



## 500A250D

- 500 Watts CW
- 10kHz–250MHz
- Class A
- Portable
- Full VSWR-tolerant
- CE & RoHS Compliant
- High Efficiency

## Features

The Model 500A250D is a solid-state, self-contained, air-cooled, broadband amplifier designed for applications where instantaneous bandwidth, high gain and linearity are required. Available in a stylish, contemporary cabinet for benchtop use or with cabinet removed for rack mounting.

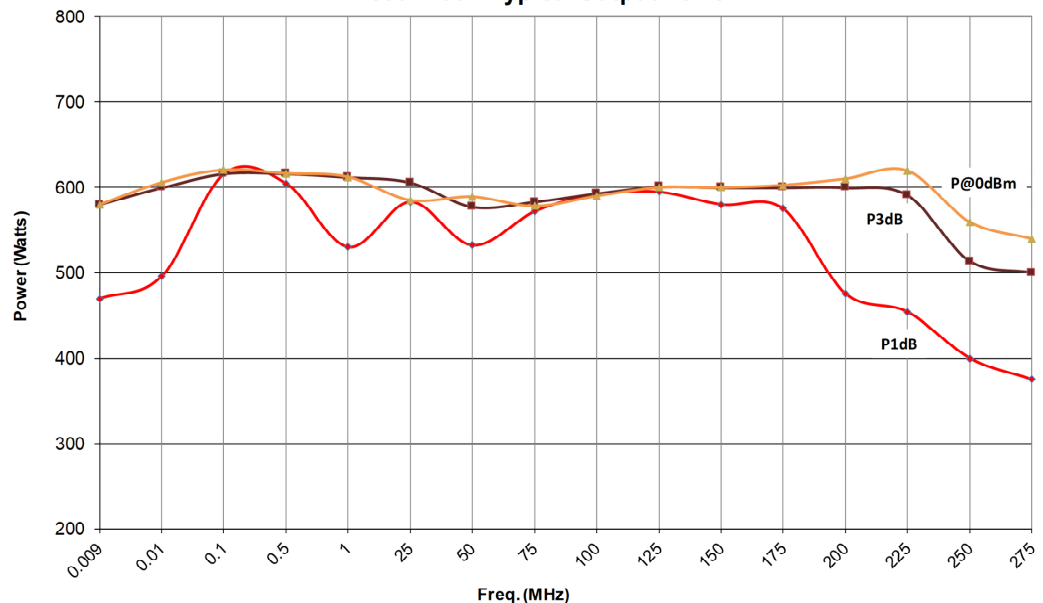
The Model 500A250D, when used with a sweep generator, will provide a minimum of 500 watts of RF power from .01-250MHz. Included is a front panel gain control which permits the operator to conveniently set the desired output level. The 500A250D is protected from RF input overdrive by an RF input leveling circuit which controls the RF input level to the RF amplifier first stage when the RF input level is increased above 0dBm. 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. The Model 500A250D 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 display to indi-

cate the operate status and fault conditions if an over-temperature or power supply fault has occurred. The unit can be returned to operate when the condition has been cleared.

All amplifier control functions and status indications are available remotely through the included Remotes Package. The Remotes Package includes GPIB/IEEE-488 format, RS-232 hardware and fiber optic, USB, and Ethernet. The bus interface connector is located on the back panel and positive control of local or remote operation is assured by a Local/Remote switch on the front panel of the amplifier. Also included with the Remotes Package is a safety interlock circuit for use with external safety switch interlocks. This circuit prevents the amplifier from going into operate mode unless the external connection is made. A jumper plug is provided for cases where this functionality is not needed. Optional RF sample ports are available to allow for easy forward and reverse power monitoring.

The export classification for this equipment is EAR99.

