

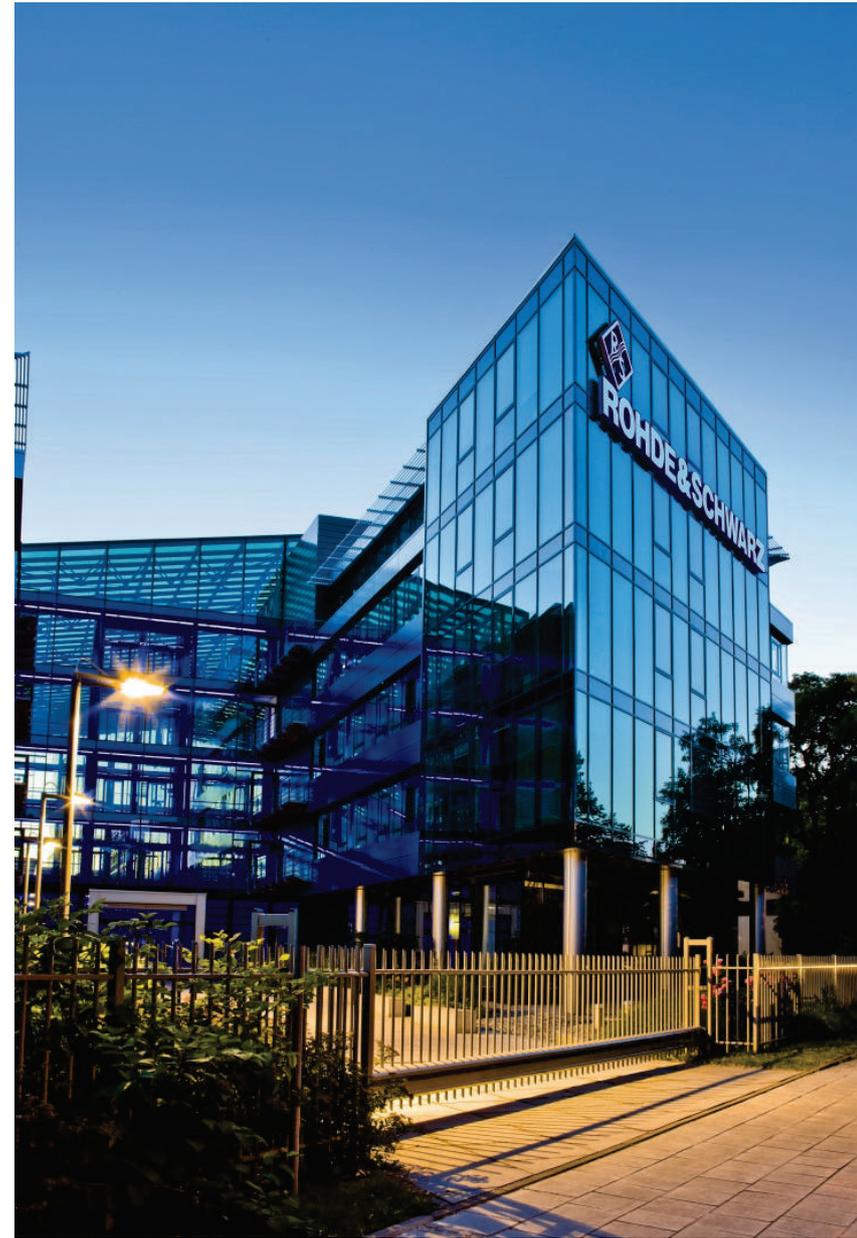
Distribution Catalog

2017 Summer Edition



About Rohde & Schwarz

- Independent, autonomous company
- For more than 80 years, Rohde & Schwarz has stood for **quality**, **precision** and **innovation** in all fields of wireless communications
- Represented in over 70 countries, with subsidiaries in 57 countries
- Turnover > EUR 1.92 billion (FY 15/16)
- 10,000 employees worldwide



Rohde & Schwarz

Around the world



Business Fields

T&M equipment for the following applications



Test & Measurement

- I RF and microwave
- I Electromagnetic compatibility (EMC) tests
- I Radiocommunications, especially mobile radio
- I Audio, video and broadcasting
- I General-purpose electronics

Secure Communications



Radiomonitoring and Radiolocation



Broadcasting



Services



Distribution Instruments

The quality you expect at an unexpected price



Distribution Instruments

The quality you expect at an unexpected price

Versatile T&M instruments for everyday lab use.

- Quality T&M solutions engineered by Rohde & Schwarz
- Accurate, reliable, easy to use
- With a comprehensive support thanks to the worldwide service and technical support network from Rohde & Schwarz



Service you can rely on Worldwide at all times

No matter how you buy our products:

- through direct sales channels,
- from a distributor, or
- from our R&S®Shop,

there is always a personal contact partner ready to help you:

- Worldwide service and sales network
- 24-hour support
- R&D centers at technology locations around the globe



Distribution Instruments

Portfolio overview



Oscilloscopes

Power Supplies

Signal Generators

Handheld Analyzers

Spectrum Analyzers

Network Analyzers

EMC Precompliance

Meters and Counters

Oscilloscopes Models



- Main Menu
- Oscilloscopes**
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- Meters and Counters

Oscilloscopes Specifications

	R&S®Scope Rider	R&S®HMO100Z	R&S®HMO120Z	R&S®RTB2000	R&S®HMO3000	R&S®RTM2000	R&S®RTE
							
Bandwidth (-3 dB)	60 MHz 100 MHz 200 MHz 350 MHz 500 MHz	50 MHz 70 MHz 100 MHz	100 MHz 200 MHz 300 MHz	70 MHz 100 MHz 200 MHz 300 MHz	300 MHz 400 MHz 500 MHz	200 MHz 350 MHz 500 MHz 1 GHz	200 MHz 350 MHz 500 MHz 1 GHz 1.5 GHz 2 GHz
Number of channels	Analog: 2/4 Digital: 8*	Analog: 2 Digital: 8*	Analog: 2 Digital: 8*	Analog: 2/4 Digital: 16*	Analog: 2/4 Digital: 8/16*	Analog: 2/4 Digital: 16*	Analog: 2/4 Digital: 16*
Sampling Rate	Up to 5 Gsample/s	512 Msample/s per channel 1 Gsample/s Interleaved	1 Gsample/s per channel 2 Gsample/s Interleaved	1.25 Gsample/s per channel 2.5 Gsample/s Interleaved	2 Gsample/s per channel 4 Gsample/s Interleaved	2.5 Gsample/s per channel 5 Gsample/s Interleaved	5 Gsample/s per channel
Memory Depth	Up to 500 kSample	512 ksample per channel 1 Msample Interleaved	1 Msample per channel 2 Msample Interleaved	10 Msample per channel 20 Msample Interleaved	4 Msample per channel 8 Msample Interleaved	10 Msample per channel 20 Msample Interleaved 460 Msample segmented memory (with option)	10 Msample per channel 50 Msample (with option) Up to 40 Msample interleaved Up to 200 Msample (with option)

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R&S® RTE1000 Digital Oscilloscope

Truly uncompromised in performance



The perfect choice for	
Designing and debugging embedded systems	Signal validation
EMI debugging during daily development	Power integrity analysis

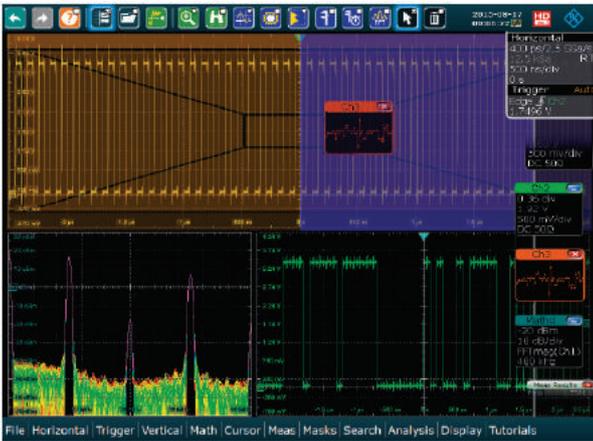
Key specifications	
Bandwidth	200 MHz, 300 MHz, 500 MHz, 1 GHz, 1.5 GHz, 2 GHz
Channels	2/4
Max. sample rate	5 Gsample/s
Max. memory	200 Msample
Mixed signal option	16 channels, 5 Gsample/s
Acquisition rate	> 1 000 000 waveforms/s
Vertical resolution	up to 16 bits
Mixed signal option	16 channels, 400 MHz, 5 Gsample/s, 100 Msample/channel

Truly uncompromised in performance

More reliable measurements, more tools and fast results, more fun to use – that's the R&S® RTE oscilloscope. From embedded design development to power electronics analysis to general debugging, the R&S® RTE offers quick solutions for everyday T&M tasks.

Your benefit	Features
No trade-offs	<ul style="list-style-type: none"> Longest signal sequences (200 Msample memory depth) at highest resolution (5 Gsample/s sampling rate) Find signal faults quickly: more than 1 000 000 waveforms/s Most precise results: 16-bit vertical resolution in high definition mode
High-resolution 10.4" touchscreen	<ul style="list-style-type: none"> Drag & drop signals and measurement results Results in only two clicks thanks to the powerful toolbar Convenient tools such as QuickMeas, fingertip zoom and undo/redo
Multichannel spectrum analysis	<ul style="list-style-type: none"> Analysis of up to four signals in parallel Correlation of time and frequency signals Spectrogram: display changes in power and frequency over time Outstanding RF performance: high dynamic range and low inherent noise

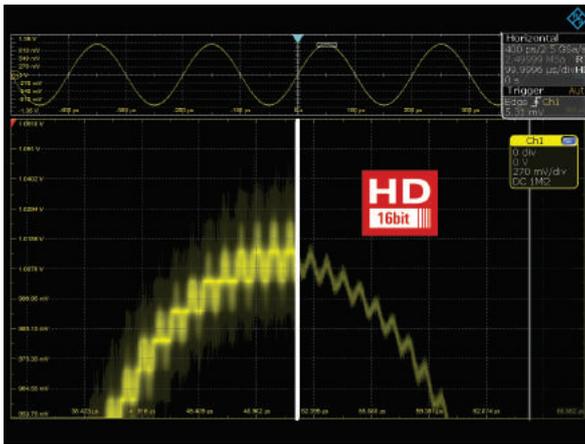
► For more information, visit www.rohde-schwarz.com/product/RTE



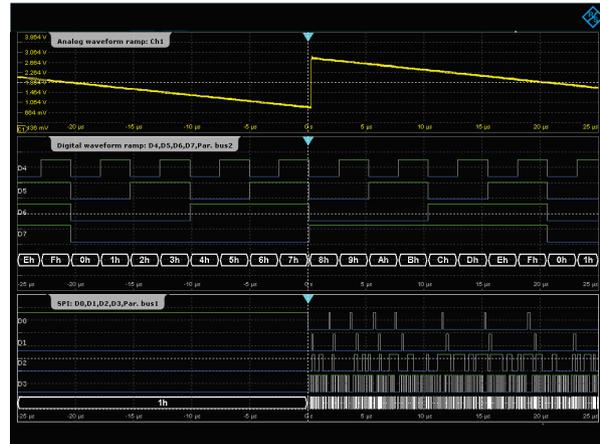
You can drag & drop waveforms and result windows on the screen. The SmartGrid function helps you flexibly arrange multiple diagrams on the screen.



R&S®RTE oscilloscopes come with built-in spectrum analysis for up to four signals in parallel. Results can be correlated in the time and frequency domain. Analysis functions such as spectrogram (with R&S®RTE-K18 option), mask test and peak list are available.



The high definition mode (HD mode) increases the vertical resolution of the R&S®RTE to up to 16 bit. This results in sharper waveforms, showing signal details that would otherwise be masked by noise.



With the R&S®RTE-B1 option, every R&S®RTE can be turned into a mixed signal oscilloscope with 16 digital channels. This example shows the ramp signal of a 4-bit ADC with analog and digital channels correlated to an SPI bus that controls the ADC.

Popular options	
Hardware options (plug-in)	Type
Mixed signal option, 400 MHz, 16 digital channels	R&S®RTE-B1
SSD hard disk	R&S®RTE-B18
Memory upgrade, 50 Msample per channel	R&S®RTE-B102
Serial triggering and decoding	
I ² C/SPI serial decoding	R&S®RTE-K1
UART/RS-232/RS-422/RS-485 serial decoding	R&S®RTE-K2
CAN/LIN serial triggering and decoding	R&S®RTE-K3
Analysis	
High definition mode up to 16 bit	R&S®RTE-K17
Spectrum analysis	R&S®RTE-K18
Power analysis	R&S®RTE-K31

Broad range of probes			
Active		Multifunctional	
Single-ended	Differential	High-voltage	Current
Passive			EMC near-field
Standard	Special		

Rohde & Schwarz offers a broad range of oscilloscope probes for different applications. For more information, see the product brochure: Digital oscilloscopes from Rohde & Schwarz, Probes and accessories (PD 3606.8866.12)

R&S® RTB2000 Digital Oscilloscopes

Power of 10



The perfect choice for

R&D troubleshooting Education

Production tests and repair Electronic hobbyists

Key specifications

Bandwidth	70 MHz, 100 MHz, 200 MHz, 300 MHz
Channels	2 or 4 analog channels +16 digital channels (with MSO option)
Max. sample rate	2.5 Gsample/s (interleaved), 1.25 Gsample/s (all channels)
Memory	10 Msample, 20 Msample (interleaved)
Display	10.1" capacitive touch, 1280 x 800 resolution
ADC	10-bit
Boot time	10 seconds
Max. update rate	50,000 waveforms per second
Connectivity	LAN, USB host and device ports
Upgradable	bandwidth, protocol trigger and decode, MSO, pattern generator and arbitrary waveform generator
Warranty	standard 3-year

More signal details with the power of 10

What sets these scopes apart from all others in their class? New, advanced technology.

- 10-bit ADC – see small signal details in the presence of large signals
- 10 Msample acquisition memory depth on each channel (20 Msample when interleaved)
- Large 10.1" high-resolution capacitive touchscreen with gesture support

Your benefit	Features
See small signal detail in the presence of large signals	10-bit ADC, 1280 x 800 pixel display resolution
Capture more time at full bandwidth	2.5 Gsample/s max. sample rate with up to 20 Msample memory, 12 horizontal divisions
Easier to see and collaborate. Faster to operate and interpret results.	10.1" capacitive touchscreen with 1280 x 800 resolution, grid annotation, split dual window

► For more information,
see www.rohde-schwarz.com/product/RTB2000

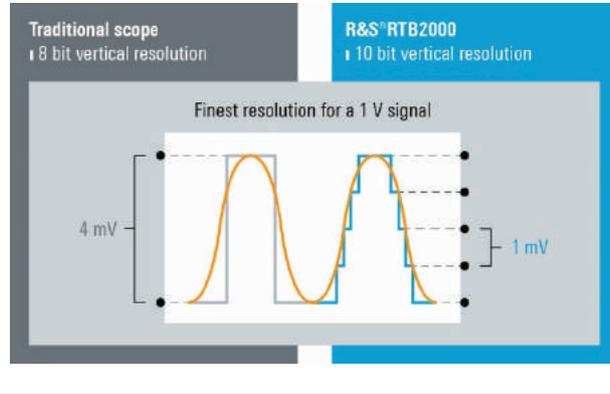
10 to 100 times more memory depth compared to traditional oscilloscopes in the same instrument class

Capture the longest time periods with class-leading 160 Msample memory



Standard memory (light blue) | Optional segmented memory (dark blue)

10-bit A/D converter: uncovers even small signal details



Ordering information

Step 1: choose your oscilloscope model

Two-channel model: R&S®RTB2002
Four-channel model: R&S®RTB2004

Included: All models include the R&S®RT-ZP03 single-ended passive probe for each channel, power cord and 3-year warranty.

Step 2: choose your bandwidth option

70 MHz bandwidth	standard for two-channel and four-channel models
100 MHz bandwidth	R&S®RTB-B221 for R&S®RTB2002 R&S®RTB-B241 for R&S®RTB2004
200 MHz bandwidth	R&S®RTB-B222 for R&S®RTB2002 R&S®RTB-B242 for R&S®RTB2004
300 MHz bandwidth	R&S®RTB-B223 for R&S®RTB2002 R&S®RTB-B243 for R&S®RTB2004

Step 3: choose your options and accessories

Software options

Triggering and decoding	R&S®RTB-K1 I ² C/SPI R&S®RTB-K2 UART/RS-232/422/485 R&S®RTB-K3 CAN/LIN
History and segmented memory	R&S®RTB-K15
Application bundle	R&S®RTB-PK1 (-K1, -K2, -K3, -K15)

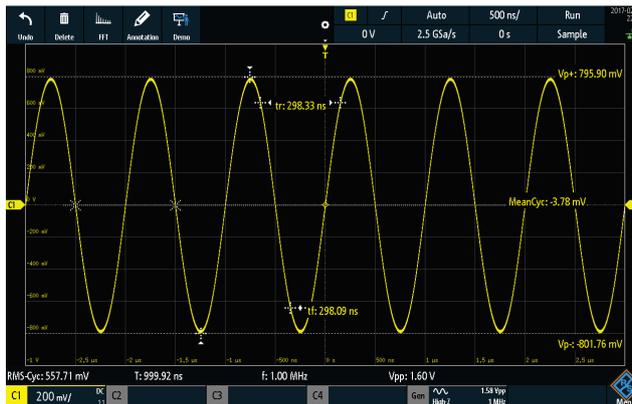
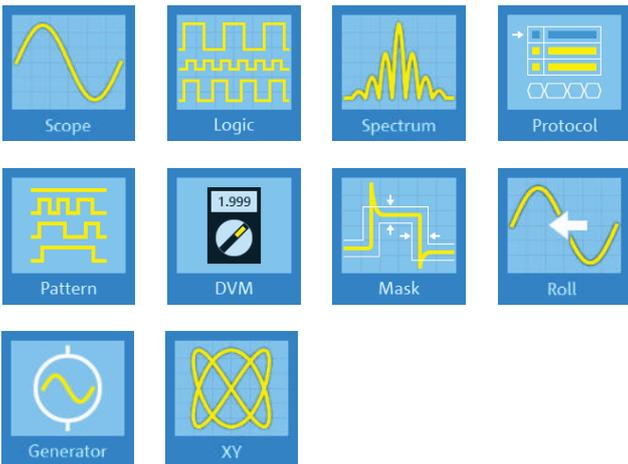
Hardware options

R&S®RTB-B1 mixed signal upgrade for non-MSO models, 250 MHz
R&S®RTB-B6 arbitrary waveform generator

Accessories

R&S®RTB-Z1 plastic front cover
R&S®RTB-Z3 soft carrying bag
R&S®ZZA-RTB2K rackmount kit

X-in-1 oscilloscope



QuickMeas: automatic measurement and graphical display at the push of a button.

Rohde & Schwarz Representative

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Latin America +1 410 910 79 88 | Asia Pacific +65 65 13 04 88 | China +86 800 810 82 28 / +86 400 650 58 96

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R&S® Scope Rider (R&S® RTH)

Lab performance in a rugged and portable design



The perfect choice for

Electrical and electromechanical installation and maintenance

Debugging and testing advanced power electronics

Electronic field service and maintenance

Education

Key specifications

Bandwidth	60 MHz, 100 MHz, 200 MHz, 350 MHz, 500 MHz
Channels	2/4
Max. sample rate	5 Gsample/s
Max. memory	500 ksample, 50 Msample segmented memory (optional)
Acquisition rate	50 000 waveforms/s
ADC resolution	10 bits
Isolated channels	CAT IV 600 V/CAT III 1000 V
IP rating	IP51, in line with IEC 60529
Display	7.0" color touchscreen, 800 × 480 pixel
Mixed signal option	8 channels, 250 MHz, 1.25 Gsample/s, 125 ksample

The perfect multipurpose tool for the lab or in the field.

