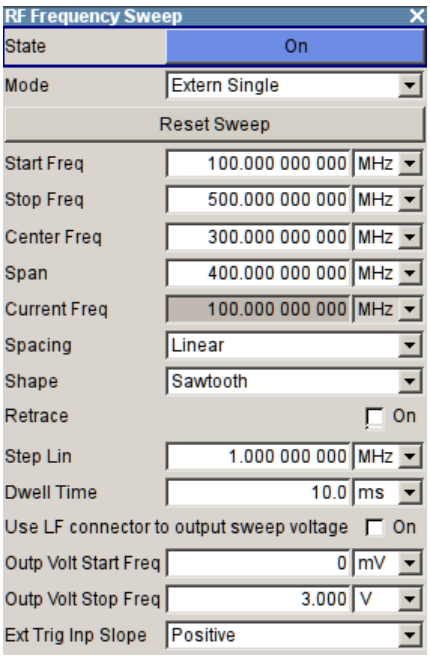


RF Frequency Sweep Settings

► To access the sweep dialog, select "RF > configure > Sweep/List > RF Frequency Sweep".

In these dialogs you can configure the corresponding sweep signal.

State - Frequency Sweep
Activates RF sweep mode.

Note:
Activating a sweep mode automatically deactivates other sweeps and the list mode.

Remote command:
`[:SOURce<hw>]:FREQuency:MODE` on page 349

Mode - RF Frequency Sweep
Selects the RF frequency sweep mode.

If you change the sweep mode during the execution, the signal generator stops the sweep and starts with the next trigger event at the initial value.

The "Reset Sweep" button sets the sweep to the start value.

"Auto" Generates a continuously repeating sweep signal immediately after activating the sweep mode.
The sweep steps are performed atomatically, controlled by the dwell time, see "Dwell Time - Frequency Sweep" on page 186.

Example:

```
SOUR:SWE:FREQ:MODE AUTO
TRIG:FSW:SOUR AUTO
SOUR:FREQ:MODE SWE
```

"Single" Generates a single sweep cycle after a trigger event.
The sweep steps within the cycle are performed automatically, controlled by the dwell time. If one cycle is completed, the instrument waits for the next trigger event.
To trigger the sweep, use "Execute Single Sweep" button, or the corresponding remote control commands, for example `*TRG`.

Example:

```
SOUR:SWE:FREQ:MODE AUTO
TRIG:FSW:SOUR SING
SOUR:FREQ:MODE SWE
SOUR:SWE:FREQ:EXEC
```

"Step" Generates the sweep signal step-by-step, manually triggered.
To perform the sweep steps, enter the frequency value under Current Freq - Frequency Sweep. You can directly enter the value, but also use the [up] and [down] navigation keys or the [rotary knob].
You can determine the step width below in the entry field "Step Lin" or "Step Log", see Step Lin/Log - Frequency Sweep.
If a step is out of the sweep range ("Start Freq" or "Stop Freq"), it is ignored.

Note: To step through the sweep frequencies in remote control mode, use the `FREQ:MAN` command with the `UP` or `DOWN` parameter.

Example:

```
SOUR:FREQ:CENT 300MHz
SOUR:FREQ:SPAN 400MHz
SOUR:SWE:FREQ:SPAC LIN
SOUR:SWE:FREQ:STEP:LIN 100MHz
SOUR:FREQ:MODE MAN
TRIG:FSW:SOUR SING
```

set sweep mode "Step".

```
SOUR:FREQ:MODE SWE
```

activate sweep mode, the frequency is set to "Start Freq".

```
SOUR:FREQ:MAN UP
```

set the frequency to the next higher sweep frequency.

```
SOUR:FREQ:MAN DOWN
```

set the frequency to the next lower sweep frequency.

"Extern Single" Generates a single sweep cycle when an a external trigger event occurs.
The sweep steps within the cycle are performed automatically, controlled by the dwell time. If one cycle is completed, the instrument waits for the next trigger event.
To trigger the sweep, apply an external trigger signal.
Refer to the description of the rear panel for information on the connectors for external trigger signal input (see Chapter 3.2.2, "Rear Panel Tour", on page 54).

Example:

```
SOUR:SWE:FREQ:MODE AUTO
TRIG:FSW:SOUR EXT
SOUR:FREQ:MODE SWE
```
(External trigger)

"Extern Step" Generates the sweep signal step-by-step, manually triggered.
To trigger a sweep step, apply an external trigger signal. The step width corresponds to the step width set for the rotary knob.

