R&S®FNH
HANDHELD COMBINATION ANALYZER

Specifications



Specifications
Version 01.00

ROHDE&SCHWARZ
Make ideas real

CONTENTS

Definitions **3**

Base unit **4**

Frequency 4

Sweep time 5

Bandwidths 5

Maximum input power 5

Level 5

Intermodulation and spurious response 6

Trigger functions 9

Inputs and outputs 9

General data **10**

Options **12**

R&S®FNH-K41 CAT application 12

R&S®FNH-K42 VNA application 12

R&S®FNH-K22 tracking generator option 14

R&S®FNH-B10 DC bias option 14

R&S®FNH-B44 extended power range option 14

R&S®FNH-B102 3.5 mm RF input connector 15

Equivalence of specifications for different R&S®FNH part numbers 15

Ordering information **16**

Base units 16

Options 16

Extras 16

Antennas and antenna accessories 17

Power sensors supported by the R&S®FNH-K9 18

Power sensors supported by the R&S®FNH-K29 18

Optical power sensors and accessories 18

Calibration kit 18

Test cable 19

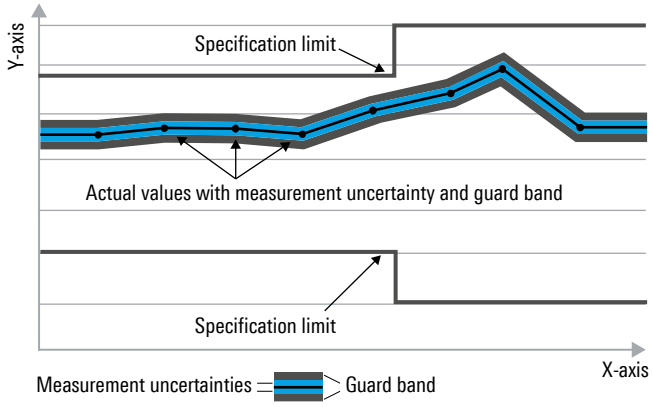
Warranty and service **19**

Definitions

General
Product data applies under the following conditions:

- Three hours of storage at ambient temperature followed by 30 minutes of warm–up operation
- Specified environmental conditions met
- Recommended calibration interval adhered to
- All internal automatic adjustments performed, if applicable

Specifications with limits
Represent warranted product performance by means of a range of values for the specified parameter. These specifications are marked with limiting symbols such as <, ≤, >, ≥, ± or descriptions such as maximum, limit of, minimum. Compliance is ensured by testing or is derived from the design. Test limits are narrowed by guard bands to take into account measurement uncertainties, drift and aging, if applicable.



Non–traceable specifications with limits (n. trc.)
Represent product performance that is specified and tested as described under “Specifications with limits” above. However, product performance in this case cannot be warranted due to the lack of measuring equipment traceable to national metrology standards. In this case, measurements are referenced to standards used in the Rohde & Schwarz laboratories.

Specifications without limits
Represent warranted product performance for the specified parameter. These specifications are not specially marked and represent values with no or negligible deviations from the given value, e.g. dimensions or resolution of a setting parameter. Compliance is ensured by design.

Typical data (typ.)
Characterizes product performance by means of representative information for the given parameter. When marked with <, > or as a range, it represents the performance met by approximately 80 % of the instruments at production time. Otherwise, it represents the mean value.

Nominal values (nom.)
Characterize product performance by means of a representative value for the given parameter, e.g. nominal impedance. In contrast to typical data, a statistical evaluation does not take place and the parameter is not tested during production.

Measured values (meas.)
Characterize expected product performance by means of measurement results gained from individual samples.

Uncertainties
Represent limits of measurement uncertainty for a given measurand. Uncertainty is defined with a coverage factor of 2 and has been calculated in line with the rules of the Guide to the Expression of Uncertainty in Measurement (GUM), taking into account environmental conditions, aging, wear and tear.

Device settings and GUI parameters are designated with the format “parameter: value”.

Non–traceable specifications with limits, typical data as well as nominal and measured values are not warranted by Rohde & Schwarz.

In line with the 3GPP standard, chip rates are specified in million chips per second (Mcps), whereas bit rates and symbol rates are specified in billion bit per second (Gbps), million bit per second (Mbps), thousand bit per second (kbps), million symbols per second (Msps) or thousand symbols per second (ksps), and sample rates are specified in million samples per second (Msample/s). Gbps, Mcps, Mbps, Msps, kbps, ksps and Msample/s are not SI units.

Base unit

Frequency

Frequency range	R&S®FNH6, models .06/.56	5 kHz to 6 GHz
	with R&S®FNH-B8SA option	5 kHz to 8 GHz
	with R&S®FNH-K41 cable and antenna tester (CAT) option	30 kHz to 6 GHz
	with R&S®FNH-K42 vector network analyzer (VNA) option (prerequisite: R&S®FNH-K41)	30 kHz to 6 GHz
	with R&S®FNH-K22 tracking generator [1]	30 kHz to 6 GHz
	with R&S®FNH-B8NA VNA option	30 kHz to 8 GHz
	R&S®FNH13, models .13/.63	5 kHz to 13.6 GHz
	with R&S®FNH-B20SA option	5 kHz to 20 GHz
	with R&S®FNH-K41 VNA option	30 kHz to 13.6 GHz
	with R&S®FNH-K42 VNA option (prerequisite: R&S®FNH-K41)	30 kHz to 13.6 GHz
	with R&S®FNH-K22 tracking generator [1]	30 kHz to 13.6 GHz
	with R&S®FNH-B20NA VNA option	30 kHz to 20 GHz
	R&S®FNH26, models .26/.76	5 kHz to 26.5 GHz
	with R&S®FNH-B32SA option	5 kHz to 32 GHz
	with R&S®FNH-K41 VNA option	30 kHz to 26.5 GHz
	with R&S®FNH-K42 VNA option (prerequisite: R&S®FNH-K41)	30 kHz to 26.5 GHz
	with R&S®FNH-K22 tracking generator [1]	30 kHz to 26.5 GHz
	all models with R&S®FNH-K1R real-time spectrum analyzer (RTSA) option	
	with R&S®FNH-B60 real-time bandwidth	60 MHz
	with R&S®FNH-B125 real-time bandwidth (prerequisite: R&S®FNH-B60)	125 MHz
Frequency resolution		1 Hz

Signal analysis bandwidth	all models with R&S®FNH-K1R RTSA option	
	standard	20 MHz
	with R&S®FNH-B60 real-time bandwidth	60 MHz
	with R&S®FNH-B125 real-time bandwidth	125 MHz

Reference frequency, internal		
Aging per year (for 20 years)		$\pm 3 \times 10^{-6}$
Temperature drift		1×10^{-7}
Achievable initial calibration accuracy		5×10^{-7}
Total reference uncertainty		(time since last adjustment × aging rate) + temperature drift + calibration accuracy

[1] The R&S®FPH-K22 option has the base frequency as the model .6/.13/.26. If a frequency upgrade option is installed R&S®FPH-8SA and R&S®FPH-20SA. The tracking generator is limited to the maximum frequency of 26.5 GHz.

Frequency readout		
Marker resolution		0.1 Hz
Uncertainty		±(marker frequency × reference uncertainty + 10 % × resolution bandwidth + ½ (span / (sweep points – 1) + 1 Hz)
Number of sweep (trace) points		711
Marker tuning frequency step size		span / 710
Frequency counter resolution	selectable	0.1 Hz (low), 0.1 mHz (high)
Count uncertainty	SNR > 25 dB	±(frequency × reference uncertainty + ½ (last digit))
Frequency span		0 Hz, 10 Hz to 6/8/13.6/20/26.5/32 GHz
Span uncertainty		1 % (nom.)

