R&S®RTM3000 Oscilloscope
Release Notes
Firmware Version 01.710

These Release Notes describe the following oscilloscope models and options:
R&S®RTM3002, Oscilloscope order no. 1335.8794K02
R&S®RTM3004, Oscilloscope order no. 1333.8794K04

Muehldorfstr. 15, 81671 Munich, Germany
Phone: +49 89 41 29 - 0
Fax: +49 89 41 29 12 - 164
E-mail: mailto:info@rohde-schwarz.com
Internet: http://www.rohde-schwarz.com

5810.0290.02 | Version 12 | R&S®RTM3000

The software makes use of several valuable open source software packages. For information, see the "Open Source Acknowledgment" provided with the product.
The following abbreviations are used throughout this document: R&S®RTM3000 is abbreviated as R&S RTM3000.

PAD-T-M: 3574.3288.02/01.710/CI/1/EN

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Contents

1 Information on the Current Version and History

1.1 New Functions

The following table lists the new functions and indicates the version in which the new function was introduced:

New Function of Firmware V01.710:

Version	Function
V01.710	None, this is a buxfix release

New Function of Firmware V01.700:

Version	Function
V01.700	Option RTM-B6: SCPI command for generator burst function.

New Function of Firmware V01.600:

Version	Function
V01.600	Configurable function 'Action on Trigger' added to the 'Trigger' menu.
V01.600	New Option RTM-K37: Spectrum Analysis and Spectrogram.
V01.600	Support of all modular probes with all measurement modes. R&S®RT-ZM15/-ZM30/-ZM60/-ZM90/-ZM130/-ZM160
V01.600	New measurement type 'Delay to Trigger'.
V01.600	Disable R&S logo in screenshot via 'Save/Load' dialog.

New Function of Firmware V01.550:

Version	Function
V01.550	None, this is a bugfix release.

New Function of Firmware V01.501:

Version	Function
V01.501	New math functions track: Period, frequency, pulse with and duty cycle.
V01.501	Option to disable date and time on screen. See 'Date & Time' setup.
V01.501	Option to close dialog when screenshot if saved via 'Save/Load' dialog.
V01.501	Second cursor source implemented.
V01.501	Individual color selection for each math waveform.
V01.501	New pattern types in option RTM-B6 pattern generator: PWM, PWM - RGB LED and PWM - Test Signals.
V01.501	Symmetry attribute in signal function 'Triangle' with option RTM-B6 function generator.

Version	Function
V01.501	Track setups in App menu.
V01.501	Track demos. See App menu tab 'Track'.

New Function of Firmware V01.400:

Version	Function
V01.400	Option RTM-K36: New Bode plot application allow the instrument to perform gain and phase testing.
V01.400	New 'Cut Waveform' feature for Option RTM-B6 Function generator allows user to select a portion of captured oscilloscope waveform in the arbitrary setup.
V01.400	New burst feature for option RTM-B6 Function generator allows user to specify a fixed number of waveform cycles.
V01.400	Oscilloscope simultaneously displays cursor results with measurement statistics.
V01.400	Enhanced FFT usability.
V01.400	Active probes with offset and ProbeMeter®: Possibility to copy probe meter value to probe offset in probe menu.
V01.400	Math waveform position and scale adjustment in math menu.
V01.400	Delete screenshot in internal memory.

New Function of Firmware V01.300:

Version	Function
V01.300	Auto Scale added to channel short menu. Auto Scale can be accessed by touching the channel icon in the signal bar at the bottom of the screen and only affects the active channel. This is in contrast to the autoset function that always affects all channels that are switched on.

New Function of Firmware V01.200:

Version	Function
V01.200	None.

New Function of Firmware V01.100:

Version	Function
V01.100	None, as this is a first release.

1.2 Modified Functions

The following table lists the modified functions and indicates the version in which the modification was carried out:

Modifications of Firmware V01.710:

Version	Function
V01.710	None.

