

LabWindows/CVI, VXIplug 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



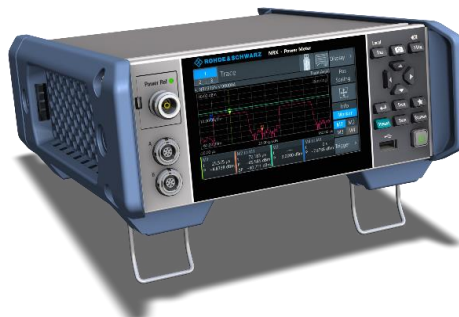
- | R&S®NRPM - OTA Sensors



- | R&S®NRP2



- | R&S NRX (compatibility support)



- | R&S®NRQ6



Driver history for LabWindows/CVI and
VXIplug&play Instrument Driver for
C/C++, VEE, MATLAB®, etc.

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1 Supported Instruments

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

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

2 Getting Started

2.1 LabWindows/CVI driver

The Rohde & Schwarz **rspwrmeter** Instrument driver can be used in LabWindows/CVI 6 and later. In order to be able to compile an application it is required to add following files to your LabWindows/CVI project:

- *rspwrmeter.c + rspwrmeter.h*
- *rspwrmeter_attributes.c + rspwrmeter_attributes.h*
- *rspwrmeter_utility.c + rspwrmeter_utility.h*
- *rscore.c + rscore.h*
- *rspwrmeter_callbacks.c*
- *rspwrmeter.fp + rspwrmeter.sub*

2.2 VXIplug&play driver in C/C++, LabWindows/CVI

In this case the compiled source code from LabWindows/CVI driver is used. The compiled ANSI-C libraries exist for Windows XP and newer, 32-bit / 64-bit.

Add the following files to your 32-bit target project:

- C:\Program Files (x86)\IVI Foundation\VISA\WinNT\include\rspwrmeter.h
- C:\Program Files (x86)\IVI Foundation\VISA\WinNT\lib\msc\rspwrmeter.lib (static)
- C:\Program Files (x86)\IVI Foundation\VISA\WinNT\Bin\rspwrmeter_32.dll (dynamic)

In CVI only:

- C:\Program Files (x86)\IVI Foundation\VISA\WinNT\rspwrmeter\rspwrmeter.fp
- C:\Program Files (x86)\IVI Foundation\VISA\WinNT\rspwrmeter\rspwrmeter.sub

Add the following files to your 64-bit target project:

- C:\Program Files\IVI Foundation\VISA\Win64\Include\rspwrmeter.h
- C:\Program Files\IVI Foundation\VISA\Win64\Lib_x64\msc\rspwrmeter64.lib (static)
- C:\Program Files\IVI Foundation\VISA\Win64\Bin\rspwrmeter_64.dll (dynamic)

In CVI only:

- C:\Program Files\IVI Foundation\VISA\Win64\rspwrmeter\rspwrmeter.fp
- C:\Program Files\IVI Foundation\VISA\Win64\rspwrmeter\rspwrmeter.sub

2.3 VXIplug&play driver in MATLAB

MATLAB instrument driver **rspwrmeter.mdd** can be found in:

32-bit driver

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\rspwrmeter\rspwrmeter.mdd

64-bit driver

C:\Program Files\IVI Foundation\VISA\Win64\rspwrmeter\rspwrmeter.mdd

For detailed description on how to use the driver in MATLAB please refer to the Application Note [1MA171 - How to use R&S instrument in MATLAB](#)

2.4 Linux and Mac OS X

To be able to use Rohde & Schwarz **rspwrmeter** Instrument driver in Linux or Mac OSX, the functioning VISA is required. Then, the process is the same as using LabWindows/CVI driver.