When debugging embedded devices in the lab or analyzing complex problems in the field, the R&S® Scope Rider offers the performance and capabilities of a lab oscilloscope as well as the form factor and ruggedness of a battery-operated handheld device.

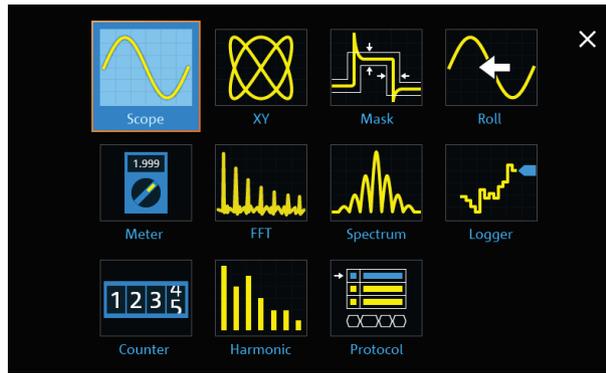
Your benefit	Features
Superior performance	<ul style="list-style-type: none"> Deep memory (up to 50 Msample) and high resolution (5 Gsample/s) Fast acquisition rate: 50 000 waveforms/s 10-bit A/C converter Excellent sensitivity: 2 mV/div to 100 V/div Up to 200 V offset range 33 automatic measurement functions
Outstanding protection and excellent connectivity	<ul style="list-style-type: none"> Isolated channels: CAT IV 600 V/CAT III 1000 V IP51 housing that meets military requirements Wireless LAN and Ethernet for web-based remote control and quick data access
8 instruments in one handheld package	<ul style="list-style-type: none"> Lab performance oscilloscope Logic analyzer Protocol analyzer Data logger Digital multimeter¹⁾ Spectrum analyzer Harmonics analyzer Frequency counter

¹⁾ Additional multimeter channel in two-channel model.

► For more information, visit www.rohde-schwarz.com/product/RTH

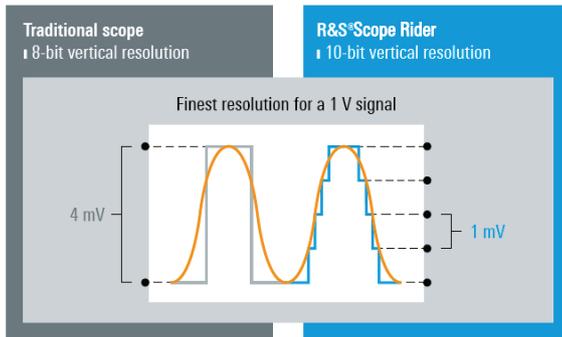


The high-speed acquisition system of the R&S®Scope Rider captures up to 50 000 waveforms/s and uncovers rare and unexpected signal anomalies.

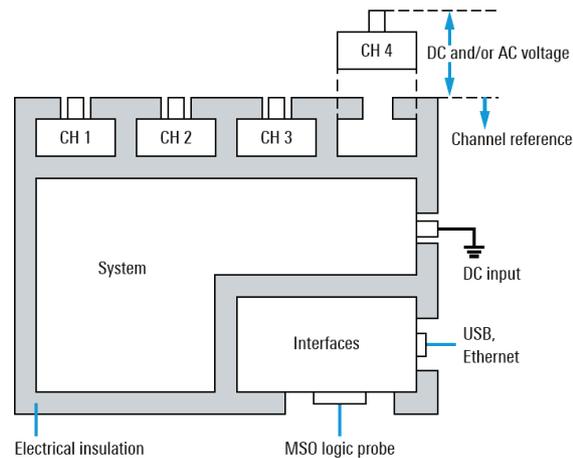


8 instruments in one – select the instrument you need at the push of a button.

10-bit A/D converter: uncovers even small signal details



Double insulation for maximum safety



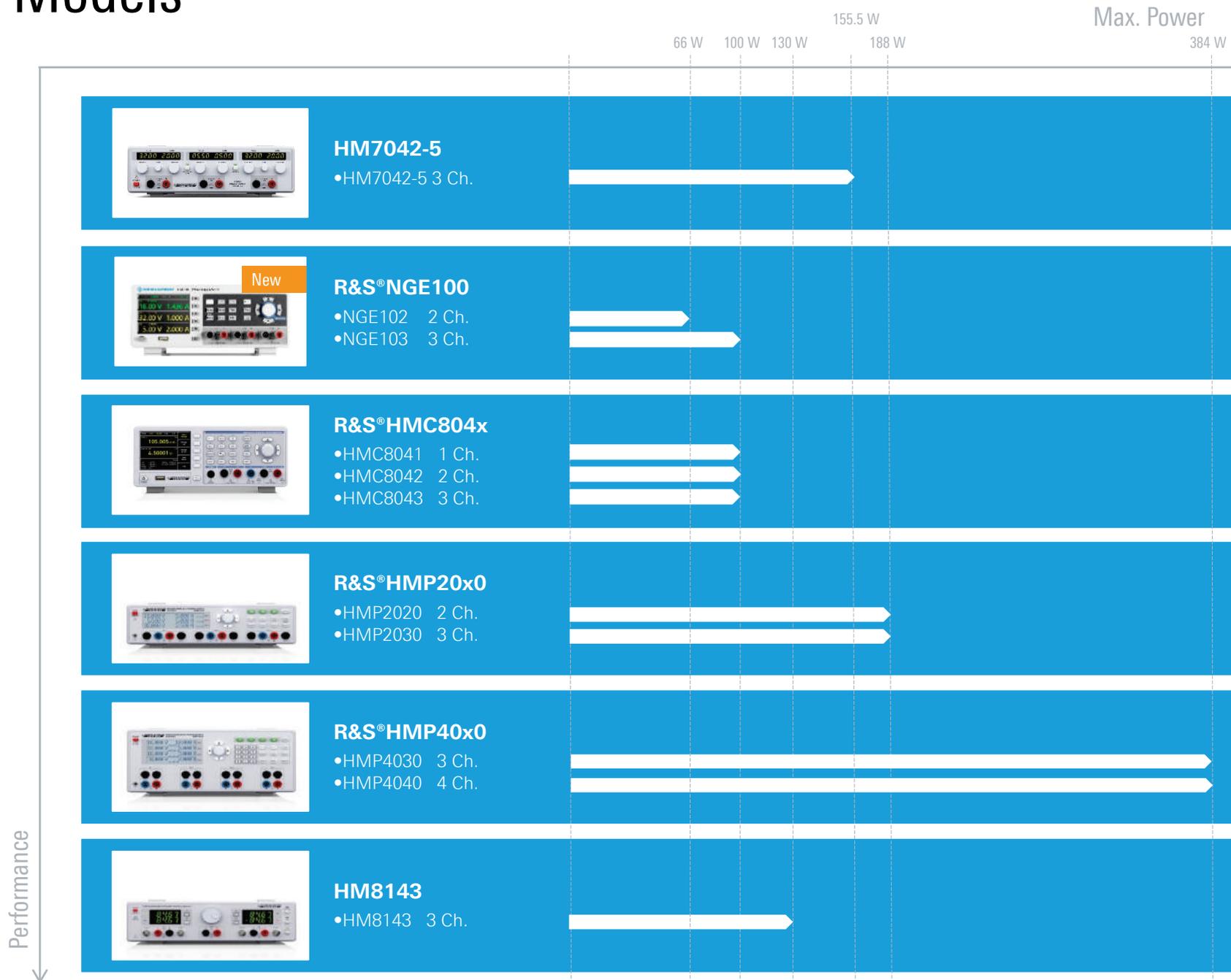
Popular options/ accessories

Hardware Options	Type
Mixed signal option, 250 MHz, 8 digital channels	R&S®RTH-B1
Software options	
I ² C/SPI serial decoding	R&S®RTH-K1
UART/RS-232/RS-422/RS-485 serial decoding	R&S®RTH-K2
CAN/LIN serial triggering and decoding	R&S®RTH-K3
History/segmented memory	R&S®RTH-K15
Spectrum analysis	R&S®RTH-K18
Advanced triggering	R&S®RTH-K19
Frequency counter	R&S®RTH-K33
Harmonics analysis	R&S®RTH-K34
Wireless LAN	R&S®RTH-K200/ R&S®RTH-K200US
Web interface remote control	R&S®RTH-K201
Passive probes	
500 MHz, 10:1, isolated, 600V CATIV, 1000V CAT III	R&S®RT-Z110
500MHz, 100:1, isolated, 600V CAT IV, 1000V CAT III	R&S®RT-Z111
Current probes	
100 kHz, 30A, AC/DC	R&S®RT-HZ050
Accessories	
Soft carrying bag	R&S®HA-Z220
Spare battery	R&S®HA-Z306

Languages supported: English, German, French, Spanish, Russian, simplified and traditional Chinese, Korean and Japanese.

Rohde & Schwarz Representative

Power Supplies Models



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- Handheld Analyzers
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- EMC Precompliance
- Meters and Counters

Power Supplies

Specifications

	HM7042-5	R&S®NGE100		R&S®HMC804x			R&S®HMP20x0		R&S®HMP40x0		HM8143
											
Channels	3	2	3	1	2	3	2	3	3	4	3
Max. Voltage	2 x 32 V 1 x 5.5 V	2 x 32V	3 x 32V	1 x 32 V	2 x 32 V	3 x 32 V	2 x 32 V	3 x 32 V	3 x 32 V	4 x 32 V	2 x 30 V 1 x 5 V
Max. Current	2 x 2A 1 x 5A	3A		10 A	5 A	3 A	1 x 10 A 1 x 5 A	5 A	10 A	10 A	2 A
Resolution	10 mV 1 mA or 10 mA	10 mV 1 mA		1 mV 0.1/0.5 mA (I < 1 A), 1 mA (I ≥ 1 A)			1 mV 0.2 mA (I < 1 A), 1 mA (I ≥ 1 A)	1 mV 0.1 mA (I < 1 A), 1 mA (I ≥ 1 A)	1 mV 0.2 mA (I < 1 A), 1 mA (I ≥ 1 A)		10 mV 1 mA (Ch1, Ch3)
Max. Power	155.5W	66 W	100 W	100 W			188 W		384 W		130 W
Oversvoltage Protection	adjustable for each channel	adjustable for each channel		adjustable for each channel			adjustable for each channel		adjustable for each channel		n.a.

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R&S® HMC804x Power Supply

Compact and easy to use



The perfect choice for

Engineering lab

Production testing

Education

Maintenance & repair

Key features

One, two or three channels – the R&S® HMC804x power supplies with their specifications and wide range of functions are ideal for use in development labs and industrial environments. Thanks to their high energy efficiency, the linear power supplies remain cool and quiet, even at maximum load. Practical interfaces and connectors allow users to work quickly and conveniently with the R&S® HMC804x. Convenient functions enable the instruments to be used in special applications.

Key specifications	R&S® HMC8041	R&S® HMC8042	R&S® HMC8043
Number of channels	1	2	3
Max. power per channel	100 W	50 W	33 W
Total power output	100 W		
Output voltage per channel	0 V to 32 V		
Max. output current per channel	10 A	5 A	3 A
Resolution	1 mV/1 mA		
Overvoltage protection	adjustable per channel		
Overcurrent protection	FuseLink technology		
Arbitrary V/I curves	EasyArb function		

Your benefit	Features
Clear display of all measured parameters	The brilliant color display shows voltage current and power values in real time
Flexible channel configurations for up to 90 volts	All channels are galvanically isolated and can be combined to drive balanced circuitries or for higher voltages/currents
Flexible overcurrent protection	<ul style="list-style-type: none"> FuseLink allows you to freely combine the electronic fuses in each channel A fuse delay can be set to prevent too early switch-off due to a short current spike
Programmable time/voltage or time/current sequences	Arbitrary waveforms can be generated for voltage and current. Function can be configured and executed via control panel or external interface
EasyRamp function	After switching on, voltage will increase practically linear to the set value

► For more information, see www.rohde-schwarz.com/product/HMC804x

Ideal for industrial environments



Power supply units in industrial production are often found in 19" racks. All R&S[®]HMC804x models can be integrated into 19" racks with the R&S[®]HZC95 rackmounting kits.

WAGO cage clamp



To facilitate typical calibration setups, the rear panel connector was designed with a WAGO cage clamp.

Ordering information

Base units			
Model	Channel	Power	GPIB
R&S [®] HMC8041	1	100 W (max. 10 A)	No
R&S [®] HMC8041-G	1		Yes
R&S [®] HMC8042	2	100 W (50 W/channel, max. 5 A)	No
R&S [®] HMC8042-G	2		Yes
R&S [®] HMC8043	3	100 W (33 W/channel, max. 3 A)	No
R&S [®] HMC8043-G	3		Yes

System component

Description	Type
19" rackmount kit, 2 HU	R&S [®] HZC95

Included accessories:

All models include operating manual, power cable and three-year warranty.

Electronic fuses, overvoltage protection

Overcurrent/overvoltage protection can be set for each channel individually. The electronic fuses can be linked to other channels. In this case, all linked channels will be switched off as soon as one reaches a limit. Even the delay time can be set to prevent premature switch-off due to short current spikes.

EasyRamp function

Sometimes test sequences should avoid the abrupt rise of the supply voltage. The EasyRamp function allows users to simulate a startup curve. After the channels are switched on, the increase in output voltage will be practically linear to the set voltage value within a defined time span.

EasyArb

EasyArb is the time/current flow or time/voltage curve that is freely programmable by channel, with up to 512 points. Programming is possible via remote software or directly on the instrument.

Sequencing function

The R&S[®]HMC804x power supply includes a sequencing function that can be adjusted via a menu. Sequencing enables you to automatically and consecutively connect available channels to the device under test, with adjustable time offsets when the MASTER ON/OFF key is activated.

Rohde & Schwarz Representative

R&S® NGE100 Power Supply Series

Reduced to the max



The perfect choice for

Education

R&D

Maintenance & repair

Manufacturing test

Key specifications	R&S® NGE103	R&S® NGE102
Number of channels	3	2
Max. output power	100 W	66 W
Output power per channel	max. 33.6 W	
Output voltage per channel	0 V to 32 V	
Output current per channel	0 A to 3 A	
Resolution	10 mV / 1 mA	

Fitting your daily needs

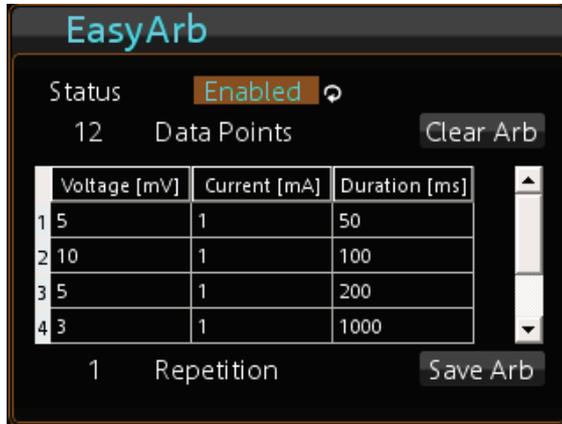
What sets these power supplies apart from others in their class?

- All channels are galvanically separated and earth-free
- All channels are electrically equivalent with the same voltage, current and power
- Parallel and serial operation through V/I tracking
- Protection functions to safeguard instrument and DUT
- Tracking and link functions
- Remote control via USB interface and optional LAN or wireless LAN, unique in this class

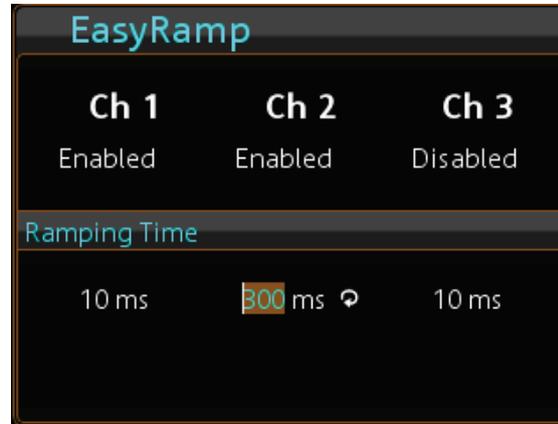
Your benefit	Features
Straightforward operation	All basic functions can be operated via direct keys on the front panel. The spin wheel plays the central role to adjust voltage and current.
The separate output channels can work like individual power supplies	All channels are electrically equivalent, galvanically separated, earth-free and provide the same voltage, current and power.
Small, compact and quiet	Combination of primary transformer, secondary switching regulator and additional linear control reduces weight and size, yet maintains robustness and low ripple.

► For more information, see www.rohde-schwarz.com/product/NGE100

Comfort features for special applications



EasyArb allows the user to program time/voltage or time/current sequences.

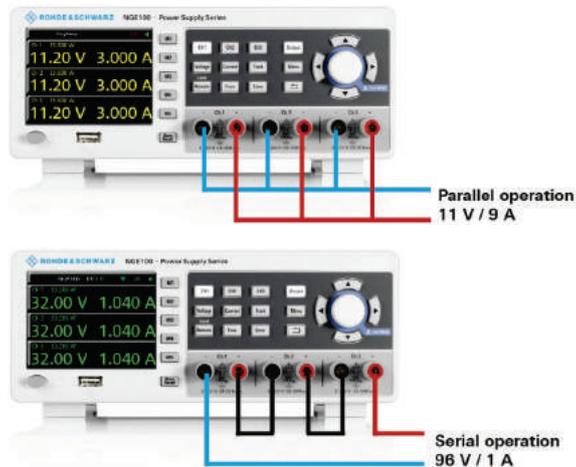


EasyRamp simulates operating conditions with controlled rise of supply voltage to prevent a sudden voltage surge.

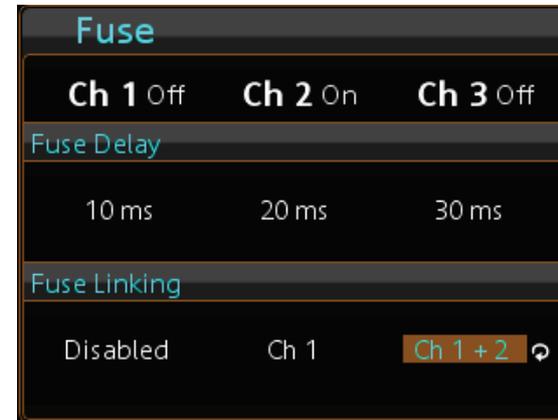


The different operating conditions are marked by colors: constant voltage operation is indicated in green, constant current operation in red, inactive channels are shown in yellow, blue indicates that the channel is in setting mode.

Parallel and serial operation through V/I tracking



Running in parallel, higher currents can be achieved; serial connected channels yield higher voltages.



Users can set the power supply so that all channels are switched off if one channel hits the limit. Or it can be set to leave one channel working.

Ordering information

Base unit	
Two-channel power supply	R&S [®] NGE102
Three-channel power supply	R&S [®] NGE103
Software options	
Ethernet remote control	R&S [®] NGE-K101
Wireless LAN remote control	R&S [®] NGE-K102
Digital I/O trigger	R&S [®] NGE-K103
System components	
19" rack adapter, 2 height units	R&S [®] HZC95

Rohde & Schwarz Representative

R&S® HM8143 Power Supply

Flexible solution for special applications



The perfect choice for

Engineering lab

Production testing

Simulation of battery
charging process

Maintenance &
repair

Key specifications

Total power output	130 W
Number of outputs	3
Voltage output CH1, CH3	0 V to 30 V
Voltage output CH2	5 V
Current output per channel	max. 2 A
Current sinking CH1, CH3	max. 2 A
Modulation input (CH1, CH3)	DC to 20 kHz bandwidth

Key features

The R&S®HM8143 power supply is the perfect choice whenever two-quadrant operation is needed. Besides the source functionality, it also provides electronic loads to accurately sink current and dissipate power in a controlled manner, for example to emulate the characteristics of a battery being charged or unloaded.

The R&S®HM8143 offers two channels with up to 30 V source and sink functionality plus one source channel with 5 V. Electronic fuse and modulation inputs are additional features.

