Firmware Release 6.01

for the Power Meter R&S NRP

Contents

Windows is a registered trademark of Microsoft Corp.

1. Important Notes

This package contains the firmware for the power meter R&S NRP consisting of three files: application firmware, boot loader and keyboard controller. All three files have to be installed to get the latest functionality. However, you don't need to install a file, if it is already installed. The firmware release 6.01 fits for all instruments already delivered. New firmware for sensors is contained within a separate package.

> *Please make sure, that you install the following file versions, if they are not already installed (System → System Info):*
>
> *Application Firmware: 6.01 (nrpt_06.01.nrp)*
>
> *Boot Loader: 5.01 (openbios_05.01.nrp)*
>
> *Keyboard Controller: 3.22 (keyb_03.22.nrp)*
>
> *Otherwise, problems could occur while using the instrument.*

2. Installation Software

Use the Firmware Update program module from the R&S NRP toolkit to load the new firmware for the R&S NRP. The toolkit is supplied on a CD-ROM together with the sensors. It is also available on the internet under http://www.rohde-schwarz.com/product/nrp.

3. Prerequisites concerning the PC

A 32-bit-WINDOWS operating system with USB support (WINDOWS 98SE/ME/2000/XP) must be installed. For the update process, one free USB port has to be available. The R&S NRP toolkit needs about 10 MByte of free space on the hard disk and must be installed prior to the update process.
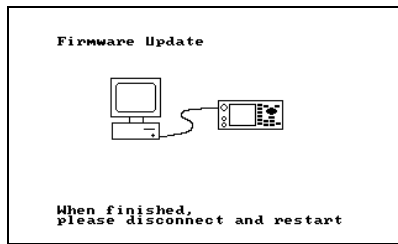
4. Connection between PC and R&S NRP

For the connection between the PC and the R&S NRP, use a standard USB cable.

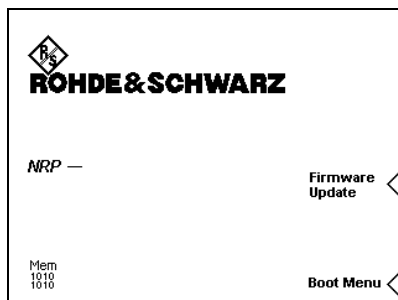## 5. Procedure of a firmware update

- Preparation
  Install the R&S NRP toolkit software prior to operation of the instrument.

- Connection
  - ✓ Connect the R&S NRP to the PC by means of the USB cable.
  - ✓ Make sure that the R&S NRP is AC powered during the update process. Switch the R&S NRP off.
  - ✓ Unplug any other R&S NRP base unit or R&S NRP power sensor from the PC.

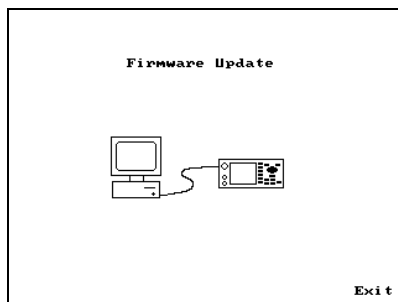Start of the update procedure from a firmware version prior to version 3.01:

- ✓ Switch on the R&S NRP. The picture opposite appears on the display after a short time.

- ✓ In addition, the PC should have identified the new USB hardware and assigned the appropriate driver from the R&S NRP Toolkit to the R&S NRP (brief message in a small window).

Start of the update procedure from a firmware version 3.01 or later:

- ✓ Switch on the R&S NRP. The boot menu appears on the display only for a short time (2 sec.) before it continues with the normal start-up process.

- ✓ To switch to the Firmware Update mode, the soft key "Firmware Update" in the boot menu has to be pushed.

- ✓ While the Firmware Update mode is active, the picture opposite can be seen on the display.
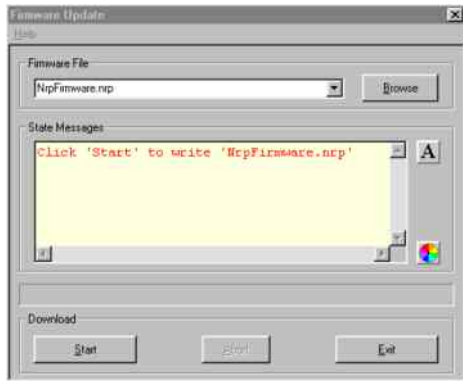
If you forgot to install the R&S NRP Toolkit software beforehand, Windows will try in vain to find a USB driver for the R&S NRP. If this happens, the R&S NRP is highlighted by a yellow exclamation mark in the Windows device manager. In this case, proceed as follows:

➢ *Abort the dialog for driver installation.*

➢ *Install the R&S NRP Toolkit from the CD-ROM.*
Then manually assign the USB driver from the toolkit to the R&S NRP.

