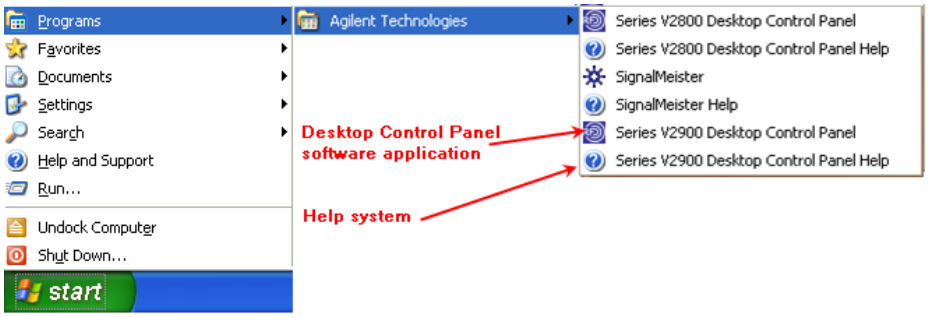


You may also access help in context to the active screen. To do this, click to help button at the top of the screen:



Help from your computer

If you install the *Series V2900 Desktop Control Panel software* on your PC, you may access the help from the Agilent Technologies program group.



Help from the CD-ROM

To access the System Help from the Series V2900 Vector Signal Generator Product Information CD-ROM:

1. Insert the CD-ROM into the computer.
2. If the computer is not set up to auto-run, double-click the CD drive in Windows Explorer.
3. When the CD launches, click the Series V2900 Help System link.
4. Either Open the System Help for immediate use, or Save it as a file on your computer for later recall and use.