

Mobile power measurement with NRT sensor and PC Card Adapter NRT-Z4



The right size for any serviceman's case: PC Card Adapter NRT-Z4 with NRT sensor
Photo 43 233

Directional Power Meter NRT for power and reflection measurements on digital mobile-radio base stations has been a big success in its first two years on the market*. The sensors NRT-Z43 and NRT-Z44 have digital interfaces, which enable them to be used without the basic unit, ie directly at the serial interface of a PC, laptop or notebook. Previously this was made possible by Interface Adapter NRT-Z3 in combination with the graphical Windows user interface NRT-V. What makes the stand-alone solution so attractive for users working in R&D, production, service and installation is not only the possibility of immediate processing of measured results on a PC but also the favour-

able price and ease of handling. A minor drawback, especially in mobile applications, was the need to supply the sensor operating voltage via a separate plug-in power adapter.

Thanks to PC Card Adapter NRT-Z4 this is no longer necessary. This adapter is simply inserted into the PC card slot of a laptop or notebook and will then power the sensor as well as transfer data to the PC. Apart from a Type II PC Card socket (PCMCIA specification 2.1), no special requirements are made of the PC. The adapter runs under any Windows operating system (3.x/95/98/NT). The additional power drawn by the sensor is a mere 5 % of the battery capacity and so practically negligible.

Most users will prefer to operate the sensor under the Windows user interface NRT-V supplied with the sensor, which offers the entire functionality of

a modern power meter. For logging purposes the measured results can be saved in files together with date and time for further processing by standard office software (eg Excel). For those wishing to integrate the sensor into a measurement system, the Rohde & Schwarz web site provides drivers for LabWindows/CVI, LabVIEW and HP VEE free of charge.

The sensors were designed for frequency and power ranges from 0.2 to 4 GHz/0.003 to 300 W (NRT-Z44) and 0.4 to 4 GHz/0.0007 to 75 W (NRT-Z43), so power measurements are possible on base stations to all customary standards. In the case of CDMA base stations (IS95 and W-CDMA), average power, reflection, peak power (PEP) and amplitude distribution (complementary cumulative distribution function, CCDF) can be measured. The latter two parameters are required for assessing the dynamic performance of CDMA transmitter output stages, which have to handle peak power of about ten times average power with low distortion.

The functionality offered by an NRT sensor connected to a laptop or notebook via PC Card Adapter NRT-Z4 is no less than that of a solution with the basic NRT unit, and holds par with peak power analyzers costing many times more. Another plus is the directional coupler for transmit power measurements, which is ready integrated into the NRT sensor. All in all a complete and inexpensive solution for the needs of today, in other words just plug in and go.

Thomas Reichel

* Reichel, T.: Power Reflection Meter NRT – The next generation in directional power meters. News from Rohde & Schwarz (1997) No. 153, pp 7–9

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