Remote Emulation with the R&S®NRP2 Power Meter
Application Note

Products:

| R&S®NRP2

The R&S®NRP2 power meter offers a remote emulation feature that makes it possible to control the instrument by commands other than the built-in native SCPI commands. This feature allows the user to replace power meters, e.g. from other manufacturers, with the R&S®NRP2 power meter without having to change the remote control code.

This application note describes how to use the remote emulation feature in general. Furthermore, it describes in detail the remote emulation for each supported instrument, limitations of the individual emulations and the remaining differences between the emulated and the original commands.

ROHDE&SCHWARZ

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1 Abbreviations

The following abbreviations are used in this application note:

- 436A   HP 436A power meter from Hewlett-Packard
- 437B   HP 437B power meter from Hewlett-Packard
- 438A   HP 438A power meter from Hewlett-Packard
- E4418B   E4418B power meter from Hewlett-Packard / Agilent Technologies
- E4419B   E4419B power meter from Hewlett-Packard / Agilent Technologies
- N432A   N432A power meter from Hewlett-Packard / Agilent Technologies
- N1911A   N1911A power meter from Hewlett-Packard / Agilent Technologies
- N1912A   N1912A power meter from Hewlett-Packard / Agilent Technologies
- NRP   R&S®NRP power meter from Rohde & Schwarz
- NRP2   R&S®NRP2 power meter from Rohde & Schwarz
- NRVD   R&S®NRVD power meter from Rohde & Schwarz
- NRP-Zxx   R&S®NRP-Zxx power sensor from Rohde & Schwarz

2 Overview

Power meters are often used in automated test applications that are used for at least several years or even decades. Software written for such applications is often used without any or only few modifications during the entire lifetime. Any modification of these applications therefore requires special care to be taken. The replacement of instruments, e.g. due to malfunction, or a standard replacement with a similar instrument from another vendor/manufacturer requires 100 % compatibility in at least the

- electrical features
- functional features
- remote control features

To fulfill the last requirement, the NRP2 offers the remote emulation feature.

This feature allows the user to control the NRP2 by using the exact same commands that were implemented in the original instrument. Therefore, the NRP2 operates in the same way as the original instrument, e.g. a 437B.

As a result, total costs for maintenance and service for those applications can decrease.

An overview of implemented remote emulations is given in the following table:

Remote emulations in the NRP2			
Manufacturer	**Instrument**	**Language**	**Section**
Rohde & Schwarz	NRP	SCPI	6
	NRVD	SCPI	7
Hewlett-Packard	436A	Non-SCPI	8
	437B	Non-SCPI	9
	438A	Non-SCPI	10
Agilent Technologies Hewlett-Packard	E4418B	SCPI	11
	E4419B	SCPI	
	N432A	SCPI	12
	N1911A	SCPI	13
	N1912A	SCPI	

3 Sensor Substitution

When a power meter is replaced with the NRP2, also the power sensor used along with the power meter needs to be replaced with an appropriate NRP-Zxx sensor. Since Rohde & Schwarz offers a comprehensive portfolio of state-of-the-art power sensors, the following table serves as a guideline to make it easier to select a sensor. The table gives an overview of Hewlett-Packard/Agilent Technologies power sensors and proposes NRP-Zxx sensors that could be used as an adequate substitute. Please note that the proposed NRP-Zxx sensors do not exactly match the Hewlett-Packard/Agilent sensors in all their specifications. Therefore, we strongly recommend checking the data sheets of the proposed NRP-Zxx sensors to find the best substitute that fulfills the application requirements.

Closest sensor substitutes		
8480 series thermocouple power sensors		
HP/Agilent power sensor	**Rohde & Schwarz power sensor**	**Note**
8481A	NRP-Z51	
8482A	NRP-Z51	
8483A	---	75 ohm impedance
8485A	NRP-Z52	
R8486A Q8486A V8486A W8486A	---	Waveguide flange
8487A	NRP-Z56	
8481H	NRP-Z21 NRP-Z22 NRP-Z23	Diode sensor, max. power: +23 dBm Diode sensor, max. power: +33 dBm Diode sensor
8482H	NRP-Z92	Diode sensor, max. power: +33 dBm
8481B	NRP-Z23 NRP-Z24	Diode sensor, max. power: +42 dBm Diode sensor
8482B	NRP-Z24 NRP-Z92	Diode sensor, min. frequency: 10 MHz Diode sensor, max. power: +33 dBm

Closest sensor substitutes		
8480 series diode power sensors		
8481D	NRP-Z11 NRP-Z21	Min. power: –67 dBm, max. frequency: 8 GHz Min. power: –67 dBm
8485D	NRP-Z31	Min. power: –67 dBm
R8486D Q8486D	---	Waveguide flange
8487D	NRP-Z56 NRP-Z85/86	Thermal sensor, min. power: –35 dBm Wideband sensors, max. frequency: 40 GHz, min. power: –60 dBm

Closest sensor substitutes		
E9300 series average power sensors		
HP/Agilent power sensor	**Rohde & Schwarz power sensor**	**Note**
E9300A	NRP-Z21	
E9301A	NRP-Z11	
E9304A	NRP-Z91	
E9300H	NRP-Z22	
E9301H	NRP-Z92 NRP-Z11 NRP-Z22	Max. power: +23 dBm
E9300B	NRP-Z23 NRP-Z24	Max. power: +42 dBm
E9301B	NRP-Z23 NRP-Z24 NRP-Z92	Max. power: +42 dBm Max. power: +33 dBm

Closest sensor substitutes		
E9320 series peak and average power sensors		
E9321A	NRP-Z81	Min. power: –60 dBm
E9322A	NRP-Z81	
E9323A	NRP-Z81	
E9325A	NRP-Z81	Min. power: –60 dBm
E9326A	NRP-Z81	
E9327A	NRP-Z81	

Closest sensor substitutes		
E4410 series CW power sensors		
HP/Agilent power sensor	**Rohde & Schwarz power sensor**	**Note**
E4412A	NRP-Z11	Min. power: –67 dBm, max. frequency: 8 GHz
	NRP-Z21	Min. power: –67 dBm
E4413A	NRP-Z31	Min. power: –67 dBm

Note:
Instead of the NRP-Z11 and NRP-Z21 three-path diode power sensors listed in the above tables, the corresponding NRP-Z211 and NRP-Z221 two-path diode power sensors (dynamic range: –60 dBm to +20 dBm) may be used alternatively.
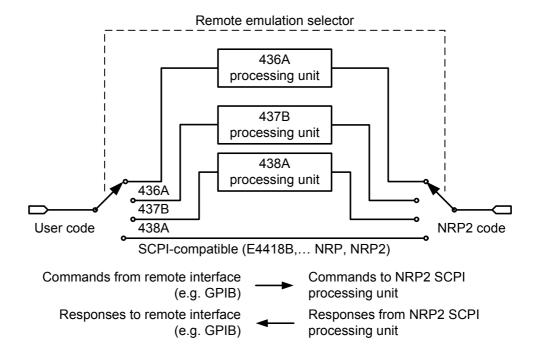
4 Basics

4.1 Remote Control Languages

Instruments implement different kinds of remote control languages. These languages are grouped into two basic categories:

- SCPI-compatible
- Non-SCPI-compatible

Command examples				
Function	**436A** **Non-SCPI**	**437B** **Non-SCPI**	**N1911A / N1911A** **SCPI**	**NRP2** **SCPI**
Resetting the instrument	DCL	PR	*RST	*RST
Selecting manual range mode	1	RM1EN	:SENS1:RANG 0 :SENS1:RANG:AUTO OFF	:SENS1:RANG 0 :SENS1:RANG:AUTO OFF
Selecting logarithmic units	D	LG	:UNIT1:POW DBM :UNIT1:POW:RAT DB	:UNIT1:POW DBM :UNIT1:POW:RAT DB
Triggering a measurement and reading the result value	I	TR1	:INIT1:CONT OFF :TRIG1:SOUR BUS :INIT1:IMM :TRIG1:IMM :FETC1?	:INIT1:CONT OFF :TRIG1:SOUR BUS :INIT1:IMM :TRIG1:IMM :FETC1?

Older instruments often implement a simple, unstructured and non-SCPI-compatible language, whereas modern instruments implement usually a complex, well structured and SCPI-compatible language.
The NRP2 offers a solution for both kinds of languages using specialized processing units in non-SCPI-compatible languages:

Commands from remote interface (e.g. GPIB) → Commands to NRP2 SCPI processing unit

Responses to remote interface (e.g. GPIB) ← Responses from NRP2 SCPI processing unit

4.1.1 SCPI-Compatible Languages

Commands are routed directly from the remote interface to the NRP2 SCPI command processing unit; responses are routed in the reverse direction.

4.1.2 Non-SCPI-Compatible Languages

Commands are routed from the remote interface to the NRP2 SCPI command processing unit through a remote emulation specific processing unit; responses are routed in the reverse direction.

This specific processing unit parses the non-SCPI-compatible commands with reference to the corresponding syntax and translates them into SCPI-compatible ones. The unit also reformats the responses with respect to the requirements of the emulated instrument.

4.2 Remote Emulation Compatibility

An emulated instrument having fewer features than, or the same features as, the NRP2 can be replaced without special care.

However, replacing an emulated instrument having more features than the NRP2 or features that differ from those of the NRP2 requires additional care. The user must

- ensure that the NRP2 complies with the functional requirements
- verify that application code does not use features of the emulated instrument which are not available in NRP2

4.2.1 Command Compatibility

In certain remote emulations, the NRP2

- does not support all commands
- does not support all parameters of a command
- implements a different behavior for a command

In the command tables of the different remote emulations, the status column gives compatibility information to a command:

Command compatibility status	
Status	**Comment**
✔	Command implementation is fully compatible.
✋ See item n	Command implementation is not fully compatible. The implementation in the NRP2 • does not support the same parameter(s) as the emulated instrument does • has different functionality than the emulated instrument • reports an invalid parameter or execution error if possible
○	Command is implemented without any functionality. The implementation in the NRP2 • ignores setting commands • returns default value in query commands • does not report errors • does not change any operating mode of the instrument • does not change any system state of the instrument
✖	Command is not implemented. The implementation in the NRP2 reports an unknown command error if possible.
+	Command has been added to enhance the functionality of the emulated instrument.

If the application software uses commands that are fully compatible, no special care has to be taken. The application software can be used as is.
If the application software uses commands that are not fully compatible, the application software must be verified and normally also modified. If the required modifications to the application software are infeasible, the NRP2 cannot be used as replacement for another instrument.

4.2.2 IDN / OPT Strings

The remote emulation provides user-defined responses to *IDN? and *OPT? queries. This feature is of informational character only and has no impact on the functionality of the NRP2.

4.3 Preset / Reset

Changing the remote emulation does not automatically trigger a reset operation to the instrument. Therefore it is strongly recommended to manually execute a reset to the NRP2 after changing the remote emulation.
The default state of a particular remote emulation can be applied by pressing the Preset key on the NRP2 front panel.
The default state can also be achieved by sending the corresponding command via the remote control interface, e.g. the *RST command in SCPI-compatible languages.

4.4 Power Down / Power Up

The selected remote emulation and the user-defined response to *IDN? and *OPT? queries are saved when the NRP2 is switched off.
When the NRP2 is switched on again, it starts up with the same settings that were active before it was switched off.
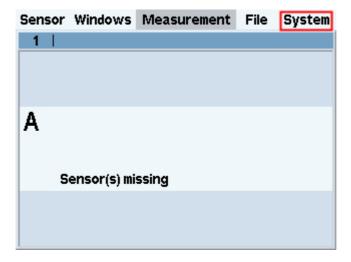
5 Activating a Remote Emulation

In order to use a specific remote emulation, it must first be activated by the user. Activation is done either
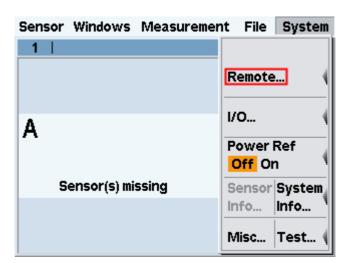
– manually at the NRP2 front panel
– remotely using SCPI commands
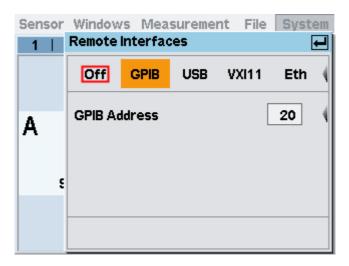
5.1 Manual Operation

On the NRP2 front panel, select the "System" menu by pressing the left- or right-hand side of the 1st toggle switch:
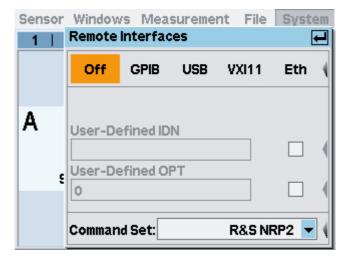

Then press the left-hand side of the 2nd toggle switch to open the "Remote Interfaces" dialog:
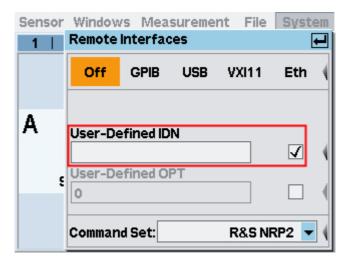
Now select the "Off" tab by pressing the left- or right-hand side of the 2nd toggle switch:
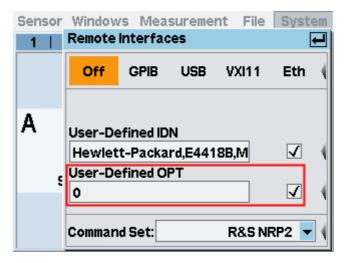

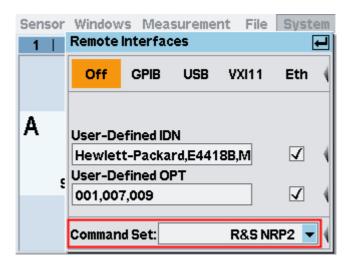In the "Off" tab, set up the remote emulation specific parameters:

To change the response to an *IDN? Query, enable the user-defined response by pressing the right-hand side of the 4th toggle switch. Then press the right-hand side of this toggle switch to enable editing of the related input box. When editing has finished, press the Menu key to confirm the modifications:
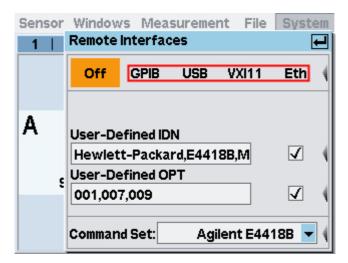
To change the response to an *OPT? query, enable the user-defined response by pressing the right-hand side of the 5th toggle switch. Then press the left-hand side of this toggle switch to enable editing of the related input box. When editing has finished, press the Menu key to confirm the modifications:

To activate a specific remote emulation, press the left-hand side of the 6th toggle switch and use the Up and Down cursor keys to select the corresponding item. Then press the Menu key to confirm the selection:

After having set up the remote emulation parameters, select the desired remote control interface by pressing the left- or right-hand side of the 2nd toggle switch:

Note:

Details on how to operate the NRP2 front panel can be found in [1].

5.2 Remote Operation

When the NRP2 uses a non-SCPI-compatible language, the remote emulation cannot be changed remotely. The emulation needs to be changed manually.

When the NRP2 uses an SCPI-compatible language, use the following commands to modify the remote emulation parameters:

Commands to modify remote emulation relevant settings	
Command	**Comment**
:SYSTem:IDN <value>	Sets the user-defined response to a *IDN? query. The string-type parameter <value> allows up to 128 characters. The parameter has to be enclosed in single or double quotes.
:SYSTem:IDN?	Gets the user-defined response to a *IDN? query.

:SYSTem:IDN:AUTO <value>	Sets the state of the user-defined response to a *IDN? query.
	
	If the user-defined response is enabled, the value provided with the command :SYSTem:IDN <value> is returned.
	
	If the user-defined response is disabled, the factory default setting is returned.
	
