

# Amplifiers

## Model 250A400

### Features:

- 250 W CW, 0.01 – 400 MHz
- Class A design
- 100% mismatch tolerant
- Built-in fault monitoring and protection
- Remote control: Ethernet, USB, GPIB, fiber-optic serial, RS-232
- Modular design for easy maintenance and service
- Low acoustical noise

### Applications:

- EMC (military, aviation, automotive, commercial)
- Radiated and conducted EMC testing
- General purpose, antenna, and component testing
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To view our full amplifier portfolio visit:

[www.arworld.us/amplifiers](http://www.arworld.us/amplifiers)

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ISO 9001:2015 Certified

ISO 17025 :2017 Accredited



The Model 250A400 is a solid-state, Class A design, self-contained, air-cooled, broadband power amplifier designed for applications where instantaneous bandwidth, high gain and linearity are required. It will provide a minimum of 250 W across its operating bandwidth. Protection from input overdrive beyond 0 dBm is provided as well as protection from various failure conditions including over-temperature and power supply faults.

A front panel display indicates the operational status and fault conditions. All amplifier control functions, and status indications are available remotely using GPIB/IEEE-488, RS-232, fiber-optic serial, USB, or Ethernet. Interface connectors are located on the back panel. Local and remote operation is managed by a switch on the front panel.

Due to the Class A design it is ideally suited for EMC Test applications where continued operation into high VSWR loads including open and short circuits is required.

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.

Model 250A400

- 250 W
- 0.01 - 400 MHz

Electrical Specifications					
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output (0.01 - 400 MHz)	PSAT	250	325	>400	W
Input for Rated Output	Pin			1.0	mW
				0	dBm
Power Output @ 1 dB Compression	P1dB	200	250	>300	W
Power Output @ 3 dB Compression	P3dB	250	325	>400	W
Operating Frequency	BW	0.01		400	MHz
Gain (Small Signal)		54	58		dB
Gain Reduction Adjustment (when below compression)		20	25		dB
Flatness	$\Delta G$		$\pm 1.5$	$\pm 2.0$	dB
Input Impedance	Z in		50		Ohm
			1.5:1	2.0:1	VSWR
Output Impedance	Z out		50		Ohm
			2.0:1	2.5:1	VSWR
3 <sup>rd</sup> Order Intercept	IP3		65		dBm
Noise Figure	NF		8.5		dB
Harmonic Distortion @ 250 W	H2, H3		-30	-20	dBc
Spurious			-73		dBc
Power Consumption	PD			1350	W

Absolute Maximum Rating				
Exceeding any of the limits listed here may result in permanent damage to the device.				
Parameter	Minimum	Typical	Maximum	Unit
RF Drive			+13	dBm
RF Load		1:1	$\infty$	VSWR
RF Load Reflected <small>Will operate without damage or oscillation when connected to any load impedance without the aid of foldback circuitry.</small>			100	%
AC Power (single phase)	100		240	VAC
AC Power	47		63	Hz
Ambient Temperature for operation	+5		+40	°C
Storage Temperature	-20		+50	°C
Altitude			2000	m
Shock/Vibration	Normal Truck Transport			



Model 250A400

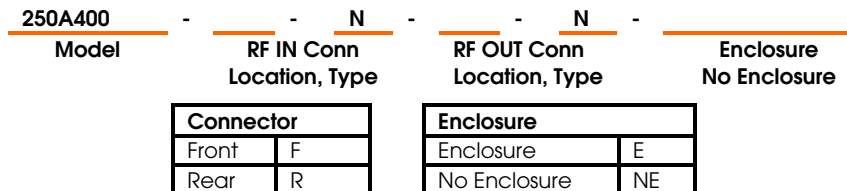
- 250 W
- 0.01 - 400 MHz

Mechanical Specifications		
Parameters		Unit
Dimensions (With Cabinet) (W x H x D)	50.3 x 20.5 x 74.9	cm
	19.8 x 8.1 x 29.5	in
Dimensions (No Cabinet) - 4U for 19" Rack	48.3 x 17.7 x 74.9	cm
	19 x 7.0 x 29.5	in
Weight (With Cabinet)	45	kg
	98	lb
Weight (No Cabinet)	33	kg
	73	lb
Cooling	Forced air (self-contained fans) Side inlets / rear outlet $\Delta t = +9^{\circ}\text{C}$ (typical)	
Acoustical Noise (Measured @ 1 meter from the front)	59 (typical)	dBA

Regulatory Compliance	
Type	Standard
EMC	EN 61326-1
Safety	UL 61010-1
	CAN/CSA C22.2 #61010-1
	CENELEC EN 61010-1
RoHS	Directive 2011/65/EU
Export	EAR99

