

# RFEX V6.1.50

## Release Notes

### Products:

- | R&S®RFEX
- | R&S®RFEX-Fast

This document gives an overview of the additional features and improvements that are implemented with version 6.1.50

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# 1 Scope

This document gives an overview of the additional features and improvements that have been implemented with version 6.1.50:

- New Installer
- Support of FPH
- XML Report
- Bugfixes

Furthermore, the release notes provide information on the download link, the update procedure and known issues for the current versions.

## 2 Installation / Update

### 2.1 Download of Version V6.1.50

The software can be downloaded from the Rohde & Schwarz web site under the following link:

[https://www.rohde-schwarz.com/us/product/ts-emf-productstartpage\\_63493-8174.html](https://www.rohde-schwarz.com/us/product/ts-emf-productstartpage_63493-8174.html)

The zip-file is password protected. Registered customers get the password via mailing from the R&S customer support center. Please contact customer support or your local sales representative in case you did not receive the mail and need the password.

### 2.2 Upgrade to V6.1.50

Upgrade to Version 6.1.50 is free of charge. Also for customers not using the UMTS/LTE decoding functionality or the spectral measurements with TSME, upgrade is recommended due to other improvements and bug fixes included in the release.

Installation of RFEX 6.1.50 requires de-installation of the previously used version. Please refer to the quick start and installation guide for further information on the installation.

## 3 New Features in Version 6.1.50

### 3.1 New Installer

For RFEX 6.1.50, a new state-of-the-art installer has been used. Please refer to the quick start and installation guide for further information on the installation.

### 3.1 FPH support for spectral measurements

In version 6.1.50, the newest R&S handheld spectrum analyzer is supported now for spectral measurements.

### 3.2 XML Report

Additional to the known EXCEL report, the measurement results can also be exported into an XML file. Please refer to the user manual for further information.

## 4 Improvements

### 4.1 Improvements in Version 6.1.50

#### 4.1.1 Extrapolation factor in LTE/UMTS packets

Starting from now, also numbers with decimal fraction can be entered as extrapolation factor.

#### 4.1.2 Sweep time settings for spectral measurements

Instead of using the default "Auto" setting where the analyzer chooses automatically the sweep time, a distinguished sweep time can be set.

## 5 Eliminated Errors

### 5.1 Eliminated Errors Version 6.1.50

#### 5.1.1 FSH4/8 switching between different analyzer modes

In certain situations the switching between analyzer modes (spectrum and digital modulation analyzer) of the FSH4/8 did not work. This has been corrected.

#### 5.1.2 Spectral Measurements with TSME/TSMW

There have been issues while measuring several packets in a spectral measurement with TSME/TSMW. Due to device configuration issues, this caused problems for the TSME/TSMW. To avoid this problem, the number of selectable packets for a spectral measurement for TSME/TSMW has been restricted to one.

#### 5.1.3 3-Axis-Antenna Switching for TSME/TSMW spectral measurements

In certain cases, the antenna switching stopped at the z-axis after the measurement of the first packet. Following packets have been measured only on the z-axis. This has been solved. Anyway, this situation will not appear in future due to the modification of the packet selection for those analyzers (refer to 5.1.2.)

#### 5.1.4 FSH4/8 detection issue

In case an FSH4/8 had previously been selected in the hardware setup and another spectrum analyzer was connected at RFEX startup with the same IP address, a warning message regarding the FSH firmware version has been displayed. This erroneous message will no longer appear.

### 5.2 Eliminated Errors Version 6.1.42

#### 5.2.1 FSH4/8/13/20 Switching of isotropic antenna through analyzer

In some cases, the selection box "Switching antenna through analyzer" was not displayed. This has been corrected.

#### 5.2.2 Unit in threshold tables wrong

Manually created threshold tables were saved with the wrong unit. This has been corrected.

### **5.2.3 Error message with RFEX-Fast while report output**

Depending on the report output settings of RFEX, an error message occurred while showing reports with RFEX-Fast. This has been corrected.

