



TEST & MEASUREMENT PRODUCT GUIDE

ROHDE & SCHWARZ
Make ideas real



Rohde & Schwarz
is one of the world's
leading manufacturers
of electronic T&M
and communications
equipment

A photograph of a modern glass skyscraper at dusk. The Rohde & Schwarz logo, featuring a stylized 'R' and 'S' in a square, is illuminated and mounted on the upper part of the building. The name 'ROHDE & SCHWARZ' is written in large, illuminated letters along the edge of the building's facade. The sky is a deep blue, and the building's glass reflects the ambient light.

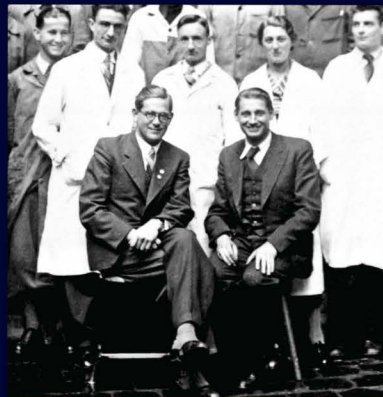
ROHDE & SCHWARZ

Rohde & Schwarz has driven innovation in RF technology from the very beginning, always pushing the limits of what is technically feasible. We are committed to providing our customers with industry-leading solutions to meet even the most challenging requirements.



YOUR PARTNER IN TEST AND MEASUREMENT

Rohde & Schwarz is a market-leading supplier in the mobile and wireless communications sector. We offer a comprehensive portfolio of Test and Measurement (T&M) instruments and systems for the development, production and acceptance testing of components and consumer devices. Important T&M markets include the automotive industry, the aerospace & defense sector, all industrial electronics segments as well as research and education. In addition to its established business fields, Rohde & Schwarz is making substantial investments in future technologies such as artificial intelligence, the industrial internet of things (IIoT), 6G, cloud solutions and quantum technology.



About Rohde and Schwarz

Rohde & Schwarz is one of the world's leading manufacturers of T&M, Secure Communications, Monitoring and Network Testing, and Broadcasting equipment. Founded more than 80 years ago, the independent company has an extensive sales and service network with subsidiaries and representatives in more than 70 countries. Incorporated in the United States since 1978, Rohde & Schwarz USA, Inc. has a large team of sales and application engineers throughout North America with regional offices in Maryland, Texas, California, and Oregon. We have a world-class service facility in Columbia, Maryland and our customers can expect extensive after-sales support, including training, free technical support and close personal contact from our engineers out in the field as possible – with the desired quality and performance.

BENCHTOP SIGNAL AND SPECTRUM ANALYZERS



The Rohde & Schwarz signal and spectrum analyzer portfolio offers options ranging from low-cost, yet powerful 1 GHz analyzers to handheld and mid-range models to full-featured 85 GHz spectrum analyzers. Designed by the RF experts at Rohde & Schwarz, all spectrum analyzers feature exceptional signal integrity, high value and excellent reliability. We have you covered.



	R&S®FSW	R&S®FVA3000	R&S®FSV3000	R&S®FPS	R&S®FPL1000	R&S®FPC
Frequency range	2 Hz to 8/13.6/26.5/43.5/50/67/90 GHz	2 Hz to 4/7.5/13.6/30/44/50/54 GHz	10 Hz to 4/7.5/13.6/30/44/50 GHz	10 Hz to 4/7/13.6/30/40 GHz	5 kHz to 3/7.5/14/26.5 GHz	5 kHz to 1/2/3 GHz
Phase noise	< -136 dBc (1 Hz) (f = 1 GHz, 10 kHz offset)	< -127 dBc (1 Hz) (f = 1 GHz, 10 kHz offset option B710)	< -114 dBc (1 Hz) (f = 1 GHz, 10 kHz offset option B710)	< -106 dBc (1 Hz) (f = 500 MHz, 10 kHz offset)	< -108 dBc (1 Hz) (f = 1 GHz, 10 kHz offset)	< -92 dBc (1 Hz) (f = 500 MHz, 30 kHz offset)
DANL - at 1 GHz, RF preamplifier ON	< -166 dBm/Hz	< -164 dBm/Hz	< -162 dBm/Hz	< -160 dBm/Hz	< -163 dBm/Hz	< -158 dBm/Hz FPC-B22
Analysis bandwidth	8.312 GHz	1 GHz	200 MHz	160 MHz	40 MHz	-

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HANDHELD ANALYZERS

Handheld analyzers for field use with rugged designs to make efficient measurements outdoors when installing and maintaining antenna systems. Models include unique features with tracking generator features, built in network analyzers and more.



