



# **POWER COUNTER**

# **USER MANUAL**



# CAUTION

**WARNING - Maximum input voltage is 12VDC.** Automotive voltages may exceed 12V causing damage to internal circuitry. Damage resulting from excessive input voltage is readily apparent and will not be covered under warranty. Units returned for warranty service that have damage resulting from excessive supply voltages will incur service charges.

**WARNING - Maximum antenna input signal is 5W.** Under no circumstances should the unit be directly connected to an RF transmitter of more than 5W output. In addition, the 40dB attenuator that is shipped with the unit should remain attached at all times. The only time the attenuator should come off is if you are measuring frequencies off the air and are not directly coupled into the unit. Damage to the input amplifier circuitry is readily apparent and will not be covered under warranty. Units returned for warranty service that have damage to the input circuitry will incur service charges.

## Table of Contents

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Specifications	4
Front Panel buttons	5
Operation	6
Factory Service	7

# Specifications

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Frequency Range:	<b>10MHz-2.6GHz</b>
Sensitivity:	<b>Power measurements from 10mW to 5w or 0dBm to +37dBm</b>
Input:	<b>50 Ohm</b>
Accuracy:	<b>+/- 1dBm</b>
Display:	<b>2x16 alphanumeric LCD with EL backlight</b>
Size:	<b>3.75"H x 3"W x .15"D</b>
Weight:	<b>12oz aluminum</b>
Battery:	<b>Rechargeable internal NiCad 6 volt pack</b>
Operating Time:	<b>3-4 hours on full charge / 8 hour charge time</b>
Power:	<b>12vdc, 500mA</b>

## **Power**

Press and hold the power button for two seconds to turn the unit on. Then press and hold the power button to turn the EL backlight on. Press and hold the power button for 4 seconds to turn the unit off.

## **Test**

Press the test button to exit the function configuration menu back out to test mode.

## **Function**

Press the function button to enter the configuration menu.

A.) POWER DISPLAY Press the UP/DOWN arrow button to switch between mW, W, mW/W (Auto) or dBm measurement display

B.) FREQ DISPLAY Press the UP/DOWN button to switch between Channel and Measured display.

C.) RESOLUTION Press the UP/DOWN button to switch between 1kHz (fast) or 100Hz (slow).

D.) MEMORY Press the UP/DOWN arrow button to scroll through saved frequencies. Press and hold the Function button and then the UP/DOWN arrow button to show the power measurement saved for that frequency.

E.) CLEAR MEMORY Press and hold the Function button plus the UP arrow button twice to clear data saved to memory.

F.) AUTO STORE Press the UP/DOWN arrow button to enable or disable the auto store feature. If enabled the frequency and power level will be stored 2 seconds after a valid reading has been obtained.

G.) CONFIG STORE Press and hold the TEST button until CONFIG STORED is displayed. This will store all configuration parameters the user has set to their preference.

H.) CONFIG RECALL Press and hold the test until CONFIG RECALLED is displayed. If the user changes any parameters during use and wishes to go back to what was stored during config store.

# Operation

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## Direct Coupling Power Measurement

The Power Counter comes with a 40dB external attenuator that must remain on at all times when directly coupling a transmitter. The unit can accept power levels from 10mW(0dBm) to 5w (+37dBm). **Under no circumstances should more than 5w be directly coupled to the unit. The attenuator can get warm or hot after continuous use.**

If the transmitter you are testing has a connector other than the SMA that is on the attenuator an adapter may be necessary.

Turn the unit on and connect a transmitter to the attenuator and the unit will read the frequency and power level. If there is no active signal after 5 seconds the display will clear the last measurement.

## Measuring Frequency Off Air

The Power Counter can also be used as a conventional frequency counter. Disconnect the 40dB attenuator and attach any 50 Ohm antenna. Key up a transmitter and the unit will read the frequency of the transmitter, although any power measurement displayed will not be accurate.

## RS232

The Power Counter has an RS232 serial interface. Data stored to memory may be downloaded using the optional CBDS interface cable and a download program. The serial interface specification is available upon request for those who wish to write their own software.

## **PRODUCT WARRANTY**

Optoelectronics, Inc. warrants all products and accessories for one (1) year against defects in materials and workmanship to the original purchaser. Products returned for warranty service will be repaired or replaced at Optoelectronics' option.

Specifically excluded are any products returned under this warranty that upon examination, have been modified, had unauthorized repairs attempted, have suffered damage to the input circuitry from the application of an excessive input signal, have suffered damage to the charging circuitry or internal batteries from the application of excessive voltage, or show other evidence of misuse or abuse. Optoelectronics reserves sole right to make this determination.

No other warranties are expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. Optoelectronics, Inc. is not liable for consequential damages.

## **WARRANTY**

Products under warranty must be returned, transportation prepaid, to Optoelectronics' service center. All parts replaced and labor performed under warranty are at no charge to the customer.

## **NON-WARRANTY**

Products not under warranty must be returned, transportation prepaid, to Optoelectronics' service center. Factory service will be performed on a time and materials basis at the service rate in effect at the time of repair. A repair estimate prior to commencement of service may be requested. Return shipping will be added to the service invoice and is to be paid by the customer.

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