

Amplifiers

Model 500S1G2z5A

Features:

- 500 W CW, 1.0 – 2.5 GHz
- 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

To view our full amplifier portfolio visit:

www.arworld.us/amplifiers

AR RF/Microwave Instrumentation

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ISO 9001:2015 Certified

ISO 17025 :2017 Accredited



The Model 500S1G2z5A 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 500S1G2z5A, when used with a sweep generator, will provide a minimum of 500 watts of RF power. Included is a front panel gain control which permits the operator to conveniently set the desired output level and an internal automatic level control (ALC) with local or remote control of the ALC threshold. The 500S1G2z5A 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 500S1G2z5A 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 indicate 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 hardwire 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.

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.

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- 500 W
- 1.0 - 2.5 GHz

Electrical Specifications					
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output (1.0 – 2.5 GHz)	PSAT	500	550		W
Input for Rated Output	Pin			1	mW
				0	dBm
Power Output @ 1 dB Compression	P1dB	350	400		W
Power Output @ 3 dB Compression	P3dB	450	550		W
Operating Frequency	BW	1.0		2.5	GHz
Gain (Small Signal)		57			dB
Gain Reduction Adjustment (when below compression)		20			dB
Flatness	ΔG		± 1.5	± 2.0	dB
Input Impedance	Z in		50		Ohm
			2.0:1		VSWR
Output Impedance	Z out		50		Ohm
3 rd Order Intercept	IP3		66		dBm
Noise Figure	NF		10		dB
Harmonic Distortion @ 350 W	H2, H3			-20	dBc
Harmonic Distortion @ 500 W			-20		dBc
Spurious			-73		dBc
Power Consumption	PD			2250	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 <i>Will operate without damage or oscillation when connected to any load impedance without the aid of foldback circuitry.</i>			25	%
AC Power (single phase)	100		240	VAC
AC Power	47		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		Unit
Dimensions (With Cabinet) (W x H x D)	50.3 x 37.3 x 74.9	cm
	19.8 x 14.7 x 29.5	in
Dimensions (No Cabinet) - xU for 19" Rack	48.3 x 35.5 x 74.9	cm
	19 x 14.0 x 29.5	in
Weight (With Cabinet)	64.9	kg
	143	lb
Weight (No Cabinet)	50.3	kg
	111	lb
Cooling	Forced air (self-contained fans) Side inlets / rear outlet $\Delta t = +7^{\circ}\text{C}$ (typical)	
Acoustical Noise (Measured @ 1 meter from the front)	56 (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 Ω)
RF output	7-16 female (50 Ω)
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

500S1G2z5A - N - 716 - Enclosure
 Model RF IN Conn RF OUT Conn Enclosure
 Location, Type Location, Type No Enclosure

