R&S®ELEKTRA
EMC TEST SOFTWARE

Swift and reliable measurements of electromagnetic disturbances

Product Brochure
Version 05.00

ROHDE&SCHWARZ
Make ideas real

AT A GLANCE

The R&S®ELEKTRA EMC test software can be used to control complete EMC test systems to perform automated or interactive electromagnetic interference (EMI) and electromagnetic susceptibility (EMS) measurements on equipment under test (EUT) to verify compliance with relevant standards.

New, reliable and highly efficient automatic and interactive test procedures deliver accurate results and allow in-depth analysis of EMI and EMS measurements during development and certification. At the same time, they speed up these processes.

R&S®ELEKTRA features a predefined software library that covers all common EMC standards – including relevant limit lines, test setups and transducer factors – to simplify test configuration and enable users to start testing faster.

Users can create EUT-specific test plans with multiple tests and configure test templates, hardware setups and report templates. The dashboard-style, all-on-one-screen user interface provides quick and easy access to every required function and parameter. Favorite items and tagging and search functions enhance usability and make it easy to navigate through the huge amount of data created during EMC testing.

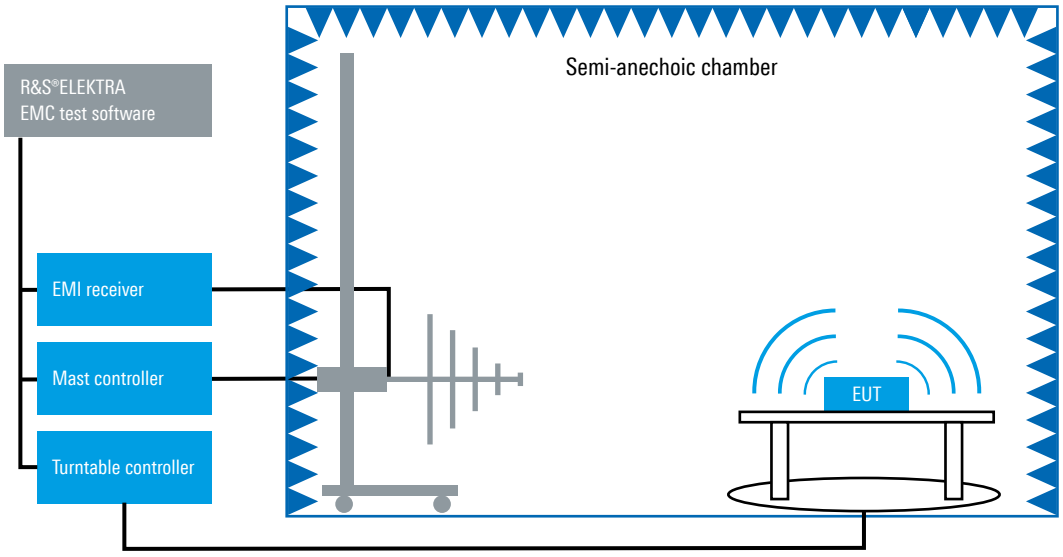
EUT-centric planning, execution and documentation of test runs enables users to maintain an overview. Test setups, measurement procedures and reports can be tailored to users' requirements in the case of non-standard tests. R&S®ELEKTRA has an open interface that supports a wide variety of instruments and system components, including third-party equipment.

Automated EMI measurement with R&S®ELEKTRA.

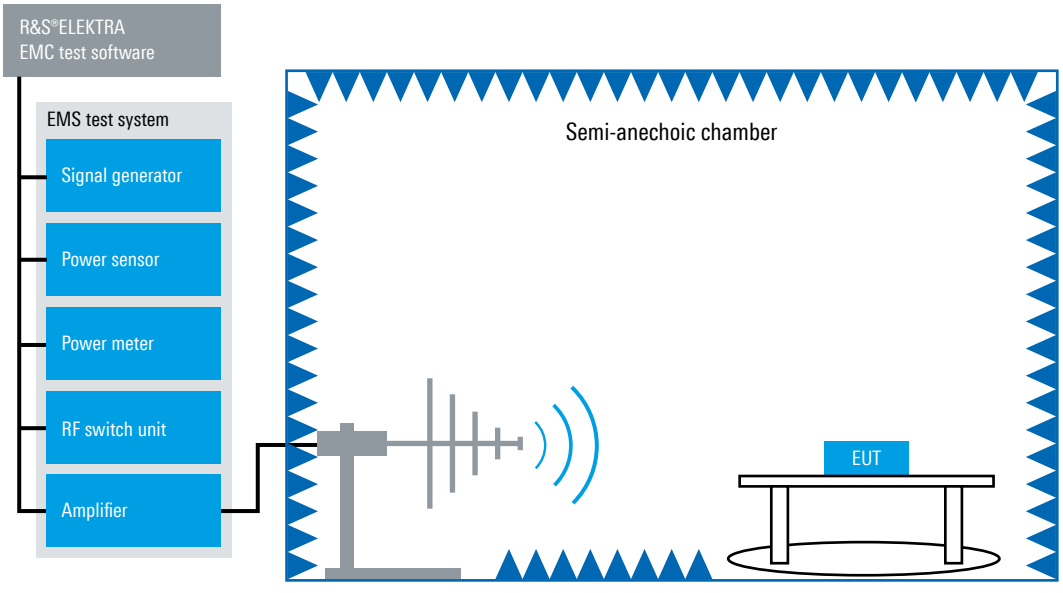
KEY FACTS

- Can be used to create test plans with multiple tests for easy management of EUTs
- Intuitive, interactive and automated EMC measurements
- Covers most common EMC standards with predefined settings/templates
- Efficient result analysis and reporting
- Scalable and flexible platform – from small systems for R&D debugging to multi-site EMC certification labs

Radiated emissions (RE) test setup



Radiated susceptibility (RS) test setup



INTUITIVE USER INTERFACE

The intuitive user interface is easy to use and simplifies navigation.

Sleek, fast and modern

R&S®ELEKTRA comes with a revolutionary user interface (UI) that makes it future-ready. The sleek, fast and modern UI has a large, scalable, high-resolution and high-contrast display that supports touchscreen devices.

Favorites dashboard

Frequently used elements such as EUT test plans, hardware setups, test templates, test results and reports can be pinned to the dashboard for quick and convenient access.

