

# 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



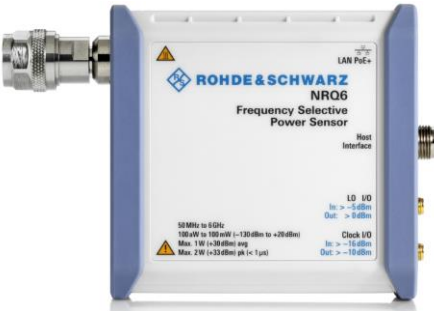
- | R&S®NRP2



- | R&S NRX (compatibility mode)



- | R&S®NRQ6



Driver history for LabVIEW

# Table of Contents

<b>1</b>	<b>Supported Instruments.....</b>	<b>3</b>
<b>2</b>	<b>Installation of the LabVIEW driver .....</b>	<b>4</b>
<b>2.1</b>	<b>Installation on a Windows machine.....</b>	<b>4</b>
<b>2.2</b>	<b>Installation on a non-Windows machine.....</b>	<b>5</b>
<b>3</b>	<b>LabVIEW driver history.....</b>	<b>6</b>

# 1 Supported Instruments

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

<b>Which instruments are supported?</b>		
<b>Current revision of instrument driver supports these instruments and firmware versions:</b>		
<b>Instrument</b>	<b>Supported Firmware</b>	<b>Remarks</b>
NRPxxX/XN	2.30.0	
NRPM	17.06.28.04	
NRP2 base unit	7.13	
NRQ6	2.00	
NRX	2.20	Compatibility support

## 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 5.12.3 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-2.30.0**  
The driver is compiled in LabVIEW 2015 64-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		
Driver history		
Revision	Date	Note
2.30.0	09/2021	<ul style="list-style-type: none"> <li>* Support for R&amp;S NRPXXS/SN FW 2.30</li> <li>* New core 7.3.0</li> <li> </li> <li>* New:               <ul style="list-style-type: none"> <li>- Configure Trigger Sender State.vi</li> <li>- Configure Trigger Sender Port.vi</li> <li>- Query I Gamma Correction.vi</li> <li>- Fetch Results.vi</li> <li>- Save Commands.vi</li> </ul> </li> <li> </li> <li>* Updated:               <ul style="list-style-type: none"> <li>- Configure Reference Oscillator.vi - Updated range table</li> </ul> </li> <li> </li> <li>* New attributes:               <ul style="list-style-type: none"> <li>- System Restart (RSPWRMETER_ATTR_SYSTEM_RESTART)</li> <li>- System Result Update Time (RSPWRMETER_ATTR_SYSTEM_RESULT_UPDATE_TIME)</li> <li>- System Status Update Time (RSPWRMETER_ATTR_SYSTEM_STATUS_UPDATE_TIME)</li> </ul> </li> </ul>
1.9.0	04/2021	<ul style="list-style-type: none"> <li>* Updated for LV 2015</li> <li>* New Core 7.1.0</li> <li>* All Front Panels reworked to Silver-style controls               <ul style="list-style-type: none"> <li>- Configure ContAv.vi - Sampling Rate parameter no longer used</li> </ul> </li> <li> </li> <li>* Deleted:               <ul style="list-style-type: none"> <li>- RSPWRMETER_ATTR_SYSTEM_EMULATION</li> <li>- RSPWRMETER_ATTR_CHANNEL_CONTAV_SAMPLING</li> </ul> </li> </ul>
1.7.0	05/2019	<ul style="list-style-type: none"> <li>* Update only relevant for users of the NRX base unit with the newest firmware 2.20</li> <li>- Breaking change for NRX:               <ul style="list-style-type: none"> <li>- Some units before the firmware 2.20 were fixed in WATT.</li> <li>Now they depend on setting of the units - Configure Units.vi. Default units after *RST are dBm.</li> <li>Affected attributes and functions:                   <ul style="list-style-type: none"> <li>- RSPWRMETER_ATTR_CHANNEL_TRIGGER_LEVEL - trigger level for a single channel - Configure Trigger.vi</li> <li>- RSPWRMETER_ATTR_TRIGGER_LEVEL - trigger level for all channels</li> <li>- RSPWRMETER_ATTR_LIMITS_LOWER_POWER, RSPWRMETER_ATTR_LIMITS_UPPER_POWER - Configure Power Range.vi</li> <li>- RSPWRMETER_ATTR_SYSTEM_IO_ANALOG_OUTPUT_LOWER_POWER, RSPWRMETER_ATTR_SYSTEM_IO_ANALOG_OUTPUT_UPPER_POWER</li> </ul> </li> </ul> </li> </ul>
1.6.1	03/2019	<ul style="list-style-type: none"> <li>* Fixed: For NRQ6 IQ data format set to IQpair</li> </ul>

