Release Notes
Revision: 5

R&S®Scope Rider RTH Digital Oscilloscope

Firmware Release V1.30.3.5

These Release Notes describe the following models and options of the R&S®Digital Oscilloscope:

- R&S®RTH1004 Digital Oscilloscope, order no. 1317.5000K04
- R&S®RTH1002 Digital Oscilloscope, order no. 1317.5000K02

New Features of V1.30.3.5:

- Software option R&S®RTH-K3 CAN/LIN Trigger & Decode
- Roll mode: displaying untriggered signals in time bases between 50 ms and 500 s
- Option R&S®RTH-K200: list of certified countries extended by India
- Improved usability of the web interface: instrument overview, file browser, instrument remote control, SCPI device control (some features only available with option R&S®RTH-K201)

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1 Revision History

Date	Rel. Note rev.	Changes
29.06.2016	5.0	Firmware Release Version V1.30.3.5 for RTH1002 and RTH1004
03.05.2016	4.0	Firmware Release Version V1.20.3.4 for RTH1002 and RTH1004
17.02.2016	3.0	Firmware Release Version V1.10.2.10 for RTH1002 and RTH1004
07.01.2016	2.0	Firmware Release Version V1.0.1.19 for RTH1002 and RTH1004
12.11.2015	1.0	First version RTH1004 firmware V0.90.8.30

2 Firmware Update

The firmware update file for the R&S RTH is a single rsi-file.

2.1 Preparing the Installation

Please transfer the following file to a USB memory stick:

RTH_Update_1.30.3.5.rsi   Firmware image for R&S®RTH1004 and R&S®RTH1002

2.2 Updating the Firmware on the Instrument

Follow these steps to update the instrument firmware:

1. Make sure that the instrument has sufficient battery power or connect the instrument to the mains supply.

2. Insert the memory stick into the USB port of the oscilloscope

3. Press the ⚙ key or tap on the "Menu" button and select "Setup"

4. Scroll down to "Firmware Update" > "Open File"

5. In the path menu navigate to the location of the RTH_Update_xxx.rsi file on your memory stick and press "Select"

6. Confirm with "Yes" the start of the update process.

7. Wait until the update process is finished. This may take up to 15 minutes. The instrument automatically reboots itself once the update process is finished.

IMPORTANT INFORMATION for update from version <u>V0.90.8.30 to</u> <u>any other version</u>: For update from V0.90.8.30 to this version the instrument requires a second and manual boot once the update is finished. The instrument cannot complete the first automatic boot at the end of the update and will freeze displaying the bootscreen. Please remove the battery, insert the battery again and then switch on the instrument. After this action the instrument will boot correctly.

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

3 New Functions

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

Version	Function
V1.30.3.5	Option R&S®RTH-K3 CAN/LIN Trigger & Decode
V1.30.3.5	Roll mode: displaying untriggered signals in time bases between 50 ms and 500 s
V1.30.3.5	Option R&S®RTH-K200: list of certified countries extended by India
V1.30.3.5	Improved usability of the web interface: file browser, instrument remote control, SCPI device control (some features only available with option R&S®RTH-K201)
V1.20.3.4	Waveform export as csv and compressed csv
V1.20.3.4	Onetouch documentation functionality
V1.20.3.4	Option R&S®RTH-K200: list of certified countries extended by Armenia, Australia, Belarus, China, Japan, Kazakhstan, Kyrgyz Republic, New Zealand and Singapore
1.10.2.10	Option R&S®RTH-K15, History and Segmented Memory
1.10.2.10	Selfalignment for DMM part of RTH1002
1.10.2.10	Option R&S®RTH-K200: Russia added in the list of certified countries
1.10.2.10	Switch off/on of touchscreen by long press of "SHIFT" key
1.10.2.10	Hold function for meter on RTH1004 and DMM on RTH1002. Activation with "RUN/STOP" key
1.0.1.19	Support of 2-channel oscilloscope R&S®RTH1002 with hardware digital multimeter
1.0.1.19	Option R&S®RTH-B1, Mixed-Signal Option
1.0.1.19	Option R&S®RTH-K1, I2C/SPI Serial Triggering and Decoding
1.0.1.19	Option R&S®RTH-K2, UART/RS-232/RS-422/RS-485 Serial Triggering and Decoding
1.0.1.19	Option R&S®RTH-K19, Advanced Triggering
1.0.1.19	Options R&S®RTH-K200 and R&S®RTH-K200US, Wireless LAN
1.0.1.19	Option R&S®RTH-K201 Web Interface Remote Control
0.90.8.30	This is a first release.

