

Release Notes

Revision: 09

R&S®ES-SCAN EMI Measurement Software

Software Release V2.70

These Release Notes describe the following types and options of the R&S®ES-SCAN EMI Measurement Software.

- R&S®ES-SCAN, order no. 1308.9270.02

New Features of V2.70:

- Support for Windows 7 (64-Bit), Windows 8.x and Windows 10
- Support of the EMI Receivers R&S®ESR 26
- Open Source Acknowledgement included as part of the Documentation

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1 Revision History

Date	Rel. Note rev.	Changes
20 Dec 2016	09	software update to V2.70
06 Mar 2013	08	software update to V2.60
09 Mar 2011	07	software update to V2.50
20 May 2010	06	software update to V2.40
20 Oct 2009	05	software update to V2.30
...	01 - 04	former versions (software versions before 2.30)

2 Installation Information

2.1 First Time Installation and Update

The software installation for R&S®ES-SCAN is one file (a self-extracting zip-archive) including the main software version number e.g. 'ES-SCAN_2.70.exe'.

The file can be found on the Rohde & Schwarz web page.

NOTE: Do not install the software on any of the R&S instruments

2.1.1 Performing the Installation of the Application

The software setup process is performed in several steps.

A moment after starting the file, a dialog box is displayed to select the language of the installation (English, Chinese, Korean, Japanese).

Then the following items will be installed (some steps may not be visible if the corresponding item had already been installed with an earlier version of the setup).

- software R&S®ES-SCAN V2.70 and shared executable files
- VxIpn driver "rsepsi" V1.4.3 for R&S®ESPI
- driver for RSIB-VISA
(LAN access also for instruments based on MS Windows™ NT)
- driver for the iKey dongle V4.2.0.4
(“iKey” or “USB token”, the driver may also be referred to as “smart card reader”)
- VxIpn driver "rsepsi" V4.30.0 for R&S®ESCI
- VxIpn driver "rsfsp" V4.20.1 for R&S®FSP (also used for R&S®FSL)
- VxIpn driver "rsspecan" V1.19 for R&S®ESL and for R&S®FSV / FSVR / FSW
- VxIpn driver "rsemi" V1.77 for R&S®ESR / ESRP
- example data if selected

Please confirm all queries which show up during those setups.

Please note that R&S®ES-SCAN can control any devices only if a valid "iKey" dongle is attached to a USB port of the PC. Without dongle the software can still be operated with simulated level/spectrum results (e.g. for demonstration or evaluation purposes).

2.1.2 Performing the Update of the an existing Version

You may make a backup of your R&S®ES-SCAN data files (located in the folder as indicated in the dialog 'View' → 'Options...' → 'Data Folders') before you start the update. In general, regular (e.g. weekly) backups are strongly recommended.

The update of R&S®ES-SCAN can be done by running the normal 'Setup.exe' (see above). The setup will detect your old installation automatically and will uninstall it before the new version will be installed.

Be sure to use the same data installation folder in order to keep your existing data and configuration files.

If the application should fail right after startup (premature shutdown), then first uninstall R&S®ES-SCAN and then re-install it again.

2.2 Minimum Firmware Versions of the controlled Instruments

Instrument	Minimum Firmware Version	Comment
R&S®ESR(P)	1.78	support for K53
R&S®ESCI	3.32	
R&S®ESPI	1.72 (Win NT), 3.32 (Win XP)	
R&S®ESL	1.82	
R&S®FSW	1.10	support for K54
R&S®FSV	1.20	R&S®FSVR : 1.56 ; support for K54
R&S®FSP	1.40 (Win NT), 3.10 (Win XP)	
R&S®FSL	1.20	

2.3 Remote Drivers (VISA)

For remote control via LAN as well as via GPIB it is necessary to have the function library 'VISA' installed on the PC.

R&S®ES-SCAN has been tested only with the NI-VISA™ from National Instruments. With other 'VISA' distributions R&S®ES-SCAN may not properly work !

Please note that for using NI-VISA™ from National Instruments you need to have a valid 'NI-VISA Deployment License'. If you are also using one of their GPIB interfaces - e.g. 'PCI-GPIB', 'GPIB-USB-B /-HS' (recommended for flexibility!), 'PCMCIA-GPIB' - then a valid license for NI-VISA™ is automatically included.

If you don't have such a GPIB interface, then you should first purchase a valid license (also see the License Agreement from National Instruments when starting a corresponding installation):

<http://sine.ni.com/nips/cds/view/p/lang/en/nid/12145>

Alternatively search e.g. for "NI-VISA pricing" on the National Instruments Internet homepage:

<http://www.ni.com/>

You may already have a setup of the GPIB driver software "NI 488.2" on a CD-ROM. An update of the software can also be downloaded from the Internet:

<http://www.ni.com/support/gpib/versions.htm>

With the default installation of the GPIB driver ("NI 488.2"), an installation of NI-VISA™ is not activated.

