Features

The Model 500W1000B is a self-contained, air-cooled, broadband, completely solid-state amplifier designed for applications where instantaneous bandwidth and high gain are required. Push-pull circuitry is utilized in all high power stages in the interest of lowering distortion and improving stability. The Model 500W1000B, when used with an RF sweep generator, will provide a minimum of 500 watts of RF power.

The Model 500W1000B is equipped with a Digital Control Panel (DCP) which provides both local and remote control of the amplifier. The DCP uses a color LCD touch screen and a single rotary knob to offer status reporting and control capability. The display provides operational presentation of Forward Power and Reflected Power plus amplifier status. Special features include a gain control, internal automatic level control (ALC) with front panel control of the ALC threshold, forward and reflective RF sample ports for precise power measurements and RF output level protection. Protection is provided by DC current level sensing of all output stages.

All amplifier control functions and status indications are available remotely in GPIB/IEEE-488 format and RS-232 hardware and fiber optic, USB and Ethernet. The buss interface connector is located on the back panel and positive control of local or remote operation is assured by a keylock on the front panel of the amplifier.

Housed in a stylish contemporary benchtop enclosure, the Model 500W1000B provides readily available RF power for typical applications such as RF susceptibility testing, antenna and component testing, watt meter calibration, and as a driver for frequency multipliers and higher power amplifiers. A safety interlock can be implemented via a rear panel connector.

The export classification for this equipment is EAR99. These commodities, technology or software are controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited.
Specifications

RATED OUTPUT POWER: 500 watts minimum

INPUT FOR RATED OUTPUT: 1.0 milliwatt maximum

POWER OUTPUT @ 3 dB compression:
Nominal 575 watts, 550 watts min up to 500 MHz; 475 watts min from 500 to 1000 MHz

POWER OUTPUT @ 1 dB compression:
Nominal 500 watts, 475 watts min up to 500 MHz; 400 watts min from 500 to 1000 MHz

FLATNESS: ±1.5 dB maximum; ±1.0 dB typical

FREQUENCY RESPONSE: 80−1000 MHz instantaneously

GAIN (at maximum setting): 57 dB minimum

GAIN ADJUSTMENT (continuous range): 25 dB minimum

INPUT IMPEDANCE: 50 ohms, VSWR 1.5:1 maximum; 1.3:1 typical

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. (See Application Note #27)

MODULATION CAPABILITY: Faithfully reproduces AM, FM, or Pulse modulation appearing on input signal.

HARMONIC DISTORTION: Minus 20 dBc maximum at 400 watts, -20 dBc typical at 500 watts

THIRD ORDER INTERCEPT POINT: 63 dBm typical

NOISE FIGURE: 8 dB maximum, 6 dB typical

PRIMARY POWER (specify voltage): 120−240 VAC, 50/60 Hz, single phase, 2200 watts

CONNECTORS
RF Input: Type N, front panel
RF Output: Type N female, front panel
Forward sample: BNC female, front (-50 dBc)
Reverse sample: BNC female, front (-50 dBc)
Remote Interfaces:
IEEE-488 24-pin female
RS-232 9-pin Subminiature D, female
Fiber Optic ST Conn Tx and Rx RS-232
USB 2.0 Type B
Ethernet RJ-45
Safety Interlock: 15-pin Subminiature D, rear panel

COOLING: Forced air (self contained fans), enters front and bottom

EXPORT CLASSIFICATION: EAR99

Model Configurations

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>RF INPUT</th>
<th>RF OUTPUT</th>
<th>WEIGHT</th>
<th>SIZE (W x H x D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500W1000B</td>
<td>N female, front</td>
<td>N female, front</td>
<td>86.2kg</td>
<td>50.3 x 47 x 61cm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(190 lb)</td>
<td>19.8 x 18.5 x 24 in</td>
</tr>
<tr>
<td>500W1000BM1</td>
<td>N female, rear</td>
<td>N female, rear</td>
<td>86.2kg</td>
<td>50.3 x 47 x 61cm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(190 lb)</td>
<td>19.8 x 18.5 x 24 in</td>
</tr>
<tr>
<td>500W1000BM2</td>
<td>Same as 500W1000B with enclosure removed for rack mounting</td>
<td>Same as 500W1000B with enclosure removed for rack mounting</td>
<td>68.0kg</td>
<td>48.3 x 44.5 x 61cm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(150 lb)</td>
<td>19 x 17.5 x 24 in</td>
</tr>
<tr>
<td>500W1000BM3</td>
<td>Same as 500W1000BM1 with enclosure removed for rack mounting</td>
<td>Same as 500W1000BM1 with enclosure removed for rack mounting</td>
<td>68.0kg</td>
<td>48.3 x 44.5 x 61cm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(150 lb)</td>
<td>19 x 17.5 x 24 in</td>
</tr>
</tbody>
</table>

Graphs

![Graph of 500W1000B Typical Gain flatness @ -20 dBm input](image-url)
500W1000B
- 500 Watts CW
- 80MHz–1000MHz

Graphs

500W1000B Harmonics @ 500 watts

Typical Input VSWR

Typical Noise Figure vs. Frequency

To order AR Products, call 215.723.8181. For an applications engineer call: 800.933.8181. Direct to Service call: 215.723.0275 or email: service@arworld.us. For Faxing Orders: 866.859.0582 (Orders Only Please) info@arworld.us

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