Your benefit	Features
Two channels with source/sink functionality	Two-quadrant functionality can be used to source or sink current, e.g. to emulate any charging/unloading application
Additional 5 V source channel	Can be used to supply often used 5 V circuitries without needing another instrument
Electronic fuse	Overcurrent protection can be set to switch off all channels in case the configured current limit is overdriven
Modulation inputs	Via external modulation signals, the R&S®HM8143 can be used as a power amplifier, for example to supply AC motors

► For more information,
see www.rohde-schwarz.com/product/HM8143

Parallel & serial operating mode

In the parallel operating mode, channels can be bundled to achieve higher currents.
In the serial operating mode, channels can be combined for higher output voltages.

Modulation inputs

The R&S®HM8143 provides two modulation inputs on the rear, so it can be used as a power amplifier with a frequency range from DC to 50 kHz. Applications include testing of AC motors, relays, etc.

Electronic fuse

In order to provide even better protection than current limiting, the R&S®HM8143 offers the feature of an electronic fuse. As soon as the current limit is reached, all outputs are simultaneously disabled.

Arbitrary function

The arbitrary mode can be used to generate a time/voltage flow. A table comprising up to 1024 voltage and time values can be defined using external software tools.

Ordering information

Model configuration information	
Description	Model
Two-quadrant power supply	R&S®HM8143

System component	
Description	Type
19" rackmount kit, 2 HU	R&S®HZ42

Included accessories:

The R&S®HM8143 includes operating manual, power cable and three-year warranty.



Rohde & Schwarz Representative

R&S® HM7042-5 Triple Power Supply

Basic power supply at affordable price



The perfect choice for

Education

Research & design

Maintenance & repair

Production testing

Key specifications

Total power output	155.5 W
Number of outputs	3
Voltage output CH1, CH3	0 V to 32 V
Voltage output CH2	0 V to 5.5 V
Current output CH1, CH3	0 A to 2 A
Current output CH2	0 A to 5 A
Display resolution CH1, CH3	10 mV/1 mA
Display resolution CH2	10 mV/10 mA

Key features

- High-performance, inexpensive laboratory power supply
- Floating, overload and short-circuit proof outputs
- Separate voltage and current displays for each output
- Protection of sensitive loads by current limit or electronic fuse
- Pushbutton to activate/deactivate all outputs
- Low residual ripple, high output power, excellent regulation
- Parallel operation for higher current and serial operation for higher voltage
- Temperature-controlled fan

Your benefit

Features

Straightforward operation	All functions can be operated from the front panel; separate rotary knobs for each channel to adjust voltage and current
The separate output channels can work like individual power supplies	All channels are galvanically separated and can be combined for higher voltage or current
Small, compact and quiet	Combination of primary transformer, secondary switching regulator and additional linear control reduces weight and size

► For more information,
see www.rohde-schwarz.com/product/HM7042-5

Parallel & serial operating mode

Because all channels are galvanically separated, they can be combined.

- In the parallel operating mode, channels can be bundled to achieve higher currents
- In the serial operating mode, channels can be combined for higher output voltages



Ordering information

Model configuration information	
Description	Model
Triple power supply	R&S [®] HM7042-5

System component	
Description	Type
19" rackmount kit, 2 HU	R&S [®] HZ42

Included accessories:

The R&S[®]HM7042-5 includes operating manual, power cable and three-year warranty.

Rohde & Schwarz Representative

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Trade names are trademarks of the owners | R&S[®]HM7042-5 Triple Power Supply | Data without tolerance limits is not binding

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R&S® HMP Series Power Supply

More flexibility with up to 4 channels in a compact instrument



The perfect choice for

Engineering lab

Production testing

Maintenance & repair

General purpose

Key specifications

No. of channels	2, 3 or 4
Max. voltage	32 V
Max. current	5 A or 10 A
Max. power	188 W or 384 W
Overvoltage protection	Adjustable for each channel
Channel combining	FuseLink technology
Arbitrary V/I curves	EasyArb function

Key features

Up to four channels in one instrument – the R&S®HMP power supply units are ideal for use in industrial production environments and in development labs. Depending on the model, the total operating performance is 188 W or 384 W, offering 80 W or 160 W per channel.

Low residual ripple due to linear post-regulators and high setting/read-back resolution make it the right choice for any sophisticated application. Remote sensing eliminates voltage drops on the load leads in order to compensate long leads to the DUT. Comfortable programming features and 19" rack-mount kits ensure perfect integration in production environments.

Your benefit	Features
Up to 4 channels in a single compact box	The flexible R&S®HMP family offers up to 4 channels, including sense lines for each, allowing the right configuration for any specific application
Flexible channel configurations for up to 120 V or 40 A, including controllable overcurrent protection	<ul style="list-style-type: none"> Up to 10 A per channel Each channel is galvanically isolated FuseLink allows you to freely combine the electronic fuses in each channel
Easily programmable time/voltage or time/current curves	Configure EasyArb on the front panel, or choose remotely programmed time/voltage or time/current curves

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

Parallel & serial operating mode

The integrated power management function also ensures intelligent power distribution over each channel.

- In the parallel operating mode, channels can be bundled to achieve higher currents
- In the serial operating mode, channels can be combined for a maximum of up to 120 V

Ordering information

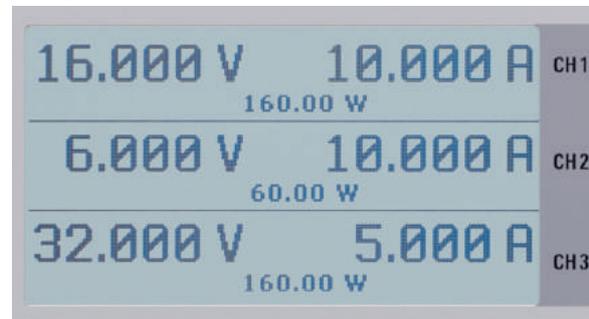
Base units				
Model	R&S®HMP4040	R&S®HMP4030	R&S®HMP2030	R&S®HMP2020
Output voltage per channel	0 V to 32 V			
Output current per channel	0 A to 10 A		0 A to 5 A	1 x 0 A to 10 A 1 x 0 A to 5 A
Maximum output power per channel	160 W		80 W	1 x 160 W 1 x 80 W
Total output power	384 W		188 W	
Channels	4	3	3	2

Industrial production environment



All front panel connectors, including sense lines, are also located on the rear panel of the instrument.

Informative display



The measured output voltage and current as well as the resulting output power are displayed in real time.

Interfaces and system components

Description	Type
Dual interface Ethernet/USB	R&S®HO732
Interface IEEE-488 (GPIB)	R&S®HO740
19" rackmount kit, 2 HU (for R&S®HMP20xx)	R&S®HZ42
19" rackmount kit, 4 HU (for R&S®HMP40xx)	R&S®HZP91

Included accessories:

All models include operating manual, power cable and three-year warranty.

EasyArb

EasyArb is the time/current flow or time/voltage curve that is freely programmable by channel, with up to 128 points. Programming is possible via remote software or directly on the instrument.

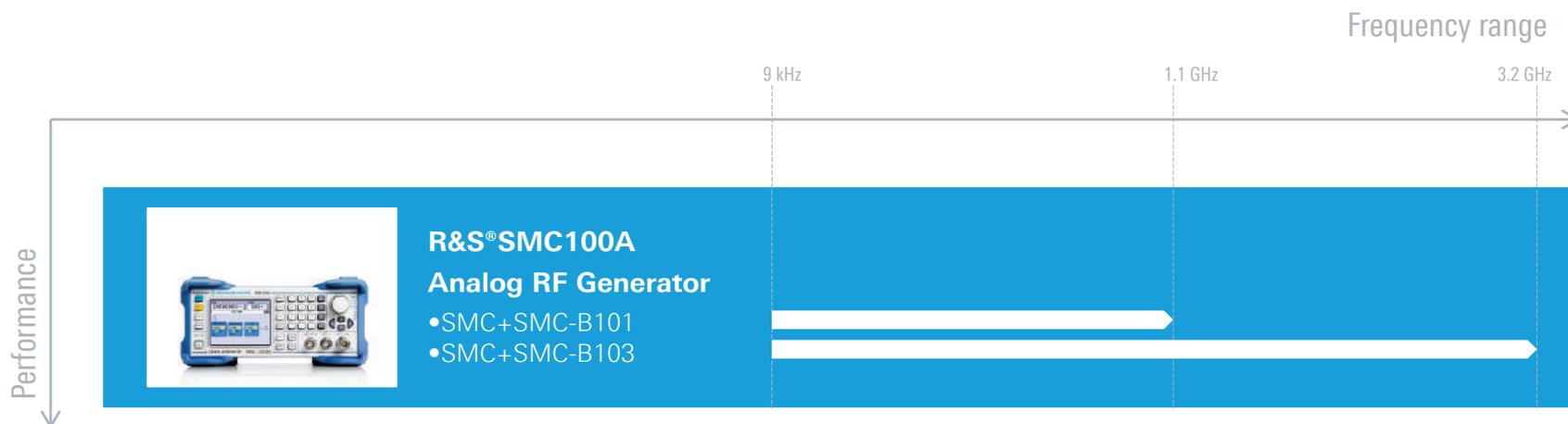
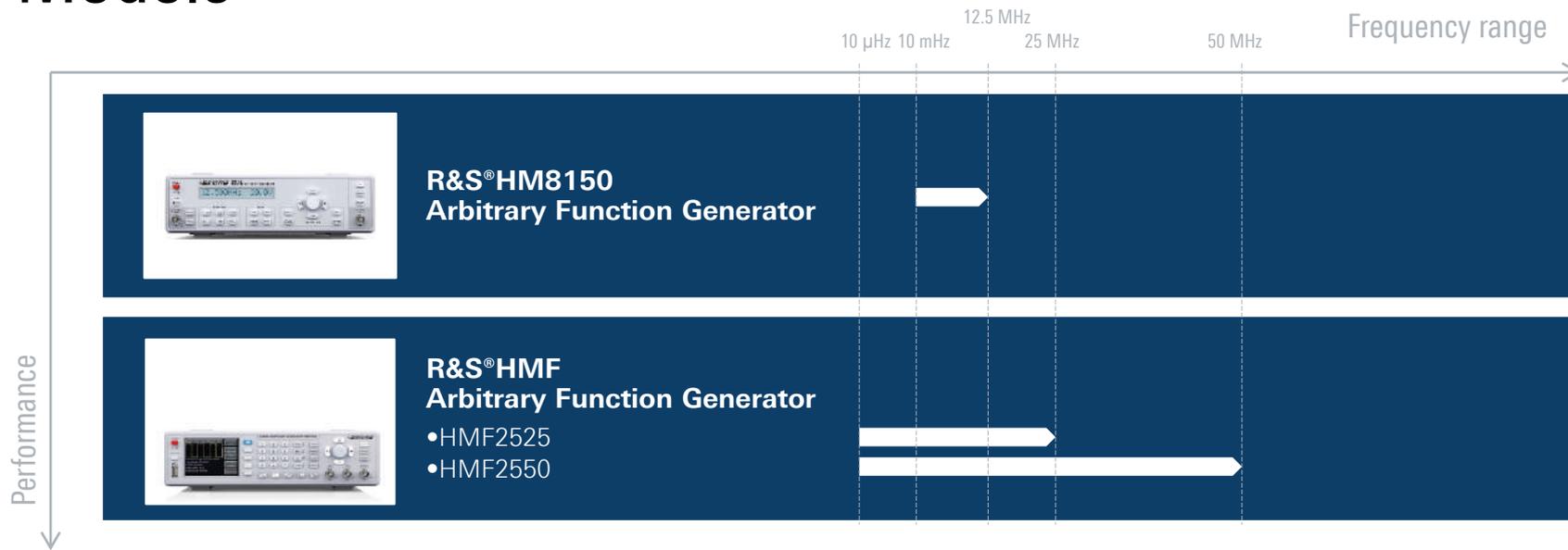
FuseLink

Overcurrent/overvoltage protection can be set for each channel individually. The electronic fuses can be linked to other channels. In this case, all linked channels will be switched off as soon as one reaches a limit.

Rohde & Schwarz Representative

Signal Generators

Models



- Main Menu
- Oscilloscopes
- Power Supplies
- Signal Generators**
- Handheld Analyzers
- Spectrum Analyzers
- Network Analyzers
- EMC Precompliance
- Meters and Counters

Signal Generators

Specifications

	R&S®HMF	R&S®HM8150	R&S®SMC100A
			
Type	Arbitrary waveform generator	Function generator	RF signal generator
Frequency range	10 μ Hz to 25/50 MHz	10 mHz to 12.5 MHz	9 kHz to 1.1/3.2 GHz
Max. specified output voltage / power	5 mV to 10 V (Vpp) (into 50 Ω)	10 mVpp to 10 Vpp (into 50 Ω) 20 mVpp to 20 Vpp (open circuit)	+13 dBm
SSB phase noise	typ. < -115 dBc (1 Hz)	-	< -105 dBc (typ. -111 dBc) (f = 1 GHz)
Modulation	AM, FM, pulse, PWM, FSK	-	AM/FM/ ϕ M/pulse

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- EMC Precompliance
- Meters and Counters

R&S® HMF25xx Arbitrary Function Generator

Accurate, versatile and affordable



The perfect choice for

Engineering lab

Maintenance & repair

Education

General purpose

Key specifications

Frequency range	10 μ Hz to 25 MHz
R&S®HMF2525	10 μ Hz to 50 MHz
R&S®HMF2550	
Output voltage	5 mV _{pp} to 10 V _{pp} (into 50 Ω) 10 mV _{pp} to 20 V _{pp} (open circuit)
Total harmonic distortion	0.04 % typ. (f < 100 kHz)
DC offset	\pm 5 mV to 5 V
Arbitrary waveform length	up to 256 ksamples
Arbitrary waveform resolution	14 bit

Key features

- Two versions: R&S®HMF2525 with 25 MHz and R&S®HMF2550 with 50 MHz maximum frequency
- 14-bit resolution and 8 ns rise time
- As well as standard waveforms such as sine, rectangle and triangle, the instruments provide powerful arbitrary signal functionality. In addition to predefined signal shapes such as sin(x)/x, white or pink noise, it can also output customer-specific, arbitrary curve shapes with a signal length of up to 256 ksamples.
- The burst, sweep, gating, internal and external triggering operating modes and the AM, FM, PM, PWM and FSK modulation functions (in each case internal and external) can be applied on all signals

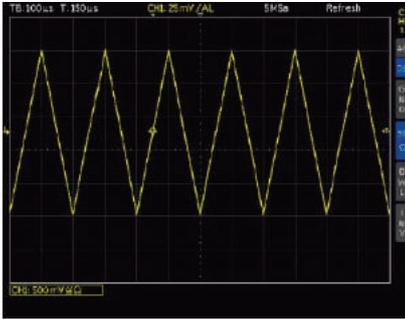
Your benefit

Features

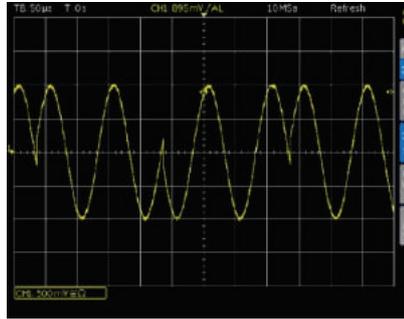
Powerful pulse generator	Provides pulses with a recurrence rate of up to 12.5 MHz/25 MHz; the pulse width can be set from 15 ns to 999 s with a resolution of 5 ns. Rise/fall time can be selected from 8 ns to 500 ns – a very useful feature when characterizing input hysteresis of semiconductor devices
Easily create arbitrary waveforms	Arbitrary waveforms can be developed with PC software. Stored waveforms can be loaded via front USB port or imported via the complimentary HMExplorer software (available for download)

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

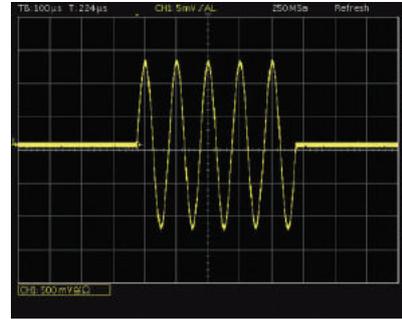
Signal examples



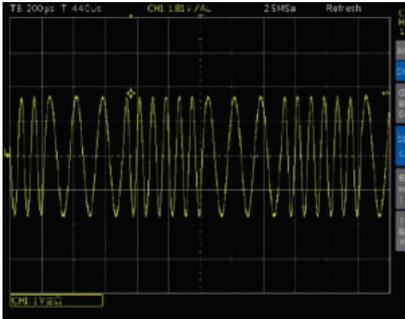
Triangle signal.



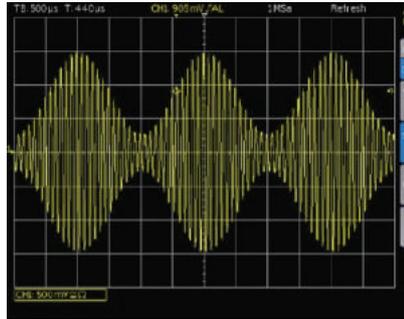
Phase modulation (PM).



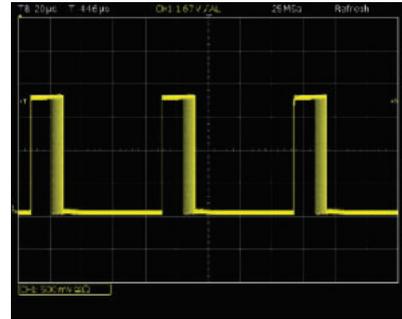
Burst example.



Frequency shift keying (FSK).



Amplitude modulation (AM).



Pulse width modulation (PWM).

Ordering information

Base units

Frequency Range	Model
10 μ Hz to 25 MHz	R&S®HMF2525
10 μ Hz to 50 MHz	R&S®HMF2550

Options/system components

Description	Type
Dual Ethernet/USB interface	R&S®HO732
IEEE-488 (GPIB) interface	R&S®HO740
19" rackmount kit, 2 HU	R&S®HZ42

Included accessories:

All models include operating manual, power cable and three-year warranty.

