Important Info:
Since firmware V1.50
the default windows
password is "894129"!

Release Notes

Revision: 45

R&S®FSV Signal Analyzer

Firmware Release 1.71SP3

These Release Notes are for following models of the R&S®FSV Signal Analyzer:
R&S® FSV3, order no. 1307.9002K03, R&S® FSV3, order no. 1307.9002K21,
R&S® FSV7, order no. 1307.9002K07, R&S® FSV13, order no. 1307.9002K13,
R&S® FSV30, order no. 1307.9002K30, R&S® FSV40, order no. 1307.9002K39,
R&S® FSV40, order no. 1307.9002K40

New Features of Firmware V1.71SP3:

- FSV-K100/101/104/105 Spectrum Mask and ACLR extended ‘Span’ support.
- FSV-K100/101/104/105 Spectrum ACLR extended ‘Sweep Time’ support.

New Features of Firmware V1.71/V1.71SP1-2:

- Support for Power Sensors R&S NRP-Z211 and R&S NRP-Z221
- OBW: Marker search limits can be used for multi-carrier measurements
- User Preference: Remote command `MMEM:USER` added for automated configuration of the User Key assignment.
- Limit line system supports unit dBpT
- FSV-K30: RF input coupling can be switched between AC and DC mode
- FSV-K104 On / Off Power Measurement and Auto Gating
- FSV-K100/101/104/105 SCPI support for Auto/Fixed Scaling

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1 Revision History

Date	Rel. Note rev.	Changes
13. August 2012	45	First version for FSV firmware V1.71SP3

2 Installation Information

2.1 Firmware Update

The firmware update file for the R&S FSV is one file including the main firmware version number e.g. `FSVSetup_V1.05SP1.exe`. It will be referred as `FSVSetup.exe` later in the text. The file can be found on Rohde & Schwarz web page.

There are several ways how to update the device after downloading the `FSVSetup.exe` installation file. The update can be performed on the instrument (see chapter 2.1.1) or from a Windows PC (see chapter 2.1.2).

2.1.1 Performing the Firmware Update on the Instrument

There are three ways to make the setup `FSVSetup.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 FSV.

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

1. Connect the R&S FSV 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 FSV press the hard key “Setup” and then the soft keys “General Setup”, “Network Address”, “IP Address”. The IP address consists of 4 numbers between 0 and 255)
4. Login to the instrument (user name: “instrument” and default password “123456” or since firmware version 1.50 password “894129”).
5. Copy the `FSVSetup.exe` from your PC to a new folder e.g. C:\FWUpdate.
6. You can now access this directory with the `FSVSetup.exe` from the R&S FSV analyzer firmware.

Using a network drive:

7. Connect your R&S FSV to your LAN, and establish a connection to one of your servers. (Please ask you local IT administrator for support)
8. Copy the `FSVSetup.exe` from your PC to a directory on this server
9. You can now access the directory with the `FSVSetup.exe` from the R&S FSV analyzer firmware.

Performing the update on instrument:

The firmware update process is performed by the following steps:

10. Switch the instrument on and wait until the Analyzer has resumed operation.
11. Press the "SETUP" hard key, go to the side menu using the "More" soft key, and press the soft keys "Firmware Update".

    A dialog box is displayed to select the proper FSV*.exe setup file. Change the path to the drive and directory which you prepared in the step 2.1.1 (USB stick directory, remote PC directory or directory on a server) and close the dialog with the “Select” button.
12. 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, then "Alignment" and the "Self Alignment" soft key to start the alignment procedure.
    Depending on the previous firmware version, a reconfiguration of the hardware may be required during the first start of the firmware. In this case the following message box is displayed:

    `"FPGA Update. A system shutdown is necessary”`

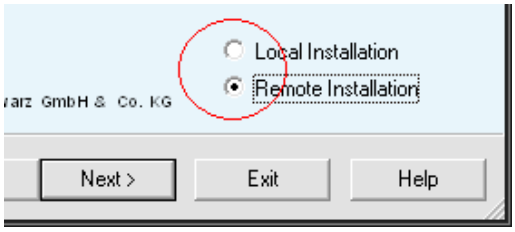
    Accept this and the device will be shut down. It is then necessary to start the device on the front panel. A automatically restart is not possible because the FPGA needs a complete boot cycle from power off.