Spectral purity	for model .06/.13/.26	
SSB phase noise	frequency = 1000 MHz	
	carrier offset = 10 kHz	≤ –105 dBc (1 Hz), –110 dBc (1 Hz) (typ.)
	carrier offset = 30 kHz	≤ –107 dBc (1 Hz), –112 dBc (1 Hz) (typ.)
	carrier offset = 100 kHz	≤ –109 dBc (1 Hz), –113 dBc (1 Hz) (typ.)
	carrier offset = 1 MHz	≤ –115 dBc (1 Hz), –121 dBc (1 Hz) (typ.)
	carrier offset = 3 MHz	≤ –115 dBc (1 Hz), –134 dBc (1 Hz) (typ.)
	carrier offset = 5 MHz	≤ –125 dBc (1 Hz), –139 dBc (1 Hz) (typ.)

Sweep time

Sweep time	span = 0 Hz	45 µs to 3000 s
	10 Hz ≤ span ≤ 32 GHz	20 ms to 1500 s
Uncertainty	span = 0 Hz	1 % (nom.)
	span ≥ 10 Hz	3 % (nom.)

Bandwidths

Resolution bandwidths		
Range	–3 dB bandwidths	1 Hz to 10 MHz in 1/3 sequence
Bandwidth accuracy	1 Hz ⩽ resolution bandwidth (RBW) ⩽ 300 kHz	< 5 % (nom.)
	300 kHz < RBW ≤ 1 MHz	< 10 % (nom.)
Selectivity 60 dB:3 dB	Gaussian type filters	< 5 (nom.)
Video filters		
Range	–3 dB bandwidths	1 Hz to 10 MHz in 1/3 sequence

Maximum input power

Maximum rated input levels		
DC voltage		50 V
CW RF power [2]	port 1	+26 dBm
	port 2	+26 dBm

Level

Display range		displayed noise floor to +30 dBm
Level display		
Logarithmic level axis		1/2/3/5/10/20/30/50/100/120/150 dB, 10 divisions
Linear level axis		0 % to 100 %, 10 divisions
Number of traces		4
Trace detectors		max. peak, min. peak, auto peak, sample, RMS
Trace functions		clear/write, max. hold, min. hold, average, view
Setting range of reference level		–130 dBm to +30 dBm
Units of level axis		dBm, dBmV, dBµV, V, W

[2] Derating for ≤ 300 MHz down to +15 dBm. Prolonged exposure to high power level can cause degradation in performance.

Level measurement uncertainty		
Absolute level uncertainty at 80 MHz	RF attenuation = 10 dB, level = –10 dBm, RMS detector, RF preamplifier off, 10 kHz RBW	
	+20 °C to +30 °C	< 0.5 dB
Frequency response [3]	+20 °C to +30 °C	
	RF attenuation = 0 dB, level = –10 dBm, RF preamplifier off [4]	
	5 kHz ≤ f ≤ 10 MHz	≤ 1.5 dB (nom.)
	10 MHz < f ≤ 8 GHz	≤ 1 dB
	8 GHz < f < 8.1 GHz	≤ 2 dB
	8.1 GHz ≤ f < 20 GHz	≤ 1.5 dB
	20 GHz ≤ f ≤ 32 GHz	≤ 2 dB
	RF attenuation = 0 dB, level = –30 dBm, RF preamplifier on [5]	
	5 kHz ≤ f ≤ 10 MHz	≤ 1.5 dB (nom.)
	10 MHz < f < 900 MHz	≤ 1.5 dB
	900 MHz ≤ f < 1.1 GHz	≤ 2 dB
	1.1 GHz ≤ f ≤ 8GHz	≤ 1 dB
	8 GHz < f < 8.1 GHz	≤ 2 dB
	8.1 GHz ≤ f < 15 GHz	≤ 1.5 dB
	15 GHz ≤ f ≤ 32 GHz	≤ 2 dB
Attenuator uncertainty at 80 MHz	span = 100 kHz ,RBW = 30 kHz, input power = –10 dBm, 0 dB to 30 dB, referenced to an RF attenuation of 0 dB	
	+20 °C to +30 °C	< 0.5 dB
Uncertainty of reference level setting		< 0.1 dB (nom.)
Display nonlinearity	SNR > 16 dB, 0 dB to –50 dB, logarithmic level display [6]	< 0.3 dB
Bandwidth switching uncertainty	reference: RBW = 10 kHz	< 0.1 dB (nom.)
Total measurement uncertainty	95 % confidence level, +20 °C to +30 °C, SNR > 16 dB, sweep time auto, RF preamplifier off, signal level: 0 dB to –50 dB below reference level, RF attenuation = auto, span/RBW < 100	
	10 MHz < f ≤ 8 GHz	0.83 dB
	8 GHz < f < 8.1 GHz	1.40 dB
	8.1 GHz ≤ f < 20 GHz	1.10 dB
	20 GHz ≤ f ≤ 32 GHz	1.40 dB

Intermodulation and spurious response

Intermodulation		
Third order intercept (TOI)	for model .06/.13/.26	
	intermodulation-free dynamic range, RF attenuation = 0 dB, RF preamplifier off, level –20 dBm, two –20 dBm signals (both), 200 kHz spacing	
	100 MHz ≤ f ≤ 150 MHz	+14 dBm (nom.)
	150 MHz < f ≤ 350 MHz	+15 dBm (nom.)
	350 MHz < f ≤ 500 MHz	+16 dBm (nom.)
	500 MHz < f ≤ 600 MHz	+14 dBm (nom.)
	600 MHz < f ≤ 1GHz	+13 dBm (nom.)
	1 GHz < f ≤ 1.3 GHz	+15 dBm (nom.)
	1.3 GHz < f ≤ 1.8 GHz	+16 dBm (nom.)
	1.8 GHz < f ≤ 2.5 GHz	+15 dBm (nom.)
	2.5 GHz < f ≤ 2.9 GHz	+16 dBm (nom.)
	2.9 GHz < f ≤ 3.4 GHz	+14.5 dBm (nom.)
	3.4 GHz < f ≤ 3.6 GHz	+16.5 dBm (nom.)
	3.6 GHz < f ≤ 6 GHz	+14 dBm (nom.)
	6 GHz < f ≤ 7.9 GHz	+13.5 dBm (nom.)
	7.9 GHz < f ≤ 8.5 GHz	+10 dBm (nom.)
	8.5 GHz < f ≤ 14 GHz	+11 dBm (nom.)
	14 GHz < f ≤ 17 GHz	+12 dBm (nom.)
	17 GHz < f ≤ 22 GHz	+11 dBm (nom.)
	22 GHz < f ≤ 27 GHz	+12 dBm (nom.)
	27 GHz < f ≤ 32 GHz	+14 dBm (nom.)

[3] For RBW > 3 MHz and span ≥ 1.95 GHz, stated frequency responses are nominal values.

[4] Applicable input level < –20 dBm below 80 MHz for RBW > 3 MHz and span ≥ 1.95 GHz.

[5] Applicable input level < –35 dBm below 80 MHz for RBW > 3 MHz and span ≥ 1.95 GHz.

[6] For models with R&S®FNH-K22 option, the display nonlinearity is 0.3 dB (typ.) for –45 dB to –50 dB.

Second harmonic intercept (SHI) (nom.)	for model .06/.13/.26	
	RF attenuation = 0 dB, RF preamplifier off, level –30 dBm	
	10 MHz ≤ f ≤ 2 GHz	+40 dBm (nom.), –70 dBc (nom.)
	2 GHz < f ≤ 8.64 GHz	+50 dBm (nom.), –80 dBc (nom.)
	8.64 GHz < f ≤ 12.25 GHz	+30 dBm (nom.), –60 dBc (nom.)
	12.25 GHz < f ≤ 14.3 GHz	+24 dBm (nom.), –54 dBc (nom.)
	14.3 GHz < f ≤ 15.9 GHz	+15 dBm (nom.), –45 dBc (nom.)