4 Modified Functions

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

Version	Function
1.30.3.5	Configuration of cursors and measurements does not interrupt and restart acquisition anymore. Configuration can be done while acquisition continues running.
1.30.3.5	Display menu: new configuration window for intensity. Can be used to configure the intensity of the displayed waveforms (scope mode only).
1.30.3.5	STOP mode: increased reactivity when changing parameters such as vertical or horizontal settings or zoom.
1.20.3.4	Option B1, protocol trigger: setting of the thresholds in the protocol menu is now independent of the trigger level that is currently applied.
1.20.3.4	RTH1002: **PT1000** platinum temperature sensor was removed from the menu, as this accessory is not supported by the instrument. Only PT100 and PT500 are supported.
1.10.2.10	Selfalignment extended by DMM section for RTH1002: For RTH1002, scope mode: selection between scope vertical alignment only and all scope and DMM alignment steps ("full"). For RTH1002, DMM mode: selection between DMM alignment only and all scope and DMM alignment steps ("full").
1.10.2.10	To restore the factory settings, hold down the PRESET key during the boot process. Improved: the PRESET key can be released once the pop-up window appears where the restore has to be confirmed or cancelled. It is not necessary anymore to keep the PRESET button pressed all the time.
1.0.1.19	Demo K0 enables all K-options and B1 option.
1.0.1.19	Selftest reworked: all visible test steps are able to run; test steps that are not implemented or require user interaction were removed from the list of selectable test steps.
0.90.8.30	None, as this is a first release

5   Eliminated Issues

The following table lists the eliminated issues and indicates the version in which the issue was eliminated:

Version	Function
1.30.3.5	Solved: Option K1, K2 threshold setting: It is necessary to first select the channel and only after that set the threshold. If the threshold is entered before selecting a new channel, the threshold value will not be applied.
1.30.3.5	Solved: For time bases between 500 s/DIV … 50 ms/DIV the instrument seems very slow as it only starts to display the trace after the acquisition has been fully completed and processed by firmware.
1.20.3.4	Options K1, K2 and K19: several problems solved with triggering, also in combinations of K1 or K2 with K19
1.20.3.4	Solved: Option B1: Measurements on digital channels are not supported.
1.20.3.4	Solved: K15, History player cannot be stopped in mode automatic with 5000 segments
1.20.3.4	Solved: Option B1: In stop mode artefacts may be visible on digital channels.
1.20.3.4	Some issues with the autoset functionality were solved.
1.20.3.4	Solved: RTH1002, indication of statistics in frequency measurement (min, max, average over all frequencies) may not be correct in some cases
1.20.3.4	Solved: RTH1002/RTH1004 full selfalignment. In rare cases the AB alignment step fails. In this case repeat the full alignment. Typically the second try will pass.
1.20.3.4	Solved: Very rarely, if instrument is switched on and idle for a certain time: instrument reacts very slowly or not at all to keypad and touchscreen operation and needs to be rebooted.
1.20.3.4	Solved: Using Cursor with Math as input channel in combination with zoom is not supported. Combination can be selected, but leads to incorrect behavior of the instrument.
1.10.2.10	Option B1, assignment of channel indicators corrected; user can now move digital channels on the screen
1.10.2.10	Support added on RTH1002: temperature measurement using PT500 platinum sensor
1.10.2.10	Improvement in trigger hysteresis, especially for 10:1 probe settings.
1.10.2.10	Solved: Option K2, UART: the value of the parity bit is not correct
1.10.2.10	Solved: Option K1, I2C bus triggers: trigger types address, data and address and data do not trigger reliably
1.0.1.19	Solved: Very sporadic incorrect trigger on the analog channels
1.0.1.19	Solved: The battery controller consumes very much energy from the battery when the RTH is switched off and disconnected from the mains. Therefore the battery runs empty very quickly.
1.0.1.19	Solved: Screenshot button: if pressed a second time before the pop-up window disappears the instrument will freeze.
1.0.1.19	Solved: Logger does not provide a backup of the log results yet if the RTH is switched off during logging.

6 Known Issues

The following table provides a more detailed overview about known issues. It also indicates the version in which the issue appeared for the first time.

Version	Function
1.30.3.5	None.

7 Documentation

The instrument comes with a printed "Getting Started" Manual that explains the first steps with the instrument and its basic operation.

The operating manual is provided as pdf-file for download from the Rohde & Schwarz webpages.

The datasheet is available as pdf-file for download from the Rohde & Schwarz webpages.

8 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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