ROHDE & SCHWARZ

Test and Measurement
Division

Release Notes

Firmware Release 4.76

for R&S FSMR Measuring Receivers

with order number: 1166.3311.xx and 1313.9200.xx

New Features:

- High Pass Filter 400 Hz and Low Pass Filter 30 kHz and 80 kHz in FS-K7 and Demod mode of Measurement Receiver.
- Level Offset in Measurement Receiver and Avionics mode.
- ALC FIXED function in Demod mode of Measurement Receiver.
- Units WATT and dBuV available in Measurement Receiver and Avionics mode.
- "Track Once" function in Measurement Receiver and Avionics mode.
- Demodulation output in Demod mode of Measurement Receiver mode.
- Clearing of range calibration values in RF Level mode of Receiver mode.
- Autotune threshold in Measurement Receiver and Avionics mode.
- External power meter type "MANUAL" available to allow manual entering a power level used for the absolute power calibration.
- Power sensor selftest supported.
- **FS-K9: Power Sensor Duty Cycle correction supported.**
- **FS-K9: Indication of the power meter model and serial number.**
- Support for Power Sensor NRP-Z28, NRP-Z92 and NRP-Z98.
- **FS-K7: New Fundamental Frequency AUTO/MANUAL setting for SINAD and THD measurement.**
- FSP-B10 additionally supports SMBV100a, SMA100a and SMB (TTL mode).
- Additional Overload indication OVTRC.
- New remote command "SYSTem:SHUTdown" to shutdown the instrument.
- Extended Marker Peak List function includes automatic peak list update.
- **Transducer: New function VIEW TRANSDUCER.**
- **Trace Export: Additional ASCII File entries "Preamplifier" and "Transducer".**

For more new feartures see section 'New Functions'

Release Note Revision: 1

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History

Date	Rel Note Rev	Changes
16. Oct 2012	1	First revision for V4.76

General Topics

Firmware Downgrade

A downgrade from the firmware V4.76 requires following steps:

1. Ensure to be logged in with administrator rights (user "instrument").
2. Exit the firmware with ALT-F4.
3. Select Windows Start Menu -> Settings -> Control Panel -> Add or Remove Programs
4. Remove the following entries:
   Rohde & Schwarz NRP USB Driver v2.50.0
   Rohde & Schwarz NRP-Toolkit v2.1.16
5. Install previous firmware version.

Firmware Update

Generation of the update set

The instrument firmware is provided as ZIP. It is available from our website.

Preparing installation via USB stick or LAN:

Download the update set ZIP file.

Extract the contents of the ZIP file to a temporary folder, e.g. C:\MyTemp.

If also firmware options packages like FS-K5 shall be installed you should put them to ..\MyTemp\Extensions\K5\Disk1.

Recommended extension sub directory names:
- K5
- K30
- K40
- K70
- K72   (includes K73)
- K76   (includes K77)
- K82   (includes K83)
- K84   (includes K85)

Other files (e.g. release rotes) shall not be stored in these directories. This files would be copied on harddisk and may cause a disk full problem on drive E:.
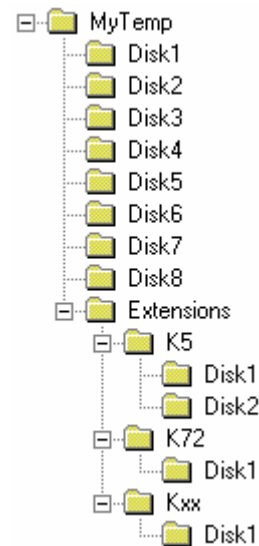
Performing the firmware update on the instrument

A new method to install the base system and all required applications is available, if the installed base system firmware is V4.11 or newer. The sub directories for all update sets have to be aranged as described in the section "*Preparing installation via LAN or USB stick*". The new update manager will search for available update sets.

