



ROHDE & SCHWARZ

Test and Measurement
Division

Release Notes

Noise Test

Application Firmware R&S FS-K30

Release 4.10

with Service Pack 1

for R&S FSP/FSU/FSQ/FSMR/FSUP Analyzer Firmware V4.1x

New Features:

- **Markers**
- **Scpi support for memory traces**
- **Binary trace export via scpi**

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Contents

History	3
General Topics	3
Compatibility of the R&S FS-K30 Noise Application Firmware with other Firmware Releases	3
Firmware Update of the R&S FS-K30	4
Generation of the update disk set.....	4
Preparing installation via LAN or USB stick:.....	5
Performing the Application Firmware Update on the Instrument.....	5
Enabling the Application Firmware via License Key Code Entry	5
New Functions in version 4.10	6
Modified Functions.....	6
Problems Eliminated	7
Manual Operation and IEC/IEEE Bus.....	7
IEC/IEEE Bus only	7
Problems eliminated with Service Pack 1	7
Known problems	7
Manual Operation and IEC/IEEE Bus.....	7
IEC/IEEE Bus only	8
Modifications to the Operating Manual	8
Modified Chapters for manual operation	8
Modified Chapters for remote operation.....	8
Appendix: Contact to our hotline.....	9

History

Date	Rel Note Rev	Changes
02 April 2007	1	First revision for Noise Application Firmware 4.10
05 June 2007	2	Description added for command DISPlay[:WINDow<1>]:TRACe<1 2>:X[:SCALe].
16 July 2007	3	Problem eliminated with Service Pack 1 added.
03 August 2007	4	FSUP V4.17 added

General Topics

Compatibility of the R&S FS-K30 Noise Application Firmware with other Firmware Releases

The following table shows the compatible versions of the basic analyzer firmware and the Noise Application Firmware:

Table of compatible versions:

R&S FS-K30 Application Firmware	R&S FSP Basic Firmware	R&S FSU Basic Firmware	R&S FSQ Basic Firmware	R&S FSMR Basic Firmware	R&S FSUP Basic Firmware
4.10 SP1	4.10	4.11	4.15	-	4.17
4.10	4.10	4.11	4.15	-	-
4.00	4.00	4.01	4.05	4.06	-
3.90	3.90	3.91	3.95	3.96	3.97/3.99
3.80	3.80	3.81	3.85	3.86	-
3.70	3.70	3.71	3.75	-	-
3.60	3.60	3.61	3.65	3.66 SP1	-
3.50	3.50	3.51	3.55	-	-
3.40	3.40	3.41	3.45	-	-
3.30	3.30	3.31	3.35	-	-
3.28	3.20	3.21	3.25	-	-
-	3.10	3.11	3.15	-	-

Note: For R&S FSMR a system memory of 512MByte is required.

For instruments, shipped with 256MByte system memory, a memory extension FSQ-B512, order number 1157.1590.02, is available.

The system memory size can be easily checked by pressing SETUP – SYSTEM INFO – STATISTICS, item "Memory size".

Firmware Update of the R&S FS-K30

The R&S FS-K30 Noise Application Firmware package is available with its own version number. This application firmware package requires an appropriate basic instrument firmware version. Compatible revisions are shown in the table above.

Please make sure to have the correct basic firmware version installed prior to installing the R&S FS-K30 Noise Application Firmware. Please refer to the basic firmware version release notes for firmware update information of the basic firmware.

Generation of the update disk set

The files needed for the R&S FS-K30 Noise Application Firmware update are available in the FIRMWARE section of the Service Board on GLORIS (R&S FS-30).

If you already have the update disk set you can skip this paragraph.

They are grouped according to the disk contents:

Disk 1:	disk1.bin	(self-extracting ZIP file)
Disk 2:	data3.cab	(packed contents of disk 2, will be automatically unpacked by FW update)
Disk 3:	data4.cab	(packed contents of disk 3, will be automatically unpacked by FW update)
Disk 4:	data5.cab	(packed contents of disk 4, will be automatically unpacked by FW update)

The contents of disk 1 are packed in a self-extracting ZIP file and need to be unzipped. For this purpose the following steps are necessary:

1. Create a temporary directory on your local PC (e.g. MyTemp\Extensions\FSK30 on drive C:)
2. Copy disk1.bin into that directory and rename it to disk1.exe
3. Execute disk1.exe. Under Windows XP this is done best using the following sequence:
 <CTRL><ESC> - RUN – C:\MyTemp\Extensions\FSQ30\DISK1 - <ENTER> or
 <CTRL><ESC> - AUSFÜHREN – C:\MyTemp\Extensions\FSK30\DISK1 - <ENTER> for a German version.