	R&S®FSH	R&S®ZVH	R&S®ZPH	R&S®Spectrum Rider FPH	R&S®ZNH
Frequency range	9 kHz (optional) / 100 kHz - 4/8/13.6/20 GHz	100 kHz - 3.6/8 GHz	5 kHz - 3(4) GHz	5 kHz - 2(4)/6(8)/13.6(20)/26.5(31)/44 GHz	30 kHz - 4/8/18/26.5 GHz
Phase noise	< - 127 dBc (1 Hz) (f = 500 MHz, 1 MHz offset)	< - 120 dBc (1 Hz) (f = 500 MHz, 1 MHz offset)	< - 125 dBc (1 Hz) (f = 500 MHz, 1 MHz offset)	< - 125 dBc (1 Hz) (f = 500 MHz, 1 MHz offset)	
DANL - at 1 GHz, RF preamplifier ON	< - 163 dBm	< - 163 dBm	< - 163 dBm	< - 163 dBm	
Analysis bandwidth	20 MHz	20 MHz	2 MHz	2 MHz	
Instrument Type	Signal and spectrum analyzer, Combination analyzer	Combination analyzer	Combination analyzer	Signal and spectrum analyzer	Vector Network Analyzer

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ANALOG SIGNAL GENERATORS

With the analog signal generator portfolio we cover the wide range of RF, microwave and mmWave frequencies.

Our selection of analog signal generators is characterized by the outstanding signal purity and performance as well as their functionality of the solutions; whether in the high end or midrange area.

The solutions benefit industries such as RF semiconductor, wireless communications, aerospace and defense, and also covers tasks featuring development, production and service, and more.



	R&S®SMA100B	R&S®SMB100B	R&S®SMB100A	R&S®SGS100A	R&S®SGU100A
Frequency range	8 kHz - 67 GHz	8 kHz - 6 GHz	100 kHz - 40 GHz	1 MHz - 12.75 GHz	12 GHz - 40 GHz
Output Power	-127 dBm to +30 dBm	-127 dBm to +26 dBm	-120 dBm to +18 dBm	-120 dBm to +15 dBm	-100 dBm to +15 dBm
SSB phase noise	< -147 dBc	< -126 dBc	< -122 dBc	< -126 dBc	< -126 dBc
Harmonics	< -60 dBc	< -30 dBc	< -58 dBc	< -30 dBc	< -30 dBc

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VECTOR SIGNAL GENERATORS

Rohde & Schwarz leverages decades of test and measurement excellence to provide you with a wide portfolio of RF vector signal generators. Our solutions range from the top-performance models capable of handling the most demanding signal generation tasks to midrange models featuring remarkably good RF characteristics, as well as compact solutions.

A common feature across different models in the solutions portfolio is high performance and their flexibility and suitability to a multitude of applications. Whether your task involves development verification and testing in wireless communication, GNSS, or mmWave applications, we have the right solution for you.



	R&S®SMW200A	R&S®SMM100A	R&S®SMBV100B	R&S®SMCV100B	R&S®SGT100A	R&S®SGS100A	R&S®SGU100A
Frequency range	100 kHz - 67 GHz	100 kHz - 44 GHz	8 kHz - 6 GHz	4 kHz - 7.125 GHz	1 MHz - 6 GHz	1 MHz - 12.75 GHz	12 GHz - 40 GHz
Output Power	-120 dBm to +18 dBm	-120 dBm to +18 dBm	-127 dBm to +20 dBm	-120 dBm to +20 dBm	-120 dBm to +17 dBm	-120 dBm to +15 dBm	-100 dBm to +15 dBm
Modulation bandwidth	2 GHz	1 GHz	1 GHz	240 MHz	240 MHz	1 GHz external	2 GHz external
SSB phase noise	< -137 dBc	< -129 dBc	< -126 dBc	< -125 dBc	< -126 dBc	< -126 dBc	< -126 dBc
Harmonics	< -55 dBc	< -55 dBc	< -30 dBc	< -30 dBc	< -30 dBc	< -30 dBc	< -30 dBc

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BROADCAST SIGNAL GENERATORS AND ANALYZERS



Rohde & Schwarz supplies consumer electronics manufacturers with all the T&M equipment they need to develop and manufacture satellite receivers, TVs and other consumer electronics equipment, including high-resolution formats such as UltraHD. For broadcasters and cable network operators, the company offers high-performance instruments for digital and analog baseband generation and modulation as well as tailored solutions for DOCSIS and all other relevant modern broadcasting standards.



