# SECTION I

# GENERAL INFORMATION

## 1.1 GENERAL DESCRIPTION

The Model 10W1000B Amplifier is a self-contained, broadband unit designed for laboratory applications where instantaneous bandwidth, high gain, and moderate power output are required. A gain control is located on the front panel which can be used to decrease the amplifier gain by 10dB or more. Solid state technology is used exclusively to offer significant advantages in reliability and cost. A Model 10W1000B used with a frequency swept signal source will provide 10 watts of linear swept power output from .5 to 1000MHz. Typical applications include antenna and component testing, wattmeter calibration, EMI susceptibility testing, use as a driver for frequency multipliers and high power amplifiers and as an RF source for magnetic resonance imaging studies.

## 1.2 POWER SUPPLIES

The 10W1000B has a self contained switching power supply. The input voltage range to this supply is 90-132 VAC and 180-264 VAC, 50/60 Hz. Universal or selected automatically, the operator does not have to switch or change anything on the 10W1000B when changing the input voltage. The power consumption is a nominal 500 watts. Primary circuit fusing is provided.

## 1.3 SPECIFICATIONS

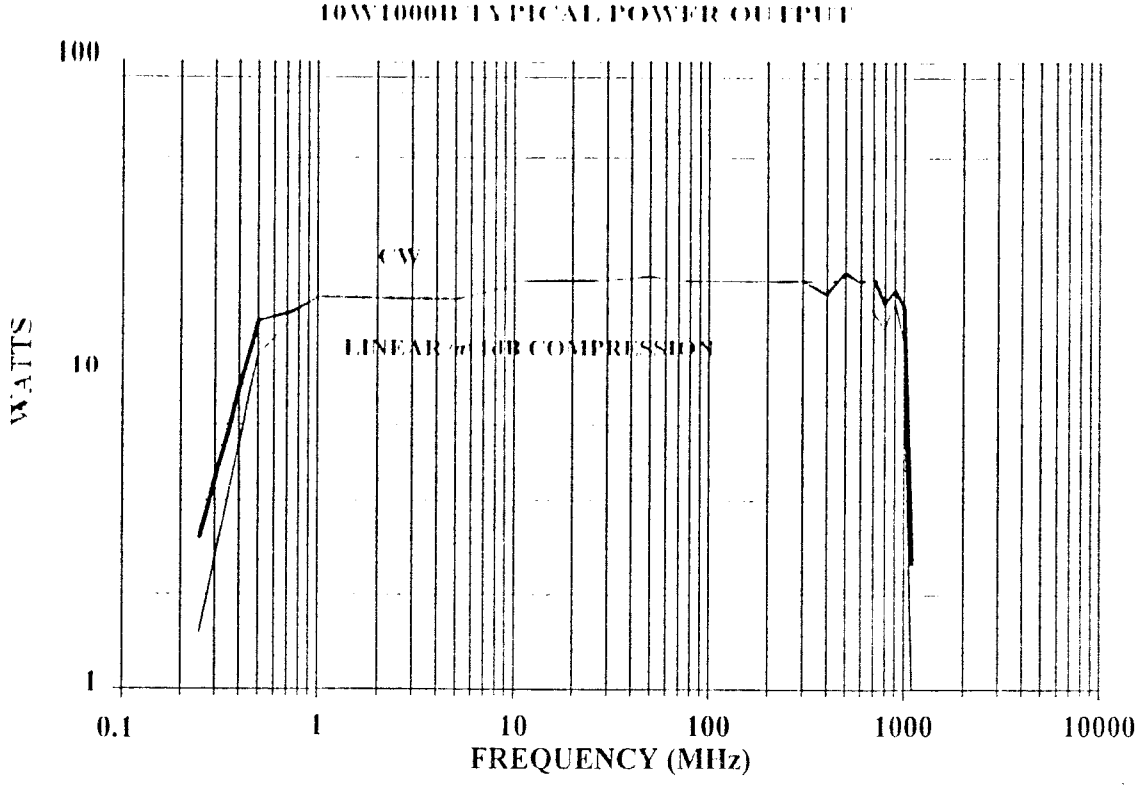
Refer to the "Amplifier Research Data Sheet" on the following page for detailed specifications.

AMPLIFIER RESEARCH
160 School House Road, Souderton, PA 18964-9990 USA
TEL 215-723-8181 • FAX 215-723-5688

MODEL 10W1000B
10 WATTS CW
500 kHz - 1000 MHz

The Model 10W1000B is a solid state, self-contained, air-cooled, broadband amplifier designed for applications where instantaneous bandwidth and high gain are required. Push-pull circuitry is utilized in the high power stages to lower distortion and improve stability. The 10W1000B, when used with an RF sweep generator, will provide a minimum of 10 watts of swept power. Included is a front panel gain control which permits the operator to conveniently set the desired output level. The 10W1000B is protected from RF input overdrive by limiting diodes and an RF input leveling circuit which controls the RF input level to the RF amplifier first stage when the RF input level is increased above 0 dBm. The RF Amplifier stages are protected from over temperature by removing the DC voltage to them if an over temperature condition occurs due to cooling blockage or fan failure. There is a fault lamp on the rear panel to indicate an over temperature condition or power supply fault has occurred. The unit can be returned to operate when the fault condition has been cleared.

The 10W1000B utilizes a switching power supply with universal and autoranging input which will automatically accept from 90 to 135 VAC or from 180 to 270 VAC at 47 to 63 Hz.




REV102695

# SPECIFICATIONS
## Model 10W1000B

| | |
|---|---|
| *POWER OUTPUT, CW* | |
| *Nominal* | *18 watts* |
| *Minimum* | *10 watts* |
| *Linear @ 1dB compression* | *10 watts minimum* |
| *FLATNESS* | *±1.0 dB typical*<br>*±1.5 dB maximum* |
| *FREQUENCY RESPONSE* | *500 kHz-1000 MHz instantaneously* |
| *INPUT FOR RATED OUTPUT* | *1.0 milliwatt maximum* |
| *GAIN (at maximum setting)* | *40 dB minimum* |
| *GAIN ADJUSTMENT (Continuous Range)* | *10 dB minimum* |
| *INPUT IMPEDANCE* | *50 ohms, VSWR 2.0:1 maximum* |
| *OUTPUT IMPEDANCE* | *50 ohms, nominal* |
| *MISMATCH TOLERANCE ** | *100% of rated power without foldback. Will operate without damage or oscillation with any magnitude and phase of source and load impedance.* |
| *MODULATION CAPABILITY* | *Will faithfully reproduce AM, FM, or pulse modulation appearing on the input signal* |
| *HARMONIC DISTORTION* | *Minus 20 dBc maximum at 10 watts* |
| *THIRD ORDER INTERCEPT POINT* | *50 dBm typical* |
| *PRIMARY POWER (selected automatically)* | *90-135/180-270 VAC*<br>*50/60 Hz, single phase*<br>*300 watts maximum* |
| *CONNECTORS* | *Type N female on front panel* |
| *COOLING* | *Forced air (self contained fans)* |
| *WEIGHT* | *16.0 kg (35 lb)* |
| *SIZE (WxHxD)* | *50.3 x 15.5 x 30.0 cm*<br>*19.8 x 6.1 x 11.8 in* |

** See Application Note #27*