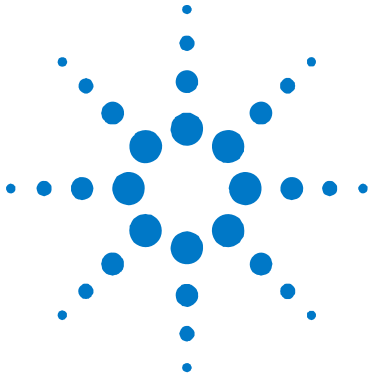

# Agilent Series V2900 Vector Signal Generator

## Firmware Release Notes

Agilent Technologies

# Notices



## Manual Part Number

**V2920-90004**

## 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.

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## Safety Notices

The following safety precautions should be

**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.**

## Updating your product's firmware:

The process for installing a firmware update on the Series V2900 VSG is provided on page 17 of this document (see Firmware installation process). If you are installing the Series V2900 Desktop Control Panel for the V2920A, refer to the installation instructions in the *Agilent V2920A Installation and Quick Start Guide*, provided in your ship kit, on the CD-ROM, and at www.agilent.com/find/V2920A.

# Version 5.0 firmware release overview

The Series V2900 Vector Signal Generator version 5.0 release resolves one firmware concern.

***Upgrade considerations for Series V2900 Vector Signal Generator***

| Consideration | From v4.0 | From v3.4 | From v3.3 | From v3.11 |
|---|---|---|---|---|
| Recalibration required | No | No | No | No |
| Requalification suggested | No | No | No | No |

# Version 5.0 firmware critical fixes

| 5.0 Critical fixes: Symptom | Resolution | 2910 | 2920 | V2920A |
|---|---|---|---|---|
| PR13705: Fixed a ~ 15µs delay when triggering the start of an ARB waveform. | The firmware was modified to correct this problem. | X | X | X |

# Version 4.0 firmware release overview

The Series V2900 Vector Signal Generator VSG version 4.0 firmware release introduces 26 firmware enhancements. Additionally, version 4.0 resolves 27 firmware concerns.

***Upgrade considerations for Series V2900 Vector Signal Generator***

| Consideration | From version 3.11 | From version 3.3 | From version 3.4 |
|---|---|---|---|
| Recalibration required | No | No | No |
| Requalification suggested | No | No | No |

# Version 4.0 firmware enhancements

| 4.0 Enhancement | 2910 | 2920 | V2920A |
|---|---|---|---|
| Added support for the new Series V2900 Desktop Control Panel software. For details, see page 9. | | | X |
| Added support for the new Agilent V2920A RF Vector Signal Generator. | | | X |
| Added documentation to help with any trouble viewing licenses if a user should downgrade to an earlier firmware version. Note that you must first upgrade to the latest version of firmware (available at www.agilent.com/find/V2920A), then revert to the desired, older version using a correctly named .CAB file. That is, *a .CAB file that has not been saved under a different name*. | X | X | X |
| Enhanced license management user interface features for greater ease of use. | X | X | X |
| The arb list and arb sequence list are no longer affected by an instrument preset, save state, recall state, `*RST`, `:SYSTem:PRESet`, `*RCL`, or `*SAV`. Both the arb list and arb sequence list are preserved when transferring control between the instrument touchscreen interface and the Series V2900 Desktop Control Panel software. | X | X | X |
| Added "Low Phase Noise" control to enable/disable the ultra-low phase noise features in the V2920A-UPN product option. Toggle the low phase noise mode on and off in the UI (**Menu > Global Settings > Advanced > Low Phase Noise**) or with the SCPI command `:LPN`. | | | X |
| Added transition filters (controlled with `NTRansition` and `PTRansition`) for the measurement, operation, and questionable event registers. Also, clarified illustrations and descriptions of the event registers. | X | X | X |
| Added Auto Power Up feature in Global Settings. If the Auto Power Up feature is enabled (checked) you do not need to press the front panel Power On button to start the instrument. This capability makes it possible to rack-mount the instrument and start all racked instruments simply by turning on the power bus strip to which they are connected. This condition persists until you open the Advanced dialog and disable the Auto Power Up feature. | | X | X |
| When you load a new arb waveform in the waveform table, pulsed arb blanking is automatically enabled. The arb list now includes a **Pulse Blank** column you can use to easily enable or disable pulsed arb blanking for each arb file. | X | X | X |
| ALC (automatic leveling control) changes (see **Menu > Global Settings > ALC**).<br>• Added 'Blank when Tuning' option for ALC. Option can be turned ON or OFF with the `[:SOURce]:POWer:ALC:BOTune[:STATe]` command and in the ALC Global Settings dialog. When ON, the maximum attenuation will be switched in while the system is tuning. When OFF, no changes in attenuation are made during tuning.<br>• The default ALC setting was changed from disabled/Off, to enabled/On (ALC for Modulated Waveforms is enabled with Sample/Hold selected).<br>• When ALC on Modulated Waveforms is set to Auto, the Model 2920 and Model V2920A use the sample-and-hold leveling setting, but for the Model 2910, ALC is turned off when in Arb playback, including sequence mode. For non-arb playback modes, all instruments with ALC set to Auto use the sample-and-hold setting. | X | X | X |