2.5 Additional Help

The LabWindows/CVI and VXIplug&play instrument driver contains in addition the instrument driver documentation in compressed HTML format (Windows CHM help file **rspwrmeter_vxi.chm**) and stored together with the driver sources or in the following folder:

32-bit driver

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\rspwrmeter\rspwrmeter_vxi.chm

64-bit driver

C:\Program Files\IVI Foundation\VISA\Win64\rspwrmeter\rspwrmeter_vxi.chm

3 LabWindows/CVI and VXIplug&play driver history

rspwrmeter Instrument Driver		
Driver history		
Revision	Date	Note
2.30.0	09/2021	<ul style="list-style-type: none"> * Support for R&S NRPXXS/SN FW 2.30 * New core 4.2.0 * New: <ul style="list-style-type: none"> - rspwrmeter_ConfigureTriggerSenderState - rspwrmeter_ConfigureTriggerSenderPort - rspwrmeter_QueryGammaCorrection - rspwrmeter_FetchResults - rspwrmeter_SaveCommands * Updated: <ul style="list-style-type: none"> - rspwrmeter_ConfigureReferenceOscillator - Updated range table * New attributes: <ul style="list-style-type: none"> - RSPWRMETER_ATTR_SYSTEM_RESTART (System Restart) - RSPWRMETER_ATTR_SYSTEM_RESULT_UPDATE_TIME (System Result Update Time) - RSPWRMETER_ATTR_SYSTEM_STATUS_UPDATE_TIME (System Status Update Time)
1.9.1	05/2021	<ul style="list-style-type: none"> * Version 1.9.1 * Fixed bugfix in sub file generation * Reincluded RSPWRMETER_ATTR_SYSTEM_INFORMATION attribute to CVI driver * Corrected value of attribute RSPWRMETER_SUPPORTED_INSTRUMENT_MODELS
1.9.0	04/2021	<ul style="list-style-type: none"> * Version 1.9.0 * New Core 4.0.0. The core is incompatible with the Cores 3.x. If you work with drivers that use both core 4.x and 3.x, please contact our customer support, we will update your Core 3.x drivers to the newest version. * Updated: <ul style="list-style-type: none"> - rspwrmeter_ConfigureContAv - change API - removed Sampling Rate * Removed: <ul style="list-style-type: none"> - rspwrmeter_CheckAttributeXXX - rspwrmeter_ReadInstrData - rspwrmeter_GetAttributeViSession - rspwrmeter_SetAttributeViSession - RSPWRMETER_ATTR_SYSTEM_EMULATION - RSPWRMETER_ATTR_CHANNEL_CONTAV_SAMPLING

