R&S®FPL1000 Spectrum Analyzer Release Notes

Firmware Version V1.81 SP1

These Release Notes are for following models of the R&S®FPL1000 Spectrum Analyzer:
R&S® FPL1003, order no. 1304.0004K03
R&S® FPL1007, order no. 1304.0004K07
R&S® FPL1014, order no. 1304.0004K14
R&S® FPL1026, order no. 1304.0004K26

PAD-T-M: 3574.3288.02/05.00/CI/1/EN

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Contents

1 Information on the current version and history

1.1 New functions

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

New function of firmware V1.81:

Version	Function
V1.81	Support of new instrument models FPL1014 and FPL1026
V1.81	Support of new option R&S FPL1-B11

New function of firmware V1.80:

Version	Function
V1.80	Self alignment scheduler to perform self alignments regularly at specific days and times.
V1.80	R&S®FPL1-K54: Supports linear analog sweep with CISPR detectors
V1.80	R&S®FPL1-K30: ENR measurements inside the option.
V1.80	R&S®FPL1-K30: Saving and recalling calibration results.
V1.80	Support of R&S®FS-SNS18: Smart noise sources for noise figure and gain measurement
V1.80	R&S®FPL1-K54: In zero span mode CISPR trace detectors may be combined with RMS detector
V1.80	R&S®FPL1-K70: New predefined digital standard: DMR (Digital Mobile Radio).

New function of firmware V1.70:

Version	Function
V1.70	Support of new option R&S®FPL1-K40 (Phase noise measurements)
V1.70	Switchable x-axis value distribution in frequency domain.
V1.70	Maximum number of peaks of marker peak list has been increased to 500.
V1.70	Installation files are extended, to support automatic self-alignment and/or shut down after installation.

New function of firmware V1.60:

Version	Function
V1.60	R&S®FPL1-B9: New measurement "Power Sweep" including determination of compression points.
V1.60	R&S®FPL1-K54: Added reporting functionality for the mode "Spectrum".
V1.60	R&S®FPL1-K70P: Additionally supported PRBS types 7 and 31.

1.2 Modified functions

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

Modifications of firmware V1.80:

Version	Function
V1.80	Capture IQ data supporting 16- and 64-bit format (FORM REAL,16 and FORM REAL,64), besides the current 32-bit format (FORM REAL,32).
V1.80	V1.80 supporting new Windows OS Image 2.15.1.22. (from image version 2.15.1.22 onwards, the name for the Administrator-Account changed from "Administrator" to "Admin")
V1.80	Save/Recall: It is now possible to save the normalization data of the tracking generator (option R&S®FPL1-B9). If the normalization is active Quick Save automatically includes the data. Save then offers the new item "Source Cal Data" .
V1.80	R&S®FPL1-K54: FFT sweep: improved timing for FFT sub spans to support longer continuous observation times.
V1.80	R&S®FPL1-K54: Number of used FFT sub spans is shown in the sweep configuration dialog.
V1.80	The video filtering for level range LIN now uses the linear voltage domain. In previous versions this was done for RMS and average detector, only.
V1.80	ASCII trace export function is extended by a selectable column separator in spectrum mode, I/Q analyzer and R&S FPL-K7
V1.80	R&S®FPL1-K7: Option renamed to "AM/FM/PM Analog Demod"
V1.80	R&S®FPL1-K70: In order to better visualize the symbol transitions, the sample points are connected in the density trace mode for result type 'Vector I/Q'.
V1.80	R&S®FPL1-K70: Preview windows have been removed to allow for more compact dialogs.
V1.80	Now possible to directly copy SCPI-commands from the help browser to the IEC-Win

Modifications of firmware V1.70:

Version	Function
V1.70	R&S®FPL1-K54: An improved FFT algorithm achieves a better and more reliable detection of pulses in the "EMI" measurement mode.
V1.70	R&S®FPL1-K54: If you select a CISPR detector for a trace, any other traces with incompatible detectors are automatically set to "Auto Detector". If you set a trace to use one of the non-CISPR detectors any traces currently using a CISPR detector are automatically set to "Auto detector".
V1.70	R&S®FPL1-B9 (Power Sweep measurement): The instrument frequency can now be changed within the "Internal Generator" dialog
V1.70	R&S®FPL1-B9 (Power Sweep measurement): The compression point measurement can now also be activated on normalized trace data.
V1.70	R&S®FPL1-B9 (Frequency tracking): Remote command SENSe:SWEep:DURation? extended for tracking generator.
V1.70	R&S®FPL1-B9: New status message "Generator Maximum Level Exceeded" if the user sets a generator level that the generator cannot handle.

Modifications of firmware V1.60:

Version	Function
V1.60	All "File Select" dialogs (e.g. "Save", "Recall") include a button to open an operating system file explorer window.
V1.60	R&S®FPL1-K70: After preset, the trace in the constellation diagram in window 1 is now a "Density" trace, and no longer a "Clear Write" trace. This only effects the coloring of the trace. The trace values remain the same.
V1.60	R&S®FPL1-K70: For the predefined standard 3G_WCMDA.xml, the trace in the constellation diagram in window 1 is now a "Density" trace, and no longer a "Clear Write" trace. This only effects the coloring of the trace. The trace values remain the same.
V1.60	R&S®FPL1-K70: Improved burst search for low reference levels.
V1.60	R&S®FPL1-K70: Improved coarse synchronization for 64APSKs.

1.3　Improvements

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

Improvements of firmware V1.81 SP1:

Since	Function
V1.81 SP1	Production related changes.

Improvements of firmware V1.81:

since	Function
V1.80	The option R&S®FPL1-B22 RF Preamplifier with material numbers 1323.1702 and 1323.1777 could only be activated with a demo key code. Other types of option key codes did not enable the R&S®FPL1-B22 functionality. This issue is solved.

Improvements of firmware V1.80:

since	Function
V1.70	R&S®FPL1-B5: improve quality of audio output
V1.70	Function "Save/Recall - Startup Recall" It was not possible to reactivate this function, if it was once switched off. This issue is solved.
V1.50	Remote Mode / Display Update ON: Toolbar is not locked. This issue is solved.
V1.70	SYSTem:HELP:HEADers? not working properly. This issue is solved.
V1.10	Corrected naming of SW options in device footprint

Improvements of firmware V1.70 SP1:

since	Function
V1.70	The firmware could not be installed on an instrument where the Microsoft update KB4580346 was installed by the customer. This issue is solved.
V1.70	Mode Spectrum Analyzer: In some combinations of sweep points, RBW, VBW and marker count settings a single sweep did not come to an end. This issue is solved.
V1.70	Mode Spectrum Analyzer: The Dialog "Marker Demod" includes the selection for modulation types "AC VIDEO" and "AUDIO" which are not supported by FPL1000. The buttons are removed.
V1.70	Mode IQ Analyzer: The trace dialog included a detector "persistence" which is not supported by FPL1000. The button is removed.
V1.70	Startup Recall: Startup Recall was switched ON and OFF. After the next instrument reboot it could not be switched ON again. This issue is solved.

Improvements of firmware V1.70:

since	Function
V1.50	R&S® FPL1-B9 If the level of the generator was changed after a normalization, the normalized trace was not corrected. This issue is solved.
V1.50	R&S® FPL1-K30/ R&S® FPL1-B9: If the independent source (R&S® FPL1-B9) was activated in the Noise application, it was switched off, when a single sweep was started. This issue is solved.
V1.30	License key installation over R&S License Manager webpage often showed a red error message in the last line. Nevertheless, the license key had been properly installed on the device, as could be seen after the reboot. The issue is solved.