Therefore you may need to run the installation again, this time with a 'user defined selection' of installable components: Also activate the NI-VISA™ component and proceed normally.

NOTE: From version 2.40 on when you purchase R&S®ES-SCAN, then you will also get a valid license of NI-VISA™ (an additional setup CD).

For LAN control you need to enter the IP address (in R&S®ES-SCAN select 'View' → 'Options...' → 'Remote Control' → "Always use LAN", then test access).

See the instrument's manual for details on how to find the IP address; an IP address (IPv4) looks like 'xxx.xxx.xxx.xxx' .

2.4 System Requirements

- Operating systems:
 - Windows™ XP (32 bit) SP2
 - Windows™ Vista (32/64 bit)
 - Windows™ 7 (32/64 bit)
 - Windows™ 8 / 8.1
 - Windows™ 10
- Administrator privileges for installation (a standard user can then normally operate R&S®ES-SCAN)
- PC with Pentium™ processor (at least 600 MHz) or equivalent
- min. 512 MB RAM
- min. 30 MB of available hard disk space
- Minimum screen resolution 640 × 480 pixels, 256 colors
- Ethernet connection for LAN control (e.g. R&S®ESPI: FSP-B16 required)
- or IEC/IEEE bus (GPIB) controller (R&S®FSL/ESL: FSL-B10 additionally required)
- NI-VISA™ software interface (from National Instruments); also see chapter 2.3
- USB interface (USB 1.1 or USB 2.0) for software protection with a dongle

3 New Functions

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

Version	Function
2.70	support of Windows 7 (64-Bit), Windows 8 / 8.1, Windows 10
2.70	support of the EMI receiver R&S®ESR 26
2.70	support of the spectrum analyzer R&S®FSV 4
2.70	report: additional "hidden" placeholders for text labels: #MEASSHORTFILE result file name without path information #SETUPSHORTFILE setup file name without path information #VERSION will lead to a string like "R&S ES-Scan V2.7"
2.70	tests: optional direct switch to the final measurement wizard after automatic peak search
2.60	support of the EMI receivers R&S®ESR and R&S®ESRP support of option K53 (Time Domain Scan) is included support of transducer sets (TDS) is the same as for R&S®ESL (see below about version 2.40)
2.60	support of the spectrum analyzer R&S®FSW support of option K54 (EMI option) is included
2.50	support of the spectrum analyzers R&S®FSV and R&S®FSVR support of option K53 (EMI option) is included
2.50	support of the 64 bit versions of Windows Vista and Windows 7
2.50	for unit strings the character ' μ ' ("MIKRO") can optionally be replaced by character ' u ' in order to avoid problems with certain Windows language versions like Greek, Russian, etc.
2.40	support of transducer sets (TDS) for all instruments R&S®ESCI, R&S®ESPI: full support R&S®ESL/FSV/FSVR: the whole frequency range of a scan/sweep set must be covered by a single range inside the referenced TDS; all corresponding transducer factors will separately be programmed to the instrument and activated R&S®FSP: the whole frequency range of a scan/sweep set must be covered by a single range inside the referenced TDS; the corresponding transducer factors will be summed up into a single one (named like the TDS) which will be programmed to the instrument
2.40	support of Japanese and Korean languages (this may not work on all Windows versions)
2.30	the driver for the R&S®ESCI has been extended for the new model R&S®ESCI-7
2.30	the drivers for R&S®ESPI and R&S®ESCI now support the new detectors CISPR-AV and CISPR-RMS

4 Modified Functions

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

Version	Function
2.70	update for detecting of the iKey; this can solve an iKey detection issue with running the software under Windows 64-Bit versions
2.70	R&S®ESR(P): for the final measurements with a CISPR detector, only the frequency dependent IF bandwidth was possible; now any CISPR bandwidth can be used
2.70	R&S®FSV/FSW: single measurements will now make use of so called 'time domain power' measurements
2.70	R&S®ESR(P): the number of scan points was limited to 1E6; now it is extended to 2E6 points (now a limitation by ES-Scan memory)
2.70	EMI receivers: any self-adapting of the scan step size is now removed (needed for TD scans)
2.60	during measurements any <u>overload</u> condition will be indicated on the status bar and remain visible until the start of the next measurement or until the user clicks on that indication field
2.60	the log file will be removed whenever R&S®ES-SCAN starts; therefore the file will not grow ever bigger and possible slow done R&S®ES-SCAN
2.60	a successful receiver selection/change will now immediately be saved in the R&S®ES-SCAN settings
2.50	the idle mode setting (RF attenuation) will not be programmed any more when entering the interactive mode during the final measurements
2.50	setup editor: when changing from scan to sweep mode, then the reference level will be set to a default value of 60 dBuV
2.50	the 'Simulator' device (for operation without an instrument) has been modified: - final measurement results show more realistic level values
2.40	the 'Simulator' device (for operation without an instrument) has been modified: - the frequency range restriction (3 GHz) has been removed - the step size for possible RF attenuation values is now 5 dB - sweep definitions allow more values to select from for the number of sweep points

