

R&S®FSC Spectrum Analyzer

Compact and cost-effective spectrum analyzer



The perfect choice for

R&D & service labs

Test automation

Professionals
Hobbyists

Education & training

Key specifications

| | |
|---------------------|---|
| Frequency range | 9 kHz to 3/6 GHz |
| Max. input power | up to +30 dBm |
| Low noise floor | down to -165 dBm (typ., with preamplifier) |
| Phase noise | < -100 dBc/Hz (f=500 MHz, @100 kHz offset, normalized to 1 Hz RBW) |
| Connectivity | LAN, USB |
| Measurement options | tracking generator, preamplifier |

Your benefit

Features

| | |
|-----------------|--|
| Easy to set up | Owing to its compact design, the R&S®FSC only takes up minimal bench space |
| Easy to operate | All important settings are available via proper hardkeys, supplemented by softkeys on lower display edge |
| Wide choice | 4 base models to fit customer needs |

Performance in a compact form factor

Performance

- The R&S®FSC features very good RF performance. Its DANL, TOI and phase noise make it ideal for many standard measurement applications.
- General-purpose spectrum analysis presets for spectral characteristics, e.g. harmonics, AM modulation depth, ACLR, etc. are included as standard

Compact form factor

- R&S®FSC has the smallest footprint in its class at only 3 HU, ½ 19". It takes up very little space on a bench. Two R&S®FSC analyzers or one R&S®FSC and an R&S®SMC signal generator fit in just 3 HU of rack space

Cost-effective

- Total cost of ownership is excellent due to affordable initial and calibration costs, plus very low operating cost with only 12 W power consumption

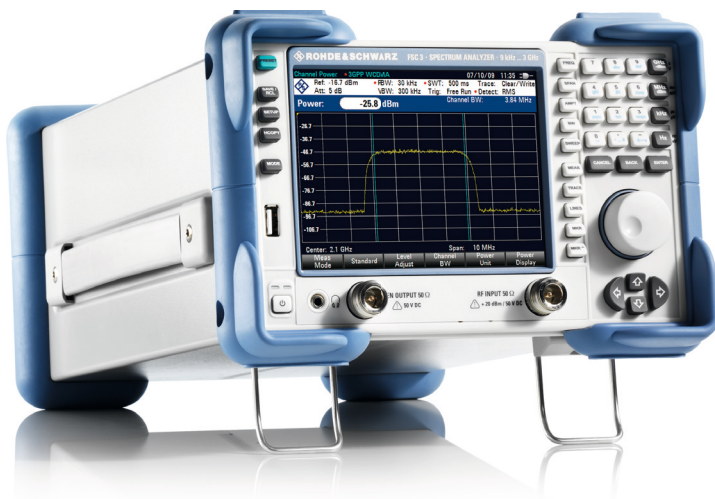
► For more information,
see www.rohde-schwarz.com/product/fsc

R&S®FSC

Spectrum Analyzer

Professional spectrum analysis – compact and cost-efficient

The R&S®FSC is a compact, cost-efficient solution that offers all essential features of a professional spectrum analyzer with Rohde & Schwarz quality. It covers a wide range of applications from simple development tasks to production, or can be used for training RF professionals. Moreover, it is ideal for applications in service or maintenance. The R&S®FSC features a wealth of functions for simplifying and speeding up the development and testing of RF products. Its good RF characteristics and its high measurement accuracy help to ensure reliable and reproducible measurement results.



R&S®FSC

Spectrum Analyzer

At a glance

Four different R&S®FSC models are available in the frequency range from 9 kHz to 3 GHz or 6 GHz. Separate models with tracking generator are available for each frequency range. An optional preamplifier that is available for all models increases sensitivity for measuring weak signals. Owing to its compact design, the R&S®FSC takes up only a minimum of space on a lab bench. When installed in a rack, two R&S®FSC or one R&S®FSC and one R&S®SMC signal generator situated next to each other fit into the 19" space.

