SignalShark
seven senses for signals

Telemeter Electronic

SignalShark® Series

Command Reference Guide

L3HARRIS | narda
Safety Test Solutions

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1 Contents

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2 General Information

Following instructions are supplied together with the device:

- Quick Start Guide: These instructions offer a quick introduction on to how to use the SignalShark. They don't replace the detailed operation manual (Online help).
- Online help: The complete operation manual can be found on the device.
- General Safety Notes: Enclosed document General Safety Notes contains important information on how to avoid injury from incorrect use and on the correct handling of the product.

⇒ Be sure to read the Quick Start Guide and the General Safety Notes before operating the device and follow all instructions provided there.
⇒ Store all documents with the device and make them available to all users.
⇒ When transferring the device to third parties, also forward these instructions to them.

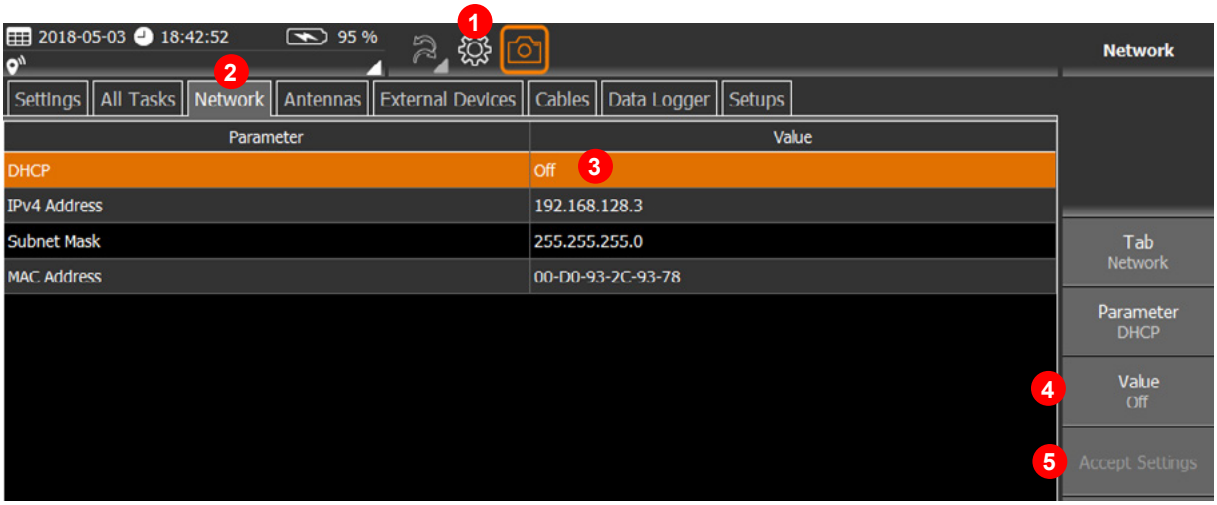
SignalShark Network Setup

Variable Network Settings

IP-Address: Ex-works set to DHCP

If you have administrative rights, you can change the IP address of the instrument as follows:

1. Open the "General Settings" menu
2. Select the "Network" tab
3. Select the desired parameter
4. Tap the "Value" button to change the value.
5. Tap on "Accept Settings" button to confirm changes
    a. You have to enter the administrator password for the changes to take effect



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Fixed Network Setting

Remote Control Port:	5300
Termination character:	Carriage Return + Line Feed (CR+LF)

Connecting to a network

The device can be remotely controlled using the Ethernet interface located on the top side panel of the device.

Figure 1 Ethernet connector (1000BaseT)

Setting up a connection:

1. Connect the SignalShark to the network using a commercially available network cable.
2. Adjust the network settings to match the network properties.
3. Open the network connection.

*You can check the connection state by sending the command "***IDN?**". If connection was successful, the instrument will send basic information such as manufacturer, model, serial number and version.*

Troubleshooting checklist

If connecting to the instrument fails:

- Check the connection (cables)
- Make sure that the SignalShark is switched on and provided with sufficient power
  - Batteries fully charged or powered via the AC adapter
- Check the settings of the IP address and the port
- Make sure there is no firewall preventing the communication
- Make sure the corresponding options are enabled

3 Narda SCPI basic principles

Narda SCPI information

Some important basic information about how Narda uses SCPI is given below.
General SCPI basic principles can be found at: www.ivifoundation.org/docs/**scpi-99**.pdf

Various parsers

Parser	Meaning
488	Parser for historic GPIB commands (e.g. *IDN?, *RST, *WAI).
SCPI99	Parser for universal SCPI commands (e.g. SYST:ERR?, ABORt).
NARDA	Narda-specific commands for measurements and measurement configuration. The Narda parser commands are derived from the GUI.

Syntax convention

Symbol	Meaning
*	Always preceding a common command
:	Separates Keywords in different subsystems
;	Separates Keywords within the same subsystem
space	Separates Keyword from parameter
|	Separates alternative commands (the bar is not sent with the command)
<>	Placeholder for numeric values (the angle brackets are not sent with the command)
[]	Placeholder for optional keywords/parameters (the square brackets are not sent with the command)
{}	Placeholder for parameters that may be included 0 or more times (the curly braces are not sent with the command)
Keyword “Long form”	First letter in each word plus all letters in the last word. If only one word -> the whole word. The uppercase letters indicates the part of the keyword that is required which is also the short form of the keyword (see below).
Keyword “Short form”	Uppercase letters in the Long form indicates the corresponding Short form: • Keywords with 4 letters or less -> all letters are used to form the short form • Keywords with 5 or more letters where the 4th letter is *not* a vowel, the first 4 letters are used and if the 4th letter *is* a vowel the first 3 letter are used to form the short form.

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Basic sequence for a remote-controlled measurement

With few exceptions, the procedure is as follows:

- Disable the GUI for high performance (SYSTem:REMote:DISPlay OFF)
- Set the device to a defined state (e.g. *RST or TASK:NEW)
- Stop the measuring system for configuration (ABORt or STOP)
- Configure the measurement task (create task, set parameters, etc.)
- RUN or HOLD the measurement (RUN:SINGle, RUN:CONT, RUN:CONT:RES, HOLD)
- Update the measurement data (e.g. SPECtrum:DATA:UPDate?)
- Optional: HOLD or STOP the measurement
- Fetch the measurement data (e.g. SPECtrum:DATA:ALL?)
- Fetch the additional data (e.g. MARKer:SPECtrum:DATA:ALL?)

Defined start state

The device must be set to a defined start state before remote operation (e.g. *RST, SYST:ERR:CLEar). It is a good idea to create a new task for each measurement task. Every new task is started with the default parameters (TASK:STATe? = RUN).
For a basic initialization of the task parameter, the task should be stopped (STOP or ABORt) otherwise the measurement will be reconfigured and restarted with each parameter change.
The task should be deleted after the measurement task is completed or a *RST or TASK:NEW is performed before the next measurement task.

End character

A maximum of 1460 bytes of user data can be transmitted in one go via TCP. Some of our data sets are very much bigger than this. It is therefore necessary to use end characters. Data without a valid end character will not be evaluated by the device. The end characters do not contain any user information and should be filtered out by the receiving program.
The Narda device sends <CR><LF> after each data packet.
The Narda device will accept data packets ending in <LF> or <CR> <LF>.

Commands

Some commands are with parameters (SPEC:FREQ:CENT 100MHz) and some are without parameters (e.g. SENSe:STOP). Commands do not have a response. The control program does not therefore know when the command has been processed by the device. An error query (e.g. SYST:ERR?) or a request to read back the parameters (e.g. SPEC:FREQ:CENT?) should therefore be sent after each command or sequence of commands.

Queries

SCPI queries always result in a response in Narda devices. Some queries are for reading out measurement parameters (e.g. SPEC:FREQ:CENT?) and some are for reading out the measurement data (e.g. SPEC:DATA:ALL?). There is no guarantee that the requested measurement data will be available at any given time, e.g., if a measurement has not been completed yet, or no data is available because of the measurement settings. A query delivers as the response either the requested parameters, or the measurement data, or NAN (not a number). NAN is defined in SCPI and is transmitted if no measurement data exist or the command is invalid at the time.

Parameter corrections for Narda devices

It may be necessary for the device to correct certain parameters, for example, if an upper or lower limit is exceeded (e.g. Fcent 999GHz). Some parameters also affect each other (e.g. FSpan can affect the RBW and the measurement time). To avoid parameter corrections, the parameters must have valid

values and be used in permitted combinations with each other. The affected parameters must be read back to test whether they have been corrected.

Example

```
// Set parameters
SPECtrum:FREQuency:CENTer 10 MHz
SPECtrum:FREQuency:SPAN 1 GHz
// Query error
SYST:ERR:ALL?
0,"No error"

// Read back parameters (SPAN was corrected)
SPECtrum:FREQuency:CENTer?
10000000

SPECtrum:FREQuency:SPAN?
40000000
```

SCPI error queue

The error queue contains the errors that have occurred in the command parser or when commands are processed. There may be several entries in the queue for each command and query. These entries can be queried individually (SYST:ERR?) or all together (SYST:ERR:ALL?). Depending on the measurement task, it may be useful to query the queue after every command or sequence of commands.

SCPI and Narda error codes

-400 to -499 SCPI query errors
-300 to -399 SCPI device-specific errors
-200 to -299 SCPI execution errors
-100 to -199 SCPI command parser errors
0 No error
> 0 Narda device-specific

Standard error code format

Error code, “Error text”

Extended Error Code Format

Error code, “Error text :Command and Parameter Information”

Note concerning “:Command and Parameter Information“

The texts provide additional information to assist with troubleshooting. The content is not standardized and can change with a new firmware version. For this reason, the text should not be used for sequence control in control programs. Only the error code is provided for this purpose.

Example

```
0,"No error"
110,“eERR_MEASUREMENT_TASK“
-224,"Illegal parameter value: 1234.569"
-113,"Undefined header: XYZ"
400,”eERR_FPGA: illegal BAND value"
```


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Task States (RUN, STOP, HOLD)

To configure the measurement system, it should be halted (STOP or ABORt). Every new task created will initially run using the default parameters in RUN mode. The measuring machine runs in RUN mode and stops automatically if the measurement is started with RUN:SINGle. If the measurement is started with RUN:CONTinuous it can be stopped by SENSe:STOP or SENSe:HOLD. The measurement results should only be evaluated when the measuring machine is in STOP mode or HOLD mode. Measurement values continue to be recorded in the background in HOLD mode. These data are available for later evaluation.

Measurement parameters and evaluation parameters

Some parameters affect the measurement (e.g. SPECtrum:FREQuency:CENTer, SPECtrum:FREQuency:SPAN) and other parameters affect data evaluation (e.g. MARKer:SPECtrum:FREQuency, MARKer:SPECtrum:SEARch:PEAK:EXCursion).
The evaluation parameters can be used in HOLD and in STOP mode to perform a new calculation using the measurement data. If measurement parameters are changed, a new measurement must be performed in order to update the measurement data. If measurement parameters are changed in HOLD mode, the device switches to STOP mode automatically.

Synchronizing several commands

For configuring the device, it is a good idea to subdivide the commands into groups (e.g. general parameters, spectrum parameters, peak table parameters). Several consecutive commands can be synchronized if a query follows each command or if the error queue is evaluated after a group of commands (e.g. SYST:ERR:ALL?).

Example

```
// Synchronization of a command group by SYST:ERR:ALL?
FREQuency:CENTer 110 MHz
FREQuency:SPAN 40 MHz
RBW 100 kHz
SYST:ERR:ALL?
0,"No error"

// Synchronization of individual commands by reading back the parameters (Query)
FREQuency:CENTer 110 MHz
FREQuency:CENTer?
110000000

FREQuency:SPAN 40 MHz
FREQuency:SPAN?
40000000

RBW 100 kHz
RBW?
100000
```

Concatenating commands and queries using ;

It is possible to send several commands in one line, each separated by a semicolon (;). The parser processes the commands from left to right, but it is possible that some combinations will produce unwanted interactions. The responses to queries are sent one at a time and must be assigned accordingly and evaluated by the receiver. At the end of such a line of commands, the error queue will contain all the errors from the individual commands and queries. It is therefore sensible to use this function only for special cases.

Example

```
// Set and read back a parameter
SPECtrum:RBW 100kHz; SPECtrum:RBW?
// Set several parameters and error query
FREQuency:SPAN 40 MHz;FREQuency:CENTer 110 MHz;SYSTem:ERRor:ALL?
```

Remote Logfile

It is possible to save all remote data traffic in a log file on the device. This is an important troubleshooting tool. The log function can be activated or deactivated with the command SYSTem:REMote:LOG. Each activation overwrites the existing logfile. After each restart of the application, the logging function must be reactivated. The logfile is saved in the SignalShark log directory under D:\Narda_Signalshark\Logfiles\Remotesystem.log.

Example Logfile:

```
2019-01-11 10:23:48.730 192.168.128.1:2852 +++
2019-01-11 10:23:53.337 192.168.128.1:2852 >>> *IDN?
2019-01-11 10:23:53.338 192.168.128.1:2852 <<< Narda Safety Test Solutions GmbH,SignalShark 3310,A-0054,V1.3.1
2019-01-11 10:23:53.356 192.168.128.1:2852 >>> *RST
2019-01-11 10:23:55.872 192.168.128.1:2852 >>> SYST:ERR:ALL?
2019-01-11 10:23:55.873 192.168.128.1:2852 <<< 0,"No error"
2019-01-11 10:26:20.340 192.168.128.1:2852 ---
```

RUN:CONTinuous Commands

Continuous Run starts a continuous measurement. With each measurement run, the scan number is increased by one. The commands RUN:CONT? or RUN:CONT:RES? return a 0 if the start of the measurement was successful and return an error code if the start of the measurement was unsuccessful. RUN:CONT or RUN:CONT:RES writes an error in the error queue (SYSTem:ERRor?) if the start of the measurement was unsuccessful. A continuous measurement can be stopped with SENSe:STOP or SENSe:HOLD to evaluate measured data for example.

RUN:SINGle Commands

Single Run starts a measurement run until the scan number has reached the desired scancount. After that, the measurement automatically goes into STOP mode. The command RUN:SINGle. starts the single run without waiting until the measurement is finished. The command RUN:SINGle? waits until the measurement is finished. The command RUN:SINGle? returns 0 if the measurement was successful and returns an error code if the measurement was unsuccessful. RUN:SINGLe writes an error in the error queue (SYSTem:ERRor?) if the measurement was unsuccessful.

DATA:ALL? commands

The Data:ALL? commands consist of a header and optional data fields.

The header is always the same:

TimeStampSyncFlag, TimeStampSeconds, TimeStampFractional, ScanNumber

All other elements are optional and tagged with an ID. As soon as an ID is available, the associated data is also available. The ID is always followed by the number of associated data elements and then the data itself. Unknown IDs or IDs which are not evaluated and the associated data elements must be ignored during parsing. This allows a later extension with new IDs.

Examples:

//Spectrum without IDs (ScanNumber=0)

SPECtrum:DATA:ALL?

0,0,0,0

//Spectrum with IDs: CONFIG, RMS, PPk

SPECtrum:DATA:ALL?

0,1532501199,579669619,4,CONFIG,5,1,1,101,31200000,400000,RMS,103,0,0,-90.36,-90.41,-91.52,-92.09,-91.00,-91.47,-92.21,-91.29,-90.17,-89.27,-87.97,-86.38,-86.33,-87.86,-88.66,-89.03,-88.81,-88.02,-87.16,-86.30,-85.64,-85.29,-84.98,-84.50,-83.84,-83.04,-82.09,-81.08,-80.18,-79.53,-79.28,-79.58,-80.38,-81.48,-82.60,-83.52,-84.31,-85.02,-85.61,-86.08,-86.48,-86.42,-86.15,-86.28,-86.23,-85.64,-85.12,-85.03,-84.89,-84.64,-84.53,-84.59,-84.74,-85.05,-85.59,-86.29,-86.89,-87.40,-88.16,-88.58,-88.40,-87.95,-87.56,-87.55,-87.82,-88.08,-88.25,-88.45,-88.50,-88.37,-88.28,-88.15,-87.87,-87.53,-87.05,-86.33,-85.53,-84.77,-84.19,-84.11,-84.42,-84.91,-85.52,-85.81,-85.15,-85.62,-87.70,-89.00,-89.57,-90.09,-90.68,-90.99,-91.23,-91.66,-91.73,-91.46,-91.12,-90.49,-89.74,-89.06,-88.49,PPk,103,0,0,-66.63,-66.77,-67.34,-68.57,-69.57,-67.28,-63.25,-59.96,-57.75,-56.64,-56.25,-56.35,-56.94,-57.77,-58.67,-59.61,-60.62,-61.87,-63.43,-65.24,-63.93,-63.50,-63.42,-63.56,-64.77,-64.82,-64.30,-63.25,-62.32,-61.49,-61.18,-61.35,-60.76,-59.63,-58.97,-58.54,-58.01,-57.67,-57.62,-57.22,-56.14,-54.92,-53.99,-53.43,-53.33,-53.74,-54.72,-56.16,-57.47,-58.35,-59.45,-61.58,-65.37,-67.96,-68.12,-68.47,-67.43,-65.38,-64.52,-64.31,-64.39,-64.27,-63.52,-61.91,-60.01,-58.52,-57.66,-57.35,-57.39,-57.64,-58.13,-58.88,-59.99,-61.62,-63.60,-65.90,-68.54,-68.58,-67.71,-66.97,-67.09,-67.69,-68.06,-68.50,-68.38,-69.05,-69.95,-65.79,-63.23,-61.94,-61.38,-61.06,-60.35,-58.69,-56.42,-54.16,-52.16,-50.52,-49.25,-48.25,-47.47

//Levelmeter without IDs (ScanNumber=0)

LEVelmeter:DATA:ALL?

0,0,0,0

//Levelmeter with IDs: PPk, RMS (without antenna handle)

LEVelmeter:DATA:ALL?

0,1532501012,938716127,195,PPk,4,0,0,-71.55,-71.55,RMS,4,0,0,-72.35,-72.35

//Levelmeter with IDs: COMPASS, PPk, RMS (with antenna handle)

LEVelmeter:DATA:ALL?

0,1532500912,935929584,430,COMPASS,3,275.7,-1.7,-94.1,PPk,4,0,0,-72.35,-72.35,RMS,4,0,0,-72.35,-72.35

//Peaktable without IDs (ScanNumber=0)

PEAKtable:DATA:ALL?

0,0,0,0

//Peaktable without IDs (no Peaks)

PEAKtable:DATA:ALL?

0,1532500432,350577299,5

//Peaktable with IDs: FREQUENCY, RMS, PPk (1 Peak)

PEAKtable:DATA:ALL?

0,1532500462,350577299,11,FREQUENCY,1,32859262.9335,RMS,3,0,0,-95.40,PPk,3,0,0,-88.28

DATA:UPDate Commands

The DATA:UPDate commands are used to update the measurement data automatically. This is possible in HOLD mode and in RUN mode.

The update mechanism has 2 modes controlled by the scan number parameter:

Mode 1 Always Forcing an new update:
Scan number parameter must be empty or NAN

Mode 2 Update only if old scan number is equal to actual scan number:
Scan number parameter must be the old scan number of the measurement application

For the first update the scan number parameter must be 0 or empty

For very long measurements, a timeout can be specified.

Example:

Command Timeout = Default (3s)
Spectrum Measurement Time = 1s

SPEC:DATA:UPD?
22

SPEC:DATA:LEVel? RMS
-92.86,-78.46,-60.11,-50.56,-47.57,-50.56,-60.11,-78.32,-86.26

SPEC:DATA:UPD?
23

SPEC:DATA:LEVel? RMS
-92.84,-78.43,-60.09,-50.55,-47.56,-50.55,-60.10,-78.29,-86.26

SPEC:DATA:UPD?
24

SPEC:DATA:LEVel? RMS
-92.88,-78.45,-60.09,-50.55,-47.55,-50.55,-60.10,-78.29,-86.01

SPEC:DATA:UPD?
25

SPEC:DATA:LEVel? RMS
-92.86,-78.41,-60.10,-50.57,-47.58,-50.58,-60.11,-78.28,-86.37

SPEC:DATA:UPD?
26

SPEC:DATA:LEVel? RMS
-92.83,-78.43,-60.13,-50.60,-47.62,-50.61,-60.15,-78.33,-86.42

SPEC:DATA:UPD?
27

SPEC:DATA:LEVel? RMS

-92.84,-78.43,-60.15,-50.62,-47.64,-50.63,-60.16,-78.31,-86.40

SPEC:DATA:UPD?
28

SPEC:DATA:LEVel? RMS
-92.78,-78.35,-60.10,-50.58,-47.60,-50.59,-60.11,-78.25,-86.81

Example:

Command Timeout = 200ms
Spectrum Measurement Time = 1s

SPEC:DATA:UPD? 0,0.2
22

SPEC:DATA:LEVel? RMS
-92.49,-78.13,-59.89,-50.38,-47.39,-50.38,-59.91,-78.10,-86.80

SPEC:DATA:UPD? 22,0.2
22

SPEC:DATA:UPD? 22,0.2
22

SPEC:DATA:UPD? 22,0.2
22

SPEC:DATA:UPD? 22,0.2
22

SPEC:DATA:UPD? 22,0.2
22

SPEC:DATA:UPD? 22,0.2
23

SPEC:DATA:LEVel? RMS
-92.52,-78.27,-59.98,-50.45,-47.45,-50.45,-59.99,-78.25,-87.20

SPEC:DATA:UPD? 23,0.2
23

SPEC:DATA:UPD? 23,0.2
23

SPEC:DATA:UPD? 23,0.2
23

SPEC:DATA:UPD? 23,0.2
23

SPEC:DATA:UPD? 23,0.2
24

SPEC:DATA:LEVel? RMS
-92.52,-78.27,-59.98,-50.45,-47.45,-50.45,-59.99,-78.25,-87.20

Example:

Spectrum and Peak Measurement Time = 100ms
Levelmeter Measurement Time = 20ms

VIEW:LIST?
"SPECTRUM",1,"PEAK_TABLE",3,"LEVEL",2

SENSe:RUN:CONT:RES
SPEC:DATA:UPD? 0
1

SPEC:DATA:LEV? RMS
-94.23,-79.58,-61.12,-51.56,-48.56,-51.56,-61.13,-79.34,-85.71

PEAK:DATA:UPD? 0
1

PEAK:DATA:LEV? RMS
-48.56

LEV:DATA:UPD? 0
5

LEV:DATA:DET?
-61.67,-61.67

SPEC:DATA:UPD? 1
2

SPEC:DATA:LEV? RMS
-94.26,-79.42,-61.09,-51.57,-48.59,-51.59,-61.12,-79.20,-85.79

PEAK:DATA:UPD? 1
2

PEAK:DATA:LEV? RMS
-48.59

LEV:DATA:UPD? 5
10

LEV:DATA:DET?
-61.39,-61.39

SPEC:DATA:UPD? 2
3

SPEC:DATA:LEV? RMS
-94.22,-79.52,-61.13,-51.59,-48.59,-51.57,-61.10,-79.19,-85.61

PEAK:DATA:UPD? 2
3

PEAK:DATA:LEV? RMS
-48.59

LEV:DATA:UPD? 10
15

LEV:DATA:DET?
-61.39,-61.39

SPEC:DATA:UPD? 3
4

SPEC:DATA:LEV? RMS
-94.22,-79.54,-61.12,-51.58,-48.59,-51.58,-61.12,-79.27,-85.57

PEAK:DATA:UPD? 3
4

PEAK:DATA:LEV? RMS
-48.59

LEV:DATA:UPD? 15
20

LEV:DATA:DET?
-61.47,-61.39

SPEC:DATA:UPD? 4
5

SPEC:DATA:LEV? RMS
-94.21,-79.50,-61.11,-51.58,-48.59,-51.59,-61.15,-79.31,-85.91

PEAK:DATA:UPD? 4
5

PEAK:DATA:LEV? RMS
-48.59

LEV:DATA:UPD? 20
25

LEV:DATA:DET?
-61.31,-61.31

SENSe:STOP
SYST:ERR:ALL?
0,"No error"

Example:

Spectrum and Peak Measurement Time = 100ms
Levelmeter Measurement Time = 1s

VIEW:LIST?
"SPECTRUM",1,"PEAK_TABLE",3,"LEVEL",2

SENSe:RUN:CONT:RES
SPEC:DATA:UPD? 0

1

SPEC:DATA:LEV? RMS
-94.26,-79.34,-61.02,-51.51,-48.54,-51.53,-61.07,-79.24,-86.54

PEAK:DATA:UPD? 0
1

PEAK:DATA:LEV? RMS
-48.54

LEV:DATA:UPD? 0
1

LEV:DATA:DET?
-62.65,-62.65

SPEC:DATA:UPD? 1
20

SPEC:DATA:LEV? RMS
-94.24,-79.25,-60.97,-51.49,-48.54,-51.55,-61.11,-79.26,-85.96

PEAK:DATA:UPD? 1
20

PEAK:DATA:LEV? RMS
-48.54

LEV:DATA:UPD? 1
2

LEV:DATA:DET?
-62.68,-62.65

SPEC:DATA:UPD? 20
30

SPEC:DATA:LEV? RMS
-94.22,-79.23,-60.98,-51.49,-48.51,-51.47,-60.94,-78.95,-86.15

PEAK:DATA:UPD? 20
30

PEAK:DATA:LEV? RMS
-48.51

LEV:DATA:UPD? 2
3

LEV:DATA:DET?
-62.62,-62.62

SPEC:DATA:UPD? 30
40

SPEC:DATA:LEV? RMS
-94.40,-79.14,-60.71,-51.18,-48.19,-51.19,-60.76,-79.02,-86.26

PEAK:DATA:UPD? 30
40

PEAK:DATA:LEV? RMS
-48.19

LEV:DATA:UPD? 3
4

LEV:DATA:DET?
-62.59,-62.59

SPEC:DATA:UPD? 40
50

SPEC:DATA:LEV? RMS
-94.24,-79.19,-60.78,-51.23,-48.23,-51.21,-60.75,-78.93,-86.14

PEAK:DATA:UPD? 40
50

PEAK:DATA:LEV? RMS
-48.23

LEV:DATA:UPD? 4
5

LEV:DATA:DET?
-62.58,-62.58

SENSe:STOP
SYST:ERR:ALL?
0,"No error"

Commands with long Timeouts

Some commands have long timeouts as specified in the documentation. For these commands, the maximum command runtime is longer than for other commands. If a timeout = 10s is given in the documentation, this means that the maximum processing time in the device is 10s. If this time is exceeded, there is a processing error. In order to avoid blocking of the following commands due to the long processing times of a command, a query should be executed after such a command (for example, SYST:ERR:ALL?). The default timeout is 3 seconds for commands without special specification in the documentation and can be queried using SYSTem:REMote:TIMeout?.

Progress query for long Timeouts

A progress query and adjusting the timeout only makes sense in special cases.
For some settings (for example, SETTings:FAST:SCANs:ONLY false), long initialization times (measurement parameter calculation) and long measurement times may occur. It is advisable to stop the measurement before parameter changes. In that way a long timeout only occur once when starting the measurement and not with every parameter change.

Example:

Parameter change in Scan Spectrum with a huge amount of bins (Slow Scan).
Using progress query command to query current calculation progress.

```
// Stop Measurement
SENSe:STOP
SYSTem:ERRor:ALL?
0,"No error"

// Change parameters of Scan Spectrum measurement
SPECtrum:FREQuency:STARt 8 kHz
SPECtrum:FREQuency:STOP 8 GHz
SPECtrum:RBW 1 kHz
SYSTem:ERRor:ALL?
0,"No error"

// Start Single Measurement with timeout of 3 seconds
// The measurement parameter calculation begins before the measurement starts
// In this example parameter calculation tooks longer than 3 seconds, so we got an timeout error
SENSe:RUN:SINGle 3s
SYSTem:ERRor:ALL?
-365,"eERR_TIME_OUT"

// Optional: Cyclic query of the command progress
// When measurement parameter calculation is finished,the measurement starts and the response of the command progress query is 0.0, "".
SYST:COMM:PROG?
320,1250,"SPECTRUM_CALC_SCAN_STEPS"

SYST:COMM:PROG?
743,1250,"SPECTRUM_CALC_SCAN_STEPS"

SYST:COMM:PROG?
1065,1250,"SPECTRUM_CALC_SCAN_STEPS"

SYST:COMM:PROG?
1207,1250,"SPECTRUM_CALC_SCAN_STEPS"

SYST:COMM:PROG?
0,0,""

// Wait until the first measurement is completed and query the measurement results
SPEC:DATA:UPD? 0
NaN

SPEC:DATA:UPD? 0
NaN

SPEC:DATA:UPD? 0
1

SPEC:DATA:LEV? RMS
-94.26,-79.34,-61.02,-51.51,-48.54,-51.53,-61.07,-79.24,-86.54
```

```
// Stop Measurement
SENSe:STOP
SYSTem:ERRor:ALL?
0,"No error"

// Change parameters of Scan Spectrum measurement
SPECtrum:RBW 10 kHz
SYSTem:ERRor:ALL?
0,"No error"

// Start Continuous Measurement with timeout of 0 seconds
// The measurement parameter calculation begins before the measurement starts
SENSe:RUN:CONTinuous 0s
SYSTem:ERRor:ALL?
0,"No error"

// Optional: Cyclic query of the command progress
//When measurement parameter calculation is finished, the measurement starts and the response of the command progress query is 0.0, ""
SYST:COMM:PROG?
151,250,"SPECTRUM_CALC_SCAN_STEPS"

SYST:COMM:PROG?
228,250,"SPECTRUM_CALC_SCAN_STEPS"

SYST:COMM:PROG?
0,0,""

// Wait until the first measurement is completed and query the measurement results
SPEC:DATA:UPD? 0
NaN

SPEC:DATA:UPD? 0
NaN

SPEC:DATA:UPD? 0
1

SPEC:DATA:LEV? RMS
-94.26,-79.34,-61.02,-51.51,-48.54,-51.53,-61.07,-79.24,-86.54
```

GUI concept as template for the Narda parser

The commands and queries for the Narda parser are closely linked to the device GUI. As a result, sequences can be described using the device GUI and implemented for remote control relatively easily. The commands are structured as defined in the GUI. Commands in the uppermost operating level are prefixed by [SENSe:]. Commands that are not defined in the GUI are prefixed by SYSTem: Some parameters are valid for all tasks (e.g. [SENSe:]ATTenuator) and some are only valid for specific tasks (e.g. SPECtrum:SCAN:COUNt). There are also some general settings (e.g. SETTings:DATE?) and information (e.g. DEVice:APPLication:VERSion?).

4 Narda SCPI Data types

The following data types are supported by the NARDA SCPI Parser:

Arbitrary

Any combination of all data types

Binary

Format: #<Headersize>[Binarysize][Binarydata]

Example: #213binarydata123

Bool

Input: 0,1,OFF,ON,FALSE,TRUE,NO,YES
Output: 0,1

ByteArray

Hexadecimal coded strings with the following formats are supported:

Example Format 0: "AABBCCDD00224455" (Hexdump)
Example Format 1: "AA,BB,CC,DD,00,22,44,55" (8Bit)
Example Format 2: "AABB,CCDD,0022,4455" (16Bit)
Example Format 4: "AABBCCDD,00224455" (32Bit)

The following special cases are supported:
“1,2,A,B“ results in “01,02,0A,0B“

When the input format and the output format differ:
“DD00224455” (Format 0) results in “DD,00,22,44,55” (Format 1)
“DD00224455” (Format 0) results in “00DD,0022,4455” (Format 2)
“DD00224455” (Format 0) results in “000000DD,00224455” (Format 4)

When the input format and the output format are reversed (Byte swapping):
“DD00224455” (Format 0) results in “DD00,2200,5544” (Format 2)
“DD00224455” (Format 0) results in “DD000000,55442200” (Format 4)

The following formats are NOT supported:
“0x1234“, “0X1234“, “x1234“, “00,ABCD,EE,00112233“, “00 11 22 33“

Char

Range: -128…127

Date

Input Format DAY_MONTH_YEAR: "dd.MM.yyyy"
Input Format MONTH_DAY_YEAR: "MM/dd/yyyy"
Input Format YEAR_MONTH_DAY: "yyyy.MM.dd"
Input Format YEAR_MONTH_DAY_ISO: "yyyy-MM-dd"

Output Format (Default) = YEAR_MONTH_DAY_ISO

DateIso

Input Format YEAR_MONTH_DAY_ISO: "yyyy-MM-dd"
Output Format (Default) = YEAR_MONTH_DAY_ISO

Double

Input String Format:
e format as[-]9.9e[+| -]999
E format as[-]9.9E[+| -]999
f format as[-]9.9
g use e or f format, whichever is the most concise
G use E or f format, whichever is the most concise

Input Precision:
A precision is also specified with the argument format. For the 'e', 'E', and 'f' formats, the precision represents the number of digits after the decimal point. For the 'g' and 'G' formats, the precision represents the maximum number of significant digits (trailing zeroes are omitted).

Default Output Format: ‘g’
Default Output Precision: 12

Enum

Examples: STOP, HOLD, RUN, LEFT, RIGHT, RMS, AVERAGE

FixArray

FixArrays can be composed of different data types. The first parameter specifies the number of elements.

Example FixArray[Double]: 3,22.09765625,33.09765625,44.09765625
Example FixArray[UShort]: 3,110,120,130
Example FixArray[Date,String]: 1,23.01.1981,”Hello World”

FlexArray

Flexarrays can be composed of different data types.
Flexarrays can only occur at the end of a parameterlist.

Example FlexArray[Double]: 22.09765625,33.09765625,44.09765625
Example FlexArray[UShort]: 110,120,130
Example FlexArray[Date,String]: 23.01.1981,”Hello World”

Optional

Optional parameters can be composed of different data types.
Optional parameters can only occur at the end of a parameter list.
Optional parameters can also be empty.

Example Optional[Enum]: RMS,PPk,MPk or empty
Example Optional[Timespan]: 100ms or empty

Float

See Double

Default Output Format: ‘g’
Default Output Precision: 7

Frequency

See Double

Input Format: Hz, kHz, MHz, GHz, THz, no unit (=Hz)
Output Format: no unit (=Hz)
Example: 100e3, 100kHz, 100 kHz, 100000

FrequencyEnum

See Frequency

Input Format: Hz, kHz, MHz, GHz, THz, no unit (=Hz)
Input Format Enum: MIN, MINIMUM, MAX, MAXIMUM, UP, DOWN
Output Format: no unit (=Hz)
Example: 100e3, 100kHz, 100 kHz, 100000, MIN, MAX

LatLon

Input Format DEGREE
Examples: -27.46758,153.02789

Input Format DEGREE_WITH_HEMISPHERE
Examples: 27.46758S,153.02789E

Input Format DEGREE_MINUTES
Examples: -27D28.055',153D1.673'

Input Format DEGREE_MINUTES_WITH_HEMISPHERE
Examples: 27D28.055'S,153D1.673'E

Input Format DEGREE_MINUTES_SECONDS
Examples: -27D28'3.3",153D1'40.4"

Input Format DEGREE_MINUTES_SECONDS_WITH_HEMISPHERE
Examples: 27D28'3.3"S,153D1'40.4"E

Output Format (Default) = DEGREE

Long

Range: -2147483648 … 2147483647

Short

Range: -32768 … 32767

String

Example: “Hello World”
Example: ‘Hello World’
Example: “Hello ‘b,i,g’ World”
Example: ‘Hello “b,i,g” World’

String488

String including only the following characters:

Letters: [A-Z] [a-z]
Numbers: [0-9]
Special characters: [-/.]

Example: “Hello-W.o.r.l.d/ 1 2 3”

Time

Input Format 24H: "hh:mm:ss"
Input Format 12H: " hh:mm:ss AM | PM"

Output Format (Default) = 24H

Timespan

See Double

Input Format: ms, h, m, s, no unit (=s)
Output Format: no unit (=s)

Example: 10e3 ms, 100s

UChar

Range: 0 … 255

ULong

Range 0 … 4294967295

ULongEnum

See ULong
See Enum

Input Format: Enum or ULong

ULongLong

Range 0 … 18446744073709551615

Unit

See Double

Input with no unit = Currently set unit
Input World A: dBm, dBV, dBmV, dBuV
Input World B: W_m2, W_cm2, A_m, V_m, dBA_m, dBV_m, dBmV_m, dBuV_m
Input Word C: %
Input World D: A, dBA
Input Attenuation: dB
Output = Currently set unit

Example: 10dB, 10.3dBm

UShort

Range 0 … 65535

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5 Stream Communication

Definitions
The following terms are used to describe the streaming communication.

Term	Explanation
Stream	A Stream consists of one or more data packets transmitted automatically one after the other.
Stream Identifier (ID)	The Stream ID determines which data packets belong to a particular Stream. Several Streams transmitted in parallel can each be uniquely identified using the Stream ID in the Header.
Data packet	A data packet is transmitted as an entity and consists of Header, Context and Data items. The Context or Data items may be empty in some cases.
Header	The Header is a defined data structure at the start of each data packet and has the same format for all Streams that are being transmitted.
Context	The Context differs from Stream to Stream and contains additional information about the data items.
Data item	Data items are the actual payload data in a data packet and differ in structure and number from Stream to Stream. An individual data item consists of a single value or a structure containing various values, depending on the Stream.
Data item format	The data item format determines the basic data types (e.g. INT16, FLOAT32) that make up a data element.
Packet Counter	The Packet Counter numbers the individual data packets consecutively. This enables the receiver to determine whether all the data packets were received.
Endianness	Endianness describes the way that the bytes in the basic data types (e.g. INT16, FLOAT32) are arranged in memory. The byte arrangement for Microsoft Windows based systems is little endian.
Streamlink	The Streamlink is a data connection for transmitting a Stream.
Remotelink	The Remotelink is used to configure and control the device settings and the Stream transmitted by the device.

General information

A Stream consists of one or more data packets transmitted automatically one after the other. A data packet is transmitted as an entity and consists of Header, Context and Data items. The Context or Data items may be empty in some cases.

Example: Structure of a data packet

Header	Context	Data items

The Header is identical for all data packets in a Stream.
The Stream ID in the Header determines the size and structure of the Context and the Data items.

The Header, Context and data items are always transmitted together as a packet.

Note

Unknown packets have to be filtered out and ignored using the Header information.

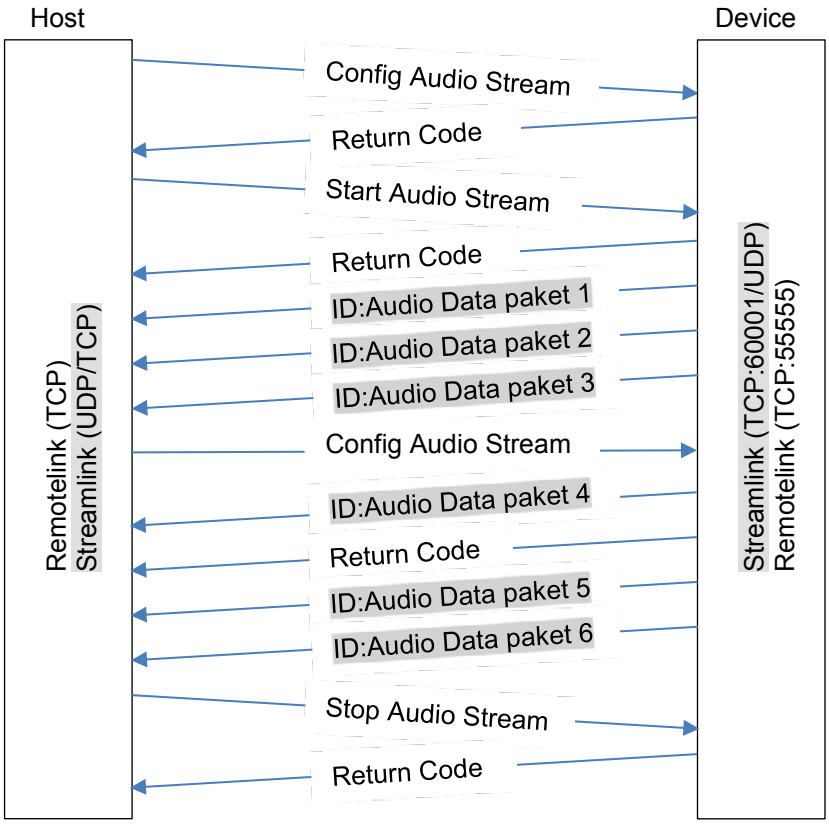
Example: IQ Data packets in a Stream

Audio			Audio			??			Audio			Audio			??		