	R&S®CLGD	R&S®SFD	R&S®SMCV100B
Frequency range	5 MHz - 1794 MHz	5 MHz - 1794 MHz	4 kHz - 7.125 GHz
Level range	-35 dBm to +15 dBm	-8 dBm to 15 dBm	-120 dBm to +20 dBm
SSB phase noise	≤ -60 dBc	≤ -60 dBc	≤ -125 dBc



R&S®ETL TV Analyzer

- ▶ Realtime demodulation
- ▶ Advanced frontend and FPGA-based demodulation
- ▶ Preselection with additional 75 Ω RF input
- ▶ Integrated spectrum analyzer
- ▶ Video decoder for MPEG-2, H.264 (MPEG-4), HEVC and AVS/AVS+



R&S®DSA DOCSIS signal analyzer

- ▶ Demodulation and analysis of DOCSIS 3.0/3.1 and EuroDOCSIS 3.0 downstream and upstream signals in realtime
- ▶ Demodulation and analysis of digital TV signals (J.83/A/B/C, DVB-C) in realtime
- ▶ Residual MER ≥ 50 dB with DOCSIS 3.1
- ▶ Residual MER ≥ 56 dB with SC-QAM
- ▶ Dual receivers for downstream (47 MHz to 1794 MHz) and upstream (5 MHz to 204 MHz)

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VECTOR NETWORK ANALYZERS

Vector network analysis (VNA) is one of the most essential RF and microwave measurement approaches.

Rohde & Schwarz offers a wide range of versatile, high-performance network analyzers up to 1.1 THz and standard multiport solutions up to 48 ports. A Rohde & Schwarz vector network analyzer is the perfect tool for analyzing passive and active components such as filters, amplifiers, mixers and multiport modules.

The network analyzers feature excellent RF characteristics and a wide variety of analysis functions that help the user evaluate important parameters at a glance.



	R&S®ZNA	R&S®ZNA67EXT	R&S®ZNB	R&S®ZNB	R&S®ZND	R&S®ZNL	R&S®ZNL	R&S®ZNL	R&S®ZNH
Max. frequency	67 GHz	110 GHz	40 GHz	43.5 GHz	8.5 GHz	20 GHz	18 (20 overrange) GHz	18 (20 overrange) GHz	26.5 GHz
Test port output power	+17 dBm	+10 dBm	+13 dBm	+13 dBm	+3 dBm	0 dBm	0 dBm	0 dBm	0 dBm
Port count	2/4	4	24	2/4	2	2	2	2	2
Instrument class	High end	High end	Multiport	General purpose	Economy	Economy	Economy	Economy	Handheld

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OSCILLOSCOPES

Oscilloscope innovation that delivers measurement confidence. Excellent signal fidelity, high acquisition rate, an innovative trigger system and a clever user interface - that's what you get with Rohde & Schwarz, a leading manufacturer of oscilloscopes.

Match your needs with the right oscilloscope platform, probe solution and software applications. Rohde & Schwarz oscilloscopes have outstanding features like e.g. digital trigger, deep memory, frequency response analysis (Bode plot), real-time de-embedding, fast update rates, and unique low noise.

From general purpose test to solutions for specific industry standards, we have you covered.



