ROHDE&SCHWARZ

Test and Measurement
Division

Release Notes

Firmware Release 4.42 SP3 (XP)

for R&S ESCI Test Receivers
with order number: **1166.5950.xx**

and R&S ESPI Test Receivers
with order number: **1164.6407.xx**

Switchover frequency of 150 kHz highpass can be assigned to CISPR Band A or B

New Softkey for LNA in Spectrum Analyzer mode

Transducer factors defined in unit dBpW are now using the clamp factor instead of the insertion loss as a reference

Note:

Existing transducer factors in unit dBpW should be checked and adapted, if necessary, as described in these release notes in section "Modified Functions" after installation of this firmware version.

Release Note Revision: **7**

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Republic of Germany

Contents

History

Date	Rel Note Rev	Changes
7 Nov 2007	1	First Revision for 4.12
28 Nov 2007	2	Headline changed
20 Aug 2008	3	First Revision for 4.32
16 Jul 2009	4	First Revision for 4.42 SP1
15 Oct 2010	5	First Revision for 4.42 SP2
25 Oct 2011	6	First Revision for 4.42 SP3
21 Nov 2011	7	ESPI added

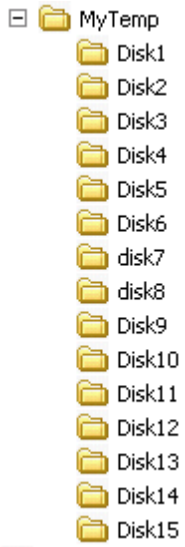
General Topics

Firmware Update

Preparing installation via USB stick or LAN:

- The instrument firmware is provided as ZIP. It is available from our website.
- Download the update set ZIP file.
- Extract the contents of the ZIP file to a temporary folder, e.g. C:\MyTemp.

  Other files (e.g. release rotes) shall not be stored in these directories. These files would be copied on harddisk and may cause a disk full problem on drive E:.
- Now copy the content of the temporary folder including all sub folders if present to a USB stick.
- The USB stick is now ready for the update.



Performing the firmware update on the instrument

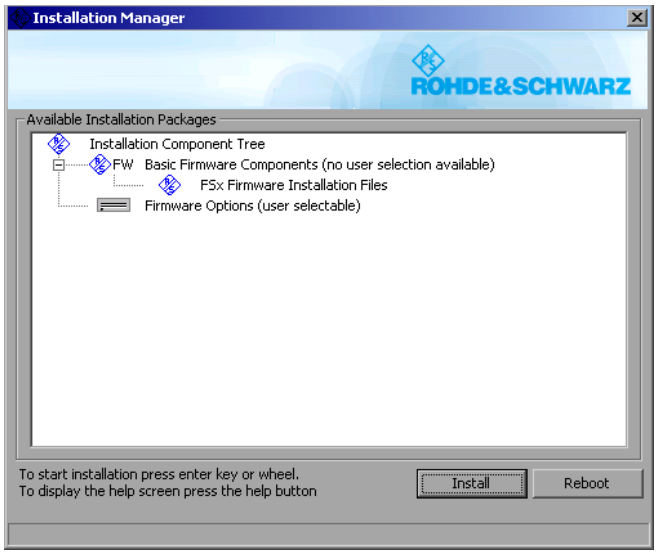
Firmware Update from version < 4.12 to 4.12 or newer:
Skip this step, if the installed firmware is V4.12 or newer. The firmware update process is performed as follows:

- Switch the instrument on and wait until the Receiver has resumed operation.
- 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
- 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.



- 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.

After a successful firmware update it is necessary to execute the instument's self alignment process by pressing CAL and softkey CAL TOTAL.

Known problems during firmware update

After switching on the instrument for the first time after a successful firmware update, the following system message might occur once: System Message
CDS: Error...

In this case the unit needs to be switched off and on again. This system message does not appear again during further power-on cycles.

Note: *If the unit is not restarted as described, system error correction data (CAL TOTAL) of a later date will be lost when switching the unit on again.*

Firmware installation of the R&S FS-K7 FM demodulator software

The R&S FS-K7 FM demodulator software package is included in the basic instrument firmware. It therefore needs no separate firmware update procedure.

Enabling the option via option key code entry

For activation of the R&S FS-K7 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 ESCI or R&S ESPI or delivered as a part of the R&S FS-K7 option package.
The key sequence for entering the license key 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.

New Functions in 4.42

New functions in version 4.42:

Spectrum Analyzer Mode:

- **Configurable Spectrum Emission Mask measurement available in analyzer mode.**
- **ACP measurement: User definable standards.**
- **ACP measurement: New standards for E-UTRA / LTE**
- **TOI Measurement: New TOI marker search function added (TOI MKR CALC/SRCH).**
- **TRAC:IQ sub system: New remote command TRAC:IQ:DATA:FORMAT.**
- **Harmonic Measurement: Additional remote command to get the used resolution bandwidth settings (CALCulate1:MARKer1:FUNCtion:HARMonics:BANDwidth[:LIST]?)**

General:

- **Auto Login Password changed for user instrument to ”123456”**
  It is now possible to enter the password after remote desktop connection by the front panel.
- **Additional overload indication OVTRC.**
- **FSP-B10: Support for SMBV100a, SMA100a and SMB (TTL mode).**

New function in version 4.42 SP3:

- **Switchover Frequency for 150 kHz Highpass**
  The switchover frequency of the 150 kHz highpass in the instruments preselector can be assigned either to CISPR Band A or Band B. The preselection filters are used to protect the input circuit of the instrument from overload when measuring weak disturbance signals in the presence of high amplitude signals or when measuring strong broadband signals with a bandwidth that is much wider than the instrument’s measurement bandwidth. Nowadays high disturbance voltages in the range below 150 kHz occur in many cases. The source of the high disturbance voltage below 150 kHz is quite often the switching frequency of the switch mode power supply and its harmonics. These disturbance voltages are not limited in commercial product standards like CISPR 22 / EN 55022 or CISPR 14-1 / EN 55014-1 as these standards do not specify disturbance voltage limits below 150 kHz. As a consequence these high levels below 150 kHz may contribute to the measurement results in CISPR Band B (150 kHz to 30 MHz). Therefore it is essential to use a highpass filter in CISPR Band B at 150 kHz and above. For measurements in CISPR Band B it is thus recommended to switch the 150 kHz to Band B.

Modified Functions

Modified function in version 4.42 SP3:

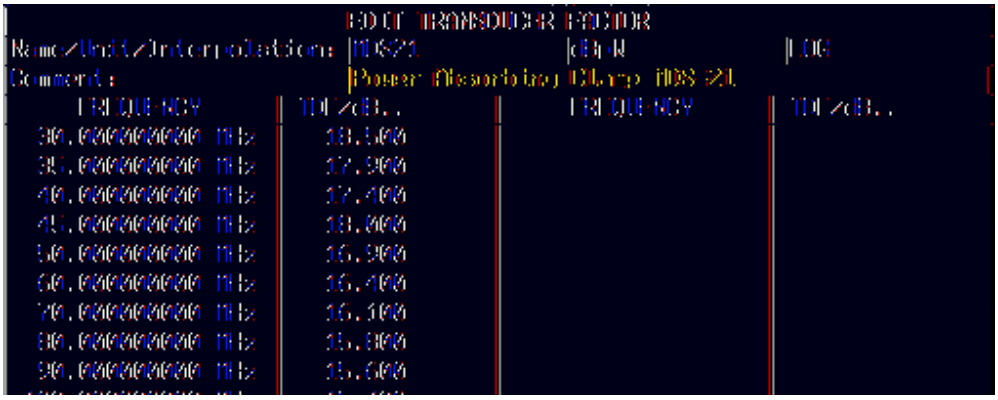
- **Use of the Low Noise Preamplifier in Spectrum Analyzer mode**
  The operation of the ESCI7 preamplifier was adapted to the behaviour of the ESCI3:
  Switching the preamplifier ON now needs the preselector to be switched on upfront and allows using the preamplifier starting from a frequency of 9 kHz.

  Spectrum analyzer users, who do not need the preselector to measure low signals, can use a broadband RF preamplifier without active preselector for frequencies starting at 100 kHz by using the key sequence SETUP – NEXT – LN PREAMP ON.

- **Transducer factors with unit dBpW changed.**
  Transducer factors defined in unit dBpW up to now represented the insertion loss of e.g. an absorbing clamp. This was changed to use the clamp factor instead of the insertion loss, to avoid the chance of misinterpretation of the calibration values shipped in combination with the absorbing clamp.

  As a consequence the numerical values of a transducer factor in dBpW have to reduced by 17 dB compared to previous firmware versions.

  Typical transducer factor for an absorbing clamp representing the insertion loss (old)



  Typical transducer factor for an absorbing clamp representing the clamp factor (new)

Modified function in version 4.42 SP2:

- **Frequency tuning with CISPR detectors.**
  When doing measurements with the quasipeak detector a settling time of four seconds was applied when tuning the frequency with the knob. Now this delay is only carried out when the dwell time is >= 1 sec. With smaller dwell times the signal observation time is started immediately after changing the frequency. This modification makes it easier to manually measure drifting and unsteady signals. Instrument behaviour under remote control and with numeric input of the receiving frequency remains unchanged.

Improvements

The version numbers in brackets indicate the version in which the problem was observed for the first time.

Improvements in version 4.42 SP1:

Receiver Mode:

- **(V4.32) Recall of saveset with peak list with only one element did not work.**
  If a saveset with an existing peak list was recalled, the peak list was not displayed on the scan screen if the list contained only one element.
- **(V4.32) Recall with active limit lines.**
  If a saveset with active limit lines was recalled, in some cases the limit lines were not displayed.
- **(V4.32) Empty hardcopies after aborting scan several times.**
  If a scan was aborted more than 50 times, all subsequent hardcopies were empty.

General:

- **(V4.32) Text was inserted twice in all edit fields by using CTRL-V.**
  If a text was copied into the clipboard by using CTRL-C, this text was inserted twice in all edit fields.
- **(V4.32) Hotkeys were not highlighted in proper mode after recall.**
  If a saveset was recalled, always the “Spectrum” hotkey was highlighted independent of the currently activated mode.

Improvements in version 4.42 SP2:

General:

- **(V4.42 SP1) Startup recall improved.**
  If a setup file with active receiver mode was used as startup recall file, the upper screen disappeared after starting the scan.

Known Issues

- **Underload detection in Status Reporting not available.**
  The detection of an underload in receiver mode is not available. Bit 1 and bit 9 in the STATus:QUEStionable:POWer register will not be set.

Appendix: Contact to our hotline

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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