	The value range of the boolean-type parameter <value> is
	   • ON or 1
	   • OFF or 0

:SYSTem:IDN:AUTO?	Gets the state of the user-defined response to a *IDN? query.
:SYSTem:OPT <value>	Sets the user-defined response to a *OPT? query. The string-type parameter <value> allows up to 128 characters. The parameter has to be enclosed in single or double quotes.
:SYSTem:OPT?	Gets the user-defined response to a *OPT? query.

:SYSTem:OPT:AUTO <value>	Sets the state of the user-defined response to a *OPT? query.
	
	If the user-defined response is enabled, the value provided with the command :SYSTem:OPT <value> is returned.
	
	If the user-defined response is disabled, the factory default setting is returned.
	
	The value range of the boolean-type parameter <value> is
	   • ON or 1
	   • OFF or 0

:SYSTem:OPT:AUTO?	Gets the state of the user-defined response to a *OPT? query.

Commands to modify remote emulation relevant settings	
Command	**Comment**
:SYSTem:LANGuage <value>	Activates the remote emulation to be used for further communications.
	The value range of the character-type parameter <value> is:
	• NRP
	• NRP2
	• NRVD
	• HP436A
	• HP437B
	• HP438A
	• E4418B
	• E4419B
	• N432A
	• N1911A
	• N1912A
	Attention:
	The remote emulation is changed immediately after parsing this command. Succeeding commands such as *WAI, *OPC or *OPC? are not allowed, since these commands may not be a part of the newly selected command set.
	Therefore, this command must be the one and only command in a program message unit.
	After sending this command, a delay of two seconds must be applied to the application software before the next command is sent.
:SYSTem:LANGuage?	Gets the current remote emulation.

Note:

The upper-case and lower-case notation serves to distinguish between the long and the short form of a command. The instrument itself does not distinguish between upper-case and lower-case notation.

6 Emulating the R&S®NRP

The NRP command set is identical to the original NRP2 command set. For information about commands and parameters please refer to [1].

7 Emulating the R&S®NRVD

The remote emulation is based on NRVD firmware version 1.52.
One or two sensors connected to plug A or B are supported.

Sensor/connector mapping	
NRVD	**NRP2**
Sensor A	Sensor A
Sensor B	Sensor B
Sensor/window mapping	
NRVD	**NRP2**
Display (sensor 1)	Window 1
Display (sensor 2)	Window 2

7.1 Limitations

Remote control interfaces USB, VXI11 and ETH are not supported.
Attaching or detaching of sensors during normal operation is not supported.
Readout of any measurement value must be preceded by an appropriate query command.

7.2 Commands

The following table shows the current implementation status of each command:

Interface functions	
Command syntax	**Status**
DCL	✓
GET	See item 1
GTL	✓
IFC	✓
LLO	✓
PPC	✗
PPD	✗
PPE	✗
PPU	✗
REN	✓

Interface functions	
Command syntax	**Status**
SDC	✔
SPD	✔
SPE	✔
SRQ	✔

IEEE488.2 functions	
Command syntax	**Status**
*CAL?	○
*CLS	✔
*ESE *ESE?	✔ ✔
*ESR?	✔
*IDN?	See item 2
*IST?	✘
*OPC *OPC?	✔ ✔
*OPT?	✔
*PRE *PRE?	✘ ✘
*PSC *PSC?	✘ ✘
*RCL	✔
*RST	✔
*SAV	✔
*SRE *SRE?	✔ ✔
*STB?	✔
*TRG	See item 1
*TST?	✔
*WAI	✔

Device-specific functions	
Command syntax	**Status**
ABORt	✓
CALibration[1|2]:EXTReme:DATA?	✗
CALibration[1|2]:EXTReme:INITiate	✗
CALibration[1|2]:EXTReme[:STATe] CALibration[1|2]:EXTReme[:STATe]?	✗ ✗
CALibration[1|2]:FILTer:AUTO CALibration[1|2]:FILTer:AUTO?	✓ ✓
CALibration[1|2]:FILTer[:NSELect] CALibration[1|2]:FILTer[:NSELect]?	✓ ✓
DIAGnostic:ACONverter?	◯
DIAGnostic:AHARdware?	◯
DIAGnostic:ASET	◯
DIAGnostic:ATESt	◯
DIAGnostic:TEST[1|2|3|4|5|6] DIAGnostic:TEST[1|2|3|4|5|6]?	◯ ◯
DISPlay:ANNotation:AMPLitude DISPlay:ANNotation:AMPLitude?	✓ ✓
DISPlay[1|2]:ANNotation:AMPLitude:EXTReme DISPlay[1|2]:ANNotation:AMPLitude:EXTReme?	✗ ✗
DISPlay[1|2]:ANNotation:AMPLitude:NRESolution DISPlay[1|2]:ANNotation:AMPLitude:NRESolution?	✓ ✓
DISPlay[1|2]:ANNotation:AMPLitude:RESolution DISPlay[1|2]:ANNotation:AMPLitude:RESolution?	✓ ✓
DISPlay[1|2]:ANNotation:BARGraph:AUTO DISPlay[1|2]:ANNotation:BARGraph:AUTO?	◯ ◯
DISPlay[1|2]:ANNotation:BARGraph:SCALe DISPlay[1|2]:ANNotation:BARGraph:SCALe?	◯ ◯
DISPlay[1|2]:ANNotation:BARGraph:SCALe:LOWer DISPlay[1|2]:ANNotation:BARGraph:SCALe:LOWer?	◯ ◯
DISPlay[1|2]:ANNotation:BARGraph:SCALe:UPPer DISPlay[1|2]:ANNotation:BARGraph:SCALe:UPPer?	◯ ◯
DISPlay[1|2]:ANNotation:BARGraph[:STATe] DISPlay[1|2]:ANNotation:BARGraph[:STATe]?	✓ ✓
DISPlay[1|2]:ANNotation:BARGraph:VOLume DISPlay[1|2]:ANNotation:BARGraph:VOLume?	◯ ◯

Device-specific functions	
Command syntax	**Status**
`DISPlay[1|2]:ANNotation:FREQuency`	✓
`DISPlay[1|2]:ANNotation:FREQuency?`	✓
`DISPlay:ANNotation:POWer`	✓
`DISPlay:ANNotation:POWer?`	✓
`DISPlay[1|2]:ANNotation:POWer:EXTReme`	✗
`DISPlay[1|2]:ANNotation:POWer:EXTReme?`	✗
`DISPlay[1|2]:ANNotation:POWer:NRESolution`	✓
`DISPlay[1|2]:ANNotation:POWer:NRESolution?`	✓
`DISPlay[1|2]:ANNotation:POWer:RESolution`	✓
`DISPlay[1|2]:ANNotation:POWer:RESolution?`	✓
`DISPlay[1|2]:ANNotation:UNCertainty:GSWR`	○
`DISPlay[1|2]:ANNotation:UNCertainty:GSWR?`	○
`DISPlay[1|2]:ANNotation:UNCertainty[:STATe]`	○
`DISPlay[1|2]:ANNotation:UNCertainty[:STATe]?`	○
`DISPlay:ANNotation:VOLTage`	✓
`DISPlay:ANNotation:VOLTage?`	✓
`DISPlay[1|2]:ANNotation:VOLTage:EXTReme`	✗
`DISPlay[1|2]:ANNotation:VOLTage:EXTReme?`	✗
`DISPlay[1|2]:ANNotation:VOLTage:NRESolution`	✓
`DISPlay[1|2]:ANNotation:VOLTage:NRESolution?`	✓
`DISPlay[1|2]:ANNotation:VOLTage:RESolution`	✓
`DISPlay[1|2]:ANNotation:VOLTage:RESolution?`	✓
`DISPlay[:ENABle]`	✓
`DISPlay[:ENABle]?`	✓
`FETC?`	✓
`INITiate`	See item 6
`INPut[1|2]:IMPedance`	○
`INPut[1|2]:IMPedance?`	○
`INPut[1|2]:IMPedance:UNIT?`	✓
`INPut[1|2]:NSELect`	✓
`INPut[1|2]:NSELect?`	✓
`INPut[1|2]:SELect`	✓
`INPut[1|2]:SELect?`	✓
`INPut[1|2]:SENSors?`	✓
`INPut[1|2]:SENSors:INFO?`	✓

Device-specific functions	
Command syntax	**Status**
`INPut[1|2]:SENSors:INITiate`	✔
`INPut[1|2]:SENSors:INITiate?`	✔
`INPut[1|2]:SENSors:TEMPerature?`	○
`INPut[1|2]:SENSors:UNIT?`	✔
`MEASure?`	✔
`OUTPut[1|2]:DC[:STATe]`	✔
`OUTPut[1|2]:DC[:STATe]?`	✔
`OUTPut:ROSZillator[:STATe]`	✔
`OUTPut:ROSZillator[:STATe]?`	✔
`[SENSe[1|2]:]AMPLitude:ATTenuation`	✔
`[SENSe[1|2]:]AMPLitude:ATTenuation?`	✔
`[SENSe[1|2]:]AMPLitude:ATTenuation:UNIT?`	✔
`[SENSe[1|2]:]AMPLitude:RANGe:AUTO`	See item 3
`[SENSe[1|2]:]AMPLitude:RANGe:AUTO?`	
`[SENSe[1|2]:]AMPLitude:RANGe:UNIT?`	✘
`[SENSe[1|2]:]AMPLitude:RANGe[:UPPer]`	✘
`[SENSe[1|2]:]AMPLitude:RANGe[:UPPer]?`	✘
`[SENSe[1|2]:]AMPLitude:REFerence`	✔
`[SENSe[1|2]:]AMPLitude:REFerence?`	✔
`[SENSe[1|2]:]AMPLitude:REFerence:MVALue`	✔
`[SENSe[1|2]:]AMPLitude:REFerence:MVALue1`	✔
`[SENSe[1|2]:]AMPLitude:REFerence:MVALue2`	✔
`[SENSe[1|2]:]AMPLitude:REFerence:UNIT?`	✔
`[SENSe[1|2]:]AMPLitude:UNIT`	See item 4
`[SENSe[1|2]:]AMPLitude:UNIT?`	
`[SENSe[1|2]:]CORRection:FREFerence`	✔
`[SENSe[1|2]:]CORRection:FREFerence?`	✔
`[SENSe[1|2]:]CORRection:FREFerence:EDATa`	✔
`[SENSe[1|2]:]CORRection:FREFerence:EDATa?`	✔
`[SENSe[1|2]:]CORRection:FREFerence:EDATa:FREE?`	✔
`[SENSe[1|2]:]CORRection:FREFerence:EDATa:ID`	✔
`[SENSe[1|2]:]CORRection:FREFerence:EDATa:ID?`	✔
`[SENSe[1|2]:]CORRection:FREFerence:EDATa:POINts?`	✔
`[SENSe[1|2]:]CORRection:FREFerence:EDATa:REMove:ALL`	✔

Device-specific functions	
Command syntax	**Status**
[SENSe[1|2]:]CORRection:FREReference:EDATa:USE	✔
[SENSe[1|2]:]CORRection:FREReference:EDATa:USE?	✔
[SENSe:]CORRection:ZERO:INITiate	✔
[SENSe:]CORRection:ZERO:INITiate?	✔
[SENSe[1|2]:]CORRection:ZERO[:STATe]	✔
[SENSe[1|2]:]CORRection:ZERO[:STATe]?	✔
[SENSe[1|2]:]DATA:AMPLitude?	✔
[SENSe[1|2]:]DATA:FREQuency?	○
[SENSe[1|2]:]DATA:POWer?	✔
[SENSe[1|2]:]DATA:VOLTage?	✔
[SENSe:]FREQuency:ADJust:LOWer	○
[SENSe:]FREQuency:ADJust:LOWer?	○
[SENSe:]FREQuency:ADJust:UPPer	○
[SENSe:]FREQuency:ADJust:UPPer?	○
[SENSe:]FREQuency:STATe	○
[SENSe:]FREQuency:STATe?	○
[SENSe:]FUNCtion:CONCurrent	✔
[SENSe:]FUNCtion:CONCurrent?	✔
[SENSe[1|2]:]FUNCtion:OFF	See item 5
[SENSe[1|2]:]FUNCtion:OFF?	
[SENSe[1|2]:]FUNCtion:ON	See item 5
[SENSe[1|2]:]FUNCtion:ON?	
[SENSe[1|2]:]POWer:ATTenuation	✔
[SENSe[1|2]:]POWer:ATTenuation?	✔
[SENSe[1|2]:]POWer:ATTenuation:UNIT?	✔
[SENSe[1|2]:]POWer:RANGe:AUTO	See item 3
[SENSe[1|2]:]POWer:RANGe:AUTO?	
[SENSe[1|2]:]POWer:RANGe:UNIT?	✘
[SENSe[1|2]:]POWer:RANGe[:UPPer]	✘
[SENSe[1|2]:]POWer:RANGe[:UPPer]?	✘
[SENSe[1|2]:]POWer:REFerence	✔
[SENSe[1|2]:]POWer:REFerence?	✔
[SENSe[1|2]:]POWer:REFerence:MVALue	✔
[SENSe[1|2]:]POWer:REFerence:MVALue1	✔
[SENSe[1|2]:]POWer:REFerence:MVALue2	✔
[SENSe[1|2]:]POWer:REFerence:UNIT?	✔

Device-specific functions	
Command syntax	**Status**
`[SENSe[1|2]:]POWer:UNIT` `[SENSe[1|2]:]POWer:UNIT?`	See item 4
`[SENSe[1|2]:]VOLTage:ATTenuation` `[SENSe[1|2]:]VOLTage:ATTenuation?`	✓ ✓
`[SENSe[1|2]:]VOLTage:ATTenuation:UNIT?`	✓
`[SENSe[1|2]:]VOLTage:RANGe:AUTO` `[SENSe[1|2]:]VOLTage:RANGe:AUTO?`	See item 3
`[SENSe[1|2]:]VOLTage:RANGe:UNIT?`	✗
`[SENSe[1|2]:]VOLTage:RANGe[:UPPer]` `[SENSe[1|2]:]VOLTage:RANGe[:UPPer]?`	✗ ✗
`[SENSe[1|2]:]VOLTage:REFerence` `[SENSe[1|2]:]VOLTage:REFerence?`	✓ ✓
`[SENSe[1|2]:]VOLTage:REFerence:MVALue`	✓
`[SENSe[1|2]:]VOLTage:REFerence:MVALue1`	✓
`[SENSe[1|2]:]VOLTage:REFerence:MVALue2`	✓
`[SENSe[1|2]:]VOLTage:REFerence:UNIT?`	✓
`[SENSe[1|2]:]VOLTage:UNIT` `[SENSe[1|2]:]VOLTage:UNIT?`	See item 4
`STATus:OPERation:CONDition?`	✓
`STATus:OPERation:ENABle` `STATus:OPERation:ENABle?`	✓ ✓
`STATus:OPERation[:EVENt]?`	✓
`STATus:PRESest`	✓
`STATus:QUEStionable:CONDition?`	✓
`STATus:QUEStionable:ENABle` `STATus:QUEStionable:ENABle?`	✓ ✓
`STATus:QUEStionable[:EVENt]?`	✓
`STATus:QUEStionable:AMPLitude:CONDition?`	✓
`STATus:QUEStionable:AMPLitude:ENABle` `STATus:QUEStionable:AMPLitude:ENABle?`	✓ ✓
`STATus:QUEStionable:AMPLitude[:EVENt]?`	✓
`STATus:QUEStionable:FREQuency:CONDition?`	○
`STATus:QUEStionable:FREQuency:ENABle` `STATus:QUEStionable:FREQuency:ENABle?`	○ ○
`STATus:QUEStionable:FREQuency[:EVENt]?`	○

Device-specific functions	
Command syntax	**Status**
`STATus:QUEStionable:POWer:CONDition?`	✔
`STATus:QUEStionable:POWer:ENABle`	✔
`STATus:QUEStionable:POWer:ENABle?`	✔
`STATus:QUEStionable:POWer[:EVENt]?`	✔
`STATus:QUEStionable:VOLTage:CONDition?`	✔
`STATus:QUEStionable:VOLTage:ENABle`	✔
`STATus:QUEStionable:VOLTage:ENABle?`	✔
`STATus:QUEStionable:VOLTage[:EVENt]?`	✔
`SYSTem:COMMunication:GPIB:ADDRess`	✔
`SYSTem:ERRor?`	✔
`SYSTem:LANGuage`	✘
`SYSTem:VERSion?`	✔
`TRIGger:SOURce`	✔
`TRIGger:SOURce?`	✔

7.3 Differences between the Emulated Instrument and the NRP2

The following table lists all remaining differences in command and/or parameter implementation. These differences have to be taken into consideration, since they may lead to necessary modifications of application code parts.