500A250D Typical Output Power



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ISO 9001 Certified



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## Specifications

**RATED OUTPUT POWER:**  
600W typical, 500W minimum; .01-250MHz

**POWER OUTPUT @ 3dB COMPRESSION:**  
600W typical, 500W minimum; .01-200MHz  
550W typical, 475W minimum, 200MHz-250MHz

**POWER OUTPUT @ 1dB COMPRESSION:**  
525W typical, 400W minimum; .01-200MHz  
425W typical, 375W minimum, 200MHz-250MHz

**FLATNESS:** ±1.5 dB typical, ±2.0 dB maximum

**FREQUENCY RESPONSE:** 10kHz-250 MHz instantaneously

**GAIN (at maximum setting):** 57 dB minimum

**GAIN ADJUSTMENT (Continuous Range):** 20 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. See Application Note #27.

**MODULATION CAPABILITY:** Will faithfully reproduce AM, FM, or Pulse modulation appearing on input signal.

**THIRD ORDER INTERCEPT:** 68 dBm typical

**NOISE FIGURE:** 7.0 dB typical

**HARMONIC DISTORTION:** Minus 20 dBc maximum at 400 watts; <-20dBc typical at 500 watts

**SPURIOUS:** Minus 73 dBc typical

**PRIMARY POWER:** 200-240 VAC, 50/60Hz, 2400 watts

**CONNECTORS:**  
RF Input: N female  
RF Output: N female  
RF Sample Ports: N female (optional)

**REMOTES PACKAGE:**  
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

**COOLING:** Forced air (self contained fans)

**WEIGHT:**  
With Cabinet 78 kg (171 lbs)  
Without Cabinet 58 kg (128 lbs)

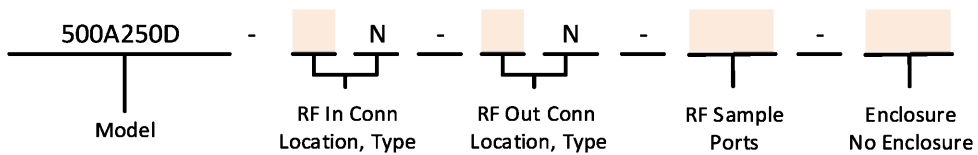
**SIZE (W x H x D):**  
With cabinet: 50.3 x 38.1 x 75.5 cm (19.8 x 15.0 x 29.7 in)  
Without Cabinet: 48.3 x 35.6 x 75.5 cm (19 x 14.0 x 29.7 in)

**ENVIRONMENTAL:**  
Operating Temperature: 5°C / +40°C  
Operating Altitude: Up to 2000M  
Shock and vibration: Normal Truck Transport

**REGULATORY COMPLIANCE:**  
EMC EN 61326-1  
Safety UL 61010-1  
CAN/CSA C22.2 #61010-1  
CENELEC EN 61010-1  
RoHS DIRECTIVE 2011/65/EU