rspwrmeter Instrument Driver		
Driver history		
Revision	Date	Note
1.7.0	05/2019	<p>* Update only relevant for users of the NRX base unit with the newest firmware 2.20</p> <ul style="list-style-type: none"> - Breaking change for NRX: - Some units before the firmware 2.20 were fixed in WATT. <p>Now they depend on setting of the units - <code>rspwrmeter_ConfigureUnits()</code>. Default units after *RST are dBm.</p> <p>Affected attributes and functions:</p> <ul style="list-style-type: none"> - <code>RSPWRMETER_ATTR_CHANNEL_TRIGGER_LEVEL</code> - trigger level for a single channel - fnc <code>rspwrmeter_ConfigureTrigger()</code> - <code>RSPWRMETER_ATTR_TRIGGER_LEVEL</code> - trigger level for all channels - <code>RSPWRMETER_ATTR_LIMITS_LOWER_POWER</code>, <code>RSPWRMETER_ATTR_LIMITS_UPPER_POWER</code> - fnc <code>rspwrmeter_ConfigurePowerRange()</code> - <code>RSPWRMETER_ATTR_SYSTEM_IO_ANALOG_OUTPUT_LOWER_POWER</code>, <code>RSPWRMETER_ATTR_SYSTEM_IO_ANALOG_OUTPUT_UPPER_POWER</code>
1.6.1	03/2019	<p>* New:</p> <ul style="list-style-type: none"> - <code>rspwrmeter_FetchIqData</code> for NRQ6 <p>* Modified:</p> <ul style="list-style-type: none"> - Changed IQ data format settings for NRQ6 - Changed Remote-control commands: - <code>rspwrmeter_ConfigureRefOscillatorEnabled</code> <ul style="list-style-type: none"> - <code>RSPWRMETER_ATTR_REFERENCE_OSCILLATOR_SOURCE</code> - <code>RSPWRMETER_ATTR_REFERENCE_OSCILLATOR_REF_FREQUENCY</code> - <code>rspwrmeter_ConfigureIFSideband</code> <ul style="list-style-type: none"> - <code>RSPWRMETER_ATTR_IF_SIDE BAND_AUTO_ENABLED</code> - <code>RSPWRMETER_ATTR_IF_SIDE BAND_SELECTED</code> - <code>rspwrmeter_GetIFSidebandFrequency</code> <ul style="list-style-type: none"> - <code>RSPWRMETER_ATTR_IF_SIDE BAND_FREQUENCY</code> - <code>rspwrmeter_ConfigureSMAConnectorOutput</code> <ul style="list-style-type: none"> - <code>RSPWRMETER_ATTR_REFERENCE_IO_OUTPUT_ENABLED</code> - <code>RSPWRMETER_ATTR_SAMPLE_CLOCK_OUTPUT_ENABLED</code> - <code>rspwrmeter_ConfigureResolutionBandwidth</code> <ul style="list-style-type: none"> - <code>RSPWRMETER_ATTR_RESOLUTION_BANDWIDTH</code> - <code>rspwrmeter_GetCurrentResolutionBandwidth</code> <ul style="list-style-type: none"> - <code>RSPWRMETER_ATTR_CURRENT_RESOLUTION_BANDWIDTH</code> - <code>rspwrmeter_ConfigureLocalOscillatorOutput</code> <ul style="list-style-type: none"> - <code>RSPWRMETER_ATTR_LOCAL_OSCILLATOR_OUTPUT_ENABLED</code> - <code>rspwrmeter_GetLocalOscillatorFrequency</code> <ul style="list-style-type: none"> - <code>RSPWRMETER_ATTR_LOCAL_OSCILLATOR_FREQUENCY</code>
1.6.0	12/2018	<ul style="list-style-type: none"> - New driver core 3.0 - Added compatibility support for NRX base unit - Fixed channel parameter offsets (-1) in all hi-level functions with parameter <code>Vilnt32 channel</code> e.g. <code>rspwrmeter_ConfigureCorrectionFrequency</code>. If you in the versions 1.5.2 and older used <code>channel=2</code>, the driver addressed the sensor on channel 1. Accessing attributes directly did not have this issue.

rspwrmeter Instrument Driver		
Driver history		
Revision	Date	Note
		<ul style="list-style-type: none"> * New functions: - rspwrmeter_ConfigureAutoSystemErrQuery - rspwrmeter_ConfigureMultiThreadLocking - rspwrmeter_GetBaseUnitSensorsPresence - rspwrmeter_GetAttributeRepCapName
1.5.2	08/2018	<ul style="list-style-type: none"> - Fixed sporadic issue with USB interface when measurements took too long to complete - Fixed incorrect endianness of data transfer
1.5.1	05/2018	* Increased OPC Timeout from 5 to 30 seconds
1.5.0	03/2018	<ul style="list-style-type: none"> * Added support for NRQ6 instrument * New: - rspwrmeter_ConfigureTriggerJitterSuppressionMethod - rspwrmeter_GetTriggerJitterSuppressionCurrentValue - rspwrmeter_GetTriggerJitterSuppressionTriggerOffset - rspwrmeter_ConfigureAveragingDomain - rspwrmeter_ConfigureNoiseCorrection - rspwrmeter_ConfigureACLRApertureTime - rspwrmeter_GetACLRSpacing - rspwrmeter_ConfigureVoltIQSampleRate - rspwrmeter_ConfigureVoltIQSampleCount - rspwrmeter_ConfigureTraceTimeAuto - rspwrmeter_GetNumberOfSamples - rspwrmeter_GetSampleRateForTrace - rspwrmeter_ConfigureReferenceOscillator - rspwrmeter_ConfigureSMACConnectorOutput - rspwrmeter_Autoset - rspwrmeter_AutosetFrequency - rspwrmeter_AutosetInputAttenuation - rspwrmeter_ConfigureBandwidthType - rspwrmeter_ConfigureResolutionBandwidth - rspwrmeter_GetCurrentResolutionBandwidth - rspwrmeter_ConfigureFilterType - rspwrmeter_ConfigureInputAttenuationAuto - rspwrmeter_ConfigureLocalOscillatorOutput - rspwrmeter_GetLocalOscillatorFrequency - rspwrmeter_ConfigureIFSideband - rspwrmeter_GetIFSidebandFrequency - rspwrmeter_ConfigureFrequencyTracking - rspwrmeter_GetFrequencyTrackingCurrentState - rspwrmeter_GetFrequencyTrackingCurrentFrequency