Details	
Item	**Comment**
1	Readout blocks until new measurement result is available.
2	Response is "ROHDE&SCHWARZ,NRVD,< serialnumber>,V1.52 V1.40"

3	Supported parameters:
	     ON | 1
	     OFF | 0

4	Supported parameters:
	     W
	     DBM
	     DBV
	     DBUV
	     DB
	     PCT
	     REL

5	Supported parameters:
	     POWer[:AC]
	     POWer:PULSe <nrf>[% | PCT] | DEF | MAX | MIN
	          <nrf> range ↔ NRP2's duty cycle range
	     SWR
	     RTL
	     RFL

6	Response buffer is limited to one measurement value.

8 Emulating the Hewlett-Packard 436A

The remote emulation is based on 436A firmware version 1.0.
One sensor connected to plug A is supported.

Sensor/connector mapping	
436A	**NRP2**
Sensor A	Sensor A
Sensor/window mapping	
436A	**NRP2**
Display	Window 1

8.1 Limitations

Remote control interfaces USB, VXI11 and ETH are not supported.
A GPIB-bus controller is mandatory in every application.
Attaching or detaching of sensors during normal operation is not supported.
Readout of any measurement value must be preceded by an addressing of the NRP2
as talker device. Talk-only mode is not supported.

8.2 Commands

The following table shows the current implementation status of each command:

Interface functions	
Command syntax	**Status**
DCL	✔
IFC	✔
LOC	✔
REN	✔

Device-specific functions	
Command syntax	**Status**
1	See item 1
2	See item 1
3	See item 1
4	See item 1

Device-specific functions	
Command syntax	**Status**
5	See item 1
9	✔
A	✔
B	✔
C	✔
D	✔
Z	✔
H	✔
I	✔
T	✔
V	✔
+	See item 2
−	See item 2

8.3 Differences between the Emulated Instrument and the NRP2

The following table lists all remaining differences in command and/or parameter implementation. These differences have to be taken into consideration, since they may lead to necessary modifications of application code parts.

Details	
Item	**Comment**

1	One-path NRP-Zxx sensors:
	
	    NRP2 range 0 ↔ 436A range 1 to 5
	
	Two-path NRP-Zxx sensors:
	
	    NRP2 range 0 ↔ 436A range 1
	
	    NRP2 range 1 ↔ 436A range 2 to 5
	
	Three-path NRP-Zxx sensors:
	
	    NRP2 range 0 ↔ 436A range 1
	
	    NRP2 range 1 ↔ 436A range 2 to 4
	
	    NRP2 range 2 ↔ 436A range 5

2	NRP-Zxx sensors are factory calibrated. Calibration during normal operation is superseded. Commands + and – are ignored.

9 Emulating the Hewlett-Packard 437B

The remote emulation is based on 437B firmware version 1.0.
One sensor connected to plug A is supported.

Sensor/connector mapping	
437B	**NRP2**
Sensor A	Sensor A

Sensor/window mapping	
437B	**NRP2**
Display	Window 1

9.1 Limitations

Remote control interfaces USB, VXI11 and ETH are not supported.
A GPIB-bus controller is mandatory in every application.
Attaching or detaching of sensors during normal operation is not supported.
Readout of any measurement value must be preceded by an addressing of the NRP2 as talker device. Talk-only mode is not supported.
Multiline commands are not supported. Both the command code and the command parameter must be sent within a program message unit.

9.2 Commands

The following table shows the current implementation status of each command:

Interface functions	
Command syntax	**Status**
DCL	✔
GET	✔
GTL	✔
IFC	✔
LLO	✔
PPC	✘
PPD	✘
PPE	✘

Interface functions	
Command syntax	**Status**
PPU	✘
REN	✓
SDC	✓
SPD	✓
SPE	✓
SRQ	See item 1

IEEE488.2 functions	
Command syntax	**Status**
*CLS	✓
*ESE	✓
*ESE?	✓
*ESR?	See item 1
*RST	✓
*SRE	✓
*SRE?	✓
*STB?	See item 1
*TST?	See item 2

Device-specific functions	
Command syntax	**Status**
CL	See item 3
CS	✓
CT	See item 4
DA	✓
DC0	✓
DC1	✓
DD	✓
DE	✓
DF	✓
DN	See item 5
DU	✓
DY	✓

Device-specific functions	
Command syntax	**Status**
ERR?	See item 6
ET	✘
EX	○
FA	✔
FH	✔
FM	✔
FR	✔
GT0	✔
GT1	✔
GT2	✔
ID	✔
IDN?	✔
KB	See item 4
LG	✔
LH	See item 7
LL	See item 7
LM0	✔
LM1	✔
LN	✔
LP2	See item 8
LT	See item 5
OC0	✔
OC1	✔
OD	✔
OF0	✔
OF1	✔
OS	✔
PR	✔
RA	✔
RC	See item 9
RH	✔
RL0	✔
RL1	✔

Device-specific functions	
Command syntax	**Status**
RL2	✔
RM	See item 10
RT	See item 5
RV	✔
SE	See item 4
SM	✔
SN	See item 4
SP	✘
ST	✔
TK?	✔
TR0	✔
TR1	✔
TR2	✔
TR3	✔
UP	See item 5
ZE	✔
@1	✔
@2	See item 8

9.3 Differences between the Emulated Instrument and the NRP2

The following table lists all remaining differences in command and/or parameter implementation. These differences have to be taken into consideration, since they may lead to necessary modifications of application code parts.

Details	
Item	**Comment**
1	Bits 4 (over limit / under limit), 3 (measurement error) and 2 (entry error) are currently not supported.
2	Response is 00000 in all cases.
3	NRP-Zxx sensors are factory calibrated. Calibration during normal operation is superseded. Command is simulated by a delay of 1 s.
4	NRP-Zxx sensors are factory calibrated. Calibration during normal operation is superseded. Commands are ignored.
5	Commands for editing the display are not supported. Commands are ignored.
6	Response is 000 in all cases.
7	Linear mode limit settings are currently not supported.
8	Layout of setup block is unknown. Commands are ignored.
9	Setup configuration 0 (default setup) is not supported.

10	One-path NRP-Zxx sensors:
	    NRP2 range 0 ↔ 437B range 1 to 5
	Two-path NRP-Zxx sensors:
	    NRP2 range 0 ↔ 437B range 1
	    NRP2 range 1 ↔ 437B range 2 to 5
	Three-path NRP-Zxx sensors:
	    NRP2 range 0 ↔ 437B range 1
	    NRP2 range 1 ↔ 437B range 2 to 4
	    NRP2 range 2 ↔ 437B range 5

10 Emulating the Hewlett-Packard 438A

The remote emulation is based on 438A firmware version 1.4.
One or two sensors connected to plug A or B are supported.

Sensor/connector mapping	
438A	**NRP2**
Sensor A	Sensor A
Sensor B	Sensor B

Sensor/window mapping	
438A	**NRP2**
Display (sensor 1)	Window 1
Display (sensor 2)	Window 2

10.1 Limitations

Remote control interfaces USB, VXI11 and ETH are not supported.
A GPIB-bus controller is mandatory in every application.
Attaching or detaching of sensors during normal operation is not supported.
Readout of any measurement value must be preceded by an addressing of the NRP2 as talker device. Talk-only mode is not supported.
Multiline commands are not supported. Both the command code and the command parameter must be sent within a program message unit.

10.2 Commands

The following table shows the current implementation status of each command:

Interface functions	
Command syntax	**Status**
DCL	✔
GET	✔
GTL	✔
IFC	✔
LLO	✔
PPC	✘
PPD	✘

Interface functions	
Command syntax	**Status**
PPE	✘
PPU	✘
REN	✓
SDC	✓
SPD	✓
SPE	✓
SRQ	See item 1

Device-specific functions	
Command syntax	**Status**
AD	✓
AE	✓
AP	✓
AR	✓
BD	✓
BE	✓
BP	✓
BR	✓
CL	See item 2
CS	✓
DA	✓
DD	✓
DE	✓
FA	✓
FH	✓
FM	✓
GT0	✓
GT1	✓
GT2	✓
KB	See item 3
LG	✓
LH	See item 4
LL	See item 4

Device-specific functions	
Command syntax	**Status**
LM0	✔
LM1	✔
LN	✔
LP1	✔
LP2	See item 5
OC0	✔
OC1	✔
OD	✔
OS	✔
PR	✔
RA	✔
RC	See item 6
RH	✔
RL0	✔
RL1	✔
RL2	✔
RM	See item 7
RV	✔
SM	✔
ST	✔
TK?	✔
TR0	✔
TR1	✔
TR2	✔
TR3	✔
ZE	✔
@1	✔
@2	See item 5
?ID	✔

10.3 Differences between the Emulated Instrument and the NRP2

The following table lists all existing differences in command and/or parameter implementation. These differences have to be taken into consideration, since they may lead to modifications of application code parts.

Details	
Item	**Comment**
1	Bits 4 (over limit / under limit), 3 (measurement error) and 2 (entry error) are currently not supported.
2	Zxx sensors are factory calibrated, calibration during normal operation is superseded. Command is simulated by a delay of 1 s.
3	Zxx sensors are factory calibrated, calibration during normal operation is superseded. Command is ignored.
4	Linear mode limit settings are currently not supported.
5	Layout of setup block is unknown. Commands are ignored.
6	Setup configuration 0 (default setup) is not supported.
7	One-path NRP-Zxx sensors: NRP2 range 0 ↔ 438A range 1 to 5 Two-path NRP-Zxx sensors: NRP2 range 0 ↔ 438A range 1 NRP2 range 1 ↔ 438A range 2 to 5 Three-path NRP-Zxx sensors: NRP2 range 0 ↔ 438A range 1 NRP2 range 1 ↔ 438A range 2 to 4 NRP2 range 2 ↔ 438A range 5

11 Emulating the Agilent Technologies E4418B/E4419B

The remote emulation is based on E4418B and E4419B firmware version A1.09.01 and A2.09.01.
One or two sensors connected to plug A or B are supported.

Sensor/connector mapping	
E4418B	**NRP2**
Sensor A	Sensor A

Sensor/connector mapping	
E4419B	**NRP2**
Sensor A	Sensor A
Sensor B	Sensor B

Sensor/window mapping	
E4418B / E4419B	**NRP2**
Upper window / upper measurement	Window 1
Upper window / lower measurement	Window 3
Lower window / upper measurement	Window 2
Lower window / lower measurement	Window 4

11.1 Limitations

Display management commands (DISPlay subsystem) are currently extremely restricted.

11.2 Commands

The following table shows the current implementation status of each command:

Interface functions	
Command syntax	**Status**
DCL	✔
GET	✔
GTL	✔
IFC	✔
LLO	✔
PPC	✘
PPD	✘
PPE	✘
PPU	✘
REN	✔
SDC	✔
SPD	✔
SPE	✔
SRQ	✔

IEEE488.2 functions	
Command syntax	**Status**
*CLS	✔
*DDT	○
*DDT?	○
*ESE	✔
*ESE?	✔
*ESR?	✔
*IDN?	See item 1
*OPC	✔
*OPC?	✔
*OPT?	✔
*RCL	✔
*RST	✔
*SAV	✔
*SRE	✔
*SRE?	✔
*STB?	✔

IEEE488.2 functions	
Command syntax	**Status**
`*TRG`	✓
`*TST?`	✓
`*WAI`	✓

Device-specific functions	
Command syntax	**Status**
`ABORt[1]|2`	✓
`CALCulate[1]|2:GAIN[:MAGNitude]` `CALCulate[1]|2:GAIN[:MAGNitude]?`	✓ ✓
`CALCulate[1]|2:GAIN:STATe` `CALCulate[1]|2:GAIN:STATe?`	✓ ✓
`CALCulate[1]|2:LIMit:CLEar:AUTo` `CALCulate[1]|2:LIMit:CLEar:AUTo?`	✓ ✓
`CALCulate[1]|2:Limit:CLEar[:IMMediate]`	✓
`CALCulate[1]|2:LIMit:FAIL?`	✓
`CALCulate[1]|2:LIMit:FCOunt?`	✓
`CALCulate[1]|2:LIMit:LOWer[:DATA]` `CALCulate[1]|2:LIMit:LOWer[:DATA]?`	✓ ✓
`CALCulate[1]|2:LIMit:STATe` `CALCulate[1]|2:LIMit:STATe?`	✓ ✓
`CALCulate[1]|2:LIMit:UPPer[:DATA]` `CALCulate[1]|2:LIMit:UPPer[:DATA]?`	✓ ✓
`CALCulate[1]|2:MATH[:EXPRession]` `CALCulate[1]|2:MATH[:EXPRession]?`	✓ ✓
`CALCulate[1]|2:MATH[:EXPRession]:CATalog?`	✓
`CALCulate[1]|2:RELative[:MAGNitude]:AUTO` `CALCulate[1]|2:RELative[:MAGNitude]:AUTO?`	✓ ✓
`CALCulate[1]|2:RELative:STATe` `CALCulate[1]|2:RELative:STATe?`	✓ ✓
`CALibration[1]|2[:ALL]` `CALibration[1]|2[:ALL]?`	See item 6
`CALibration[1]|2:AUTO` `CALibration[1]|2:AUTO?`	See item 7
`CALibration[1]|2:ECONtrol:STATe` `CALibration[1]|2:ECONtrol:STATe?`	✗ ✗

Device-specific functions	
Command syntax	**Status**
CALibration[1]|2:RCALibration	✘
CALibration[1]|2:RCALibration?	✘
CALibration[1]|2:RCFactor	✘
CALibration[1]|2:RCFactor?	✘
CALibration[1]|2:ZERO:AUTO	✓
CALibration[1]|2:ZERO:AUTO?	✓
CONFigure[1]|2[:SCALar][:POWer:AC]	✓
CONFigure[1]|2[:SCALar][:POWer:AC]:DIFFerence	✓
CONFigure[1]|2[:SCALar][:POWer:AC]:DIFFerence:RELative	✓
CONFigure[1]|2[:SCALar][:POWer:AC]:RATio	✓
CONFigure[1]|2[:SCALar][:POWer:AC]:RATio:RELative	✓
CONFigure[1]|2[:SCALar][:POWer:AC]:RELative	✓
DISPlay:CONTrast	✘
DISPlay:CONTrast?	✘
DISPlay:ENABle	✓
DISPlay:ENABle?	✓
DISPlay[:WINDow[1]|2]:FORMat	✘
DISPlay[:WINDow[1]|2]:FORMat?	✘
DISPlay[:WINDow[1]|2]:METer:LOWer	✓
DISPlay[:WINDow[1]|2]:METer:LOWer?	✓
DISPlay[:WINDow[1]|2]:METer:UPPer	✓
DISPlay[:WINDow[1]|2]:METer:UPPer?	✓
DISPlay[:WINDow[1]|2]:RESolution	✓
DISPlay[:WINDow[1]|2]:RESolution?	✓
DISPlay[:WINDow[1]|2]:SELect[1]|2	✓
DISPlay[:WINDow[1]|2]:SELect[1]|2?	✓
DISPlay[:WINDow[1]|2][:STATe]	✘
DISPlay[:WINDow[1]|2][:STATe]?	✘
FETCh[1]|2[:SCALar][:POWer:AC]?	✓
FETCh[1]|2[:SCALar][:POWer:AC]:DIFFerence?	✓
FETCh[1]|2[:SCALar][:POWer:AC]:DIFFerence:RELative?	✓
FETCh[1]|2[:SCALar][:POWer:AC]:RATio?	✓
FETCh[1]|2[:SCALar][:POWer:AC]:RATio:RELative?	✓
FETCh[1]|2[:SCALar][:POWer:AC]:RELative?	✓

