

LANarix

LAN interface for directional power sensors NRT-Zxx series

The interface-box **LANarix** can be used to control a directional power sensor of the **NRT-Zxx** series (NRT-Z14, NRT-Z43, NRT-Z44) remotely via a network connection using VISA and SCPI commands. This document describes, which commands can be used with the **LANarix** interface box.

Commands and parameters

Preliminary remark

SCPI commands generally can be written in a short-form and a long-form notation. Both versions are equivalent. This document shows the short-form of a command in uppercase letters and the long-form in combined uppercase + lowercase letters. Both versions can be used and are valid, however no deviating own abbreviations must be used.

Examples

<code>SYSTEM:ERROR?</code>	Valid
<code>SYST:err?</code>	Valid
<code>SYST:ERROR?</code>	Valid
<code>sYsTEm:ERR?</code>	Valid
<code>SYSTE:Error?</code>	Not valid (due to <code>SYSTE</code> , which is neither the short nor long form)

Commands, which end with a question mark character `?`, are query-only commands. They can't be used to „set“ something, but only query information from the connected power sensor (or the interface-box itself). An example would be the command `*IDN?`

Commands which end with a question mark in square brackets `[?]` are setting & query commands. These type of commands can be used to either set a parameter or query its current value. An example would be the command `SENSe:FREQuency[?]`. That can be used to query the current frequency by `SENS:FREQ?` or set a new frequency by `SENS:FREQ 2.42e9`

List of commands

****RST***

Resets the power sensor

Type: Setting only

Possible Parameters: <none>

****IDN?***

Queries the identification of the power sensor

Type: Query only

Possible Parameters: <none>

SYSTem:ERRor?

Queries the internal error queue. If the error queue is empty, 0, "No Error" is returned

Type: Query only

Possible Parameters: <none>

SYSTem:IFVersion?

Queries the firmware version of the LANarix interface-box. This has nothing to do with the firmware version of the connected power sensor (which is returned as part of the *IDN? query)

Type: Query only

Possible Parameters: <none>

SENSe:LIMit?

Queries certain parameter limits

Type: Query only

Possible Parameters:

FREQ_MAX	Max. Frequency
FREQ_MIN	Min. Frequency
FREQ_DEF	Default Frequency
FWD_AVG_MAX	Max. fwd. average power
FWD_AVG_MIN	Min. fwd. average power
REFL_AVG_MAX	Max. refl. average power
REFL_AVG_MIN	Min. refl. average power
NOMINAL_POWER	Nominal power (i.e. 120 W)
IMPEDANCE	Impedance
PEP_TIME_MAX	Max. hold time for PEP
PEP_TIME_MIN	Min. hold time for PEP
PEP_TIME_DEF	Default hold time for PEP
INT_TIME_MAX	Max. integration time for ADC
INT_TIME_MIN	Min. integration time for ADC
INT_TIME_DEF	Default integration time for ADC
OFFS_MAX	Max. level offset
OFFS_MIN	Min. level offset
OFFS_DEF	Default level offset
MOD_RATE_MAX	Max. modulation rate
MOD_RATE_MIN	Min. modulation rate

MOD_RATE_DEF Default modulation rate

Example: SENS:LIM? FREQ_MAX

SENSe:AVERAge:COUNT[?]

Sets or queries the average filter count

Type: Setting and query

Possible Parameters: 2, 4, 8

SENSe:BURSt:WIDTh[?]

Sets or queries the burst width setting

Type: Setting and query

Possible Parameters: numerical value in s (seconds)

SENSe:BURSt:PERiod[?]

Sets or queries the burst period setting

Type: Setting and query

Possible Parameters: numerical value in s (seconds)

SENSe:CCDF:THReshold[?]

Sets or queries the CCDF threshold

Type: Setting and query

Possible Parameters: numerical value

SENSe:FREQuency[?]

Sets or queries the sensor measurement frequency

Type: Setting and query

Possible Parameters: numerical value in Hz (hertz)

SENSe:INTEgration:TIME[?]

Sets or queries the integration time

Type: Setting and query

Possible Parameters: numerical value in s (seconds)

SENSe:OFFSet[?]

Sets or queries the power offset

Type: Setting and query

Possible Parameters: numerical value in dB

SENSe:PEP:TIME[?]