	R&S®Scope Rider	R&S®RTC1000	R&S®RTB2000	R&S®RTM3000	R&S®RTA4000	R&S®MXO 4	R&S®MXO 5	R&S®RT06	R&S®RTP
Bandwidth	60 MHz - 500 MHz	50 MHz - 300 MHz	70 MHz - 300 MHz	100 MHz - 1 GHz	200 MHz - 1 GHz	200 MHz - 1.5 GHz	100 MHz - 2 GHz	600 MHz - 6 GHz	4 GHz - 16 GHz
Channels	2/4	2	2,4	2/4	4	4	4/8	4	4
Sample rate	5 Gsample/s	2 Gsample/s	2.5 Gsample/s	5 Gsample/s	5 Gsample/s	5 Gsample/s	5 Gsample/s	20 Gsample/s	40 Gsample/s
Max. memory depth	500 kpts	2 Mpts	20 Mpts	80 Mpts	200 Mpts	800 Mpts	1 Gpts	2 Gpts	3 Gpts
Optional MSO	8 digital channels	8 digital channels	16 digital channels	16 digital channels	16 digital channels	16 digital channels	16 digital channels	16 digital channels	16 digital channels

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POWER SENSORS

A power sensor is a fundamental measurement tool in RF engineering. However, today's marketplace is filled with myriad choices, and many are making bold claims about attributes such as measurement speed and readings per second. As a result, it can be difficult to cut through the hyperbole and determine which sensor will actually meet the requirements of a specific measurement. With Power Sensors from Rohde & Schwarz, the performance level are unmatched, ensuring accurate, reliable results, fast. No matter the measurement you are making.



	R&S®NRPxxS/SN	R&S®NRPxxT/TN	R&S®NRP75TWG/N, R&S®90TWG/N and R&S®110TWG/N	R&S®NRPxxA/AN	R&S®NRPxxP	R&S®NR06
Sensor Type	Three-path diode	Thermal	Thermal	Average	Pulse	Frequency selective
Frequency Range	10 MHz to 90 GHz	DC to 110 GHz	50 GHz to 110 GHz	8 kHz to 18 GHz	50 MHz to 50 GHz	50 MHz to 6 GHz
Level Range	-70 dBm to +45 dBm	-35 dBm to +20 dBm	-30 dBm to +20 dBm	-70 dBm to +23 dBm	-60 dBm to +20 dBm	-130 dBm to +20 dBm
Connector Type	USB / LAN	USB / LAN	USB / LAN	USB / LAN	USB	USB / LAN

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DC POWER SUPPLIES

Rohde & Schwarz offers a versatile portfolio of DC Power supplies that fit variety of test and measurement scenarios. Whether you are looking to equip an educational lab or integrate a power supply into a production test system, we have the right equipment for you.

Choose between our basic bench models that come in compact design and offer modular capabilities or high-performance products that can easily power industrial labs.

Do you have any questions about particular model or need our help choosing a power supply that would fit your application needs? Feel free to get in touch with us!



	R&S®NGE100B	R&S®HMP2000	R&S®HMP4000	R&S®NGP800	R&S®NGL200	R&S®NGM200	R&S®NGU	R&S®NGA100	R&S®HMC804x
Number of output channels	2/3	2/3	3/4	2/4	1/2	1/2	1	1/2	1/2/3
Max. output power	100 W	188 W	384 W	800 W	120 W	120 W	60 W	80 W	100 W
Output voltage per channel	0 V to 32 V	0 V to 32 V	0 V to 32 V	0 V to 32 V; 0 V to 64 V	0 V to 20 V	0 V to 20 V	0 V to 20 V; -20 V to +20 V	0 V to 35 V; 0 V to 100 V	0 V to 32 V
Max. current per channel	3 A	5 A; 10 A	10 A	20 A; 10 A	-3 A to 6 A	-3 A to 6 A	≤ 6 V: ±8 A, > 6 V: ±3 A	2 A; 6 A	10 A/5 A/3 A

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SOURCE MEASURE UNITS

In addition to general purpose lab power supplies SMUs offer additional features like:

- ▶ Two- or four-quadrant power supply with source/sink operation
- ▶ High resolution, high accuracy
- ▶ Fast response combined with very low noise
- ▶ Enable extreme safe operation of sensitive electronic components
- ▶ Operation as voltage source with current limiter or as real current source with voltage limiter
- ▶ DC, pulsed, sweep or pulsed sweep source/measurement modes
- ▶ Extended synchronization capabilities with other instruments



	R&S®NGL200	R&S®NGM200	R&S®NGU200	R&S®NGU400
Number of quadrants	2	2	2	4
Max. output power	120 W	120 W	60 W	20 W, 60 W
Output voltage per channel	0 V to 20 V	0 V to 20 V	0 V to 20 V	-20 V to +20 V
Max. current per channel	-3 A to 6 A	-3 A to 6 A	< -6 V: 8 A, > 6 V 3 A	< -10 V: +/- 8 A, > 10 V +/- 1 A < -6 V: +/- 8 A, > 6 V +/- 3 A

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LCR METERS AND IMPEDANCE ANALYZERS

Our LCR meters support both high accuracy and high speed for the full range of impedance measurements, including the phase shift with frequency, for all frequencies from 1 mHz to 10 MHz. With dynamic impedance measurements vary frequency, voltage or current. We supply a full range of test fixtures for component handling, and rack mounting for automated test setups. With an MFIA impedance analyzer from Zurich Instruments AG, undertake comprehensive investigations of impedance properties for all relevant materials.



