

**[PULSE EXT]**

Input of external pulse signal or input of external trigger/gate signal for internal pulse generator.

See also [Chapter 4.4.5, "Pulse Modulation \(PM\)"](#), on page 214 .

**[REF OUT]**

Output of internal reference signal.

See also [Chapter 4.3.4, "Reference Oscillator"](#), on page 142.

**[REF IN]**

Input for external reference signal.

See also [Chapter 4.3.4, "Reference Oscillator"](#), on page 142.

[OCXO]

- Oven-controlled reference oscillator (option R&S SMB-B1)
or
- high performance oven-controlled reference oscillator (option R&S SMB-B1H)



The OCXO generates a very precise 10 MHz reference signal. It needs some minutes of warm-up time to reach its nominal frequency.

Refer also to the data sheet for detailed information.

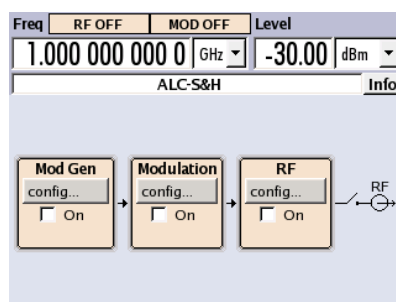
3.3 Trying out the Instrument

This section provides an example on how to configure the instrument for generating of an amplitude modulated signal.

Generation of an Amplitude-Modulated Signal

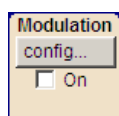
To generate a simple AM-modulated signal, proceed as follow:

1. Activate default (preset) state
Press the [PRESET] key to set a defined instrument state.



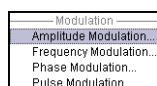
2. Select and activate AM modulation

- a) Turn the rotary knob and select the "Modulation" block.



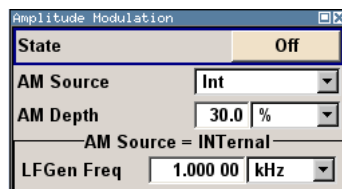
- b) Press the rotary knob to open the dialog where the modulation can be selected.

Note: Different modulation modes are available depending on the options installed.

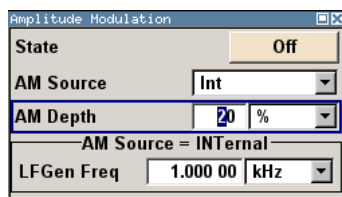


The "Amplitude Mod..." menu is the first menu and is highlighted per default.

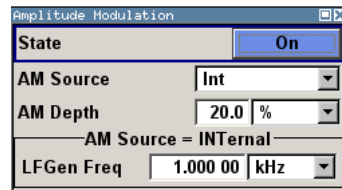
- c) Turn the rotary knob and highlight "Amplitude Mod...".
Press the rotary knob to open the "Amplitude Modulation" dialog.



- d) Turn the rotary knob to select parameter "AM Depth", press the rotary knob to allow editing and enter the preferred AM depth with the aid of the numeric keypad and the unit keys.



- e) Finally, select "State" and press the rotary knob to switch on the AM modulation.

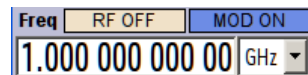


- f) Press the [DIAGRAM] key to display the complete block diagram.

To indicate the active state, the "Modulation" block is displayed in blue. The "RF" is not yet active, which means that no RF signal is output.

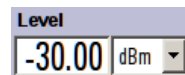
3. Set frequency and level and activate RF signal

- a) Press the [FREQ] key to activate the editing mode for frequency entry. The "Frequency" entry field in the header section of the display is highlighted.



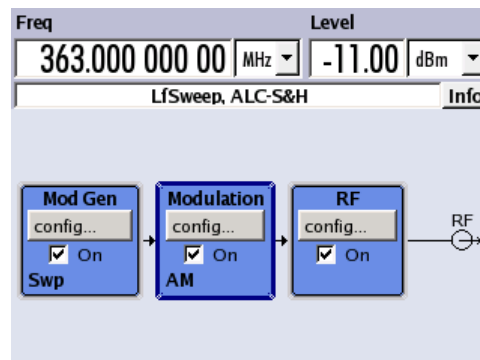
Enter the frequency using the numeric keypad and terminate the entry by pressing a unit key.

- b) Press the [LEVEL] key and enter the level settings in the same way.



- c) Press the [DIAGRAM] key to display the complete block diagram.
 d) Turn the rotary knob to select the "RF" block.
 Press the [RF ON/OFF] key to activate the "RF" block.