**EXPORT CLASSIFICATION:** EAR99

## Ordering Options



CONNECTOR LOCATION	
Front	F
Rear	R

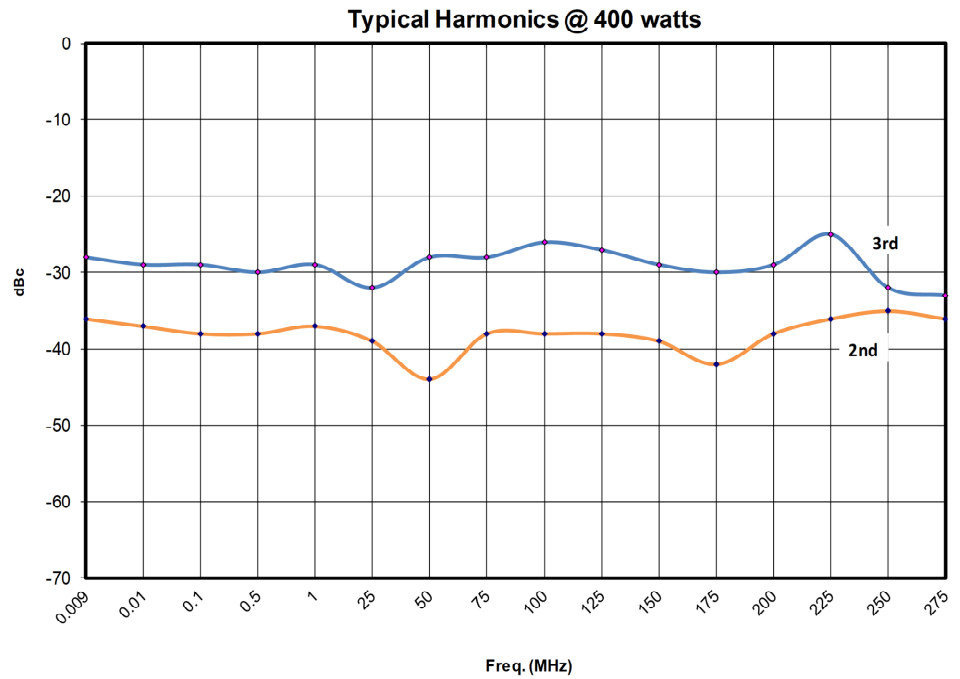
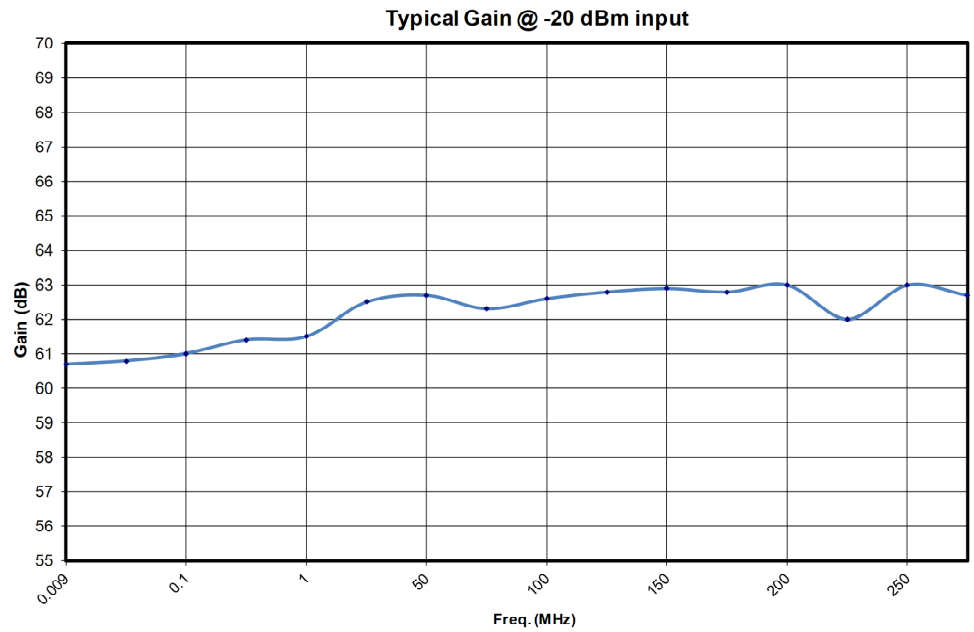
RF SAMPLE PORTS	
No RF Sample Ports	NSP
RF Sample Ports Front	SPF
RF Sample Ports Rear	SPR

ENCLOSURE	
Enclosure	E
No Enclosure	NE

Contact your AR RF/Microwave Instrumentation Sales Associate for specific model configuration pricing.