For updating to version 4.11 first update the bases system only to get the new update manager. Then update base system and all applications using the new update manager.

Skip the part *Base System Update*, if base system firmware V4.11 or newer is already installed and the directories are arranged as described above (with LAN or USB stick).

Base System Update:
The firmware update process is performed in the following steps:

➢ Switch the instrument on and wait until the Analyzer has resumed operation.
➢ For updates from LAN or USB use the SETUP | NEXT | FIRMWARE UPDATE | UPDATE PATH softkey to specify any path for the location of the disk directory (e.g. F:\MyTemp). For floppy usage the default A:\ must not be changed.
➢ Press SETUP → NEXT → FIRMWARE UPDATE
➢ Confirm the query "Do you really want to update the firmware?" with OK
➢ Insert update disk #1 to #16 as requested (for LAN or USB just confirm the copy process)
➢ The instrument will perform several automatic shutdowns, until the new firmware is installed properly. **Do not switch the instrument off until the update process has been finished completely.**

Complete Update with update manager:
➢ Use the SETUP | NEXT | FIRMWARE UPDATE | UPDATE PATH softkey to specify any path for the location of the disk directory (e.g. F:\MyTemp).
➢ Press SETUP → NEXT → FIRMWARE UPDATE
➢ Confirm the query "Do you really want to update the firmware?" with OK

The *Installation Manager* will terminate the analyzer application, search for available application update set and will show a selection list.
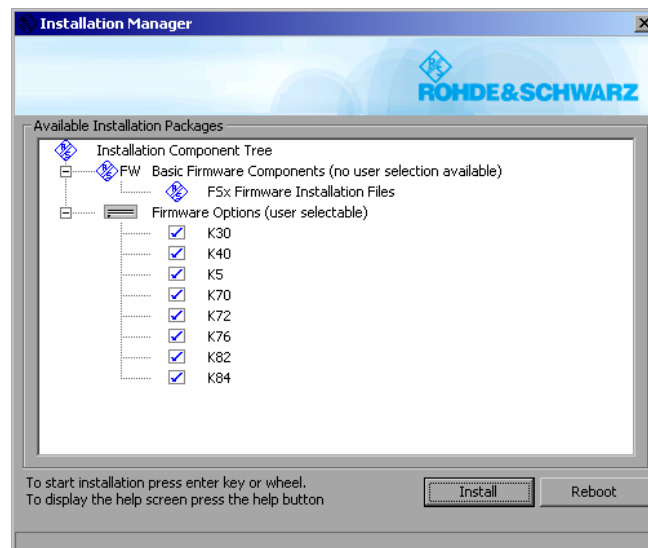
➢ Deselect applications, not to be installed and start the installation process with INSTALL. REBOOT will abort the update and restart the analyzer application without any changes.
➢ The instrument will perform several automatic shutdowns, until the new firmware and all applications are installed properly. **Do not switch the instrument off until the update process has been finished completely.**

Messagebox: Can't open front panel driver, errorcode=0x2

For some constellations this messagebox occurs after the last reboot of the device. In that case:

> ➢ Switch the instrument off by pressing the ON/standby switch at the front panel.
> ➢ Switch the power off at the rear panel.
> ➢ Wait until the Standby LED on the front panel turns from yellow to black (off).
> ➢ Switch the power on at the rear panel.
> ➢ Switch the instrument on by pressing the ON/standby switch at the front panel.

If the message box still appears, connect an external keyboard and select the "Instrument Driver Actuator" from the Windows Start Menu.

Firmware installation of the R&S FS-K7 FM demodulator, R&S FS-K8 BLUETOOTH Analyzer software R&S FS-K15 Avionics Demodulator and R&S FS-K9 power sensor measurement

The R&S FS-K7, R&S FS-K8, R&S FS-K15 and R&S FS-K9 application software package are included in the basic instrument firmware. It therefore needs no separate firmware update procedure.

