

USB-Capable Wideband Power Sensors that can Measure up to 40 GHz

Rohde & Schwarz is expanding its portfolio of USB-capable power sensors with the new R&S NRP Z85 and R&S NRP Z86. These are the world's first wideband sensors to measure power from 50 MHz to 40 GHz without requiring a base unit. Instead of a base unit, the sensors are connected to a PC via a USB interface. This cost-efficient solution displays envelope power over a dynamic range of 47 dBm to +20 dBm, which is unprecedented in the industry. High-resolution pulse analysis is another exceptional feature.

Additionally, the R&S NRP Z85 and R&S NRP Z86 provide high-precision continuous-average measurements over the entire dynamic range from 60 dBm to +20 dBm. These performance characteristics make the sensors ideal for a variety of applications in the development and maintenance of microwave and radar systems as well as in the design and production of microwave components.

The wideband power sensors can be operated from a PC via the R&S NRP Z4 USB adapter, or in combination with an R&S NRP/NRP2 power meter. They can also be connected to any signal generator or virtually any signal, spectrum and network analyzer from Rohde & Schwarz. Users can read the power measured from the DUT directly at the generator or analyzer. A complete measurement solution comprising an R&S NRP Z85 or Z86 and an R&S NRP Z4 USB adapter is significantly more cost-effective than a conventional setup involving a power sensor and a power meter.

With a video bandwidth of up to 30 MHz and a sampling rate of 80 MHz, the R&S NRP Z85 and Z86 are the ideal choice for analyzing the time characteristics of modulated signals. The rise time of less than 13 ns enables easy measurement of the most frequently analyzed pulse shapes. The power sensors can measure both peak power and average power over a defined time interval as well as perform statistical signal analysis (CCDF, PDF). Their performance is far superior to that of commercial wideband power sensors: With a measurement uncertainty of 0.18 dB at 40 GHz, the new sensors offer unparalleled accuracy for continuous-average measurements. This combines with the sensors' other exceptional performance features to make them the market benchmark in peak power applications.

The power sensors' automatic pulse analysis function provides peak power and average power measurements as well as detailed information on other important power and time characteristics of pulsed signals. These include, for example, pulse top level, pulse duration, pulse period, pulse duty cycle and pulse rise and fall times. Using equivalent time sampling, the R&S NRP Z85 and Z86 can display pulsed signals with a very high time resolution. This is done by sampling a series of consecutive waveforms of a pulsed signal. The measurements are time-shifted relative to one another, yielding a compacted sequence of samples, which over time are combined into a complete waveform.

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The new R&S NRP-Z85 and R&S NRP-Z86 wideband power sensors are now available from Rohde & Schwarz. The R&S NRP Z85 connects to the DUT via a 2.92 mm connector, the R&S NRP Z86 via a 2.4 mm connector.

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