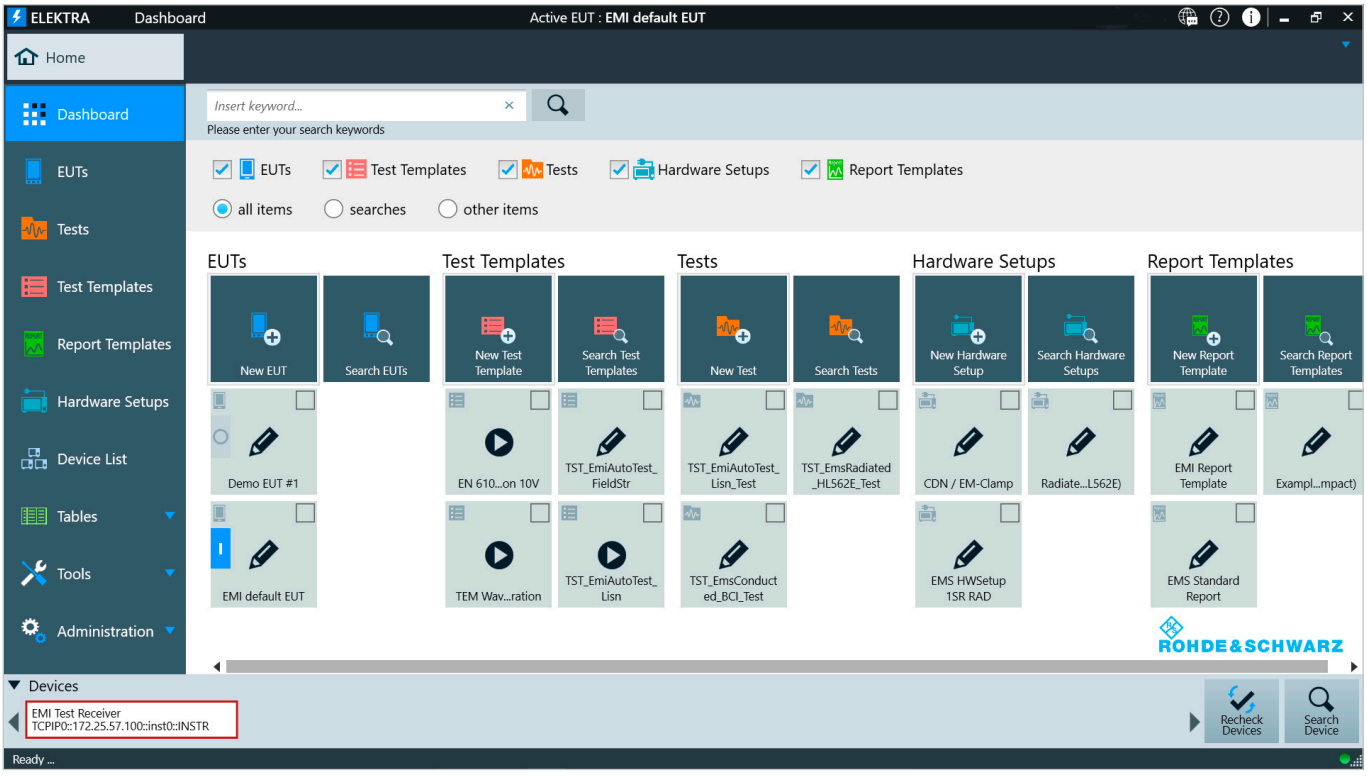
Tagging, filtering and searching

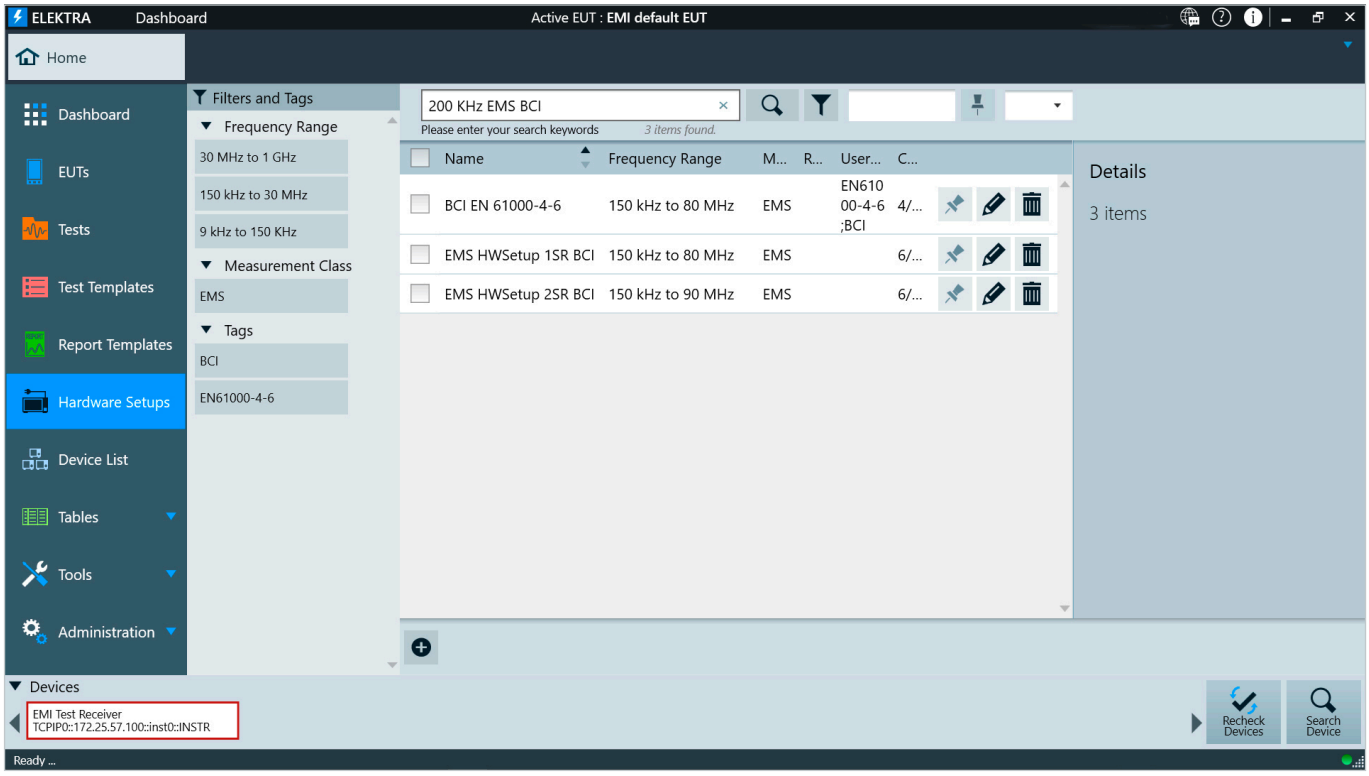
Quickly find key elements by entering keywords in the integrated search column. Apply user-defined tags to organize and classify your elements. Use filters to narrow down search results by frequency range or measurement category.

All on one page

R&S®ELEKTRA introduces an all-on-one-page user interface so users do not have to constantly switch between windows. The design makes test configuration easy as it provides quick access to all the functions and parameters needed to generate user-defined tests. Users can open multiple tests in multiple windows to view and compare data.