Device-specific functions	
Command syntax	**Status**
`FORMat[:READings]:BORDer`	✔
`FORMat[:READings]:BORDer?`	✔
`FORMat[:READings][:DATA]`	✔
`FORMat[:READings][:DATA]?`	✔
`INITiate[1]|2:CONTinuous`	✔
`INITiate[1]|2:CONTinuous?`	✔
`INITiate[1]|2[:IMMediate]`	✔
`MEASure[1]|2[:SCALar][:POWer:AC]?`	✔
`MEASure[1]|2[:SCALar][:POWer:AC]:DIFFerence?`	✔
`MEASure[1]|2[:SCALar][:POWer:AC]:DIFFerence:RELative?`	✔
`MEASure[1]|2[:SCALar][:POWer:AC]:RATio?`	✔
`MEASure[1]|2[:SCALar][:POWer:AC]:RATio:RELative?`	✔
`MEASure[1]|2[:SCALar][:POWer:AC]:RELative?`	✔
`MEMory:CATalog[:ALL]?`	✔
`MEMory:CATalog:STATe?`	✔
`MEMory:CATalog:TABLe?`	✔
`MEMory:CLEar[:NAME]`	✔
`MEMory:CLEar:TABle`	✔
`MEMory:FREE[:ALL]?`	✔
`MEMory:FREE:STATe?`	✔
`MEMory:FREE:TABLe?`	✔
`MEMory:NSTates?`	✔
`MEMory:STATe:CATalog?`	✔
`MEMory:STATe:DEFine`	✔
`MEMory:STATe:DEFine?`	✔
`MEMory:TABLe:FREQuency`	✔
`MEMory:TABLe:FREQuency?`	✔
`MEMory:TABLe:FREQuency:POINts?`	✔
`MEMory:TABLe:GAIN[:MAGNitude]`	✔
`MEMory:TABLe:GAIN[:MAGNitude]?`	✔
`MEMory:TABLe:GAIN[:MAGNitude]:POINts?`	✔
`MEMory:TABLe:MOVE`	✔
`MEMory:TABLe:SELect`	✔
`MEMory:TABLe:SELect?`	✔

Device-specific functions	
Command syntax	**Status**
`OUTPut:ROSCillator[:STATe]`	✓
`OUTPut:ROSCillator[:STATe]?`	✓
`OUTPut:TTL[1]|2:ACTive`	✗
`OUTPut:TTL[1]|2:ACTive?`	✗
`OUTPut:TTL[1]|2:FEED`	✗
`OUTPut:TTL[1]|2:FEED?`	✗
`OUTPut:TTL[1|2]:STATe`	✓
`OUTPut:TTL[1|2]:STATe?`	✓
`READ[1]|2[:SCALar][:POWer:AC]?`	✓
`READ[1]|2[:SCALar][:POWer:AC]:DIFFerence?`	✓
`READ[1]|2[:SCALar][:POWer:AC]:DIFFerence:RELative?`	✓
`READ[1]|2[:SCALar][:POWer:AC]:RATio?`	✓
`READ[1]|2[:SCALar][:POWer:AC]:RATio:RELative?`	✓
`READ[1]|2[:SCALar][:POWer:AC]:RELative?`	✓
`[SENSe[1]|2]:AVERage:COUNt`	✓
`[SENSe[1]|2]:AVERage:COUNt?`	✓
`[SENSe[1]|2]:AVERage:COUNt:AUTO`	✓
`[SENSe[1]|2]:AVERage:COUNt:AUTO?`	✓
`[SENSe[1]|2]:AVERage:SDETect`	✗
`[SENSe[1]|2]:AVERage:SDETect?`	✗
`[SENSe[1]|2]:AVERage[:STATe]`	✓
`[SENSe[1]|2]:AVERage[:STATe]?`	✓
`[SENSe[1]|2]:CORRection:CFACtor[:INPut][:MAGNitude]`	✗
`[SENSe[1]|2]:CORRection:CFACtor[:INPut][:MAGNitude]?`	✗
`[SENSe[1]|2]:CORRection:CSET[1][:SELect]`	✗
`[SENSe[1]|2]:CORRection:CSET[1][:SELect]?`	✗
`[SENSe[1]|2]:CORRection:CSET2[:SELect]`	✓
`[SENSe[1]|2]:CORRection:CSET2[:SELect]?`	✓
`[SENSe[1]|2]:CORRection:CSET[1]:STATe`	✗
`[SENSe[1]|2]:CORRection:CSET[1]:STATe?`	✗
`[SENSe[1]|2]:CORRection:CSET2:STATe`	✓
`[SENSe[1]|2]:CORRection:CSET2:STATe?`	✓
`[SENSe[1]|2]:CORRection:DCYCle[:INPut][:MAGNitude]`	✓
`[SENSe[1]|2]:CORRection:DCYCle[:INPut][:MAGNitude]?`	✓
`[SENSe[1]|2]:CORRection:DCYCle:STATe`	✓
`[SENSe[1]|2]:CORRection:DCYCle:STATe?`	✓

Device-specific functions

Command syntax	Status
[SENSe[1]|2]:CORRection:FDOFfset[:INPut][:MAGNitude] [SENSe[1]|2]:CORRection:FDOFfset[:INPut][:MAGNitude]?	✔ ✔
[SENSe[1]|2]:CORRection:GAIN[1][:INPut][:MAGNitude] [SENSe[1]|2]:CORRection:GAIN[1][:INPut][:MAGNitude]?	✘ ✘
[SENSe[1]|2]:CORRection:GAIN2[:INPut][:MAGNitude] [SENSe[1]|2]:CORRection:GAIN2[:INPut][:MAGNitude]?	✔ ✔
[SENSe[1]|2]:CORRection:GAIN3[:INPut][:MAGNitude] [SENSe[1]|2]:CORRection:GAIN3[:INPut][:MAGNitude]?	✔ ✔
[SENSe[1]|2]:CORRection:GAIN4[:INPut][:MAGNitude] [SENSe[1]|2]:CORRection:GAIN4[:INPut][:MAGNitude]?	✔ ✔
[SENSe[1]|2]:CORRection:GAIN2:STATe [SENSe[1]|2]:CORRection:GAIN2:STATe?	✔ ✔
[SENSe[1]|2]:CORRection:GAIN3:STATe [SENSe[1]|2]:CORRection:GAIN3:STATe?	✔ ✔
[SENSe[1]|2]:CORRection:LOSS2[:INPut][:MAGNitude] [SENSe[1]|2]:CORRection:LOSS2[:INPut][:MAGNitude]?	✔ ✔
[SENSe[1]|2]:CORRection:LOSS2:STATe [SENSe[1]|2]:CORRection:LOSS2:STATe?	✔ ✔
[SENSe[1]|2]:FREQuency[:CW|:FIXed] [SENSe[1]|2]:FREQuency[:CW|:FIXed]?	✔ ✔
[SENSe[1]|2]:LIMit:CLEar:AUTO [SENSe[1]|2]:LIMit:CLEar:AUTO?	✘ ✘
[SENSe[1]|2]:LIMit:CLEar[:IMMediate]	✘
[SENSe[1]|2]:LIMit:FAIL?	✘
[SENSe[1]|2]:LIMit:FCOunt?	✘
[SENSe[1]|2]:LIMit:LOWer[:DATA] [SENSe[1]|2]:LIMit:LOWer[:DATA]?	✘ ✘
[SENSe[1]|2]:LIMit:STATe [SENSe[1]|2]:LIMit:STATe?	✘ ✘
[SENSe[1]|2]:LIMit:UPPer[:DATA] [SENSe[1]|2]:LIMit:UPPer[:DATA]?	✘ ✘
[SENSe[1]|2]:POWer:AC:RANGe [SENSe[1]|2]:POWer:AC:RANGe?	✔ ✔
[SENSe[1]|2]:POWer:AC:RANGe:AUTO [SENSe[1]|2]:POWer:AC:RANGe:AUTO?	✔ ✔
[SENSe[1]|2]:SPEed [SENSe[1]|2]:SPEed?	See item 8

Device-specific functions	
Command syntax	**Status**
[SENSe[1]|2]:V2P	✘
[SENSe[1]|2]:V2P?	✘
SERVice:OPTion	✔
SERVice:OPTion[?]	✔
SERVice:SENSor[1]|2:CDATe?	✔
SERVice:SENSor[1]|2:CPLace?	✘
SERVice:SENSor[1]|2:SNUMber?	✔
SERVice:SENSor[1]|2:TYPE?	✘
SERVice:SNUMber	✘
SERVice:SNUMber?	✔
SERVice:VERSion:PROCessor	✔
SERVice:VERSion:PROCessor?	✔
SERVice:VERSion:SYSTem	✔
SERVice:VERSion:SYSTem?	✔
STATus:DEVice:CONDition?	✔
STATus:DEVice:ENABle	✔
STATus:DEVice:ENABle?	✔
STATus:DEVice[:EVENt]?	✔
STATus:DEVice:NTRansition	✔
STATus:DEVice:NTRansition?	✔
STATus:DEVice:PTRansition	✔
STATus:DEVice:PTRansition?	✔
STATus:OPERation:CONDition?	✔
STATus:OPERation:ENABle	✔
STATus:OPERation:ENABle?	✔
STATus:OPERation[:EVENt]?	✔
STATus:OPERation:NTRansition	✔
STATus:OPERation:NTRansition?	✔
STATus:OPERation:PTRansition	✔
STATus:OPERation:PTRansition?	✔
STATus:OPERation:CALibrating[:SUMMary]:CONDition?	✔
STATus:OPERation:CALibrating[:SUMMary]:ENABle	✔
STATus:OPERation:CALibrating[:SUMMary]:ENABle?	✔
STATus:OPERation:CALibrating[:SUMMary][:EVENt]?	✔
STATus:OPERation:CALibrating[:SUMMary]:NTRansition	✔
STATus:OPERation:CALibrating[:SUMMary]:NTRansition?	✔

Device-specific functions	
Command syntax	**Status**
STATus:OPERation:CALibrating[:SUMMary]:PTRansition STATus:OPERation:CALibrating[:SUMMary]:PTRansition?	✔ ✔
STATus:OPERation:LLFail[:SUMMary]:CONDition?	See item 5
STATus:OPERation:LLFail[:SUMMary]:ENABle STATus:OPERation:LLFail[:SUMMary]:ENABle?	See item 5
STATus:OPERation:LLFail[:SUMMary][:EVENt]?	See item 5
STATus:OPERation:LLFail[:SUMMary]:NTRansition STATus:OPERation:LLFail[:SUMMary]:NTRansition?	See item 5
STATus:OPERation:LLFail[:SUMMary]:PTRansition STATus:OPERation:LLFail[:SUMMary]:PTRansition?	See item 5
STATus:OPERation:MEASuring[:SUMMary]:CONDition?	✔
STATus:OPERation:MEASuring[:SUMMary]:ENABle STATus:OPERation:MEASuring[:SUMMary]:ENABle?	✔ ✔
STATus:OPERation:MEASuring[:SUMMary][:EVENt]?	✔
STATus:OPERation:MEASuring[:SUMMary]:NTRansition STATus:OPERation:MEASuring[:SUMMary]:NTRansition?	✔ ✔
STATus:OPERation:MEASuring[:SUMMary]:PTRansition STATus:OPERation:MEASuring[:SUMMary]:PTRansition?	✔ ✔
STATus:OPERation:SENSe[:SUMMary]:CONDition?	✔
STATus:OPERation:SENSe[:SUMMary]:ENABle STATus:OPERation:SENSe[:SUMMary]:ENABle?	✔ ✔
STATus:OPERation:SENSe[:SUMMary][:EVENt]?	✔
STATus:OPERation:SENSe[:SUMMary]:NTRansition STATus:OPERation:SENSe[:SUMMary]:NTRansition?	✔ ✔
STATus:OPERation:SENSe[:SUMMary]:PTRansition STATus:OPERation:SENSe[:SUMMary]:PTRansition?	✔ ✔
STATus:OPERation:TRIGger[:SUMMary]:CONDition?	✔
STATus:OPERation:TRIGger[:SUMMary]:ENABle STATus:OPERation:TRIGger[:SUMMary]:ENABle?	✔ ✔
STATus:OPERation:TRIGger[:SUMMary][:EVENt]?	✔
STATus:OPERation:TRIGger[:SUMMary]:NTRansition STATus:OPERation:TRIGger[:SUMMary]:NTRansition?	✔ ✔
STATus:OPERation:TRIGger[:SUMMary]:PTRansition STATus:OPERation:TRIGger[:SUMMary]:PTRansition?	✔ ✔
STATus:OPERation:ULFail[:SUMMary]:CONDition?	See item 5

Device-specific functions	
Command syntax	**Status**
STATus:OPERation:ULFail[:SUMMary]:ENABle STATus:OPERation:ULFail[:SUMMary]:ENABle?	See item 5
STATus:OPERation:ULFail[:SUMMary][:EVENt]?	See item 5
STATus:OPERation:ULFail[:SUMMary]:NTRansition STATus:OPERation:ULFail[:SUMMary]:NTRansition?	See item 5
STATus:OPERation:ULFail[:SUMMary]:PTRansition STATus:OPERation:ULFail[:SUMMary]:PTRansition?	See item 5
STATus:PRESet	✔
STATus:QUEStionable:CONDition?	✔
STATus:QUEStionable:ENABle STATus:QUEStionable:ENABle?	✔ ✔
STATus:QUEStionable[:EVENt]?	✔
STATus:QUEStionable:NTRansition STATus:QUEStionable:NTRansition?	✔ ✔
STATus:QUEStionable:PTRansition STATus:QUEStionable:PTRansition?	✔ ✔
STATus:QUEStionable:CALibration[:SUMMary]:CONDition?	✔
STATus:QUEStionable:CALibration[:SUMMary]:ENABle STATus:QUEStionable:CALibration[:SUMMary]:ENABle?	✔ ✔
STATus:QUEStionable:CALibration[:SUMMary][:EVENt]?	✔
STATus:QUEStionable:CALibration[:SUMMary]:NTRansition STATus:QUEStionable:CALibration[:SUMMary]:NTRansition?	✔ ✔
STATus:QUEStionable:CALibration[:SUMMary]:PTRansition STATus:QUEStionable:CALibration[:SUMMary]:PTRansition?	✔ ✔
STATus:QUEStionable:POWer[:SUMMary]:CONDition?	✔
STATus:QUEStionable:POWer[:SUMMary]:ENABle STATus:QUEStionable:POWer[:SUMMary]:ENABle?	✔ ✔
STATus:QUEStionable:POWer[:SUMMary][:EVENt]?	✔
STATus:QUEStionable:POWer[:SUMMary]:NTRansition STATus:QUEStionable:POWer[:SUMMary]:NTRansition?	✔ ✔
STATus:QUEStionable:POWer[:SUMMary]:PTRansition STATus:QUEStionable:POWer[:SUMMary]:PTRansition?	✔ ✔
SYSTem:COMMunicate:GPIB[:SELF]:ADDRess SYSTem:COMMunicate:GPIB[:SELF]:ADDRess?	✔ ✔
SYSTem:COMMunicate:SERial:CONTrol:DTR SYSTem:COMMunicate:SERial:CONTrol:DTR?	✖ ✖

Device-specific functions	
Command syntax	**Status**
SYSTem:COMMunicate:SERial:CONTrol:RTS	✖
SYSTem:COMMunicate:SERial:CONTrol:RTS?	✖
SYSTem:COMMunicate:SERial[:RECeive]:BAUD	✖
SYSTem:COMMunicate:SERial[:RECeive]:BAUD?	✖
SYSTem:COMMunicate:SERial[:RECeive]:BITs	✖
SYSTem:COMMunicate:SERial[:RECeive]:BITs?	✖
SYSTem:COMMunicate:SERial[:RECeive]:PACE	✖
SYSTem:COMMunicate:SERial[:RECeive]:PACE?	✖
SYSTem:COMMunicate:SERial[:RECeive]:PARity[:TYPE]	✖
SYSTem:COMMunicate:SERial[:RECeive]:PARity[:TYPE]?	✖
SYSTem:COMMunicate:SERial[:RECeive]:SBITs	✖
SYSTem:COMMunicate:SERial[:RECeive]:SBITs?	✖
SYSTem:COMMunicate:SERial:TRANsmit:AUTO?	✖
SYSTem:COMMunicate:SERial:TRANsmit:BAUD	✖
SYSTem:COMMunicate:SERial:TRANsmit:BAUD?	✖
SYSTem:COMMunicate:SERial:TRANsmit:BITs	✖
SYSTem:COMMunicate:SERial:TRANsmit:BITs?	✖
SYSTem:COMMunicate:SERial:TRANsmit:ECHO	✖
SYSTem:COMMunicate:SERial:TRANsmit:ECHO?	✖
SYSTem:COMMunicate:SERial:TRANsmit:PACE	✖
SYSTem:COMMunicate:SERial:TRANsmit:PACE?	✖
SYSTem:COMMunicate:SERial:TRANsmit:PARity[:TYPE]	✖
SYSTem:COMMunicate:SERial:TRANsmit:PARity[:TYPE]?	✖
SYSTem:COMMunicate:SERial:TRANsmit:SBITs	✖
SYSTem:COMMunicate:SERial:TRANsmit:SBITs?	✖
SYSTem:ERRor?	See item 2
SYSTem:LANGuage SYSTem:LANGuage?	See item 3
SYSTem:LOCal	✓
SYSTem:PRESet	✓
SYSTem:REMote	✓
SYSTem:RINTerface SYSTem:RINTerface?	See item 4
SYSTem:RWLock	✓
SYSTem:VERSion?	See item 2

Device-specific functions	
Command syntax	Status
TRIGger[1]|2:DELay:AUTO	✔
TRIGger[1]|2:DELay:AUTO?	✔
TRIGger[1]|2[:IMMediate]	✔
TRIGger[1]|2:SOURce	✔
TRIGger[1]|2:SOURce?	✔
UNIT[1]|2:POWer	✔
UNIT[1]|2:POWer?	✔
UNIT[1]|2:POWer:RATio	✔
UNIT[1]|2:POWer:RATio?	✔

11.3 Differences between the Emulated Instrument and the NRP2

The following table lists all remaining differences in command and/or parameter implementation. These differences have to be taken into consideration, since they may lead to necessary modifications of application code parts.