Improvements of firmware V1.60:

since	Function
V1.50	With a "right click" on a quick save set, it was not possible to change the quick save set name or to activate the "write protection". This issue is solved.
V1.50	The "Auto Level" function did not work in case of an active tracking generator, combined with a start frequency smaller than 300kHz. This issue is solved.
V1.50	If the tracking generator was on, and calibration data was available, a new calibration was necessary after using "Duplicate Current Channel Setup". This issue is solved.
V1.50	The serial number of the CPU board was not shown correctly for IPS2-8GB CPUs. This issue is solved.
V1.50	In certain combinations of frequency settings, number of sweep points and RBWs, the marker function "Signal Count" did not finish. This issue is solved.
V1.30	Sometimes the firmware did not shut down correctly after pressing <ALT><F4>. This issue is solved.
V1.10	In the dialog of the "Reference Fixed" marker function, the label of the X-Axis value could be wrong ("Frequency" instead of "Time" or "Time" instead of "Frequency") and the values sometimes were shown in a wrong unit. This issue is solved.

1.4 Known issues

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

Known issues of firmware V1.10:

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.

2 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

3 Firmware update

The firmware update file for the R&S FPL1000 is one file including the main firmware version number e.g. FPL1000Setup_V1.81SP1.exe. It will be referred as FPL1000Setup.exe later in the text. The file can be found on Rohde & Schwarz web page.

3.1 Validity information

The firmware is referring to following model numbers:

Device	Order Number
R&S® FPL1003	1304.0004K03
R&S® FPL1007	1304.0004K07
R&S® FPL1014	1304.0004K14
R&S® FPL1026	1304.0004K26

3.2 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:

- 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:

- Connect the R&S FPL1000 to your LAN.

- Start the remote desktop on your PC (%windir%\system32\mstsc.exe).

- 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.

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

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

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

Using a network drive:

- 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)

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

- 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:

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

- 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.

- 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.

- 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.

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

## 3.3 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.

- Run FPL1000Setup.exe on your PC.

- Select Remote Installation and click the button "Next >".
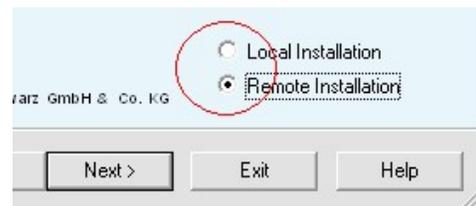
- Select the Packages which shall be installed and click the button "Next >". HINT FOR FIRE WALL USERS: The FPL1000Setup.exe is communicating with the instruments via LAN. Therefore, it is necessary that the FPL1000Setup.exe may pass the fire wall. After adding it to the fire wall rules, restart the scan by clicking on "Rescan".
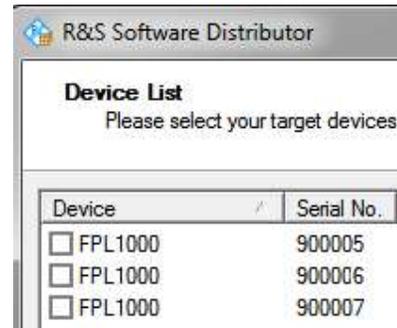
- After scanning your LAN subnet all found instruments are listed. Select the instruments you want to update.
  It is possible to select up to 5 instruments for updating in parallel.

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!

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

- Start the installation by selecting "Install"

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

3.4 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 or activate the Administrator account. Please refer also to the Quick Start Manual of the FPL1000.

3.5 Installing Firmware Options

3.5.1 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:

- Press the "SETUP" hard key.

- Go to the tab "Versions + Options"

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

- Enter the option key number using the keypad.

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

- Reboot the device.

Installation of options via XML-file

- Press the "SETUP" hard key.

- Go to the tab "Versions + Options"

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

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

- 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.

4 Customer support

Technical support – where and when you need it

For quick, expert help with any Rohde & Schwarz product, contact our customer support center. A team of highly qualified engineers provides support and works with you to find a solution to your query on any aspect of the operation, programming or applications of Rohde & Schwarz products.

Contact information

Contact our customer support center at www.rohde-schwarz.com/support or follow this QR code:

Figure 4-1: QR code to the Rohde & Schwarz support page