Key facts

- Frequency range 9 kHz to 3 GHz or 6 GHz
- Resolution bandwidths 10 Hz to 3 MHz
- High sensitivity (< -141 dBm (1 Hz), with optional preamplifier < -161 dBm (1 Hz))
- High third order intercept (> 10 dBm, typ. 15 dBm)
- Low measurement uncertainty (< 1 dB)
- Internal tracking generator (model .13/.16)
- Storage of measurement results on USB stick
- LAN and USB interface for remote control and transfer of measurement data
- R&S®FSCView software for simple documentation of measurement results
- Compact dimensions
- Low power consumption (12 W)

Measurement functions

- Noise marker for determining the noise power referenced to 1 Hz measurement bandwidth
- Frequency counter with 0.1 Hz resolution
- Limit line monitoring (pass/fail function) for indicating whether the DUT complies with defined limits
- Modulation depth measurement of AM-modulated signals
- Measurement of harmonics and total harmonic distortion
- AM/FM audio demodulator (audio via built-in loudspeaker or via headphones)
- Scalar transmission measurement for fast and simple determination of the transmission characteristics of DUTs such as cables, filters or amplifiers (available for the R&S®FSC models .13 and .16 with tracking generator)
- Location of EMC problems on printed boards using the R&S®HZ-15 near-field probe set for emission measurements from 30 MHz to 3 GHz

- Field-strength measurements taking into account the specific antenna factors of the connected antenna, the field strength being displayed directly in dBμV/m
- Power measurement on pulsed signals in the time domain with predefined settings for the GSM and EDGE mobile radio standards
- Channel power measurement in a definable transmission channel with predefined settings for 3GPP WCDMA, cdmaOne, CDMA2000® and LTE mobile communications standards
- Measurement of occupied bandwidth (OBW)
- Adjacent channel power, absolute or referenced to the TX carrier for up to 12 channels and 12 adjacent channels
- Gated sweep for displaying the modulation spectrum of burst signals such as GSM or WLAN
- Measurement of spurious emissions

Easy operation

The R&S®FSC is operated via the keyboard and a rotary knob with an integrated enter function. All important settings such as frequency, bandwidth, span or marker can be directly accessed via hardkey buttons. Clearly arranged softkeys at the lower edge of the touch screen provide additional menu selections. The user interface is available in different languages: English, Korean, Japanese, Chinese, Russian, Italian, Spanish, Portuguese, French, Hungarian and German.

R&S®FSCView software for recording measurement results

The R&S®FSCView software that comes with the analyzer is an easy-to-use tool for managing, evaluating and documenting measurement results.

Benefits and key features

- Data transfer between the R&S®FSC and a PC via USB/LAN
- Easy postprocessing of measurement results by means of data export in ASCII or MS Excel format
- Storage of graphics data in standard formats
- Printout of measurement results, including the instrument settings used
- Simple comparison of measurement results
- Subsequent analysis of the measurement results using markers
- Subsequent display of limit lines
- Editor for creating limit lines and antenna factors
- Compatibility with Windows XP and Vista (32-bit version)

Remote-control operation

All functions of the R&S®FSC can be controlled via the USB or LAN interface using SCPI-compatible remote-control commands. For this purpose, drivers for LabWindows/CVI, LabView, VXI-Plug & Play and Linux are available.

