Firmware Release 1.25
(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.

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 or NT) is running on your PC and about 5 MByte free space on your hard disk is required.
WinZip 7.0 or higher is neccessary 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 ↵
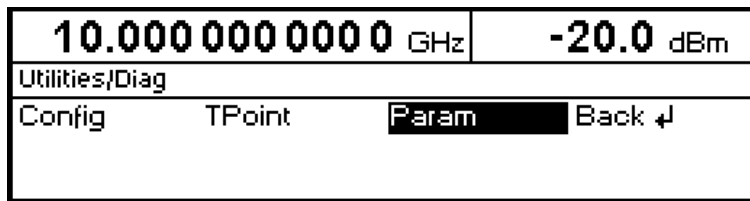
➢ Choose DIAG in the utilities menu with the rotary knob

➢ 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"
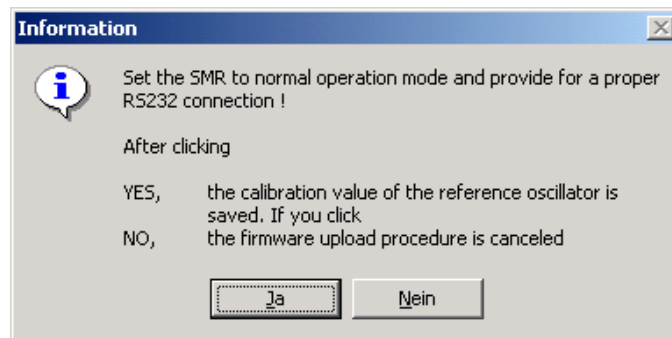
5.1) Installing the firmware loader for installed firmware versions 1.10 and 1.11

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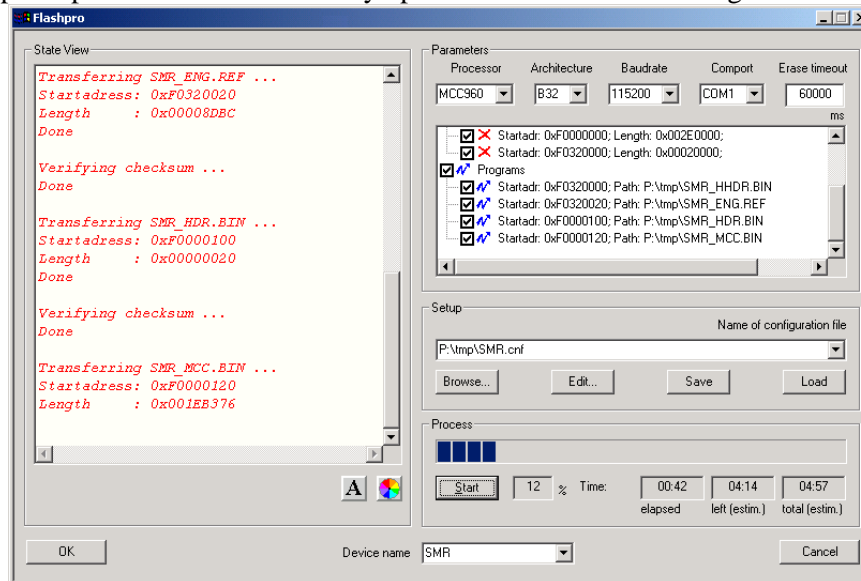
- After the update process restart the SMR by switching the 'ON/OFF' button and click the Yes button to upload the reference oscillator value. Then start the internal calibration procedure described below.
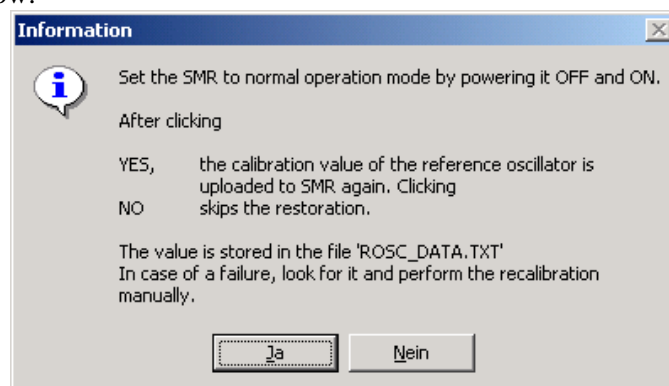
5.2) Installing the firmware loader for installed firmware versions 1.12 or higher

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 automatic progress 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 neccessary.