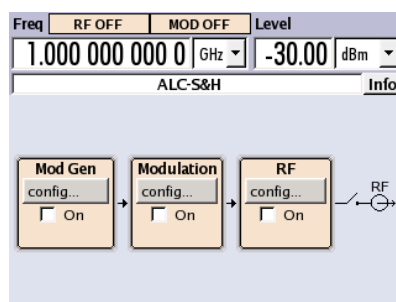
The AM modulation signal is now present at the RF output.



Generation of an RF Frequency Sweep Signal

In the example, an RF frequency sweep is configured. Proceed as follow:

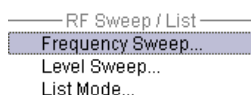
1. Activate default (preset) state
 Press the [PRESET] key to set a defined instrument state.



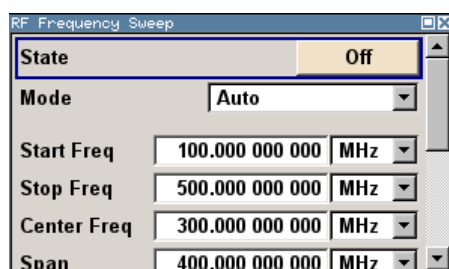
2. Configure and activate RF frequency sweep.
 - a) Turn the rotary knob and select the "RF" block.



- b) Press the rotary knob to open the dialog where the RF frequency sweep can be selected.

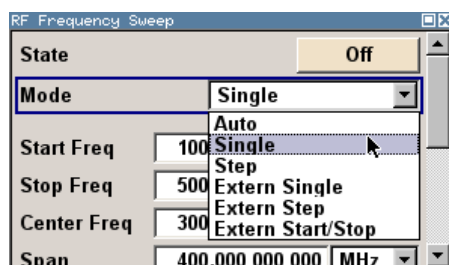


- c) Turn the rotary knob and highlight "RF Frequency Sweep...". Press the rotary knob to open the "RF Frequency Sweep" dialog.



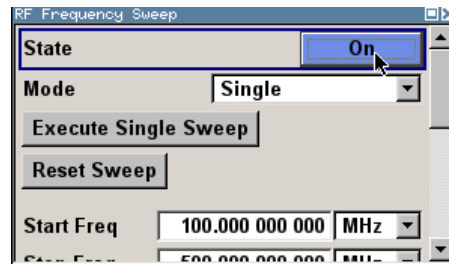
All sweep parameters are default except for the sweep mode. The default settings are not changed.

- d) Turn the rotary knob to select parameter "Mode", press the rotary knob to open the selection list and select "Single".



- e) Press the rotary knob to apply the selection. For triggering, the "Execute Single Sweep" and "Reset Sweep" buttons are displayed.

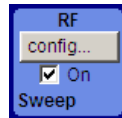
- f) Finally, select "State" and press the rotary knob to switch on the RF frequency sweep.



- g) Press the [DIAGRAM] key to display the complete block diagram.
The "RF" is not yet active, which means that no RF signal is output.

3. Activate RF signal.

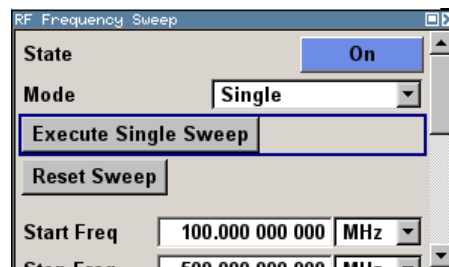
- a) Turn the rotary knob to select the "RF" block.
b) Press the [RF ON/OFF] key to activate the "RF" signal output.



To indicate the active state, the RF block is displayed in blue. An RF signal with the default frequency and level settings is output, i.e. 1 GHz and -30 dBm.
The sweep is not yet active, it must be triggered in the sweep dialog.

4. Trigger RF frequency sweep

- a) Press the [Winbar] key to switch to the "RF Frequency Sweep" dialog.
Turn the rotary knob to select the "Execute Single Sweep" button.



Press the rotary knob to trigger (start) the frequency sweep.

A linear single sweep signal is now present at the RF output, starting at 100 MHz.
The sweep is processed in 1 MHz steps with dwell time of 10 ms per step up to the stop frequency of 500 MHz.

The sweep starts at 100 MHz, stops at 500 MHz in 1 MHz steps is output with a dwell time of 10 ms per step.