Firmware Release 1.44

(32-Bit-WINDOWS version)

for the Signal Generators
R&S SMR20, R&S SMR27, R&S SMR30, R&S SMR40, R&S SMR50
and R&S SMR60

**This firmware version is ONLY for the models explicitly mentioned above!
Do not try to update other Rohde & Schwarz generators using this firmware.**

Contents

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1. Important Notes

This package contains the firmware as well as the context sensitive help systems for the generators: SMRxx. As these generators are equipped with flash EPROMs, the software can be loaded and updated without opening the equipment.

This firmware installation is only for SMRs equipped with **firmware 1.10** or higher. If the SMR has an older firmware, please contact the nearest R&S Service department or your local R&S Vendor.

If your device is a SMR20 equipped with option SMR-B25 (IF Input 0.04GHz ... 6GHz, Order No. 1135.1998.02), please read also the instructions in chapter 5.4.

2. Installation Software

The installation package consists of many parts including the loader, the firmware config file, the firmware itself and some batch and other programs. You can choose wether you want to update the firmware via the COM1 or COM2 interface. Using different batch files depending on your choice will start the loader program and begin the update process automatically. You can also start the loader directly and choose the firmware you want to install.

3. Prerequisites concerning the PC

A 32-bit-WINDOWS operating system (WINDOWS 95/98/2000/NT or XP) is running on your PC and about 5 MByte free space on your hard disk is required.
WinZip 7.0 or higher or a similar program is necessary and the RS232 interface must be configured with the following parameters:

- Baud rate: 9600
- Data Bits: 8
- Parity: No
- Stopbits: 1
- Protocol: none

4. Connection between PC and SMR

The SMR provides two 9 pin connectors on the back panel, named "AUX" and "RS232". Make sure that you connect the RS232 interface of the SMR to the RS232 interface (COM1 or COM2) on your computer. Use a two-sided Sub-D connector. The interface of your computer shall not be used by any other program during the update process.

5. Procedure of a Firmware Update

- Preparation
  Copy the zipped firmware to a new directory and unzip the files using WinZip or a similar program.

- Checking the firmware version
  Depending on the firmware version currently installed on the SMR the update procedure varies by a small point.

For firmware versions 1.10 or 1.11 please follow the procedure described in the next paragraph.
If your SMR firmware is 1.12 of higher you can go on with the paragraph 5.2.
You can check the firmware version by the following procedure:

10.000 000 000 0 GHz	-20.0 dBm
Utilities	
Display System Ref Osc Protect	
Calib Diag Test Mod Key	
Aux I/O Setup Install Back ↵	

➢ Press the blue *PRESET* button and confirm with the *SELECT* hardkey

➢ Choose UTILITIES in the main generator menu with the rotary knob

➢ Press the knob or the *SELECT* hardkey

10.000 000 000 0 GHz	-20.0 dBm
Utilities/Diag	
Config TPoint Param Back ↵	

➢ Choose DIAG in the utilities menu with the rotary knob

➢ Choose PARAM in the diag menu with the rotary knob and press the knob or the *SELECT* hardkey

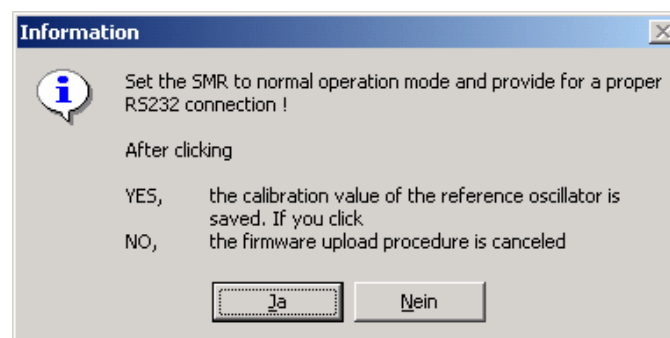The version of the SMR's firmware can be found on the menu entry "Software Version"

