

How to use the R&S®NRP-Z Instrument Drivers

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Installation of the instrument driver

The driver requires the NRP-Tool Kit Revision 2.1.x or higher. The Tool Kit installs the Windows (7, VISTA, XP) USB drivers. Please install the Tool Kit before connecting the instrument.

Download the Tool Kit from:

http://www.rohde-schwarz.com/product/nrp_sensors/downloads_tool.html

The VXIplug&play LabVIEW instrument driver also installs the tool **ChannelAssignment.exe**.

Instrument Address Descriptor

The syntax for the Instrument Descriptor is following:
USB::<vendor Id>::<product Id>::<serial number>

where <vendor Id> is 0aad for Rohde&Schwarz

<product Id> depends on the sensor

NRP-Z21 : 0x0003
NRP-FU : 0x0004
FSH-Z1 : 0x000b
NRP-Z11 : 0x000c
NRP-Z22 : 0x0013
NRP-Z23 : 0x0014
NRP-Z24 : 0x0015
NRP-Z51 : 0x0016
NRP-Z52 : 0x0017
NRP-Z55 : 0x0018
NRP-Z56 : 0x0019
FSH-Z18 : 0x001a
NRP-Z91 : 0x0021
NRP-Z81 : 0x0023
NRP-Z31 : 0x002c
NRP-Z37 : 0x002d
NRP-Z96 : 0x002e
NRP-Z27 : 0x002f
NRP-Z28 : 0x0051
NRP-Z98 : 0x0052
NRP-Z92 : 0x0062
NRP-Z57 : 0x0070
NRP-Z85 : 0x0083
NRP-Z86 : 0x0095
NRP-Z211 : 0x00a6
NRP-Z221 : 0x00a7

<serial number> you can find on your sensor. Serial number is number with 6 digits. For example 900003

Examples: "USB::0x0aad::0x000b::100000"

You can use "*" for product id or serial number. We suggest full resource descriptor, when you have connected more sensor. You can use star, when one sensor is connected.

Examples: "USB::0x0aad::0x000b::*" - Opens first FSH-Z1 sensor on the BUS.
"USB::0x0aad::*" - Opens first R&S sensor on the BUS.
"*" - Opens first R&S sensor on the BUS.

Note:

One instance of the driver is allowed for one process. If you initialize two sessions you close only one session successfully and rsnrpz_close for second session make memory leak. If you want work with more sensors use function rsnrpz_AddSensor which attach sensor to specified channel. rsnrpz_init attach sensor to channel 1.

Sensor Identification and Logical Names

For easy identifications sensors on the USB bus use the Channel Assignment application, which is distributed with the driver and found in the rsnrpz driver directory as **ChannelAssignment.exe**.

The driver supports logical names. You can pass the logical name instead of the instrument descriptor. For example: "sensor1" instead of "USB::0xaad::0x000b::100000". Logical names can be configured with the Channel Assignment application.

Programming Guide

In order to get started with the NRP-Z sensor programming it is recommended to refer to the Power Viewer Plus Help. Useful programming hints can be found in the chapter "Programming Guide".

LabVIEW

Use this driver as a standard LabVIEW driver

In order to use this driver as a standard LabVIEW driver, please copy the contents of ~\VXIplug&play\GWinNt\rsnrpz directory into your LabVIEW directory (~\LabVIEW\instr.lib\rsnrpz\). The driver will then be directly accessible from the LabVIEW Instrument Driver function palette menu.

Additional Help

In addition, the instrument driver documentation is included in compressed HTML format (Windows CHM help file) stored together with the LabVIEW driver sources.

Each VI's help is linked to the section in the "CHM" file that describes all the features of the VI.

- **LabVIEW 8.2** and higher an additional help topic can be accessed directly by pressing "[Click here for more help](#)" in the Context Help

LabWindows/CVI

The driver requires the NRP-Tool Kit Revision 1.80 or higher. The tool kit installs the Windows VISTA, XP, 2000) USB drivers. Please install the Tool Kit before connecting the instrument.

Download the Tool Kit from:

http://www.rohde-schwarz.com/product/nrp_sensors/downloads_tool.html

To use the LabWindows/CVI driver it is necessary to install the NRP-Tool Kit first.

