R&S®FPL1000
Spectrum Analyzer
Release Notes
Firmware Version V1.51

These Release Notes are for following models of the R&S®FPL1000 Spectrum Analyzer:
R&S® FPL1003, order no. 1304.0004.03
R&S® FPL1007, order no. 1304.0004.07

The following abbreviations are used throughout this document:

R&S®FPL1000 is abbreviated as R&S FPL1000.

ROHDE & SCHWARZ

Table of Contents

1 Current Version and History

1.1 New Functions

The following table lists the new functions and indicates the version in which the new function is introduced:

New Functions in Firmware V1.51:

Version	Function
V1.51	Support of new option R&S®FPL1-B9 (internal generator) including - Tracking Generator: (In Frequency Sweep of mode Spectrum only) - Independent Source (all modes and applications)

New Functions in Firmware V1.50:

Version	Function
V1.50	R&S®FPL1-K54: CISPR Detectors in zero span mode
V1.50	R&S® FPL1-K7 (Analog Demod): Support of compatibility modes for EXA/CXA
V1.50	R&S® FPL1-K7: Input Source I/Q file
V1.50	For compatibility to some R&S measurement receivers: New SCPI command: SYSTem:SPEaker:MUTE for toggling the loudspeaker. (SYSTem:SPEaker[:STATe ON|OFF still possible)
V1.50	R&S® FPL1-K30: Added support of uncertainty calculator
V1.50	R&S® FPL1-K30: Support of smart noise sources R&S®FS-SNS
V1.50	R&S® FPL1-K70: Density trace mode for polar displays and eye diagram.
V1.50	R&S® FPL1-K70: New predefined standard: GBAS (Ground Based Augmentation System).
V1.50	R&S® FPL1-K70: New "Marker To" functionality to automatically move the marker to the start of the current result range, i.e. the result range highlighted in blue background color.
V1.50	R&S® FPL1-K70: Various new SCPI commands that facilitate the handling of e.g. burst/pattern search scenarios, bit error rate measurements.
V1.50	R&S® FPL1-K70: New mapping "SMx" for π/8-D8PSK and π/4-DQPSK.
V1.50	R&S® FPL1-K70: New mapping "Gray" for pi/4-QPSK.

New Functions in Firmware V1.40:

Version	Function
V1.40	Support of new option R&S®FPL1-K54
V1.40	Support of compatibility modes for EXA/CXA and HP instruments
V1.40	I/Q Analyzer: new parameter: wide path only (SAW OFF)
V1.40	R&S®FPL1-K70: For sample rates smaller than or equal to 6.25 MHz, SAW filter can now be deactivated. Before, it was always active for sample rates smaller than or equal to 6.25 MHz. Deactivating the SAW filter can improve the residual EVM.

New Functions in Firmware V1.30:

Version	Function
V1.30	Support of new model R&S® FPL1007
V1.30	Spectrum Analysis: new measurements APD and CCDF
V1.30	Spectrum Analysis: Support of 3D Spectrogram.
V1.30	I/Q Analyzer: Support of 3D Spectrogram.
V1.30	I/Q Analyzer: New input source "File"
V1.30	R&S® FPL1-K7: Support of 3D Spectrogram.
V1.30	R&S® FPL1-K30: Support of measurements with variable RBW and sweep time for frequencies below 10 MHz
V1.30	New options R&S® FPL1-K70, R&S® FPL1-K70M and R&S® FPL1-K70P
V1.30	LXI: The web control no longer requires administrator rights.

1.2 Modified Functions

The following table lists the modified functions and indicates the version in which the modification is carried out:

No functions have been modified in Firmware V1.51.

Modified functions of Firmware V1.50:

since	Function
V1.00	IQ Analyzer and R&S® FPL1-K70: When using Input Source "I/Q File", the softkey "SAW-Filter" now is disabled.
1.50	Limit of "frequency offset" was extended to 1GHz
V1.50	R&S® FPL1-K70: Improved layouts for the "Predefined Display Configurations".
V1.50	R&S® FPL1-K70: Up/Down increment for the parameters capture length and result length has been increased, both for the scroll wheel step size and for the respective SCPI commands.
V1.50	R&S® FPL1-K70: When saving an iq-tar file, the number of pre-/posttrigger samples is now stored as meta information.

No functions have been modified in Firmware V1.40.

Modified functions of Firmware V1.30:

Version	Function
V1.30	All toolbar buttons are enlarged by some pixels for better usability.
V1.30	The "Display" dialog in the setup offers an additional tab "Touch" for configuring the touch behavior of the display. The possibility to change this behavior via the tool bar buttons is unchanged.
V1.30	During the self-alignment, the frontend temperature is checked. If the temperature difference between beginning and end of self alignment is too high, the self alignment becomes invalid.
V1.30	The FFT sweep has been accelerated in most situations.
V1.30	The estimation of the effective sweep time in FFT sweep is more accurate.
V1.30	The hysteresis for the video trigger has been modified (about 10% of the trigger level in volt).
V1.30	Spectrum Analysis: the number of vertical display lines has been increased to 4.
V1.30	Gating: The analyzer now displays a warning if the FFT window length is greater than the gate length.
V1.30	In mode Spectrum Analysis and mode I/Q Analyzer, the Input dialog now shows an additional field "Input Connector". Always "RF" is selected and cannot be changed.
V1.30	I/Q Analyzer: Without option B40, the maximal sample rate has been extended to 16 MHz and the maximal Analysis bandwidth has been extended to 12.8 MHz.
V1.30	R&S® FPL1-K30: Maximum number of measurement points increased to 1201.