5.1. Installing the firmware loader for installed firmware versions 1.10 and 1.11

If your actual firmware version is 1.10 or 1.11 you have to execute one of the following batch files in the firmware update directory:
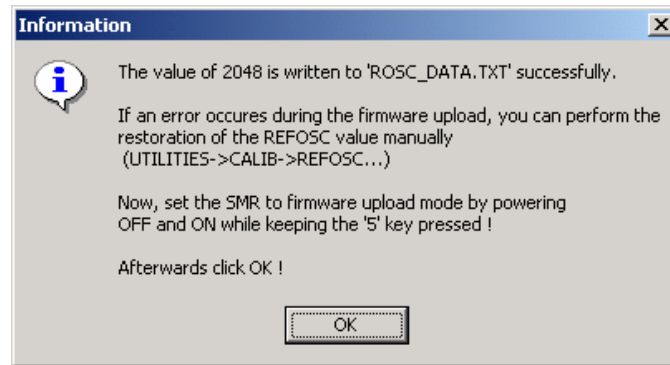
- **smr_com1_refosc.bat** if you use the COM1 port for the connection
- **smr_com2_refosc.bat** if you use the COM2 port for the connection

The batch-file will execute the firmware loader, load the installation configuration files and start the update process:

- When the following message occurs, switch on the SMR by pressing the 'ON/OFF' button, and wait 5 to 10 seconds. Then click the Yes button to continue.

Information   ☒

ⓘ   Set the SMR to normal operation mode and provide for a proper
    RS232 connection !

    After clicking

    YES,   the calibration value of the reference oscillator is
             saved. If you click
    NO,   the firmware upload procedure is canceled

           [Ja]   [Nein]

- The update process saves the reference oscillator value in a special file called ROSC_DATA.TXT. Please contact your local vendor in case of unexpected problems. He can manually restore the value.
 Switch off the SMR and on again by pressing the '5' key on the keypad and the 'ON' button simultaneously as mentioned on the windows message.

- The update process will automatically upload the firmware. This might take roughly 5 minutes
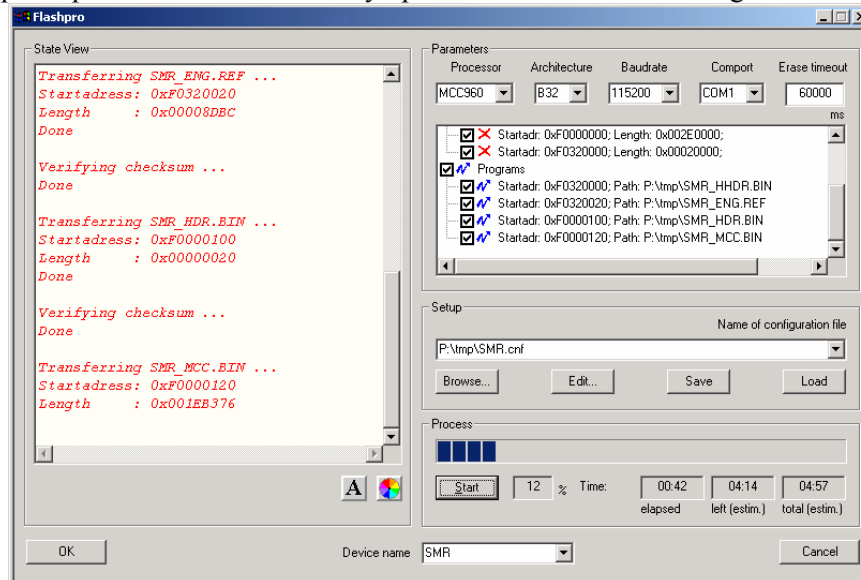
- After the update process restart the SMR by switching the 'ON/OFF' button and click the Yes button to upload the reference oscillator value. Then start the internal calibration procedure described below.
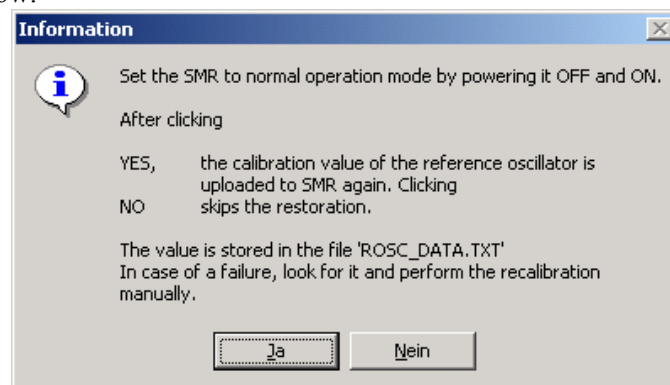
5.2. Installing the firmware loader for installed firmware versions 1.12 or higher

The firmware can be installed automatically or manually.
In each case you have to switch on the SMR while pressing the '5' key on the keypad.