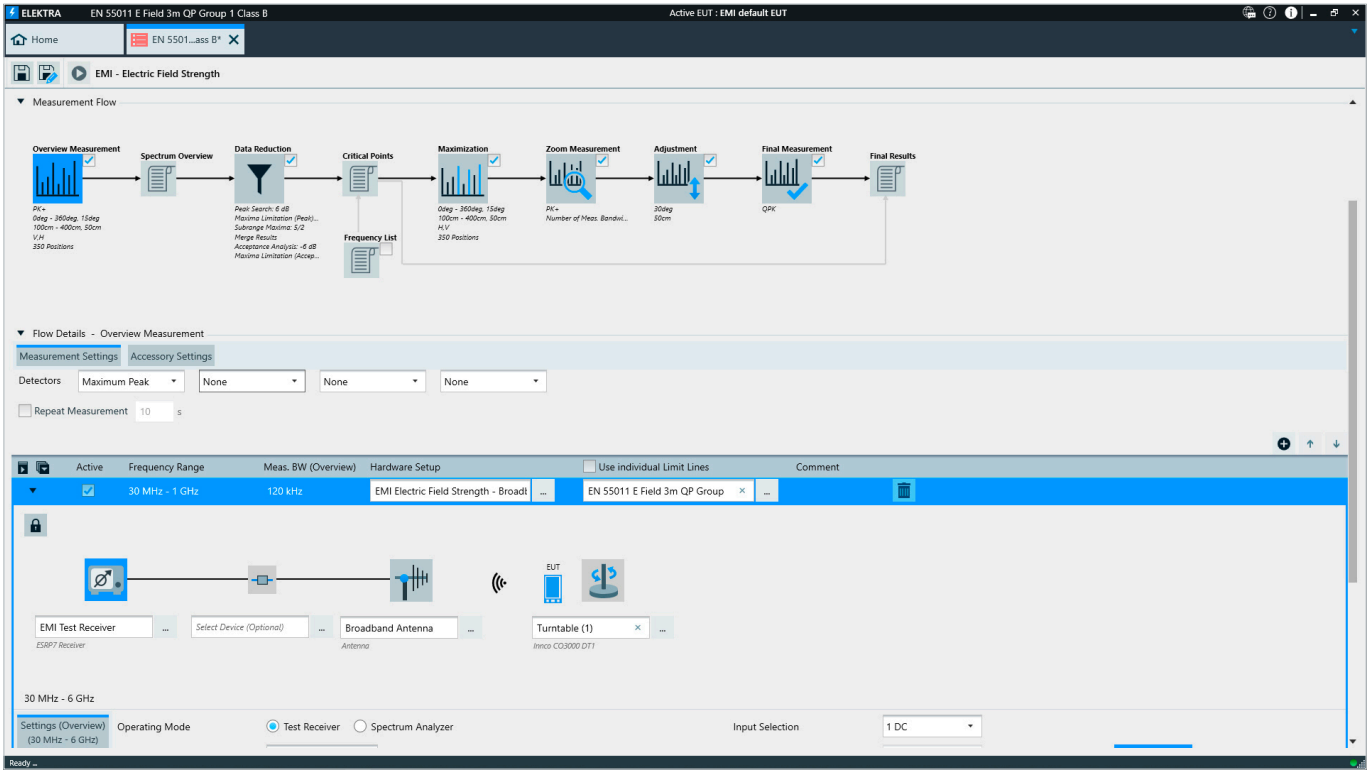
R&S®ELEKTRA user interface with multiple favorite items pinned to the dashboard for one-click access.





Powerful search function combines searches in different categories with specific filters and tags.

EMI auto test template. Hardware setups and configurations can be viewed and changed directly with the all-on-one-page interface.



GET STARTED QUICKLY

R&S®ELEKTRA improves usability for new and existing users of EMC test software with a predefined library for all common EMC standards, EUT-centric test plans, automatic detection of connected instruments and automated field uniformity evaluation for EMS measurements.

Standard	EMI	EMS
CISPR 11	supported	not applicable
CISPR 14	supported	supported
CISPR 15	supported	not applicable
CISPR 32	supported	not applicable
CISPR 35	not applicable	supported
IEC 61000-4-3	not applicable	supported
IEC 61000-4-6	not applicable	supported
CISPR 12	supported	not applicable
CISPR 25	supported	not applicable
ISO 11451	not applicable	supported
ISO 11452	not applicable	supported
MIL-STD-461	supported	supported
ETSI/FCC wireless	supported	supported
For more detailed information relating to the supported standards, contact your local Rohde&Schwarz sales office.		

Large library of predefined test setups for common EMC standards

A large library can be easily created using the configuration wizard that provides predefined test setups in accordance with common EMC standards. These test setups enable new and existing users to instantaneously perform tests with minimal preparation.