Connector	
Front	F
Rear	R

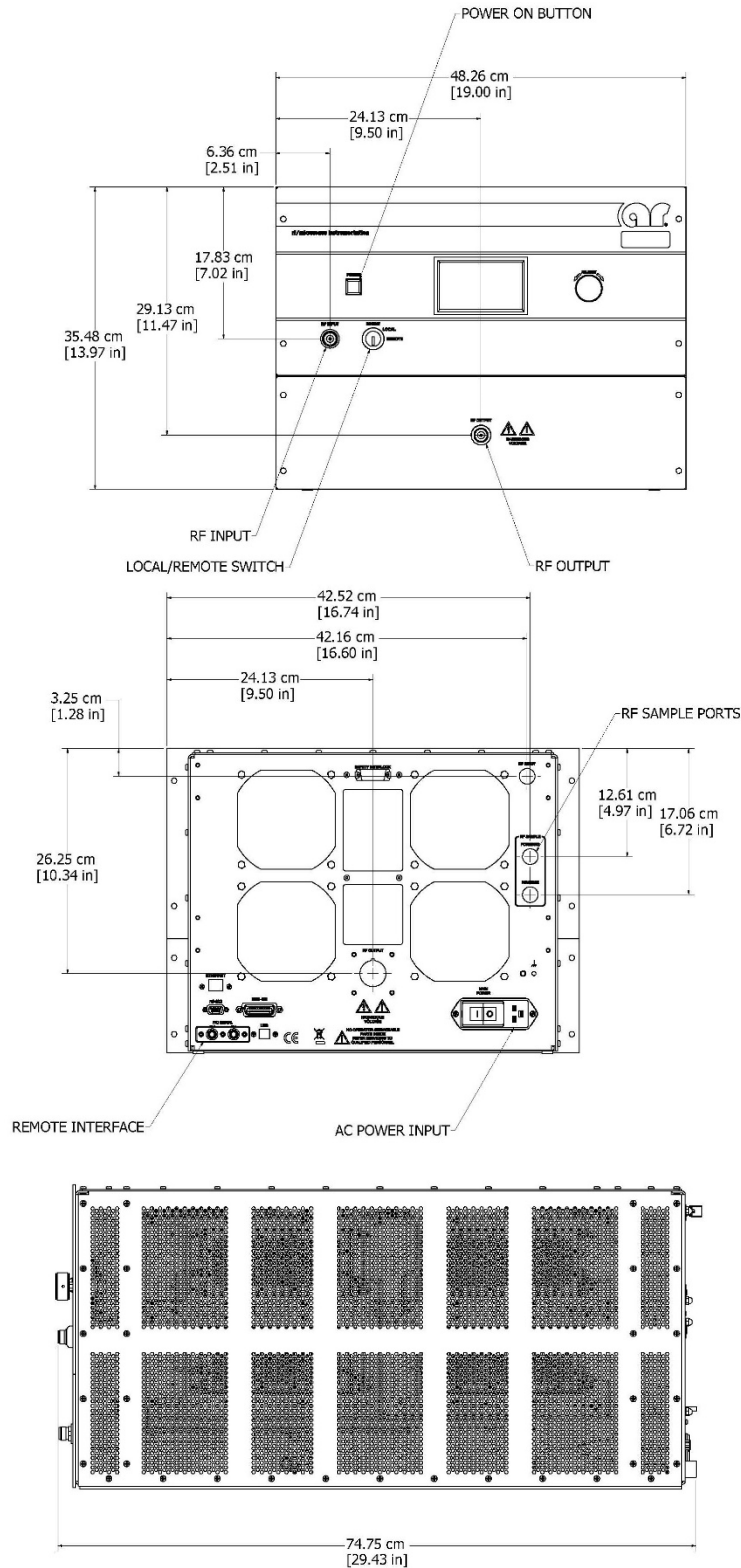
Enclosure	
Enclosure	E
No Enclosure	NE



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Envelope Drawing