Rohde & Schwarz Representative

R&S® HM8150 Function Generator

Versatile and price convenient



The perfect choice for

General purpose

Education

Hobbyist

Maintenance & repair

Key specifications

Frequency range	10 mHz to 12.5 MHz
Output voltage	10 mV _{pp} to 10 V _{pp} (into 50 Ω) 20 mV _{pp} to 20 V _{pp} (open circuit)
Total harmonic distortion	0.05% typ. (f < 100 kHz)
DC offset	±75 mV to 7.5 V
Arbitrary waveform resolution	12 bit

Key features

- Waveforms: sine wave, square wave, triangle, pulse, sawtooth, arbitrary
- Rise and fall time: < 10 ns
- Pulse width adjustment: 100 ns to 80 s
- Arbitrary waveform generator: 40 MSa/s
- Burst, gating, external triggering, sweep
- Free of charge software for creation of arbitrary waveforms
- External amplitude modulation (bandwidth 20 kHz)
- Intuitive operation with one touch of a button – quick change of signals

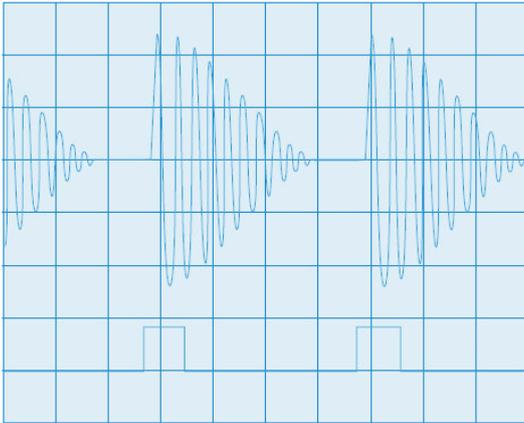
Your benefit

Features

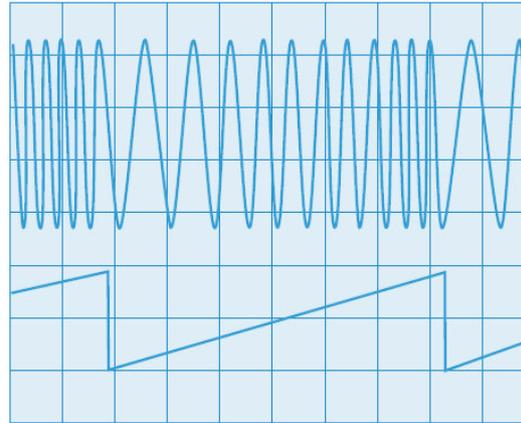
Easy to use	<ul style="list-style-type: none"> ■ With the touch of one button, the R&S®HM8150 offers six different waveforms ■ Frequency and amplitude can be varied for sawtooth (ramp), triangle, sine and square wave signals ■ The pulse function permits the pulse width to be modified
Versatile functionality	<ul style="list-style-type: none"> ■ In addition to the “continuous” operating mode, signals can be generated in response to a trigger and a gating signal ■ Frequency sweep is available for sine wave, square wave, sawtooth, pulse and arbitrary waveforms ■ Arbitrary signals can be defined by the user via the RS-232, GPIB or USB interface

► For more information,
see www.rohde-schwarz.com/product/HM8150

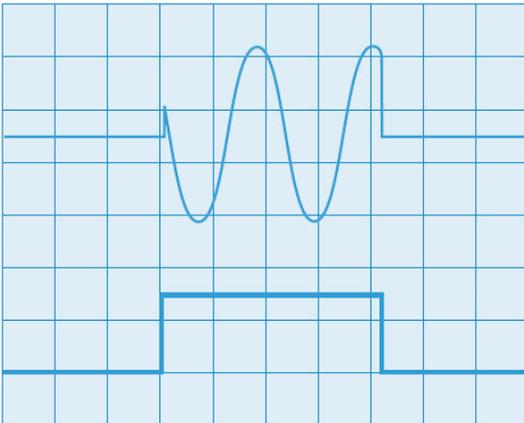
Signal examples



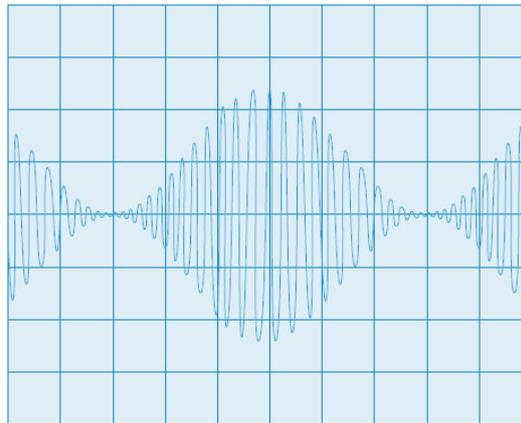
Triggered arbitrary signal.



Swept sine wave and sawtooth signal.



Output signal controlled by a gate signal).



Sine wave with amplitude modulation (using the external modulation input).

Ordering information

Base unit

Description	Model
Function generator	R&S®HM8150

Options/system components

Description	Type
Dual Ethernet/USB interface	R&S®HO732
IEEE-488 (GPIB) interface	R&S®HO880
19" rackmount kit, 2 HU	R&S®HZ42

Included accessories:

The R&S®HM8150 includes power cable, operating manual and three-year warranty.



R&S®HZ42
19" rackmount kit 2HU



R&S®HO880
IEEE-488 GPIB interface

Rohde & Schwarz Representative

R&S® SMC100A Signal Generator

Smallest size and best price/performance ratio



The perfect choice for

RF teaching labs

Simple production applications

A&D development/
service/maintenance

Service and maintenance

Key specifications

Frequency range	9 kHz to 1.1/3.2 GHz
Max. output power	+13 dBm, +17 dBm (typ.) (f = 200 kHz to 3.2 GHz);
SSB phase noise	< -105 dBc, -111 dBc (typ.)
Non-harmonics	< -60 dBc, -72 dBc (typ.)
Modulation	AM/FM/ϕM/PM

A generator for every environment with the smallest size and best price/performance ratio

- Outstanding RF performance
- Graphical user interface
- 3-year calibration cycle
- USB, Ethernet and GPIB connectivity
- Small footprint, lightweight and power-efficient

Your benefit

Graphical interface allows you to set up the signal the way you think about it

More performance across the board without costing more

Ideal for the lab, production or the field

Features

- Block diagram user interface
- Graphic display of signals
- Click, configure and control with a mouse
- Mimics the functional blocks of a transmitter

- Best phase noise performance
- Fastest switching speed
- Outstanding output power
- Vastly superior modulation capabilities

- Lab: better performance
- Production: higher speed, better connectivity
- Field: size, weight, power

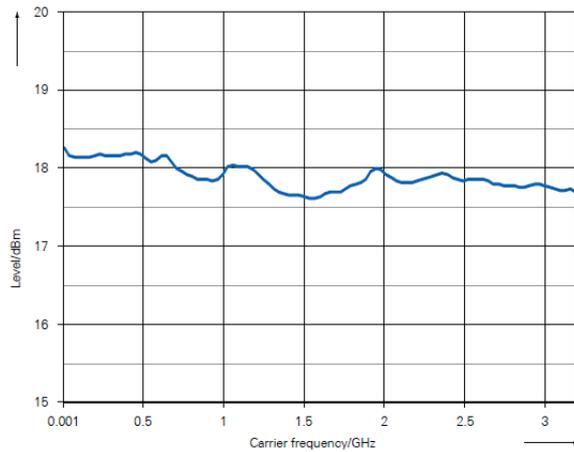
► For more information, visit
www.rohde-schwarz.com/product/SMC100A

Various connectivity



Integrate into current test setup without having to alter your USB, Ethernet or GPIB connectivity interface.

Measured maximum available power



The high output power of typ. > +17 dBm enables measurements on DUTs such as mixers that require a high level for the local oscillator.

Minimized total cost of ownership



A minimum of modules in the R&S SMC100A means high reliability and easy servicing.

Ordering information

Choose your model

Generator	Frequency range
R&S SMC100A with SMC-B101	1 GHz
R&S SMC100A with SMC-B103	3 GHz

Included: All models include power cable, quick start guide and three-year warranty

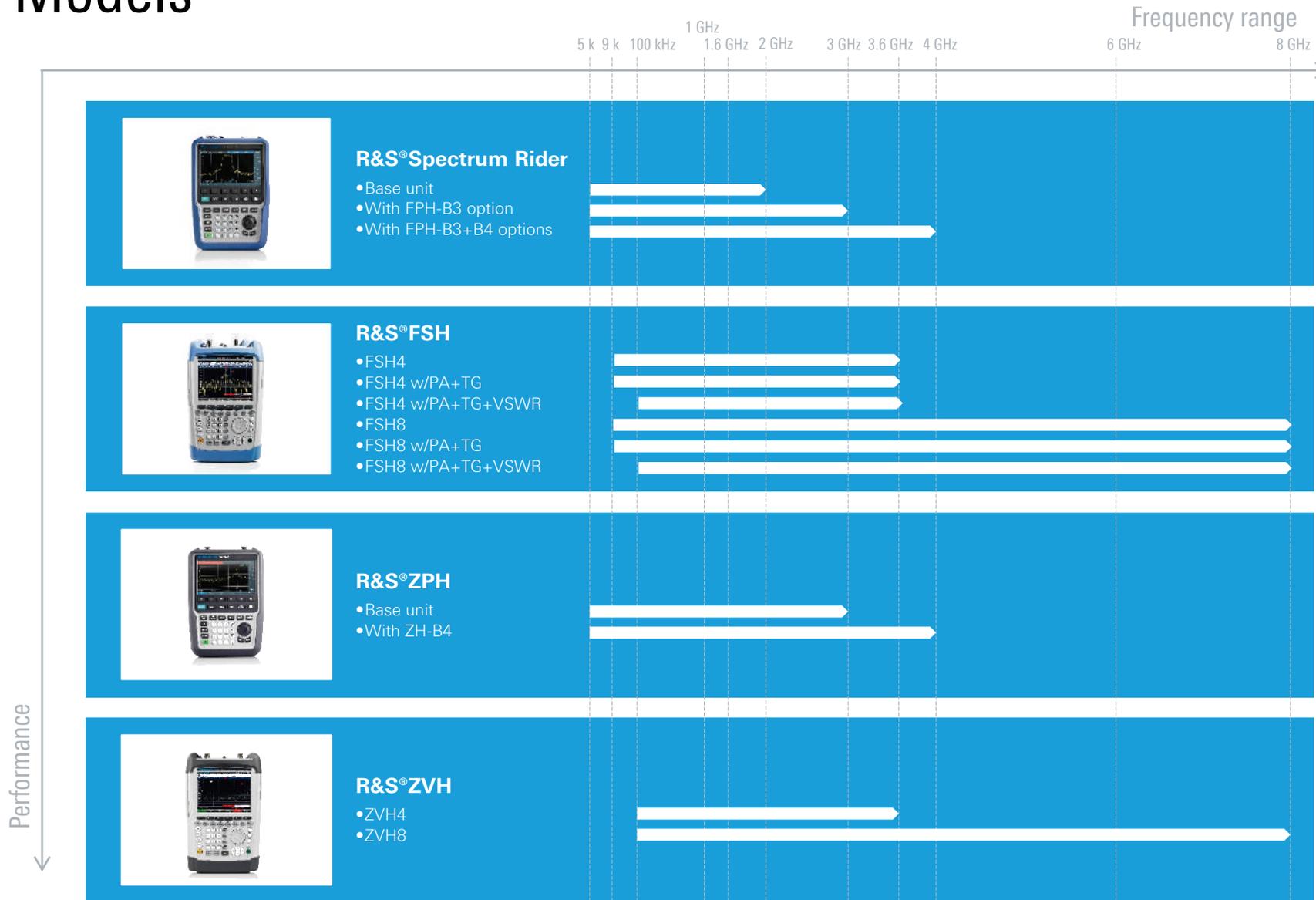
Popular options/accessories

Description	Type
Reference oscillator OCXO	R&S SMC-B1
GPIB/IEEE488 interface	R&S SMC-K4

Rohde & Schwarz Representative

Handheld Analyzers

Models



- Main Menu
- Oscilloscopes
- Power Supplies
- Signal Generators
- Handheld Analyzers**
- Spectrum Analyzers
- Network Analyzers
- EMC Precompliance
- Meters and Counters

Handheld Analyzers

Specifications

Spectrum Analysis	R&S®Spectrum Rider FPH	R&S®FSH, R&S®ZVH	Cable & Antenna / Vector Network Analysis	R&S®Cable Rider ZPH	R&S®ZVH	R&S®FSH
Frequency range	5 kHz to 2/3/4 GHz	FSH4 (.04/.14) 9 kHz to 3.6 GHz FSH4 (.24) / ZVH4 100 kHz to 3.6 GHz FSH8 (.08/.18) 9 kHz to 8 GHz FSH8 (.28) / ZVH8 100 kHz to 8 GHz FSH13 (.13/.23) 9 kHz to 13.6 GHz FSH20 (.20/.30) 9 kHz to 20 GHz	Frequency range	5 kHz to 3/4 GHz	ZVH4 100 kHz to 3.6 GHz ZVH8 100 kHz to 8 GHz	FSH4 (.24) 300 kHz to 3.6 GHz FSH8 (.28) 300 kHz to 8 GHz FSH13 (.23) 100 kHz to 8 GHz FSH20 (.30) 100 kHz to 8 GHz
DANL (with amplifier)	-146dBm typ.		Mode	Reflection (S11) 1-port Cable loss Distance to fault	Reflection (S11, S22) transmission (S21, S12) 1-port Cable loss Distance to fault	
TOI (with 0dB attenuator)	+10 dBm typ.	+15 dBm typ.	Data point	101 to 2501	101, 201, 401, 601, 631, 801, 1001, 1201	101,201,401,601, 631
RBW	1 Hz to 3 MHz		Port output power	- 10 dBm nom.	-40 dBm to 0 dBm (nom.) (in 1 dB step)	

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R&S® Spectrum Rider Spectrum Analyzer

Small form factor to handle large tasks



The perfect choice for

Interference hunting

EMI debugging/
RF design validation

Spectrum monitoring

Training

Key specifications

Frequency	5 kHz to 2/3/4 GHz
Resolution bandwidths	1 Hz to 3 MHz
DANL @ 3 GHz (preamp on)	< -163 dBm
Phase noise, 100 kHz offset	105 dBc/Hz
Battery operation time	up to 8 hours
Weight	2.5 kg

The perfect analysis tool for lab and field environments

- Illuminated keypad for dim environments
- Large buttons for easy operation with gloves
- Lightest handheld spectrum analyzer on the market at 5.5 lbs (30 % lighter than competitor models)
- 8 hours of battery life (almost twice as long as competitor models)
- Dust and drip water protected (IP51)
- User-friendly configuration overview menu

Your benefit

Battery life twice that of today's handheld spectrum analyzers

Smartphone style capacitive touchscreen; also available with traditional interface

Buy only what you need; upgrade later without returning analyzer for servicing

Features

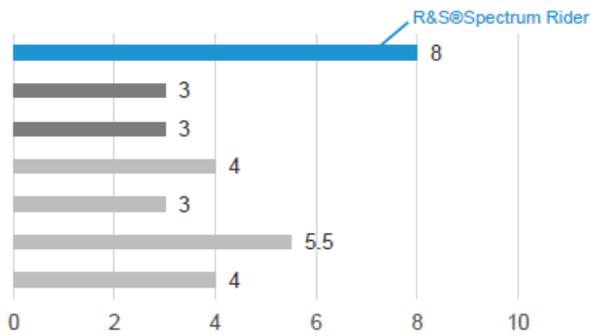
Up to 8 hours battery life

- 7.5 inch antiglare capacitive color touchscreen
- On-screen keyboard
- Smartphone-like gestures
- Adjustable display brightness
- Backlit large button keypad
- Multifunction rotary knob

- 2 GHz base model
- 3 GHz and 4 GHz keycode options
- Pre-amplifier keycode options
- Channel power meter keycode option

► For more information, visit www.rohde-schwarz.com/product/FPH

Operation time (hr)

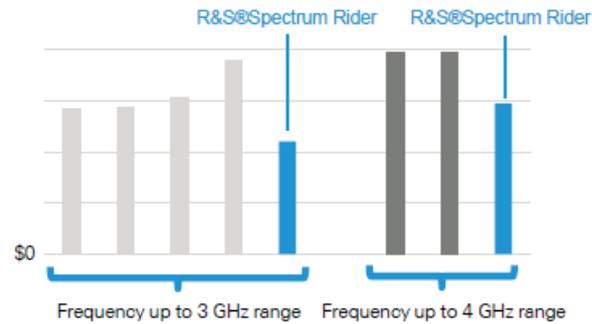


This instrument features an innovative fanless concept – part of a ruggedized design that protects it from dust and water. In addition, the MTBF is lower than that of other instruments with a fan. Designed with power optimization in mind, the R&S Spectrum Rider consumes less power than the competition, allowing it to operate a full 8-hour day before the battery needs recharging.



The backlit keypad enables you to use the analyzer in all lighting conditions.

Price comparison



Options are available to support the different measurements you need. All options can be easily added via keycodes without sending the instrument back to the service center. Calibration and alignment are also not required. Adding options to R&S Spectrum Rider is a simple, time-saving and cost-saving approach.

Future-friendly, extendable frequency range

Unlike spectrum analyzers with fixed frequency ranges, the R&S Spectrum Rider's range can be upgraded if needed – up to 4 GHz. There's no need to use or carry additional instruments.

5 kHz 2 GHz 3 GHz 4 GHz

Other products to consider

- The R&S FPH supports all R&S NRP family models up to 110 GHz
- Consider the R&S FSH if demodulation is needed, or R&S FSH or R&S ZVH if distance to fault or a tracking generator is necessary.

Ordering information

Choose your model and frequency

Base model	
R&S Spectrum Rider handheld spectrum analyzer, 5 kHz to 2 GHz	R&S FPH
Frequency upgrade	
Spectrum analyzer frequency upgrade, 2 GHz to 3 GHz	R&S FPH-B3
Spectrum analyzer frequency upgrade, 2 GHz to 4 GHz	R&S FPH-B4

Popular options/accessories

Description	Type
Preamplifier	R&S FPH-K22
AM/FM analysis	R&S FPH-K7
Power sensor support	R&S FPH-K9
Channel power meter	R&S FPH-K19
Pulse measurements with power sensor	R&S FPH-K29
Interference analysis	R&S FPH-K15
Signal strength mapping	R&S FPH-K16
Receiver mode	R&S FPH-K43
Yagi antenna, 824 MHz to 960 MHz	R&S HA-Z900
Yagi antenna, 1710 MHz to 1990 MHz	R&S HA-Z1900

Included: All models include lithium-ion battery pack, side strap for your hand, USB cable, power cord and 3-year warranty.

Languages supported: English, German, French, Spanish, Russian, simplified and traditional Chinese, Korean and Japanese.

Rohde & Schwarz Representative

R&S®FSH Handheld Spectrum Analyzer

The all-in-one handheld platform



The perfect choice for	
Installation and maintenance of transmitter stations	EMI debugging/ RF design validation
Interference hunting	Electromagnetic fields measurements

Key specifications	
Frequency range	9 kHz to 3.6/8/13.6/20 GHz
Resolution bandwidth	1 Hz to 3 MHz
Demodulation bandwidth	20 MHz
Phase noise	95 dBc/Hz; -105 dBc/Hz (typ.)
Measurement uncertainty	< 1 dB (typ.)
Displayed average noise level (DANL)	R&S®FSH4 & R&S®FSH8 -157 dBm; -161 dBm (typ.) R&S®FSH13 & R&S®FSH20 -155 dBm; -159 dBm (typ.)
Third order intercept (TOI)	R&S®FSH4 only > +10 dBm; +15 dBm (typ.) R&S®FSH8/FSH13/FSH20 > +3 dBm; +10 dBm (typ.)

Expandable platform that eliminates the need for multiple instruments

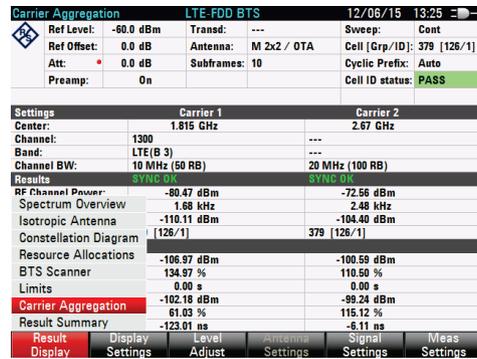
Depending on the model and options installed, the R&S®FSH can be a

- Spectrum analyzer
- Interference hunting analyzer
- Cable and antenna analyzer
- Two-port vector network analyzer
- Power meter

Your benefit	Features
An expandable platform for every RF handheld measurement application	Expanded modes of operation for field strength measurements, power measurements, network analysis, interference analysis, vector voltmeter, pulse measurements
Extensive support for numerous wireless technologies	Modulation analysis for all current cellular technologies, including over-the-air LTE-Advanced carrier aggregation signal analysis
Most efficient instrument in the field	<ul style="list-style-type: none"> ■ Sunlight readable display ■ Wizard streamlines test development ■ Remote control and data export with free R&S®Instrument View software ■ Fast measurement mode switching ■ SD card and USB port for data storage

► For more information, visit www.rohde-schwarz.com/product/FSH

Support of numerous mobile comm. standards



Modulation measurements on GSM/GPRS/EDGE, W-CDMA, TD-SCDMA CDMA2000, 1xEV-DO, LTE TDD, LTE FDD

Vector network analyzer mode



For cable loss and antenna testing and characterization as well as distance to fault measurements.
Two-port capability for transmission measurements.