### **5.2.4 GPS position from FSH4/8/13/20 not correctly entered in report**

The GPS coordinates from FSH4/8/13/20 were only correctly entered in the report, when the GPS sensor unit was tested before in the hardware setup. This has been corrected.

## **5.3 Eliminated Errors Version 6.1.41**

### **5.3.1 Removal of the Beta-Version mark on the main GUI of RFEX-Fast**

For some reason, a Beta-Version label appeared on the main GUI. This has been removed.

### **5.3.2 Update of the language resource files**

The language files for Spanish and Chinese have been updated.

### **5.3.3 Automatic disabling of active transducers for UMTS measurements with FSH4/8/13/20**

If an UMTS measurement is started on FSH, active transducers are automatically disabled.

### **5.3.4 Correction of position readout for the southern hemisphere with FSH4/8/13/20**

The GPS position calculation for FSH was erroneous for the southern hemisphere. This has been corrected.

### **5.3.5 Recognition errors of hardlock-option TSEMF-K23 (UMTS/LTE decoding with FSH8)**

In some cases, option TSEMF-K23 was not recognized correctly for UMTS/LTE decoding with FSH8.



### **5.3.6 FSH4/8/13/20 problems while switching between different measurement modes**

When FSH users with TSEMF-K23 switched between spectral and UMTS decoding or between UMTS and LTE measurements, it could easily happen, that the FSH did not switch the measurement mode or that the data connection got lost. This misbehavior has been removed.

### **5.3.7 RFEX Option “Switch through Analyzer” for measurements with analyzers of the FSH-family**

RFEX Option “Switch through Analyzer” for measurements with analyzers of the FSH-family  
Under some conditions the selection box “Switch through Analyzer” on the tab “Switch Unit” of the RFEX Hardware Configuration menu disappeared. This has been corrected.

### **5.3.8 Support of additional R&S measurement devices**

Additional, ZVH4/8, FSW, ESR/ESRP/ESL are now supported.

### **5.3.9 RFEX-Fast on analyzer: support of GPS receiver**

If the RFEX-Fast was installed on an analyzer, activation and usage of a GPS-Receiver were possible, however, the activation and COM address were not stored. This has been changed.

### **5.3.10 Generation of Packets with frequencies below 30 MHz**

For packets with frequencies below 30 MHz, an error message could occur that the cable used does not cover the selected frequency range, even the correct cable was used. This erroneous message does no longer appear.

## **5.4 Eliminated Errors Version 6.1.40**

### **5.4.1 RFEX crash during startup**

On some systems, old ocx and dlls were not overwritten by the components in the latest installation.

### **5.4.2 Switch through analyzer**

The checkbox “Switch through Analyzer” on the tab “Switch Unit” of the RFEX hardware configuration sometime appeared, even if FSH4/8 was selected (reference to known issues below).

### **5.4.3 Diagnostic routine for antenna switching**

A diagnostic routine has been implemented in case if there are problems switching the 3-axis-probe. Thus, the problem can be narrowed down to help the user to solve the problem.

#### **5.4.4 Pre-Amplifier Support for FSL**

The pre-amplifier can now be activated in the packet, if FSL is selected as analyzer.

### **5.5 Eliminated Errors Version 6.1.39**

#### **5.5.1 Selection of LTE Bandwidth**

For wideband LTE measurements, the used bandwidth of the signal has to be selected from a list. The sorting of the list has been corrected.

### **5.6 Eliminated errors Version 6.1.34SP1**

#### **5.6.1 FSH4 / FSH8 Firmware 2.0 / 2.1**

Workaround from RFEX version 6.1.34 removed. Measurement speed increase achieved for Channel Power through optimization for FSH firmware 2.0 / 2.1

#### **5.6.2 Threshold calibration with Switch Unit “None”**

Threshold calibration for non-isotropic antennas still used the antenna factors selected under isotropic antennas, even if the menu was not visible.

#### **5.6.3 Threshold table for new Packet**

If a new packet was generated in the RFEX, the message “Cable not defined in the given frequency range” could occur.

