

Playback of XM Radio Waveforms R&S®SMBV-K256, R&S®SMJ-K256, R&S®SMU-K256, R&S®SMW-K256, R&S®AFQ-K256 Operating Manual



1175.7374.02 – 03

This document describes the following software options:

- R&S®SMBV-K256
1415.8402.02
- R&S®SMJ-K256
1409.2606.02
- R&S®SMU-K256
1161.1240.02
- R&S®SMW-K256
1413.9824.02, 1413.9824.03
- R&S®AFQ-K256
1401.6002.02

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 decline to assist customers in recording the Sirius XM broadcast.

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The following abbreviations are used throughout this manual: R&S®AFQ is abbreviated as R&S AFQ, R&S®SMBV is abbreviated as R&S SMBV, R&S®SMJ is abbreviated as R&S SMJ, R&S®SMU is abbreviated as R&S SMU, R&S®SMW is abbreviated as R&S SMW.

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1 Getting Started

The XM Radio waveforms files (*.wav) are provided from Sirius XM and can be played on the Arbitrary Waveform Generator (ARB) of the instruments listed under [chapter 1.2, "System Requirements"](#), on page 5.



Playing of XM Radio waveforms on an Rohde&Schwarz signal generator requires a license and the waveforms from Sirius XM.

1.1 Version History



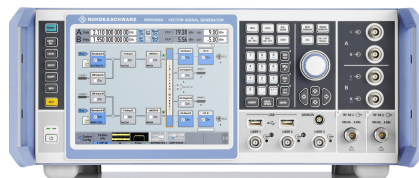
For information on the current firmware version refer to the release notes of the instrument.

1.2 System Requirements

The XM Radio waveforms can be playback on the instruments listed below. The instrument must be equipped with the options listed in [table 1-1](#).

Supported Instruments

- R&S SMW200A Vector Signal Generator



- R&S SMU200A Vector Signal Generator



- R&S SMBV100A Vector Signal Generator



- R&S SMJ100A Vector Signal Generator



- R&S AFQ100A I/Q Modulation Generator



Table 1-1: Required options

Option name	Description
R&S SMJ-B9/B10 R&S SMU-B9/B10	Baseband Generator
R&S SMBV-B10/51 with R&S SMBV-K511 and R&S SMBV-K512	Baseband Generator with Memory Extension
R&S SMW-B10 with R&S SMW-K511/-K512	Baseband generator with realtime coder and ARB (64 Msample), 120 MHz RF bandwidth with Memory Extension
R&S AFQ-B10/B11/B12	Baseband Hardware
R&S SMBV-K256 R&S SMJ-K256 R&S SMU-K256 R&S SMW-K256 R&S AFQ-K256	Playback of XM Radio Waveforms

For information on the order number of an option refer to the data sheet.

1.3 Installation Instructions



The files are encrypted for reasons of protection. Copying or recording the waveform files with the intention of using them on another playback device is prohibited!

If this option is supplied together with a new instrument, the license key is already installed. To install the license key on your instrument, proceed as described in the “Installation Instructions for Options” included in the delivery.

To install the XM radio waveforms on your instrument

Proceed as described below.

1. Copy the waveforms files received from Sirius XM to USB stick or an external USB HDD.
2. Connect the USB stick or USB HDD to USB connector of the instrument.
3. Copy the waveforms files to the instrument target directory, e.g. `_transfer`.
4. Alternatively, store the files to a network drive and connect the instrument to the LAN.
5. Enable the instrument to playback the encrypted files, see [chapter 1.4, "Enabling the Instrument to Playback XM Radio Waveforms"](#), on page 7.

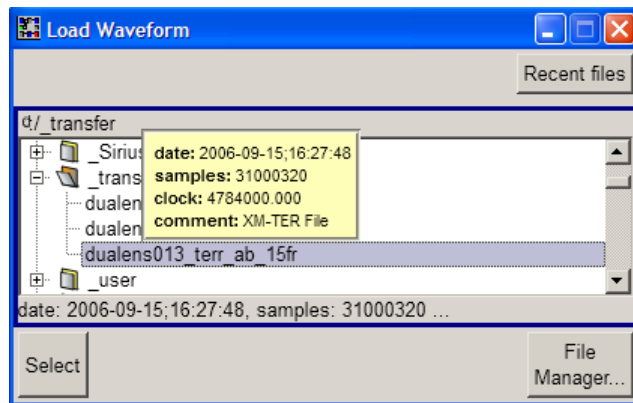
1.4 Enabling the Instrument to Playback XM Radio Waveforms

To play the XM Radio waveforms files on your instrument, proceed as described below.

