

R&S®FSWT

Test Receiver

Release Notes

Firmware Version V1.81SP2

These Release Notes are for following models of the R&S®FSWT Test Receiver:
R&S®FSWT26, order no. 1313.7008.26

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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 was introduced:

New Functions in Firmware V1.81SP1

Version	Function
1.81SP1	The analog outputs can be muted while changing the frequency for a variable duration.

New Functions in Firmware V1.81

Version	Function
1.81	Support for FSWT-K70 Vector signal analysis
1.81	Support for FSWT-K70M Multi-modulation analysis
1.81	Support for FSWT-K70P BER PRBS measurements
1.81	Support for FSWT-K96 OFDM Vector signal analysis
1.81	Support for FSWT-B517 DIG IQ 40G streaming out interface
1.81	Support for single side band (SSB) demodulation added to analog outputs
1.81	Analog modulation analysis: Audio file export (*.wav) added for time domain displays.

New Functions in Firmware V1.71

Version	Function
1.71	Support for R&S FSWT-K53 Time domain scan
1.71	Support for R&S FSWT- B23E, RF preamplifier upgradeable, 100 Hz to 26.5 GHz
1.71	Support for R&S FSWT-U223, RF preselector upgrade
1.71	Analog modulation analysis: New demodulation type AC Video
1.71	Adjustable recording interval for the IF spectrogram in receiver mode

New Functions in Firmware V1.61:

Version	Function
1.61	New button to turn off the limit check without having to deselect the checked traces.
1.61	Right click on the quick save button to activate a write protection.
1.61	User definable storage path for the reporting data allows you to store raw data anywhere on a hard drive or removable storage device.
1.61	New display to write user notes and add them to the report.
1.61	R&S FSWT-K57: The time trigger interval is now displayed in the channel info.

New Functions in Firmware V1.60:

Version	Function
V1.60	Support for R&S FSWT-K57 rastering application
V1.60	File dialogs have a new button to open the Microsoft Windows File Explorer.
V1.60	Display lines in receiver and analog modulation analysis show the delta value between line 1 and 2 if both are active.

Version	Function
V1.60	Manual user port control is now available in the input/output menu.
V1.60	New button available in frequency dialog to activate coupling of the bargraph settings at the current frequency to the corresponding scan table settings.

New Functions in Firmware V1.50:

Version	Function
V1.50	A warning message is displayed when a transducer is active and the measurement frequency is set to values outside of the transducer range.
V1.50	The fast access knobs can now be used to cycle through the peaks in a peak list and to adjust the positions of display lines .
V1.50	The rotary wheel can now be locked in order to prevent accidental changing of the measurement frequency.
V.150	The currently used IF Gain value is displayed in the Channel Info Bar while in IF Gain Auto mode
V1.50	The fast access knobs can now be used to cycle between AM and FM Phones Output directly
V1.50	New self alignment features: "Await warm-up operation" and "Shutdown after Alignment" supported, which can also be selected from the ESWSetup.exe installation program. Display of remaining time for self alignment and warning if alignment is started and the warming up message is still shown in the status bar.
V1.50	Supports Transducer and Limit Line Import and Export using CSV (comma separated) files.
V1.50	Remote Mode: In order to prevent a manual switch on of the screen with the softkey "Display Update On/Off" the remote command <code>SYSTEM:DISPlay:LOCK <on/off></code> can now be used to lock this soft key.
V1.50	Remote trace query and IQ trace query now support 64 bit (more precise) or 16 bit (faster). Select the format with the commands <code>FORMat REAL, 64</code> or <code>FORMat REAL, 16</code> prio to querying the trace data.
V1.50	A touch on the LXI logo at the right bottom of the screen now opens the LXI Configuration Dialog which also shows the IP address and Computer Name of the device.

1.2 Modified Functions

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

Modified functions of Firmware V1.81:

Version	Function
1.81	The low pass filter for the Analog Outputs can now be set to lower values. With 10 MHz resolution bandwidth, the minimum low pass frequency is now 10 kHz.

Modified functions of Firmware V1.71:

Version	Function
1.71	The IF spectrogram display is no longer reset when changing the center frequency.
1.71	R&S FSWT-K57: The maximum sample rate is now limited to 600 MHz.
1.71	Analog modulation analysis: The minimum demod BW is now 10 Hz.
1.71	The minimum AC cutoff frequency of the analog outputs is now 1 Hz.

