

Amplifiers

Model 500W1000C

Features:

- 500 Watts CW, 80 – 1000 MHz
- Class A design
- 100% mismatch tolerant
- Built-in fault monitoring, logging and protection
- Touch screen display
- RF sample ports with forward and reverse power monitoring
- VSWR monitor with user settable limit
- User settable ALC
- Remote control: Ethernet, USB, GPIB, fiber-optic serial, RS-232
- Modular design for easy maintenance and service
- Low acoustical noise
- 3 Year Warranty

Applications:

- EMC (military, aviation, automotive, commercial)
- Radiated and conducted EMC testing
- General purpose, antenna, and component testing
- 4G LTE, 5G NR (FR1/FR2), OFDM, PSK/QAM, Wi-Fi etc.

To view our full amplifier portfolio visit:
www.ar.ametek-cts.com

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ISO 9001: 2015 Certified
ISO 17025 :2017 Accredited

The Model 500W1000C is a self-contained, air-cooled, solid-state Class A broadband power amplifier designed for applications demanding wide bandwidth coverage, high gain, and linear performance. It delivers a minimum of 500 W over a frequency range of 80 to 1000 MHz. The unit includes safeguards against input overdrive beyond 0 dBm, as well as various fault conditions such as excessive temperature and power supply issues.

A scalable, module-based design combined with advanced forced air cooling ensures reliable operation and long-term performance in demanding test environments. A clear front panel display provides immediate visibility of operating status and fault conditions, enabling fast setup and confident operation. For maximum flexibility, all control and monitoring functions can be accessed either locally via the front panel or remotely through a wide range of standard interfaces, including GPIB/IEEE 488, RS 232, fiber optic serial, USB, and Ethernet.

This Class A amplifier is engineered for EMC immunity, communications, and aerospace & defense testing, delivering exceptional stability and linearity under demanding load conditions, including high VSWR, open, or short circuits. Low spurious emissions, high spectral purity, and wideband performance make it ideal for modern wireless and 5G applications.

Export classification for this device is EAR99. These goods, technologies, or software are regulated under U.S. Export Administration Regulations, and unauthorized diversion is prohibited by U.S. law.



Model 500W1000C

- 500 W
- 80 MHz - 1000 MHz



Electrical Specifications					
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output	PSAT	500	600	>620	W
Input for Rated Output	Pin			1	mW
				0	dBm
Power Output @ 3 dB Compression (80 – 700 MHz)	P3dB	525	575	>600	W
Power Output @ 3 dB Compression (700 – 1000 MHz)	P3dB	500	475	>500	W
Power Output @ 1 dB Compression (80 – 700 MHz)	P1dB	450	500	>550	W
Power Output @ 1 dB Compression (700 – 1000 MHz)	P1dB	425	450	>480	W
Operating Frequency	BW	80		1000	MHz
Gain (Small Signal)			57		dB
Gain Reduction Adjustment (when below gain compression)		25			dB
Flatness @ small signal (-20 dBm input)	ΔG		±1.0	±1.5	dB
Input Impedance	Z in		50		Ohm
			1.3:1	1.5:1	VSWR
Output Impedance	Z out		50		Ohm
			2.0:1	2.5:1	VSWR
3 rd Order Intercept	IP3		+63		dBm
Noise Figure	NF		8		dB
Harmonic Distortion @ 425 W	H2, H3		-30	-20	dBc
Spurious			-73		dBc
Power Consumption	Pd			1800	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		0	+13	dBm
RF Load		1:1	∞	VSWR
RF Load Reflected Will operate without damage or oscillation when connected to any load impedance without the aid of foldback circuitry.			100	%
AC Power (single phase)	100		240	VAC
AC Power	47	60	63	Hz
Ambient Temperature	+5	+25	+40	°C
Storage Temperature	-20		+50	°C
Altitude			2000	M
Shock/Vibration	Normal Truck Transport			



