Manual operation: See "Fill User Correction Data with Sensor" on page 166

6.13.3 SOURce:FM Subsystem

The FM subsystem contains the commands for checking the frequency modulation.

Characteristics which are valid for all modulations and the LF Output are configured in the `SOURce:LFOutput` subsystem (e.g. frequency). The external signal is input at the [MOD EXT] connector.

For information about the required options, see Chapter 4.4.3, "Frequency Modulation (FM)", on page 207.

[:SOURce<hw>]:FM[:DEViation] <Deviation>

Sets the deviation of the frequency modulation signals in Hz. The maximum deviation depends on the set RF frequency and the selected modulation mode (see data sheet).

Parameters:

<Deviation> float

Range: 0 to dynamic
Increment: 0.01
*RST: 1000

Example: `FM 2E3`
sets a 2 kHz deviation to the modulation signal.

Manual operation: See "FM Deviation" on page 209

[:SOURce<hw>]:FM:EXTernal:COUPling <Coupling>

Selects the coupling mode for the external frequency modulation signal.

Parameters:

<Coupling> AC | DC

AC
Uses only the AC signal component of the modulation signal.

DC
Uses the modulation signal as it is, with AC and DC.

*RST: AC

Example: `FM:EXT:COUP AC`
selects the coupling mode AC for the external frequency modulation signal.

Manual operation: See "Mod Ext Coupling" on page 210

[:SOURce<hw>]:FM:EXTernal:DEViation <Deviation>

Sets the deviation of the external frequency modulation signal in Hz. The maximum deviation depends on the set RF frequency and the selected modulation mode (see data sheet).

The sum of the deviations of all active frequency modulation signals may not exceed the total value set with command `[:SOURce<hw>]:FM[:DEViation]`.

Parameters:
<Deviation> float
Range: see data sheet
Increment: 0.01
*RST: 1000

Example: `FM:EXT:DEV 3kHz`
sets 3 kHz deviation to the frequency modulation signal.

Manual operation: See "FM Deviation" on page 209

[:SOURce<hw>]:FM:INTernal:DEViation <Deviation>

Sets the deviation of the internal frequency modulation signal in Hz.

The sum of the deviations of all active frequency modulation signals may not exceed the total value set with command `[:SOURce<hw>]:FM[:DEViation]`.

Parameters:
<Deviation> float
Range: 0 to dynamic
Increment: 0.01
*RST: 1E3

Example: `FM:INT1:DEV 2E3`
sets 2 kHz deviation for the freqeuncy modulation signal.

Manual operation: See "FM Deviation" on page 209

[:SOURce<hw>]:FM:MODE <Mode>

Selects the mode for the frequency modulation.

Parameters:
<Mode> NORMal | LNOise | HDEViation

NORMal
Provides full setting range of modulation bandwidth and FM deviation.

LNOise
Provides phase noise and spurious characteristics close to CW. The range for modulation bandwidth and FM deviation is reduced (see data sheet).

HDEViation
Provides full setting range for FM deviation. The range of modulation bandwidth is reduced (see data sheet).

*RST: NORM

Example: `FM:MODE NORM`
selects normal mode for external frequency modulation.

Manual operation: See "FM Mode" on page 209

[:SOURce<hw>]:FM:SENSitivity?

Queries the input sensitivity of the externally applied signal for frequency modulation. The returned value reports the sensitivity in Hz/V. It is assigned to the voltage value for full modulation of the input signal.

The sensitivity depends on the set `[:SOURce<hw>]:FM[:DEViation]`.

Return values:
<Sensitivity> float

Range: 0 to max
Increment: 0.01

Example: `FM:DEV 5E3`
sets a modulation deviation of 5 kHz.
`FM:SENS`
queries the input sensitivity at the external modulation input.
`Response: 5E3`
since the voltage value for full modulation is 1V, the resulting sensitivity is precisely 5000 Hz/V.

Usage: Query only

Manual operation: See "FM Sensitivity" on page 210

[:SOURce<hw>]:FM:SOURce <Source>

Selects the modulation signal source for frequency modulation.

Parameters:
<Source> INTernal | EXTernal | INT,EXT

INT
Uses the internally generated signal for modulation. To configure the frequency, use the commands of the Chapter 6.13.6, "SOURce:LFOutput Subsystem", on page 354 subsystem.

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