Modifications of Firmware V01.700:

Version	Function
V01.700	Increasing of FFT waveform update rate up to factor ten with low start frequencies and activated 'Automatic RBW'.
V01.700	Removed extra treatment of ADC clipping values in waveform arithmetic average. Clipping values are now processed as normal ADC values and not emphasized in waveform.

Modifications of Firmware V01.600:

Version	Function
V01.600	Additional configurations added to measurement type 'Delay'.
V01.600	Units As, A^2 and V^2 in math menu.
V01.600	Octal numbers marked as not editable in ARINC 429 trigger configuration window.
V01.600	External Trigger Input as trigger A/B source disabled.
V01.600	Selectable trigger hysteresis for External Trigger Input disabled.
V01.600	Various improvements in GUI and languages.

Modifications of Firmware V01.550:

Version	Function
V01.550	Modifications in selfalignment routine for channel offset.

Modifications of Firmware V01.501:

Version	Function
V01.501	Low pass and high pass function in math improved.
V01.501	Item 'Set To Screen' removed from cursor menu.
V01.501	Acquisition mode High Resolution in memory mode Auto improved. Higher sampling rates available.
V01.501	For measurements SCPI commands response significantly improved.
V01.501	In trigger type 'Timeout' range type 'Stays High|Low' removed.
V01.501	For Bode Plot application, waveform generator load is set to 50 Ohm by default. CAUTION: Amplitude is doubled on DUT if there no 50 Ohm termination!
V01.501	Automatic line break in bus table if necessary.
V01.501	Grid annotation in FFT window stays on waveform color even if spectrum color is set to 'Rainbow' or 'Temp. Color'.
V01.501	Various improvements in GUI and languages.

Modifications of Firmware V01.400:

Version	Function
V01.400	Option RTM-K15: Exit button in history player added.
V01.400	Auto off time of annotation tool expanded to 30s if a color selected.
V01.400	Renaming 'σ-Deviation' to 'StdDev' in measure statistic table.
V01.400	Sample rate indicator in zoom window removed.
V01.400	FFT amplitude scale limit adapted to probe setting in vertical scale mode Veff.
V01.400	Number of decimal places for values in csv export depends on resolution now.
V01.400	Information text in zoom window if roll mode is running.
V01.400	Bus table displays data as defined in 'Display Setup'.
V01.400	Various improvements in GUI and languages.

Modifications of Firmware V01.300:

Version	Function
V01.300	First start of roll mode: Trace fills the screen from left to right.
V01.300	FFT start frequency value limited to 0Hz and stop frequency limited to sample rate/2.
V01.300	Option RTM-K18: When Spectrum Mode is switched on, the time domain window disappears.
V01.300	Information on frequency limitation is now displayed in the Meter application window.
V01.300	When a channel is off the channel information in the signal bar at the bottom of the screen is reduced to a minimum.
V01.300	Close button added to zoom mode.
V01.300	With 2.5GSa sampling rate and 1GHz signal on channel input: Sin(x)/x interpolation improved.
V01.300	When an active probe is plugged in, the probe menu opens automatically.
V01.300	With active probes (such as RT-ZD40) ProbeMeter® displays all available measurement values in a window at the bottom of the screen. This can be configured in the probe menu.
V01.300	Probe menu for high voltage probe RT-ZHD extended with all probe settings.
V01.300	Front panel firmware updated to version 01.011: RTC battery management improved.
V01.300	Various improvements in GUI and user languages.

Modifications of Firmware V01.200:

Version	Function
V01.200	Various improvements in GUI and user languages.

Modifications of Firmware V01.100:

Version	Function
V01.100	None, as this is a first release.

1.3 Improvements

The following tables list the improvements and indicate since which version the issue could be observed:

Improvements of Firmware V01.710:

Version	Improvement
V01.710	Solved: Wrong measurement results with active gate.
V01.710	Solved: Wrong measurement results for Vtop, Vbase, Vamp and Overshoot with active high-resolution acquisition mode.