2.1.2 Performing the Firmware Update from a Windows PC

If the firmware version 1.20 or newer is installed on the instrument 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.

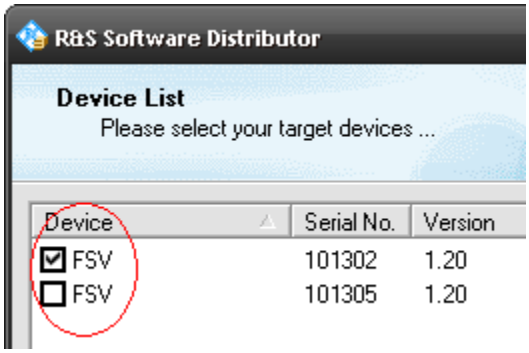
13. Run `FSVSetup.exe` on your PC.

14. Select Remote Installation and click the button Next.



15. Select the Packages which shall be installed and click the button Next .
    HINT FOR FIRE WALL USERS: The `FSVSetup.exe` is communicating with the instruments via LAN. Therefore it is necessary that the `FSVSetup.exe` may pass the fire wall. After adding it to the fire wall rules, restart the scan by clicking on Rescan.

16. 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.



ATTENTION

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!

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

18. Start the installation by selecting "Install"

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

2.2 Operation with and without Administrator Rights

With firmware version V1.50 and image version V3.25 or higher, the analyzer may be operated with or without administrator rights. Some administrative tasks (e.g. a firmware update or a LXI functions or network configuration) do require 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 FSV.
An update from a firmware version <V1.50 to version V1.50 or higher does not replace the XP-image. This means that a firmware update only will not offer the functionality to the “NormalUser”. To replace the image version, contact your R&S service representative. Prerequisite is a front module controller FMR9 which can be identified by the BIOS version V7.0.xx.yy shown during startup or by the CPU Board FMR9 with order no. 1091.1599.00 shown in SETUP-SYSTEM INFO-HARDWARE INFO.

2.3 Firmware Downgrade

A downgrade of the firmware from V1.50 or greater to version <V1.50 requires the following process:

20. Ensure to be logged in with administrator rights (user “Instrument”)
21. Exit the firmware with ALT-F4
22. Select Windows Start Menu -> Programs -> Accessories -> Backgrade to start the back grade preparation in the registry. If a message box appears allow that registry settings to be performed.
23. Open the Windows Explorer change the path to the drive and directory which you prepared in the step 2.1.1 (USB stick directory, remote PC directory or directory on a server) and double click on proper FSV*.exe setup file.
24. 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.
    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, then "Alignment" and the "Self Alignment" soft key to start the alignment procedure.
    Depending on the previous firmware version, a reconfiguration of the hardware may be required during the first start of the firmware. In this case the following message box is displayed:
    "FPGA Update. A system shutdown is necessary”
    Accept this and the device will be shut down. It is then necessary to start the device on the front panel. A automatically restart is not possible because the FPGA needs a complete boot cycle from power off.

2.4 Installing Firmware Options

2.4.1 Firmware R&S FSV-K7 Analog Demodulation, R&S FSV-K7S FM Stereo Measurements, R&S FSV-K8 Bluetooth®/EDR Measurements, R&S FSV-K9 Power Sensor Measurements, R&S FSV-K14 Spectrogram Measurements and FSV-K54 EMI Measurements

The R&S FSV-K7, R&S FSV-K7S, R&S FSV-K8, R&S FSV-K9,, R&S FSV-K14 and R&S FSV-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.

Note:
The R&S FSV-K7S needs the FSV-K7 installed on the device.

