

R&S® AFQ100A

I/Q Modulation Generator

Release Notes

Firmware Version 2.15.231.65

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The following abbreviations are used throughout this document:

R&S® AFQ100A is abbreviated as R&S AFQ100A.

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1 Information on the Current Version and History

1.1 Version 2.15.231.65

- New Standard Galileo (K266)
- New Standard LTE Release 9 (K284)
- New Standard IEEE 802.11 AC (K286)
- New Standard Glonass (K294)

1.2 Version 2.15.231.59

- Bugfix: Artifacts in error history removed

1.3 Version 2.15.231.58

- Bugfix: GPIB address not persistent

1.4 Version 2.15.231.55

- Support for new SDRAM memory modules
- Improved marker operations
- Increased upper limit for repeat count
- New Standard T-DMB/DAB (K253)
- New Standard Tetra Release 2 (K268)

1.5 Version 2.09.285.24

Bug in software memory test fixed

1.6 Version 2.09.285.21

- New standard Bluetooth+ (K260)
- New standard GSM EDGE+ (K241)
- New standard HD-Radio (K352)
- Bug in command remote control command "sour:equ:mod:rffr xxx;*opc?" fixed

1.7 Version 2.09.285.20

- New standard HSPA+ (K259)
- New Factory Preset dialog
- New Security dialog
- Visa resource strings in GPIB dialog
- New parameter clock slope for digital output port 2
- Impairments phase error now limited to +/- 14 deg
- New trigger run mode Repeat N Times
- New SCPI commands for creating test signals
- Improvements in impairments handling
- Waveform files with identical names written in quick succession were sometimes ignored. Fixed
- Bug in memory clock synchronisation to external clock with low frequency fixed

1.8 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 multi segment signals
- DAC problems in internal amplitude adjustment eliminated

1.9 Version 2.04.244.07

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

1.10 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.
- PLL synchronisation problem on startup (Base Board version 8) fixed
- 1 Bit amplitude rounding error with disabled impairments fixed

1.11 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
- Bug in playback of waveforms > 2 GBytes fixed

1.12 Version 2.04.187

- Support for BaseBoard Version 8
- Reference clock synchronisation (BaseBoard version ≥ 8 required)
- Ready-LED not switched on after system startup. Fixed
- Error message "Cannot sync..." not cleared by File New fixed

1.13 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
- Spurious glitches due to internal periodic switching operations removed
- Limitation of waveform length to < 2 GBytes removed
- Swapped bit order on digital output port 2 fixed

1.14 Version 2.02.80.02

- Support for Base Board revision 5

1.15 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

1.16 Version 1.46.98

- Encrypted FPGA files
- Setup now includes sample waveform files in folder Lists\Waveforms
- 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

1.17 Version 1.46.73

- First release

2 Modifications to the Documentation

The current documentation is up-to-date.

3 Installing the Firmware

3.1 Installing new instrument firmware

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 boot manager 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.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 **AFQ_2.15.231.65.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.

4 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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