

This function prevents a warning caused by signals, that generally comply with the specification, but temporarily overload the input, for example due to spikes. The warning is suppressed in the history, and in the error queue.

Note: This setting is not affected by an instrument preset ([preset] key), *rst or the Save/Recall function. Only the factory preset resets (enables) this setting.

Remote command:

[:SOURce<hw>] :INPut:MODext:WIGNore on page 353

4.4.4 Phase Modulation (PhiM)



It is not possible to use phase modulation simultaneously with frequency modulation. See "Simultaneous Operation of Several Modulations or Other Operating Modes" on page 203 for an overview in detail.

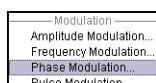
An internal and/or external source can be selected for phase modulation. The [LF GEN] modulation generator is available as the internal source.

The [MOD EXT] input connector for external feed of analog modulation signals is at the front of the instrument. The coupling mode of the input (AC or DC) and the impedance can be selected.

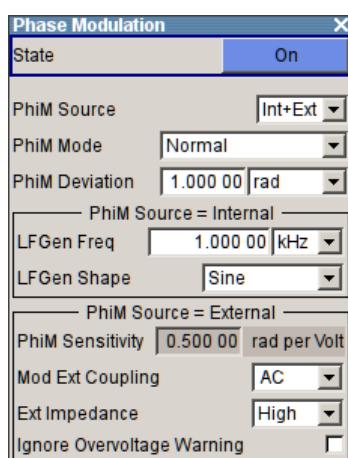
Selection between the following modulation modes is possible:

- "Normal" mode with full setting range for modulation bandwidth and PhiM deviation.
- "High Deviation" mode with full setting range for PhiM deviation and a reduced setting range for modulation bandwidth. Phase noise is reduced in the lower modulation frequency range compared to the default mode.
- "Low Noise" mode with better signal/noise ratio, but reduced setting range for modulation bandwidth and deviation (see data sheet)

4.4.4.1 Phase Modulation Dialog



To open the "Phase Modulation" dialog, select "Modulation > Configure > Phase Modulation" or use the [MENU] key under "Modulation".



In the upper section of the dialog, the modulation source is selected and the modulation switched on. The modulation source can be selected independently for the different modulation types and the LF output.

The configuration of the selected external and/or internal modulation source is performed in the lower section of the dialog (internal source only).

These settings affect all modulations which use the same modulation sources.

An LF generator and a pulse generator are available as internal sources.

State

Activates PhiM modulation.

Activation of PhiM deactivates frequency modulation.

Remote command:

[**:SOURce<hw>**] :PM:STATE on page 381

PhiM Source

Selects the source for the PhiM signal.

"Internal" Uses the internal LF generator as the modulation signal source for PhiM.

"External" Uses an externally applied modulation signal.
The external signal is input via the [MOD EXT] connector.

"Internal + External"

Uses both, the internal and externally applied modulation signal.

Remote command:

[**:SOURce<hw>**] :PM:SOURce on page 381

PhiM Mode

Selects the mode for the phase modulation.

"Normal"

The full range for modulation bandwidth and PM deviation is available.

"High Deviation"

The maximum range for ϕM deviation is available. Phase noise is improved for low frequencies compared to the default mode. The range of modulation frequency is limited (see data sheet). This mode is recommended for low modulation frequencies and/or high ΦM deviation.

"Low Noise" Phase modulation with phase noise and spurious characteristics close to CW mode. The range for modulation bandwidth and PM deviation is limited (see data sheet).

Remote command:

[**:SOURce<hw>**] :PM:MODE on page 380

PhiM Deviation

Sets the modulation deviation in RAD.

The maximum deviation depends on the set RF frequency and the selected modulation mode (see data sheet).

If the entered deviation is too high for the set RF frequency, the instrument provides the maximum value and displays an error message. The same applies, if the RF frequency is set to a value, at which the deviation cannot be determined.

The deviation of the internal source must not exceed the deviation of the external source in case of modulation source "Int+Ext".

Remote command:

[**:SOURce<hw>**] :PM[:DEViation] on page 379

[**:SOURce<hw>**] :PM:INTERNAL:DEViation on page 380

[**:SOURce<hw>**] :PM:EXTERNAL:DEViation on page 379

LF Gen Freq

Sets the frequency of the LF generator.

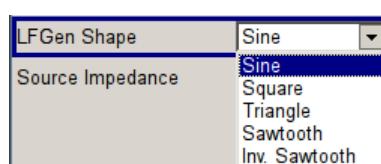
This setting affects all analog modulations which use the LF generator as the internal modulation source.

Remote command:

[**:SOURce**] :LFOOutput<ch>:FREQuency on page 355

LF Gen Shape

Selects the waveform shape of the LF signal.



Note: The installed hardware determines the available settings. Use the [Hardware Config](#) dialog to check the hardware the instrument is equipped with.

For information on the required hardware revision, refer to the release notes.

Remote command:

[**:SOURce**] :LFOOutput:SHAPe on page 363