

# R&S<sup>®</sup>SMCVB-KV13

## HD Radio<sup>™</sup> Waveforms

### User Manual



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Version 03

**ROHDE & SCHWARZ**  
Make ideas real



This document describes the following software option:

- R&S®SMCVB-KV13 HD Radio™ Waveforms (1434.5434.xx)

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The following abbreviations are used throughout this manual: R&S®SMCV100B is abbreviated as R&S SMCV100B.

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# 1 Welcome to the R&S SMCVB-KV13 option

The R&S SMCVB-KV13 is a waveform library that provides waveform files in accordance with HD Radio™ Technology.

This user manual contains a reference description of the functionality that the waveform library provides. All functions not discussed in this manual are described in the R&S SMCV100B user manual. The latest version is available at:

[www.rohde-schwarz.com/manual/SMCV100B](http://www.rohde-schwarz.com/manual/SMCV100B)

## 1.1 Key features

The R&S SMCVB-KV13 features:

- Numerous waveform files in accordance with HD Radio™ Technology
- Efficient use with dedicated waveforms

## 1.2 Installation

You can find detailed installation in the R&S SMCV100B user manual describing firmware versions FW 4.90.002.xx and later of the R&S SMCV100B.

Installation of the waveform library and playing of HD Radio™ waveforms does not require additional licensing at the license holder. The option R&S SMCVB-KV13 already provides licensed HD Radio™ waveforms.

## 1.3 What's new

Compared to the previous version, this user manual provides HD Radio™ copyright information. See the second page of this user manual.

## 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](http://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 Data sheets and brochures

The data sheet contains the technical specifications of the R&S SMCV100B. It also lists the options 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](http://www.rohde-schwarz.com/brochure-datasheet/smcv100b)

### 1.4.7 Release notes and open source acknowledgment (OSA)

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

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

See [www.rohde-schwarz.com/firmware/smcv100b](http://www.rohde-schwarz.com/firmware/smcv100b)

### 1.4.8 Application notes, application cards, white papers, etc.

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

See [www.rohde-schwarz.com/application/smcv100b](http://www.rohde-schwarz.com/application/smcv100b)

## 2 Available waveform files

The R&S SMCVB-KV13 waveform library contains three folders with the available waveform files. For details on the waveform files, contact iBiquity Digital Corporation.

- [AM folder](#).....8
- [CC folder](#)..... 10
- [FM folder](#)..... 13

### 2.1 AM folder

Contains the following waveform files, listed in alphabetical order:

IB\_AM\_e1\_awgn.wv  
 IB\_AM\_e1a\_CW\_dc.wv  
 IB\_AMr001\_e1\_cw\_0\_m10.wv  
 IB\_AMr001\_e1\_cw\_2\_6.wv  
 IB\_AMr001\_e1\_cw\_m1\_m2.wv  
 IB\_AMr001\_e1\_cw\_m30\_0\_30.wv  
 IB\_AMr001\_e1\_cw\_m7p5\_10.wv  
 IB\_AMr201\_e1awfc52.wv  
 IB\_AMr201\_e1awfr1190.wv  
 IB\_AMr208\_e1awfa05.wv  
 IB\_AMr208\_e1awfa07.wv  
 IB\_AMr208\_e1awfa10.wv  
 IB\_AMr208\_e1awfb01.wv  
 IB\_AMr208\_e1awfb02.wv  
 IB\_AMr208\_e1awfb03.wv  
 IB\_AMr208\_e1awfb04.wv  
 IB\_AMr208\_e1awfb05.wv  
 IB\_AMr208\_e1awfb102.wv  
 IB\_AMr208\_e1awfb104.wv  
 IB\_AMr208\_e1awfb111.wv  
 IB\_AMr208\_e1awfb113.wv  
 IB\_AMr208\_e1awfb119.wv  
 IB\_AMr208\_e1awfb121.wv