Modified functions of Firmware V1.61:

Version	Function
1.61	Scrolling the scan trace when using the zoom function in the receiver mode now starts when getting close to the diagram border instead of exactly at the border

Modified functions of Firmware V1.60:

Version	Function
V1.60	Grid annotations displayed semi-transparent in front of traces to enhance the readability of the annotation values.
V1.60	Vertical display lines now show their current value in the diagram.
V1.60	Changing the preamplifier value via remote command will now automatically activate the preamplifier.

Modified functions of Firmware V1.50 SP2:

Version	Function
V1.50SP2	The order of preamplifier gain values for fast access was turned back to V1.40.

Modified functions of Firmware V1.50 SP1:

Version	Function
V1.50SP1	Modification to hardware setup algorithms for production internal reasons.

Modified functions of Firmware V1.50:

Version	Function
V1.50	If a self alignment was started in an aligned instrument state and this alignment is aborted upon user request, the previous alignment data are now restored.

1.3 Improvements

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

Improvements of Firmware V1.81 SP2

since	Function
---	Updated driver certificates to ensure ability to install FSWT firmware on current windows patch level.
1.81SP1	The IF spectrogram was reset when changing the center frequency. This issue is solved.

Improvements of Firmware V1.81

since	Function
1.71	Relative limit lines in AC Video displays in the analog modulation analysis application did not work. This issue is solved.
1.71	Parameter changes could cause previously deselected limit lines to reappear. This issue is solved.
1.61	After closing the "Trigger / Gate Config" dialog in the spectrum application, the audio output would not be turned on again. This issue is solved.

Improvements of Firmware V1.71

since	Function
1.61	The IF spectrogram display could stop updating in rare cases. This issue is solved.
1.61	The reporting toolbar button needed to be pressed twice to open the reporting menu. This issue is solved.
1.61	Analog modulation analysis: "Current Focus" didn't switch the analog output to the corresponding modulation in case a spectrum display was selected. This issue is solved.
1.61	Control of switch unit GS525 was not possible. This issue is solved.
1.50	Coupling of limit lines caused limit lines to be turned off globally when switching to the Rastering application. This issue is solved.
1.50	Limit lines in Receiver could not be switched off via SCPI. This issue is solved.

Improvements of Firmware V1.61:

since	Function
1.30	Editing transducer values with an external keyboard: Using the shortcut "G" + "Enter" to enter the unit GHz didn't work. This issue is solved.
1.50	The reporting functionality represented the unit μ as μ . This issue is solved.

Improvements of Firmware V1.60SP1:

since	Function
V1.60	Scan did not finish for some settings and therefore repeat indefinitely. This issue is solved.
V1.60	IF Outputs 1 and 2 showed a distorted signal when set to 100 MHz output frequency. This issue is solved.
V1.60	Using the IF analysis display in receiver mode caused a firmware crash due to high memory usage. That issue is solved.
V1.60	The IF analysis display sometimes became very small and not resizable anymore. This issue is solved.
V1.30	The IF gain auto mode was still active when auto ranging was deactivated. This issue is solved.

since	Function
V1.60	FSWT-K57: The image stabilization algorithm sometimes caused an image to reappear with active averaging, even when the signal wasn't present anymore. This issue is solved.

Improvements of Firmware V1.60:

since	Function
V1.10	The "Trigger", "Run Sgl" and "Run Cont" hardkeys were not always illuminated correctly. This issue is solved.
V1.10	When taking a screenshot, and if the file name is ".ng", the extension will be ".ng", and it will not be recognized as a .png file. This issue is solved.
V1.50	Analog output could show overload when changing the sample rate or bandwidth to a lower value. This issue is solved.
V1.50	The remote command INP:PRES:FILT:BPAS returned an error in receiver mode. This issue is solved.
V1.50	RF Disconnected was not restored after instrument shutdown. This issue is solved.
V1.50	External switch control via GPIB in non SCPI mode wasn't possible. This issue is solved.

Improvements of Firmware V1.50 SP2:

since	Function
V1.50	Loading a fast access configuration file from a version prior to 1.50 did not not work. This issue is solved
V1.50	External switch control via GPIB wasn't possible. This issue is solved.