5 Improvements

The following table lists the improvements and indicates the version in which the issue was fixed:

Version	Function
2.70	R&S®ESL: a pause/resume change with repeating scans could lead to a freeze
2.70	R&S®FSP: binary trace data transfer: with GPIB operation the last byte may not be read
2.70	R&S®ESR: the programming of the RF input could fail
2.70	unit dBpT is now supported
2.70	the frequencies for a TD scan with a BW of 10 Hz had been calculated with a rounded step size (2 Hz instead of 2.5 Hz)
2.70	with the simulator device it is now possible to also select bandwidths which are necessary for MIL-STD measurements (decadic 6 dB filters)
2.70	a scan starting below 1 kHz could fail because of the preamp's frequency range causing an internal conflict (preamp starts at 1 kHz) when sending the corresponding remote commands
2.70	programming of huge transducer factors could lead to a communication problem
2.70	when opening the table editor (e.g. with a limit line or with a transducer) then the software may be blocked (issue existed since Patch Collection C for V2.60)
2.70	R&S®ESR(P): levels from a TD scan with a bandwidth of 9 kHz had sometimes been assigned to a slightly inaccurate step size; this has been fixed
2.70	R&S®ESR(P): changing from 3-dB to 6-dB filters could fail if option B29 is not available; this has been fixed
2.70	R&S®FSL/FSP: the overload detection as introduced with V2.60 didn't always work; this has been fixed
2.70	R&S®ESR(P): it could happen that from a scan only the first data block was transferred or that you had to explicitly stop the scan after all results had been transferred
2.70	4-line-LISNs: the selection of lines L2 / L3 could be wrong
2.70	R&S®ESR(P): with LISNs the control of the user port lines could fail
2.70	R&S®ESR(P): with scans an attenuation auto ranging was not always properly programmed
2.70	R&S®ESR(P): repetitive scans didn't work
2.70	R&S®FSV/FSW: with LISNs the control of the user port lines could fail
2.70	R&S®ESR(P): for the final measurements a setting 'preamp auto' had not always been programmed; when changing to 'idle' the defined RF attenuation had not always been programmed
2.70	tests: when saving a measurement result, then part of the preview data could be missing in the file when using reference traces, too
2.70	R&S®ESR(P): the programming/handling of the unit as defined in a transducer set could fail
2.70	R&S®FSL: a frequency sweep with detector QP is now possible, though generally not recommended in spectrum analyzer mode (rather use PK+ for preview and QP for final measurements)

