Fast. Accurate. USB-capable. Power sensors from Rohde & Schwarz

ROHDE&SCHWARZ

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The most important features for accurate and simple power measurements are maximum measurement accuracy and speed, and easy operation with a base unit or PC/laptop.

The R&S®NRP family combines all these features with the R&S®NRP2 base unit, R&S®NRPV virtual power meter PC software and a wide range of USB-capable power sensors.

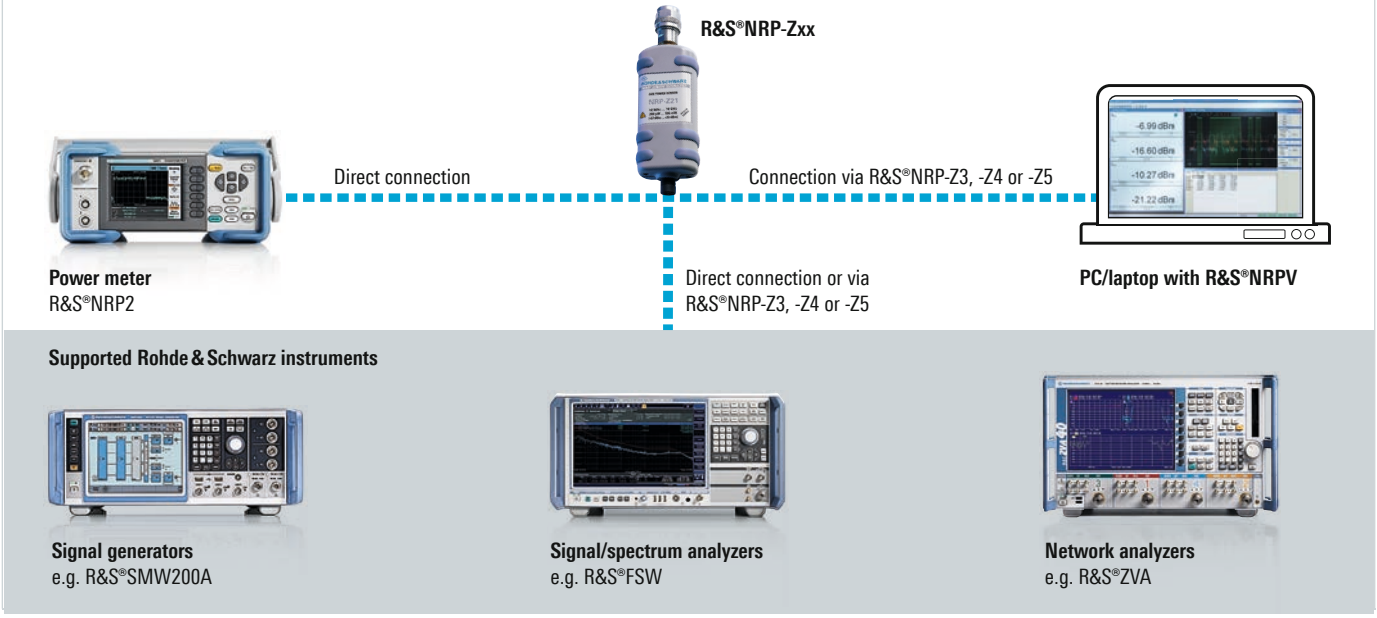
Rohde&Schwarz offers an extensive portfolio for power measurements from DC to 110 GHz, from –67 dBm to +45 dBm, including:

- Three-path diode power sensors with 90 dB dynamic range
- Wideband power sensors for performing accurate envelope power analysis
- Thermal power sensors for maximum accuracy
- Level control sensors and power sensor modules for special applications

