



ROHDE & SCHWARZ

Test and Measurement
Division

Release Notes

Firmware

R&S® AFQ 100 A

Version 2.04.244.13

Printed in the Federal Republic of Germany

Throughout this manual, R&S AFQ is generally used as an abbreviation for the Baseband Signal Generator R&S® AFQ 100 A.

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1 General Information

This R&S AFQ firmware revision consists of three files which have to be installed in the given sequence:

- **RsSigGenUninstaller_9.8.cmd**
- **SoftwarePlatform_2.1.60.0.msi**
- **AFQ_2.04.244.13.exe**

Please ensure that all three files are available on the signal generator, either on the local disk, on a USB stick (see following example) or on a network directory that can be accessed by the instrument (see chapter 1 of Quick Start Guide).

The firmware update is performed under control of the Windows XP embedded operating system. To obtain access to Windows XP, a mouse or an external keyboard must be connected via USB. For convenient operation it is recommended to apply both. If no keyboard is available, it can be simulated by means of the on-screen keyboard (Menu **Start-Accessories-Accessibility**).

An external monitor is required too. The appropriate VGA plug is located on the rear panel.

Example: Providing the update files on a USB stick

- Download update files on a PC
- Connect USB stick to PC. The USB stick is automatically recognized and assigned a free drive.
- Copy files from the PC to the USB stick.
- Switch off signal generator.
- Connect USB stick to USB interface (front or rear) of the instrument.
- Switch instrument on again.
- Wait until instrument firmware boot window with the progress bars appears.
- Click the **Abort** button in the boot window. Booting of the instrument firmware is aborted and the Windows XP Embedded desktop is displayed.
- Open Windows Explorer. The USB stick is assigned a free drive. The update files are available on this drive. Proceed with step 2 of the following instruction.

2 Firmware Update

1. Save the current version

It is highly recommended to save the current/running version. This can be done very easily (and it is completely intuitive with a mouse).

1. Switch off the device and switch it on again. When the device is starting now you see the Bootmanager window (blue background, white field inside and a red selection line) after a short time. If you see this window select "Backup/Recovery" and press **ENTER**.
2. After a short time you see a new window (blue background!) with five buttons. Select "**Make backup**" via the up or down arrow keys. Confirm this with the key **ENTER**. The device shows you the versions of what will be stored. Select the button "Make Backup" and the device starts working. This takes a while, but you get an information, when you can switch off the device (press the power on key for four seconds).

If you want to restore a previously saved version you select "**Restore Backup**" at point 2.

HINT: At the moment the backup/recovery it is the only (easy) way to downgrade a device from version 2.xx to 1.xx.

2. Call Windows XP Embedded desktop

- Connect USB mouse to instrument.
- Turn on the instrument.
- Wait until R&S AFQ firmware boot window with the progress bars appears.
- Click the **Abort** button in the boot window or press **Alt-F4** on the USB keyboard. Booting of the instrument firmware is aborted and the Windows XP Embedded desktop is displayed.

3. Uninstall old firmware version

- Double-click **RsSigGenUninstaller_9.8.cmd**
This script file identifies and removes all currently installed R&S instrument software items. Confirm Message Box with "Ok".
The process will take several minutes.
- The instrument restarts automatically.

4. Install new firmware version

- Double-click the item **SoftwarePlatform_2.1.60.0.msi**
Click the button "finish" when displayed.
- Double-click the item **AFQ_2.04.244.13.exe**
- Click the button "finish" when displayed (the instrument then restarts automatically).

5. Update PCI FPGA

This firmware version comes with an updated PCI FPGA configuration which must be installed by the user.

- Go to dialog Setup / System / Update
- Click button **PCI-FPGA** and follow instructions. Make sure not to power off the instrument before the operation has completed!
- Shut down the program and **power off** the instrument.
- Switch instrument on again to make the changes active.

3 Modifications in Current Version

The new firmware offers the following functional improvements:

Version 2.04.244.13

Bugfixes only.

Version 2.04.244.07

Bugfixes only.