| 4.0 Enhancement | 2910 | 2920 | V2920A |
|---|---|---|---|
| Added an overt method, via SCPI command, to stop and unload an arbitrary waveform while it is playing. To stop and unload the waveform file playback, use the `[:SOURce]:RADio:ARB:[STATe]` command (for example: `:RAD:ARB:STAT OFF` stops playback and unloads the waveform). | X | X | X |
| There is a new field on the **Menu > Global Settings > Carrier Offsets** dialog. In addition to phase offset, you can now adjust frequency offset in increments of 0.1 Hz over a range of +/- 40 MHz. This is done digitally, and is offset from the carrier frequency. Therefore, you can offset the center frequency of units within a MIMO system to different values, while the phase is still locked and the LO is still shared. The `[:SOURce]:FREQuency:OFFSet` command is updated accordingly. | | X | X |
| SCPI commands were added to enable/disable SCPI debug logging. See `:DIAGnostic:REMote` commands. These commands are new: `:DIAGnostic:REMote:LOG:OUTPut[:STATe]`, `:DIAGnostic:REMote:CLEar:OUTput`, and `:DIAGnostic:REMote:CLEar:LOG`. | X | X | X |
| Added a SCPI command, `[:SOURce]:RADio:ARB:SEQuency:DELete`, that allows you to delete one specific arb sequence row or all rows. | X | X | X |
| Increased the maximum number of rows in the User Flatness table from 10 to 20. This accommodates application broader use models. | X | X | X |
| Added example files for you to customize for your particular needs:<br>• List mode: Example file is *Example List.csv*<br>• Sequence playback table: Example file is *Example Sequence.csv*<br>• User flatness: Example file is *Example User Flatness.csv* | X | X | X |
| Added the `:MMEMory:DELete` command to allow you to remove files or directories to make room on the instrument's FLASH memory when using memory-intensive SCPI programs. | X | X | X |
| Power-on recall state enhancement: Implemented `SYSTem:PRESet:TYPE` and `SYSTem:PRESet:SAVE` (and added settings to menu system: **Menu > Global Settings > Preset**) that allow you to specify `USER` (User Preset) or `FACTory` (Factory Preset) settings for preset and power on actions.<br>• If Factory Preset is chosen, the instrument is set to the factory default state.<br>• If User Preset is chosen, the instrument is set to the state saved by `SYSTem:PRESet:SAVE`. | X | X | X |
| MIMO mode settings are now persistent after a `:SYSTem:PRESet` or Preset button event. | | X | X |
| Added ways to track when a sequence is started and awaiting a trigger:<br>• `[:SOURce]:RADio:ARB:SEQuence:AROW` returns "0"<br>• Added display of "Active Row" in the right-hand panel in the instrument user interface, and added the phrase "Waiting for trigger" | X | X | X |
| Added `DIAGnostic:INFOrmation:OPTions` command that allows you to query the Series V2900 instrument's to ascertain which options are installed. | X | X | X |
| It is important to set the center frequency on a MIMO master and slave unit to the same value. Otherwise cal will not function properly. To remind users, the help system includes notes to this effect. Also, if the user changes the frequency when it is configured for MIMO slave mode, the instrument displays a message "Verify MIMO Master and all MIMO Slaves are tuned to same frequency." | | X | X |
| Added documentation of the process to remove old CAB files to make room on the instrument's Storage Card memory when upgrading the firmware. In the help system, go to File management > Upgrading firmware > Making room on the instrument's Storage Card. | X | X | X |
| The `:MBOX:COMMand` command was added to allow Agilent Technologies Model V2891A Upconverter to be programmed through a Agilent Technologies Series V2900 instrument. SCPI programming commands sent from the PC through the Series V2900 instrument on the GPIB, LAN, or USB bus pass through the instrument to the Model 2891-xx by way of a USB cable between the instrument and the Model 2891-xx. | X | X | X |

| 4.0 Enhancement | 2910 | 2920 | V2920A |
|---|---|---|---|
| Added SCPI debug feature for diagnostic purposes (see **Menu > Utilities > SCPI Debug** to enable or disable the debug mode). Once enabled, all remote commands received by the instrument are displayed on the instrument screen. You may also save the SCPI debug data to a file. That text file (logging queries and/or errors) can be saved to the instrument or to a connected USB memory device. | X | X | X |
| Added capability to set the offset of the sync output relative to the ARB wrap, as a percentage of the ARB waveform duration. In the user interface, see **Menu > Global Settings > Sync out**. Refer also to the `SOUTput:OFFSet` command. | X | X | X |

