R&S® NRPxxS(N)
3 Path Diode Power Sensors
Release Notes
Firmware Version 02.20.20100902

81671 Munich, Germany
Printed in Germany – Subject to change – Data without tolerance limits is not binding.

The following abbreviations are used throughout this document:
R&S®NRPxxS(N) is abbreviated as R&S NRPxxS(N).

Test and Measurement

Release Notes

Table of Contents

1 Information on the Current Version and History

1.1 Version 02.20.20100902

Released: October, 2020

New Functionality

- none.

Fixed Issues

- Triggered measurements in ContAv mode with positive trigger delay values.

1.2 Version 02.10.20051901

Released: June, 2020

New Functionality

- none.

Fixed Issues

- NRX compatible buffered mode.

1.3 Version 02.00.20021703

Released: February, 2020

New Functionality

- Continuous average measurements in buffered mode can process up to 100000 measurements per second while using internal or external trigger endlessly.
- Enhanced sensor-sanitizing feature.
- NRX base unit can control LAN capable sensors via network protocol.

Fixed Issues

- Auxiliary values (MIN and MAX) made available for auto triggered trace measurements (TRIGger:ATRIgger:STATe ON).
- Burst measurement with a burst repetition rate between app. 5s until 9s now triggers for each burst.
- Selecting external reference clock reference without clock applied does no longer stop sensor accessibility.

1.4 Version 18.06.14.10

Released: June, 2019

New Functionality

- none

Fixed Issues

- RTC 483169 / QDS #442835805: NRP Sensor not accessible after power cycle

1.5 Version 18.06.14.01

Released: July, 2018

New Functionality

- Enhanced sensor sanitising feature.

Fixed Issues

- none

1.6 Version 17.11.27.03

Released: December, 2017

New Functionality

- none

Fixed Issues

- Continuously opening and closing sensor communication via LAN at a certain points leads to inaccessibility of the sensor.
- *RCL on a not previously stored parameter set returns no error code

Known Bugs

- None

1.7 Version 17.06.27.06

- **Released: July, 2017**
- **New Functionality**
  - SYSTem:PRESet implemented: Resets all parameters but not INIT:CONT, SENSe:AVERage:TCONtrol and SENSe:TRACe:AVERage:TCONtrol
  - Trace output provides up to 100000 points instead of 8192.
    (Not available in NRP legacy USB mode and via NRP2)
  - Support of sanitizing according to "Manual for the Certification and Accreditation of Classified Systems under the NISPOM"
  - Remote control is provided for LED blinking sequence in addition to LED color
- **Fixed Issues**
  - Averaging with single triggered measurements now works reliable also with moving filter setting (SENSe:AVERage:TCONtrol MOVing)
  - Sensor instability fixed when using the integrated web interface in parallel to a Visa viLock()
- **Known Bugs**
  - None

1.8 Version 16.05.13.02

Released: May, 2016

New Functionality

- none

Fixed Issues

- Solved false reporting of errors that have been already cleared
- Critical measurement speed issue solved
- Trigger delay support for continuous average mode

Known Bugs

- None

1.9 Version 16.03.22.01

Released: March, 2016

New Functionality

- The maximum number of slots was increased from 32 to 128 in timeslot mode
- LAN Sensor web interface: improved compatibility with Internet Explorer

Fixed Issues

- Fixed result error when using moving average and fast mode together
- Autotrigger indication is now reset safely when resetting or aborting measurements
- Detection of sensor plug location works correctly on SMW and SMBV signal generators

Known Bugs

- Trigger delay is not supported for continuous average mode

1.10 Version 15.12.10.01

Released: December, 2015

New Functionality

- Static error queue replaces static error momentary output
  New commands SYSTem:SERRor:LIST? and SYSTem:SERRor:LIST:ALL?