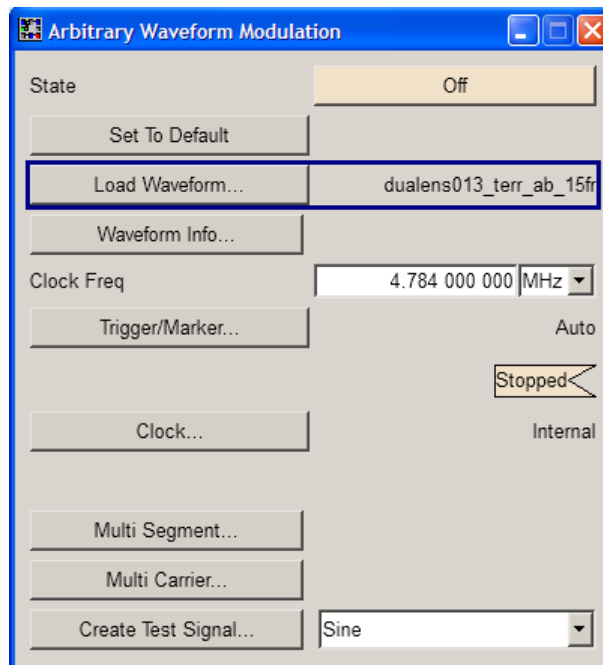
1. Press the PRESET key.
The instrument's settings will be adjust to a standard set of operating conditions.
2. Select "Baseband block > ARB".



3. Select "Load Waveform" button, navigate to the directory with the XM Radio waveforms files (for instance `"D:/_transfer"`) and select a file from the list. Only files with extension `*.wv` are displayed.

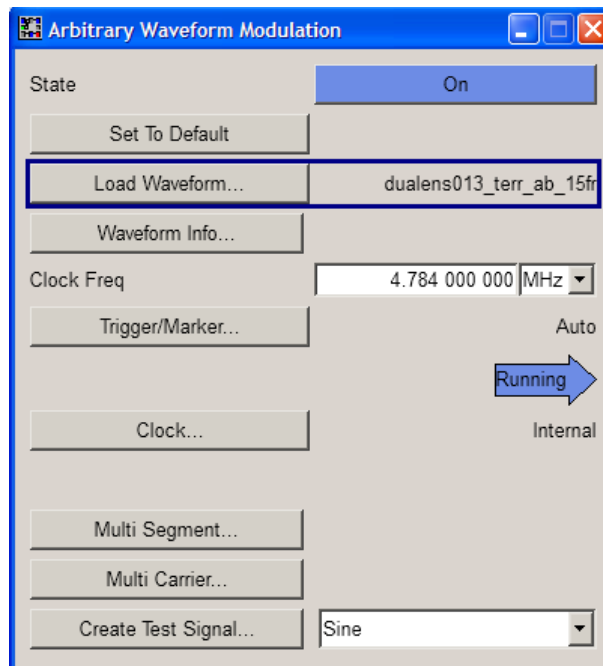


When the file is loaded, the name of the selected file and the clock frequency are displayed in the "ARB" dialog.



4. Set "ARB > State > On" to enable ARB modulation.

Enabling the Instrument to Playback XM Radio Waveforms



The instrument process the selected waveform file.

5. Press the FREQ key and enter the corresponding carrier frequency.
The file in this example contains one terrestrial channel that can be used for both ensembles A and B. To generate the signal of the *TerrA* channel, set the carrier frequency "Freq = 2337.490 MHz".

Note:

For an overview of the file contents and the required carrier frequency, refer to the description provided with the delivery of the waveform files or contact Sirius XM.

6. Set "RF > On" to enable signal generation.



The instrument modulates the selected waveform file on the configured frequency.

2 Available XM Radio Waveform Files



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

Rohde&Schwarz does not provide the XM radio waveform files themselves, but rather the functionality to playback these files.

Provided that the required options are fitted (see [chapter 1.2, "System Requirements"](#), on page 5), you can playback XM Radio waveform files.

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