Streamlink and Remotelink

A Remotelink and a Streamlink are used for Stream communication.
The Remotelink consists of the ASCII remote commands described in this document.
The Streamlink consists of the binary data packets for one or more Streams.
The Streamlink is configured and controlled by the Remotelink.

Example: Remotelink and Streamlink between host and device



General Stream Header

Description

The Header is a defined data structure at the start of each individual data packet and has the same format for all the Streams that are being transmitted.

Together with the Stream Version, the Stream ID is used to uniquely identify the data contents.
This makes it possible to implement a receiver routine that distinguishes between different Stream IDs and Stream Versions so they can be processed.
The packet counter is used to verify the transmitted data. Each data packet transmitted is numbered consecutively before it is sent. This enables the receiver to detect whether data packets have been lost or are out of sequence.

Header format

Parameter	Type	Bytes	Description
ByteOrder	Word	2	0x55AA = little endian 0xAA55 = big endian (not supported)
HeaderVersion	Word	2	Header version 0x0001 = Stream Header Version 1
StreamID	Word	2	Stream identifier 0x0002 = Stream Audio
StreamVersion	Word	2	Version for context and data items 0x0002 = Version 1 (of e.g. Stream Audio)
Reserved	Word	2	Reserved for later use
Reserved	Word	2	Reserved for later use
PacketCounter	DWord	4	Packet counter for lost packet detection
SizeOfContext	DWord	4	Number of bytes for the context data
NumberOfItems	DWord	4	Number of data items
SizeOfItem	DWord	4	Size of a single data item
Stream identifier	DWord	4	Set a run time by the user

6 Narda Audio Stream Context

Description

The Audio Stream Context is a defined data structure which is transmitted in an Audio data packet after the Header. The size of the Context structure is specified by the SizeOfContext data field in the Header.
The timestamp consists of the two data fields IntegerSeconds and FractionalSeconds.
The time is based on the device RTC (real time clock). The RTC must be set anew after every device start using remote commands (DATE; TIME;). The timestamp is synchronized with the RTC once when the Audio Stream is started and is then computed with sample accuracy for each transmitted data packet until the Audio Stream is stopped.
The EventFlags 0x00000001, 0x00000002, 0x00000004 and 0x00000008 are important for the assessment of measurement result quality. The EventFlags bit 0x00000004 is set after every parameter change and remains set until the measurement data capture function is stable again.

Audio stream context format

Parameter	Type	Bytes	Description
IntegerSeconds	DWord	4	Integer second part of the timestamp in UTC seconds since January 1, 1970 (without leap seconds).
FractionalSeconds	DWord	4	Nanosecond part of the timestamp to add to the second part.
Reserved	DWord	4	Reserved for later use
Reserved	DWord	4	Reserved for later use
DataItemFormat	Word	2	0x0002 = INT16 (16 Bit Audio)
DemodMode	Word	2	0x0001 = FM mono 0x0002 = AM 0x0003 = CW 0x0004 = LSB 0x0005 = USB 0x0006 = IQ 0x0007 = ISB 0x0008 = PULSE 0x0009 = AM and FM mono 0x0010 = PM
Channels	Word	2	Number of audio channels
BFO	Float	4	Beat Frequency [Hz]
Reserved	Float	4	Reserved for later use
Squelch Value	Float	4	Squelch Threshold Value
SampleRate	Float	4	Audio sample rate [Hz]
CBW	Float	4	Audio bandwidth [Hz]
Ftune	Double	8	Demodulation frequency [Hz]
Attenuator	Float	4	Attenuator 0…50 dB

7 Vita 49.2 Radio Transport (VRT) Spectrum for SignalShark

This chapter includes information about how Vita49.2 is used with Narda SignalShark.
Detailed information about Vita 49.2 can be found in the ANSI/VITA 49.2-2017 Documentation.

Spectrum Data Packet Class – Overview

Packet Header		
Parameter	**Selected Option**	**Comments**
Packet type	Signal Data Packet with stream ID	Conveys the digitized spectrum data
Packet Size	Variable	Depends on receiver settings.
Stream identifier	Yes	Set at run time by the user
Class ID	No	
Integer-seconds timestamp	UTC	Present in every packet
Fractional seconds timestamp	Real Time	

Packet Payload		
Parameter	**Selected Option**	**Comments**
Packing method	Processing efficient	
Item packing field size	16	Specified by data packet payload field in the paired Spectrum Context Packet.
Data item size	16	Specified by data packet payload field in the paired Spectrum Context Packet.
Event-tag size	0 bits	No event tags
Channel-tag size	0 bits	No channel tags
Vector size	0 bits	No vector
Real/complex type	Log Power Data in dB relative to reference level, real data	Spectrum bins
Data item format	Signed fixed point	[1,8,7] (7 fractional bits, 8 integral bits, 1 bit for sign)
Sample repeating/channel repeating	No repeating	No repeating of any kind
Repeat count	0	

Packet Trailer		
Parameter	**Selected Option**	**Comments**
Calibrated time indicator	Yes	0: timestamp is free running 1: timestamp is related to some external reference time
Valid data indicator	Yes	0: data invalid, 1: data valid Is set to 1 at detection of the “data invalid flag” OR “overflow flag” within the internal spectrum data
Reference lock indicator	No	
AGC/MGC indicator	No	
Detected signal indicator	No	
Spectral inversion indicator	No	
Over-range indicator	Yes	0: No Over-range, 1: Over-range Is set to 1 at detection of the “overdriven flag” within the internal spectrum data stream
Sample loss indicator	Yes	0: No Sample loss, 1: Sample loss Is set to 1 in the first packet after detection of a “frame number gap” > 1 within the internal spectrum stream
Sample Frame Indicators	Yes	Always 0 for RT Spectrum i.e. data is send within a single frame/packet
User-defined indicators	No	
Associated context packet count	Yes	0: No associated context packet 1: A context packet is send before every first data packet of a complete spectrum Usually, one Spectrum context packet is sent during one data packet interval. Context packages are always transmitted before the associated data packet

Spectrum Context Packet Class – Overview

Packet Header		
Parameter	**Selected Option**	**Comments**
Packet type	Spectrum Context	
Stream identifier	Yes	Identical to the stream identifier of the associated Spectrum data stream.
Class ID	No	
Integer-seconds timestamp	UTC	Present in every packet
Fractional seconds timestamp	Real Time	
Timestamp precision	Packet precision	Context changes apply to the sampling interval of the data packet with the exact same timestamp (TSM = 1)

Context Fields		
Parameter	**Selected Option**	**Comments**
Context field change indicator	Yes	0: no context field changes 1: at least one context field change with respect to last conveyed packet
Reference point identifier	No	
Bandwidth	No	
IF reference frequency	No	
RF reference frequency	Yes	Fcent for RT-Spectrum or Fstart of a Scan Spectrum
RF reference frequency offset	No	
IF band offset	No	
Reference level	Yes	Level in dBm of a CW signal at the frontend of the compensated signal chain which generates full scale spectrum data.
Gain	No	
Over-range count	No	
Sample rate	Yes	Sample Rate in Hz
Timestamp adjustment	No	
Timestamp calibration time	No	
Temperature	No	
Device identifier	No	
State and event indicators	No	Not supported. Pls. use indicator flags of the data packet instead
Data packet payload	Yes	
Logical events	No	
Calibrated time indicator	No	
Valid data indicator	No	
Reference lock indicator	No	
AGC/MGC indicator	No	
Detected signal indicator	No	
Spectral inversion indicator	No	
Over-range indicator	No	
Sample loss indicator	No	
User-defined indicators	No	
GPS	Yes	Is transmitted only when available
Formatted GPS geolocation	Yes	Altitude represents height above mean sea level
Formatted INS geolocation	No	
ECEF ephemeris	No	
Relative ephemeris	No	
GPS ASCII	No	

Ephemeris reference identifier	No	
Context association lists	No	
Source list	No	
System list	No	
Vector component list	No	
Asynchronous channel list	No	
Spectrum Type	Yes	R = 0, Window Time Interpretation = 2 (samples), Averaging Type = 1 (RMS), 2 (+Pk) or 4 (-Pk), Spectrum Type = 1 (log Power in dBr)
Window Type	Yes	100 (user defined by Narda : 4 term Nuttal with 3 degrees of freedom)
Npoints	Yes	FFT Size
Wnpoints	Yes	Window length in Samples
Resolution	Yes	Bin width in HZ
Span	Yes	FSpan in Hz
Naverages	Yes	Number of averaged spectra
Weighting Factor	No	Unused = 0
F1	Yes	Index of the first bin relative to the index of the bin at reference frequency
F2	Yes	Index of the last bin relative to the index of the bin at reference frequency
Window Time-Delta	Yes	time difference between subsequent FFTs in samples

Spectrum Data Packet Class – Details

The packet is transmitted in big-endian order, most significant byte first.

Packet Field Name	Size in Words	
Header	1	
Stream Identifier	1	
Integer-seconds Timestamp	1	
Fractional-seconds Timestamp	2	
Data Payload	Depends on settings for spectrum streaming	
Trailer	1	

Header (1 Word)

Bits	Value	Description
4	b0001	**Packet Type =** Spectrum Data packet with Stream Identifier

1	0	**Class ID bit (C bit)** Spectrum Data packets not include the Class ID field
1	1	**Trailer bit (T bit)** Spectrum Data packets include the trailer field
1	1	**Not Vita 49.0**
1	1	**Spectral Data**
2	b01	**Timestamp integer (TSI) =** Coordinated Universal Time (UTC)
2	b10	**Timestamp fractional (TSF) =** Real Time (Picoseconds) Timestamp
4	0…15	**Packet Count** Modulo-16 count of Spectrum Data packets.
16	big-endian	**Packet Size** This 16-bit field indicates the total number of 32-bit words present in the Spectrum Data packet, including the header, payload and all other fields.

Stream Identifier (1 Word, big-endian)

The Stream Identifier (Stream ID) is a 32-bit number assigned to a VRT Packet Stream. The Stream Identifier can be set by user and is used to separate different streams from each other.

Integer-seconds Timestamp (1 Word, big-endian)

The Integer-seconds Timestamp conveys UTC and provides the Reference-Point Time of the first Data Sample in the packet in seconds, including leap seconds, since midnight January 1, 1970, Greenwich Mean Time.

Fractional-seconds Timestamp (2 Words, big-endian)

The Real-Time Timestamp extends the resolution of the Integer-seconds Timestamp down to one picosecond.

Data Payload

The number of words in the data payload is variable and depends on the settings. The format of the data items 16 bit fixed point. Data items are send as log power data in dB relative to reference level.

16 Bit Payload Format (big-endian)

signed 16 bit fix point number

Bits	Description
1	Sign bit
8	Integral part
7	Fractional part

Trailer (1 Word)

Bits	Value	Description
1	1	Enables Calibrated Time Indicator
1	1	Enables Valid Data Indicator

1	0	Enables Reference Lock Indicator (not implemented)
3	0	Reserved
1	1	Enables Over-range Indicator
1	1	Enables Sample Loss Indicator
4	0	Reserved
1	1	Calibrated Time Indicator
1	1 or 0	Valid Data Indicator
1	1 or 0	Reference Lock Indicator (not implemented)
3	0	Reserved
1	1 or 0	Over-range Indicator
1	1 or 0	Sample Loss Indicator
2	0	Sample Frame Indicator (0 for RT Spectrum),
1	1	Enable Associated Context Packet Count
7	1 or 0	Associated Context Packet Count

Spectrum Context Packet Class - Details

The packet is transmitted in big-endian order, most significant byte first.

Packet Field Name	Size in Words
Header	1
Stream Identifier	1
Integer-seconds Timestamp	1
Fractional-seconds Timestamp	2
Context Indicator Field 0	1
Context Indicator Field 1	1
RF Reference Frequency	2
Reference Level	2
Sample Rate	2
Data Packet Payload Format	2
Formatted GPS (optional)	11
Spectrum Type	1
Window Type	1
Npoints	1
Wnpoints	1
Resolution	2
Span	2
Naverages	1
Weighting Factor	1
F1	1
F2	1
Window Time-Delta	1

Header (1 Word)

Bits	Value	Description
4	b0100	**Packet Type =** Signal Data context packet
1	0	**Class ID bit (C bit)** Signal Data packets not include the Class ID field
1	0	**Reserved**
1	1	**Not a V49.0 Packet Indicator**
1	1	**Timestamp Mode (TSM)** Context changes apply to the sampling interval of the data packet
2	b01	**Timestamp Integer (TSI) =** Coordinated Universal Time (UTC)
2	b10	**Timestamp Fractional (TSF) =** Real Time (Picoseconds) Timestamp
4	0…15	**Packet Count** Modulo-16 count of Spectrum Data packets.
16	big-endian	**Packet Size** This 16-bit field indicates the total number of 32-bit words present in the Spectrum context packet, including the header and all other fields.

Stream Identifier (1 Word, big-endian)

The Stream Identifier (Stream ID) is a 32-bit number assigned to a VRT Packet Stream. The Stream Identifier can be set by user and is used to separate different streams from each other.

Integer-seconds Timestamp (1 Word, big-endian)

The Integer-seconds Timestamp conveys UTC and provides the Reference-Point Time of the first Data Sample in the packet in seconds, including leap seconds, since midnight January 1, 1970, Greenwich Mean Time.

Fractional-seconds Timestamp (2 Words, big-endian)

The Real-Time Timestamp extends the resolution of the Integer-seconds Timestamp down to one picosecond.

Context Indicator Field 0 (1 Word)

The Context Indicator field contains bit fields, one for each Context Field, that indicate whether the corresponding optional Context field is present in the packet.

Bits	Value	Description
1	0 or 1	Context Field Change Indicator
1	0	Reference Point Identifier
1	0	Bandwidth
1	0	IF Reference Frequency
1	1	RF Reference Frequency
1	0	RF Reference Frequency Offset

1	0	IF Band Offset
1	1	Reference Level
1	0	Gain
1	0	Over-range Count
1	1	Sample Rate
1	0	Timestamp Adjustment
1	0	Timestamp Calibration Time
1	0	Temperature
1	0	Device Identifier
1	0	State/Event Indicators
1	0	Siganl Data Packet Payload Format
1	0 or 1	Formatted GPS
1	0	Formatted INS
1	0	ECEF Ephemeris
1	0	Relative Ephemeris
1	0	Ephemeris Ref ID
1	0	GPS ASCII
1	0	Contex Association Lists
1	0	Field Attributes Enable
3	0	Reserved for CIF expansion
1	0	CIF 3 Enable
1	0	CIF 2 Enable
1	1	CIF 1 Enable
1	0	Reserved

Context Indicator Field 1 (1 Word)

The Context Indicator field contains bit fields, one for each Context Field, that indicate whether the corresponding optional Context field is present in the packet.

Bits	Value	Description
1	0	Phase Offset
1	0	Polarization
1	0	3-D Pointing vector
1	0	3-D Pointing Vector Structure
1	0	Spatial Scan Type
1	0	Spatial Reference Type
1	0	Beam width
1	0	Range (Distance)
3	0	Reserved
1	0	E_b/N_o BER
1	0	Threshold
1	0	Compression Point
1	0	2^{nd} and ThirdOrder Intercept Points

1	0	SNR/Noise Figure
1	0	Aux Frequency
1	0	Aux Gain
1	0	Aux Bandwidth
1	0	Reserved
1	0	Array of CIFS
1	1	Spectrum
1	0	Sector Scan/Step
1	0	Reserved
1	0	Index List
1	0	Discrete I/O (32 bit)
1	0	Discrete I/O (64 bit)
1	0	Health Status
1	0	V49 Spec Compliance
1	0	Version and Build Code
1	0	Buffer Size
1	0	Reserved

RF Reference Frequency (2 Word, big-endian)

Is an unsigned 64bit fixpoint number.

Bits	Description
44	Integer Part
20	Fractional Part

Reference Level (2 Words, big-endian)

Is a signed 16bit fixpoint number.

Bits	Description
16	Reserved = 0
1	Sign bit
8	Integer Part
7	Fractional Part

Sample Rate (2 Word, big-endian)

Is an unsigned 64bit fixpoint number.

Bits	Description
44	Integer Part
20	Fractional Part

Data Packet Payload Format (2 Words)

Bits	Value	Description
1	0	Packing Method = processing-efficient packing
2	b01	Data Sample Type = Complex, Cartesian
5	b00000	Data Item Format = Signed Fixed-Point
1	0	Repeat Indicator = 0
3	0	Event-Tag Size = 0
4	0	Channel-Tag Size = 0
4	0	Reserved
6	b001111 or b011111	Item Packing Field Size 001111 = 16-1 for 16 Bit Format 011111 = 32-1 for 32 Bit Format
6	b001111 or b011111	Data Item Size 001111 = 16-1 for 16 Bit Format 011111 = 32-1 for 32 Bit Format
16	0	No Repeat Count
16	0	Vector Size = 0

Formatted GPS (optional) (11 Words)

Bits	Value	Description
4	0	Reserved
2	b00	Timestamp Integer (TSI)
2	b00	Timestamp Fractional (TSF)
24	0	GPS/INS Manufacturer OUI
32	big-endian	Integer second timestamp of Position Fix
32	big-endian	Fractional second timestamp of Position Fix
32	big-endian	Latitude in degrees, signed 32 bit fix point number, 10 bit Integer and 22 bit fractional part
32	big-endian	Longitude in degrees, signed 32 bit fix point number, 10 bit Integer and 22 bit fractional part
32	big-endian	Altitude in meters, signed 32 bit fix point number, 27 bit Integer and 5 bit fractional part
32	big-endian	Speed over Ground in meters/second, unsigned 32 bit fix point number, 16 bit Integer and 16 bit fractional part
32	big-endian	Heading Angle in degrees, (not implemented, value = 0x7FFFFFFF)
32	big-endian	Track Angle in degrees, signed 32 bit fix point number, 10 bit Integer and 22 bit fractional part
32	big-endian	Magnetic Variation, signed 32 bit fix point number, 10 bit Integer and 22 bit fractional part

Spectrum Type (1 Word)

Bits	Description
12	Reserved
4	Window Time
8	Averaging Type
8	Spectrum Type

Window Type (1 Word)

Bits	Description
16	Reserved
8	Reserved
8	Window Type

Npoints (1 Word)

Bits	Description
32	Number of Transform Points

Wnpoints (1 Word)

Bits	Description
32	Number of Window Points

Resolution (2 Words)

Bits	Description
44	Resolution (63..32), Hz
20	Resolution (31..0), Hz

Span (2 Words)

Bits	Description
44	Span (63..32), Hz
20	Span (31..0), Hz

Naverages (1 Word)

Bits	Description
32	Number of Averages

Weighting Factor (1 Word)

Bits	Description
32	Weighting Factor

F1 (1 Word)

Bits	Description
32	F1 index

F2 (1 Word)

Bits	Description
32	F2 Index

Window Time-Delta (1 Word)

Bits	Description
32	Samples

Jumbo Packets

Jumbo packets must be supported and enabled on the SignalShark, on the control computer and on all connected LAN components like switches, routers, etc.

8 Vita 49.2 Radio Transport (VRT) I/Q Stream for SignalShark

This chapter includes information about how Vita49.2 is used with Narda SignalShark.
Detailed information about Vita 49.2 can be found in the ANSI/VITA 49.2-2017 Documentation.

IF Data Packet Class – Overview

Packet Header		
Parameter	**Selected Option**	**Comments**
Packet type	IF Data Packet with stream ID	Conveys the digitized IF
Packet Size	Variable	Depends on receiver settings.
Stream identifier	Yes	Set at run time by the user
Class ID	No	
Integer-seconds timestamp	UTC	Present in every packet
Fractional seconds timestamp	Real Time	

Packet Payload		
Parameter	**Selected Option**	**Comments**
Packing method	Processing efficient	
Item packing field size	16 or 32 bits	Specified by data packet payload field in the paired IQ Context Packet.
Data item size	16 or 32 bits	Specified by data packet payload field in the paired IQ Context Packet.
Event-tag size	0 bits	No event tags
Channel-tag size	0 bits	No channel tags
Vector size	0 bits	No vector
Real/complex type	Complex Cartesian samples	I/Q samples
Data item format	Signed fixed point	
Sample repeating/channel repeating	No repeating	No repeating of any kind
Repeat count	0	

Packet Trailer		
Parameter	**Selected Option**	**Comments**
Calibrated time indicator	Yes	0: timestamp is free running 1: timestamp is related to some external reference time
Valid data indicator	Yes	0: data invalid, 1: data valid Is set to 1 at detection of the “data invalid flag” OR “overflow flag” within the internal FPGA IQ data stream
Reference lock indicator	No	
AGC/MGC indicator	No	
Detected signal indicator	No	
Spectral inversion indicator	No	
Over-range indicator	Yes	0: No Over-range, 1: Over-range Is set to 1 at detection of the “overdriven flag” within the internal FPGA IQ data stream
Sample loss indicator	Yes	0: No Sample loss, 1: Sample loss Is set to 1 in the first packet after detection of a “frame number gap” > 1 within the internal FPGA IQ data stream
User-defined indicators	No	
Associated context packet count	Yes	0: No associated context packet 1: There is an associated context packet Usually, one IQ context packet is sent during one data packet interval. Context packages are always transmitted before the associated data packet

IF Context Packet Class – Overview

Packet Header		
Parameter	**Selected Option**	**Comments**
Packet type	IF Context Packet	
Stream identifier	Yes	Identical to the stream identifier of the associated IQ data stream.
Class ID	No	
Integer-seconds timestamp	UTC	Present in every packet
Fractional seconds timestamp	Real Time	
Timestamp precision	Packet precision	Context changes apply to the sampling interval of the data packet with the exact same timestamp (TSM = 1)

Context Fields		
Parameter	**Selected Option**	**Comments**
Context field change indicator	Yes	0: no context field changes 1: at least one context field change with respect to last conveyed packet
Reference point identifier	No	
Bandwidth	Yes	CBW (-6.02 dB BW, Parks McClellan, α = 0.16)
IF reference frequency	No	
RF reference frequency	Yes	Ftune
RF reference frequency offset	No	
IF band offset	No	
Reference level	Yes	Level in dBm of a CW signal at the frontend of the compensated signal chain which generates full scale I/Q data.
Gain	No	
Over-range count	No	
Sample rate	Yes	1.28×CBW(normal) or 2.56×CBW (oversampling)
Timestamp adjustment	No	
Timestamp calibration time	No	
Temperature	No	
Device identifier	No	
State and event indicators	No	Not supported. Pls. use indicator flags of the data packet instead
Data packet payload	Yes	
Logical events	No	
Calibrated time indicator	No	
Valid data indicator	No	
Reference lock indicator	No	
AGC/MGC indicator	No	
Detected signal indicator	No	
Spectral inversion indicator	No	
Over-range indicator	No	
Sample loss indicator	No	
User-defined indicators	No	
GPS	Yes	Is transmitted only when available
Formatted GPS geolocation	Yes	Altitude represents height above mean sea level
Formatted INS geolocation	No	
ECEF ephemeris	No	
Relative ephemeris	No	
GPS ASCII	No	

Ephemeris reference identifier	No	
Context association lists	No	
Source list	No	
System list	No	
Vector component list	No	
Asynchronous channel list	No	

IF Data Packet Class – Details

The packet is transmitted in big-endian order, most significant byte first.

Packet Field Name	Size in Words	
Header	1	
Stream Identifier	1	
Integer-seconds Timestamp	1	
Fractional-seconds Timestamp	2	
Data Payload Available Settings depends on, CBW, Oversampling (ON/OFF) and Payload Format (16/32 Bit)	2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048	
Trailer	1	

Header (1 Word)

Bits	Value	Description
4	b0001	**Packet Type =** IF Data packet with Stream Identifier
1	0	**Class ID bit (C bit)** IF Data packets not include the Class ID field
1	1	**Trailer bit (T bit)** IF Data packets include the trailer field
2	0	**Reserved**
2	b01	**Timestamp integer (TSI) =** Coordinated Universal Time (UTC)
2	b10	**Timestamp fractional (TSF) =** Real Time (Picoseconds) Timestamp
4	0…15	**Packet Count** Modulo-16 count of IF Data packets.
16	big-endian	**Packet Size** This 16-bit field indicates the total number of 32-bit words present in the IF Data packet, including the header, payload and all other fields.

Stream Identifier (1 Word, big-endian)

The Stream Identifier (Stream ID) is a 32-bit number assigned to a VRT Packet Stream. The Stream Identifier can be set by user and is used to separate different streams from each other.

Integer-seconds Timestamp (1 Word, big-endian)

The Integer-seconds Timestamp conveys UTC and provides the Reference-Point Time of the first Data Sample in the packet in seconds, including leap seconds, since midnight January 1, 1970, Greenwich Mean Time.

Fractional-seconds Timestamp (2 Words, big-endian)

The Real-Time Timestamp extends the resolution of the Integer-seconds Timestamp down to one picosecond.

Data Payload (2…2048 Words)

The data payload is a contiguous sequence of data samples. The number of words in the data payload is variable and depends on the settings. The format of the data items within the payload is “complex cartesian” and can be selected between 16 and 32 bit resolution.

IQ 16 Bit Payload Format (big-endian)

2x signed 16 bit fix point number

Bits	Description
1	I Sample sign bit
15	I Sample fractional part
1	Q Sample sign bit
15	Q Sample fractional part

IQ 32 Bit Payload Format (big-endian)

2x signed 32 bit fix point number

Bits	Description
1	I Sample sign bit
24	I Sample fractional part
7	Reserved = 0
1	Q Sample sign bit
24	Q Sample fractional part
7	Reserved = 0

Trailer (1 Word)

Bits	Value	Description
1	1	Enables Calibrated Time Indicator
1	1	Enables Valid Data Indicator
1	0	Enables Reference Lock Indicator (not implemented)
3	0	Reserved

1	1	Enables Over-range Indicator
1	1	Enables Sample Loss Indicator
4	0	Reserved
1	1	Calibrated Time Indicator
1	1 or 0	Valid Data Indicator
1	1 or 0	Reference Lock Indicator (not implemented)
3	0	Reserved
1	1 or 0	Over-range Indicator
1	1 or 0	Sample Loss Indicator
4	0	Reserved
1	1	Enable Associated Context Packet Count
7	1 or 0	Associated Context Packet Count

IF Context Packet Class - Details

The packet is transmitted in big-endian order, most significant byte first.

Packet Field Name	Size in Words
Header	1
Stream Identifier	1
Integer-seconds Timestamp	1
Fractional-seconds Timestamp	2
Context Indicator Field	1
Bandwidth	2
RF Reference Frequency	2
Reference Level	1
Sample Rate	2
Data Packet Payload Format	2
Formatted GPS (optional)	11

Header (1 Word)

Bits	Value	Description
4	b0100	**Packet Type =** IF Data context packet
1	0	**Class ID bit (C bit)** IF Data packets not include the Class ID field
2	0	**Reserved**
1	1	**Timestamp Mode (TSM)** Context changes apply to the sampling interval of the data packet
2	b01	**Timestamp Integer (TSI) =** Coordinated Universal Time (UTC)
2	b10	**Timestamp Fractional (TSF) =** Real Time (Picoseconds) Timestamp

4	0…15	**Packet Count** Modulo-16 count of IF Data packets.
16	big-endian	**Packet Size** This 16-bit field indicates the total number of 32-bit words present in the IF context packet, including the header and all other fields.

Stream Identifier (1 Word, big-endian)

The Stream Identifier (Stream ID) is a 32-bit number assigned to a VRT Packet Stream. The Stream Identifier can be set by user and is used to separate different streams from each other.

Integer-seconds Timestamp (1 Word, big-endian)

The Integer-seconds Timestamp conveys UTC and provides the Reference-Point Time of the first Data Sample in the packet in seconds, including leap seconds, since midnight January 1, 1970, Greenwich Mean Time.

Fractional-seconds Timestamp (2 Words, big-endian)

The Real-Time Timestamp extends the resolution of the Integer-seconds Timestamp down to one picosecond.

Context Indicator Field (1 Word)

The Context Indicator field contains bit fields, one for each Context Field, that indicate whether the corresponding optional Context field is present in the packet.

Bits	Value	Description
1	0 or 1	Context Field Change Indicator
1	0	Reserved
1	1	Bandwidth
1	0	Reserved
1	1	RF Reference Frequency
2	0	Reserved
1	1	Reference Level
2	0	Reserved
1	1	Sample Rate
5	0	Reserved
1	0 or 1	Data Packet Payload Format
1	0 or 1	Formatted GPS
14	0	Reserved

Bandwidth (2 Word, big-endian)

Is an unsigned 64bit fixpoint number.

Bits	Description
44	Integer Part
20	Fractional Part

RF Reference Frequency (2 Word, big-endian)

Is an unsigned 64bit fixpoint number.

Bits	Description
44	Integer Part
20	Fractional Part

Reference Level (1 Word, big-endian)

Is a signed 16bit fixpoint number.

Bits	Description
16	Reserved = 0
1	Sign bit
8	Integer Part
7	Fractional Part

Sample Rate (2 Word, big-endian)

Is an unsigned 64bit fixpoint number.

Bits	Description
44	Integer Part
20	Fractional Part

Data Packet Payload Format (2 Words)

Bits	Value	Description
1	0	Packing Method = processing-efficient packing
2	b01	Data Sample Type = Complex, Cartesian
5	b00000	Data Item Format = Signed Fixed-Point
1	0	Repeat Indicator = 0
3	0	Event-Tag Size = 0
4	0	Channel-Tag Size = 0
4	0	Reserved
6	b001111 or b011111	Item Packing Field Size 001111 = 16-1 for 16 Bit Format 011111 = 32-1 for 32 Bit Format
6	b001111 or b011111	Data Item Size 001111 = 16-1 for 16 Bit Format 011111 = 32-1 for 32 Bit Format
16	0	No Repeat Count
16	0	Vector Size = 0

Formatted GPS (optional) (11 Words)

Bits	Value	Description
4	0	Reserved
2	b00	Timestamp Integer (TSI)
2	b00	Timestamp Fractional (TSF)
24	0	GPS/INS Manufacturer OUI
32	big-endian	Integer second timestamp of Position Fix
32	big-endian	Fractional second timestamp of Position Fix

32	big-endian	Latitude in degrees, signed 32 bit fix point number, 10 bit Integer and 22 bit fractional part
32	big-endian	Longitude in degrees, signed 32 bit fix point number, 10 bit Integer and 22 bit fractional part
32	big-endian	Altitude in meters, signed 32 bit fix point number, 27 bit Integer and 5 bit fractional part
32	big-endian	Speed over Ground in meters/second, unsigned 32 bit fix point number, 16 bit Integer and 16 bit fractional part
32	big-endian	Heading Angle in degrees, (not implemented, value = 0x7FFFFFFF)
32	big-endian	Track Angle in degrees, signed 32 bit fix point number, 10 bit Integer and 22 bit fractional part
32	big-endian	Magnetic Variation, signed 32 bit fix point number, 10 bit Integer and 22 bit fractional part

Jumbo Packets

Jumbo packets must be used for TCP and UDP for payload limit settings > 256 words to achieve maximum performance and avoid UDP packet fragmentation. The possible payload limit settings depend on CBW, Payload Format (16/32Bit) and Oversampling setting. Jumbo packets must be supported and enabled on the SignalShark, on the control computer and on all connected LAN components like switches, routers, etc.

Glossary

Symbol	Description	
VRT	Vita Radio Transport	
Word	1 Word equals 32 bits	
Bit Range X:Z	e.g. 31:28 means bits 31,30,29,28	
Bit Value bXYZ	e.g. b1011 means 4 bits with memory content of bit1=1,bit2=0,bit3=1,bit4=1	
HexValue 0xXYZ	e.g. 0x1A equals decimal value of 26	
Big Endian	https://en.wikipedia.org/wiki/Endianness	
Fixpoint Number	https://en.wikipedia.org/wiki/Q_(number_format)	

9 Command Groups

Narda Command Reference - IEEE488

***IDN?**
Queries the instrument basic information such as manufacturer, model, serial number, version
***OPC?**
Synchronizes overlapped commands
***RST**
Resets the device to default settings and all status data. This command has a timeout of 10s.
***WAI**
Synchronizes overlapped commands

Narda Command Reference - SCPI-99

ABORt
Aborts running measurements and calculations. Sets TASK:STATE to STOP mode.
SYSTem:ERRor[:NEXT]?
Queries the error queue for the next error item and removes it from the queue. The query returns the error code and the error message string.
SYSTem:ERRor:ALL?
Queries the error queue for every existing error item and clears the error queue. The query returns the error code for every error.
SYSTem:ERRor:CLEar[:ALL]
Clears the error queue
SYSTem:ERRor:CODE[:NEXT]?
Queries the error queue for the next error item and removes the error from the queue. The query returns only the error code omitting the string.
SYSTem:ERRor:CODE:ALL?
Queries the error queue for every existing error item and clears the error queue. The query returns the error code for every error.
SYSTem:ERRor:COUNt?
Queries the error queue for the number of error items
SYSTem:ERRor:LIST?
Queries a list of all possible error items in the error queue

Narda Command Reference - DEVice

DEVice:APPLication:DATE?
Queries the application date
DEVice:APPLication:VERSion?
Queries the application version number
DEVice:BIOS:VERSion?
Queries the BIOS version number
DEVice:BOARd:CONTroller:BOOTloader:VERSion?
Queries the boardcontroller bootloader version
DEVice:BOARd:CONTroller:FIRMware:VERSion?
Queries the boardcontroller firmware version
DEVice:FPGA:BITStream:VERSion?
Queries the FPGA bitstream version
DEVice:FPGA:PCIE:DRIVer:VERSion?
Queries the FPGA PCI Express driver version
DEVice:OPERation:SYSTem:VERSion?
Queries the operation system version
DEVice:PART:NUMBer?
Queries the part number

DEVice:PRODuct:NAME?
Queries the product name
DEVice:SERial:NUMBer?
Queries the serial number

Narda Command Reference - SETTings

SETTings:ADJust:EQUalizer
Starts equalizer adjustment. This command has a timeout of 60s.
SETTings:DATE?
Queries the date setting of the system
SETTings:FAST:SCANs:ONLY
Allows fast scans only with limited BINS
SETTings:FAST:SCANs:ONLY?
Queries fast scan state
SETTings:GNSS:SOURce
Sets the GNSS source
SETTings:GNSS:SOURce?
Queries the GNSS source
SETTings:MAGNetic:DECLination
Sets the magnetic declination
SETTings:MAGNetic:DECLination?
Queries the magnetic declination
SETTings:PPS:SOURce
Sets the PPS source
SETTings:PPS:SOURce?
Queries the PPS source
SETTings:REFerence:FREQuency:SOURce
Reference frequency source
SETTings:REFerence:FREQuency:SOURce?
Queries the reference frequency souce
SETTings:TIME?
Queries the system time?
SETTings:TIME:SYNC:NOW
Starts synchronization of systemtime with gnss time. This command has a timeout of 10s.
SETTings:TSTamp:SYNC:MODE
Sets the timestamp synchronization mode
SETTings:TSTamp:SYNC:MODE?
Queries the timestamp synchronization mode
SETTings:TSTamp:SYNC:NOW
Starts timestamp synchronization and wait until sync finished. This command has a timeout of 10s.

Narda Command Reference - SENSe

[SENSe:]ADC:OOR?
Queries ADC out of range state for the active measurement task
[SENSe:]ANTenna:HANDle?
Queries the type of antenna handle connected to the SignalShark
[SENSe:]ANTenna:POLarization?
Queries the polarization of the antenna connected to the antenna handle
[SENSe:]ANTenna:TYPE?
Queries the type of antenna connected to the SignalShark
[SENSe:]ATTenuator
Attenuation for the RF input
[SENSe:]ATTenuator?
Queries the current attenuation

[SENSe:]ATTenuator:LIST?
Queries a list of possible attenuator settings
[SENSe:]COMPass:DATA?
Compass values of the active compass
[SENSe:]EXTernal:DEVice
External device
[SENSe:]EXTernal:DEVice?
Queries the external device state
[SENSe:]EXTernal:DEVice:SWITchable?
Queries if the external device is switchable
[SENSe:]FREQuency:RANGe?
Queries the frequency range for active measurement task. The frequency range depends on the connected equipment.
[SENSe:]GNSS:DATA?
GNSS values of the active GNSS
[SENSe:]HOLD
Holds the measurement and initializes if measurement is stopped
[SENSe:]HOLD?
Holds the measurement and initializes if measurement is stopped
[SENSe:]INPut
Selects the RF input
[SENSe:]INPut?
Queries the RF input number
[SENSe:]PREamp
Preamplifier state of the antenna handle
[SENSe:]PREamp?
Queries the state of the preamplifier of the antenna handle
[SENSe:]REFerence:LEVel
Reference level for the RF input
[SENSe:]REFerence:LEVel?
Queries the reference level for the RF input
[SENSe:]REFerence:LEVel:LIST?
Queries a list of possible attenuator settings
[SENSe:]REFerence:LEVel:OFFSet
Sets the reference level offset. The flag [SENSe:]REFerence:LEVel:OFFSet:ENABle must be enabled for the setting of [SENSe:]REFerence:LEVel:OFFSet to take effect!
[SENSe:]REFerence:LEVel:OFFSet?
Queries the current reference level offset. The flag [SENSe:]REFerence:LEVel:OFFSet:ENABle must be enabled for the setting of [SENSe:]REFerence:LEVel:OFFSet to take effect!
[SENSe:]REFerence:LEVel:OFFSet:ENABle
Enables/disables the reference level offset
[SENSe:]REFerence:LEVel:OFFSet:ENABle?
Queries the corresponding reference level offset state
[SENSe:]REFerence:LEVel:OFFSet:LIST?
Queries a list of possible reference level offset settings
[SENSe:]RUN:CONTinuous
Starts a new continuous measurement
[SENSe:]RUN:CONTinuous?
Starts a new continuous measurement
[SENSe:]RUN:CONTinuous:RESet
Starts a new continuous measurement with reset
[SENSe:]RUN:CONTinuous:RESet?
Starts a new continuous measurement with reset
[SENSe:]RUN:SINGle
Starts a new single measurement with reset
[SENSe:]RUN:SINGle?
Starts a new single measurement with reset. The command processing ends when scan count equals scan number or the timeout value is reached.

