

# R&S®FPC Spectrum Analyzer Release Notes

## Firmware Version 1.70

These Release Notes are for following models of the R&S®FPC Spectrum Analyzer:  
R&S® FPC1000, order no. 1328.6660.02,  
R&S® FPC1500, order no. 1328.6660.03

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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®FPC is abbreviated as R&SFPC

PAD-T-M: 3574.3288.02/04.00/CI/1/EN



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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 functions of firmware V1.70:

Version	Function
V1.70	Support of long time recording of the spectrogram

### New functions of earlier firmware versions:

Version	Functions
V1.60	Support for saving dataset in csv format (in Spectrum Analyzer mode only)
V1.60	SCPI Command to read out Memory Trace
V1.60	Add transducer units dBuV and dBuA
V1.60	SCPI command to activate Bluetooth LE in FSK digital demodulation
V1.60	Support for date format YYYY/MM/DD
V1.60	R&S®FPC-K7: Supports reference offset
V1.60	R&S®FPC-K7: Support for FM analog external triggering
V1.60	R&S®FPC-B200: Support of specific external USB WIFI dongle
V1.60	R&S®FPC-K42: Exporting traces (datasets) as sxp files
V1.50	S-Parameter based calibration kit data in VNA mode
V1.50	S11 and S21 can be displayed in one screen in VNA mode
V1.50	Calibrate S11 and S21 in a single step in VNA mode
V1.40	Support of two detectors in parallel, peak list and logarithmic limit lines in R&S FPC-K43: Receiver Mode
V1.40	Support of auto tracking markers
V1.40	Extended measurement functionalities in R&S FPC-K7: ASK/FSK
V1.40	Support for variable input attenuation in R&S FPC-K42: Vector Network Analysis

V1.40	Trigger status displayed in status bar
V1.30	Support of R&S FPC1500
V1.30	R&S®FPC-K42: Vector Network Analysis (for R&S FPC1500 only)
V1.30	Logarithmic display in R&S FPC-K43: Receiver Mode
V1.30	Support of up to 3 memory traces
V1.30	Support of R&S®ZN-Z103 calibration unit
V1.30	Deactivate display for faster measurements via SCPI
V1.20	Extended FPC-K55 Advanced Measurements with third order intercept, TDMA power, harmonic distortion and AM modulation depth measurements.
V1.20	Extended FPC-K7 ASK/FSK with support for Bluetooth LE and Tire Pressure standard, burst processing, and an IQ power trigger
V1.20	Possibility to manual select between Sweep and FFT mode where possible
V1.20	Turn on all marker with a single softkey
V1.10	R&S®FPC-K7: Modulation Analysis (AM, FM, ASK, FSK)
V1.10	R&S®FPC-K43: Receiver Mode
V1.10	R&S®FPC-K55: Advanced Measurement (Spectrogram, Occupied Bandwidth and Channel Power)

## 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 V1.70:

Version	Function
V1.70	Network IP Forwarding is deactivated by default
V1.70	ICNIRP Limit Lines are added as predefined limit lines for EMF measurements
V1.70	ZN-Z135 and ZN-Z170 calibration kits are added as default kits
V1.70	In an unstable network, the SCPI connection to the instrument requires constant reconnection. For that case a shared SCPI connection can be selected to ensure a stable SCPI reconnection.
V1.70	When installing the FPC version remotely with InstrumentView, the FPC reboots automatically after the installation is done

## Modifications of earlier firmware versions:

Version	Function
V1.60	Display message box in case an unsupported file is loaded
V1.60	R&S®FPC-K42: Switch off interference suppression. by default
V1.40	Improved UI for WIFI connection

## 1.3 Improvements

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

### Improvements of firmware V1.70:

since	Function
V1.70	With the command SCPI:TRAC:DATA? TRACE2 incorrect data values were transferred when a transducer factor was used. This issue is fixed
V1.70	In some cases limit lines were at incorrect levels when transducer factors were turned on. This issue is fixed
V1.70	Marker result values on trace 2 were not always updated in single sweep mode. This issue is fixed

### Improvements of earlier firmware versions:

since	Function
V1.60	R&S®FPC-K42: Add warning message when more than max points in s1p file
V1.51	Some instruments show sporadic LAN data transfer problems. This issue is fixed
V1.50	Improved on/off switching of tracking generator in Spectrum Analyzer mode
V1.50	Improved display in VNA mode when interference suppression is switched off
V1.50	Fixed various bugs concerning SCPI commands
V1.50	Corrected instrument ID via USB: R&S®InstrumentView V2.00 required for USB connection
V1.41	Improved handling of special measurement settings
V1.41	Improved sweep control
V1.40	Fixed various bugs concerning SCPI commands

V1.30	Performance improvements
V1.30	Fixed a bug where the last WiFi password was not remembered
V1.30	Fixed a bug where the time markers did not jump over each other
V1.30	Hardware Options are correctly returned when querying via SCPI on *OPT?
V1.20	Performance improvements
V1.20	Show WiFi MAC address in Instrument Setup Screen
V1.20	Support special characters for WiFi passphrase

## 1.4 Known issues

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

since	Function
none	none

## 2 Modifications to the documentation

The current documentation is up-to-date.