#### **5.6.4 Bar graph for Peak-Average Measurements**

The blue bar (current value) and the red bar (max value) were in the wrong order and had to be exchanged.

#### **5.6.5 Alternative Pixel Resolution for Spectrum Analyzers**

Switching between resolution 8001 and 501 pixels (not available for FSH-family) could lead to runtime errors (index error) due to wrong allocation of list length. 501 Pixels is the default setting.

## **5.6.6 Installation on Analyzer / Upgrade of Windows installer**

Installation of Microsoft re-distributables on embedded XP-systems (e.g. for RFEX on analyser):  
Upgrade for Windows installer included in delivery

## **5.7 Eliminated errors Version 6.1.34**

### **5.7.1 RFEX-Installation / Windows redistributables**

On some PCs, the additional windows files the RFEX requires for TSMW support were not available. The necessary files were not included in the delivery. Now, the necessary Windows re-distributable have been included in the RFEX-setup.

### **5.7.2 LTE-measurements**

Invalid results (e.g. due to RF under-range, switched Cell-ID, not completed synchronization) reported by the TSMW could lead to wrong results in the report. The check for invalid measurement results in the RFEX has been improved to discard incomplete / inconsistent results.

### **5.7.3 FSH4/8-measurements**

Workaround implemented for timing problems with Channel Power measurements with FSH4/8 firmware version 1.56. Workaround slows down the measurement.

## 6 Known Issues

### 6.1 Version 6.1.50

#### 6.1.1 XML reports: LTE measurements

Regarding LTE measurements, currently only PSync and SSync values are listed in the XML report.

#### 6.1.2 XML Reports: Longterm measurements

Currently, no XML reports are generated for longterm measurements.

#### 6.1.3 Not suitable for installation on analyzers

Due to the necessary installation of .NET resources, version 6.1.50 is not suitable for the installation on analyzers. The requirements of .NET exceed the system resources of the devices.

### 6.2 Versions 6.1.39/6.1.40

Please refer to chapter 3 for current limitations / known issues for LTE-measurements with FSH4/8 and TSMW spectral measurements.

#### 6.2.1 Calibration File in the Hardware Configuration menu

In the menu Hardware Configuration a calibration file can be used to compensate any frequency response of the measurement device or any additional attenuation. The functionality is the same and in addition to an extension cable called up in the packet settings. While the calibration file is correctly included in the calculation of the final results, it is not considered for the level indication during measurement in the status window and in the bar graph indication during Peak/Average measurement.

#### 6.2.2 Suppress Crosstalk plus 8001 pixels resolution

Restrictions have been found when the Suppress Crosstalk function was used together with 8001 Pixel resolution (RFEX menu *System--> Options*), in particular for small frequency range and small RBW (transmission channel =  $\frac{1}{2}$  RBW). In this case, the 8001 pixels setting results in a high number of pixels per broadcast channel, which may lead to wrong results of the suppress crosstalk function.

##### *Recommendation*

- Use default setting 501 pixels
- Use 8001 pixel only for wide frequency ranges or together with the peak-search function.

### **6.2.3 Installation on analyzer**

If the RFEX / RFEX-Fast are installed on an analyzer with WinXP (embedded) operating system, the Microsoft re-distributables are not installed automatically. The setup has to be started from the subdirectory Microsoft\_redistributables on the RFEX distribution. If after start of the installations the software comes up with the message with the message "Windows Installer 3.1 or higher required ", upgrade of the installer is required, first. The file "WindowsInstaller-KB893803-v2-x86\_Installer 3.1v2\_for XP.exe" is now included on CD.

### **6.2.4 UMTS decoding with FSV**

The theoretical maximum measurement rate for Peak/AV is 10 Hz. Due to a timing issue between start of measurement and trigger pulse quite often only 5 Hz may be achieved.

### **6.2.5 H-field measurements**

The RFEX supports H-field measurements and the use of the respective limit lines. However, currently the units in the report have to be changed manually from dB $\mu$ V/m to dB $\mu$ A/m.