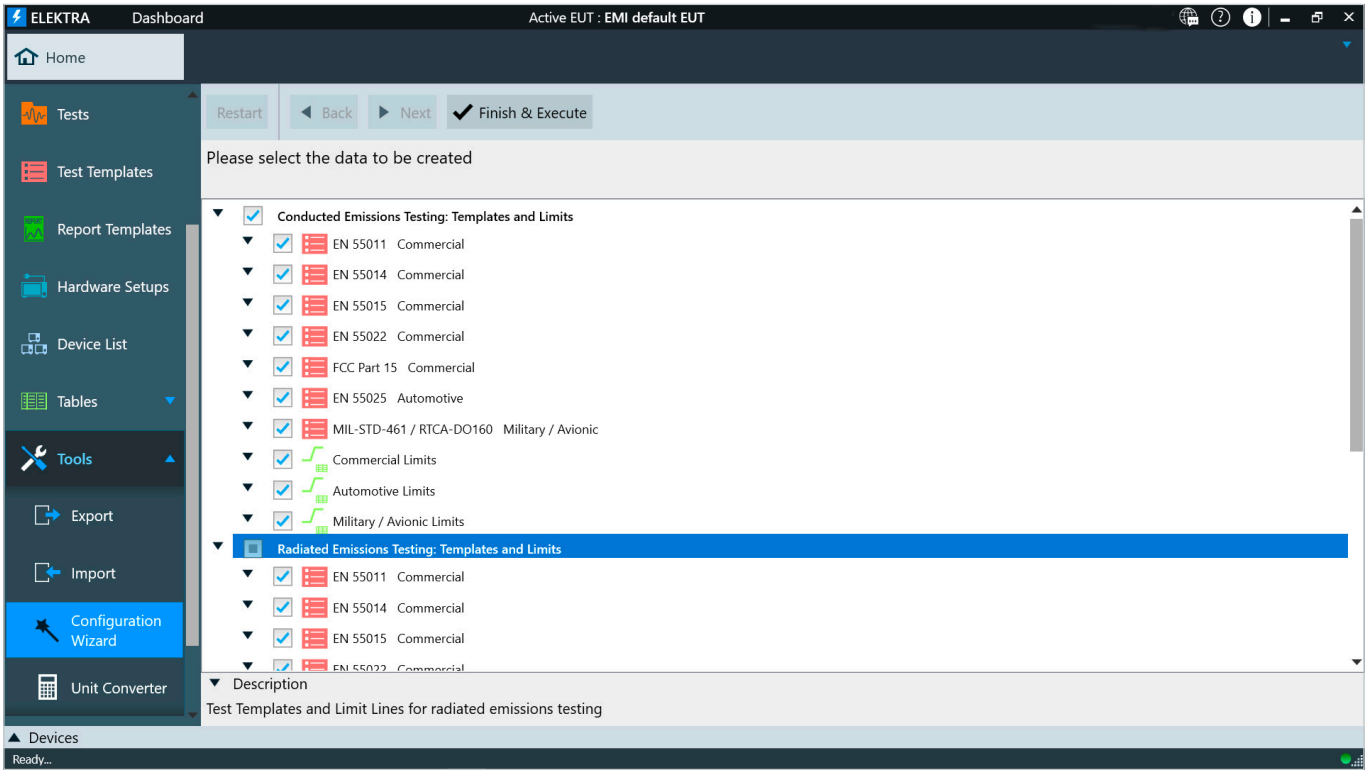
EUT-centric test plan management

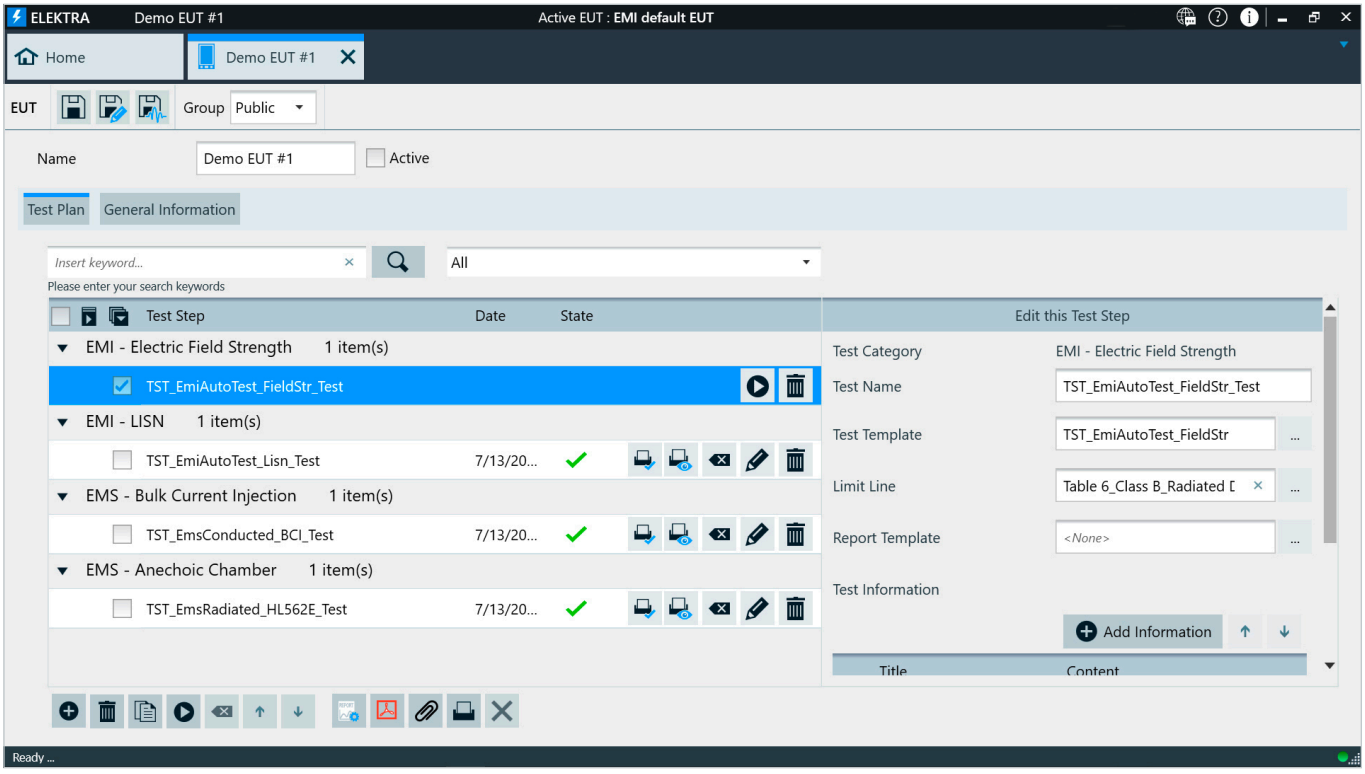
The increasing complexity of EUTs results in the need to meet multiple requirements from various EMC standards. R&S®ELEKTRA gives users the ability to build and manage a test plan around a specific EUT. This prevents users from missing a test and helps generate a comprehensive report.

Automatic detection of connected instruments

R&S®ELEKTRA accelerates the hardware configuration process by automatically detecting connected instruments available for testing.

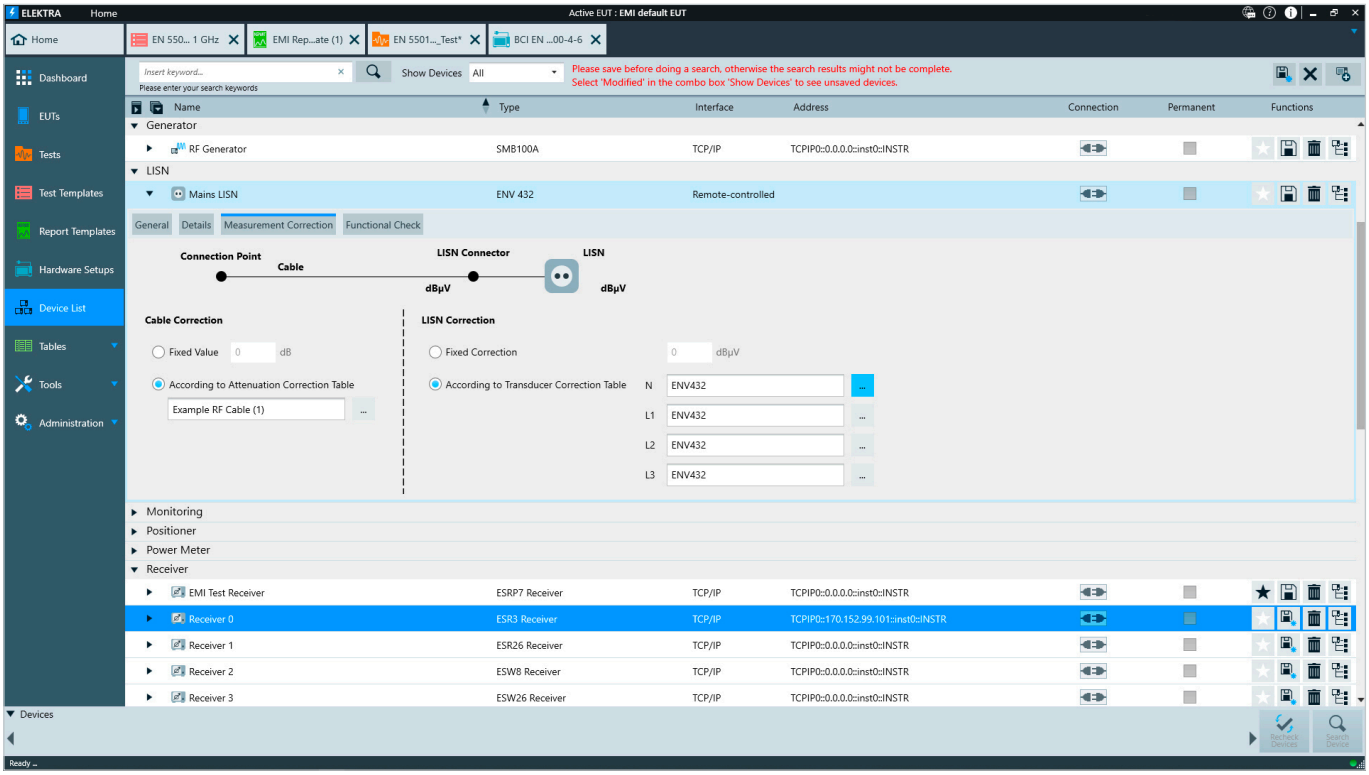
Configuration wizard with a library of multiple predefined test setups.





