SOURce<hw>

For one-path instruments, the keyword `SOURce` is optional and can be omitted.

6.13.1 SOURce:AM Subsystem

The AM subsystem contains the commands for setting the amplitude modulation.

An external modulation signal is input at the [MOD EXT] connector.

The settings for the internal modulation source (LF generator) are made in the `SOURce:LFOutput` subsystem.

[:SOURce<hw>]:AM:DEPTh:EXPonential <DepthExp>

Sets the overall modulation depth of the amplitude modulation in dB.

Note: The exponential AM mode applies to instruments with frequency option 12 GHz or higher. You can select this mode with command `[:SOURce<hw>]:AM:TYPE`. For more details, see also the GUI reference, Chapter 4.4.2, "Amplitude Modulation (AM)", on page 204.

Parameters:

<DepthExp> float

Range: -40 to 40
Increment: 0.01
*RST: 10

Example: AM:DEPT:LIN 15PCT
sets the AM modulation depth to 15 percent.

Options: (exponential): R&S SMB-B112/-B112L/-B120/-B120L/-B140/-B140L

Manual operation: See "AM Depth" on page 205

[:SOURce<hw>]:AM:DEPTh:LINear <DepthLin>

Sets the overall modulation depth of the amplitude modulation in percent.

Note: For high frequency instruments, you can alternatively select exponential amplitude modulation with command [:SOURce<hw>]:AM:TYPE. In this case, the generator sets modulation depth in dB (logarithmic).

For more details, see also the GUI reference, Chapter 4.4.2, "Amplitude Modulation (AM)", on page 204.

Parameters:

<DepthLin> float

Range: 0 to 100
Increment: 0.1
*RST: 30

Example: AM:DEPT:LIN 15
sets the AM modulation depth to 15 dB.

Manual operation: See "AM Depth" on page 205

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

Selects the coupling mode for the external amplitude 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: AM:EXT:COUP AC
selects the coupling mode AC for external amplitude modulation.

Manual operation: See "Mod Ext Coupling" on page 206

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

Queries the input sensitivity of the externally applied signal for amplitude modulation.

The sensitivity depends on the set modulation depth, see [:SOURce<hw>]:AM:DEPTh:LINear and [:SOURce<hw>]:AM:DEPTh:EXPonential.

The returned value reports the sensitivity in %/V. It is assigned to the voltage value for full modulation of the input.

Return values:

<Sensitivity> float

Range: 0 to 100

Example: `AM:DEPT 50`
sets a modulation depth of 50 %.
`AM:SENS?`
queries the input sensitivity at the external modulation input.
`Response: 50`
since the voltage value for full modulation is 1V, the resulting sensitivity is precisely 50 %/V.

Usage: Query only

Manual operation: See "AM Sensitivity" on page 206

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

Selects the modulation signal source for amplitude modulation.

With linear AM (see `[:SOURce<hw>]:AM:TYPE` on page 334), you can use both, the internal and an external modulation signal at a time, for example to perform two-tone AM.

Parameters:

<Source> INTernal | EXTernal | INT,EXT

INTernal
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.

EXTernal
Uses an externally applied modulation signal.

INT,EXT
Uses both, the internal and external modulation signals.

*RST: INT

Example: `AM:SOUR INT`
selects the internal modulation source.

Manual operation: See "AM Source" on page 205

[:SOURce<hw>]:AM:STATe <State>

Activates amplitude modulation.

Parameters:

<State> 0 | 1 | OFF | ON

*RST: 0