Enabling these options via option key code entry

This section can be skipped if the option key was entered once.

For activation of these application software packages a license key for validation must be entered. The license key is printed either on a label on the rear panel of the R&S FSMR or delivered as a part of the software package.

The key sequence for entering the license key for every option is:

SETUP - GENERAL SETUP – OPTIONS - INSTALL OPTION

Use the numeric keypad to input the option key number and press ENTER.

➢ On a successful validation the message 'option key valid' will appear.

➢ If the validation failed, the option software is not installed.

Note: R&S FS-K15 requires 512MB memory.
For instruments, shipped with 256MByte system memory, a memory extension FSQ-B512, order number 1157.1590.02, is available.

The system memory size can be easily checked by pressing SETUP – SYSTEM INFO – STATISTICS, item "Memory size".

Compatibility to other Firmware Option Packages

The following firmware option packages are available with their own disks and they must be installed separately. Please refer to their release notes.

R&S FSMR V4.76 is compatible to the following firmware option releases:

R&S FS-K5	R&S FS-K30	R&S FS-K40	R&S FS-K72 FS-K73 FS-K74 FS-K74+	R&S FS-K76 FS-K77	R&S FS-K82 FS-K83	R&S FS-K84 FS-K85	R&S FSQ-K70
4.70	4.71	4.71	4.70	4.70	4.70	4.70	4.70

Note: R&S FS-K30 requires 512MB memory.
For instruments, shipped with 256MByte system memory, a memory extension FSQ-B512, order number 1157.1590.02, is available.

The system memory size can be easily checked by pressing SETUP – SYSTEM INFO – STATISTICS, item "Memory size".

New Functions in Version 4.76

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- Clearing of range calibration values in RF Level mode of Measurement Receiver mode.
- Autotune threshold in Measurement Receiver and Avionics mode.
- External power meter type "MANUAL" available to allow manual entering a power level used for the absolute power calibration.
- Power sensor selftest supported.
- FS-K9: Support for Power Sensor NRP-Z28, NRP-Z92 and NRP-Z98.
- **FS-K9: Power Sensor Duty Cycle correction supported.**
- **FS-K9: Indication of the power meter serial number**
- FS-K7: New Fundamental Frequency AUTO/MANUAL setting for SINAD and THD measurement
- FSP-B10: Support for SMBV100a, SMA100a and SMB (TTL mode).
- **External Reference: Selectable PLL bandwidth and new "Fall Back to Internal" mode EXT [INT].**
- Additional Overload indication OVTRC. New Status Bit for Overload Trace (OVTRC) in the STATus:QUEStionable:POWer Register
- New remote command "SYSTem:SHUTdown" to shutdown the instrument.
- **Trace Export: Additional ASCII File entries "Preamplifier" and "Transducer"**
- Harmonic Measurement: Additional remote command to get the used resolution bandwidth settings (CALCulate1:MARKer1:FUNCtion:HARMonics:BANDwidth[:LIST]?)
- **Transducer: New function VIEW TRANSDUCER available**
- HP emulation:
  - command OL expanded
  - no difference between local and remote sweep points
  - "SER?" available to query the serial number

  for 8560E, 8561E, 8562E, 8563E, 8564E, 8565E:
  - Spurious Measurement: threshold line is take into account for calculating of resolution bandwidth and noise level, message box "RBW/VBW coupling adjusted" suppressed
  - Harmonic Measurement: modified algorithm for finding harmonics
  - Phase Noise Measurement: some minor adjustments
  - Support of 4 markers
  - Corrections of RBW calculation if FFT-Filter is switched on
  - Command MKNOISE, MKTRACK: correction of return value
  - Sweep time adjusted for gated sweep (command GATE)

  for 8566A/B, 8568A/B:
  - Support of 4 markers

  for 8591E, 8594E:
  - sweep time adjusted for gated sweep (command GATE)
- Support for new 3GPP HSPA+ Application Firmware R&S FS-K73+.

