

R&S[®]SMCVB-KV14

XM Radio Waveforms

User Manual



1179279002
Version 04

ROHDE & SCHWARZ
Make ideas real



This document describes the following software option:

- R&S®SMCVB-KV14 XM Radio Waveforms (1434.5463.xx)

Customer information regarding recording in the Sirius XM Band

Sirius XM does not support recording of Sirius XM broadcast. If a customer purchases equipment from Rohde & Schwarz with the intention of recording the Sirius XM broadcast, this customer does so at its own risk. Sirius XM will not provide any support or assistance to this customer. Rohde & Schwarz declines to assist customers in recording the Sirius XM broadcast.

© 2024 Rohde & Schwarz

Muehldorfstr. 15, 81671 Muenchen, Germany

Phone: +49 89 41 29 - 0

Email: info@rohde-schwarz.com

Internet: www.rohde-schwarz.com

Subject to change – data without tolerance limits is not binding.

R&S® is a registered trademark of Rohde & Schwarz GmbH & Co. KG.

All other trademarks are the properties of their respective owners.

1179.2790.02 | Version 04 | R&S®SMCVB-KV14

Throughout this document, R&S® is indicated as R&S.

Contents

1	Welcome to the R&S SMCVB-KV14 option.....	5
1.1	Key features.....	5
1.2	Installation.....	5
1.3	What's new.....	6
1.4	Documentation overview.....	7
1.4.1	Getting started manual.....	7
1.4.2	User manuals and help.....	7
1.4.3	Service manual.....	7
1.4.4	Instrument security procedures.....	7
1.4.5	Printed safety instructions.....	8
1.4.6	Specifications and product brochures.....	8
1.4.7	Calibration certificate.....	8
1.4.8	Release notes and open source acknowledgment.....	8
1.4.9	Application notes, application cards, white papers, etc.....	8
1.4.10	Videos.....	8
	Index.....	9

1 Welcome to the R&S SMCVB-KV14 option

The R&S SMCVB-KV14 is a waveform library in accordance with the XM Radio digital standard. The XM Radio waveform files are provided by Sirius XM.



The playback of XM Radio waveforms requires license and waveforms from Sirius XM

Rohde & Schwarz does not provide XM Radio waveform files themselves, but rather the functionality to play back waveform files.

If the required options are installed, you can play back XM Radio waveform files.



The Sirius XM approval certificate is available for registered users on the global Rohde & Schwarz information system (GLORIS), stored in the document folder `SMCVB-KV14_XM_Radio_Waveforms`.

For information on required options and how to play waveforms, see the R&S SMCV100B user manual. The latest version is available at:

www.rohde-schwarz.com/manual/SMCV100B

1.1 Key features

The R&S SMCVB-KV14 features efficient use with dedicated waveforms that are provided by Sirius XM.

1.2 Installation

Required options

The equipment layout for processing files of waveform libraries includes:

- R&S SMCV100B base unit, including arbitrary waveform generator (64 MSample ARB memory, 60 MHz RF bandwidth)
- Waveform library option (R&S SMCVB-KVxx)

For more information on ARB options, see chapter "Using the arbitrary waveform generator (ARB)" in the R&S SMCV100B user manual.

To get XM Radio library files

- ▶ Contact Sirius XM to get XM Radio library files.

To save a library file

- ▶ Save the library file to one of the following storage locations:
 - External storage device (HDD, memory stick): Use an external USB storage device to save large files or complete libraries. Connect the storage device to one of the USB 3.0 connectors on the rear panel of the R&S SMCV100B. If detected correctly, you can access the files on the R&S SMCV100B in the `/usb/` directory in the file-select dialogs.
The R&S SMCV100B supports the following storage formats: ext2/ext3/ext4, FAT16/FAT32, NTFS (read-only), ISO9660, UDF
 - Internal memory (SSD): Use the internal memory to save single files to the user directory `/var/user/` of the R&S SMCV100B, for example, using FTP via a LAN connection.