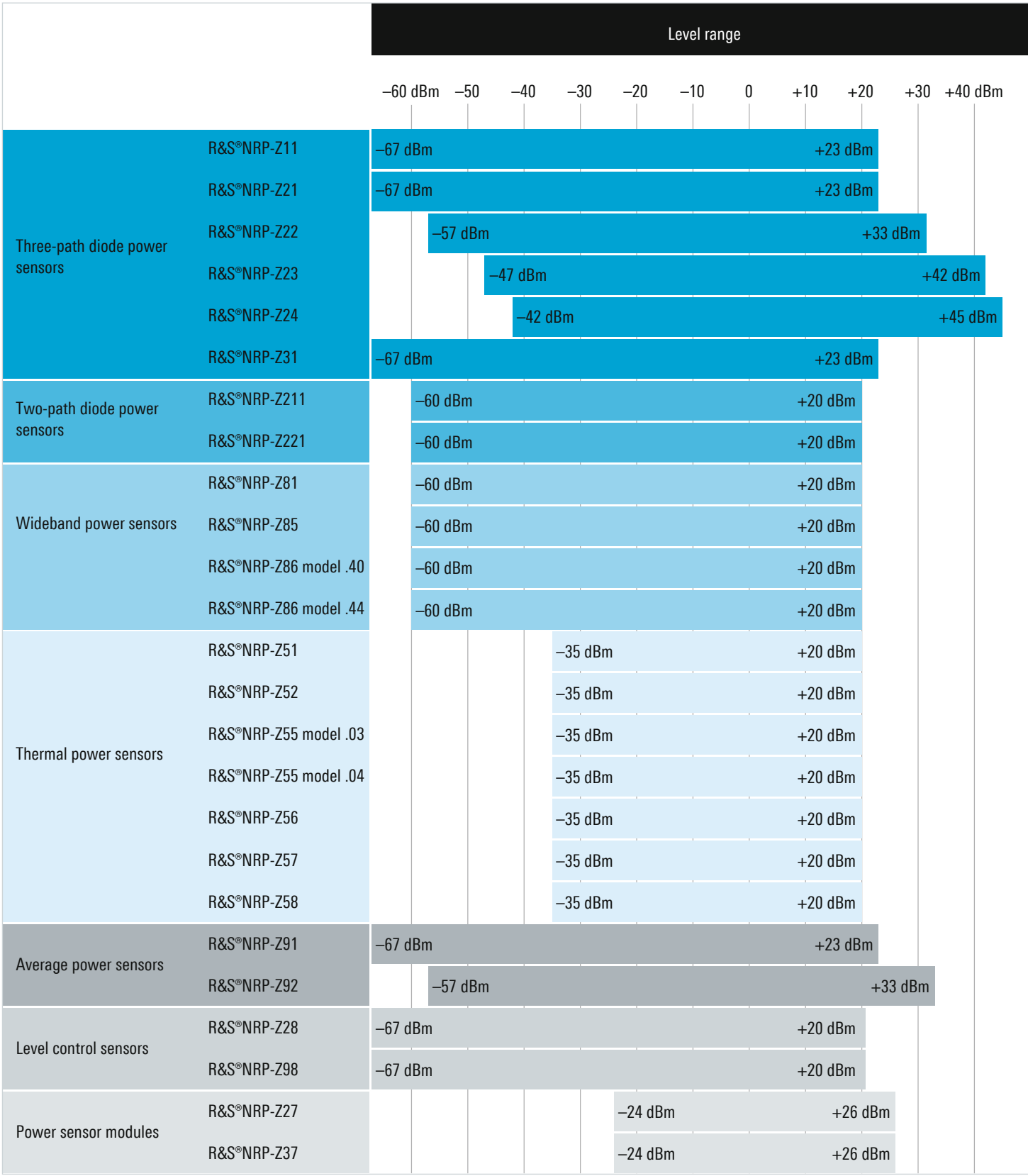
The R&S®NRP power sensors can be connected to a laptop or PC via USB and controlled via the R&S®NRPV virtual power meter PC software. Up to four power sensors can be operated in parallel with a R&S®NRP2 base unit. They are also supported by virtually all Rohde&Schwarz signal generators and signal, spectrum and network analyzers.

