

R&S® SMCVB-KV20

Chinese Digital Radio Waveforms

User Manual



1179365002
Version 03

ROHDE & SCHWARZ
Make ideas real



This document describes the following software options:

- R&S®SMCVB-KV20 Chinese Digital Radio Waveforms (1434.5892.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-KV20 option

The R&S SMCVB-KV20 is a waveform library that provides waveform files in accordance with the Chinese broadcast standards GY/T 268.1 and GY/T 268.2.

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

1.1 Key features

The R&S SMCVB-KV20 features:

- Numerous waveform files in accordance with Chinese Digital Radio broadcast standards
- Efficient use with dedicated waveforms as interferer signal

1.2 Installation

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

1.3 What's new

Compared to the previous version there are editorial changes only.

1.4 Documentation overview

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

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 open-source acknowledgment document provides verbatim license texts of the used open source software.

See 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

2 Available waveform files

This chapter contains the description of the available waveform files.

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2.1 General settings and features

All files have general features and settings as follows:

- Loop time 10 minutes
- Sample rate 816 kHz

2.2 Naming conventions

The main broadcasting parameters are coded in the file name:

- <Transmission mode>
Characters "T1", or "T2" depending on the mode.
- <Spectrum mode>
Characters "S1", "S2", "S9", "S10" or "S23" depending on the mode.
- <Constellation of main service data>
"QPSK", "16QAM", or "64QAM"
- <LDPC coding rate>
 - "12" for 1/2
 - "'34" for 3/4

- FM signal included
"FM"

Example: cdr_T1S10_QPSK34_FM.wv

This file has the following characteristics:

- Transmission mode: 1
- Spectrum mode: 10
- Constellation of main service data: QPSK
- LDPC coding rate: 3/4
- FM included

See also [Chapter 2.9, "Cdr_t1s10_QPSK34_fm.wv"](#), on page 11.

2.3 Cdr_t1s1_16QAM12.wv

| | |
|---------------------------------|-------|
| Transmission mode | 1 |
| Spectrum mode | 1 |
| Constellation main service data | 16QAM |
| LDPC coding | 1/2 |
| FM part | no |

2.4 Cdr_t1s1_16QAM34.wv

| | |
|---------------------------------|-------|
| Transmission mode | 1 |
| Spectrum mode | 1 |
| Constellation main service data | 16QAM |
| LDPC coding | 3/4 |
| FM part | No FM |

2.5 Cdr_t1s1_64QAM34.wv

| | |
|---------------------------------|--------|
| Transmission mode | 1 |
| Spectrum mode | 1 |
| Constellation main service data | 64 QAM |

| | |
|-------------|-------|
| LDPC coding | 3/4 |
| FM part | No FM |

2.6 Cdr_t1s1_QPSK12.wv

| | |
|---------------------------------|-------|
| Transmission mode | 1 |
| Spectrum mode | 1 |
| Constellation main service data | QPSKM |
| LDPC coding | 1/2 |
| FM part | No FM |

2.7 Cdr_t1s1_QPSK34.wv

| | |
|---------------------------------|-------|
| Transmission mode | 1 |
| Spectrum mode | 1 |
| Constellation main service data | QPSK |
| LDPC coding | 3/4 |
| FM part | No FM |

2.8 Cdr_t1s10_QPSK12_fm.wv

| | |
|---------------------------------|-------------------|
| Transmission mode | 1 |
| Spectrum mode | 10 |
| Constellation main service data | QPSK |
| LDPC coding | 1/2 |
| FM part | Stereo multiplex |
| | L = 1 kHz |
| | R = Off |
| | ±44 kHz deviation |

2.9 Cdr_t1s10_QPSK34_fm.wv

| | |
|---------------------------------|-------------------|
| Transmission mode | 1 |
| Spectrum mode | 10 |
| Constellation main service data | QPSK |
| LDPC coding | 3/4 |
| FM part | Stereo multiplex |
| | L = 1 kHz |
| | R = Off |
| | ±44 kHz deviation |

2.10 Cdr_t1s2_QPSK12.wv

| | |
|---------------------------------|-------|
| Transmission mode | 1 |
| Spectrum mode | 2 |
| Constellation main service data | QPSK |
| LDPC coding | 1/2 |
| FM part | No FM |

2.11 Cdr_t1s2_QPSK34.wv

| | |
|---------------------------------|-------|
| Transmission mode | 1 |
| Spectrum modes | 2 |
| Constellation main service data | QPSK |
| LDPC coding | 3/4 |
| FM part | No FM |

2.12 Cdr_t1s23_QPSK12_fm.wv

| | |
|---------------------------------|------|
| Transmission mode | 1 |
| Spectrum mode | 23 |
| Constellation main service data | QPSK |
| LDPC coding | 1/2 |

| | |
|---------|-------------------|
| FM part | Stereo multiplex |
| | L = 1 kHz |
| | ±34 kHz deviation |

2.13 Cdr_t1s23_QPSK34_fm.wv

| | |
|---------------------------------|-------------------|
| Transmission mode | 1 |
| Spectrum mode | 23 |
| Constellation main service data | QPSK |
| LDPC coding | 3/4 |
| FM part | Stereo multiplex |
| | L = 1 kHz |
| | ±25 kHz deviation |

2.14 Cdr_t1s9_QPSK34_fm.wv

| | |
|---------------------------------|-------------------|
| Transmission mode | 1 |
| Spectrum mode | 9 |
| Constellation main service data | QPSK |
| LDPC coding | 3/4 |
| FM part | Stereo multiplex |
| | L = 1 kHz |
| | ±34 kHz deviation |

2.15 Cdr_t1s9_QPSK34.wv

| | |
|---------------------------------|-------|
| Transmission mode | 1 |
| Spectrum mode | 9 |
| Constellation main service data | QPSK |
| LDPC coding | 3/4 |
| FM part | no FM |

2.16 Cdr_t2s1_16QAM34.wv

| | |
|---------------------------------|-------|
| Transmission mode | 2 |
| Spectrum modes | 1 |
| Constellation main service data | 16QAM |
| LDPC coding | 3/4 |
| FM part | No FM |

2.17 Cdr_t2s1_64QAM34.wv

| | |
|---------------------------------|-------|
| Transmission mode | 2 |
| Spectrum mode | 1 |
| Constellation main service data | 64QAM |
| LDPC coding | 3/4 |
| FM part | No FM |

2.18 Cdr_t2s2_64QAM34.wv

| | |
|---------------------------------|-------|
| Transmission mode | 2 |
| Spectrum mode | 2 |
| Constellation main service data | 64QAM |
| LDPC coding | 3/4 |
| FM part | No FM |

2.19 Cdr_t2s2_QPSK12.wv

| | |
|---------------------------------|-------|
| Transmission mode | 2 |
| Spectrum mode | 2 |
| Constellation main service data | QPSK |
| LDPC coding | 1/2 |
| FM part | No FM |

2.20 Cdr_t2s2_QPSK34.wv

| | |
|---------------------------------|-------|
| Transmission mode | 2 |
| Spectrum mode | 2 |
| Constellation main service data | QPSK |
| LDPC coding | 3/4 |
| FM part | No FM |

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