R&S®SMCVB-KV16
ATSC 3.0 Waveforms
User Manual

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Version 01

ROHDE&SCHWARZ
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This document describes the following software option:

- R&S®SMCVB-KV16 ATSC 3.0 Waveforms (1434.5528.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-KV16 Option

The R&S SMCVB-KV16 is a waveform library that provides waveform files in accordance with the ATSC 3.0 digital standard.

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-KV16 features:

- Numerous waveform files in accordance with ATSC 3.0 digital standard
- Efficient use with dedicated waveforms

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 later than FW 4.70.176.xx of the R&S SMCV100B.

1.3 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

1.3.1 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.

1.3.2 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.

1.3.3 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

1.3.4 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.

1.3.5 Printed Safety Instructions

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

1.3.6 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

1.3.7 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

1.3.8 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 ATSC 3.0 Waveform Files

The files are stored on the disk.

The set of files is available twice:

- One set is generated with ALP encapsulated test IP packets as PLP content with payload acc. to ITU.O PRBS of sequence 2^{23}-1.
- The other set is generated with ALP encapsulated test TS packets as PLP content with payload acc. to ITU.O PRBS of sequence 2^{23}-1.

Each file has a duration of approx. 30 seconds to ensure proper locking of a receiver for e.g. BER before LDPC measurement.

The files are composed together in subdirectories acc. to the ATSC 3.0 V&V test case definition in phases (P) and steps (S):

Subdirectory	Related test case *
P1S1	VV001 – VV033
P1S2	VV034 – VV061
P1S3	VV062 – VV065
P1S4	VV066 – VV069
P1S5	VV100 – VV167
P1S6	VV170 – VV181 (except VV168, VV169, VV177, VV178, VV182 to VV187)
P1S7	VV190 – VV192 (except VV193, VV194, VV195)
P1S8	VV196 – VV199
P2S1	VV200 – VV223
P2S2	VV224 – VV244
P2S3	VV245 – VV280
P6S1	VV600 – VV605 (except VV601 and VV602)
* All file names contain the related test case of the ATSC.org A/322 Verification & Validation group, e.g. "VV001".	

2.1 File Descriptions

The available waveform files are described in the WV-K818_Content_Overview_<version>.xlsx Excel file.

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