EUT test plan with various subtests.

Device list showing all test equipment and device configurations.



INCREASE YOUR TEST THROUGHPUT

R&S®ELEKTRA is designed for compatibility with powerful EMC test equipment to boost testing speed with automated test execution.

Automated test execution

R&S®ELEKTRA provides automated test execution by controlling and monitoring the instruments used. Automated test execution and interactive testing can be toggled to enable in-depth debugging. Users can simulate and validate test configurations and procedures prior to the actual test to ensure that hardware resources are used efficiently.

Parallel interactive and automated operation

R&S®ELEKTRA increases productivity since it allows interactive operation, e.g. configuring tests and generating report templates, in parallel with automated test execution. Multiple windows can be opened on the same screen, enabling users to compare different test runs.

Use the full performance of your receivers

R&S®ELEKTRA fully utilizes the capabilities of modern receivers to increase measurement speed. R&S®ELEKTRA performs automated disturbance measurements with the R&S®ESW, R&S®ESRP, R&S®ESU, R&S®ESR, R&S®ESCI, R&S®ESPI and R&S®ESL test receivers and with the R&S®FSW, R&S®FSV, R&S®FSC, R&S®FSH, R&S®FPL and R&S®FSL signal and spectrum analyzers.

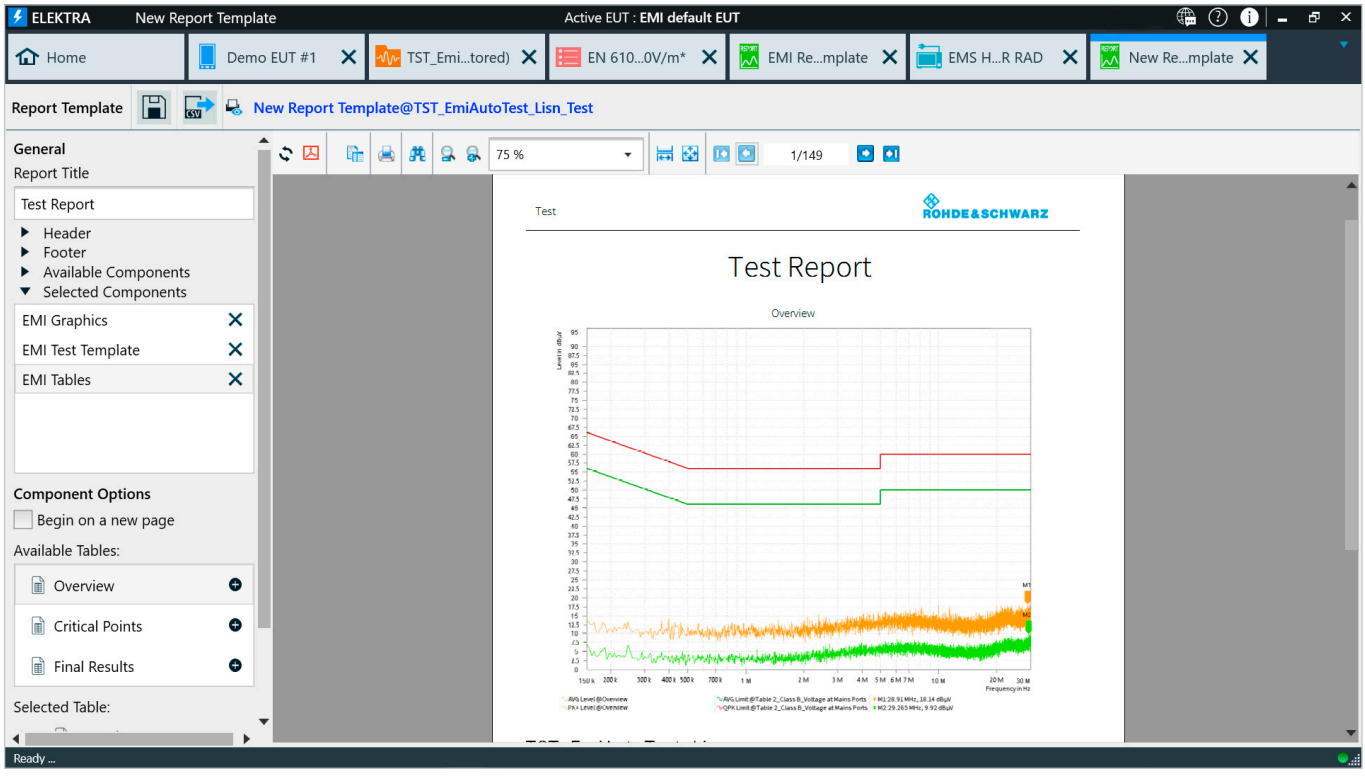
R&S®ELEKTRA automatically controls the equipment generating EMS test levels and manages amplifier band and signal path switching. It also monitors the EUT on multiple channels using appropriate test equipment.