Wizard support for common measurement functions



User-definable test sequences that reduce operating errors in the field.

Remote control via LAN or USB



The R&S®FSH can be remotely controlled via the USB or LAN interface and integrated into user-specific programs.

Ordering information

Choose your model

Spectrum analyzer	Frequency range	Options
R&S®FSH4.04	9 kHz to 3.6 GHz	Base unit
R&S®FSH4.14	9 kHz to 3.6 GHz	Tracking generator
R&S®FSH4.24	100 kHz to 3.6 GHz	VSWR bridge
R&S®FSH8.08	9 kHz to 8 GHz	Base unit
R&S®FSH8.18	9 kHz to 8 GHz	Tracking generator
R&S®FSH8.28	100 kHz to 8 GHz	VSWR bridge
R&S®FSH13.13	9 kHz to 13.6 GHz	Base unit
R&S®FSH13.23	9 kHz to 13.6 GHz	Tracking generator and VSWR bridge
R&S®FSH20.20	9 kHz to 20 GHz	Base unit
R&S®FSH20.30	9 kHz to 20 GHz	Tracking generator and VSWR bridge

Included: All models include lithium-ion battery pack, LAN and USB cables, AC power supply, CD-ROM with and documentation, quick start guide and three-year warranty (one year for battery and accessories)

Popular options/accessories

Description	Type
Spectrum analyzer preamplifier	R&S®FPH-B22
Interference analysis	R&S®FPH-K15
Lithium-ion battery pack, 6.75 Ah	R&S®HA-Z206
Soft carrying bag	R&S®HA-Z220
Hard case	R&S®HA-Z221
Near-field probe set	R&S®HZ-15
Yagi antenna, 824 MHz to 960 MHz	R&S®HA-Z900
Yagi antenna, 1710 MHz to 1990 MHz	R&S®HA-Z1900

Rohde & Schwarz Representative

R&S® Cable Rider ZPH

Expect fast, expect efficient



The perfect choice for

RF transmitter installation

RF transmitter maintenance

RF cable testing

Antenna performance testing

Key specifications

Frequency range	2 MHz to 3/4 GHz
Measurement speed	0.3 ms/point
Data points	101 to 2501 points
Measurement mode (standard)	DTF, return loss, VSWR, 1-port cable loss, loss, smith chart, phase
Measurement mode (optional)	power meter, power measurement with power sensor, pulse measurement
Maximum permissible spurious signal	+17 dBm
Boot time	< 15 s
Warm-up time	1 min
Battery operation hour (fully charge)	9 hours
Weight	2.5 kg

Save time in the field

The R&S® Cable Rider ZPH is a one-port analyzer that has all the essential basic measurement capabilities required for installing and maintaining antenna systems in the field. Its unique features ensure fast and efficient cable and antenna measurements.

With its short boot and warm-up times and fast measurement speed, the analyzer gets down to analyzing without much time loss.

Your benefit	Features
Hybrid operation	Large keypads and sensitive capacitive touchscreen
Make the right measurement right away	Wizard function, settings preconfigured in advance.
One-step calibration	No toggling between O/S/L standards with the R&S® ZN-Z103 automatic calibration unit
Shortest test time	Fastest measurement speed (0.3ms/pt), short boot and warm-up times
Work under bright or dim conditions	Non-reflective display with adjustable backlight, illuminated keypad
Buy what you need when you need it	Upgrade via keycode, no downtime, no re-calibration required
Simple wireless remote operation	Free downloadable Android/IOS apps (third-party wireless router required)

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

Wizard function

A

Project manager/expert centrally creates the test sequences

B

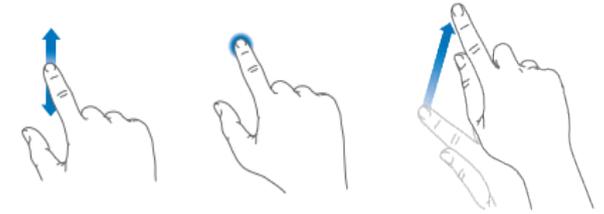
Operator uses the wizard to execute the test sequences

C

Operator shows the measurement result to the project manager/expert and documents it

Fast and accurate measurements in three simple steps.

Smartphone gesturing



Move spectrum, pinch to zoom, cross to delete, etc.

Remote wireless control apps



Tablet with Android/iOS app to remotely control the analyzer.

Feature highlights

Fast

- Add markers and change settings quickly and easily
- Fastest measurement speed
- Fastest boot and warm-up time
- Fast measurements – no calibration required
- Fast deployment with the wizard function

Efficient

- Single charge lasts entire work day
- Buy what you need when you need it
- One-step calibration
- Simplified measurement procedure
- Remote operation by Android or iOS apps



Soft carrying bag (R&S®HA-Z220)



Ruggedized hard case (R&S®HA-Z321)



One-step calibration with automatic calibration unit (R&S®ZN-Z103)



Combined OSL calibration kit (R&S®FSH-Z29)

Ordering information

Popular options/accessories

Description	Option
Frequency upgrade (3 GHz to 4 GHz)	R&S®ZPH-B4
Calibration unit	R&S®ZN-Z103
Combined open/short/50 Ω load calibration standard, for calibrating the VSWR and DTF measurements, DC to 3.6 GHz	R&S®FSH-Z29
Soft carrying bag	R&S®HA-Z220
Hard case	R&S®HA-Z321

Rohde & Schwarz Representative

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Latin America +1 410 910 79 88 | Asia Pacific +65 65 13 04 88 | China +86 800 810 82 28 / +86 400 650 58 96

www.rohde-schwarz.com | customersupport@rohde-schwarz.com

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R&S® ZVH Cable and Antenna Analyzer

For more efficiency in the field



The perfect choice for	
Installation and maintenance of RF transmitter system	RF cable measurement
Antenna measurement	General purpose spectrum measurement

Key specifications	
Frequency range	100 kHz to 3.6/8 GHz
Port output power	0.3 ms/point
Data points	101 to 1201 points
DC bias	yes
Measurement mode (standard)	DTF, return loss, VSWR, one-port cable loss, loss, smith chart, phase
Measurement mode (optional)	transmission measurement, vector network analysis, vector voltmeter, spectrum analysis, power meter, power measurement with power sensor, pulse measurement
Maximum permissible spurious signal	+17 dBm
Battery operation (fully charged)	3 hours (with HA-Z204) 4.5 hours (with HA-Z206)
Weight	3 Kg

Equipped with essential functions and features for efficient, fast and reliable field measurements

Depending on options installed, the R&S® ZVH can be a

- Cable and antenna analyzer
- Two-port vector network analyzer
- Power meter
- Spectrum analyzer

Free software and apps to conveniently remote control the analyzer. The wizard function also allows users to preconfigure test sequences for repeatability and reduce measurement and troubleshooting time.

Your benefit	Features
Make the right measurement right away	Wizard function, preconfiguration of settings in advance
An expandable platform for every RF handheld measurement application	Expanded modes of operation for field strength measurements, power measurements, network analysis, vector voltmeter, pulse measurements
Simple wireless remote operation	Free downloadable Android/IOS apps (third-party wireless router required)
Most efficient instrument in the field	<ul style="list-style-type: none"> ■ Sunlight readable display ■ Wizard streamlines test development ■ Remote control and data export with free R&S® Instrument View software ■ Fast switching of measurement modes ■ SD card and USB port for data storage

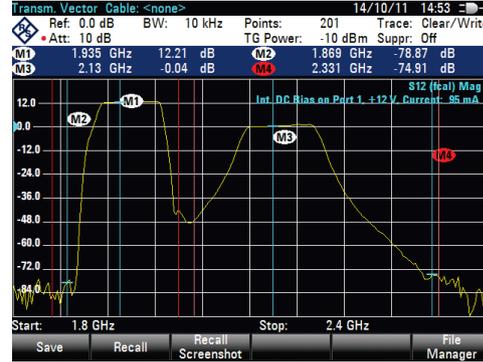
► For more information, visit www.rohde-schwarz.com/product/ZVH

Vector network analysis



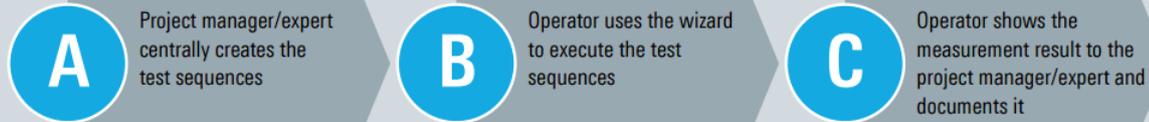
Simultaneous display of four S-parameters (S11, S21, S12, S22).

Transmission measurement



Two-port capability for transmission measurements.

Wizard function



Fast and accurate measurement in simple 3 steps.

Remote control via LAN or USB



The R&S®ZVH can be remotely controlled via the USB or LAN interface and integrated into user-specific programs.

Remote wireless control apps



Tablet with R&S®MobileView apps (available for Android and IOS) to remote control the analyzer.

Ordering information

Choose your model

Base model

Cable & antenna analyzer, 100 kHz to 3.6 GHz	R&S®ZVH4
Cable & antenna analyzer, 100 kHz to 8 GHz	R&S®ZVH8

Included: All models include lithium-ion battery pack, LAN and USB cables, AC power supply, CD-ROM with software and documentation, quick start guide and three-year warranty (one year for battery and accessories)

Popular options

Description	Type
Remote control via LAN or USB	R&S®ZVH-K40
Transmission measurement	R&S®ZVH-K39
Vector network analysis	R&S®ZVH-K42
Vector voltmeter	R&S®ZVH-K45
Spectrum analysis	R&S®ZVH-K1
Spectrogram measurement application	R&S®ZVH-K14
Power meter	R&S®ZVH-K9

Popular accessories

Description	Type
Combined open/short/50Ω load calibration standard, DC to 8 GHz	R&S®FSH-Z28
Combined open/short/50Ω load calibration standard, DC to 3.6 GHz	R&S®FSH-K29
Lithium-ion battery pack, 6.75 Ah	R&S®HA-Z206
Soft carrying bag	R&S®HA-Z220
Hard case	R&S®HA-Z221
GPS receiver	R&S®HA-Z240

Rohde & Schwarz Representative

Spectrum Analyzers

Models



- Main Menu
- Oscilloscopes
- Power Supplies
- Signal Generators
- Handheld Analyzers
- Spectrum Analyzers**
- Network Analyzers
- EMC Precompliance
- Meters and Counters

Spectrum Analyzers

Specifications

	R&S®HMS-X	R&S®FPC1000	R&S®FSC	R&S®FSL
				
Frequency range	100 kHz to 1.6/3 GHz	5 kHz to 1/2/3 GHz	9 kHz to 3/6 GHz	9 kHz to 3/6 GHz
DANL	-104 dBm (typ.) -124 dBm (typ.) with preamplifier	Up to -150 dBm (typ.) 165 dBm (typ.) with preamp	Up to -146 dBm (typ.) Up to -165 dBm (typ.) with preamplifier	Up to -140 dBm Up to -152 dBm, -162 dBm (typ.) with preamplifier
TOI	typ. +13 dBm	meas. +7 dBm	typ. 15 dBm (frequency = 1 GHz)	typ. +18 dBm
Features and capabilities	Tracking Generator (opt.)	Demodulator (opt.) Receiver Mode (opt.) Advanced Measurements (opt.)		Tracking generator up to 18 GHz (opt.) 28 MHz analysis bandwidth Analog demodulator (opt.) Battery / DC-power (opt.) Cellular and wireless standard analysis (opt.) Noise figure measurements (opt.)
RBW	10 kHz to 1 MHz in 1-3 steps, 200 kHz (-3dB)	1 Hz to 3 MHz	10 Hz to 3 MHz	300 Hz to 10 MHz (standard) 10 Hz to 10 MHz (with R&S®FSL-B7)
Phase noise	f = 500 MHz, typ. values 30 kHz < -85 dBc (1 Hz) 100 kHz < -100 dBc (1 Hz) 1 MHz < -120 dBc (1 Hz)	f = 500 MHz, typ. values 30 kHz < -92 dBc (1 Hz) 100 kHz < -103 dBc (1 Hz) 1 MHz < -125 dBc (1 Hz)	f = 500 MHz, typ. values 30 kHz < -105 dBc (1 Hz) 100 kHz < -110 dBc (1 Hz) 1 MHz < -127 dBc (1 Hz)	f = 500 MHz, typ. values 10 kHz < -103 dBc (1 Hz) 100 kHz < -105 dBc (1 Hz) 1 MHz < -120 dBc (1 Hz)

Main Menu

Oscilloscopes

Power Supplies

Signal Generators

Handheld Analyzers

Spectrum Analyzers

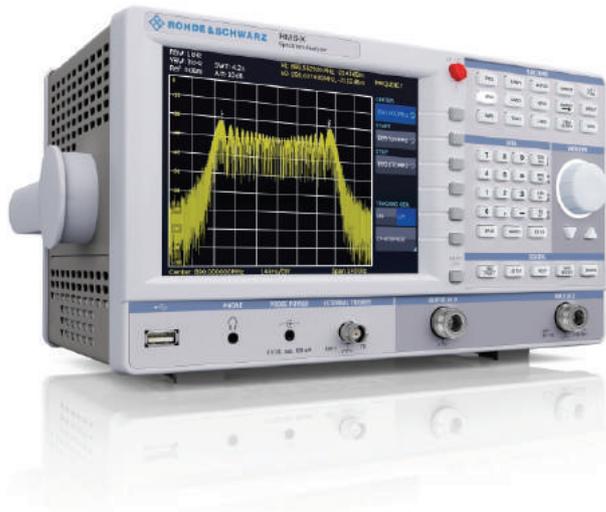
Network Analyzers

EMC Precompliance

Meters and Counters

R&S® HMS-X Spectrum Analyzer

One base unit, many possibilities



The perfect choice for

Engineering lab

EMI precompliance measurements

Maintenance & repair

Education

Key specifications

Frequency range	100 kHz to 1.6 GHz/3 GHz
Spectral purity	> -100 dBc/Hz (at 100 kHz)
Sweep	20 ms to 1000 s
Detectors	auto/min./max. peak, sample, RMS, average, quasi-peak (with R&S®HMS-EMC)

Tracking generator (with R&S® HMS-TG)

Frequency range	5 MHz to 1.6 GHz/3 GHz
Output level	-20 dBm to 0 dBm

Key features

- General purpose spectrum analyzer – entry level class
- Excellent price/performance ratio
- Optional tracking generator, 5 MHz to 1.6 GHz/3 GHz
- Options to adapt to specific applications

Your benefit

Entry level class instrument including all basic measurements

Vouchers for later upgrades

Features

Provides all standard functions such as amplitude and harmonic measurements, variety of detectors and filters, trace memory and trace mathematics, markers and limit lines, tracking generator, and much more

To meet growing requirements, upgrade vouchers allow you to upgrade the instruments with all options at any time

► For more information, visit
www.rohde-schwarz.com/product/HMS

Flexible options



This option activates all the functions that are required for EMC precompliance measurements, including preamplifier.

This option increases the frequency range from 1.6 GHz to 3 GHz.

This option activates the tracking generator in the instrument.

Upgrade at any time

You can easily upgrade all three available options at any later point in time with option upgrade vouchers available from your dealer.

The voucher number and the serial number of your R&S®HMS-X instrument enable you to generate the necessary license key directly on our web page <http://voucher.rohde-schwarz.com>.



Ordering information

Model configuration information	
Description	Base Unit
Spectrum analyzer, 100 kHz to 1.6 GHz	R&S®HMS-X
Description	Option ¹
EMC option, including preamplifier	R&S®HMS-EMC
Frequency upgrade to 3 GHz	R&S®HMS-3G
Unlock built-in tracking generator	R&S®FPC-B22
Description	Voucher ²
EMC option, including preamplifier	R&S®HV213
Frequency upgrade to 3 GHz	R&S®HV212
Unlock built-in tracking generator	R&S®HV211

1) Available only with purchase of R&S®HMS-X basic unit.

2) Activate R&S®HMS-X options at any time after purchase of R&S®HMS-X basic unit.

Included: All models include power cable, operating manual and three-year warranty.

Interfaces/accessories	
Description	Type
Dual-interface Ethernet/USB	R&S®HO732
Interface IEEE-488 (GPIB), galvanically isolated	R&S®HO740
Near-field probe set, 3 GHz, for EMI diagnostics	R&S®HZ540
3 GHz VSWR bridge for R&S®HMS-X, incl. R&S®HMS-TG option	R&S®HZ547
19" rackmount kit, 4 HU	R&S®HZ46
Carrying case for protection and transport	R&S®HZ99

Rohde & Schwarz Representative

R&S®FPC1000 Spectrum Analyzer

Unexpected performance in entry class



The perfect choice for

R&D & service labs

Test automation

Professionals
Hobbyists

Education & training

Key specifications

Frequency range	5 kHz to 1 GHz with upgrades up to 3 GHz
Max. input power	up to +30 dBm
Low noise floor	down to -165 dBm (typ., with preamplifier)
Phase noise	< -103 dBc/Hz (f=500 MHz, @100 kHz offset)
Connectivity	LAN, USB, Wi-Fi (optional)
Measurement options	modulation analysis, receiver mode, advanced measurements

Your benefit	Features
Investment protection	All upgrades available via keycode, no additional calibration required
More resolution for better measurements	Lowest noise floor in class down to -165 dBm (typ., with preamplifier), resolution bandwidth down to 1 Hz, 10.1" WXGA display
Flexible remote measurements	First Wi-Fi-enabled spectrum analyzer (R&S®FPC-B200 option) for wirelessly access the instrument

Outstanding performance and innovation Investment protection

- The R&S®FPC1000 base instrument has a frequency range of 5 kHz to 1 GHz. Keycode options unlock higher frequency ranges up to 3 GHz or enable other features when required

Class-leading RF performance

- Engineered in Germany, the R&S®FPC1000 has an extraordinarily low noise floor and high max. input power, in combination providing the best dynamic range in its class

High resolution

- High display resolution with 10.1" WXGA display and measurement bandwidth settings down to 1 Hz resolve the finest spectral details

Virtual control

- The R&S®FPC1000 supports wired Ethernet and Wi-Fi connectivity. R&S®InstrumentView for Microsoft® Windows as well as the iOS/Android App based R&S®MobileView platforms enable remote control and measurement anywhere, anytime

► For more information,
see www.rohde-schwarz.com/product/fpc1000

Highlights

- ✓ Flexible upgrade concept

✓ Low noise floor

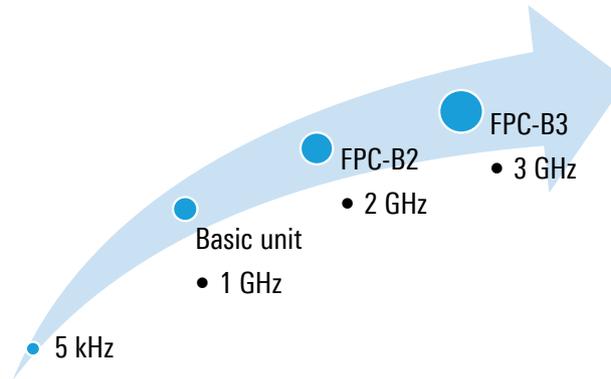
✓ High max. input power
- ✓ 10.1" display

✓ 1 Hz resolution bandwidth

✓ Easy to control

Class-leading spectrum analyzer engineered in Germany.

Frequency extension using keycodes



Buy what you need when you need it.

