NI-RFSG Features

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Contents

NI-RFSG 18.5 Manual

This manual contains reference information for using NI-RFSG 18.5 to program your NI RF signal generator device with LabVIEW NXG.

NI-RFSG Instrument Driver FPGA Extensions

NI-RFSG instrument driver FPGA extensions for VSTs enable you to use precompiled FPGA bitfiles to customize the behavior of the VST FPGA while maintaining the functionality of the NI-RFSG instrument driver.

Before you begin using NI-RFSG instrument driver FPGA extensions, you must install NI-RFSG and . You must also download a precompiled bitfile to use NI-RFSG instrument driver FPGA extensions. Visit `ni.com/info` and enter the Info Code ex6h8h, then select your hardware, and browse the download page to download an NI-RFSG instrument driver FPGA extensions precompiled FPGA bitfile.

Note Certain NI-RFSG instrument driver FPGA extensions might require you to install the instrument design libraries. Refer to the installation requirements of individual NI-RFSG instrument driver FPGA extensions located on the download page for more information.

The precompiled bitfiles are included in examples that illustrate how to use the precompiled bitfiles. These examples contain three parts—a precompiled bitfile featuring application-specific IP, a host-based example that uses NI-RFSA, NI-RFSG, or both, and IP dependencies, such as source code. These examples are distributed through the VI Package Manager, which installs with .

When you install NI-RFSG, model-specific folders for your VST module are created in the following location: Windows 10/8.1/7: `Users\Public\Documents\National Instruments\FPGA Extensions Bitfiles`

Note The instrument driver searches for precompiled bitfiles in these model-specific folders. For the instrument driver to recognize your precompiled bitfile, ensure that the precompiled bitfile is located in the model-specific folder that corresponds to your hardware. To change the default directory where the FPGA bitfiles are installed, refer to `ni.com/info` and enter the Info Code FPGABitfile for more information about updating the registry key.

Visit `ni.com/info` and enter the Info Code exkt9h to learn more about instrument driver FPGA extensions.

Loading an FPGA Bitfile

To use NI-RFSG instrument driver FPGA extensions, you must specify the precompiled bitfile you want to use when you initialize the instrument driver session. If you want to access additional FPGA functionality provided by the precompiled bitfile, you must also obtain an FPGA reference to use with the LabVIEW FPGA host interface.

Note You can only load one bitfile on a VST module at a time. If you use both NI-RFSG and another instrument driver to simultaneously access the same instrument, both sessions must initialize with the same bitfile.

Complete the following steps to open an instrument driver session that uses a precompiled bitfile:

1. Call Initialize With Options.
2. Wire the Driver Setup string to the `options string` input.
3. Include the Bitfile tag in the Driver Setup string, and set the value of the Bitfile tag to the name of the bitfile you want to load, as shown in the following example string:
   `DriverSetup=Bitfile:filename.lvbitx`

   where `filename.lvbitx` is the file name of the bitfile you want to load.

Obtaining an FPGA Reference

Complete the following steps to obtain an FPGA reference to use with the LabVIEW FPGA host interface:

1. Read the niRFSA FPGA Bitfile Path property.
   The FPGA Bitfile Path property returns the absolute path to the bitfile as a string.
2. Wire the output of the FPGA Bitfile Path property to the `String` input of the String to Path function.
3. Wire the `Path` output of the String to Path function to the `Bitfile Path` input of the Open Dynamic Bitfile Reference function.

RF List Mode

RF list mode is an operating mode in which the device deterministically sequences through a predetermined set of RF configurations. A given set of RF configurations, as specified by an RF configuration list, is enacted by the RF modules without any interaction with the host system and NI-RFSA. Because the host system is not involved in executing the RF configuration list changes, the changes from one step in the list to the next are deterministic.

RF List Mode Supported Devices: PXIe-5644/5645/5646, PXIe-5650/5651/5652/5653/5654/5654 with PXIe-5696, PXIe-5673E, PXIe-5820/5840

Simulating an NI-RFSG Device

Simulate an NI-RFSG device to develop, modify, and/or test an application without hardware. Using a simulated device to test an application eliminates the risk of hardware damage. Additionally, you can use simulated NI-RFSG hardware to evaluate an NI product for which you do not have hardware.

Complete the following steps to create and configure a simulated NI-RFSG device using the NI-RFSG instrument driver:

1. Call Initialize With Options.
2. Set the `option string` input. The `option string` input is composed of the Simulate and Driver Setup keywords, as illustrated in the following example:

```
Simulate=1,DriverSetup=Model:model number; BoardType:type
```

Note You must enable simulation (`Simulate=1`) to simulate any device.

The following table shows the valid values for `model number` and `type`.

Option	Valid Values
`model number`	5611, 5650, 5650e, 5651, 5651e, 5652, 5652e, 5653, 5654, 5673E
`type`	PXI, PXIe

Note For PXI/PXIe-5650/5651/5652 modules only, you can use the `BoardType:PXI` and `BoardType:PXIe` values to indicate whether a module is PXI or PXI Express, respectively.

Simulation Examples

- When simulating a PXIe-5673E, you can use any of the following `option string` inputs:

  ```
  Simulate=1,DriverSetup=Model:5673E
  ```

  ```
  Simulate=1,DriverSetup=Model:5611; AWG:5450; LO:5652e
  ```

  ```
  Simulate=1,DriverSetup=Model:5611; AWG:5450; LO:5652;
  loBoardType:PXIe
  ```

  (With an external LO) `Simulate=1,DriverSetup=Model:5611; AWG:5450; LO:<external>`

- When simulating an PXIe-5650, you can use either of the following `option string` inputs:

  ```
  Simulate=1,DriverSetup=Model:5650e
  ```

  ```
  Simulate=1,DriverSetup=Model:5650; BoardType:PXIe
  ```

Associating Hardware Modules in SystemDesigner

Before you can program your PXIe-5673E Vector Signal Generator, you must create an association between the individual hardware modules to control them as a single RF device.

After launching LabVIEW NXG, complete the following steps to associate your hardware modules.

> **Note** When you associate modules in SystemDesigner, the changes are automatically reflected in Measurement & Automation Explorer (MAX). You can alternatively associate your modules in MAX.

1. Open the Live view in SystemDesigner.
2. On the diagram, select the PXIe-5611 IQ Modulator for your vector signal generator.
3. On the **Item** tab in the Configuration pane, expand **Configure vector signal generator**.
4. Select the appropriate hardware module from each system component drop-down listbox.

   > **Note** Select **Not Specified** if you do not want to associate a specific module with the I/Q modulator. Select **External** if you want to use an external module, such as a third-party LO, with your I/Q modulator.

   Once you associate all the modules, your vector signal generator model displays underneath the label of the I/Q modulator on the Live view.

NI-RFSG Properties

Use the niRFSG Property Node to get (read) or set (write) NI-RFSG properties. When you read a property, NI-RFSG analyzes the current configuration to return the coerced value for that property. NI-RFSG verifies many properties upon reading, thereby either transitioning the session to the verified state or alerting you of an invalid configuration. Setting a property transitions the session to an unverified state.

Note For more information about a specific property, refer to the Context Help for that property within the NI-RFSG API.

Property	Description
Active Channel	Specifies the channel name used to access all subsequent channel-based properties in this property node. Set the channel before setting channel-based properties. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Arb:Advanced:Compensate for Filter Group Delay	Enables or disables compensation for filter group delay on the AWG module. This property also accounts for the upconverter group delay and aligns the RF output with the Started Event, Done Event, and Marker Events. At a low I/Q rate, the group delay can become so large that some devices may not be able to align the events with the RF output, in which case you must increase the I/Q rate or disable this property. Supported Devices: PXIe-5672 Default Value: FALSE
Arb:Advanced:Digital Gain (dB)	Specifies the digital gain, in decibels. The digital gain is applied to the waveform data after filtering. Use this property to adjust the output power of the device while keeping the analog path fixed. This may cause clipping, overflows, or quantization noise if used improperly. To set this property, the NI-RFSG device must be in the Configuration or Generation state. Supported Devices: PXIe-5644/5645/5646, PXIe-5820/5840 Default Value: 0 dB
Arb:Advanced:Overflow Error Reporting	Configures error reporting for onboard signal processing (OSP) overflows. Overflows lead to clipping of the waveform. Supported Devices: PXIe-5820/5840 Default Value: Warning
Arb:Arb Carrier Frequency (Hz)	Indicates the carrier frequency generated by the AWG module. Supported Devices: PXI-5610, PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5840
Arb:Arb Power (dBm)	Indicates the average output power from the PXI-5421, PXI-5441, PXIe-5442, and PXIe-5450 AWG modules. If an arbitrary waveform is being generated, this property specifies either the average power or the peak power of the signal, depending on the Power Level Type property setting. Supported Devices: PXI-5670/5671, PXIe-5672/5673/5673E
Arb:Data Transfer:Advanced:Host	Specifies the size of the DMA buffer in computer memory, in

Property	Description
DMA Buffer Size	bytes. To set this property, the NI-RFSG device must be in the Configuration state. A sufficiently large host DMA buffer improves performance by allowing large writes to be transferred more efficiently. Supported Devices: PXIe-5820/5840 Default Value: 8 MB
Arb:Data Transfer:Advanced:Maximum In-Flight Read Requests	Specifies the maximum number of concurrent PCI Express read requests the RF signal generator can issue. Supported Devices: PXI-5670/5671, PXIe-5672/5673/5673E
Arb:Data Transfer:Advanced:Preferred Packet Size	Specifies the preferred size of the data field in a PCI Express read request packet. In general, the larger the packet size, the more efficiently the device uses the bus. By default, RF signal generators use the largest packet size allowed by the system. However, due to different system implementations, some systems may perform better with smaller packet sizes. Recommended values for this property are powers of two between 64 and 512. **Note** In some cases, the RF signal generator generates packets smaller than the preferred size you set with this property. Supported Devices: PXI-5670/5671, PXIe-5672/5673/5673E
Arb:Data Transfer:Data Transfer Block Size	Indicates the number of samples at a time to download to onboard memory. This property is useful when the total data to be transferred to onboard memory is large. Supported Devices: PXIe-5672/5673/5673E Default Value: 1 MS
Arb:Data Transfer:Direct Download	Specifies whether the niRFSG Write Arb Waveform VI immediately writes waveforms to the device or copies the waveform to host memory for later download. NI-RFSG reads and validates this property when an arbitrary waveform is first allocated. PXI-5670: Direct download is always disabled. PXI-5671: To increase performance when using large waveforms, enable direct download. To maximize reconfigurability, disable direct download. Perform the following steps to enable direct download: Set the I/Q rate to less than or equal to 8.33 MS/s with the IQ Rate property. Set the Power Level Type property to Peak Power. Disable the IQ Swap Enabled property. Disable the Digital Equalization Enabled property. PXIe-5644/5645/5646, PXIe-5672/5673/