[SENSe:]STOP
Stops the measurement
[SENSe:]TSTamp:SYNC:DEViation?
Timestamp synchronization deviation
[SENSe:]TSTamp:SYNC:FINE?
Timestamp fine synchronization state
[SENSe:]TSTamp:SYNC:STATe?
Timestamp synchronization state

Narda Command Reference - DISPlay

DISPlay:LEVelmeter:LMAX
Sets the maximum displayed level (x-axis) in the levelmeter view in actual unit
DISPlay:LEVelmeter:LMAX?
Queries the maximum displayed level (x-axis) in the levelmeter view in actual unit
DISPlay:LEVelmeter:LRANge
Sets the maximum displayed level range (x-axis) in the levelmeter view in actual unit
DISPlay:LEVelmeter:LRANge?
Queries the maximum displayed level range (x-axis) in the levelmeter view in actual unit
DISPlay:MAP:CENTer
Centers the map to the current GNSS position
DISPlay:MAP:CENTer:POSition
Sets center point of the map
DISPlay:MAP:CENTer:POSition?
Queries the center point of the map
DISPlay:MAP:LIST?
Queries a list of available maps
DISPlay:MAP:SELect
Sets the selected map
DISPlay:MAP:SELect?
Queries the name of the selected map
DISPlay:MAP:ZOOM:LEVel
Sets the zoom level
DISPlay:MAP:ZOOM:LEVel?
Queries the zoom level of the map
DISPlay:PEAKtable:SHOW:TRANsmitter
Shows the transmitter table with peaktable
DISPlay:PEAKtable:SHOW:TRANsmitter?
Queries if the transmitter table is shown with peaktable
DISPlay:PEAKtable:SORT
Sort criteria for peaktable
DISPlay:PEAKtable:SORT?
Queries the sort criteria for peaktable
DISPlay:PERSistence:LMAX
Sets the maximum displayed level (y-axis) in the persistence view in actual unit
DISPlay:PERSistence:LMAX?
Queries the maximum displayed level (y-axis) in the persistence view in actual unit
DISPlay:PERSistence:LRANge
Sets the maximum displayed level range (y-axis) in the persistence view in actual unit
DISPlay:PERSistence:LRANge?
Queries the maximum displayed level range (y-axis) in the persistence view in actual unit
DISPlay:SPECtrum:LMAX
Sets maximum displayed level (y-axis) in the spectrum view in actual unit
DISPlay:SPECtrum:LMAX?
Queries the maximum displayed level (y-axis) in the spectrum view in actual unit
DISPlay:SPECtrum:LRANge
Sets the maximum displayed level range (y-axis) in the spectrum view in actual unit

DISPlay:SPECtrum:LRANge?
Queries the maximum displayed level range (y-axis) in the spectrum view in actual unit
DISPlay:UNIT
Sets the actual level unit
DISPlay:UNIT?
Queries the actual level unit
DISPlay:UNIT:LIST?
Queries a list of possible level units

Narda Command Reference - DLOGger

DLOGer:SAVE:LOCalization
Datalogger save localization
DLOGer:WORKing:DIRectory
Datalogger get/set working directory
DLOGer:WORKing:DIRectory?
Datalogger get/set working directory
DLOGger:CONFig:TASK:SAVE
Datalogger configuration
DLOGger:CONFig:TASK:SAVE?
Queries the datalogger configuration
DLOGger:DIRectory:ADD?
Creates a new directory and returns the directory path
DLOGger:DIRectory:DELete
Deletes the given directory
DLOGger:DIRectory:DELete:ALL
Deletes all files in the given directory
DLOGger:DIRectory:LIST?
Queries a list of all directories within the data logger
DLOGger:SAVE:DATaset
Datalogger save dataset
DLOGger:SAVE:EXTernal:BEARing
Datalogger save external bearing
DLOGger:SAVE:SCReenshot
Saves screenshot to file

Narda Command Reference - SYSTem

SYSTem:AUDio:MUTE
Sets the system audio mute setting
SYSTem:AUDio:MUTE?
Queries the system audio mute setting
SYSTem:AUDio:VOLume
Sets the system audio volume setting
SYSTem:AUDio:VOLume?
Queries the system audio volume setting
SYSTem:COMMand:FILTer?
Queries the filter flags of command processing
SYSTem:COMMand:PROGress?
Queries the progress of command processing
SYSTem:REMote:COMMand:LIST?
Queries a list with all available commands in the narda remote parser
SYSTem:REMote:DISPlay
Enables or disables GUI views while remote on
SYSTem:REMote:DISPlay?
Queries the remote display state

SYSTem:REMote:LOG
Enables or disables remote logfile
SYSTem:REMote:LOG?
Queries the remote logfile state
SYSTem:REMote:LOG:CONFig
Sets the remote logfile configuration
SYSTem:REMote:LOG:CONFig?
Queries the remote logfile configuration
SYSTem:REMote:SLEep?
Lets parser sleep for a specific timespan and returns true if successful.
SYSTem:REMote:TIMeout
SCPI default remote timeout (default factory setting = 3 seconds)
SYSTem:REMote:TIMeout?
Queries the SCPI default remote timeout
SYSTem:REMote:TIMeout:RESet
Resets remote timeout of all commands to the default value
SYSTem:SHUTdown
Shuts down or restarts the instrument
SYSTem:STARtup:DATE?
Startup Date of the system
SYSTem:STARtup:SEConds?
Seconds since last start of the system
SYSTem:STARtup:TIME?
Startup Time of the system

Narda Command Reference - NETWork

NETWork:MAC:ADDRess?
Queries the Network MAC address

Narda Command Reference - TASK

TASK:ADD?
Adds a new measurement task to the instrument
TASK:DELete
Deletes a measurement task
TASK:DELete:ALL
Deletes all a measurement tasks
TASK:LIST?
Queries a list of measurement tasks and task names
TASK:MOVE
Moves a measurement task to another position
TASK:NEW?
Adds a new measurement task and deletes existing tasks. This command has a timeout of 10s
TASK:REName
Renames a measurement task
TASK:REPLace?
Replaces an existing measurement task
TASK:SELect
Selects a measurement task
TASK:SELect?
Queries the selected measurement task
TASK:STATe?
Queries the task state of the selected task

Narda Command Reference - VIEW

VIEW:ADD?
Adds a new view to the active measurement task
VIEW:DELete
Deletes a view from the active measurement task
VIEW:LIST?
Queries a list of views of the active measurement task
VIEW:REPLace
Replaces a view of the active measurement task
VIEW:SELect
Selects a view from the active measurement task
VIEW:SELect?
Queries the index of the selected view of the active measurement task
VIEW:SIZE:MAXimize
Maximizes the selected view
VIEW:SIZE:RESTore
Restores the size of the selected view

Narda Command Reference - SPECtrum

SPECtrum:DATA:ALL?
Queries the spectrum configuration and values for multiple traces. Caution: You must skip unused and unknown IDs and data elements while parsing to be compatible with future extensions. (see DATA:ALL? commands)
SPECtrum:DATA:COUNt?
Queries the spectrum data count (number of bins)
SPECtrum:DATA:FREQuency:STARt?
Queries spectrum data start frequency
SPECtrum:DATA:FREQuency:STEP?
Queries spectrum data frequency step
SPECtrum:DATA:LEVel?
Queries spectrum level data
SPECtrum:DATA:OVERdriven?
Queries the spectrum data overdriven flag
SPECtrum:DATA:REALtime?
Queries the spectrum data realtime flag for traces: MnR, AvR, MxR, MxP, MnP, MxA, MxS
SPECtrum:DATA:UPDate?
Update is avaliable in RUN and HOLD mode (see DATA:UPDate Commands)
SPECtrum:FREQuency:CENTer
Sets the center frequency for spectrum
SPECtrum:FREQuency:CENTer?
Queries the center frequency
SPECtrum:FREQuency:CENTer:STEP
Sets the center frequency step for spectrum
SPECtrum:FREQuency:CENTer:STEP?
Queries the center frequency step for spectrum
SPECtrum:FREQuency:CENTer:TUNE:COUPling
Automatic coupling of Fcent and Ftune
SPECtrum:FREQuency:CENTer:TUNE:COUPling?
Queries the coupling state of Fcent and Ftune
SPECtrum:FREQuency:ENTRy:MODE
Sets the entry mode for Fcent, Fspan or Fstart, Fstop
SPECtrum:FREQuency:ENTRy:MODE?
Queries the entry mode for Fcent, Fspan or Fstart, Fstop
SPECtrum:FREQuency:SPAN
Frequency span for spectrum

SPECtrum:FREQuency:SPAN?
Queries the frequency span
SPECtrum:FREQuency:STARt
Sets the Start frequency for spectrum
SPECtrum:FREQuency:STARt?
Queries the start frequency, in Hz
SPECtrum:FREQuency:STOP
Sets the Stop frequency for spectrum
SPECtrum:FREQuency:STOP?
Queries the stop frequency, in Hz
SPECtrum:MEASurement:TIME
Measurement time for spectrum
SPECtrum:MEASurement:TIME?
Queries the measurement time
SPECtrum:MEASurement:TIME:ENTRy:MODE
Sets the measurement time entry mode, absolute or relative
SPECtrum:MEASurement:TIME:ENTRy:MODE?
Queries the measurement time entry mode, absolute or relative
SPECtrum:RBW
Sets the resolution bandwidth for spectrum
SPECtrum:RBW?
Queries the bandwidth, in Hz
SPECtrum:RBW:AUTO
Bandwidth automatic coupling to the span
SPECtrum:RBW:AUTO?
Queries the bandwidth automatic coupling state
SPECtrum:RBW:ENTRy:MODE
Sets the bandwidth entry mode; absolute or relative
SPECtrum:RBW:ENTRy:MODE?
Queries the bandwidth entry mode; absolute or relative
SPECtrum:RBW:FILTer:TYPE
Sets the bandwidth filter type
SPECtrum:RBW:FILTer:TYPE?
Queries the bandwidth filter type
SPECtrum:RBW:LIST?
Queries a list of possible RBW settings
SPECtrum:SCAN:COUNt
Sets the spectrum scan count
SPECtrum:SCAN:COUNt?
Queries the current scan count
SPECtrum:SCAN:NUMBer?
Queries the current scan number
SPECtrum:TRACe:DETector<Number>
Sets the detector configuration. Only the 3rd detector can be configured.
SPECtrum:TRACe:DETector<Number>?
Queries the detector configuration. Only the 3rd detector can be configured
SPECtrum:TRACe:ENABle
Enables the displayed detectors and traces
SPECtrum:TRACe:ENABle?
Queries the corresponding trace state
SPECtrum:TRACe:INFinite
Sets the infinite min max trace state
SPECtrum:TRACe:INFinite?
Queries the infinite min max trace state
SPECtrum:TRACe:LIST?
Queries a list of selected display traces

SPECtrum:TSTamp?
Queries the spectrum data timestamp

Narda Command Reference - MARKer

MARKer:FXD:FREQuency
Sets the frequency of fixed marker
MARKer:FXD:FREQuency?
Queries the frequency of fixed marker
MARKer:FXD:TIME
Sets the time postion of fixed marker
MARKer:FXD:TIME?
Queries the time postion of fixed marker
MARKer:FXD:VALue
Sets the value of fixed marker
MARKer:FXD:VALue?
Queries the value of fixed marker
MARKer:SPECtrum:DATA:ALL?
Queries all marker values for spectrum. Caution: You must skip unused and unknown IDs and data elements while parsing to be compatible with future extensions (see DATA:ALL? commands).
MARKer<Index>:SPECtrum:DATA:FREQuency?
Queries the marker or deltamarker frequency data
MARKer<Index>:SPECtrum:DATA:LEVel?
Queries marker or deltamarker level data
MARKer<Index>:SPECtrum:DATA:PEAK:STATe?
Queries the marker peak state. PEAK:STATe only works in HOLD or STOP mode or with track peak enabled (PEAK:TRACk ON.)
MARKer<Index>:SPECtrum:DATA:TIME?
Queries the marker or deltamarker time data
MARKer<Index>:SPECtrum:ENABle
Marker enable or disable
MARKer<Index>:SPECtrum:ENABle?
Queries the current state of a marker
MARKer<Index>:SPECtrum:FREQuency
Marker frequency (see also MARKer<Index>:SPECtrum:DATA:FREQuency?)
MARKer<Index>:SPECtrum:FREQuency?
Queries the current frequency for a marker
MARKer<Index>:SPECtrum:FREQuency:LINK
Marker frequency link
MARKer<Index>:SPECtrum:FREQuency:LINK?
Queries the marker frequency link to another marker
MARKer<Index>:SPECtrum:FREQuency:LINK:OFFSet
Marker frequency link offset
MARKer<Index>:SPECtrum:FREQuency:LINK:OFFSet?
Queries the frequency link offset
MARKer<Index>:SPECtrum:FUNCtion
Sets the marker function
MARKer<Index>:SPECtrum:FUNCtion?
Queries the channel power function
MARKer:SPECtrum:FUNCtion:CPOWer:CBW
CBW for marker function: Channel Power
MARKer:SPECtrum:FUNCtion:CPOWer:CBW?
Queries the CBW
MARKer<Index>:SPECtrum:FUNCtion:CPOWer:DATA?
Queries data for marker function: Channel Power
MARKer<Index>:SPECtrum:FUNCtion:NOISe:DATA?
Queries data for marker or deltamarker function: Noise

MARKer:SPECtrum:FUNCtion:NOISe:NBW
NBW for marker function: Noise
MARKer:SPECtrum:FUNCtion:NOISe:NBW?
Queries the NBW
MARKer:SPECtrum:FUNCtion:NOISe:NBW:AUTO
NBW auto coupling for marker function: Noise
MARKer:SPECtrum:FUNCtion:NOISe:NBW:AUTO?
Queries the NBW auto coupling state
MARKer<Index>:SPECtrum:FUNCtion:OCBW:DATA?
Queries data for marker function: OCCUPIED_BANDWIDTH
MARKer:SPECtrum:FUNCtion:OCBW:MODE
Mode for marker function: OCCUPIED_BANDWIDTH
MARKer:SPECtrum:FUNCtion:OCBW:MODE?
Mode for marker function: OCCUPIED_BANDWIDTH
MARKer:SPECtrum:FUNCtion:OCBW:NTRials
Sets the NTrials (number of trials) for marker function: OCCUPIED_BANDWIDTH
MARKer:SPECtrum:FUNCtion:OCBW:NTRials?
NTrials (number of trials) for marker function: OCCUPIED_BANDWIDTH
MARKer:SPECtrum:FUNCtion:OCBW:PERCent
Sets the % for marker function: OCCUPIED_BANDWIDTH
MARKer:SPECtrum:FUNCtion:OCBW:PERCent?
Queries the % for marker function: OCCUPIED_BANDWIDTH
MARKer:SPECtrum:FUNCtion:OCBW:THReshold
Sets the threshold for marker function: OCCUPIED_BANDWIDTH
MARKer:SPECtrum:FUNCtion:OCBW:THReshold?
Queries the threshold for marker function: OCCUPIED_BANDWIDTH
MARKer:SPECtrum:FUNCtion:OCBW:XDB
XdB for marker function: OCCUPIED_BANDWIDTH
MARKer:SPECtrum:FUNCtion:OCBW:XDB?
XdB for marker function: OCCUPIED_BANDWIDTH
MARKer<Index>:SPECtrum:FUNCtion:TRANsmitter:DATA?
Queries the data for Marker function: TRANSMITTER
MARKer:SPECtrum:LIST?
List of enabled markers
MARKer<Index>:SPECtrum:PEAK
Marker peak search (time or frequency domain)
MARKer<Index>:SPECtrum:PEAK:LEFT
Marker left peak search (frequency domain)
MARKer<Index>:SPECtrum:PEAK:LOWer
Marker lower peak search (time domain)
MARKer<Index>:SPECtrum:PEAK:NEXT
Marker next peak search (time or frequency domain)
MARKer<Index>:SPECtrum:PEAK:RIGHt
Marker right peak search (frequency domain)
MARKer<Index>:SPECtrum:PEAK:UPPer
Marker upper peak search (time domain)
MARKer<Index>:SPECtrum:REFerence
Reference marker for a delta marker
MARKer<Index>:SPECtrum:REFerence?
Queries the corresponding reference marker
MARKer:SPECtrum:SEARch:AUTO:PEAK:ENABle
'Auto Peak Search for M1' for marker
MARKer:SPECtrum:SEARch:AUTO:PEAK:ENABle?
Queries the searchlimit enable state
MARKer:SPECtrum:SEARch:FREQuency:LOWer
Lower frequency searchlimit for marker and peaktable

MARKer:SPECtrum:SEARch:FREQuency:LOWer?
Queries the lower frequency searchlimit
MARKer:SPECtrum:SEARch:FREQuency:UPPer
Upper frequency searchlimit for marker and peaktable
MARKer:SPECtrum:SEARch:FREQuency:UPPer?
Queries the upper frequency searchlimit
MARKer:SPECtrum:SEARch:LIMits:ENABle
Sets the 'Use Search Limits' enable state for marker and peaktable
MARKer:SPECtrum:SEARch:LIMits:ENABle?
Queries the searchlimit enable state
MARKer:SPECtrum:SEARch:LOEXclude:ENABle
'Exclude LO' searchlimit for marker and peaktable
MARKer:SPECtrum:SEARch:LOEXclude:ENABle?
Queries the searchlimit enable state
MARKer:SPECtrum:SEARch:PEAK:EXCursion
Sets the peak excursion for marker and peaktable
MARKer:SPECtrum:SEARch:PEAK:EXCursion?
Queries the peak excursion
MARKer:SPECtrum:SEARch:PEAK:EXCursion:ENABle
'Peak Excursion' searchlimit for marker and peaktable
MARKer:SPECtrum:SEARch:PEAK:EXCursion:ENABle?
Queries the peak excursion enable state
MARKer:SPECtrum:SEARch:SGRam:RANGe
Sets the spectrogram searchrange
MARKer:SPECtrum:SEARch:SGRam:RANGe?
Queries the spectrogram searchrange
MARKer:SPECtrum:SEARch:THReshold
Threshold searchlimit for marker and peaktable
MARKer:SPECtrum:SEARch:THReshold?
Queries the threshold searchlimit
MARKer:SPECtrum:SEARch:TRACk:PEAKs:ENABle
'Track Peaks' for marker
MARKer:SPECtrum:SEARch:TRACk:PEAKs:ENABle?
Queries the searchlimit enable state
MARKer<Index>:SPECtrum:TIME
Time position of a marker (see also MARKer<Index>:SPECtrum:DATA:TIME?)
MARKer<Index>:SPECtrum:TIME?
Queries marker time position
MARKer<Index>:SPECtrum:TIME:LINK
Marker time link
MARKer<Index>:SPECtrum:TIME:LINK?
Queries the time link marker
MARKer<Index>:SPECtrum:TIME:LINK:OFFSet
Marker time link offset. A time offset can only be set if the selected task is an RT Spectrum task.
MARKer<Index>:SPECtrum:TIME:LINK:OFFSet?
Queries the time link offset
MARKer<Index>:SPECtrum:TRACe
Selects the active trace for a marker. Only traces enabled by SPECtrum:TRACe:ENABle are available.
MARKer<Index>:SPECtrum:TRACe?
Queries the active trace of a marker
MARKer<Index>:SPECtrum:TYPE
Sets the Marker type
MARKer<Index>:SPECtrum:TYPE?
Queries the configuration of a marker, normal or delta

Narda Command Reference - LEVelmeter

LEVelmeter:CBW
Sets the channel bandwidth for levelmeter
LEVelmeter:CBW?
Queries the channel bandwidth for levelmeter
LEVelmeter:CBW:FILTer:TYPE
Sets the levelmeter CBW filter type
LEVelmeter:CBW:FILTer:TYPE?
Queries the levelmeter CBW filter type
LEVelmeter:CBW:LIST?
Queries a list of possible CBW settings
LEVelmeter:CBW:OVERsampling
Sets the levelmeter oversampling state
LEVelmeter:CBW:OVERsampling?
Queries the levelmeter oversampling state
LEVelmeter:DATA:AFC?
Queries AFC data values
LEVelmeter:DATA:ALL?
Queries all levelmeter detector and handle values. Caution: You must skip unused and unknown IDs and data elements while parsing to be compatible with future extensions (see DATA:ALL? commands).
LEVelmeter:DATA:DETector<Number>?
Queries the levelmeter detector value (PPk, CPk, RMS, CRMS, MPk, Smp, Avg, CAvg)
LEVelmeter:DATA:DETector:MODulation?
Queries the levelmeter modulation detector values (AM_PPk, AM_MPk, AM_PPDIV2, AM_RMS, FM_PPk, FM_MPk, FM_PPDIV2, FM_RMS, PM_PPk, PM_MPk, PM_PPDIV2, PM_RMS)
LEVelmeter:DATA:UPDate?
Update is avaliable in RUN and HOLD mode (see DATA:UPDate Commands)
LEVelmeter:DETector<Number>
Detector configuration
LEVelmeter:DETector<Number>?
Queries the detector configuration
LEVelmeter:DETector:INFinite
Sets the infinite min max detector state
LEVelmeter:DETector:INFinite?
Queries the infinite min max detector state
LEVelmeter:DETector:MODulation
Modulation detector configuration
LEVelmeter:DETector:MODulation?
Queries the modulation detector configuration
LEVelmeter:FREQuency:TUNE
Sets the levelmeter tune frequency
LEVelmeter:FREQuency:TUNE?
Queries the levelmeter tune frequency
LEVelmeter:FREQuency:TUNE:CENTer:COUPling
Automatic coupling of Ftune and Fcent
LEVelmeter:FREQuency:TUNE:CENTer:COUPling?
Queries the coupling state of Ftune and Fcent
LEVelmeter:FREQuency:TUNE:STEP
Tune frequency step for levelmeter
LEVelmeter:FREQuency:TUNE:STEP?
Queries the tune frequency step for levelmeter
LEVelmeter:MEASurement:TIME
Sets the measurement time for levelmeter
LEVelmeter:MEASurement:TIME?
Queries the measurement time for levelmeter

LEVelmeter:POST:AVG
Sets the post averaging time for levelmeter
LEVelmeter:POST:AVG?
Queries the post averaging time
LEVelmeter:PRE:AVG
Sets the pre averaging time for levelmeter
LEVelmeter:PRE:AVG?
Queries the pre averaging time
LEVelmeter:SCAN:COUNt
Sets the levelmeter scan count
LEVelmeter:SCAN:COUNt?
Queries the levelmeter scan count
LEVelmeter:SCAN:NUMBer?
Queries the levelmeter scan number
LEVelmeter:TSTamp?
Queries levelmeter data timestamp

Narda Command Reference - PEAKtable

PEAKtable:DATA:ALL?
Queries peaktable with frequency and level values for multiple traces. Caution: You must skip unused and unknown IDs and data elements while parsing to be compatible with future extensions (see DATA:ALL? commands).
PEAKtable:DATA:COUNt?
Queries the number of peaktable list elements
PEAKtable:DATA:FREQuency?
Queries peaktable frequency data
PEAKtable:DATA:LEVel?
Queries peaktable level data
PEAKtable:DATA:SCAN:NUMBer?
PEAKtable data scan number
PEAKtable:DATA:TSTamp?
Query PEAKtable data timestamp
PEAKtable:DATA:UPDate?
Update is avaliable in RUN and HOLD mode (see DATA:UPDate Commands)
PEAKtable:SCAN:NUMBer?
Queries the peaktable scan number
PEAKtable:TRACe
Selects the active trace for the peaktable. Only traces enabled by SPECtrum:TRACe:ENABle are available.
PEAKtable:TRACe?
Queries the active trace
PEAKtable:TSTamp?
Queries peaktable data timestamp

Narda Command Reference - STReam

STReam:ADD?
Adds a new stream to the active stream task
STReam:CONNection:ADDRess
Sets the connection IP or multicast address for selected stream
STReam:CONNection:ADDRess?
Queries the stream IP address
STReam:CONNection:CLOSe
Closes connection for selected stream
STReam:CONNection:IDN
Stream identifier for the selected stream connection
STReam:CONNection:IDN?
Queries the stream identifier of the stream connection

STReam:CONNection:OPEN
Opens connection for selected stream
STReam:CONNection:PORT
Connection portnumber for selected stream
STReam:CONNection:PORT?
Queries the connection portnumber for selected stream
STReam:CONNection:STATe?
Queries connection state for selected stream
STReam:CONNection:TYPE
Sets the connection type TCP or UDP for selected stream
STReam:CONNection:TYPE?
Queries the connection type for selected stream
STReam:DELete
Deletes a stream from the active stream task
STReam:LIST?
Queries a list of streams from the active stream task
STReam:SELect
Selects a stream of the active stream task for configuration of the connection
STReam:SELect?
Queries the selected stream of the active stream task

Narda Command Reference - IQSTream

IQSTream:ANTenna:FACTor?
Queries the antenna factor for Ftune
IQSTream:CBW
Sets the IQ channel bandwidth
IQSTream:CBW?
Queries the IQ channel bandwidth
IQSTream:CBW:LIST?
Queries a list of possible CBW settings
IQSTream:FREQuency:TUNE
Sets the IQ tune frequency
IQSTream:FREQuency:TUNE?
Queries the IQ tune frequency
IQSTream:OVERsampling
Sets the IQ oversampling state
IQSTream:OVERsampling?
Queries the IQ oversampling state
IQSTream:PAYLoad:FORMat
Sets the IQ payload format
IQSTream:PAYLoad:FORMat?
Queries the IQ payload format
IQSTream:PAYLoad:LIMit
Sets the IQ payload limit in words (32Bit)
IQSTream:PAYLoad:LIMit?
Queries the IQ payload limit
IQSTream:PAYLoad:LIMit:LIST?
Queries a list of possible payload limits depending on payload format, CBW and oversampling

Narda Command Reference - BEARing

BEARing:AZIMuth:CORRection
Sets the azimuth correction for bearing
BEARing:AZIMuth:CORRection?
Queries the azimuth correction for bearing

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BEARing:CBW
Sets the channel bandwidth for bearing
BEARing:CBW?
Queries the channel bandwidth for bearing
BEARing:CBW:LIST?
Queries a list of possible CBW settings
BEARing:CYCLe:TIME?
Queries the cycle time for bearing
BEARing:DATA:ALL?
Queries all bearing values. Caution: You must skip unused and unknown IDs and data elements while parsing to be compatible with future extensions. (see DATA:ALL? commands)
BEARing:DATA:AZIMuth?
Queries the azimuth of the bearing result.
BEARing:DATA:DETector?
Queries the bearing detector value
BEARing:DATA:DFQuality?
Queries the DF quality of the current bearing in percent
BEARing:DATA:ELEVation?
Queries the elevation of the bearing result.
BEARing:DATA:SCAN:NUMBer?
Queries the bearing data scan number
BEARing:DATA:TSTamp?
Queries the bearing data timestamp
BEARing:DATA:UPDate?
Update is avaliable in RUN and HOLD mode (see DATA:UPDate Commands)
BEARing:DATA:VALid?
Queries the valid flag of the last bearing result
BEARing:DATA:VALid:ENABle
Switches ‚Last valid bearing data‘ flag on/off. When enabled, last valid bearing is returned and not the last measurement run data. Filter settings like ‘BEARing:DFSQuelch’, ‘BEARing:MIN:DFQuality’ or ‘BEARing:MIN:STABility’ will only take effect, if this parameter is enabled!
BEARing:DATA:VALid:ENABle?
Queries last valid bearing data state. When enabled, last valid bearing is returned and not the last measurement run data. Filter settings like ‘BEARing:DFSQuelch’, ‘BEARing:MIN:DFQuality’ or ‘BEARing:MIN:STABility’ will only take effect, if this parameter is enabled!
BEARing:DFSQuelch
Sets the DF squelch for bearing. The flags BEARing:DFSQuelch:ENABle and BEARing:DATA:VALid:ENABle must be enabled for the settings of BEARing:DFSQuelch to take effect!
BEARing:DFSQuelch?
Queries the DF squelch level for bearing. The flags BEARing:DFSQuelch:ENABle and BEARing:DATA:VALid:ENABle must be enabled for the settings of BEARing:DFSQuelch to take effect!
BEARing:DFSQuelch:ENABle
Enables/Disables DF squelch criteria for bearings. The flag BEARing:DATA:VALid:ENABle must also be enabled for the settings of BEARing:DFSQuelch:ENABle to take effect.
BEARing:DFSQuelch:ENABle?
Queries the DF squelch state. The flag BEARing:DATA:VALid:ENABle must also be enabled for the settings of BEARing:DFSQuelch:ENABle to take effect.
BEARing:FREQuency:TUNE
Sets the bearing tune frequency
BEARing:FREQuency:TUNE?
Queries the bearing tune frequency
BEARing:FREQuency:TUNE:STEP
Sets the tune frequency step for bearing
BEARing:FREQuency:TUNE:STEP?
Queries the tune frequency step for bearing
BEARing:MEASurement:TIME
Sets the measurement time for bearing
BEARing:MEASurement:TIME?
Queries the measurement time for bearing

BEARing:MIN:DFQuality
Sets the minimum DF quality for a bearing. The flags BEARing:MIN:DFQuality:ENABle and BEARing:DATA:VALid:ENABle must be enabled for the settings of BEARing:MIN:DFQuality to take effect!
BEARing:MIN:DFQuality?
Queries the minimum DF quality for a bearing. Sets the minimum DF quality for a bearing. The flags BEARing:MIN:DFQuality:ENABle and BEARing:DATA:VALid:ENABle must be enabled for the settings of BEARing:MIN:DFQuality to take effect!
BEARing:MIN:DFQuality:ENABle
Enables/Disables minimum DF quality criteria for bearings. The flag BEARing:DATA:VALid:ENABle must also be enabled for the settings of BEARing:MIN:DFQuality:ENABle to take effect
BEARing:MIN:DFQuality:ENABle?
Queries the minimum DF quality criteria state. The flag BEARing:DATA:VALid:ENABle must also be enabled for the settings of BEARing:MIN:DFQuality:ENABle to take effect.
BEARing:MIN:STABility
Sets the minimum stability for bearings. The flags BEARing:DATA:VALid:ENABle and BEARing:MIN:STABility:ENABle must be enabled for the settings of BEARing:MIN:STABility to take effect!
BEARing:MIN:STABility?
Queries the minimum level stability for bearings. The flags BEARing:DATA:VALid:ENABle and BEARing:MIN:STABility:ENABle must be enabled for the settings of BEARing:MIN:STABility to take effect!
BEARing:MIN:STABility:ENABle
Enables/Disables minimum stability criteria for bearings. The flag BEARing:DATA:VALid:ENABle must also be enabled for the settings of BEARing:MIN:STABility:ENABle to take effect.
BEARing:MIN:STABility:ENABle?
Queries the minimum stability criteria state. The flag BEARing:DATA:VALid:ENABle must also be enabled for the settings of BEARing:MIN:STABility:ENABle to take effect.
BEARing:NORTh:REFerence
Sets the north reference for bearing
BEARing:NORTh:REFerence?
Queries the north reference for bearing
BEARing:POST:AVG
Sets the post averaging time for bearing
BEARing:POST:AVG?
Queries the post averaging time for bearing
BEARing:REFerence:MARK:DIRection
Sets the reference mark direction for bearing
BEARing:REFerence:MARK:DIRection?
Queries the reference mark direction for bearing
BEARing:SCAN:COUNt
Sets the bearing scan count
BEARing:SCAN:COUNt?
Queries the bearing scan count
BEARing:SCAN:NUMBer?
Queries the bearing scan number
BEARing:SCAN:TIME?
Queries the scan time for bearing
BEARing:TSTamp?
Queries the bearing data timestamp

Narda Command Reference - DEMod

DEMod:CBW
Sets the channel bandwidth for demodulation
DEMod:CBW?
Queries the channel bandwidth for demodulation
DEMod:CBW:FILTer:TYPE
Sets the demodulation CBW filter type
DEMod:CBW:FILTer:TYPE?
Queries the demodulation CBW filter type

DEMod:CBW:LIST?
Queries a list of possible CBW settings
DEMod:CBW:OVERsampling
Sets the demodulation oversampling state
DEMod:CBW:OVERsampling?
Queries the demodulation oversampling state
DEMod:FREQuency:TUNE
Sets the demodulation tune frequency
DEMod:FREQuency:TUNE?
Queries the demodulation tune frequency
DEMod:FREQuency:TUNE:AFC
Switches the demodulation AFC on/off
DEMod:FREQuency:TUNE:AFC?
Queries the demodulation AFC state
DEMod:FREQuency:TUNE:BFO
Sets the demodulation BFO value (only for USB,ISB,LSB)
DEMod:FREQuency:TUNE:BFO?
Queries the demodulation BFO value (only for USB,ISB,LSB)
DEMod:MUTE
Sets the mute state of the demodulation volume
DEMod:MUTE?
Queries the mute state of the demodulation volume
DEMod:SQUelch
Sets the demodulation squelch value. The command DEMod:SQUelch:ENABle must be enabled for the settings of DEMod:SQUelch to take effect!
DEMod:SQUelch?
Queries the demodulation squelch value. The command DEMod:SQUelch:ENABle must be enabled for the settings of DEMod:SQUelch to take effect!
DEMod:SQUelch:ENABle
Switches the demodulation squelch on/off
DEMod:SQUelch:ENABle?
Queries the demodulation squelch enable state
DEMod:TYPE
Sets the demodulation type
DEMod:TYPE?
Queries the demodulation type
DEMod:TYPE:ENABle
Switches the demodulation type on/off
DEMod:TYPE:ENABle?
Queries the demodulation type enable state
DEMod:VOLume
Sets the demodulation volume
DEMod:VOLume?
Queries the demodulation volume
DEMod:VOLume:AGC
Switches the demodulation AGC on/off
DEMod:VOLume:AGC?
Queries the demodulation AGC state

Narda Command Reference - SGRam

SGRam:DATA:ALL?
Queries all or a range of spectrogram frames. Caution: You must skip unused and unknown IDs and data elements while parsing to be compatible with future extensions. (see DATA:ALL? commands)
SGRam:DATA:FRAMe:COUNt?
Queries the number of valid spectrogram frames
SGRam:DATA:UPDate?
Update is avaliable in RUN and HOLD state. (see DATA:UPDate Commands)

SGRam:DETector<Number>
Sets the spectrogram detector configuration
SGRam:DETector<Number>?
Queries the spectrogram detector configuration
SGRam:DETector:VISible
Sets the spectrogram detector configuration
SGRam:DETector:VISible?
Queries the spectrogram detector configuration
SGRam:FRAMe:COUNt
Sets the maximum number of spectrogram frames
SGRam:FRAMe:COUNt?
Queries the maximum number of spectrogram frames
SGRam:SCAN:NUMBer?
Queries the spectrogram scan number

Narda Command Reference - MAP

MAP:LOCalization:AREA
Sets the localization area.
MAP:LOCalization:AREA?
Queries the localization area.
MAP:LOCalization:BEARing:ERRor
Sets the bearing error for the localization
MAP:LOCalization:BEARing:ERRor?
Queries the bearing error for the localization
MAP:LOCalization:DATA?
Queries the localization data
MAP:LOCalization:FREQuency:TUNE:LIST?
Queries the available Ftunes for localization
MAP:LOCalization:FREQuency:TUNE:SELect
Sets the frequency of the localization
MAP:LOCalization:FREQuency:TUNE:SELect?
Queries the frequency of the localization
MAP:LOCalization:LOS:PROBability
Sets the line of sight probability for the localization
MAP:LOCalization:LOS:PROBability?
Queries the line of sight probability for the localization
MAP:LOCalization:MIN:DFQuality
Sets the minimum DF quality for a bearing. The flag MAP:LOCalization:MIN:DFQuality:ENABle must be enabled for the setting of MAP:LOCalization:MIN:DFQuality to take effect!
MAP:LOCalization:MIN:DFQuality?
Queries the minimum DF quality for a bearing to be taken into account by the localization. The flag MAP:LOCalization:MIN:DFQuality:ENABle must be enabled for the setting of MAP:LOCalization:MIN:DFQuality to take effect!
MAP:LOCalization:MIN:DFQuality:ENABle
Enables/Disables minimum DF quality criteria for bearings.
MAP:LOCalization:MIN:DFQuality:ENABle?
Queries the minimum DF quality criteria state.
MAP:LOCalization:MIN:SPEed
Sets the min. Speed parameter for the localization. The flag MAP:LOCalization:MIN:SPEed:ENABle must be enabled for the setting of MAP:LOCalization:MIN:SPEed to take effect!
MAP:LOCalization:MIN:SPEed?
Queries the min. Speed parameter for the localization. The flag MAP:LOCalization:MIN:SPEed:ENABle must be enabled for the setting of MAP:LOCalization:MIN:SPEed to take effect!
MAP:LOCalization:MIN:SPEed:ENABle
Enables/Disables minimum speed criteria for bearings to be taken into account by the localization.
MAP:LOCalization:MIN:SPEed:ENABle?
Queries the minimum speed criteria state for bearings to be taken into account by the localization.

MAP:LOCalization:MIN:SPEed:LIST?
Queries the list of possible values for the min. Speed parameter
MAP:LOCalization:RECord:BEARing
Starts/Stops recording of bearings
MAP:LOCalization:RECord:BEARing?
Queries the recording of bearings state
MAP:LOCalization:RECord:LIST?
Queries the available records for localization
MAP:LOCalization:RECord:SELect
Selects the record used for localization
MAP:LOCalization:RECord:SELect?
Queries the record used for localization
MAP:LOCalization:RESolution
Sets the resolution of the localization area
MAP:LOCalization:RESolution?
Queries the resolution of the localization area
MAP:LOCalization:STARt
Starts the localization
MAP:LOCalization:STATe?
Queries the localization state
MAP:LOCalization:STOP
Stops the localization
MAP:LOCalization:USE:CASE:PRESet
Sets the use case preset for the localization
MAP:LOCalization:USE:CASE:PRESet?
Queries the use case preset for the localization
MAP:MODE
Sets the map mode
MAP:MODE?
Queries the map mode

Narda Command Reference - HORizontal

HORizontal:SCAN:ADD:VALue
Horizontal scan add discrete value
HORizontal:SCAN:CALC:RESult
Horizontal scan calculate bearing
HORizontal:SCAN:DATA?
Queries the Horizontal scan results
HORizontal:SCAN:DELete:VALue
Horizontal scan delete last value
HORizontal:SCAN:DETector
Sets the Horizontal scan detector
HORizontal:SCAN:DETector?
Queries the Horizontal scan detector
HORizontal:SCAN:MANual:CORRection
Horizontal scan manual correction
HORizontal:SCAN:RESet
Horizontal scan reset
HORizontal:SCAN:RESet:MAX
Horizontal scan reset max
HORizontal:SCAN:STARt
Horizontal scan start
HORizontal:SCAN:STATe?
Queries the Horizontal scan state
HORizontal:SCAN:STOP
Horizontal scan stop

HORizontal:SCAN:TYPE
Sets the Horizontal scan type
HORizontal:SCAN:TYPE?
Queries the Horizontal scan type

Narda Command Reference - PERSistence

PERSistence:DATA:ALL?
Queries a persistence image. Caution: You must skip unused and unknown IDs and data elements while parsing to be compatible with future extensions. (see DATA:ALL? commands)
PERSistence:DATA:COLumn:COUNt?
Queries the number of columns of a persistence image
PERSistence:DATA:FREQuency:STARt?
Queries persistence data start frequency
PERSistence:DATA:FREQuency:STEP?
Queries persistence data frequency step
PERSistence:DATA:OVERdriven?
Queries the persistence data overdriven flag
PERSistence:DATA:REALtime?
Queries the pesistence data realtime flag
PERSistence:DATA:ROW:COUNt?
Queries the number of rows of a persistence image
PERSistence:DATA:UPDate?
Update is avaliable in RUN and HOLD mode (see DATA:UPDate Commands)
PERSistence:MEASurement:TIME
Measurement time for persistence
PERSistence:MEASurement:TIME?
Queries the persistence measurement time
PERSistence:SCAN:COUNt
Sets the persistence scan count
PERSistence:SCAN:COUNt?
Queries the current scan count
PERSistence:SCAN:NUMBer?
Queries the persistence scan number
PERSistence:TYPE
Sets the persistence type
PERSistence:TYPE?
Queries the persistence type

Narda Command Reference - Deprecated

BEARing:PERSistence
Deprecated Command: Use BEARing:POST:AVG instead
BEARing:PERSistence?
Deprecated Command: Use BEARing:POST:AVG? instead
LEVelmeter:DETector:PERSistence
Deprecated Command: Use LEVelmeter:POST:AVG instead
LEVelmeter:DETector:PERSistence?
Deprecated Command: Use LEVelmeter:POST:AVG? instead
LEVelmeter:TVIDeo
Deprecated Command: Use LEVelmeter:PRE:AVG instead
LEVelmeter:TVIDeo?
Deprecated Command: Use LEVelmeter:PRE:AVG? instead
[SENSe:]APPLication:QUIT
Deprecated Command: Use SYSTem:SHUTdow instead
[SENSe:]ATTenuator:ENTRy:MODE
Deprecated Command: Has no effect anymore

[SENSe:]ATTenuator:ENTRy:MODE?
Deprecated Command: Has no effect anymore
[SENSe:]REFerence:LEVel:ENTRy:MODE
Deprecated Command: Has no effect anymore
[SENSe:]REFerence:LEVel:ENTRy:MODE?
Deprecated Command: Has no effect anymore
[SENSe:]RUN:SINGle:OVERlap
Deprecated Command: Use RUN:SINGle instead
[SENSe:]STOP:MODE
Deprecated Command: Use STOP and HOLD instead
[SENSe:]STOP:MODE?
Deprecated Command: Use STOP and HOLD instead

10 Command Descriptions

Narda Command Reference - IEEE488

Contains the SCPI commands as defined in the IEEE488.2

*IDN?

Queries the instrument basic information such as manufacturer, model, serial number, version

Result Parameter

Parameter	Type	Description
Identification	Arbitrary[String]	Device identification string

Examples

//Queries the instrument basic information

*IDN?

Narda Safety Test Solutions GmbH,SignalShark 3310,A-0054,V1.3.1

*OPC?

Synchronizes overlapped commands

Result Parameter

Parameter	Type	Description
OPC_Flag	UShort	OPC Flag (will always be 1)

Examples

//Waits until all operations are complete and then returns 1

*OPC?

1

*RST

Resets the device to default settings and all status data. This command has a timeout of 10s.

Examples

//Resets the device

*RST

*WAI

Synchronizes overlapped commands

9 Command Groups ^

Examples

```
//Waits until all commands are finished
*WAI
```

9 Command Groups ^

Narda Command Reference - SCPI-99

Scpi commands as defined in the Scpi99 standard.

ABORt

Aborts running measurements and calculations. Sets TASK:STATE to STOP mode.

Examples

```
//Aborts any running measurement
ABORt
```

SYSTem:ERRor[:NEXT]?

Queries the error queue for the next error item and removes it from the queue. The query returns the error code and the error message string.

Result Parameter

Parameter	Type	Description
ErrorCode	Long	Next error code from the queue
ErrorMessage	String	Next error string from the queue

Examples

```
//Queries the next error code and string from the error queue
SYST:ERR?
-113,"Undefined header :SYSTem:ERRor:CODE:NEXT?"
```

SYSTem:ERRor:ALL?

