

R&S®SFE / SFE100

Broadcast Tester / Test Transmitter

Release Notes

Firmware Version 02.50

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81671 Munich, Germany

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The following abbreviations are used throughout this document:

R&S®SFE / SFE100 is abbreviated as R&S SFE / SFE100.

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1 Information on the Current Version and History

1.1 Version 02.50

- Released: October 2011

New Functionality

- DVB-S (R&S SFE-K2): Additional roll off factor 0.20 for DIRECTV application added
- DVB-T2 (R&S SFE-K16): Additional SCPI scripts available
- DVB-T2 (R&S SFE-K16): MISO/SFN supported
- Audio BC (R&S SFE-K170): FM RDS: 0x0D terminating character missing
- Audio BC (R&S SFE-K170): FM RDS: Editor accept extended keyboard entries
- DMB Streams France (R&S SFU-K229) supported
- DTV interferers (R&S SFU-K354): DVB-T2 7MHz interferer signal added
- ISDB-Tmm waveforms (R&S SFU-K365) supported

Fixed Issues

- ATV, NICAM ENCODER: Different groupdelay between external AF inputs.
- DVB-T (R&S SFE-K1): Signal without echoes
- ISDB-T (R&S SFE-K6): Correct PCR restamping with TS PLAYER data stream
- DVB-T2 (R&S SFE-K16): T2MI=ON: Channel Bandwidth = 6, 7 MHz is not working correctly
- Audio BC (R&S SFE-K170): Preemphasis calculation of frequency below 1kHz is missing

Known Issues

- DVB-T2 (R&S SFE-K16): SinglePLP with TIME_IL_TYPE = 1 via T2MI-Interface not yet supported

1.2 Version 02.40

- Released: July 2011

New Functionality

- ARB (R&S SFE-K35): Reload algorithm dependent on filename, date/time and size
- ARB (R&S SFE-K35): 1GSa memory is supported
- R&S SFE-K38: Multichannel ARB waveforms are supported
- CMMB (R&S SFE-K15): PMS TS Stuffing allowed
- DVB-T2 (R&S SFE-K16): MPLP is supported
- DVB-T2 (R&S SFE-K16): SCPI scripts for DTG, NORDIG, OFCOM and V&V setups
- ISDB-S waveforms (R&S SFU-K362) are supported
- Satellite interferers (SFU-K363) are supported
- MediaFLO (R&S SFE-K10): AIS 2.0 is supported
- R&S SFU-K227 T2MI stream library supports content streams
- TsGen: Performance optimized when decrypting non gts based transport streams
- SFE100: Reset in progress is indicated

Fixed Issues

- DVB-T2 (R&S SFU-K16): Single-PLP parameters not settable, if R&S SFU-K20 or R&S SFU-K22 is not available
- FADING: Recall of unchanged predefined fading profiles shows Standard USER
- Local Vector Modulation Adjustment is not possible for frequencies ≤ 87 MHz
- Recall of instrument settings may corrupt GUI menus
- SFE100: Multiple start of recovery destroys HD image
- TsGen: Naming of missing sw-options is unclear
- TsGen: Seamless trp may cause assertions
- Digital In: Measurement of low-level input signals not correct
- SFE100: High power option (R&S SFE-B90): Level linearity is not ensured
- Audio BC: Sporadic remote timeouts occur after switching signal source
- ISDB-T: Default value of AC Data corrected (now ALL1)
- Remote: Command error at READ:IQC:TDMB:PROT:PROF and LEV

Known Issues

- SFE: DVB-T2 (R&S SFE-K16): The fading function is not supported with this firmware version
- DVB-T2 (R&S SFE-K16): Maximum number of PLP is limited to 6
- DVB-T2 with T2MI=ON: Channel Bandwidth = 6, 7 MHz is not working correctly

1.3 Version 02.32

- Released: October 2010

Fixed Issues

- DVB-T2: SFE: Fading is not supported
- SFE100: ARB works not with K35
- Level is not correct after RECALL APPL
- CMMB: Long remote control response time when missing input signal
- Fading: Uncertainty of 10ns in delay and 0.1° in phase due to rounding issues.