Displayed average noise level (DANL)	+20 °C to +30 °C	
	for model .06/.13/.26	
RF preamplifier = off	RF attenuation = 0 dB, termination 50 Ω, RBW = 1 kHz, video bandwidth (VBW) = 10 Hz, sample detector, average mode = log, normalized to 1 Hz	
	5 kHz < f < 1 MHz	–125 dBm (nom.)
	1 MHz ≤ f < 100 MHz	–140 dBm, –144 dBm/Hz (typ.)
	100 MHz ≤ f < 2.5 GHz	–147 dBm, –151 dBm/Hz (typ.)
	2.5 GHz ≤ f < 3.6 GHz	–142 dBm, –147 dBm/Hz (typ.)
	3.6 GHz ≤ f < 7.6 GHz	–145 dBm, –149 dBm/Hz (typ.)
	7.6 GHz ≤ f ≤ 8 GHz	–141 dBm, –146 dBm/Hz (typ.)
	8 GHz < f < 13.6 GHz	–137 dBm, –143 dBm/Hz (typ.)
	13.6 GHz ≤ f < 17.6 GHz	–136 dBm, –141 dBm/Hz (typ.)
	17.6 GHz ≤ f < 18.6 GHz	–137 dBm, –142 dBm/Hz (typ.)
	18.6 GHz ≤ f < 29.4 GHz	–136 dBm, –140 dBm/Hz (typ.)
	29.4 GHz ≤ f ≤ 32 GHz	–132 dBm, –135 dBm/Hz (typ.)
RF preamplifier = on	for model .06/.13/.26	
	5 kHz < f < 1 MHz	–135 dBm (nom.)
	1 MHz ≤ f < 100 MHz	–155 dBm, –160 dBm/Hz (typ.)
	100 MHz ≤ f < 2.5 GHz	–159 dBm, –164 dBm/Hz (typ.)
	2.5 GHz ≤ f ≤ 3.6 GHz	–157 dBm, –162 dBm/Hz (typ.)
	3.6 GHz < f < 7.1 GHz	–159 dBm, –164 dBm/Hz (typ.)
	7.1 GHz ≤ f ≤ 8 GHz	–156 dBm, –161 dBm/Hz (typ.)
	8 GHz < f < 9 GHz	–155 dBm, –160 dBm/Hz (typ.)
	9 GHz ≤ f < 14 GHz	–158 dBm, –163 dBm/Hz (typ.)
	14 GHz ≤ f < 21 GHz	–151 dBm, –160 dBm/Hz (typ.)
	21 GHz ≤ f < 29 GHz	–148 dBm, –156 dBm/Hz (typ.)
	29 GHz ≤ f ≤ 32 GHz	–148 dBm, –152 dBm/Hz (typ.)
Spur-free dynamic range	for model .06/.13/.26	
	at 2.4 GHz 2/3 (TOI – DANL)	> 105 (nom.)

Spurious responses	for model .06/.13/.26	
Image frequencies	RF attenuation = 0 dB, RF preamplifier off, input level –30 dBm, f = tuned frequency	
	10 MHz ≤ f ≤ 3.6 GHz, f + 2 × 1.04185 GHz	–88 dBc (nom.)
	3.6 GHz < f ≤ 8 GHz, f + 2 × 1.04185 GHz	–56 dBc (nom.)
	8 GHz < f ≤ 32 GHz, f + 2 × 1.04185 GHz	–84 dBc (nom.)
	10 MHz ≤ f ≤ 3.6 GHz, f + 2 × 5.52185 GHz	–70 dBc (nom.)
	3.6 GHz < f ≤ 8 GHz, f + 2 × 10.32185 GHz	–80 dBc (nom.)
	8 GHz < f ≤ 9 GHz, f + 2 × 2.63815 GHz	–55 dBc (nom.)
	9 GHz < f ≤ 10.56 GHz, f + 2 × 2.63815 GHz	–65 dBc (nom.)
	f + 2 × 2.63815 GHz, 10.56 GHz < f ≤ 13.8 GHz	–50 dBc (nom.)
	13.8 GHz < f ≤ 15.24 GHz, f + 2 × 5.52185 GHz	–65 dBc (nom.)
	15.24 GHz < f ≤ 16.92 GHz, f + 2 × 2.63815 GHz	–75 dBc (nom.)
	16.92 GHz < f ≤ 21.24 GHz, f + 2 × 5.52185 GHz	–75 dBc (nom.)
	21.24 GHz < f ≤ 23.04 GHz, f – 2 × 5.52185 GHz	–65 dBc (nom.)

	23.04 GHz < f ≤ 26 GHz, f – 2 × 5.52185 GHz	–52 dBc (nom.)
	26 GHz < f ≤ 28.5 GHz, f – 2 × 5.52185 GHz	–60 dBc (nom.)
	28.5 GHz < f ≤ 32 GHz, f – 2 × 5.52185 GHz	–55 dBc (nom.)
Intermediate frequencies	for model .06/.13/.26, RF attenuation = 0 dB, RF preamplifier off, input level –30 dBm	
	10321.85 MHz	–65 dBc (nom.)
	5521.85 MHz	–65 dBc (nom.)
	2638.15 MHz	–65 dBc (nom.)
	1041.85 MHz	–65 dBc (nom.)
Other interfering signals	for model .06/.13/.26, signal level – RF attenuation < –30 dBm, f = tuned frequency	
	f ≤ 100 MHz, with f + 5.52185 GHz / 2	–60 dBc (nom.)
	100 MHz < f ≤ 3.6 GHz, with f + 5.52185 GHz / 2	–65 dBc (nom.)
	3.6 GHz < f ≤ 8 GHz, with f + 5.52185 GHz / 2	–70 dBc (nom.)
	8 GHz < f ≤ 13.8 GHz, with f + 2.63815 GHz / 2	–60 dBc (nom.)
	13.8 GHz < f ≤ 15.24 GHz, with f + 5.52185 GHz / 2	–50 dBc (nom.)
	15.24 GHz < f ≤ 16.92 GHz, with f + 2.63815 GHz / 2	–50 dBc (nom.)
	16.92 GHz < f ≤ 21.24 GHz, with f + 5.52185 GHz / 2	–55 dBc (nom.)
	21.24 GHz < f ≤ 23.4 GHz, with f – 5.52185 GHz / 2	–70 dBc (nom.)
	23.4 GHz < f ≤ 24.72 GHz, with f – 5.51815 GHz / 2	–45 dBc (nom.)
	24.72 GHz < f ≤ 28.2 GHz, with f – 5.51815 GHz / 2	–70 dBc (nom.)
	28.2 GHz < f ≤ 32 GHz, with f – 5.51815 GHz / 2	–55 dBc (nom.)
Other interfering signals, related to local oscillators	model .06/.13/.26	
	sideband	–70 dBc (nom.)
	local oscillator (LO) related spurs	–50 dBc (meas.)
Residual spurious response	RF attenuation = 0 dB, termination = 50 Ω without input signal, RBW ≤ 1 kHz, f ≥ 3 MHz	–95 dBm (nom.)

