R&S® MXO4 Oscilloscopes Release Notes

Firmware Version 2.2.2.1

These Release Notes are for following models of R&S® MXO4:

R&S® MXO44, order no. 1335.5050K04

1335.5272.00 | Version 11.01 | R&S® MXO4 |

The software makes use of several valuable open source software packages. For information, see the "Open Source Acknowledgment" provided with the product.

PAD-T-M: 3574.3288.02/04.00/CI/1/EN

ROHDE&SCHWARZ

Make ideas real

Contents

1 Information on the current version and history

1.1 Version

New functionality

Version	Functions
2.2.2.1	QUAD-SPI decoding now included in MXO4-K510 option
2.2.2.1	MXO4-K530 ARINC (aerospace protocols) is available as an option
2.2.2.1	SCPI commands for screen annotations
2.2.2.1	Support of R&S®RT-Z2T probe interface adapter to connect TekProbe-BNC level II probes
2.2.2.1	New function Zone trigger
2.1.3.2	Added exFAT support
2.1.3.2	Added RT-ZM modular probe support
2.1.3.2	Extended de-skew on analog channels up to 20ms
2.1.3.2	Math formula editor
2.1.3.2	MXO4-K550 SPMI is available as an option
2.1.3.2	MXO4-K560 10BASE-T1S is available as an option
2.0.3.0	New Feature DVM (Digital Volt Meter)
2.0.3.0	New Option MXO4-K31 Power Analysis
1.4.2.2	Added spectrum logarithmic x-axis scaling
1.4.2.2	LIN decode & triggering now included in MXO4-K520 option
1.4.2.2	Added CAN symbolic decode
1.4.2.2	Added CAN-XL Fast Mode support
1.4.2.2	Device Web file manager - multiple file selection
1.4.2.2	WebDAV support added. This allows scope to be mounted as a network drive for file sharing
1.3.2.0	Added roll mode support
1.3.2.0	Added track functionality for waveform measurements

Version	Functions
1.3.2.0	CAN-XL decode & triggering now included in MXO4-K520 option
1.3.2.0	Added file browser for file management operations
1.3.2.0	Added service reporter for bug reports
1.3.2.0	Added calibration support for frequency response analysis (MXO4-K36)
1.3.2.0	Support save operation of gain and phase data for frequency response analysis (MXO4-K36)
1.3.2.0	Added screenshot download in web-browser
1.2.3.0	Added measure all events in a single acquisition
1.2.3.0	MXO4-K520 CAN/CAN-FD is available as an option
1.2.3.0	Undo / redo can be used for user operations
1.2.3.0	Added secure erase functionality to erase internal user storage
1.2.3.0	Easier selection of close-proximity elements in a diagram
1.2.3.0	User functions force trigger, save and recall waveform can be assigned to the front panel user key
1.2.3.0	Increased the number of decoded frames
1.1.2.0	Added on-screen annotations
1.1.2.0	Added Autoset and Find Trigger Level
1.1.2.0	Added support for reference waveforms
1.1.2.0	Added support for AB-R Trigger
1.1.2.0	Added support for Spectrum analysis on math and reference waveforms

Modified functionality

Version	Functions
2.2.2.1	On MXO 4, the number of spectrum increased from 1 to 4
2.2.2.1	Switch coarse / fine by pressing multiuse wheel is a value in focus
2.2.2.1	MXO5-K31 power analysis: support of standard IEC61000-3-2 revision 2019
2.2.2.1	MXO5-K31 power analysis: magnitude in unit % and A in result table
2.2.2.1	New dialog for signal color setup
2.2.2.1	User notified when acquisition memory depth exceeds limit for certain math use cases
2.1.3.2	Added signal flow diagram in vertical dialog
1.1.2.0	A connected flash drive is used as default location for "Save" operations

Improvements

Version	Improvements
2.2.2.1	Solved: Device did not boot proper if K550 installed only
2.0.3.0	Ability to resize dialog size with pinch gesture.
1.4.2.2	Hardware acceleration of math waveform functions - integral and rescale
1.3.2.0	Increased number of reference level for automatic measurements
1.3.2.0	Hardware acceleration of math waveform calculation. Supported math operations: add, subtract, multiply, divide, absolute value, square, square root, log10, loge, log2, reciprocal, invert.
1.3.2.0	Extended frequency range for frequency response analysis (MXO4-K36) to 10 mHz
1.3.2.0	Progress bar for save operations
1.3.2.0	Improved cursor handling with multi-use wheel
1.3.2.0	Performance improvements for frequency response analysis (MXO4-K36)
1.3.2.0	Performance improvement for serial bus decode & triggering
1.3.2.0	Improved channel 4 LED coloring
1.2.3.2	Improved USB automount
1.2.3.0	Improved touch sensitivity
1.2.3.0	Multiple performance and stability improvements
1.2.3.0	I2C decode table includes data details
1.2.3.0	Easier resizing of result tables on the bottom of the screen

Known issues

Version	Known Issues
2.2.2.1	Toolbar functions for mask test without function
2.2.2.1	In some instances, when using deep memory with math, instrument may require disabling math before saving waveform data

2 Modifications to the documentation

The current documentation is up-to-date.