1.4 Version 02.30

- Released: October 2010

New Functionality

- DVB-T2 (SFE/SFE100-K16): SPLP is supported
- Satellite Interferers (SFU-K363) is supported
- T2-MI Streams (SFU-K227) is supported
- EMC Test Streams (SFU-K228) is supported
- TsGen: Support of ETI files with extension .xeti

Modified Functionality

- TsGen: K22: Sample TRP streams are included
- Remote: VXI11 protocol works immediately after booting
- CMMB: Default values changed

Fixed Issues

- Fading: Dopplershift is not correctly calculated
- ATV, AudioBC: Different groupdelay between external AF inputs

Known Issues

- SFE: DVB-T2: The fading function is supported with the next version 02.32

1.5 Version 02.22

- Released: June 2010

Fixed Issues

- Favorites: Indicated menu path of parameters is not correct
- CMMB: SFE Fading not supported, SFE100 Noise not supported

2 Modifications to the Documentation

The current documentation is up-to-date.

3 Firmware Update

Your instrument is delivered with the latest firmware version available. Firmware updates are provided on the Rohde & Schwarz Home Page (<http://www.rohde-schwarz.com/downloads/firmware/sfe.html>), by Rohde & Schwarz service centers or sales offices.

You can install the new firmware version by using either the USB or the LAN interface:

- For an update using the USB interface, store the downloaded update files on a memory stick.
- For an update using the LAN interface (due to speed recommended), store the downloaded update files on a network directory.

Further information

- Installing software options
See User Manual, chapter "Basic Instrument Configurations".
- Connecting the instrument to a network (LAN)
See the User Manual, chapter "Operating the R&S SFE / SFE100 in a LAN".
- Sharing and accessing instrument drives
See the User Manual, chapter "Operating the R&S SFE / SFE100 in a LAN".
- R&S SFE only: Making a backup before installing new firmware
See the User Manual, chapter "Installed Software".

3.1 Update Information

The firmware update consists of three files. The version numbers in the file names vary with each update (symbolized by placeholder x).

- Firmware: *SFE_xx.xx.xx.xx(Release).msi*
- Batch file: *FinishSetup.bat*
- *SfeVxi11Any.reg*

If Analog Realtime Modulations (ATV) are used with the R&S SFE, the following file is necessary too:

- Video signals: *AtvVideoBasic_xx.xx.xx.xx.msi*

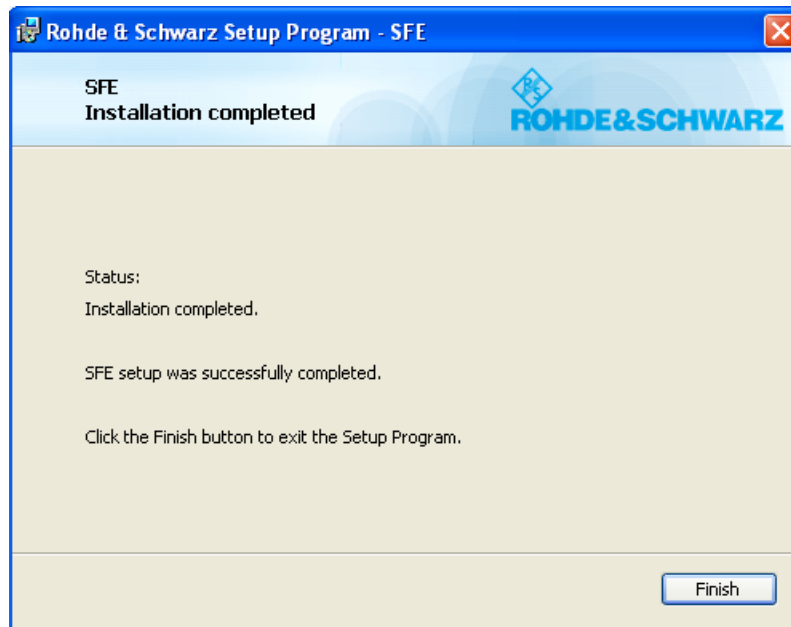
The update is performed under control of the Windows XP Embedded operating system. Windows XP can only be accessed if a mouse and optional an external keyboard is connected.

