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

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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.

10.00	0 0 0 0 0 0 0	00 GHz	-20.0 dBm
Utilities			
Display	System	Ref Osc	Protect
Calib	Diag	Test	Mod Key
Aux I/O	Setup	Install	Back 🖌
Aux I/O		Install	
10.00	0 0 0 0 0 0 0	00 GHz	-20.0 dBm
Utilities/Diag		•	
CanGa	TDeiek	Deres	Deels d

Param

TPoint

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:

- 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
- 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:

Back 🚽

- **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.

Informati	ion	×
٩		5MR to normal operation mode and provide for a proper onnection !
	After clic	king
	YES,	the calibration value of the reference oscillator is saved. If you click
	NO,	the firmware upload procedure is canceled
		<u>]a</u> <u>N</u> ein

Config

• 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.

Informa	tion
(i)	The value of 2048 is written to 'ROSC_DATA.TXT' successfully.
	If an error occures during the firmware upload, you can perform the restoration of the REFOSC value manually (UTILITIES->CALIB->REFOSC)
	Now, set the SMR to firmware upload mode by powering OFF and ON while keeping the '5' key pressed !
	Afterwards click OK !
)

• The update process will automatically upload the firmware. This might take roughly 5 minutes

and Hashpro						
State View		Parameters			-	
Transferring SMR ENG.REF		Processor	Architecture	Baudrate	Comport	Erase timeout
Startadress: 0xF0320020		MCC960 -	B32 💌	115200 -	COM1 👻	60000
Length : 0x00008DBC				, _		ms
Done				00; Length: 0x002 00: Length: 0x000		_
Verifying checksum				oo, zongan onooo	20000,	
Done				00; Path: P:\tmp\	SMR HHDR.BIN	4
		🛛 🗹 🚀 Start	adr: 0xF032002	20; Path: P:\tmp\	SMR_ENG.REF	
Transferring SMR HDR.BIN		- 🗹 🛷 Start	adr: 0xF000010	00; Path: P:\tmp\	SMR_HDR.BIN	
Startadress: 0xF0000100		Start	adr: 0xF000012	20; Path: P:\tmp\	SMR_MCC.BIN	_
Length : 0x00000020					1	
Done						
Verifying checksum Done		Setup			Name of c	onfiguration file
		P:\tmp\SMR.cnf	-			-
Transferring SMR_MCC.BIN Startadress: 0xF0000120 Length : 0x001EB376		Browse	Edit		Save	Load
Length : 0x001EB376		<u> </u>				
	-	Process				
	A 🚯	<u>Start</u>	12 _% Tim	e: 00:42 elapsed	04:14 left (estim.)	04:57 total (estim.)
OK	Device name	SMR	•			Cancel

• 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.

Informat	ion	×		
(i)	Set the	SMR to normal operation mode by powering it OFF and ON.		
	After cl	icking		
	YES,	the calibration value of the reference oscillator is uploaded to SMR again. Clicking		
	NO	skips the restoration.		
	The value is stored in the file 'ROSC_DATA.TXT' In case of a failure, look for it and perform the recalibration manually.			
		<u>]a</u> <u>N</u> ein		

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.

🔏 PG_FLASH	It Blashpro
Options Help	C State View
Functions RS232 Comm	Officen Pronesser Architectura Bardetail Comport Erase timeout Suchen in: Image: transmitter in the second
	Bottom b
	kbin v
	Dateigame: SMR.onf Diffion Dateigup: onf Files (*.onf) Abbrechen Name of configuration file
<u>D</u> K <u>Cancel</u>	Browse Edk Save Load
	A Start 0 % Time. elapsed left (estim.) total (estim.)
	OK Device name Default Cancel

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:

State View		Parameters
Loading transfer program		Processor Architecture Baudrate Comport Erase timeout
Startadress; 0xD0080000		MCC960 V B32 V 115200 V COM1 V 60000
Length : 0x00004000		
Monitor transferred successfully		Memory Blocks
Erasing block 1		V X Erase Ranges
Startadress: 0xF0000000		
Length : 0x00300000		
Done		✓ ✓ Programs
Erasing block 2		····· ☑ ✔ Startadr: 0xF0320020; Path: P:\tmp\SMR_ENG.REF
Startadress: 0xF0320000		Startadr: 0xF0000100; Path: P:\tmp\SMR_HDR.BIN
Length : 0x00020000		Startadr: 0xF0000120; Path: P:\tmp\SMR_MCC.BIN
Done		
Transferring SMR_HHDR.BIN Startadress: OxF0320000 Length : Ox00000020		Setup Name of configuration file
Done Verifying checksum		Browse Edit Save Load
Done		
		Process
1		
	<u>A</u>	Start 52 % Time: 00:10 00:09 00:19 elapsed left (estim.) total (estim.)
OK	Device name	SMR Cancel

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	≻	Choose UTILITIES in the main generator menu with the rotary knob
Main Frequency	Level	Modulation	n Digital Mod	≻	Press the knob or the SELECT
LF Óutpuť Help	Sweep	List	Utilities		hardkey
	000 000	0 GHz	-20.0 dBm	>	Choose PROTECT in the main generator menu with the rotary knob
Utilities Display Calib Aux I/O	System Diag Setup	Ref Osc Test Install	Protect Mod Key Back ⊮ I		Press the knob or the <i>SELECT</i> hardkey
	000 000	0 GHz	-20.0 dBm	>	Choose LOCK LEVEL 1 in the main generator menu with the rotary knob
Utilities/Protec				Ar	entry field for the password pops up
Lock Level 2 Lock Level 3			Dff Dn On	>	Insert "123456" with the numeric keypad and confirm with the <i>SELECT</i> hardkey
				>	Then choose OFF with the rotary knob and press the <i>SELECT</i> hardkey
	000 000	0 GHz	-20.0 dBm	>	Go back to the UTILITIES menu by pressing the back hardkey
Utilities Display	System	Ref Osc	Protect	≻	Choose CALIB with the rotary knob
Calib Aux I/O	Diag Setup	Test Install	Mod Key Back ₊J	۶	Press the knob or the SELECT hardkey
10 000	000 000	0 GHz	-20.0 dBm	≻	Choose ALL with the rotary knob
Utilities/Calib				≻	Press the knob or the SELECT
Ref Osc	Level				hardkey 2 times
Internal C All	alibrations YTO	ALC	LFGen		
	000 000	0 GHz	-20.0 dBm		e SMR will start with the internal ibration procedure, which will take a
Main			iF Off		<i>i</i> minutes.
Calibrate All	▶	Calibrating	ALC		
Back ₄ I					

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 (<i>only</i> 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