

ALPHA
RADIO PRODUCTS

**ALPHA
POWER**

4510
wattmeter

LABORATORY STANDARD

1.8 - 30 MHz

30 milliwatts
to
3000 Watts



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FEATURE SUMMARY

- ☉ 1.8-30 MHz frequency range
- ☉ 30mW to 3000W power measurement range
- ☉ Frequency and temperature compensated
- ☉ 9 RF power display ranges (auto switching or manual)
- ☉ Displays both Delivered and Forward power
- ☉ PEP or Tune/Carrier modes
- ☉ Typical 3% power accuracy across frequency range
- ☉ Displays computed VSWR
- ☉ Serial data interface for computer logging of power and VSWR data
- ☉ Windows application included

DESCRIPTION

The Alpha Wattmeter represents a revolution in RF power measurement. State of the art integrated circuit technology and innovative design techniques have combined to deliver a mix of features, precision and convenience previously only found in a laboratory-grade power meter. During operation, the 4510 simultaneously measures the frequency of the signal and the internal temperature of the unit, and compensates for those factors in determining measured power. This assures linearity in the accuracy of measured power under changing operating conditions. Internal calibration errors are also further reduced by use of proprietary sampling and differencing techniques.

The built-in analog meter displays forward or reverse power using nine full-scale ranges from 30mW to 3kW. The digital display continuously displays either Forward or Delivered power. All data is available for computer logging through the serial data interface.

OUTPUT & DISPLAY

The analog meter displays power in nine ranges. The full scale reading for the power ranges is: 0.3, 1, 3, 10, 30, 100, 300, 1000, 3000 Watts, respectively. These ranges can be selected manually or automatically.

POWER

The 4510 requires a nominal 12 Volt DC, 600 mA power source. It is shipped with a universal power supply that operates from 85 to 260 Volts AC, 50 or 60 Hz.

Parameter	Min	Typical	Max	Units
Frequency of operation	1.8		30	MHz
Power measurement range (full scale)	0.3		3000	Watt
Minimum detectable power		10		mW
Minimum power for accurate operation		30		mW
Power measurement accuracy (Std. Deviation.)		3	5	%
Directivity	30	35		dB
Minimum detectable SWR		1.036	1.065	
Power Supply	9	12	16	V DC
Current consumption (operate mode)		600	800	mA
Current consumption (rest mode)		10	50	mA
Size (Width x Height x Depth)	8.6	4.7	3.2	in
Weight		9.02		lbs.
Operating temperature	-20		+50	C
Storage temperature	-55		+85	C
Measurement impedance		50		Ohm
Insertion loss		0.05	0.2	dB
RF voltage (center of coax to ground)			600	V RMS
RF current			12	A RMS
Coax connectors	Field replaceable (UHF type standard)			
DC input	5.5x2.5mm coaxial power receptacle (Tip +)			
Serial interface connector	9-pin D female (IBM PC compatible)			

Typical Minimum Detectable SWR