## Version 4.0 firmware critical fixes

| 4.0 Critical fixes - Symptom | Resolution | 2910 | 2920 |
|---|---|---|---|
| PR13550: Use of user flatness prevents source from achieving full output power. | The firmware was modified to correct this problem. | X | X |
| PR13471 The power meter pass-through command `:PMET:COMM ZERO` causes error states the instrument and inhibits proper *TRG functionality. | The pass-through timeout threshold was increased to ensure adequate time for all pass-through power meter operations. | X | X |
| PR13425: The power factor was allowed to be changed while running an arb sequence. | The firmware was changed, such that the power factor of an arb file cannot be changed while an arb sequence is on. An error message is displayed if the user attempts to change the power factor while arb sequence is on: SCPI error number 243, "Power factor cannot be changed while arb sequence is on." | X | X |
| PR13289 & PR13142 Timeout when turning on the instrument display with the `:DISPlay:ENABle` command while computing digital modulations. | The firmware was improved to greatly enhance the speed of turning on the display during digital modulation. | X | X |
| PR13242: ARB sequence followed by a manual ARB load does not turn on Output power when requested – takes many seconds. | The firmware was modified to correct this problem. | X | X |
| PR13191: If the trigger mode was “Trigger steps in sweep/list” and the waveform hadn’t been calculated yet, the instrument waited to calculate the waveform until AFTER the trigger was received. | The firmware was modified such that the instrument calculates the waveform, and then waits for the trigger. | X | X |
| PR13147 and PR13145: The `:DIAG:REM:SAVE` usage information is unclear. | Firmware and documentation are revised. `:DIAG:REM:SAVE` only saves the diagnostic log to the specified file name. Only SCPI data captured since `:DIAGnostic:REMote:LOG:OUTPut:STATe ON` is saved to the file. Use `:MMEMory:DATA?` to retrieve file. | X | X |
| PR13143: The `:MMEMory:DATA` command uses an inappropriate default directory (\temp). | The firmware was modified to change the default directory to \Storage Card\User\... | X | X |
| PR13330: Numeric entry in Digital demodulation (e.g., PSK) dialog fields does not close the dialog after pressing 'Enter'. | The firmware was modification to correct this problem. | X | X |
| PR13217 & PR13157: Missing context-sensitive help links to the help system: Edit pages for ASK, FSK, PSK, and QAM; License Add and License Transfer dialogs. | The firmware was modified to add the links to the help system. | X | X |

