

# LabWindows/CVI, VXIplug driver history for the R&S® Signal Generators

## Products:

| R&S®SMB100A



| R&S®SMC100A



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

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# 1 Supported Instruments

In the following table the supported Rohde & Schwarz 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>
SMB100A	3.20	
SMC100A	3.20	

## 2 Getting Started

### 2.1 LabWindows/CVI driver

The Rohde & Schwarz **rssmb** 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:

- *rssmb.c*
- *rssmb.h*
- *rssmb.fp*
- *rssmb\_utility.h*
- *rssmb\_utility.c*

### 2.2 VXIplug&play driver in C# and Visual Basic.NET

A C# or VB wrapper is necessary to enable a direct access to the driver DLL. The **rssmb** wrappers are automatically installed in the following folders:

32-bit driver

**C:\Program Files (x86)\IVI Foundation\VISA\WinNT\include\rssmb.cs**  
**C:\Program Files (x86)\IVI Foundation\VISA\WinNT\include\rssmb.vb**

64-bit driver

**C:\Program Files\IVI Foundation\VISA\Win64\include\rssmb64.cs**  
**C:\Program Files\IVI Foundation\VISA\Win64\include\rssmb64.vb**

### 2.3 Linux and Mac OS X

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

### 2.4 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 **rssmb\_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\rssmb\rssmb\_vxi.chm**

64-bit driver

**C:\Program Files\IVI Foundation\VISA\Win64\rssmb\rssmb\_vxi.chm**

## 3 LabWindows/CVI and VXIplug&play driver history

rssmb Instrument Driver		
Driver history for LabWindows/CVI and VXIplug&play Instrument Driver for, C/C++, VEE, MATLAB®, etc.		
Revision	Date	Note
2.21.0	07/2016	<ul style="list-style-type: none"> <li>* Modified error reporting in case of invalid parameter. Instead of returning error code according to invalid parameter, functions return always the same code VI_ERROR_INSTR_PARAMETER. Using rssma_error_message shall give name of invalid parameter in error message.</li> <li>* rssmb_error_query reads all errors from instrument's error queue</li> </ul>
2.20.3	04/2015	<ul style="list-style-type: none"> <li>* Added MATLAB custom driver</li> <li>* Added MATLAB snippet codes to functions and attributes help file</li> <li>* Added High deviation mode to FM modulation</li> </ul>
2.20.1	08/2012	Modifications: <ul style="list-style-type: none"> <li>- rssmb_setViReal64 - format specifier changed to %.12lG, to fix small value rounding in some functions (RCDRV00002144)</li> </ul>
2.20.0	11/2011	Driver update for Firmware version V 2.20.237.31 <ul style="list-style-type: none"> <li>* New:               <ul style="list-style-type: none"> <li>- Pulse Modulation Train</li> <li>- rssmb_SetSYSTEMDisplayLock</li> <li>- rssmb_GetSYSTEMDisplayLock</li> <li>- rssmb_GetStereoAdjustment</li> <li>- rssmb_SetStereoARITypeState</li> <li>- rssmb_GetStereoARITypeState</li> <li>- rssmb_SetROSCExternalSynchronisationBandwidth</li> <li>- rssmb_GetROSCExternalSynchronisationBandwidth</li> <li>- rssmb_SetRFAttenuatorPowerSearchMode</li> <li>- rssmb_GetRFAttenuatorPowerSearchMode</li> <li>- rssmb_SetFrequencySweepMultiplier</li> <li>- rssmb_GetFrequencySweepMultiplier</li> <li>- rssmb_GetLISTFreeSpace</li> <li>- rssmb_SetPowerDisplayPermanentPriority</li> <li>- rssmb_GetPowerDisplayPermanentPriority</li> <li>- rssmb_TESTAllStart</li> <li>- rssmb_TESTAllStart</li> <li>- rssmb_SYSTEMFactoryPreset</li> </ul> </li> <li>* Removed:               <ul style="list-style-type: none"> <li>- DNS settings</li> </ul> </li> </ul>