Queries the error queue for every existing error item and clears the error queue. The query returns the error code for every error.

Result Parameter

Parameter	Type	Description
ErrorCodes	FlexArray[Long,String]	Array of all error codes and error strings

Examples

```
//Queries a list of all error items in the error queue
SYST:ERR:ALL?
-100,"Command error :SPEC:FREQ:STOP",-224,"eERR_ILLEGAL_PARAMETER_VALUE"
```

SYSTem:ERRor:CLEar[:ALL]

Clears the error queue

Examples

```
//Clears the error queue
SYSTem:ERRor:CLEar
```

9 Command Groups ^

SYSTem:ERRor:CODE[:NEXT]?

Queries the error queue for the next error item and removes the error from the queue. The query returns only the error code omitting the string.

Result Parameter

Parameter	Type	Description
ErrorCode	Long	Next error code from the queue

Examples

//Queries the next error code from the error queue

SYST:ERR:CODE?

-113

SYSTem:ERRor:CODE:ALL?

Queries the error queue for every existing error item and clears the error queue. The query returns the error code for every error.

Result Parameter

Parameter	Type	Description
ErrorCodes	FlexArray[Long]	Array of all error codes

Examples

//Queries a list of every error in the error queue

SYSTem:ERRor:CODE:ALL?

-113,-113,-113

SYSTem:ERRor:COUNt?

Queries the error queue for the number of error items

Result Parameter

Parameter	Type	Description
ErrorCount	ULongLong	Count of errors in the error queue

Examples

//Queries the current size of the error queue

SYST:ERR:COUN?

2

SYSTem:ERRor:LIST?

Queries a list of all possible error items in the error queue

9 Command Groups ^

Result Parameter

Parameter	Type	Description
ErrorCodes	FlexArray[Long,String]	Array of all error codes and error strings

Examples

```
//Queries a list of all possible error items in the error queue
SYSTem:ERRor:LIST?
-440,"eERR_QUERY_UNTERMINATED_AFTER_INDEFINITE_RESPONSE", …
```

9 Command Groups ^

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Narda Command Reference - DEVice

Device subsystem

DEVice:APPLication:DATE?

Queries the application date

Result Parameter

Parameter	Type	Description
Version	Date	Application Date

Examples

//Queries the application date
DEV:APPL:DATE?
2019-02-06

DEVice:APPLication:VERSion?

Queries the application version number

Result Parameter

Parameter	Type	Description
Version	String	Application version number

Examples

//Queries the application version number
DEV:APPL:VERS?
"V1.3.1"

DEVice:BIOS:VERSion?

Queries the BIOS version number

Result Parameter

Parameter	Type	Description
Version	String	Version number

Examples

//Queries the version number
DEV:BIOS:VERS?
"TQMxE38M.5.4.48.0028.15"

DEVice:BOARd:CONTroller:BOOTloader:VERSion?

Queries the boardcontroller bootloader version

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Version	String	Version number

Examples

//Queries the version number

DEV:BOAR:CONT:BOOT:VERS?

"V0.9.2"

DEVice:BOARd:CONTroller:FIRMware:VERSion?

Queries the boardcontroller firmware version

Result Parameter

Parameter	Type	Description
Version	String	Version number

Examples

//Queries the version number

DEV:BOAR:CONT:FIRM:VERS?

"V1.0.2"

DEVice:FPGA:BITStream:VERSion?

Queries the FPGA bitstream version

Result Parameter

Parameter	Type	Description
Version	String	Version number

Examples

//Queries the FPGA Bitstream version number

DEV:FPGA:BITS:VERS?

"528"

DEVice:FPGA:PCIE:DRIVer:VERSion?

Queries the FPGA PCI Express driver version

Result Parameter

Parameter	Type	Description
Version	String	Version number

9 Command Groups ^

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Examples

//Queries the version number
DEV:FPGA:PCIE:DRIV:VERS?
"1.8.0.0"

DEVice:OPERation:SYSTem:VERSion?

Queries the operation system version

Result Parameter

Parameter	Type	Description
Version	String	Version number

Examples

//Queries the version number
DEV:OPER:SYST:VERS?
"V2.0.6"

DEVice:PART:NUMBer?

Queries the part number

Result Parameter

Parameter	Type	Description
Version	String	Part Number

Examples

//Queries part number
DEV:PART:NUMB?
"3310/01"

DEVice:PRODuct:NAME?

Queries the product name

Result Parameter

Parameter	Type	Description
Version	String	Product name

Examples

//Queries product name
DEV:PROD:NAME?
"SignalShark 3310"

DEVice:SERial:NUMBer?

Queries the serial number

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Version	String	Serial Number

Examples

//Queries serial number
DEV:SER:NUMB?
"A-0054"

9 Command Groups ^

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Narda Command Reference - SETTings

Settings subsystem

SETTings:ADJust:EQUalizer

Starts equalizer adjustment. This command has a timeout of 60s.

Examples

```
//Starts equalizer adjustment
SETT:ADJ:EQU
```

SETTings:DATE?

Queries the date setting of the system

Result Parameter

Parameter	Type	Description
Date	Date	System Date

Examples

```
//Queries the system date
SETT:DATE?
2019-02-25
```

SETTings:FAST:SCANs:ONLY

Allows fast scans only with limited BINS

Command Parameter

Parameter	Type	Description
Value	Bool	Fast scans only

Examples

```
//Disables fast scans for scan spectrum
SETT:FAST:SCAN:ONLY OFF
```

SETTings:FAST:SCANs:ONLY?

Queries fast scan state

Result Parameter

Parameter	Type	Description
Value	Bool	Fast scans only

9 Command Groups ^

Examples

//Queries fast scan state
SETT:FAST:SCAN:ONLY?
0

SETTings:GNSS:SOURce

Sets the GNSS source

Command Parameter

Parameter	Type	Description
Value	Enum	AUTO, INTERNAL, ANTENNA

Examples

//Sets GNSS source to automatic mode
SETT:GNSS:SOUR AUTO

SETTings:GNSS:SOURce?

Queries the GNSS source

Result Parameter

Parameter	Type	Description
Value	Enum	AUTO, INTERNAL, ANTENNA

Examples

//Queries GNSS source
SETT:GNSS:SOUR?
AUTO

SETTings:MAGNetic:DECLination

Sets the magnetic declination

Command Parameter

Parameter	Type	Description
Value	Double	0...180

Examples

//Sets magnetic declination to 0
SETT:MAGN:DECL 0

SETTings:MAGNetic:DECLination?

Queries the magnetic declination

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	Double	0...180

Examples

//Queries magnetic declination
SETT:MAGN:DECL?
0

SETTings:PPS:SOURce

Sets the PPS source

Command Parameter

Parameter	Type	Description
Value	Enum	GNSS, EXTERNAL

Examples

//Sets PPS source to active GNSS
SETT:PPS:SOUR GNSS

SETTings:PPS:SOURce?

Queries the PPS source

Result Parameter

Parameter	Type	Description
Value	Enum	GNSS, EXTERNAL

Examples

//Queries PPS source
SETT:PPS:SOUR?
GNSS

SETTings:REFerence:FREQuency:SOURce

Reference frequency source

Command Parameter

Parameter	Type	Description
Value	Enum	INTERNAL, EXTERNAL

Examples

//Sets reference frequency source to INTERNAL
SETT:REF:FREQ:SOUR INTERNAL

9 Command Groups ^

SETTings:REFerence:FREQuency:SOURce?

Queries the reference frequency souce

Result Parameter

Parameter	Type	Description
Value	Enum	INTERNAL, EXTERNAL

Examples

//Queries the reference frequency source
SETT:REF:FREQ:SOUR?
INTERNAL

SETTings:TIME?

Queries the system time?

Result Parameter

Parameter	Type	Description
Time	Time	System Time

Examples

//Queries the system time
SETT:TIME?
10:24:36

SETTings:TIME:SYNC:NOW

Starts synchronization of systemtime with gnss time. This command has a timeout of 10s.

Examples

//Starts system time synchronization
SETTings:TIME:SYNC:NOW

SETTings:TSTamp:SYNC:MODE

Sets the timestamp synchronization mode

Command Parameter

Parameter	Type	Description
Value	Enum	FREERUN, PPS

Examples

//Sets timestamp synchronization to PPS
SETT:TST:SYNC:MODE PPS

9 Command Groups ^

SETTings:TSTamp:SYNC:MODE?

Queries the timestamp synchronization mode

Result Parameter

Parameter	Type	Description
Value	Enum	FREERUN, PPS

Examples

```
//Queries timestamp synchronization mode
SETT:TST:SYNC:MODE?
PPS
```

SETTings:TSTamp:SYNC:NOW

Starts timestamp synchronization and wait until sync finished. This command has a timeout of 10s.

Examples

```
//Starts timestamp synchronization
SETT:TST:SYNC:NOW
```

9 Command Groups ^

Narda Command Reference - SENSe

Sense subsystem

[SENSe:]ADC:OOR?

Queries ADC out of range state for the active measurement task

Result Parameter

Parameter	Type	Description
Value	Bool	ADC out of range state

Examples

//Queries ADC out of range state.

ADC:OOR?

0

[SENSe:]ANTenna:HANDle?

Queries the type of antenna handle connected to the SignalShark

Result Parameter

Parameter	Type	Description
Value	Enum	NONE, HANDLE

Examples

//Queries the antenna handle type

ANT:HAND?

NONE

[SENSe:]ANTenna:POLarization?

Queries the polarization of the antenna connected to the antenna handle

Result Parameter

Parameter	Type	Description
Value	Enum	NONE, HORIZONTAL, VERTICAL

Examples

//Queries the polarization

ANT:POL?

NONE

[SENSe:]ANTenna:TYPE?

Queries the type of antenna connected to the SignalShark

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	Enum	NONE, ADFA, DFA, ANTENNA, MANUAL

Examples

//Queries the antenna type
ANT:TYPE?
NONE

[SENSe:]ATTenuator

Attenuation for the RF input

Command Parameter

Parameter	Type	Description
Value	Unit	Attenuation (dB)

Examples

//Sets the RF attenuation to 5 dB
ATT 5

[SENSe:]ATTenuator?

Queries the current attenuation

Result Parameter

Parameter	Type	Description
Value	Unit	Attenuation in dB

Examples

//Queries the current attenuation
ATT?
5

[SENSe:]ATTenuator:LIST?

Queries a list of possible attenuator settings

Result Parameter

Parameter	Type	Description
List	FlexArray[Float]	List of attenuator settings

9 Command Groups ^

Examples

//Queries a list of attenuator settings

ATT:LIST?

31.5,31,30.5,30,29.5,29,28.5,28,27.5,27,26.5,26,25.5,25,24.5,24,23.5,23,22.5,22,21.5,21,20.5,20,19.5,19,18.5,18,17.5,17,16.5,16,15.5,15,14.5,14,13.5,13,12.5,12,11.5,11,10.5,10,9.5,9,8.5,8,7.5,7,6.5,6,5.5,5,4.5,4,3.5,3,2.5,2,1.5,1,0.5,0

[SENSe:]COMPass:DATA?

Compass values of the active compass

Query Parameter

Parameter	Type	Description
Optional	Optional[Enum]	Reserved for future use

Result Parameter

Parameter	Type	Description
Azimuth	Float	Azimuth in degree.
Elevation	Float	Elevation in degree.
Roll	Float	Roll in degree.

Examples

//Queries a list of all compass values

COMP:DATA?

153.3,-3.6,178.3

[SENSe:]EXTernal:DEVice

External device

Command Parameter

Parameter	Type	Description
Value	Bool	External device state

Examples

//Switches the external device ON

SENSe:EXTernal:DEVice ON

//Switches the external device OFF

EXT:DEV OFF

[SENSe:]EXTernal:DEVice?

Queries the external device state

Result Parameter

Parameter	Type	Description
Value	Bool	External device state

9 Command Groups ^

Examples

//Queries the external device state
SENSe:EXTernal:DEVice?
0

[SENSe:]EXTernal:DEVice:SWITchable?

Queries if the external device is switchable

Result Parameter

Parameter	Type	Description
Value	Bool	External device switchable

Examples

//Queries if the external device is switchable
SENSe:EXTernal:DEVice:SWITchable?
1

//Queries if the external device is switchable
EXT:DEV:SWIT?
0

[SENSe:]FREQuency:RANGe?

Queries the frequency range for active measurement task. The frequency range depends on the connected equipment.

Result Parameter

Parameter	Type	Description
Fmin	Frequency	Minimum frequency in Hz
Fmax	Frequency	Maximum frequency in Hz

Examples

//Queries frequency range in Hz
FREQ:RANG?
8000,8000000000

[SENSe:]GNSS:DATA?

GNSS values of the active GNSS

Query Parameter

Parameter	Type	Description
Optional	Optional[Enum]	Reserved for future use

9 Command Groups ^

Result Parameter

Parameter	Type	Description
TimeOfLastTelegram	Time	UTC Time of last telegram including Milliseconds
DateOfLastTelegram	Date	UTC Date of last telegram
TimeOfLastPosFix	Time	UTC Time of last position fix including Milliseconds
DateOfLastPosFix	Date	UTC Date of last position fix
Quality	Enum	GPS, DGPS, GNSS, DGNSS, FROZEN, NOFIX
Fix	Enum	FIX2D, FIX3D, NOFIX
Satellites	UShort	Number of Satellites
Latitude	Double	Latitude
Longitude	Double	Longitude
Altitude	Float	Altitude in m
Speed	Float	Speed in m/s
Course	Float	Course in degree

Examples

```
//Queries a list of all GNSS values
GNSS:DATA?
13:22:30.900,2018-08-23,13:22:30.900,2018-08-23,GNSS,FIX3D,5,48.4584,9.231,445.9,0.082,0
```

[SENSe:]HOLD

Holds the measurement and initializes if measurement is stopped

Command Parameter

Parameter	Type	Description
Optional	Optional[Timespan]	Timeout value for initializing (s, ms)

Examples

```
//Holds measurement with a timeout of 10 seconds for initializing
HOLD 10s
//Holds measurement with default timeout for initializing
SENSe:HOLD
```

[SENSe:]HOLD?

Holds the measurement and initializes if measurement is stopped

Query Parameter

Parameter	Type	Description
Optional	Optional[Timespan]	Timeout value for initializing (s, ms)

9 Command Groups ^

Result Parameter

Parameter	Type	Description
ReturnCode	Long	Returns 0 if continuous run has started successfully
ReturnMsg	String	Returns 'No error' if successful

Examples

```
//Holds measurement with a timeout of 10 seconds for initializing
HOLD? 10s
0,"No error"

//Holds measurement with default timeout for initializing
SENSe:HOLD?
0,"No error"
```

[SENSe:]INPut

Selects the RF input

Command Parameter

Parameter	Type	Description
Value	ULong	RF input (1,2,3,4)

Examples

```
//Sets the RF input to input 1
INP 1
```

[SENSe:]INPut?

Queries the RF input number

Result Parameter

Parameter	Type	Description
Value	ULong	RF input (1,2,3,4)

Examples

```
//Queries the RF input
INP?
1
```

[SENSe:]PREamp

Preamplifier state of the antenna handle

Command Parameter

Parameter	Type	Description
Value	Bool	Preamplifier state

9 Command Groups ^

Examples

//Switches off the preamplifier
PRE OFF

[SENSe:]PREamp?

Queries the state of the preamplifier of the antenna handle

Result Parameter

Parameter	Type	Description
Value	Bool	Preamplifier state

Examples

//Queries the current state of the preamplifier
PRE?
1

[SENSe:]REFerence:LEVel

Reference level for the RF input

Command Parameter

Parameter	Type	Description
Value	Unit	Reference Level (dBm,...)

Examples

//Sets the RF reference level to -14
REF:LEV -14

[SENSe:]REFerence:LEVel?

Queries the reference level for the RF input

Result Parameter

Parameter	Type	Description
Value	Unit	Reference Level

Examples

//Queries the RF reference level
REF:LEV?
-14

[SENSe:]REFerence:LEVel:LIST?

Queries a list of possible attenuator settings

9 Command Groups ^

Result Parameter

Parameter	Type	Description
List	FlexArray[Float]	List of reference level settings

Examples

//Queries a list of reference level settings

REF:LEV:LIST?

17.5,17,16.5,16,15.5,15,14.5,14,13.5,13,12.5,12,11.5,11,10.5,10,9.5,9,8.5,8,7.5,7,6.5,6,5.5,5,4.5,4,3.5,3,2.5,2,1.5,1,0.5,0,-0.5,-1,-1.5,-2,-2.5,-3,-3.5,-4,-4.5,-5,-5.5,-6,-6.5,-7,-7.5,-8,-8.5,-9,-9.5,-10,-10.5,-11,-11.5,-12,-12.5,-13,-13.5,-14

[SENSe:]REFerence:LEVel:OFFSet

Sets the reference level offset. The flag [SENSe:]REFerence:LEVel:OFFSet:ENABle must be enabled for the setting of [SENSe:]REFerence:LEVel:OFFSet to take effect!

Command Parameter

Parameter	Type	Description
Value	Unit	ReferenceLevelOffset (dB)

Examples

//Sets the RF reference level offset to 5 dB

REF:LEV:OFFSet 5

[SENSe:]REFerence:LEVel:OFFSet?

Queries the current reference level offset. The flag [SENSe:]REFerence:LEVel:OFFSet:ENABle must be enabled for the setting of [SENSe:]REFerence:LEVel:OFFSet to take effect!

Result Parameter

Parameter	Type	Description
Value	Unit	ReferenceLevelOffset in dB

Examples

//Queries the current reference level offset

REF:LEV:OFFSet?

5

[SENSe:]REFerence:LEVel:OFFSet:ENABle

Enables/disables the reference level offset

Command Parameter

Parameter	Type	Description
Value	Bool	Reference level offset state

9 Command Groups ^

Examples

//Enables reference level offset
SENSE:REF:LEV:OFFS:ENAB ON

[SENSe:]REFerence:LEVel:OFFSet:ENABle?

Queries the corresponding reference level offset state

Result Parameter

Parameter	Type	Description
Value	Bool	Reference level offset state

Examples

//Queries reference level offset state
SENSE:REF:LEV:OFFS:ENAB?
1

[SENSe:]REFerence:LEVel:OFFSet:LIST?

Queries a list of possible reference level offset settings

Result Parameter

Parameter	Type	Description
List	FlexArray[Float]	List of reference level offset settings

Examples

//Queries a list of reference level offset settings
REF:LEV:OFFS:LIST?
40,39.99,39.98,39.97,39.96,39.95,39.94,39.93,39.92,39.91,39.9,39.89,39.88,39.87,39.86,39.85,39.84,39.83,39.82,39.81,39.8,39.79,39.78,39.77,39.76,39.75,39.74,39.73,39.72,39.71,39.7,39.69,39.68,39.67,39.66,39.65,39.64,39.63,39.62,39.61,39.6,39.59,39.58,39.57,39.56,39.55,39.54,39.53,39.52,39.51,39.5,39.49,39.48,39.47,39.46,39.45,39.44,39.43,39.42,...

[SENSe:]RUN:CONTinuous

Starts a new continuous measurement

Command Parameter

Parameter	Type	Description
Optional	Optional[Timespan]	Timeout value for initializing (s, ms)

9 Command Groups ^

Examples

//Starts a continuous measurement with a timeout of 10 seconds for initializing
RUN:CONT 10s
//Starts a continuous measurement with default timeout for initializing
SENSe:RUN:CONTinuous

[SENSe:]RUN:CONTinuous?

Starts a new continuous measurement

Query Parameter

Parameter	Type	Description
Optional	Optional[Timespan]	Timeout value for initializing (s, ms)

Result Parameter

Parameter	Type	Description
ReturnCode	Long	Returns 0 if continuous run has started successfully
ReturnMsg	String	Returns 'No error' if successful

Examples

//Starts a continuous measurement with a timeout of 10 seconds for initializing
RUN:CONT? 10s
0,"No error"

//Starts a continuous measurement with default timeout for initializing
SENSe:RUN:CONTinuous?
0,"No error"

[SENSe:]RUN:CONTinuous:RESet

Starts a new continuous measurement with reset

Command Parameter

Parameter	Type	Description
Optional	Optional[Timespan]	Timeout value for initializing (s, ms)

Examples

//Starts a continuous measurement with reset and a timeout of 10 seconds for initializing
RUN:CONT:RES 10s
//Starts a continuous measurement with reset and default timeout for initializing
SENSe:RUN:CONTinuous:RESet

[SENSe:]RUN:CONTinuous:RESet?

Starts a new continuous measurement with reset

9 Command Groups ^

Query Parameter

Parameter	Type	Description
Optional	Optional[Timespan]	Timeout value for initializing (s, ms)

Result Parameter

Parameter	Type	Description
ReturnCode	Long	Returns 0 if continuous run has started successfully
ReturnMsg	String	Returns 'No error' if successful

Examples

```
//Starts a continuous measurement with reset and a timeout of 10 seconds for initializing
RUN:CONT:RES? 10s
0,"No error"

//Starts a continuous measurement with reset and default timeout for initializing
SENSe:RUN:CONTinuous:RESet?
0,"No error"
```

[SENSe:]RUN:SINGle

Starts a new single measurement with reset

Command Parameter

Parameter	Type	Description
Optional	Optional[Timespan]	Timeout value for initializing (s, ms)

Examples

```
//Starts a single measurement with a timeout of 10 seconds for initializing
RUN:SING 10s
//Starts a single measurement with default timeout
SENSe:RUN:SINGle
```

[SENSe:]RUN:SINGle?

Starts a new single measurement with reset. The command processing ends when scan count equals scan number or the timeout value is reached.

Query Parameter

Parameter	Type	Description
Optional	Optional[Timespan]	Timeout value for initializing and single measurement (s, ms)

9 Command Groups ^

Result Parameter

Parameter	Type	Description
ReturnCode	Long	Returns 0 if single run has finished successfully
ReturnMsg	String	Returns 'No error' if successful

Examples

//Starts a single measurement as a blocking command until initializing and measurement has finished with a timeout of 10 seconds.

RUN:SING? 10s

0,"No error"

//Starts a single measurement as a blocking command until initializing and measurement has finished with default timeout.

SENSe:RUN:SINGle?

0,"No error"

[SENSe:]STOP

Stops the measurement

Examples

//Stops the measurement

STOP

[SENSe:]TSTamp:SYNC:DEViation?

Timestamp synchronization deviation

Result Parameter

Parameter	Type	Description
Value	Double	Timestamp synchronisation deviation

Examples

//Queries the timestamp synchronization deviation

SENse:TSTamp:SYNC:DEViation?

5.12e-9

//Queries the timestamp synchronization deviation

TST:SYNC:DEV?

0

[SENSe:]TSTamp:SYNC:FINE?

Timestamp fine synchronization state

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	Bool	True if we have fine synchronisation

Examples

//Queries the timestamp fine synchronization state
SENse:TSTamp:SYNC:FINE?
0

//Queries the timestamp fine synchronization state
TST:SYNC:FINE?
1

[SENSe:]TSTamp:SYNC:STATe?

Timestamp synchronization state

Result Parameter

Parameter	Type	Description
Value	Enum	SYNCHRONIZED, UNSYNCHRONIZED, FREERUN

Examples

//Queries timestamp synchronization state
TST:SYNC:STAT?
FREERUN

9 Command Groups ^

Narda Command Reference - DISPlay

Display subsystem

DISPlay:LEVelmeter:LMAX

Sets the maximum displayed level (x-axis) in the levelmeter view in actual unit

Command Parameter

Parameter	Type	Description
Value	Unit	LMAX (dBm, ...)

Examples

//Sets LMAX to -20 dBm

DISP:LEV:LMAX -20

DISPlay:LEVelmeter:LMAX?

Queries the maximum displayed level (x-axis) in the levelmeter view in actual unit

Result Parameter

Parameter	Type	Description
Value	Unit	LMAX

Examples

//Queries LMAX

DISP:LEV:LMAX?

-20.00

DISPlay:LEVelmeter:LRANge

Sets the maximum displayed level range (x-axis) in the levelmeter view in actual unit

Command Parameter

Parameter	Type	Description
Value	Unit	LRANge (dB)

Examples

//Sets LRANge to 100 dB

DISP:LEV:LRANge 100

DISPlay:LEVelmeter:LRANge?

Queries the maximum displayed level range (x-axis) in the levelmeter view in actual unit

Result Parameter

Parameter	Type	Description
Value	Unit	LRANge

9 Command Groups ^

Examples

```
//Queries LRANge?
DISP:LEV:LRAN?
100
```

DISPlay:MAP:CENTer

Centers the map to the current GNSS position

Examples

```
//Centers the map to the current GNSS position
DISPlay:MAP:CENTer
//Centers the map to the current GNSS position
DISP:MAP:CENT
```

DISPlay:MAP:CENTer:POSition

Sets center point of the map

Command Parameter

Parameter	Type	Description
Lat	Double	Latitude in degree (decimal)
Lon	Double	Longitude in degree (decimal)

Examples

```
//Centers the map to the specified postion
DISPlay:MAP:CENT:POS 48.23196, 9.23589
```

DISPlay:MAP:CENTer:POSition?

Queries the center point of the map

Result Parameter

Parameter	Type	Description
Lat	Double	Latitude in degree (decimal)
Lon	Double	Longitude in degree (decimal)

Examples

```
//Queries the center position of the map
DISPlay:MAP:CENTer:POSition?
48.23196, 9.23589
```

DISPlay:MAP:LIST?

Queries a list of available maps

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	FlexArray[String]	List of available maps

Examples

//Queries a list of available maps

DISP:MAP:LIST?

'D: Default\Mapnik','D: Europa\Mapnik','Empty Map'

DISPlay:MAP:SELect

Sets the selected map

Command Parameter

Parameter	Type	Description
MapName	String	Name of the map to be selected

Examples

//Sets the selected map

DISPlay:MAP:SELect 'Pfullingen'

DISPlay:MAP:SELect?

Queries the name of the selected map

Result Parameter

Parameter	Type	Description
MapName	String	Name of the currently selected map

Examples

//Queries the selected map

DISP:MAP:SEL?

Default

DISPlay:MAP:ZOOM:LEVel

Sets the zoom level

Command Parameter

Parameter	Type	Description
ZoomLevel	UShort	zoom level

Examples

//Sets the zoom level of the map to 13

DISP:MAP:ZOOM:LEV 13

9 Command Groups ^

DISPlay:MAP:ZOOM:LEVel?

Queries the zoom level of the map

Result Parameter

Parameter	Type	Description
ZoomLevel	UShort	zoom level

Examples

//Queries the current zoom level of the map

DISP:MAP:ZOOM:LEV?

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DISPlay:PEAKtable:SHOW:TRANsmitter

Shows the transmitter table with peaktable

Command Parameter

Parameter	Type	Description
Value	Bool	Show transmitter table

Examples

//Shows transmitter table with peaktable

DISPlay:PEAKtable:SHOW:TRANsmitter true

DISPlay:PEAKtable:SHOW:TRANsmitter?

Queries if the transmitter table is shown with peaktable

Result Parameter

Parameter	Type	Description
Value	Bool	Show transmitter table

Examples

//Queries if transmitter table is shown with peaktable

DISPlay:PEAKtable:SHOW:TRANsmitter?

1

DISPlay:PEAKtable:SORT

Sort criteria for peaktable

Command Parameter

Parameter	Type	Description
Value	Enum	FREQUENCY, LEVEL

9 Command Groups ^

Examples

//Sorts peaktable by LEVEL
DISP:PEAK:SORT LEVEL

DISPlay:PEAKtable:SORT?

Queries the sort criteria for peaktable

Result Parameter

Parameter	Type	Description
Value	Enum	FREQUENCY, LEVEL

Examples

//Queries the sort criteria for peaktable
DISP:PEAK:SORT?
LEVEL

DISPlay:PERSistence:LMAX

Sets the maximum displayed level (y-axis) in the persistence view in actual unit

Command Parameter

Parameter	Type	Description
Value	Unit	LMAX (dBm, ...)

Examples

//Sets LMAX to -20 dBm
DISP:PERS:LMAX -20

DISPlay:PERSistence:LMAX?

Queries the maximum displayed level (y-axis) in the persistence view in actual unit

Result Parameter

Parameter	Type	Description
Value	Unit	LMAX

Examples

//Queries LMAX
DISP:PERS:LMAX?
-20.00

DISPlay:PERSistence:LRANge

Sets the maximum displayed level range (y-axis) in the persistence view in actual unit

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Value	Unit	LRANge (dB)

Examples

//Sets LRANge to 100 dB
DISP:PERS:LRAN 100

DISPlay:PERSistence:LRANge?

Queries the maximum displayed level range (y-axis) in the persistence view in actual unit

Result Parameter

Parameter	Type	Description
Value	Unit	LRANge

Examples

//Queries LRANge
DISP:PERS:LRAN?
100

DISPlay:SPECtrum:LMAX

Sets maximum displayed level (y-axis) in the spectrum view in actual unit

Command Parameter

Parameter	Type	Description
Value	Unit	LMAX (dBm, ...)

Examples

//Sets LMAX to -20 dBm
DISP:SPEC:LMAX -20

DISPlay:SPECtrum:LMAX?

Queries the maximum displayed level (y-axis) in the spectrum view in actual unit

Result Parameter

Parameter	Type	Description
Value	Unit	LMAX

Examples

//Queries LMAX
DISP:SPEC:LMAX?
-20.00

9 Command Groups ^

DISPlay:SPECtrum:LRANge

Sets the maximum displayed level range (y-axis) in the spectrum view in actual unit

Command Parameter

Parameter	Type	Description
Value	Unit	LRANge (dB)

Examples

//Sets LRANge to 100 dB
DISP:SPEC:LRAN 100

DISPlay:SPECtrum:LRANge?

Queries the maximum displayed level range (y-axis) in the spectrum view in actual unit

Result Parameter

Parameter	Type	Description
Value	Unit	LRANge

Examples

//Queries LRANge
DISP:SPEC:LRAN?
100

DISPlay:UNIT

Sets the actual level unit

Command Parameter

Parameter	Type	Description
Value	Enum	No antenna connected: dBm, dBV, dBmV, dBuV With antenna connected: dBm, dBV, dBmV, dBuV, W_m2, W_cm2, A_m, V_m, dBA_m, dBV_m, dBmV_m, dBuV_m

Examples

//Sets the unit to dBm
DISP:UNIT dBm

DISPlay:UNIT?

Queries the actual level unit

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	Enum	No antenna connected: dBm, dBV, dBmV, dBuV With antenna connected: dBm, dBV, dBmV, dBuV, W_m2, W_cm2, A_m, V_m, dBA_m, dBV_m, dBmV_m, dBuV_m

Examples

//Queries the unit

DISP:UNIT?

dBm

DISPlay:UNIT:LIST?

Queries a list of possible level units

Result Parameter

Parameter	Type	Description
Data	FlexArray[Enum]	List of possible units

Examples

//Queries a list of possible units

DISP:UNIT:LIST?

dBm,dBV,dBmV,dBuV

9 Command Groups ^

Narda Command Reference - DLOGger

Datalogger subsystem

DLOGer:SAVE:LOCalization

Datalogger save localization

Command Parameter

Parameter	Type	Description
FileName	String	Filename or empty string for auto naming
Comment	String	Comment for the file to save

Examples

```
//Saves localization to file with specific filename and comment
DLOG:SAVE:LOC 'MyFileName','This is a comment'
//Saves localization to file with no filename and no comment
DLOGger:SAVE:LOCalization ","
```

DLOGer:WORKing:DIRectory

Datalogger get/set working directory

Command Parameter

Parameter	Type	Description
Path	String	Path to working directory

Examples

```
//Sets the working directory
DLOG:WORK:DIR 'D:\\Narda_SignalShark\\Datalogger\\Measurement Data'
```

DLOGer:WORKing:DIRectory?

Datalogger get/set working directory

Result Parameter

Parameter	Type	Description
Path	String	Path to working directory

Examples

```
//Queries the working directory
DLOGer:WORKing:DIRectory?
'D:\\Narda_SignalShark\\Datalogger\\Measurement Data'
```

DLOGger:CONFig:TASK:SAVE

Datalogger configuration

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Value	Enum	ALL, SELECTED

Examples

//Configures datalogger to save selected task only
DLOG:CONF:TASK:SAVE SELECTED

DLOGger:CONFig:TASK:SAVE?

Queries the datalogger configuration

Result Parameter

Parameter	Type	Description
Value	Enum	ALL, SELECTED

Examples

//Queries the datalogger save configuration
DLOG:CONF:TASK:SAVE?
SELECTED

DLOGger:DIRectory:ADD?

Creates a new directory and returns the directory path

Query Parameter

Parameter	Type	Description
Value	String	Path to the new directory

Result Parameter

Parameter	Type	Description
Value	String	Path to the new directory

Examples

//Creates a new directory and returns the directory path
DLOGger:DIRectory:ADD? 'E:/Narda_SignalShark/Datalogger/Data/Bearing'
E:/Narda_SignalShark/Datalogger/Data/Bearing_1

DLOGger:DIRectory:DELete

Deletes the given directory

Command Parameter

Parameter	Type	Description
Directory	String	Directory to be deleted

9 Command Groups ^

Examples

//Deletes the given directory

DLOGger:DIRectory:DELete 'D:/Narda_SignalShark/Datalogger/Data/Bearing1'

DLOGger:DIRectory:DELete:ALL

Deletes all files in the given directory

Command Parameter

Parameter	Type	Description
Directory	String	Directory of which the content will be deleted

Examples

//Deletes all files in the given directory

DLOGger:DIRectory:DELete:ALL 'E:/Narda_SignalShark/Datalogger/Data/Bearing'

DLOGger:DIRectory:LIST?

Queries a list of all directories within the data logger

Result Parameter

Parameter	Type	Description
Value	FlexArray[String]	List of directories

Examples

//Queries a list of all directories within the data logger

DLOGger:DIRectory:LIST?

DLOGger:SAVE:DATaset

Datalogger save dataset

Command Parameter

Parameter	Type	Description
FileName	String	Filename or empty string for auto naming
Comment	String	Comment for the file to save

Examples

//Saves dataset to file with specific filename and comment

DLOG:SAVE:DAT 'MyFileName','This is a comment'

//Saves dataset to file with no filename and no comment

DLOGger:SAVE:DATaset ","

DLOGger:SAVE:EXTernal:BEARing

Datalogger save external bearing

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Ftune	Double	Frequency
Latitude	Double	GNSS Latitude
Longitude	Double	GNSS Longitude
Azimuth	Double	Azimuth in degree: 0°...360°
OptionalParameters	Optional[String,String,String,Date,Time,Double,Double,Double]	Filename or empty string for auto naming, Optional Comment or empty string, Source or empty string, Date of the external bearing, Time of the external bearing, Elevation in degree: -90°...90°, DF Quality in percent 0%...100%, RMS level value in dBm

Examples

//Saves external bearing to file

DLOG:SAVE:EXT:BEAR 300.0e6, 48.472, 9.2212, 300.09, 'MyBearing', 'Some comment', 'Some Source', 21.03.2015, 14:07:09, 0.3, 100.0,-98.4

//Saves external bearing to file

DLOGger:SAVE:EXTernal:BEARing 51.2e6,48.472,9.220,100.0

DLOGger:SAVE:SCReenshot

Saves screenshot to file

Command Parameter

Parameter	Type	Description
FileName	String	Filename or empty string for auto naming
Comment	String	Comment for the file to save

Examples

//Saves screenshot to file with specific filename and comment

DLOG:SAVE:SCR 'MyFileName','This is a comment'

9 Command Groups ^

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Narda Command Reference - SYSTem

System subsystem

SYSTem:AUDio:MUTE

Sets the system audio mute setting

Command Parameter

Parameter	Type	Description
Value	Bool	Audio mute

Examples

```
//Enables audio mute
SYST:AUD:MUTE ON
```

SYSTem:AUDio:MUTE?

Queries the system audio mute setting

Result Parameter

Parameter	Type	Description
Value	Bool	Audio mute

Examples

```
//Queries audio mute
SYST:AUD:MUTE?
1
```

SYSTem:AUDio:VOLume

Sets the system audio volume setting

Command Parameter

Parameter	Type	Description
Value	Double	Audio volume 0%...100%

Examples

```
//Sets the audio volume to 90%
SYST:AUD:VOL 90
```

SYSTem:AUDio:VOLume?

Queries the system audio volume setting

Result Parameter

Parameter	Type	Description
Value	Double	Audio volume

9 Command Groups ^

Examples

```
//Queries the audio volume
SYST:AUD:VOL?
90
```

SYSTem:COMMand:FILTer?

Queries the filter flags of command processing

Result Parameter

Parameter	Type	Description
Value	ULong	Filter Flags

Examples

```
//Queries the command filter flags
SYST:COMM:FILT?
0
```

SYSTem:COMMand:PROGress?

Queries the progress of command processing

Result Parameter

Parameter	Type	Description
StepNumber	Double	Progress step number
StepCount	Double	Progress step count
ProgressInfo	String	Progress info

Examples

```
//Queries command progress
SYST:COMM:PROG?
0,0,""
```

SYSTem:REMote:COMMand:LIST?

Queries a list with all available commands in the narda remote parser

Query Parameter

Parameter	Type	Description
Optional	Optional[String]	e.g. 'ShowParameters'

Result Parameter

Parameter	Type	Description
Value	String	List of available scpi commands

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Examples

```
//Queries a list of available commands with parameter description
SYST:REM:COMM:LIST? 'ShowParameters'
…BEARing:DFSQuelch:ENABle Bool;…

//Queries a list of available commands
SYSTem:REMote:COMMand:LIST?
*IDN?;*OPC?;*RST;*WAI;ABORt;SYSTem:ERRor:CODE[:NEXT]?;…
```

SYSTem:REMote:DISPlay

Enables or disables GUI views while remote on

Command Parameter

Parameter	Type	Description
Value	Bool	Remote Display

Examples

```
//Disables remote display
SYST:REM:DISP 0
```

SYSTem:REMote:DISPlay?

Queries the remote display state

Result Parameter

Parameter	Type	Description
Value	Bool	Remote Display

Examples

```
//Queries the remote display value
SYST:REM:DISP?
0
```

SYSTem:REMote:LOG

Enables or disables remote logfile

Command Parameter

Parameter	Type	Description
Value	Bool	Remote Logfile

Examples

```
//Disables remote logfile
SYST:REM:LOG OFF
```

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SYSTem:REMote:LOG?

Queries the remote logfile state

Result Parameter

Parameter	Type	Description
Value	Bool	Remote Logfile

Examples

//Queries the remote logfile state

SYST:REM:LOG?

0

SYSTem:REMote:LOG:CONFig

Sets the remote logfile configuration

Command Parameter

Parameter	Type	Description
Receive	Bool	True for showing receive data
Transmit	Bool	True for showing transmit data
Timestamp	Bool	True for showing timestamp info
Connection	Bool	True for showing connection info
LineSize	ULong	Maximum line size, 0 = disable line size limit
LineCount	ULong	Maximum line count, 0 = disable line count limit

Examples

//Sets remote logfile configuration

SYST:REM:LOG:CONF true, true, true, true, 0, 0

SYSTem:REMote:LOG:CONFig?

Queries the remote logfile configuration

Result Parameter

Parameter	Type	Description
Receive	Bool	True for showing receive data
Transmit	Bool	True for showing transmit data
Timestamp	Bool	True for showing timestamp info
Connection	Bool	True for showing connection info
LineSize	ULong	Maximum line size, 0 = disable line size limit
LineCount	ULong	Maximum line count, 0 = disable line count limit

9 Command Groups ^

Examples

```
//Queries remote logfile configuration
SYST:REM:LOG:CONF?
1,1,1,1,0,0
```

SYSTem:REMote:SLEep?

Lets parser sleep for a specific timespan and returns true if successful.

Query Parameter

Parameter	Type	Description
Time	Timespan	Timespan for sleeping

Result Parameter

Parameter	Type	Description
ReturnCode	Bool	Returns 1 if succesfull

Examples

```
//Lets the parser sleep for 100 milliseconds
SYSTem:REMote:SLEep? 100ms
1

//Lets the parser sleep for 1 second
SYST:REM:SLE? 1s
1
```

SYSTem:REMote:TIMeout

SCPI default remote timeout (default factory setting = 3 seconds)

Command Parameter

Parameter	Type	Description
Timeout	Timespan	Remote timeout (s, ms)

Examples

```
//Sets remote timeout to 10 seconds
SYST:REM:TIM 10s
```

SYSTem:REMote:TIMeout?