Connector interfaces	
Function	Type
RF input	N female (50 $\Omega$ )
RF output	N female (50 $\Omega$ )
IEEE-488	24-pin female
RS-232	9-pin subminiature D female
RS-232 (fiber optic)	ST
USB 2.0	Type B
Ethernet	RJ-45
Interlock	15-pin subminiature D female

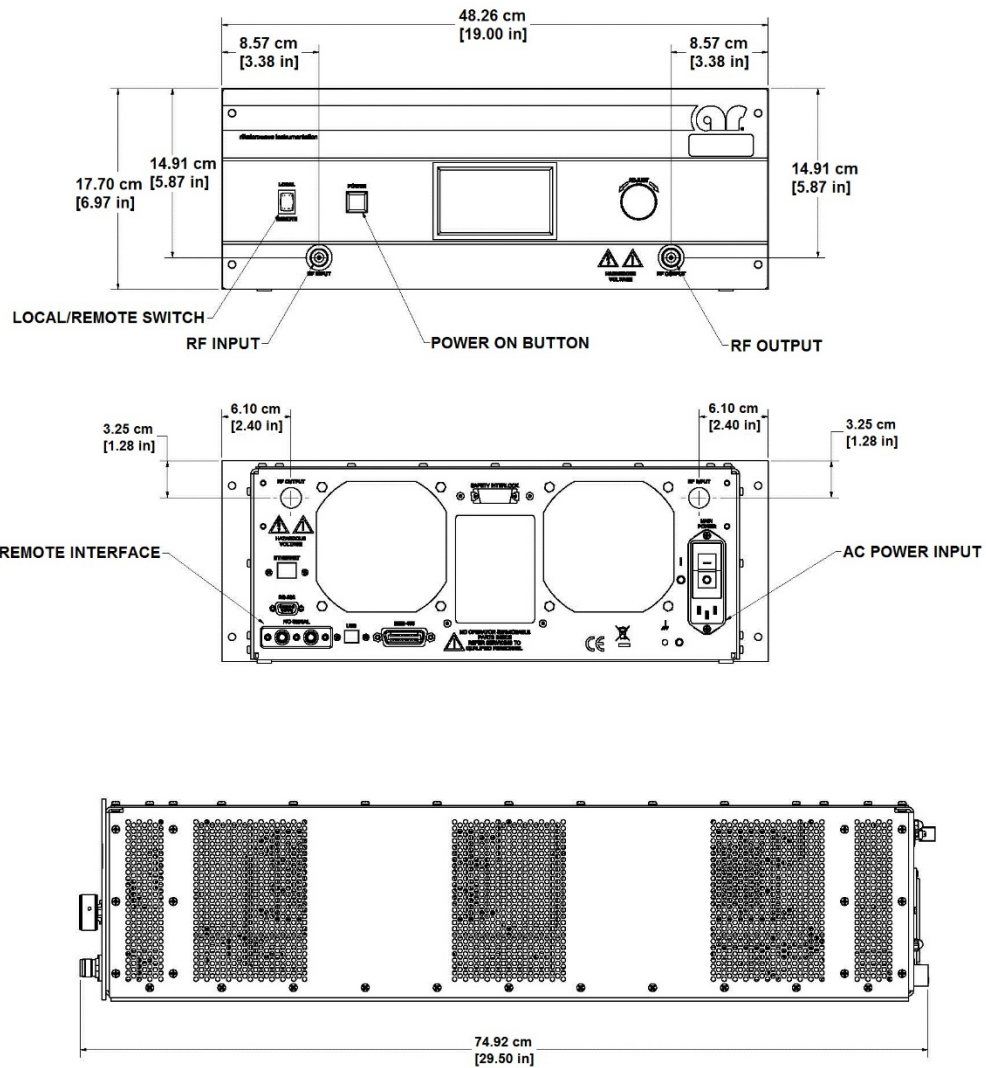