Details	
Item	Comment
1	Response at E4418B is "Agilent Technologies,E4418B,MY< serialnumber>,A1.09.01" Response at E4419B is "Agilent Technologies,E4419B,MY< serialnumber>,A2.09.01"
2	Response data is not mapped to E4418B/E4419B response data range.
3	Additional parameter values are: NRP, NRP2, 436A, 438A, E4418B, E4419B, N1911A, N1912A
4	Parameter values RS232 and RS422 are not supported.
5	Bits 1 (channel A LL or UL fail status) and 2 (channel B LL or UL fail status) are not supported.
6	NRP-Zxx sensors are factory calibrated. Calibration during normal operation is superseded. Zeroing is executed, calibrating is simulated by a delay of 1 s.
7	NRP-Zxx sensors are factory calibrated. Calibration during normal operation is superseded. Calibrating is simulated by a delay of 1 s.
8	Parameter value 200 (measurements/s) is not supported.

12 Emulating the Agilent Technologies N432A

One sensor connected to plug A is supported.

Sensor/connector mapping	
N432A	**NRP2**
Sensor A	Sensor A

Sensor/window mapping	
N432A	**NRP2**
Upper window / upper measurement	Window 1
Upper window / lower measurement	Window 3
Lower window / upper measurement	Window 2
Lower window / lower measurement	Window 4

12.1 Limitations

Display management commands (DISPlay subsystem) are extremely restricted.

12.2 Commands

The following table shows the current implementation status of each command:

Interface functions	
Command syntax	**Status**
DCL	✔
GET	✔
GTL	✔
IFC	✔
LLO	✔
PPC	✘
PPD	✘
PPE	✘
PPU	✘
REN	✔
SDC	✔

Interface functions	
Command syntax	**Status**
SPD	✔
SPE	✔
SRQ	✔

IEEE488.2 functions	
Command syntax	**Status**
*CLS	✔
*DDT *DDT?	○ ○
*ESE *ESE?	✔ ✔
*ESR?	✔
*IDN?	See item 1
*OPC *OPC?	✔ ✔
*OPT?	✔
*RCL	✔
*RST	✔
*SAV	✔
*SRE *SRE?	✔ ✔
*STB?	✔
*TRG	✔
*TST?	✔
*WAI	✔

Device-specific functions	
Command syntax	**Status**
ABORt[1]	✓
CALCulate[1]|2|3|4:HOLD:STATe CALCulate[1]|2|3|4:HOLD:STATe?	○ ○
CALCulate[1]|2|3|4:FEED[1]|2 CALCulate[1]|2|3|4:FEED[1]|2?	✓ ✓
CALCulate[1]|2|3|4:GAIN[:MAGNitude] CALCulate[1]|2|3|4:GAIN[:MAGNitude]?	✓ ✓
CALCulate[1]|2|3|4:GAIN:STATe CALCulate[1]|2|3|4:GAIN:STATe?	✓ ✓
CALCulate[1]|2|3|4:LIMit:CLEar:AUTo CALCulate[1]|2|3|4:LIMit:CLEar:AUTo?	✓ ✓
CALCulate[1]|2|3|4:Limit:CLEar[:IMMediate]	✓
CALCulate[1]|2|3|4:LIMit:FAIL?	✓
CALCulate[1]|2|3|4:LIMit:FCOunt?	✓
CALCulate[1]|2|3|4:LIMit:LOWer[:DATA] CALCulate[1]|2|3|4:LIMit:LOWer[:DATA]?	✓ ✓
CALCulate[1]|2|3|4:LIMit:STATe CALCulate[1]|2|3|4:LIMit:STATe?	✓ ✓
CALCulate[1]|2:LIMit:UPPer[:DATA] CALCulate[1]|2:LIMit:UPPer[:DATA]?	✓ ✓
CALCulate[1]|2|3|4:MATH[:EXPRession] CALCulate[1]|2|3|4:MATH[:EXPRession]?	✓ ✓
CALCulate[1]|2|3|4:MATH[:EXPRession]:CATalog?	✓
CALCulate[1]|2|3|4:RELative[:MAGNitude]:AUTO CALCulate[1]|2|3|4:RELative[:MAGNitude]:AUTO?	✓ ✓
CALCulate[1]|2|3|4:RELative:STATe CALCulate[1]|2|3|4:RELative:STATe?	✓ ✓
CALibration[1]:RCFactor CALibration[1]:RCFactor?	✗ ✗
CALibration[1]:ZERO:AUTO CALibration[1]:ZERO:AUTO?	✓ ✓
CONFigure[1]|2|3|4[:SCALar][:POWer:AC]	✓
CONFigure[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence	✓
CONFigure[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence:RELative	✓
CONFigure[1]|2|3|4[:SCALar][:POWer:AC]:RATio	✓
CONFigure[1]|2|3|4[:SCALar][:POWer:AC]:RATio:RELative	✓

Device-specific functions	
Command syntax	**Status**
CONFigure[1]|2|3|4[:SCALar][:POWer:AC]:RELative	✔
DISPlay:ENABle	✔
DISPlay:ENABle?	✔
DISPlay:SCReen:FORMat	See item 2
DISPlay:SCReen:FORMat?	
DISPlay[:WINDow[1]|2]:ANALog:LOWer	✔
DISPlay[:WINDow[1]|2]:ANALog:LOWer?	✔
DISPlay[:WINDow[1]|2]:ANALog:UPPer	✔
DISPlay[:WINDow[1]|2]:ANALog:UPPer?	✔
DISPlay[:WINDow[1]|2]:FORMat	✔
DISPlay[:WINDow[1]|2]:FORMat?	✔
DISPlay[:WINDow[1]|2]:METer:LOWer	✔
DISPlay[:WINDow[1]|2]:METer:LOWer?	✔
DISPlay[:WINDow[1]|2]:METer:UPPer	✔
DISPlay[:WINDow[1]|2]:METer:UPPer?	✔
DISPlay[:WINDow[1]|2]:NUMeric[1]|2:RESolution	✔
DISPlay[:WINDow[1]|2]:NUMeric[1]|2:RESolution?	✔
DISPlay[:WINDow[1]|2]:SELect[1]|2	✔
DISPlay[:WINDow[1]|2]:SELect[1]|2?	✔
DISPlay[:WINDow[1]|2][:STATe]	✘
DISPlay[:WINDow[1]|2][:STATe]?	✘
FETCh[1]|2|3|4[:SCALar][:POWer:AC]?	✔
FETCh[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence?	✔
FETCh[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence:RELative?	✔
FETCh[1]|2|3|4[:SCALar][:POWer:AC]:RATio?	✔
FETCh[1]|2|3|4[:SCALar][:POWer:AC]:RATio:RELative?	✔
FETCh[1]|2|3|4[:SCALar][:POWer:AC]:RELative?	✔
FORMat[:READings]:BORDer	✔
FORMat[:READings]:BORDer?	✔
FORMat[:READings][:DATA]	✔
FORMat[:READings][:DATA]?	✔
HCOPy:SDUMp:DATA	✔
HCOPy:SDUMp:DATA?	✔
HCOPy:SDUMp:DATA:FORMat	See item 3
HCOPy:SDUMp:DATA:FORMat?	

Device-specific functions	
Command syntax	**Status**
LXI:IDENtify[:STATe]	✘
LXI:IDENtify[:STATe]?	✘
INITiate[1]:CONTinuous	✔
INITiate[1]:CONTinuous?	✔
INITiate[1]:CONTinuous:ALL	✔
INITiate[1]:CONTinuous:ALL?	✔
INITiate[1]:CONTinuous:SEQuence[1]	✔
INITiate[1]:CONTinuous:SEQuence[1]?	✔
INITiate[1][:IMMediate]	✔
INITiate[1][:IMMediate]:ALL	✔
INITiate[1][:IMMediate]:SEQuence[1]	✔
MEASure[1]|2|3|4[:SCALar][:POWer:AC]?	✔
MEASure[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence?	✔
MEASure[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence:RELative?	✔
MEASure[1]|2|3|4[:SCALar][:POWer:AC]:RATio?	✔
MEASure[1]|2|3|4[:SCALar][:POWer:AC]:RATio:RELative?	✔
MEASure[1]|2|3|4[:SCALar][:POWer:AC]:RELative?	✔
MEMory:CATalog[:ALL]?	✔
MEMory:CATalog:STATe?	✔
MEMory:CATalog:TABLe?	✔
MEMory:CLEar[:NAME]	✔
MEMory:CLEar:TABle	✔
MEMory:FREE[:ALL]?	✔
MEMory:FREE:STATe?	✔
MEMory:FREE:TABLe?	✔
MEMory:NSTates?	✔
MEMory:STATe:CATalog?	✔
MEMory:STATe:DEFine	✔
MEMory:STATe:DEFine?	✔
MEMory:TABLe:FREQuency	✔
MEMory:TABLe:FREQuency?	✔
MEMory:TABLe:FREQuency:POINts?	✔
MEMory:TABLe:GAIN[:MAGNitude]	✔
MEMory:TABLe:GAIN[:MAGNitude]?	✔

Device-specific functions	
Command syntax	**Status**
`MEMory:TABLe:GAIN[:MAGNitude]:POINts?`	✓
`MEMory:TABLe:MOVE`	✓
`MEMory:TABLe:SELect`	✓
`MEMory:TABLe:SELect?`	✓
`OUTPut:RECorder[1]:FEED`	✓
`OUTPut:RECorder[1]:FEED?`	✓
`OUTPut:RECorder[1]:LIMit:AUTO`	✗
`OUTPut:RECorder[1]:LIMit:AUTO?`	✗
`OUTPut:RECorder[1]:LIMit:LOWer`	✓
`OUTPut:RECorder[1]:LIMit:LOWer?`	✓
`OUTPut:RECorder[1]:LIMit:UPPer`	✓
`OUTPut:RECorder[1]:LIMit:UPPer?`	✓
`OUTPut:RECorder[1][:STATe]`	✓
`OUTPut:RECorder[1][:STATe]?`	✓
`OUTPut:ROSCillator[:STATe]`	✓
`OUTPut:ROSCillator[:STATe]?`	✓
`READ[1]|2|3|4[:SCALar][:POWer:AC]?`	✓
`READ[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence?`	✓
`READ[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence:RELative?`	✓
`READ[1]|2|3|4[:SCALar][:POWer:AC]:RATio?`	✓
`READ[1]|2|3|4[:SCALar][:POWer:AC]:RATio:RELative?`	✓
`READ[1]|2|3|4[:SCALar][:POWer:AC]:RELative?`	✓
`[SENSe[1]]:AVERage:COUNt:VOLT`	✓
`[SENSe[1]]:AVERage:COUNt: VOLT?`	✓
`[SENSe[1]]:AVERage:SDETect`	✗
`[SENSe[1]]:AVERage:SDETect?`	✗
`[SENSe[1]]:BRESistance`	✗
`[SENSe[1]]:BRESistance?`	✗
`[SENSe[1]]:CORRection:CFACtor[:INPut][:MAGNitude]`	✗
`[SENSe[1]]:CORRection:CFACtor[:INPut][:MAGNitude]?`	✗
`[SENSe[1]]:CORRection:CSET[1][:SELect]`	✗
`[SENSe[1]]:CORRection:CSET[1][:SELect]?`	✗
`[SENSe[1]]:CORRection:CSET2[:SELect]`	✓
`[SENSe[1]]:CORRection:CSET2[:SELect]?`	✓
`[SENSe[1]]:CORRection:CSET[1]:STATe`	✗
`[SENSe[1]]:CORRection:CSET[1]:STATe?`	✗

Device-specific functions	
Command syntax	**Status**
[SENSe[1]]:CORRection:CSET2:STATe	✔
[SENSe[1]]:CORRection:CSET2:STATe?	✔
[SENSe[1]]:CORRection:DCYCle[:INPut][:MAGNitude]	✔
[SENSe[1]]:CORRection:DCYCle[:INPut][:MAGNitude]?	✔
[SENSe[1]]:CORRection:DCYCle:STATe	✔
[SENSe[1]]:CORRection:DCYCle:STATe?	✔
[SENSe[1]]:CORRection:FDOFfset[:INPut][:MAGNitude]	✔
[SENSe[1]]:CORRection:FDOFfset[:INPut][:MAGNitude]?	✔
[SENSe[1]]:CORRection:GAIN[1][:INPut][:MAGNitude]	✘
[SENSe[1]]:CORRection:GAIN[1][:INPut][:MAGNitude]?	✘
[SENSe[1]]:CORRection:GAIN2[:INPut][:MAGNitude]	✔
[SENSe[1]]:CORRection:GAIN2[:INPut][:MAGNitude]?	✔
[SENSe[1]]:CORRection:GAIN3[:INPut][:MAGNitude]	✔
[SENSe[1]]:CORRection:GAIN3[:INPut][:MAGNitude]?	✔
[SENSe[1]]:CORRection:GAIN4[:INPut][:MAGNitude]	✔
[SENSe[1]]:CORRection:GAIN4[:INPut][:MAGNitude]?	✔
[SENSe[1]]:CORRection:GAIN2:STATe	✔
[SENSe[1]]:CORRection:GAIN2:STATe?	✔
[SENSe[1]]:CORRection:GAIN3:STATe	✔
[SENSe[1]]:CORRection:GAIN3:STATe?	✔
[SENSe[1]]:FREQuency[:CW|:FIXed]	✔
[SENSe[1]]:FREQuency[:CW|:FIXed]?	✔
[SENSe[1]]:RSELection	✘
[SENSe[1]]:RSELection?	✘
[SENSe[1]]:RVALue	✘
[SENSe[1]]:RVALue?	✘
SERVice:BACKlight:BRIGhtness	✘
SERVice:BACKlight:BRIGhtness?	✘
SERVice:BIST:CALibrator	✘
SERVice: BIST:CALibrator?	✘
SERVice:BIST:VRF	✘
SERVice:BIST:VRF?	✘
SERVice:BIST:VCOM	✘
SERVice:BIST:VCOM?	✘
SERVice:BIST:V0	✘
SERVice:BIST:V0?	✘