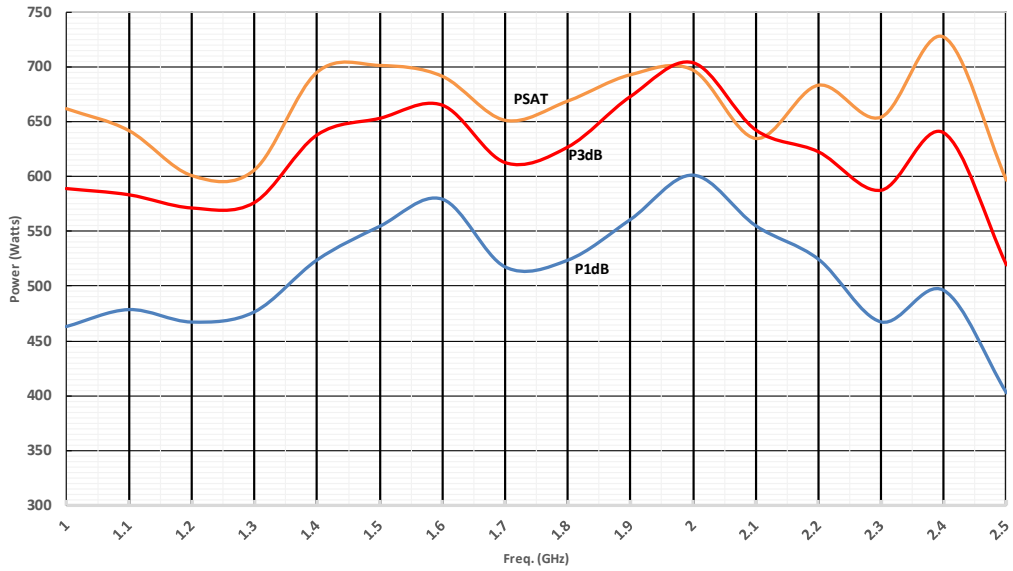
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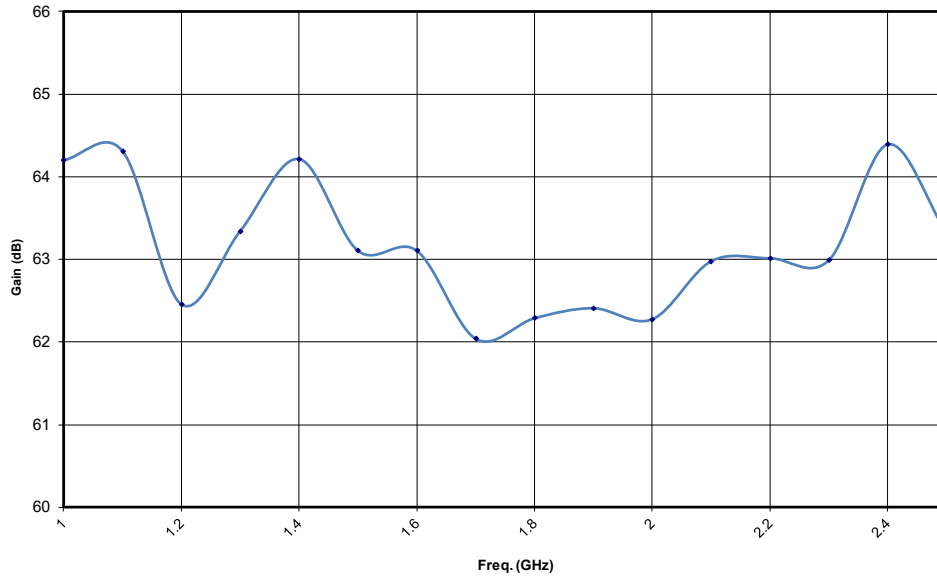
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TYPICAL PSAT POWER @ 0dBm INPUT

