

R&S®FPL1000 Spectrum Analyzer

Release Notes

Firmware Version V1.90 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

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1178.6510.02 | Version 17 | R&S®FPL1000 Spectrum Analyzer | **COMPANY RESTRICTED**

The software makes use of several valuable open source software packages. For information, see the "Open Source Acknowledgment" provided with the product.

The following abbreviations are used throughout this document: R&S®FPL1000 Spectrum Analyzer is abbreviated as R&SFPL1000 Spectrum Analyzer.



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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 V1.90:

Version	Function
V1.90	R&S FPL1-K54: Supports logarithmic axis with all detectors (standard and CISPR).
V1.90	R&S FPL1-K7: SAW filter can be switched off for analog demodulation measurements.

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.

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 V1.90:

Version	Function
V1.90	R&S FPL1-K54: EMI measurement FFT sweep: Sweep times leading to interruption in signal acquisition within one FFT segment are not possible anymore.

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.

1.3 Improvements

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

Improvements of firmware V1.90 SP1:

since	Function
V1.90 SP1	Recording of dynamic YIG correction values failed on FPL1014. This issue is solved.

Improvements of firmware V1.90:

since	Function
V1.90	File upload on the R&S web control failed for file sizes > 8 MB. This issue is solved.

V1.90	Vertical separator between windows was not functional. This issue is solved.
V1.90	Limit Line vanished after Autolevel, when using Quick-Save-Set in EMI-mode. This issue is solved.
V1.90	R&S FPL1014 and R&S FPL1026: Yig filter positioning in sweep mode not optimal. This issue is solved.

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.

1.4 Known issues

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

since	Function
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2 Modifications to the documentation

The current documentation is up-to-date.

3 Firmware update

3.1 Validity information

The firmware is referring to the 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 Update information

The firmware update file for the R&S FPL1000 is one file including the main firmware version number e.g. FPL1000Setup_V1.60.exe. It is referred to as FPL1000Setup.exe throughout the text. You can find the file on the Rohde & Schwarz web page:

<http://www.rohde-schwarz.com/firmware/fpl1000>

3.3 Performing the firmware update on the instrument

There are three ways to provide access to the FPL1000Setup.exe for the R&S FPL1000.

Using a USB storage device:

1. Copy the file to a directory of the storage device.
2. Insert the storage device in one of the USB connectors of the R&S FPL1000.

Using the remote desktop:

1. Connect the R&S FPL1000 to your LAN.
2. Start the remote desktop on your PC (C:\winnt\system32\mstsc.exe or C:\windows\system32\mstsc.exe).
3. Enter the required connection settings: TCP/IP address of the instrument you want to update. To get the TCP/IP address of the R&S FPL1000, select [Setup] > "Network + Remote". The IP address consists of 4 numbers between 0 and 255.
4. Enable the "local resources" > "drives" option.
5. Select "Connect".
6. Log in to the instrument using the user name: "instrument" and the default password "894129".

7. Copy the FPL1000Setup.exe from your PC to a new folder, e.g. C:\FWUpdate.
8. You can now access this directory with the FPL1000Setup.exe from the R&S FPL1000 firmware.

Using a network drive:

1. Connect the R&S FPL1000 to your LAN and establish a connection to one of your servers. (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 firmware.

Performing the update on the instrument:

Update the firmware by performing the following steps:

1. Switch on the instrument and wait until the analyzer is ready for operation.
2. If a measurement is running, stop it by pressing the highlighted [Run Cont] or [Run Single] key. Do not update the firmware during a running measurement.
3. Select [Setup] > "System Config" > "Firmware Update" tab.
4. In the file selection dialog box, select the FPL1000Setup.exe file from the prepared storage location.
"File Explorer": Instead of using the file manager of the R&S FPL1000 firmware, you can also use the Microsoft Windows File Explorer to manage files.
5. Select "Install".
6. Select "Next". A selection list of the available firmware packages is displayed.
7. By default, all applications are installed. Make sure the required applications are selected.
8. Select "Install" to start the update.

After the firmware update, the R&S FPL1000 reboots automatically.

Depending on the previous firmware version, a reconfiguration of the hardware can be required during the first startup of the firmware. The reconfiguration starts automatically, and a message box informs you about the process. When the reconfiguration has finished, the instrument again reboots automatically.