Ordering information

Model configuration information

Base Unit	Description
R&S®FPC1000	R&S®FPC1000 spectrum analyzer, 5 kHz to 1 GHz
Option	Description
R&S®FPC-B2	Spectrum analyzer frequency upgrade, 1 GHz to 2 GHz
R&S®FPC-B3	Spectrum analyzer frequency upgrade, 2 GHz to 3 GHz
R&S®FPC-B22	Spectrum analyzer preamplifier
R&S®FPC-B200	Wi-Fi connection support
R&S®FPC-K7	Modulation analysis
R&S®FPC-K43	Receiver mode
R&S®FPC-K55	Advanced measurements
Accessories	Name
R&S®ZZA-FPC1	19" rackmount kit
R&S®HZ-15	Near field probes, 30 MHz to 3 GHz
R&S®HZ-16	Amplifier, 100 kHz to 3 GHz
R&S®RTB-Z3	Carrying case

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

Wireless remote control with R&S®MobileView apps (available on Android and iOS)



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



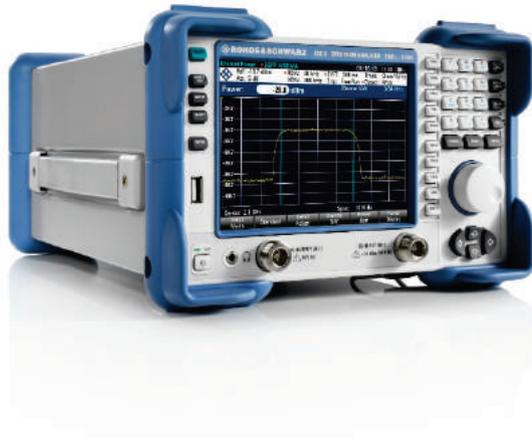
Flexible remote control on demand, anywhere, anytime.

* Wi-Fi feature not available in some countries due to local certification requirements.

Rohde & Schwarz Representative

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®FPC 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, 1/2 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

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

Rohde & Schwarz Representative

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Latin America +1 410 910 79 88 | Asia Pacific +65 65 13 04 88 | China +86 800 810 82 28 / +86 400 650 58 96

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Trade names are trademarks of the owners | R&S®FSC Spectrum Analyzer | Data without tolerance limits is not binding

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R&S®FSL Spectrum Analyzer

Signal analysis functions in a lightweight, compact package



The perfect choice for

Research, education

Portable measurements in the field

Fast and easy to integrate in automated tests

Wireless & mobile communications standard signal analysis *)

Key specifications

Frequency	9 kHz to 3/6/18 GHz
DANL at 1 GHz	typ. -160 dBm (preamp ON)
Spurious response	< -60 dBc
Analysis bandwidth	28 MHz
Phase noise at 1 GHz (100 kHz offset)	typ. -105 dBc (1 Hz)
Total level accuracy	< 0.8 dB
TOI at 1 GHz	typ. +18 dBm (R&S®FSL3/FSL6) typ. +13 dBm (R&S®FSL18)
Weight	< 8 kg

A wide range of analysis functions

The R&S®FSL is an extremely lightweight and compact spectrum analyzer. Its low weight and optional battery/DC power make it the ideal instrument for the lab and in the field.

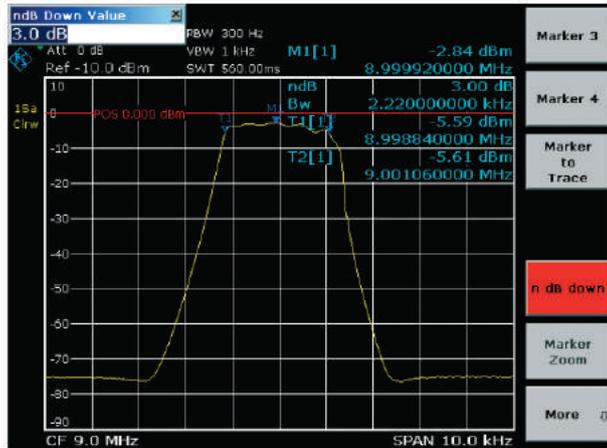
The R&S®FSL features many measurement options for analyzing signals in line with common standards. With an optional tracking generator, scalar network analysis up to 18 GHz is possible.

Your benefit	Features
One instrument for multiple tasks	Spectrum analysis Power meter Analog and digital signal analysis Scalar network analysis
Can take it with you everywhere	Carrying handle and low weight Optional battery pack Optional 12/24 V DC power supply
Signal analysis functions	Many measurement options for analyzing signals in line with IEEE (WLAN, WiMAX™ and Bluetooth®) and 3GPP standards *

* Please see product data sheet for supported standards

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

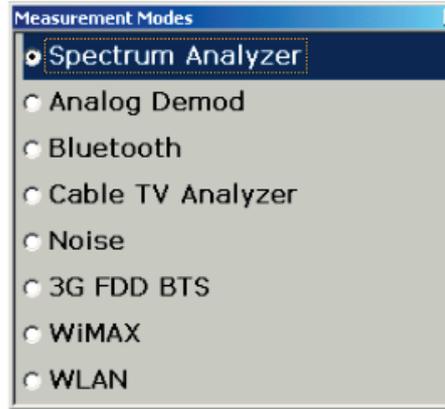
Scalar network analysis*



With the optional tracking generator, users can quickly and easily measure frequency response, filters and attenuation. The “n dB down” marker determines the 3 dB bandwidth of a bandpass filter at the press of a button.

* For reflection measurement, an external VSWR bridge is required.

Many predefined measurements



The R&S®FSL offers many different firmware options. The user can switch between different applications.

Popular options/accessories

Description	Item
Spectrum analyzer, 9 kHz to 3 GHz	R&S®FSL3
Spectrum analyzer, 9 kHz to 6 GHz	R&S®FSL6
Spectrum analyzer, 9 kHz to 18 GHz	R&S®FSL18
OCXO frequency reference	R&S®FSL-B4
Additional interfaces	R&S®FSL-B5
Narrow resolution filters	R&S®FSL-B7
Gated sweep	R&S®FSL-B8
GPIB interface	R&S®FSL-B10
RF preamplifier (3/6 GHz)	R&S®FSL-B22
DC power supply, 12 V to 28 V	R&S®FSL-B30
NiMH battery pack	R&S®FSL-B31
Description	Option
AM/FM/φM measurement demodulator	R&S®FSL-K7
Power sensor support	R&S®FSL-K9
Spectrogram measurements	R&S®FSL-K14
3GPP FDD BTS application firmware	R&S®FSL-K72
WLAN transmitter measurements for IEEE 802.11a, b, g, j	R&S®FSL-K91
Noise figure and gain measurements	R&S®FSL-K30

Use as power meter



Turn the R&S®FSL into a power meter with R&S®NRP power sensors and the R&S®FSL-K9 option.

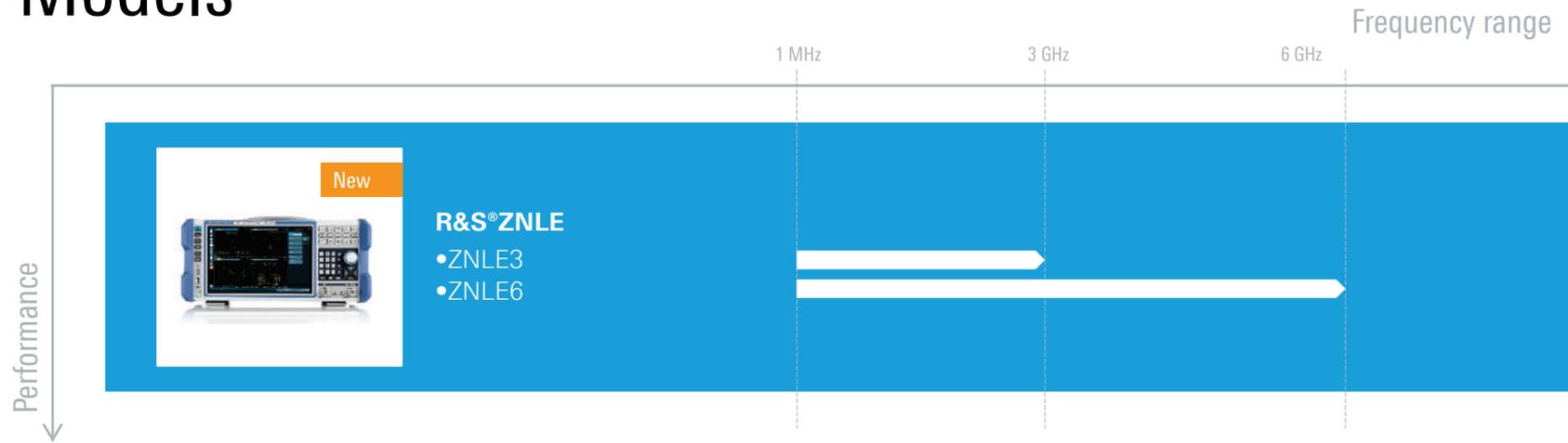
R&S®FSL unique features in its class

- Portability, optional battery and 12/24 V DC power
- Scalar network analysis up to 18 GHz
- Many measurement options for analyzing standard communications signals

Rohde & Schwarz Representative

Network Analyzers

Models



Main Menu

Oscilloscopes

Power Supplies

Signal Generators

Handheld Analyzers

Spectrum Analyzers

Network Analyzers

EMC Precompliance

Meters and Counters

R&S®ZNLE Vector Network Analyzer

Measurements as easy as ABC



The perfect choice for

Passive RF components tests

Education & training

Automated testing

Production environment

Key specifications

Frequency range	1 MHz to 3 GHz (R&S®ZNLE3) 1 MHz to 6 GHz (R&S®ZNLE6)
Number of ports	2 ports, N(F)
Dynamic range	up to 110 dB (spec.) 120 dB (typ.)
Output power	up to 0 dBm
IF bandwidths	1 Hz to 500 kHz
Sweep time	16.7 ms for 401 points (100 kHz IFBW, TOSM, 200 MHz span)

Vector network analysis made easy

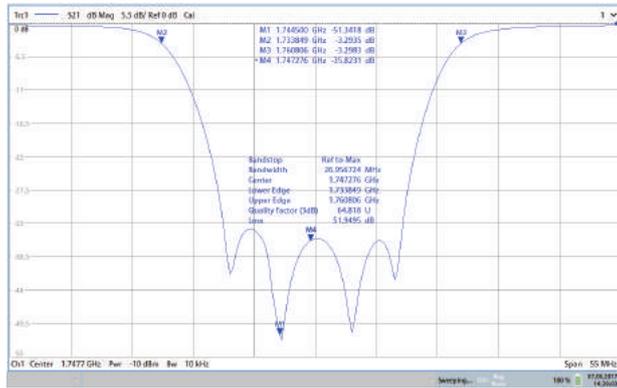
With the R&S®ZNLE, vector network analysis measurements become as easy as ABC: easy to use, easy to calibrate, easy to configure.

Fast measurement speeds, reliable RF performance and a clearly structured user interface make the R&S®ZNLE the perfect choice for vector network analysis measurements on passive components.

Your benefit	Features
Solid performance in an economic instrument	Standalone vector network analyzer with fast measurement speeds and low trace noise
Clearly structured user interface with multi-touchscreen	Wide capacitive touchscreen for convenient configuration with multi-touch gesturing. Undo/redo softkeys and fully integrated context-sensitive help menu for user-friendly operation
Standard instrument for use in the lab	De/embedding, fixture compensation, support of automatic calibration units and remote control via LAN or GPIB

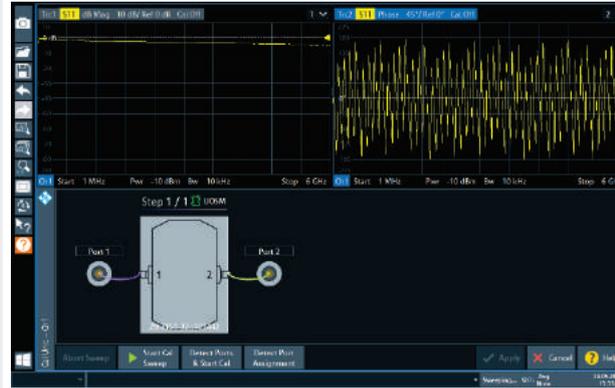
► For more information, see www.rohde-schwarz.com/product/ZNLE

Vector network analysis



Automatic filter characterization with advanced marker functions: all important values in one step.

Automatic calibration unit support



Automatic calibration units supported for convenient automatic system error correction. To be even quicker, a one-step auto cal is available.

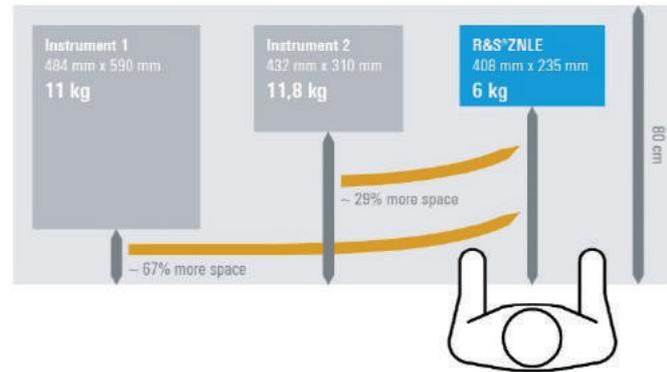
Order information

Description	Item
Vector network analyzer, 1 MHz to 3 GHz	R&S®ZNLE3
Vector network analyzer, 1 MHz to 6 GHz	R&S®ZNLE6
GPIB Interface	R&S®FPL1-B10
Automatic calibration unit	R&S®ZN-Z151



R&S®ZN-Zx calibration units can be used with the R&S®ZNLE for a convenient and quick way to perform system error correction.

Up to 67% more space on your desk

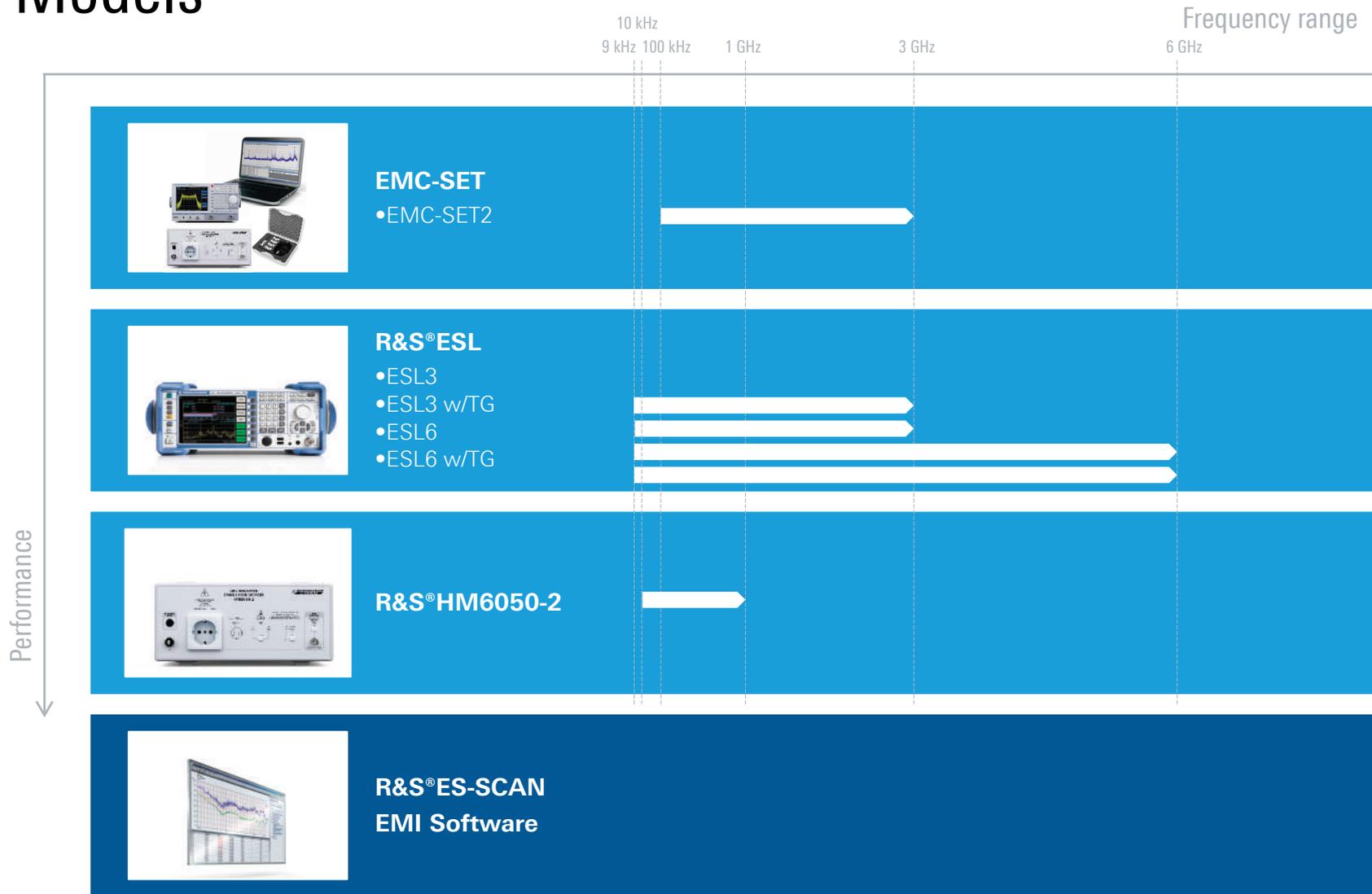


The R&S®ZNLE leaves up to 67% more space on a typical 80 cm workbench than comparable analyzers. Weighing 60% less than comparable analyzers, it is the most portable benchtop analyzer. The R&S®ZNLE fits easily on any desk for convenient everyday measurements such as tuning a filter.

Feature highlights

- Compact standalone vector network analyzer with fully integrated computer
- Fast measurement speeds
- Innovative user interface and wide 10.1" multi-touchscreen
- Windows 10 operating system
- Use of calibration units

EMC Precompliance Models



- Main Menu
- Oscilloscopes
- Power Supplies
- Signal Generators
- Handheld Analyzers
- Spectrum Analyzers
- Network Analyzers
- EMC Precompliance**
- Meters and Counters

EMC Precompliance Specifications

	EMC-SET2	R&S®ESL	R&S®HM6050-2	R&S®ES-SCAN
Type	EMC Precompliance Set Incl. spectrum analyzer, LISN and near-field probe set	EMI test receiver	Line Impedance Stabilization Network	EMI Software
Frequency range	100 kHz to 3 GHz	9 kHz to 3/6 GHz (depending on model)	10 kHz to 30 MHz	-
Measurement time	20 ms to 1000 s	Selectable from 100 μ s to 100 s (receiver mode/scan, per frequency step) Selectable from 2.5 ms to 16 000 s, zero span 1 μ s to 16 000 s (analyzer mode/sweep time)	-	-
RBW	1 kHz (100 Hz) to 1 MHz in 1/3 steps CISPR: 200 Hz (-3 dB), 9 kHz, 120 kHz, 1 MHz (-6 dB)	10 Hz to 10 MHz in 1/3 sequence (-3 dB) 200 Hz, 9 kHz, 120 kHz (-6 dB), 1 MHz (impulse)	-	-
DANL (sensitivity)	typ. -135 dBm; -124 dBm with optional preamplifier	Preamplifier on (R&S®FSL-B22 - option), normalized to 1 Hz typ. -130 dBm (9 kHz < f < 3 MHz) typ. -162 dBm (f = 500 MHz) typ. -158 dBm (f = 3 GHz)	-	-

- Main Menu
- Oscilloscopes
- Power Supplies
- Signal Generators
- Handheld Analyzers
- Spectrum Analyzers
- Network Analyzers
- EMC Precompliance**
- Meters and Counters

R&S® HMS EMC-SET Precompliance Set

Complete, cost-efficient EMI measuring set



The perfect choice for

EMI precompliance measurements in engineering lab

Remotely controlled EMI measurements for EMC diagnosis and precompliance

Key specifications

Frequency range	100 kHz to 3 GHz
Measurement time	20 ms to 1000 s
Resolution bandwidth (RBW)	1 kHz (100 Hz) to 1 MHz in 1 to 3 steps
DANL (sensitivity)	-115 dBm, -124 dBm (typ.); -135 dBm

Key features

The EMC-SET provides all necessary devices and software to conduct reliable EMC precompliance measurements. This set meets the needs of cost-conscious customers and engineers who want to perform diagnostic troubleshooting during the design phase or measure typical EMI problems.