rssmb Instrument Driver		
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		<ul style="list-style-type: none"> <li>- rssmb_SetKeyboardLayout</li> <li>- rssmb_GetKeyboardLayout</li> <li>- rssmb_SetKeyboardLanguage</li> <li>- rssmb_GetKeyboardLanguage</li> <li>- rssmb_SetDisplayBlankMode</li> <li>- rssmb_GetDisplayBlankMode</li> <li>- rssmb_SYSTEMNetworkCommonExecute</li> </ul>
2.10.2	08/2010	<p>Driver update for Firmware version V2.10.116.18</p> <p>* New functions</p> <ul style="list-style-type: none"> <li>- rssmb_CALibrationStereoCoder</li> <li>- rssmb_GetAutomaticFilePath</li> <li>- rssmb_GetPowerConnectedStatus</li> <li>- rssmb_SetAnalogModulationsExternalInputImpedance</li> <li>- rssmb_GetAnalogModulationsExternalInputImpedance</li> <li>- rssmb_SetLISTIndex</li> <li>- rssmb_GetLISTIndex</li> <li>- rssmb_SYSTEMGPIBResource</li> <li>- rssmb_SYSTEMSerialResource</li> <li>- rssmb_SYSTEMOptionUserDefined</li> </ul> <p>* Modified functions</p> <ul style="list-style-type: none"> <li>- rssmb_confPulm</li> </ul>
2.10.1	06/2010	Removed type cast in rssmb_init preventing 64-bit compilation
2.10.0	10/2009	<p>Driver update for Firmware version 2.10.001.22</p> <p>Initial Release for Linux, support for:</p> <ul style="list-style-type: none"> <li>- Mandriva Linux 2008 and Mandriva Linux 2009</li> <li>- openSUSE 10.3 and openSUSE 11.0</li> </ul> <p>* Added functions:</p> <ul style="list-style-type: none"> <li>- rssmb_SetPULMTrainRepetition</li> <li>- rssmb_GetPULMTrainRepetition</li> <li>- rssmb_GetPULMTrainRepetitionPoints</li> <li>- rssmb_SetAIRFOutputsState</li> <li>- rssmb_GetOutputImpedance</li> <li>- rssmb_SetROSCRFOutput</li> <li>- rssmb_GetROSCRFOutput</li> <li>- rssmb_SetFrequencySweepVoltageOut</li> <li>- rssmb_GetFrequencySweepVoltageOut</li> <li>- rssmb_SetFrequencySweepStartVoltage</li> </ul>

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Revision	Date	Note
		<ul style="list-style-type: none"> <li>- rssmb_GetFrequencySweepStartVoltage</li> <li>- rssmb_SetFrequencySweepStopVoltage</li> <li>- rssmb_GetFrequencySweepStopVoltage</li> <li>- rssmb_GetLevelSweepSpacing</li> <li>- rssmb_ResetLevelSweep</li> <li>- rssmb_SetLISTStartIndex</li> <li>- rssmb_GetLISTStartIndex</li> <li>- rssmb_SetLISTStopIndex</li> <li>- rssmb_GetLISTStopIndex</li> <li>- rssmb_LearnLISTModeData</li> <li>- rssmb_SetCALibrationLevelAdjustmentData</li> <li>- rssmb_GetCALibrationLevelAdjustmentData</li> <li>- rssmb_SetImageSize</li> <li>- rssmb_GetImageSize</li> <li>- rssmb_SetOutputDevice</li> <li>- rssmb_GetOutputDevice</li> <li>- rssmb_SaveHardCopy</li> <li>- rssmb_SetAutomaticNamingState</li> <li>- rssmb_GetAutomaticNamingState</li> <li>- rssmb_GetAutomaticFileName</li> <li>- rssmb_SetAutomaticDirectory</li> <li>- rssmb_GetAutomaticDirectory</li> <li>- rssmb_DeleteImageFiles</li> <li>- rssmb_SetAutomaticFileDateState</li> <li>- rssmb_GetAutomaticFileDateState</li> <li>- rssmb_GetAutomaticFileDate</li> <li>- rssmb_SetAutomaticFilePrefixState</li> <li>- rssmb_GetAutomaticFilePrefixState</li> <li>- rssmb_SetAutomaticFilePrefix</li> <li>- rssmb_GetAutomaticFilePrefix</li> <li>- rssmb_GetAutomaticFileNumber</li> <li>* Updates and fixes:</li> <li>- rssmb_CALibrationAll</li> <li>- rssmb_CALibrationClockSynthesis</li> <li>- rssmb_CALibrationFMOffset</li> <li>- rssmb_CALibrationFrequency</li> <li>- rssmb_CALibrationModulationGenerators</li> <li>- rssmb_CALibrationLevel</li> <li>- rssmb_revision_query</li> </ul>
2.05.2	12/2008	Modified functions:

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Revision	Date	Note
		rssmb_SetRFAttenuatorModerssmb_GetRFAttenuatorMode, rssmb_GetRFAttenuatorLowerRange, rssmb_GetRFAttenuatorUpperRange - fixed instrument model checking
2.05.1	11/2008	<p>New features:</p> <ul style="list-style-type: none"> <li>- Added <b>R&amp;S®SMC100A</b> support</li> <li>- Power Sensor measurement (NRP-Z View) improved</li> </ul> <p>New functions:</p> <p>rssmb_ResetAllSweeps  rssmb_SetLFSweepShape  rssmb_GetLFSweepShape  rssmb_SetLFSweepSource  rssmb_GetLFSweepSource  rssmb_SetAllModulationsState  rssmb_GetFMSensitivity  rssmb_GetPMSensitivity  rssmb_UserCorrectionFillData  rssmb_GetUserCorrectionValue  rssmb_SetLevelSweepShape  rssmb_GetLevelSweepShape</p> <p>Modified functions:</p> <p>rssmb_init (SMC support added)  rssmb_confPM (SMC support added)  rssmb_confPulmTrigger (SMC support added)  rssmb_confRFLevel (SMC support added)</p>
2.05.0	10/2008	<p>Driver update for Firmware version <b>2.05.200.09</b></p> <p>New functions:</p> <p>rssmb_confStereoModulation  rssmb_StereoDirect  rssmb_SetStereoExternalInputImpedance  rssmb_GetStereoExternalInputImpedance  rssmb_SetStereoMaxModulationFrequency  rssmb_GetStereoMaxModulationFrequency  rssmb_SetStereoFMDeviation  rssmb_GetStereoFMDeviation  rssmb_SetStereoSource  rssmb_GetStereoSource  rssmb_SetStereoState  rssmb_GetStereoState</p>



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		rssmb_confStereoARI rssmb_SetStereoARIBKCode rssmb_GetStereoARIBKCode rssmb_SetStereoARIDeviation rssmb_GetStereoARIDeviation rssmb_SetStereoARISState rssmb_GetStereoARISState rssmb_SetStereoARIType rssmb_GetStereoARIType rssmb_confStereoAudio rssmb_SetStereoAudioFrequency rssmb_GetStereoAudioFrequency rssmb_SetStereoAudioMode rssmb_GetStereoAudioMode rssmb_SetStereoAudioPreemphasis rssmb_GetStereoAudioPreemphasis rssmb_SetStereoAudioPreemphasisState rssmb_GetStereoAudioPreemphasisState rssmb_confStereoPilot rssmb_SetStereoPilotState rssmb_GetStereoPilotState rssmb_SetStereoPilotDeviation rssmb_GetStereoPilotDeviation rssmb_SetStereoPilotPhase rssmb_GetStereoPilotPhase rssmb_confStereoRDS rssmb_StereoRDSPrGIdentification rssmb_StereoRDSPrGName rssmb_SetStereoRDSDataSet rssmb_GetStereoRDSDataSet rssmb_SetStereoRDSDeviation rssmb_GetStereoRDSDeviation rssmb_SetStereoRDSState rssmb_GetStereoRDSState rssmb_SetStereoRDSTrafficAnnouncementState rssmb_GetStereoRDSTrafficAnnouncementState rssmb_SetStereoRDSTrafficProgramState rssmb_GetStereoRDSTrafficProgramState rssmb_SetFrequencySweepShape rssmb_GetFrequencySweepShape

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		rssmb_PowerFilter rssmb_SetPowerSenseFilterMode rssmb_GetPowerSenseFilterMode rssmb_SetPowerFilterFixedNoiseContent rssmb_GetPowerFilterFixedNoiseContent rssmb_SetPowerFilterFixedNoiseTimeout rssmb_GetPowerFilterFixedNoiseTimeout rssmb_CALibrationClockSynthesis rssmb_SetImageFileName rssmb_GetImageFileName rssmb_SetImageFormat rssmb_GetImageFormat rssmb_GetImageSnapshot rssmb_PresetSignalPath rssmb_GetSYSTEMStartupStatus rssmb_SetAngleUnits rssmb_GetAngleUnits rssmb_SetPowerUnits rssmb_GetPowerUnits rssmb_SetVelocityUnits rssmb_GetVelocityUnits rssmb_DevicePreset Modified functions: rssmb_init (USB support added) rssmb_CALibrationLevel rssmb_readToFile rssmb_revision_query
2.04.0	07/2007	Driver created

### **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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