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Specifications in brief

| | | R&S®FSC3 | R&S®FSC6 |
|------------------------------------|--|--|---------------------------|
| Frequency range | | 9 kHz to 3 GHz | 9 kHz to 6 GHz |
| Resolution bandwidth | | 10 Hz to 3 MHz | |
| Displayed average noise level | without preamplifier, RBW = 1 Hz | | |
| | 10 MHz to 2 GHz | < -141 dBm, typ. -146 dBm | < -141 dBm, typ. -146 dBm |
| | 2 GHz to 3 GHz | < -138 dBm, typ. -143 dBm | < -138 dBm, typ. -143 dBm |
| | 3 GHz to 3.6 GHz | – | < -138 dBm, typ. -143 dBm |
| | 3.6 GHz to 5 GHz | – | < -142 dBm, typ. -146 dBm |
| | 5 GHz to 6 GHz | – | < -140 dBm, typ. -144 dBm |
| | with R&S®FSC-B22 preamplifier option, RBW = 1 Hz | | |
| | 10 MHz to 1 GHz | < -161 dBm, typ. -165 dBm | < -161 dBm, typ. -165 dBm |
| | 1 GHz to 2 GHz | < -159 dBm, typ. -163 dBm | < -159 dBm, typ. -163 dBm |
| | 2 GHz to 3 GHz | < -155 dBm, typ. -159 dBm | < -155 dBm, typ. -159 dBm |
| | 3 GHz to 5 GHz | – | < -155 dBm, typ. -159 dBm |
| | 5 GHz to 6 GHz | – | < -151 dBm, typ. -155 dBm |
| IP3 | frequency 1 GHz | typ. 15 dBm | |
| Phase noise | frequency 500 MHz | | |
| | 30 kHz carrier offset | < -95 dBc (1 Hz) | |
| | 100 kHz carrier offset | < -100 dBc (1 Hz) | |
| | 1 MHz carrier offset | < -120 dBc (1 Hz) | |
| Detectors | | sample, max/min peak, auto peak, RMS | |
| Level measurement uncertainty | 10 MHz < f ≤ 3.6 GHz | < 1 dB, typ. 0.5 dB | < 1 dB, typ. 0.5 dB |
| | 3 GHz < f < 3.6 GHz | | < 1 dB, typ. 0.5 dB |
| | 3.6 GHz < f ≤ 6 GHz | | < 1.5 dB, typ. 1 dB |
| Tracking generator (model .13/.16) | | | |
| Frequency range | | 100 kHz to 3 GHz | 100 kHz to 6 GHz |
| Output power | | 0 dBm (nominal) | 0 dBm (nominal) |
| Dynamic range (transmission) | 100 kHz < f < 300 kHz | > 60 dB, typ. 80 dB | > 60 dB, typ. 80 dB |
| | 300 kHz < f < 3 GHz | > 70 dB, typ. 90 dB | > 70 dB, typ. 90 dB |
| | 3 GHz < f < 6 GHz | – | > 70 dB, typ. 90 dB |
| Display | | 5.7" (14.5 cm) color LCD with VGA resolution | |
| Dimensions | (W x H x D) | 233 mm x 158 mm x 350 mm (9.2 in x 6.2 in x 13.8 in) | |
| Weight | | 4.5 kg (9.92 lbs) | |