Queries the SCPI default remote timeout

Result Parameter

Parameter	Type	Description
Timeout	Timespan	Remote timeout in s

9 Command Groups ^

Examples

//Queries the remote timeout
SYST:REM:TIM?
10

SYSTem:REMote:TIMeout:RESet

Resets remote timeout of all commands to the default value

Examples

//Resets remote timeout of all commands to the default value
SYST:REM:TIM:RES

SYSTem:SHUTdown

Shuts down or restarts the instrument

Command Parameter

Parameter	Type	Description
Value	Enum	Shutdown Mode (SYSTEM_RESTART, SYSTEM_LOG_OFF, APP_QUIT, APP_RESTART)

Examples

//Restarts the instrument
SYSTem:SHUTdown SYSTEM_RESTART

SYSTem:STARtup:DATE?

Startup Date of the system

Result Parameter

Parameter	Type	Description
Date	Date	System startup Date

Examples

//Queries the system startup date
SYSTem:STARtup:DATE?
2019-07-26

//Queries the system startup date
SYST:STAR:DATE?
2019-07-26

SYSTem:STARtup:SEConds?

Seconds since last start of the system

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Seconds	ULongLong	Seconds since last start of the system

Examples

//Queries the time since last start of the system in seconds
SYSTem:STARtup:SEConds?
265050

//Queries the time since last start of the system in seconds
SYST:STAR:SEC?
265050

SYSTem:STARtup:TIME?

Startup Time of the system

Result Parameter

Parameter	Type	Description
Time	Time	System startup Time

Examples

//Queries the system startup time
SYSTem:STARtup:TIME?
09:22:25

//Queries the system startup time
SYST:STAR:TIME?
09:22:25

9 Command Groups ^

Narda Command Reference - NETWork

Network settings subsystem

NETWork:MAC:ADDRess?

Queries the Network MAC address

Result Parameter

Parameter	Type	Description
Address	String	Network MAC address

Examples

//Queries the Network MAC address

NETW:MAC:ADDR?

"00-D0-93-2C-93-78"

9 Command Groups ^

Narda Command Reference - TASK

Task subsystem

TASK:ADD?

Adds a new measurement task to the instrument

Query Parameter

Parameter	Type	Description
Type	String	Task type e.g. 'SPECTRUM', 'RT_SPECTRUM', 'RT_STREAMING', 'AUTO_DF'

Result Parameter

Parameter	Type	Description
Name	String	Name of the new task

Examples

```
//Adds a new realtime spectrum task and queries the name of the task
TASK:ADD? 'RT_SPECTRUM'
"RT Spectrum"
```

TASK:DELete

Deletes a measurement task

Command Parameter

Parameter	Type	Description
Name	String	Task name to delete

Examples

```
//Deletes the measurement task with the name 'Spectrum01'
TASK:DEL 'Spectrum01'
```

TASK:DELete:ALL

Deletes all a measurement tasks

Examples

```
//Deletes all measurement tasks
TASK:DEL:ALL
```

TASK:LIST?

Queries a list of measurement tasks and task names

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Result Parameter

Parameter	Type	Description
List	FlexArray[String,String]	List of all measurement tasks (Type, Name)

Examples

//Queries a list of all measurement tasks

TASK:LIST?

"RT_SPECTRUM","RT Spectrum","RT_STREAMING","RT Streaming","SPECTRUM","Spectrum","SPECTRUM","Spectrum01"

TASK:MOVE

Moves a measurement task to another position

Command Parameter

Parameter	Type	Description
Name	String	Task to move
NameNewPos	String	Destination task to move in front of, or empty string to move to the end

Examples

//Moves the measurement task 'Spectrum01' to the end

TASK:MOVE 'Spectrum01',''

TASK:NEW?

Adds a new measurement task and deletes existing tasks. This command has a timeout of 10s

Query Parameter

Parameter	Type	Description
Type	String	Task type e.g. 'SPECTRUM', 'RT_SPECTRUM', 'RT_STREAMING', 'AUTO_DF'

Result Parameter

Parameter	Type	Description
Name	String	Name of the new task

Examples

//Adds a new realtime spectrum task and queries the name of the task

TASK:NEW? 'RT_SPECTRUM'

"RT Spectrum"

TASK:REName

Renames a measurement task

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Name	String	Task to rename
NewName	String	New task name

Examples

//Renames the measurement task 'Spectrum01' with the name 'mySpectrum01'

TASK:REN 'Spectrum01', 'mySpectrum01'

TASK:REPLace?

Replaces an existing measurement task

Query Parameter

Parameter	Type	Description
Name	String	Name of task to replace
Type	String	Task type of new task e.g. 'RT_SPECTRUM', 'AUTO_DF'

Result Parameter

Parameter	Type	Description
Name	String	Name of the new task

Examples

//Replaces the measurement task with the name 'Spectrum01' with a new task of type 'RT_SPECTRUM'

TASK:REPL? 'Spectrum01','RT_SPECTRUM'

"RT Spectrum"

TASK:SELect

Selects a measurement task

Command Parameter

Parameter	Type	Description
Name	String	Task name to select

Examples

//Selects the measurement task with the name 'Spectrum01'

TASK:SEL 'Spectrum01'

TASK:SELect?

Queries the selected measurement task

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Type	String	Task type
Name	String	Task name

Examples

//Queries the selected measurement task

TASK:SEL?

"SPECTRUM","Spectrum01"

TASK:STATe?

Queries the task state of the selected task

Result Parameter

Parameter	Type	Description
Value	Enum	Task state (RUN, HOLD, STOP)

Examples

//Queries the task state of the selected task

TASK:STAT?

RUN

9 Command Groups ^

Narda Command Reference - VIEW

View subsystem

VIEW:ADD?

Adds a new view to the active measurement task

Query Parameter

Parameter	Type	Description
Reference	UShort	Index of the reference view to insert the new view next to
Direction	Enum	Position of the new view relative to the reference view (LEFT,RIGHT,ABOVE,BELOW)
Type	String	Type of view e.g. 'SPECTRUM', 'PEAK_TABLE', 'LEVEL', 'PERSISTENCE', 'SPECTROGRAM', 'BEARING', 'MAP'

Result Parameter

Parameter	Type	Description
NewView	UShort	Index of the new view added

Examples

```
//Adds a new peaktable view to the left of the view with index 1
VIEW:ADD? 1,LEFT,'PEAK_TABLE'
2
```

VIEW:DELete

Deletes a view from the active measurement task

Command Parameter

Parameter	Type	Description
View	UShort	Index of the view to delete

Examples

```
//Deletes the view with index 1
VIEW:DEL 1
```

VIEW:LIST?

Queries a list of views of the active measurement task

Result Parameter

Parameter	Type	Description
List	FlexArray[String,UShort]	List of all views (Type, Index)

9 Command Groups ^

Examples

//Queries a list of views of the active measurement task
VIEW:LIST?
"PEAK_TABLE",2,"SPECTRUM",1

VIEW:REPLace

Replaces a view of the active measurement task

Command Parameter

Parameter	Type	Description
View	UShort	Index of the view to replace
Type	String	Type of view e.g. 'PEAK_TABLE'

Examples

//Replaces the view with index 1 with a peaktable view
VIEW:REPL 1,'PEAK_TABLE'

VIEW:SELect

Selects a view from the active measurement task

Command Parameter

Parameter	Type	Description
View	UShort	Index of the view to select

Examples

//Selects the view with index 1
VIEW:SEL 1

VIEW:SELect?

Queries the index of the selected view of the active measurement task

Result Parameter

Parameter	Type	Description
View	UShort	Index of the selected view

Examples

//Queries the index of the selected view of the active measurement task
VIEW:SEL?
1

VIEW:SIZE:MAXimize

Maximizes the selected view

9 Command Groups ^

Examples

//Maximizes the selected view
VIEW:SIZE:MAX

VIEW:SIZE:RESTore

Restores the size of the selected view

Examples

//Restores the size of the selected view
VIEW:SIZE:REST

Narda Command Reference - SPECtrum

Spectrum subsystem

SPECtrum:DATA:ALL?

Queries the spectrum configuration and values for multiple traces. Caution: You must skip unused and unknown IDs and data elements while parsing to be compatible with future extensions. (see DATA:ALL? commands)

Query Parameter

Parameter	Type	Description
Optional	Optional[Enum]	RMS, PPk, MPk, Avg, Smp, MnR, AvR, MxR, MxP, MnP, MxA, MxS

Result Parameter

Parameter	Type	Description
TimeStampSyncFlag	Bool	Timestamp Sync Flag
TimeStampSeconds	ULong	Seconds since 1.1.1970 0:00 Greenwich Mean Time
TimeStampFractional	ULong	Nanoseconds fractional part
ScanNumber	ULongLong	Scan Number
ConfigID	Enum	Optional: CONFIG
ConfigElements	ULong	Number of ConfigID Elements
ScanSteps	ULong	Number of Scansteps
ScanTime	Double	Average Scan Time / Meas Time
TotalBins	ULong	Number of Bins
FreqStart	Frequency	Start frequency of the X-Axis
FreqStep	Frequency	Frequency step of the X-Axis
TraceID	Enum	Optional: RMS, PPk, MPk, Avg, Smp, MnR, AvR, MxR, MxP, MnP, MxA, MxS
TraceElements	ULong	Number of TraceID Elements
Overdriven	Bool	Overdriven flag
NotRealtime	Bool	NotRealtime flag
LevelValues	FlexArray[Float]	List of power levels in actual unit

Examples

//Queries all activated traces of the spectrum

SPECtrum:DATA:ALL?

0,1551350795,722909033,3306,CONFIG,5,1,0.01,51,90000000,400000,RMS,53,0,0,-66.20,-67.63,-73.90,-79.52,-71.85,-65.89,-65.97,-72.14,-81.58,-81.68,-75.74,-68.35,-66.88,-71.39,-82.09,-87.16,-86.25,-73.73,-62.21,-57.57,-58.99,-66.72,-82.28,-92.28,-92.18,-91.34,-85.38,-76.03,-71.63,-72.93,-76.87,-76.62,-74.96,-74.30,-78.34,-69.98,-60.43,-57.41,-60.11,-65.24,-68.36,-75.68,-86.24,-84.01,-79.83,-81.25,-88.08,-93.73,-93.82,-93.17,-92.43

SPECtrum:DATA:COUNt?

Queries the spectrum data count (number of bins)

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	ULong	Number of bins

Examples

//Queries the number of bins for the spectrum results
SPEC:DATA:COUN?
27

SPECtrum:DATA:FREQuency:STARt?

Queries spectrum data start frequency

Result Parameter

Parameter	Type	Description
Value	Frequency	Start frequency of the X-Axis

Examples

//Queries the start frequency for the spectrum results
SPEC:DATA:FREQ:STAR?
87400000

SPECtrum:DATA:FREQuency:STEP?

Queries spectrum data frequency step

Result Parameter

Parameter	Type	Description
Value	Frequency	Frequency step of the X-Axis

Examples

//Queries the frequency step for the spectrum results
SPEC:DATA:FREQ:STEP?
200000

SPECtrum:DATA:LEVel?

Queries spectrum level data

Query Parameter

Parameter	Type	Description
Name	Enum	RMS, PPk, MPk, Avg, Smp, MnR, AvR, MxR, MxP, MnP, MxA, MxS

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Data	FlexArray[Float]	List of power levels in actual unit

Examples

//Queries the spectrum data results for AvR

SPEC:DATA:LEV? AvR

-92.93,-84.10,-78.49,-78.52,-84.42,-93.50,-92.02,-89.82,-83.25,-70.33,-64.19,-63.79,-61.04,-55.48,-55.48,-61.55,-69.25,-67.60,-70.60,-80.08,-93.79,-87.75,-70.16,-60.62,-57.62,-60.60,-70.13

SPECtrum:DATA:OVERdriven?

Queries the spectrum data overdriven flag

Result Parameter

Parameter	Type	Description
Value	Bool	Overdriven flag

Examples

//Queries the overdriven flag

SPEC:DATA:OVER?

0

SPECtrum:DATA:REALtime?

Queries the spectrum data realtime flag for traces: MnR, AvR, MxR, MxP, MnP, MxA, MxS

Result Parameter

Parameter	Type	Description
Value	Bool	Realtime flag

Examples

//Queries the realtime flag

SPEC:DATA:REAL?

1

SPECtrum:DATA:UPDate?

Update is avaliable in RUN and HOLD mode (see DATA:UPDate Commands)

Query Parameter

Parameter	Type	Description
Optional	Optional[ULongLong,Timespan]	ScanNumber of last queried measurement data or NaN to force an update, Timeout value for update data (s, ms)

9 Command Groups ^

Result Parameter

Parameter	Type	Description
ScanNumber	ULongLong	ScanNumber of current measurement data.

Examples

```
//Spectrum data update with old scancount = 10 and timeout = 100ms
SPEC:DATA:UPD? 10,100ms
25244

//Forces Spectrum data update because we do not have old scannumber
SPECtrum:DATA:UPDate?
24548

//Spectrum data update with old scannumber = 0
SPECtrum:DATA:UPDate? 0
24792

//Forces Spectrum data update with timeout = 100ms
SPECtrum:DATA:UPDate? NaN,100ms
25024
```

SPECtrum:FREQuency:CENTer

Sets the center frequency for spectrum

Command Parameter

Parameter	Type	Description
Value	Frequency	Center frequency (Hz, kHz, MHz, GHz)

Examples

```
//Sets the center frequency in MHz
SPEC:FREQ:CENT 51.2 MHz
```

SPECtrum:FREQuency:CENTer?

Queries the center frequency

Result Parameter

Parameter	Type	Description
Value	Frequency	Center frequency in Hz

Examples

```
//Queries the center frequency
SPEC:FREQ:CENT?
51200000
```

9 Command Groups ^

SPECtrum:FREQuency:CENTer:STEP

Sets the center frequency step for spectrum

Command Parameter

Parameter	Type	Description
Value	Frequency	Center frequency step (Hz, kHz, MHz, GHz)

Examples

//Sets the center frequency step in MHz

SPEC:FREQ:CENT:STEP 1 MHz

SPECtrum:FREQuency:CENTer:STEP?

Queries the center frequency step for spectrum

Result Parameter

Parameter	Type	Description
Value	Frequency	Center frequency step in Hz

Examples

//Queries the center frequency step size

SPEC:FREQ:CENT:STEP?

1000000

SPECtrum:FREQuency:CENTer:TUNE:COUPling

Automatic coupling of Fcent and Ftune

Command Parameter

Parameter	Type	Description
Value	Bool	Coupling state

Examples

//Sets the Fcent Ftune coupling to OFF

SPEC:FREQ:CENT:TUNE:COUP OFF

SPECtrum:FREQuency:CENTer:TUNE:COUPling?

Queries the coupling state of Fcent and Ftune

Result Parameter

Parameter	Type	Description
Value	Bool	Coupling state

9 Command Groups ^

Examples

//Queries the Fcent Ftune coupling state
SPEC:FREQ:CENT:TUNE:COUP?
0

SPECtrum:FREQuency:ENTRy:MODE

Sets the entry mode for Fcent, Fspan or Fstart, Fstop

Command Parameter

Parameter	Type	Description
Value	Enum	Entry mode (FSTART_FSTOP,FCENT_FSPAN)

Examples

//Sets entry mode to FCENT_FSPAN
SPEC:FREQ:ENTR:MODE FCENT_FSPAN

SPECtrum:FREQuency:ENTRy:MODE?

Queries the entry mode for Fcent, Fspan or Fstart, Fstop

Result Parameter

Parameter	Type	Description
Value	Enum	Entry mode (FSTART_FSTOP,FCENT_FSPAN)

Examples

//Queries the entry mode
SPEC:FREQ:ENTR:MODE?
FCENT_FSPAN

SPECtrum:FREQuency:SPAN

Frequency span for spectrum

Command Parameter

Parameter	Type	Description
Value	Frequency	Frequency span (Hz, kHz, MHz, GHz)

Examples

//Sets the frequency span in MHz
SPEC:FREQ:SPAN 40 MHz

9 Command Groups ^

SPECtrum:FREQuency:SPAN?

Queries the frequency span

Result Parameter

Parameter	Type	Description
Value	Frequency	Frequency span in Hz

Examples

//Queries the frequency span
SPEC:FREQ:SPAN?
40000000

SPECtrum:FREQuency:STARt

Sets the Start frequency for spectrum

Command Parameter

Parameter	Type	Description
Value	Frequency	Start frequency (Hz, kHz, MHz, GHz)

Examples

//Sets the start frequency in GHz
SPEC:FREQ:STAR 1 GHz

SPECtrum:FREQuency:STARt?

Queries the start frequency, in Hz

Result Parameter

Parameter	Type	Description
Value	Frequency	Start frequency in Hz

Examples

//Queries the start frequency in Hz
SPEC:FREQ:STAR?
1000000000

SPECtrum:FREQuency:STOP

Sets the Stop frequency for spectrum

Command Parameter

Parameter	Type	Description
Value	Frequency	Stop frequency (Hz, kHz, MHz, GHz)

9 Command Groups ^

Examples

//Sets the stop frequency in Hz
SPEC:FREQ:STOP 2e9

SPECtrum:FREQuency:STOP?

Queries the stop frequency, in Hz

Result Parameter

Parameter	Type	Description
Value	Frequency	Stop frequency in Hz

Examples

//Queries the stop frequency in Hz
SPEC:FREQ:STOP?
2000000000

SPECtrum:MEASurement:TIME

Measurement time for spectrum

Command Parameter

Parameter	Type	Description
Value	Timespan	Measurement time (h, m, s, ms)

Examples

//Sets the measurement time to 10ms
SPEC:MEAS:TIME 10 ms

SPECtrum:MEASurement:TIME?

Queries the measurement time

Result Parameter

Parameter	Type	Description
Value	Timespan	Measurement time in s

Examples

//Queries the measurement time
SPEC:MEAS:TIME?
0.01

SPECtrum:MEASurement:TIME:ENTRy:MODE

Sets the measurement time entry mode, absolute or relative

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Value	Enum	Measurement time entry mode (Absolute, Relative)

Examples

//Sets the measurement time entry mode to ABSOLUTE

SPECtrum:MEASurement:TIME:ENTRy:MODE Absolute

SPECtrum:MEASurement:TIME:ENTRy:MODE?

Queries the measurement time entry mode, absolute or relative

Result Parameter

Parameter	Type	Description
Value	Enum	Measurement time entry mode (Absolute, Relative)

Examples

//Queries the measurement time entry mode

SPEC:MEAS:TIME:ENTR:MODE?

ABSOLUTE

SPECtrum:RBW

Sets the resolution bandwidth for spectrum

Command Parameter

Parameter	Type	Description
Value	Frequency	Resolution Bandwidth (Hz, kHz, MHz, GHz)

Examples

//Sets the bandwidth in kHz

SPEC:RBW 100 kHz

SPECtrum:RBW?

Queries the bandwidth, in Hz

Result Parameter

Parameter	Type	Description
Value	Frequency	Resolution Bandwidth in Hz

9 Command Groups ^

Examples

//Queries the bandwidth in Hz
SPEC:RBW?
100000

SPECtrum:RBW:AUTO

Bandwidth automatic coupling to the span

Command Parameter

Parameter	Type	Description
Value	Bool	Coupling state

Examples

//Sets the bandwidth automatic coupling to OFF
SPEC:RBW:AUTO OFF

SPECtrum:RBW:AUTO?

Queries the bandwidth automatic coupling state

Result Parameter

Parameter	Type	Description
Value	Bool	Coupling state

Examples

//Queries the bandwidth automatic coupling state
SPEC:RBW:AUTO?
1

SPECtrum:RBW:ENTRy:MODE

Sets the bandwidth entry mode; absolute or relative

Command Parameter

Parameter	Type	Description
Value	Enum	RBW entry (Absolute, Relative)

Examples

//Sets the bandwidth entry to ABSOLUTE
SPEC:RBW:ENTR:MODE Absolute

SPECtrum:RBW:ENTRy:MODE?

Queries the bandwidth entry mode; absolute or relative

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	Enum	RBW entry (Absolute, Relative)

Examples

//Queries the bandwidth entry
SPEC:RBW:ENTR:MODE?
ABSOLUTE

SPECtrum:RBW:FILTer:TYPE

Sets the bandwidth filter type

Command Parameter

Parameter	Type	Description
Value	Enum	Filter type (Normal, EMC)

Examples

//Sets the bandwidth filter type to NORMAL
SPEC:RBW:FILT:TYPE Normal

SPECtrum:RBW:FILTer:TYPE?

Queries the bandwidth filter type

Result Parameter

Parameter	Type	Description
Value	Enum	Filter type (Normal, EMC)

Examples

//Queries the bandwidth filter type
SPEC:RBW:FILT:TYPE?
NORMAL

SPECtrum:RBW:LIST?

Queries a list of possible RBW settings

Result Parameter

Parameter	Type	Description
List	FlexArray[Double]	List of RBWs

Examples

//Queries a list of RBWs
SPEC:RBW:LIST?
800000,400000,200000,100000,50000,25000,12500,6250

9 Command Groups ^

SPECtrum:SCAN:COUNt

Sets the spectrum scan count

Command Parameter

Parameter	Type	Description
Value	ULong	Scan count

Examples

```
//Sets the scan count to 50
SPEC:SCAN:COUN 50
```

SPECtrum:SCAN:COUNt?

Queries the current scan count

Result Parameter

Parameter	Type	Description
Value	ULong	Scan count

Examples

```
//Queries the current scan count
SPEC:SCAN:COUN?
50
```

SPECtrum:SCAN:NUMBer?

Queries the current scan number

Result Parameter

Parameter	Type	Description
Value	ULongLong	Scan number

Examples

```
//Queries the current scan number
SPEC:SCAN:NUMB?
1814
```

SPECtrum:TRACe:DETector<Number>

Sets the detector configuration. Only the 3rd detector can be configured.

Suffixes

Parameter	Type	Description
Number	UShort	Detector Number = 3

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Mode	Enum	Detector1 (PPk), Detector2 (RMS), Detector3 (MPk, Smp, Avg)

Examples

//Sets detector 3 to minus peak
SPEC:TRAC:DET3 MPk

SPECtrum:TRACe:DETector<Number>?

Queries the detector configuration. Only the 3rd detector can be configured

Suffixes

Parameter	Type	Description
Number	UShort	Detector Number = 3

Result Parameter

Parameter	Type	Description
Mode	Enum	Detector1 (PPk), Detector2 (RMS), Detector3 (MPk, Smp, Avg)

Examples

//Queries the detector mode for detector 3
SPEC:TRAC:DET3?
MPk

SPECtrum:TRACe:ENABle

Enables the displayed detectors and traces

Command Parameter

Parameter	Type	Description
Name	Enum	All, RMS, PPk, MPk, Avg, Smp, MnR, AvR, MxR, MxP, MnP, MxA, MxS
State	Bool	Trace state

Examples

//Enables AvR trace
SPEC:TRAC:ENAB AvR,ON

SPECtrum:TRACe:ENABle?

Queries the corresponding trace state

9 Command Groups ^

Query Parameter

Parameter	Type	Description
Name	Enum	All, RMS, PPk, MPk, Avg, Smp, MnR, AvR, MxR, MxP, MnP, MxA, MxS

Result Parameter

Parameter	Type	Description
State	Bool	Trace state

Examples

```
//Queries AvR trace state
SPEC:TRAC:ENAB? AvR
1
```

SPECtrum:TRACe:INFinite

Sets the infinite min max trace state

Command Parameter

Parameter	Type	Description
Value	Bool	Infinite state

Examples

```
//Enables infinite min max trace
SPEC:TRAC:INF ON
```

SPECtrum:TRACe:INFinite?

Queries the infinite min max trace state

Result Parameter

Parameter	Type	Description
Value	Bool	Infinite state

Examples

```
//Queries infinite state
SPEC:TRAC:INF?
1
```

SPECtrum:TRACe:LIST?

Queries a list of selected display traces

Result Parameter

Parameter	Type	Description
List	FlexArray[Enum]	Selected display traces

9 Command Groups ^

Examples

//Queies all selected display traces
SPEC:TRAC:LIST?
RMS,PPk,AvR

SPECtrum:TSTamp?

Queries the spectrum data timestamp

Result Parameter

Parameter	Type	Description
TimeStampSyncFlag	Bool	Timestamp Sync Flag
TimeStampSeconds	ULong	Seconds since 1.1.1970 0:00 Greenwich Mean Time
TimeStampFractional	ULong	Nanoseconds fractional part

Examples

//Queries the spectrum data timestamp
SPEC:TST?
0,1533056334,809341586

9 Command Groups ^

Narda Command Reference - MARKer

Marker subsystem

MARKer:FXD:FREQuency

Sets the frequency of fixed marker

Command Parameter

Parameter	Type	Description
Value	Frequency	Fixed Marker frequency (Hz, kHz, MHz, GHz)

Examples

//Sets fixed marker frequency to 52.2 MHz
MARK:FXD:FREQ 52.2e6

MARKer:FXD:FREQuency?

Queries the frequency of fixed marker

Result Parameter

Parameter	Type	Description
Value	Frequency	Marker frequency in Hz

Examples

//Queries the fixed marker frequency
MARK:FXD:FREQ?
52200000

MARKer:FXD:TIME

Sets the time postion of fixed marker

Command Parameter

Parameter	Type	Description
Value	Timespan	Fixed Marker time (h, m, s, ms)

Examples

//Sets fixed marker time postion to -15 s
MARK:FXD:TIME -15
//Sets fixed marker time position to -5 ms
MARKer:FXD:TIME -5 ms

MARKer:FXD:TIME?

Queries the time postion of fixed marker

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	Timespan	Time position of fixed Marker in seconds

Examples

//Queries the fixed marker time postion

MARK:FXD:TIME?

-15

MARKer:FXD:VALue

Sets the value of fixed marker

Command Parameter

Parameter	Type	Description
Value	Unit	Fixed marker value in actual unit (dBm,...)

Examples

//Sets the fixed marker value to 10 in actual unit

MARK:FXD:VAL 10

//Sets the fixed marker value to 10 dBm

MARKer:FXD:VALue 10 dBm

MARKer:FXD:VALue?

Queries the value of fixed marker

Result Parameter

Parameter	Type	Description
Value	Unit	Fixed marker value in actual unit

Examples

//Queries the fixed marker value

MARK:FXD:VAL?

10.00

MARKer:SPECtrum:DATA:ALL?

Queries all marker values for spectrum. Caution: You must skip unused and unknown IDs and data elements while parsing to be compatible with future extensions (see DATA:ALL? commands).

Query Parameter

Parameter	Type	Description
Optional	Optional[Enum]	Reserved for future use

9 Command Groups ^

Result Parameter

Parameter	Type	Description
TimeStampSyncFlag	Bool	Timestamp Sync Flag
TimeStampSeconds	ULong	Seconds since 1.1.1970 0:00 Greenwich Mean Time
TimeStampFractional	ULong	Nanoseconds fractional part
ScanNumber	ULongLong	Scan Number
MarkerID	Enum	Optional: M1, M2, D2, M3, D3, M4, D4, ... , M8, D8
MarkerElements	ULong	Number of MarkerID Elements
TraceName	Enum	RMS, PPk, MPk, Avg, Smp, MnR, AvR, MxR, MxP, MnP, MxA, MxS
Frequency	Double	Marker frequency in Hz
Time	Double	Marker time in seconds
Level	Float	Marker power level in actual unit
CPowerFunction	Enum	Optional: CHANNEL_POWER
CPower	Unit	Channel Power
NoiseFunction	Enum	Optional: NOISE
Noise	Unit	Noise
OcBwFunction	Enum	Optional: OCCUPIED_BANDWIDTH
OcBW	Frequency	Occupied Bandwidth value
OcBWFmid	Frequency	Middle Frequency
OcBWCPower	Unit	Channel Power
TrFunction	Enum	Optional: TRANSMITTER
TrName	String	Transmitter name
TrType	String	Transmitter type
TrComment	String	Transmitter comment

Examples

// Marker 1 with Marker Function NOISE, Marker 2 with Marker Function CHANNEL POWER, Marker 3 without function

MARK:SPEC:DATA:ALL?

0,1551351924,765450087,106,M1,6,RMS,100000000,0,-78.23,NOISE,-121.42,M2,6,RMS,104400000,0,-55.47,CHANNEL_POWER,-50.91,M3,4,RMS,98000000,0,-47.77

MARKer<Index>:SPECtrum:DATA:FREQuency?

Queries the marker or deltamarker frequency data

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Result Parameter

Parameter	Type	Description
Data	Double	Marker frequency in Hz

9 Command Groups ^

Examples

//Marker 3 frequency
MARK3:SPEC:DATA:FREQ?
60000000

MARKer<Index>:SPECtrum:DATA:LEVel?

Queries marker or deltamarker level data

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Result Parameter

Parameter	Type	Description
Data	Float	Marker power level in actual unit

Examples

//Marker 3 power level
MARK3:SPEC:DATA:LEV?
-0.85

MARKer<Index>:SPECtrum:DATA:PEAK:STATe?

Queries the marker peak state. PEAK:STATe only works in HOLD or STOP mode or with track peak enabled (PEAK:TRACk ON.)

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Result Parameter

Parameter	Type	Description
Value	Bool	1 = peak was found, 0 = no peak was found

Examples

//Marker 3 peak state
MARK3:SPEC:DATA:PEAK:STAT?
0

MARKer<Index>:SPECtrum:DATA:TIME?

Queries the marker or deltamarker time data

9 Command Groups ^

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Result Parameter

Parameter	Type	Description
Data	Double	Marker time in seconds

Examples

//Time position of marker 2

MARK2:SPEC:DATA:TIME?

0

MARKer<Index>:SPECtrum:ENABle

Marker enable or disable

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Command Parameter

Parameter	Type	Description
Value	Bool	Enable state

Examples

//Disables marker 3

MARK3:SPEC:ENAB OFF

MARKer<Index>:SPECtrum:ENABle?

Queries the current state of a marker

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Result Parameter

Parameter	Type	Description
Value	Bool	Enable state

Examples

//Queries the marker 1 enable state

MARK1:SPEC:ENAB?

1

9 Command Groups ^

MARKer<Index>:SPECtrum:FREQuency

Marker frequency (see also MARKer<Index>:SPECtrum:DATA:FREQuency?)

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Command Parameter

Parameter	Type	Description
Value	Frequency	Marker frequency (Hz, kHz, MHz, GHz)

Examples

```
//Sets marker 2 frequency to 52.2 MHz
MARK2:SPEC:FREQ 52.2e6
```

MARKer<Index>:SPECtrum:FREQuency?

Queries the current frequency for a marker

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Result Parameter

Parameter	Type	Description
Value	Frequency	Marker frequency in Hz

Examples

```
//Queries the current frequency for marker 1
MARK1:SPEC:FREQ?
52200000
```

MARKer<Index>:SPECtrum:FREQuency:LINK

Marker frequency link

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

9 Command Groups ^

Command Parameter

Parameter	Type	Description
LinkIndex	ULong	Frequency link Marker Index (1...8). If Marker Index equals Link Index, Frequency link is disabled.

Examples

```
//Disables frequency link for marker 4
MARK4:SPEC:FREQ:LINK 4
//Sets marker 8 as frequency link for marker 3
MARK3:SPEC:FREQ:LINK 8
```

MARKer<Index>:SPECtrum:FREQuency:LINK?

Queries the marker frequency link to another marker

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Result Parameter

Parameter	Type	Description
LinkIndex	ULong	Frequency link Marker Index (1...8)

Examples

```
//Queries the marker which is linked (in frequency) with marker 2
MARK2:SPEC:FREQ:LINK?
1
```

MARKer<Index>:SPECtrum:FREQuency:LINK:OFFSet

Marker frequency link offset

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (2...8)

Command Parameter

Parameter	Type	Description
Value	Frequency	Marker frequency (Hz, kHz, MHz, GHz)

9 Command Groups ^

Examples

//Sets marker 3 frequency link offset to 10 MHz
MARK3:SPEC:FREQ:LINK 10e6

MARKer<Index>:SPECtrum:FREQuency:LINK:OFFSet?

Queries the frequency link offset

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (2...8)

Result Parameter

Parameter	Type	Description
Value	Frequency	Marker frequency in Hz

Examples

//Queries the frequency link offset for marker 2
MARKer2:SPECtrum:FREQuency:LINK:OFFSet?
10000000

MARKer<Index>:SPECtrum:FUNCtion

Sets the marker function

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Command Parameter

Parameter	Type	Description
Function	String	Function name e.g. 'CHANNEL_POWER', 'NOISE', 'OCCUPIED_BANDWIDTH', 'TRANSMITTER' or empty string '' to disable function

Examples

//Disables function for marker 3
MARK3:SPEC:FUNCtion ''
//Sets channel power function for marker 1
MARKer1:SPECtrum:FUNCtion 'CHANNEL_POWER'
//Sets noise function for marker 2
MARK2:SPEC:FUNCtion 'NOISE'

9 Command Groups ^

MARKer<Index>:SPECtrum:FUNCtion?

Queries the channel power function

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Result Parameter

Parameter	Type	Description
Function	String	Function name

Examples

//Queries the channel power function for marker 1
MARK1:SPEC:FUNC?
"CHANNEL_POWER"

MARKer:SPECtrum:FUNCtion:CPOWer:CBW

CBW for marker function: Channel Power

Command Parameter

Parameter	Type	Description
Value	Frequency	CBW frequency (Hz, kHz, MHz, GHz)

Examples

//Sets CBW 100 kHz for channel power function of all marker
MARK:SPEC:FUNC:CPOW:CBW 100e3

MARKer:SPECtrum:FUNCtion:CPOWer:CBW?

Queries the CBW

Result Parameter

Parameter	Type	Description
Value	Frequency	CBW frequency in Hz

Examples

//Queries the CBW for channel power function of all marker
MARK:SPEC:FUNC:CPOW:CBW?
100000

MARKer<Index>:SPECtrum:FUNCtion:CPOWer:DATA?

Queries data for marker function: Channel Power

9 Command Groups ^

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Result Parameter

Parameter	Type	Description
Data	Unit	Marker function data in actual unit

Examples

//Marker 3 function data
MARK3:SPEC:FUNC:CPOW:DATA?
-86.61

MARKer<Index>:SPECtrum:FUNCtion:NOISe:DATA?

Queries data for marker or deltamarker function: Noise

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Result Parameter

Parameter	Type	Description
Data	Unit	Marker function data in actual unit

Examples

//Marker 3 function data
MARK3:SPEC:FUNC:NOIS:DATA?
-146.54

MARKer:SPECtrum:FUNCtion:NOISe:NBW

NBW for marker function: Noise

Command Parameter

Parameter	Type	Description
Value	Frequency	NBW frequency (Hz, kHz, MHz, GHz)

Examples

//Sets NBW 100 kHz for noise function of all marker
MARK:SPEC:FUNC:NOIS:NBW 100e3

9 Command Groups ^

MARKer:SPECtrum:FUNCtion:NOISe:NBW?

Queries the NBW

Result Parameter

Parameter	Type	Description
Value	Frequency	NBW frequency in Hz

Examples

//Queries the NBW for noise function of all marker
MARK:SPEC:FUNC:NOIS:NBW?
1000000

MARKer:SPECtrum:FUNCtion:NOISe:NBW:AUTO

NBW auto coupling for marker function: Noise

Command Parameter

Parameter	Type	Description
Value	Bool	Coupling state

Examples

//Sets NBW auto coupling to OFF for noise function of all marker
MARK:SPEC:FUNC:NOIS:NBW:AUTO OFF

MARKer:SPECtrum:FUNCtion:NOISe:NBW:AUTO?

Queries the NBW auto coupling state

Result Parameter

Parameter	Type	Description
Value	Bool	Coupling state

Examples

//Queries the NBW auto coupling state for noise function of all marker
MARK:SPEC:FUNC:NOIS:NBW:AUTO?
0

MARKer<Index>:SPECtrum:FUNCtion:OCBW:DATA?

Queries data for marker function: OCCUPIED_BANDWIDTH

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

9 Command Groups ^

Result Parameter

Parameter	Type	Description
OcBW	Frequency	Occupied Bandwidth value
OcBWFmid	Frequency	Middle Frequency
OcBWCPower	Unit	Channel Power

Examples

//Marker 3 function data

MARK3:SPEC:FUNC:OCBW:DATA?

155663,446019301,-21.37

//Marker 2 function data

MARKer2:SPECtrum:FUNCtion:OCBW:DATA?

155723,446019276,-21.10

MARKer:SPECtrum:FUNCtion:OCBW:MODE

Mode for marker function: OCCUPIED_BANDWIDTH

Command Parameter

Parameter	Type	Description
Value	Enum	Occupied bandwith mode (%, dB)

Examples

//Sets occupied bandwith mode to dB

MARK:SPEC:FUNC:OCBW:MODE dB

MARKer:SPECtrum:FUNCtion:OCBW:MODE?

Mode for marker function: OCCUPIED_BANDWIDTH

Result Parameter

Parameter	Type	Description
Value	Enum	Occupied bandwith mode

Examples

//Queries occupied bandwith mode

MARK:SPECtrum:FUNC:OCBW:MODE?

XdB

MARKer:SPECtrum:FUNCtion:OCBW:NTRials

Sets the NTrials (number of trials) for marker function: OCCUPIED_BANDWIDTH

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Value	UShort	Occupied bandwith NTrials parameter (1...1000)

Examples

//Sets occupied bandwith NTrials value to 80
MARK:SPEC:FUNC:OCBW:NTR 80

MARKer:SPECtrum:FUNCtion:OCBW:NTRials?

NTrials (number of trials) for marker function: OCCUPIED_BANDWIDTH

Result Parameter

Parameter	Type	Description
Value	UShort	Occupied bandwith NTrials parameter

Examples

//Queries occupied bandwith NTrials value
MARK:SPEC:FUNC:OCBW:NTR?
80

MARKer:SPECtrum:FUNCtion:OCBW:PERCent

Sets the % for marker function: OCCUPIED_BANDWIDTH

Command Parameter

Parameter	Type	Description
Value	Float	Occupied bandwith % parameter (50 ... 99.99)

Examples

//Sets occupied bandwith percent value to 80
MARKer:SPECtrum:FUNCtion:OCBW:PERCent 80.0

MARKer:SPECtrum:FUNCtion:OCBW:PERCent?

Queries the % for marker function: OCCUPIED_BANDWIDTH

Result Parameter

Parameter	Type	Description
Value	Float	Occupied bandwith % parameter

9 Command Groups ^

Examples

//Queries occupied bandwith percent value
MARK:SPECtrum:FUNC:OCBW:PERC?
80

MARKer:SPECtrum:FUNCtion:OCBW:THReshold

Sets the threshold for marker function: OCCUPIED_BANDWIDTH

Command Parameter

Parameter	Type	Description
Value	Unit	Threshold level in acutal unit or units of: No antenna connected: dBm, dBV, dBmV, dBuV With antenna connected: dBm, dBV, dBmV, dBuV, W_m2, W_cm2, A_m, V_m, dBA_m, dBV_m, dBmV_m, dBuV_m

Examples

//Sets occupied bandwith threshold level to 0 dBm
MARK:SPEC:FUNC:OCBW:THR 0 dBm

MARKer:SPECtrum:FUNCtion:OCBW:THReshold?

Queries the threshold for marker function: OCCUPIED_BANDWIDTH

Result Parameter

Parameter	Type	Description
Value	Unit	Threshold level in actual unit

Examples

//Queries occupied bandwith threshold level
MARK:SPEC:FUNC:OCBW:THR?
0.00

MARKer:SPECtrum:FUNCtion:OCBW:XDB

XdB for marker function: OCCUPIED_BANDWIDTH

Command Parameter

Parameter	Type	Description
Value	Float	Occupied bandwith XdB parameter (-60...1)

9 Command Groups ^

Examples

//Sets occupied bandwith XdB value to -10 dB
MARK:SPEC:FUNC:OCBW:XDB -10.0

MARKer:SPECtrum:FUNCtion:OCBW:XDB?

XdB for marker function: OCCUPIED_BANDWIDTH

Result Parameter

Parameter	Type	Description
Value	Float	Occupied bandwith XdB parameter

Examples

//Queries occupied bandwith XdB
MARK:SPEC:FUNC:OCBW:XDB?
-10

MARKer<Index>:SPECtrum:FUNCtion:TRANsmitter:DATA?

Queries the data for Marker function: TRANSMITTER

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Result Parameter

Parameter	Type	Description
Name	String	Transmitter name
Type	String	Transmitter type
Comment	String	Transmitter comment

Examples

//Marker 2 function data
MARKer2:SPECtrum:FUNCtion:TRANsmitter:DATA?
"BIG FM","FM Radio","Deutschlands biggste Beats"

//Marker 3 function data
MARK3:SPEC:FUNC:TRAN:DATA?
"SWR 4 BW","FM Radio",""

MARKer:SPECtrum:LIST?

List of enabled markers

9 Command Groups ^

Result Parameter

Parameter	Type	Description
List	FlexArray[Enum]	Enabled marker list

Examples

//Queries the enabled markers

MARK:SPEC:LIST?