Improvements of Firmware V1.50:

since	Function
V1.40	Some diagrams were not included during report generation. This issue is solved.
V1.40	Under certain conditions, Zerospan traces did not show all measured points. This issue is solved.
V1.40	There were sporadic issues with the printing of multiple graphs. These issues are solved.
V1.00	The FSWT-B17 was limited to a maximum Sample rate of 100MHz. This issue is solved. The FSWT-B17 interface now supports streaming up to 200MHz Sample rate.

1.4 Known Issues

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

since	Function
V1.81	K96 OFDM: The y-axis of the Power Spectrum is labeled with dBm instead of the correct unit dBm/Hz.
V1.60	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.
V1.00	If the additional software R&S DigiConf should be installed directly on the FSWT, please use the version V03.01.009.30.Build220 SP1 or newer (Beta available upon request) older version may have data transfer problems or show white screens. The R&S DigiConf software might prevent windows to shut down occasionally. If this happens, please select "Force shut down" and confirm.
V1.00	It is anticipated that save sets made with the firmware 1.01 and earlier will not be compatible to this version.

since	Function
V1.10	The B10 (External Tracking) generator option does not work with resolution bandwidth larger than 80 MHz.

1.5 Modifications to the Documentation

2 Firmware Update

The firmware update file for the R&S FSWT is one file including the main firmware version number e.g. FSWTSetup_V1.00.exe. It will be referred as FSWTSetup.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 FSWTSetup.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 FSWT.

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

1. Connect the R&S FSWT 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 FSWT press the hard key "Setup" and then the softkey "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 FSWTSetup.exe from your PC to a new folder e.g. C:\FWUpdate.
6. You can now access this directory with the FSWTSetup.exe from the R&S FSWT analyzer firmware.

Using a network drive:

1. Connect your R&S FSWT to your LAN, and establish a connection to one of your servers. (Please ask the local IT administrator for support)
2. Copy the FSWTSetup.exe from your PC to a directory on this server
3. You can now access the directory with the FSWTSetup.exe from the R&S FSWT 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 softkey "System Config", and select the tab "Firmware Update".
A file browser is displayed to select the proper FSWT*.exe setup file. Change the path to the drive and directory which you prepared in the step before (USB stick

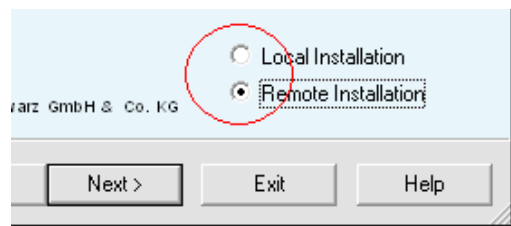
directory, remote PC directory or directory on a server) and close the dialog with the "Install" button.

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 softkey "Alignment" and then press the button "Start Self Alignment" to invoke the alignment procedure.

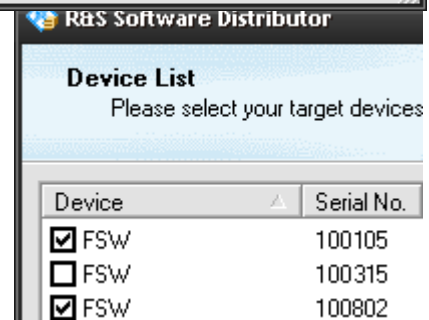
2.2 Performing the Firmware Update from a Windows PC

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 FSWTSetup.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 FSWTSetup.exe is communicating with the instruments via LAN. Therefore it is necessary that the FSWTSetup.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. LXI functions or network configuration) do require administrator rights. A firmware update is also possible without administrator rights.

In the default configuration, auto login is enabled, and the "Instrument" account with administrator rights is active. This means that no password is required, and the full functionality of the analyzer is available. An additional user account (user name "NormalUser" with default password "894129") is pre-defined. Use standard Windows functionality if you wish to deactivate the auto login mechanism and activate the NormalUser account. Please refer also to the Quick Start Manual of the FSWT.

2.4 Installing Firmware Options

2.4.1 Firmware options included in basic instrument

The K33 application software package is included in the basic instrument firmware. Therefore, they do not have a separate item in the installer to be selected.

2.4.2 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.

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