Trigger functions

External reference, external trigger		
Connector		SMA (f), 50 Ω
Mode		external reference, external trigger
External reference	required level	0 dBm
	frequency	10 MHz
Trigger source	spectrum analyzer mode	free run, video, external
	vector network analyzer mode	free run, external
External trigger level threshold	low-to-high transition	2.4 V
	high-to-low transition	0.5 V
	maximum	3.0 V

Inputs and outputs

RF input		
Impedance		50 Ω (nom.)
Connector	for model .06/.13	type N, female
	for model .26	PC 3.5 mm, male
Voltage standing wave ratio (VSWR)	for model .06/.13/.26	
	RF attenuation = 0 dB	
	100 kHz ≤ f < 200 MHz	2.5 (nom.)
	200 MHz ≤ f < 3 GHz	1.5 (nom.)
	3 GHz ≤ f < 13 GHz	1.8 (nom.)
	13 GHz ≤ f < 15 GHz	2.5 (nom.)
	15 GHz ≤ f < 24 GHz	1.8 (nom.)
	24 GHz ≤ f ≤ 32 GHz	1.6 (nom.)
Input attenuator	preamplifier = off	0 dB to 40 dB, in 5 dB steps
	preamplifier = on	0 dB to 15 dB, in 5 dB steps
AF output		
AF demodulation types		AM and FM
Connector		3.5 mm mini jack
Output impedance		32 Ω (nom.)
Voltage (open circuit)		adjustable from 0 V to > 100 mV (RMS)

General data

Manual operation		
Languages		English, French, German, Hungarian, Italian, Portuguese, Spanish, Chinese, Chinese Traditional, Japanese, Korean
Remote control		
Command set		SCPI 1997.0
LAN interface		10/100/1000 Mbps BASE-T, RJ-45
USB interface		USB 2.0 (type C)
Display		
Size		7" TFT color display
Resolution		WVGA, 800 × 480 pixel
Audio		
Speaker		available (internal)
3.5 mm headphone jack		available (external headphone supported)
USB interface		USB 3.0 (type C) [7], USB 3.0 (type A, host mode only), USB 2.0 (type A, host mode only)
	number of interfaces	3
Mass memory	not supplied	USB flash drive (supports USB 3.0/2.0/1.x), size ≤ 1000 Gbyte
		microSD card, size ≤ 256 Gbyte
Data storage	internal	> 160 instrument settings and traces
	on USB flash drive or microSD card, ≥ 1 Gbyte	> 10000 instrument settings and traces

Environmental conditions		
Temperature	operating temperature range	–10 °C to +55 °C
	storage temperature range	–20 °C to +50 °C
	battery charging mode	0 °C to +40 °C
Climatic loading	relative humidity	+25 °C/+55 °C, 95 % relative humidity, in line with EN 60068-2-30
Altitude	operating with battery	5000 m (16404 ft)
	operating with AC to DC adapter	3000 m (9840 ft)
Protection class		IP51/IP54 [8] in line with IEC 60529
Mechanical resistance		
Vibration	sinusoidal	5 Hz to 150 Hz, in line with EN 60068-2-6, MIL-PRF-28800F Class 2
	random	8 Hz to 650 Hz, in line with EN 60068-2-64, MIL-PRF-28800F Class 2
Shock		40 g shock spectrum, in line with MIL-STD-810H, method 516.8 procedure I, MIL-PRF-28800F
Power supply		
Rated voltage R&S®HA-Z401 AC power supply	input specification	100 V to 240 V AC (± 10 %)
	rated frequency	50 Hz to 60 Hz (± 5 %)
	rated current	1.7 A to 0.7 A
	test marks	CE, UKCA, cULus, PSE, BIS, CCC, TUV Rheinland, EAC, FCC
External DC voltage		15 V
Battery R&S®HA-Z406		lithium-ion battery
Capacity		99 Wh
Voltage		10.8 V (nom.)
Operating time with new, fully charged battery R&S®HA-Z406	spectrum analyzer mode	≥ 4 h (meas.)
	VNA mode	≥ 4 h (meas.)
	RTSA mode	≥ 3.5 h (meas.)

[7] Host mode performs up to USB 3.0 while device mode performs up to USB 2.0.

[8] IP54 achieved with R&S®HA-Z422 rainproof carrying holster.

Charging time	instrument switched off or charge with R&S®HA–Z403 battery charger	approx. 3.2 h (meas.)
	instrument switched off	approx. 3.5 h (meas.)
	instrument switched on	
	spectrum analyzer mode	approx. 5 h (meas.)
	VNA mode	approx. 5 h (meas.)
	RTSA mode	approx. 5.5 h (meas.)
Life time	charging cycles	> 75 % or more of its initial capacity after 300 charges/discharges
Power consumption (preset mode)	model .06/.13/.26	
	spectrum analyzer mode	28 W (meas.)
	VNA mode	28 W (meas.)
	RTSA mode	31.6 W (meas.)
Product conformity		
Electromagnetic compatibility	in line with EMC Directive 2014/30/EU	applied harmonized standards: • EN 61326-1 • EN 61326-1 table 2 (immunity, industrial) • CISPR 11/EN 55011/Group 1, Class B (emission)
Electrical safety	in line with Low Voltage Directive 2014/35/EU	applied harmonized standards: • IEC 61010-1 • EN 61010-1
	USA	UL 61010-1
	Canada	CAN/CSA C22.2 No. 61010-1-12
Test marks		CE, $_{C}$TÜV SÜD$_{US}$, KC, RCM
EU legislation	EU: in line with Data Act – Regulation (EU) 2023/2854	for details, see user documentation
Calibration interval	recommended for highest accuracy	12 months
Dimensions and weight		
Dimensions	W × H × D	202 mm × 294 mm × 78 mm (8.0 in × 11.6 in × 3 in)
Weight		3.7 kg (8.2 lb)

Options

R&S®FNH-K41 CAT application

One-port cable loss measurement		
Result format		magnitude
Range	selectable	1/2/5/10/20/50/100 dB
Resolution		0.01 dB

Distance-to-fault and time domain reflectometry analysis		
Return loss		
Range		1/2/3/5/10/20/30/50/100/120/130/150 dB
Resolution		0.01 dB
VSWR		
Range	selectable	1 to 1.1/1.5/2/3/6/11/21 or 71
Fault resolution		(1.5 m × 10^8 × velocity factor / span)
Maximum cable length	depending on cable loss	
	without R&S®FNH-B44	1500 m (nom.)
	with R&S®FNH-B44	> 1500 m (nom.)
DTF transform type		bandpass impulse

R&S®FNH-K42 VNA application

Frequency resolution		1 Hz
Number of measurement points	per trace	3 to 16001
Measurement bandwidth	1/3/10 steps	10 Hz to 100 kHz
Measurement speed	preset mode, transmission normalization port 1/port 2, number of points: 1001, IF bandwidth = 100 kHz	177 µs per point

Measurements

Individual measurements		• reflection (S_{11}, S_{22}) • transmission (S_{21}, S_{12}) • distance-to-fault
Measurement wizard		
Guides the user through a sequence of individual measurements. Uses the R&S®InstrumentView software to configure the measurement sequence including hints displayed on the screen. R&S®InstrumentView is also used to combine the measurement results into user-configurable reports.		

Test port output [9], without optional extended power range (R&S®FNH-B44)		
Maximum port output power	30 kHz ≤ f < 300 kHz	0 dBm (nom.)
	300 kHz ≤ f < 10 MHz	0 dBm (nom.)
	10 MHz ≤ f < 6 GHz	0 dBm (typ.)
	6 GHz ≤ f < 23 GHz	0 dBm (typ.)
	23 GHz ≤ f < 24 GHz	0 dBm (typ.)
	24 GHz ≤ f < 25 GHz	–10 dBm (typ.)
	25 GHz ≤ f < 25.5 GHz	–10 dBm (typ.)
	25.5 GHz ≤ f ≤ 26.5 GHz	–10 dBm (typ.)
Power range	30 kHz ≤ f < 300 kHz	0 dBm to –25 dBm (nom.), in 1 dB steps
	300 kHz ≤ f < 10 MHz	0 dBm to –25 dBm (nom.), in 1 dB steps
	10 MHz ≤ f < 6 GHz	0 dBm to –25 dBm (nom.), in 1 dB steps
	6 GHz ≤ f < 23 GHz	0 dBm to –25 dBm (nom.), in 1 dB steps
	23 GHz ≤ f < 24 GHz	0 dBm to –25 dBm (nom.), in 1 dB steps
	24 GHz ≤ f < 25 GHz	–10 dBm to –25 dBm (nom.), in 1 dB steps
	25 GHz ≤ f < 25.5 GHz	–10 dBm to –25 dBm (nom.), in 1 dB steps
	25.5 GHz ≤ f ≤ 26.5 GHz	–10 dBm to –25 dBm (nom.), in 1 dB steps

[9] In VNA mode port 1 RF input and port 2 RF output function as bidirectional test ports.