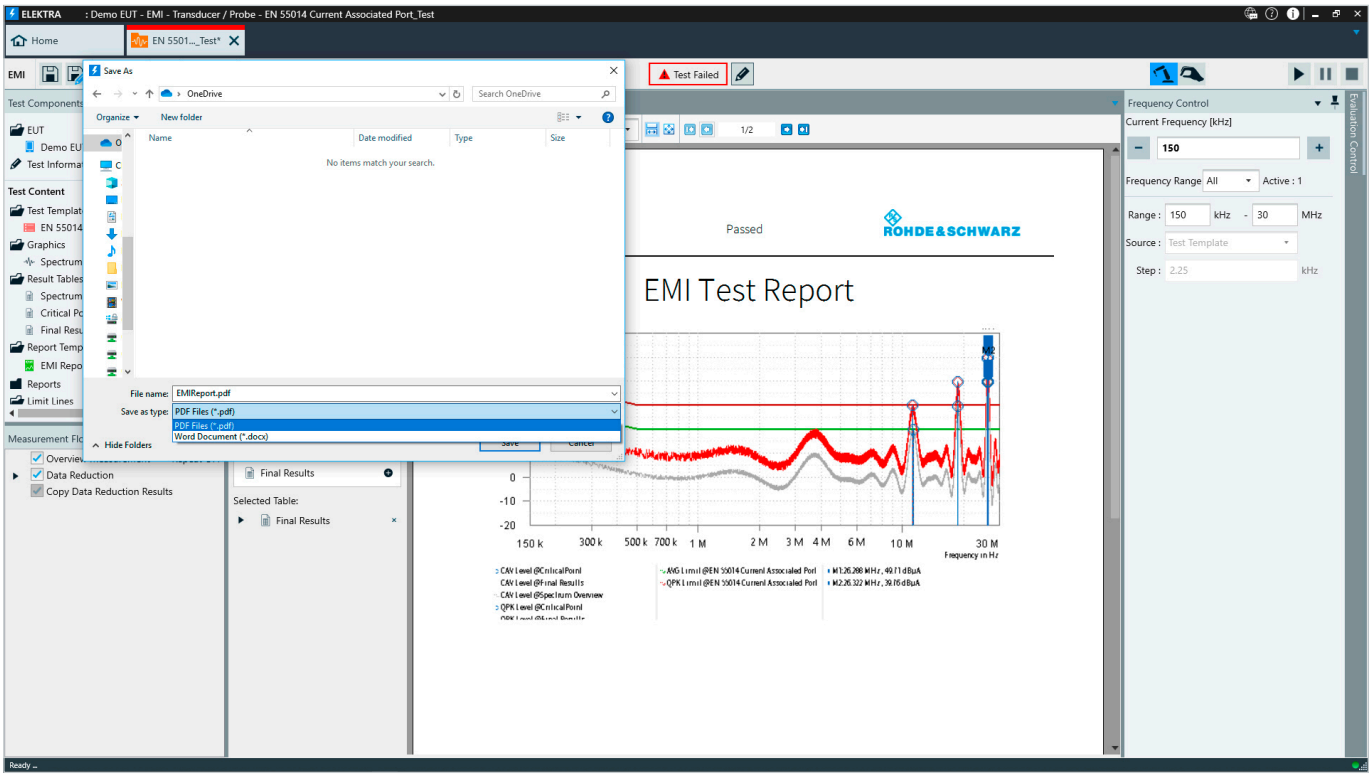
R&S®ELEKTRA automatically switches the phases of artificial mains networks when measuring conducted disturbance. It saves all measured values for data reduction and further analyses.

Easily analyze and document your results

R&S®ELEKTRA automatically collects, analyzes and evaluates measurement data for each individual test performed. It also features an easy-to-use function that generates and saves test reports as PDF or DOCX files.

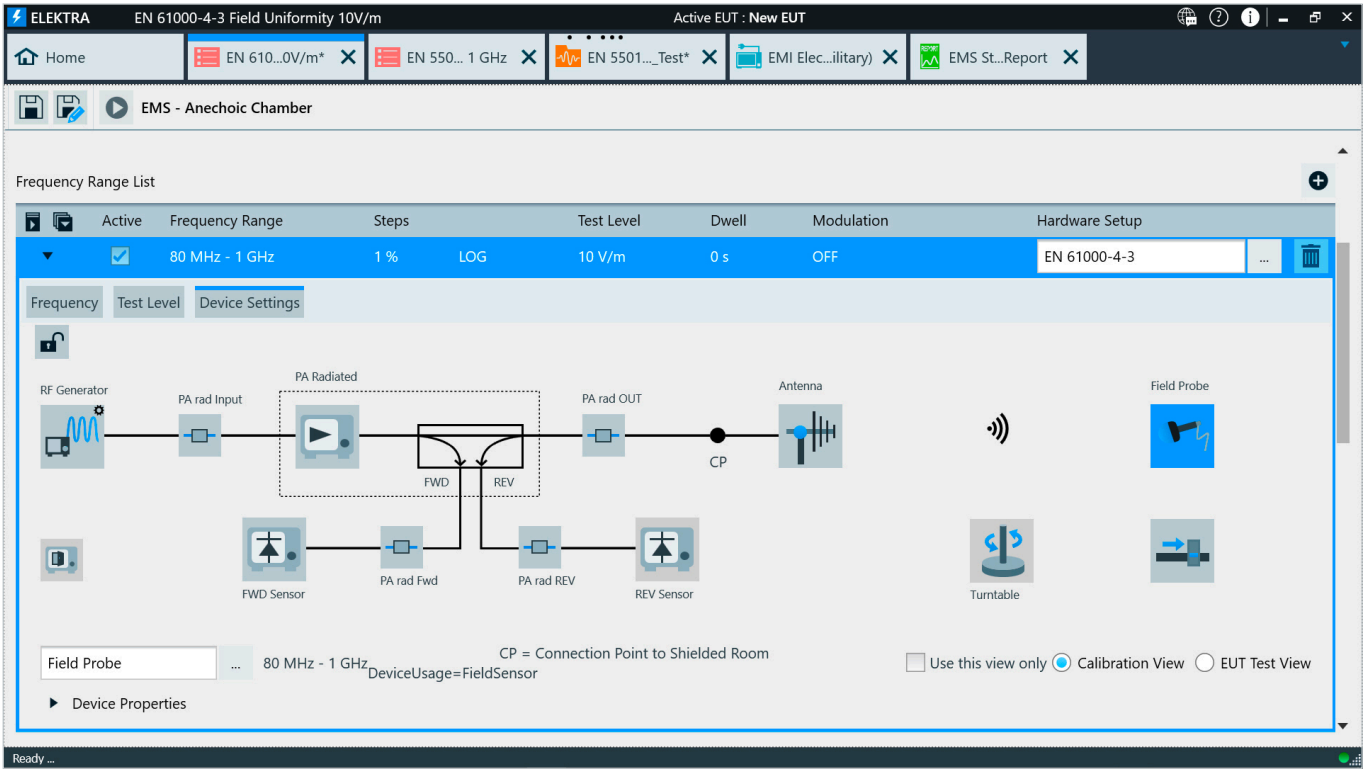
Multiple operations (e.g. running a test, creating hardware setups and test and report templates) can be performed simultaneously.