Device-specific functions	
Command syntax	**Status**
SERVice:CALibrator:ADJust:COUR	✖
SERVice:CALibrator:ADJust:COUR?	✖
SERVice:CALibrator:ADJust:FINE	✖
SERVice:CALibrator:ADJust:FINE?	✖
SERVice:DISPlay:BSCReen	✖
SERVice:DISPlay:BSCReen?	✖
SERVice:DISPlay:BSCReen:SECure:ACTivation	✖
SERVice:DISPlay:BSCReen:SECure:ACTivation?	✖
SERVice:DISPlay:BSCReen:SECure:DEACtivation	✖
SERVice:DISPlay:BSCReen:SECure:DEACtivation?	✖
SERVice:FAN:FULL	✖
SERVice:FAN:FULL?	✖
SERVice:LAN:PHOStname	✖
SERVice:FAN:PHOStname?	✖
SERVice:OPTion	✔
SERVice:OPTion[?]	✔
SERVice:SECure:ERAse	✖
SERVice:SECure:ERAse?	✖
SERVice:SENSor[1]|2:SNUMber?	✔
SERVice:SENSor[1]|2:TYPE?	✖
SERVice:SNUMber	✖
SERVice:SNUMber?	✔
SERVice:STATe	✖
SERVice:STATe?	✖
SERVice:VERSion:PROCessor	✔
SERVice:VERSion:PROCessor?	✔
SERVice:VERSion:SYSTem	✔
SERVice:VERSion:SYSTem?	✔
STATus:DEVice:CONDition?	✔
STATus:DEVice:ENABle	✔
STATus:DEVice:ENABle?	✔
STATus:DEVice[:EVENt]?	✔
STATus:DEVice:NTRansition	✔
STATus:DEVice:NTRansition?	✔
STATus:DEVice:PTRansition	✔
STATus:DEVice:PTRansition?	✔

Device-specific functions	
Command syntax	**Status**
STATus:OPERation:CONDition?	✔
STATus:OPERation:ENABle STATus:OPERation:ENABle?	✔ ✔
STATus:OPERation[:EVENt]?	✔
STATus:OPERation:NTRansition STATus:OPERation:NTRansition?	✔ ✔
STATus:OPERation:PTRansition STATus:OPERation:PTRansition?	✔ ✔
STATus:OPERation:CALibrating[:SUMMary]:CONDition?	✔
STATus:OPERation:CALibrating[:SUMMary]:ENABle STATus:OPERation:CALibrating[:SUMMary]:ENABle?	✔ ✔
STATus:OPERation:CALibrating[:SUMMary][:EVENt]?	✔
STATus:OPERation:CALibrating[:SUMMary]:NTRansition STATus:OPERation:CALibrating[:SUMMary]:NTRansition?	✔ ✔
STATus:OPERation:CALibrating[:SUMMary]:PTRansition STATus:OPERation:CALibrating[:SUMMary]:PTRansition?	✔ ✔
STATus:OPERation:LLFail[:SUMMary]:CONDition?	See item 4
STATus:OPERation:LLFail[:SUMMary]:ENABle STATus:OPERation:LLFail[:SUMMary]:ENABle?	See item 4
STATus:OPERation:LLFail[:SUMMary][:EVENt]?	See item 4
STATus:OPERation:LLFail[:SUMMary]:NTRansition STATus:OPERation:LLFail[:SUMMary]:NTRansition?	See item 4
STATus:OPERation:LLFail[:SUMMary]:PTRansition STATus:OPERation:LLFail[:SUMMary]:PTRansition?	See item 4
STATus:OPERation:MEASuring[:SUMMary]:CONDition?	✔
STATus:OPERation:MEASuring[:SUMMary]:ENABle STATus:OPERation:MEASuring[:SUMMary]:ENABle?	✔ ✔
STATus:OPERation:MEASuring[:SUMMary][:EVENt]?	✔
STATus:OPERation:MEASuring[:SUMMary]:NTRansition STATus:OPERation:MEASuring[:SUMMary]:NTRansition?	✔ ✔
STATus:OPERation:MEASuring[:SUMMary]:PTRansition STATus:OPERation:MEASuring[:SUMMary]:PTRansition?	✔ ✔
STATus:OPERation:TRIGger[:SUMMary]:CONDition?	✔
STATus:OPERation:TRIGger[:SUMMary]:ENABle STATus:OPERation:TRIGger[:SUMMary]:ENABle?	✔ ✔
STATus:OPERation:TRIGger[:SUMMary][:EVENt]?	✔

Device-specific functions	
Command syntax	**Status**
STATus:OPERation:TRIGger[:SUMMary]:NTRansition	✓
STATus:OPERation:TRIGger[:SUMMary]:NTRansition?	✓
STATus:OPERation:TRIGger[:SUMMary]:PTRansition	✓
STATus:OPERation:TRIGger[:SUMMary]:PTRansition?	✓
STATus:OPERation:ULFail[:SUMMary]:CONDition?	See item 4
STATus:OPERation:ULFail[:SUMMary]:ENABle	See item 4
STATus:OPERation:ULFail[:SUMMary]:ENABle?	
STATus:OPERation:ULFail[:SUMMary][:EVENt]?	See item 4
STATus:OPERation:ULFail[:SUMMary]:NTRansition	See item 4
STATus:OPERation:ULFail[:SUMMary]:NTRansition?	
STATus:OPERation:ULFail[:SUMMary]:PTRansition	See item 4
STATus:OPERation:ULFail[:SUMMary]:PTRansition?	
STATus:PRESet	✓
STATus:QUEStionable:CONDition?	✓
STATus:QUEStionable:ENABle	✓
STATus:QUEStionable:ENABle?	✓
STATus:QUEStionable[:EVENt]?	✓
STATus:QUEStionable:NTRansition	✓
STATus:QUEStionable:NTRansition?	✓
STATus:QUEStionable:PTRansition	✓
STATus:QUEStionable:PTRansition?	✓
STATus:QUEStionable:CALibration[:SUMMary]:CONDition?	✓
STATus:QUEStionable:CALibration[:SUMMary]:ENABle	✓
STATus:QUEStionable:CALibration[:SUMMary]:ENABle?	✓
STATus:QUEStionable:CALibration[:SUMMary][:EVENt]?	✓
STATus:QUEStionable:CALibration[:SUMMary]:NTRansition	✓
STATus:QUEStionable:CALibration[:SUMMary]:NTRansition?	✓
STATus:QUEStionable:CALibration[:SUMMary]:PTRansition	✓
STATus:QUEStionable:CALibration[:SUMMary]:PTRansition?	✓
STATus:QUEStionable:POWer[:SUMMary]:CONDition?	✓
STATus:QUEStionable:POWer[:SUMMary]:ENABle	✓
STATus:QUEStionable:POWer[:SUMMary]:ENABle?	✓
STATus:QUEStionable:POWer[:SUMMary][:EVENt]?	✓
STATus:QUEStionable:POWer[:SUMMary]:NTRansition	✓
STATus:QUEStionable:POWer[:SUMMary]:NTRansition?	✓

Device-specific functions	
Command syntax	**Status**
STATus:QUEStionable:POWer[:SUMMary]:PTRansition	✓
STATus:QUEStionable:POWer[:SUMMary]:PTRansition?	✓
SYSTem:COMMunicate:GPIB[:SELF]:ADDRess	✓
SYSTem:COMMunicate:GPIB[:SELF]:ADDRess?	✓
SYSTem:COMMunicate:LAN:AIP[:STATe]	✗
SYSTem:COMMunicate:LAN:AIP[:STATe]?	✗
SYSTem:COMMunicate:LAN:CURRent:ADDRess?	✗
SYSTem:COMMunicate:LAN:CURRent:DGATeway?	✗
SYSTem:COMMunicate:LAN:CURRent:DNAMe?	✗
SYSTem:COMMunicate:LAN:CURRent:SMASk?	✗
SYSTem:COMMunicate:LAN:ADDRess	✗
SYSTem:COMMunicate:LAN:ADDRess?	✗
SYSTem:COMMunicate:LAN:DGATeway	✗
SYSTem:COMMunicate:LAN:DGATeway?	✗
SYSTem:COMMunicate:LAN:DHCP[:STATe]	✗
SYSTem:COMMunicate:LAN:DHCP[:STATe]?	✗
SYSTem:COMMunicate:LAN:DNAMe	✗
SYSTem:COMMunicate:LAN:DNAMe?	✗
SYSTem:COMMunicate:LAN:HNAMe	✗
SYSTem:COMMunicate:LAN:HNAMe?	✗
SYSTem:COMMunicate:LAN:MAC?	✗
SYSTem:COMMunicate:LAN:RESTart	✗
SYSTem:COMMunicate:LAN:SMASk	✗
SYSTem:COMMunicate:LAN:SMASk?	✗
SYSTem:COMMunicate:TCPip:CONTrol	✗
SYSTem:COMMunicate:TCPip:CONTrol?	✗
SYSTem:DISPlay:BMP?	✓
SYSTem:ERRor?	See item 4
SYSTem:LANGuage SYSTem:LANGuage?	See item 5
SYSTem:LOCal	✓
SYSTem:PRESet	✓
SYSTem:REMote	✓
SYSTem:RWLock	✓
SYSTem:VERSion?	✓

Device-specific functions	
Command syntax	**Status**
`TRIGger[1][:SEQuence[1]]:DELay:AUTO`	✓
`TRIGger[1][:SEQuence[1]]:DELay:AUTO?`	✓
`TRIGger[1][:SEQuence[1]]:IMMediate`	✓
`TRIGger[1][:SEQuence[1]]:SOURce`	✓
`TRIGger[1][:SEQuence[1]]:SOURce?`	✓
`UNIT[1]|2|3|4:POWer`	✓
`UNIT[1]|2|3|4:POWer?`	✓
`UNIT[1]|2|3|4:POWer:RATio`	✓
`UNIT[1]|2|3|4:POWer:RATio?`	✓

12.3 Differences between the Emulated Instrument and the NRP2

The following table lists all remaining differences in command and/or parameter implementation. These differences have to be taken into consideration, since they may lead to necessary modifications of application code parts.

Details	
Item	**Comment**
1	Response at N432A is "Agilent TechnologiesN432A,MY< serialnumber>,A1.09.01".
2	Parameter EXP is not supported.
3	Parameter PNG is not supported.
4	Response data is not mapped to N432A response data range.
5	Additional parameter values are: NRP, NRP2, 436A, 438A, E4418B, E4419B, N432A, N1911A, N1912A

13 Emulating the Agilent Technologies N1911A/N1912A

The remote emulation is based on N1911A and N1912A firmware version A1.05.04 and A2.05.04.
One or two sensors connected to plug A or B are supported.

Sensor/connector mapping	
N1911A	**NRP2**
Sensor A	Sensor A

Sensor/connector mapping	
N1912A	**NRP2**
Sensor A	Sensor A
Sensor B	Sensor B

Sensor/window mapping	
N1911A / N1912A	**NRP2**
Upper window / upper measurement	Window 1
Upper window / lower measurement	Window 3
Lower window / upper measurement	Window 2
Lower window / lower measurement	Window 4

13.1 Limitations

Display management commands (DISPlay subsystem) are extremely restricted.
TRACe subsystem is not supported.
SENSe:TRACe subsystem is not supported.
PSTAtistic subsystem is not supported.

13.2 Commands

The following table shows the current implementation status of each command:

Interface functions	
Command syntax	**Status**
DCL	✔
GET	✔
GTL	✔
IFC	✔
LLO	✔
PPC	✘
PPD	✘
PPE	✘
PPU	✘
REN	✔
SDC	✔
SPD	✔
SPE	✔
SRQ	✔

IEEE488.2 functions	
Command syntax	**Status**
*CLS	✔
*DDT *DDT?	○ ○
*ESE *ESE?	✔ ✔
*ESR?	✔
*IDN?	See item 1
*OPC *OPC?	✔ ✔
*OPT?	✔
*RCL	✔
*RST	✔
*SAV	✔
*SRE *SRE?	✔ ✔
*STB?	✔

IEEE488.2 functions	
Command syntax	**Status**
`*TRG`	✓
`*TST?`	✓
`*WAI`	✓

Device-specific functions	
Command syntax	**Status**
`ABORt[1]|2`	✓
`CALCulate[1]|2|3|4:FEED[1]|2` `CALCulate[1]|2|3|4:FEED[1]|2?`	See item 14
`CALCulate[1]|2|3|4:GAIN[:MAGNitude]` `CALCulate[1]|2|3|4:GAIN[:MAGNitude]?`	See item 13
`CALCulate[1]|2|3|4:GAIN:STATe` `CALCulate[1]|2|3|4:GAIN:STATe?`	See item 13
`CALCulate[1]|2|3|4:LIMit:CLEar:AUTo` `CALCulate[1]|2|3|4:LIMit:CLEar:AUTo?`	✓ ✓
`CALCulate[1]|2|3|4:Limit:CLEar[:IMMediate]`	✓
`CALCulate[1]|2|3|4:LIMit:FAIL?`	✓
`CALCulate[1]|2|3|4:LIMit:FCOunt?`	✓
`CALCulate[1]|2|3|4:LIMit:LOWer[:DATA]` `CALCulate[1]|2|3|4:LIMit:LOWer[:DATA]?`	✓ ✓
`CALCulate[1]|2|3|4:LIMit:STATe` `CALCulate[1]|2|3|4:LIMit:STATe?`	✓ ✓
`CALCulate[1]|2|3|4:LIMit:UPPer[:DATA]` `CALCulate[1]|2|3|4:LIMit:UPPer[:DATA]?`	✓ ✓
`CALCulate[1]|2|3|4:MATH[:EXPRession]` `CALCulate[1]|2|3|4:MATH[:EXPRession]?`	See item 11
`CALCulate[1]|2|3|4:MATH[:EXPRession]:CATalog?`	See item 11
`CALCulate[1]|2|3|4:PHOLd:CLEar`	✓
`CALCulate[1]|2|3|4:RELative[:MAGNitude]:AUTO` `CALCulate[1]|2|3|4:RELative[:MAGNitude]:AUTO?`	✓ ✓
`CALCulate[1]|2|3|4:RELative:STATe` `CALCulate[1]|2|3|4:RELative:STATe?`	✓ ✓
`CALibration[1]|2[:ALL]` `CALibration[1]|2[:ALL]?`	See item 10

Device-specific functions	
Command syntax	**Status**
CALibration[1]|2:AUTO CALibration[1]|2:AUTO?	See item 9
CALibration[1]|2:RCALibration CALibration[1]|2:RCALibration?	✖ ✖
CALibration[1]|2:RCFactor CALibration[1]|2:RCFactor?	✖ ✖
CALibration[1]|2:ZERO:AUTO CALibration[1]|2:ZERO:AUTO?	✔ ✔
CALibration[1]|2:ZERO:NORMal:AUTO CALibration[1]|2:ZERO:NORMal:AUTO?	✖ ✖
CONFigure[1]|2|3|4[:SCALar][:POWer:AC]	✔
CONFigure[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence	✔
CONFigure[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence:RELative	✔
CONFigure[1]|2|3|4[:SCALar][:POWer:AC]:RATio	✔
CONFigure[1]|2|3|4[:SCALar][:POWer:AC]:RATio:RELative	✔
CONFigure[1]|2|3|4[:SCALar][:POWer:AC]:RELative	✔
DISPlay:ENABle DISPlay:ENABle?	✔ ✔
DISPlay:SCReen:FORMat DISPlay:SCReen:FORMat?	✖ ✖
DISPlay[:WINDow[1]|2]:ANALog:LOWer DISPlay[:WINDow[1]|2]:ANALog:LOWer?	✔ ✔
DISPlay[:WINDow[1]|2]:ANALog:UPPer DISPlay[:WINDow[1]|2]:ANALog:UPPer?	✔ ✔
DISPlay[:WINDow[1]|2]:FORMat DISPlay[:WINDow[1]|2]:FORMat?	✖ ✖
DISPlay[:WINDow[1]|2]:METer:LOWer DISPlay[:WINDow[1]|2]:METer:LOWer?	✔ ✔
DISPlay[:WINDow[1]|2]:METer:UPPer DISPlay[:WINDow[1]|2]:METer:UPPer?	✔ ✔
DISPlay[:WINDow[1]|2][:NUMeric[1]|2]:RESolution DISPlay[:WINDow[1]|2][:NUMeric[1]|2]:RESolution?	✔ ✔
DISPlay[:WINDow[1]|2]:SELect[1]|2 DISPlay[:WINDow[1]|2]:SELect[1]|2?	✖ ✖
DISPlay[:WINDow[1]|2][:STATe] DISPlay[:WINDow[1]|2][:STATe]?	✖ ✖