Version 2.04.244.06

- New option K-247 (1xEV.DO Rev.A)
- New option K-254 (802.11n)
- Note: FPGAs and output timing unchanged.

Version 2.04.244.03

- Bugfix in playback of waveforms > 2GBytes
- New commands for creating a test sine signal

```
:SOURce:TSIGnal:SINE:SAMPles <number of samples>
:SOURce:TSIGnal:SINE:PHASe <phase in degrees>
:SOURce:TSIGnal:SINE:CREate
:SOURce:TSIGnal:SINE:CREate:NAMed <name>
:SOURce:TSIGnal:SINE:FREQuency?
```
- Symbolic display of current trigger state and external reference clock source in the block diagram

Version 2.04.187

- Support for BaseBoard Version 8
- Reference clock synchronisation (BaseBoard version \geq 8 required)

Version 2.04.176

- New option K-252 (DVB-H)
- New option K-255 (EUTRA)
- New option K-6 (Pulse Creator)
- New option K-80 (BERT)

The list of currently available options now is

K-6 (Pulse Creator)
K-80 (BERT)
K-240 (GSM/EDGE)
K-242 (3GPP FDD)
K-243 (3GPP Enhanced MS/BS Tests incl. HSDPA)
K-244 (GPS)
K-245 (HSUPA)
K-246 (Cdma2000)
K-248 (802.11 (a/b/g) (WLAN))
K-249 (802.16 (WiMAX))
K-250 (TD.SCDMA)
K-251 (Enhanced TD-SCDMA)
K-252 (DVB-H)
K-255 (EUTRA)
K-256 (XM Radio)
K-261 (Multi Carrier CW)
K-262 (Awgn)

- Fast segment hopping FHOP (BaseBoard version ≥ 5 required)
- Segment mode Auto and therefore SCPI command SOURce:TRIGger:SEGMent:MODE AUTO no longer supported. Use SOURce:TRIGger:SEGMent:SOURce AUTO instead
- Commands :SOURce:OUTPut:DIGital:CLOCK and :SOURce:OUTPut:DIGital:CLOCK:SOURce obsolete.
- This FW requires an update of the PCI FPGA. Go to menu Setup/System/Update to perform the update.
- Ramp signal waveform file "sawtooth.wv" for (digital output) testing included.
- Full support of long waveforms
- Faster loading of waveforms

Version 2.02.80.02

- Support for Base Board revision 5

Version 2.02.80

- WinIQSIM2 support
- Option-B11 (4 GB waveform memory)
- Option K-256 (XM Radio)

- Remote control command [:SOURce<HW>:]STATe modified to :SOURce<HW>:STATe
- New remote control command :PATH:COUNt

Version 1.46.98

- Encrypted FPGA files
- Setup now includes sample waveform files in folder ListsWaveforms

Version 1.46.73

- First release

4 Problems Eliminated

Version 2.04.244.13

Extended blank counter length allows playing long waveforms in trigger mode Single
Removed spurious trigger glitches when using markers
Improved EMC
Extended segment count (512) for multisegment signals
DAC problems in internal amplitude adjustment eliminated

Version 2.04.244.07

FPGA not loaded after test signal output and output board selection changed

Version 2.04.244.06

PLL synchronisation on startup (Base Board version 8)
1 Bit amplitude rounding error with disabled impairments

Version 2.04.244.03

Bug in playback of waveforms > 2 GBytes

Version 2.04.187

Ready-LED not switched on after system startup
Error message "Cannot sync..." not cleared by File New

Version 2.04.176

Spurious glitches due to internal periodic switching operations
Limitation of waveform length to < 2GBytes
Swapped bitorder on digital output port 2

Version 1.46.98

DIAGnostic:EEPRom? 'AFQ_DIGITAL','BLOCK_IDENT' works now
DIAGnostic:BGInfo:CATalog? works now
:SOURce:INPut:BERT:IMPedance G50 works now
Message "unhandled Interrupt" in manual multisegment trigger mode fixed
Fallback mechanism for configuration files fixed

5 Our Hotline

If you have any questions or suggestions, please contact our hotline:

Telephone: +49 (0)180 512 42 42

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