Saving a test report with analyzed and evaluated measurements as a PDF or DOCX file.

Simultaneously working on templates while a test is running.



MIGRATION FEATURES

Migration wizard

R&S®ELEKTRA makes it easy for R&S®ES-SCAN and R&S®EMC32 users to migrate hardware setups, test templates, settings and tests from R&S®ES-SCAN and R&S®EMC32 to R&S®ELEKTRA.

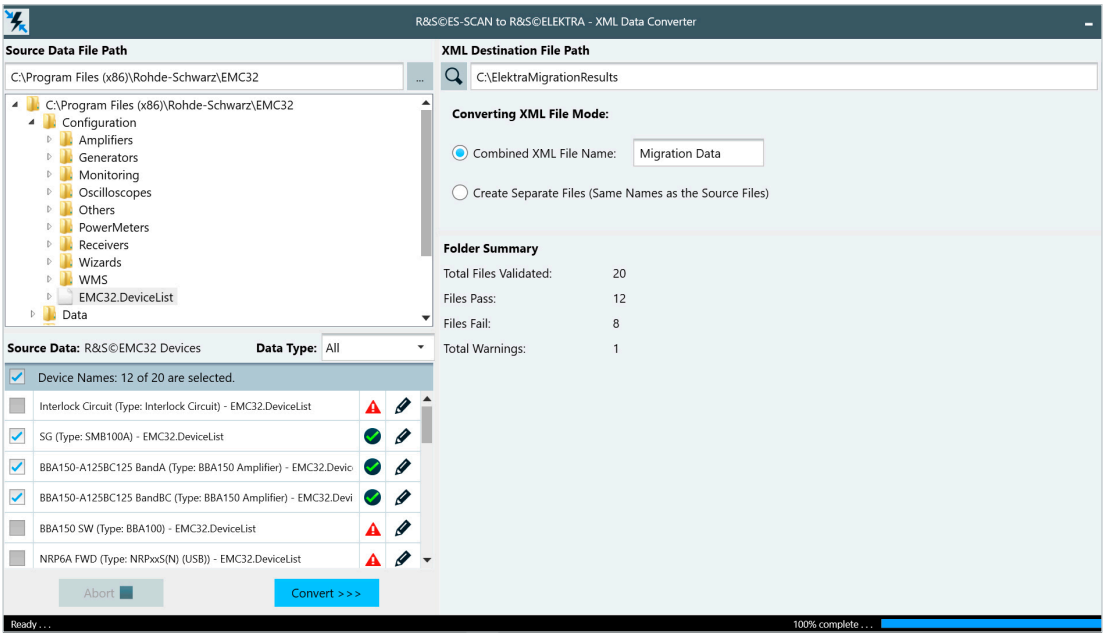
Supports variety of instruments and system components

Generic device drivers provide flexibility to interface with a variety of instruments. The library of test setups and the hardware detection makes it easy to exchange instruments.

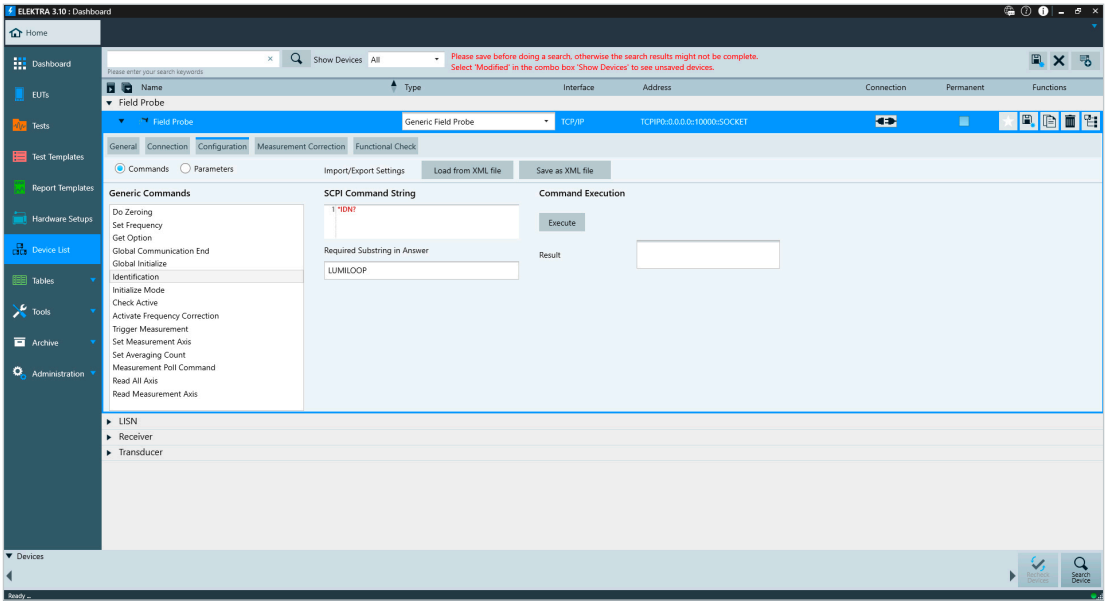
Backup

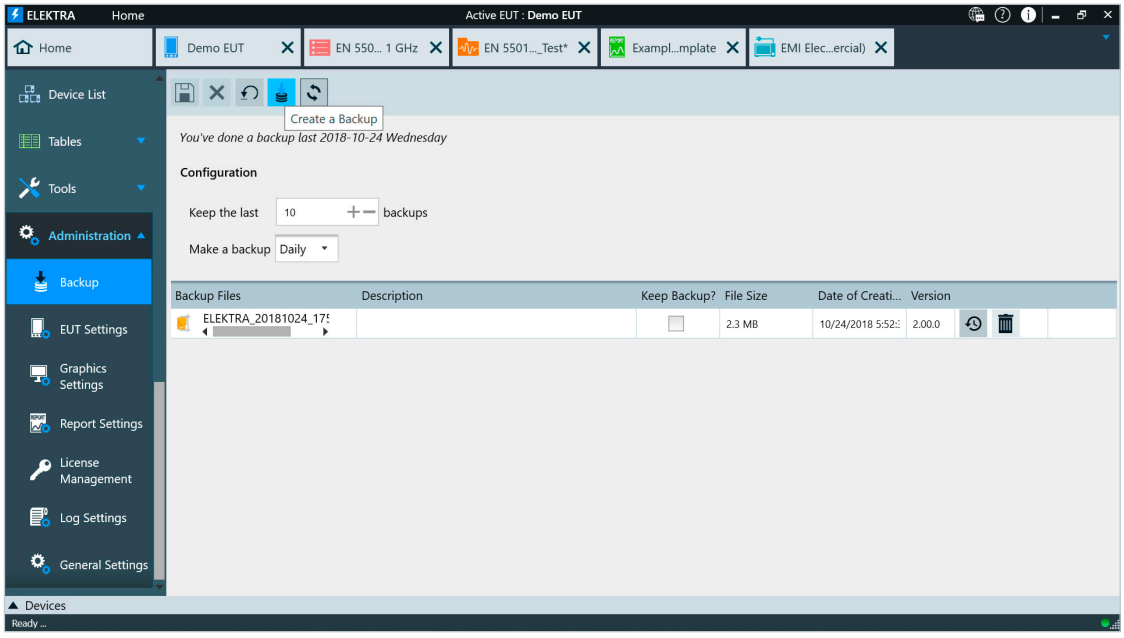
R&S®ELEKTRA provides both automatic and manual backup options to ensure that configurations, test setups, results and reports are safely archived.