Property	Description
	5673E, PXIe-5820/5840: Direct download is always enabled. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Arb:Data Transfer:Maximum Bandwidth	Specifies the maximum amount of bus bandwidth to use for data transfers. Supported Devices: PXI-5670/5671, PXIe-5672/5673/5673E
Arb:Data Transfer:Streaming:Space Available In Streaming Waveform (Samples)	Indicates the space available, in samples, in the streaming waveform for writing new data. For optimal performance, write new data to the waveform in a fixed size that is an integer divisor of the total size of the streaming waveform. This waveform size ensures that writes do not have to wrap around from the end to the beginning of the waveform buffer. To read this property, the NI-RFSG device must be in the Committed state. Supported Devices: PXIe-5672/5673/5673E, PXIe-5820/5840
Arb:Data Transfer:Streaming:Streaming Enabled	Enables or disables continuous streaming of waveform data. Supported Devices: PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: Disabled
Arb:Data Transfer:Streaming:Streaming Waveform Name	Specifies the name of the waveform used to continuously stream data during generation. Supported Devices: PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: "" (empty string)
Arb:Data Transfer:Streaming:Streaming Write Timeout	Indicates the maximum amount of time allowed to complete a streaming write operation. Supported Devices: PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: 10.0 seconds
Arb:Digital Equalization Enabled	When this property is enabled, NI-RFSG equalizes the waveform data to correct for variations in the response of the NI-RFSG device. Enabling digital equalization improves the modulation error ratio (MER) and error vector magnitude (EVM) for signals with large bandwidths (>500 kHz), but it increases tuning times. This property only applies when the Generation Mode property is set to Arb Waveform or Script. To set this property, the NI-RFSG device must be in the Configuration state. On the PXI-5670/5671, equalization is performed in the software, so tuning time is increased. On the PXIe-5672, equalization is performed in the hardware so that there is no compromise in performance. PXIe-5644/5645/5646, PXIe-5820/5840: Enable is the only supported value for

Property	Description
	this device. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672, PXIe-5820/5840 Default Values: PXI-5670/5671: Disable PXIe-5644/5645/5646, PXIe-5672, PXIe-5820/5840: Enable
Arb:Digital Pattern	Enables or disables digital pattern on the PXI-5421/5441 AWG module. This property must be set to TRUE to enable signal routing to and from the Digital Data & Control connector. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXI-5670/5671 Default Value: FALSE
Arb:Generation Mode	Specifies whether to generate a continuous wave (CW) signal, the arbitrary waveform specified by the Selected Waveform property, or the script specified by the Selected Script property, upon calling the niRFSG Initiate VI. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696 (CW support only), PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: CW
Arb:IQ Rate (S/s)	This property specifies the I/Q rate of the arbitrary waveform. The I/Q rate is coerced to a value the hardware can achieve. Read this value back after setting it to see the actual I/Q rate. NI-RFSG internally uses an FIR filter with flat response up to (0.4 × IQ rate). Given a desired signal with the maximum frequency content f , sample the signal at an I/Q rate greater than or equal to (f /0.4). This property only applies when the Generation Mode property is set to Arb Waveform or Script. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Arb:IQ Swap Enabled	Enables or disables the inverse phase rotation of the I/Q signal by swapping the I and Q inputs. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: FALSE
Arb:Memory Size	The total amount of memory on the RF signal generator in bytes.

Property	Description
	Note Not all onboard memory can be used for waveform storage. A portion of onboard memory stores scripts that specify how the waveforms are generated. These scripts typically require less than 1 KB of onboard memory. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Arb:Phase Continuity Enabled	Specifies whether the driver maintains phase continuity in the arbitrary waveforms. When this property is set to Enable, NI-RFSG may increase the waveform size, and the Frequency Tolerance (Hz) property specifies the maximum allowable frequency error that can be introduced when keeping the signal phase-continuous. To set the Phase Continuity Enabled property, the NI-RFSG device must be in the Configuration state. This property only applies when the Generation Mode property is set to Arb Waveform or Script. PXI-5671: When using the PXI-5671 with I/Q rates less than or equal to 8.33 MS/s, an input phase-continuous signal is always phase-continuous upon output, and this property has no effect. PXIe-5644/5645/5646, PXIe-5672/5673/5673E, PXIe-5820/5840: Phase continuity is always enabled on these devices. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Arb:Pre-filter Gain (dB)	Specifies the AWG prefilter gain. The prefilter gain is applied to the waveform data before any other signal processing. Reduce this value to prevent overflow in the AWG interpolation filters. Other gains on the NI-RFSG device are automatically adjusted to compensate for nonunity AWG prefilter gain. The PXI-5671, PXIe-5672 must be in the Configuration state to use this property. However, the PXIe-5673/5673E can be in either the Configuration or the Generation state to use this property. **Note** On the PXI-5671, this property applies only when the I/Q rate is set to a value less than or equal to 8.33 MS/s. On the PXIe-5644/5645/5646, PXIe-5672/5673/5673E, and PXIe-5820/5840, this

Property	Description
	property is always applicable. Supported Devices: PXIe-5644/5645/5646, PXI-5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: 0 dB
Arb:Pulse Shaping:Filter Type	Specifies the pulse-shaping filter type for the FIR filter. You can use this property only with signal generators that support onboard signal processing (OSP). NI-RFSG returns an error if you use this property with a device that does not support OSP. Supported Devices: PXI-5670/5671, PXIe-5672/5673/5673E Default Value: None
Arb:Pulse Shaping:Raised Cosine Alpha	Specifies the alpha value to use when calculating the pulse-shaping FIR filter coefficients. You can use this property only when the Filter Type property is set to Raised Cosine and with signal generators that support onboard signal processing (OSP). NI-RFSG returns an error if you use this property with a device that does not support OSP. Supported Devices: PXI-5671, PXIe-5672/5673/5673E
Arb:Pulse Shaping:Root Raised Cosine Alpha	Specifies the alpha value to use when calculating the pulse-shaping FIR filter coefficients. You can use this property only when the Filter Type property is set to Root Raised Cosine and with signal generators that support onboard signal processing (OSP). NI-RFSG returns an error if you use this property with a device that does not support OSP. Supported Devices: PXI-5671, PXIe-5672/5673/5673E
Arb:Selected Script	Specifies the script in onboard memory to generate upon calling the niRFSG Initiate VI when the Generation Mode property is set to Script. The Selected Script property is ignored when the Generation Mode property is set to Arb Waveform or CW. To set the Selected Script property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Arb:Signal Bandwidth (Hz)	Specifies the bandwidth of the arbitrary signal. This value must be less than or equal to (0.8 × I/Q rate). NI-RFSG defines signal bandwidth as twice the maximum I/Q signal deviation from 0 Hz. Usually, the baseband signal center frequency is 0 Hz. In such cases, the bandwidth is simply the I/Q signal's minimum frequency subtracted from its maximum frequency

Property	Description
	or f max - f min. This property applies only when the Generation Mode property is set to Arb Waveform or Script, except for when using the PXIe-5840, which supports setting this property in all supported generation modes. To set the Signal Bandwidth property, the NI-RFSG device must be in the Configuration state. PXI-5670/5671, PXIe-5672: Based on your signal bandwidth, NI-RFSG decides whether to configure the upconverter center frequency in increments of 1 MHz or 5 MHz. Failure to configure this property may result in the signal being placed outside the upconverter passband. PXIe-5644/5645/5646, PXIe-5673/5673E: This property is used only for error checking purposes. Otherwise, this property is ignored. PXIe-5820/5840: Based on your signal bandwidth, NI-RFSG decides the equalized bandwidth. If this property is not set, NI-RFSG uses the maximum available signal bandwidth. For the PXIe-5840, the maximum allowed signal bandwidth depends on the upconverter center frequency. Refer to the specifications document for your device for more information about signal bandwidth. The device specifications depend on the signal bandwidth. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Arb:Software Scaling Factor	Specifies how much to scale the data before writing it with the niRFSG Write Arb Waveform VI. The resulting waveform must be smaller than 1.0 in complex magnitude. This property is supported only if you set the Power Level Type property to Peak Power. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: 1.0
Arb:Waveform Capabilities:Max Number Waveforms	Specifies the maximum number of waveforms the NI-RFSG device can hold in memory. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Arb:Waveform Capabilities:Max Waveform Size	Specifies the size of the largest waveform that is allowed. To read this property, the NI-RFSG device must be in the Configuration state. PXI-5671, PXIe-5672: The value of this property depends on the I/Q rate. Set the I/Q rate before reading this property. PXIe-5673/5673E: The maximum waveform size is reduced to account for the amount of device memory currently used.

Property	Description
	Note Not all onboard memory is available for waveform storage. A portion of onboard memory stores scripts that specify how the waveforms are generated. These scripts typically require less than 1 KB of onboard memory. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Arb:Waveform Capabilities:Min Waveform Size	Specifies the smallest allowable waveform size. PXI-5671, PXIe-5672: The value of this property depends on the I/Q rate. Set the I/Q rate before reading this property. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Arb:Waveform Capabilities:Selected Waveform	Specifies the waveform in onboard memory to generate upon calling the niRFSG Initiate VI when the Generation Mode property is set to Arb Waveform. The Selected Waveform property is ignored when the Generation Mode property is set to Script or CW. To set the Selected Waveform property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: "" (empty string)
Arb:Waveform Capabilities:Waveform Quantum	Returns the waveform quantum for the device. The number of samples in a waveform must be an integer multiple of the waveform quantum. The other restrictions on the length of the waveform are the minimum and maximum arbitrary waveform sizes. PXI-5671, PXIe-5672: The value of this property depends on the I/Q rate. Set the I/Q Rate property before reading this property. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Arb:Waveform Repeat Count	Specifies the repeat count of a waveform when you set the Waveform Repeat Count Is Finite property to TRUE. This property is valid only when you set the Generation Mode property to Arb Waveform. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: 1
Arb:Waveform Repeat Count Is	Specifies the repetition mode of a waveform when you set the

Property	Description
Finite	Generation Mode property to Arb Waveform. If you set this property to TRUE, the number of repetitions is determined by the Waveform Repeat Count property. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: FALSE
Clock:Advanced:Arb Oscillator Phase DAC Value	Specifies the oscillator phase digital-to-analog converter (DAC) value on the arbitrary waveform generator (AWG). Use this property to reduce the trigger jitter when synchronizing multiple devices with NI-TClk. This property can also help maintain synchronization repeatability by writing a previous measurement's phase DAC value to the current session. This property is applicable only when the Arb Sample Clock Source property is set to ClkIn. Supported Devices: PXIe-5673/5673E
Clock:Arb Onboard Sample Clock Mode	Specifies the Sample Clock mode on the device. To set this property, the NI-RFSG device must be in the Configuration state. PXIe-5644/5645/5646, PXIe-5820/5840: Divide Down is the only supported value for this device. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Values: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672, PXIe-5820/5840: Divide Down PXIe-5673/5673E: High Resolution
Clock:Arb Sample Clock Rate (Hz)	Returns the rate of the Sample Clock on the device. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Clock:Arb Sample Clock Source	Specifies the Sample Clock source for the device. To set this property, the NI-RFSG device must be in the Configuration state. PXIe-5644/5645/5646, PXIe-5820/5840: OnboardClock is the only supported value for this device. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: OnboardClock
Clock:PXI Chassis Clk 10 Source	Specifies the clock source for driving the PXI 10 MHz backplane Reference Clock. This property is configurable if the PXI-5610 upconverter module is installed in only Slot 2 of a PXI chassis. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXI-5610, PXI-5670/5671

