R&S®ESRP
EMI Test Receiver
Release Notes

Firmware Version V3.66

These Release Notes are for following models of the R&S® EMI Test Receiver:
R&S® ESRP3,   order no. 1316.4500K03
R&S® ESRP7,   order no. 1316.4500K07

We highly recommend to upgrade instruments with firmware 3.36 to 3.36 SP1 or higher.

1176.7755.02 | Version 24 | R&S®ESRP |

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®ESRP is abbreviated as R&SESRP.

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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 V3.66:

Version	Function
V3.66	Receiver mode now supports trace averaging.

New function of firmware V3.48Sp1:

Version	Function
V3.48 SP1	ESR-B10: Support for generators R&S SMB100B and R&S SMBV100B models.

New function of firmware V3.48:

Version	Function
V3.48	New limit lines and transducers have been added for addressing the replacement of EN 55022 and EN 55013 by EN 55032 as well as for testing of high voltage power supply systems in vehicles in accordance with latest EN 55025

New function of firmware V3.46:

Version	Function
V3.46	Support of ASCII export of a receiver scan spectrogram.
V3.46	Support of external tracking generators R&S SMAB-B103, R&S SMAB-B106, R&S SMAB-B112 and R&S SMAB-B120.
V3.46	Support of manual user port handling. New softkey "User Port ->" added to the "Input/Output" hardkey menu that opens a menu to configure the user port manually.

New function of firmware V3.36:

Version	Function
V3.36	Support for 7.5 kHz channel filter.
V3.36	Added softkey "Status Bar State" in the menu "Setup -> Display Setup".
V3.36	Firmware supports Windows 10 operating system.
V3.36	Firmware provides open source acknowledgement on instrument.
V3.36	Added "Enhanced Tree Walking" as a new SCPI parser mode.

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 3.48SP3:

Version	Function
V3.48 SP3	Zero span: The x-axis scaling algorithm optimized for bandwidths greater than or equal to 1 MHz.
V3.48 SP3	The auto sweep time calculation in spectrum analyzer with active filter type CISPR was optimized.
V3.48 SP3	In specific cases after a recall of save settings signal path settings for RF frontend 1329.0114.02 were not initialized. This problem was solved.

Modifications of firmware 3.48SP2:

Version	Function
V3.48 SP2	Zero span: the same x-axis scaling algorithm is now used for traces and diagram graticule.

Modifications of firmware V3.46SP1:

Version	Function
V3.46 SP1	Number of sweep segments for spectrum analyzer sweep mode "Sweep" increased.

Modifications of firmware V3.46:

Version	Function
V3.46	Peak list export files were always saved to "C:\" after a preset. Now, the user defined path remains unchanged.
V3.46	In the time domain scan, the maximum resolution bandwidth for start frequencies of 100 kHz was limited to 5 kHz (3 dB) and 9 kHz (6 dB). This upper limit has been increased to 10 kHz.
V3.46	The maximum EMI bandwidth was limited to 100 Hz for a receiver frequency of 100 Hz in both the receiver bargraph and the receiver scan. This limit has been increased to 200 Hz.
V3.46	The switch off algorithm of the internal tracking generator was changed in spectrum analyzer mode.
V3.46	After restoring a saveset with active receiver mode, all saved traces with mode "View" were set to "Clear Write". Now the saved trace mode is restored.
V3.46	Turning on the squelch in a demodulation measurement automatically activates the video trigger. In earlier versions, the video trigger remained active after the squelch function was turned off. Now, the video trigger is also switched off, when the squelch function is deactivated.
V3.46	Preselector switching algorithm optimized for FFT sweep in spectrum analyzer mode.

Modifications of firmware V3.36SP1:

Version	Function
V3.36 SP1	Self-alignment algorithm of one specific 3rd IF signal path (102.5 MHz) adapted to the other signal paths.

Modifications of firmware V3.36:

Version	Function
V3.36	The visibility state of status bar, tool bar and date & time field are now saved before shutdown and in save/recall datasets.
V3.36	Changing the reference level offset will preserve the vertical position of limit lines with relative y-values on the screen.
V3.36	Extended number of significant digits from 12 to 14 for remote command CALCulate:MARKer:COUNt:FREQuency? to be able to read out 1 mHz frequency resolution.