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Mechanical Specifications		
Parameters	Typical	Unit
Dimensions (With Cabinet) (W x H x D)	50.3 x 38.1 x 74.9	cm
	19.8 x 15.0 x 29.5	in
Dimensions (No Cabinet) – 8U for 19" Rack	48.3 x 35.6 x 74.9	cm
	19.0 x 14.0 x 29.5	in
Weight (With Cabinet)	69.4	kg
	153	lb
Weight (No Cabinet)	50.8	kg
	112	lb
Cooling	Forced air (self-contained fans)	
Acoustic Noise Measured @ 1 Meter	60	dBA

Connector Interfaces	
Function	Type
RF Input	N, female, rear (50 Ω) (option front)
RF Output	N, female, rear (50 Ω) (option front)
IEEE-488	24-pin
RS-232	9 pin subminiature D
Ethernet	RJ-45
RS-232 (fiber optic)	ST
USB 2.0	Type B
Interlock	15-pin subminiature D

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

Ordering Options

500W1000C	-	N	-	N	-		
Model		RF IN Conn Location, Type		RF OUT Conn Location, Type		Enclosure No Enclosure	RF Sample Ports
		Connector			Enclosure	RF Sample Ports	
		Front	F			Enclosure	E
		Rear	R			No Enclosure	NE
						RF Sample Ports	
						Front	SPF
						Rear	SPR