The files will be unzipped.

4. Delete disk1.exe from the temporary directory.

The temporary directory will now contain the following files:

data1.cab	data1.hdr	data2.cab	DAX1_6.TXT	DAX1_9.TXT	DAX2_06.TXT
ExecCtrl.exe	id.txt	ikernel.ex_	ISSetup.exe	layout.bin	Restinst.exe
Setup.exe	Setup.ini	setup.inx			

Please make sure that all the filenames are spelt correctly on your disks before you try to use them for the firmware update. Especially the trailing underscore ('_') as used in ikernel.ex_ is essential for correct operation of the update program.

5. Copy the contents of the temporary directory onto update disk #1.

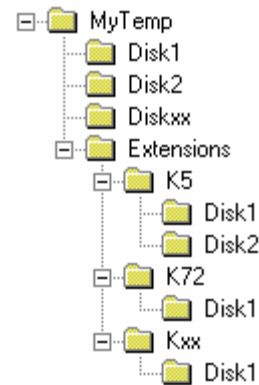
The content of the other disks are already packed in the format required by the firmware update program and need no further processing. The files only need to be copied onto disks #2, #3 and #4, the number in the filename (minus 1) indicating the corresponding disk number (data3.cab => disk #2, data4.cab => disk #3 and data5.cab => disk #4etc).

Preparing installation via LAN or USB stick:

If the installation shall be done via LAN or USB stick please set up the following directory structure:

Copy all files as mentioned in the previous section in the directories ..\MyTemp\Extensions\FSK30\Disk1 – Disk4.

Since version 3.40 the directory path can contain more the 64 characters.



Performing the Application Firmware Update on the Instrument

The Application Firmware update process is performed in the following steps:

- Switch the instrument on and wait until the Analyzer has resumed operation.
- For updates from LAN or USB use the SETUP | NEXT | FIRMWARE UPDATE | UPDATE PATH softkey to specify any path for the location of the Disk1 directory (e.g. F:\MyTemp\Extensions\FSQK30). For floppy usage the default A:\ must not be changed
- Press SETUP → NEXT → FIRMWARE UPDATE
- Confirm the query "Do you really want to update the firmware?" with OK
- Insert update disk #1 to #4 as requested (for LAN or USB just confirm the copy process)
- The instrument will perform several automatic shutdowns, until the new firmware is installed properly.
Do not switch the instrument off until the update process has been finished completely.

After switching on the instrument for the first time after a successful firmware update it is necessary to execute the instrument's self alignment process by pressing CAL and softkey CAL TOTAL.

Note: A simplified update process is available if base system firmware 4.1x or newer is installed. More details are described in the release note of the base system firmware.

Enabling the Application Firmware via License Key Code Entry

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

After installing the application firmware package a license key for validation must be entered. The license key is printed either on a label on the rear panel of the instrument or delivered as a part of the R&S FS-K30 Noise application firmware package.

The key sequence for entering the license key is:

SETUP - GENERAL SETUP – OPTIONS - INSTALL OPTION

Use the numeric keypad to input the license key number and press ENTER.

- On a successful validation the message 'option key valid' will appear. The instrument will perform an automatic reboot.
- If the validation failed, the application firmware is not installed.
The most probable reason will be that the instrument is not equipped with the correct basic firmware version. Therefore a messagebox will appear asking for installation of the correct basic firmware version.

If the application firmware package was not installed prior to entering the license key code, a message will appear asking for installation of the application firmware package.

In any case please make sure that the correct basic firmware version and the application firmware package is installed prior to entering the license key code.

New Functions in version 4.10

1. Markers

One marker is supported. It can be moved between the noise and gain traces. Peak and Min functionalities are also supported.

2. Binary Trace Data Export via scpi

The user needs to set the data format to real in scpi before fetching the measurement results.

3. Memory trace support via scpi

The user can copy the measurement results into memory traces via scpi.

4. New enhancement labels

K30 displays OVLD, EXREF, EXT, SGL and PA warning and information labels like the spectrum analyzer.

