

Wideband power meter

Power meter PM-1 is intended for power measurements in 10-2500MHz frequency range.

Features:

- Compact case
- Wide frequency range
- Good dynamics
- Large built-in LCD
- Rechargeable and replaceable accumulators
- Internal 3-cell charger

Application areas:

- GSM/UMTS networks
- CATV networks
- GPS
- FM-radio
- 2.4GHz Wi-Fi

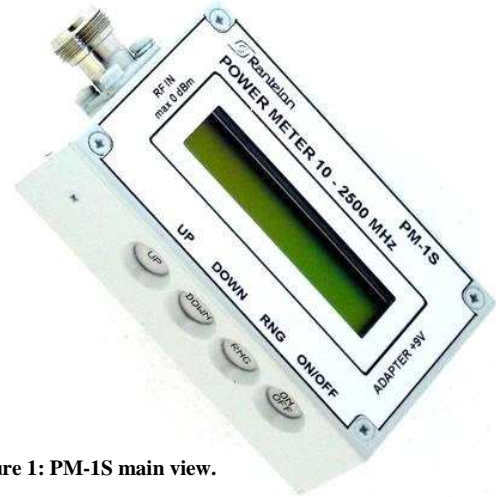


Figure 1: PM-1S main view.

Product description:

Power meter PM-1 operates in 10-2500MHz frequency range. Operating range is divided into 7 sub-ranges. For precise and stable work in each sub-range special calibration coefficients are defined. There is no filtering at the input of the power meter. Therefore the device can operate in whole bandwidth 10-2500MHz without the need of switching through sub-ranges. In that case measurement precision is out of specified limits, but relative results can be valid.

PM-1 allows measurement of radio-signals with dynamics about 60dB. "Offset" option gives possibility to read results directly from the power meter display, without the need for additional calculations after the measurement.

Built-in battery level indicator (right lower corner of LCD) shows remaining power of 3xAA-type cells. If level is equal to 4.5V (or above) the indicator will show 9. In case of low level (3.1V or less) value is 0. Built-in charger allows external charging/powering with any kind of power supply with +9V output.



Figure 2: PM-1S top and side view.



Technical specifications:

Parameter	Specification
Input frequency range	10-2500MHz
Frequency sub-ranges *	10-500MHz 500-1000MHz 1000 – 1300MHz 1300 – 1600MHz 1600 – 1900MHz 1900 – 2200MHz 2200 – 2500MHz
Absolute dynamic range	60dB
Input impedance	50Ω
Input maximum level	0dBm
Accuracy (in recommended level range, tested at -10dBm)	± 2dB (typ. 1.5dB)
Operating time (3xAA-type new accumulators 2600mAh)	> 8 hours
Accumulators	3 pcs., AA-type, NiMH, 1.2V
Battery charging duration (2600mAh NiMH 3xAA)	≈ 3 hours
Battery level indicator	digital, built-in
Digital offset option	built-in
Internal 3-cell charger ** 1000mA, 2.1mm DC-connector for external network adapter	built-in
RF-connector	N-type, female
Dimensions	122 x 61 x 34 mm

* Optional! Frequencies up to 8GHz are available on order. For more details contact Rantelon.

** **NB!** When using external power supply please ensure that center pin (inner conductor) of 2.1mm DC-connector is connected to positive lead. When charging is in progress output voltage of external power supply must be stably +9V. In case of normal operation (or when charging is in progress) green LED is active. When charging is finished both green and red LEDs are switched off. If there is a charging fault (like broken battery etc.) the red LED will remain active. Begin charging only when the battery level indicator is showing “1” or less. If the red LED is active at the beginning of charging process, initial battery charge is too low: pre-charge or replace the battery.

Do not use device in unspecified conditions! If there is a need for hardware reset (in case of firmware trouble etc.) the following sequence should be performed: first remove the cover, then remove the battery, wait at least 10 seconds, then insert the battery and put the cover on.

Buttons:

ON/OFF - switches device ON and OFF

RNG - activates offset or frequency sub-range tuning

DOWN - changes to the next lower frequency sub-range or decreases the offset value

UP - changes to the next higher frequency sub-range or increases the offset value

Settings and properties:

- It should be kept in mind that maximum input power is 0dBm. Applying higher levels to the device input can damage it. Recommended range of input levels is between -55 and -10dBm.
- Offset can be tuned from -100dB to 100dB in 1dB steps
- When device is switched on the frequency sub-range is set to 500-1000MHz and the offset is set to 0dB.
- To replace batteries/accumulators unscrew the case (there are 4 screws in the corners of the top cover) and replace batteries/accumulators.