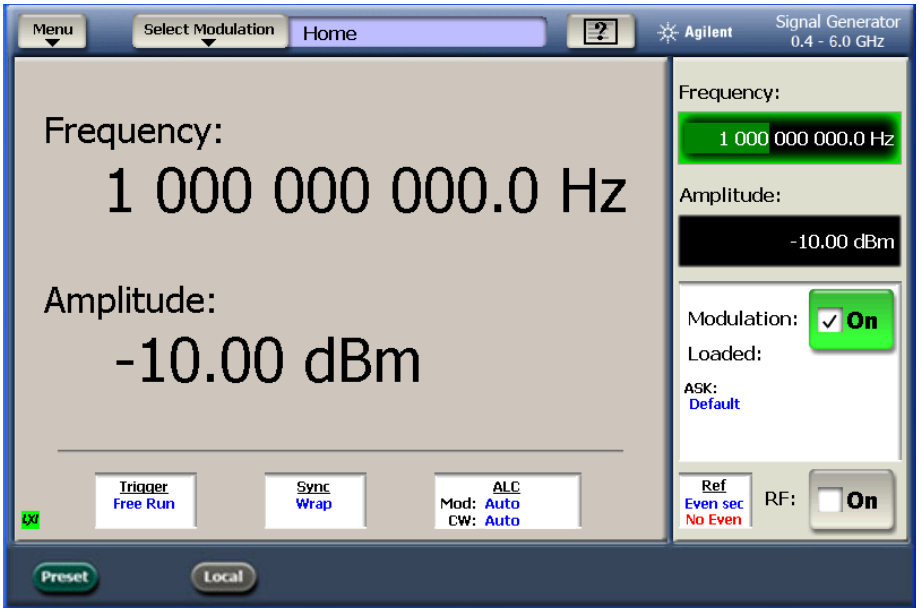
| 4.0 Critical fixes - Symptom | Resolution | 2910 | 2920 |
|---|---|---|---|
| PR13093 & PR12864: The help system's Command Locator is not up to date. Help system missing some SCPI commands. | Help system is updated with up-to-date Command Locator. Added the following SCPI commands:<br>`:ABORt`<br>`:MBOX:COMMand`<br>`[:SOURce]:ASK:PATTern:COUNt`<br>`[:SOURce]:FSK:PATTern:COUNt`<br>`[:SOURce]:PSK:PATTern:COUNt`<br>`[:SOURce]:QAM:PATTern:COUNt`<br>`[:SOURce]:RADio:ARB:SEQuence:RUNNing` | X | X |
| PR13089: If you modify an arb sequence, and then you attempt to re-load it (either from front panel or remote), the load/open is ignored. | The firmware was modified to correct this problem. | X | X |
| PR13063: Clarification is needed regarding limitations on deleting arbitrary waveform files, using the instrument touchscreen, and using the `:RAD:ARB:DEL` command. | Help system updated with clarification:<br>NOTE: You cannot delete an arbitrary waveform file while it is loaded or while it is playing. You must first stop the arbitrary waveform playback and then delete the file. | X | X |
| PR13060n: Changes to Trigger settings do not take effect until something else happens, such as turning the RF on/off or loading a new modulation. | Changes to Trigger settings (**Menu > Global Settings > Trigger**) and related SCPI commands now take effect immediately upon being set. Related SCPI commands: `:TRIGger:DELay`, `:TRIGger:DELay:ACTual`, `:TRIGger:MODE`, and `:TRIGger:SOURce` | X | X |
| PR13050: MIMO mode trigger delay appears to be other than what is set in the Trigger settings dialog. | The trigger dialog now annotates the minimum realizable trigger delay. If the user sets a delay value that is less than the minimum realizable delay, a message is displayed, "The minimum realizable trigger delay is <value> sec". There is a new SCPI command, `:TRIGger:DELay:ACTual`, that allows you to query the actual trigger delay.<br>For an arb sequence, each arb waveform in the sequence may have a different actual trigger delay. The nominal trigger delay is annotated. The nominal delay is a function of the lowest sample rate in the sequence. The minimum allowable trigger setting is the larger of 1.28 µs or 8 sample periods. | X | X |
| PR13025: ARB Sequence list does not persist through a preset (unlike the ARB list, which does persist) – confusing. | The arb sequence list is no longer affected by instrument preset, save state, recall state, `*RST`, `:SYSTem:PRESet`, `*RCL`, or `*SAV`. Both the arb list and arb sequence list are preserved when transferring control between the instrument touchscreen interface and the Desktop Control Panel interface. | X | X |
| PR13006: After operating the instrument with the display off, changing the frequency, and then turning the display back on (`:DISP:ENAB 1`) the instrument display shows an incorrect frequency. | The firmware was modified to correct this problem. | X | X |
| PR12992: If a file upload via VXI-11 is interrupted (for example, due to a network outage), it is not possible to communicate with the instrument via any remote interface (USB, LAN socket, VXI-11) until after a power cycle. | The firmware was modified to recover without having to cycle power. | X | X |

| 4.0 Critical fixes - Symptom | Resolution | 2910 | 2920 |
|---|---|---|---|
| PR12635: Help system documentation of the external IQ input (I-IN and Q-IN) functionality and external IQ output (I-OUT and Q-OUT) functionality is confusing. | Help system topics were clarified. Furthermore, the I-IN and Q-IN connector types are clarified (Model 2910 uses female BNC connectors, Models 2920 and V2920A use female SMB connectors). The Model 2910 is not equipped with external IQ output functionality. | X | X |
| PR12544: In the help system, the directories used in the `:MMEMory:DATA` command examples are incorrect. | Help system `:MMEMory` related topics have been corrected, with augmented examples. | X | X |
| PR12522: When saving a sequence file, the system rounds the, "Param" field to the 4$^{th}$ decimal place. An error is generated if the Param is at its max. | The firmware was modified to correct this problem. | X | X |
| PR12485: Unable to differentiate between zip files and folders in the file browse window on the instrument. | The firmware was modified to clearly delineate (visually) between the zip files and folders. | X | X |
| PR12014: The maximum sample rate in the [:SOURce]:RADio:ARB:SRATe command is not accurate for the Model 2920 and Model V2920A. | Help system corrected: The maximum sample rate value for the Model 2910 is 50 MHz. The maximum sample rate value for the Model 2920 and Model V2920A is 100 MHz. | X | X |
| PR11879: The EVEN SEC Out signal is used for signaling MIMO startup. This signal is being sent out while the arb is running and the user changes the RF amplitude. This could falsely trigger an adjacent unit that has been set up and is waiting for a MIMO trigger. | The firmware was modified to correct this problem (*corrected in the 3.3 release*). | | X |
| PR11860: When in MIMO mode, changing amplitude causes the waveform playback to stop. | The firmware was modified to correct this problem (*corrected in the 3.3 release*). | | X |
| PR10634, PR10633, & PR10631 Units setting (**Menu > Global Settings > Units**) is not acknowledged in the list mode frequency column, the user flatness frequency column, and the arb sequence frequency column. | The firmware was modified to correct this problem. | X | X |
| PR10630: Extended frequency setting (**Menu > Global Settings > Advanced > Extend Freq**) is not propagated to the arb sequence table. | The firmware was modified to correct this problem. | X | X |