R&S® LCX LCR meter

- ▶ Frequency range upgradeable to 10 MHz
- ▶ Basic accuracy of $\pm 0.05\%$ for impedance measurements
- ▶ Basic accuracy of $\pm 0.03^\circ$ for phase measurements
- ▶ DC bias up to 40 V
- ▶ Data logging function



MFIA Impedance Analyzer

- ▶ 1 mHz to 5 MHz, 1 m Ω to 1 T Ω
- ▶ Fast and accurate measurements
- ▶ LabOne® Toolset including Sweeper, Plotter and Data Acquisition Modules
- ▶ Ideal fit for DLTS, MEMS and ESR & ESL applications

WIRELESS COMMUNICATION TESTERS

Modern modules, CPEs, smartphones, tablets or any other wireless device support a growing number of technologies and frequency bands. As a result, more transmitters, receivers and antenna paths must be tested in R&D and during high-volume mass production (MP). The R&D engineering validation test (EVT) and design validation test (DVT) phases require more extensive RF testing than mass production e.g. verification of MIMO performance and all supported bands and bandwidth combinations.



	R&S®CMA180	R&S®CMW100	R&S®CMP180	R&S®CMP200
Frequency range	100 MHz – 3 GHz	70 MHz - 6 GHz	400 MHz - 8 GHz	6 – 20GHz (IF) 23 – 50 GHz (RRH)
Bandwidth	20 MHz	160 MHz	500 MHz	1 GHz
Key Features	Analog / Digital VSA & VSG, VoIP, IQ Record/ Playback	One VSA & VSG, Cost efficient, 8 ports	Two VSA & VSGs, 16 ports, True MIMO, 4kQAM, Best-In-Class EVM	UWB compliance, FR2 Beam Ver & Char, FR2 testing over IF & RF
Standards Supported	Digital & Analog: DMR, P25, NXDN, TETRA, POCSAG, LTE, WiFi, Zigbee, AM, FM, PM, SSB, CW Avionics: ILS, VOR, MB	BT, WiFi6, GSM, WCDMA, LTE, 5G, GNSS	BT, WiFi7, GSM, WCDMA, LTE, 5G, GNSS	UWB, 5G FR2
Application	R&D, Production, Service/Repair	R&D (EVT, DVT), Production (FTM)	R&D (EVT, DVT), Production (FTM)	R&D (EVT, DVT), Production (FTM)

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CALL-BOXES

Device manufacturers, chipset suppliers, network operators, authorized test labs and service/repair centers require signaling call-boxes for simulating cellular networks and non-cellular connectivity. This 'signaling solution' includes the physical layer and protocol messages, providing a test environment for voice calls, sending messages, IP data transfer and everything else a device could do on a real-live network.



R&S®CMX500 radio communication tester

The CMX500 is the future-proof solution for 5G NR (FR1/FR2) and LTE signaling and non-signaling testing, featuring an intuitive and flexible web-based user interface. The user interface allows for manual interactive operation and scripting is used for automated, repeatable testing.



R&S®CMW500 radio communication tester

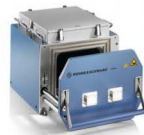
As the industry standard for wireless device testing for over a decade, the CMW500 has been continually enhanced and incorporates the extensive experience gained through long term relationships with the entire wireless ecosystem. It includes the latest LTE enhancements as well as NB-IoT (CAT-NB), eMTC (CAT-M), WCDMA, GSM, WiFi and Bluetooth all in a single compact tester.

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ANTENNA TEST SYSTEMS AND OTA CHAMBERS

Rohde & Schwarz is a one-stop-shop for a full range of radiated testing. Our solutions are designed to support the latest technologies, to be futureproof and with ease of use in mind. Our reliable solutions are complemented by a global support network of skilled technicians and customer care personnel.