Additional Help

The LabWindows/CVI instrument driver consists of a ZIP archive containing the driver sources. In addition, the instrument driver documentation is also included in compressed HTML format (Windows CHM help file) and stored together with the driver sources.

VXIplug&play Instrument Driver

C#

A wrapper is necessary to enable a direct access to the driver DLL.
The rsnrpz.cs wrapper for C# is automatically installed in the ~VXIplug&play\WinNt\include directory.

Visual Basic .NET

A wrapper is necessary to enable a direct access to the driver DLL.
The rsnrpz.vb wrapper for .NET is automatically installed in the ~VXIplug&play\WinNt\include directory.

Additional Help

In addition, the instrument driver documentation is also included in compressed HTML format (Windows CHM help file) and stored together with the driver sources in the ~VXIplug&play\WinNT\rsnrpz directory.

Additional Information

For more information regarding the VXIplug&play instrument drivers, please read the readme.txt file that comes with each driver.

Linux

Drivers for Linux are available - Please contact Rohde & Schwarz Customer Support Center

Troubleshooting Checklist for Problems Related to USB

Software

- Use Windows operation system with newest available service pack
- Use actual version of NRP Toolkit software (available at http://www.rohde-schwarz.com/product/nrp_sensors/downloads_tool.html).
- Use actual remote control driver (available at http://www.rohde-schwarz.com/product/nrp_sensors/downloads_drivers.html).
- If you use self written software, always use the "rsnrpz_close"-command at the program's end.

Hardware

- Use only Highspeed Hubs 2.0 with own power supply.

- Disconnect power supply when switching off the computer. Connect power supply before starting Windows.
- Do not extend USB cables (NRB-Z cable + trigger cable + USB extension cable) beyond a total length of 5 meters
- Do not cascade hubs unnecessarily.
- Use only connection cables of Highspeed USB 2.0 hubs or those with Logo:

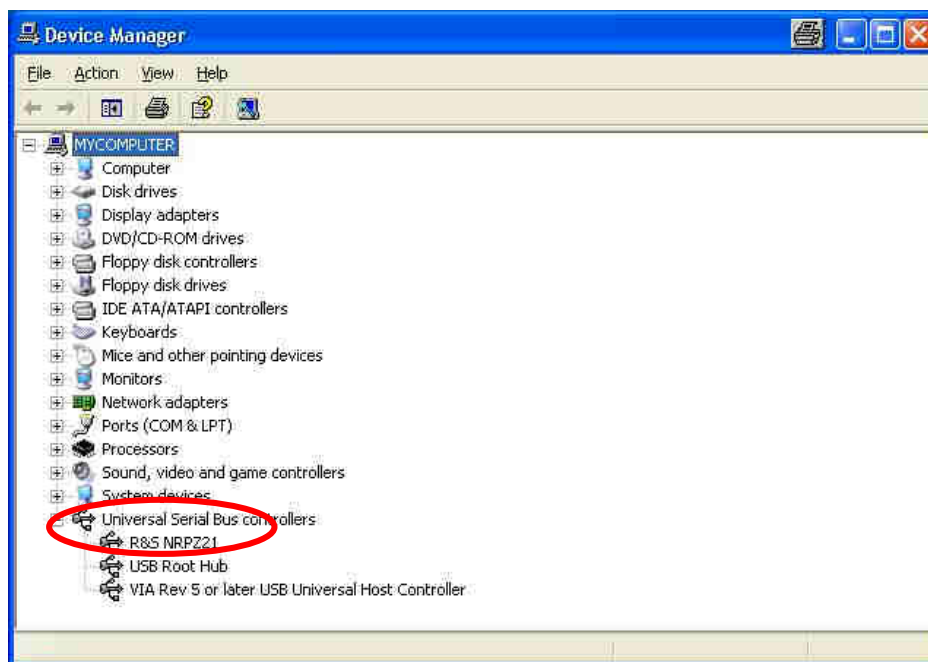


- Check firmware version of NRP-Z sensors
http://www.rohde-schwarz.com/product/nrp_sensors/downloads_firmware.html).
- Exchange hub if all points above are fulfilled without success.

How to check a properly working NRV-Zxx

Select START/SETTINGS/CONTROL PANEL/SYSTEM/DEVICE MANAGER:

A properly working NRP-Zxx has to be identified by the computer like this:



If instead of a detected R&S NRPZxx a unknown device is shown, please check again carefully all the points of the check list.