## Series V2900 Desktop Control Panel

**NOTE:** This feature is presently available only for the Model V2920A instrument.

The Series V2900 Desktop Control Panel is a software application you install on your PC. It provides full control of your Series V2900 vector signal generator from the convenience of your PC – set the parameters for a measurement, analyze the waveform, view the results on your PC, etc. Using 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 SCPI interface.




The Desktop Control Panel software communicates to the instrument over the high-speed USB interface. While the Desktop Control Panel software is running the following are disabled on the instrument: touch screen interface, LXI web interface, digital I/O on the instrument back panel, Preset and Local buttons and knob and puck on the instrument front panel, and 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). When you exit the Desktop Control Panel program the above items are re-enabled, and the instrument performs a system preset (`:SYSTem:PRESet`).

The Desktop Control Panel software may be installed from the Series V2900 CD-ROM, or from the Agilent V2920A product web page at www.agilent.com/find/V2920A. Installation instructions are provided in the V2920A VSG *Installation and Quick Start Guide*, and in the instrument help system.

For additional detail on using the Desktop Control Panel, refer to the "Controlling the Instrument via Desktop Control Panel" section in the instrument help system.

## Version 3.4 firmware release overview

The Series V2900 Vector Signal Generator VSG version 3.4 firmware release includes one firmware enhancement.

***Upgrade considerations for the Series V2900 Vector Signal Generator***

| Consideration | From version 3.11 |
|---|---|
| Recalibration required | No |
| Requalification suggested | No |

## Version 3.4 firmware enhancements

| Enhancement | 2910 | 2920 |
|---|---|---|
| Added 28910 support. | X | X |

## Version 3.4 firmware critical fixes

| Critical fixes - Symptom | Resolution | 2910 | 2920 |
|---|---|---|---|
| PR12193: Earlier versions occasionally would get a hardware error when downloading an ARB file. | A firmware modification was initiated to correct this problem. | X | X |

## Version 3.3 firmware release overview

The Series V2900 Vector Signal Generator version 3.3 firmware release includes the resolution of six firmware concerns and the introduction of four new enhancements. Additionally, traditional and simplified Chinese languages have been removed from the GUI and online help.

| Consideration | From version 3.11 |
|---|---|
| Recalibration required | No |
| Requalification suggested | No |

## Version 3.3 firmware enhancements

| Enhancement | 2910 | 2920 |
|---|---|---|
| A Gaussian filter was added to the FSK format and an NRZ Gaussian filter was added to non-FSK formats | X | X |
| MIMO waveforms may now be played without cycling modulation and then triggering each individual instrument. MIMO is now treated as a triggered operation, where the ARB is shut down and restarted after leveling is completed. | | X |
| Status register improvements have been made to enable an ARB sequence status query. The ARB Event register is queried using `:STATus:OPERation:ARB[:EVENt]` and the ARB Enable register is set/queried using `:STATus:OPERation:ARB:ENABle`. Notification is available is single sweep mode. | X | X |
| The VSG may now be queried to determine if an ARB waveform sequence has been triggered. | X | X |

## Version 3.3 firmware critical fixes

| Critical fixes - Symptom | Resolution | 2910 | 2920 |
|---|---|---|---|
| PR10080: Numeric keyboard window is occasionally inactive | A firmware modification was initiated to correct this problem | X | X |
| PR10584: Digital modulation; FSK frequency deviation has slight bias versus separation. | A firmware modification was initiated to correct this problem. | X | X |
| PR10887: SCPI Gaussian filter settings do not set instrument. | All SCPI Gaussian filter settings now correctly set the instrument. | X | X |
| PR10911: Sources, change definition of dwell time to mean “loop time” when playing sweeps or lists. | A firmware modification was included to redefine dwell time to specify tune-to-tune time. | X | X |
| PR11606: Need pulsed ARB blanking SCPI command. | `[:SOURce]:RADio:ARB:PBLank[:STATe]` was added to the list of active SCPI commands. | X | X |
| PR11635: Status register issue; external reference lock is detected, but no indication is given that the source is locked to that reference. | When an external reference is applied, the detect bit and the lock bit now both return a status of 1 or “true”. | X | X |

# Version 3.11 firmware release overview

The Series V2900 Vector Signal Generator version 3.11 firmware release includes the resolution of two firmware concerns.