Ordering information

| Designation | Type | Order No. |
|---|-------------|--------------|
| Spectrum Analyzer, 9 kHz to 3 GHz | R&S®FSC3 | 1314.3006.03 |
| Spectrum Analyzer, 9 kHz to 3 GHz, with tracking generator | R&S®FSC3 | 1314.3006.13 |
| Spectrum Analyzer, 9 kHz to 6 GHz | R&S®FSC6 | 1314.3006.06 |
| Spectrum Analyzer, 9 kHz to 6 GHz, with tracking generator | R&S®FSC6 | 1314.3006.16 |
| Accessories supplied | | |
| Power cable, USB cable for connection to PC, quick start guide and CD-ROM with R&S®FSCView software and documentation | | |
| Options | | |
| Preamplifier, 100 kHz to 3 GHz/6 GHz, for the R&S®FSC3/FSC6 | R&S®FSC-B22 | 1314.3535.02 |
| Accessories | | |
| LAN Cable | R&S®HA-Z210 | 1309.6152.00 |
| Headphones | R&S®FSH-Z36 | 1145.5838.02 |
| 19" Rack Adapter, for installing two R&S®FSC side-by-side | R&S®ZZA-T33 | 1109.4458.00 |
| 19" Rack Adapter, for installing one R&S®FSC | R&S®ZZA-T34 | 1109.4464.00 |
| 19" Adapter for installing a combination of the R&S®FSC/R&S®SMC | R&S®ZZA-T37 | 1109.4529.00 |
| Matching Pad, 50 Ω/75 Ω, bidirectional, 0 Hz to 2.7 GHz, N female/N male, power-handling capacity 2 W | R&S®RAM | 0358.5414.02 |
| Matching Pad, 50 Ω/75 Ω, unidirectional, 0 Hz to 2.7 GHz, N female/N male, power-handling capacity 2 W | R&S®RAZ | 0358.5714.02 |
| Matching Pad, 50 Ω/75 Ω, bidirectional, 0 Hz to 1 GHz, BNC female/N male, power-handling capacity 1 W | R&S®FSH-Z38 | 1300.7740.02 |
| Near-Field Probe Set | R&S®HZ-15 | 1147.2736.02 |
| Preamplifier for R&S®HZ-15 | R&S®HZ-16 | 1147.2720.02 |

Service you can rely on

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

About Rohde & Schwarz

Rohde & Schwarz is an independent group of companies specializing in electronics. It is a leading supplier of solutions in the fields of test and measurement, broadcasting, radiomonitoring and radiolocation, as well as secure communications. Established more than 75 years ago, Rohde & Schwarz has a global presence and a dedicated service network in over 70 countries. Company headquarters are in Munich, Germany.

Environmental commitment

- Energy-efficient products
- Continuous improvement in environmental sustainability
- ISO 14001-certified environmental management system

Certified Quality System
ISO 9001

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R&S®FSC

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Highlights



High RF performance



Low power consumption



Low noise floor



Compact form factor



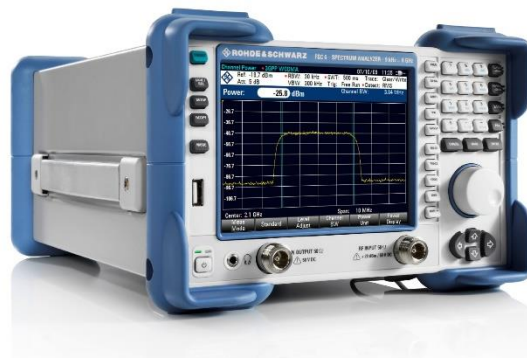
High max. input power



Easy to control

Class-leading spectrum analyzer engineered in Germany.

Tracking generator



Tracking generator for scalar transmission measurements.

Ordering information

Model configuration information

| Description | Model |
|--|-------------------------|
| 9 kHz to 3 GHz | R&S®FSC3 (1314.3006.03) |
| 9 kHz to 3 GHz, with tracking generator | R&S®FSC3 (1314.3006.13) |
| 9 kHz to 6 GHz | R&S®FSC6 (1314.3006.06) |
| 9 kHz to 6 GHz, with tracking generator | R&S®FSC6 (1314.3006.16) |
| Description | Option |
| Preamplifier for spectrum analyzer | R&S®FSC-B22 |
| Description | Accessories |
| 19" rackmount kit for two R&S®FSC | R&S®ZZA-T33 |
| 19" rackmount kit for one R&S®FSC | R&S®ZZA-T34 |
| Headphones | R&S®FSH-Z36 |
| Near-field probes, 30 MHz to 3 GHz | R&S®HZ-15 |
| Preamplifier for R&S®HZ-15, 100 kHz to 3 GHz | R&S®HZ-16 |

Easy virtual control – control it your way, be it wired or wireless*

Wireless remote control with R&S®MobileView app*



Wired/wireless* remote control with R&S®InstrumentView PC software



Flexible remote control
on demand, anywhere, anytime.

* Via a wireless router connected to the instrument's LAN port

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