Example:

```
SOUR:SWE:FREQ:MODE STEP
SOUR:SWE:FREQ:SPAC LIN
SOUR:SWE:FREQ:STEP:LIN 1MHz
TRIG:FSW:SOUR EXT
SOUR:FREQ:MODE SWE
```
(External trigger)

"Extern Start/Stop"
Generates a continuously repeating sweep signal that is started, stopped and restarted by subseqeunt external trigger events. The sweep steps are performed automatically, controlled by the dwell time.
Refer to the description of the rear panel for information on the connectors for external trigger signal input (see Chapter 3.2.2, "Rear Panel Tour", on page 54).

Example:

```
SOUR:SWE:FREQ:MODE AUTO
TRIG:FSW:SOUR EAUT
SOUR:FREQ:MODE SWE
```
(External trigger)

Remote command:
`[:SOURce<hw>]:SWEep[:FREQuency]:MODE` on page 424
`:TRIGger<hw>:FSWeep:SOURce` on page 458
`[:SOURce<hw>]:FREQuency:MODE` on page 349

Execute Single Sweep - Frequency Sweep
Starts a sweep manually. This trigger button is displayed in "Single" mode.

Remote command:
`[:SOURce<hw>]:SWEep[:FREQuency]:EXECute` on page 423
`:TRIGger<hw>:FSWeep[:IMMediate]` on page 459
`:TRIGger<hw>[:SWEep][:IMMediate]` on page 463

Reset Sweep - Frequency Sweep
Resets the sweep.

With the next trigger event, the sweep starts with at the initial value.

Remote command:
`[:SOURce<hw>]:SWEep:RESet[:ALL]` on page 433

Start Freq - Frequency Sweep
Sets the start frequency.

Remote command:
`[:SOURce<hw>]:FREQuency:STARt` on page 351

Stop Freq - Frequency Sweep
Sets the stop frequency.

Remote command:
[:SOURce<hw>]:FREQuency:STOP on page 351

Center Freq - Frequency Sweep
Sets the center frequency.

Remote command:
[:SOURce<hw>]:FREQuency:CENTer on page 346

Span - Frequency Sweep
Sets the span.

Remote command:
[:SOURce<hw>]:FREQuency:SPAN on page 350

Current Freq - Frequency Sweep
Displays the current frequency.

In sweep "Step" mode, the parameter is editable and you can enter frequency for the next step.

Remote command:
[:SOURce<hw>]:FREQuency:MANual on page 348

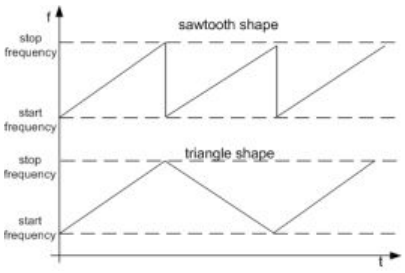
Spacing - Frequency Sweep
Selects the mode for the calculation of the frequency sweep intervals.

"Linear" Takes the frequency value entered as an absolute value in Hz.

"Logarithmic" Takes the value entered as a lograithmic value, that means as a constant fraction of teh current frequency in %.

Remote command:
[:SOURce<hw>]:SWEep[:FREQuency]:SPACing on page 427

Shape - RF Frequency Sweep
Selects the waveform shape of the sweep signal.



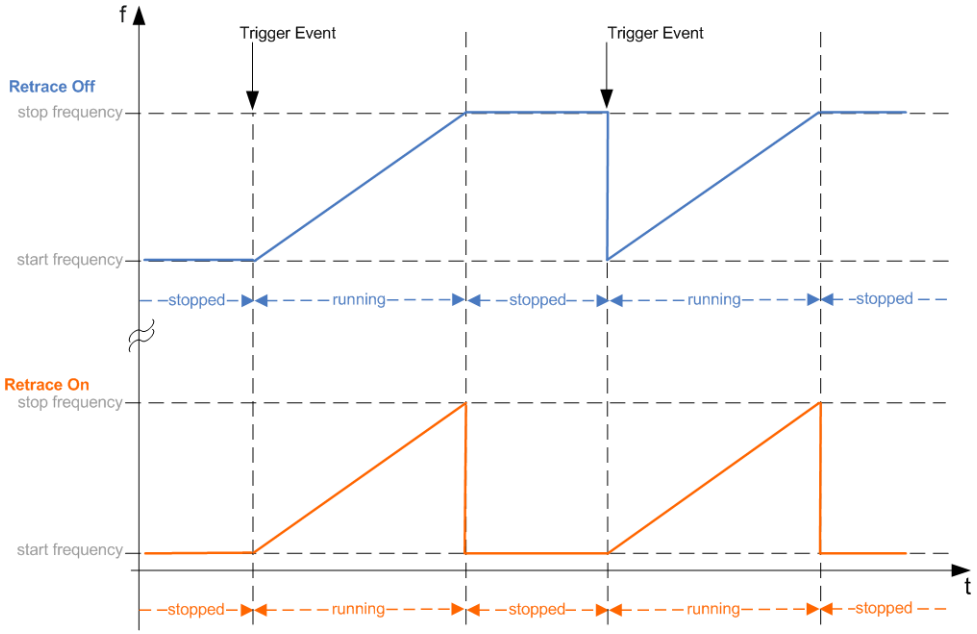
"Sawtooth" One sweep runs from start to stop frequency. Each subsequent sweep starts at the start frequency, that means the shape of the sweep sequence resembles a sawtooth.