3.2 Updating the Firmware on the R&S SFE

1. Switch off instrument.
2. Connect mouse and/or external keyboard to the USB interface.
3. Switch on instrument.
4. Wait until the R&S SFE firmware has booted and the application has started.
5. Access Windows XP Embedded desktop.
 - Operation with mouse: Click the "Close" button of the R&S SFE application.
 - Operation with keyboard: Press ALT+F4 to close the application.

The Windows XP Embedded desktop is displayed.

6. Copy update files.
 - Open folder with update files using the Windows Explorer.
 - Delete all files in D:\SFE\Installations.
 - Copy update files to D:\SFE\Installations.
 - If available, copy new AtvVideoBasic_02.*.msi to D:\SFE\Installations.
 - Change to D:\SFE\Installations.
7. Install new firmware version.
 - Execute SFE_0x.xx.xx.xx(Release).msi.



- After the installation, click the "Finish" button.

8. For Analog Realtime Modulations (ATV) only:
Install new video signals (if available) by executing *AtvVideoBasic_01.xx.xx.xx.msi*.

NOTICE**Risk of causing instrument unusability**

Never switch off the instrument after this point.

The device must be switched on after the update of the boot device only.

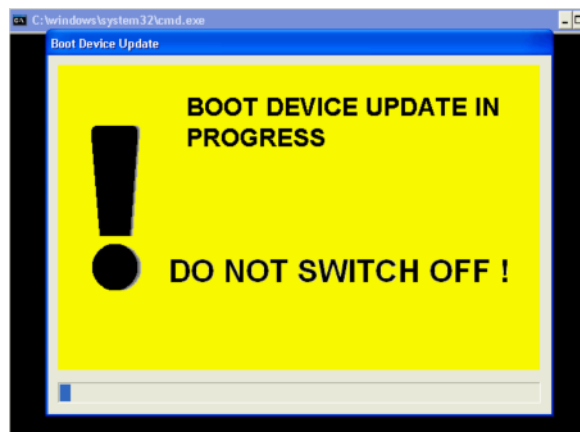
9. Start *FinishSetup.bat*.

The R&S SFE is rebooted and the new R&S SFE firmware is started.
The boot device in the R&S SFE is checked and reprogrammed if necessary.

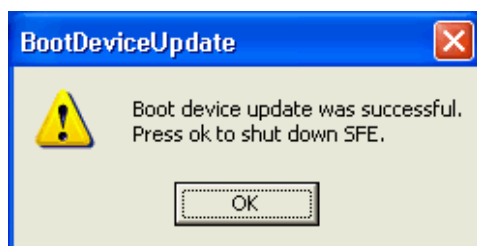
- If the reprogramming of the boot device is indicated you have to proceed with step 10.
- If the reprogramming was not necessary, an "Adjustment All" is carried out automatically with the first start of the R&S SFE firmware.
- Wait until R&S SFE firmware is operational.
The firmware installation is finished.

10. Finish the reprogramming of the boot device.

The reprogramming of the boot device is indicated by the following message:



- After successful update, click the "OK" button:



The R&S SFE is shut down.

- Switch on the R&S SFE again.

The R&S SFE firmware will be started.

With the first start of the R&S SFE firmware, an "Adjustment All" is carried out automatically.

- Wait until R&S SFE firmware is operational.

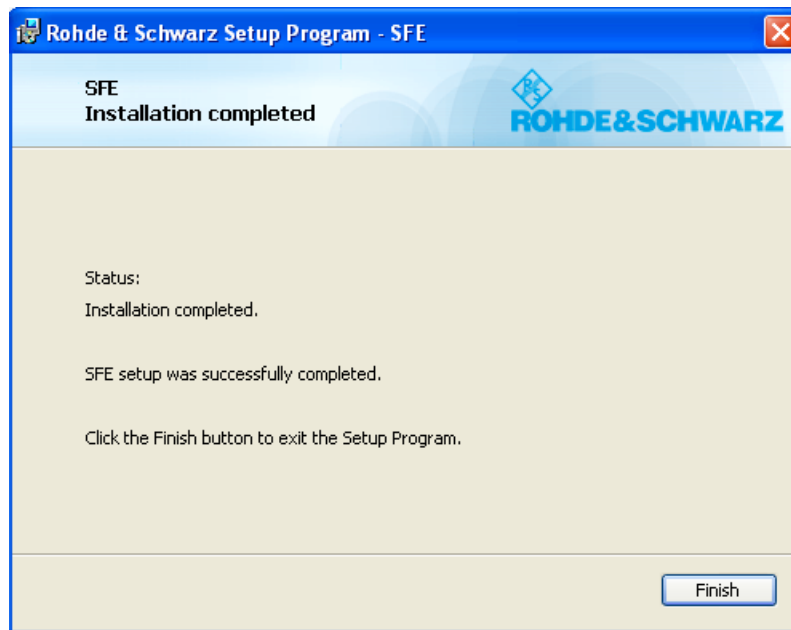
The firmware installation is finished.