Date	Release Notes Revision	Changes
01.07.2024	2.2.2.1	Added functionality and stability improvements
04.04.2024	2.1.3.2	Added functionality and stability improvements
10.10.2023	2.0.3.0	Added functionality and stability improvements
27.07.2023	1.4.2.2	Added functionality and stability improvements
04.04.2023	1.3.2.0	Added functionality and stability improvements
22.12.2022	1.2.3.0	Added functionality and stability improvements
08.09.2022	1.1.2.0	Added functionality and stability improvements
22.06.2022	1.0.1.14	Initial version for MXO4

3 Firmware update

Firmware updates for the R&S MXO4 are available as a single download from the Rohde&Schwarz web page http://www.rohde-schwarz.com.

The installation file for R&S MXO4 is named "**Setup_MXO4_V2.2.2.1.exe**".

After the update to this firmware version, the instrument will start with preset instrument settings. To check the installed firmware version, select "System" from the "Settings" menu and switch to the "About" tab or tab on the R&S icon on the upper right corner of the instrument screen.

3.1 Preparing the Update

There are several ways to update the device after downloading the firmware installation file.

Using a flash drive:

1. Copy the file to a directory of the flash drive and insert the flash drive into one of the USB sockets of the instrument.

3.2 Performing the Firmware Update on the Instrument

The firmware update process is performed with the following steps:

1. Switch the instrument on and wait until the Oscilloscope has resumed operation.

2. Ensure that the acquisition mode is not running. If the RUN CONT or the RUN Nx SINGLE key is shining green, press this key to stop the acquisition.

3. Select "Maintenance" from the "Settings" menu at the bottom right of the screen.

4. Select the "FW Update" tab.

5. The selected dialog box contains a part with the title "Select setup for firmware update". Press the Button "Install from file". A file selection dialog appears.

6. Change the path to the drive and directory which you prepared in the step 3.1 (flash drive directory) and close the dialog with the "Select" button.

7. The installation starts and an indicator appears. By default, all applications should be installed.

8. The installation continues and the firmware is stopped. After a few minutes the system restarts automatically.
    Depending on the previously installed firmware version, a reconfiguration of the hardware may be required during the first start of the firmware. In this case, a message box is displayed and the update of the FPGA starts automatically. **Do not switch off the instrument during the update!** After the update of the FPGA the instrument restarts automatically.

If a special FPGA update is required the instrument must execute a cold boot. In such a case, a message appears on the screen asking to switch off the instrument. Press the "Ok" button and wait until the instrument is completely switched off. As a final step switch on the instrument. The instrument resumes operation.

9. After the firmware update a "Self alignment" is recommended. Select "Maintenance -> Alignment" from the "Settings" menu. Select "Start alignment" to start the self alignment procedure.
A progress bar appears to indicate the running alignment procedure. This will take several minutes.

Now the instrument is ready for operation.

3.3 Performing the Firmware Update without a running oscilloscope application

A firmware update has to be executed from a remote PC.

1. Download the firmware installation file to a Windows PC in the same network as the oscilloscope.

2. Start the update by executing the firmware installation file.

3. Select "Remote Installation" and press "Next".

4. Select the packages to install (default is all) and press "Next".

5. The installer tries to find all oscilloscopes in your network. Once the device is found, select the checkbox next to the device name and press "Install".
Note: If the device is not found, check the network connection of the oscilloscope or press the "Options…" button to define additional information, i.e. the IP address.
Note: Multiple devices can be selected at once to execute the installation on all devices at the same time.

6. Wait until the installation is finished. The oscilloscope will reboot at the end of the installation.

7. Select "Finish" to close the installer.

3.4 Firmware downgrade

A firmware downgrade is handled like a firmware update.

3.5 Installing Firmware Options

The firmware update includes all currently available firmware options. No additional installation is required. A firmware update has no side effects to firmware options already installed.

The instructions in this chapter are only needed, if a firmware option is purchased and needs to be enabled on the instrument.

Enabling Options by Entering Option Key Codes

To activate firmware options, enter a license key for validation. The license key is in the device certificate or delivered as a part of the software package. The process is performed in the following steps:

1. Press the SETUP key. A dialog box appears. Select the "SW options" tab. The selected tab contains a box with the title "Install a new option". There are two ways to install a firmware option:

    a) If a file including the option key is provided, select "Open" in the box with the title "Install from file". Navigate to the directory containing the option key file. Choose the file and click "Select".
    b) If an option key number is provided double click on the data entry filed with the title "Enter new option key". A key pad appears. Enter the option key number and press the "Enter" button.

2. After successful validation the message "option key valid" is displayed. If the validation failed, the firmware option is not installed.

3. If more than one firmware option shall be installed, step 1 and 2 needs to be repeated several times.

Reboot the device or restart the firmware.

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:

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