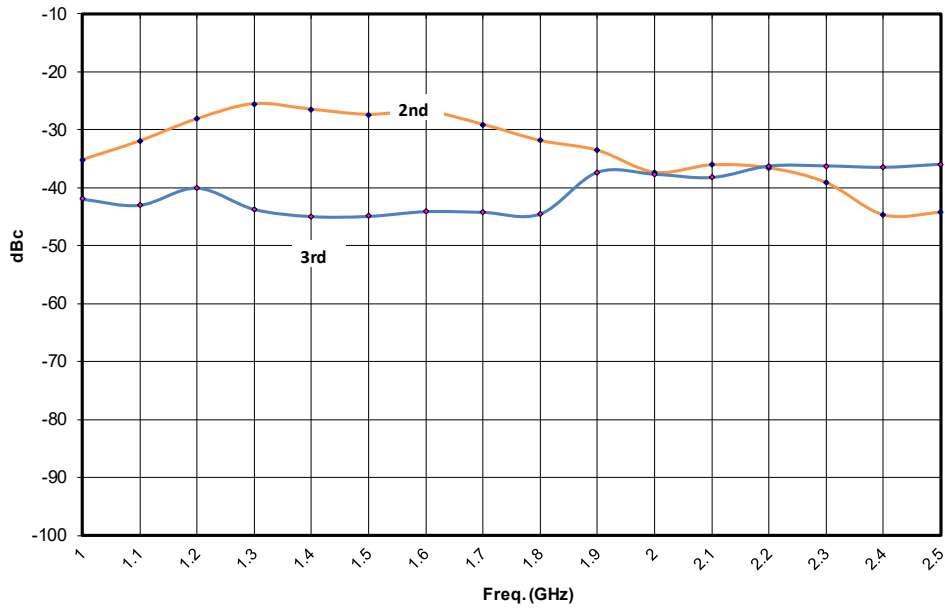


TYPICAL SMALL SIGNAL GAIN @ -20dBm INPUT

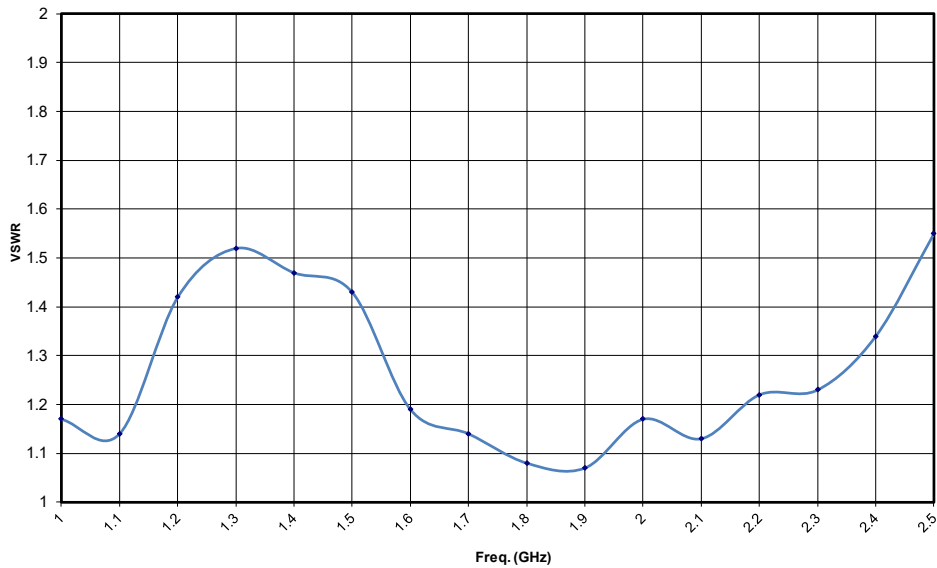


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TYPICAL HARMONICS @ 350 WATTS OUTPUT



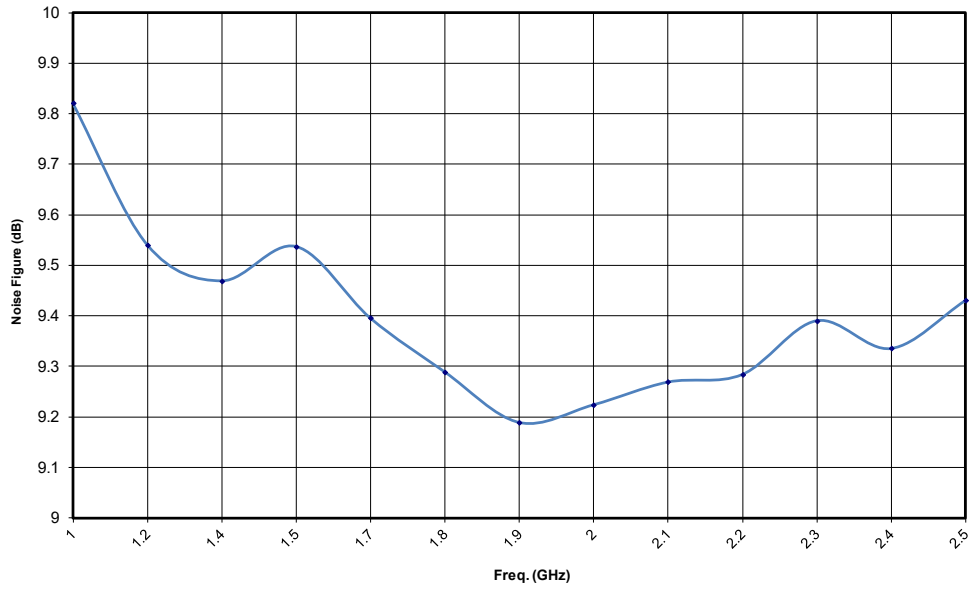
TYPICAL INPUT VSWR



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TYPICAL NOISE FIGURE



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