

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	16.05.13.02	
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
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_SIDEBAND_AUTO_ENABLED</code> - <code>RSPWRMETER_ATTR_IF_SIDEBAND_SELECTED</code> - <code>rspwrmeter_GetIFSidebandFrequency</code> <ul style="list-style-type: none"> - <code>RSPWRMETER_ATTR_IF_SIDEBAND_FREQUENCY</code> - <code>rspwrmeter_ConfigureSMACConnectorOutput</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>

rspwrmeter Instrument Driver		
Driver history		
Revision	Date	Note
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 ViInt32 channel e.g. rspwrmeter_ConfigureCorrectionFrequency. If you in the versions 1.5.2 and older used channel=2, the driver addressed the sensor on channel 1. Accessing attributes directly did not have this issue. * New functions: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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_ConfigureSMAConnecterOutput - rspwrmeter_Autoset - rspwrmeter_AutosetFrequency - rspwrmeter_AutosetInputAttenuation - rspwrmeter_ConfigureBandwidthType - rspwrmeter_ConfigureResolutionBandwidth - rspwrmeter_GetCurrentResolutionBandwidth - rspwrmeter_ConfigureFilterType - rspwrmeter_ConfigureInputAttenuationAuto - rspwrmeter_ConfigureLocalOscillatorOutput - rspwrmeter_GetLocalOscillatorFrequency - rspwrmeter_ConfigureIFSideband

rspwrmeter Instrument Driver		
Driver history		
Revision	Date	Note
		<ul style="list-style-type: none"> - rspwrmeter_GetIFSidebandFrequency - rspwrmeter_ConfigureFrequencyTracking - rspwrmeter_GetFrequencyTrackingCurrentState - rspwrmeter_GetFrequencyTrackingCurrentFrequency - 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

rspwrmeter Instrument Driver		
Driver history		
Revision	Date	Note
1.0.1	07/2015	* 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	* 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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