***Upgrade considerations for the Series V2900 Vector Signal Generator***

| Consideration | From version 3.1 |
|---|---|
| Recalibration required | No |
| Requalification suggested | No |

# Version 3.11 firmware critical fixes

| Critical fixes - Symptom | Resolution | 2910 | 2920 |
|---|---|---|---|
| PR10866: Installation of a new .CAB file sometimes fails to unzip the English Help. | A boot file update has been added to the .CAB file installation process. | X | X |
| PR10867: The instrument boot-up dialog does not work properly for Windows® CE 4 reinstallation. | A modification has been made to the reinstallation process to correct this problem. | X | X |

## Version 3.1 firmware release overview

The Series V2900 Vector Signal Generator version 3.1 firmware includes the capability to supporting Model 280111 MIMO Signal Analysis Software.

***Upgrade considerations for the Series V2900 Vector Signal Generator***

| Consideration | From version 3.0 |
|---|---|
| Recalibration required | No |
| Requalification suggested | No |

## Version 3.1 firmware enhancements

| Enhancement | 2910 | 2920 |
|---|---|---|
| Added support of Model 280111 MIMO Signal Analysis Software | | X |

## Version 3.1 firmware critical fixes

| Critical fixes - Symptom | Resolution | 2910 | 2920 |
|---|---|---|---|
| PR10780: Observe even second output polarity control on oscilloscope; change polarity from rising to falling. Polarity remains in rising mode. | Fixed non-functional even second output polarity control. | X | X |
| PR10718: Synch out pulse on ARB waveform wrap does not work on arbitrary waveform files with an odd number of points. The bus is 64 bits wide and direct memory access deals in sample pairs only. | A SCPI command error message (+219) “ARB File Error: Must have an even number of samples, load aborted” is now evoked. The SCPI command error message is added to the Help: Remote control > SCPI command error messages. | X | X |

# Version 3.0 firmware release overview

The Series V2900 Vector Signal Generator version 3.0 firmware release includes the addition of arbitrary waveform modes to perform at higher sampling rates and wider bandwidth. A new ALC (automatic leveling control) choice now sets the power at the maximum available value without leveling. Additionally, the capability to switch individual channels on and off has been added to the cdma2000 and W-CDMA editors.

***Upgrade considerations for the Series V2900 Vector Signal Generator***

| Consideration | From version 2.0 |
|---|---|
| Recalibration required | No |
| Requalification suggested | No |

# Version 3.0 firmware enhancements

| Enhancement | 2910 | 2920 |
|---|---|---|
| Added arbitrary waveform generator modes to perform at 25 Mega-sample with 20 MHz bandwidth or 50 Mega-sample with 40 MHz bandwidth. | X | |
| Added arbitrary waveform generator modes to perform at 25 Mega-sample with 20 MHz bandwidth, 50 Mega-sample with 40 MHz bandwidth, or 100 Mega-sample with 80 MHz bandwidth. | | X |
| Added a button to the cdma2000 and W-CDMA editors that normalizes the power sum to 0.0 dB. | X | X |
| Added an indicator in the W-CDMA and cdma2000 editors that reports the total power for the code domain. | X | X |
| Added the choice of switching individual channels on and off for cdma2000 and W-CDMA editors. | X | X |
| Added a new automatic leveling control (ALC) choice that sets the power out to the maximum available value without leveling. This enhancement includes control of the feature through the SCPI command `:MPOWer`. | X | X |
| Added an arbitrary waveform sequencing mode that keeps the timing consistent when changing between arbitrary waveforms or when changing the amplitude and frequency. | X | X |
| Added “Auto-Restart” below the “Single” and “Continuous” choices in the arbitrary waveform sequence setup pull-down menu. | X | X |