Power accuracy	source power: –10 dBm	
	10 MHz ≤ f < 7.5 GHz	1.0 dB (typ.)
	7.5 GHz ≤ f ≤ 26.5 GHz	1.5 dB (typ.)
Power linearity	referenced to –10 dBm	
	10 MHz ≤ f < 23.5 GHz	0.5 dB (nom.)
	23.5 GHz ≤ f ≤ 26.5 GHz	0.75 dB (nom.)

Test port input [7]		
Compression at test port input	input level: +10 dBm, referenced to –10 dBm	
	10 MHz ≤ f ≤ 26.5 GHz	0.1 dB (nom.)
Power measurement accuracy	at –10 dBm	
	10 MHz ≤ f < 5.5 GHz	0.5 dB (typ.)
	5.5 GHz ≤ f < 8 GHz	1.0 dB (typ.)
	8 GHz ≤ f ≤ 26.5 GHz	1.5 dB (typ.)
Noise level	at 1 kHz measurement bandwidth, normalized to 1 Hz	
	30 kHz ≤ f < 10 MHz	–120 dBm (1 Hz) (nom.)
	10 MHz ≤ f ≤ 26.5 GHz	–120 dBm (1 Hz) (typ.)
Measurement receiver RF attenuation	10 MHz ≤ f ≤ 26.5 GHz	0 dB to 15 dB, in 1 dB steps (nom.)
Maximum nominal input level		+10 dBm (nom.)

System dynamic range	maximum port output power, IF bandwidth = 300 Hz, port terminated with openstandard (average of 100 sweeps)	
	30 kHz ≤ f < 300 kHz	80 dB (nom.)
	300 kHz ≤ f < 10 MHz	105 dB (nom.)
	10 MHz ≤ f < 5 GHz	100 dB, 110 dB (typ.)
	5 GHz ≤ f < 8.2 GHz	90 dB, 110 dB (typ.)
	8.2 GHz ≤ f < 16 GHz	100 dB, 110 dB (typ.)
	16 GHz ≤ f < 25 GHz	90 dB, 105 dB (typ.)
	25 GHz ≤ f ≤ 26.5 GHz	85 dB, 95 dB (typ.)
Trace stability		
Trace noise magnitude (RMS)	maximum port output power, IF bandwidth = 1 kHz, 0 dB reflection, port terminated with open standard	
	30 kHz ≤ f < 10 MHz	0.004 dB (nom.)
	10 MHz ≤ f < 6 G Hz	0.0032 dB (nom.)
	6 GHz ≤ f < 20.5 GHz	0.0032 dB (nom.)
	20.5 GHz ≤ f < 25 GHz	0.008 dB (nom.)
	25 GHz ≤ f ≤ 26.5 GHz	0.012 dB (nom.)
Trace noise phase (RMS)	maximum port output power, IF bandwidth = 1 kHz, 0 dB reflection, port terminated with open standard	
	30 kHz ≤ f < 10 MHz	0.1° (nom.)
	10 MHz ≤ f < 6 GHz	0.02° (nom.)
	6 GHz ≤ f < 20.5 GHz	0.02° (nom.)
	20.5 GHz ≤ f < 25 GHz	0.04° (nom.)
	25 GHz ≤ f ≤ 26.5 GHz	0.06° (nom.)
Temperature dependence	at 0 dB reflection	
	30 kHz ≤ f ≤ 26.5 GHz	
	magnitude	0.04 dB/K (meas.)
	phase	0.12°/K (meas.)
Reflection and transmission measurements		
Trace modes		clear/write, average, max./min. hold, interference suppression
Result format		dB magnitude, phase, unwrapped phase, Smith, linear magnitude, real, imaginary, SWR, polar, group delay, cable loss
Measurement range		–120 dB to +30 dB
dB magnitude		
Range	selectable	1/2/3/5/10/20/30/50/100/120/130/150 dB
Resolution		0.01 dB
Linear magnitude		
Range	selectable	0 to 0.2/0.5/1/2/5/10/20/50/100/200
Resolution		0.01
SWR		
Range	selectable	1 to 1.1/1.5/2/3/6/11/21 or 71
Resolution		0.01
Phase		

Range	selectable	90/180/360/1000° to 100000°, in 1/2/5 steps
Resolution		0.01°
Smith, polar		
Range		1
Resolution		0.01

R&S®FNH-K22 tracking generator option

Unless specified otherwise, specifications do not apply to a frequency range from –3 × RBW to +3 × RBW, at least not from –100 kHz to +100 kHz. Maximum output level: +5 dBm (peak modulation in the case of amplitude-modulated signals).

Tracking generator (for model .06/.13/.26)		
Frequency range	usable to 30 kHz	100 kHz to model maximum frequency
Resolution		1 Hz
Port output power	30 kHz ≤ f < 300 kHz	refer to leveled port output power under VNA section
	300 kHz ≤ f < 24 GHz	refer to leveled port output power under VNA section
	24 GHz ≤ f ≤ 26.5 GHz	refer to leveled port output power under VNA section

R&S®FNH-B10 DC bias option

DC bias		
Output port		SMA (female), 50 Ω
Output voltage	mode: internal	+2 V to +32 V, in 0.1 V steps (nom.)
Accuracy	< +3 V	< 0.1 V (nom.)
	≥ +3 V	< 0.1 V (nom.)
Maximum output power	mode: internal	
	operated with battery	7 W
	operated with AC mains	7 W
Maximum continuous output current	mode: internal	650 mA

R&S®FNH-B44 extended power range option

Test port output [7], with optional extended power range		
Maximum port output power	30 kHz ≤ f < 300 kHz	0 dBm (nom.)
	300 kHz ≤ f < 10 MHz	6 dBm (nom.)
	10 MHz ≤ f < 8 GHz	6 dBm (typ.)
	8 GHz ≤ f < 8.3 GHz	4 dBm (typ.)
	8.3 GHz ≤ f < 24 GHz	6 dBm (typ.)
	24 GHz ≤ f < 25 GHz	3 dBm (typ.)
	25 GHz ≤ f < 25.5 GHz	–3 dBm (typ.)
	25.5 GHz ≤ f ≤ 26.5 GHz	–6 dBm (typ.)
Power range	30 kHz ≤ f < 300 kHz	0 dBm to –50 dBm (nom.), in 1 dB steps
	300 kHz ≤ f < 10 MHz	6 dBm to –50 dBm (nom.), in 1 dB steps
	10 MHz ≤ f < 8 GHz	6 dBm to –50 dBm (nom.), in 1 dB steps
	8 GHz ≤ f < 8.3 GHz	4 dBm to –50 dBm (nom.), in 1 dB steps
	8.3 GHz ≤ f < 24 GHz	6 dBm to –50 dBm (nom.), in 1 dB steps
	24 GHz ≤ f < 25 GHz	3 dBm to –50 dBm (nom.), in 1 dB steps
	25 GHz ≤ f < 25.5 GHz	–3 dBm to –50 dBm (nom.), in 1 dB steps
	25.5 GHz ≤ f ≤ 26.5 GHz	–6 dBm to –50 dBm (nom.), in 1 dB steps
Power accuracy	source power: –10 dBm	
	10 MHz ≤ f < 7.5 GHz	1.0 dB (typ.)
	7.5 GHz ≤ f ≤ 26.5 GHz	1.5 dB (typ.)
Power linearity	referenced to –10 dBm	
	10 MHz ≤ f < 23.5 GHz	0.5 dB (nom.)
	23.5 GHz ≤ f ≤ 26.5 GHz	0.75 dB (nom.)

