

The accurate EMC Power Meter

Fast · Accurate · Flexible

An accurate and fast power meter is indispensable to perform reliable EMC measurements. The RadiPower offers a range of RF power meters for CW or Burst/Pulse power measurements during EMC tests. The RadiPower offers an affordable, accurate and extremely fast CW power meter. It provides measurements within 0.25 dB over a frequency range from 4 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, where the total test time is depending on the number of frequency points, the dwell time and the speed of the power meter. As the EMC standards prescribe the first two parameters, the speed of the power meter is the only one that can be optimised. Most RF power meters tend to get relatively slow at low power (test) levels. The RadiPower uses a detector with sampling speed up to a maximum of 10 Msps providing fast power measurement over its complete power range, even at low power levels.



Accurate

Next to speed, accuracy is the second important parameter when performing EMC measurements. The RadiPower has an accuracy of 0.25 dB which is extremely suitable for immunity testing in accordance to Automotive, CE-marking and Military standards. 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.

Ruggedized

The RadiPower USB power meters are mounted in a very ruggedized metal housing to ensure long life and excellent shielding. The power meter is equipped with an N-type precision input connector.

Wide band

The RadiPower 6 GHz (model RPR2006C) has a standard frequency range from 9 kHz to 6 GHz which is covering most

conducted- and radiated susceptibility tests. The 4 kHz low frequency extension (option #010) enables the RPR2006C to be used from 4 kHz, like required in MilStd. 461 CS-114, BCI common mode test on power cables. The RadiPower 18 GHz (model RPR2018C) covers power measurements from 80 MHz to 18 GHz.

Flexible

The RadiPower USB power meter can be connected to the USB1004A plug-in card which contains 4 USB inputs. The USB1004A plug-in card is designed to fit in the RadiCentre 19-inch rack-mountable modular system and together with the other available plug-in cards an affordable and comprehensive EMC test system can be configured. Alternatively, the RadiPower USB power head can be connected directly to a PC using the a standard USB port.

Software support

For stand-alone applications, the RadiPower USB power meter can be controlled by RadiMation Free which is standard delivered with each RadiPower. In case the RadiPower is used in a RadiCentre, it is software controllable through one of the available interfaces (USB, LAN, IEEE-488). Furthermore, the RadiPower can be controlled by RadiMation integral

EMC measurement software and/or any other measurement packages as all software command codes to control the unit are available.





RadiPower Head		RPR2006C	RPR2018C
Detector type		Log detector	
Measurement function		RMS CW power, Peak power (max hold)	
Frequency range		9 kHz to 6 GHz 4 kHz to 6 GHz (#010)	80 MHz to 18 GHz
Power measuring range	4 kHz - 9 kHz (RPR2006C #010)	-40 dBm up to +10 dBm	NA
	9 kHz - 6 GHz	-55 dBm up to +10 dBm (usable to - 60 dBm)	NA
	80 MHz to 18 GHz	NA	-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, 1 MSps or 10 MSps (*)	
Temperature effect		0,15 dB over full temperature range	
Zero adjustment		Not required	
Measurement units		dBm or Watts	
Frequency response correction		Stored frequency response data is taken into account by numerical entry of the measurement frequency	

(*) 10 MSps only available in RPR2006C and RPR2018C with firmware version 2.7.0 or Higher

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

Environmental conditions	Card & Head	Filters CW	# of averages
Temperature range (use)	0 °C - +40 °C	Filter 1	10
Temperature range (storage)	-20 °C - +85 °C	Filter 2	30
Relative humidity	10 % - 90 % (non-condensing)	Filter 3	100
		Filter 4	300
		Filter 5	1,000
		Filter 6	3,000
		Filter 7	5,000
Connectors and cables		Auto filter mode	
To plug-in card or PC (data)	USB type B	+10 to 0 dBm 100	100 (Filter 3)
USB Communication	USB 1.1	0 till -10 dBm 100	100 (Filter 3)
USB power consumption	< 200 mA	-10 till -20 dBm 100	100 (Filter 3)
RF input connector	Precision N-type	-20 till -30 dBm 300	300 (Filter 4)
Mechanical dimensions (6GHz head)	124 x 32 x 32 mm	-30 till -40 dBm 1,000	1,000 (Filter 5)
Mechanical dimensions (18 GHz head)	152 x 32 x 32 mm	-40 till -50 dBm 3,000	3,000 (Filter 6)
Warranty	3 years	Below -50 dBm 5,000	5,000 (Filter 7)
Models			
USB1004A	Plug-in card for RadiCentre - 4 channels		
RPR2006C	RadiPower RF power head, 6 GHz		
RPR2018C	RadiPower RF power head, 18 GHz		

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