➢ *Go to Control Panel – Add/Remove Hardware and start the hardware assistant to search for new components.*

➢ *Mark the R&S NRP in the list of hardware components and complete the driver installation.*

➢ *Switch off the R&S NRP and back on.*
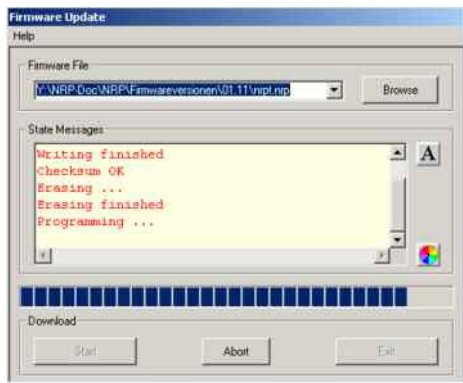
- Updating the application firmware

✓ Start **NRP Toolkit – Firmware Update** from the Windows Start menu.

The dialog box on the left is displayed next.

✓ Search for the file named `nrpt_06.01.nrp` by using the **Browse** button or enter the file name and the file path of the application firmware in the **Firmware File** box

✓ Click the **Start** button to start the file transfer, which is performed automatically.

✓ During the update, the State Messages box informs you of the progress. The update has been completed if the message '`Flashup successfully finished`' appears.

✓ Then disconnect the R&S NRP from the PC and press the exit button or switch it off and back on.

Potential problems

✗ *Error in the compatibility and consistency checks*

In this case, the update is aborted and an error message is output.

✓ *Switch the R&S NRP off and back on and start the update again.*

- Updating the boot loader

  ✓ The latest version of the boot loader is 5.01. You may skip this step if your boot loader is already up to date. In this case proceed with "Updating the firmware for the keyboard controller".

openbios_xx_xx.nrp

  The boot loader update is similar to the update of the application firmware (see above).

  ✓ Instead of the application, however, you must load the new boot loader named

  `openbios_05.01.nrp`

- Updating the firmware for the keyboard controller

keyb_xx_xx.nrp

  This update is similar to the update of the application firmware (see above).

  ✓ Instead of the application, however, you must load the new controller firmware named

  `keyb_03.22.nrp`

  Attention!

  At the end of the update process of the keyboard controller, the R&S NRP goes into the standby state and has to be switched on again manually. This is not an error.

6. New and modified Functions

- The NRP now supports statistics modes (e.g. for Z81 sensors).

Remote control

- Chopper-commands are not supported any more.
- [sense$i4$]:statistics:average?
- [sense$i4$]:statistics:mid:offset[:time][?]
- [sense$i4$]:statistics:mid:time[?]
- [sense$i4$]:statistics:offset[:time][?]
- [sense$i4$]:statistics:samples[:minimum][?]
- [sense$i4$]:statistics:scale:x:mpwidth?
- [sense$i4$]:statistics:scale:x:points[?]
- [sense$i4$]:statistics:scale:x:range[?]
- [sense$i4$]:statistics:scale:x:rlevel[?]
- [sense$i4$]:statistics:time[?]
- calculate$i4$:statistics:marker:horizontal:data?
- calculate$i4$:statistics:marker:horizontal:position[:x][:power][?]
- calculate$i4$:statistics:marker:vertical:data[:power]?
- calculate$i4$:statistics:marker:vertical:position[:y][?]
- calculate$i8$:statistics:power:avg:data?

7. Problems Eliminated

- AutoFilter didn't work.
- Setting status-bit for "Sensor Front/Rear" corrected.
- When operating with EOI (remote control), the last character was deleted.
- The resolution setting was inconsistent with the number of shown digits.
- *RCL didn't work in timegate mode.
- In some cases the writing "Pk/Av" was not displayed.
- Selection of gates was not always possible.
- Default for AuxValues now is "Normal".
- In "Dig" window mode sometimes a wrong gate was shown.
- Horizontal scaling in trace mode sometimes skipped values.
- Minum unit for marker positions is now ns.
- The NRP stopped booting with a white screen, when DHCP was active and a sensor was connected.

8. Known problems

Remote control

- USBTMC: The RQS/MSS-Bit is not compliant to the IEEE 488.2 standard.
- USBTMC: The driver doesn't work reliably. When USBTMC is used, the connection sometimes breaks down.

9. Modifications to the Operating Manual and Supplements

Yes.

Appendix: Contact to our hotline

Any questions and ideas concerning the instrument are welcome to our hotline:

    Phone: ++49-1805-124242

    FAX: ++49-89-4129-13777

    e-mail: CustomerSupport@rsd.rohde-schwarz.com