Sets or queries the PEP time

Type: Setting and query

Possible Parameters: numerical value in s (seconds)

SENSe:MODulation:RATE[?]

Sets or queries the modulation rate

Type: Setting and query

Possible Parameters: numerical value

SENSe:DIRection[?]

Sets or queries the signal direction

Type: Setting and query

Possible Parameters:

AUTO	Automatic detection
1>2	1 > 2
2>1	2 > 1

SENSe:FUNction:FORWard[?]

Sets or queries the measurement function in forward direction

Type: Setting and query

Possible Parameters:

FWD_NONE	No measurement
FWD_AVER	Average Power
FWD_CBUR	Average Burst Power (Calculated)
FWD_CCDF	Complementary Cumulative Distribution Function
FWD_CF	Ratio of Peak Envelope Power to Average Power
FWD_MBAV	Average Burst Power (Measured)
FWD_PEP	Peak Envelope Power

SENSe:FUNcTion:REVerse[?]

Sets or queries the measurement function in reverse direction

Type: Setting and query

Possible Parameters:

REV_NONE	No measurement
REV_POW	Rev. Power
REV_RCO	Reflection Coefficient
REV_RL	Return Loss
REV_SWR	Standing Wave Ratio

SENSe:AVERage:MODE[?]

Sets or queries the averaging mode

Type: Setting and query

Possible Parameters:

AUTO	Automatic Average Count selection
USER	User selected average count

SENSe:INTegration:MODE[?]

Sets or queries the integration mode

Type: Setting and query

Possible Parameters:

DEF	Default
USER	User selected

SENSe:BANDwidth:VIDeo[?]

Sets or queries the video bandwidth. Hint: The possible parameters are depending on the model of the power sensor.

Type: Setting and query

Possible Parameters:

4E3	4 kHz (NRT-Z14 / Z43 / Z44)
2E5	200 kHz (NRT-Z14 / Z43 / Z44)
4E6	4 MHz (NRT-Z43 / Z44)
6E5	600 kHz (NRT-Z14)

SENSe:RESolution[?]

Sets or queries the resolution

Type: Setting and query

Possible Parameters:

LOW	Low resolution
HIGH	High resolution

SENSe:TIMEout[?]

Sets or queries the internal communication timeout (between LANarix interface box and power sensor)

Type: Setting and query

Possible Parameters: Timeout in ms (milliseconds)

SENSe:MODulation:TYPE[?]

Sets or queries the selection of a special modulation type

Type: Setting and query

Possible Parameters:

OFF	No modulation
IS95	
WCDMA	
DVBT	
DAB	

SENSe:PEP:MODE[?]

Sets or queries the PEP mode

Type: Setting and query

Possible Parameters:

DEF	Default
USER	User selected

SENSe:PORT[?]

Sets or queries the reference port

Type: Setting and query

Possible Parameters:

SOUR	Source port
LOAD	Load port

SENSe:CALibration:ZERO?

Execute a Zero calibration of the sensor and returns some internal values

Type: Query only

Possible Parameters: <none>

Example:

```
"zero1 = -4.6422E-06, zero2 = -1.3630E-06"  
"PEP zero for 4kHz filter : -1.1375E-03"  
"PEP zero for 200kHz filter : -9.0005E-04"  
"PEP zero for 4MHz filter : -9.4733E-04"
```

SENSe:SPECification?

Returns a list of sensor specifications

Type: Query only

Possible Parameters: <none>

TRIGger:MODE[?]

Sets or queries the trigger mode. Hint: The only reasonable mode in conjunction with the LANarix interfac-box is FRE

Type: Setting and query

Possible Parameters:

FRE	Free run
HIGH	Remote (only with NRT base unit)

INITialize:IMMediate

Initializes a measurement. This must be executed before measurement results can be queried by a `FETCH?` command

Type: Setting only

Possible Parameters: <none>

FETCh?

Queries for the measurement result(s) of a previous measurement which has been executed by the use of an `INIT:IMM` command

Depending on the selected forward and reverse channel measurement functions, one or two results will be returned

Type: Query only

Possible Parameters: <none>

Example:

0.001316,0.18776 If forward and reverse channel measurements have been selected

0.05372 If only a forward or reverse channel measurements has been selected