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Data Sheet



RadiPower® Pro series

USB Power Meter

Model - RPR4006R

True RMS

Wide Dynamic Range

High accuracy



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RadiPower® Pro Series

Fast RMS Power Measurements

True RMS

Wide Dynamic Range

High accuracy

The RPR4006R is the first member of the new 4000 series power meters. This new model combines excellent RMS measurement accuracy over a large dynamic range with high measurement speed, even at low power levels.

True RMS | For non CW measurement a RMS response is required. This can be done in multiple ways, the best way is to incorporate an RMS detector. This leads to a DC voltage that is proportional to the RF RMS value of the input signal. Performing this step in hardware and not relying on software computation results in higher accuracy and faster measurements. The RadiPower 4006R uses a true RMS detector, which ensures accurate power measurement of non-sinusoidal RF signals over the entire measuring range.

High dynamic range & speed | The RadiPower® RPR4006R offers a very high dynamic range (up to 80 dB) over the frequency range from 4 kHz to 6 GHz. Where most RF power meters will become (extremely) slow at low input amplitudes, the RadiPower® 4006R maintains its high measuring speed over the entire input power range. With measurement rates of up to 5 MS/s, fast true RMS power measurements become reality!

Accuracy and input matching | High measuring speed becomes useless if the measuring accuracy is poor. The RPR4006R power meter offers an improved accuracy of +/- 0.2 dB over the complete frequency range. By using a "true RMS" detector with active input ranging, the error contribution for non-sinusoidal signals with a high crest factor is less than 0.2 dB. To further improve the measurement accuracy, it is crucial that the input VSWR of the power meter is very low. Any deviation from 50 Ohms will result in measurement uncertainty that cannot be corrected. Therefore, the input VSWR of the RadiPower pro-series has been optimized to ensure that these uncertainties are minimized. This feature makes the RadiPower® 4000 series even better for accurate RF power measurements.

Ruggedized housing | The RadiPower® RPR4006R uses a robust, specially treated, aluminium housing. As a result, good RF shielding is combined with a sleek industrial appearance and a virtually scratch-free housing.

Easy to use | The RadiPower® RPR4006R is equipped with a USB interface that allows the power meter to be connected directly to the USB port of a Windows PC. RadiMation® (freeware) can be used to allow direct control over the power meter settings and display the measurement results on the PC screen. In addition, the RadiPower® RPR4006R can also be connected to a RadiCentre®, modular test system. This requires the USB1004A plug-in card and a RadiCentre (sold separately). A maximum of four (4) different RadiPowers per plug-in card can be controlled and read via the RadiCentre. Up to seven (7) plug-in cards can be used in one RadiCentre, resulting in up to 28 power meters to one radiCentre.

Software support | The RadiPower® RPR4006R can be controlled by RadiMation® software (licensed) when being used for EMC immunity testing. Using the instrument command codes as defined in the manual, the RadiPower® RPR4006R can be used with any other software control package. Driver availability on request.

RadiPower® Technical Specifications

| Model | | RPR4006R | | |
|--|--|---|------------|------------|
| Measuring function | | RMS power | | |
| Measurement speed | | 1 MS/s 5 MS/s | | |
| Resolution | | 0,01 dB | | |
| Measuring units | | dBm or Watt | | |
| Zero adjustment | | Not required | | |
| Input damage level | | > +20 dBm | | |
| Measurement range & accuracy | | | | |
| Frequency range | | 4 kHz to 6 GHz | | |
| Power measuring range | | Frequency | MAX | MIN |
| | | 100 kHz - 100 MHz | 10 | -70 |
| | | 100 MHz - 1,5 GHz | 10 | -65 |
| | | 1,5 GHz - 3,5 GHz | 10 | -60 |
| | | 3,5 GHz - 4,5 GHz | 10 | -55 |
| | | 4,5 GHz - 6 GHz | 10 | -50 |
| Frequency response accuracy (at 23° C ± 2° C) | | +/- 0,2 dB | | |
| Linearity error | | 0,05 dB + 0,005 dB/dB | | |
| Temperature effect | | 0,15 dB max over full temperature range | | |
| Deviation from CW for signals with high crest factor | | < 0,2 dB | | |
| VSWR | | | | |
| Max SWR: < 100 MHz | | 1,05 | | |
| 100 MHz to 6 GHz | | 1,10 | | |
| Connections & Dimensions | | | | |
| Dimensions of measuring device (LxWxH) | | 125,2 * 44,5 * 32 mm | | |
| RF input connector | | N type precision | | |
| Data connector (power head side) | | USB mini type B | | |
| Power Consumption | | | | |
| Supply voltage | | +5Vdc from USB port (4,75 V to 5,25 V) | | |
| Current consumption (USB) | | Max. 500 mA | | |
| Environmental conditions | | | | |
| Temperature range (operating) | | 0° to 40° Celsius | | |
| Temperature range (storage) | | -20 to 85° C | | |
| Relative humidity | | 10 - 90% (non-condensing) | | |
| Compliance | | | | |
| EMC | | EN 61326 | | |
| Low Voltage | | N/A | | |
| Warranty | | | | |
| | | 3 year ⁽¹⁾ | | |

(1) Three years warranty will be granted only after you register the product at www.raditeq.com. Without registration, a 1 year warranty period applies.

- All specifications are measured after 30 minutes warm-up time and 0dBm unless specified otherwise.
- Typical specifications indicate that the measured values are met on at least 80% of the points.

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