2.4.2 Other Firmware Options within the FSVSetup.exe File

The R&S FSV-K10, R&S FSV-K30, R&S FSV-K70, R&S FSV-K72/73, R&S FSV-K76/77, R&S FSV-K82/84, R&S FSV-K91, R&S FSV-K93, R&S FSV-K100/104 application software packages have their own installation item and are therefore added to the selection list during the firmware update. Ensure that the checkbox is checked ☑ if their installation is requested.

Note:
The functionality of the FSV-K91n is integrated within FSV-K91 and is activated by an own key code.

2.4.3 Compatibility of Firmware Options

The R&S FSV Signal Analyzer Firmware 1.71SP3 is compatible to the following option:

FSV-K10	FSV-K30	FSV-K40	FSV-K70	FSV-K72 FSV-K73	FSV-K76 FSV-K77
V1.71SP3	V1.71SP3	V1.71SP2	V1.71	V1.70	V1.70

FSV-K82 FSV-K83	FSV-K84 FSV-K85	FSV-K91 FSV-K91n	FSV-K93	FSV-K100 FSV-K101 FSV-K104 FSV-K105
V1.70	V1.71	V1.71SP2	V1.71SP2	V1.71SP3

2.4.4 Compatibility with the EUTRA/LTE software

This R&S FSV Signal Analyzer Firmware supports the EUTRA/LTE FSV-K100-K105 as internal measurement applications which are included in the FSVSetup.exe. Nevertheless this version is still compatible to the following EUTRA/LTE software running on PCs:

- R&S FSV-K100 EUTRA/LTE FDD Downlink
- R&S FSV-K101 EUTRA/LTE FDD Uplink
- R&S FSV-K102 EUTRA/LTE Downlink MIMO (requires either R&S FSV-K100 or R&S FSV-K104)
- R&S FSV-K104 EUTRA/LTE TDD Downlink
- R&S FSV-K105 EUTRA/LTE TDD Uplink

The EUTRA/LTE software can either be installed on an external PC or on the R&S FSV as an external application. The installation instructions can be found in the EUTRA/LTE release notes. If the EUTRA/LTE software is installed on the R&S FSV, the LTE Measurement Application is no longer available. In order to enable the LTE Measurement Application (build-in option), uninstall the EUTRA/LTE software under Windows Start -> Control Panel -> Add or Remove Programs -> Rohde & Schwarz Eutra/LTE.

2.4.5 Enabling Options by Entering Option Key Codes

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:

25. Press the "SETUP" hard key.
26. Go to the side menu using the "More" soft key.
27. Press the "Option Licenses" soft key.
28. Press the "Install Option" soft key.

    A dialog box is displayed.
29. Enter the option key number using the keypad.
30. Press "ENTER".

    After a successful validation the message "option key valid" is displayed. If the validation failed, the option software is not installed.
31. Reboot the device.

Installation of options via XML-file

32. Press the "SETUP" hard key.
33. Go to the side menu using the "More" soft key.
34. Press the "Option Licenses" soft key.
35. Press the "Install Option by XML" soft key.

    A dialog box is displayed.
36. Select the path to the XML file (e.g. network drive or USB stick)
37. Press "ENTER".

    After a successful validation the message "option key valid" is displayed. If the validation failed, the option software is not installed.
38. Reboot the device.

3 New Functions

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

Version	Function
V1.71SP3	FSV-K30: Added SCPI command `MMEMory:STORe{1|2}:TRACe` (as Spectrum Analyzer)
V1.71SP3	FSV-K100/101/104/105: Spectrum Mask and ACLR extended 'Span' support.
V1.71SP3	FSV-K100/101/104/105: Spectrum ACLR extended 'Sweep Time' support.