Improvements of Firmware V01.700:

Version	Improvement
V01.700	Solved: Option RTM-K18/K37: Headline spectrum and spectrogram diagram could overlap with touch control.
V01.700	Solved: Connection lost during web server 'Livescreen' or 'Remote Front Panel' with latest Chrome or Edge browser.
V01.700	Solved: Rarely spikes in waveform after horizontal scaling in stop mode with activated roll mode.
V01.700	Solved: History export to USB did not work.
V01.700	Solved: Wrong measurement values after vertical scaling in stop mode with following zoom activation.
V01.700	Solved: Possible wrong vertical waveform scale in QuickMeas if the source of QuickMeas changed during QuickMeas.
V01.700	Solved: Statistic measurement values not actualized after closing zoom window in stop mode.
V01.700	Solved: Option RTM-K18/K37: Peak list could not be saved.
V01.700	Solved: Firmware blocker after interrupted SCPI waveform download.
V01.700	Solved: Option RTM-K36: No gain and phase waveform data if start and stop frequency close to each other.

Improvements of Firmware V01.600:

Version	Improvement
V01.600	Solved: Trigger level knob has no function after using zoom or QuickMeas in roll mode and turn back to normal time base mode.
V01.600	Solved: Wrong waveform data in zoom window when zoom is activated in roll initial mode and then the acquisition is stopped before the waveform window is complete.
V01.600	Solved: Sweep type 'Triangle' does not work correctly with RTM-B6.
V01.600	Solved: Wrong clipping math waveforms, depending on history of math and source setup.
V01.600	Solved: Sporadic incorrect data in math waveform.
V01.600	Solved: Wrong value in numeric input keypad after clear and new input that starts with '-'.
V01.600	Solved: Display of decode format bus 1 in ARINC 429 configuration window even when bus 2 to 4 is selected.
V01.600	Solved: No function of 'Find Threshold' button in ARINC 429 configuration window.
V01.600	Solved: A few instruments may irregularly show spikes in waveforms, depending on selected time base.
V01.600	Solved: In option RTM-K31 Switching Loss position cursors 3, 4 and 5 did not change measurement values.
V01.600	Solved: In rare cases, trigger jitter with positive trigger time and trigger point not in acquisition.
V01.600	Solved: Amplitude measurements with amplitude less than 7mV did not work.
V01.600	Solved: Wrong function of 'Wait on Trigger' Bit in status operation register after Break followed by Single.

Improvements of Firmware V01.550:

Version	Improvement
V01.550	Solved: Overshoot calculated 0 % with more than one signal period.
V01.550	Solved: Sometimes Autoset sets wrong vertical scaling values with input frequencies lower than 500 Hz. It depends on control history.
V01.550	Solved: Wrong horizontal position zoom if zoom tool used when menu is open.

Improvements of Firmware V01.501:

Version	Improvement
V01.501	Solved: Universal rotary knob did not work in Horizontal menu on Zoom Scale.
V01.501	Solved: Zero Adjust value in channel menu was lost with preset.
V01.501	Solved: Wrong waveform offset in XY diagram with measurement and statistic table.

Improvements of Firmware V01.400:

Version	Improvement
V01.400	Solved: Noise on signal of analog generator remains after function change.
V01.400	Solved: Firmware blocker after autoset in roll mode.
V01.400	Solved: Wrong waveform data display after stop in roll mode and QuickMeas.
V01.400	Solved: Setting ZA15 option for active probe RT-ZDxx did not work.
V01.400	Solved: Math function with inactive channels did not work.
V01.400	Solved: Wrong data display in XY mode and roll mode with high resolution active.
V01.400	Solved: Firmware blocker when waveform saving with 'Vis. Channels' or when saving bus table.
V01.400	Solved: Parallel bus displays more than one label in a large bus honeycomb.
V01.400	Solved: No possible waveform scaling after single in roll mode.
V01.400	Solved: Measurement delay did not work with reference as source.