Fixed Issues

- Queries for enum parameters return the short form
- Download of new sensor calibration while measuring fixed
- False overload notification when plugging a sensor to NRP2 fixed
- Change of measuring mode immediately after fetch? does no longer lead to an unexpected behaviour

1.11 Version 15.10.27.01

Released: October, 2015

New Functionality

- Auto trigger delay time configurable with TRIGger:ATRigger:DELay command: The auto trigger function starts a single measurment in triggered modes if no regular trigger occurred since. This former fixed 300ms time is now configurable in a range from 0.1s to 5s

Fixed Issues

- Built in Web GUI:
  - Rounding errors at parameter borders lead to rejections of setting to limits
  - Improved compatibility with different browsers
- SCPI status system: Corrections of behaviour in some special trigger cases

1.12 Version 15.07.02.01

Released: July, 2015

New Functionality

- Built in Web GUI: Firmware update support
  Note: Updating for this version still requires using the firmware download from the Toolkit. Just the next firmware can be downloaded via Web GUI

Fixed Issues 15.07.02.01

- Improved compatibitly with NRP2
- Improved interworking with sensors of previous generation while connected to same host
- Fixed an incorrect state change sequence in buffered mode when using legacy USB interface
- Built in Web GUI: Radio buttons now visible in Opera Browser 27.0
- Parameter reset while changing interfaces done correctly
- Built in Web GUI: Rounding errors at parameter borders lead to rejections of setting to limits

1.13 Version 15.03.13.03

Released: March, 2015

New Functionality

- Built in Web GUI: Sensor name can be set independantly from network hostname to identify the sensor
- R&S NRPxS(N) are now supported by R&S SMW at front panel and back side USB connectors

Fixed Issues

- Buffered mode: Enhanced stabilitiy in some complex use cases
- Burst Mode: Duty cycle does no longer affect measured values
- Built in Web GUI: Corrected issue that some activities required two mouse clicks
- Built in Web GUI: Support of external trigger on EXT1 and EXT2
- S-parameter correction: correct handling with built in web client and after downloading new sets
- Auto Averaging: Corrected behaviour of auto averaging when using trigger modes EXT1/2, BUS or INTernal
- Correct XML style formatting of the device footprint (SERVice:DFPRint? command)
- Text outputs: Line termination is LF in SCPI modes, CR/LF in legacy USB mode

2 Firmware Update

2.1 Installation of New Firmware

Use the Firmware Update from NRP-Toolkit to load new firmware for the power sensors. The R&S NRP-Toolkit is supplied on a CD-ROM together with the power sensors. The toolkit also can be downloaded from the R&S web pages.

The most recent NRPxxS(N) firmware versions can be downloaded from the R&S homepage on the Internet, since the CD ROM accompanying the power sensors contains the firmware status at the time of delivery.

2.2 Hardware and Software Requirements

The system requirements to perform a firmware update are as follows:

- PC with USB and NRP-ZKU
- Alternatively LAN connection to a LAN capable sensor
- Operating system Windows™ 7 or Windows™ 8
- VISA software must be installed on your PC:
  Recommended versions: NI Visa V5.3 or Agilent Visa V16.3 or later versions
- The R&S NRP-Toolkit software (Version 4.6 or later) must be installed on your PC. The Firmware Update is part of the NRP-Toolkit
- A Rohde & Schwarz update file (*.rsu) for the sensor must be available

The update files are available in https://www.rohde-schwarz.com/en/firmware/nrp_s_sn

