



**ROHDE & SCHWARZ**

Test and Measurement  
Division

## **Release Notes**

**cdma2000/1xEV-DV**

**Mobile Station Test**

**Application Firmware R&S FS-K83**

**Release 4.60**

**with Service Pack 1**

for R&S FSP, FSU, FSQ, FSG, FSMR, FSUP  
Analyzer Firmware 4.6x

**Release Note Revision: 3**

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## History

| <b>Date</b>     | <b>Rel Note Rev</b> | <b>Changes</b>   |
|-----------------|---------------------|--|
| 17 June 2010    | 1                   | First revision for R&S FS-K83 Firmware 4.60.   |
| 12 October 2010 | 2                   | Improvement with Service Pack 1 added.<br>New hot line phone number for calls from Europe. |
| 07 March 2011   | 3                   | New chapter "Customer Support".  |

## General Topics

### Compatibility of R&S FS-K83 cdma2000/1xEV-DV MS Firmware

The following table shows the compatible version of the basic analyzer firmware version and the cdma2000/1xEV-DV MS application firmware:

**Table of compatible versions:**

| R&S FS-K83<br>Application<br>Firmware | R&S FSP<br>Basic<br>Firmware | R&S FSU<br>Basic<br>Firmware | R&S FSQ<br>Basic<br>Firmware | R&S FSMR<br>Basic<br>Firmware | R&S FSUP<br>Basic<br>Firmware | R&S FMU<br>Basic<br>Firmware | R&S FSG<br>Basic<br>Firmware |
|---------------------------------------|------------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|------------------------------|------------------------------|
| 4.60 SP1                              | -                            | 4.61 SP1                     | 4.65 SP1                     | -                             | -                             | -                            | 4.69 SP1                     |
| 4.60                                  | -                            | 4.61                         | 4.65                         | -                             | -                             | -                            | 4.69                         |
| 4.50                                  | 4.50                         | 4.51                         | 4.55                         | -                             | -                             | -                            | 4.59                         |
| 4.40 SP1                              | -                            | -                            | -                            | -                             | 4.47                          | -                            | -                            |
| 4.40                                  | 4.40                         | 4.41                         | 4.45                         | -                             | -                             | -                            | 4.49                         |
| 4.30                                  | 4.30                         | 4.31                         | 4.35                         | 4.36                          | 4.37                          | 4.38                         | 4.39                         |
| 4.21                                  | 4.20                         | 4.21                         | 4.25                         | 4.26                          | 4.27                          | -                            | 4.29 SP1                     |
| 4.20                                  | -                            | -                            | -                            | -                             | -                             | -                            | 4.29                         |
| 4.10                                  | 4.10                         | 4.11                         | 4.15                         | 4.16                          | 4.17                          | -                            | -                            |
| 4.00                                  | 4.00                         | 4.01                         | 4.05                         | 4.06                          | -                             | -                            | -                            |
| 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                         | -                             | -                             | -                            | -                            |
| 3.28                                  | 3.20                         | 3.21                         | 3.25                         | -                             | -                             | -                            | -                            |
| 3.24                                  | 3.10                         | 3.11                         | 3.15                         | -                             | -                             | -                            | -                            |
| 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                         | -                             | -                             | -                            | -                            |
| 2.28                                  | 2.20                         | 2.21                         | 2.25                         | -                             | -                             | -                            | -                            |
| 2.24                                  | 2.10                         | 2.11                         | 2.15                         | -                             | -                             | -                            | -                            |

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-K83 cdma2000/1xEV-DV MS Firmware**

Since basic firmware version 4.2x a ZIP file with the update sets of the basic system firmware and all available applications is provided. This ZIP file is available in the instruments FIRMWARE section, e.g. R&S FSU of the Service Board on GLORIS.

Please follow the steps described in the instrument's basic firmware release note to perform a complete firmware update.

## **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-K83 cdma2000/1xEV-DV 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 a successful validation the message 'option key valid' will appear.
- If the validation failed, the application firmware is not 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.**

## **New Functions in version 4.60**

None

## **Improvements**

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

### **1. [V4.50] The Trigger to Frame value was too large by ½ chip.**

The result is now reduced by 406.9 ns.

## **Improvements with Service Pack 1**

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

### **1. [V4.60] Modulation Summary: Indicated Symbol Rate and Spreading factor do not fit.**

This only occurs for channel PICH and a base spreading factor set to 16.

## Known Issues

None.

## Modified Functions

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

1. [V3.28/V2.28]    **Unit circle display in constellation diagrams.**
2. [V3.28]            **Option FS-K9 power sensor support for RF measurements**
3. [V3.30/V2.30]    **The FS-K83 can now also analyze Agilent's ESG opt 101 non standard signals.**
4. [V3.30/V2.30]    **Read out of spectrum emission mask worst fail position.**
5. [V2.40/V3.40]    **Sign change for frequency offset, phase offset and q-inversion for symbol constellation and bitstream.**  
Due to a correction of the cdma2000 specific -q definition, the mention values had been changed
6. [V3.50]            **Maximal capture length is increased to 64 for R&S FSU and R&S FSQ. On R&S FSQ also up to 38 sets of 64 PCGs are possible.**
7. [V3.50]            **Command ": [SENSe:] CDPower:ORDeR?" delivers now short form HAD or BTR as result.**
8. [V3.60/V2.60]    **Changed SCPI commands**  
In order to limit to 12 chars the commands  
: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'.
9. [V3.60/V2.60]    **External trigger level is now adjustable from 0.5 to 3.5V.**
10. [V3.60/V2.60]   **Carrier frequency step size softkey available.**
11. [V3.70/V2.80]   **ACP: number of adjacent channels increased to 12.**
12. [V3.70/V2.80]   **ACP: power mode to max holds the power results.**
13. [V3.80/V2.80]   **Trace view available within code domain analyzer.**
14. [V4.00]    **Spectrum emission mask: List evaluation in lower screen now supported.**
15. [V4.20]    **Support for instrument R&S FSG is available.**
16. [V4.20]    **Softkey REF VALUE Y AXIS is available for CDP measurements.**
17. [V4.21]    **Band Classes 14 and 15 supported.**
18. [V4.30]    **Softkey AC / DC Coupling is available.**
19. [V4.30]    **New Ref Value Y Axis / Reference Level coupling simplifies grid scaling configuration for Code Domain measurements.**  
Since version 4.20 the Reference Level and the grid scaling (REF VALUE Y AXIS) with unit dBm can be independently set for Code Domain measurements. In previous versions changing the Reference Level and changing the Ref Value Y Axis were independent. If the Reference Level value is changed the Ref Value Y Axis is now automatically adjusted to keep the difference between Reference Level and Ref Value Y axis constant.  
Example:  
Ref Level set to 0 dBm  
Ref Value Y axis set to -10 dBm (at Y Axis Position 100%)  
► The upper Y limit of the grid scaling is now at 10 dB below reference level.

Change Reference Level to -10dBm

The Ref Value Y Axis is now adjusted to -20 dB

► The upper Y limit of the grid scaling is at 10 dB below reference level as before.

**Note:** The internal reference level change with function ADJUST REF LEVEL is treated in the same way.

## Modifications to the Operating Manual

For the R&S FS-K83 cdma2000/1xEV-DV MS Application Firmware manuals please refer to the following order numbers:

- 1007.9800.44-05 (German/English)

They can be downloaded from R&S internet – search: FS-K83:

<http://www.rohde-schwarz.com>

## Modified Chapters

None.

## **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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