System Dynamic range	maximum port output power, IF bandwidth = 300 Hz, port terminated with open standard (average of 100 sweeps)	
	30 kHz ≤ f < 300 kHz	90 dB (nom.)
	300 kHz ≤ f < 10 MHz	115 dB (nom.)
	10 MHz ≤ f < 5 GHz	110 dB, 120 dB (typ.)
	5 GHz ≤ f < 8.5 GHz	100 dB, 120 dB (typ.)
	8.5 GHz ≤ f < 16 GHz	110 dB, 120 dB (typ.)
	16 GHz ≤ f < 25 GHz	100 dB, 115 dB (typ.)
	25 GHz ≤ f ≤ 26.5 GHz	95 dB, 105 dB (typ.)
Trace stability		
Trace noise magnitude (in dB, RMS)	maximum port output power, IF bandwidth = 1 kHz, 0 dB reflection, port terminated with open standard	
	30 kHz ≤ f < 10 MHz	0.002 dB, 0.0005 dB (typ.)
	10 MHz ≤ f < 6 G Hz	0.0016 dB, 0.0005 dB (typ.)
	6 GHz ≤ f < 20.5 GHz	0.0016 dB, 0.0008 dB (typ.)
	20.5 GHz ≤ f < 25 GHz	0.004 dB, 0.001 dB (typ.)
	25 GHz ≤ f ≤ 26.5 GHz	0.006 dB, 0.028 dB (typ.)
Trace noise phase (in °, RMS)	maximum port output power, IF bandwidth = 1 kHz, 0 dB reflection, port terminated with open standard	
	30 kHz ≤ f < 10 MHz	0.05°, 0.005° (typ.)
	10 MHz ≤ f < 6 GHz	0.02°, 0.0028° (typ.)
	6 GHz ≤ f < 20.5 GHz	0.02°, 0.0055° (typ.)
	20.5 GHz ≤ f < 25 GHz	0.04°, 0.0085° (typ.)
	25 GHz ≤ f ≤ 26.5 GHz	0.05°, 0.018° (typ.)
Temperature dependence	at 0 dB reflection	
	30 kHz ≤ f ≤ 26.5 GHz	
	magnitude	0.04 dB/K (meas.)
	phase	0.12°/K (meas.)

R&S®FNH-B102 3.5 mm RF input connector

Frequency range	model .13 with R&S® FNH-B102 option (only R&S®FNH13 is available in combination with R&S®FNH-B102 option)	5 kHz to 20 GHz
Frequency response	refer to Frequency response under Level	
VSWR	RF attenuation = 0 dB	
	100 kHz ≤ f < 200 MHz	2.5 (nom.)
	200 MHz ≤ f < 3 GHz	1.5 (nom.)
	3 GHz ≤ f < 13 GHz	1.8 (nom.)
	13 GHz ≤ f < 15 GHz	2.5 (nom.)
	15 GHz ≤ f ≤ 20 GHz	1.8 (nom.)

Equivalence of specifications for different R&S®FNH part numbers

The specifications for part number 5603.1111.06 are equivalent to part number 5603.1111.56.

The specifications for part number 5603.1111.13 are equivalent to part number 5603.1111.63.

The specifications for part number 5603.1111.26 are equivalent to part number 5603.1111.76.

Ordering information

Base units

Designation	Type	Order No
Handheld combination analyzer, 5 kHz to 6 GHz	R&S®FNH6	5603.1111.06
Handheld combination analyzer, 5 kHz to 13.6 GHz	R&S®FNH13	5603.1111.13
Handheld combination analyzer, 5 kHz to 26.5 GHz	R&S®FNH26	5603.1111.26
Accessories supplied: lithium–ion battery pack, AC power supply with country specific adapters for EU, GB, US, AUS, CH, documentation, quick start guide, side strap		

Options

Designation	Type	Order No.
Spectrum analyzer frequency upgrade, 6 GHz to 8 GHz	R&S®FNH-B8SA	5603.0809.02
Spectrum analyzer frequency upgrade, 13.6 GHz to 20 GHz	R&S®FNH-B20SA	5603.0909.02
Spectrum analyzer frequency upgrade, 26.5 GHz to 32 GHz	R&S®FNH-B32SA	5603.1034.02
Spectrum analyzer preamplifier, 5 kHz to 8 GHz	R&S®FNH-B24	5603.3489.02
Spectrum analyzer preamplifier, 5 kHz to 20 GHz	R&S®FNH-B24	5603.3495.02
Spectrum analyzer preamplifier, 5 kHz to 32 GHz	R&S®FNH-B24	5603.3508.02
Real-time spectrum analyzer (RTSA) application	R&S®FNH-K1R	5603.3450.02
60 MHz real-time bandwidth	R&S®FNH-B60	5603.3466.02
125 MHz real-time bandwidth	R&S®FNH-B125	5603.3472.02
Vector network analyzer frequency upgrade, 6 GHz to 8 GHz	R&S®FNH-B8NA	5603.0815.02
Vector network analyzer frequency upgrade, 13.6 GHz to 20 GHz [10]	R&S®FNH-B20NA	5603.0915.02
DC bias variable voltage source	R&S®FNH-B10	5603.3520.02
Power range extension	R&S®FNH-B44	5603.3537.02
3.5 mm RF connectors, for model .13 (factory installed) [11]	R&S®FNH-B102	5603.0921.02
Power sensor support [12]	R&S®FNH-K9	5603.3589.02
I/Q capture option	R&S®FNH-K10	5603.3572.02
Interference analysis	R&S®FNH-K15	5603.3620.02
Signal strength mapping	R&S®FPH-K16	5603.3637.02
Channel info display	R&S®FNH-K18	5603.3543.02
Channel power meter	R&S®FNH-K19	5603.3595.02
Segmented sweep	R&S®FNH-K20	5603.3550.02
Channel scanner	R&S®FNH-K21	5603.3566.02
Tracking generator [13]	R&S®FNH-K22	5603.3720.02
Pulse measurements, with power sensor	R&S®FPH-K29	5603.3608.02
Cable and antenna tester (CAT) application option, 6 GHz	R&S®FNH-K41	5603.3643.02
CAT application option, 13.6 GHz	R&S®FNH-K41	5603.3766.02
CAT application option, 26.5 GHz	R&S®FNH-K41	5603.3772.02
Vector network analyzer option, 6 GHz	R&S®FNH-K42	5603.3650.02
Vector network analyzer option, 13.6 GHz	R&S®FNH-K42	5603.3789.02
Vector network analyzer option, 26.5 GHz	R&S®FNH-K42	5603.3795.02
Vector voltmeter	R&S®FNH-K45	5603.3666.02
Wave ratio and quantity	R&S®FNH-K66	5603.3689.02
Time domain analysis	R&S®FNH-K68	5603.3695.02
Electromagnetic field (EMF) measurement	R&S®FNH-K105	5603.3737.02

Extras

Designation	Type	Order No.
Battery [14]	R&S®HA-Z406	5603.4085.02
Battery charger for R&S®HA-Z406 **Fehler! Textmarke nicht definiert.**	R&S®HA-Z403	1321.1486.02
Spare power supply	R&S®HA-Z401	5603.4091.02
Rain holster with strap	R&S®HA-Z422	5603.4110.02
GPS with 10 MHz clock	R&S®HA-Z440	1321.1028.00
Hardcase	R&S®HA-Z321	1321.1357.02

[10] R&S®FNH-B20NA and R&S®FNH-B20SA options are only available in combination with R&S®FNH13, guaranteed performance up to 18 GHz.
[11] R&S®FNH-B102 option is only available in combination with R&S®FNH13.
[12] For average power measurements only. Peak power measurements supported by the R&S®FNH-K29 option.
[13] R&S®FNH-K22 option will follow the frequency or frequency upgrade as per model .6/.13/.26. Tracking generator goes up to 26.5 GHz maximum.
[14] The battery charger is dedicated to charging an additional battery outside the instrument. The battery can be charged via the instrument as well.