- New Import/Export function for device specific data (option licence keys)**.**

- New functions to temporary disable/enable option license keys**.**

- New remote command "DIAG:SERV:VERS?" available to query all the measurement application versions.

- TOI Measurement: New TOI marker search function added (TOI MKR CALC/SRCH).

- **Occupied Bandwidth Measurement: New remote command to get frequeny and level of the markers T1, T2**

- New "Instrument Driver Actuator" in the Windows Start menu

- Extended Marker Peak List function includes automatic peak list update

- **Configurable Spectrum Emission Mask measurement available in analyzer mode.**

- Support for Noise Correction outside of ACP measurement

- **ACP/Multi Carrier ACP measurement with selectable RRC weighting filter for TX, ACP and ALT channels.**

- Multi Carrier ACP with up to 18 TX Channels

- Multi Carrier ACP: Support for save/recall of user defined standards

- **ACP measurement: User definable standards.**

- **ACP measurement: New standards for E-UTRA / LTE**

Modified Functions

Modified functions in version 4.76:

- Resolution of modulation results increased to 7 digits in Measurement Receiver and Avionics mode.

- Measurement time will be set to manual mode after having changed the resolution bandwidth in Measurement Receiver or Avionics mode.

- With the demodulation bandwidth of Measurement Receiver set to AUTO, the demodulation bandwidth will be adjusted to the measurement time. If the mode is set to MANUAL, the measurement time is limited due to the demodulation bandwidth.

- For some RF signals it is not possible for the Ref Level Autorange function to find a stable setting. The Ref Level Autorange function is then switched off and a message box is displayed.

- If the BASEBAND softkey is pressed in the main menu of the Avionics mode, the baseband input is switched on.

Improvements

- **Remote command "STAT:QUES?" returned a wrong CAL state.**
  The instrument returned the wrong status value for bit 8 (CALibration), if the display has been switched off (done by default or after sending the remote command SYST:DISP:UPD OFF).

- **Remote command "MMEM:DATA" ignored folder, previously set with "MMEM:CDIR".**

- **System freeze after key stroke sequence: FILE – FILEMANAGER – PREV – ESC -ESC.**

- **ACP measurement: Fast ACP mode did not support more than 3 adjacent channels.**
  A bandwidth of 0.000 Hz was indicated for the 4th Alternate Channel and above.

- **The remote command ":DISP:FORM:SPL" returned an error message "Invalid separator".**
  Only the long form of the command ":DISPLAY:FORMAT SPLIT" worked.

- **Power meter stopped after two days.**
  If the power meter was active for more than two days, the measurement did stop.

- **PA indicator in RF Level spectrum display of measurement receiver did not work.**
  In some cases, the PA (preamplifier) indicator in the RF level spectrum display of the measurement receiver was displayed, even when the preamplifier was off.

- **UNCAL indicator was not displayed if CAL CORR was switched off.**

- **Change of average count interrupted recal iteration sequence.**
  An active recal iteration sequence stopped when the average count was changed automatically in RF Level mode.

Known Issues

For known issues related to option packages R&S FS-Kxx please refer to the corresponding release notes of the individual option package.

Operating Manual

The order numbers for the current manual sets are

- 1166.3363.12-03   (English)
- 1166.3363.19-03   (English, letter format)

The corresponding PDF-Files are separately available on the service board.

Customer Support

Technical support – where and when you need it

For quick, expert help with any Rohde & Schwarz equipment, contact one of our Customer Support Centers. A team of highly qualified engineers provides telephone support and will work with you to find a solution to your query on any aspect of the operation, programming or applications of Rohde & Schwarz equipment.

Up-to-date information and upgrades

To keep your instrument up-to-date and to be informed about new application notes related to your instrument, please send an e-mail to the Customer Support Center stating your instrument and your wish. We will take care that you will get the right information.

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