M1,M2

MARKer<Index>:SPECtrum:PEAK

Marker peak search (time or frequency domain)

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Examples

//Marker 2 peak search

MARK2:SPEC:PEAK

MARKer<Index>:SPECtrum:PEAK:LEFT

Marker left peak search (frequency domain)

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Examples

//Marker 2 left peak search

MARK2:SPEC:PEAK:LEFT

MARKer<Index>:SPECtrum:PEAK:LOWer

Marker lower peak search (time domain)

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Examples

//Marker 2 lower peak search

MARK2:SPEC:PEAK:LOW

9 Command Groups ^

MARKer<Index>:SPECtrum:PEAK:NEXT

Marker next peak search (time or frequency domain)

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Examples

//Marker 2 next peak search

MARK2:SPEC:PEAK:NEXT

MARKer<Index>:SPECtrum:PEAK:RIGHt

Marker right peak search (frequency domain)

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Examples

//Marker 2 right peak search

MARK2:SPEC:PEAK:RIGHt

MARKer<Index>:SPECtrum:PEAK:UPPer

Marker upper peak search (time domain)

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Examples

//Marker 2 upper peak search

MARK2:SPEC:PEAK:UPP

MARKer<Index>:SPECtrum:REFerence

Reference marker for a delta marker

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (2...8)

9 Command Groups ^

Command Parameter

Parameter	Type	Description
RefIndex	ULongEnum	Reference Marker Index (0...8, FXD). If RefIndex equals 0, Reference is disabled.

Examples

//Disables reference for marker 4
MARK4:SPEC:REF 0
//Sets marker 1 as reference for delta marker 2
MARKer2:SPECtrum:REFerence 1
//Sets FXD marker as reference for delta marker 3
MARK3:SPEC:REF FXD

MARKer<Index>:SPECtrum:REFerence?

Queries the corresponding reference marker

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (2...8)

Result Parameter

Parameter	Type	Description
RefIndex	ULongEnum	Reference Marker Index (0...8, FDX)

Examples

//Queries the reference marker for delta marker 2
MARK2:SPEC:REF?
1

MARKer:SPECtrum:SEARch:AUTO:PEAK:ENABle

'Auto Peak Search for M1' for marker

Command Parameter

Parameter	Type	Description
Value	Bool	'Auto Peak Search for M1'

Examples

//Sets the searchlimit enable state to OFF
MARK:SPEC:SEAR:AUTO:PEAK:ENAB 0

MARKer:SPECtrum:SEARch:AUTO:PEAK:ENABle?

Queries the searchlimit enable state

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	Bool	'Auto Peak Search for M1'

Examples

//Queries the searchlimit enable state
MARK:SPEC:SEAR:AUTO:PEAK:ENAB?
1

MARKer:SPECtrum:SEARch:FREQuency:LOWer

Lower frequency searchlimit for marker and peaktable

Command Parameter

Parameter	Type	Description
Value	Frequency	Frequency searchlimit (Hz, kHz, MHz, GHz)

Examples

//Sets the lower frequency searchlimit to 100 MHz
MARK:SPEC:SEAR:FREQ:LOW 100 MHz

MARKer:SPECtrum:SEARch:FREQuency:LOWer?

Queries the lower frequency searchlimit

Result Parameter

Parameter	Type	Description
Value	Frequency	Frequency searchlimit in Hz

Examples

//Queries the lower frequency searchlimit
MARK:SPEC:SEAR:FREQ:LOW?
100000000

MARKer:SPECtrum:SEARch:FREQuency:UPPer

Upper frequency searchlimit for marker and peaktable

Command Parameter

Parameter	Type	Description
Value	Frequency	Frequency searchlimit (Hz, kHz, MHz, GHz)

Examples

//Sets the upper frequency searchlimit to 400 MHz
MARK:SPEC:SEAR:FREQ:UPP 400 MHz

9 Command Groups ^

MARKer:SPECtrum:SEARch:FREQuency:UPPer?

Queries the upper frequency searchlimit

Result Parameter

Parameter	Type	Description
Value	Frequency	Frequency searchlimit in Hz

Examples

//Queries the upper frequency searchlimit
MARK:SPEC:SEAR:FREQ:UPP?
400000000

MARKer:SPECtrum:SEARch:LIMits:ENABle

Sets the 'Use Search Limits' enable state for marker and peaktable

Command Parameter

Parameter	Type	Description
Value	Bool	'Use Search Limits'

Examples

//Sets the searchlimit enable state to OFF
MARK:SPEC:SEAR:LIM:ENAB 0

MARKer:SPECtrum:SEARch:LIMits:ENABle?

Queries the searchlimit enable state

Result Parameter

Parameter	Type	Description
Value	Bool	'Use Search Limits'

Examples

//Queries the searchlimit enable state
MARK:SPEC:SEAR:LIM:ENAB?
1

MARKer:SPECtrum:SEARch:LOEXclude:ENABle

'Exclude LO' searchlimit for marker and peaktable

Command Parameter

Parameter	Type	Description
Value	Bool	'Exclude LO'

9 Command Groups ^

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Examples

//Sets the searchlimit enable state to OFF
MARK:SPEC:SEAR:LOEX:ENAB 0

MARKer:SPECtrum:SEARch:LOEXclude:ENABle?

Queries the searchlimit enable state

Result Parameter

Parameter	Type	Description
Value	Bool	'Exclude LO'

Examples

//Queries the searchlimit enable state
MARK:SPEC:SEAR:LOEX:ENAB?
0

MARKer:SPECtrum:SEARch:PEAK:EXCursion

Sets the peak excursion for marker and peaktable

Command Parameter

Parameter	Type	Description
Value	Unit	Peak Excursion (dB)

Examples

//Sets the peak excursion to 10 dB
MARK:SPEC:SEAR:PEAK:EXC 10 dB

MARKer:SPECtrum:SEARch:PEAK:EXCursion?

Queries the peak excursion

Result Parameter

Parameter	Type	Description
Value	Unit	Peak Excursion in dB

Examples

//Queries the peak excursion
MARK:SPEC:SEAR:PEAK:EXC?
10

MARKer:SPECtrum:SEARch:PEAK:EXCursion:ENABle

'Peak Excursion' searchlimit for marker and peaktable

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Value	Bool	'Peak Excursion'

Examples

//Sets the peak excursion enable state to ON
MARK:SPEC:SEAR:PEAK:EXC:ENAB 0

MARKer:SPECtrum:SEARch:PEAK:EXCursion:ENABle?

Queries the peak excursion enable state

Result Parameter

Parameter	Type	Description
Value	Bool	'Peak Excursion'

Examples

//Queries the peak excursion enable state
MARK:SPEC:SEAR:PEAK:EXC:ENAB?
1

MARKer:SPECtrum:SEARch:SGRam:RANGe

Sets the spectrogram searchrange

Command Parameter

Parameter	Type	Description
Value	Enum	Spectrogram searchrange (All, Visible)

Examples

//Sets spectrogram searchrange to VISIBLE
MARK:SPEC:SEAR:SGR:RANG VISIBLE

MARKer:SPECtrum:SEARch:SGRam:RANGe?

Queries the spectrogram searchrange

Result Parameter

Parameter	Type	Description
Value	Enum	Spectrogram searchrange (All, Visible)

Examples

//Queries the spectrogram searchrange
MARK:SPEC:SEAR:SGR:RANG?
VISIBLE

9 Command Groups ^

MARKer:SPECtrum:SEARch:THReshold

Threshold searchlimit for marker and peaktable

Command Parameter

Parameter	Type	Description
Value	Unit	Threshold level in actual unit or units of: No antenna connected: dBm, dBV, dBmV, dBuV With antenna connected: dBm, dBV, dBmV, dBuV, W_m2, W_cm2, A_m, V_m, dBA_m, dBV_m, dBmV_m, dBuV_m

Examples

```
//Sets the threshold searchlimit to -80 dBm
MARK:SPEC:SEAR:THR -80 dBm
//Sets the threshold searchlimit to -100 in actual unit
MARK:SPEC:SEAR:THR -100
```

MARKer:SPECtrum:SEARch:THReshold?

Queries the threshold searchlimit

Result Parameter

Parameter	Type	Description
Value	Unit	Threshold level in actual unit

Examples

```
//Queries the threshold searchlimit
MARK:SPEC:SEAR:THR?
-80.00
```

MARKer:SPECtrum:SEARch:TRACk:PEAKs:ENABle

'Track Peaks' for marker

Command Parameter

Parameter	Type	Description
Value	Bool	'Track Peaks'

Examples

```
//Sets the searchlimit enable state to OFF
MARK:SPEC:SEAR:TRAC:PEAK:ENAB 0
```

9 Command Groups ^

MARKer:SPECtrum:SEARch:TRACk:PEAKs:ENABle?

Queries the searchlimit enable state

Result Parameter

Parameter	Type	Description
Value	Bool	'Track Peaks'

Examples

//Queries the searchlimit enable state

MARK:SPEC:SEAR:TRAC:PEAK:ENAB?

0

MARKer<Index>:SPECtrum:TIME

Time position of a marker (see also MARKer<Index>:SPECtrum:DATA:TIME?)

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Command Parameter

Parameter	Type	Description
Value	Timespan	Marker time (h, m, s, ms)

Examples

//Sets marker 2 time position to -7 ms

MARK2:SPEC:TIME -7e-3

MARKer<Index>:SPECtrum:TIME?

Queries marker time position

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Result Parameter

Parameter	Type	Description
Value	Timespan	Time position of the Marker in seconds

Examples

//Queries marker 1 time position

MARK1:SPEC:TIME?

0

9 Command Groups ^

MARKer<Index>:SPECtrum:TIME:LINK

Marker time link

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Command Parameter

Parameter	Type	Description
LinkIndex	ULong	Time link Marker Index (1...8). If Marker Index equals Link Index, Time link is disabled.

Examples

```
//Disables time link for marker 4
MARK4:SPEC:TIME:LINK 4
//Sets marker 8 as time link for marker 3
MARK3:SPEC:TIME:LINK 8
```

MARKer<Index>:SPECtrum:TIME:LINK?

Queries the time link marker

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Result Parameter

Parameter	Type	Description
LinkIndex	ULong	Time link Marker Index (1...8)

Examples

```
//Queries the time link marker for marker 2
MARK2:SPEC:TIME:LINK?
2
```

MARKer<Index>:SPECtrum:TIME:LINK:OFFSet

Marker time link offset. A time offset can only be set if the selected task is an RT Spectrum task.

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (2...8)

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Value	Timespan	Offset time (h, m, s, ms)

Examples

//Sets time link offset of marker 2 to 5 ms
MARK2:SPEC:TIME:LINK:OFFS 5 ms

MARKer<Index>:SPECtrum:TIME:LINK:OFFSet?

Queries the time link offset

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (2...8)

Result Parameter

Parameter	Type	Description
Value	Timespan	Offset time in seconds

Examples

//Queries the time link offset of marker 2
MARK2:SPEC:TIME:LINK:OFFS?
0

MARKer<Index>:SPECtrum:TRACe

Selects the active trace for a marker. Only traces enabled by SPECtrum:TRACe:ENABle are available.

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Command Parameter

Parameter	Type	Description
Name	Enum	RMS, PPk, MPk, Avg, Smp, MnR, AvR, MxR, MxP, MnP, MxA, MxS

Examples

//Sets RMS as active trace for marker 2
MARK2:SPEC:TRAC RMS

MARKer<Index>:SPECtrum:TRACe?

Queries the active trace of a marker

9 Command Groups ^

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (1...8)

Result Parameter

Parameter	Type	Description
Name	Enum	RMS, PPk, MPk, Avg, Smp, MnR, AvR, MxR, MxP, MnP, MxA, MxS

Examples

//Queries the current active trace for marker 1

MARK1:SPEC:TRAC?

AvR

MARKer<Index>:SPECtrum:TYPE

Sets the Marker type

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (2...8)

Command Parameter

Parameter	Type	Description
Type	Enum	Type (NORMAL,DELTA)

Examples

//Configures Marker 3 as delta Marker

MARK3:SPEC:TYPE DELTA

MARKer<Index>:SPECtrum:TYPE?

Queries the configuration of a marker, normal or delta

Suffixes

Parameter	Type	Description
Index	UShort	Marker Index (2...8)

Result Parameter

Parameter	Type	Description
Type	Enum	Type (NORMAL,DELTA)

9 Command Groups ^

Examples

```
//Queries the configuration of marker 2
MARK2:SPEC:TYPE?
DELTA
```

Narda Command Reference - LEVelmeter

Levelmeter subsystem

LEVelmeter:CBW

Sets the channel bandwidth for levelmeter

Command Parameter

Parameter	Type	Description
Value	Frequency	Channel Bandwidth (Hz, kHz, MHz, GHz)

Examples

```
//Sets the bandwith in kHz
LEV:CBW 100 kHz
```

LEVelmeter:CBW?

Queries the channel bandwidth for levelmeter

Result Parameter

Parameter	Type	Description
Value	Frequency	Channel Bandwidth in Hz

Examples

```
//Queries the bandwith
LEV:CBW?
100000
```

LEVelmeter:CBW:FILTer:TYPE

Sets the levelmeter CBW filter type

Command Parameter

Parameter	Type	Description
Value	Enum	Filter type (Channel, MIL, CISPR)

Examples

```
//Sets the cbw filter type to Channel
LEVelmeter:CBW:FILTer:TYPE Channel
```

LEVelmeter:CBW:FILTer:TYPE?

Queries the levelmeter CBW filter type

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	Enum	Filter type (Channel, MIL, CISPR)

Examples

//Queries the cbw filter type

LEV:CBW:FILT:TYPE?

CHANNEL

LEVelmeter:CBW:LIST?

Queries a list of possible CBW settings

Result Parameter

Parameter	Type	Description
List	FlexArray[Double]	List of CBWs

Examples

//Queries a list of CBWs

LEV:CBW:LIST?

40000000,38400000,32000000,30000000,25600000,25000000,24000000,20000000,19200000,16000000,15000000,12800000,12500000,12000000,10000000,9600000,8000000,7500000,6400000,6250000,6000000,5120000,5000000,4800000,4000000,3840000,3200000,3000000,2560000,2500000,2400000,2000000,1920000,1600000,1500000,1280000,1250000,1200000,1000000,960000,800000,750000,640000,625000,600000,512000,500000,480000,400000,384000,320000,300000,256000,250000,240000,200000,192000,160000,150000,128000,125000,120000,100000,96000,80000,75000,64000,62500,60000,51200,50000,48000,40000,38400,32000,30000,25600,25000,24000,20000,19200,16000,15000,12800,12500,12000,10000,9600,9000,8000,7500,6400,6250,6000,5120,5000,4800,4000,3840,3200,3100,3000,2700,2560,2500,2400,2100,2000,1920,1600,1500,1280,1250,1200,1000,960,800,750,640,625,600,512,500,480,400,384,320,300,256,250,240,200,192,160,150,128,125,120,100,50,25

LEVelmeter:CBW:OVERsampling

Sets the levelmeter oversampling state

Command Parameter

Parameter	Type	Description
Value	Bool	Oversampling

Examples

//Disables oversampling

LEV:CBW:OVER OFF

LEVelmeter:CBW:OVERsampling?

Queries the levelmeter oversampling state

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	Bool	Oversampling

Examples

//Queries the levelmeter oversampling state

LEV:CBW:OVER?

1

LEVelmeter:DATA:AFC?

Queries AFC data values

Result Parameter

Parameter	Type	Description
FCorr	Frequency	FTune correction in Hz
FOffset	Frequency	Offset frequency in Hz

Examples

//Queries AFC data

LEV:DATA:AFC?

0,-1959

LEVelmeter:DATA:ALL?

Queries all levelmeter detector and handle values. Caution: You must skip unused and unknown IDs and data elements while parsing to be compatible with future extensions (see DATA:ALL? commands).

Query Parameter

Parameter	Type	Description
Optional	Optional[Enum]	Reserved for future use

9 Command Groups ^

Result Parameter

Parameter	Type	Description
TimeStampSyncFlag	Bool	Timestamp Sync Flag
TimeStampSeconds	ULong	Seconds since 1.1.1970 0:00 Greenwich Mean Time
TimeStampFractional	ULong	Nanoseconds fractional part
ScanNumber	ULongLong	Scan Number
CompassID	Enum	Optional: COMPASS
CompassElements	ULong	Number of CompassID Elements
Azimuth	Float	Azimuth in degree.
Elevation	Float	Elevation in degree.
Roll	Float	Roll in degree.
AfcID	Enum	Optional: AFC
AfcElements	ULong	Number of AfcID Elements
AfcFCorr	Frequency	FTune correction in Hz
AfcFOffset	Frequency	Offset frequency in Hz
DetectorID	Enum	Optional: PPk, CPk, RMS, CRMS, MPk, Smp, Avg, CAvg
DetectorElements	ULong	Number of DetectorID Elements
Overdriven	Bool	Overdriven flag
NotRealtime	Bool	NotRealtime flag
DetectorValue	Float	Detector value
TraceValue	Float	Detector Trace min/max value
ModDetectorID	Enum	Optional: AM_PPk, AM_MPk, AM_PPDIV2, AM_RMS, FM_PPk, FM_MPk, FM_PPDIV2, FM_RMS, PM_PPk, PM_MPk, PM_PPDIV2, PM_RMS
ModDetectorElements	ULong	Number of ModDetectorID Elements
ModOverdriven	Bool	Overdriven flag
ModNotRealtime	Bool	NotRealtime flag
ModDetectorValue	Float	Detector value
ModTraceValue	Float	Detector Trace min/max value

Examples

//Queries all activated detectors of levelmeter (no handle connected, 3 level detectors and 4 FM modulation detectors)

LEV:DATA:ALL?

0,1551352285,20747734,2160,AFC,2,0,395349,PPk,4,0,0,-67.44,-67.44,RMS,4,0,0,-73.29,-73.29,Avg,4,0,0,-73.64,-73.64,FM_PPk,4,0,0,244645,244645,FM_MPk,4,0,0,1035296,1035296,FM_PPdiv2,4,0,0,639971,639971,FM_RMS,4,0,0,87840,87840

//Queries all activated detectors of levelmeter (with handle connected, 1 detector)

LEV:DATA:ALL?

0,1533059558,957863188,608,COMPASS,3,150.7,1.2,1.3,PPk,4,0,0,-70.71,-70.71

9 Command Groups ^

LEVelmeter:DATA:DETector<Number>?

Queries the levelmeter detector value (PPk, CPk, RMS, CRMS, MPk, Smp, Avg, CAvg)

Suffixes

Parameter	Type	Description
Number	UShort	Detector Number 1...3

Result Parameter

Parameter	Type	Description
Value	Float	Detector value
ValueMinMax	Float	Detector min/max value

Examples

//Queries the levelmeter detector2 values

LEV:DATA:DET2?

-84.70,-79.03

LEVelmeter:DATA:DETector:MODulation?

Queries the levelmeter modulation detector values (AM_PPk, AM_MPk, AM_PPDIV2, AM_RMS, FM_PPk, FM_MPk, FM_PPDIV2, FM_RMS, PM_PPk, PM_MPk, PM_PPDIV2, PM_RMS)

Result Parameter

Parameter	Type	Description
ModDetectorID	Enum	AM_PPk, AM_MPk, AM_PPDIV2, AM_RMS, FM_PPk, FM_MPk, FM_PPDIV2, FM_RMS, PM_PPk, PM_MPk, PM_PPDIV2, PM_RMS
ModDetectorElements	ULong	Number of Elements
ModDetectorValue	Float	Detector value
ModTraceValue	Float	Detector Trace min/max value

Examples

//Queries the levelmeter modulation detector values

LEV:DATA:DET:MOD?

AM_RMS,2,0.00,0.00,FM_RMS,2,0,0,PM_RMS,2,0.00,0.00

LEVelmeter:DATA:UPDate?

Update is avaliable in RUN and HOLD mode (see DATA:UPDate Commands)

9 Command Groups ^

Query Parameter

Parameter	Type	Description
Optional	Optional[ULongLong,Timespan]	ScanNumber of last queried measurement data or NaN to force an update, Timeout value for update data (s, ms)

Result Parameter

Parameter	Type	Description
ScanNumber	ULongLong	ScanNumber of current measurement data.

Examples

```
//Levelmeter data update with old scancount = 10 and timeout = 100ms
LEV:DATA:UPD? 10,100ms
1520

//Force Levelmeter data update because we do not have old scannumber
LEVelmeter:DATA:UPDate?
1305

//Levelmeter data update with old scannumber = 0
LEVelmeter:DATA:UPDate? 0
1389

//Force Levelmeter data update with timeout = 100ms
LEV:DATA:UPD? NaN,100ms
1453
```

LEVelmeter:DETector<Number>

Detector configuration

Suffixes

Parameter	Type	Description
Number	UShort	Detector Number 1...3

Command Parameter

Parameter	Type	Description
Mode	Enum	Detector1 (Off, PPk, CPk), Detector2 (Off, RMS, CRMS), Detector3 (Off, MPk, Smp, Avg, CAvg)

Examples

```
//Sets detector 3 to minus peak
LEV:DET3 MPk
```

9 Command Groups ^

LEVelmeter:DETector<Number>?

Queries the detector configuration

Suffixes

Parameter	Type	Description
Number	UShort	Detector Number 1...3

Result Parameter

Parameter	Type	Description
Mode	Enum	Detector1 (Off, PPk, CPk), Detector2 (Off, RMS, CRMS), Detector3 (Off, MPk, Smp, Avg, CAvg)

Examples

```
//Queries current mode for detector 3
LEV:DET3?
MPk
```

LEVelmeter:DETector:INFinite

Sets the infinite min max detector state

Command Parameter

Parameter	Type	Description
Value	Bool	Infinite state

Examples

```
//Enables infinite min max detector
LEV:DET:INF ON
```

LEVelmeter:DETector:INFinite?

Queries the infinite min max detector state

Result Parameter

Parameter	Type	Description
Value	Bool	Infinite state

Examples

```
//Queries infinite state
LEVelmeter:DETector:INFinite?
1
```

LEVelmeter:DETector:MODulation

Modulation detector configuration

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Mode	Enum	Detector mode (Off, AM, FM, PM, PPk, MPk, PPdiv2, RMS)

Examples

//Sets modulation detector to AM

LEV:DET:MOD AM

LEVelmeter:DETector:MODulation?

Queries the modulation detector configuration

Result Parameter

Parameter	Type	Description
Mode	Enum	Detector mode (Off, AM, FM, PM, PPk, MPk, PPdiv2, RMS)

Examples

//Queries modulation detector configuration

LEV:DET:MOD?

AM

LEVelmeter:FREQuency:TUNE

Sets the levelmeter tune frequency

Command Parameter

Parameter	Type	Description
Value	Frequency	Tune frequency (Hz, kHz, MHz, GHz)

Examples

//Sets the tune frequency in MHz

LEV:FREQ:TUNE 1.2 MHz

LEVelmeter:FREQuency:TUNE?

Queries the levelmeter tune frequency

Result Parameter

Parameter	Type	Description
Value	Frequency	Tune frequency in Hz

9 Command Groups ^

Examples

```
//Queries the tune frequency
LEV:FREQ:TUNE?
1200000
```

LEVelmeter:FREQuency:TUNE:CENTer:COUPling

Automatic coupling of Ftune and Fcent

Command Parameter

Parameter	Type	Description
Value	Bool	Coupling state

Examples

```
//Sets the Ftune Fcent coupling to OFF
LEV:FREQ:TUNE:CENT:COUP OFF
```

LEVelmeter:FREQuency:TUNE:CENTer:COUPling?

Queries the coupling state of Ftune and Fcent

Result Parameter

Parameter	Type	Description
Value	Bool	Coupling state

Examples

```
//Queries the Ftune Fcent coupling state
LEV:FREQ:TUNE:CENT:COUP?
0
```

LEVelmeter:FREQuency:TUNE:STEP

Tune frequency step for levelmeter

Command Parameter

Parameter	Type	Description
Value	Frequency	Tune frequency step (Hz, kHz, MHz, GHz)

Examples

```
//Sets the tune frequency step in MHz
LEV:FREQ:TUNE:STEP 1 MHz
```

LEVelmeter:FREQuency:TUNE:STEP?

Queries the tune frequency step for levelmeter

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	Frequency	Tune frequency step in Hz

Examples

//Queries the tune frequency step
LEV:FREQ:TUNE:STEP?
1000000

LEVelmeter:MEASurement:TIME

Sets the measurement time for levelmeter

Command Parameter

Parameter	Type	Description
Value	Timespan	Measurement time (h, m, s, ms)

Examples

//Sets the measurement time to 10ms
LEV:MEAS:TIME 10 ms

LEVelmeter:MEASurement:TIME?

Queries the measurement time for levelmeter

Result Parameter

Parameter	Type	Description
Value	Timespan	Measurement time in s

Examples

//Queries the measurement time
LEV:MEAS:TIME?
0.01

LEVelmeter:POST:AVG

Sets the post averaging time for levelmeter

Command Parameter

Parameter	Type	Description
Value	Timespan	Post averaging time (h, m, s, ms)

Examples

//Sets the post averaging time to 10ms
LEV:POST:AVG 10 ms

9 Command Groups ^

LEVelmeter:POST:AVG?

Queries the post averaging time

Result Parameter

Parameter	Type	Description
Value	Timespan	Post averaging time in s

Examples

//Queries the post averaging time
LEV:POST:AVG?
0.01

LEVelmeter:PRE:AVG

Sets the pre averaging time for levelmeter

Command Parameter

Parameter	Type	Description
Value	Timespan	Pre averaging time (h, m, s, ms), 0 = OFF

Examples

//Sets the pre averaging time to 10ms
LEV:PRE:AVG 10 ms

LEVelmeter:PRE:AVG?

Queries the pre averaging time

Result Parameter

Parameter	Type	Description
Value	Timespan	Pre averaging time in s, 0 = OFF

Examples

//Queries the pre averaging time
LEV:PRE:AVG?
0.01

LEVelmeter:SCAN:COUNt

Sets the levelmeter scan count

Command Parameter

Parameter	Type	Description
Value	ULong	Scan count

9 Command Groups ^

Examples

//Sets the scan count to 50
LEV:SCAN:COUN 50

LEVelmeter:SCAN:COUNt?

Queries the levelmeter scan count

Result Parameter

Parameter	Type	Description
Value	ULong	Scan count

Examples

//Queries the scan count
LEV:SCAN:COUN?
50

LEVelmeter:SCAN:NUMBer?

Queries the levelmeter scan number

Result Parameter

Parameter	Type	Description
Value	ULongLong	Scan number

Examples

//Queries the current scan number
LEV:SCAN:NUMB?
121

LEVelmeter:TSTamp?

Queries levelmeter data timestamp

Result Parameter

Parameter	Type	Description
TimeStampSyncFlag	Bool	Timestamp Sync Flag
TimeStampSeconds	ULong	Seconds since 1.1.1970 0:00 Greenwich Mean Time
TimeStampFractional	ULong	Nanoseconds fractional part

Examples

//Queries the levelmeter data timestamp
LEV:TST?
0,1533060782,779856660

9 Command Groups ^

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Narda Command Reference - PEAKtable

Peaktable subsystem, only includes parameters not included in Spectrum or Marker subsystem

PEAKtable:DATA:ALL?

Queries peaktable with frequency and level values for multiple traces. Caution: You must skip unused and unknown IDs and data elements while parsing to be compatible with future extensions (see DATA:ALL? commands).

Query Parameter

Parameter	Type	Description
Optional	Optional[Enum]	RMS, PPk, MPk, Avg, Smp, MnR, AvR, MxR, MxP, MnP, MxA, MxS

Result Parameter

Parameter	Type	Description
TimeStampSyncFlag	Bool	Timestamp Sync Flag
TimeStampSeconds	ULong	Seconds since 1.1.1970 0:00 Greenwich Mean Time
TimeStampFractional	ULong	Nanoseconds fractional part
ScanNumber	ULongLong	Scan Number
FreqID	Enum	Optional: FREQUENCY
FreqElements	ULong	Number of FreqID Elements
FreqList	FlexArray[Double]	List of frequency values in Hz
TransID	Enum	Optional: TRANSMITTER
TransElements	ULong	Number of TransID Elements
TransList	FlexArray[String]	List of transmitter names
TraceID	Enum	Optional: RMS, PPk, MPk, Avg, Smp, MnR, AvR, MxR, MxP, MnP, MxA, MxS
TraceElements	ULong	Number of TraceID Elements
Overdriven	Bool	Overdriven flag
NotRealtime	Bool	NotRealtime flag
LevelList	FlexArray[Float]	List of power levels in actual unit

Examples

//Queries all activated traces of the peaktable

PEAKtable:DATA:ALL?

0,1551350855,82909033,9242,FREQUENCY,2,104815669.821,97703112.7976,RMS,4,0,0,-57.17,-57.71

PEAKtable:DATA:COUNt?

Queries the number of peaktable list elements

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	ULong	Number of peaktable list elements

Examples

//Queries the number of peaktable list elements

PEAK:DATA:COUN?

6

PEAKtable:DATA:FREQuency?

Queries peaktable frequency data

Result Parameter

Parameter	Type	Description
Data	FlexArray[Double]	List of peaktable frequencies in Hz

Examples

//Queries the peaktable frequencies

PEAK:DATA:FREQ?

94699563.7042,90104272.4717,90096905.6252,92211000.0235,93499880.9218,91995584.0599

PEAKtable:DATA:LEVel?

Queries peaktable level data

Query Parameter

Parameter	Type	Description
Name	Enum	RMS, PPk, MPk, Avg, Smp, MnR, AvR, MxR, MxP, MnP, MxA, MxS

Result Parameter

Parameter	Type	Description
Data	FlexArray[Float]	List of power levels in actual unit

Examples

//Queries the peaktable power levels for the RMS trace

PEAK:DATA:LEV? RMS

-112.30,-112.51,-113.16,-113.44,-117.04,-119.30

PEAKtable:DATA:SCAN:NUMBer?

PEAKtable data scan number

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	ULongLong	Scan number

Examples

Queries the data scan number

PEAKtable:DATA:SCAN:NUMBer?

1624

Queries the data scan number

PEAK:DATA:SCAN:NUMB?

7086

PEAKtable:DATA:TSTamp?

Query PEAKtable data timestamp

Result Parameter

Parameter	Type	Description
TimeStampSyncFlag	Bool	Timestamp Sync Flag
TimeStampSeconds	ULong	Seconds since 1.1.1970 0:00 Greenwich Mean Time
TimeStampFractional	ULong	Nanoseconds fractional part

Examples

Queries the PEAKtable data timestamp

PEAKtable:DATA:TSTamp?

0,1564392802,584232802

Queries the PEAKtable data timestamp

PEAK:DATA:TST?

0,1564392812,124232802

PEAKtable:DATA:UPDate?

Update is avaliable in RUN and HOLD mode (see DATA:UPDate Commands)

Query Parameter

Parameter	Type	Description
Optional	Optional[ULongLong,Timespan]	ScanNumber of last queried measurement data or NaN to force an update, Timeout value for update data (s, ms)

Result Parameter

Parameter	Type	Description
ScanNumber	ULongLong	ScanNumber of current measurement data.

9 Command Groups ^

Examples

```
//Peaktable data update with old scancount = 10 and timeout = 100ms
PEAK:DATA:UPD? 10,100ms
16088

//Force peaktable data update because we do not have old scan number
PEAKtable:DATA:UPDate?
15921

//Peaktable data update with old scan number = 0
PEAKtable:DATA:UPDate? 0
15975

//Force peaktable data update with timeout = 100ms
PEAKtable:DATA:UPDate? NaN,100ms
16031
```

PEAKtable:SCAN:NUMBer?

Queries the peaktable scan number

Result Parameter

Parameter	Type	Description
Value	ULongLong	Scan number

Examples

```
//Queries the current scan number
PEAK:SCAN:NUMB?
2087
```

PEAKtable:TRACe

Selects the active trace for the peaktable. Only traces enabled by SPECtrum:TRACe:ENABle are available.

Command Parameter

Parameter	Type	Description
Name	Enum	RMS, PPk, MPk, Avg, Smp, MnR, AvR, MxR, MxP, MnP, MxA, MxS

Examples

```
//Sets AvR as active trace for peaktable
PEAK:TRAC AvR
```

PEAKtable:TRACe?

Queries the active trace

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Name	Enum	RMS, PPk, MPk, Avg, Smp, MnR, AvR, MxR, MxP, MnP, MxA, MxS

Examples

//Queries the current active trace for peaktable

PEAK:TRAC?

RMS

PEAKtable:TSTamp?

Queries peaktable data timestamp

Result Parameter

Parameter	Type	Description
TimeStampSyncFlag	Bool	Timestamp Sync Flag
TimeStampSeconds	ULong	Seconds since 1.1.1970 0:00 Greenwich Mean Time
TimeStampFractional	ULong	Nanoseconds fractional part

Examples

//Queries the peaktable data timestamp

PEAK:TST?

0,1533062041,302777397

9 Command Groups ^

Narda Command Reference - STReam

Stream subsystem

STReam:ADD?

Adds a new stream to the active stream task

Query Parameter

Parameter	Type	Description
Type	String	Stream type e.g. 'VITA49_IQ', 'VITA49_SPECTRUM_RMS', 'VITA49_SPECTRUM_PLUS_PK', 'VITA49_SPECTRUM_THIRD_DETECTOR', 'AUDIO_DEMOD'

Result Parameter

Parameter	Type	Description
Index	UShort	Index of the new stream added

Examples

```
//Adds a new 'VITA49_IQ' stream
STR:ADD? 'VITA49_IQ'
1
```

STReam:CONNection:ADDRess

Sets the connection IP or multicast address for selected stream

Command Parameter

Parameter	Type	Description
Value	String	Stream IP or Multicast Address for the socket connection

Examples

```
//Enables localhost loopback with TCP fast path option SIO_LOOPBACK_FAST_PATH
STR:CONN:ADDR 'LoopbackFastPath'
//Sets IPv4 address
STR:CONN:ADDR 192.168.128.1
//Sets IPv4 multicast address
STR:CONN:ADDR 226.0.0.1
//Sets IPv4 localhost loopback
STR:CONN:ADDR '127.0.0.1'
//Sets localhost loopback
STR:CONN:ADDR 'localhost'
```

9 Command Groups ^

STReam:CONNection:ADDRess?

Queries the stream IP address

Result Parameter

Parameter	Type	Description
Value	String	Stream IP or Multicast Address for the socket connection

Examples

//Queries the address
STR:CONN:ADDR?
"192.168.128.1"

STReam:CONNection:CLOSe

Closes connection for selected stream

Examples

//Closes connection
STR:CONN:CLOS

STReam:CONNection:IDN

Stream identifier for the selected stream connection

Command Parameter

Parameter	Type	Description
Id	ULong	Id of the stream

Examples

//Sets identifier 12345 to the stream connection
STR:CONN:IDN 12345

STReam:CONNection:IDN?

Queries the stream identifier of the stream connection

Result Parameter

Parameter	Type	Description
Id	ULong	Id of the stream

Examples

//Queries the identifier of the stream connection
STR:CONN:IDN?
0

9 Command Groups ^

STReam:CONNection:OPEN

Opens connection for selected stream

Examples

//Opens connection
STR:CONN:OPEN

STReam:CONNection:PORT

Connection portnumber for selected stream

Command Parameter

Parameter	Type	Description
Value	UShort	Portnumber for the socket connection

Examples

//Sets socket portnumber 55555
STR:CONN:PORT 55555

STReam:CONNection:PORT?

Queries the connection portnumber for selected stream

Result Parameter

Parameter	Type	Description
Value	UShort	Portnumber for the socket connection

Examples

//Queries socket portnumber
STR:CONN:PORT?
4444

STReam:CONNection:STATe?

Queries connection state for selected stream

Result Parameter

Parameter	Type	Description
Value	Enum	Connection state (OPENED, CLOSED, CONNECTED)

Examples

//Queries connection state
STR:CONN:STAT?
CLOSED

9 Command Groups ^

STReam:CONNection:TYPE

Sets the connection type TCP or UDP for selected stream

Command Parameter

Parameter	Type	Description
Value	Enum	Connection type (TCP_SERVER, TCP_CLIENT, UDP_SINGLECAST, UDP_MULTICAST)

Examples

```
//Sets connection type to UDP
STR:CONN:TYPE UDP_SINGLECAST
```

STReam:CONNection:TYPE?

Queries the connection type for selected stream

Result Parameter

Parameter	Type	Description
Value	Enum	Connection type

Examples

```
//Queries the connection type
STR:CONN:TYPE?
UDP_SINGLECAST
```

STReam:DELete

Deletes a stream from the active stream task

Command Parameter

Parameter	Type	Description
Index	UShort	Index of the stream to delete

Examples

```
//Deletes the stream with the index 1
STR:DEL 1
```

STReam:LIST?

Queries a list of streams from the active stream task

9 Command Groups ^

Result Parameter

Parameter	Type	Description
List	FlexArray[String,UShort]	List of available streams in currently active task (Type, Index)

Examples

//Queries a list of streams in the currently active RT Spectrum task

STR:LIST?

"AUDIO_DEMOD",1

//Queries a list of streams in the currently active RT Streaming task

STR:LIST?

"VITA49_IQ",1

//Queries a list of streams in the currently active RT Streaming task

STR:LIST?

"VITA49_SPECTRUM_RMS",2,"VITA49_IQ",1,"VITA49_SPECTRUM_PLUS_PK",3,"VITA49_SPECTRUM_THIRD_DETECTOR",4

STReam:SELect

Selects a stream of the active stream task for configuration of the connection

Command Parameter

Parameter	Type	Description
Index	UShort	Index of the stream to select

Examples

//Selects the stream with the index 2 of the active stream task

STR:SEL 2

STReam:SELect?

Queries the selected stream of the active stream task

Result Parameter

Parameter	Type	Description
Index	UShort	Index of the selected stream

Examples

//Queries the selected stream of the active stream task

STR:SEL?

2

9 Command Groups ^

Narda Command Reference - IQSTream

IQ Stream subsystem

IQSTream:ANTenna:FACTor?

Queries the antenna factor for Ftune

Result Parameter

Parameter	Type	Description
Value	Double	Antenna Factor for FTune

Examples

//Queries the antenna factor for Ftune

IQST:ANT:FACT?

50.3224864799

IQSTream:CBW

Sets the IQ channel bandwidth

Command Parameter

Parameter	Type	Description
Value	Frequency	Channel Bandwidth (Hz, kHz, MHz, GHz)

Examples

//Sets the bandwidth in kHz

IQST:CBW 100 kHz

IQSTream:CBW?

Queries the IQ channel bandwidth

Result Parameter

Parameter	Type	Description
Value	Frequency	Channel Bandwidth in Hz

Examples

//Queries the bandwidth

IQST:CBW?

100000

IQSTream:CBW:LIST?

Queries a list of possible CBW settings

9 Command Groups ^

Result Parameter

Parameter	Type	Description
List	FlexArray[Double]	List of CBWs

Examples

//Queries a list of CBWs

IQST:CBW:LIST?

20000000,19200000,16000000,15000000,12800000,12500000,12000000,10000000,9600000,8000000,7500000,6400000,6250000,6000000,5120000,5000000,4800000,4000000,3840000,3200000,3000000,2560000,2500000,2400000,2000000,1920000,1600000,1500000,1280000,1250000,1200000,1000000,960000,800000,750000,640000,625000,600000,512000,500000,480000,400000,384000,320000,300000,256000,250000,240000,200000,192000,160000,150000,128000,125000,120000,100000,96000,80000,75000,64000,62500,60000,51200,50000,48000,40000,38400,32000,30000,25600,25000,24000,20000,19200,16000,15000,12800,12500,12000,10000,9600,9000,8000,7500,6400,6250,6000,5120,5000,4800,4000,3840,3200,3100,3000,2700,2560,2500,2400,2100,2000,1920,1600,1500,1280,1250,1200,1000,960,800,750,640,625,600,512,500,480,400,384,320,300,256,250,240,200,192,160,150,128,125,120,100,50,25

IQSTream:FREQuency:TUNE

Sets the IQ tune frequency

Command Parameter

Parameter	Type	Description
Value	Frequency	Tune frequency (Hz, kHz, MHz, GHz)

Examples

//Sets the tune frequency in MHz

IQST:FREQ:TUNE 1.2 MHz

IQSTream:FREQuency:TUNE?

Queries the IQ tune frequency

Result Parameter

Parameter	Type	Description
Value	Frequency	Tune frequency in Hz

Examples

//Queries the tune frequency

IQST:FREQ:TUNE?

1200000

IQSTream:OVERsampling

Sets the IQ oversampling state

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Value	Bool	Oversampling

Examples

//Disables oversampling
IQST:OVER OFF

IQSTream:OVERsampling?

