

# SPECIFICATIONS IN BRIEF

## Specifications in brief

| Network analysis                               |  |  |
|--|--|--|
| Frequency range                                | R&S®ZNH4                               | 30 kHz to 4 GHz  |
|  | R&S®ZNH8                               | 30 kHz to 8 GHz  |
|  | R&S®ZNH18                              | 30 kHz to 18 GHz   |
|  | R&S®ZNH26                              | 30 kHz to 26.5 GHz   |
| Test port connector                            | R&S®ZNH4                               |  |
|  | R&S®ZNH8                               | type N female  |
|  | R&S®ZNH18                              |  |
|  | R&S®ZNH26                              | 3.5 mm, male   |
| Number of test ports                           |  | 2  |
| Standard measurement functions                 | one-port cable and antenna measurement | reflection and transmission measurement, one-port cable loss, DTF measurement  |
|  | two-port vector network analysis       | $S_{11}$ , $S_{21}$ , $S_{12}$ , $S_{22}$  |
| Result format                                  |  | <ul style="list-style-type: none"> <li>▶ dB magnitude</li> <li>▶ phase</li> <li>▶ unwrapped phase</li> <li>▶ Smith</li> <li>▶ linear magnitude</li> <li>▶ real</li> <li>▶ imaginary</li> <li>▶ SWR</li> <li>▶ polar</li> <li>▶ group delay</li> </ul>                |
| Calibration methods                            |  | <ul style="list-style-type: none"> <li>▶ reflection normalization (open and short)</li> <li>▶ reflection (OSM)</li> <li>▶ transmission normalization (P1 and P2)</li> <li>▶ transmission normalization in both directions</li> <li>▶ TOSM</li> <li>▶ UOSM</li> </ul> |
| Dynamic range                                  |  | 100 dB (typ.)  |
| Output power                                   |  | 0 dBm (typ.)   |
| Trace noise magnitude (RMS)                    |  | 0.0015 dB (typ.)   |
| Trace noise phase (RMS)                        |  | 0.0015° (typ.)   |
| Measurement speed                              |  | 761 µs per point   |
| Number of measurement points                   | selectable                             | 3 to 16 001  |
| Measurement bandwidth                          | range                                  | 10 Hz to 100 kHz in 1/3/10 steps   |
| Measurement range                              |  | -120 dB to +30 dB  |
| Maximum rated input level                      | CW RF power                            | 23 dBm (= 0.2 W)   |
|  | peak RF power                          | 26 dBm (= 0.4 W)   |
| DC bias output voltage                         | mode: internal                         | +2 V to +32 V in 0.1 V steps (nom.)  |
| General data                                   |  |  |
| Display size                                   | capacitive touchscreen                 | 7"   |
| Display resolution                             | WVGA                                   | 800 × 480 pixel  |
| Battery (R&S®HA-Z306)                          | capacity                               | 72 Wh (version E),<br>74.5 Wh (version F and above)  |
|  | voltage                                | 11.25 V (nom., version E)<br>10.8 V (nom., version F and above)  |
| Operating time with new, fully charged battery |  | 4 h  |
| Dimensions                                     | W × H × D                              | 202 mm × 294 mm × 76 mm<br>(8.0 in × 11.6 in × 3 in)   |
| Weight   |  | 3.1 kg (6.8 lb)  |