New functions from previous versions:

Version	Function
V1.71	Support for Power Sensors R&S NRP-Z211 and R&S NRP-Z221
V1.71	OBW: Marker search limits can be used for multi-carrier measurements.
V1.71	User Preference: Remote command `MMEM:USER` added for automated configuration of the User Key assignment
V1.71	Limit line system supports unit dBpT
V1.71	FSV-K30: RF input coupling can be switched between AC and DC mode
V1.71	FSV-K104: On / Off Power Measurement
V1.71	FSV-K104: Auto Gating
V1.71	FSV-K100/101/104/105: SCPI support for AUTO/Fixed scaling.
V1.71	FSV-K105: Configuration Special Subframe setting added.
V1.70SP1	FSV39: Support for new Detector Board 1307.9554.03 Rev 07.xx
V1.70	Support for FSV-K54 EMI measurements
V1.70	Auto sequences support mode to continue without trigger
V1.70	Support for new Detector Board 1307.9554.03 Rev 07.xx
V1.70	SEM: new standard file for 1.4 MHz LTE signal: UL\BW_01_4_MHz.xml
V1.70	Remote command `SYST:CLOG` for SCPI logging added
V1.70	Remote command `MMEM:DEL:IMM` to delete write protected files added
V1.70	FSV-B10: Support of new SGS100A SGMA generator
V1.70	FSV-B10: Support of new SMB100A frequency options 20GHz/40GHz
V1.70	FSV-B10: Support of negative numerators
V1.70	FSV-B17: Support unfiltered mode
V1.70	FSV-B17: Support for digital LVDS trigger
	FSV-K7: Support of I/Q Im- and Export
V1.70	FSV-K10: Support for 100 kHz RBW/VBW at 1800 kHz offset freq. in Mod. spectrum measurement. `CONFigure:SPECtrum:MODulation:LIST:BANDwidth:RESolution 1800000,100000`

Version	Function
V1.70	FSV-K10: Selectable maximum offset frequency in Wide Mod. Spectrum measurement `CONFigure:WSPectrum:MODulation:LIST:SELect NARRow`
V1.70	FSV-K70: new measurement Bit Error Rate (BER) belonging to source Modulation Accuracy
V1.70	FSV-K70: new measurement Constellation I/Q (Rotated) belonging to source Meas & Ref Signal
V1.70	FSV-K70: new parameter “Fine Synchronization” (Detected Data, Pattern, Known Data)
V1.70	FSV-K70: Sample Signals for some K70 standards are delivered with the instrument (C:\R_S\Instr\user\vsa\DemoSignals) in .iq.tar format. They can be used to get familiarized with the option without having a generator.
V1.70	FSV-K83: Added filter for multi carrier measurements
V1.70	FSV-K91: Simultaneous analysis of up to 4 Tx antennas for IEEE 802.11n MIMO capable devices.
V1.70	FSV-K91: Sequential analysis of up to 4 Tx antennas for IEEE 802.11n MIMO capable devices using the Rohde & Schwarz OSP Open Switch and Control Platform.
V1.70	FSV-K91: Sequential analysis of up to 4 Tx antennas for IEEE 802.11n MIMO capable devices.
V1.70	FSV-K91: For the Spectrum Emission Mask (SEM) measurement, the trace data reduction mode is now selectable.
V1.70	FSV-K100/101/104/105: Auto/Fixed Scaling for Measurements. Measurements can now be displayed with fixed Y-axis scaling (default) or the original auto scaling Y-axis.
V1.70	FSV-K100/101/104/105: Settings file support for PUSCH Hopping Offset, PUSCH Hopping bits and Frame Number offset.

4 Modified Functions

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

Version	Function
V1.71 SP3	FSV-K10: Wide Modulation Spectrum measurement extended to 6 MHz frequency offsets. Previous versions only performed measurements up to 5.8 MHz frequency offsets.
V1.71SP3	FSV-K104: On / Off Power Measurement results now include External Attenuation.
V1.71SP3	FSV-K100/101/104/105: Spectrum ACLR SCPI List results extended to include 'Upper Power' and 'Limit' results.
V1.71SP3	FSV-K101/105: Results Summary now includes limits for 'Frequency Error' and 'IQ Offset' when appropriate.
V1.71SP3	FSV-K105: Improved synchronization when DL subframes active.

