

How to use the R&S[®] NRP-Z Power Sensor drivers

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Installation of the instrument driver

The driver requires the NRP-Tool Kit Revision 1.60 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

The VXIPnP LabVIEW instrument driver also installs the tool ChannelAssignment.

Instrument Address Descriptor

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

where <vendor Id> is 0aad for Rohde&Schwarz
<product Id> depends on the sensor:

Sensor:	<product Id>
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
FSH-Z18	0x001a
NRP-Z91	0x0021
NRP-Z81	0x0023
NRP-Z37	0x002d
NRP-Z27	0x002f
NRP-Z28	0x0051
NRP-Z98	0x0052

<serial number> is printed on the sensor and consists of 6 digits. For example 900003.

Examples: **USB::0x0aad::0x000b::100000**

You can use * for the product id or the serial number in the resource descriptor. Use star only for one connected sensor, because the driver opens only the first sensor on the bus.

Examples:

Opens the first FSH-Z1 sensor: **USB::0x0aad::0x000b::*** -

Opens the first R&S sensor: **USB::0x0aad::*** or
**

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.

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 ~\VX\pnp\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 6.1** and higher an additional help topic can be accessed directly by pressing "[Click here for more help](#)" in the Context Help

LabVIEW 7.1 driver

Please use the LabVIEW 7 driver.

LabVIEW 8.2 and LabVIEW 8.5 drivers

Please use the LabVIEW 8 driver.

LabWindows/CVI

The driver requires the NRP-Tool Kit Revision 1.07 or higher. The Tool Kit installs the Windows (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 ToolKit first.

CVI Version

Use National Instruments LabWindows/CVI 5.5 or later.

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

VEE

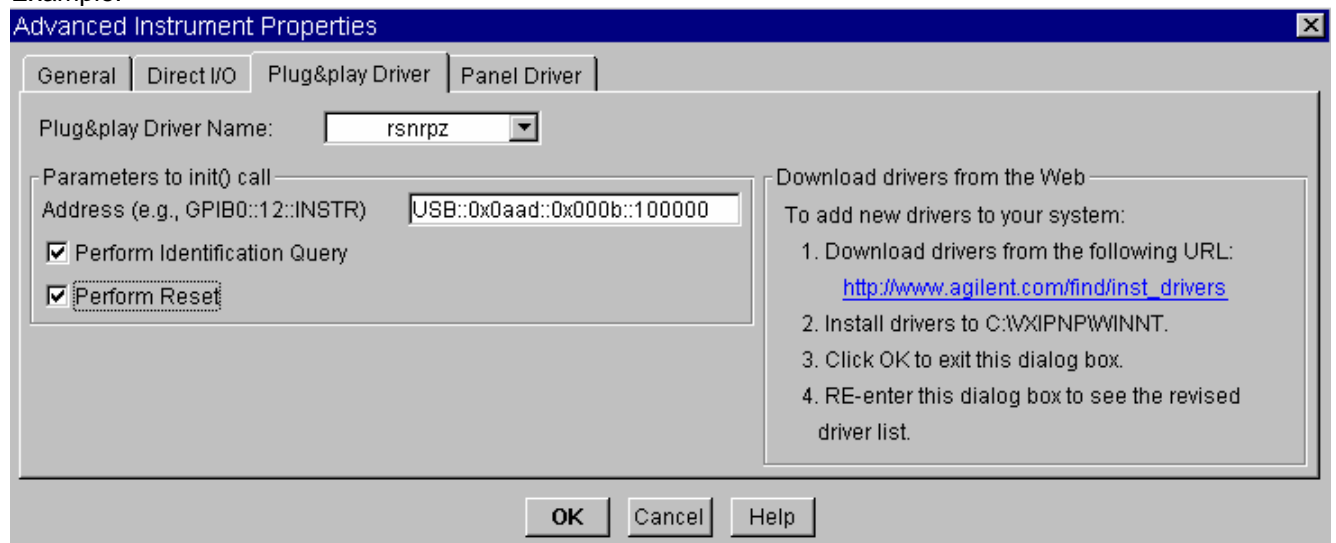
Use VEE 6 or later.

Please install the NRP Tool Kit and the NRPZ driver first.

Set the Plug&Play Driver Name to rsnrpz and the Address to the Address or the logical Name of the Power Sensor in the menu

IO > Instrument Manager > Advanced > Plug&Play Driver.

Example:



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 ~\VXI\pnp\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 ~\VXI\pnp\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 ~\VXI\pnp\WinNT\rsnrpz directory.

Additional Information

For more information regarding the VXI\pnp 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 XP or Windows 2000 operation system with newest available service pack (\geq SP 2 for Windows XP, \geq SP 4 for Windows 2000)
- 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:

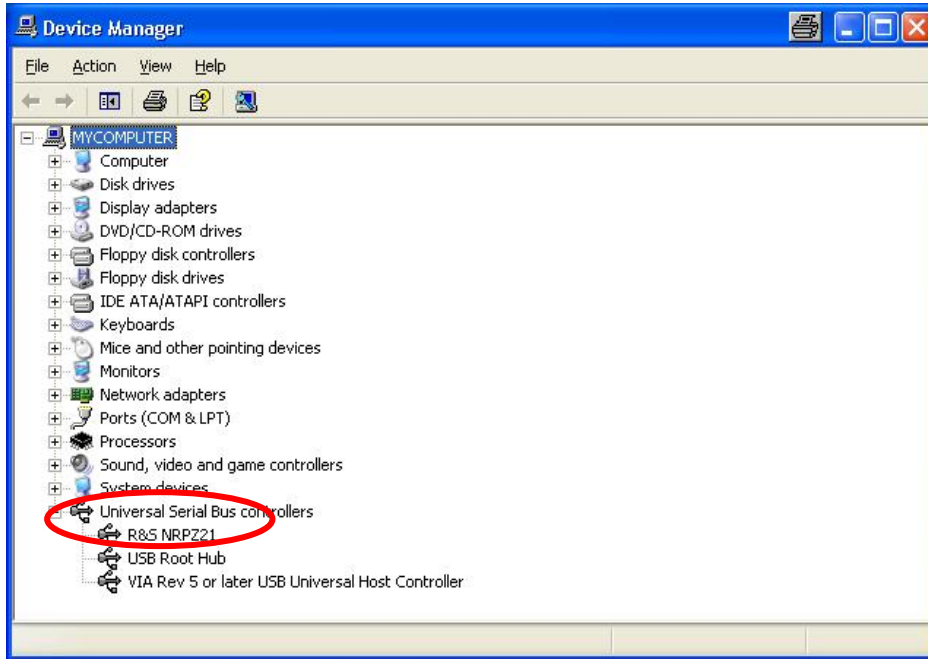


- Check firmware version of NRP sensors to:
version \geq 3.20 for NRP-Z11, NRP-Z21, NRP-Z22, NRP-Z23, NRP-Z24, NRP-Z91,
version \geq 1.40 for NRP-Z51, NRP-Z55.
(to be found at http://www.rohde-schwarz.com/product/nrp_sensors/downloads_firmware.html).
- Exchange Hub if all points above are fulfilled without 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.