Queries the IQ oversampling state

Result Parameter

Parameter	Type	Description
Value	Bool	Oversampling

Examples

//Queries the oversampling state
IQST:OVER?
0

IQSTream:PAYLoad:FORMat

Sets the IQ payload format

Command Parameter

Parameter	Type	Description
Value	Enum	IQ payload format (I16Q16, I32Q32)

Examples

//Sets the IQ format to 16 bit
IQST:PAYL:FORM I16Q16

IQSTream:PAYLoad:FORMat?

Queries the IQ payload format

Result Parameter

Parameter	Type	Description
Value	Enum	IQ payload format

Examples

//Queries the IQ format
IQST:PAYL:FORM?
I16Q16

9 Command Groups ^

IQSTream:PAYLoad:LIMit

Sets the IQ payload limit in words (32Bit)

Command Parameter

Parameter	Type	Description
Value	ULong	Payload Limit (256,512,1024,2048)

Examples

//Sets the payload limit to 2048 words

IQST:PAYL:LIM 2048

IQSTream:PAYLoad:LIMit?

Queries the IQ payload limit

Result Parameter

Parameter	Type	Description
Value	ULong	Payload Limit

Examples

//Queries the payload limit

IQST:PAYL:LIM?

2048

IQSTream:PAYLoad:LIMit:LIST?

Queries a list of possible payload limits depending on payload format, CBW and oversampling

Result Parameter

Parameter	Type	Description
Value	FlexArray[ULong]	List of possible payload limits

Examples

//Queries list of possible limits

IQST:PAYL:LIM:LIST?

4,8,16,32,64,128,256,512,1024,2048

9 Command Groups ^

Narda Command Reference - BEARing

Bearing subsystem

BEARing:AZIMuth:CORRection

Sets the azimuth correction for bearing

Command Parameter

Parameter	Type	Description
Value	Double	Azimuth correction in degree

Examples

//Sets the azimuth correction in degree

BEAR:AZIM:CORR 1.2

BEARing:AZIMuth:CORRection?

Queries the azimuth correction for bearing

Result Parameter

Parameter	Type	Description
Value	Double	Azimuth correction in degree

Examples

//Queries the azimuth correction

BEAR:AZIM:CORR?

1.2

BEARing:CBW

Sets the channel bandwidth for bearing

Command Parameter

Parameter	Type	Description
Value	Frequency	Channel Bandwidth (Hz, kHz, MHz, GHz)

Examples

//Sets the bandwith in kHz

BEAR:CBW 100 kHz

BEARing:CBW?

Queries the channel bandwidth for bearing

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	Frequency	Channel Bandwidth in Hz

Examples

//Queries the bandwith

BEAR:CBW?

100000

BEARing:CBW:LIST?

Queries a list of possible CBW settings

Result Parameter

Parameter	Type	Description
List	FlexArray[Double]	List of CBWs

Examples

//Queries a list of CBWs

BEAR:CBW:LIST?

40000000,38400000,32000000,30000000,25600000,25000000,24000000,20000000,19200000,16000000,15000000,12800000,12500000,12000000,10000000,9600000,8000000,7500000,6400000,6250000,6000000,5120000,5000000,4800000,4000000,3840000,3200000,3000000,2560000,2500000,2400000,2000000,1920000,1600000,1500000,1280000,1250000,1200000,1000000,960000,800000,750000,640000,625000,600000,512000,500000,480000,400000,384000,320000,300000,256000,250000,240000,200000,192000,160000,150000,128000,125000,120000,100000,96000,80000,75000,64000,62500,60000,51200,50000,48000,40000,38400,32000,30000,25600,25000,24000,20000,19200,16000,15000,12800,12500,12000,10000,9600,9000,8000,7500,6400,6250,6000,5120,5000,4800,4000,3840,3200,3100,3000,2700,2560,2500,2400,2100,2000,1920,1600,1500,1280,1250,1200,1000,960,800,750,640,625,600,512,500,480,400,384,320,300,256,250,240,200,192,160,150,128,125,120,100,50,25

BEARing:CYCLe:TIME?

Queries the cycle time for bearing

Result Parameter

Parameter	Type	Description
Value	Timespan	Cycle time in s

Examples

//Queries cycle time

BEAR:CYCL:TIME?

0.0434810703125

BEARing:DATA:ALL?

Queries all bearing values. Caution: You must skip unused and unknown IDs and data elements while parsing to be compatible with future extensions. (see DATA:ALL? commands)

9 Command Groups ^

Query Parameter

Parameter	Type	Description
Optional	Optional[Enum]	Reserved for future use

Result Parameter

Parameter	Type	Description
TimeStampSyncFlag	Bool	Timestamp Sync Flag
TimeStampSeconds	ULong	Seconds since 1.1.1970 0:00 Greenwich Mean Time
TimeStampFractional	ULong	Nanoseconds fractional part
ScanNumber	ULongLong	Scan Number
BearingID	Enum	Optional: BEARING
BearingElements	ULong	Number of BearingID Elements
Overdriven	Bool	Overdriven flag
VectorLost	Bool	Vectors Lost flag
ValidBearing	Bool	Valid Bearing flag
Azimuth	Float	Azimuth in degree.
AzimuthCorrection	Double	Azimuth correction in degree.
Elevation	Float	Elevation in degree.
DFQuality	Float	DFQuality in percent.
DetectorValue	Float	Omnidirectional Detector value
CompassID	Enum	Optional: COMPASS
CompassElements	ULong	Number of CompassID Elements
CompassAzimuth	Float	Azimuth in degree.
CompassElevation	Float	Elevation in degree.
CompassRoll	Float	Roll in degree.
GnssID	Enum	Optional: GNSS
GnssElements	ULong	Number of GnssID Elements
GnssFrozenFlag	Bool	Is true if GNSS signal is frozen.
Gnss3DFlag	Bool	Is true if GNSS signal is 3D.
GnssSatellites	UShort	Number of Satellites
GnssLatitude	Double	Latitude
GnssLongitude	Double	Longitude
GnssAltitude	Float	Altitude in m
GnssSpeed	Float	Speed in m/s
GnssCourse	Float	Course in degree

Examples

//Queries all bearing values (with GNSS reception)

BEAR:DATA:ALL?

0,1551352848,319361484,1161,BEARING,8,0,0,1,291.189,0,20.166,58.741,-103.56,COMPASS,3,235,2.6,0,GNSS,8,0,1,5,48.45829,9.23033,401.6,0.041,354.29

//Queries all bearing values (without GNSS reception)

BEAR:DATA:ALL?

0,1551351255,94004555,119,BEARING,8,0,0,1,50.837,0,-7.014,50.824,-98.85,COMPASS,3,235.1,2.8,0

9 Command Groups ^

BEARing:DATA:AZIMuth?

Queries the azimuth of the bearing result.

Result Parameter

Parameter	Type	Description
Value	Float	Azimuth of bearing in degree

Examples

//Queries the azimuth (in degree) of the last bearing result

BEAR:DATA:AZIM?

211.2865

BEARing:DATA:DETector?

Queries the bearing detector value

Result Parameter

Parameter	Type	Description
Value	Float	Omnidirectional Detector value

Examples

//Queries the bearing detector value

BEAR:DATA:DET?

-16.79

BEARing:DATA:DFQuality?

Queries the DF quality of the current bearing in percent

Result Parameter

Parameter	Type	Description
Value	Float	Quality of the bearing

Examples

//Queries the DF quality of the last bearing in percent

BEAR:DATA:DFQ?

87.1462

BEARing:DATA:ELEVation?

Queries the elevation of the bearing result.

Result Parameter

Parameter	Type	Description
Value	Float	Elevation of bearing in degree.

9 Command Groups ^

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Examples

//Queries the elevation (in degree) of the last bearing.
BEAR:DATA:ELEV?
37.5

BEARing:DATA:SCAN:NUMBer?

Queries the bearing data scan number

Result Parameter

Parameter	Type	Description
Value	ULongLong	Scan number

Examples

//Queries the data scan number
BEARing:DATA:SCAN:NUMBer?
5072

//Queries the data scan number
BEAR:DATA:SCAN:NUMB?
5114

BEARing:DATA:TSTamp?

Queries the bearing data timestamp

Result Parameter

Parameter	Type	Description
TimeStampSyncFlag	Bool	Timestamp Sync Flag
TimeStampSeconds	ULong	Seconds since 1.1.1970 0:00 Greenwich Mean Time
TimeStampFractional	ULong	Nanoseconds fractional part

Examples

//Queries the BEARing data timestamp
BEARing:DATA:TSTamp?
0,1564485640,97158964

//Queries the BEARing data timestamp
BEAR:DATA:TST?
0,1564485649,740908964

BEARing:DATA:UPDate?

Update is avaliable in RUN and HOLD mode (see DATA:UPDate Commands)

9 Command Groups ^

Query Parameter

Parameter	Type	Description
Optional	Optional[ULongLong,Timespan]	ScanNumber of last queried measurement data or NaN to force an update, Timeout value for update data (s, ms)

Result Parameter

Parameter	Type	Description
ScanNumber	ULongLong	ScanNumber of current measurement data.

Examples

```
//Bearing data update with old scancount = 10 and timeout = 100ms
BEAR:DATA:UPD? 10,100ms
57182

//Force Bearing data update because we do not have old scan number
BEAR:DATA:UPD?
57026

//Bearing data update with old scan number = 0
BEAR:DATA:UPD? 0
57125

//Force Bearing data update with timeout = 100ms
BEAR:DATA:UPD? NaN,100ms
57153
```

BEARing:DATA:VALid?

Queries the valid flag of the last bearing result

Result Parameter

Parameter	Type	Description
Value	Bool	Valid flag of bearing data.

Examples

```
//Queries the valid flag of the last bearing result
BEAR:DATA:VAL?
1
```

BEARing:DATA:VALid:ENABle

Switches ‚Last valid bearing data' flag on/off. When enabled, last valid bearing is returned and not the last measurement run data. Filter settings like 'BEARing:DFSQuelch', 'BEARing:MIN:DFQuality' or 'BEARing:MIN:STABility' will only take effect, if this parameter is enabled!

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Value	Bool	Last valid bearing data

Examples

//Enables valid bearing data only

BEAR:DATA:VAL:ENAB 1

BEARing:DATA:VALid:ENABle?

Queries last valid bearing data state. When enabled, last valid bearing is returned and not the last measurement run data. Filter settings like 'BEARing:DFSQuelch', 'BEARing:MIN:DFQuality' or 'BEARing:MIN:STABility' will only take effect, if this parameter is enabled!

Result Parameter

Parameter	Type	Description
Value	Bool	Last valid bearing data

Examples

//Queries last valid bearing data state

BEAR:DATA:VAL:ENAB?

1

BEARing:DFSQuelch

Sets the DF squelch for bearing. The flags BEARing:DFSQuelch:ENABle and BEARing:DATA:VALid:ENABle must be enabled for the settings of BEARing:DFSQuelch to take effect!

Command Parameter

Parameter	Type	Description
Value	Unit	DF Squelch level in actual unit or units of: No antenna connected: dBm, dBV, dBmV, dBuV With antenna connected: dBm, dBV, dBmV, dBuV, W_m2, W_cm2, A_m, V_m, dBA_m, dBV_m, dBmV_m, dBuV_m

Examples

//Sets the DF squelch to -80 dBm

BEAR:DFSQ -80 dBm

9 Command Groups ^

BEARing:DFSQuelch?

Queries the DF squelch level for bearing. The flags BEARing:DFSQuelch:ENABle and BEARing:DATA:VALid:ENABle must be enabled for the settings of BEARing:DFSQuelch to take effect!

Result Parameter

Parameter	Type	Description
Value	Unit	DF Squelch level in actual unit

Examples

//Queries the DF squelch in actual unit

BEAR:DFSQ?

-90.00

BEARing:DFSQuelch:ENABle

Enables/Disables DF squelch criteria for bearings. The flag BEARing:DATA:VALid:ENABle must also be enabled for the settings of BEARing:DFSQuelch:ENABle to take effect.

Command Parameter

Parameter	Type	Description
Value	Bool	DF Squelch state

Examples

//Enables DF squelch criteria

BEAR:DFSQ:ENAB ON

BEARing:DFSQuelch:ENABle?

Queries the DF squelch state. The flag BEARing:DATA:VALid:ENABle must also be enabled for the settings of BEARing:DFSQuelch:ENABle to take effect.

Result Parameter

Parameter	Type	Description
Value	Bool	DF Squelch state

Examples

//Queries the DF squelch state

BEAR:DFSQ:ENAB?

1

BEARing:FREQuency:TUNE

Sets the bearing tune frequency

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Value	Frequency	Tune frequency (Hz, kHz, MHz, GHz)

Examples

//Sets the tune frequency in MHz
BEAR:FREQ:TUNE 1.2 MHz

BEARing:FREQuency:TUNE?

Queries the bearing tune frequency

Result Parameter

Parameter	Type	Description
Value	Frequency	Tune frequency in Hz

Examples

//Queries the tune frequency
BEAR:FREQ:TUNE?
446000000

BEARing:FREQuency:TUNE:STEP

Sets the tune frequency step for bearing

Command Parameter

Parameter	Type	Description
Value	Frequency	Tune frequency step (Hz, kHz, MHz, GHz)

Examples

//Sets the tune frequency step in MHz
BEAR:FREQ:TUNE:STEP 1 MHz

BEARing:FREQuency:TUNE:STEP?

Queries the tune frequency step for bearing

Result Parameter

Parameter	Type	Description
Value	Frequency	Tune frequency step in Hz

Examples

//Queries the tune frequency step
BEAR:FREQ:TUNE:STEP?
1000000

9 Command Groups ^

BEARing:MEASurement:TIME

Sets the measurement time for bearing

Command Parameter

Parameter	Type	Description
Value	Timespan	Measurement time (h, m, s, ms)

Examples

//Sets the measurement time to 10ms

BEAR:MEAS:TIME 10 ms

BEARing:MEASurement:TIME?

Queries the measurement time for bearing

Result Parameter

Parameter	Type	Description
Value	Timespan	Measurement time in s

Examples

//Queries the measurement time

BEAR:MEAS:TIME?

0.001

BEARing:MIN:DFQuality

Sets the minimum DF quality for a bearing. The flags BEARing:MIN:DFQuality:ENABle and BEARing:DATA:VALid:ENABle must be enabled for the settings of BEARing:MIN:DFQuality to take effect!

Command Parameter

Parameter	Type	Description
DFMin	Float	minimum DF quality

Examples

//Sets the min DF quality to 80 percent.

BEARing:MIN:DFQuality 80

BEARing:MIN:DFQuality?

Queries the minimum DF quality for a bearing. Sets the minimum DF quality for a bearing. The flags BEARing:MIN:DFQuality:ENABle and BEARing:DATA:VALid:ENABle must be enabled for the settings of BEARing:MIN:DFQuality to take effect!

Result Parameter

Parameter	Type	Description
DFMin	Float	minimum DF quality

9 Command Groups ^

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Examples

```
//Queries the min DF quality
BEARing:MIN:DFQuality?
60
```

BEARing:MIN:DFQuality:ENABle

Enables/Disables minimum DF quality criteria for bearings. The flag BEARing:DATA:VALid:ENABle must also be enabled for the settings of BEARing:MIN:DFQuality:ENABle to take effect

Command Parameter

Parameter	Type	Description
Value	Bool	min DF quality state

Examples

```
//Enables min DF quality criteria
BEAR:MIN:DFQ:ENAB ON
```

BEARing:MIN:DFQuality:ENABle?

Queries the minimum DF quality criteria state. The flag BEARing:DATA:VALid:ENABle must also be enabled for the settings of BEARing:MIN:DFQuality:ENABle to take effect.

Result Parameter

Parameter	Type	Description
Value	Bool	min DF quality state

Examples

```
//Queries min DF quality criteria state
BEAR:MIN:DFQ:ENAB?
1
```

BEARing:MIN:STABility

Sets the minimum stability for bearings. The flags BEARing:DATA:VALid:ENABle and BEARing:MIN:STABility:ENABle must be enabled for the settings of BEARing:MIN:STABility to take effect!

Command Parameter

Parameter	Type	Description
Value	Unit	Min Stability in (dB)

Examples

```
//Sets the min stability to 10 dB
BEAR:MIN:STAB 10
```

9 Command Groups ^

BEARing:MIN:STABility?

Queries the minimum level stability for bearings. The flags BEARing:DATA:VALid:ENABle and BEARing:MIN:STABility:ENABle must be enabled for the settings of BEARing:MIN:STABility to take effect!

Result Parameter

Parameter	Type	Description
Value	Unit	Min Stability in (dB)

Examples

```
//Queries the min stability
BEAR:MIN:STAB?
10
```

BEARing:MIN:STABility:ENABle

Enables/Disables minimum stability criteria for bearings. The flag BEARing:DATA:VALid:ENABle must also be enabled for the settings of BEARing:MIN:STABility:ENABle to take effect.

Command Parameter

Parameter	Type	Description
Value	Bool	min stability state

Examples

```
//Enables min stability criteria
BEAR:MIN:STAB:ENAB ON
```

BEARing:MIN:STABility:ENABle?

Queries the minimum stability criteria state. The flag BEARing:DATA:VALid:ENABle must also be enabled for the settings of BEARing:MIN:STABility:ENABle to take effect.

Result Parameter

Parameter	Type	Description
Value	Bool	min stability state

Examples

```
//Queries min stability criteria state
BEAR:MIN:STAB:ENAB?
0
```

BEARing:NORTh:REFerence

Sets the north reference for bearing

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Value	Enum	Type (COMPASS, GNSS_VELOCITY, REFERENCE_MARK_DIRECTION)

Examples

//Sets the north reference
BEAR:NORT:REF COMPASS

BEARing:NORTh:REFerence?

Queries the north reference for bearing

Result Parameter

Parameter	Type	Description
Value	Enum	Type (COMPASS, GNSS_VELOCITY, REFERENCE_MARK_DIRECTION)

Examples

//Queries the north reference
BEAR:NORT:REF?
REFERENCE_MARK_DIRECTION

BEARing:POST:AVG

Sets the post averaging time for bearing

Command Parameter

Parameter	Type	Description
Value	Timespan	Post averaging time (h, m, s, ms)

Examples

//Sets the post averaging time to 10ms
BEAR:POST:AVG 0.01

BEARing:POST:AVG?

Queries the post averaging time for bearing

Result Parameter

Parameter	Type	Description
Value	Timespan	Post averaging time in s

9 Command Groups ^

Examples

```
//Queries the post averaging time
BEAR:POST:AVG?
0
```

BEARing:REFerence:MARK:DIRection

Sets the reference mark direction for bearing

Command Parameter

Parameter	Type	Description
Value	Double	Reference mark direction in degrees

Examples

```
//Sets the reference mark direction in degree
BEAR:REF:MARK:DIR 1.2
```

BEARing:REFerence:MARK:DIRection?

Queries the reference mark direction for bearing

Result Parameter

Parameter	Type	Description
Value	Double	Reference mark direction in degrees

Examples

```
//Queries the reference mark direction
BEAR:REF:MARK:DIR?
0
```

BEARing:SCAN:COUNt

Sets the bearing scan count

Command Parameter

Parameter	Type	Description
Value	ULong	Scan count

Examples

```
//Sets the scan count to 50
BEAR:SCAN:COUN 50
```

BEARing:SCAN:COUNt?

Queries the bearing scan count

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	ULong	Scan count

Examples

//Queries the scan count
BEAR:SCAN:COUN?
50

BEARing:SCAN:NUMBer?

Queries the bearing scan number

Result Parameter

Parameter	Type	Description
Value	ULongLong	Scan number

Examples

//Queries the current scan number
BEAR:SCAN:NUMB?
46301

BEARing:SCAN:TIME?

Queries the scan time for bearing

Result Parameter

Parameter	Type	Description
Value	Timespan	Scan time in s

Examples

//Queries the scan time
BEAR:SCAN:TIME?
0.0535433359375

BEARing:TSTamp?

Queries the bearing data timestamp

Result Parameter

Parameter	Type	Description
TimeStampSyncFlag	Bool	Timestamp Sync Flag
TimeStampSeconds	ULong	Seconds since 1.1.1970 0:00 Greenwich Mean Time
TimeStampFractional	ULong	Nanoseconds fractional part

9 Command Groups ^

Examples

```
//Queries the bearing data timestamp
BEAR:TST?
0,1550654793,460288647
```

9 Command Groups ^

Narda Command Reference - DEMod

Demodulation subsystem

DEMod:CBW

Sets the channel bandwidth for demodulation

Command Parameter

Parameter	Type	Description
Value	Frequency	Channel Bandwidth (Hz, kHz, MHz, GHz)

Examples

```
//Sets the bandwith in kHz
DEM:CBW 100 kHz
```

DEMod:CBW?

Queries the channel bandwidth for demodulation

Result Parameter

Parameter	Type	Description
Value	Frequency	Channel Bandwidth in Hz

Examples

```
//Queries the bandwith
DEM:CBW?
100000
```

DEMod:CBW:FILTer:TYPE

Sets the demodulation CBW filter type

Command Parameter

Parameter	Type	Description
Value	Enum	Filter type (Channel, MIL, CISPR)

Examples

```
//Sets the cbw filter type to Channel
DEM:CBW:FILT:TYPE Channel
```

DEMod:CBW:FILTer:TYPE?

Queries the demodulation CBW filter type

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	Enum	Filter type (Channel, MIL, CISPR)

Examples

//Queries the cbw filter type

DEM:CBW:FILT:TYPE?

CHANNEL

DEMod:CBW:LIST?

Queries a list of possible CBW settings

Result Parameter

Parameter	Type	Description
List	FlexArray[Double]	List of CBWs

Examples

//Queries a list of CBWs

DEM:CBW:LIST?

1000000,960000,800000,750000,640000,625000,600000,512000,500000,480000,400000,384000,320000,300000,256000,250000,240000,200000,192000,160000,150000,128000,125000,120000,100000,96000,80000,75000,64000,62500,60000,51200,50000,48000,40000,38400,32000,30000,25600,25000,24000,20000,19200,16000,15000,12800,12500,12000,10000,9600,9000,8000,7500,6400,6250,6000,5120,5000,4800,4000,3840,3200,3100,3000,2700,2560,2500,2400,2100,2000,1920,1600,1500,1280,1250,1200,1000,960,800,750,640,625,600,512,500,480,400,384,320,300,256,250,240,200,192,160,150,128,125,120,100,50,25

DEMod:CBW:OVERsampling

Sets the demodulation oversampling state

Command Parameter

Parameter	Type	Description
Value	Bool	Oversampling

Examples

//Disables oversampling

DEM:CBW:OVER OFF

DEMod:CBW:OVERsampling?

Queries the demodulation oversampling state

Result Parameter

Parameter	Type	Description
Value	Bool	Oversampling

9 Command Groups ^

Examples

//Queries the oversampling state
DEM:CBW:OVER?
0

DEMod:FREQuency:TUNE

Sets the demodulation tune frequency

Command Parameter

Parameter	Type	Description
Value	Frequency	Demod tune frequency in Hz

Examples

//Sets the demodulation tune frequency
DEM:FREQ:TUNE 97.7 MHz

DEMod:FREQuency:TUNE?

Queries the demodulation tune frequency

Result Parameter

Parameter	Type	Description
Value	Frequency	Demod tune frequency in Hz

Examples

//Queries the demodulation tune frequency
DEM:FREQ:TUNE?
97700000

DEMod:FREQuency:TUNE:AFC

Switches the demodulation AFC on/off

Command Parameter

Parameter	Type	Description
Value	Bool	AFC Enable Value

Examples

//Enables AFC
DEM:FREQ:TUNE:AFC ON

DEMod:FREQuency:TUNE:AFC?

Queries the demodulation AFC state

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	Bool	AFC Enable Value

Examples

//Queries the AFC state

DEM:FREQ:TUNE:AFC?

1

DEMod:FREQuency:TUNE:BFO

Sets the demodulation BFO value (only for USB,ISB,LSB)

Command Parameter

Parameter	Type	Description
Value	Frequency	BFO Value in Hz

Examples

//Sets the BFO value

DEM:FREQ:TUNE:BFO 100

DEMod:FREQuency:TUNE:BFO?

Queries the demodulation BFO value (only for USB,ISB,LSB)

Result Parameter

Parameter	Type	Description
Value	Frequency	BFO Value in Hz

Examples

//Queries the BFO value

DEM:FREQ:TUNE:BFO?

100

DEMod:MUTE

Sets the mute state of the demodulation volume

Command Parameter

Parameter	Type	Description
Value	Bool	Demod volume mute state ON/OFF

Examples

//Enables muting for the demodulations

DEM:MUTE ON

9 Command Groups ^

DEMod:MUTE?

Queries the mute state of the demodulation volume

Result Parameter

Parameter	Type	Description
Value	Bool	Demod volume mute state

Examples

//Queries the mute state of the demodulation volume

DEM:MUTE?

1

DEMod:SQUelch

Sets the demodulation squelch value. The command DEMod:SQUelch:ENABle must be enabled for the settings of DEMod:SQUelch to take effect!

Command Parameter

Parameter	Type	Description
Value	Unit	SQUelch Value (dBm)

Examples

//Sets the squelch value to 10 dBm

DEM:SQU 10 dBm

DEMod:SQUelch?

Queries the demodulation squelch value. The command DEMod:SQUelch:ENABle must be enabled for the settings of DEMod:SQUelch to take effect!

Result Parameter

Parameter	Type	Description
Value	Unit	SQUelch Value

Examples

//Queries the squelch value

DEM:SQU?

10.00

DEMod:SQUelch:ENABle

Switches the demodulation squelch on/off

Command Parameter

Parameter	Type	Description
Value	Bool	SQUelch Enable Value

9 Command Groups ^

Examples

//Sets the squelch enable value
DEM:SQU:ENAB 1

DEMod:SQUelch:ENABle?

Queries the demodulation squelch enable state

Result Parameter

Parameter	Type	Description
Value	Bool	SQUelch Enable Value

Examples

//Queries the squelch enable value
DEM:SQU:ENAB?
1

DEMod:TYPE

Sets the demodulation type

Command Parameter

Parameter	Type	Description
Value	Enum	Demod type (OFF, FM, PM, AM, AM_FM, PULSE, CW, ISB, LSB, USB, IQ)

Examples

//Sets the demodulation type to AM
DEM:TYPE AM

DEMod:TYPE?

Queries the demodulation type

Result Parameter

Parameter	Type	Description
Value	Enum	Demod type

Examples

//Queries the demodulation type
DEM:TYPE?
AM

DEMod:TYPE:ENABle

Switches the demodulation type on/off

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Value	Bool	Demod Enable Value

Examples

//Sets the demod enable value
DEM:TYPE:ENAB 1

DEMod:TYPE:ENABle?

Queries the demodulation type enable state

Result Parameter

Parameter	Type	Description
Value	Bool	Demod Enable Value

Examples

//Queries the demod enable value
DEM:TYPE:ENAB?
1

DEMod:VOLume

Sets the demodulation volume

Command Parameter

Parameter	Type	Description
Value	Double	Demod volume 0%...100%

Examples

//Sets the demodulation volume to 90%
DEM:VOL 90

DEMod:VOLume?

Queries the demodulation volume

Result Parameter

Parameter	Type	Description
Value	Double	Demod volume

Examples

//Queries the demodulation volume
DEM:VOL?
90

9 Command Groups ^

DEMod:VOLume:AGC

Switches the demodulation AGC on/off

Command Parameter

Parameter	Type	Description
Value	Bool	AGC Enable Value

Examples

//Enables AGC

DEM:VOL:AGC ON

DEMod:VOLume:AGC?

Queries the demodulation AGC state

Result Parameter

Parameter	Type	Description
Value	Bool	AGC Enable Value

Examples

//Queries the AGC state

DEM:VOL:AGC?

1

9 Command Groups ^

Narda Command Reference - SGRam

Spectrogram subsystem

SGRam:DATA:ALL?

Queries all or a range of spectrogram frames. Caution: You must skip unused and unknown IDs and data elements while parsing to be compatible with future extensions. (see DATA:ALL? commands)

Query Parameter

Parameter	Type	Description
Optional	Optional[ULongEnum]	First Frame to Query or MIN, Last Frame to Query or MAX, RMS, PPk, MPk, Avg, Smp

Result Parameter

Parameter	Type	Description
TimeStampSyncFlag	Bool	Timestamp Sync Flag
TimeStampSeconds	ULong	Seconds since 1.1.1970 0:00 Greenwich Mean Time
TimeStampFractional	ULong	Nanoseconds fractional part
ScanNumber	ULongLong	Scan Number
InfoID	Enum	Optional: INFO
InfoElements	ULong	Number of InfoID Elements
FramesQueried	ULong	Number of Frames queried
FramesAvaliable	ULong	Number of Frames avaliable
TotalBins	ULong	Number of Bins per Frame
FreqStart	Frequency	Start frequency of the X-Axis
FreqStep	Frequency	Frequency step of the X-Axis
SgramID	Enum	Optional: RMS, PPk, MPk, Avg, Smp
SgramElements	ULong	Number of SgramID Elements
TStampSeconds	ULong	Seconds since 1.1.1970 0:00 Greenwich Mean Time
TStampFractional	ULong	Nanoseconds fractional part
FrameNumber	ULong	Frame Number
Overdriven	Bool	Overdriven flag
NotRealtime	Bool	NotRealtime flag
LevelValues	FlexArray[Float]	List of power levels in actual unit

9 Command Groups ^

Examples

//Queries all valid frames (Spectrogram with 3 PPk frames)

SGRAM:DATA:ALL?

0,1551350976,656297236,3,INFO,5,3,3,51,90000000,400000,PPk,56,1551350976,656297236,1,0,0,-61.75,-62.97,-66.98,-70.65,-67.08,-62.94,-62.85,-67.11,-72.30,-72.86,-69.55,-65.74,-64.90,-68.04,-73.39,-74.19,-73.69,-67.28,-59.02,-55.28,-56.27,-62.74,-72.29,-76.86,-77.36,-77.34,-74.43,-68.39,-65.20,-65.32,-66.61,-67.33,-68.37,-70.48,-72.52,-67.13,-60.25,-57.80,-58.89,-62.72,-66.82,-70.81,-74.76,-75.00,-73.59,-73.44,-75.19,-76.49,-76.16,-76.04,-76.03,PPk,56,1551350975,656297236,2,0,0,-61.55,-63.05,-67.30,-70.40,-67.12,-62.79,-62.84,-67.18,-72.26,-73.02,-69.91,-65.75,-64.77,-67.48,-73.62,-75.53,-73.93,-67.51,-59.08,-55.36,-56.45,-62.65,-72.68,-76.24,-76.72,-77.14,-74.43,-68.51,-65.27,-65.38,-66.41,-67.56,-68.38,-70.40,-72.57,-67.18,-60.35,-57.72,-58.91,-62.76,-66.93,-71.28,-75.70,-75.10,-73.56,-73.79,-75.40,-76.21,-76.47,-76.37,-75.72,PPk,56,1551350974,656297236,3,0,0,-61.48,-62.89,-66.74,-70.08,-66.73,-62.54,-62.43,-66.89,-71.95,-72.91,-69.88,-65.49,-64.56,-67.44,-73.59,-75.40,-74.03,-67.42,-58.81,-54.80,-56.13,-62.89,-72.77,-76.40,-76.79,-77.19,-73.48,-68.31,-65.26,-65.35,-66.46,-67.34,-68.75,-70.34,-72.02,-67.32,-60.02,-57.00,-58.47,-62.52,-66.60,-71.03,-75.18,-75.33,-73.35,-73.55,-75.52,-76.50,-76.27,-76.05,-75.62

SGRam:DATA:FRAMe:COUNt?

Queries the number of valid spectrogram frames

Result Parameter

Parameter	Type	Description
Value	ULong	Number of valid frames

Examples

//Queries the number of frames

SGR:DATA:FRAM:COUN?

450

SGRam:DATA:UPDate?

Update is avaliable in RUN and HOLD state. (see DATA:UPDate Commands)

Query Parameter

Parameter	Type	Description
Optional	Optional[ULongLong,Timespan]	ScanNumber of last queried measurement data or NaN to force an update, Timeout value for update data (s, ms)

Result Parameter

Parameter	Type	Description
ScanNumber	ULongLong	ScanNumber of current measurement data.

9 Command Groups ^

Examples

```
//Spectrogram data update with old scancount = 10 and timeout = 100ms
SGR:DATA:UPD? 10,100ms
559900

//Forces Spectrogram data update because we do not have old scannumber
SGRam:DATA:UPDate?
558630

//Spectrogram data update with old scannumber = 0
SGRam:DATA:UPDate? 0
558980

//Forces Spectrogram data update with timeout = 100ms
SGRam:DATA:UPDate? NaN,100ms
559430
```

SGRam:DETector<Number>

Sets the spectrogram detector configuration

Suffixes

Parameter	Type	Description
Number	UShort	Detector Number 1...3

Command Parameter

Parameter	Type	Description
Value	Enum	Detector1 (Off,PPk), Detector2 (Off,RMS), Detector3 (Off, MPk, Smp, Avg)

Examples

```
//Sets detector 3 to minus peak
SGR:DET3 MPk
```

SGRam:DETector<Number>?

Queries the spectrogram detector configuration

Suffixes

Parameter	Type	Description
Number	UShort	Detector Number 1...3

Result Parameter

Parameter	Type	Description
Value	Enum	Detector1 (Off, PPk, CPk), Detector2 (Off, RMS), Detector3 mode (Off, MPk, Smp, Avg)

9 Command Groups ^

Examples

//Queries detector 3 configuration
SGR:DET3?
MPk

SGRam:DETector:VISible

Sets the spectrogram detector configuration

Command Parameter

Parameter	Type	Description
Value	Enum	Detector (PPk, RMS, MPk, Smp, Avg)

Examples

//Sets MPk as visible detector
SGR:DET:VIS MPk
//Sets PPk as visible detector
SGRam:DETector:VISible PPk

SGRam:DETector:VISible?

Queries the spectrogram detector configuration

Result Parameter

Parameter	Type	Description
Value	Enum	Detector (PPk, RMS, MPk, Smp, Avg)

Examples

//Queries detector configuration
SGRam:DETector:VISible?
MPk

SGRam:FRAMe:COUNt

Sets the maximum number of spectrogram frames

Command Parameter

Parameter	Type	Description
Value	ULong	Max number of Spectrogram Frames

Examples

//Sets number of spectrogram frames to 101
SGRam:FRAMe:COUNt 101

9 Command Groups ^

SGRam:FRAMe:COUNt?

Queries the maximum number of spectrogram frames

Result Parameter

Parameter	Type	Description
Value	ULong	Max number of Spectrogram Frames

Examples

//Queries number of spectrogram frames

SGR:FRAM:COUN?

101

SGRam:SCAN:NUMBer?

Queries the spectrogram scan number

Result Parameter

Parameter	Type	Description
Value	ULongLong	Scan number

Examples

//Queries the current scan number

SGR:SCAN:NUMB?

1814

9 Command Groups ^

Narda Command Reference - MAP

Map subsystem

MAP:LOCalization:AREA

Sets the localization area.

Command Parameter

Parameter	Type	Description
TopLeftLat	Double	Top left latitude in degree (decimal)
TopLeftLon	Double	Top left longitude in degree (decimal)
BottomRightLat	Double	Bottom right latitude in degree (decimal)
BottomRightLon	Double	Bottom right longitude in degree (decimal)

Examples

```
//Sets the localization area.
MAP:LOCalization:AREA 48.548, 9.095, 48.368, 9.366
```

MAP:LOCalization:AREA?

Queries the localization area.

Result Parameter

Parameter	Type	Description
TopLeftLat	Double	Top left latitude in degree (decimal)
TopLeftLon	Double	Top left longitude in degree (decimal)
BottomRightLat	Double	Bottom right latitude in degree (decimal)
BottomRightLon	Double	Bottom right longitude in degree (decimal)

Examples

```
//Queries the localization area.
MAP:LOCalization:AREA?
48.548, 9.095, 48.368, 9366
```

MAP:LOCalization:BEARing:ERRor

Sets the bearing error for the localization

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Value	Float	Bearing error in degree 0°...20°

Examples

//Sets the bearing error for the localization to 7.47 degree
MAP:LOC:BEAR:ERR 7.47

MAP:LOCalization:BEARing:ERRor?

Queries the bearing error for the localization

Result Parameter

Parameter	Type	Description
Value	Float	Bearing error in degree 0°...20°

Examples

//Queries the bearing error for the localization
MAP:LOCalization:BEARing:ERRor?
16.2

MAP:LOCalization:DATA?

Queries the localization data

Result Parameter

Parameter	Type	Description
ValidFlag	Bool	Valid flag of the localization data
BearingCount	ULong	Number of bearings used for the localization
Lat	Float	Latitude of the localization result in degree (decimal)
Lon	Float	Longitude of the localization result in degree (decimal)
SemiMajorAxis	Float	Length of the semi-major axis of the error ellipse in m
SemiMinorAxis	Float	Length of the semi-minor axis of the error ellipse in m
Angle	Float	Angle of the semi-major axis with respect to north in degree
Frequency	Double	Frequency of the localization

Examples

//Queries the localization data
MAP:LOCalization:DATA?
1,17,48.47213,9.217754,845.9222,593.3905,147.925,433000000

9 Command Groups ^

MAP:LOCalization:FREQuency:TUNE:LIST?

Queries the available Ftunes for localization

Result Parameter

Parameter	Type	Description
Value	FlexArray[Double]	List frequencies for localization in Hz

Examples

//Queries the available Ftune for localization

MAP:LOC:FREQ:TUNE:LIST?

200000000.0,433000000.0,150000000.0

MAP:LOCalization:FREQuency:TUNE:SELect

Sets the frequency of the localization

Command Parameter

Parameter	Type	Description
Value	Frequency	Frequency (Hz, kHz, MHz, GHz)

Examples

//Sets the frequency of the localization to 200 MHz

MAP:LOC:FREQ:TUNE:SEL 200 MHz

MAP:LOCalization:FREQuency:TUNE:SELect?

Queries the frequency of the localization

Result Parameter

Parameter	Type	Description
Value	Double	Frequency of the localization in Hz

Examples

//Queries the selected Ftune of the localization

MAP:LOC:FREQ:TUNE:SEL?

200000000

MAP:LOCalization:LOS:PROBability

Sets the line of sight probability for the localization

Command Parameter

Parameter	Type	Description
Value	Float	Line of sight probability in percent 0%,1%...100%

9 Command Groups ^

Examples

//Sets the line of sight probability for the localization

MAP:LOC:LOS:PROB 50.0

MAP:LOCalization:LOS:PROBability?

Queries the line of sight probability for the localization

Result Parameter

Parameter	Type	Description
Value	Float	Line of sight probability in percent 0%,1%...100%

Examples

//Queries the line of sight probability for the localization

MAP:LOCalization:LOS:PROBability?

60.0

MAP:LOCalization:MIN:DFQuality

Sets the minimum DF quality for a bearing. The flag MAP:LOCalization:MIN:DFQuality:ENABle must be enabled for the setting of MAP:LOCalization:MIN:DFQuality to take effect!

Command Parameter

Parameter	Type	Description
DFMin	Float	minimum DF quality 0%, 5%, ..., 100%

Examples

//Sets the min DF quality to 80 percent.

MAP:LOCalization:MIN:DFQuality 80

MAP:LOCalization:MIN:DFQuality?

Queries the minimum DF quality for a bearing to be taken into account by the localization. The flag MAP:LOCalization:MIN:DFQuality:ENABle must be enabled for the setting of MAP:LOCalization:MIN:DFQuality to take effect!

Result Parameter

Parameter	Type	Description
DFMin	Float	minimum DF quality 0%, 5%, ..., 100%

Examples

//Queries the min DF quality

MAP:LOCalization:MIN:DFQuality?

60

9 Command Groups ^

MAP:LOCalization:MIN:DFQuality:ENABle

Enables/Disables minimum DF quality criteria for bearings.

Command Parameter

Parameter	Type	Description
Value	Bool	min DF quality state

Examples

//Enables min DF quality criteria

MAP:LOC:MIN:DFQ:ENAB ON

MAP:LOCalization:MIN:DFQuality:ENABle?

Queries the minimum DF quality criteria state.

Result Parameter

Parameter	Type	Description
Value	Bool	min DF quality state

Examples

//Queries min DF quality criteria state

MAP:LOC:MIN:DFQ:ENAB?

1

MAP:LOCalization:MIN:SPEed

Sets the min. Speed parameter for the localization. The flag MAP:LOCalization:MIN:SPEed:ENABle must be enabled for the setting of MAP:LOCalization:MIN:SPEed to take effect!