Antennas and antenna accessories

Designation	Type	Order No.
Omnidirectional antenna, for circular right-hand polarization, 18 GHz to 26.5 GHz	R&S®AC004R1	0749.3000.03
Omnidirectional antenna, for circular left-hand polarization, 18 GHz to 26.5 GHz	R&S®AC004L1	4078.4000.02
Omnidirectional antenna, for circular left-hand polarization, 26.5 GHz to 40 GHz	R&S®AC004L2	4078.5006.02
Omnidirectional antenna, for circular right-hand polarization, 26.5 GHz to 40 GHz	R&S®AC004R2	0749.3251.03
Telescopic antenna	R&S®CS-ZANT	4500.7470.00
Standard gain horn antenna, 26 GHz to 40 GHz, mid band gain 20 dB, WR 28	R&S®FH-SG-40	3629.2393.02
RF cable, DC to 8 GHz, armored, type N (m) to type N (f) connectors, length: 1 m	R&S®FSH-Z320	1309.6600.00
RF cable, DC to 8 GHz, armored, type N (m) to type N (f) connectors, length: 3 m	R&S®FSH-Z321	1309.6617.00
Matching pad, 50/75 Ω, L section, type N to BNC	R&S®FSH-Z38	1300.7740.02
Yagi antenna, 1710 MHz to 1990 MHz	R&S®HA-Z1900	1328.6825.02
Log-periodic antenna, 700 MHz to 4 GHz	R&S®HA-Z350	1321.1405.02
Standard gain horn antenna adapter	R&S®HA-Z370	1334.8432.02
Yagi antenna, 824 MHz to 960 MHz	R&S®HA-Z900	1328.6283.02
RF cable, DC to 6 GHz, type N (m) to type N (m) connectors, length: 1 m	R&S®HA-Z901	3626.2757.02
Carrying bag, for R&S®HA-Z900 or R&S®HA-Z1900 Yagi antenna	R&S®HA-Z902	1328.6883.02
Handheld directional antenna (antenna handle)	R&S®HE400	4104.6000.02
Basic handheld directional antenna (antenna handle)	R&S®HE400BC	4104.6000.04
Cellular antenna module, 700 MHz to 2500 MHz	R&S®HE400CEL	4104.7306.02
HF antenna module, 8.3 kHz to 30 MHz	R&S®HE400HF	4104.8002.02
Cable set, for R&S®HE400 and R&S®HE400MW (requires R&S®HE300USB)	R&S®HE400-K	4104.7770.02
RF cable, for R&S®HE400BC	R&S®HE400-KB	4104.7770.04
Log-periodic antenna module, 450 MHz to 8 GHz	R&S®HE400LP	4104.8402.02
Microwave handheld directional antenna (antenna handle)	R&S®HE400MW	4104.6000.03
S band and C band antenna module, 1.7 GHz to 6 GHz	R&S®HE400SCB	4104.7606.02
SHF antenna module, 5 GHz to 20 GHz (with R&S®HE400BC and R&S®HE400MW antenna handle)	R&S®HE400SHF	4104.8602.02
USB adapter, for R&S®HE400 handheld directional antenna	R&S®HE400USB	4080.9440.02
UWB antenna module, 30 MHz to 6 GHz	R&S®HE400UWB	4104.6900.02
VHF antenna module, 20 MHz to 200 MHz	R&S®HE400VHF	4104.8202.02
Handheld directional antenna, with preamplifier	R&S®HE800-PA	4115.6006.02
Transport case, for R&S®HE800-PA	R&S®HE800Z1	4115.7660.02
Broadband omnidirectional antenna, 800 MHz to 26.5 GHz	R&S®HF907OM	4070.3279.02
Wooden tripod	R&S®HZ-1	0837.2310.02
Compact probe set for E and H near-field measurements, 30 MHz to 3 GHz	R&S®HZ-15	1147.2736.02
Preamplifier (3 GHz, 20 dB), power adapter (100 V to 230 V), for R&S®HZ-15	R&S®HZ-16	1147.2720.02
Near-field probe set for H field	R&S®HZ-17	1339.4141.02
Attenuator, 100 W, 20 dB, 50 Ω, DC to 2 GHz, type N (f) to type N (m)	R&S®RBU100	1073.8495.20
Attenuator, 100 W, 30 dB, 50 Ω, DC to 2 GHz, type N (f) to type N (m)	R&S®RBU100	1073.8495.30
Attenuator, 50 W, 20 dB, 50 Ω, DC to 6 GHz, type N (f) to type N (m)	R&S®RDL50	1035.1700.52
Isotropic antenna, 30 MHz to 3 GHz, for R&S®TS-EMF	R&S®TSEMF-B1	1074.5719.02
Isotropic antenna, 700 MHz to 6 GHz, for R&S®TS-EMF	R&S®TSEMF-B2	1074.5702.02
Isotropic antenna, 700 MHz to 8 GHz, for R&S®TS-EMF	R&S®TSEMF-B2E	1074.5702.03
Isotropic antenna, 9 kHz to 200 MHz, for R&S®TS-EMF	R&S®TSEMF-B3	1074.5690.02
Converter cable	R&S®TSEMF-CV	1158.9250.02
Adapter, type N (m) to BNC (f)		0118.2812.00
Adapter, type N (m) to type N (m)		0092.6581.00
Adapter, type N (m) to SMA (f)		4012.5837.00
Adapter, type N (f) to SMA (f)		3692.7660.00
Adapter, type N (m) to 7/16 (f)		3530.6646.00
Adapter, type N (m) to 7/16 (m)		3530.6630.00
Adapter, type N (m) to FME (f)		4048.9790.00
Adapter, BNC (m) to banana plug (f)		0017.6742.00

Power sensors supported by the R&S®FNH-K9

Designation	Type	Order No.
Directional power sensor, 25 MHz to 1 GHz	R&S®FSH-Z14	1120.6001.02
Directional power sensor, 200 MHz to 4 GHz	R&S®FSH-Z44	1165.2305.02
Three-path diode power sensors, 100 pW to 200 mW, 10 MHz to 8 GHz	R&S®NRP8S	1419.0006.02
Three-path diode power sensors, 100 pW to 200 mW, 10 MHz to 18 GHz	R&S®NRP18S	1419.0029.02
Three-path diode power sensors, –60 dBm to +33 dBm, 10 MHz to 18 GHz	R&S®NRP18S-10	1424.6721.02
Three-path diode power sensors, –50 dBm to +42 dBm, 10 MHz to 18 GHz	R&S®NRP18S-20	1424.6738.02
Three-path diode power sensors, –45 dBm to +45 dBm, 10 MHz to 18 GHz	R&S®NRP18S-25	1424.6744.02
Three-path diode power sensors, 100 pW to 200 mW, 10 MHz to 33 GHz	R&S®NRP33S	1419.0064.02
Thermal power sensor, 300 nW to 100 mW, 0 Hz to 18 GHz	R&S®NRP18T	1424.6115.02
Thermal power sensor, 300 nW to 100 mW, 0 Hz to 33 GHz	R&S®NRP33T	1424.6138.02
Average power sensors, 100 pW to 200 mW, 8 kHz to 6 GHz	R&S®NRP6A	1424.6796.02
Average power sensors, 100 pW to 200 mW, 8 kHz to 18 GHz	R&S®NRP18A	1424.6815.02
USB adapter cable to connect R&S®FSH-Z14/R&S®FSH-Z44 to the R&S®FNH, length: 1.8 m	R&S®FSH-Z144	1145.5909.02
USB interface cable, to connect R&S®NRP to the R&S®FNH, length: 1.5 m	R&S®NRP-ZKU	1419.0658.03

