ROHDE&SCHWARZ

Test and Measurement
Division

Release Notes

1xEV-DO Mobile Station Test

Application Firmware R&S FS-K85

Release 4.20

for R&S FSP, FSU, FSQ, FSG, FSMR, FSUP
Analyzer Firmware 4.2x

New Features:

- Support for instrument R&S FSG.
- Softkey REF VALUE Y AXIS available now for CDP measurements, too.

Release Note Revision: 2

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Contents

History

Date	Rel Note Rev	Changes
19 July 2007	1	First revision for R&S FS-K85 Firmware 4.20.
16 August 2007	2	FSP, FSU and FSQ added.

General Topics

Compatibility of R&S FS-K85 1xEV-DO MS Application Firmware

The following table shows the compatible version of the basic spectrum firmware version and the 1xEV-DO MS application firmware:

Table of compatible versions:

R&S FS-K85 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	R&S FSG Basic Firmware
4.20	4.20	4.21	4.25	-	-	4.29
4.10	4.10	4.11	4.15	-	4.17	-
4.00	4.00	4.01	4.05	-	-	-
3.90	3.90	3.91	3.95	3.96	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	-	-	-
2.80	2.80	2.81	-	-	-	-
2.60	2.60	2.61	-	-	-	-
2.40	2.40	2.41	2.45	-	-	-
2.30	2.30	2.31	2.35	-	-	-

Application firmware versions 3.xx are running on R&S FSPs with order # 1164.4391.xx or R&S FSU with order # 1166.1660.xx or R&S FSQ with operating system XP.
Application firmware version 2.xx are running on R&S FSPs with order # 1093.4495.xx or R&S FSU with order # 1129.9003.xx or R&S FSQ with operating system NT.

Firmware Update of R&S FS-K85 1xEV-DO MS Application Firmware

The R&S FS-K85 1xEV-DO MS application firmware package is available with its own version number. This application firmware package requires an appropriate basic instrument firmware version. The compatible versions are shown in the table above.
Please make sure to have the correct basic firmware version installed prior to installing the R&S FS-K85 1xEV-DO MS application firmware. Please refer to the basic firmware version release notes for firmware update information of the basic firmware.

Note: *R&S FS-K84 and R&S FS-K85 are using the same update set. It is therefore required to only update one of these applications.*

Generation of an update disk set for R&S FS-K85

The files needed for the R&S FS-K85 1xEV-DO MS Application Firmware update are available in the FIRMWARE section of the Service Board on GLORIS (R&S FS-K85).
If you already have the update disk set you can skip this paragraph.

Disk 1: disk1.bin (self-extracting ZIP file)

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:

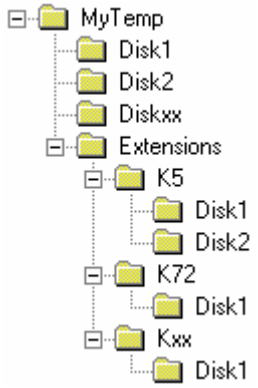
1. Create a temporary directory on your local PC (e.g. MyTemp\Extensions\K85 on drive C:).
2. Copy disk1.bin into that directory and rename it to disk1.exe.
3. Execute disk1.exe. Under Windows 95/98/NT/XP/2000 this is done best using the following sequence:
   <CTRL><ESC> - RUN – C:\MyTemp\Extensions\K85\DISK1 - <ENTER>
   or
   <CTRL><ESC> - AUSFÜHREN – C:\MyTemp\Extensions\K85\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	ExecCtrl.exe	id.txt	ikernel.ex_
ISSetup.exe	layout.bin	RestInst.exe	Setup.exe	Setup.ini	setup.inx

   Please make sure that all filenames exactly match with these printed above before you try to use them for the firmware update. Especially the trailing underscore ('_') as used in ikernel.ex_ **or** _inst32i.ex_ **is essential for correct operation of the update program.**

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

Preparing installation via LAN or USB stick:



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

Copy all files as mentioned in the previous section in the directory ..\MyTemp\Extensions\K85\Disk1.