1.3 Improvements

The following tables list the improvements and indicate since which version the issue could be observed:

No additional Improvements have been implemented in Firmware V1.51:

Improvements of Firmware V1.50:

Version	Function
1.30	When using touch gestures the frequency offset was not taken into account. This issue is solved.
1.30	If a Limit Line was switched on manually, and after that remotely queried (CALC:LIM1:FAIL?), the result could be wrong
1.30	If Marker Demodulation was switched to ON within the ACLR measurement: "Continous Demodulation" could not be switched off (softkey had no effect). The issue is solved.
1.30	In option R&S® FPL1-K7 the key for impedance 50 Ohm / 75 Ohm was missing. The functionality was only accessible remotely. The issue is solved.
1.30	R&S® FPL1-K70: The trigger Holdoff Time was not available. The issue is solved..
1.40	R&S® FPL1-K70: Changing the SAW filter state in Run Single mode does not raise the dirty flag. The issue is solved.
1.40	R&S® FPL1-K70: If the pattern waveform is found but not all pattern symbols are detected correctly (error message "Pattern symbols incorrect"), the pattern is not highlighted in the symbol table. The corresponding remote command TRAC<n>:DATA? PSTR works. The issue is solved.

No additional Improvements have been implemented in Firmware V1.40:

Improvements of Firmware V1.30:

since	Function
V1.00	In FSL compatibility mode the "*IDN?" command returned an invalid serial number. This is fixed now.
V1.05	For the Startup Recall it was necessary to select a file first, and then switch on the Startup Recall. Now it is also possible to switch on the Startup Recall first and then to select a file.
V1.10	In the ACLR measurement with Power Mode "Max Hold", if the ACLR mode is changed between "ABS" and "REL" this setting only worked after the next sweep start (not during continuous sweep). The issue is solved.
V1.10	The combination FFT sweep and continuous demodulation was not blocked. The issue is solved.

1.4 Known Issues

The following table lists the known issues and indicates since which version the issue could be observed:

since	Function
V1.05	If the instrument has an image 1.09, and a firmware 1.10 or earlier, the firmware version of the firmware to uninstall is not shown during the update from a PC. If the installed firmware is 1.20 or later, there is no problem.
V1.30	License key installation over R&S License Manager webpage often shows a red error message in the last line. Nevertheless, the license key has been properly installed on the device, which can be seen after the reboot.
V1.30	Sometimes the firmware does not shut down correctly after pressing <ALT><F4>. However, the instrument settings for the next firmware start are stored correctly.
V1.51	If the tracking generator is on, and calibration data is available, a new calibration is necessary after using "Duplicate Current Channel Setup"

1.5 Modifications to the Documentation

All new features are described in the online help or the latest documentation, which is available for download from the Rohde & Schwarz website, on the R&S FPL1000 product page at:

http://www.rohde-schwarz.com/product/FPL1000.html

2 Firmware Update

The firmware update file for the R&S FPL1000 is one file including the main firmware version number e.g. FPL1000Setup_V1.30.exe. It will be referred as FSP1000Setup.exe later in the text. The file can be found on Rohde & Schwarz web page.

2.1 Performing the Firmware Update on the Instrument

There are three ways to make the setup FPL1000Setup.exe visible to the device:

Using a memory stick:

1. Copy the file to a directory of the memory stick and insert the memory stick into one of the USB sockets of the R&S FPL1000.

Using the remote desktop and copying the installation files to a directory of the instrument:

1. Connect the R&S FPL1000 to your LAN.

2. Start the remote desktop on your PC (C:\winnt\system32\mstsc.exe).

3. Enter the TCP/IP address of the instrument you want to update. Ensure that the "local resources" > "drives" option is selected and press the "Connect" button. (To get the TCP/IP address of the R&S FPL1000 press the hard key "Setup" and then the soft key "Network + Remote". The IP address consists of 4 numbers between 0 and 255.