Your benefit

EMC precompliance testing

Complete set

Features

Avoids unexpected results in test labs during EMC compliance tests, saves extra cost of repetitive tests and prevents surprises before a problem actually occurs

All necessary tools and components are included; no need for wasting time searching for accessories

► For more information, visit
www.rohde-schwarz.com/product/EMC_PCS

R&S®HMS-X spectrum analyzer



- Frequency range: 100 Hz to 1.6 GHz/3 GHz
- Fast sweep mode
- Receiver mode with quasi-peak detector
- Various detectors: auto peak, min./max. peak, sample, RMS

R&S®HM6050-2 LISN



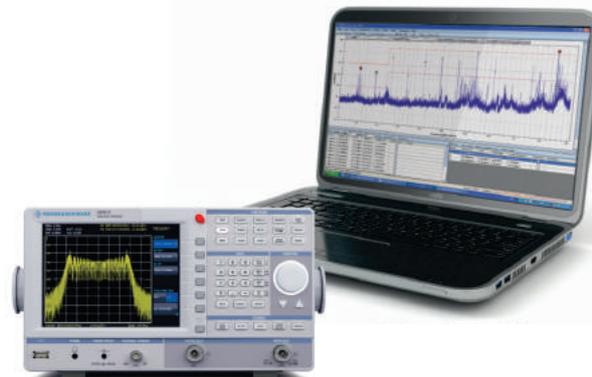
- 9 kHz to 30 MHz
- Built-in transient limiter
- Artificial hand connector

R&S®HZ540 Probe

- 100 kHz to 3 GHz
- 1x E-field probe
- 1x H-field probe
- 1x high-impedance probe



EMC PreCom with HMEexplorer software



Ordering information

Precompliance set

Description	Model
100 kHz to 3 GHz	R&S®HMS EMC-SET2
Included instrument and accessories	
Spectrum analyzer with EMC option	R&S®HMS-X
LISN 9kHz to 30 MHz	R&S®HM6050-2
100 kHz to 3 GHz; 1x E-field probe 1x H-field probe 1x high-impedance probe	R&S®HZ540
EMI module part of the HMEexplorer software for conducting precompliance measurements	EMC PreCom

Included:

All models include power cable, operating manual and come with three-year warranty.

Rohde & Schwarz Representative

R&S®ESL EMI Receiver

Compact, cost-effective measuring receiver



The perfect choice for

EMI measurements
& debugging of
commercial products

EMC labs

Standard RF
spectrum
measurements

Development &
mobile users

Key specifications

Frequency range	up to 50 GHz
Measurement range	-70 dBm to +23 dBm
Amplitude accuracy	0.5 dB
1 dB compression	+5 dBm
RF input pulse-resistant	up to 10 mWs
Displayed average noise level with preamplifier	<-152 dBm (1 Hz)
Resolution bandwidths	10 Hz to 10 MHz (-3 dB), 200 Hz, 9 kHz, 120 kHz (-6 dB), 1 MHz (impulse)

Compact, cost-effective measuring receiver

The R&S®ESL EMI test receiver combines two instruments in one, measuring EMC disturbances in line with commercial standards and also serving as a full-featured spectrum analyzer for diverse lab applications. The R&S®ESL is designed to meet the needs of cost-conscious users who want to perform diagnostic and precompliance EMI measurements up to 3 GHz or 6 GHz.

Your benefit

EMI measurements

Features

- Very good RF characteristics
- Frequency range covering the most important EMI measurements in commercial product standards
- All CISPR weighting detectors included
- All major functions of an advanced EMI test receiver, including fully automated EMI test sequences

Compact and mobile

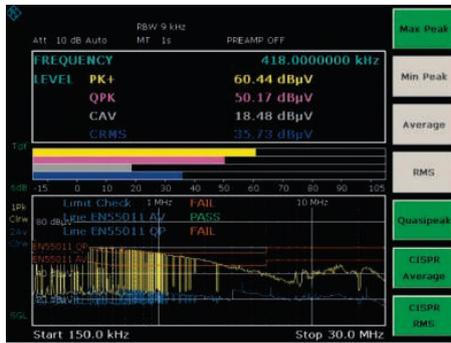
- Rugged case as standard
- Compact size
- Lightweight
- Optional battery operation for installation, maintenance and on-site applications

Standard RF spectrum measurements

Complete functionality of an R&S®FSL3/R&S®FSL6 spectrum analyzer included

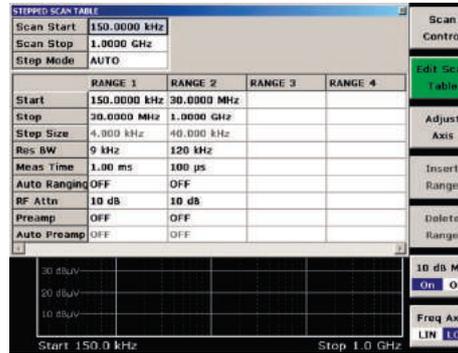
► For more information, visit
www.rohde-schwarz.com/product/ESL

Test receiver and spectrum analyzer function



Menu for selecting weighting detectors. Values produced by a maximum of four different detectors are simultaneously displayed, both numerically and as an analog bargraph.

Individual receiver parameters set for subranges



In receiver mode, the R&S®ESL is tuned in fixed frequency steps in accordance with the settings in the SCAN table. The SCAN table can be programmed for a maximum of ten frequency subranges with independently selectable parameters.

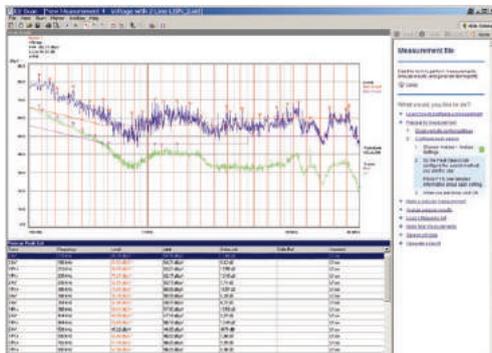
Ordering information

Choose your model

Test receiver	Frequency range	Options
R&S®ESL3 (1300.5001.03)	9 kHz to 3 GHz	Base unit
R&S®ESL3 (1300.5001.13)	9 kHz to 3 GHz	Tracking generator
R&S®ESL6 (1300.5001.06)	9 kHz to 6 GHz	Base unit
R&S®ESL6 (1300.5001.16)	9 kHz to 6 GHz	Tracking generator

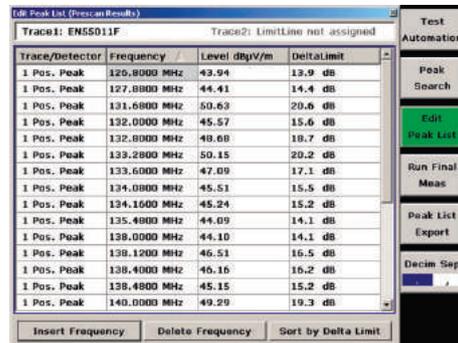
Included: All models include power cable, quick start guide and CD-ROM (with operating manual and service manual) and three-year warranty

Diagnostic measurements made easy with ES-SCAN



Preview measurement (Pk and Avg) with determination of the local maxima (here, 25 subranges) for subsequent final measurement (QP and C-Avg).

Evaluation of critical disturbance frequencies list



This saves valuable test time and is a great help for anyone who does not make such measurements on a regular basis.

Popular options/accessories

Description	Type
OCXO reference frequency	R&S®FSL-B4
Additional interfaces (video out, IF out, noise source control, AUX port, R&S®NRP-Zxx power sensor)	R&S®FSL-B5
Gated sweep	R&S®FSL-B8
AM/FM/φM measurement demodulator	R&S®FSL-K7
Power sensor support (requires R&S®FSL-B5 or R&S®NRP-Z3/-Z4)	R&S®FSL-K9

Rohde & Schwarz Representative

R&S® HM6050-2 Line Impedance Stabilization Network

To meet relevant standards



The perfect choice for

EMI precompliance measurements in engineering lab

Remotely controlled EMI measurements for EMC diagnosis and precompliance

Key features

- Single-phase V-network to measure line-conducted interferences from 10 kHz to 30 MHz (based on CISPR 16, amplitude/frequency characteristics)
- Selectable transient limiter
- Artificial hand connector

Key specifications

Frequency range	10 kHz to 30 MHz
Max. current	16 A
Line voltage	230 V
Line frequency	50 Hz to 60 Hz
Artificial hand	220 pF + 511 Ω

Your benefit

Measurements in accordance with international standards

Complete functionality

Features

Meets VDE 0876 and CISPR Publ. 16 standards

Contains air core inductance coils and features an artificial hand and a PE simulating network that can be bridged

► For more information,
see www.rohde-schwarz.com/product/HM6050

General information

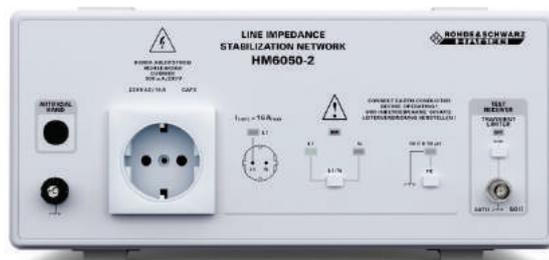
- The HM6050-2 line impedance stabilization network (LISN) is basically a filter network
- A lowpass filter connects the DUT to the AC power lines.
- The LISN presents the signal with a well-defined impedance
- For measurements with a spectrum analyzer/EMC receiver, the EMC signal is available after having passed through a highpass filter.
- Two identical networks provide the asymmetric noise emission signals of the DUT's L1 and N power lines
- The user can choose between the signals; the selected signal will be available at the HM6050-2's test signal output

Ordering information

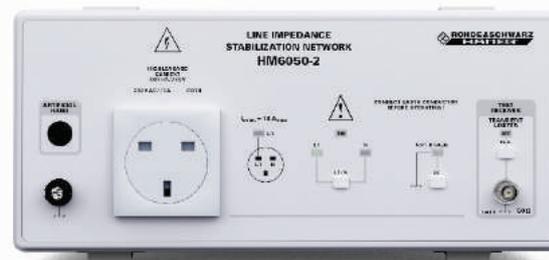
Model configuration information	
Description	Model
Line impedance stabilization network, EU version	R&S®HM6050-2D
Line impedance stabilization network, UK version	R&S®HM6050-2UK
Line impedance stabilization network, US version	R&S®HM6050-2US

Included accessories:

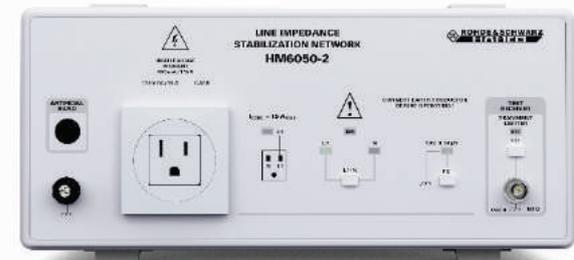
The R&S®HM76050-2 include operating manual, power cable, and three-year warranty.



EU version



UK version



US version

Rohde & Schwarz Representative

Rohde & Schwarz GmbH & Co. KG | Europe, Africa, Middle East +49 89 4129 12345 | North America 1 888 TEST RSA (1 888 837 87 72)

Latin America +1 410 910 79 88 | Asia Pacific +65 65 13 04 88 | China +86 800 810 82 28 / +86 400 650 58 96

www.rohde-schwarz.com | customersupport@rohde-schwarz.com

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Meters and Counters Specifications

	R&S®HMC8012	HM8118	HM8123	R&S®HMC8015		R&S®HM8000
						
Instrument type	digital multimeter	LCR bridge/meter	universal counter	power analyzer	Instrument type	multimeter (R&S®HM8012) LCR meter (R&S®HM8018) function generator (R&S®HM8030-6) triple power supply (R&S®HM8040-3)
Measurements	voltage, current, frequency, power, resistance (two and four-wire), temperature, capacitance, diode, continuity	inductance, capacitance, resistance, impedance, reactance, admittance, conductance, susceptance, quality factor, dissipation factor, phase angle, phase difference, ratio	frequency/period, pulse width, duty cycle, UPM, events, frequency ratio, time interval, time difference, phase difference	voltage, current, active power, apparent power, reactive power, power factor, phase shift, frequency, THD, energy, extended analysis (option)		
Measurement range	voltage (DC/AC): 400 mV to 1000/750 V current (DC/AC): 20 mA to 10 A resistance: 400 Ω to 250 MΩ capacitance: 5 nF to 500 μF	impedance: 3 Ω to 100 MΩ phase: -180° to +180° frequency range: 20 Hz to 200 kHz amplitude: 50 mV to 1.5 V (RMS) internal bias voltage: 0 V to +5 V internal bias current: 0 A to +200 mA	frequency: 0 Hz to 200 MHz (BNC connectors) 200 MHz to 3 GHz (SMA connector) period: 5 ns to 10 000 s	voltage: 15 V to 600 V current: 15 mA to 20 A	Measurement range	please check datasheet

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- Network Analyzers
- EMC Precompliance
- Meters and Counters**

R&S® HMC8012 Digital Multimeter

See more – up to three results in parallel



The perfect choice for

General purpose

Engineering lab

Production testing

Hobbyists

Key specifications

Measurement range	DC to 100 kHz
Basic DC accuracy	0.015 %
Number of digits	5 ¾ digit
Resolution	1 µV, 100 nA, 1 mΩ, 1 pF, 1 Hz, 0.1 °C,

Key features

- True RMS measurement, AC, AC + DC
- Simultaneous display of three measurement functions, e.g. DC + AC + statistics
- Measurement functions: DCV, DCI, ACV, ACI, frequency, resistance (2- and 4-wire), temperature, capacitance, diode and continuity test
- Mathematic functions: limit testing, minimum, maximum, average, offset, DC power, calculation of dB and dBm
- Data logging to internal memory or USB stick

Your benefit

See more at a glance with three values displayed on one screen

Limit testing on color display for easy minimum/maximum analysis

10 A range as standard

Saves up to 4 GB of data directly onto storage devices

Features

Measured voltage, measured current, calculated power

Programmable test functions such as limit, min./max., etc.

One current input with up to 10 A and no need to change connectors for different ranges

Writes directly to USB thumb drive

► For more information, see www.rohde-schwarz.com/product/HMC8012

Simultaneous measurement display



Simultaneous display of three measurements, including DCI and ACI at the same time.

Ideal for industrial environments



Easily slots into R&S HZC95 2 HU 19" rackmount kit for production environment.

Ordering information

Base units	
Description	Model
without GPIB	R&S HMC8012
with GPIB	R&S HMC8012-G

Accessories and system component

Description	Type
PT100 temperature probe, 2-wire	R&S HZ812
PT100 temperature probe, 4-wire	R&S HZ887
Silicone test leads (included with base unit)	R&S HZ15
19" rackmount kit, 2 HU for HMC series	R&S HZC95

Included accessories:

All models include R&S HZ15 silicone test leads with safety connectors and test probe, length: 1 m (black + red), operating manual, power cable and three-year warranty.

Application	How the HAMEG R&S HMC8012 meets your needs
General purpose	<ul style="list-style-type: none"> Clear 5¾-digit display Quick and easy measurement High resolution and accuracy Extremely useful in service and repair centers, training centers, universities and schools
Engineering lab	<ul style="list-style-type: none"> Wide frequency range from DC to 100 kHz Accurate four-wire resistance measurement Long-term data logging capability Fanless design
Production environment	<ul style="list-style-type: none"> LXI-compliant Ethernet interface USB and Ethernet interface, GPIB (HMC8012-G only) SCPI remote control functionality LabVIEW drivers available

Rohde & Schwarz Representative

R&S® HM8118 LCR Bridge

Universal, flexible and easy to use



The perfect choice for

Engineering lab

Component validation

Production testing

General purpose

Key specifications

Test frequencies	20 Hz to 200 kHz
Basic accuracy	0.05 %
Measurement functions	L, C, R, Z , X, Y , G, B, D, Q, ϕ , Δ , M, N
Internal bias voltage	0 V to +5 V
Internal bias current	0 mA to 200 mA
External bias voltage	0 V to +40 V

Key features

- Basic accuracy: 0.05 %
- Up to 12 measurements per second
- Parallel and serial mode
- Internal programmable voltage and current bias
- Kelvin cable and four-terminal SMD test adapter included
- R&S®HO118 binning interface (optional) for automatic sorting of components

Your benefit

Versatile functionality, all usually needed measurements included

Easy to use

Easy to interface for remote control

Quiet on the bench

Features

The R&S®HM8118 provides the full range of measurements to characterize resistors, capacitors and inductors; results are displayed in absolute, relative or average values

Frequently used functions are directly accessible via front panel keys

RS-232/USB interface; optional GPIB

Fanless design

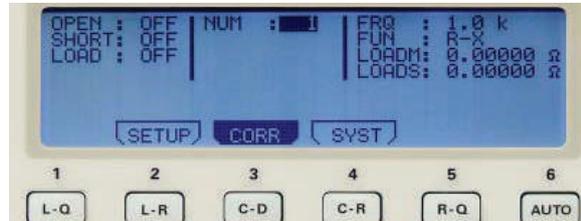
► For more information, see www.rohde-schwarz.com/product/HM8118

Direct control



The most important parameters are adjustable with the push of a button.

Ease of use



Activation and deactivation of OPEN, SHORT and LOAD correction.

Ordering information

Base unit

Description	Model
200 kHz LCR bridge	R&S [®] HM8118

Options/accessories/system components

Description	Type
Binning interface (service center installation only)	R&S [®] HO118
Four-terminal test fixture including shorting plate	R&S [®] HZ181
Four-terminal transformer test cable	R&S [®] HZ186
Interface IEEE-488 (GPIB)	R&S [®] HO880
19" rackmount kit, 2 HU	R&S [®] HZ42



Comfortable

Equivalent circuit and range selection, either manual or automatic

Trigger

Continuous, manual or external control via interface, binning interface or trigger input

Save/Recall

Store and retrieve up to 10 instrument settings

Complete

Internal voltage and current bias

R&S[®]HO118 binning interface



The R&S[®]HO118 binning interface enables use with external hardware that sorts components by physical type after measurement. Data lines for eight sorting containers and control lines (ALARM, INDEX, EOM, TRIG).

Included accessories:

The R&S[®]HM8118 LCR bridge includes R&S[®]HZ184 four-terminal Kelvin test cable, R&S[®]HZ188 four-terminal SMD component test fixture, operating manual, power cable and three-year warranty.



R&S[®]HZ181 4-terminal test fixture including shorting plate.



R&S[®]HZ186 4-terminal transformer test cable.