## Version 3.0 critical fixes

| 3.0 Critical fixes - Symptom | Resolution | 2910 | 2920 |
|---|---|---|---|
| PR10863: All current FSK modulations are performed with the newly-renamed NRZ Gaussian filter type. | Changed the pull-down menu for the FSK filter selection from “Gaussian” to “NRZ Gauss.” The SCPI command changed from `:GAUSsian` to `:NGAuss`. | X | X |
| PR10675: When a remote command is used to load a problematic *.csv file for a digital modulation, an error is not put into the SCPI error queue. | A SCPI command error message, “Waveform File Error,” is now evoked. The SCPI command error message is added to the Help: Remote control > SCPI command error messages. | X | X |
| PR10645: When a badly-formed list file is opened remotely using the `:LIST:LOAD` command, the SCPI interface is unresponsive to further remote commands. | The `:LIST:LOAD` command no longer halts the SCPI interface. | X | X |
| PR10642: When adding an ARB file to the list in an established sweep sequence, the sweep mode stops. | Adding an ARB file to the list in an established sweep sequence no longer stops the sweep mode. | X | X |
| PR10640: When the display is switched back on after executing the `:DISP:ENAB OFF` command, the frequency and amplitude are reset to default values. | The frequency and amplitude settings are no longer reset when the display is switched on. | X | X |
| PR10604: When the display is switched back on after executing the `:DISP:ENAB OFF` command, a number of modified parameters such as user flatness, cdma2000, W-CDMA, and GSM/EDGE waveforms are reset to default values. | The modified parameters are no longer reset when the display is switched on. | X | X |
| PR10603: The frequency limits on the arbitrary file sequence mode prevent the Model 2920 from going above 2.5 GHz or below 400 MHz. | The frequency limits are corrected for the arbitrary file sequence mode. | X | X |
| PR10602: When using the arbitrary waveform sequence mode, short glitches appear after the trigger event and before the ARB signal begins after selecting Restart. Need to change ALC behavior to avoid large glitches before and after the arbitrary waveform when using the externally-triggered ARB sequence mode. | When in the arbitrary waveform modulation panel, the auto-selection for ALC is now “Off” instead of “Sample & Hold.” | X | X |
| PR10601: The currently-playing arbitrary waveform is restarted when the display is off and the SCPI command `:DISP:ENAB ON` is received. | The currently-playing arbitrary waveform is no longer restarted when the display is off and the SCPI command `:DISP:ENAB ON` is received. | X | X |
| PR10595: The short form for the SCPI command `:SWEep:SETTLe` does not work as documented in the Help. | The short form for the SCPI command was corrected to `:SWEep:SETTle` in the Help. | X | X |
| PR10587: The “About Agilent” page in the application does not indicate the PLD revision of the amplifier board. | The “About Agilent” page in the application now indicates the PLD revision of the amplifier board. | X | X |
| PR10563: The currently-playing arbitrary waveform sequence file is lost when the display is off and the Local key is pressed. | The currently-playing arbitrary waveform sequence file continues to play when the display is off and the Local key is pressed. | X | X |
| PR10534: The source configured to “Trigger a sweep/list” should wait for the trigger after tuning and leveling at the first point of the sweep. | The source configured to “Trigger a sweep/list” now waits for the trigger after tuning and leveling at the first point of the sweep. | X | X |
| PR10506: The SCPI query of the Event Register is not responding as described in the Help. | Updated the Help to correctly describe the expectations for a query of the Event Register. | X | X |
| PR10431: The carrier phase should be adjustable, but is not. | The carrier phase can now be controlled. | X | X |

| 3.0 Critical fixes - Symptom | Resolution | 2910 | 2920 |
|---|---|---|---|
| PR10385: When the FSK2 digital modulation is configured, a carrier offset is added to the FSK2 signal. | The FSK2 signal no longer has a carrier offset. | X | X |
| PR10323: The LXI information in the Help does not directly link to instructions on how to reset the LXI user name / password. | A link was added in the LXI Help topic that jumps to the “LAN Config Init” topic. | X | X |
| PR10299: After loading a PSK digital modulation, the Load button does not gray out as it should to indicate the modulation has loaded. | The PSK signal now loads properly and the Load button grays out, as expected. | X | X |
| PR10205: When a VXI-11 discovery command is sent out from a PC, all of the instruments connected over the LAN go into remote mode. | When a VSI-11 connection over the LAN terminates, all of the instruments are put into local mode. | X | X |
| PR10196: When using the `:MMEM:DATA` command to transfer files, the name of the transferred file gets capitalized, creating duplicate files with “different” measurement data. | The case of the original file name is now preserved when transferring files using the `MMEM:DATA` command. | X | X |
| PR10119: Upon viewing the code domain display when editing a W-CDMA signal, it is only possible to select one of the first 110 scrambling codes. | Changes were made to the pop-up menu so that when it fills the entire display, the maximum number of scrambling codes available is 142. | X | X |
| PR10099: When a row is deleted in the cdma2000 or W-CDMA editors, the table gets scrolled to the top row of the table. | The table in the cdma2000 and W-CDMA editors no longer scrolls to the top when a row is deleted. | X | X |

# Firmware installation process

Use one of the following procedures to upgrade the instrument's firmware.