# ORDERING INFORMATION

| Designation  | Type        | Frequency range  | Order No.    |
|--|-------------|------------------|--------------|
| <b>Base kit</b>  |             |                  |              |
| Handheld vector network analyzer, two-port, 4 GHz, type N  | R&S®ZNH4    |                  | 1321.1611.04 |
| Handheld vector network analyzer, two-port, 8 GHz, type N  | R&S®ZNH8    |                  | 1321.1611.08 |
| Handheld vector network analyzer, two-port, 18 GHz, type N   | R&S®ZNH18   |                  | 1321.1611.18 |
| Handheld vector network analyzer, two-port, 26 GHz, DC 3.5 mm  | R&S®ZNH26   |                  | 1321.1611.26 |
| <b>Accessories supplied</b>  |             |                  |              |
| Lithium-ion battery pack, USB cable, AC power supply with country-specific adapters for EU, GB, USA, AUS, CH, getting started manual, side strap |             |                  |              |
| <b>Software options</b>  |             |                  |              |
| Power sensor support   | R&S®ZNH-K9  |                  | 1334.6800.02 |
| Pulse measurements with power sensor   | R&S®ZNH-K29 |                  | 1334.6823.02 |
| DC bias variable voltage source  | R&S®ZNH-K10 |                  | 1334.6846.02 |
| Vector voltmeter   | R&S®ZNH-K45 |                  | 1334.6852.02 |
| Wave ratios and wave quantities  | R&S®ZNH-K66 |                  | 1334.6869.02 |
| <b>Calibration and verification</b>  |             |                  |              |
| Calibration kit, 50 Ω  | R&S®ZCAN    | 0 Hz to 3 GHz    | 0800.8515.52 |
| Calibration kit, 75 Ω  | R&S®ZCAN    | 0 Hz to 3 GHz    | 0800.8515.72 |
| Calibration kit, 50 Ω (combined open/short)  | R&S®FSH-Z28 | 0 Hz to 8 GHz    | 1300.7810.03 |
| Calibration kit, 50 Ω (combined open/short)  | R&S®FSH-Z29 | 0 Hz to 3.6 GHz  | 1300.7510.03 |
| Calibration kit, type N (m), 50 Ω (combined open/short/through calibration standard)   | R&S®ZV-Z170 | 0 Hz to 9 GHz    | 1317.7683.02 |
| Calibration kit, type N (f), 50 Ω (combined open/short/through calibration standard)   | R&S®ZV-Z170 | 0 Hz to 9 GHz    | 1317.7683.03 |
| Calibration kit, 3.5 mm (m), 50 Ω (combined open/short/through calibration standard)   | R&S®ZV-Z135 | 0 Hz to 15 GHz   | 1317.7677.02 |
| Calibration kit, 3.5 mm (f), 50 Ω (combined open/short/through calibration standard)   | R&S®ZV-Z135 | 0 Hz to 15 GHz   | 1317.7677.03 |
| Calibration kit  | R&S®ZN-Z103 | 2 MHz to 4 GHz   | 1321.1828.02 |
| Calibration kit  | R&S®ZN-Z103 | 1 MHz to 6 GHz   | 1321.1828.12 |
| Calibration kit, 3.5 mm (m)  | R&S®ZN-Z135 | 0 Hz to 26.5 GHz | 1328.8157.02 |
| incl. DCV data on CD   | R&S®ZN-Z135 | 0 Hz to 26.5 GHz | 1328.8157.12 |
| incl. accredited calibration   | R&S®ZN-Z135 | 0 Hz to 26.5 GHz | 1328.8157.22 |
| Calibration kit, 3.5 mm (f)  | R&S®ZN-Z135 | 0 Hz to 26.5 GHz | 1328.8157.03 |
| incl. DCV data on CD   | R&S®ZN-Z135 | 0 Hz to 26.5 GHz | 1328.8157.13 |
| incl. accredited calibration   | R&S®ZN-Z135 | 0 Hz to 26.5 GHz | 1328.8157.23 |
| Calibration kit, type N (m)  | R&S®ZN-Z170 | 0 Hz to 18 GHz   | 1328.8163.02 |
| incl. DCV data on CD   | R&S®ZN-Z170 | 0 Hz to 18 GHz   | 1328.8163.12 |
| incl. accredited calibration   | R&S®ZN-Z170 | 0 Hz to 18 GHz   | 1328.8163.22 |
| Calibration kit, type N (f)  | R&S®ZN-Z170 | 0 Hz to 18 GHz   | 1328.8163.03 |
| incl. DCV data on CD   | R&S®ZN-Z170 | 0 Hz to 18 GHz   | 1328.8163.13 |
| incl. accredited calibration   | R&S®ZN-Z170 | 0 Hz to 18 GHz   | 1328.8163.23 |
| Calibration kit, 3.5 mm (open/short/match/through male and female each)  | R&S®ZN-Z235 | 0 Hz to 26.5 GHz | 1336.8500.02 |
| <b>Test cables</b>   |             |                  |              |
| 3.5 mm (f) to 3.5 mm (m)   |             |                  |              |
| length: 0.6 m  | R&S®ZV-Z93  | 0 Hz to 26.5 GHz | 1301.7595.25 |
| length: 1.0 m  | R&S®ZV-Z93  | 0 Hz to 26.5 GHz | 1301.7595.38 |
| 2.92 mm (f) to 2.92 mm (m)   |             |                  |              |
| length: 0.6 m  | R&S®ZV-Z95  | 0 Hz to 40 GHz   | 1301.7608.25 |
| length: 1.0 m  | R&S®ZV-Z95  | 0 Hz to 40 GHz   | 1301.7608.38 |
| Type N (m) to type N (m)   |             |                  |              |
| length: 0.6 m  | R&S®ZV-Z191 | 0 Hz to 18 GHz   | 1306.4507.24 |
| length: 1.0 m  | R&S®ZV-Z191 | 0 Hz to 18 GHz   | 1306.4507.36 |