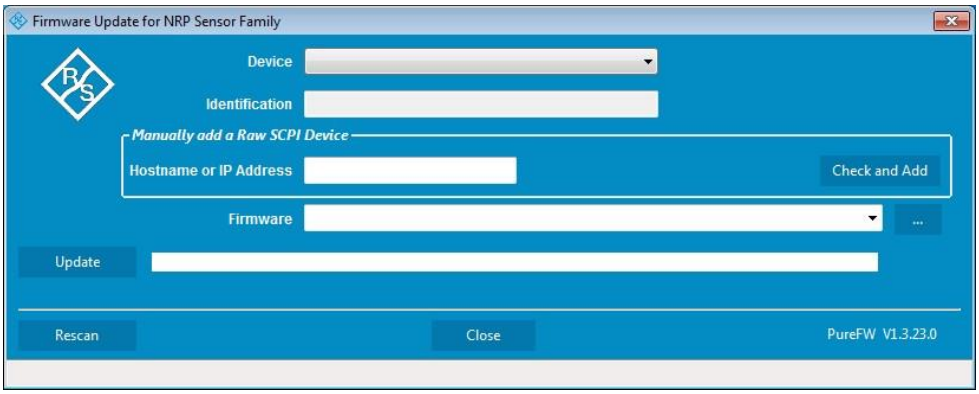
2.3 Preparation

1. Make sure a VISA software is installed. Firmware update with Firmware Update can only be performed with the device recognized as a VISA device.
2. Make sure that a version of NRP Toolkit later than 4.6 is installed.
3. Connect the power sensor to the PC using an NRP-ZKU interface cable. Shortly afterwards, the PC should have identified the new USB hardware.

2.4 Updating the Application Firmware

To perform a firmware update:

1. Start the Firmware Update program via "Start menu > NRP-Toolkit > Firmware Update". The following window should appear:



   The program automatically starts scanning for R&S NRPxxS(N) power sensors. When the scan is completed, all recognized power sensors are listed in the "Device" dropdown control.

2. If the sensor you want to update is not listed in the "Device" dropdown control, perform one of the following:

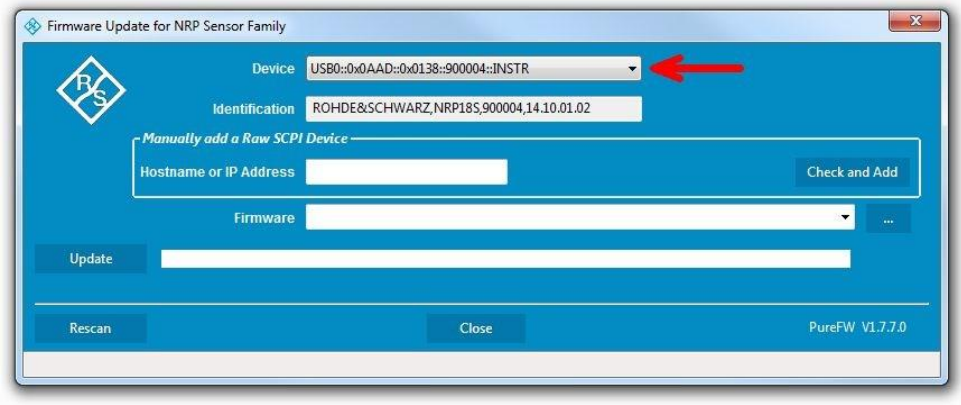
   a) Press "Rescan" to search for attached sensors.

   Enter the hostname or the IP address of the power sensor which is to be used in the field "Manually add a Raw SCPI Device" and then press "Check and Add" or Enter.

   The program searches for the specified power sensor on the network and adds it to the "Device" list.

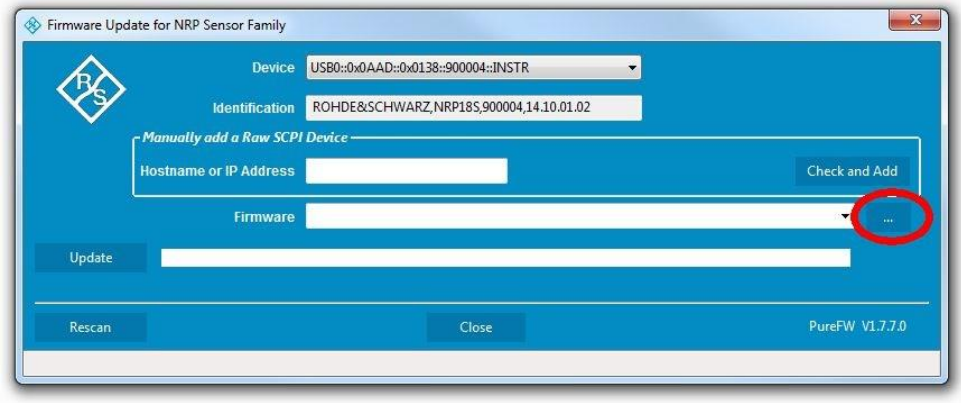
   b) Check whether all necessary drivers are installed on the computer.For example, if VISA library is not installed on the computer, no VISA power sensor will be accessible.