Migration wizard.



Generic drivers also support third-party instruments.





R&S®ELEKTRA offers automatic and manual backup options.

AUTOMOTIVE AND MILITARY EXTENSION

R&S®ELEKTRA supports full automotive and military EMS testing with the R&S®ELEMS-AMEX option.

R&S®ELEMS-AMEX support for standards

R&S®ELEKTRA supports EMS measurements in line with common automotive and military standards such as MIL-STD-461, ISO 11451 and ISO 11452 as well as various OEM standards. These standards cover digitally modulated interferer signals (e.g. OFDM signals) and radar pulse interferers.

Automotive and military standards require specific setups and procedures for measuring susceptibility to RF interference. These requirements relate, for example, to modulation, level adjustment and system monitoring, and are supported by the R&S®ELEMS-AMEX option.

Special interface

Automotive components are usually equipped with an interface for communications over bus systems such as CAN or LIN. The R&S®EMCAN64 middleware included with the R&S®ELEMS-AMEX software allows read and write access from R&S®ELEKTRA to these buses using the standard CANoe and CANalyzer software tools from Vector Informatik GmbH.

RADIATED SPURIOUS EMISSION (RSE) TESTING FOR WIRELESS COMMUNICATIONS

Intentional radiators typically emit noise at multiples of the carrier frequency. Most countries therefore require measurement of RSEs as part of their regulatory certification (Radio Equipment Directive (for Europe) or Federal Communications Commission 47 CFR Part 15).

R&S®ELEKTRA enables users to automate RSE testing and perform measurements quickly, effectively and in line with standards. RSE testing can be performed on both cellular (2G/3G/4G/5G) and wireless (e.g. Bluetooth®) equipment.

ORDERING INFORMATION

Designation	Type	Order No.
Hardware		
License dongle	R&S®EMCPC	5601.0018.02
Software		
Essential EMI test software for conducted and radiated emissions	R&S®ELEMI-E	5601.0030.02
Advanced EMI test software for conducted and radiated emissions	R&S®ELEMI-A	5601.0053.02
EMI system test software for conducted and radiated emissions	R&S®ELEMI-S	5601.0076.02
EMS test software for conducted susceptibility	R&S®ELEMS-C	5601.0099.02
EMS test software for radiated susceptibility	R&S®ELEMS-R	5601.0118.02
EMS system test software for conducted and/or radiated susceptibility	R&S®ELEMS-S	5601.0130.02
EMC options		
EMC extension, for EUT test bench control	R&S®ELEMC-ATB	5601.2340.02
EMC extension for cellular signaling	R&S®ELEMC-CELS	5601.0699.02
Data exchange interface for EMC tests	R&S®ELEMC-DEX	5601.0547.02
Generic drivers	R&S®ELEMC-DRV	5601.0230.02
Enhanced data base	R&S®ELEMC-EDB	5601.0530.02
EMC base software for offline preprocessing/postprocessing	R&S®ELEMC-OFF9	5601.0599.02
EMC extension, for remote control interface	R&S®ELEMC-REM	5601.0553.02
EMC extension for report generation	R&S®ELEMC-REP	5601.0460.02
Oscilloscope drivers (monitoring)	R&S®ELEMC-SCP	5601.0630.02
EMC test list automation	R&S®ELEMC-TLA	5601.0560.02
EMC extension for wireless signaling	R&S®ELEMC-WRLS	5601.0701.02
EMI options		
3D results evaluation	R&S®ELEMI-3D	5601.0260.02
EMI extension 5G RSE measurements in line with FCC	R&S®ELEMI-5GFC	5601.0682.02
EMI extension for multiband (multireceiver) measurements	R&S®ELEMI-MBM	5601.0676.02
EMI out-of-band measurements	R&S®ELEMI-OOB	5601.0724.02
Radiated spurious emission measurements	R&S®ELEMI-RSE	5601.0253.02
EMS options		
5G signaling for R&S®CMX500	R&S®ELEMS-5GS	5601.0276.02
EMS extension audio breakthrough	R&S®ELEMS-ABT	5601.0730.02
EMS waveform management software for AIM 731731 standard	R&S®ELEMS-AIM	5601.0582.02
EMS test software extension for automotive and military, with CAN monitoring and system leveling	R&S®ELEMS-AMEX	5601.0353.02
EMS extension, for MIL-STD-461, CS103/CS104/CS105	R&S®ELEMS-C345	5601.0576.02
EMS extension, for rotating tuner reverberation chamber	R&S®ELEMS-RVC	5601.2410.02
Software bundles		
EMI advanced test software package	R&S®ELEMI-EA	5601.0424.02
EMI advanced test and system test software package	R&S®ELEMI-AS	5601.0518.02
EMI advanced system test software package	R&S®ELEMI-EAS	5601.0382.02
EMS system test software package, conducted	R&S®ELEMS-CS	5601.0447.02
EMS system test software package, radiated	R&S®ELEMS-RS	5601.0360.02
EMS system test software package, conducted and radiated	R&S®ELEMS-CRS	5601.0401.02
Software maintenance		
One year software maintenance is optionally available for each software item. Contact your local Rohde&Schwarz sales office.		

Service at Rohde&Schwarz
You're in great hands

- Worldwide
- Local and personalized
- Customized and flexible
- Uncompromising quality
- Long-term dependability

Rohde&Schwarz

The Rohde&Schwarz technology group is among the trailblazers when it comes to paving the way for a safer and connected world with its leading solutions in test&measurement, technology systems and networks&cybersecurity. Founded more than 85 years ago, the group is a reliable partner for industry and government customers around the globe. The independent company is headquartered in Munich, Germany and has an extensive sales and service network with locations in more than 70 countries.

www.rohde-schwarz.com

Sustainable product design

- Environmental compatibility and eco-footprint
- Energy efficiency and low emissions
- Longevity and optimized total cost of ownership

Certified Quality Management
ISO 9001

Certified Environmental Management
ISO 14001

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Rohde&Schwarz customer support
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Data without tolerance limits is not binding | Subject to change

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