Command Parameter

Parameter	Type	Description
Value	Speed	min. Speed in m/s, km/h or mi/h

Examples

//Sets the min. Speed parameter for the localization to 20 km/h

MAP:LOC:MIN:SPE 20 km_h

MAP:LOCalization:MIN:SPEed?

Queries the min. Speed parameter for the localization. The flag MAP:LOCalization:MIN:SPEed:ENABle must be enabled for the setting of MAP:LOCalization:MIN:SPEed to take effect!

Result Parameter

Parameter	Type	Description
Value	Float	min. Speed in m/s

9 Command Groups ^

Examples

//Queries the min. Speed parameter for the localization in m/s
MAP:LOCalization:MIN:SPEed?
2.777

MAP:LOCalization:MIN:SPEed:ENABle

Enables/Disables minimum speed criteria for bearings to be taken into account by the localization.

Command Parameter

Parameter	Type	Description
Value	Bool	min Speed state

Examples

//Enables min Speed criteria
MAP:LOC:MIN:SPE:ENAB ON

MAP:LOCalization:MIN:SPEed:ENABle?

Queries the minimum speed criteria state for bearings to be taken into account by the localization.

Result Parameter

Parameter	Type	Description
Value	Bool	min Speed state

Examples

//Queries the min Speed criteria state
MAP:LOC:MIN:SPE:ENAB?
1

MAP:LOCalization:MIN:SPEed:LIST?

Queries the list of possible values for the min. Speed parameter

Result Parameter

Parameter	Type	Description
Value	FlexArray[Float]	List of min. Speed values in m/s

Examples

//Queries the list of possible values for the min. Speed parameter in m/s
MAP:LOC:MIN:SPE:LIST?
0.277,0.555,0.833,1.388,2.777,5.555,8.333,13.888

//Queries the list of possible values for the min. Speed parameter in m/s
MAP:LOCalization:MIN:SPEed:LIST?
0.277,0.555,0.833,1.388,2.777,5.555,8.333,13.888

9 Command Groups ^

MAP:LOCalization:RECord:BEARing

Starts/Stops recording of bearings

Command Parameter

Parameter	Type	Description
Value	Bool	Type ON,OFF

Examples

//Starts recording

MAP:LOC:REC:BEAR ON

MAP:LOCalization:RECord:BEARing?

Queries the recording of bearings state

Result Parameter

Parameter	Type	Description
Value	Bool	Type ON,OFF

Examples

//Queries the recording state

MAP:LOCalization:RECord:BEARing?

OFF

MAP:LOCalization:RECord:LIST?

Queries the available records for localization

Result Parameter

Parameter	Type	Description
Value	FlexArray[String]	List of records for localization

Examples

//Queries the available records for localization

MAP:LOC:REC:LIST?

RecordA, RecordB, RecordC

MAP:LOCalization:RECord:SELect

Selects the record used for localization

Command Parameter

Parameter	Type	Description
RecordName	String	Name of the record

9 Command Groups ^

Examples

//Selects the record 'MyRecord' for localization
MAP:LOC:REC:SEL 'MyRecord'

MAP:LOCalization:RECord:SELect?

Queries the record used for localization

Result Parameter

Parameter	Type	Description
RecordName	String	Name of the selected record

Examples

//Queries the selected record for localization
MAP:LOCalization:RECord:SELect?
'MyRecord'

MAP:LOCalization:RESolution

Sets the resolution of the localization area

Command Parameter

Parameter	Type	Description
Value	Enum	Resolution (VERY_HIGH, HIGH, NORMAL, LOW, VERY_LOW)

Examples

//Sets the resolution of the localization area to HIGH
MAP:LOC:RES HIGH

MAP:LOCalization:RESolution?

Queries the resolution of the localization area

Result Parameter

Parameter	Type	Description
Value	Enum	Resolution (VERY_HIGH, HIGH, NORMAL, LOW, VERY_LOW)

Examples

//Queries the resolution of the localization area
MAP:LOCalization:RESolution?
NORMAL

9 Command Groups ^

MAP:LOCalization:STARt

Starts the localization

Examples

//Starts the localization
MAP:LOCalization:STARt
//Starts the localization
MAP:LOC:STAR

MAP:LOCalization:STATe?

Queries the localization state

Result Parameter

Parameter	Type	Description
Value	Enum	STARt, STOP

Examples

//Queries the localization state
MAP:LOC:STAT?
STOP

//Queries the localization state
MAP:LOCalization:STATe?
START

MAP:LOCalization:STOP

Stops the localization

Examples

//Stops the localization
MAP:LOCalization:STOP
//Stops the localization
MAP:LOC:STOP

MAP:LOCalization:USE:CASE:PRESet

Sets the use case preset for the localization

Command Parameter

Parameter	Type	Description
Value	Enum	Use case preset (CITY_VEHICLE_GNSS, CITY_FIXED_SITE, FREE_FIELD_VEHICLE_GNSS, FREE_FIELD_FIXED_SITE)

9 Command Groups ^

Examples

//Sets the use case preset for localization to CITY_VEHICLE_GNSS
MAP:LOC:USE:CASE:PRES CITY_VEHICLE_GNSS

MAP:LOCalization:USE:CASE:PRESet?

Queries the use case preset for the localization

Result Parameter

Parameter	Type	Description
Value	Enum	Use case preset (CITY_VEHICLE_GNSS, CITY_FIXED_SITE, FREE_FIELD_VEHICLE_GNSS, FREE_FIELD_FIXED_SITE)

Examples

//Queries the use case preset for localization
MAP:LOCalization:USE:CASE:PRESet?
FREE_FIELD_VEHICLE_GNSS

MAP:MODE

Sets the map mode

Command Parameter

Parameter	Type	Description
Mode	Enum	Mode (NONE, DISCRETE_LOCALIZATION, CONTINUES_LOCALIZATION, MEASUREMENT_SITES, COVERAGE, LOCALIZATION_RESULTS)

Examples

//Sets the map mode to CONTINUES_LOCALIZATION
MAP:MODE CONTINUES_LOCALIZATION

MAP:MODE?

Queries the map mode

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Mode	Enum	Mode (NONE, DISCRETE_LOCALIZATION, CONTINUES_LOCALIZATION, MEASUREMENT_SITES, COVERAGE, LOCALIZATION_RESULTS)

Examples

//Queries the current map mode

MAP:MODE?

NONE

9 Command Groups ^

Narda Command Reference - HORizontal

HORizontal Scan Subsystem (undefined Commands)

HORizontal:SCAN:ADD:VALue

Horizontal scan add discrete value

Examples

//Adds current value horizontal scan
HORizontal:SCAN:ADD:VALue

HORizontal:SCAN:CALC:RESult

Horizontal scan calculate bearing

Examples

//Horizontal scan calculate result
HORizontal:SCAN:CALC:RESult

HORizontal:SCAN:DATA?

Queries the Horizontal scan results

Result Parameter

Parameter	Type	Description
ValidFlag	Bool	Valid flag of the localization data.
Overdriven	Bool	Overdriven flag
LostFrames	Bool	LostFrames flag
Uncertain	Bool	Uncertain flag
DetectorValue	Float	Detector value
Azimuth	Float	Azimuth in degree.
Elevation	Float	Elevation in degree.
Roll	Float	Roll in degree.

Examples

//Queries the horizontal scan results
HORizontal:SCAN:DATA?
1,0,0,0,-85.63,218.799,-12.572,-1.902

HORizontal:SCAN:DELete:VALue

Horizontal scan delete last value

Examples

//Deletes last horizontal scan value
HORizontal:SCAN:DELete:VALue

9 Command Groups ^

HORizontal:SCAN:DETector

Sets the Horizontal scan detector

Command Parameter

Parameter	Type	Description
Value	Enum	Horizontal scan detector (RMS, CRMS, PPk, CPK)

Examples

```
//Sets horizontal scan detector to RMS
HORizontal:SCAN:DETector RMS
```

HORizontal:SCAN:DETector?

Queries the Horizontal scan detector

Result Parameter

Parameter	Type	Description
Value	Enum	Horizontal scan detector (RMS, CRMS, PPk, CPK)

Examples

```
//Queries the horizontal scan detector
HORizontal:SCAN:DETector?
RMS
```

HORizontal:SCAN:MANual:CORRection

Horizontal scan manual correction

Examples

```
//Horizontal scan manual correction
HORizontal:SCAN:MANual:CORRection
```

HORizontal:SCAN:RESet

Horizontal scan reset

Examples

```
//Resets horizontal scan values
HORizontal:SCAN:RESet
```

HORizontal:SCAN:RESet:MAX

Horizontal scan reset max

9 Command Groups ^

Examples

//Resets horizontal scan max values
HORizontal:SCAN:RESet:MAX

HORizontal:SCAN:STARt

Horizontal scan start

Examples

//Starts horizontal scan
HORizontal:SCAN:STARt

HORizontal:SCAN:STATe?

Queries the Horizontal scan state

Result Parameter

Parameter	Type	Description
Value	Enum	Horizontal scan state (INIT, START, RESET_MAX, ADD_DISCRETE, ADD_DISCRETE_MAX, DELETE_LAST_VALUE, CALCULATE_BEARING, MANUAL_BEARING)

Examples

//Queries horizontal scan state
HORizontal:SCAN:STATe?
START

HORizontal:SCAN:STOP

Horizontal scan stop

Examples

//Stops horizontal scan
HORizontal:SCAN:STOP

HORizontal:SCAN:TYPE

Sets the Horizontal scan type

Command Parameter

Parameter	Type	Description
Value	Enum	Horizontal scan type (CONTINUOUS, DISCRETE, DISCRETE_MAX_HOLD)

9 Command Groups ^

Examples

//Sets horizontal scan type to CONTINUOUS
HORizontal:SCAN:TYPE CONTINUOUS

HORizontal:SCAN:TYPE?

Queries the Horizontal scan type

Result Parameter

Parameter	Type	Description
Value	Enum	Horizontal scan type (CONTINUOUS, DISCRETE, DISCRETE_MAX_HOLD)

Examples

//Queries the horizontal scan type
HORizontal:SCAN:TYPE?
CONTINUOUS

9 Command Groups ^

Narda Command Reference - PERSistence

Persistence subsystem

PERSistence:DATA:ALL?

Queries a persistence image. Caution: You must skip unused and unknown IDs and data elements while parsing to be compatible with future extensions. (see DATA:ALL? commands)

Query Parameter

Parameter	Type	Description
Optional	Optional[Enum]	Reserved for future use

Result Parameter

Parameter	Type	Description
TimeStampSyncFlag	Bool	Timestamp Sync Flag
TimeStampSeconds	ULong	Seconds since 1.1.1970 0:00 Greenwich Mean Time
TimeStampFractional	ULong	Nanoseconds fractional part
ScanNumber	ULongLong	Scan Number
ColumnCount	ULong	Number of frequency bins along the x-axis, i.e. number of columns in the probability matrix
RowCount	ULong	Number of power level bins along the y-axis, i.e. number of rows in the probability matrix
FreqStart	Frequency	Start frequency of the X-Axis
FreqStep	Frequency	Frequency step of the X-Axis
PersistenceType	Enum	Optional: Max, Avg
Overdriven	Bool	Overdriven flag
NotRealtime	Bool	NotRealtime flag
PersistenceValues	FlexArray[Float]	List of probability values in range from 0 (0 % probability) to 1 (100% probability) (see "SCPI Example - Persistence" in the Appendix for more detailed information)

Examples

//Queries the current persistence data

PERS:DATA:ALL?

0,1592475133,816676044,4139,801,601,73338084,50000,MAX,0,0,0.002,0.0025,0.0023333,0.002,0.0020833,0.0019167, ...

PERSistence:DATA:COLumn:COUNt?

Queries the number of columns of a persistence image

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	ULong	Number of persistence columns

Examples

//Queries the number of persistence columns

PERS:DATA:COL:COUN?

801

PERSistence:DATA:FREQuency:STARt?

Queries persistence data start frequency

Result Parameter

Parameter	Type	Description
Value	Frequency	Start frequency of the X-Axis

Examples

//Queries the start frequency for the persistence results

PERS:DATA:FREQ:STAR?

87400000

PERSistence:DATA:FREQuency:STEP?

Queries persistence data frequency step

Result Parameter

Parameter	Type	Description
Value	Frequency	Frequency step of the X-Axis

Examples

//Queries the frequency step for the persistence results

PERS:DATA:FREQ:STEP?

200000

PERSistence:DATA:OVERdriven?

Queries the persistence data overdriven flag

Result Parameter

Parameter	Type	Description
Value	Bool	Overdriven flag

9 Command Groups ^

Examples

//Queries the overdriven flag
PERS:DATA:OVER?
0

PERSistence:DATA:REALtime?

Queries the pesistence data realtime flag

Result Parameter

Parameter	Type	Description
Value	Bool	Realtime flag

Examples

//Queries the realtime flag
PERS:DATA:REAL?
1

PERSistence:DATA:ROW:COUNt?

Queries the number of rows of a persistence image

Result Parameter

Parameter	Type	Description
Value	ULong	Number of persistence rows

Examples

//Queries the number of persitence rows
PERS:DATA:ROW:COUN?
601

PERSistence:DATA:UPDate?

Update is avaliable in RUN and HOLD mode (see DATA:UPDate Commands)

Query Parameter

Parameter	Type	Description
Optional	Optional[ULongLong,Timespan]	ScanNumber of last queried measurement data or NaN to force an update, Timeout value for update data (s, ms)

Result Parameter

Parameter	Type	Description
ScanNumber	ULongLong	ScanNumber of current measurement data.

9 Command Groups ^

Examples

//Persistence data update with old scancount = 10 and timeout = 100ms
PERS:DATA:UPD? 10,100ms
559900

//Forces Persistence data update because we do not have old scannumber
PERS:DATA:UPDate?
558630

//Persistence data update with old scannumber = 0
PERS:DATA:UPDate? 0
558980

//Forces Persistence data update with timeout = 100ms
PERS:DATA:UPDate? NaN,100ms
559430

PERSistence:MEASurement:TIME

Measurement time for persistence

Command Parameter

Parameter	Type	Description
Value	Timespan	Measurement time (h, m, s, ms)

Examples

//Sets the persistence measurement time to 1s
PERS:MEAS:TIME 1 s

PERSistence:MEASurement:TIME?

Queries the persistence measurement time

Result Parameter

Parameter	Type	Description
Value	Timespan	Measurement time in s

Examples

//Queries the persistence measurement time
PERS:MEAS:TIME?
0.01

PERSistence:SCAN:COUNt

Sets the persistence scan count

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Value	ULong	Scan count

Examples

//Sets the scan count to 50
PERS:SCAN:COUN 50

PERSistence:SCAN:COUNt?

Queries the current scan count

Result Parameter

Parameter	Type	Description
Value	ULong	Scan count

Examples

//Queries the current scan count
PERS:SCAN:COUN?
50

PERSistence:SCAN:NUMBer?

Queries the persistence scan number

Result Parameter

Parameter	Type	Description
Value	ULongLong	Scan number

Examples

//Queries the current scan number
PERS:SCAN:NUMB?
1814

PERSistence:TYPE

Sets the persistence type

Command Parameter

Parameter	Type	Description
Value	Enum	Max, Avg

Examples

//Sets the persistence type to Max
PERS:TYPE Max

9 Command Groups ^

PERSistence:TYPE?

Queries the persistence type

Result Parameter

Parameter	Type	Description
Value	Enum	Max, Avg

Examples

//Queries the persistence type

PERS:TYPE?

Avg

9 Command Groups ^

Narda Command Reference - Deprecated

Deprecated subsystem

BEARing:PERSistence

Deprecated Command: Use BEARing:POST:AVG instead

Command Parameter

Parameter	Type	Description
Value	Timespan	Post averaging time (h, m, s, ms)

Examples

//Deprecated Command: Sets the post averaging time to 10ms

BEAR:PERS 0.01

BEARing:PERSistence?

Deprecated Command: Use BEARing:POST:AVG? instead

Result Parameter

Parameter	Type	Description
Value	Timespan	Post averaging time in s

Examples

//Deprecated Command: Queries the post averaging time

BEAR:PERS?

0

LEVelmeter:DETector:PERSistence

Deprecated Command: Use LEVelmeter:POST:AVG instead

Command Parameter

Parameter	Type	Description
Value	Timespan	Post averaging time (h, m, s, ms)

Examples

//Deprecated Command: Sets the post averaging time to 10ms

LEV:DET:PERS 10 ms

LEVelmeter:DETector:PERSistence?

Deprecated Command: Use LEVelmeter:POST:AVG? instead

9 Command Groups ^

Result Parameter

Parameter	Type	Description
Value	Timespan	Post averaging time in s

Examples

//Deprecated Command: Queries the post averaging time
LEV:DET:PERS?
0.01

LEVelmeter:TVIDeo

Deprecated Command: Use LEVelmeter:PRE:AVG instead

Command Parameter

Parameter	Type	Description
Value	Timespan	Pre averaging time (h, m, s, ms), 0 = OFF

Examples

//Deprecated Command: Sets the pre averaging time to 10ms
LEV:TVID 10 ms

LEVelmeter:TVIDeo?

Deprecated Command: Use LEVelmeter:PRE:AVG? instead

Result Parameter

Parameter	Type	Description
Value	Timespan	Pre averaging time in s, 0 = OFF

Examples

//Deprecated Command: Queries the pre averaging time
LEV:TVID?
0.01

[SENSe:]APPLication:QUIT

Deprecated Command: Use SYSTem:SHUTdow instead

Examples

//Deprecated Command: This command shuts down the instrument
APPL:QUIT

[SENSe:]ATTenuator:ENTRy:MODE

Deprecated Command: Has no effect anymore

9 Command Groups ^

Command Parameter

Parameter	Type	Description
Value	Enum	Entry mode (ATTENUATOR,REFERENCE_LEVEL)

Examples

//Deprecated Command: Sets entry mode to REFERENCE_LEVEL
ATT:ENTR:MODE REFERENCE_LEVEL

[SENSe:]ATTenuator:ENTRy:MODE?

Deprecated Command: Has no effect anymore

Result Parameter

Parameter	Type	Description
Value	Enum	Entry mode (ATTENUATOR,REFERENCE_LEVEL)

Examples

//Deprecated Command: Queries the entry mode
ATT:ENTR:MODE?
REFERENCE_LEVEL

[SENSe:]REFerence:LEVel:ENTRy:MODE

Deprecated Command: Has no effect anymore

Command Parameter

Parameter	Type	Description
Value	Enum	Entry mode (ATTENUATOR,REFERENCE_LEVEL)

Examples

//Deprecated Command: Sets entry mode to REFERENCE_LEVEL
REF:LEV:ENTR:MODE REFERENCE_LEVEL

[SENSe:]REFerence:LEVel:ENTRy:MODE?

Deprecated Command: Has no effect anymore

Result Parameter

Parameter	Type	Description
Value	Enum	Entry mode (ATTENUATOR,REFERENCE_LEVEL)

9 Command Groups ^

Examples

//Deprecated Command: Queries the entry mode

REF:LEV:ENTR:MODE?

REFERENCE_LEVEL

[SENSe:]RUN:SINGle:OVERlap

Deprecated Command: Use RUN:SINGle instead

Command Parameter

Parameter	Type	Description
Optional	Optional[Timespan]	Timeout value for initializing and single measurement (s, ms)

Examples

//Deprecated Command: Starts a single measurement as non-blocking command with a timeout of 10 seconds for initializing and measurement

RUN:SING:OVER 10s

//Deprecated Command: Starts a single measurement as a non-blocking command with default timeout

SENSe:RUN:SINGle:OVERlap

//Deprecated Command: Starts a single measurement as a blocking command until initializing and measurement has finished

RUN:SING:OVER;*WAI

[SENSe:]STOP:MODE

Deprecated Command: Use STOP and HOLD instead

Command Parameter

Parameter	Type	Description
Value	Enum	Stop mode (STOP,HOLD)

Examples

//Deprecated Command: Select the hold mode

STOP:MODE HOLD

//Deprecated Command: Select the stop mode

SENSe:STOP:MODE STOP

[SENSe:]STOP:MODE?

Deprecated Command: Use STOP and HOLD instead

Result Parameter

Parameter	Type	Description
Value	Enum	Stop mode (STOP,HOLD)

9 Command Groups ^

Examples

```
//Deprecated Command: Queries the stop mode
STOP:MODE?
HOLD
```

9 Command Groups ^

11 Appendix: Examples

SCPI Example – RT Spectrum

	//Setup Task and Views	
←	*RST	//Reset device
	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//all OK
←	TASK:NEW? 'RT_SPECTRUM'	//Add RT Spectrum task, delete other Tasks
→	"RT Spectrum"	
←	TASK:SELect 'RT Spectrum'	//This is only necessary, if RT Spectrum task still exists.

	//Setup measurement parameters	
←	SENSe:ATTenuator 10 dB	//Set attenuator to 10 dB
←	SPECtrum:FREQuency:STARt 1e9	//Set start frequency to 1 GHz
←	SPECtrum:FREQuency:STOP 1.04e9	//Set stop frequency to 1.04 GHz
←	SPECtrum:RBW 100e3	//Set RBW to 100 kHz
←	SPECtrum:SCAN:COUNt 50	//Set ScanCount to 50
←	SPECtrum:TRACe:ENABle AvR,ON	//Enable trace AvR
←	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//all OK

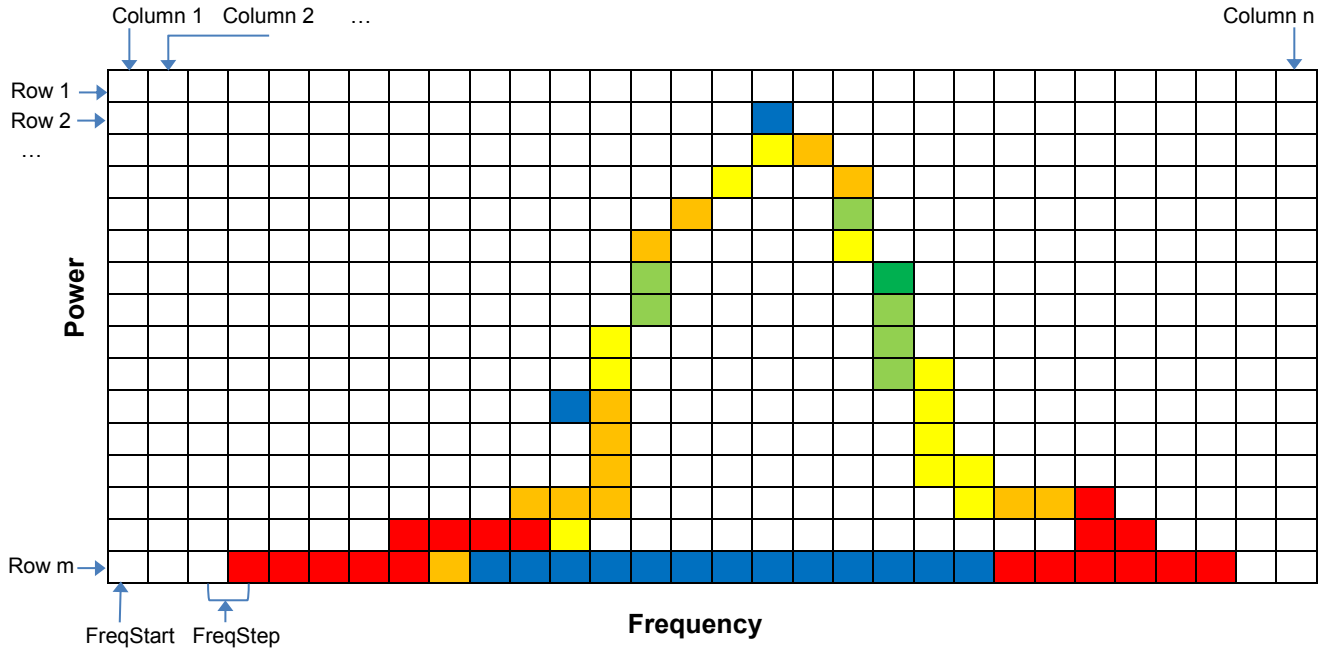
	//Measurement sequence	
←	RUN:CONT;HOLD	
	//Acquire first spectrum data to get trace basic information	
←	SPECtrum:DATA:UPDate?	//Wait until new spectrum data is aquired
→	3	//Returns current ScanNumber (e.g. 3)
←	SPECtrum:DATA:COUNt?	//Request number of bins
→	801	
←	SPECtrum:DATA:FREQuency:STARt?	//Request SPECtrum data start frequency
→	1000000000	
←	SPECtrum:DATA:FREQuency:STEP?	//Request SPECtrum data frequency step
→	50000	

	//Measurement loop for fast acquisition of spectrum data.	
←	SPECtrum:DATA:UPDate?	//Wait until new spectrum data is aquired
→	4	//Returns current ScanNumber (e.g. 3)
←	SPECtrum:DATA:OVERdriven?	//Check for overdriven
→	0	//not overdriven
←	SPECtrum:DATA:REALtime?	//Check for real-time
→	1	//it is real-time
←	SPEC:DATA:LEVel? AvR	//Request AvR trace data
→	-89.54,-93.91,-99.58,-100.34,-100.44,-100.58,...-98.47	//the level values depends on the selected unit

Use of SPECtrum:DATA result

Index	Frequency	AvR Value
1	1000000000 (start frequency)	-89.54
2	1000000000 + 50000 (+ frequency step)	-93.91
3	1000000000 + 50000 + 50000	-99.58
4	1000000000 + 50000 + 50000 + 50000	-100.34
…	…	…
161	1000000000 + 50000 + … + 50000	-98.47

SCPI Example – Persistence



Probability of occurrence:
red = Highest probability of occurrence, blue = Lowest probability of occurrence

From the command PERSistence:DATA:ALL?, the last parameter, “PersistenceValues”, in the respond returns a list of all probability values in a range from 0 (0% probability of occurrence) to 1 (100% probability of occurrence).
The “ColumnCount” parameter returns the number of columns in the probability matrix and the “RowCount” parameter returns the number of rows in the probability matrix.
With this information it is possible to build up the probability matrix in the following way:

“PersistenceValues” list:

1st probability value in the list correspond with Row 1 and Column 1 in the matrix: (a_{11})
2d probability value in the list correspond with Row 1 and Column 2 in the matrix: (a_{12})
3d probability value in the list correspond with Row 1 and Column 3 in the matrix: (a_{13})

…

nth probability value in the list correspond with Row 1 and Column n in the matrix: (a_{1n})
(n+1)th probability value in the list correspond with Row 2 and Column 1 in the matrix: (a_{21})
(n+2)th probability value in the list correspond with Row 2 and Column 2 in the matrix: (a_{22})
etc…

Spectrum parameters can be set with the SPECtrum:XXX-commands (see “Narda Command Reference – SPECtrum”)

	//Setup Task and Views	
←	*RST	//Reset device
	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//all OK
←	TASK:NEW? 'RT_SPECTRUM'	//Add RT Spectrum task, delete other Tasks
→	"RT Spectrum"	
←	TASK:SELect 'RT Spectrum'	//This is only necessary, if more tasks exists.
←	VIEW:ADD? 1,BELOW,'PERSISTENCE'	//Add a Persistence view below the default spectrum view
←	VIEW:LIST?	//Request a list of existing views in the current task
→	"PERSISTENCE",2,"SPECTRUM",1	
←	VIEW:SEL 2	//Select the Persistence view with index 2

	//Setup measurement and display parameters	
←	SENSe:ATTenuator 10 dB	//Set attenuator to 10 dB
←	SPECtrum:FREQuency:STOP 100 MHz	//Set stop frequency to 100 MHz
←	SPECtrum:FREQuency:STARt 96 MHz	//Set start frequency to 96 MHz
←	SPECtrum:RBW 10e3	//Set RBW to 10 kHz
←	DISP:PERS:LRAN 100	//Set the maximum displayed level range to 100 dB
←	DISP:PERS:LMAX -70	//Set the maximum displayed level value to -70 dBm
	PERS:TYPE Max	//Set the Persistence type to Max
←	PERS:MEAS:TIME 50ms	//Set the persistence measurement time to 50 ms
←	PERS:SCAN:NUMB 1	//Set the scan number to 1
←	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//all OK

	//Measurement sequence	
←	RUN:CONT	
←	PERSistence:DATA:UPDate?	//Wait until new persistence data is aquired
→	4	//Returns current ScanNumber (e.g. 3)
←	PERS:DATA:ALL?	//Request all data, last position gives the probability value-list
→	0,1592475133,816676044,4139,801,601,73338084,50000,MAX,0,0,0.002,0.0025,0.0023333,…	

SCPI Example – Automatic DF

	//Setup Task and Views	
←	*RST	//Reset device
	SYST:ERR:CODE:ALL?	//Check for errors
→	0	//all OK
←	TASK:NEW? 'AUTO_DF'	//Add Auto DF task, delete other Tasks and request new task name
→	"Auto DF"	
←	TASK:SEL 'Auto DF'	//This is only necessary, if AutoDF task still exists.

	//Setup Auto DF spectrum parameters	
←	SENSe:ATT 0 dB	//Set attenuator to 0 dB
←	SPEC:FREQ:CENT 446 MHz	//Set frequency (fcent = ftune)
←	SPEC:RBW 25e3	//Set RBW to 200 kHz
	//Setup Auto DF bearing parameters	
←	BEAR:FREQ:TUNE 446 MHz	//Set tuning frequency (fcent = ftune)
←	BEAR:CBW 40e3	//Set channel bandwidth to 12.5 kHz
←	BEAR:MEAS:TIME 1ms	//Set bearing measurement time to 1 ms
←	SETT:MAGN:DECL 2.68	//Set magnetic declenation (only required if compass is used)
←	BEAR:NORT:REF REFERENCE_MARK_DIRECTION	//Set north reference to antenna reference mark direction
←	BEAR:REF:MARK:DIR 0	//Set the deviation of the antenna reference mark direction to north in degree
←	BEAR:AZIM:CORR 0	//Set the azimuth correction in degree to 0°
←	BEARing:DFSQuelch -80 dBm	//Set DF squelch to avoid bearing results based on noise.
←	BEAR:DFSQ:ENAB ON	//Switch DF squelch filter ON
←	BEAR:MIN:DFQ 80	//Set bearing minimum quality filter to 80%
←	BEAR:MIN:DFQ:ENAB ON	//Switch on DF minimum quality filter
←	BEAR:MIN:STAB:ENAB OFF	//Switch off min. stability filter
←	BEAR:DATA:VAL:ENAB 1	//Set BEAR:DATA:VAL:ENAB flag, so that DFSQuelch and MIN:DFQ becomes applied.
←	SYST:ERR:CODE:ALL?	//Check for errors
→	0	//all OK

	//Measurement loop	
←	BEAR:FREQ:TUNE 446 MHz	//Set new tuning frequency if needed (fcent = ftune)
←	RUN:CONT;HOLD	//Do bearing and keep results in memory
←	BEAR:DATA:UPD?	//Wait until new bearing data is aquired
→	3	//Returns current ScanNumber (e.g. 3)
←	BEAR:DATA:AZIM?	//Request azimuth value
→	272.9964	
	BEAR:DATA:ELEV?	//Request elevation value
→	37.5	//
←	BEAR:DATA:DFQ?	//Request DF quality of bearing
→	82.45299	//e.g. 82.45299 %

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SCPI Example – VITA49 IQ Streaming

	//Setup Task and Views	
←	*RST	//Reset device
	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//All OK
←	TASK:NEW? 'RT_STREAMING'	//Add RT Streaming task, delete other Tasks
→	"RT Streaming"	
←	STReam:ADD? 'VITA49_IQ'	//Add a new streaming view
→	1	
	STReam:Select 1	Select the added stream (view)
←	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//All OK

	//Setup connection parameters	
←	STReam:Connection:IDN 12345	//Set stream identifier number
←	STReam:Connection:IDN?	//Check stream identifier number
→	12345	
	STReam:CONNection:TYPE UDP_SINGLECAST	//Set stream type to UDP_SINGLECAST
	STReam:CONNection:ADDRess "192.168.128.1"	//Set UDP streaming client address
←	STReam:CONNection:PORT 4444	//Set UDP streaming port
←	STReam:CONNection:PORT?	//Check UDP streaming port
→	4444	
←	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//All OK

	//Setup IQ-Streaming parameters	
←	IQSTream:CBW:LIST?	
→	20000000,19200000,16000000,…	
←	IQSTream:CBW 750kHz	
←	IQSTream:CBW?	
→	750000	
←	IQSTream:FREQuency:TUNE 97.7MHz	
←	IQSTream:OVERsampling OFF	
←	IQSTream:PAYLoad:LIMit:LIST?	
→	32,64,128,256,512,1024,2048	
←	IQSTream:PAYLoad:LIMit 2048	
←	IQSTream:PAYLoad:FORMat I16Q16	
←	SYSTem:ERRor:CODE:ALL?	
→	0	

	//Open/close connection and start/stop streaming	
←	STReam:CONNection:OPEN	//Open connection and start streaming
←	STReam:CONNection:STAte?	//Check connection state
→	CONNECTED	
←	STReam:CONNection:CLOSE	//Close connection and stop streaming
←	STReam:CONNection:STAte?	//Check connection state
→	CLOSED	

SCPI Example – VITA49 Spectrum Streaming via UDP Single Cast

Spectrum parameters can be set with the SPECtrum:XXX-commands (see “Narda Command Reference – SPECtrum”)

	//Setup Task and Views	
←	*RST	//Reset device
	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//All OK
←	TASK:NEW? 'RT_STREAMING'	//Add RT Streaming task, delete other Tasks
→	"RT Streaming"	
←	STReam:ADD? 'VITA49_SPECTRUM_RMS'	//Add a new streaming view, here with RMS data
→	1	
	STReam:Select 1	Select the added stream (view)
←	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//All OK

	//Setup connection parameters	
←	STReam:Connection:IDN 12345	//Set stream identifier number
←	STReam:Connection:IDN?	//Check stream identifier number
→	12345	
	STReam:CONNection:TYPE UDP_SINGLECAST	//Set stream type to UDP_SINGLECAST
	STReam:CONNection:ADDRess "192.168.128.1"	//Set UDP streaming client address
←	STReam:CONNection:PORT 4444	//Set UDP streaming port
←	STReam:CONNection:PORT?	//Check UDP streaming port
→	4444	
←	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//All OK

	//Open/close connection and start/stop streaming	
←	STReam:CONNection:OPEN	//Open connection and start streaming
←	STReam:CONNection:STAte?	//Check connection state
→	CONNECTED	
←	STReam:CONNection:CLOSE	//Close connection and stop streaming
←	STReam:CONNection:STAte?	//Check connection state
→	CLOSED	

SCPI Example – Audio Streaming via TCP

Demodulation parameters can be set with the DEMod:XXX-commands (see “Narda Command Reference – DEMod”)

	//Setup Task and Views	
←	*RST	//Reset device
←	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//All OK
←	TASK:SELect?	//Check which task is currently selected
→	"RT_SPECTRUM","RT Spectrum"	
←	DEM:TYPE FM	//Set the demodulation type to FM
←	DEM:TYPE?	//Check the set demodulation type
→	FM	
←	DEM:TYPE:ENAB 1	//Switch on the set demodulation type
←	DEM:TYPE:ENAB?	//Check demodulation type enable state
→	1	
←	DEM:CBW:LIST?	//Check available CBWs
→	1000000,960000,800000,750000,640000,625000,600000,512000,500000,480000,400000,384000,320000, … , 128,125,120,100,50,25	
←	DEM:CBW 200 kHz	//Set the CBW to 200 kHz
←	DEM:CBW?	//Check the CBW
→	200000	
←	DEM:FREQ:TUNE 97.7 MHz	//Set the demodulation tune frequency to 97.7 MHz
←	DEM:FREQ:TUNE?	//Check the demodulation tune frequency
→	97700000	
←	STR:LIST?	//Check for available streams
→	"AUDIO_DEMOD",1	
←	STR:SEL 1	//Select the audio_demod stream (index 1)
←	STR:SEL?	//Check selected stream
→	1	
←	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//All OK

	//Setup connection parameters	
←	STReam:Connection:IDN 12345	//Set stream identifier number
←	STReam:Connection:IDN?	//Check stream identifier number
→	12345	
←	STR:CONN:TYPE TCP_SERVER	//Set stream type to TCP_SERVER
←	STR:CONN:TYPE?	//Check stream type
→	TCP_SERVER	
←	STReam:CONNection:PORT 4444	//Set TCP streaming port
←	STReam:CONNection:PORT?	//Check TCP streaming port
→	4444	
←	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//All OK

	//Open/close connection and start/stop streaming	
←	STReam:CONNection:OPEN	//Open connection and start streaming
←	STReam:CONNection:STAte?	//Check connection state
→	CONNECTED	
←	STReam:CONNection:CLOSE	//Close connection and stop streaming
←	STReam:CONNection:STAte?	//Check connection state
→	CLOSED	
←	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//All OK

SCPI Example – Audio Streaming via UDP Single Cast

Demodulation parameters can be set with the DEMod:XXX-commands (see “Narda Command Reference – DEMod”)

	//Setup Task and Views	
←	*RST	//Reset device
←	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//All OK
←	TASK:SELect?	//Check which task is currently selected
→	"RT_SPECTRUM","RT Spectrum"	
←	DEM:TYPE FM	//Set the demodulation type to FM
←	DEM:TYPE?	//Check the set demodulation type
→	FM	
←	DEM:TYPE:ENAB 1	//Switch on the set demodulation type
←	DEM:TYPE:ENAB?	//Check demodulation type enable state
→	1	
←	DEM:CBW:LIST?	//Check available CBWs
→	1000000,960000,800000,750000,640000,625000,600000,512000,500000,480000,400000,384000,320000, … , 128,125,120,100,50,25	
←	DEM:CBW 200 kHz	//Set the CBW to 200 kHz
←	DEM:CBW?	//Check the CBW
→	200000	
←	DEM:FREQ:TUNE 97.7 MHz	//Set the demodulation tune frequency to 97.7 MHz
←	DEM:FREQ:TUNE?	//Check the demodulation tune frequency
→	97700000	
←	STR:LIST?	//Check for available streams
→	"AUDIO_DEMOD",1	
←	STR:SEL 1	//Select the audio_demod stream (index 1)
←	STR:SEL?	//Check selected stream
→	1	
←	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//All OK

	//Setup connection parameters	
←	STReam:Connection:IDN 12345	//Set stream identifier number
←	STReam:Connection:IDN?	//Check stream identifier number
→	12345	
←	STReam:CONNection:TYPE UDP_SINGLECAST	//Set stream type to UDP_SINGLECAST
←	STR:CONN:TYPE?	//Check stream type
→	UDP_SINGLECAST	
←	STReam:CONNection:ADDRess "192.168.178.9"	//Set UDP streaming client address
←	STR:CONN:ADDR?	//Check streaming client address
→	"192.168.178.9"	
←	STReam:CONNection:PORT 4444	//Set UDP streaming port
←	STReam:CONNection:PORT?	//Check UDP streaming port
→	4444	
←	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//All OK

	//Open/close connection and start/stop streaming	
←	STReam:CONNection:OPEN	//Open connection and start streaming
←	STReam:CONNection:STAte?	//Check connection state
→	CONNECTED	
←	STReam:CONNection:CLOSE	//Close connection and stop streaming
←	STReam:CONNection:STAte?	//Check connection state
→	CLOSED	
←	SYSTem:ERRor:CODE:ALL?	//Check for errors
→	0	//All OK

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Glossary / Acronyms

Term	Description
CBW:	Channel bandwidth
HTML	HTML stands for HyperText Markup Language and represents a language for describing Internet pages or their elements. Internet browsers are able to interpret this language and thus display the contents of the Internet pages formatted accordingly.
HTTP	HyperText Transfer Protocol is a standard, which describes the transfer of data over a network. It is mainly used to load / transfer web pages from the World Wide Web (WWW) into a web browser.
IP address	An IP address is a unique computer network address based on the Internet protocol (IP), which is assigned to each device connected to the network (e.g. the Internet) enabling the device to be addressed and therefore accessed (similar to the house number in a postal address).
Measurement mode (sub mode):	A second level of modes/a submenu of modes
Narda auto (directional) antenna:	A Narda directional antenna; which is always automatically detected by the device
Narda auto cable:	A Narda cable; which is always automatically detected by the device
NBW	Noise bandwidth
Option:	An additional measurement mode that can be enabled on the device by buying an (unlock-) code
RBW:	Resolution bandwidth
SCPI	Standard Commands for Programmable Instruments
TCP port	The TCP port number is part of the device network address. It indicates the application for which the data are intended. The TCP port number is thus comparable to the name of the recipient (addressee) in the analogy of a postal address.
User antenna:	An external antenna (non-Narda antenna)
User cable:	An external cable (non-Narda antenna)
VBW:	Video bandwidth

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