	R&S®CMW-Z10	R&S®TS7124	R&S®CM0	R&S®DST200	R&S®ATS800R	R&S®ATS1800C
WxDxH [m]	0.32 x 0.27 x 0.53	0.45 x 0.4 x 0.48	0.45 x 0.7 x 0.72	0.77 x 0.7 x 0.76	0.6 x 1.2 x 2.0	0.9 x 1.5 x 2.0
Frequency range	400 MHz – 6 GHz	300 MHz - 18 GHz	300 MHz - 77 GHz	0.4 GHz - 18 GHz	20 GHz – 50 GHz	12 GHz – 170 GHz*
Shielding Eff.	>60dB	>80dB	>80dB	> 100 dB	>60dB	>90 dB
MIMO capabilities	2x2	4x4	4x4		2x2	2x2
mmW Test Type & Quiet Zone (QZ)	Coupling	Near-Field (NF)	Direct-Far-Field (DFF) QZ: Ø 2 cm @ 40GHz		Compact Antenna Test Range (CATR) QZ: Ø 20 cm	Compact Antenna Test Range (CATR) Ø 40cm
Positioner	none	none	none		3D (opt) or Tilt/Tilt (opt.)	3D
Application	R&D, Production	R&D, Production	R&D, Production	R&D, production sample testing, diagnostics	R&D, Pre-Conformance	R&D, Conformance, Regulatory

* Depending on feed selection

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R&S®OSP OPEN SWITCH AND CONTROL PLATFORM



The R&S®OSP is a high-performance switch platform from Rohde & Schwarz. It facilitates RF tests by eliminating the need to rearrange coaxial cable connections repeatedly during measurements. Instead, the application-specific modules in the base unit automatically switch the required signal paths.

The R&S®OSP is offered in two compact 2 HU models (R&S®OSP220, R&S®OSP230) and one higher 3 HU model (R&S®OSP320) to meet the requirements of diverse test scenarios – ranging from desktop configurations for laboratory measurements to complex, rack-integrated test systems.

The R&S®OSP230 model comes with touchscreen for manual control. A monitor option is available for the R&S®OSP320 model.



	R&S®OSP220	R&S®OSP230	R&S®OSP320
Instrument dimensions W x H: 19" x RU	2	2	3
Number of module slots	6	5	10
Number of slots on the front/rear panel	3/3	2/3	5/5
Status display	Yes	No	Yes
Touchscreen	No	Yes	Optional

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PHASE NOISE ANALYZERS

The phase noise analyzer portfolio from Rohde & Schwarz offers an affordable, mid-range solution with high sensitivity and fast measurements as well as high-end ultra-high-sensitivity solutions with advanced measurements modes. Ideal for phase noise analysis and VCO tests, the industry-leading solutions enable two-path phase noise analysis with real-time cross correlation and fast VCO characterization with built-in low-noise DC sources. Additionally, high-end signal and spectrum analysis can be added into a single box.

Designed by the RF experts at Rohde & Schwarz, all our phase noise analyzers feature exceptional sensitivity, high value and excellent reliability.



	R&S®FSWP Phase noise analyzer and VCO tester	R&S®FSPN Phase noise analyzer and VCO tester	R&S®Fxxx-K40 Phase noise measurement option
Description	High end signal and spectrum analyzer and phase noise tester in one box	Pure phase noise analyzer and VCO tester with high measurement speed	Measurement application software option available for R&S signal and spectrum analyzers
Frequency range	1 MHz up to 50 GHz, 325 GHz with external mixers	1 MHz to 50 GHz	2 Hz to 90 GHz, 325 GHz with external mixers
Phase noise performance 1 GHz center frequency, 10 kHz offset	-174 dBc/Hz	-163 dBc/Hz	Varies based on industry leading spectrum analyzers, from -108 dBc/Hz to 137 dBc/Hz
Integrated spectrum & signal analyzer	Yes	No	Yes
Measurements	Real time cross correlation with indication of processing gain. Very sensitive phase noise and amplitude noise measurements in parallel, signal analysis like pulsed and vector signal analysis	Real Time cross correlation with indication of processing gain. Simultaneous measurement of phase noise and amplitude noise	SSB phase noise; Residual FM; residual PM; Jitter
Capability of phase noise measurements	Internal source for measuring residual phase noise on pulsed signals	Extremely low-noise internal DC sources for automatic VCO characterization	1 Hz to 10 GHz offset range; Selection of resolution bandwidth and number of averages for each offset range; Definable evaluation ranges for residual FM/PM; Signal tracking; Optional suppression of spurious emissions
Measurement Automation Setup	SCPI recorder to simplify code generation	Automatic SCPI recoding and 100% compatible with R&S®FSWP	SCPI recorder to simplify code generation