LabVIEW Instrument Driver		
Driver history		
Revision	Date	Note
		<ul style="list-style-type: none"> <li>* New: Added function for NRQ6: Fetch IQ Measurement.vi</li> <li>* Modified:               <ul style="list-style-type: none"> <li>- Changed Remote-control commands:                   <ul style="list-style-type: none"> <li>- Configure Reference Oscillator.vi                       <ul style="list-style-type: none"> <li>- RSPWRMETER_ATTR_REFERENCE_OSCILLATOR_SOURCE</li> <li>- RSPWRMETER_ATTR_REFERENCE_OSCILLATOR_REF_FREQUENCY</li> </ul> </li> <li>- Configure IF Sideband.vi                       <ul style="list-style-type: none"> <li>- RSPWRMETER_ATTR_IF_SIDE BAND_AUTO_ENABLED</li> <li>- RSPWRMETER_ATTR_IF_SIDE BAND_SELECTED</li> </ul> </li> <li>- Get IF Sideband Frequency.vi                       <ul style="list-style-type: none"> <li>- RSPWRMETER_ATTR_IF_SIDE BAND_FREQUENCY</li> </ul> </li> <li>- Configure SMA Connector Output.vi                       <ul style="list-style-type: none"> <li>- RSPWRMETER_ATTR_REFERENCE_IO_OUTPUT_ENABLED</li> <li>- RSPWRMETER_ATTR_SAMPLE_CLOCK_OUTPUT_ENABLED</li> </ul> </li> <li>- Configure Resolution Bandwidth.vi                       <ul style="list-style-type: none"> <li>- RSPWRMETER_ATTR_RESOLUTION_BANDWIDTH</li> </ul> </li> <li>- Get Current Resolution Bandwidth.vi                       <ul style="list-style-type: none"> <li>- RSPWRMETER_ATTR_CURRENT_RESOLUTION_BANDWIDTH</li> </ul> </li> <li>- Configure Local Oscillator Output.vi                       <ul style="list-style-type: none"> <li>- RSPWRMETER_ATTR_LOCAL_OSCILLATOR_OUTPUT_ENABLED</li> </ul> </li> <li>- Get Local Oscillator Frequency.vi                       <ul style="list-style-type: none"> <li>- RSPWRMETER_ATTR_LOCAL_OSCILLATOR_FREQUENCY</li> </ul> </li> </ul> </li> </ul> </li> </ul>
1.6.0	12/2018	<ul style="list-style-type: none"> <li>- Added compatibility support for NRX base unit</li> <li>- Added Get Sensors Presence.vi</li> </ul>
1.5.2	08/2018	<ul style="list-style-type: none"> <li>- Fixed sporadic issue with USB interface when measurements took too long to complete</li> <li>- Fixed incorrect endianness of data transfer</li> </ul>
1.5.0	03/2018	<ul style="list-style-type: none"> <li>* Added support for NRQ6 instrument</li> <li>* Initialize.vi, Initialize with Options.vi, Close.vi and Utility VIs have new VI icons</li> <li>* Deleted duplicate VI Query System Information.vi, use the following VI instead: System Information.vi</li> <li>* New:               <ul style="list-style-type: none"> <li>- Initiate And Wait.vi - starts a single measurement and waits for it to finish</li> <li>- Initiate All And Wait.vi - starts a single measurement on all Base Unit sensors and waits for all of them to finish</li> <li>- Configure Trigger Jitter Suppression Method.vi</li> <li>- Get Trigger Jitter Suppression Current Value.vi</li> <li>- Get Trigger Jitter Suppression Trigger Offset.vi</li> <li>- Configure Averaging Domain.vi</li> <li>- Configure Noise Correction.vi</li> <li>- Configure Trace Time Auto.vi</li> <li>- Get Number Of Samples.vi</li> </ul> </li> </ul>