- For the <u>automatic progress</u> start one of the following batch files:
  - **smr_com1.bat** if you use the COM1 port for the connection
 - **smr_com2.bat** if you use the COM2 port for the connection

  The batch-file will execute the firmware loader, load the installation configuration files and start the update process.
  After the update process the calibration procedure described below is necessary (chapter 5.3.).
  If your SMR20 is equipped with Option **SMR-B25** (Order No. 1135.1998.02) please follow the instructions described in chapter 5.4.

- For manual update execute the program *pg_flash.exe* and click on the "*Flashpro*" button.
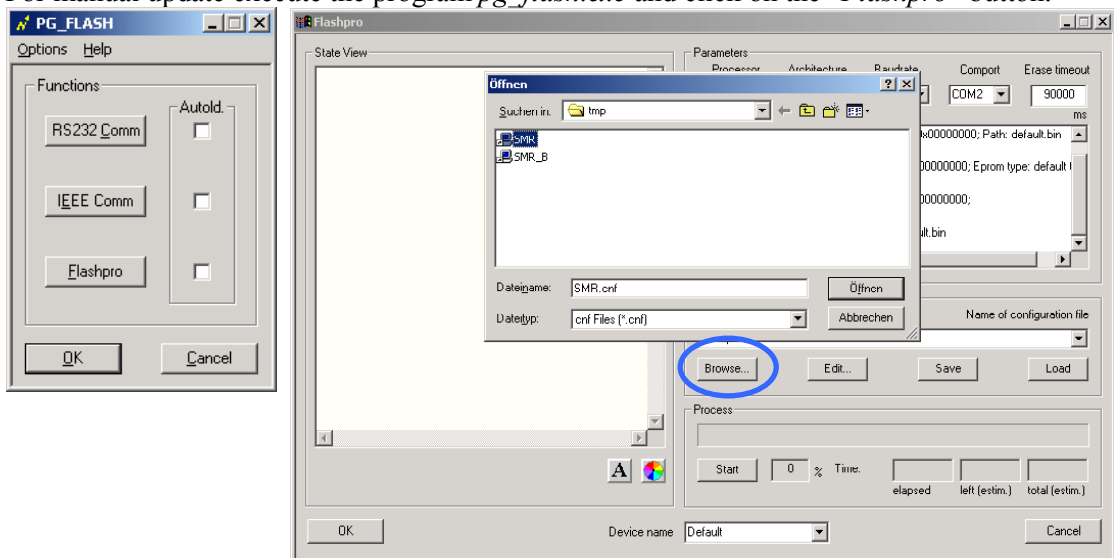
Open the configuration file dialog by pressing on the Browse button in the setup field. Select SMR, press the open button and confirm your selection with the Load button in the setup field. The Flashpro software updates all configuration settings according to your selection. You can select a different RS232 interface by choosing one of the COM-ports in the pulldown menu. Please do not change any other parameter. Then press Start to execute the update process:
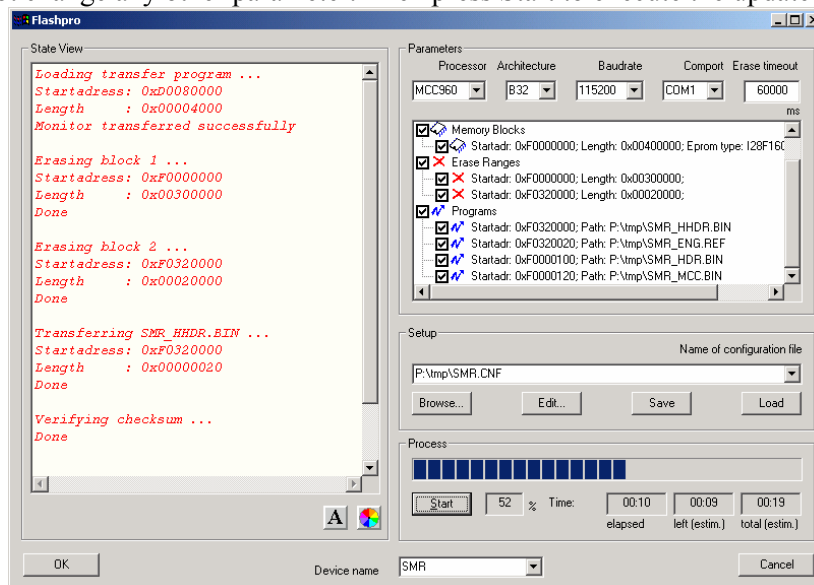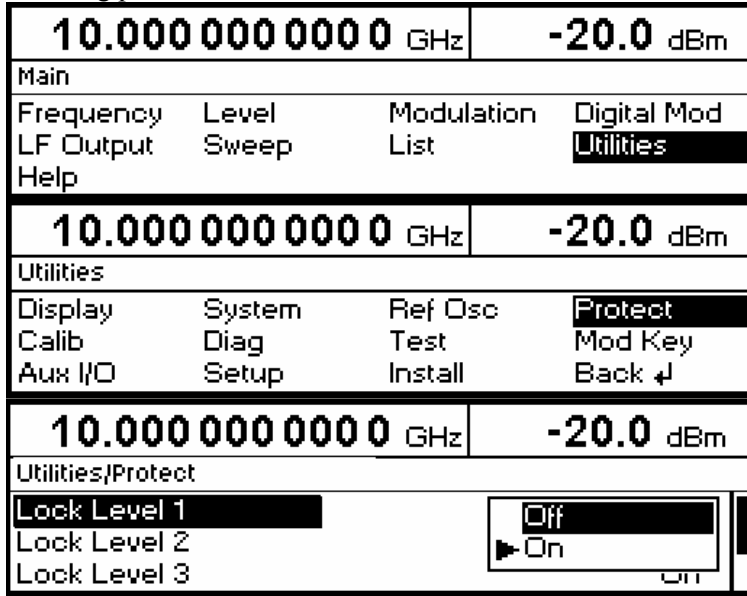
After the update process the calibration procedure described below is necessary (chapter 5.3.). If your SMR20 is equipped with Option **SMR-B25** (Order No. 1135.1998.02), please follow the instructions described in chapter 5.4.