Rohde & Schwarz Representative

R&S® HM8123 Universal Counter

Wide frequency range and accurate results



The perfect choice for

Engineering labs

Maintenance & repair

Education

General purpose

Key specifications

Measurement Range	DC to 3 GHz
- Input A/B (BNC)	DC to 200 MHz
- Input C (SMA)	100 MHz to 3 GHz
Input Impedance	
- Input A/B	50 Ω or 1 MΩ, sensitivity 25 mV
- Input C	50 Ω, sensitivity 30 mV
Input voltage	25 mV to 250 V (frequency dependent)

Key features

- 10-digit resolution (at 10 s gate time)
- Nine measurement functions, external GATE and ARMING connectors (BNC)
- External reference input (10 MHz) via BNC connector
- HM8123: TCXO (temperature stability: $\pm 0.5 \times 10^{-6}$)
HM8123-X: OCXO (temperature stability: $\pm 1.0 \times 10^{-8}$)
- Burst measurements
- Fanless design

Your benefit

High accuracy

Features

- High sensitivity and switchable attenuators to adapt to a wide range of input levels
- 10-digit resolution for precise measurements
- Optional OCXO for even higher accuracy

Two identical inputs A and B

Can be used for interchannel measurements such as frequency ratio A/B, time interval A:B, phase A to B

Additional input for higher frequencies

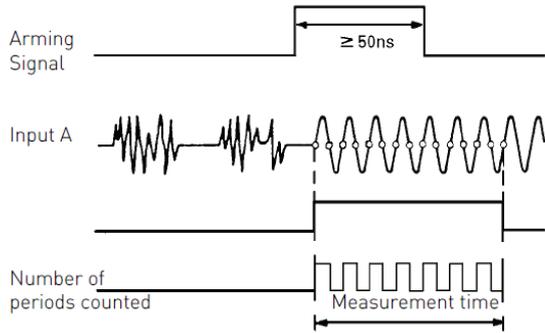
Widens the frequency range up to 3 GHz

Easy to use

Frequently used functions are directly accessible via front panel keys

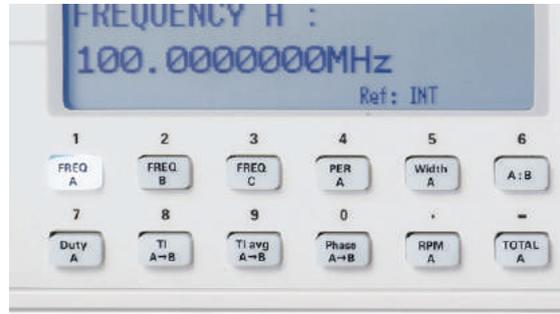
► For more information,
see www.rohde-schwarz.com/product/HM8123

External arming



External arming prevents undesired signals from triggering of a measurement.

Ease of use



Intuitive one-push pushbutton operation makes each function directly addressable.

Ordering information

Base units

Description	Model
With TCXO (temp. stability: $\pm 0.5 \times 10^{-6}$)	R&S®HM8123
With OCXO (temp. stability: $\pm 1.0 \times 10^{-8}$)	R&S®HM8123-X

Options/system components

Description	Type
IEEE-488 Interface (GPIB)	R&S®HO880
19" rackmount kit, 2 HU	R&S®HZ42

Included accessories:

All models include power cable, operating manual and three-year warranty.



3 measurement inputs as standard:
A/B: DC to 200 MHz
C: 100 MHz to 3 GHz

USB/RS-232 interface as standard.



R&S®HZ42
2 HU, 19" rackmount kit.



R&S®HO880
IEEE-488 GPIB interface.

Rohde & Schwarz Representative

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Latin America +1 410 910 79 88 | Asia Pacific +65 65 13 04 88 | China +86 800 810 82 28 / +86 400 650 58 96

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R&S® HMC8015 Power Analyzer

Comprehensive power analysis in a compact package



The perfect choice for

Engineering lab

General purpose

Production testing

Education

Key specifications

Bandwidth	DC to 100 kHz
Sampling rate	500 ksample/s
Resolution	simultaneous display of current and voltage, each with 16-bit
Voltage input	up to 600 V _{RMS}
Current input	up to 20 A _{RMS}
Basic accuracy	0.05 % of reading
Frequency accuracy	0.1 % of reading
Input impedance	2 MΩ

Key features

The R&S®HMC8015 power analyzer is the first compact tester for AC/DC load and standby current characterization that enables measurements without additional tools such as a computer or remote infrastructure. In addition to a numerical and graphical display with 26 key parameters, the instrument delivers performance and compliance protocols in line with IEC 62301, EN 50564 and EN 61000-3-2.

Your benefit

Clear display of all measured parameters

Features

- Simultaneous display of up to 10 numerical measurement functions
- User-configurable measurement display
- Graphical display modes for inrush, harmonic analysis, waveform and trend chart

High measurement accuracy

- Basic accuracy: 0.05 %
- Signal acquisition from DC to 100 kHz at a sampling rate of 500 ksample/s
- Simultaneous display of current and voltage, each with 16-bit resolution

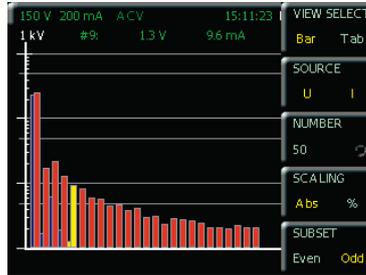
Everyday measurement functions

- 26 different measurement and mathematical functions
- Limit testing with pass/fail indication for up to six selectable limits

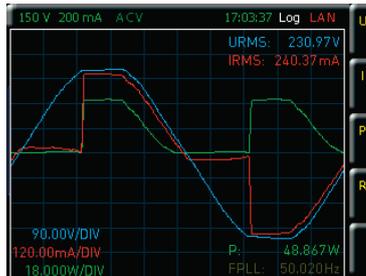
► For more information, see www.rohde-schwarz.com/product/HMC8015



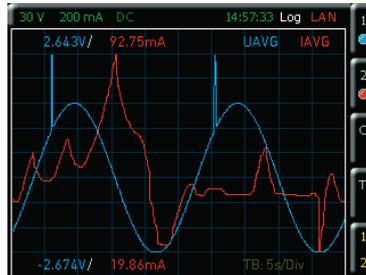
Inrush function



Harmonic analysis bargraph



Waveform: load with phase-angle control



Trend chart function

Function overview with indication of required options

Function	Description	Configuration
P	Active power (W)	Standard
S	Apparent power (VA)	Standard
Q	Reactive power (VAR)	Standard
PF	Power factor (λ)	Standard
PHI	Phase shift (φ)	Standard
FU	Voltage frequency value (Hz)	Standard
FI	Current frequency value (Hz)	Standard
FPLL	Acquisition frequency (Hz)	Standard
URMS	RMS voltage (U RMS)	Standard
UAVG	Average voltage (U AVG)	Standard
IRMS	RMS current (I RMS)	Standard
I AVG	Average current (I AVG)	Standard
UTHD	Total harmonic distortion U	Standard
ITHD	Total harmonic distortion I	Standard
WHM, WHP, WH, AHM, AHP, AH	Energy counter (integrator values)	Standard
UPPeak	Maximum voltage (U PEAK)	HOC/HVC151
UMPeak	Minimum voltage (U PEAK)	HOC/HVC151
IPPeak	Maximum current (I PEAK)	HOC/HVC151
IMPeak	Minimum current (I PEAK)	HOC/HVC151
PPPeak	Maximum power (P PEAK)	HOC/HVC151
PMPeak	Minimum power (P PEAK)	HOC/HVC151
Harmonics	Bargraph of up to 50 harmonics	HOC/HVC151
Waveform	Waveform display (displays one period of voltage, current or power)	HOC/HVC151
Trend chart	Current and voltage displayed as a waveform	HOC/HVC151
Inrush	Triggered display of waveform (single shot)	HOC/HVC151
Sensor input	Input for current probe/external shunt	HOC/HVC152
DIN/AIN	Digital/analog inputs and outputs (BNC)	HOC/HVC152
Limit/pass-fail	Limit display	HOC/HVC152
IEC62301	Standby standard	HOC/HVC153
EN50564	Extended standby standard	HOC/HVC153
EN61000-3-2	Harmonic current for EMC, CE approval	HOC/HVC153

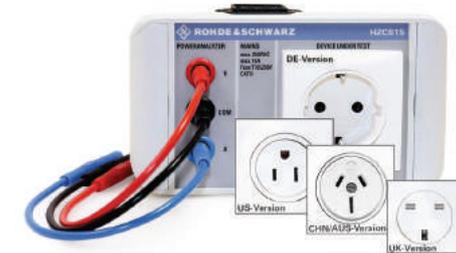
Software options: can be ordered directly from the factory (HOC15x) or later (HVC15x) as a voucher

Ordering information

Base units	
Description	Model
without GPIB	R&S®HMC8015
with GPIB	R&S®HMC8015-G
Options/accessories/system components	
Description	Type
AC/DC current probe 30 A, 4 mm connectors	R&S®HVC50
AC/DC current probe, 1000 A, 4 mm connectors	R&S®HVC51
Line adapters US version EU version GB version CHN/AUS version	R&S®HVC815-US R&S®HVC815-EU R&S®HVC815-GB R&S®HVC815-CHN
Advanced analysis, voucher upgrade	R&S®HOC/HVC151
Advanced I/O, voucher upgrade	R&S®HOC/HVC152
Compliance test, voucher upgrade	R&S®HOC/HVC153
19" rackmount kit, 2 HU	R&S®HVC95

Included accessories:

All models include operating manual, power cable and three-year warranty.



R&S®HVC815 adapter

Rohde & Schwarz Representative

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Trade names are trademarks of the owners | R&S®HMC8015 Power Analyzer | Data without tolerance limits is not binding

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R&S® HM8000 Modular System

Configure your individual set of test instruments



The perfect choice for

Education

Hobbyists

Maintenance & repair

Key features

- Unsurpassed price-performance ratio and enormous flexibility of plug-in system
- Multimeter, LCR meter, function generator and triple power supply can be combined into a set
- Mainframe allows simultaneous operation of two modules
- Space-saving by stacking up to 5 mainframes
- Blank module available for customized instrument design

Key specifications

Function generator	up to 10 MHz, up to 10 V _{pp} waveforms: sine, triangle, square wave, pulse, DC
Triple power supply	2 x 0 V to 20 V/0.5 A, 1 x 5 V/1 A
LCR meter	measurement functions: L, C, R, Θ , Q, D, Z basic accuracy: 0.2 %
4 3/4-digit multimeter	50 000 counts basic accuracy: 0.05 %

Your benefit

Unsurpassed price-performance ratio

Flexibility

Blank module available

Features

Very suitable for education; high performance for any type of basic electronic training

Four different instruments can be combined into a space-saving set to meet individual requirements

- To easily build customized circuitries
- Power is supplied by the mainframe
- Can also be used to fill unused slots

► For more information, visit
www.rohde-schwarz.com/product/HM8001

R&S®HM8030-6 function generator



- Frequency range: 50 mHz to 10 MHz
- Output voltage: up to 10 Vpp (into 50Ω)
- Waveforms: sine, triangle, square wave, pulse, DC
- Distortion: < 0.5 % up to 1 MHz, rise and fall time of typ. 15 ns

R&S®HM8040-3 triple power supply



- 2 x 0 V to 20 V/0.5 A; 1 x 5 V/1 A
- 3-digit switchable displays for current and voltage
- Display resolution: 0.1 V/1 mA
- Adjustable current limiting and electronic fuse

R&S®HM8018 LCR meter



- Measurement functions: L, C, R, θ , Q/D, |Z|
- Basic accuracy: 0.2 %
- Meas. frequencies: 100 Hz, 120 Hz, 1 kHz, 10 kHz, 25 kHz
- Max. resolution: 0.001 Ω , 0.001 pF, 0.01 μ H

R&S®HM8012 4 $\frac{3}{4}$ -digit multimeter



- 4 $\frac{3}{4}$ -digit display with 50 000 counts
- Basic accuracy: 0.05 %
- Max. resolution: 10 μ V, 0.01 dBm, 10 nA, 10 m Ω , 0.1 $^{\circ}$ C
- Offset function and relative value measurements

R&S®HM8001 mainframe



- **Module supply voltages:**
2 x 8 V (AC), max. 5.5 A each
2 x 5 V (DC), max. 1 A each
4 x 20 V (DC), max. 0.5 A each
- Power consumption per module: max. 25 W
- DC voltages electronically regulated, floating and short-circuit proof

Ordering information

Step 1: choose mainframe (fits up to 2 modules)

R&S®HM8001-2	Mainframe
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Step 2: choose instrument modules

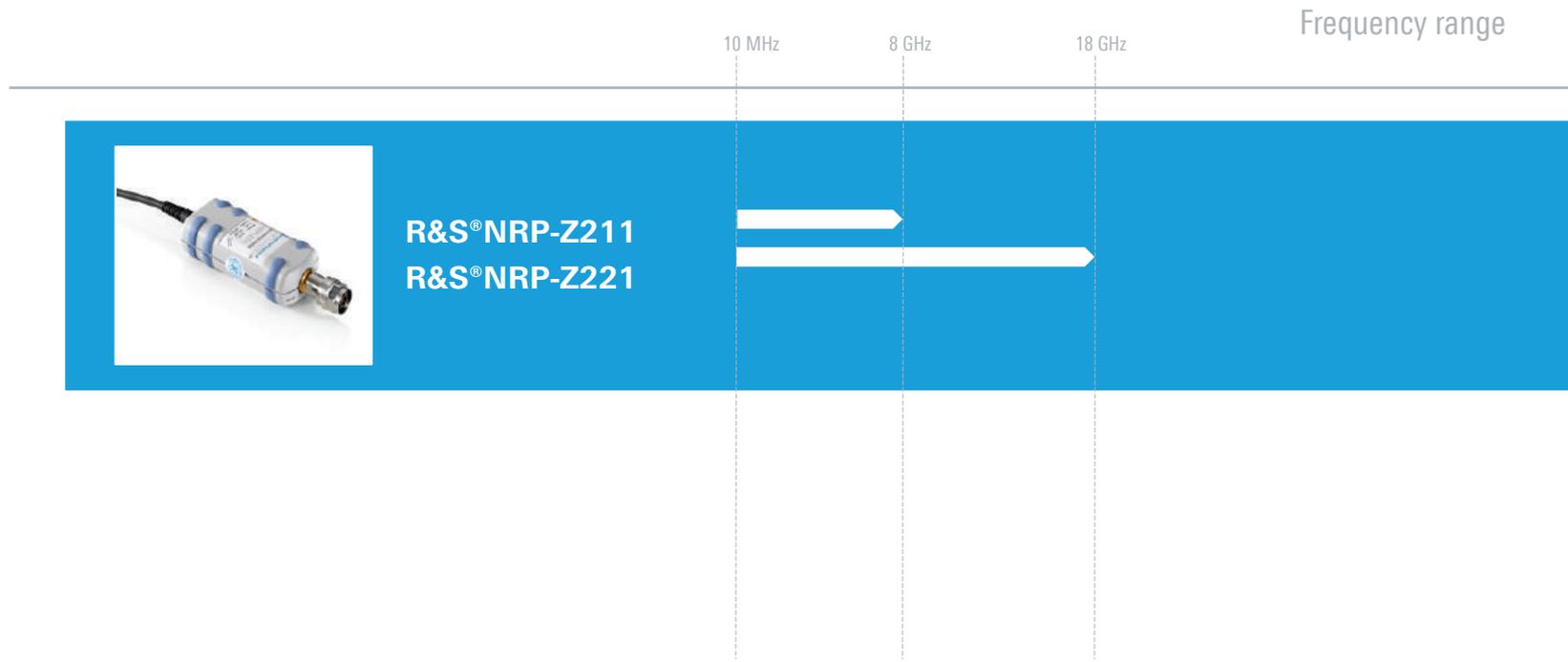
R&S®HM8030-6	Function generator
R&S®HM8040-3	Triple power supply
R&S®HM8012	4 $\frac{3}{4}$ -digit multimeter
R&S®HM8018	LCR meter
R&S®HM800	Blank module



R&S®HM800 blank module

Power Meters

Models



- Main Menu
- Oscilloscopes
- Power Supplies
- Signal Generators
- Handheld Analyzers
- Spectrum Analyzers
- Network Analyzers
- EMC Precompliance
- Meters and Counters**

Power Meters

Specifications

	R&S®NRP-Z211	R&S®NRP-Z221
		
Frequency range	10 MHz to 8 GHz	10 MHz to 18 GHz
Power range	1 nW to 100 mW (-60 dBm to +20 dBm)	1 nW to 100 mW (-60 dBm to +20 dBm)
Accuracy	0.054 dB to 0.110 dB	0.054 dB to 0.143 dB

- Main Menu
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R&S®NRP-Z211/-Z221 Two-Path Diode Power Sensor

Get accurate results faster



The perfect choice for

Base stations and mobile equipment

Calibration

Get accurate results faster

The R&S®NRP-Z211/-Z221 two-path diode power sensors combine all key characteristics relevant for their use in production. They are cost-effective, fast, precise and USB-capable, offering the best price/performance ratio in their class.

- Innovative two-path diode power sensor with enhanced interrange performance
- 80 dB dynamic range for CW and modulated signals
- Automatic burst detection and acquisition
- Low sensitivity to harmonics

Key specifications

Frequency range	10 MHz to 8 or 18 GHz
Measurement range	-60 dBm to +20 dBm (1 nW to 100 mW)
Speed	1,500 measurements/s
Available measurement functions	continuous average mode, trace mode, timeslot/time gate mode, burst average mode

Your benefit

USB sensors with no compromises

Highest accuracy

Fastest time to accurate measurements

Features

The R&S®NRP-Zxx power sensors are USB sensors that can be used standalone and have no downside in terms of versatility, accuracy and functionality

R&S®Smart Sensor technology

- Widest measurement range
- Lowest noise floor
- Fastest measurements

► For more information, visit
www.rohde-schwarz.com/product/NRP

Multiple ways to operate R&S®NRP-Z211/-Z221 power sensors

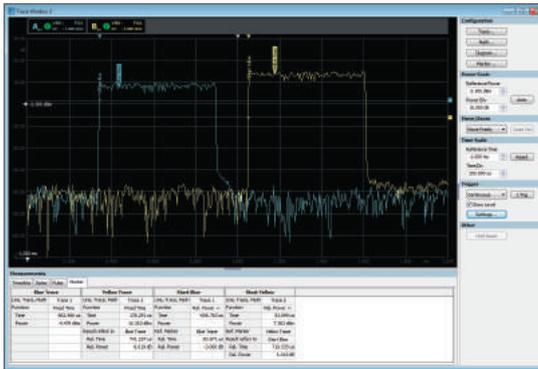


The power sensors can be operated either on an R&S®NRP2 base unit or directly on a laptop/PC. They are also supported by numerous Rohde & Schwarz signal generators, signal analyzers, spectrum analyzers and network analyzers. The R&S®NRP-Z4 passive USB adapter cable is all that is needed to connect the sensors to a laptop/PC.

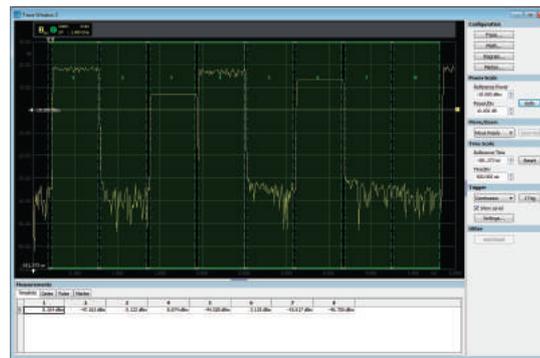
The R&S®NRP-Z5 sensor hub allows you to connect up to four sensors to a laptop/PC without additional adapters and to simultaneously start the measurements using an external trigger signal.

R&S®NRPV: convenient power measurements via PC application

In combination with the R&S®NRPV virtual power meter software, the USB capability of the R&S®NRP-Z211/-Z221 power sensors can be ideally utilized. The software covers all sensor functions and supports up to four sensors connected to a laptop/PC via the R&S®NRP-Z3/-Z4 USB adapter cables or the R&S®NRP-Z5 sensor hub. The sensors are automatically detected when plugged in and added to all open measurement windows (hot plugging).



Pulse delay measurement on different traces.



Measurement of eight timeslots in one shot with the R&S®NRPV.

Ordering information

Base units

Frequency Range	Model
2-path diode power sensor 10 MHz to 8 GHz	R&S®NRP-Z211
2-path diode power sensor 10 MHz to 18 GHz	R&S®NRP-Z221

Accessories

Description	Type
USB adapter cable (passive)	R&S®NRP-Z4
USB adapter cable (active)	R&S®NRP-Z3
R&S®NRPV license for one sensor	R&S®NRPZ-K1
Sensor hub	R&S®NRP-Z5

For higher frequencies and other power measurement ranges, please contact your local Rohde & Schwarz partner.

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