Power sensors supported by the R&S®FNH-K29

Designation	Type	Order No.
Pulse power sensors, 1 nW to 100 mW, 50 MHz to 18 GHz	R&S®NRP18P	1444.1190.02
Pulse power sensors, 1 nW to 100 mW, 50 MHz to 40 GHz, 2.92 mm	R&S®NRP40P	1444.1290.02

Optical power sensors and accessories

Designation	Type	Order No.
USB optical power meter (Germanium)	R&S®HA-Z360	1334.5162.00
USB optical power meter (filtered InGaAs)	R&S®HA-Z361	1334.5179.00
Subscriber connector (SC) adapter, for optical power meter	R&S®HA-Z362	1334.5185.00
Lucent connector (LC) adapter, for optical power meter	R&S®HA-Z363	1334.5191.00
2.5 mm universal adapter for optical power meter	R&S®HA-Z364	1334.5204.00
1.25 mm universal adapter for optical power meter	R&S®HA-Z365	1334.5210.00
Patch cord, SC to LC, SM, SX, length: 1 m	R&S®HA-Z366	1334.5227.00
Patch cord, SC to SC, SM, SX, length: 1 m	R&S®HA-Z367	1334.5233.00

Calibration kit

Designation	Type	Order No.
Calibration kit, 50 Ω (combined open/short), 0 Hz to 8 GHz	R&S®FSH-Z28	1300.7810.03
Calibration kit, 50 Ω (combined open/short), 0 Hz to 3.6 GHz	R&S®FSH-Z29	1300.7510.03
Calibration kit, 3.5 mm (open/short/match/through male and female each), 0 Hz to 26.5 GHz	R&S®ZN-Z235	1336.8500.02
Calibration kit, 2 MHz to 4 GHz	R&S®ZN-Z103	1321.1828.02
Calibration kit, 1 MHz to 6 GHz	R&S®ZN-Z103	1321.1828.12
Calibration unit, 2-port, 5 kHz to 4.5 GHz	R&S®ZN-ZE104	1350.8040.04
Calibration unit, 2-port, 5 kHz to 9 GHz	R&S®ZN-ZE109	1350.8040.09
Calibration unit, 2-port, 5 kHz to 18 GHz	R&S®ZN-ZE118	1350.8040.18
Calibration unit, 2-port, 5 kHz to 26.5 GHz	R&S®ZN-ZE126	1350.8040.26
Calibration kit, 3.5 mm (m), 0 Hz to 26.5 GHz	R&S®ZN-Z135	1328.8157.02
Calibration kit, 3.5 mm (m), 0 Hz to 26.5 GHz, including documentation of calibration values (DCV) data on CD	R&S®ZN-Z135	1328.8157.12
Calibration kit, 3.5 mm (m), 0 Hz to 26.5 GHz, including accredited calibration	R&S®ZN-Z135	1328.8157.22
Calibration kit, 3.5 mm (f), 0 Hz to 26.5 GHz	R&S®ZN-Z135	1328.8157.03
Calibration kit, 3.5 mm (f), 0 Hz to 26.5 GHz, including DCV data on CD	R&S®ZN-Z135	1328.8157.13
Calibration kit, 3.5 mm (f), 0 Hz to 26.5 GHz, including accredited calibration	R&S®ZN-Z135	1328.8157.23
Calibration kit, type N (m), 0 Hz to 18 GHz	R&S®ZN-Z170	1328.8163.02
Calibration kit, type N (m), 0 Hz to 18 GHz, including DCV data on CD	R&S®ZN-Z170	1328.8163.12
Calibration kit, type N (m), 0 Hz to 18 GHz, including accredited calibration	R&S®ZN-Z170	1328.8163.22
Calibration kit, type N (f), 0 Hz to 18 GHz	R&S®ZN-Z170	1328.8163.03
Calibration kit, type N (f), 0 Hz to 18 GHz, including DCV data on CD	R&S®ZN-Z170	1328.8163.13
Calibration kit, type N (f), 0 Hz to 18 GHz, including accredited calibration	R&S®ZN-Z170	1328.8163.23

Test cable

Designation	Type	Order No.
Test port cable, 3.5 mm (f) to 3.5 mm (m), 0 Hz to 26.5 GHz, length: 635 mm	R&S®ZV-Z93	1301.7595.25
Test port cable, 3.5 mm (f) to 3.5 mm (m), 0 Hz to 26.5 GHz, length: 965 mm	R&S®ZV-Z93	1301.7595.38
Test port cable, 2.92 mm (f) to 2.92 mm (m), 0 Hz to 40 GHz, length: 635 mm	R&S®ZV-Z95	1301.7608.25
Test port cable, 2.92 mm (f) to 2.92 mm (m), 0 Hz to 40 GHz, length: 965 mm	R&S®ZV-Z95	1301.7608.38
Test port cable, type N (m) to type N (m), 0 Hz to 18 GHz, length: 610 mm	R&S®ZV-Z191	1306.4507.24
Test port cable, type N (m) to type N (m), 0 Hz to 18 GHz, length: 914 mm	R&S®ZV-Z191	1306.4507.36
Test port cable, type N (m) to 3.5 mm (m), 0 Hz to 18 GHz, length: 610 mm	R&S®ZV-Z192	1306.4513.24
Test port cable, type N (m) to 3.5 mm (m), 0 Hz to 18 GHz, length: 914 mm	R&S®ZV-Z192	1306.4513.36
Test port cable, 3.5 mm (f) to 3.5 mm (m), 0 Hz to 26.5 GHz, length: 610 mm	R&S®ZV-Z193	1306.4520.24
Test port cable, 3.5 mm (f) to 3.5 mm (m), 0 Hz to 26.5 GHz, length: 914 mm	R&S®ZV-Z193	1306.4520.36
Test port cable, 3.5 mm (f) to 3.5 mm (m), 0 Hz to 26.5 GHz, length: 1524 mm	R&S®ZV-Z193	1306.4520.60
Test port cable, 2.92 mm (f) to 2.92 mm (m), 0 Hz to 40 GHz, length: 610 mm	R&S®ZV-Z195	1306.4536.24
Test port cable, 2.92 mm (f) to 2.92 mm (m), 0 Hz to 40 GHz, length: 914 mm	R&S®ZV-Z195	1306.4536.36

Warranty and service

Warranty		
Base unit		3 year
All other items		1 year
Service options		
	Service plans	**On demand**
Calibration	up to five years	pay per calibration
Warranty and repair	up to five years [15]	standard price repair
Contact your Rohde & Schwarz sales office for further details.		

[15] For extended periods, contact your Rohde & Schwarz sales office.

Service at Rohde&Schwarz
You're in great hands
- Worldwide
- Local and personalized
- Customized and flexible
- Uncompromising quality
- Long-term dependability

Rohde&Schwarz
The Rohde&Schwarz technology group is among the trailblazers when it comes to paving the way for a safer and connected world with its leading solutions in test&measurement, technology systems and networks&cybersecurity. Founded more than 90 years ago, the group is a reliable partner for industry and government customers around the globe. The independent company is headquartered in Munich, Germany and has an extensive sales and service network with locations in more than 70 countries.

www.rohde-schwarz.com

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

Certified Quality Management
ISO 9001

Certified Environmental Management
ISO 14001

More Rohde&Schwarz certificates

Rohde&Schwarz training
www.training.rohde-schwarz.com

Rohde&Schwarz customer support
www.rohde-schwarz.com/support

R&S® is a registered trademark of Rohde&Schwarz GmbH&Co. KG
Trade names are trademarks of the owners
PD 5216.3595.22 | Version 01.00 | September 2026 (ja)
R&S®FNH Handheld Combination Analyzer
Data without tolerance limits is not binding | Subject to change
© 2026 Rohde&Schwarz | 81671 Munich, Germany