Note: Do not switch off the instrument during the reconfiguration process!

Now the firmware update is complete.

9. After the firmware update, the "UNCAL" status is displayed in the status bar. A self-alignment is necessary.
10. Perform a self-alignment ([SETUP] > "Alignment" > "Start Self Alignment").

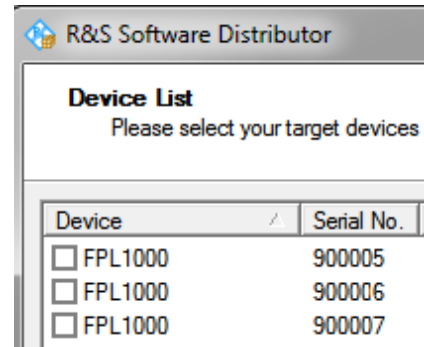
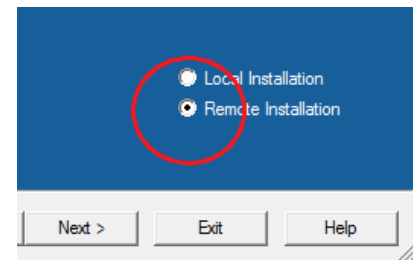
3.4 Performing the firmware update from a Windows PC

You can also update the firmware using a LAN connection between the instrument and a Windows PC.

1. Run FPL1000Setup.exe on your PC.
2. Select "Remote Installation".
3. Select "Next".
4. Select the packages to install.
5. Select "Next".

Note:

FOR FIREWALL USERS: The FPL1000Setup.exe communicates with the instrument via LAN. Therefore, the FPL1000Setup.exe file must pass the firewall. Add it to the firewall rules, then restart the the scan using "Rescan".



6. The setup procedure scans your LAN subnet and displays all found instruments
7. Select the instruments you want to update. You can select up to 5 instruments to update in parallel.

NOTICE

Be careful and check twice if you have selected the correct instruments. Depending on your company's network structure, also instruments of other departments are included!

8. If necessary, select "Help" to display additional help. Select "Install" to start the installation.
9. Confirm the message to reboot the instrument to activate the firmware update. The instrument restarts automatically.
10. After the firmware update, the "UNCAL" status is displayed in the status bar. A self-alignment is necessary.
11. Perform a self-alignment ([SETUP] > "Alignment" > "Start Self Alignment").

3.5 Installing firmware options

3.5.1 Firmware options included in basic instrument

The R&S®FPL1-K7 and R&S®FPL1-K54 application software packages are included in the basic instrument firmware. Therefore, they do not have a separate item in the installer to be selected.

3.5.2 Other firmware options within the FPL1000Setup.exe file

The following optional application software packages have their own installation items and are therefore added to the selection list during the firmware update. Ensure that the checkbox is checked if the installation is requested.

- R&S®FPL1-K30 Noise figure measurements
- R&S®FPL1-K40 Phase noise measurement application
- R&S®FPL1-K70 Vector signal analysis

3.5.3 Enabling options by entering option key codes

NOTICE

Skip this section if the option key was entered once.

To activate application software packages, you must enter a license key for validation. You only have to enter the option key once per option.

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

The license key is in the device certificate or delivered as a part of the software package.

To enable an option using an option key

1. Select [SETUP] > "System Config" > "Versions + Options" tab.
2. Select "Install Option".
A dialog box is displayed.
3. Enter the option key number using the keypad.
4. Press [ENTER].

After a successful validation, the "Option Key valid" message is displayed. If the validation fails, the option software is not installed.

5. Repeat the activation process for all options you want to install.
6. Reboot the device.
7. Check whether the options are available on the instrument ([SETUP] > "System Config" > "Versions + Options" tab).

To enable options via an XML-file

1. Select [SETUP] > "System Config" > "Versions + Options" tab.
2. Select "Install Option by XML".
A file browser is displayed.
3. Select the path to the XML file (e.g. network drive or USB storage device).
4. Press "Select".

After a successful validation, the "Option Key valid" message is displayed. If the validation fails, the option software is not installed.

5. Repeat the activation process for all options you want to install.
6. Reboot the device.
7. Check whether the options are available on the instrument ([SETUP] > "System Config" > "Versions + Options" tab).

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