Property	Description
Clock:Reference Clock Export Output Terminal	Specifies the destination terminal for exporting the Reference Clock on the RF signal generators. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXIe-5673/5673E, PXIe-5820/5840 Default Value: Do not export signal
Clock:Reference Clock Rate (Hz)	Specifies the rate of the Reference Clock. To set this property, the NI-RFSG device must be in the Configuration state. If you are using the PXIe-5654/5654 with PXIe-5696, the NI-RFSG device must be in the Committed state to read this property. When you read this property, it returns the frequency the device is locked to during the Committed state. If you set this property to Auto, NI-RFSG uses the default Reference Clock rate for the device or automatically detects the Reference Clock rate if automatic detection is supported by the device.  **Note** Automatic detection of the Reference Clock rate is supported on only the PXIe-5654/5654 with PXIe-5696. For all other supported devices, NI-RFSG uses the default Reference Clock rate of 10 MHz. PXIe-5654/5654 with PXIe-5696: Values between 1 MHz to 20 MHz in 1 MHz steps are supported in addition to the Auto and 10MHz values. Supported Devices: PXI-5610, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: Auto
Clock:Reference Clock Source	Specifies the Reference Clock source. To set this property, the NI-RFSG device must be in the Configuration state.  **Note** The PXI-5670/5671 and PXIe-5672 devices also allow you to drive the PXI 10 MHz backplane clock with the PXI Chassis Clk 10 Source property. Supported Devices: PXI-5610, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: Onboard Clock

Property	Description
Configuration List:Active List	Specifies the name of the configuration list to make active. When a property is get or set and that property is in the configuration list properties of the active list, the property is set to or get from the active list step of the active list. If the Active Configuration List property is set to "" (empty string), no list is active. **Note** For the PXIe-5650/5651/5652 and PXIe-5673E, when this property is set to a valid list name, the Frequency Settling Units property only supports Seconds After I/O as a valid value. Supported Devices: PXIe-5644/5645/5646, PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXIe-5673E, PXIe-5820/5840 Default Value: "" (empty string)
Configuration List:Active Step	Specifies the active step of the list defined by the Active Configuration List property. Supported Devices: PXIe-5644/5645/5646, PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXIe-5673E, PXIe-5820/5840 Default Value: 0
Configuration List:Configuration List Is Done	Returns whether the configuration list is still running or done. To read this property, the device must be in the Generation state. Supported Devices: PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXIe-5673E
Configuration List:Configuration List Repeat	Specifies whether the configuration list runs only once or continuously. Supported Devices: PXIe-5650/5651/5652, PXIe-5654/5654 with PXIe-5696, PXIe-5673E Default Value: Continuous
Configuration List:Step In Progress	Returns the configuration list step that is currently programmed to the hardware. The list is zero-indexed. You can query this property only when a list is executed. PXIe-5650/5651/5652, PXIe-5654/5654 with PXIe-5696, PXIe-5673E: This property can be read only when a configuration list is running. PXIe-5644/5645/5646: This property always returns 0 when the configuration list is not running. PXIe-5820/5840: If the configuration list is not running, this property returns the last step of a configuration list that is programmed to the hardware. If the device was last initiated without an active configuration list, this property returns 0. Supported Devices: PXIe-5644/5645/5646,

Property	Description
	PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXIe-5673E, PXIe-5820/5840
Device Characteristics:AE Temperature (Degrees C)	Returns the amplitude extender module temperature in degrees Celsius. Supported Devices: PXIe-5654 with PXIe-5696
Device Characteristics:AWG Temperature (Degrees C)	Returns the AWG module temperature in degrees Celsius. PXIe-5820/5840: If you query this property during RF list mode, list steps may take longer to complete during list execution. Supported Devices: PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Device Characteristics:Device Temperature (Degrees C)	Returns the device temperature. If the NI-RFSG session is controlling multiple devices, this property returns the temperature of the primary RF device. The NI-RFSG session is opened using the primary RF device name. Serial signals between the sensor and the system control unit can potentially modulate the signal being generated, thus causing phase spurs. After the device thoroughly warms up, its temperature varies only slightly (less than 1 degree Celsius) and slowly, and it is not necessary to constantly poll this temperature sensor. PXIe-5644/5645/5646, PXIe-5820/5840: If you query this property during RF list mode, list steps may take longer to complete during list execution. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Device Characteristics:FPGA Temperature (Degrees C)	Returns the FPGA temperature in degrees Celsius. Serial signals between the sensor and the system control unit can potentially modulate the signal being generated, thus causing phase spurs. After the device thoroughly warms up, its temperature varies only slightly (less than 1 degree Celsius) and slowly, and it is not necessary to constantly poll this temperature sensor. **Note** If you query this property during RF list mode, list steps may take longer to complete during list execution. Supported Devices: PXIe-5820/5840
Device Characteristics:LO Temperature (Degrees C)	Returns the LO module temperature in degrees Celsius. PXIe-5840: If you query this property during RF list mode, list

Property	Description
	steps may take longer to complete during list execution. Supported Devices: PXIe-5673/5673E, PXIe-5840
Device Characteristics:Module Power Consumption (W)	Returns the total power consumption of the device, in watts. **Note** If you query this property during RF list mode, list steps may take longer to complete during list execution. Supported Devices: PXIe-5820/5840
Device Characteristics:Module Revision	Returns the module revision letter. If the NI-RFSG session is controlling multiple modules, this property returns the revision letter of the primary RF module. The NI-RFSG session is opened using the primary RF module name. Supported Devices: PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXIe-5673/5673E, PXIe-5820/5840
Device Characteristics:Options:Fast Tuning Option	Returns whether the RF signal generator has the fast tuning option available. Supported Devices: PXIe-5654/5654 with PXIe-5696
Device Characteristics:Serial Number	Returns the serial number of the RF module. If the NI-RFSG session is controlling multiple modules, this property returns the serial number of the primary RF module. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Device Characteristics:Temperature Read Interval	Specifies the minimum time, in seconds, between temperature sensor readings. Supported Devices: PXIe-5820/5840
Device Specific:Vector Signal Transceiver:Device Characteristics:FPGA Bitfile Path	Returns a string containing the path to the location of the current NI-RFSG instrument driver FPGA extensions bitfile, a.lvbitx file, that is programmed on the device. You can specify the bitfile location using the Driver Setup string in the options string input of the niRFSG Initialize With Options VI. NI-RFSG instrument driver FPGA extensions enable you to use pre-compiled FPGA bitfiles to customize the behavior of the vector signal transceiver FPGA while maintaining the functionality of the NI-RFSG instrument driver. Supported Devices: PXIe-5644/5645/5646, PXIe-5820/5840

Property	Description
Device Specific:Vector Signal Transceiver:Events:Events Delay	Specifies the delay, in seconds, applied to the Started Event, Done Event, and all Marker Events with respect to the analog output of the RF signal generator. To set this property, the NI-RFSG device must be in the Configuration or Generation state. If you decrease the event delay during generation, some markers may be dropped.  **Note** By default, markers and events are delayed to align with the waveform data generated from the device. This property adds an additional delay to markers and events. Use this property to adjust the time delay between events and the corresponding data. Supported Devices: PXIe-5644/5645/5646, PXIe-5820/5840 Valid Values: PXIe-5644/5645: -1.217 us to 67.050 us PXIe-5646: -0.896 us to 64.640 us PXIe-5820/5840: 0 us to 3.276 us
Device Specific:Vector Signal Transceiver:IQ Out Port:Carrier Frequency	Specifies the frequency, in Hz, of the I/Q OUT port signal. The onboard signal processing (OSP) applies the specified frequency shift to the I/Q data before the data is sent to the digital-to-analog converter (DAC). To set this property, the NI-RFSG device must be in the Configuration state.  **Note** For the PXIe-5820, NI recommends using the Frequency (Hz) property. For the PXIe-5645, this property is ignored if you are using the RF ports. Supported Devices: PXIe-5645, PXIe-5820 Valid Values: PXIe-5645: -60 MHz to 60 MHz PXIe-5820: -500 MHz to 500 MHz
Device Specific:Vector Signal Transceiver:IQ Out Port:Common Mode Offset	Specifies the common-mode offset, in volts, applied to the signals generated at each differential output terminal. This property is valid only when you set the IQ Out Port Terminal Configuration property to Differential. Common-mode offset shifts both positive and negative terminals in the same direction. To use this property, you must use the Active Channel property to specify the name of the channel you are configuring. For the PXIe-5645, you can configure the I and Q channels by using I or Q as the channel string, or set the channel string to "" (empty string) to configure both channels. For the PXIe-5820, the only valid value for the channel string is

Property	Description
	"" (empty string). To set this property, the NI-RFSG device must be in the Configuration state. **Note** For the PXIe-5645, this property is ignored if you are using the RF ports. Supported Devices: PXIe-5645, PXIe-5820 Valid Values: PXIe-5645: -0.8 V to 0.8 V if you set the IQ Out Port Load Impedance property to 50 ohms. -1.2 V to 1.2 V if you set the IQ Out Port Load Impedance property to 100 ohms. PXIe-5820: -0.25 V to 1.5 V **Note** The valid range is dependent on the load impedance.
Device Specific:Vector Signal Transceiver:IQ Out Port:Level	Specifies the amplitude of the generated signal in volts, peak-to-peak (V pk-pk). For example, if you set this property to 1.0, the output signal ranges from -0.5 volts to 0.5 volts. To use this property, you must use the Active Channel property to specify the name of the channel you are configuring. For the PXIe-5645, you can configure the I and Q channels by using I or Q as the channel string, or set the channel string to "" (empty string) to configure both channels. For the PXIe-5820, the only valid value for the channel string is "" (empty string). To set this property, the NI-RFSG device must be in the Configuration state. **Note** For the PXIe-5645, this property is ignored if you are using the RF ports. Refer to the specifications document for your device for allowable output levels. Supported Devices: PXIe-5645, PXIe-5820 Default Value: 0.5 volts Valid Values: PXIe-5645: 1 V pk-pk maximum if you set the IQ Out Port Terminal Configuration property to Differential , and 0.5 V pk-pk maximum if you set the IQ Out Port Terminal Configuration property to Single-Ended. PXIe-5820: 3.4 V pk-pk maximum for signal bandwidth less than 160 MHz, and 2 V pk-pk maximum for signal bandwidth greater than 160 MHz.