| Designation  | Type         | Frequency range  | Order No.    |
|--|--------------|------------------|--------------|
| Type N (m) to 3.5 mm (m)   |              |                  |              |
| length: 0.6 m  | R&S®ZV-Z192  | 0 Hz to 18 GHz   | 1306.4513.24 |
| length: 1.0 m  | R&S®ZV-Z192  | 0 Hz to 18 GHz   | 1306.4513.36 |
| 3.5 mm (f) to 3.5 mm (m)   |              |                  |              |
| length: 0.6 m  | R&S®ZV-Z193  | 0 Hz to 26.5 GHz | 1306.4520.24 |
| length: 0.9 m  | R&S®ZV-Z193  | 0 Hz to 26.5 GHz | 1306.4520.36 |
| length: 1.5 m  | R&S®ZV-Z193  | 0 Hz to 26.5 GHz | 1306.4520.60 |
| 2.92 mm (f) to 2.92 mm (m)   |              |                  |              |
| length: 0.6 m  | R&S®ZV-Z195  | 0 Hz to 40 GHz   | 1306.4536.24 |
| length: 0.9 m  | R&S®ZV-Z195  | 0 Hz to 40 GHz   | 1306.4536.36 |
| <b>Power sensors</b>   |              |                  |              |
| <b>Power sensors supported by R&amp;S®ZNH-K9 (for average power measurement) and wideband power sensors supported by R&amp;S®ZNH-K29 (for pulse measurement)</b> |              |                  |              |
| Directional power sensor   | R&S®FSH-Z14  | 25 MHz to 1 GHz  | 1120.6001.02 |
| Directional power sensor   | R&S®FSH-Z44  | 200 MHz to 4 GHz | 1165.2305.02 |
| Universal power sensor, 100 mW, two-path   | R&S®NRP-Z211 | 10 MHz to 8 GHz  | 1417.0409.02 |
| Universal power sensor, 100 mW, two-path   | R&S®NRP-Z221 | 10 MHz to 18 GHz | 1417.0309.02 |
| Wideband power sensor, 100 mW  | R&S®NRP-Z81  | 50 MHz to 18 GHz | 1137.9009.02 |
| Wideband power sensor, 100 mW (2.92 mm)  | R&S®NRP-Z85  | 50 MHz to 40 GHz | 1411.7501.02 |
| Wideband power sensor, 100 mW (2.40 mm)  | R&S®NRP-Z86  | 50 MHz to 40 GHz | 1417.0109.40 |
| Wideband power sensor, 100 mW (2.40 mm)  | R&S®NRP-Z86  | 50 MHz to 44 GHz | 1417.0109.44 |
| Three-path diode power sensor, 100 pW to 200 mW  | R&S®NRP8S    | 10 MHz to 8 GHz  | 1419.0006.02 |
| Three-path diode power sensor, 100 pW to 200 mW  | R&S®NRP18S   | 10 MHz to 18 GHz | 1419.0029.02 |
| Three-path diode power sensor, 100 pW to 200 mW  | R&S®NRP33S   | 10 MHz to 33 GHz | 1419.0064.02 |
| Three-path diode power sensor, 100 pW to 200 mW  | R&S®NRP40S   | 50 MHz to 40 GHz | 1419.0041.02 |
| Three-path diode power sensor, 100 pW to 200 mW  | R&S®NRP50S   | 50 MHz to 50 GHz | 1419.0087.02 |
| Thermal power sensor, 300 nW to 100 mW   | R&S®NRP18T   | 0 Hz to 18 GHz   | 1424.6115.02 |