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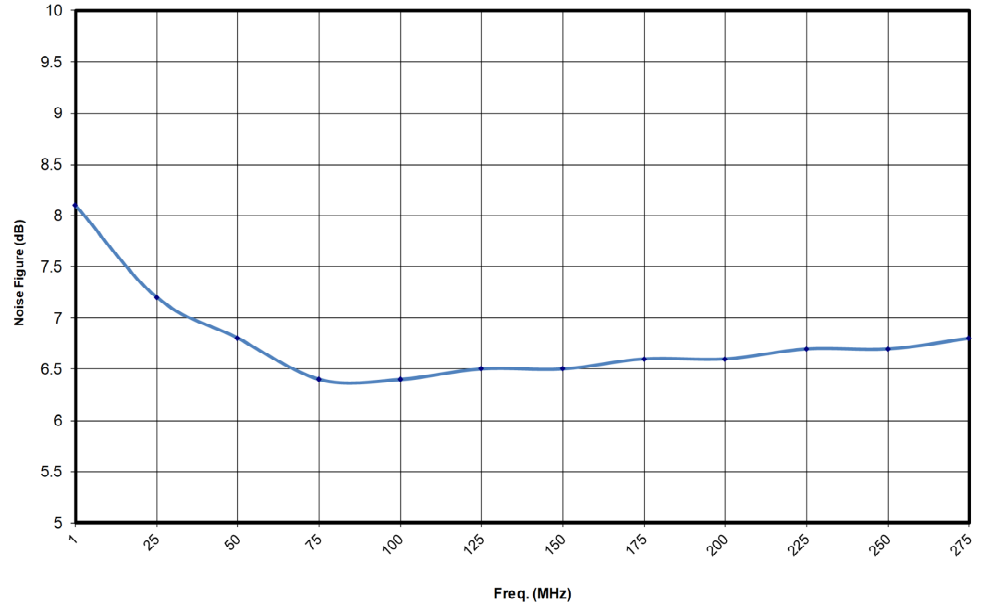


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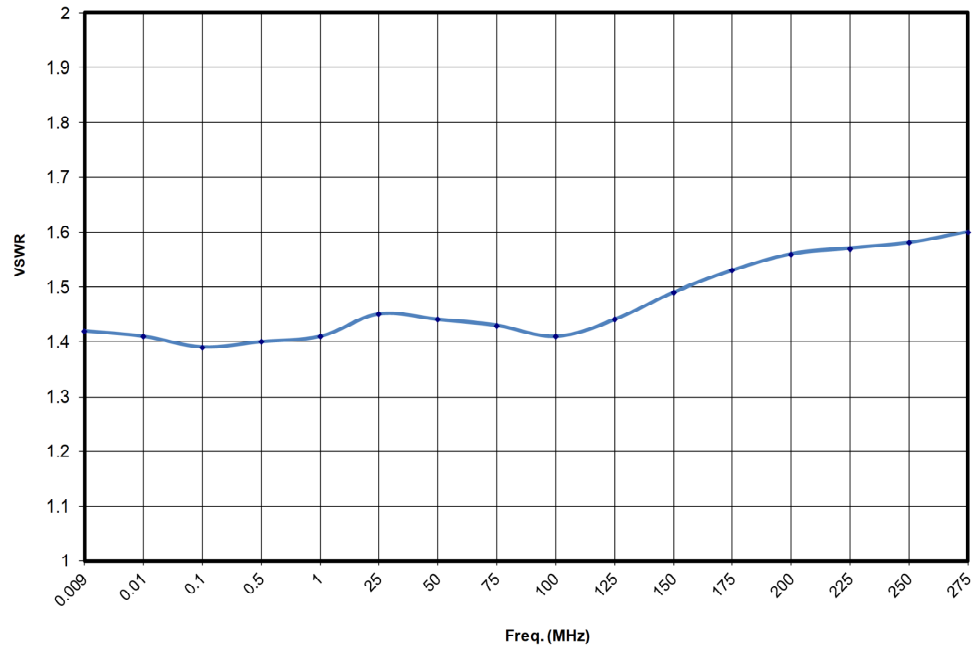
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## Graphs

### Typical Noise Figure vs. Frequency



### Typical Input VSWR



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## Envelope Drawing