Device-specific functions	
Command syntax	**Status**
DISPlay[:WINDow[1]|2]:TRACe:FEED	✖
DISPlay[:WINDow[1]|2]:TRACe:FEED?	✖
FETCh[1]|2|3|4[:SCALar][:POWer:AC]?	✔
FETCh[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence?	✔
FETCh[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence:RELative?	✔
FETCh[1]|2|3|4[:SCALar][:POWer:AC]:RATio?	✔
FETCh[1]|2|3|4[:SCALar][:POWer:AC]:RATio:RELative?	✔
FETCh[1]|2|3|4[:SCALar][:POWer:AC]:RELative?	✔
FORMat[:READings]:BORDer	✔
FORMat[:READings]:BORDer?	✔
FORMat[:READings][:DATA]	✔
FORMat[:READings][:DATA]?	✔
INITiate[1]|2:CONTinuous	✔
INITiate[1]|2:CONTinuous?	✔
INITiate:CONTinuous:ALL	✔
INITiate:CONTinuous:ALL?	✔
INITiate:CONTinuous:SEQuence[1]|2	✔
INITiate:CONTinuous:SEQuence[1]|2?	✔
INITiate[1]|2[:IMMediate]	✔
INITiate[:IMMediate]:ALL	✔
INITiate[:IMMediate]:SEQuence[1]|2	✔
MEASure[1]|2|3|4[:SCALar][:POWer:AC]?	✔
MEASure[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence?	✔
MEASure[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence:RELative?	✔
MEASure[1]|2|3|4[:SCALar][:POWer:AC]:RATio?	✔
MEASure[1]|2|3|4[:SCALar][:POWer:AC]:RATio:RELative?	✔
MEASure[1]|2|3|4[:SCALar][:POWer:AC]:RELative?	✔
MEMory:CATalog[:ALL]?	✔
MEMory:CATalog:STATe?	✔
MEMory:CATalog:TABLe?	✔
MEMory:CLEar[:NAME]	✔
MEMory:CLEar:TABle	✔
MEMory:FREE[:ALL]?	✔
MEMory:FREE:STATe?	✔

Device-specific functions	
Command syntax	**Status**
MEMory:FREE:TABLe?	✔
MEMory:NSTates?	✔
MEMory:STATe:CATalog?	✔
MEMory:STATe:DEFine MEMory:STATe:DEFine?	✔ ✔
MEMory:TABLe:FREQuency MEMory:TABLe:FREQuency?	✔ ✔
MEMory:TABLe:FREQuency:POINts?	✔
MEMory:TABLe:GAIN[:MAGNitude] MEMory:TABLe:GAIN[:MAGNitude]?	✔ ✔
MEMory:TABLe:GAIN[:MAGNitude]:POINts?	✔
MEMory:TABLe:MOVE	✔
MEMory:TABLe:SELect MEMory:TABLe:SELect?	✔ ✔
OUTPut:RECorder[1]|2:FEED OUTPut:RECorder[1]|2:FEED?	✔ ✔
OUTPut:RECorder[1]|2:LIMit:LOWer OUTPut:RECorder[1]|2:LIMit:LOWer?	✔ ✔
OUTPut:RECorder[1]|2:LIMit:UPPer OUTPut:RECorder[1]|2:LIMit:UPPer?	✔ ✔
OUTPut:RECorder[1]|2:STATe OUTPut:RECorder[1]|2:STATe?	✔ ✔
OUTPut:ROSCillator[:STATe] OUTPut:ROSCillator[:STATe]?	✔ ✔
OUTPut:TRIGger:STATe OUTPut:TRIGger:STATe?	✔ ✔
PSTatistic:CCDF:GAUSsian[:STATe] PSTatistic:CCDF:GAUSsian[:STATe]?	✘ ✘
PSTatistic:CCDF:GAUSsian:MARKer[1]|2[:SET]	✘
PSTatistic:CCDF:MARKer:DELta?	✘
PSTatistic:CCDF:MARKer[1]|2:DATa?	✘
PSTatistic:CCDF:MARKer[1]|2:X PSTatistic:CCDF:MARKer[1]|2:X?	✘ ✘
PSTatistic:CCDF:MARKer[1]|2:Y PSTatistic:CCDF:MARKer[1]|2:Y?	✘ ✘
PSTatistic:CCDF:REFerence:DATa?	✘

Device-specific functions	
Command syntax	**Status**
`PSTatistic:CCDF:REFerence[:STATe]`	✖
`PSTatistic:CCDF:REFerence[:STATe]?`	✖
`PSTatistic:CCDF:REFerence:MARKer[1]|2[:SET]`	✖
`PSTatistic:CCDF:REFerence:MARKer[1]|2[:SET]?`	✖
`PSTatistic:CCDF:REFerence:POWer:AVERage?`	✖
`PSTatistic:CCDF:REFerence:POWer:PEAK?`	✖
`PSTatistic:CCDF:REFerence:POWer:PTAVerage?`	✖
`PSTatistic[1]|2:CCDF:CONTinuous`	✖
`PSTatistic[1]|2:CCDF:CONTinuous?`	✖
`PSTatistic[1]|2:CCDF:COUNt`	✖
`PSTatistic[1]|2:CCDF:COUNt?`	✖
`PSTatistic[1]|2:CCDF:DATa?`	✖
`PSTatistic[1]|2:CCDF:DATa:MAX`	✖
`PSTatistic[1]|2:CCDF:DATa:MAX?`	✖
`PSTatistic[1]|2:CCDF:POWer?`	✖
`PSTatistic[1]|2:CCDF:PROBability?`	✖
`PSTatistic[1]|2:CCDF:STORe:REFerence`	✖
`PSTatistic[1]|2:CCDF:TABle?`	✖
`PSTatistic[1]|2:CCDF:TRACe[:STATe]`	✖
`PSTatistic[1]|2:CCDF:TRACe[:STATe]?`	✖
`PSTatistic[1]|2:CCDF:TRACe:MARKer[1]|2[:SET]`	✖
`PSTatistic[1]|2:CCDF:TRACe:POWer:AVERage?`	✖
`PSTatistic[1]|2:CCDF:TRACe:POWer:PEAK?`	✖
`PSTatistic[1]|2:CCDF:TRACe:POWer:PTAVerage?`	✖
`READ[1]|2|3|4[:SCALar][:POWer:AC]?`	✔
`READ[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence?`	✔
`READ[1]|2|3|4[:SCALar][:POWer:AC]:DIFFerence:RELative?`	✔
`READ[1]|2|3|4[:SCALar][:POWer:AC]:RATio?`	✔
`READ[1]|2|3|4[:SCALar][:POWer:AC]:RATio:RELative?`	✔
`READ[1]|2|3|4[:SCALar][:POWer:AC]:RELative?`	✔
`SENSe[1]|2:AVERage:COUNt`	✔
`SENSe[1]|2:AVERage:COUNt?`	✔
`SENSe[1]|2:AVERage:COUNt:AUTO`	✔
`SENSe[1]|2:AVERage:COUNt:AUTO?`	✔

Device-specific functions	
Command syntax	**Status**
SENSe[1]|2:AVERage:SDETect	✘
SENSe[1]|2:AVERage:SDETect?	✘
SENSe[1]|2:AVERage[:STATe]	✔
SENSe[1]|2:AVERage[:STATe]?	✔
SENSe[1]|2:AVERage2:COUNt	✘
SENSe[1]|2:AVERage2:COUNt?	✘
SENSe[1]|2:AVERage2[:STATe]	✘
SENSe[1]|2:AVERage2[:STATe]?	✘
SENSe[1]|2:BANDwidth:VIDeo	✔
SENSe[1]|2:BANDwidth:VIDeo?	✔
SENSe[1]|2:BWIDth:VIDeo	✔
SENSe[1]|2:BWIDth:VIDeo?	✔
SENSe[1]|2:BUFFer:COUNt	✘
SENSe[1]|2:BUFFer:COUNt?	✘
SENSe[1]|2:BUFFer:MTYPe	✘
SENSe[1]|2:BUFFer:MTYPe?	✘
SENSe[1]|2:CORRection:CFACtor[:INPut][:MAGNitude]	✘
SENSe[1]|2:CORRection:CFACtor[:INPut][:MAGNitude]?	✘
SENSe[1]|2:CORRection:CSET[1][:SELect]	✘
SENSe[1]|2:CORRection:CSET[1][:SELect]?	✘
SENSe[1]|2:CORRection:CSET2[:SELect]	✔
SENSe[1]|2:CORRection:CSET2[:SELect]?	✔
SENSe[1]|2:CORRection:CSET[1]:STATe	✘
SENSe[1]|2:CORRection:CSET[1]:STATe?	✘
SENSe[1]|2:CORRection:CSET2:STATe	✔
SENSe[1]|2:CORRection:CSET2:STATe?	✔
SENSe[1]|2:CORRection:DCYCle[:INPut][:MAGNitude]	✔
SENSe[1]|2:CORRection:DCYCle[:INPut][:MAGNitude]?	✔
SENSe[1]|2:CORRection:DCYCle:STATe	✔
SENSe[1]|2:CORRection:DCYCle:STATe?	✔
SENSe[1]|2:CORRection:FDOFfset[:INPut][:MAGNitude]?	✔
SENSe[1]|2:CORRection:GAIN[1][:INPut][:MAGNitude]	✘
SENSe[1]|2:CORRection:GAIN[1][:INPut][:MAGNitude]?	✘
SENSe[1]|2:CORRection:GAIN2[:INPut][:MAGNitude]	✔
SENSe[1]|2:CORRection:GAIN2[:INPut][:MAGNitude]?	✔
SENSe[1]|2:CORRection:GAIN3[:INPut][:MAGNitude]	✔
SENSe[1]|2:CORRection:GAIN3[:INPut][:MAGNitude]?	✔

Device-specific functions	
Command syntax	**Status**
SENSe[1]|2:CORRection:GAIN4[:INPut][:MAGNitude]?	✔
SENSe[1]|2:CORRection:GAIN2:STATe SENSe[1]|2:CORRection:GAIN2:STATe?	✔ ✔
SENSe[1]|2:CORRection:GAIN3:STATe SENSe[1]|2:CORRection:GAIN3:STATe?	✔ ✔
SENSe[1]|2:DETector:FUNCtion SENSe[1]|2:DETector:FUNCtion?	✔ ✔
SENSe[1]|2:FREQuency[:CW|:FIXed] SENSe[1]|2:FREQuency[:CW|:FIXed]?	✖ ✖
SENSe[1]|2:FREQuency[:CW|:FIXed]:STARt SENSe[1]|2:FREQuency[:CW|:FIXed]:STARt?	✖ ✖
SENSe[1]|2:FREQuency[:CW|:FIXEd]:STEP SENSe[1]|2:FREQuency[:CW|:FIXEd]:STEP?	✖ ✖
SENSe[1]|2:FREQuency[:CW|:FIXEd]:STOP SENSe[1]|2:FREQuency[:CW|:FIXEd]:STOP?	✖ ✖
SENSe[1]|2:MRATe SENSe[1]|2:MRATe?	See item 8
SENSe[1]|2:POWer:AC:RANGe SENSe[1]|2:POWer:AC:RANGe?	✔ ✔
SENSe[1]|2:POWer:AC:RANGe:AUTO SENSe[1]|2:POWer:AC:RANGe:AUTO?	✔ ✔
SENSe[1]|2:SWEep[1]|2|3|4:AUTO SENSe[1]|2:SWEep[1]|2|3|4:AUTO?	✖ ✖
SENSe[1]|2:SWEep[1]|2|3|4:AUTO:REF1|REF2 SENSe[1]|2:SWEep[1]|2|3|4:AUTO:REF1|REF2?	✖ ✖
SENSe[1]|2:SWEep[1]|2|3|4:OFFSet:TIME SENSe[1]|2:SWEep[1]|2|3|4:OFFSet:TIME?	✖ ✖
SENSe[1]|2:SWEep[1]|2|3|4:TIME SENSe[1]|2:SWEep[1]|2|3|4:TIME?	✖ ✖
SENSe[1]|2:TEMPerature?	✖
SENSe[1]|2:TRACe:AUToscale	✖
SENSe[1]|2:TRACe:LIMit:LOWer SENSe[1]|2:TRACe:LIMit:LOWer?	✖ ✖
SENSe[1]|2:TRACe:LIMit:UPPer SENSe[1]|2:TRACe:LIMit:UPPer?	✖ ✖
SENSe[1]|2:TRACe:OFFSet:TIME SENSe[1]|2:TRACe:OFFSet:TIME?	✖ ✖

Device-specific functions	
Command syntax	**Status**
SENSe[1]|2:TRACe:TIME	✘
SENSe[1]|2:TRACe:TIME?	✘
SENSe[1]|2:TRACe:UNIT	✘
SENSe[1]|2:TRACe:UNIT?	✘
SENSe[1]|2:TRACe:X:SCALe:PDIV	✘
SENSe[1]|2:TRACe:X:SCALe:PDIV?	✘
SENSe[1]|2:TRACe:Y:SCALe:PDIV	✘
SENSe[1]|2:TRACe:Y:SCALe:PDIV?	✘
SENSe[1]]|2:V2P	✘
SENSe[1]]|2:V2P?	✘
SERVice:BIST:CALibrator	✘
SERVice:BIST:CALibrator?	✘
SERVice:BIST:CW[1]|2:LINearity	✘
SERVice:BIST:CW[1]|2:LINearity?	✘
SERVice:BIST:CW[1]|2:LINearity:PERRor?	✘
SERVice:BIST:CW[1]|2:ZSET:NUMber?	✘
SERVice:BIST:PEAK[1]|2:LINearity	✘
SERVice:BIST:PEAK[1]|2:LINearity?	✘
SERVice:BIST:PEAK[1]|2:LINearity:PERRor?	✘
SERVice:BIST:PEAK[1]|2:ZSET	✘
SERVice:BIST:PEAK[1]|2:ZSET:NUMber?	✘
SERVice:BIST:TBASe:STATe	✘
SERVice:BIST:TBASe:STATe?	✘
SERVice:BIST:TRIGger:TEST?	✘
SERVice:CALibrator:ADJ:COUR	✘
SERVice:CALibrator:ADJ:COUR?	✘
SERVice:CALibrator:ADJ:FINE	✘
SERVice:CALibrator:ADJ:FINE?	✘
SERVice:LAN:PHOStname	✘
SERVice:OPTion	✔
SERVice:OPTion?	✔
SERVice:SECure:ERASe	✘
SERVice:SENSor[1]|2:CALFactor	✘
SERVice:SENSor[1]|2:CALFactor?	✘
SERVice:SENSor[1]|2:CDATe?	✘