To load and play a waveform library file

1. Load the waveform file from its storage location:
 - External storage device (HDD, memory stick): Load the file from the `/usb/` directory.
 - Internal memory (SSD): Load the file from the user directory `/var/user/`

Note: Library files are encrypted files. Loading the library file at the R&S SMCV100B requires installation of the corresponding library option. See ["Required options"](#) on page 5.
2. To load the file at the R&S SMCV100B, select the file in the dialog "Baseband" > "ARB" > "Load Waveform".
3. To select the file, navigate to the storage location (1).
4. Select "ARB" > "State" > "On".
The R&S SMCV100B processes the waveform file.
5. In the block diagram, select "RF" > "On"
The waveform file is modulated onto the RF carrier and output at the RF 50 Ω connector.

For more information on loading waveform files, see chapter "How to create, generate and play waveform files" in the R&S SMCV100B user manual.

1.3 What's new

Compared to the previous version the documentation provides updated installation instructions to access, download and play waveform library files, see [Chapter 1.2, "Installation"](#), on page 5.

1.4 Documentation overview

This section provides an overview of the R&S SMCV100B user documentation. Unless specified otherwise, you find the documents at:

www.rohde-schwarz.com/manual/smcv100b

1.4.1 Getting started manual

Introduces the R&S SMCV100B and describes how to set up and start working with the product. Includes basic operations, typical measurement examples, and general information, e.g. safety instructions, etc. A printed version is delivered with the instrument.

1.4.2 User manuals and help

Separate manuals for the base unit and the software options are provided for download:

- **Base unit manual**
Contains the description of all instrument modes and functions. It also provides an introduction to remote control, a complete description of the remote control commands with programming examples, and information on maintenance, instrument interfaces and error messages. Includes the contents of the getting started manual.
- **Software option manual**
Contains the description of the specific functions of an option. Basic information on operating the R&S SMCV100B is not included.

The contents of the user manuals are available as help in the R&S SMCV100B. The help offers quick, context-sensitive access to the complete information for the base unit and the software options.

All user manuals are also available for download or for immediate display on the internet.

1.4.3 Service manual

Describes the performance test for checking compliance with rated specifications, firmware update, troubleshooting, adjustments, installing options and maintenance.

The service manual is available for registered users on the global Rohde & Schwarz information system (GLORIS):

<https://gloris.rohde-schwarz.com>

1.4.4 Instrument security procedures

Deals with security issues when working with the R&S SMCV100B in secure areas. It is available for download on the internet.

1.4.5 Printed safety instructions

Provides safety information in many languages. The printed document is delivered with the product.

1.4.6 Specifications and product brochures

The specifications document, also known as the data sheet, contains the technical specifications of the R&S SMCV100B. It also lists the firmware applications and their order numbers, and optional accessories.

The brochure provides an overview of the instrument and deals with the specific characteristics.

See www.rohde-schwarz.com/brochure-datasheet/smcv100b

1.4.7 Calibration certificate

The document is available on <https://gloris.rohde-schwarz.com/calcert>. You need the device ID of your instrument, which you can find on a label on the rear panel.

1.4.8 Release notes and open source acknowledgment

The release notes list new features, improvements and known issues of the current software version, and describe the software installation.

The software uses several valuable open source software packages. An open source acknowledgment document provides verbatim license texts of the used open source software.

www.rohde-schwarz.com/firmware/smcv100b

1.4.9 Application notes, application cards, white papers, etc.

These documents deal with special applications or background information on particular topics.

For some application sheets, see also:

www.rohde-schwarz.com/application/smcv100b

1.4.10 Videos

Find various videos on Rohde & Schwarz products and test and measurement topics on YouTube: <https://www.youtube.com/@RohdeundSchwarz>

Index

A

Application cards	8
Application notes	8

B

Brochures	8
-----------------	---

C

Calibration certificate	8
-------------------------------	---

D

Data sheets	8
Documentation overview	7

G

Getting started	7
-----------------------	---

H

Help	7
------------	---

I

Instrument help	7
Instrument security procedures	7

K

Key features	5
--------------------	---

L

Libraries	
Load file	6
Play file	6
Required options	5

O

Open source acknowledgment (OSA)	8
--	---

R

Release notes	8
---------------------	---

S

Safety instructions	8
Security procedures	7
Service manual	7
Specifications	8

U

User manual	7
-------------------	---

V

Videos	8
--------------	---

W

Welcome	5
What's new	6
White papers	8