**NOTE**: Be certain you are downloading and installing the correct firmware for your instrument. There are two types of installation files available:

1. Firmware files for the Agilent Series V2900 VSAs (with a .cab file extension)

-or-

2. Software files for the Desktop Control Panel application installed on a PC (with a .exe file extension). To install the Desktop Control Panel, refer to the installation instructions in the *V2820A Installation and Quick Start Guide*.

If you attempt to install the wrong file type, an error is displayed and the installation procedure aborts.

## Firmware installation using the front panel interface:

1. On your PC, launch a web browser and download the latest firmware upgrade file from the www.Agilent.com website.
2. Save the file to a location that you can access from the instrument.

   **NOTE:** A USB memory device is convenient for this purpose, as you can then use it to transfer the file to the instrument.
3. Select Menu > Utilities > Upgrade Firmware.
4. Navigate to the location of the upgrade file that you just downloaded and saved.
5. Select (highlight) the file and select **Open**.
6. Follow the on-screen prompts to complete the installation.

## Firmware installation using the LXI web interface:

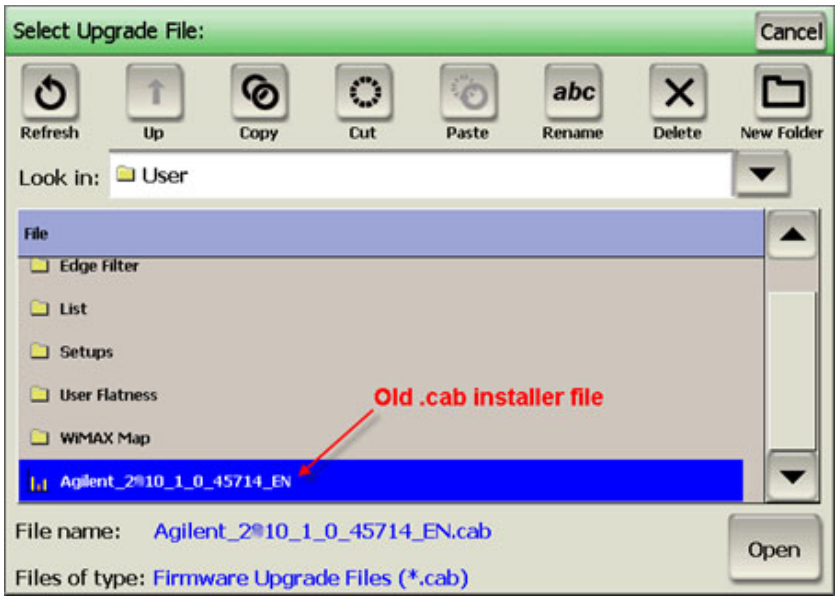
Although you can upgrade the instrument firmware from the LXI web interface, you will not be able to detect the progress of the upgrade. You may want to upload the upgrade file to the instrument, and then run the upgrade process locally.

1. Connect the instrument to a web network that includes your computer.
2. On the computer, launch a web browser and download the latest firmware upgrade file from the www.agilent.com/find/V2920A website. Save it to a directory on the computer.
3. In the web browser, use the instrument IP address as the URL. If you do not know the instrument IP address, select **Menu > Utilities > Ethernet Settings** from the instrument front panel.
4. Click **Instrument** on the web page. The virtual front panel is shown.
5. Click **Menu > Utilities > Upgrade Firmware**.
6. You may need to type the username / password (default is admin / admin) to proceed.
7. Click **Browse** and navigate to the location of the file that you just downloaded from www.agilent.com/find/V2920A.
8. Click **Upload**. This copies the file to the instrument firmware upgrade directory.
9. Click **Start Upgrade** and then click the file that you uploaded to the instrument.
10. Click **Load**.
11. Follow the prompts to complete the installation.

## Making room on the instrument's Storage Card

If, in the process of upgrading the firmware, you receive a message that the Storage Card (the instrument's internal memory) is full, use one of the following procedures to remove old .cab (firmware installer) files:

### *Using the Select Upgrade File dialog*




1. While in the Select Upgrade File dialog, make sure that "User" is the selected **Look In** directory.
2. In the **File** list, scroll to the bottom of the list to see the old .cab files.

   **NOTE:** Any .cab files listed in the **File** list are old installer files. Deleting them will not affect the instrument's operation with the present firmware installation.
3. Select an old .cab file and press the **Delete** button in the dialog's upper toolbar.
4. Repeat Step 3 for each old .cab file.

### *Using SCPI commands*

1. Use the `:MMEMory:CATalog?` command to ascertain what old .cab files exist on the Storage Card.
2. Use the `:MMEMory:DELete` command to delete the old .cab files.