- For manual update execute the program *pg_flash.exe* and click on the "*Flashpro*" button.
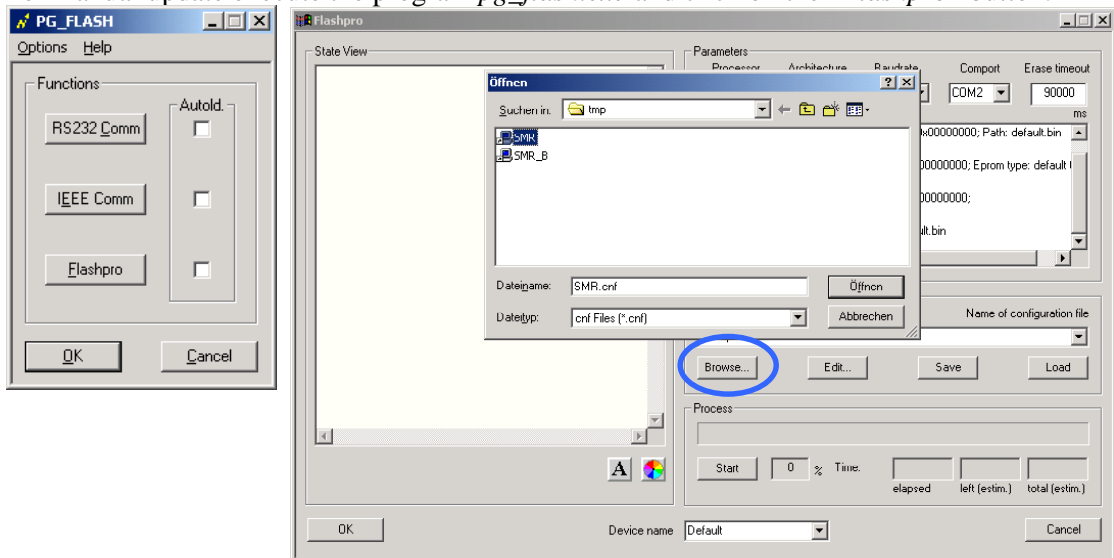
Open the configuration file dialog by pressing on the Browse button in the setup field. Select SMR, press the open button and confirm your selection with the Load button in the setup field. The Flashpro software updates all configuration settings according to your selection. You can select a different 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:
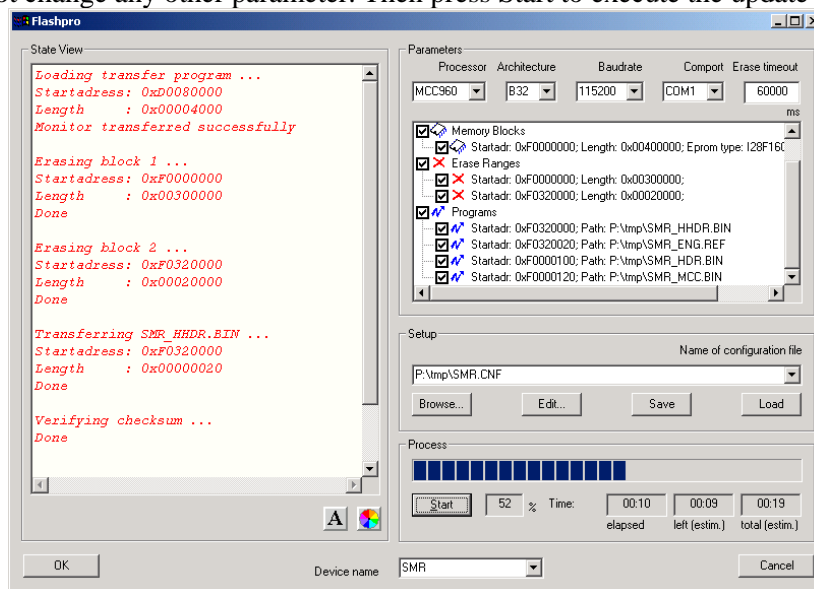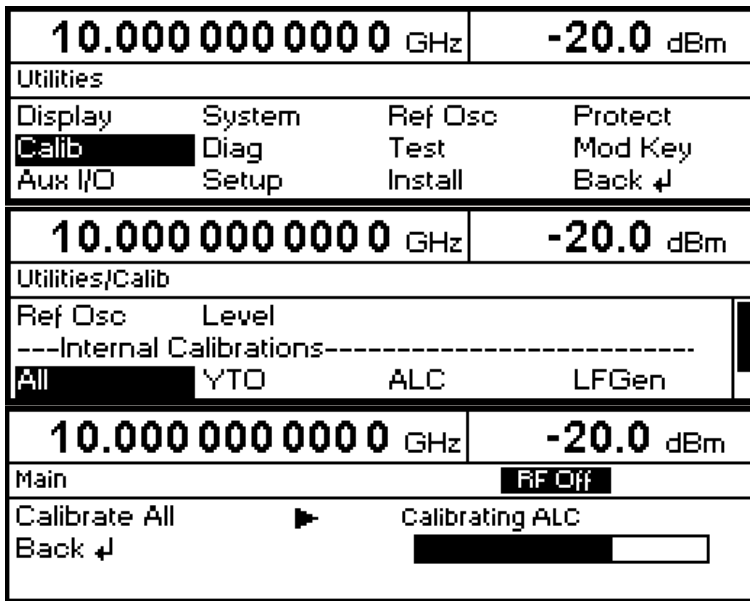
5.3) Internal calibration