LabVIEW Instrument Driver		
Driver history		
Revision	Date	Note
		<ul style="list-style-type: none"> <li>- Get Sample Rate For Trace.vi</li> <li>- Configure ACLR Aperture Time.vi</li> <li>- Get ACLR Spacing.vi</li> <li>- Configure Volt IQ Sample Rate.vi</li> <li>- Configure Volt IQ Sample Count.vi</li> <li>- Configure Reference Oscillator.vi</li> <li>- Configure SMA Connector Output.vi</li> <li>- Autoset.vi</li> <li>- Autoset Frequency.vi</li> <li>- Autoset Input Attenuation.vi</li> <li>- Configure Bandwidth Type.vi</li> <li>- Configure Resolution Bandwidth.vi</li> <li>- Get Current Resolution Bandwidth.vi</li> <li>- Configure Filter Type.vi</li> <li>- Configure Input Attenuation</li> <li>- Configure Local Oscillator Output.vi</li> <li>- Get Local Oscillator Frequency.vi</li> <li>- Configure IF Sideband.vi</li> <li>- Get IF Sideband Frequency.vi</li> <li>- Configure Frequency Tracking.vi</li> <li>- Get Frequency Tracking Current State.vi</li> <li>- Get Frequency Tracking Current Frequency.vi</li> <li>- Get Device Footprint.vi</li> <li>- Get System Test Levels.vi</li> <li>- Set System Sensor Name.vi</li> <li>* Modified:</li> <li>- Measurement Mode.vi - added Volt IQ and ACLR measurements</li> <li>- Write Calibration Data.vi</li> <li>* Deleted:</li> <li>- Read Static Errors.vi</li> </ul>
1.4.0	06/2017	<ul style="list-style-type: none"> <li>- Added support for NRPM OTA power sensors</li> <li>- Exchanged Driver Core 6.7.1 that supports Simulation mode and Logging</li> <li>- All VISA resource name inputs are mandatory</li> <li>- Cleaned up all the Front Panels and Block Diagrams</li> <li>- Several bugfixes</li> <li>* New:</li> <li>- Configure Trigger Synchronize Port.vi</li> <li>- Configure Trigger Auto Delay.vi</li> <li>- Configure Trigger Count.vi</li> <li>- Fetch All Paths.vi</li> <li>- Fetch All Paths Buffered.vi</li> </ul>



LabVIEW Instrument Driver		
Driver history		
Revision	Date	Note
		<ul style="list-style-type: none"> <li>- Query Meas Path Sensor Present.vi</li> <li>- Configure Meas Path Sensor Enabled.vi</li> <li>- Read All Static Errors.vi</li> <li>- Query System Information.vi</li> </ul>
1.3.1	12/2016	<ul style="list-style-type: none"> <li>* Fixed callback interface affecting the following attributes: <ul style="list-style-type: none"> <li>- RSPWRMETER_ATTR_CHANNEL_SENSOR_INFO</li> <li>- RSPWRMETER_ATTR_SYSTEM_STD_CATALOG</li> <li>- RSPWRMETER_ATTR_CHANNEL_MEAS_MATH_EXPRESSION_CATALOG</li> <li>- RSPWRMETER_ATTR_CHANNEL_VBW_LIST</li> </ul> </li> </ul>
1.3.0	11/2016	<ul style="list-style-type: none"> <li>* 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</li> <li>* Added support for NRP6A, NRP6AN, NRP18A, NRP18AN, NRP18T, NRP18TN, NRP40T, NRP40TN, NRP50T, NRP50TN, NRP33SN-V, NRP67T, NRP67TN, NRP110T, NRP110TN</li> </ul>
1.2.0	03/2016	<ul style="list-style-type: none"> <li>* Added support for NRP8S, NRP8SN, NRP33S, NRP33SN, NRP40S, NRP40SN, NRP50S, NRP50SN</li> <li>* Modified: <ul style="list-style-type: none"> <li>- Configure Trigger.vi - 'External 2' added to Trigger Source parameter</li> <li>- Measurement Mode.vi - help updated</li> </ul> </li> </ul>
1.0.3	12/2015	<ul style="list-style-type: none"> <li>* Bug fixed in Get Trace Data.vi</li> <li>* New: <ul style="list-style-type: none"> <li>- Get Trace Data With Auxiliary.vi</li> </ul> </li> </ul>
1.0.2	08/2015	<ul style="list-style-type: none"> <li>* Removed RSPWRMETER_ATTR_CHANNEL_TRACE_REALTIME</li> <li>* Modified Configure Trace.vi - parameter 'Realtime' is no longer used</li> </ul>
1.0.1	07/2015	<ul style="list-style-type: none"> <li>* Added ContAv Fast Unchopped Enabled</li> <li>* Modified Configure ContAv.vi - added control for Fast Unchopped Enabled</li> <li>* Fixed floating point number issue with NRP2</li> </ul>
1.0.0	12/2014	* Initial Release

### **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**

- Energy-efficient products
- Continuous improvement in environmental sustainability
- ISO 14001-certified environmental management system



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