

Power Meter for Wireless measurements

Fast Synchronous Power Measurements · Robust · Flexible

DARE!! Instruments has extended the RadiPower model RPR3006W to comply with the measurement requirements of the ETSI 300 328 and 301 893 standards for wideband data transmission systems, like IEEE 802.11TM, Bluetooth and ZigbeeTM including the new Wifi 6E (6 GHz). The RPR3006W now covers a measurements range from 10 MHz to 6 (8) GHz.

Extremely Fast

In order to achieve this measurement requirements of the ETSI standards the sampling speed of the RadiPower power sensor has been increased to maximum 5 MS/s. At the same time a hardware trigger input/output has been added to allow synchronous power measurements of wideband data transmission devices with multiple inputs/outputs (MIMO).

Accurate

Next to speed, accuracy is another main requirement when performing RF power measurements of wireless devices. The RPR3006W allows high precision RF power measurements with a high dynamic range of 60 dB. The power meter provides a basic accuracy of $\pm 0,2$ dB and is way within the requirements for measurements in accordance to ETSI standards.

Easy to use

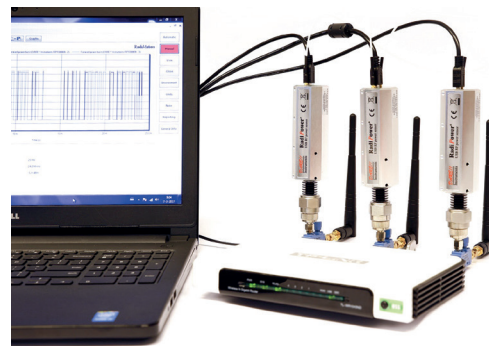
The RadiPower Wireless is equipped with an USB interface which enables direct connection of the Power sensors to a PC USB port. Together with the RadiPower USB power sensor a RadiMation FREE freeware package is delivered to enable direct control of the power meter settings and display the measurement results on the PC screen. The RadiMation Freeware also enables synchronous triggering of multiple RadiPower Wireless power sensors.

'Burst' mode

The RadiMation Freeware includes a 'Burst' mode with user selectable measurement speed/time to capture the wideband Burst/Pulse signals and calculate the measurement parameters, maximum RMS power, duty cycle, medium utilization and maximum sequence time. This mode is fully compliant with the

measurement methods as defined in the ETSI standards for wideband data transmission systems EN 300 328 (2,4 GHz) and EN 301 893 (5 GHz).

In burst mode, the RadiPower can store the information of 100.000 bursts and observation time up to 60 seconds. For each burst the average power and timing data is stored in the buffer. The RadiPower uses a sample speed of 1 or 5 MSps in combination with a RMS detector to ensure correct measurements on wideband modulating transceivers.



For MIMO devices with for example six antenna ports, an equal amount of RPR3006W power heads can be daisy-chained using the MMCX connectors enabling synchronised triggering of all six RadiPower meters. RadiMation Freeware captures the samples of each power meter simultaneously and calculates the total combined power according to the ETSI 300 328 standard.

Software support

The standard delivered RadiMation Freeware supports all RadiPower measurement modes. Using the instrument command codes the RadiPower Wireless can be used with any other software control package.

RadiPower® Wireless

Technical Specifications



RadiPower Head	
Detector type	RMS detector
Measurement function	RMS power, peak (max hold) and Burst mode
Calibrated frequency range	10 MHz to 6 GHz (8 GHz - option #010)
Power measuring range	-50 dBm to +10 dBm @ 10 MHz to 6 GHz -40 dBm to +10 dBm @ 6 GHz to 8 GHz (option #010)
Maximum SWR	1,10 @ up to 1 GHz 1,15 @ 1 GHz to 6 GHz
Frequency response accuracy (at 23°C ± 2°C)	± 0,2 dB
Deviation from CW for wideband modulated signals with crest factors up to 10	< 0,2 dB
Linearity error	0,05 dB + 0,005 dB/dB
Input damage level	+20 dBm
Resolution	0,01 dB
RF input impedance	50 Ohm
Measuring speed	1 MS/s and 5 MS/s
Temperature effect	0,15 dB over full temperature range
Zero adjustment	Not required
Frequency response correction	Stored frequency response data is taken into account by numerical entry of the measurement frequency
Measurement units	dBm / Watts

Mechanical	
Dimensions of measuring device	124 mm (L) x 32 mm (W) x 32 mm (H)
RF input connector	Precision N-type
Data connector (power head side)	USB mini type B
Trigger input and output	MMCX (standard one cable supplied with each RPR3006W)

Environmental Head	
Temperature range (use)	0 °C - +40 °C
Temperature range (storage)	-20 °C - +85 °C
Relative humidity	10% - 90% (non-condensing)

Interfaces and supply	Head
USB Communication	USB2, drivers supplied for latest Windows versions
Supply voltage	+ 5 VDC from USB port (4,75 VDC to 5,25 VDC)
Current consumption (USB)	Typical 180 mA (maximum 200 mA)
Warranty	3 years (moist excluded)

Models	
RPR3006W	RadiPower RF Wireless power head, 6 GHz
Option #010	8 GHz frequency extension

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