Modified functions from previous versions:

Version	Function
V1.71	FSV-K54: Limit lines for EN55014 do have a linear frequency axis
V1.71	Transducer factors defined in unit dBpW up to now represented the insertion loss of e.g. an absorbing clamp. This was changed to use the clamp factor instead of the insertion loss, to avoid the chance of misinterpretation of the calibration values shipped in combination with the absorbing clamp. As a consequence the numerical values of a transducer factor in dBpW have to be reduced by 17 dB compared to previous firmware versions.
V1.71	FSV-K100/101/104/105: 'Resource Block' range restricted to standard values '6, 15, 25, 50, 75, 100', GUI setting changes are only possible via Channel Bandwidth setting. Allocation file setting or Recall file setting not to standard values are promoted to nearest higher standard value unless above maximum value in which case set to the100 RB maximum value, an incompatible settings warning is generated. SCPI setting changes are limited to standard values otherwise a data out of range error is generated.
V1.71	FSV-K100/101/104/105: To improve persistent Frame Start Offset result visibility, the order of the display results Frame Start offset, Subframe selection and Marker value in Capture Measurement is changed.
V1.71	FSV-K101/105: Crest Factor results are not relevant for slot: 0 or 1 selections and are suppressed.
V1.71	FSV-K101/105: Bit Stream results extended to report 'Allocation ID' and 'Codeword' results.
V1.71	FSV-K101/105: PUCCH 'Format' range extended and simplified to 'F1, F1a, F1b, F2, F2a, F2b and F3'.
V1.71	FSV-K101/105: Legacy PUCCH 'Delta Offset' setting removed. This setting supported very early standards of 3GPP LTE standard and is no longer required.
V1.71	FSV-K100/101/104/105: Improved subframe start offset precision.
V1.71	FSV-K101/105: Improved synchronization performance for PUCCH signals with high IQ imbalance.
V1.71	FSV-K100/104: The time interpolation method of the channel estimation is adapted to Change Request R4-102812.
V1.71	FSV-K100/104: Improved the robustness of subframe configuration detection, based on physical detection against boosting variations.

Version	Function
V1.71	FSV-K100/104: Support for boosting estimation with subframe configuration detection set to PDCCH Protocol.
V1.71	FSV-K100/104: Improved synchronization performance for signals with high IQ offset.
V1.71	FSV-K101/105: Improved time alignment error measurement precision.
V1.71	FSV-K101/105: CCDF and Crest Factor measurement results are not subjected to the multicarrier filter.
V1.70	Improved LO suppression by using direct sampling concept for low frequencies in more situations.
V1.70	Print to file: To improve responsiveness first the snap shot is done, then the file dialog is opened
V1.70	Improved Mini Frontpanel to include all necessary hard keys and adjusted size to work well on a 1024x768 screen. The keystroke ALT + M will work as a shortcut.
V1.70	Limited the `OUTP:UPOR:VAL` to `#B00111111` according to the possible bits.

V1.70	FSV-K10: The following query remote commands now return the short form
	`CONFigure:MS:CHANnel:SLOT1:FILTer?`
	`DISPlay:WINDow1:TRACe1:MODE?`
	`CONFigure:BURSt:PTEMplate:TALign?`
	`CONFigure:MS:DEMod:DECision?`
	`CONFigure:MS:DEMod:STDBits?`
	`CONFigure:SPECtrum:SELect?`

V1.70	FSV-K70: The internally used peak excursion for diagrams scaled in % has been decreased, to work better within the EVM measurement
V1.70	FSV-K100/101/104/105: Adjusted ACLR limits to latest 3GPP test specification.
V1.70	FSV-K100/101/104/105: Initial marker position now aligns to peak of current measurement when switched on.
V1.70	FSV-K100/101/104/105: Limited Uplink ‘Subframe configuration’ ‘Number of RB’ to a maximum of 100 and ‘Offset RB’ to a maximum of 99.
V1.70	FSV-K100/101/104/105: Limited ‘Number of RB PUCCH’ to a maximum of ‘Signal Characteristics – Number of RB’ or 100 whichever is the smaller.
V1.70	FSV-K100/101/104/105: Limited ‘Number of subbands’ to a maximum of ‘Signal Characteristics – Number of RB’ less ‘Number of RB PUCCH’ or 100 whichever is the smaller.
V1.70	FSV-K100/101/104/105: Limited Group Hopping or Sequence Hopping selection to only one being set at any one time.

