

The accurate RF Power Meter

Fast · Accurate · Flexible

An accurate power meter is indispensable to perform reliable EMC measurements. The RadiPower® offers a range of RF power meters dedicated for RMS, CW, or peak power measurements during EMC tests. The RadiPower® offers an affordable, accurate and extremely fast power meter. It provides measurements within 0.25 dB over a frequency range from 9 kHz up to 6 GHz and 80 MHz up to 18 GHz, which enables effective measurements in accordance with the latest international EMC standards.

Fast

EMC immunity measurements are time consuming. The total elapsed time is mainly depending on the number of frequency points, the dwell time and the speed of the power meter.

As standards in general prescribe the first two parameters, the speed of the power meter is the only one that can be optimised. The unprecedented detector technology sampling with a maximum rate of 1 M samples per second makes extremely fast though accurate power measurements finally a reality, even at low power levels.



Accurate

Next to speed, accuracy is the first concern when performing EMC measurements. The RadiPower® allows high precision EMC measurements with a high dynamic range. The RadiPower® 6 GHz (RPR2006C) has a dynamic range of >65 dB. The RadiPower® 18 GHz (RPR2018C) has a dynamic range of >55 dB. With an accuracy of 0.25 dB it is suitable for measurements in accordance to Automotive, CE-marking and Military standards.

Flexible

RadiPower® power heads can be directly connected to a PC via a standard USB port. Alternatively the RadiPower® plug-in card model USB1004A provides 4 USB slots to connect a maximum of four RadiPower® power heads. RadiPower® plug-in cards are designed to fit in the RadiCentre® 19-inch rack-mountable modular system. Together with the other available cards the

RadiCentre® offers an affordable and comprehensive EMC test system. Alternatively the RadiPower® power head can be connected directly to a PC using a standard USB port.

Measurement uncertainty

The RadiPower® has a very low Standing Wave Ratio (SWR) and this will result in a low impedance mismatch, which is one of the contributions to the measurement uncertainty in RF power measurements.

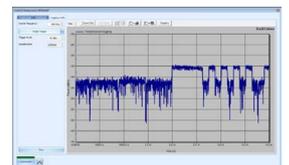
Software support

For stand-alone use the RadiMation® Freeware software is delivered with the system. In case the RadiPower® is used in a RadiCentre®, it is software controllable with LAN, RS-232 and IEEE-488. Besides the RadiMation® integral EMC measurement software the system can be controlled by all EMC measurement packages as all software codes to control the unit are available. For stand-alone use the RadiMation® Freeware software is delivered with the system.

Measurements modes

The RadiPower® RPR2006C and RPR2018C are dedicated for CW RMS or Peak power measurements.

In the RMS mode the RadiPower® calculates the RMS power based on multiple measurements. In the Peak mode the maximum power value is stored and logged over time using a max hold function. When measuring RF/burst signals is required the RadiPower® can be delivered as a dedicated RF pulse power head (RPR2006P and RPR2018P).





RadiPower® Head	RPR2006C	RPR2018C
Detector type	Log detector	
Measurement function	RMS CW power, Peak power (max hold)	
Frequency range	9 kHz to 6 GHz	80 MHz to 18 GHz
Power measuring range	-55 dBm up to +10 dBm (Usable to -60 dBm)	-45 dBm up to +10 dBm (Usable to -50 dBm)
Input damage level	> +20 dBm	
Resolution	0.01 dB	
RF input impedance	50 Ohm	
Maximum SWR	1.05 @ below 100 MHz 1.15 @ 100 MHz to 2 GHz 1.35 @ 2 GHz to 6 GHz	1.20 @ 80 MHz to 6 GHz 1.35 @ 6 GHz to 18 GHz
Frequency response accuracy (at 23 °C ±2 °C)	±0.25 dB (≤ 10 GHz)	±0.25 dB (≤ 10 GHz) ±0.50 dB (> 10 GHz)
Linearity error	0.05 dB + 0.005 dB/dB (-50 dBm to +10 dBm)	0.25 dB / 10 dB (-40 dBm to +10 dBm)
Measuring speed	20 kSps, 100 kSps or 1 MSps	
Temperature effect	0.15 dB over full temperature range	
Zero adjustment	Not required	
Measurement units	dBm or W	
Frequency response correction	Stored frequency response data is taken into account by numerical entry of the measurement frequency	

RadiPower® Plug-in Card	
Form factor	Occupies one slot in a RadiCentre®

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

Connectors and cables	
To plug-in card or PC (data)	USB type B
USB Communication	USB 1.1
USB power consumption	<200 mA
RF input connector	Precision N-type (m)
Mechanical dimensions (6 GHz head)	124 x 32 x 32 mm
Mechanical dimensions (18 GHz head)	152 x 32 x 32 mm
Warranty	3 years

Models	
USB1004A	Plug-in card for RadiCentre® -4 channels
RPR2006C	RadiPower® RF power head, 6 GHz
RPR2018C	RadiPower® RF power head, 18 GHz

Filters CW	# of averages
Filter 1	10
Filter 2	30
Filter 3	100
Filter 4	300
Filter 5	1000
Filter 6	3000
Filter 7	5000

Auto filter mode	
+10 to 0 dBm	100 (Filter 3)
0 till -10 dBm	100 (Filter 3)
-10 till -20 dBm	100 (Filter 3)
-20 till -30 dBm	300 (Filter 4)
-30 till -40 dBm	1000 (Filter 5)
-40 till -50 dBm	3000 (Filter 6)
Below -50 dBm	5000 (Filter 7)

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