Improvements of Firmware V01.300:

Version	Improvement
V01.300	Solved: MTP function with Windows 10: Windows prevents copying files to the instrument with file extensions unknown to Windows.
V01.300	Sometimes no trigger when roll mode switched off.

Improvements of Firmware V01.200:

Version	Improvement
V01.200	Solved: For active high-voltage differential probes RT-ZHD as well as power rail probe RT-ZPR the zero offset of the probes was not corrected automatically by the instrument.
V01.200	Solved: Probe attenuation was lost after preset with active probes.
V01.200	Solved: In XY mode channel unit A was not considered for grid annotation in diagrams directly.

Improvements of Firmware V01.100:

Version	Improvement
V01.100	None, as this is a first release.

1.4 Known Issues

The following tables list the known issues and indicate since which version the issue could be observed:

Known issues of Firmware V01.710

since	Issue
V01.100	Unit in search hysteresis level not changed with channel source unit.
V01.400	Option RTM-K36: Wrong horizontal marker position via SCPI commands after horizontal shift of gain and phase waveform.

2 Modifications to the Documentation

The current documentation is up-to-date.

3 Firmware Update

3.1 Validity Information

Device	Order Number
RTM3002.FWU	Firmware image for R&S®RTM3002
RTM3004.FWU	Firmware image for R&S®RTM3004

3.2 Updating the Firmware

3.2.1 Possibility 1: Update using a USB Drive

Please transfer the update file to a USB drive and follow these steps to update the instrument firmware via USB drive:

Follow these steps to update the instrument firmware:

1. Insert the USB drive into the USB port on the front of the oscilloscope.
2. Touch on the R&S logo on the screen to open the main menu.
3. Scroll down the main menu until the “Setup” icon is visible.
4. Touch on the “Setup” icon to open the setup menu.
5. Select “Firmware Update”; the instrument will display the current version (“Installed”) and the version on the USB drive (“New”) for both the device firmware and the front controller firmware.
6. Select “Execute” to start the update process for the device firmware.
7. Wait until the update process has completed. This may take up to one minute. The instrument automatically reboots once the update process is finished.
8. If there is a newer version of the front controller firmware too, select “Execute” once again to update this firmware as well. The front controller firmware update only takes seconds and does not require a reboot of the instrument after it has completed.

Interruption of the power during the update process can make the instrument unusable!

3.2.2 Possibility 2: Update using a PC with USB cable connection to the instrument

Follow these steps to update the instrument firmware via USB cable:

1. Setup the R&S®RTM3000 Interface settings to USB MTP. 'SETUP\INTERFACE\USB\PARAMETER' or touch on interface symbol below the date and time in the upper right corner.
2. Connect your PC to the R&S®RTM3000 with a USB cable. The PC's USB host port (type A) connects to the USB device port (type B) on the rear of the oscilloscope.
3. The PC will show a popup message asking if you would like to connect to the oscilloscope.
4. Click on "Open device to view files".
5. Then the primary directories (internal storage, live data and upload) appear.
6. Drag & drop the new version of the firmware to the upload directory.
7. Select 'EXECUTE' on the R&S®RTM3000 to start the update process.
8. Wait until the update process has completed. This may take up to one minute. The instrument automatically reboots once the update process is finished.
9. If there is a newer version of the front controller firmware too, select "Execute" once again to update this firmware as well. The front controller firmware update only takes seconds and does not require a reboot of the instrument after it has completed.

Interruption of the power during the update process can make the instrument unusable!

4 Customer Support

Technical support – where and when you need it

For quick, expert help with any Rohde & Schwarz product, contact our customer support center. A team of highly qualified engineers provides support and works with you to find a solution to your query on any aspect of the operation, programming or applications of Rohde & Schwarz products.

Contact information

Contact our customer support center at www.rohde-schwarz.com/support
or follow this QR code:

Figure 4-1: QR code to the Rohde & Schwarz support page