4. Login to the instrument (user name: "instrument" and default password "894129").

5. Copy the FPL1000Setup.exe from your PC to a new folder e.g. C:\FWUpdate.

6. You can now access this directory with the FPL1000Setup.exe from the R&S FPL1000 analyzer firmware.

Using a network drive:

1. Connect your R&S FPL1000 to your LAN, and establish a connection to one of your servers. (Please ask the local IT administrator for support)

2. Copy the FPL1000Setup.exe from your PC to a directory on this server

3. You can now access the directory with the FPL1000Setup.exe from the R&S FPL1000 analyzer firmware.

Performing the update on the instrument:

The firmware update process is performed by the following steps:

1. Switch the instrument on and wait until the Analyzer has resumed operation.

2. Press the "SETUP" hard key, then the soft key "System Config", and select the tab "Firmware Update".
    A file browser is displayed to select the proper FPL1000*.exe setup file. Change the path to the drive and directory which you prepared in the step before (USB

stick directory, remote PC directory or directory on a server) and close the dialog with the "Install" button.
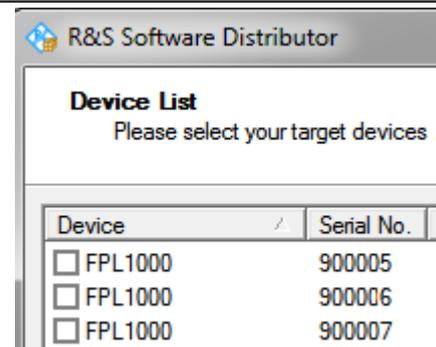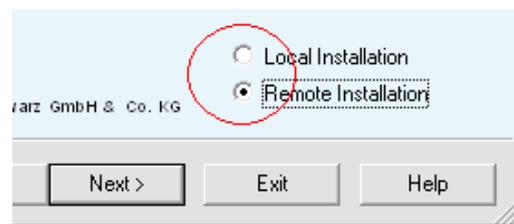
3. Press the "Next" button to come to the selection of the firmware packages. By default all application should be installed. Ensure that the applications needed are selected.

4. Press the "Install" button.
    The firmware will be stopped and the installation starts. After a few minutes the system restarts automatically. After the restart the firmware installation is complete. After the firmware update the "UNCAL" flag appears. A self alignment is necessary.

5. Press the "SETUP" hard key, the soft key "Alignment" and then press the button "Start Self Alignment" to invoke the alignment procedure.

2.2 Performing the Firmware Update from a Windows PC

This feature is not supported if the installed version is less than 1.05.

The new firmware can also be uploaded without using a memory stick or a network drive. Just a LAN connection from the instrument and a Windows PC is necessary.

1. Run FPL1000Setup.exe on your PC.

2. Select Remote Installation and click the button "Next >".

3. Select the Packages which shall be installed and click the button "Next >". HINT FOR FIRE WALL USERS: The FPL1000Setup.exe is communicating with the instruments via LAN. Therefore it is necessary that the FPL1000Setup.exe may pass the fire wall. After adding it to the fire wall rules, restart the scan by clicking on "Rescan".

4. After scanning your LAN subnet all found instruments are listed. Select the instruments you want to update.
    It is possible to select up to 5 instruments for updating in parallel.

NOTICE

Please be careful and check twice if you have selected the correct instruments. Depending on your company's network structure also instruments of other departments will show up!

5.   Additional help will be displayed after clicking the button "Help" and further options are available by clicking the button "Options".

6.   Start the installation by selecting "Install"

7.   Confirm that you want to reboot the instrument in order to activate the firmware update (the instrument then restarts automatically)

2.3 Operation with and without Administrator Rights

The analyzer may be operated with or without administrator rights. Some administrative tasks (e.g. network configuration) do require administrator rights. However, a firmware update is possible without administrator rights.

In the default configuration, auto login is enabled, and the "Instrument" account without administrator rights is active. This means that no password is required. Use standard Windows functionality if you wish to deactivate the auto login mechanism and activate the Administrator account. Please refer also to the Quick Start Manual of the FPL1000.

2.4 Installing Firmware Options

2.4.1 Enabling Options by Entering Option Key Codes

NOTICE

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

To activate application software packages, you must enter a license key for validation.

If a XML-file with an option key was sent to you see the install description below.

The license key is in the device certificate or delivered as a part of the software package. The process is performed in the following steps:

1. Press the "SETUP" hard key.

2. Go to the tab "Versions + Options"

3. Press the button "Install Option".
    A dialog box is displayed.

4. Enter the option key number using the keypad.

5. Press "ENTER".
    After a successful validation the message "Option Key valid" is displayed. If the validation failed, the option software is not installed.

6. Reboot the device.

Installation of options via XML-file

1. Press the "SETUP" hard key.

2. Go to the tab "Versions + Options"

3. Press the button "Install Option by XML".
    A file browser is displayed.

4. Select the path to the XML file (e.g. network drive or USB stick)

5. Press "Select".
    After a successful validation the message "Option Key valid" is displayed. If the validation failed, the option software is not installed.

6. Reboot the device.

3 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.

Europe, Africa, Middle East
Phone +49 89 4129 12345
customersupport@rohde-schwarz.com

North America
Phone 1-888-TEST-RSA (1-888-837-8772)
customer.support@rsa.rohde-schwarz.com

Latin America
Phone +1-410-910-7988
customersupport.la@rohde-schwarz.com

Asia/Pacific
Phone +65 65 13 04 88
customersupport.asia@rohde-schwarz.com

China
Phone +86-800-810-8828 / +86-400-650-5896
customersupport.china@rohde-schwarz.com