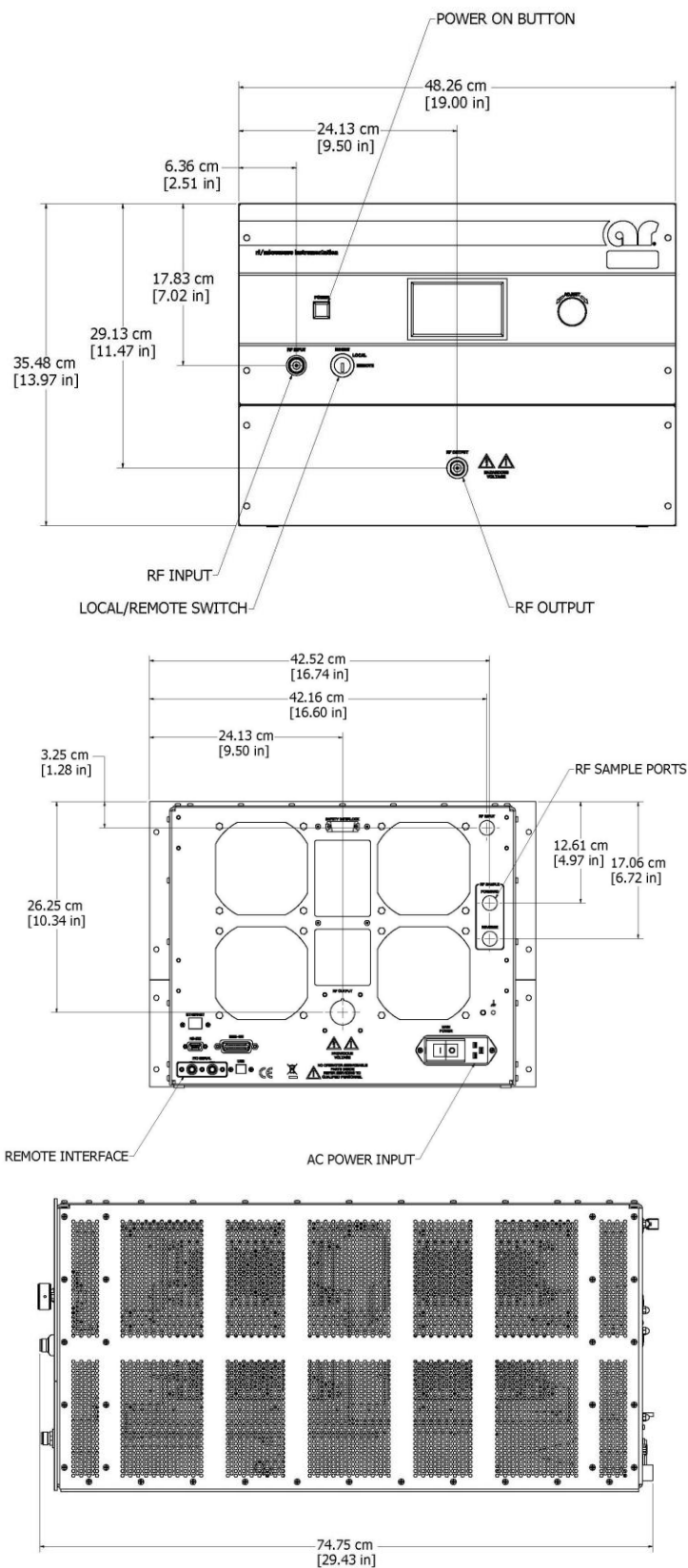


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Envelope Drawing

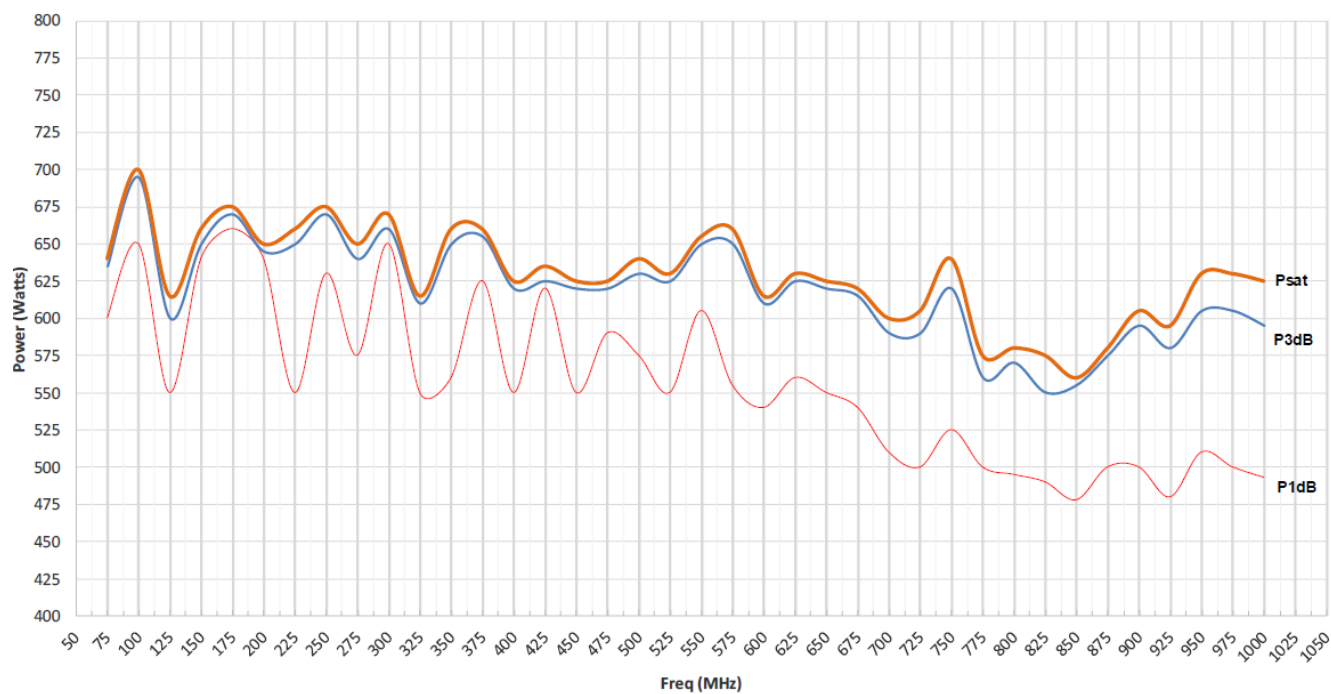