Performing an Application Firmware Update on the Instrument

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

- Switch on the instrument and wait until the Analyzer has resumed operation.
- For updates from LAN or USB (XP only) 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\K85). 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 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 off the instrument until the update process has finished completely.**

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

Note: *R&S FS-K84 and R&S FS-K85 are using the same update set. It is therefore required to only update one of these applications.*

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 analyzer or delivered as a part of the R&S FS-K85 1xEV-DO MS 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 successful validation the message 'option key valid' will appear.

- If the validation failed, the application firmware will not be installed.
  The most likely reason will be that the instrument is not equipped with the correct basic firmware version. In this case a message box 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.

Modified Functions

The version numbers in brackets indicate the version in which the function was modified

1. [V2.40/3.40] Sign change for frequency offset, phase offset and q-invertion for symbol constellation and bitstream.
Due to a correction of the cdma2000 specific –q definition, the mention values had been changed

2. [V3.50] Command `:[SENSe:]CDPower:ORDer?` Delivers now short form `HAD` or `BITR` as result.

3. [V3.50] CDP measurement over 3648 consecutive half slots for R&S FSQ possible (over 3 seconds of IQ data).

4. [V3.60/V2.60] External trigger level adjustable from 0.5 to 3.5V.

5. [V3.60/V2.60] Carrier frequency step size softkey available.

6. [V2.60/3.60] Changed SCPI commands.
In order to limit to 12 chars the :`CALCulate2:FEED 'XTIMe:CDPower:SYMBol:CONStellation'` and `:CALCulate2:FEED 'XTIMe:CDPower:COMPosite:CONStellation'` are changed to `:CALCulate2:FEED 'XTIMe:CDPower:SYMBol:CONSt'` and `:CALCulate2:FEED 'XTIMe:CDPower:COMPosite:CONSt'`.

7. [V3.70/V2.80] ACP: number of adjacent channels increased to 12.

8. [V3.70/V2.80] ACP: power mode to max holds the power results.

9. [V3.80/V2.80] Trace view available within code domain analyzer.

10. [V4.00] Spectrum emission mask: List evaluation in lower screen now supported.

11. [V4.20] Support for instrument R&S FSG.

12. [V4.20] Softkey REF VALUE Y AXIS available for CDP measurements.

Problems Eliminated

None

Known Problems

None

Modifications to the Operating Manual and Supplements

For the R&S FS-K85 1xEV-DO MS Application Firmware manuals please refer to the following order numbers:

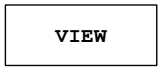
- 1007.9800.44-02 (German/English)

They can be downloaded from R&S internet – search: FS-K85:

http://www.rohde-schwarz.com

Modified Chapters

Menu TRACE



The softkey *VIEW* freezes the trace.

IEC-Bus-command:

```
:DISP:WIND:TRAC:MODE VIEW
```

Menu MEAS – SPECTRUM EM MASK

The softkey *LIST EVALUATION* reconfigures the SEM output to a split screen. In the upper half the trace with the limit line is shown. In the lower half the peak value list is shown. For every range of the spectrum emission defined by the standard the peak value is listed. For every peak value the frequency, the absolute power, the relative power to the channel power and the delta limit to the limit line is shown. As long as the delta limit is negative, the peak value is below the limit line. A positive delta indicates a failed value. The results are then colored in red, and a star is indicated at the end of the row, for indicating the fail on a black and white printout.
If the list evaluation is active, the peak list function is not available.

IEC/IEEE-bus command:

```
:CALCulate1:PEAKsearch:AUTO ON | OFF
```

With this command the list evaluation which is by default for backwards compatibility reasons off can be turned on.

`TRACe1:DATA? LIST`
With this command the list evaluation results are queried in the following order:
<no>, <start>, <stop>, <rbw>, <freq>, <power abs>, <power rel>, <delta>, <limit check>, <unused1>, <unused2>
All results are float values.

no	: range number
start	: start frequency
stop	: stop frequency
rbw	: resolution bandwidth of range
freq	: frequency of peak
power abs	: absolute power in dBm of peak
power rel	: relative power in dBc (related to the channel power) of peak
delta	: distance to the limit line in dB (positive indicates value above the limit, fail)
limit check	: limit fail (pass = 0, fail =1)
unused1	: reserved (0.0)
unused2	: reserved (0.0)

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