6.13.10 SOURce:PHASe Subsystem

This subsystem contains the commands for adjusting the phase of the RF output signal relative to a reference signal of the same frequency.

[:SOURce<hw>]:PHASe <Phase>

Sets the phase variation relative to the current phase. The variation is specified in RADians.

Parameters:

<Phase> float

Range: -720 to 720
Increment: 0.1
*RST: 0

Example: `PHAS 0.1 RAD`
changes the phase by 0.1 RAD relative to the current phase.
`PHAS:REF`
adopts the set phase as the current phase.

Manual operation: See "Delta Phase" on page 142

[:SOURce<hw>]:PHASe:REFerence

Adopts the phase set with `SOURce:PHASe:ADJust` as the current phase.

Example: `PHAS 0.1RAD`
changes the phase by 0.1 RAD relative to the current phase.
`PHAS:REF`
adopts the set phase as the current phase.

Usage: Event

Manual operation: See "Reset Delta Phase Display" on page 142

6.13.11 SOURce:PM Subsystem

The PM subsystem contains the commands for checking the phase modulation. The settings for the internal modulation source (LF generator) are made in the SOURce:LFOutput subsystem.

For information on the required options, see Chapter 4.4.4, "Phase Modulation (PhiM)", on page 211.

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

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

Parameters:

<Deviation> float

Range: see data sheet
Increment: 1E-6

Example: `PM 2`
sets 2 RAD deviation to the phase modulation signal.

Manual operation: See "PhiM Deviation" on page 213

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

Selects the coupling mode for the external phase 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: `PM:EXT:COUP AC`
selects the coupling mode AC for the external phase modulation signal.

Manual operation: See "Mod Ext Coupling" on page 214

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

Sets the modulation deviation of the external phase modulation signal in RAD. The maximum value 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>]:PM:EXTernal:DEViation`.

Parameters:

<Deviation> float

Range: 0 to 20
*RST: 1

Example: `PM 5`
sets 5 RAD deviation for the external phase modulation signal.

Manual operation: See "PhiM Deviation" on page 213

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

Sets the deviation of the internal phase modulation signal in RAD.

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

Parameters:
<Deviation> float

Range: see data sheet
Increment: 1E-6
*RST: 1

Example: `PM:INT1:DEV 3RAD`
sets 3 RAD deviation for the internal phase modulation signal.

Manual operation: See "PhiM Deviation" on page 213

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

Selects the mode for the phase modulation.

Parameters:
<Mode> HDEViation | NORMal | LNOise

HDEViation
Provides full setting range of PhiM deviation. The range of modulation frequency is limited (see data sheet). Recommended for low modulation frequencies and/or high PhiM deviation.

NORMal
Provides full setting range of modulation bandwidth and PhiM deviation. Recommended for high modulation frequencies.

LNOise
Provides modulation with phase noise and spurious characteristics close to CW mode. The range for modulation bandwidth and PhiM deviation is limited (see data sheet)

*RST: HBANdwidth

Example: `PM:MODE LNO`
selects Low Noise mode for external phase modulation.

Manual operation: See "PhiM Mode" on page 212

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

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

Return values:
<Sensitivity> float

Example: `PM:DEV 1`
sets a modulation deviation of 1RAD.
`PM:SENS?`
queries the input sensitivity at the external modulation input.
`Response: 1`
since the voltage value for full modulation is 1V, the resulting sensitivity is precisely 1RAD/V.

Usage: Query only

Manual operation: See "PhiM Sensitivity" on page 214

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

Selects the modulation signal source for phase modulation.

You can use both, the internal and an external modulation signal at a time.

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

INTernal
Uses the internally generated signal for modulation. To configure the LF signal, use the commands of the SOURce:LFOutput Subsystem subsystem.

EXTernal
Uses an externally applied modulation signal.

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

*RST: INT

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

Manual operation: See "PhiM Source" on page 212

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

Activates phase modulation.

Note: Activation of PM deactivates frequency modulation (FM).

Parameters:
<State> 0 | 1 | OFF | ON

*RST: 0