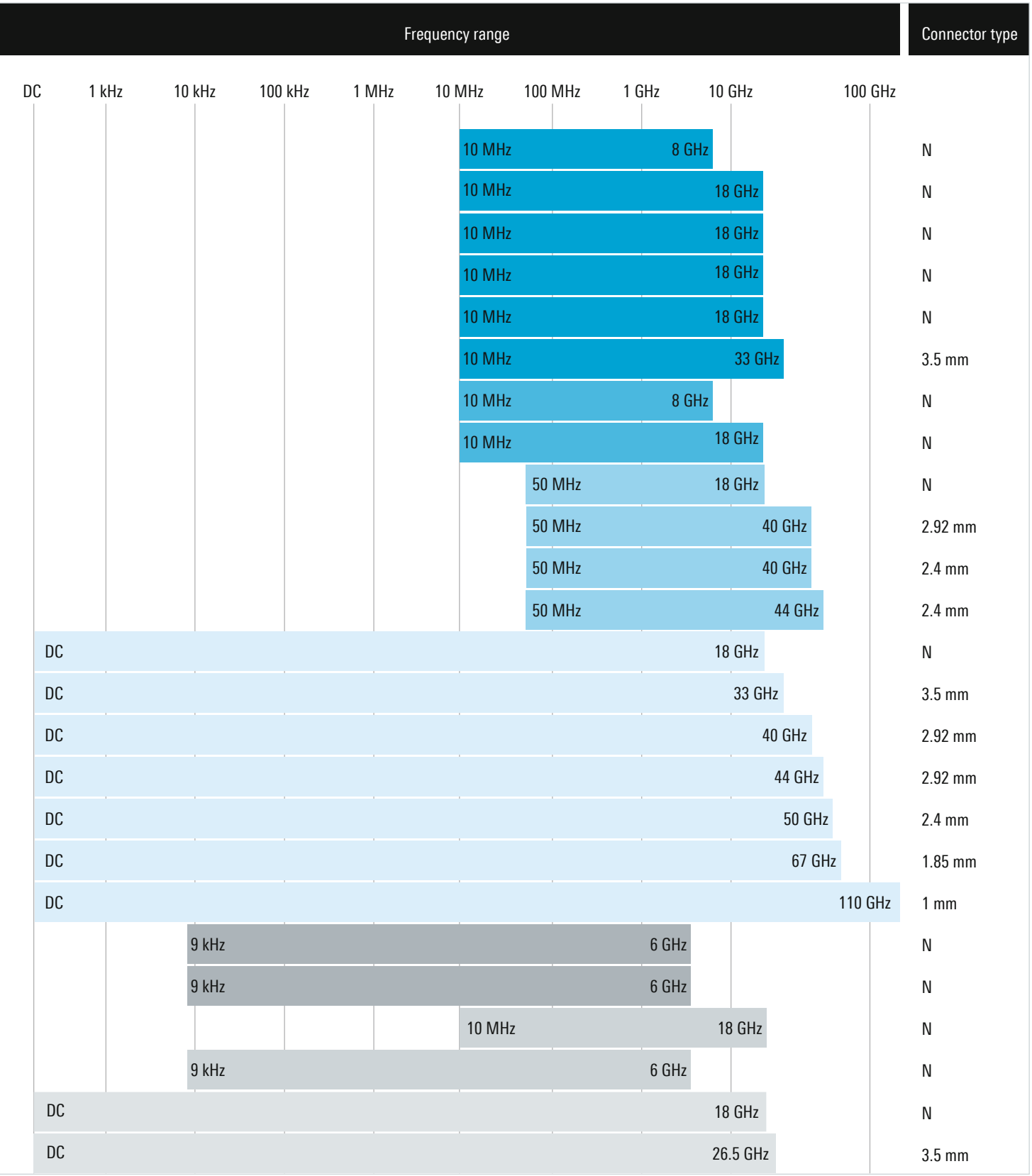
Depending on the application, the focus of power measurements is either on measurement accuracy, measurement speed or the optimal combination of both. R&S®NRP family offers the best characteristics on the market for all applications.

Wide choice of ways to operate the power sensors



Power sensor overview




Frequency range
Connector type
DC
1 kHz
10 kHz
100 kHz
1 MHz
10 MHz
100 MHz
1 GHz
10 GHz
100 GHz
10 MHz 8 GHz N
10 MHz 18 GHz N
10 MHz 18 GHz N
10 MHz 18 GHz N
10 MHz 18 GHz N
10 MHz 33 GHz 3.5 mm
10 MHz 8 GHz N
10 MHz 18 GHz N
50 MHz 18 GHz N
50 MHz 40 GHz 2.92 mm
50 MHz 40 GHz 2.4 mm
50 MHz 44 GHz 2.4 mm
DC 18 GHz N
DC 33 GHz 3.5 mm
DC 40 GHz 2.92 mm
DC 44 GHz 2.92 mm
DC 50 GHz 2.4 mm
DC 67 GHz 1.85 mm
DC 110 GHz 1 mm
9 kHz 6 GHz N
9 kHz 6 GHz N
10 MHz 18 GHz N
9 kHz 6 GHz N
DC 18 GHz N
DC 26.5 GHz 3.5 mm