Modified Functions

The behaviour of the following functions changed compared to earlier versions [the number in brackets indicates the firmware version that introduced the individual change]:

- 1. [V3.60] ASCII Trace export available**
- 2. [V3.70] Increased number of digits in table of results**
- 3. [V3.80] X-axis scale is configurable between RF and IF frequencies**
- 4. [V3.80] Roll key direction is same as the spectrum analyzer**
- 5. [V4.10] One marker is supported for noise and gain trace.**
- 6. [V4.10] Binary trace data export supported.**
- 7. [V4.10] Memory traces supported via SCPI.**
- 8. [V4.10] Additional enhancement labels OVLD, EXREF, EXT, SGL and PA.**
- 9. [V4.10] Optimized print colours.**

Print functionality is using the optimized print colours for better view.

10. [V4.10] Trace Export shows all data values in one line

Trace Export function now provides useful array of data. All data values for one frequency point are displayed in the same line.

Problems Eliminated

Manual Operation and IEC/IEEE Bus

1. [V3.80] Recall did not load the start and stop frequencies correctly

A saved file in K30 V3.80 was not recalled properly for start and stop frequencies. This has now been corrected.

2. [V4.00] Calibration status should change to UNCALIBRATED when some analyzer settings change

When Rev level, Range, RF Attenuation and Preamplifier settings change, Calibration status should be UNCALIBRATED. This has now been corrected.

IEC/IEEE Bus only

1. [V4.00] Setting frequency parameters to the same values lead to UNCALIBRATED

Setting frequency start, stop, and step, fixed LO and fixed IF parameters to the same values caused to UNCALIBRATED. This has now been corrected.

2. [V4.00] ENR and Loss tables were not updated correctly

When defining an ENR or a Loss table via scpi commands, the previous table was not completely overwritten. This has now been corrected.

Problems eliminated with Service Pack 1

Service Pack 1 fixes the following problems. The version numbers in brackets indicate the version in which the problem was observed for the first time.

1. [V4.10] Application crashes when Average parameter's value is changed

After a preset when Average parameter's value was changed, the application crashed. This has now been corrected.

Known problems

The version numbers in brackets indicate the version in which the error was observed for the first time.

Manual Operation and IEC/IEEE Bus

1. [V3.28] Printing the table of frequency list results

The whole table of frequency list results, which fits more than 1 page, can not be printed with one key press to the PRINT SCREEN softkey. The first key press only prints the first page of the list.

Workaround: To be able to print the whole list, the PRINT SCREEN key should be pressed number of times, until the whole list is printed. After each key press the user should wait for printing job to finish before requesting to print the next page.

2. [V3.50] Soft front panel

The setting parameter does not update when the numeric keys are pressed on the soft front panel. Pressing return to enter the value shows that the keystrokes have been received and the parameter updates correctly.

IEC/IEEE Bus only

1. [V3.90] [SENSe:]CONFigure:MODE commands

[SENSe] is not optional for these commands when using the short form: "CONF:MODE" as it conflicts with the "CONFigure" subsystem.

Workaround: Do not omit SENSE for these commands.

Modifications to the Operating Manual

The R&S FS-K30 Noise application functions are included in a separate manual set. Please refer to the following order numbers:

- 1157.2316.02 (German and English)

Modified Chapters for manual operation

None

Modified Chapters for remote operation

DISPlay[:WINDow<1>]:TRACe<1|2>:X[:SCALe]

This command allows user to select RF or IF frequency to be displayed on the X axis when the DUT is not amplifier. The numeric suffix TRACe<1 to 2> is irrelevant.

Syntax: DISPlay[:WINDow<1>]:TRACe<1|2>:X:SCALe RF | IF

Example: DISP:TRAC:X IF - IF frequency will be displayed on X axis.

Processing: FS-K30.

Appendix: Contact to our hotline

Any questions or ideas concerning the instrument are welcome by our hotline:

USA & Canada

Monday to Friday (except US public holidays)
8:00 AM – 8:00 PM Eastern Standard Time (EST)
Tel. from USA 888-test-rsa (888-837-8772) (opt 2)
From outside USA +1 410 910 7800 (opt 2)
Fax +1 410 910 7801
E-mail Customer.Support@rsa.rohde-schwarz.com

East Asia

Monday to Friday (except Singaporean public holidays)
8:30 AM – 6:00 PM Singapore Time (SGT)
Tel. +65 6 513 0488
Fax + 65 6 846 1090
E-mail Customersupport.asia@rohde-schwarz.com

Rest of the World

Monday to Friday (except German public holidays)
08:00 – 17:00 Central European Time (CET)
Tel. from Europe +49 (0) 180 512 42 42
From outside Europe +49 89 4129 13776
Fax +49 (0) 89 41 29 637 78
E-mail CustomerSupport@rohde-schwarz.com