Ordering Options



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## Envelope Drawing

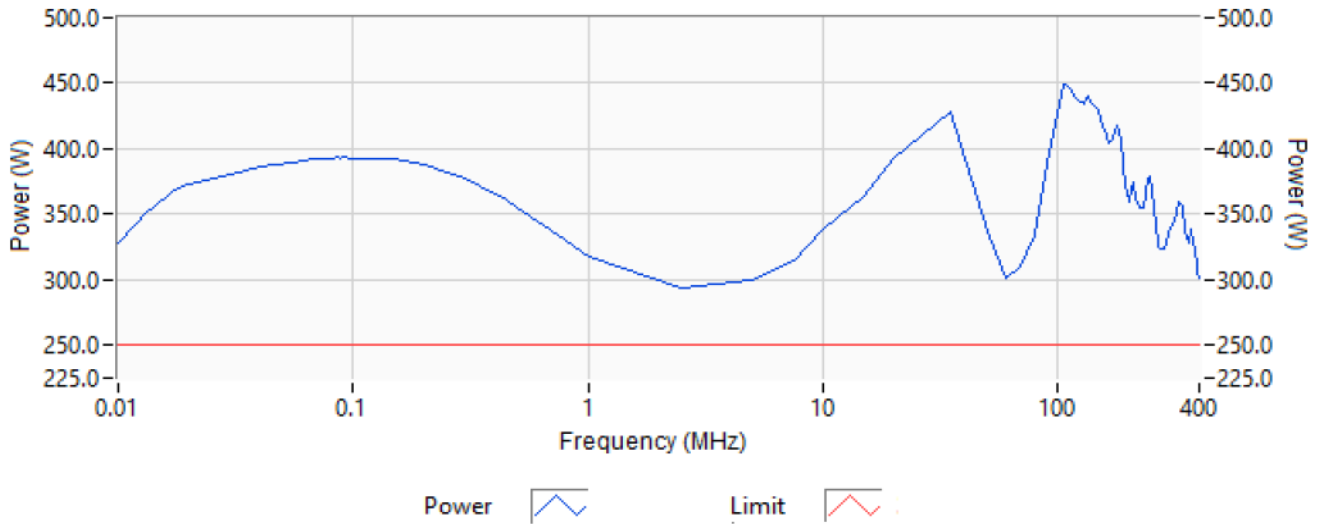


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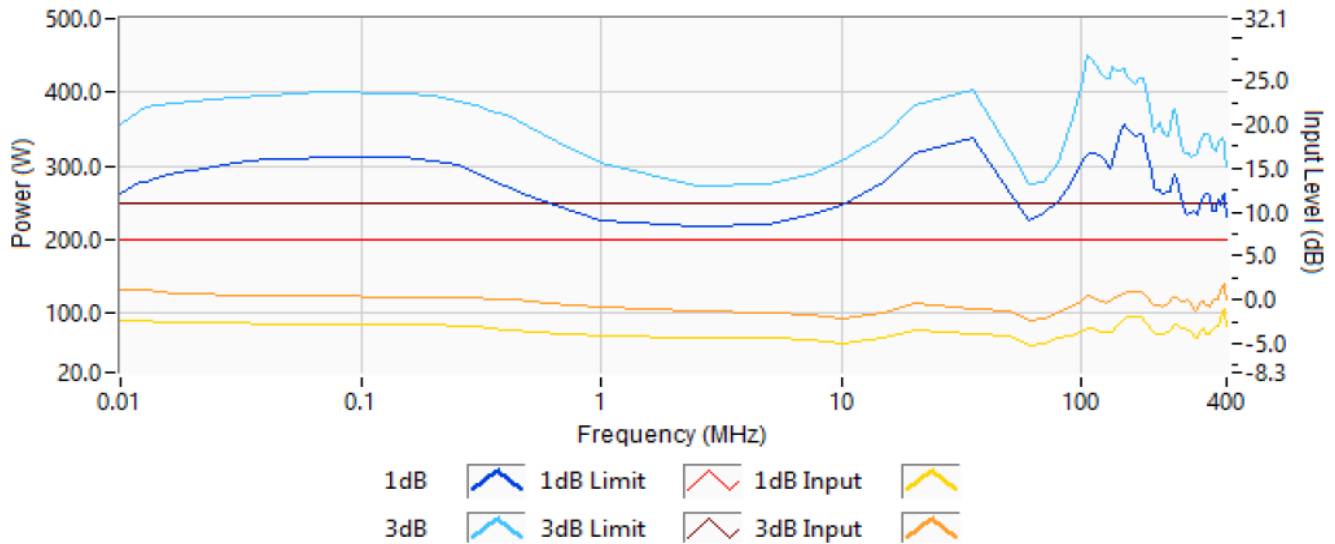
**TYPICAL PSAT POWER @ 0dBm INPUT**