Model 500W1000C

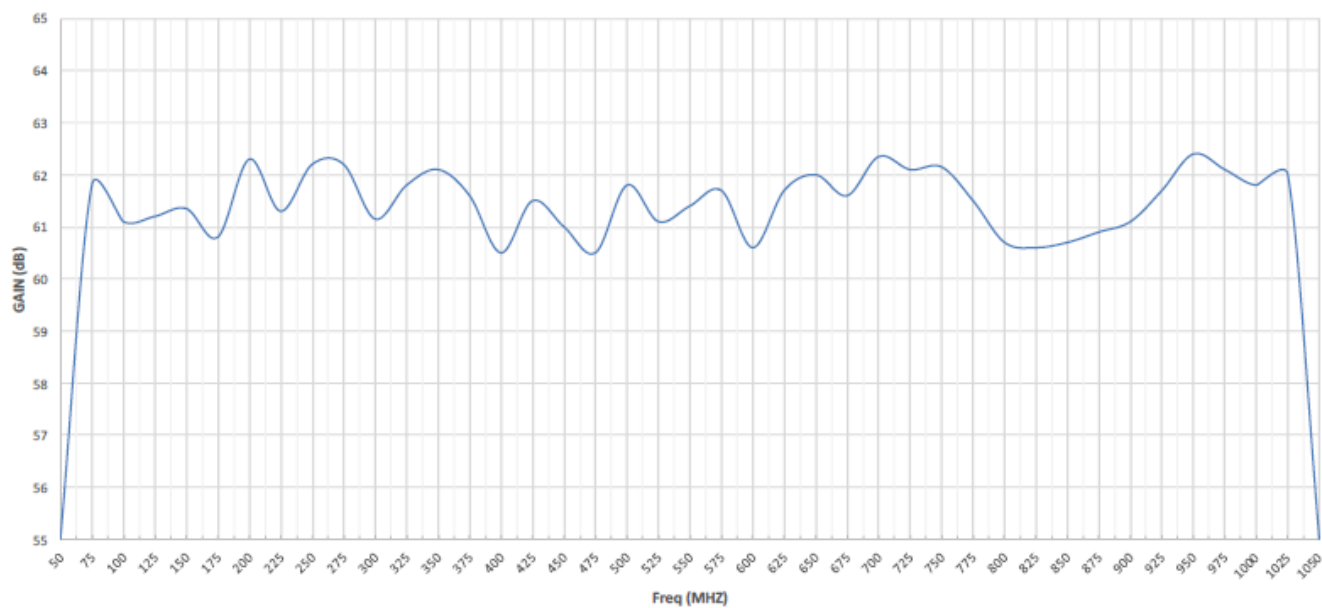
- 500 W
- 80 MHz - 1000 MHz



TYPICAL OUTPUT POWER (P1dB, P3dB Compression)