Power sensors and accessories

Multipath diode power sensors The ideal combination of accuracy, measurement speed and widest dynamic range	 R&S®NRP-Z11/-Z2x/-Z31 three-path diode power sensors	▪ Frequency range from 10 MHz to 33 GHz ▪ Level range from –67 dBm to +45 dBm ▪ Dynamic range of 90 dB based on innovative three-path concept ▪ Fast measurement speed, precise power measurements and wide range of measurement functions ▪ Ideal for universal applications in R&D, installation and maintenance ▪ Sensors for high power applications
	 R&S®NRP-Z211/-Z221 two-path diode power sensors	▪ Frequency range from 10 MHz to 18 GHz ▪ Level range from –60 dBm to +20 dBm ▪ Dynamic range of 80 dB ▪ Cost-efficient multipath diode sensors for production
Wideband power sensors Outstanding dynamic range for trace measurements	 R&S®NRP-Z8x	▪ Frequency range from 50 MHz to 44 GHz ▪ Level range from –60 dBm to +20 dBm ▪ Accurate envelope power analysis ▪ Automatic pulse analysis ▪ Statistical analysis ▪ High resolution mode ▪ Master-slave triggering (with R&S®NRP2 base unit or R&S®NRP-Z5 USB sensor hub) ▪ Ideal for radar applications and for analysis of complex modulated signals
Thermal power sensors Outstanding linearity and maximum accuracy	 R&S®NRP-Z5x	▪ Frequency range from DC to 110 GHz ▪ Level range from –35 dBm to +20 dBm ▪ Excellent impedance matching ▪ Innovative connector design for improved ease of use ▪ Outstanding performance for reference applications and calibration labs
Average power sensors Ideal for EMC applications	 R&S®NRP-Z91/-Z92	▪ Frequency range from 9 kHz to 6 GHz ▪ Level range from –67 dBm to +33 dBm ▪ Support of low frequencies down to 9 kHz
Level control sensors Highly accurate signal level generation with a signal generator	 R&S®NRP-Z28/-Z98	▪ Frequency range from 9 kHz to 18 GHz ▪ Level range from –67 dBm to +20 dBm ▪ Ideal to feed accurate power level into a device under test (DUT) and monitor the power at the same time
Power sensor modules Turns R&S®FSMR measuring receivers into precision power meters	 R&S®NRP-Z27/-Z37	▪ Frequency range from DC to 26.5 GHz ▪ Level range from –24 dBm to +26 dBm ▪ Accurate level calibration of signal sources in conjunction with the R&S®FSMR measuring receiver down to a level of –115 dBm
Power meter base unit Supports all measurement functions of every sensor	 R&S®NRP2	▪ Operates up to four R&S®NRP-Zxx power sensors in parallel ▪ Numerical or graphical display of measurement results depending on the measurement function ▪ Intuitive user interface (window-based) ▪ Remote control operation via Ethernet, GPIB and USB ▪ Emulates legacy power meters ▪ Sensor check source (optional)
Virtual power meter Convenient power measurements via PC based software	 R&S®NRPV	▪ R&S®NRP-Zxx power sensors can be connected to a laptop or PC via a USB adapter and controlled via the R&S®NRPV virtual power meter PC software ▪ Numerical display (continuous average, timeslot average, timegate average and burst average mode) ▪ Multiple traces in one window ▪ Extremely flexible marker functions ▪ Dongle-free on multiple PCs through intelligent licensing concept
USB accessories Professional adapters and trigger solutions	 R&S®NRP-Z5	▪ R&S®NRP-Z3 active USB adapter for external triggering ▪ R&S®NRP-Z4 passive USB adapter to connect R&S®NRP-Zxx power sensors to a laptop or PC ▪ R&S®NRP-Z5 USB sensor hub supports up to four power sensors in parallel, flexible external/internal triggering of all connected sensors and master-slave triggering with R&S®NRP-Z8x wideband power sensors

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PD 3606.7147.62 | Version 02.00 | August 2013 (as)
Fast. Accurate. USB-capable. Power sensors from Rohde&Schwarz

81671 München, Germany | Subject to change

3606714732

3606.7147.62 02.00 PDP 1 en