3. In the "Device" line select the sensor you want to update.

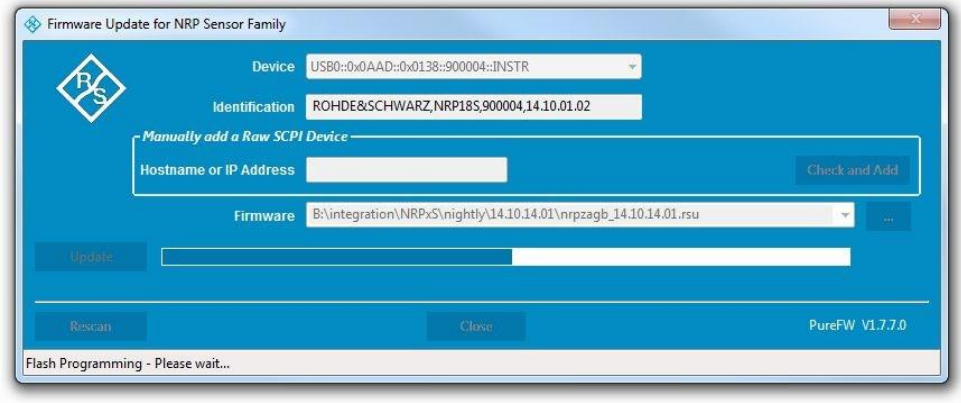


The "Hostname or IP Address" field is not used during this procedure and should therefore be left empty.

4. In the "Firmware" field enter the full path and file name of the update file or press the ellipsis button to browse the file system for it. New firmware for the R&S NRPxxS(N) power sensors generally has an *.rsu (Rohde & Schwarz Update) extension.

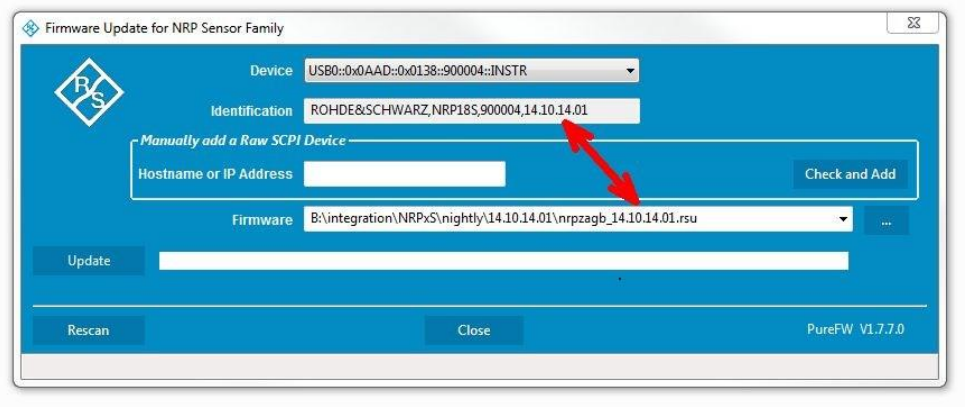


5. Click on the "Update" button to download the new firmware and program it into the flash memory of the sensor.



During the update process the progress is shown through a progress bar. The update sequence may take a couple of minutes, depending on the sensor model and the size of the selected file.

6. Check if the update was successful. This is the case if the firmware version in the "Identification" field is the same as the one you loaded in the "Firmware" field.



Potential damage to the firmware of the device

Disconnecting the power supply while an update is in progress may lead to missing or faulty firmware.

Special care must be taken on not disconnecting the power supply while the update is in progress. Interrupting the power supply during the firmware update will most likely lead to an unusable device which needs to be sent in for maintenance.

3 Customer Support

Technical support – where and when you need it

For quick, expert help with any Rohde & Schwarz equipment, contact one of our Customer Support Centers. A team of highly qualified engineers provides telephone support and will work with you to find a solution to your query on any aspect of the operation, programming or applications of Rohde & Schwarz equipment.

Up-to-date information and upgrades

To keep your instrument up-to-date and to be informed about new application notes related to your instrument, please send an e-mail to the Customer Support Center stating your instrument and your wish. We will take care that you will get the right information.

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