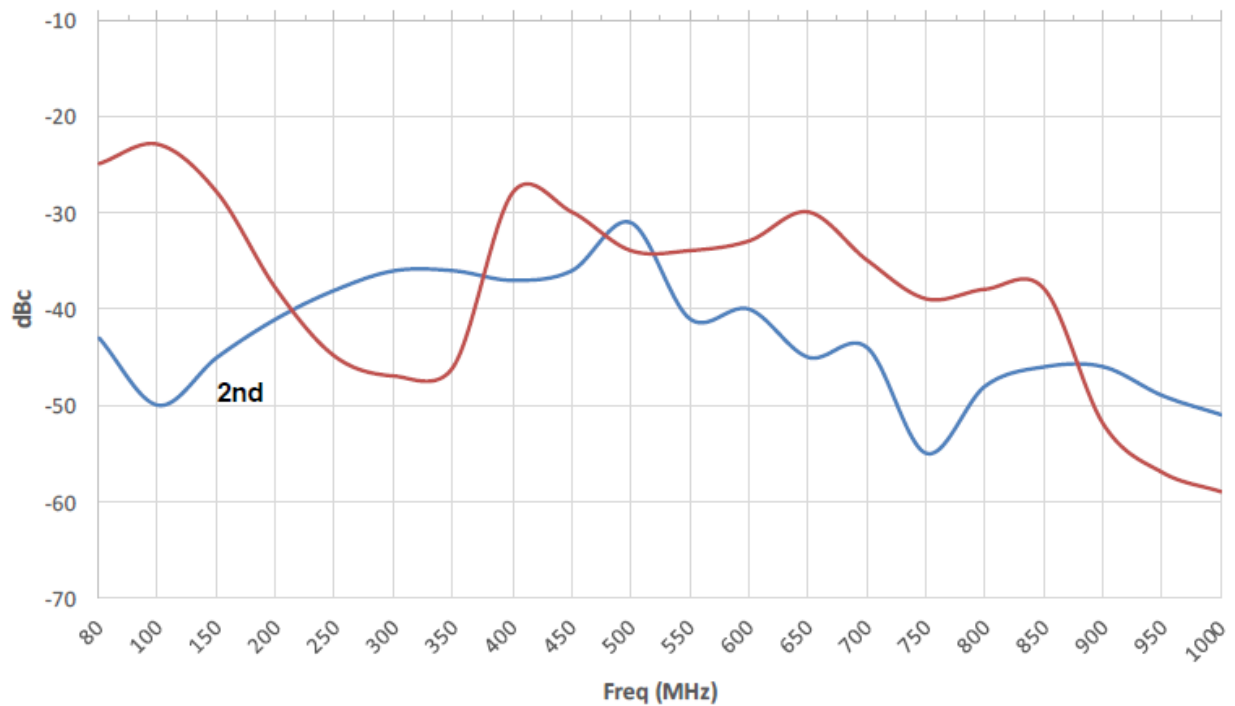


TYPICAL SMALL SIGNAL GAIN @ -20 dBm INPUT

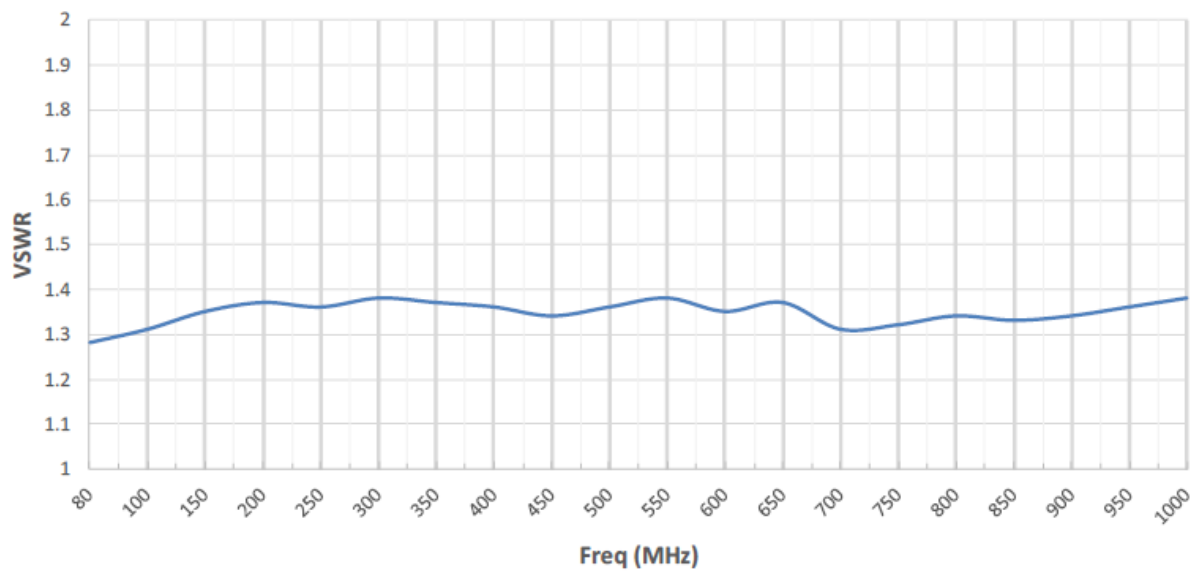


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TYPICAL HARMONICS @ 425 WATTS



TYPICAL INPUT VSWR



- 500 W
- 80 MHz - 1000 MHz

TYPICAL NOISE FIGURE