Property	Description
	Note The valid values are only applicable when you set the IQ Out Port Load Impedance property to 50 ohms and when you set the IQ Out Port Offset property to 0.
Device Specific:Vector Signal Transceiver:IQ Out Port:Load Impedance	Specifies the load impedance, in ohms, connected to the I/Q OUT port. To set this property, the NI-RFSG device must be in the Configuration state. To use this property, you must use the Active Channel property to specify the name of the channel you are configuring. For the PXIe-5645, you can configure the I and Q channels by using I or Q as the channel string, or set the channel string to "" (empty string) to configure both channels. For the PXIe-5820, the only valid value for the channel string is "" (empty string). **Note** For the PXIe-5645, this property is ignored if you are using the RF ports. Supported Devices: PXIe-5645, PXIe-5820 Default Value: 50 ohms if you set the IQ Out Port Terminal Configuration property to Single-Ended , and 100 ohms if you set the IQ Out Port Terminal Configuration to Differential. Valid Values: Any value greater than 0. Values greater than or equal to 1 megaohms are interpreted as high impedance.
Device Specific:Vector Signal Transceiver:IQ Out Port:Offset	Specifies the value, in volts, that the signal generator adds to the I and Q signals. To set this property, the NI-RFSG device must be in the Configuration state. To use this property, you must use the Active Channel property to specify the name of the channel you are configuring. For the PXIe-5645, you can configure the I and Q channels by using I or Q as the channel string, or set the channel string to "" (empty string) to configure both channels. For the PXIe-5820, the only valid value for the channel string is "" (empty string). **Note** For the PXIe-5645, this property is ignored if you are using the RF ports. PXIe-5645: The waveform may be scaled in DSP prior to adding offset and the device state may be changed in order to

Property	Description
	accommodate the requested offset. PXIe-5820: The waveform is not automatically scaled in DSP. To prevent DSP overflows, use the Pre-filter Gain (dB) property to scale the waveform to provide additional headroom for offsets. Supported Devices: PXIe-5645, PXIe-5820
Device Specific:Vector Signal Transceiver:IQ Out Port:Temperature (Degrees C)	Returns the temperature, in degrees Celsius, of the I/Q Out circuitry on the device. If you query this property during RF list mode, list steps may take longer to complete during list execution. Supported Devices: PXIe-5645, PXIe-5820
Device Specific:Vector Signal Transceiver:IQ Out Port:Terminal Configuration	Specifies whether to use the I/Q OUT port for Differential configuration or Single-Ended configuration. If you set this property to Single-Ended , you must terminate the negative I and Q output connectors with a 50 Ohm termination. If you set this property to Single-Ended , the positive I and Q connectors generate the resulting waveform. If you set this property to Differential , both the positive and negative I and Q connectors generate the resulting waveform. To use this property, you must use the Active Channel property to specify the name of the channel you are configuring. For the PXIe-5645, you can configure the I and Q channels by using I or Q as the channel string, or set the channel string to "" (empty string) to configure both channels. For the PXIe-5820, the only valid value for the channel string is "" (empty string). **Note** For the PXIe-5645, this property is ignored if you are using the RF ports. To set this property, the NI-RFSG device must be in the Configuration state. PXIe-5820: The only valid value for this property is Differential. Supported Devices: PXIe-5645, PXIe-5820 Default Value: Differential
Device Specific:Vector Signal Transceiver:Signal Path:Absolute Delay	Specifies the sub-Sample Clock delay, in seconds, to apply to the I/Q waveform. Use this property to reduce the trigger jitter when synchronizing multiple devices with NI-TClk. This property can also help maintain synchronization repeatability by writing the absolute delay value of a previous measurement to the current session. To set this property, the NI-RFSG device must be in the Configuration state.

Property	Description
	Note If this property is set, NI-TClk cannot perform any sub-Sample Clock adjustment. The resolution of this property is a function of the I/Q sample period at 15E(-6) times that sample period. Supported Devices: PXIe-5820/5840 Valid Values: Plus or minus half of one Sample Clock period
Device Specific:Vector Signal Transceiver:Signal Path:Interpolation Delay	Specifies the delay, in seconds, to apply to the I/Q waveform. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646 Valid Values: Plus or minus half of one I/Q sample period
Device Specific:Vector Signal Transceiver:Signal Path:LO Frequency Step Size (Hz)	Specifies the step size for tuning the local oscillator (LO) phase-locked loop (PLL). When the LO PLL Fractional Mode Enabled property is set to Enabled , the specified step size affects the fractional spur performance of the device. When the LO PLL Fractional Mode Enabled property is set to Disabled , the specified step size affects the phase noise performance of the device. Supported Devices: PXIe-5644/5645/5646, PXIe-5840 Default Value: 200 kHz
Device Specific:Vector Signal Transceiver:Signal Path:LO PLL Fractional Mode Enabled	Specifies whether to use fractional mode for the local oscillator (LO) phase-locked loop (PLL). This property enables or disables fractional frequency tuning in the LO. Fractional mode provides a finer frequency step resolution and allows smaller values for the LO Frequency Step Size property. However, fractional mode may introduce non-harmonic spurs. This property is valid only if you set the LO Source property to Onboard. Supported Devices: PXIe-5644/5645/5646, PXIe-5840 Default Value: Enabled
Device Specific:Vector Signal Transceiver:Signal Path:LO Source	Specifies whether to use the internal or external local oscillator (LO) source. If this property is set to "" (empty string), NI-RFSG uses the internal LO source. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXIe-5840 Default Value: Onboard
Device Specific:Vector Signal Transceiver:Signal Path:Output Port	Specifies the connector(s) to use to generate the signal. To set this property, the NI-RFSG device must be in the Configuration state. You must write complex I and Q data for all options. The Q data has no effect if you set this property to

Property	Description
	I Only and set the IQ Out Port Carrier Frequency property to 0. If you set the IQ Out Port Carrier Frequency property to a value other than 0, the onboard signal processing (OSP) frequency shifts I and Q as a complex value and outputs the real portion of the result on the I connector(s) of the device. If you set the Output Port property to I Only or IQ Out , the IQ Out Port Terminal Configuration property applies. Supported Devices: PXIe-5644/5645/5646, PXIe-5820/5840 Default Values: PXIe-5644/5645/5646, PXIe-5840: RF Out PXIe-5820: IQ Out
Device Specific:Vector Signal Transceiver:Signal Path:Relative Delay	Specifies the delay, in seconds, to apply to the I/Q waveform. Relative delay allows for delaying the generated signal from one device relative to the generated signal of another device after those devices have been synchronized. You can achieve a negative relative delay by delaying both synchronized devices by the same value (1 us) before generation begins and then changing the relative delay to a smaller amount than the initial value on only one of the devices. **Note** To obtain a negative relative delay when synchronizing the PXIe-5840 with a module that does not support this property, use the NI-TClk Sample Clock Delay property. To set this property, the NI-RFSG device must be in the Configuration or Generation state. The resolution of this property is a function of the I/Q sample period at 15E(-6) of the sample period but not worse than one Sample Clock period. Supported Devices: PXIe-5820/5840 Valid Values: 0 us to 3.2 us
Device Specific:Vector Signal Transceiver:Signal Path:RF Blanking Source	Specifies the Marker Event at which RF blanking occurs. RF blanking quickly attenuates the RF OUT signal. Use Marker Events to toggle the state of RF blanking. The RF Output always starts in the unblanked state. To set this property, the NI-RFSG device must be in the Configuration state. You can specify Marker Events by using scripts to trigger blanking at a certain point in a waveform. For example, if you set this property to marker0 , and marker0 occurs on samples 1,000 and 2,000 of a script, then the RF Output will be blanked (attenuated) between samples 1,000 and 2,000. The shortest supported blanking interval is eight microseconds.

Property	Description
	Note For the PXIe-5645, this property is ignored if you are using the I/Q ports. **Note** For the PXIe-5840, RF blanking does not occur for frequencies less than 120 MHz. Supported Devices: PXIe-5644/5645/5646, PXIe-5840 Default Value: "" (empty string)
Device Specific:Vector Signal Transceiver:Triggers:Sync Sample Clock Dist Line	Specifies which external trigger line distributes the Sample Clock sync signal. When synchronizing the Sample Clock between multiple devices, configure all devices to use the same Sample Clock sync distribution line. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5646 Default Value: "" (empty string) Valid Values: PXI_Trig0, PXI_Trig1, PXI_Trig2, PXI_Trig3, PXI_Trig4, PXI_Trig5, PXI_Trig6, PXI_Trig7, PFI0
Device Specific:Vector Signal Transceiver:Triggers:Sync Sample Clock Master	Specifies whether the device is the master device when synchronizing the Sample Clock between multiple devices. The master device distributes the Sample Clock sync signal to all devices in the system through the Sample Clock sync distribution line. When synchronizing the Sample Clock, one device must always be designated as the master. The master device actively drives the Sample Clock sync distribution line. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5646 Default Value: FALSE
Device Specific:Vector Signal Transceiver:Triggers:Sync Script Trigger Dist Line	Specifies which external trigger line distributes the synchronized Script Trigger signal. Use the Active Channel property to specify the name of the Script Trigger you are configuring. When synchronizing the Script Trigger, configure all devices to use the same Script Trigger distribution line. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646 Default Value: "" (empty string) Valid Values: PXI_Trig0, PXI_Trig1, PXI_Trig2, PXI_Trig3, PXI_Trig4, PXI_Trig5, PXI_Trig6, PXI_Trig7, PFI0
Device Specific:Vector Signal	Specifies whether the device is the master device when

Property	Description
Transceiver:Triggers:Sync Script Trigger Master	synchronizing the Script Trigger between multiple devices. Use the Active Channel property to specify the name of the Script Trigger you are configuring. The master device distributes the synchronized Script Trigger to all devices in the system through the Script Trigger distribution line. When synchronizing the Script Trigger, one device must always be designated as the master. The master device actively drives the Script Trigger distribution line. For slave devices, set the Script Trigger Type property to Digital Edge , and set the Script Trigger Digital Edge Source property to sync_script. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646 Default Value: FALSE
Device Specific:Vector Signal Transceiver:Triggers:Sync Start Trigger Dist Line	Specifies which external trigger line distributes the synchronized Start Trigger signal. When synchronizing the Start Trigger, configure all devices to use the same Start Trigger distribution line. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646 Default Value: "" (empty string) Valid Values: PXI_Trig0, PXI_Trig1, PXI_Trig2, PXI_Trig3, PXI_Trig4, PXI_Trig5, PXI_Trig6, PXI_Trig7, PFI0
Device Specific:Vector Signal Transceiver:Triggers:Sync Start Trigger Master	Specifies whether the device is the master device when synchronizing the Start Trigger between multiple devices. The master device distributes the synchronized Start Trigger to all devices in the system through the Start Trigger distribution line. When synchronizing the Start Trigger, one device must always be designated as the master. The master device actively drives the Start Trigger distribution line. For slave devices, set the Start Trigger Type property to Digital Edge , and set the Start Trigger Digital Edge Source property to sync_start. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646 Default Value: FALSE
Device Specific:Vector Signal Transceiver:Upconverter:Frequency Offset (Hz)	This property offsets the Upconverter Center Frequency (Hz) from the RF frequency. Use this property to keep the local oscillator (LO) leakage at a determined offset from the RF signal. **Note** You cannot set the Upconverter Center