| Thermal power sensor, 300 nW to 100 mW   | R&S®NRP33T   | 0 Hz to 33 GHz   | 1424.6138.02 |
| Thermal power sensor, 300 nW to 100 mW   | R&S®NRP40T   | 0 Hz to 40 GHz   | 1424.6150.02 |
| Thermal power sensor, 300 nW to 100 mW   | R&S®NRP50T   | 0 Hz to 50 GHz   | 1424.6173.02 |
| Thermal power sensor, 300 nW to 100 mW   | R&S®NRP67T   | 0 Hz to 67 GHz   | 1424.6196.02 |
| Thermal power sensor, 300 nW to 100 mW   | R&S®NRP90T   | 0 Hz to 90 GHz   | 1424.6473.02 |
| Thermal power sensor, 300 nW to 100 mW   | R&S®NRP110T  | 0 Hz to 110 GHz  | 1424.6215.02 |
| Average power sensor, 100 pW to 200 mW   | R&S®NRP6A    | 8 kHz to 6 GHz   | 1424.6796.02 |
| Average power sensor, 100 pW to 200 mW   | R&S®NRP18A   | 8 kHz to 18 GHz  | 1424.6815.02 |
| <b>R&amp;S®FSH-Zxx power sensors require the following adapter cable for operation with the R&amp;S®ZNH</b>  |              |                  |              |
| USB adapter cable to connect R&S®FSH-Z14/R&S®FSH-Z44 to the R&S®ZNH, length: 1.8 m   | R&S®FSH-Z144 |                  | 1145.5909.02 |
| <b>R&amp;S®NRP-Zxx power sensors require the following adapter cable for operation with the R&amp;S®ZNH</b>  |              |                  |              |
| USB adapter cable (passive) to connect R&S®NRP-Zxx to the R&S®ZNH, length: 2 m   | R&S®NRP-Z4   |                  | 1146.8001.02 |
| <b>R&amp;S®NRP power sensors require the following adapter cable for operation with the R&amp;S®ZNH</b>  |              |                  |              |
| USB interface cable to connect R&S®NRP to the R&S®ZNH, length: 1.5 m   | R&S®NRP-ZKU  |                  | 1419.0658.03 |
| <b>Optical power sensors and accessories</b>   |              |                  |              |
| RF cable, armored, type N (m) and type N (f) connectors, length: 1 m   | R&S®FSH-Z320 | 0 Hz to 8 GHz    | 1309.6600.00 |
| RF cable, armored, type N (m) and type N (f) connectors, length: 3 m   | R&S®FSH-Z321 | 0 Hz to 8 GHz    | 1309.6617.00 |
| Attenuator, 50 W, 20 dB, 50 Ω, type N (f) to type N (m)  | R&S®RDL50    | 0 Hz to 6 GHz    | 1035.1700.52 |
| Attenuator, 100 W, 20 dB, 50 Ω, type N (f) to type N (m)   | R&S®RBU100   | 0 Hz to 2 GHz    | 1073.8495.20 |
| Attenuator, 100 W, 30 dB, 50 Ω, type N (f) to type N (m)   | R&S®RBU100   | 0 Hz to 2 GHz    | 1073.8495.30 |
| OEM USB optical power meter (germanium)  | R&S®HA-Z360  |                  | 1334.5162.00 |