IB\_AMr208\_e1awfb124.wv  
IB\_AMr208\_e1awfb126.wv  
IB\_AMr208\_e1awfb128.wv  
IB\_AMr208\_e1awfb130.wv  
IB\_AMr208\_e1awfb131.wv  
IB\_AMr208\_e1awfb132.wv  
IB\_AMr208\_e1awfb134.wv  
IB\_AMr208\_e1awfb135.wv  
IB\_AMr208\_e1awfb145.wv  
IB\_AMr208\_e1awfb243.wv  
IB\_AMr208\_e1awfc00.wv  
IB\_AMr208\_e1awfc04.wv  
IB\_AMr208\_e1awfc06.wv  
IB\_AMr208\_e1awfc08.wv  
IB\_AMr208\_e1awfc10.wv  
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IB\_AMr208\_e1awfc19.wv  
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IB\_AMr208\_e1awfc30.wv  
IB\_AMr208\_e1awfc31.wv  
IB\_AMr208\_e1awfc32.wv  
IB\_AMr208\_e1awfr1221.wv  
IB\_AMr208\_e1awfr1249.wv  
IB\_AMr208\_e1awfr1260.wv  
IB\_AMr208a\_e1awfb00.wv  
IB\_AMr208a\_e1awfb138.wv  
IB\_AMr208a\_e1awfc33.wv  
IB\_AMr208a\_e1awfc34.wv

IB\_AMr208b\_e1awf1123.wv  
IB\_AMr208c\_e1awf1124.wv  
IB\_AMr208c\_e1awfa11.wv  
IB\_AMr220\_e1awfc28.wv  
IB\_AMr230\_e1awfr1005.wv  
IB\_AMr230\_e1awfr1187.wv  
IB\_AMr230\_e1awfr1261.wv  
IB\_AMr230a\_e1awfr1001.wv  
IB\_AMr230a\_e1awfr1002.wv  
IB\_AMr230b\_e1awfc102.wv  
IB\_AMr230d\_e1awfr12.wv  
IB\_AMr430\_e1wfr1016.wv  
IB\_AMr430\_e1wfr1017.wv  
IB\_AMr430\_e1wfr1018.wv  
IB\_AMr430\_e1wfr1019.wv  
IB\_AMr430\_e1wfr1020.wv  
IB\_AMr430\_e1wfr1021.wv  
IB\_AMr430\_e1wfr1022.wv  
IB\_AMr430\_e1wfr1023.wv  
IB\_AMr430\_e1wfr1024.wv  
IB\_AMr430\_e1wfr1025.wv  
IB\_AMr430\_e1wfr1026.wv  
IB\_AMr430\_e1wfr1027.wv  
IB\_AMr430\_e1wfr1028.wv  
IB\_AMr440\_e1wfr1116.wv  
IB\_AMr440\_e1wfr1117.wv

## 2.2 CC folder

Contains the following waveform files, listed in alphabetical order:

CC\_TTN\_FMr440a\_e1wfr001.wv  
CC\_TTN\_FMr440a\_e1wfr002.wv  
CC\_TTN\_FMr440a\_e1wfr003.wv

CC\_TTN\_FMr440a\_e1wfr004.wv  
CC\_TTN\_FMr440a\_e1wfr005.wv  
CC\_TTN\_FMr440a\_e1wfr006.wv  
CC\_TTN\_FMr440a\_e1wfr007.wv  
CC\_TTN\_FMr440a\_e1wfr008.wv  
CC\_TTN\_FMr440a\_e1wfr009.wv  
CC\_TTN\_FMr440a\_e1wfr010.wv  
CC\_TTN\_FMr440a\_e1wfr011.wv  
CC\_TTN\_FMr440a\_e1wfr012.wv  
CC\_TTN\_FMr440a\_e1wfr013.wv  
CC\_TTN\_FMr440a\_e1wfr014.wv  
CC\_TTN\_FMr440a\_e1wfr015.wv  
CC\_TTN\_FMr440a\_e1wfr016.wv  
CC\_TTN\_FMr440a\_e1wfr017.wv  
CC\_TTN\_FMr440a\_e1wfr018.wv  
CC\_TTN\_FMr440a\_e1wfr019.wv  
CC\_TTN\_FMr440a\_e1wfr019b.wv  
CC\_TTN\_FMr440a\_e1wfr020.wv  
CC\_TTN\_FMr440a\_e1wfr020b.wv  
CC\_TTN\_FMr440a\_e1wfr021.wv  
CC\_TTN\_FMr440a\_e1wfr022.wv  
CC\_TTN\_FMr440a\_e1wfr023.wv  
CC\_TTN\_FMr440a\_e1wfr024.wv  
CC\_TTN\_FMr440a\_e1wfr025.wv  
CC\_TTN\_FMr440a\_e1wfr026.wv  
CC\_TTN\_FMr440a\_e1wfr027.wv  
CC\_TTN\_FMr440a\_e1wfr028.wv  
CC\_TTN\_FMr440a\_e1wfr029.wv  
CC\_TTN\_FMr440a\_e1wfr030.wv  
CC\_TTN\_FMr440a\_e1wfr031.wv  
CC\_TTN\_FMr440a\_e1wfr032.wv  
CC\_TTN\_FMr440a\_e1wfr033.wv  
CC\_TTN\_FMr440a\_e1wfr034.wv