Property	Description
	> Frequency (Hz) property or the Arb Carrier Frequency (Hz) property at the same time as the Upconverter Frequency Offset (Hz) property. Resetting this property disables the upconverter frequency offset. Supported Devices: PXIe-5644/5645/5646, PXIe-5840 Valid Values: PXIe-5644/5645: -42 MHz to 42 MHz PXIe-5646: -100 MHz to 100 MHz PXIe-5840: -625 MHz to 625 MHz
Events:Configuration Settled Event Export Output Terminal	Specifies the destination terminal for exporting the Configuration Settled event. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5654/5654 with PXIe-5696, PXIe-5820/5840
Events:Configuration Settled Event Terminal Name	Returns the fully qualified signal name as a string. Supported Devices: PXIe-5654/5654 with PXIe-5696, PXIe-5820/5840 Default Values: PXIe-5654/5654 with PXIe-5696: / ModuleName /ConfigurationSettledEvent , where ModuleName is the name of your device in MAX. PXIe-5820/5840: / ModuleName /ao/0/ConfigurationSettledEvent , where ModuleName is the name of your device in MAX.
Events:Done Event Export Output Terminal	Specifies the destination terminal for exporting the Done event. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Events:Done Event Terminal Name	Returns the fully qualified signal name as a string. Supported Devices: PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Values: PXI-5670/5671, PXIe-5672/5673/5673E: / AWGName /DoneEvent , where AWGName is the name of your associated AWG module in MAX. PXIe-5820/5840: / ModuleName /ao/0/DoneEvent , where ModuleName is the name of your device in MAX.
Events:Marker:Output Behavior	Specifies the output behavior for the Marker Event. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5820/5840 Default Value: Pulse
Events:Marker:Output Terminal	Specifies the destination terminal for exporting the Marker Event. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840

Property	Description
Events:Marker:Pulse:Width Units	Specifies the pulse width units for the Marker Event. This property is valid only when the Marker Event Output Behavior property is set to Pulse. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5820/5840 Default Value: Seconds
Events:Marker:Pulse:Width Value	Specifies the pulse width value for the Marker Event. Use the Marker Event Pulse Width Units property to set the units for the pulse width value. This property is valid only when the Marker Event Output Behavior property is set to Pulse. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5820/5840 Default Value: 200 ns
Events:Marker:Terminal Name	Returns the fully qualified signal name as a string. Supported Devices: PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Values: PXI-5670/5671, PXIe-5672/5673/5673E: /AWGName /Marker X Event , where AWGName is the name of your associated AWG module in MAX and X is Marker Event 0 through 3. PXIe-5820/5840: / ModuleName /ao/0/Marker X Event , where ModuleName is the name of your device in MAX and X is Marker Event 0 through 3.
Events:Marker:Toggle:Initial State	Specifies the initial state for the Marker Event when the Marker Event Output Behavior property is set to Toggle. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5820/5840 Default Value: Digital Low
Events:Started Event Export Output Terminal	Specifies the destination terminal for exporting the Started Event. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Events:Started Event Terminal Name	Returns the fully qualified signal name as a string. Supported Devices: PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Values: PXI-5670/5671, PXIe-5672/5673/5673E: /AWGName /StartedEvent , where AWGName is the name of your associated AWG module in MAX. PXIe-5820/5840: / ModuleName /ao/0/StartedEvent , where ModuleName is the name of your device in MAX.
Events:Timer:Interval	Specifies the time, in seconds, before the timer emits an event after the task is started and specifies the time interval

Property	Description
	between timer events after the first event. **Note** For the PXIe-5820/5840, this property must be set for the timer to start. If you do not set this property, the timer is disabled. Supported Devices: PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXIe-5673E, PXIe-5820/5840 Default Value: 0
External Calibration:Last External Calibration Temperature	Indicates the temperature, in degrees Celsius, of the device at the time of the last external calibration. Supported Devices: PXI-5610, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E
External Calibration:Recommended Interval	Indicates, in months, the recommended interval between each external calibration of the device. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:Advanced Session Information:Logical Name	Returns a string that contains the logical name you specified when opening the current IVI session. You can pass a logical name to the niRFSG Initialize VI or the niRFSG Initialize with Options VI. The IVI Configuration Utility must contain an entry for the logical name. The logical name entry refers to a driver session section in the IVI Configuration file. The driver session section specifies a physical device and initial user options. Supported Devices: PXI-5610, PXIe-5611, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:Advanced Session Information:Resource Descriptor	Returns a string that contains the resource descriptor NI-RFSG uses to identify the physical device. If you initialize NI-RFSG with a logical name, this property contains the resource name that corresponds to the entry in the IVI Configuration Utility. If you initialize NI-RFSG with the resource name, this property contains that value. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:Driver	Returns a string that contains a comma-separated list of

Property	Description
Capabilities:Class Group Capabilities	class-extension groups that NI-RFSG implements. Supported Devices: PXI-5610, PXIe-5611, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:Driver Capabilities:Supported Instrument Models	Returns a string that contains a model code of the NI-RFSG device. For drivers that support more than one device, this property contains a comma-separated list of supported devices. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:Driver Identification:Class Specification Major Version	Returns the major version number of the class specification with which NI-RFSG is compliant. Supported Devices: PXI-5610, PXIe-5611, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:Driver Identification:Class Specification Minor Version	Returns the minor version number of the class specification with which NI-RFSG is compliant. Supported Devices: PXI-5610, PXIe-5611, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:Driver Identification:Description	Returns a string that contains a brief description of NI-RFSG. This property returns National Instruments RF Signal Generator Instrument Driver. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:Driver Identification:Driver Prefix	Returns a string that contains the prefix for NI-RFSG. The name of each user-callable VI in NI-RFSG starts with this prefix. This property returns niRFSG. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:Driver Identification:Driver Vendor	Returns a string that contains the name of the vendor that supplies NI-RFSG. This property returns National Instruments. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/

Property	Description
	5840
Inherent IVI Attributes:Driver Identification:Revision	Returns a string that contains additional version information about NI-RFSG. For example, NI-RFSG can return Driver: NI-RFSG 14.5.0, Compiler: MSVC 9.00, Components: IVI Engine 4.00, VISA-Spec 4.00 as the value of this property. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:Instrument Identification:Firmware Revision	Returns a string that contains the firmware revision information for the NI-RFSG device you are currently using. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:Instrument Identification:Manufacturer	Returns a string that contains the name of the manufacturer for the NI-RFSG device you are currently using. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:Instrument Identification:Model	Returns a string that contains the model number or name of the NI-RFSG device you are currently using. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:User Options:Cache	Specifies whether to cache the value of properties. When caching is enabled, NI-RFSG tracks the current NI-RFSG device settings and avoids sending redundant commands to the device. NI-RFSG can always cache or never cache particular properties, regardless of the setting of this property. Call the niRFSG Initialize With Options VI to override the default value. Supported Devices: PXI-5610, PXIe-5611, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:User Options:Interchange Check	Specifies whether to perform interchangeability checking and retrieve interchangeability warnings. **Note** Enabling interchangeability check is not

Property	Description
	supported. Supported Devices: PXI-5610, PXIe-5611, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:User Options:Query Instrument Status	Specifies whether the NI-RFSG instrument driver queries the device status after each operation. Querying the device status is useful for debugging. After you validate your program, you can set this property to FALSE to disable status checking and maximize performance. NI-RFSG can choose to ignore status checking for particular properties, regardless of the setting of this property. Call the niRFSG Initialize With Options VI to override the default value. Supported Devices: PXI-5610, PXIe-5611, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:User Options:Range Check	Specifies whether to validate property values and VI parameters. Range-checking parameters is very useful for debugging. After you validate your program, you can set this property to FALSE to disable range checking and maximize performance. NI-RFSG can choose to ignore range checking for particular properties, regardless of the setting of this property. Call the niRFSG Initialize With Options VI to override the default value. Supported Devices: PXI-5610, PXIe-5611, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:User Options:Record Value Coercions	Specifies whether the IVI engine keeps a list of the value coercions it makes for integer and real type properties. **Note** Enabling record value coercions is not supported. Supported Devices: PXI-5610, PXIe-5611, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Inherent IVI Attributes:User Options:Simulate	Specifies whether NI-RFSG simulates I/O operations. This property is useful for debugging applications without using

Property	Description
	hardware. After a session is opened, you cannot change the simulation state. Call the niRFSG Initialize With Options VI to enable simulation. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
IQ Impairment:Enabled	Enables or disables I/Q impairment. The I Offset , Q Offset , and IQ Skew properties are ignored when the Impairment Enabled property is disabled. Supported Devices: PXIe-5644/5645/5646, PXIe-5673/5673E, PXIe-5820/5840 Default Value: Enabled
IQ Impairment:Gain Imbalance (dB)	Specifies the gain imbalance of the I/Q modulator (I versus Q). Supported Devices: PXIe-5644/5645/5646, PXIe-5673/5673E, PXIe-5820/5840 Valid Values: -6 dB to 6 dB
IQ Impairment:I Offset	When using a National Instruments AWG module or vector signal transceiver (VST) device, this property specifies the I-signal DC offset. Units are either percent (%) or volts (V), depending on the Offset Units property setting. PXIe-5673/5673E: Actual AWG signal offset is equal to the I/Q modulator offset correction plus the value specified by this property. When using an external AWG (non-National Instruments AWG), this property is read-only and indicates the I/Q modulator I-offset. Units are volts, as specified by the Offset Units property. Supported Devices: PXIe-5644/5645/5646, PXIe-5673/5673E, PXIe-5820/5840 Valid Values: -100% to 100% or -0.2 V to 0.2 V
IQ Impairment:IQ Skew (Degrees)	Specifies the adjustment of the phase angle between the I and Q vectors. If this skew is zero, the phase angle is 90 degrees. Supported Devices: PXIe-5644/5645/5646, PXIe-5673/5673E, PXIe-5820/5840 Valid Values: -30 degrees to 30 degrees
IQ Impairment:Offset Units	Specifies the units of the I Offset property and the Q Offset property. Offset units are either percent (%) or volts (V). Supported Devices: PXIe-5644/5645/5646, PXIe-5673/5673E, PXIe-5820/5840 Default Value: Percent
IQ Impairment:Q Offset	When using a National Instruments AWG module or VST device, this property specifies the Q-signal DC offset. Units are either percent (%) or volts (V), depending on the Offset Units