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EMI TEST RECEIVERS

Rohde & Schwarz has been in the EMI test receiver business for more than 80 years. From the very first EMI test receivers in the 1930s to the advanced FFT-based instruments offered today, Rohde & Schwarz has repeatedly introduced innovations that set industry benchmarks for quality and ease of use. In the emerging age of the wirelessly-networked internet of things, careful use of spectrum and rising requirements for the coexistence of components is playing an increasingly important role. Rohde & Schwarz will continue to innovate for years to come.

The EMI test receiver portfolio from Rohde & Schwarz offers unparalleled performance for commercial, automotive, and military test standards, including those from IEC, CISPR, CENELEC, ETSI, FCC, ANSI, and RTCA. Flagship receivers from Rohde & Schwarz are fully CISPR 16-1-1 compliant, extremely accurate, and offer a straightforward, refined user interface.



	R&S®ESW	R&S®ESR	R&S®ESRP	R&S®EPL1000	R&S®ESL
Frequency range	1 Hz to 8 / 26.5 / 44 GHz	10 Hz to 3.6 / 7 / 26.5 GHz	9 kHz to 3.6 / 7 GHz	5 kHz to 30 MHz	9 kHz to 3 / 6 GHz
Displayed average noise level (typical, 1 MHz < f ≤ 1 GHz)	- 169 dBm	- 168 dBm	- 162 dBm	- 156 dBm (up to 30 MHz)	- 160 dBm
Max. analysis bandwidth	1 Hz to 80 MHz	10 Hz to 10 MHz, 40 MHz in zero span	10 Hz to 10 MHz, 40 MHz in zero span	1 Hz to 10 MHz	10 Hz to 10 MHz, 20 MHz in zero span
Application	The high end compliance EMI test receiver with best RF characteristics capable for super fast measurements with high bandwidth, Multi CISPR APD or external mixers.	The R&S®ESR is a compliance EMI test receiver with an optional DC input and battery pack enabling fast measurements in the lab as well as in the field.	The R&S®ESRP is an EMI test receiver for diagnostic measurements during development and precompliance testing as a preparation for the final certification test.	The R&S®EPL1000 is a compliance EMI test receiver for measurements up to 30 MHz with an optional DC input and a battery pack for fast measurements in the lab and in the field	The R&S®ESL combines an EMI test receiver and a spectrum analyzer in one instrument, making it versatile for diverse lab applications and EMI analysis.

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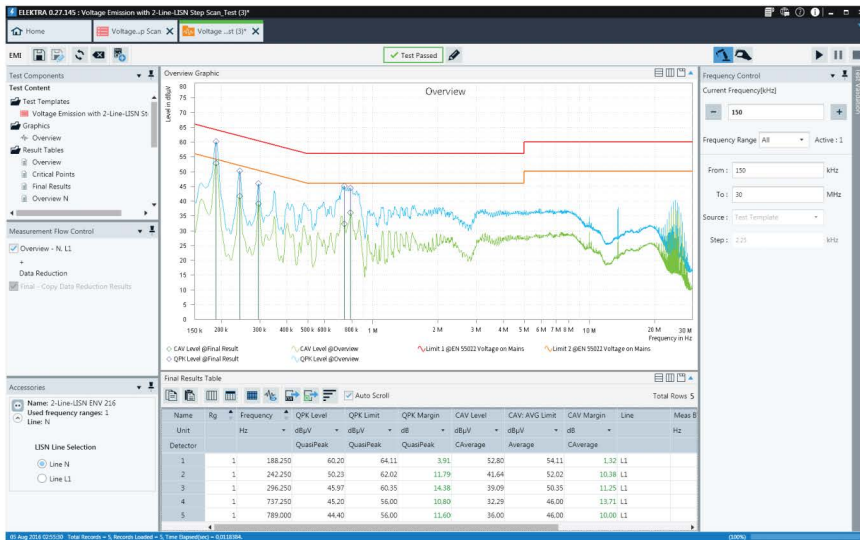
BROADBAND AMPLIFIERS