CC\_TTN\_FMr440a\_e1wfr035.wv  
CC\_TTN\_FMr440a\_e1wfr036.wv  
CC\_TTN\_FMr440a\_e1wfr037.wv  
CC\_TTN\_FMr440a\_e1wfr038.wv  
CC\_TTN\_FMr440a\_e1wfr039.wv  
CC\_TTN\_FMr440a\_e1wfr040.wv  
CC\_TTN\_FMr440a\_e1wfr041.wv  
CC\_TTN\_FMr440a\_e1wfr042.wv  
CC\_TTN\_FMr440a\_e1wfr043.wv  
CC\_TTN\_FMr440a\_e1wfr044.wv  
CC\_TTN\_FMr440a\_e1wfr045.wv  
CC\_TTN\_FMr440a\_e1wfr046.wv  
CC\_TTN\_FMr440a\_e1wfr047.wv  
CC\_TTN\_FMr440a\_e1wfr048.wv  
CC\_TTN\_FMr440a\_e1wfr049.wv  
CC\_TTN\_FMr440a\_e1wfr049b.wv  
CC\_TTN\_FMr440a\_e1wfr050.wv  
CC\_TTN\_FMr440a\_e1wfr050b.wv  
CC\_TTN\_FMr440a\_e1wfr051.wv  
CC\_TTN\_FMr440a\_e1wfr051b.wv  
CC\_TTN\_FMr440a\_e1wfr052.wv  
CC\_TTN\_FMr440a\_e1wfr053.wv  
CC\_TTN\_FMr440a\_e1wfr054.wv  
CC\_TTN\_FMr440a\_e1wfr055.wv  
CC\_TTN\_FMr440a\_e1wfr056.wv  
CC\_TTN\_FMr440a\_e1wfr057.wv  
CC\_TTN\_FMr440a\_e1wfr058.wv  
CC\_TTN\_FMr440a\_e1wfr065.wv  
CC\_TTN\_FMr440a\_e1wfr070.wv  
CC\_TTN\_FMr440a\_e1wfr071.wv  
CC\_TTN\_FMr440a\_e1wfr072.wv

## 2.3 FM folder

Contains the following waveform files, listed in alphabetical order:

CC\_FMr440\_e1wfr015\_HighDataRate.wv

CC\_FMr440d\_e1wfr011.wv

CC\_FMr440d\_e1wfr012.wv

CC\_FMr440d\_e1wfr013.wv

CC\_FMr440d\_e1wfr014.wv

IB\_FM\_e1\_awgn.wv

IB\_FM\_e1\_CW\_dc.wv

IB\_FMr001\_e1\_cw\_0\_100.wv

IB\_FMr001\_e1\_cw\_0\_m100.wv

IB\_FMr001\_e1\_cw\_0\_m200.wv

IB\_FMr001\_e1\_cw\_10\_20.wv

IB\_FMr001\_e1\_cw\_50\_100.wv

IB\_FMr001\_e1\_cw\_m275\_0\_275.wv

IB\_FMr001\_e1\_cw\_m50\_0.wv

IB\_FMr001\_e1\_cw\_m80\_m90.wv

IB\_FMr201\_e1wfc52.wv

IB\_FMr201\_e1wfr1189.wv

IB\_FMr208\_e1wfr1122.wv

IB\_FMr208\_e1wfr1185.wv

IB\_FMr208\_e1wfr1246.wv

IB\_FMr208\_e1wfr1247.wv

IB\_FMr208\_e1wfr1248.wv

IB\_FMr208c\_e1wfa05.wv

IB\_FMr208c\_e1wfa25.wv

IB\_FMr208c\_e1wfa98.wv

IB\_FMr208c\_e1wfa99.wv

IB\_FMr208c\_e1wfc00.wv

IB\_FMr208c\_e1wfc03.wv

IB\_FMr208c\_e1wfc08.wv

IB\_FMr208c\_e1wfc09.wv

IB\_FMr208c\_e1wfc10.wv

IB\_FMr208c\_e1wfc201.wv  
IB\_FMr208c\_e1wfc203.wv  
IB\_FMr208c\_e1wfc204.wv  
IB\_FMr208c\_e1wfc206.wv  
IB\_FMr208c\_e1wfc209.wv  
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IB\_FMr208c\_e1wfc227.wv  
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IB\_FMr208c\_e1wfc546.wv  
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IB\_FMr208c\_e1wfc548.wv  
IB\_FMr208c\_e1wfc90.wv  
IB\_FMr208d\_e1wfa141.wv  
IB\_FMr208d\_e1wfc208.wv  
IB\_FMr208d\_e1wfc538.wv  
IB\_FMr208d\_e1wfc540.wv  
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IB\_FMr208e\_e1wfc13.wv  
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IB\_FMr208i\_e1wfa58.wv  
IB\_FMr208j\_e1wfa105.wv  
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IB\_FMr208j\_e1wfc89.wv  
IB\_FMr220\_e1wfa108.wv  
IB\_FMr220a\_e1wfc100.wv  
IB\_FMr220a\_e1wfc101.wv  
IB\_FMr220a\_e1wfc553.wv  
IB\_FMr220a\_e1wfc555.wv  
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IB\_FMr230\_e1wfr1061.wv  
IB\_FMr230\_e1wfr143.wv  
IB\_FMr230a\_e1wfa153.wv  
IB\_FMr230a\_e1wfc102.wv  
IB\_FMr230a\_e1wfr1000.wv  
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IB\_FMr430\_e1wfr1080.wv  
IB\_FMr430\_e1wfr1082.wv  
IB\_FMr430\_e1wfr1083.wv  
IB\_FMr430\_e1wfr1086.wv  
IB\_FMr430\_e1wfr1087.wv  
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IB\_FMr430\_e1wfr1091.wv  
IB\_FMr430\_e1wfr1092.wv  
IB\_FMr430\_e1wfr1093.wv  
IB\_FMr430\_e1wfr1094.wv  
IB\_FMr430\_e1wfr1095.wv  
IB\_FMr430\_e1wfr1096.wv  
IB\_FMr430\_e1wfr1097.wv  
IB\_FMr430\_e1wfr1098.wv  
IB\_FMr430\_e1wfr1099.wv  
IB\_FMr430\_e1wfr1100.wv  
IB\_FMr430\_e1wfr1101.wv  
IB\_FMr430\_e1wfr1102.wv  
IB\_FMr430\_e1wfr1152.wv  
IB\_FMr430a\_e1wfr1081.wv  
IB\_FMr430a\_e1wfr1085.wv  
IB\_FMr440\_e1wfr1111.wv  
IB\_FMr440\_e1wfr1112.wv



IB\_FMr440\_e1wfr1113.wv

IB\_FMr440\_e1wfr1114.wv

IB\_FMr440\_e1wfr1115.wv

IB\_FMr440\_e1wfr1243.wv

IB\_FMr440\_e1wfr1251.wv

IB\_FMr440\_e1wfr1252.wv

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