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:
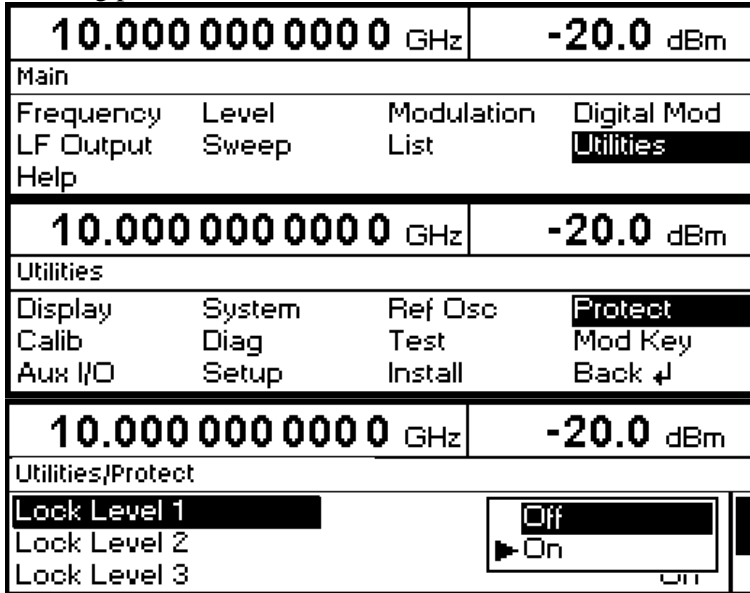
10.000 000 000 0 GHz **-20.0** dBm Main Frequency Level Modulation Digital Mod LF Output Sweep List Utilities Help	➤ Choose UTILITIES in the main generator menu with the rotary knob ➤ Press the knob or the *SELECT* hardkey
10.000 000 000 0 GHz **-20.0** dBm Utilities Display System Ref Osc Protect Calib 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.

6. New and modified Functions

- none

7. Bug Fixes and Changes

Previously ...	Now ...
level problems concerning the IF-Option (SMR-B23, SMR-B24, SMR-B25) occured in Firmware Version V1.24 (*only* in Firmware Version V1.24).	the error is fixed.

Appendix: Contact to our hotline

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

Phone: ++49-1805-124242

FAX: ++49-89-4129-13777

e-mail: CustomerSupport@rsd.rohde-schwarz.com