Property	Description
	property setting. PXIe-5673/5673E: Actual AWG signal offset is equal to the I/Q modulator offset correction plus the value specified by this property. When using an external AWG, this property is read-only and indicates the I/Q modulator Q-offset. Units are volts, as indicated by the Offset Units property. Supported Devices: PXIe-5644/5645/5646, PXIe-5673/5673E, PXIe-5820/5840 Valid Values: -100% to 100% or -0.2 V to 0.2 V
Modulation:Analog:AM Sensitivity	Specifies an uncalibrated digital-to-analog converter (DAC) value that scales the input signal before the signal modulates the carrier. A value of 0 completely attenuates the signal, and a value of 100 passes the full-scale signal to the modulator. When using the PXIe-5654with PXIe-5696, NI-RFSG may coerce AM sensitivity. Coercing the AM sensitivity prevents overpower conditions at the PXIe-5696 input. Read this property to determine the coerced value. Supported Devices: PXIe-5654/5654 with PXIe-5696 Default Value: 100 Valid Values: 0 to 100
Modulation:Analog:FM Band	Specifies the analog modulation frequency modulation (FM) band to use. Wideband FM allows for modulating signals higher than 100 kHz. Narrowband FM allows for modulating lower frequency signals. Supported Devices: PXIe-5654/5654 with PXIe-5696 Default Value: Wideband
Modulation:Analog:FM Deviation (Hz)	Specifies the deviation to use in frequency modulation. Supported Devices: PXI/PXIe-5650/5651/5652 Default Value: 1 kHz
Modulation:Analog:FM Narrowband Integrator	Specifies the narrowband frequency modulation (FM) range to apply by sending the signal through an integrator. This property is valid only when you set the Modulation Type property to FM and the FM Band property to Narrowband. Supported Devices: PXIe-5654/5654 with PXIe-5696 Default Value: 100 Hz to 1 kHz
Modulation:Analog:FM Sensitivity	Specifies an uncalibrated digital-to-analog converter (DAC) value that scales the input signal before the signal modulates the carrier. A value of 0 completely attenuates the signal, and a value of 100 passes the full-scale signal to the modulator. Supported Devices: PXIe-5654/5654 with PXIe-5696 Default Value: 100 Valid Values: 0 to 100

Property	Description
Modulation:Analog:Modulation Type	Specifies the analog modulation format to use. Supported Devices: PXI/PXIe-5650/5651/5652, PXIe-5654/5654 with PXIe-5696 Default Value: None
Modulation:Analog:PM Deviation (Degrees)	Specifies the deviation to use in phase modulation, in degrees. Supported Devices: PXI/PXIe-5650/5651/5652, PXIe-5653 Default Value: 90 degrees
Modulation:Analog:PM Mode	Specifies the phase modulation (PM) mode to use. Supported Devices: PXIe-5654/5654 with PXIe-5696 Default Value: Low Phase Noise
Modulation:Analog:PM Sensitivity	Specifies an uncalibrated digital-to-analog converter (DAC) value that scales the input signal before the signal modulates the carrier. A value of 0 completely attenuates the signal, and a value of 100 passes the full-scale signal to the modulator. Supported Devices: PXIe-5654/5654 with PXIe-5696 Default Value: 100 Valid Values: 0 to 100
Modulation:Analog:Waveform Frequency (Hz)	Specifies the frequency of the waveform to use as the message signal in analog modulation. Supported Devices: PXI/PXIe-5650/5651/5652 Default Value: 1 kHz
Modulation:Analog:Waveform Type	Specifies the type of waveform to use as the message signal for analog modulation. Supported Devices: PXI/PXIe-5650/5651/5652 Default Value: Sine
Modulation:Digital:FSK Deviation (Hz)	Specifies the deviation to use in FSK modulation. Supported Devices: PXI/PXIe-5650/5651/5652 Default Value: 1 kHz
Modulation:Digital:Modulation Type	Specifies the digital modulation format to use. Supported Devices: PXI/PXIe-5650/5651/5652
Modulation:Digital:PRBS Order	Specifies the order of the pseudorandom bit sequence (PRBS) internally generated by hardware and used as the message signal in digital modulation. Supported Devices: PXI/PXIe-5650/5651/5652 Default Value: 16
Modulation:Digital:PRBS Seed	Specifies the seed of the internally generated pseudorandom bit sequence (PRBS). Supported Devices: PXI/PXIe-5650/5651/5652 Default Value: 1
Modulation:Digital:Symbol Rate	Specifies the symbol rate of the bit stream for digital modulation. Supported Devices: PXI/PXIe-5650/5651/5652 Default Value: 1 kHz

Property	Description
Modulation:Digital:Waveform Type	Specifies the type of waveform to use as the message signal in digital modulation. Supported Devices: PXI/PXIe-5650/5651/5652 Default Value: PRBS
Obsolete:IQ Enabled	This property is obsolete and should not be used. Enables or disables I/Q (vector) modulation of the output signal. Enabling this property is required for generating arbitrary signals. To set this property, the NI-RFSG device must be in the Configuration state.
Obsolete:Upconverter Center Frequency Increment (Hz)	This property is obsolete and should not be used. Affects which upconverter center frequencies are used. This property can increase the speed of frequency sweeps by reducing the number of times the upconverter retunes. If explicitly set, the upconverter center frequency (UCF) is selected according to the following formula: UCF = UCF anchor + (UCF increment * k) where k is any positive or negative integer. Supported Devices: PXIe-5672
Obsolete:Upconverter Center Frequency Increment Anchor (Hz)	This property is obsolete and should not be used. Specifies the reference point for the upconverter center frequencies to use. This property can increase the speed of frequency sweeps by reducing the number of times the upconverter retunes. If explicitly set, the upconverter center frequency (UCF) is selected according to the following formula: UCF = UCF anchor + (UCF increment * k) where k is any positive or negative integer. Supported Devices: PXIe-5672
Obsolete:User-Defined Information	This property is obsolete and should not be used. Specifies a string that contains arbitrary, user-defined information that is stored with external calibration. Supported Devices: PXI-5610, PXIe-5611, PXI/PXIe-5650/5651/5652, PXIe-5653, PXI-5670/5671, PXIe-5672/5673/5673E
Obsolete:User-Defined Information Max Size	This property is obsolete and should not be used. Specifies the maximum string length for the User-Defined Information property. Supported Devices: PXI-5610, PXIe-5611, PXI/PXIe-5650/5651/5652, PXIe-5653, PXI-5670/5671, PXIe-5672/5673/5673E
Peer-to-Peer:Data Transfer Permission Initial Credits	Specifies the initial amount of data, in samples per channel, that the writer peer is allowed to transfer over the bus into the configured endpoint when the peer-to-peer data stream is enabled. If this property is not set and the endpoint is empty,

Property	Description
	credits equal to the full size of the endpoint are issued to the writer peer. If data has been written to the endpoint using the niRFSG Write P2P Endpoint (I16) VI prior to enabling the stream, credits equal to the remaining space available in the endpoint are issued to the writer peer. This property is coerced up by NI-RFSG to 8 byte boundaries. This property is endpoint-based. Supported Devices: PXIe-5673E Default Value: 1,024 samples per channel
Peer-to-Peer:Data Transfer Permission Interval	Specifies the interval, in samples per channel, at which the RF signal generator issues credits to allow the writer peer to transfer data over the bus into the configured endpoint. This property is coerced up by NI-RFSG to the nearest 128 byte boundary. This property is endpoint-based. Supported Devices: PXIe-5673E
Peer-to-Peer:Enabled	Specifies whether the device reads data from the peer-to-peer endpoint. This property is endpoint-based. Supported Devices: PXIe-5673E, PXIe-5820/5840 Default Value: FALSE
Peer-to-Peer:Endpoint Count	Returns the number of peer-to-peer FIFO endpoints supported by the device. Supported Devices: PXIe-5673E, PXIe-5820/5840
Peer-to-Peer:Endpoint Size	Returns the size, in samples, of the device's endpoint. This property is endpoint-based. Supported Devices: PXIe-5673E, PXIe-5820/5840
Peer-to-Peer:Generation FIFO Sample Quantum	Returns how many samples NI-RFSG pulls from the peer-to-peer FIFO per read. You can use this property to determine how many samples to send across the peer-to-peer bus to ensure that no samples are ignored. If you send a number of samples that is not a multiple of this value, the remaining samples are not read from the FIFO during generation. This property is endpoint-based. Supported Devices: PXIe-5820/5840
Peer-to-Peer:Is Finite Generation	Specifies whether peer-to-peer should continuously generate data from the peer-to-peer stream or from only a finite number of samples, according to the Number Of Samples To Generate property. To use this property, peer-to-peer must be enabled. This property is endpoint-based. Supported Devices: PXIe-5820/5840 Default Value: FALSE
Peer-to-Peer:Most Space Available	Returns the largest number of samples per channel available

Property	Description
in Endpoint	in the endpoint since this property was last read. You can use this property to determine how much endpoint space to use as a buffer against bus traffic latencies by reading the property and keeping track of the largest value returned. This property is endpoint-based. If you want to minimize the latency for data to move through the endpoint and be generated by the RF signal generator, use the Data Transfer Permission Initial Credits property to grant fewer initial credits than the default of the entire endpoint size. Supported Devices: PXIe-5673E, PXIe-5820/5840
Peer-to-Peer:Number Of Samples To Generate	Specifies how many samples are generated from the peer-to-peer subsystem when it is enabled. To use this property, peer-to-peer must be enabled and set to finite generation. This property is endpoint-based. Supported Devices: PXIe-5820/5840
Peer-to-Peer:Space Available In Endpoint	Returns the current space available in the endpoint in samples per channel. You can use this property when priming the endpoint with initial data through the niRFSG Write P2P Endpoint (I16) VI to determine how many samples you can write. You can also use this property to characterize the performance and measure the latency of the peer-to-peer stream as data moves across the bus. This property is endpoint-based. Supported Devices: PXIe-5673E, PXIe-5820/5840
RF:Advanced:Amp Path	Specifies the amplification path to use. The low harmonic path provides greater second and third harmonic spurious response, and the high power path provides higher output power. NI-RFSG automatically sets the value of this property based on power and frequency settings. Setting this property overrides the value chosen by NI-RFSG. **Note** Resetting this property reverts back to the default unset behavior. Supported Devices: PXIe-5654 with PXIe-5696 Default Value: Low Harmonic
RF:Advanced:Correction Temperature	Specifies the temperature, in degrees Celsius, to use for adjusting the device settings to correct for temperature changes. If you set this property, NI-RFSG uses the value you