| Designation  | Type        | Frequency range | Order No.    |
|--|-------------|-----------------|--------------|
| OEM USB optical power meter (filtered InGaAs)                      | R&S®HA-Z361 |                 | 1334.5179.00 |
| SC adapter for optical power meter                                 | R&S®HA-Z362 |                 | 1334.5185.00 |
| 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-LC SM, SX, length: 1 m                              | R&S®HA-Z366 |                 | 1334.5227.00 |
| Patch cord, SC-SC SM, SX, length: 1 m                              | R&S®HA-Z367 |                 | 1334.5233.00 |
| <b>Recommended extras</b>  |             |                 |              |
| GPS receiver   | R&S®HA-Z340 |                 | 1321.1392.02 |
| Matching pad, 50 Ω/75 Ω, L section                                 | R&S®RAM     |                 | 0358.5414.02 |
| Matching pad, 50 Ω/75 Ω, series resistor 25 Ω                      | R&S®RAZ     |                 | 0358.5714.02 |
| Matching pad, 50 Ω/75 Ω, L section, type N to BNC                  | R&S®FSH-Z38 |                 | 1300.7740.02 |
| Battery charger for R&S®HA-Z306                                    | R&S®HA-Z303 |                 | 1321.1328.02 |
| Lithium-ion battery pack, 6.4 Ah                                   | R&S®HA-Z306 |                 | 1321.1334.02 |
| Spare power supply, incl. mains plug<br>(for EU, GB, USA, AUS, CH) | R&S®HA-Z301 |                 | 1321.1386.02 |
| Car adapter  | R&S®HA-Z302 |                 | 1321.1340.02 |
| Carrying holster   | R&S®HA-Z322 |                 | 1321.1370.02 |
| Rainproof carrying holster   | R&S®HA-Z322 |                 | 1321.1370.03 |
| Soft carrying bag  | R&S®HA-Z220 |                 | 1309.6175.00 |
| Hardcase   | R&S®HA-Z321 |                 | 1321.1357.02 |
| Hard shell protective carrying case                                | R&S®RTH-Z4  |                 | 1326.2774.02 |
| Spare USB cable  | R&S®HA-Z211 |                 | 1309.6169.00 |
| Spare Ethernet cable   | R&S®HA-Z210 |                 | 1309.6152.00 |
| 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 (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 (f)                                      |             |                 | 0017.6742.00 |

## Warranty

|                               |         |
|-------------------------------|---------|
| Base unit                     | 3 years |
| All other items <sup>1)</sup> | 1 year  |

## Options

|   |         |   |
|---|---------|---|
| Extended warranty, one year                                       | R&S®WE1 | Please contact your local Rohde & Schwarz sales office. |
| Extended warranty, two years                                      | R&S®WE2 |   |
| Extended warranty with calibration coverage, one year             | R&S®CW1 |   |
| Extended warranty with calibration coverage, two years            | R&S®CW2 |   |
| Extended warranty with accredited calibration coverage, one year  | R&S®AW1 |   |
| Extended warranty with accredited calibration coverage, two years | R&S®AW2 |   |

<sup>1)</sup> For options that are installed, the remaining base unit warranty applies if longer than one year. Exception: all batteries have a one-year warranty.