### **6.2.6 FSH4 / FSH8 antenna switching**

For the time being it is not possible to control the switching of an R&S Isotropic Antenna from the RFEX via the Probe Connector of FSH4 / FSH8 (as it is possible for FHS3/6/18). Meanwhile, the functionality has been implemented in the firmware (since V2.0), but it requires activation of a Dummy Transducer on the FSH. An acceptable solution is being sought.

## 7 Improvements Previous Releases

### 7.1 Improvements in Version 6.1.39

#### 7.1.1 LTE Raw data accumulation speed improved

Raw data information is longer accumulated and less often written to the file. This improves measurement speed with raw data recording activated

#### 7.1.2 Alternative averaging mode for UMTS and LTE decoding

A second averaging mode has been implemented. Details are explained in the software manual at chapter 5.2.6. .

#### 7.1.3 Diagnostic routine for antenna switching

A diagnostic routine has been implemented in case if there are problems switching the 3-axis-probe.

#### 7.1.4 LTE spectral measurements

The packet 'LTE\_ChPow.Packet' has been added.

#### 7.1.5 Start new measurement with LTE

A checkbox in the option's dialog has been added to set LTE decoding as default for a new measurement.

### 7.2 Improvements in Version 6.1.38

#### 7.2.1 Check Box "Two Step Mode" in UMTS packet

This mode is only available with TSMU, TSMQ and TSM-LW and if a non-isotropic antenna has been selected. For all other configurations, this check box will no longer appear in the packet.

## **7.3 Improvements in Version 6.1.34SP1**

### **7.3.1 FSH4 / FSH8 Pre-Amplifier with Switch Unit “None”**

Activation of the FSH4/8 pre-amplifier in the packet also possible, if Switch Unit “None” is chosen in the configuration menu (i.e. for non-isotropic antennas).

### **7.3.2 LTE decoding Measurements**

Report generation for LTE decoding measurements updated to the latest status.

### **7.3.3 Support of ESU**

The ESU Receiver has been added to the hardware configuration and can be operated with RFEX and RFEX-Fast.

### **7.3.4 TETRA Packet**

A packet with verified settings for TETRA has been included for downlink channels in the frequency range 300 – 395 MHz. Settings for TETRA included in the RFEX-Fast.

### **7.3.5 Limit Lines RFEX**

Additional limit lines (ICNIRP\_E\_OC, occupational limit, BGBV11, German work safety) have been added and can be selected in the RFEX. The previous “ICNRIP” limit has been left in for compatibility reasons. Also H-field limits have been added and can be used.

### **7.3.6 Limit Lines FSH Analyzers on CD**

The RFEX limit lines have been converted to the formats for FSH 3/6/18 and FSH4/8 and are available on the RFEX CD.

## **7.4 Improvements in Version 6.1.34**

### **7.4.1 FSH4 / FSH8 Pre-amplifier**

Selection of pre-amplifier supported in the packet setting if FSH4/8 is chosen in the configuration menu.

### **7.4.2 Modified Function of the Button “Repeat last measurement”**

Warnings and intermediate steps have been removed from the “Repeat Last Measurement” shortcut. The button is now a quick shortcut for a repeated measurement with identical settings.

### **7.4.3 LTE decoding measurements**

Increase of measurement rate compared to Version 6.1.30. Up to 10 measurements per second are possible if there is only one frequency in the packet.

## **7.5 Improvements in Version 6.1.30**

### **7.5.1 Introduction of LTE-decoding measurement with TSMW**

### **7.5.2 Support for latest TSMx-Firmware version and Firewire Driver**

Drivers were verified under Windows 7.



### **About Rohde & Schwarz**

Rohde & Schwarz is an independent group of companies specializing in electronics. It is a leading supplier of solutions in the fields of test and measurement, broadcasting, radiomonitoring and radiolocation, as well as secure communications. Established 75 years ago, Rohde & Schwarz has a global presence and a dedicated service network in over 70 countries. Company headquarters are in Munich, Germany.

### **Environmental commitment**

- Energy-efficient products
- Continuous improvement in environmental sustainability
- ISO 14001-certified environmental management system



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