Version	Function
2.70	R&S®ESL: the programming of the IF bandwidth for the final measurements could fail; limit lines had not been assigned to traces when programmed to the device
2.70	R&S®FSV: a recent correction could have a side-effect on the programming of the final detector
2.70	R&S®FSP: binary trace data from a sweep are now being read as a single data block including header data (solves a rare issue)
2.70	data storage: when loading a huge measurement result, then part of the preview data could be missing
2.70	R&S®FSL/FSP: when using an existing setup which defines a LISN type, then the interactive entering of comments for final results was disabled
2.70	tests: when running a scan with a gap in between, then a result point could be missing
2.60	a recent optimization (less preset cycles) could lead to a communication lockup because of a missing initialization before the programming of a transducer: only a restart of the software did then allow to start the test successfully
2.60	due to memory restrictions the number of peaks/subranges is limited to 255 ; now this will be checked in the editor, too
2.60	control of LISN ENV216 with R&S®ESL: logic for controlling of the high pass was inverted
2.60	R&S®ESCI: a scan measurement with detector Quasipeak did not always work: only a restart of the software did then allow to start the test successfully
2.60	when opening a measurement result with transducer set data included, then the curve display could be incomplete, depending on the instrument driver being used
2.60	when running (automatic) final Quasipeak measurements with an R&S®FSV(R), then the actual resolution bandwidth could be a CISPR bandwidth smaller than expected
2.60	R&S®ESL: the reference level handling and programming has been corrected
2.60	a wrong trace definition in a setup file (probably caused by adding + removing of a third curve) could lead to an incomplete programming of the measurement parameters and the measurements were not started; measurements with such a setup file were therefore not possible any more
2.60	the VXIppn driver library for the R&S®FSV(R) doesn't properly handle the preamp (option B24) programming and the preamp therefore could never become active; this has been corrected with a workaround in the corresponding R&S®ES-SCAN driver, using direct SCPI command programming instead
2.60	R&S®FSV(R): the frequency range can now start at 20 Hz as needed with option FSV-B29
2.60	R&S®ESPI, R&S®ESCI: in 'marker tune mode' an incomplete data initialization could lead to a communication lockup; only a re-start of the test could then solve the issue
2.60	R&S®ESL: when scanning in measurement mode "Repeat Max Hold", then stopping of the scan had caused R&S®ES-SCAN to ignore all results above the frequency where the last scan had finished; this has been corrected
2.60	R&S®FSV(R): the programming of the level unit could collide with the level unit of an already programmed transducer factor
2.60	R&S®ESL: during the final measurements, the preamp had never been activated if the RF attenuation was set to 'Auto'
2.50	with the R&S®ESCI 7 the preamp can now be used above 3 GHz, too
2.50	the feature 'repetitive scan' now always shows up-to-date results in the diagram
2.50	with the R&S®FSL now more than one sweep trace with the same detector can be used (e.g. MaxPeak-ClearWrite and MaxPeak-MaxHold)

Version	Function
2.50	during final measurements no device preset will occur when the next frequency is being programmed
2.50	a 'per cent' character % in a test report text field will now be processed correctly
2.50	transducer correction files with many (>50) entries now also work with the R&S®ESPI
2.50	limit lines with gaps can now be used with the R&S®FSP
2.50	in some cases a final Quasipeak measurement was performed with a bandwidth of 120 kHz instead of a smaller one as defined in the current setup, which resulted in a "fail"
2.40	R&S®ES-SCAN now also supports Windows™ Vista for this purpose the setup provides the selection of separate paths: for the installation of the executables and for the user data if R&S®ES-SCAN shall control via LAN an R&S®ESPI or an R&S®FSP which internally runs under Windows™ NT 4.0 , then make sure that the file c:\VXIPNP\WinNT\Rsib\RsViRsib.ini (path may be slightly different) is not set to 'read-only' if you are logged in as an administrator, it may be necessary to also run R&S®ES-SCAN as an administrator (selection in the context menu of the start icon)
2.40	the driver for R&S®ESL is now compatible with the latest version of the corresponding VxIpn driver (RsSpecAn)
2.40	the loading of scan/sweep definitions has been made more tolerant to missing values; such a situation may occur when changing between different instruments
2.40	the Peak List generation with the Subranges method now also works with hidden 'subrange boundaries'
2.40	with final measurements the IF bandwidth will never be programmed if a CISPR detector is involved (automatic selection of the CISPR bandwidth in the instrument)
2.40	driver for R&S®FSP: a built-in preamp option is now fully supported
2.30	driver for R&S®ESL: if hardware option FSL-B5 (user port etc.) is not installed, then a corresponding warning will show up during a voltage test with a 2-/4-line LISN
2.30	for the R&S®FSL from firmware version 2.00 on, a concept has changed: setting the reference level if no unit is included in the remote command; now the required unit will always be included to ensure compatibility with all firmware versions
2.30	the application now can also handle R&S®FSP and R&S®ESPI instruments still equipped with early firmware versions which don't support some newer remote commands
2.30	peak or subrange maxima search function: >50 peaks or subranges are now possible
2.30	limit lines with >50 points are now possible, but will not be programmed to the instrument
2.30	transducer factors with >50 points are now possible (max. 625 points)

6 Known Issues

The following table lists the known issues and indicates the version in which the issue was observed for the first time:

Version	Function
2.40	<p>A conflict between the Intel PROSET™ services for the WLAN card and the iKey driver can cause that the iKey link to EMC32 is sporadically lost when EMC32 is running.</p> <p>To solve this issue you have to disable the PROSET™ services (set them to starting mode 'Manual' in the Windows Service Manager) or completely uninstall the PROSET™ software. You can use the Windows™ WLAN management tools as an alternative.</p>

7 Modifications to the Documentation

The new and modified functions mentioned in these release notes are already documented as far as applicable.

Appendix: Contacting our Hotline

Any questions or ideas concerning the application are welcome by our hotline:

North America

Phone +1-888-TEST-RSA (+1-888-837-8772)

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