"Triangle" The sweep runs from the start to the stop frequency and back, that means the shape of the sweep resembles a triangle. Each subsequent sweep starts at the start frequency.

Remote command:
[:SOURce<hw>]:SWEep[:FREQuency]:SHAPe on page 426

Retrace - RF Frequency Sweep
Activates that the signal changes to the start frequency value while it is waiting for the next trigger event.

You can enable this feature, when you are working with sawtooth shapes in sweep mode "Single" or "External Single", see Mode - RF Frequency Sweep.



Remote command:
[:SOURce<hw>]:SWEep[:FREQuency]:RETRace on page 426

Step Lin/Log - Frequency Sweep
Sets the step width for the individual frequency sweep steps.

At each step this value is added to the current frequency.

Depending on the Spacing - Frequency Sweep mode you have set, the corresponding parameter is displayed.

"Step Lin" The step width is a constant value in Hz.

Remote command:
[:SOURce<hw>]:SWEep[:FREQuency]:STEP[:LINear] on page 427

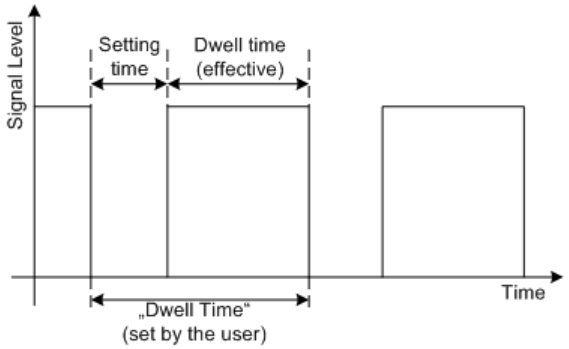
"Step Log" The step width is determined logarithmically in %, that means as a constant fraction of the current frequency.
Successive frequencies are calculated as follows:

- **start_f < stop_f**
  f2 = f1 * (1 + step_log / 100)
  If f2 > stop_f: f2 is set to stop_f.
- **start_f > stop_f**
  f2 = f1 / (1 + step_log / 100)
  If f2 < stop_f: f2 is set to stop_f.

When the shape "Triangle" is set, the frequency values on the slope from **stop_f back to start_f** are the same as on the slope from **start_f to stop_f**.

Remote command:
`[:SOURce<hw>]:SWEep[:FREQuency]:STEP:LOGarithmic` on page 428

Dwell Time - Frequency Sweep
Sets the dwell time. The dwell time determines the duration of the individual sweep steps.



The "Dwell Time" set by the user is used as the step time of the sweep. The effective net dwell time is shorter, reduced by the setting time. This setting time may be greater than the time specified in the data sheet.

Note:
It is recommended to switch off the display update for optimum sweep performance especially with short dwell times (see Chapter 4.2.3.6, "Display Update", on page 103).

Remote command:
`[:SOURce<hw>]:SWEep[:FREQuency]:DWELl` on page 422

Use LF connector to output sweep voltage - RF Frequency Sweep
Activates the output of a linear voltage ramp from sweep start to sweep stop at the LF connector. This signal can be used for the X-deflection of an oscilloscope. The voltage range is determined below.

Remote command:
`[:SOURce<hw>]:SWEep[:FREQuency]:LFConnector` on page 423

Output Voltage Start Freq - RF Frequency Sweep
Sets the voltage at the sweep start frequency.