5 Improvements

The following table lists the improvements and indicates the version in which the issue could be observed for the first time:

Version	Function
V1.70	Smaller memory leak which could be observed with remote control corrected.
V1.70	Power vs Time limit lines for AQPSK corrected. The limits have been updated according to 3GPP TS 45.005 V10.3.0, Figure B.10. Previous versions used the limits according to 3GPP TS 45.005 V10.0.0.
V1.70	FSV-K10: Modulation spectrum limits are selected by the power level derived from the slot power. Previous versions used the reference power measured with a resolution bandwidth of 30 kHz. This leads to stricter limits for offset frequencies greater than or equal than 600 kHz. See 4GPP TS 45.005 §4.2.1.3.
V1.70	FSV-K100/101/104/105: AUTO/Fixed scaling support occasionally inaccessible for 'Capture Buffer', 'Power RB RS' and 'Power RB RDSCH' Measurements. This issue is solved.

Improvements from previous versions:

Version	Function
V1.71	FSV-K40: Improvements to PN curve from 1 Hz to 10 Hz frequency offset.
V1.70	FSV-K91: In some cases the peak power measured in the SEM measurement was different from the peak power in the trace. This issue is solved.
V1.70	FSV-K93: Downloading of settings from SMU generators with recent versions of the SMU firmware installed did not work. This issue is solved.
V1.70	FSV-K93: Auto-level did not work correctly with instruments with the B24 option installed. This issue is solved.
V1.71	FSV-K104: The Adjust Timing offset was not applied to the subsequent On/Off Power Measurement. This issue is solved
V1.71	FSV-K105: Auto Gating did not show expected effect This issue is solved.
V1.70	On few units a further improvement of the level stability for frequencies above 8 GHz in FFT mode was necessary.
V1.71	SEM: EUTRA/LTE xml Files updated, because some of them had no symmetrical setups.
V1.70	Improved resolution for x-values in Marker Peak List ASCII Export for Zero Span.
V1.60	Improved level stability for frequencies above 8 GHz in FFT mode.
V1.60	The Max-Tile key did not work with the International Keyboard support installed for French language.
V1.60	In remote control in some situations the delta marker specified to be relative to a reference fix marker was relative to Marker1. This issue is solved.
V1.70	FSV-K10: FETCh commands sporadically did return no results if Measure only on Sync was a activated. This issue is solved.
V1.70	FSV-K30: When application recovery is on the 2nd stage correction calibration data is correctly preserved
V1.70	FSV-K54: LISN:TYPE parameter query results corrected: FOURP => FOUR, ESH2Z5 => ESH2, ESH3Z5 => ESH3, ENV4200 => ENV4, ENV216 => ENV2