Rohde & Schwarz broadband amplifiers are innovative solid-state solutions with exceptional RF performance for generating RF power up to 13 kW in the frequency range of 4 kHz to 6 GHz. Designed as very compact amplifiers, at highest power density, they are robust against severest output mismatch while featuring high availability. Applications range from amplitude, frequency, phase, pulse to OFDM modulation. Its modular structure allows for fieldproven scalability of systems. Sophisticated switching options for input, output and sample ports will match your needs when it comes to even complex RF systems set-ups.



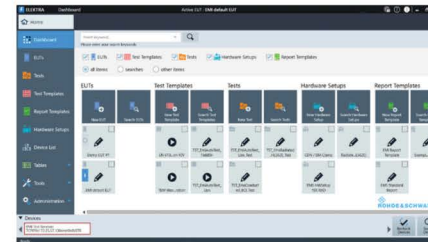
	R&S®SAM100	R&S®BBA300	R&S®BBA150	R&S®BBA130	R&S®BBL200
Frequency range	2GHz – 20GHz	380MHz – 6GHz	4kHz – 6GHz	80MHz – 6GHz	9kHz – 250 MHz
Nominal output power (Psat)	20 W	15W - 300W	15W – 3kW	22W – 13kW	3kW – 10kW
Adjustable bias point	No	Optional	No	Optional	No
Cooling type	Air	Air	Air	Air	Liquid

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EMC SOFTWARE

The nature of executing EMC testing – repetitive procedures diligently searching for unwanted emissions step-by-step through wide frequency and power level ranges – demands automation. The current EMC automation programs from Rohde & Schwarz benefit from 40 years experience, to provide market-leading standard-conform automation functions for both EMI and EMS test procedures, for the complete range of test equipment required for all aspects of EMC testing and reporting. The full range of commercial, automotive, and military EMC standards from all leading standard authorities are supported, including IEC, CISPR, CENELEC, ETSI, FCC, ANSI, RTCA and MIL-STD.



R&S®ELEKTRA

R&S®ELEKTRA test software controls complete EMC systems and automates measurements of equipment under test (EUT) being certified for emissions (EMI) and immunity (EMS).

R&S®AdVICE

R&S®AdVICE visual inspection software automates the process of visually monitoring an equipment under test (EUT) during a test sequence.



SERVICE & SUPPORT

Rohde & Schwarz offers customers reliable, local service to ensure optimal product reliability. We support you through all phases of the product life cycle and stand by you with an extensive and constantly growing portfolio of services that can be tailored to your specific needs.

Calibration Services

The scope and efficiency of our measurements are unequalled. You have chosen technologically leading products, and we ensure the total functionality and accuracy of your valuable T&M instruments for years to come.

Repair Services

Our products are among the most reliable on the market. But even the best instruments may over time deviate from their optimal performance and require adjustment or repairs. If they ever do need to be repaired, quick and smooth handling is required.

On-site Services

Downtime is a major cost factor to avoid. That's why we do everything we can to minimize the time your instruments have to be offline for calibration - all without time-consuming logistics effort. Precision is not a question of location or the manufacturer. We come to you.

Extended Warranty

To enable you to benefit from the functionality of your equipment for many years, we offer tailored services to include with your new equipment purchase or warranted product. Our concepts keep you safe.

Service Contracts

Continue to benefit after the end of warranty with our attractive service contracts. Perfect protection at all times.

Cybersecurity Services

Rohde & Schwarz Cybersecurity offers you comprehensive security services based on many years of expertise in high-security.



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Service that adds value

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



The logo for ALL data. The word "ALL" is in a large, bold, white, uppercase, sans-serif font on a dark blue background. The word "data" is in a smaller, lowercase, blue, sans-serif font on a white background.

Rohde & Schwarz

The Rohde & Schwarz electronics group offers innovative solutions in the following business fields: test and measurement, broadcast and media, secure communications, cybersecurity, monitoring and network testing. Founded more than 80 years ago, the independent company which is headquartered in Munich, Germany, has an extensive sales and service network with locations in more than 70 countries.

www.rohde-schwarz.com

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