Property	Description
	specify and therefore no longer uses the actual device temperature as the correction temperature. If you do not set this property, NI-RFSG checks the current device temperature in the Committed state and automatically sets the value of this property. **Note** Resetting this property reverts back to the default unset behavior. Use this property only when your application requires the same settings to be used every time, regardless of the temperature variation. In these cases, it is best to ensure that the temperature does not vary too much. PXIe-5820/5840: This property is read only. Supported Devices: PXIe-5611, PXI/PXIe-5650/5651/5652, PXIe-5653, PXIe-5673/5673E, PXIe-5820/5840
RF:Advanced:Pulse Modulation Mode	Specifies the pulse modulation mode to use. Supported Devices: PXIe-5654/5654 with PXIe-5696 Default Value: High Isolation
RF:Advanced:Ref PLL Bandwidth	Configures the loop bandwidth of the reference PLL. Setting this property to Narrow allows the PXIe-5653 to lock to a reference with worse phase noise than the PXIe-5653 and utilize the better phase noise of the PXIe-5653. Setting this property to Wide on the PXIe-5653 allows the reference PLL to lock to a better reference with better phase noise than the PXIe-5653 and utilize the better phase noise of the reference. Supported Devices: PXIe-5653 Default Value: Narrow
RF:Advanced:Thermal Correction Temperature Resolution (Degrees C)	Specifies the temperature change, in degrees Celsius, that is required before NI-RFSG recalculates the thermal correction settings when entering the Generation state. Supported Devices: PXIe-5820/5840
RF:Advanced:YIG Main Coil Drive	Adjusts the dynamics of the current driving the YIG main coil. Setting this property to Fast on the PXIe-5653 allows the frequency to settle significantly faster for some frequency transitions at the expense of increased phase noise. Supported Devices: PXIe-5653 Default Value: Normal
RF:ALC Control	Enables or disables the automatic leveling control (ALC). PXIe-5654 with PXIe-5696: If this property is enabled, the ALC is closed (closed-loop mode) and allows for better amplitude

Property	Description
	accuracy and wider amplitude dynamic range. If this property is disabled, the ALC is open (open-loop mode), which is ideal when using modulation. Disabling the ALC Control property also allows NI-RFSG to perform an automatic power search. PXIe-5654: Disable is the only supported value for this device. The PXIe-5654 does not support the ALC when used as a stand-alone device. Supported Devices: PXIe-5654/5654 with PXIe-5696 Default Values: PXIe-5654: Disable PXIe-5654 with PXIe-5696: Enable
RF:Allow Out Of Specification User Settings	Enables or disables warnings or errors when you set frequency, power, and bandwidth values beyond the limits of the NI-RFSG device specifications. When you enable this property, the driver does not report out-of-specification warnings or errors. To set this property, the NI-RFSG device must be in the Configuration state. Accuracy cannot be guaranteed outside of device specifications, and results may vary by module. Supported Devices: PXI/PXIe-5650/5651/5652, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: Disable
RF:Amplitude Settling	Configures the amplitude settling accuracy in decibels. NI-RFSG waits until the RF power settles within the specified accuracy level after calling the niRFSG Initiate VI or niRFSG Wait Until Settled VI or prior to advancing to next step if using RF list mode. Any specified amplitude settling value that is above the acceptable minimum value is coerced down to the closest valid value. PXI/PXIe-5650/5651/5652: This property is for NI internal use only. Supported Devices: PXIe-5654/5654 with PXIe-5696, PXIe-5820/5840 Default Values: PXIe-5654: 4 PXIe-5654 with PXIe-5696 (ALC disabled): 4 PXIe-5654 with PXIe-5696 (ALC enabled): 0.2 PXIe-5820/5840: 0.5 Valid Values: PXIe-5654: 1.5, 2, 4 PXIe-5654 with PXIe-5696 (ALC disabled): 1.5, 2, 4 PXIe-5654 with PXIe-5696 (ALC enabled): 0.2, 0.5 PXIe-5820/5840: 0.01 to 1
RF:Attenuator Hold Enabled	Enables or disables attenuator hold. While this property is set to TRUE, changing the power level causes NI-RFSG to scale the digital data sent to the AWG instead of adjusting the attenuators. Changing power levels in this manner allows the device to increase or decrease the power level in more accurate increments but may affect signal-to-noise ratios (noise density). Setting the Attenuator Hold Enabled property

Property	Description
	to TRUE limits the power levels that can be attained. With attenuator hold enabled, the power level must satisfy the following conditions: Power level less than or equal to Attenuator Hold Max Power Power level greater than or equal to (Attenuator Hold Max Power - 70 dB) Power level greater than or equal to -145 dBm To set this property, the NI-RFSG device must be in the Configuration state. The frequency cannot be changed on the PXI-5670/5671 or PXIe-5672 while the Attenuator Hold Enabled property is set to TRUE. Supported Devices: PXI-5670/5671, PXIe-5672/5673/5673E Default Value: FALSE
RF:Attenuator Hold Max Power (dBm)	Specifies the maximum power level of the RF output signal when the Attenuator Hold Enabled property is set to TRUE. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXI-5670/5671, PXIe-5672/5673/5673E Default Values: PXI-5670/5671, PXIe-5672: 17 dBm PXIe-5673/5673E: 10 dBm
RF:Attenuator Setting (dB)	Specifies the level of attenuation in the attenuator path. Setting this property overrides the value chosen by NI-RFSG. Not all power levels are achievable if you set this property. Resetting this property reverts back to the default unset behavior. Supported Devices: PXIe-5654 with PXIe-5696 Valid Values: 0 dB to 110 dB in steps of 10
RF:Automatic Power Search	Enables or disables automatic power search. When this property is enabled, a power search performs after the device is initiated, after output power is enabled, or when the frequency or power level changes while the device is generating. When this property is disabled, NI-RFSG does not perform a power search unless you call the niRFSG Perform Power Search VI. This property is ignored when the ALC Control property is enabled. PXIe-5654: Disable is the only supported value for this device. Supported Devices: PXIe-5654/5654 with PXIe-5696 Default Values: PXIe-5654: Disable PXIe-5654 with PXIe-5696: Enable
RF:Automatic Thermal Correction	Enables or disables automatic thermal correction. When this property is enabled, changes to settings cause NI-RFSG to check whether the device temperature has changed and adjust the settings as needed. When this property is disabled, you must explicitly call the niRFSG Perform Thermal

Property	Description
	Correction VI to adjust the device for temperature changes. Supported Devices: PXIe-5611, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: Enable
RF:External Gain (dB)	Specifies the external amplification or attenuation, if any, between the RF signal generator and the device under test. Positive values for this property represent amplification, and negative values for this property represent attenuation. Setting this property adjusts the actual device output power to compensate for any amplification or attenuation between the RF signal generator and the device under test.  **Note** For the PXIe-5645, this property is ignored if you are using the I/Q ports. Supported Devices: PXIe-5644/5645/5646, PXIe-5654/5654 with PXIe-5696, PXIe-5673/5673E, PXIe-5820/5840 Valid Values: -INF dB to +INF dB Default Value: 0 dB
RF:Frequency (Hz)	Specifies the frequency of the generated RF signal. For arbitrary waveform generation, this property specifies the center frequency of the signal. The PXI-5670/5671, PXIe-5672, and PXIe-5820 must be in the Configuration state to use this property. However, the PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXIe-5673/5673E, and PXIe-5840 can be in the Configuration or the Generation state to use this property.  **Note** For the PXIe-5645, this property is ignored if you are using the I/Q ports. Refer to the specifications document for your device for allowable frequency settings. Supported Devices: PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Values: PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E: 100 MHz PXIe-5653: 4 GHz PXIe-5820: 0 Hz PXIe-5840: 1 GHz
RF:Frequency Settling	Configures the frequency settling time. Interpretation of this

Property	Description
	value depends on the Frequency Settling Units property. Supported Devices: PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXIe-5673/5673E, PXIe-5840 Default Value: 1.0
RF:Frequency Settling Units	Determines the interpretation of the value passed to the Frequency Settling property. PXIe-5650/5651/5652/5653, PXIe-5673E: When the Active Configuration List property is set to a valid list name, the Frequency Settling Units property supports only Seconds After I/O as a valid value. PXIe-5654/5654 with PXIe-5696: The Frequency Settling Units property supports only Seconds After I/O and PPM as valid values.  **Note** If you set this property to Seconds After I/O, the definition of settled for the Configuration Settled event changes. Supported Devices: PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXIe-5673/5673E, PXIe-5840 Default Value: PPM
RF:Frequency Tolerance (Hz)	Specifies the allowable frequency error introduced during the software upconversion process. NI-RFSG may introduce a frequency error up to the specified amount to optimize computational speed and onboard memory usage while upconverting phase-continuous signals. If the Phase Continuity Enabled property is set to Disable, the Frequency Tolerance (Hz) property is ignored and the driver does not introduce a frequency error. On devices that do not use software upconversion, this property is ignored. The PXI-5670 always uses software upconversion, and the PXI-5671 uses software upconversion for I/Q rates greater than 8.33 MS/s. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXI-5670/5671 Default Value: 50 Hz
RF:LO In Power (dBm)	Specifies the power level of the signal at the LO IN front panel connector. This property is read/write if you are using an external LO. Otherwise, this property is read-only.  **Note** For the PXIe-5644/5645/5646, this property

Property	Description
	is always read-only. Supported Devices: PXIe-5644/5645/5646, PXIe-5673/5673E, PXIe-5840
RF:LO Out Enabled	Specifies whether the local oscillator signal is present at the LO OUT front panel connector. The local oscillator signal remains at the LO OUT front panel connector until this property is set to FALSE even if the Output Enabled property is set to FALSE, the niRFSG Abort VI is called, or the NI-RFSG session is closed. Supported Devices: PXIe-5644/5645/5646, PXIe-5673/5673E, PXIe-5840 Default Value: FALSE
RF:LO Out Power (dBm)	Specifies the power level of the signal at the LO OUT front panel connector. **Note** For the PXIe-5644/5645/5646 and PXIe-5673/5673E, this property is always read-only. Supported Devices: PXIe-5644/5645/5646, PXIe-5673/5673E, PXIe-5840
RF:RF In LO Export Enabled	Specifies whether to enable the RF IN LO OUT terminal on the PXIe-5840. Set this property to Enabled to export the LO signal from the RF IN LO OUT terminal. This property cannot be enabled or disabled unless an NI-RFSA session on the PXIe-5840 has set the NI-RFSA LO Out Export Configure From RFSG property to Enabled. Supported Devices: PXIe-5840 Default Value: Unspecified
RF:LO Out Export Configure From RFSA	Specifies whether to allow NI-RFSA to control the NI-RFSG LO out export. Set this property to Enabled to allow NI-RFSA to control the LO out export. Use the NI-RFSA RF Out LO Export Enabled property to control the LO out export from NI-RFSA. Supported Devices: PXIe-5840 Default Value: Disabled
RF:Loop Bandwidth	Configures the loop bandwidth of the tuning PLLs. This property is ignored on the PXI-5610, PXI-5670/5671, and PXIe-5672 for signal bandwidths greater than or equal to 10 MHz. This property is ignored on the PXI/PXIe-5650/5651/5652 for RF frequencies less than 50 MHz.