Version	Function
V1.70	FSV-K54: Marker Peak List displays symbols with logarithmic frequency axis as expected.
V1.70	FSV-K70: The setting of “meas only if pattern found” in single sweep could lead to a wrong calculation of the result range. This occurred if the pattern was found, but it was not possible to align the result range correctly (i.e. if the pattern was at the very end of the capture buffer). Now in this case the next occurrence of the pattern is searched for.
V1.50	FSV-K84: Measurement of Power vs Time now restarts the average calculation every time that the RUN SINGLE or the RUN CONT hardkey was pressed.
V1.50	FSV-K84: The Mean and AVG values could be have a slight offset. The calculation has been corrected.
V1.70	FSV-K91: Frequency Error and Symbol Clock Error results corrected when measuring a specific number of bursts.
V1.70	FSV-K91: `CONFigure:WLAN:PAYLoad:LENGth:SRC` command has been corrected for operation with the 802.11n SISO standard.
V1.60	FSV-K100/101/104/105: The Power Spectrum and CCDF measurement marker units were not consistent with the X scaling Unit. This issue is solved.
V1.60	FSV-K100/101/104/105: The Print outs may be incomplete. This issue is solved.
V1.60	FSV- K100/101/104/105: The Subframe Configuration warnings did not update for ‘not used’ subframes when ‘FDD/TDD’ duplexing toggled. This issue is solved.
V1.60	FSV- K100/101/104/105: The EVM vs Carrier measurement was not cleared on failed analysis in continuous run. This issue is solved.
V1.60	FSV-K100/101/104/105: Spectrum Analyzer calibration status not always reported accurately in all circumstances in the LTE option. This issue is solved.
V1.60	FSV-K100/101/104/105: Current Statistic count report did not reset on completion of target statistic count during continuous run. This issue is solved.
V1.60	FSV-K100/101/104/105: During Remote control with display OFF, immediately after a Spectrum Mask or ACLR measurement, the selection of Result Summary and run would not provide new Result Summary results. This issue is solved.
V1.60	FSV-K100/101/104/105: The ‘Sampling error’ and the ‘Frequency error’ maximum and minimum results were consistent with the current analysis but were unreliable for a statistic run with multiple analyses. This issue is solved.
V1.30	Zero Span: Measurement speed improved for smaller RBWs.
V1.60	Printing: After using the EX-IQ Box setup or doing hardcopies within K10/K30/K40/K91/K93 or K100 the print outs may be incomplete or in wrong color scheme. These issues are solved.
V1.61	In some situation switching on a further marker cleared the history of the trace statistic. This issue is solved.
V1.61	SPU with gaps an transducers active: After every gap the first measurement point took not the transducer into account. This issue is solved.
V1.60	The command `SYST:SHUT` to shutdown the operating system was broken.
V1.61	Creating a save set or shutting down the analyzer with Marker Auto Max Peak function active, did not show up the function afterwards. This issue is solved.
V1.61	Some applications did not work with the windows login as NormalUser. Also the printing did fail. These issues are solved.
V1.61	FSV-K10: DCS 1800 / PCS 1900 should not allow power classes 5-8. This issue is solved.
V1.60	FSV-K70. Modulation order Pi/8-D8PSK could not be loaded via SCPI. This issue is solved.

6 Known Issues

The following table lists the known issues and indicates the version in which the issue was observed for the first time:

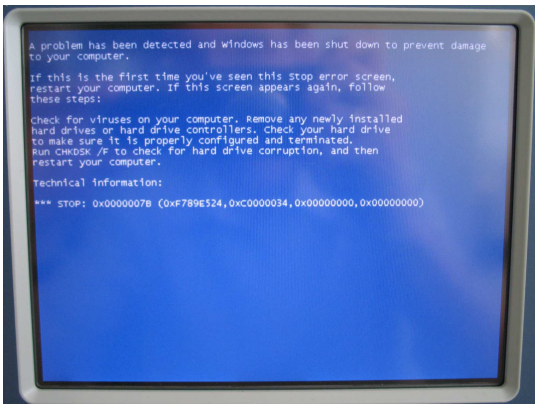
Version	Function
V1.71SP3	FSV-K10: Limit check missing in Wide Modulation Spectrum measurements at 6 MHz frequency offsets. Delta to limit result are displayed as "...". SCPI returns NAN as limit value.
V1.41/ V1.71	Hints to FSV-B17 Digital Baseband Interface: If the FSV is used as digital output and for example the R&S SMU as digital input please ensure the sample rate 100 MHz on both devices. For using R&S®DigIConf on the R&S FSV a minimum R&S®DigIConf firmware version of V2.10 or higher is necessary. With newer versions of the R&S®DigIConf it could happen that querying information about an USB connected EX-IQ Box via remote commands is not possible. This issue will be solved by reinstallation of V1.71 or execution the registry file located under: `C:\R_S\INSTR\USER\DigIConf_EnableInfoServerIfc.reg`
V1.20	The analyzer supports the LXI standard. As a consequence the DHCP IP address assignment is performed twice: once while Windows XP is booting, and again when the firmware is started. This can result in a short loss of remote desktop control. In a stable IP environment this renewal is not necessary and can be omitted by deleting the following registry key: HKEY_LOCAL_MACHINE\SOFTWARE\Rohde&Schwarz\SoftwarePlatform\ServiceConfiguration\LanServices: "DoRenewDHCP"="1"
V1.05	FSV-K10: UNDO/REDO and touch events on markers and other result items will not work.
V1.10	FSV-K10: SCPI commands do not provide full FS-K5 compatibility. See attached table.
V1.05	FSV-K30 Toggle and zoom hard keys not active.
V1.60	FSV-K91: Remote controlled: In rare cases change between remote and local mode may lock up the firmware. Switching between local and remote causes the display updates to be switched on and off. It is more efficient to leave the display on or off as desired for the entire execution of the remote control script.
V1.60SP1	FSV-K91: For low SNR signals the EVM might degenerate.
V1.60	FSV-K91: For signals with AWGN distortion the SEM trace might show shoulders in neighbor channels.
V1.20	FSV-K93: Auto level result in the spectrum measurement can be improved manually.
V1.50	FSV-K100/K104 Constellation diagram does not display ideal constellation points for ‘rotated BPSK’ and PSK.
V1.50	FSV-K100/K104 The Capture ‘analyzed frame bar(green)’ updates are occasionally skipped when processing fast measurements in continuous mode.
V1.61	FSV-K100/K101/K104/K105: Spectrum Mask with Auto Level selected may show IFOVL with attenuator clicking for part of 20 MHz Channel Bandwidth signal range. Workaround is to post initial measurement, manually increase RF attenuation and reference level.
V1.61SP1	FSV-K100/K101/K104/K105: A measurement which fails due to invalid settings may not clear the previous measurements results.

6.1 Changing of hard disks between different types of front module controllers

For the FSV spectrum analyzer different CPU boards are in use:
FMR7 with order no. 1091.3204, FMR9 with order no. 1091.1599, 1206.0198 or 1091.1347.
The hard disks of the FSV can be changed from one device to another, as long as the devices have the same CPU board with the identical order number.

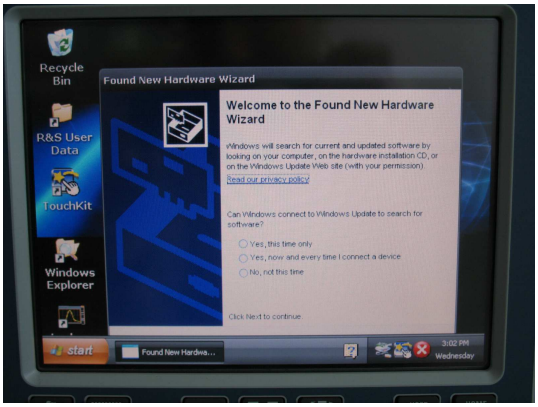
If the hard disk is exchanged between different types of CPU boards the operating system will not start up correctly. The following will happen:

Hard disc for FMR7 in device with FMR9:



A windows blue screen appears.

Hard disc for FMR9 in device with FMR7:



The “Found New Hardware Wizard” and a white/red cross symbol in the system tray can be seen, the firmware may start in the background.

Touch screen, keypad and all USB devices are not working.

Hard disc for FMR9 with different order numbers:
Touch screen, keypad and all USB devices may not work.
For images versions >= 3.28 (see Setup -> System Info -> Statistics) hard disks can be exchanged between all order numbers of FMR9 CPU boards.

General Solution:
Change back to the hard disc which fits to the front module controller.
The device will boot as usual.

7 Modifications to the Documentation

The new and modified functions mentioned in these release notes are already documented. Except the below mentioned last minute changes you can find the description including remote commands in the online help or in the manual. The manual can be downloaded from the internet under: http://www.rohde-schwarz.com. Select "DOWNLOAD" and search for R&S FSV within the category MANUAL.

No last minute changes for documentation.

8 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 make sure that you get the right information.

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