## 3 Firmware update

### 3.1 Validity information

Device	Order Number
R&S® FPC1000	1328.6660.02
R&S® FPC1500	1328.6660.03

### 3.2 Update information

Before you update the firmware, it is recommended to make a backup of the stored data on the R&S®FPC Spectrum Analyzer (datasets, screenshots, transducer factors etc.). You can make a backup with the tools available in the R&S®InstrumentView software package.

### 3.3 Updating the firmware

The firmware update itself does not delete or modify that data. However, it is recommended to perform a factory reset after the firmware update. This will update predefined limit lines, channel tables etc. but will delete user data.

New firmware versions usually contain new features, improvements of existing functionality, bug fixes etc. When a new firmware version is available, it is recommended to replace the old firmware with the new one.

The latest installation file is can be found on the Rohde & Schwarz web page at <http://www.rohde-schwarz.com/firmware/fpc>.

The steps for the installation of the firmware update are the following:

1. Download the firmware installation file `FPC_<version>.exe` from the internet.
2. The firmware comes in a single `.exe` file.
3. Save the file to the root directory of a memory stick.
4. Run the `.exe` file to unpack the self-extracting zip archive.
5. The following files are extracted.
  - `FPC_<version>_bootloader.bin`
  - `FPC_<version>_osimage.bin`
  - `FPC_<version>_updater.bin`
  - `FPC_<version>_xmegaloadfiles.bin`
6. Make sure that only these files are present in the root directory of the memory stick.
7. Turn off the R&S®FPC Spectrum Analyzer.
8. Connect the memory stick to one of the USB interfaces of the R&S®FPC Spectrum Analyzer.
9. Press the "Preset" key and the number "8" key simultaneously.

10. Turn on the R&S®FPC Spectrum Analyzer and keep pressing the two keys for at least 5 seconds after the startup screen appears.
11. Release the keys.
12. The booting process continues. After a couple of seconds, the R&S®FPC Spectrum Analyzer asks you if you really want to update the firmware.
13. Press the Enter ("√") key to update the firmware.  
(You can cancel the firmware update with the "Esc" key.)  
The firmware update takes several minutes. The R&S®FPC Spectrum Analyzer shows a message when the firmware update is done. **Note:** Do not turn off the R&S®FPC Spectrum Analyzer during the firmware update.
14. Turn off the R&S®FPC Spectrum Analyzer.
15. Turn on the R&S®FPC Spectrum Analyzer.
16. The R&S®FPC Spectrum Analyzer boots with the new firmware version.
17. Optional: It is recommended to perform a **factory reset** after a firmware update to replace the predefined limit lines, channel tables and other data with the latest updates.  
**Note:** Before you start a factory reset, make sure to make a backup of your data that you have saved on the R&S®FPC Spectrum Analyzer. Otherwise that data is deleted.

## 4 Firmware options

You can equip the R&S®FPC Spectrum Analyzer with optional functionality or firmware options. These firmware options expand the functionality of the R&S®FPC Spectrum Analyzer with new measurement functions settings etc.

This section can be skipped if the option keys were already entered once. Option keys are not affected by a firmware update.

To install a new firmware option, you have to enter a license key for validation. The license key is included in the delivery of the firmware option.

The steps for the installation of the firmware options are the following:

1. Press the "Setup" key to enter the instrument setup menu.
2. Select the "Installed Options" menu item.  
The R&S®FPC Spectrum Analyzer shows a list of all options that are currently installed on your R&S®FPC Spectrum Analyzer.
3. Select the "Install Option" button and press the Enter ("√") key.  
The R&S®FPC Spectrum Analyzer opens an input field.
4. Enter the license key with the alphanumeric keys and confirm the entry with the Enter ("√") key.
5. The license key is a 32-digit number.
6. The R&S®FPC Spectrum Analyzer confirms a successful installation.  
If the R&S®FPC Spectrum Analyzer shows an "Invalid Key Code" message, try to enter the license key again.

## 5 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](http://www.rohde-schwarz.com/support) or follow this QR code:



Bild 5-1: QR code to the Rohde & Schwarz support page