1.3 Improvements

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

Improvements of firmware V3.66:

since	Function
V1.00	The SCPI command DISP:PSAV:HOLD may cause an instrument shutdown or blue screen after multiple execution. This issue is solved

Improvements of firmware V3.48SP1:

since	Function
V3.48	The name of an active transducer set was not shown in the ASCII trace export files in receiver mode. This issue is solved.
V3.36	Limit lines with unit dBx/m were not recalled with active bargraph unit dBx/MHz in receiver mode. This issue is solved.

Improvements of firmware V3.48:

since	Function
V3.46	The softkey to perform an ASCII export of all traces in spectrum analyzer mode, showed the wrong caption "ASCII Trace Export Trace x". This issue is solved and the softkey shows now "ASCII Trace Export All Traces".

Improvements of firmware V3.46:

since	Function
V3.36 SP2	The remote command 'SENSe:DEMod:SQUelch:LEVel' did not work in receiver mode. This issue is solved.
V3.36	The remote query command "INPut:UPORt:VALue?" did not work in receiver mode. This issue is solved.
V3.36 SP2	No header was shown in the report in case of RTF format, if either the result list in the spectrum analyzer mode or the scan table in the receiver mode was selected. This issue is solved.
V2.28	Spectrum Analyzer: An active transducer set was not taken into account during the auto leveling. As a consequence the obtained sensitivity of the measurement was lower than expected. This issue is solved.
V2.28	If the user port was set to input and the state of the control lines were read, the previously adjusted output bit pattern was not restored after switching back the user port to output state. This issue is solved.

Improvements of firmware V3.36SP2:

since	Function
V3.36	The application locked up after pressing the "Marker To" hardkey if the on screen keyboard was previously active. This issue is solved.

Improvements of firmware V3.36:

since	Function
V2.27	Rounding algorithm for remote queries revised (e.g. DISP:WIND:TRAC:Y:RLEV?).
V2.27	The trace average result was restarted on parameter change although trace mode hold/cont was active. This issue is solved.
V2.27	Extremely slow SEM measurement with span = 10 MHz, RBW = VBW = 10 Hz. This issue is solved.

1.4 Known issues

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

since	Function
V1.78	The analyzer supports the LXI standard. As a consequence the DHCP IP address assignment is performed twice: once while Windows XP is booting, and again when the firmware is started. This be omitted by deleting the following registry key: `HKEY_LOCAL_MACHINE\SOFTWARE\Rohde&Schwarz\SoftwarePlatform\ServiceConfiguration\LanServices:` `"DoRenewDHCP"="1"`

2 Modifications to the documentation

The current documentation is up-to-date.

3 Firmware update

3.1 Update information

The firmware update file for the R&S ESRP is one file including the main firmware version number e.g. ESRPSetup_V2.16_SP1.exe. It will be referred as ESRPSetup.exe later in the text. The file can be found on Rohde & Schwarz web page.

3.2 Validity information

If necessary list here the material and model numbers the firmware is referring to

Device	Order Number
R&S® ESRP3	1316.4500K03
R&S® ESRP7	1316.4500K07

3.3 Updating the firmware

There are three ways to make the setup ESRPSetup.exe visible to the device:

Using a USB storage device:

1. Copy the file to a directory of the memory stick and insert the memory stick into one of the USB sockets of the R&S ESRP.

Using the remote desktop:

1. Connect the R&S ESRP to your LAN.

2. Start the remote desktop on your PC (C:\winnt\system32\mstsc.exe).

3. Enter the TCP/IP address of the instrument, you want to update. Ensure that the "local resources" > "drives" option is selected and press the "Connect" button. (To get the TCP/IP address of the R&S ESRP press the hard key "Setup" " and then the soft keys "General Setup", "Network Address", "IP Address". The IP address consists of 4 numbers between 0 and 255)

4. Login to the instrument (user name: "instrument" and default password "894129").

5. Copy the ESRPSetup.exe from your PC to a new folder e.g. C:\FWUpdate.

6. You can now access this directory with the ESRPSetup.exe from the R&S ESRP firmware.

Using a network drive:

1. Connect your R&S ESRP to your LAN, and establish a connection to one of your servers. (Please ask the local IT administrator for support)

2. Copy the ESRPSetup.exe from your PC to a directory on this server

3. You can now access the directory with the ESRPSetup.exe from the R&S ESRP firmware.

Performing the update on the instrument:

The firmware update process is performed by the following steps:

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

2. Press the "SETUP" hard key, go to the side menu using the "More" soft key, and press the soft keys "Firmware Update".

   A file browser is displayed to select the proper ESRPSetup.exe setup file. Change the path to the drive and directory which you prepared in the step before (USB stick directory, remote PC directory or directory on a server) and close the dialog with the "Select" button.

