

# R&S® FPL1000

## Spectrum Analyzer

### Release Notes

### Firmware Version V1.70

**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**

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

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# 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 V1.70:

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 Functions in 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.

### New Functions in Firmware V1.51:

Version	Function
V1.51	Support of new option R&S®FPL1-B9 (internal generator) including <ul style="list-style-type: none"> <li>- Tracking Generator: (In Frequency Sweep of mode Spectrum only)</li> <li>- Independent Source (all modes and applications)</li> </ul>

### 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 $\pi/8$ -D8PSK and $\pi/4$ -DQPSK.
V1.50	R&S® FPL1-K70: New mapping "Gray" for $\pi/4$ -QPSK.

## 1.2 Modified Functions

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

### Modified functions of Firmware V1.70:

since	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:SWEp: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.

### Modified functions of Firmware V1.60:

since	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.

### No modified functions in Firmware V1.51.

### Modified functions of Firmware V1.50:

since	Function
V1.50	IQ Analyzer and R&S® FPL1-K70: When using Input Source "I/Q File", the softkey "SAW-Filter" now is disabled

V1.50	R&S® FPL1-K70: Improved layouts for the "Predefined Display Configurations".
V1.50	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.

## 1.3 Improvements

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

### Improvements of Firmware V1.70:

Version	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:

Version	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.

### No Improvements in Firmware V1.51.

### Improvements of Firmware V1.50:

Version	Function
V1.40	R&S® FPL1-K70: Changing the SAW filter state in Run Single mode does not raise the dirty flag. The issue is solved.
V1.40	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.
V1.30	When using touch gestures the frequency offset was not taken into account. This issue is solved.
V1.30	If a Limit Line was switched on manually, and after that remotely queried (CALC:LIM1:FAIL?), the result could be wrong
V1.30	If Marker Demodulation was switched to ON within the ACLR measurement: "Continuous Demodulation" could not be switched off (softkey had no effect). The issue is solved.

Version	Function
V1.30	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.
V1.30	R&S® FPL1-K70: The trigger Holdoff Time was not available. 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.

## 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\_V1.60.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.

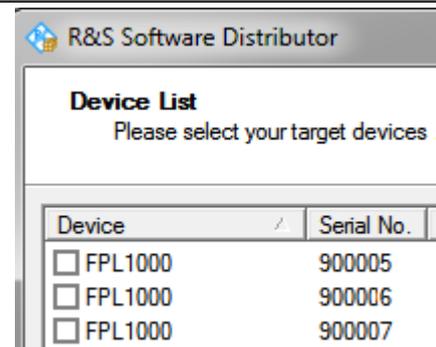
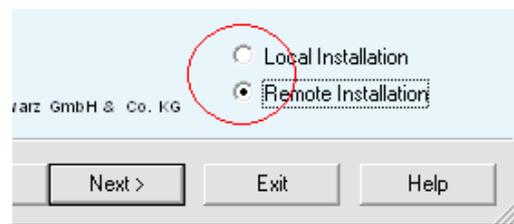
3. Press the "Next" button to come to the selection of the firmware packages. By default all application should be installed. Ensure that the applications needed are selected.
4. Press the "Install" button.  
The firmware will be stopped and the installation starts. After a few minutes the system restarts 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 or 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

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**NOTICE**

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

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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.

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