LabVIEW driver history for R&S® Power Sensors
Driver Documentation

Products:

- R&S®NRPxxS/SN – Diode Power Sensors
- R&S®NRPxxT/TN – Thermal Power Sensors
- R&S®NRPxxA/AN – Average Power Sensors
- R&S®NRPM - OTA Sensors
- R&S®NRP2
- R&S NRX (compatibility mode)
- R&S®NRQ6

Driver history for LabVIEW
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1 Supported Instruments

In the following table, the supported R&S instruments and firmware versions are listed:

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<thead>
<tr>
<th>Instrument</th>
<th>Supported Firmware</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRPxx/XN</td>
<td>16.05.13.02</td>
<td></td>
</tr>
<tr>
<td>NRPM</td>
<td>17.06.28.04</td>
<td></td>
</tr>
<tr>
<td>NRP2 base unit</td>
<td>7.13</td>
<td></td>
</tr>
<tr>
<td>NRQ6</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>NRX</td>
<td>2.20</td>
<td>Compatibility support</td>
</tr>
</tbody>
</table>
2 Installation of the LabVIEW driver

Before you start the installer, please close your LabVIEW application.

2.1 Installation on a Windows machine

The driver is distributed as WinZip self-extracting executable file. Installer supported operation systems: WinXP, Win7, Win8, Win10.

Preconditions:
- LabVIEW 2010 or newer installed
- Any VISA installed – R&S VISA 5.5.4 or newer / NI VISA 10.0 or newer

When you start the driver WinZip installer, it performs the following steps:

1. Unpacking of the driver’s instr.lib and user.lib directories content as well as the Installer.vi into a temporary folder: C:\temp\rspwrmeter-lv-1.7.0
   The driver is compiled in LabVIEW 2010 32-bit. From there you can copy it to another location or run the Installer.vi manually later. The content of the temporary folder is not deleted after the installation is finished. Starting the same installation again will overwrite all the data in that temporary folder.

2. After unpacking, the Installer.vi automatically starts in the last opened version of LabVIEW. In case you have more than one version of LabVIEW installed on your machine, make sure that the last opened LabVIEW version is the one in which you want to install the driver. If that is not the case, cancel the installation, open and close your desired LabVIEW version and run the installer again. You can have the driver installed parallel for more LabVIEW versions by repeating the installation process for each desired version.

3. On the installer options page you can change the location of the instr.lib part of the driver. user.lib part must be placed in the default location, otherwise the Express VI configuration will not properly function. Hitting Next button will first delete the old driver (if it existed), copy the new driver and mass-compile it.

4. If you have an older rsidr_toolbox, the installer updates it to the last version.
5. LabVIEW is closed and after starting it again, the driver is ready for use.
2.2 Installation on a non-Windows machine

In case you would like to install the driver on a non-Windows machine, use a Windows machine to start the driver's WinZip self-extracting executable file. This machine does not need to have LabVIEW installed. After the Step 1 (see the chapter 2.1), copy the content of the temporary folder to your target machine and start the Installer.vi manually. From that point onwards, the installation process is the same as described in Steps 2, 3, 4 and 5.
## 3 LabVIEW driver history

### LabVIEW Instrument Driver

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Note</th>
</tr>
</thead>
</table>
| 1.7.0    | 05/2019| * Update only relevant for users of the NRX base unit with the newest firmware 2.20  
  - Breaking change for NRX:  
    - Some units before the firmware 2.20 were fixed in WATT.  
      Now they depend on setting of the units - Configure Units.vi. Default units after *RST are dBm.  
      Affected attributes and functions:  
        - RSPWRMETER_ATTR_CHANNEL_TRIGGER_LEVEL - trigger level for a single channel - Configure Trigger.vi  
        - RSPWRMETER_ATTR_TRIGGER_LEVEL - trigger level for all channels  
        - RSPWRMETER_ATTR_LIMITS_LOWER_POWER, RSPWRMETER_ATTR_LIMITS_UPPER_POWER - Configure Power Range.vi  
        - RSPWRMETER_ATTR_SYSTEM_IO_ANALOG_OUTPUT_LOWER_POWER, RSPWRMETER_ATTR_SYSTEM_IO_ANALOG_OUTPUT_UPPER_POWER |
| 1.6.1    | 03/2019| * Fixed: For NRQ6 IQ data format set to IQpair  
  * New: Added function for NRQ6: Fetch IQ Measurement.vi  
  * Modified:  
    - Changed Remote-control commands:  
      Configure Reference Oscillator.vi  
      Configure IF Sideband.vi  
      Configure SMA Connector Output.vi  
      Configure Resolution Bandwidth.vi  
      Configure Local Oscillator Output.vi  
      Get Sensors Presence.vi |
| 1.6.0    | 12/2018| - Added compatibility support for NRX base unit  
  - Added Get Sensors Presence.vi |
### LabVIEW Instrument Driver