3. Press the "Next" button to come to the selection of the firmware packages. By default all application should be installed. Ensure that the applications needed are selected.

4. Press the "Install" button.
   The firmware will be stopped and the installation starts. After a few minutes the system restarts automatically. After the restart the firmware installation is complete. After the firmware update the "UNCAL" flag appears

5. A self alignment is necessary. Press the "SETUP" hard key, then "Alignment" and the "Self Alignment" soft key to start the alignment procedure.

6. Depending on the previous firmware version, a reconfiguration of the hardware may be required during the first start of the firmware. In this case the following message box is displayed:

   `"FPGA Update. A system shutdown is necessary"`

   Accept this and the device will be shut down. It is then necessary to start the device on the front panel. An automatic restart is not possible because the FPGA needs a complete boot cycle from power off.

3.4 Performing the Firmware Update from a Windows PC

If the firmware version 1.78 or newer is installed on the instrument the new firmware can also be uploaded without using a memory stick or a network drive. Just a LAN connection from the instrument and a Windows PC is necessary.

1. Run ESRPSetup.exe on your PC.

2. Select Remote Installation

3. Select "Next".
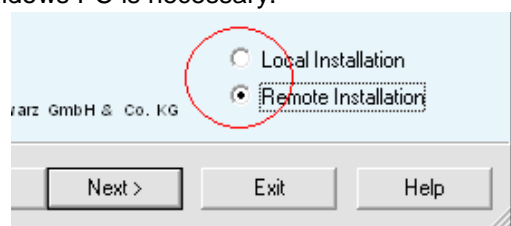
4. Select the packages to install.

5. Select "Next".

    Your LAN subnet is scanned to find all
    available instruments. If the required
    instrument is not found, check your
    firewall settings. After adding the
    ESRPSetup.exe to the firewall rules,
    restart the scan by selecting "Rescan".

6. Select the instruments you want to
    update.

    You can select up to 5 instruments to update in parallel.

7. If necessary, select "Help" to display additional help.

8. If necessary, select "Options" for further options.

9. Select "Install" to start the installation.

10. Confirm the message to reboot the instrument to activate the firmware update.

    The instrument restarts automatically.
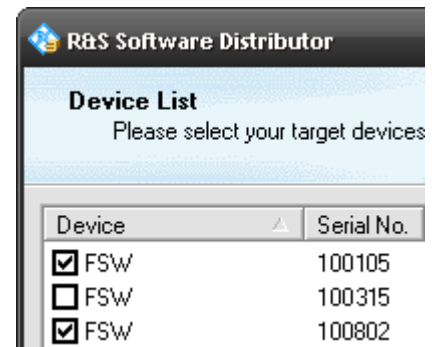
3.5 Operation with and without Administrator Rights

The receiver may be operated with or without administrator rights. Some administrative
tasks (e.g. a firmware update or network configuration) do require administrator rights.
In the default configuration, auto login is enabled, and the "Instrument" account with
administrator rights is active. This means that no password is required, and the full
functionality of the receiver is available. An additional user account (user name
"NormalUser" with default password "894129") is pre-defined. Use standard Windows
functionality if you wish to deactivate the auto login mechanism and activate the
NormalUser account. Please refer also to the Quick Start Manual of the R&S ESRP.

3.6   Installing Firmware Options

3.6.1   Firmware options included in basic instrument

All Firmware Options for the R&S ESRP are part of the basic instrument firmware. Therefore they do not have a separate item in the installer to be selected.

3.6.2   Enabling Options by Entering Option Key Codes

To activate application software packages, you must enter a license key for validation. You only have to enter the option key once per option.

If an XML-file with an option key was sent to you, see the installation description below.

The license key is in the device certificate or delivered as a part of the software package.

To enable an option using an option key

1. Press the "SETUP" hard key.

2. Go to the side menu using the "More" soft key.

3. Press the "Option Licenses" soft key.

4. Press the "Install Option" soft key.

   A dialog box is displayed.

5. Enter the option key number using the keypad.

6. Press "ENTER".

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

11. Reboot the device.

Installation of options via XML-file

7. Press the "SETUP" hard key.

8. Go to the side menu using the "More" soft key.

9. Press the "Option Licenses" soft key.

10. Press the "Install Option by XML" soft key.

    A dialog box is displayed.

11. Select the path to the XML file (e.g. network drive or USB stick)

12. Press "ENTER".

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

13. Reboot the device.

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