3.3 Updating the Firmware on the R&S SFE100

1. Switch on instrument.
2. Wait until the R&S SFE100 firmware has booted and the application has started.
3. Start Manual Remote Control of the R&S SFE100 via Remote Desktop or VNC.
4. Access Windows XP Embedded desktop by clicking the "Close" button of the R&S SFE100 application.

The Windows XP Embedded desktop is displayed.

5. Copy update files.
 - Open folder with update files using the Windows Explorer.
 - Delete all files in D:\SFE100\Installations.
 - Copy update files to D:\SFE100\Installations.
 - If available, copy new AtvVideoBasic_02.*.msi to D:\SFE100\Installations.
 - Change to D:\SFE100\Installations.
6. Install new firmware version.
 - Execute SFE_0x.xx.xx.xx(Release).msi.



- After the installation, click the "Finish" button.
7. For Analog Realtime Modulations (ATV) only:
Install new video signals (if available) by executing *AtvVideoBasic_01.xx.xx.xx.msi*.

NOTICE

Risk of causing instrument unusability

Never switch off the instrument after this point unless otherwise indicated.

The device must be switched off/on after the update of the boot device only.

8. Start *FinishSetup.bat*.

The R&S SFE100 is rebooted and the new R&S SFE100 firmware is started.



In case of reboots, all connections via VNC or Remote Desktop are terminated and the front display will become active again when the R&S SFE100 firmware is started.

The boot device in the R&S SFE100 is checked and reprogrammed if necessary.

- If the reprogramming of the boot device is indicated you have to proceed with step 9.
- If the reprogramming was not necessary, an "Adjustment All" is carried out automatically with the first start of the R&S SFE100 firmware.
- Wait until R&S SFE100 firmware is operational.
The firmware installation is finished.

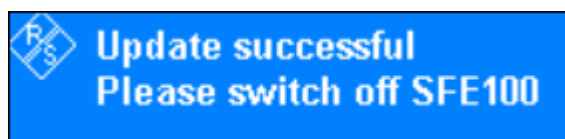
9. Finish the reprogramming of the boot device.


The reprogramming of the boot device is indicated by the following message:



!!! BOOT DEVICE UPDATE IN
PROGRESS... DON'T SWITCH OFF

The successful update of the boot device is indicated by the following message:



 Update successful
Please switch off SFE100

- Switch off the R&S SFE100 manually.
- Switch on the R&S SFE100 again.

The R&S SFE100 firmware will be started.

With the first start of the R&S SFE100 firmware, an “Adjustment All” is carried out automatically.

- Wait until R&S SFE100 firmware is operational.

The firmware installation is finished.

4 Open Source Acknowledgement

This instrument firmware makes use of valuable open source software packages. The most important of them are listed below together with their corresponding open source license. The verbatim license texts are provided in the following chapters.

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Xalan Xerces	http://xalan.apache.org/ http://xerces.apache.org/	Apache Software License, Version 2.0
ONC/RPC	http://www.plt.rwth-aachen.de	SUN
VNC	http://www.realvnc.com/	GPL V3

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com) and software written by Tim Hudson (tjh@cryptsoft.com).

Rohde & Schwarz would like to thank the open source community for their valuable contribution to embedded computing. The source code of the open source packages is available on request.

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```

/* zlib.h -- interface of the 'zlib' general purpose compression library
version 1.2.3, July 18th, 2005
Copyright (C) 1995-2005 Jean-loup Gailly and Mark Adler

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```

Jean-loup Gailly jloup@zip.org
Mark Adler madler@alumni.caltech.edu
*/

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