Device-specific functions	
Command syntax	**Status**
SERVice:SENSor[1]|2:CORRections:STATe	✘
SERVice:SENSor[1]|2:CORRections:STATe?	✘
SERVice:SENSor[1]|2:CPLace?	✘
SERVice:SENSor[1]|2:FREQuency:MAXimum?	✘
SERVice:SENSor[1]|2:FREQuency:MINimum?	✘
SERVice:SENSor[1]|2:PCALfactor	✘
SERVice:SENSor[1]|2:PCALfactor?	✘
SERVice:SENSor[1]|2:POWer:AVERage:MAXimum?	✘
SERVice:SENSor[1]|2:POWer:PEAK:MAXimum?	✘
SERVice:SENSor[1]|2:POWer:USABle:MAXimum?	✔
SERVice:SENSor[1]|2:POWer:USABle:MINimum?	✔
SERVice:SENSor[1]|2:RADC?	✘
SERVice:SENSor[1]|2:SNUMber?	✘
SERVice:SENSor[1]|2:TNUMber?	✘
SERVice:SENSor[1]|2:TYPE?	✘
SERVice:SNUMber	✘
SERVice:SNUMber?	✔
SERVice:VERSion:PROCessor	✔
SERVice:VERSion:PROCessor?	✔
SERVice:VERSion:SYSTem	✔
SERVice:VERSion:SYSTem?	✔
STATus:DEVice:CONDition?	See item 5
STATus:DEVice:ENABle	See item 5
STATus:DEVice:ENABle?	
STATus:DEVice[:EVENt]?	See item 5
STATus:DEVice:NTRansition	See item 5
STATus:DEVice:NTRansition?	
STATus:DEVice:PTRansition	See item 5
STATus:DEVice:PTRansition?	
STATus:OPERation:CONDition?	✔
STATus:OPERation:ENABle	✔
STATus:OPERation:ENABle?	✔

Device-specific functions	
Command syntax	**Status**
`STATus:OPERation[:EVENt]?`	✔
`STATus:OPERation:NTRansition` `STATus:OPERation:NTRansition?`	✔ ✔
`STATus:OPERation:PTRansition` `STATus:OPERation:PTRansition?`	✔ ✔
`STATus:OPERation:CALibrating[:SUMMary]:CONDition?`	✔
`STATus:OPERation:CALibrating[:SUMMary]:ENABle` `STATus:OPERation:CALibrating[:SUMMary]:ENABle?`	✔ ✔
`STATus:OPERation:CALibrating[:SUMMary][:EVENt]?`	✔
`STATus:OPERation:CALibrating[:SUMMary]:NTRansition` `STATus:OPERation:CALibrating[:SUMMary]:NTRansition?`	✔ ✔
`STATus:OPERation:CALibrating[:SUMMary]:PTRansition` `STATus:OPERation:CALibrating[:SUMMary]:PTRansition?`	✔ ✔
`STATus:OPERation:LLFail[:SUMMary]:CONDition?`	See item 7
`STATus:OPERation:LLFail[:SUMMary]:ENABle` `STATus:OPERation:LLFail[:SUMMary]:ENABle?`	See item 7
`STATus:OPERation:LLFail[:SUMMary][:EVENt]?`	See item 7
`STATus:OPERation:LLFail[:SUMMary]:NTRansition` `STATus:OPERation:LLFail[:SUMMary]:NTRansition?`	See item 7
`STATus:OPERation:LLFail[:SUMMary]:PTRansition` `STATus:OPERation:LLFail[:SUMMary]:PTRansition?`	See item 7
`STATus:OPERation:MEASuring[:SUMMary]:CONDition?`	✔
`STATus:OPERation:MEASuring[:SUMMary]:ENABle` `STATus:OPERation:MEASuring[:SUMMary]:ENABle?`	✔ ✔
`STATus:OPERation:MEASuring[:SUMMary][:EVENt]?`	✔
`STATus:OPERation:MEASuring[:SUMMary]:NTRansition` `STATus:OPERation:MEASuring[:SUMMary]:NTRansition?`	✔ ✔
`STATus:OPERation:MEASuring[:SUMMary]:PTRansition` `STATus:OPERation:MEASuring[:SUMMary]:PTRansition?`	✔ ✔
`STATus:OPERation:SENSe[:SUMMary]:CONDition?`	✔
`STATus:OPERation:SENSe[:SUMMary]:ENABle` `STATus:OPERation:SENSe[:SUMMary]:ENABle?`	✔ ✔
`STATus:OPERation:SENSe[:SUMMary][:EVENt]?`	✔
`STATus:OPERation:SENSe[:SUMMary]:NTRansition` `STATus:OPERation:SENSe[:SUMMary]:NTRansition?`	✔ ✔

Device-specific functions	
Command syntax	**Status**
`STATus:OPERation:SENSe[:SUMMary]:PTRansition`	✔
`STATus:OPERation:SENSe[:SUMMary]:PTRansition?`	✔
`STATus:OPERation:TRIGger[:SUMMary]:CONDition?`	✔
`STATus:OPERation:TRIGger[:SUMMary]:ENABle`	✔
`STATus:OPERation:TRIGger[:SUMMary]:ENABle?`	✔
`STATus:OPERation:TRIGger[:SUMMary][:EVENt]?`	✔
`STATus:OPERation:TRIGger[:SUMMary]:NTRansition`	✔
`STATus:OPERation:TRIGger[:SUMMary]:NTRansition?`	✔
`STATus:OPERation:TRIGger[:SUMMary]:PTRansition`	✔
`STATus:OPERation:TRIGger[:SUMMary]:PTRansition?`	✔
`STATus:OPERation:ULFail[:SUMMary]:CONDition?`	See item 7
`STATus:OPERation:ULFail[:SUMMary]:ENABle`	See item 7
`STATus:OPERation:ULFail[:SUMMary]:ENABle?`	
`STATus:OPERation:ULFail[:SUMMary][:EVENt]?`	See item 7
`STATus:OPERation:ULFail[:SUMMary]:NTRansition`	See item 7
`STATus:OPERation:ULFail[:SUMMary]:NTRansition?`	
`STATus:OPERation:ULFail[:SUMMary]:PTRansition`	See item 7
`STATus:OPERation:ULFail[:SUMMary]:PTRansition?`	
`STATus:PRESet`	✔
`STATus:QUEStionable:CONDition?`	✔
`STATus:QUEStionable:ENABle`	✔
`STATus:QUEStionable:ENABle?`	✔
`STATus:QUEStionable[:EVENt]?`	✔
`STATus:QUEStionable:NTRansition`	✔
`STATus:QUEStionable:NTRansition?`	✔
`STATus:QUEStionable:PTRansition`	✔
`STATus:QUEStionable:PTRansition?`	✔
`STATus:QUEStionable:CALibration[:SUMMary]:CONDition?`	✔
`STATus:QUEStionable:CALibration[:SUMMary]:ENABle`	✔
`STATus:QUEStionable:CALibration[:SUMMary]:ENABle?`	✔
`STATus:QUEStionable:CALibration[:SUMMary][:EVENt]?`	✔
`STATus:QUEStionable:CALibration[:SUMMary]:NTRansition`	✔
`STATus:QUEStionable:CALibration[:SUMMary]:NTRansition?`	✔
`STATus:QUEStionable:CALibration[:SUMMary]:PTRansition`	✔
`STATus:QUEStionable:CALibration[:SUMMary]:PTRansition?`	✔
`STATus:QUEStionable:POWer[:SUMMary]:CONDition?`	See item 6

Device-specific functions	
Command syntax	**Status**
`STATus:QUEStionable:POWer[:SUMMary]:ENABle` `STATus:QUEStionable:POWer[:SUMMary]:ENABle?`	See item 6
`STATus:QUEStionable:POWer[:SUMMary][:EVENt]?`	See item 6
`STATus:QUEStionable:POWer[:SUMMary]:NTRansition` `STATus:QUEStionable:POWer[:SUMMary]:NTRansition?`	See item 6
`STATus:QUEStionable:POWer[:SUMMary]:PTRansition` `STATus:QUEStionable:POWer[:SUMMary]:PTRansition?`	See item 6
`SYSTem:COMMunicate:GPIB[:SELF]:ADDRess` `SYSTem:COMMunicate:GPIB[:SELF]:ADDRess?`	✓ ✓
`SYSTem:COMMunicate:LAN:AIP[:STATe]` `SYSTem:COMMunicate:LAN:AIP[:STATe]?`	✗ ✗
`SYSTem:COMMunicate:LAN:ADDRess` `SYSTem:COMMunicate:LAN:ADDRess?`	✗ ✓
`SYSTem:COMMunicate:LAN:CURRent:ADDRess?`	✓
`SYSTem:COMMunicate:LAN:CURRent:DGATeway?`	✓
`SYSTem:COMMunicate:LAN:CURRent:DNAMe?`	✗
`SYSTem:COMMunicate:LAN:CURRent:SMASk?`	✓
`SYSTem:COMMunicate:LAN:DGATeway` `SYSTem:COMMunicate:LAN:DGATeway?`	✗ ✓
`SYSTem:COMMunicate:LAN:DHCP[:STATe]` `SYSTem:COMMunicate:LAN:DHCP[:STATe]?`	✗ ✓
`SYSTem:COMMunicate:LAN:DNAMe` `SYSTem:COMMunicate:LAN:DNAMe?`	✗ ✗
`SYSTem:COMMunicate:LAN:HNAMe` `SYSTem:COMMunicate:LAN:HNAMe?`	✗ ✗
`SYSTem:COMMunicate:LAN:MAC?`	✓
`SYSTem:COMMunicate:LAN:RESTart`	✗
`SYSTem:COMMunicate:LAN:SMASk` `SYSTem:COMMunicate:LAN:SMASk?`	✗ ✓
`SYSTem:DISPlay:BMP?`	✓
`SYSTem:ERRor?`	See item 3
`SYSTem:HELP:HEADers?`	✗
`SYSTem:LOCal`	✓
`SYSTem:PRESet`	See item 4
`SYSTem:REBoot`	+

Device-specific functions	
Command syntax	**Status**
SYSTem:REMote	✓
SYSTem:RWLock	✓
SYSTem:VERSion?	See item 3
TRACe[1]|2[:DATA]?	✗
TRACe[1]|2:DEFine:DURation:REFerence	✗
TRACe[1]|2:DEFine:DURation:REFerence?	✗
TRACe[1]|2:DEFine:TRANsition:REFerence	✗
TRACe[1]|2:DEFine:TRANsition:REFerence?	✗
TRACe[1]|2:MEASurement:INSTant:REFerence?	✗
TRACe[1]|2:MEASurement:PULSe[1]|...|10:DCYCle?	✗
TRACe[1]|2:MEASurement:PULSe[1]|...|10:DURation?	✗
TRACe[1]|2:MEASurement:PULSe[1]|...|10:PERiod?	✗
TRACe[1]|2:MEASurement:PULSe[1]|...|10:SEParation?	✗
TRACe[1]|2:MEASurement:TRANsition[1]|...|10:NEGative:DURation?	✗
TRACe[1]|2:MEASurement:TRANsition[1]|...|10:NEGative:OCCurrence?	✗
TRACe[1]|2:MEASurement:TRANsition[1]|...|10:POSitive:DURation?	✗
TRACe[1]|2:MEASurement:TRANsition[1]|...|10:POSitive:OCCurrence?	✗
TRACe[1]|2:MEASurement:REFerence?	✗
TRACe[1]|2:STATe	✗
TRACe[1]|2:STATe?	✗
TRACe[1]|2:UNIT	✗
TRACe[1]|2:UNIT?	✗
TRIGger[1]|2:COUNt	+
TRIGger[1]|2:COUNt?	+
TRIGger[1]|2:DELay	+
TRIGger[1]|2:DELay?	+
TRIGger[1]|2:DELay:AUTO	✓
TRIGger[1]|2:DELay:AUTO?	✓
TRIGger[1]|2[:IMMediate]	✓
TRIGger[:SEQuence[1]|2]:COUNt	✓
TRIGger[:SEQuence[1]|2]:COUNt?	✓
TRIGger[:SEQuence[1]|2]:DELay	✓
TRIGger[:SEQuence[1]|2]:DELay?	✓
TRIGger[:SEQuence[1]|2]:DELay:AUTO	✓
TRIGger[:SEQuence[1]|2]:DELay:AUTO?	✓

Device-specific functions	
Command syntax	**Status**
`TRIGger[:SEQuence[1]|2]:HOLDoff`	✔
`TRIGger[:SEQuence[1]|2]:HOLDoff?`	✔
`TRIGger[:SEQuence[1]|2]:HYSTeresis`	✔
`TRIGger[:SEQuence[1]|2]:HYSTeresis?`	✔
`TRIGger[:SEQuence[1]|2]:IMMediate`	✔
`TRIGger[:SEQuence[1]|2]:LEVel`	✔
`TRIGger[:SEQuence[1]|2]:LEVel?`	✔
`TRIGger[:SEQuence[1]|2]:LEVel:AUTO`	✘
`TRIGger[:SEQuence[1]|2]:LEVel:AUTO?`	✘
`TRIGger[:SEQuence[1]|2]:SLOPe`	✔
`TRIGger[:SEQuence[1]|2]:SLOPe?`	✔
`TRIGger[:SEQuence[1]|2]:SOURce`	See item 2
`TRIGger[:SEQuence[1]|2]:SOURce?`	
`TRIGger[1]|2:SOURce`	See item 2
`TRIGger[1]|2:SOURce?`	
`UNIT[1]|2|3|4:POWer`	✔
`UNIT[1]|2|3|4:POWer?`	✔
`UNIT[1]|2|3|4:POWer:RATio`	✔
`UNIT[1]|2|3|4:POWer:RATio?`	✔

13.3 Differences between the Emulated Instrument and the NRP2

The following table lists all remaining differences in command and/or parameter implementation. These differences have to be taken into consideration, since they may lead to necessary modifications of application code parts.

Details	
Item	**Comment**
1	Response at N1911A is "Agilent Technologies, N1911A,MY< serialnumber>,A1.05.04" Response at N1912A is "Agilent Technologies, N1912A,MY< serialnumber>,A2.05.04"
2	Parameter values INTernal[1] and INTernal2 are not supported.
3	Response data is not mapped to N1911A/N1912A response data range.
4	Parameters other than DEFault are currently not supported.
5	Bits 3 (channel A sensor error) and 4 (channel B sensor error) are not supported.
6	Bits 3 (upper window power), 4 (lower window power), 5 (channel A please zero), 6 (channel B please zero), 7 (upper window lower measurement power) and 8 (lower window lower measurement power) are not supported.
7	Bits 1 (channel A UL or LL fail status), 2 (channel B UL or LL fail status), 5 (upper window lower measurement power UL or LL fail status) and 6 (lower window lower measurement power UL or LL fail status) are not supported.
8	Parameter value FAST is not supported.
9	NRP-Zxx sensors are factory calibrated, calibration during normal operation is superseded. Zeroing is executed, calibrating is simulated by a delay of 1 s.
10	NRP-Zxx sensors are factory calibrated, calibration during normal operation is superseded. Calibrating is simulated by a delay of 1 s.
11	Parameter values "(SENS1-SENS1)", "(SENS1/SENS1)", "(SENS2-SENS2)" and "(SENS2/SENS2)" are currently not supported.
12	Parameter/response value is OFF in all cases.
13	Parameter/response value is 0 dB in all cases.
14	Parameter values "POW:PTAV", "POW:MIN" are not supported.

14 References

[1]   Rohde & Schwarz, R&S®NRP2 Power Meter User Manual

15 Additional Information

This application note is updated from time to time. Please visit the following website in order to download the latest version:

Application Notes R&S®NRP2 Power Meter

16 Ordering Information

Please visit the following website for comprehensive ordering information about the NRP2:

Ordering Information R&S®NRP2 Power Meter

R&S®NRP2	**Power Meter**	1144.1374.02
R&S®NRP-B1	Sensor Check Source	1146.9008.02
R&S®NRP-B2	Second Sensor Input (B)	1146.8801.02
R&S®NRP-B5	3rd and 4th Sensor Inputs (C, D)	1146.9608.02
R&S®NRP-B6	Rear-panel Sensor Inputs A and B	1146.9908.02

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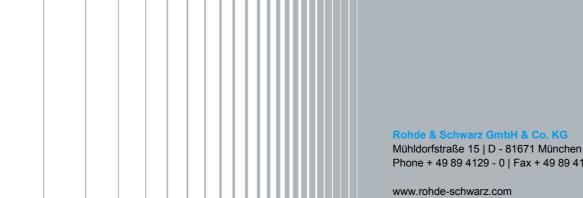
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