#### Driver history

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| 1.5.2    | 08/2018 | - Fixed sporadic issue with USB interface when measurements took too long to complete  
- Fixed incorrect endianness of data transfer |
| 1.5.0    | 03/2018 | * Added support for NRQ6 instrument  
* Initialize.vi, Initialize with Options.vi, Close.vi and Utility VIs have new VI icons  
* Deleted duplicate VI Query System Information.vi, use the following VI instead: System Information.vi  
* New:  
  - Initiate And Wait.vi - starts a single measurement and waits for it to finish  
  - Initiate All And Wait.vi - starts a single measurement on all Base Unit sensors and waits for all of them to finish  
  - Configure Trigger Jitter Suppression Method.vi  
  - Get Trigger Jitter Suppression Current Value.vi  
  - Get Trigger Jitter Suppression Trigger Offset.vi  
  - Configure Averaging Domain.vi  
  - Configure Noise Correction.vi  
  - Configure Trace Time Auto.vi  
  - Get Number Of Samples.vi  
  - Get Sample Rate For Trace.vi  
  - Configure ACLR Aperture Time.vi  
  - Get ACLR Spacing.vi  
  - Configure Volt IQ Sample Rate.vi  
  - Configure Volt IQ Sample Count.vi  
  - Configure Reference Oscillator.vi  
  - Configure SMA Connector Output.vi  
  - Autoset.vi  
  - Autoset Frequency.vi  
  - Autoset Input Attenuation.vi  
  - Configure Bandwidth Type.vi  
  - Configure Resolution Bandwidth.vi  
  - Get Current Resolution Bandwidth.vi  
  - Configure Filter Type.vi  
  - Configure Input Attenuation  
  - Configure Local Oscillator Output.vi  
  - Get Local Oscillator Frequency.vi  
  - Configure IF Sideband.vi  
  - Get IF Sideband Frequency.vi  
  - Configure Frequency Tracking.vi  
  - Get Frequency Tracking Current State.vi  
  - Get Frequency Tracking Current Frequency.vi  
  - Get Device Footprint.vi  
  - Get System Test Levels.vi  
  - Set System Sensor Name.vi |

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<table>
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<th>Note</th>
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</thead>
</table>
| 1.4.0    | 06/2017  | * Modified:  
- Measurement Mode.vi - added Volt IQ and ACLR measurements  
- Write Calibration Data.vi  
* Deleted:  
- Read Static Errors.vi  
- Added support for NRPM OTA power sensors  
- Exchanged Driver Core 6.7.1 that supports Simulation mode and Logging  
- All VISA resource name inputs are mandatory  
- Cleaned up all the Front Panels and Block Diagrams  
- Several bugfixes  
* New:  
- Configure Trigger Synchronize Port.vi  
- Configure Trigger Auto Delay.vi  
- Configure Trigger Count.vi  
- Fetch All Paths.vi  
- Fetch All Paths Buffered.vi  
- Query Meas Path Sensor Present.vi  
- Configure Meas Path Sensor Enabled.vi  
- Read All Static Errors.vi  
- Query System Information.vi |
| 1.3.1    | 12/2016  | * Fixed callback interface affecting the following attributes:  
- RSPWRMETER_ATTR_CHANNEL_SENSOR_INFO  
- RSPWRMETER_ATTR_SYSTEM_STD_CATALOG  
- RSPWRMETER_ATTR_CHANNEL_MEAS_MATH_EXPRESSION_CATALOG  
- RSPWRMETER_ATTR_CHANNEL_VBW_LIST |
| 1.3.0    | 11/2016  | * Breaking change: Configure Auto Filter.vi replaced by three new VIs: Configure Auto Filter NSR.vi, Configure Auto Filter Resolution.vi, Configure Auto Filter Reference Timeslot.vi  
* Added support for NRP6A, NRP6AN, NRP18A, NRP18AN, NRP18T, NRP18TN, NRP40T, NRP40TN, NRP50T, NRP50TN, NRP33SN-V, NRP67T, NRP67TN, NRP110T, NRP110TN |
| 1.2.0    | 03/2016  | * Added support for NRP8S, NRP8SN, NRP33S, NRP33SN, NRP40S, NRP40SN, NRP50S, NRP50SN  
* Modified:  
- Configure Trigger.vi - ‘External 2’ added to Trigger Source parameter  
- Measurement Mode.vi - help updated |
| 1.0.3    | 12/2015  | * Bug fixed in Get Trace Data.vi  
* New:  
- Get Trace Data With Auxiliary.vi |
| 1.0.2    | 08/2015  | * Removed RSPWRMETER_ATTR_CHANNEL_TRACE_REALTIME  
* Modified Configure Trace.vi - parameter ‘Realtime’ is no longer used |
| 1.0.1    | 07/2015  | * Added ContAv Fast Unchopped Enabled |
## LabVIEW Instrument Driver

<table>
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<tr>
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<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0.0</td>
<td>12/2014</td>
<td>* Initial Release</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Modified Configure ContAv.vi - added control for Fast Unchopped Enabled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Fixed floating point number issue with NRP2</td>
</tr>
</tbody>
</table>
About Rohde & Schwarz
Rohde & Schwarz is an independent group of companies specializing in electronics. It is a leading supplier of solutions in the fields of test and measurement, broadcasting, radiomonitoring and radiolocation, as well as secure communications. Established more than 80 years ago, Rohde & Schwarz has a global presence and a dedicated service network in over 70 countries. Company headquarters are in Munich, Germany.

Environmental commitment
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- Continuous improvement in environmental sustainability
- ISO 14001-certified environmental management system

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