Input Power: 0dBm, Output Power: 250 Watts Minimum



**TYPICAL POWER @ P1dB, P3dB COMPRESSION**

1dB: 200Watts Minimum, 3dB: 250Watts Minimum

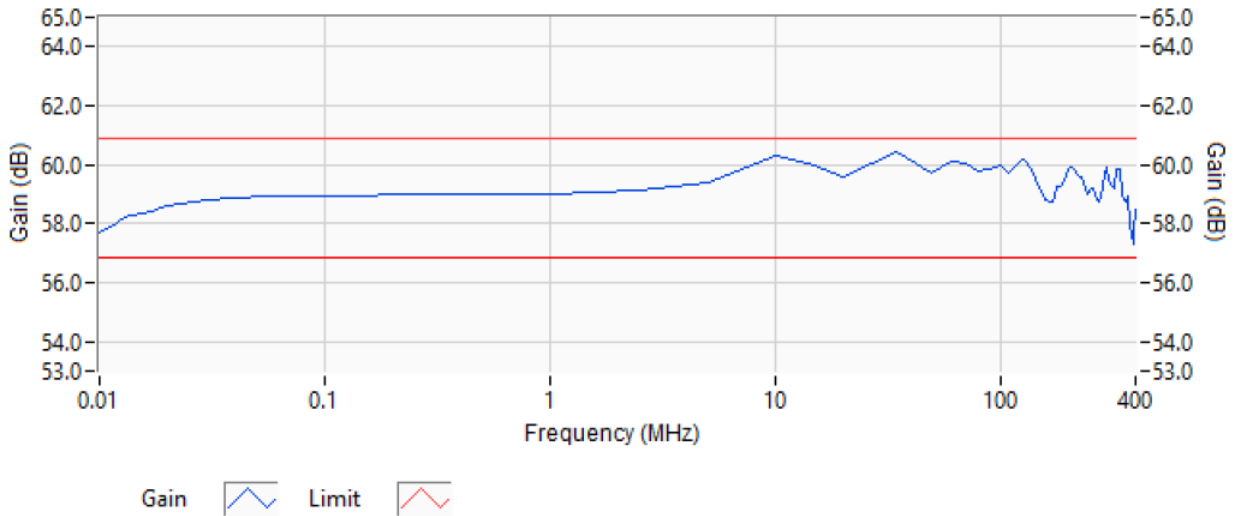


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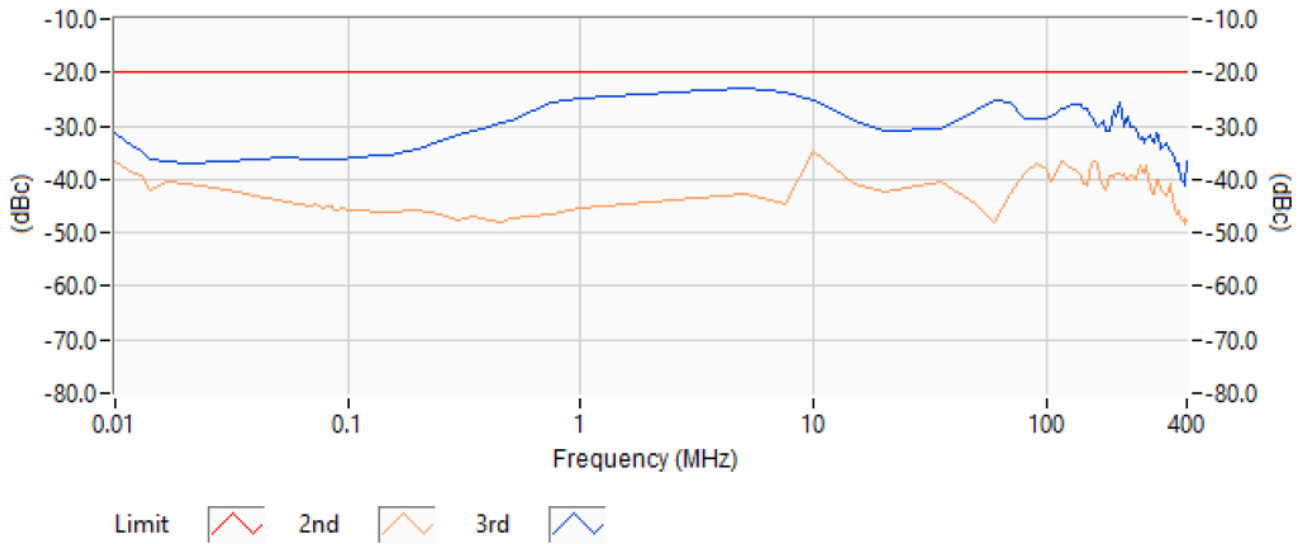
**TYPICAL SMALL SIGNAL GAIN @ -20dBm INPUT**

Specification +/- 2.00dB      Measured +/- 1.55dB



**TYPICAL 2<sup>nd</sup> & 3<sup>rd</sup> HARMONICS @ 250 WATTS OUTPUT**

-20dBc Max @ 200W (0.01 - 400MHz)



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