Property	Description
	Note Setting this property to Wide on the PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, or the PXIe-5673/5673E allows the frequency to settle significantly faster at the expense of increased phase noise. Setting this property to Medium is not a valid option on the PXI/PXIe-5650/5651/5652 or PXIe-5673/5673E. Medium is the only supported value for the PXIe-5840. Supported Devices: PXI-5610, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5840 Default Values: PXIe-5644/5645/5646, PXIe-5840: Medium PXI/PXIe-5650/5651/5652, PXIe-5673/5673E: Narrow
RF:Output Enabled	Enables or disables signal output. Setting the Output Enabled property to FALSE while in the Generation state stops signal output although generation continues internally. For the PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653, PXI-5670/5671, and PXIe-5672/5673/5673E, setting the Output Enabled property while in the Committed state does not transition the device to the Configuration state, but output changes immediately. For the PXIe-5653, this property controls only the LO1 terminal. For the PXIe-5645, this property is ignored if you are using the I/Q ports. **Note** When the Active Configuration List property is set to a valid list name, setting the Output Enabled property transitions the device to the Configuration state. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: TRUE
RF:Peak Envelope Power (dBm)	Specifies the maximum instantaneous power of the RF output signal. The Digital Gain (dB) property is not included in the calculation of the Peak Envelope Power (dbm) property. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840

Property	Description
RF:Peak Power Adjustment (dB)	Adjusts the Power Level (dBm) property. This property is valid only when you set the Power Level Type property to Peak Power. The value of the Peak Power Adjustment (dB) property adds to the Power Level (dBm) property. The Peak Power Adjustment (dB) property typically specifies the peak-to-average power ratio (PAPR) of a waveform. If the PAPR is specified, the specified power level becomes the average power level of the waveform, even if the Power Level Type property is set to Peak Power. For the PXIe-5673/5673E only, use this property to associate a peak power adjustment with a waveform. **Note** For the PXIe-5645, this property is ignored if you are using the I/Q ports. Supported Devices: PXIe-5644/5645/5646, PXIe-5673/5673E, PXIe-5840
RF:Peak Power Adjustment Inheritance	Determines the inheritance behavior of the Peak Power Adjustment property when a script inherits values from specified waveforms. Supported Devices: PXIe-5673/5673E Default Value: Exact Match
RF:Phase Offset (Degrees)	Changes the phase of the RF output signal. Use this property to align the phase of the RF output with the phase of the RF output of another device as long as the two devices are phase-coherent. Supported Devices: PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653, PXIe-5673/5673E, PXIe-5820/5840
RF:Power Level (dBm)	Specifies either the average power level or peak power level of the generated RF signal, depending on the Power Level Type property setting. The PXI-5670/5671 and PXIe-5672 must be in the Configuration state to use this property. However, the PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5654/5654 with PXIe-5696, PXIe-5673/5673E and PXIe-5840 can be in the Configuration or the Generation state to use this property. Refer to the specifications document for your device for allowable power level settings. **Note** For the PXIe-5653, this property is read-only.

Property	Description
	For the PXIe-5645, this property is ignored if you are using the I/Q ports. Supported Devices: PXIe-5644/5645/5646, PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5840 Default Values: PXIe-5644/5645/5646, PXIe-5673/5673E: -100 dBm PXI/PXIe-5650/5651/5652: -90 dBm PXIe-5654: -7 dBm PXIe-5654 with PXIe-5696: -110 dBm PXI-5670/5671, PXIe-5672: -145 dBm PXIe-5840: -174 dBm
RF:Power Level Type	Specifies the way the driver interprets the value of the Power Level property. The Power Level Type property also affects how waveforms are scaled. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Values: PXIe-5820: Peak Power All other devices: Average Power
RF:Pulse Modulation Enabled	Enables or disables pulse modulation. PXIe-5654/5654 with PXIe-5696: If this property is enabled and the signal at the PULSE IN front panel connector is high, the device generates a signal. If the signal is low, output generation is disabled. PXIe-5673/5673E: If this property is enabled and the signal at the PLS MOD front panel connector is high, the device generates a signal. If the signal is low, output generation is disabled. Supported Devices: PXIe-5654/5654 with PXIe-5696, PXIe-5673/5673E
RF:Upconverter:Center Frequency (Hz)	Indicates the center frequency of the passband containing the upconverted RF signal. Writing a value to this property while using the PXIe-5644/5645/5646, PXIe-5672/5673/5673E, or PXIe-5820/5840 enables in-band retuning. In-band retuning increases the speed of frequency sweeps by reducing the amount of upconverter retunes. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
RF:Upconverter:Gain (dB)	Indicates the gain that the upconverter applies to the signal. **Note** This property is read/write on the PXI-5610 and PXIe-5611.

Property	Description
	This property is read-only on the PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, and PXIe-5820/5840. Supported Devices: PXI-5610, PXIe-5611, PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Self Calibration:Last Self Calibration Temperature	Indicates, in degrees Celsius, the temperature of the device at the time of the last self calibration. Supported Devices: PXIe-5644/5645/5646
Triggers:Configuration List Step:Digital Edge:Edge	Specifies the active edge for the Configuration List Step Trigger. This property is valid only when the Configuration List Step Trigger Type property is set to Digital Edge. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXIe-5673E, PXIe-5820/5840
Triggers:Configuration List Step:Digital Edge:Source	Specifies the source terminal for the Configuration List Step Trigger. This property is valid only when the Configuration List Step Trigger Type property is set to Digital Edge. Supported Devices: PXIe-5644/5645/5646, PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXIe-5673E, PXIe-5820/5840
Triggers:Configuration List Step:Export Output Terminal	Specifies the destination terminal for exporting the Configuration List Step Trigger. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXIe-5654/5654 with PXIe-5696, PXIe-5673E, PXIe-5820/5840
Triggers:Configuration List Step:Terminal Name	Returns the fully qualified signal name as a string. Supported Devices: PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXIe-5673E, PXIe-5820/5840 Default Values: PXI/PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696: /ModuleName /ConfigurationListStepTrigger , where ModuleName is the name of your device in MAX. PXIe-5673E: /AWGName /ConfigurationListStepTrigger , where AWGName is the name of your associated AWG module in MAX. PXIe-5820/5840: / ModuleName /ao/0/ConfigurationListStepTrigger , where ModuleName is the name of your device in MAX.
Triggers:Configuration List Step:Type	Specifies the type of trigger to use as the Configuration List Step Trigger. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/

Property	Description
	5645/5646, PXIe-5650/5651/5652, PXIe-5653/5654/5654 with PXIe-5696, PXIe-5673E, PXIe-5820/5840
Triggers:Script:Digital Edge:Edge	Specifies the active edge for the Script Trigger. This property requires that you use the Active Channel property to specify the name of the Script Trigger you are configuring. This property is used when Script Trigger Type property is set to Digital Edge. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Triggers:Script:Digital Edge:Source	Specifies the source terminal for the Script Trigger. This property requires that you use the Active Channel property to specify the name of the Script Trigger you are configuring. This property is used only when the Script Trigger Type property is set to Digital Edge. To set the Script Trigger Digital Edge Source property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Triggers:Script:Digital Level:Active Level	Specifies the active level for the Script Trigger. This property is used when the Script Trigger Type property is set to Digital Level. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Triggers:Script:Digital Level:Source	Specifies the source terminal for the Script Trigger. This property is used when the Script Trigger Type property is set to Digital Level. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Triggers:Script:Export Output Terminal	Specifies the destination terminal for exporting the Script Trigger. This property requires that you use the Active Channel property to specify the name of the Script Trigger you are configuring. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Triggers:Script:Terminal Name	Returns the fully qualified signal name as a string. Supported Devices: PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Values: PXI-5670/5671, PXIe-5672/5673/5673E: /AWGName /ScriptTrigger X , where AWGName is the name of your associated AWG module in MAX and X is Script Trigger 0

Property	Description
	through 3. PXIe-5820/5840: / ModuleName /ao/0/ScriptTrigger X , where ModuleName is the name of your device in MAX and X is Script Trigger 0 through 3.
Triggers:Script:Type	Specifies the type of trigger to use as the Script Trigger. This property requires that you use the Active Channel property to specify the name of the Script Trigger you are configuring. To set this property, the NI-RFSG device must be in the Configuration state. Supported Devices: PXIe-5644/5645/5646, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: None
Triggers:Start:Digital Edge:Edge	Specifies the active edge for the Start Trigger. This property is used when the Start Trigger Type property is set to Digital Edge. To set this property, the NI-RFSG device must be in the Configuration state. PXIe-5654/5654 with PXIe-5696: The Start Trigger is valid only with a timer-based list when RF list mode is enabled. Supported Devices: PXIe-5644/5645/5646, PXIe-5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: Rising Edge
Triggers:Start:Digital Edge:Source	Specifies the source terminal for the Start Trigger. This property is used when the Start Trigger Type property is set to Digital Edge. To set the Start Trigger Digital Edge Source property, the NI-RFSG device must be in the Configuration state. PXIe-5654/5654 with PXIe-5696: The Start Trigger is valid only with a timer-based list when RF list mode is enabled. Supported Devices: PXIe-5644/5645/5646, PXIe-5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Triggers:Start:Export Output Terminal	Specifies the destination terminal for exporting the Start trigger. To set this property, the NI-RFSG device must be in the Configuration state. PXIe-5654/5654 with PXIe-5696: The Start Trigger is valid only with a timer-based list when RF list mode is enabled. Supported Devices: PXIe-5644/5645/5646, PXIe-5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840
Triggers:Start:P2P Endpoint Fullness:Level	Specifies the number of samples needed to be received by the endpoint before the device starts generation. This property applies only when the Start Trigger Type property is set to P2P Endpoint Fullness. Supported Devices: PXIe-5673E, PXIe-5820/5840 Default Value: -1, which allows NI-RFSG to

Property	Description
	select the appropriate fullness level.
Triggers:Start:Terminal Name	Returns the fully qualified signal name as a string. PXIe-5654/5654 with PXIe-5696: The Start Trigger is valid only with a timer-based list when RF list mode is enabled. Supported Devices: PXIe-5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Values: PXIe-5654/5654 with PXIe-5696: / ModuleName /StartTrigger , where ModuleName is the name of your device in MAX. PXI-5670/5671, PXIe-5672/5673/5673E: / AWGName /StartTrigger , where ModuleName is the name of your associated AWG module in MAX. PXIe-5820/5840: / ModuleName /ao/0/StartTrigger , where ModuleName is the name of your device in MAX.
Triggers:Start:Type	Specifies the Start Trigger type. Depending upon the value of this property, more properties may be needed to fully configure the trigger. To set this property, the NI-RFSG device must be in the Configuration state. PXIe-5654/5654 with PXIe-5696: The Start Trigger is valid only with a timer-based list when RF list mode is enabled. Supported Devices: PXIe-5644/5645/5646, PXIe-5654/5654 with PXIe-5696, PXI-5670/5671, PXIe-5672/5673/5673E, PXIe-5820/5840 Default Value: None