NI-RFSA Express VI Control Help

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This help file contains descriptions of NI-RFSA Express VI controls. The help for these controls appears in an embedded help framework on the right-hand side of the Express VI configuration page.

To view the contents of this help file, launch LabVIEW 7.1 or later, run one of the NI-RFSA Express VIs, and click the **Show Help** button.

To comment on National Instruments documentation, refer to the [National Instruments Web site](#).

NI-RFSA Express (IQ)

Configures and acquires data from National Instruments RF signal analyzers using NI-RFSA in IQ mode.

Acquire

Specifies whether to acquire a finite number of samples or to acquire samples continuously until the acquisition is stopped.

Attenuation (dB)

Specifies the downconverters overall attenuation of the input RF signal.

Attenuation

Specifies whether the attenuation is automatically determined or user-specified.

Autoscale graph

Specifies whether to autoscale the Y scale of the graph.

Checked - The Y scale of the graph is autoscaled every time the graph is updated.
Unchecked - The Y scale of the graph remains unchanged when the graph is updated.

Carrier frequency (Hz)

Specifies the carrier frequency of the acquired RF signal.

PXI Chassis Clk10 source

Specifies the signal driven to the 10 MHz reference clock on the PXI backplane.

Only certain combinations of **Reference clock source** and **PXI Chassis Clk10 source** are valid.

Device

Specifies the RF signal analyzer used. This ring control lists all NI RF signal analyzers installed on this computer that can be used by this Express VI. If you relaunch the VI and the selected RF signal analyzer is dimmed, it is no longer available.

External clock rate (Hz)

Specifies the external clock rate. The **IQ rate** will be coerced based upon this value.

External clock rate (Hz)

Displays the external clock rate which is calculated from the **IQ rate**. The external clock should be set to this value.

Acquired Signal

Displays the acquired waveform. The dashed red line indicates the limit specified by **Reference level**.

Graph view

Specifies how the acquired waveform is displayed on the graph.

IQ rate (Samples/s)

Specifies the IQ rate of the waveform.

Max time (s)

Specifies how long to allow for the acquistion to complete before reporting a timeout error.

Minimum quiet time (s)

Configures the minimum time the signal must be above or below the trigger level before the IQ Power Edge trigger is armed.

If **Slope** is set to Rising, the signal must be below the trigger level for the specified time. If **Slope** is set to Falling, the signal must be above the trigger level for the specified time.

Set this control when triggering on burst signals to avoid triggering in the middle of a burst.

Device

Specifies the RF signal analyzer used. This ring control lists all NI RF signal analyzers installed on this computer that can be used by this step. If you loaded this step as part of an existing project and the selected RF signal analyzer is dimmed, it is no longer available.

Output data type

Specifies the data type of the acquired waveform.

Pretrigger samples

Specifies the number of pretrigger samples the device must receive before the Reference trigger is acknowledged.

Of the total number of samples acquired, the number of samples configured as **Pretrigger samples** are acquired immediately prior to the trigger. The remaining samples are acquired immediately after the trigger.

Reference clock source

Specifies the source of the reference clock signal.

Only certain combinations of **Reference clock source** and **PXI Chassis Clk10 source** are valid.

Reference level (dBm)

Specifies the maximum expected power of the RF signal to be acquired.

Use relative initial time

Specifies if the timestamp value of the waveform is absolute or relative to the trigger point.

Digitizer sample clock source

Specifies the digitizer sample clock source.

Onboard clock - Uses the digitizer's onboard sample clock.

External - Coerce IQ rate - Uses an external sample clock. Select this option if your external clock has fixed rates. The **IQ rate** will be coerced based upon the rate of the external clock.

External - Coerce external clock - Uses an external sample clock. Select this option if your external clock has a flexibile rate. The clock rate will be calculated from the **IQ rate** and the external clock should be set accordingly.

IQ samples

Specifies the number of samples to be acquired for a finite acquisition. For a continuous acquisition, specifies the number of samples to be fetched every time the data is read.

Span (Hz)

Specifies the span of the acquired RF signal. The acquisition consists of a span of data surrounding the center frequency.

Edge

Specifies whether to trigger on a rising or falling edge of the trigger signal.

Slope

Specifies whether to trigger on a rising or falling edge of the signal.

Level (dBm)

Specifies the trigger threshold for the IQ power edge trigger.

Reference trigger source

Specifies the trigger source. The RF signal analyzer waits for the specified trigger to start the acquisition.

Reference trigger source

Specifies the software trigger source. The RF signal analyzer waits for the specified trigger to start the acquisition.

Click the Trigger button located on the top menu bar of the Express Workbench to generate a trigger. This button appears when you select a Software trigger.

Reference trigger type

Specifies the reference trigger type for the acquisition.

NI-RFSA Express (Spectrum)

Configures and acquires data from National Instruments RF signal analyzers using NI-RFSA in Spectrum mode.

Attenuation (dB)

Specifies the downconverters overall attenuation of the input RF signal.

Attenuation

Specifies whether the attenuation is automatically determined or user-specified.

Autoscale graph

Specifies whether to autoscale the Y scale of the graph.

Checked - The Y scale of the graph is autoscaled every time the graph is updated.
Unchecked - The Y scale of the graph remains unchanged when the graph is updated.

Averaging mode

Specifies the averaging mode.

PXI Chassis Clk10 source

Specifies the signal driven to the 10 MHz reference clock on the PXI backplane.

Only certain combinations of **Reference clock source** and **PXI Chassis Clk10 source** are valid.

Device

Specifies the RF signal analyzer used. This ring control lists all NI RF signal analyzers installed on this computer that can be used by this Express VI. If you relaunch the VI and the selected RF signal analyzer is dimmed, it is no longer available.

Device

Specifies the RF signal analyzer used. This ring control lists all NI RF signal analyzers installed on this computer that can be used by this step. If you loaded this step as part of an existing project and the selected RF signal analyzer is dimmed, it is no longer available.

Number of averages

Specifies the number of acquisitions to average.

Acquired Signal

Displays the acquired waveform. The dashed red line indicates the limit specified by **Reference level**.

Reference clock source

Specifies the source of the reference clock signal.

Only certain combinations of **Reference clock source** and **PXI Chassis Clk10 source** are valid.

Reference level (dBm)

Specifies the maximum expected power of the RF signal to be acquired.

Resolution bandwidth (Hz)

Specifies the resolution bandwidth of the spectrum. Resolution bandwidth controls the width of the frequency bins in the power spectrum computed by NI-RFSA. A larger value means the frequency bins are wider, thus you get fewer bins or spectral lines.

Resolution bandwidth is calculated as the 3 dB bandwidth of the window frequency response.

Specification method

Specifies whether the acquisition frequencies are defined in terms of a start and stop frequency or a center frequency and span.

Center frequency (Hz)

Specifies the center frequency of the acquired RF signal. The acquisition consists of a span of data surrounding the center frequency.

Start frequency (Hz)

Specifies the start frequency of the acquired RF signal. The acquisition consists of a span of data from the start frequency to the stop frequency.

Span (Hz)

Specifies the span of the acquired RF signal. The acquisition consists of a span of data surrounding the center frequency.

Stop frequency (Hz)

Specifies the stop frequency of the acquired RF signal. The acquisition consists of a span of data from the start frequency to the stop frequency.

Units

Specifies the units of the acquired spectrum.

Window type

Specifies the FFT window type.