rspwrmeter Instrument Driver		
Driver history		
Revision	Date	Note
		<ul style="list-style-type: none"> - rspwrmeter_GetDeviceFootprint - rspwrmeter_GetSystemTestLevels - rspwrmeter_SetSystemSensorName - rspwrmeter_InitiateAndWait - rspwrmeter_InitiateAllAndWait * Modified: - rspwrmeter_MeasurementMode - added Volt IQ and ACLR measurements * Deleted: - rspwrmeter_QuerySystemInformation
1.4.0	06/2017	<ul style="list-style-type: none"> - Added support for NRPM OTA power sensors * New: - rspwrmeter_ConfigureTriggerSynchronizePort - rspwrmeter_ConfigureTriggerAutoDelay - rspwrmeter_ConfigureTriggerCount - rspwrmeter_FetchAllPaths - rspwrmeter_FetchAllPathsBuffered - rspwrmeter_QueryMeasPathSensorPresent - rspwrmeter_ConfigureMeasPathSensorEnabled - rspwrmeter_ReadAllStaticErrors - rspwrmeter_QuerySystemInformation
1.3.0	11/2016	<ul style="list-style-type: none"> * Added support for NRP6A, NRP6AN, NRP18A, NRP18AN, NRP18T, NRP18TN, NRP40T, NRP40TN, NRP50T, NRP50TN, NRP33SN-V, NRP67T, NRP67TN, NRP110T, NRP110TN
1.2.1	06/2016	<ul style="list-style-type: none"> * Added rspwrmeter_SetVISATimeout, rspwrmeter_GetVISATimeout for setting/querying VISA timeout * Function rspwrmeter_ConfigureAutoFilter replaced by three new functions: rspwrmeter_ConfigureAutoFilterNSR, rspwrmeter_ConfigureAutoFilterResolution, rspwrmeter_ConfigureAutoFilterReferenceTimeslot * rspwrmeter_error_query now reads all errors from instrument's error queue
1.2.0	03/2016	<ul style="list-style-type: none"> * Added support for NRP8S, NRP8SN, NRP33S, NRP33SN, NRP40S, NRP40SN, NRP50S, NRP50SN * Modified: - rspwrmeter_ConfigureTrigger - 'External 2' added to Trigger Source parameter - rspwrmeter_MeasurementMode - help updated
1.0.3	12/2015	<ul style="list-style-type: none"> * Bug fixed in rspwrmeter_GetTraceData * New: - rspwrmeter_GetTraceDataWithAuxiliary
1.0.2	08/2015	<ul style="list-style-type: none"> * Removed RSPWRMETER_ATTR_CHANNEL_TRACE_REALTIME * Modified rspwrmeter_ConfigureTrace - parameter 'Realtime' is no longer used
1.0.1	07/2015	<ul style="list-style-type: none"> * Added RSPWRMETER_ATTR_CHANNEL_CONTAV_FAST_UNCHOPPED_ENABLED * Modified rspwrmeter_ConfigureContAv - added new parameter for RSPWRMETER_ATTR_CHANNEL_CONTAV_FAST_UNCHOPPED_ENABLED
1.0.0	12/2014	<ul style="list-style-type: none"> * 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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