5.3. Internal calibration

First please press the blue PRESET key after the first restart and confirm with the SELECT key.
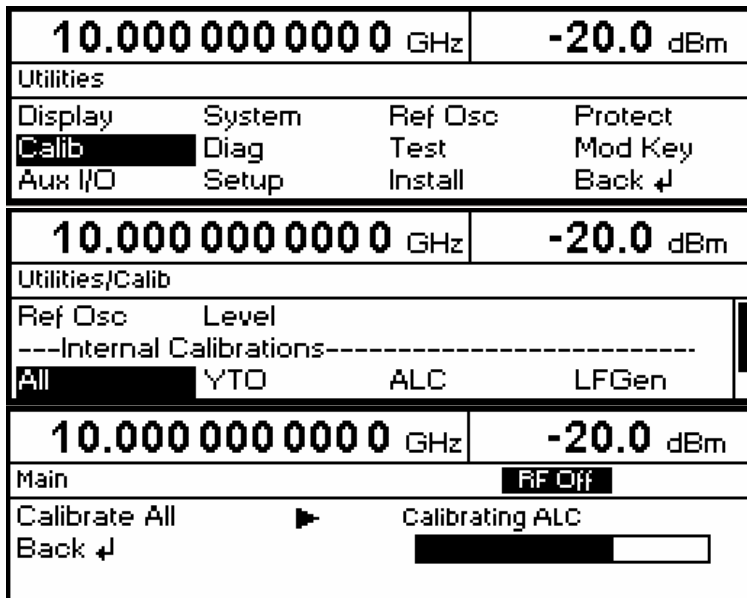
Alarm messages appearing on the display after a restart are the consequence of missing calibration data. The calibrations can be carried out without external measuring instruments. We recommend a 30 minute warmup time before starting the calibration routine with the following procedure:

10.000 000 000 0 GHz	-20.0 dBm

Main

Frequency	Level	Modulation	Digital Mod
LF Output	Sweep	List	**Utilities**
Help			

➢ Choose UTILITIES in the main generator menu with the rotary knob

➢ Press the knob or the *SELECT* hardkey

10.000 000 000 0 GHz	-20.0 dBm

Utilities

Display	System	Ref Osc	**Protect**
Calib	Diag	Test	Mod Key
Aux I/O	Setup	Install	Back ↵

➢ Choose PROTECT in the main generator menu with the rotary knob

➢ Press the knob or the *SELECT* hardkey

10.000 000 000 0 GHz	-20.0 dBm

Utilities/Protect

Lock Level 1	**Off**
Lock Level 2	► On
Lock Level 3	On

➢ Choose LOCK LEVEL 1 in the main generator menu with the rotary knob

An entry field for the password pops up

➢ Insert "123456" with the numeric keypad and confirm with the *SELECT* hardkey

➢ Then choose OFF with the rotary knob and press the *SELECT* hardkey

10.000 000 000 0 GHz	-20.0 dBm

Utilities

Display	System	Ref Osc	Protect
Calib	Diag	Test	Mod Key
Aux I/O	Setup	Install	Back ↵

➢ Go back to the UTILITIES menu by pressing the back hardkey

➢ Choose CALIB with the rotary knob

➢ Press the knob or the *SELECT* hardkey

10.000 000 000 0 GHz	-20.0 dBm

Utilities/Calib

Ref Osc	Level		
---Internal Calibrations------------------------			
All	YTO	ALC	LFGen

➢ Choose ALL with the rotary knob

➢ Press the knob or the *SELECT* hardkey 2 times

10.000 000 000 0 GHz	-20.0 dBm

Main   **RF Off**

Calibrate All	►	Calibrating ALC
Back ↵		

The SMR will start with the internal calibration procedure, which will take a few minutes.

5.4. Additional steps after the firmware update

If your device is equipped with option SMR-B25 (Order No. 1135.1998.02) please check if the SMR is recognizing this option after the firmware update correctly.
Change to UTILITIES/DIAG/CONFIG menu and look for the entry "**IFINP** SMR-B25 Var 0 Rev 0.0". If this line is displayed, the update procedure has finished and the option SMR-B25 is recognized correctly.
If the line "**IFINP** SMR-B23 Var 0 Rev 0.0" is shown, you have to install option SMR-B25 manually:

- Change to UTILITIES/PROTECT/LOCK LEVEL 3 menu and unlock this lock level by inserting "710845". Please choose Off after inserting these numbers.
- Change to UTILITIES/INSTALL/SMR B25 and switch this option to On.
- Turn your device off. The update procedure has finished.

6. *New and modified Functions*

7. *Bug Fixes and Changes*

Previously ...	Now ...	Firmware Version
… logarithmic frequency sweeps did not stop at the end frequency in single or external single mode. (CR 5246)	… the error is fixed.	≥ V1.38
… level sweep settings were ignored until the reboot of the device. (CR 6037)	… the settings are taken into account immediately.	≥ V1.40
… sweeps (or lists) stopped whenever certain parameters were changed (p.e. RF ON/OFF). (CR 6077, CR 4462)	… the sweep (or list) keeps running during changes of parameters.	≥ V1.40
... the display and notification of the "output unleveled" error message was delayed. (CR 6075)	… the error message is displayed much faster.	≥ V1.40
… the SRQ treatment was incorrect. (CR 6403)	… the error is fixed.	≥ V1.42
(CR 6776)	… the error is fixed.	≥ V1.43

Appendix: Contact to our hotline

Any questions and ideas concerning the instrument are welcome to our hotline:

    Phone: ++49-1805-124242
    FAX: ++49-89-4129-63778
    e-mail: CustomerSupport@rohde-schwarz.com

26 April 2010