

Amplifiers

Model 500S1G6C

Features:

- 500 W CW, 1.0 - 6.0 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
160 Schoolhouse Rd
Souderton, PA 18964
215.723.8181
info@arworld.us
www.arworld.us
ISO 9001:2015 Certified
ISO 17025 :2017 Accredited

The Model 500S1G6C 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 500 W across its operating bandwidth of 1.0 - 6.0 GHz. 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.

This is a multiple purpose amplifier. The low level of spurious signals and linearity make it ideal for use as a driver in testing wireless and communication components and subsystems. By covering such a wide bandwidth, it is suitable for 5G testing applications. Due to the Class A design, it is also suitable 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 3A001. 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.

- 500 W
- 1.0 - 6.0 GHz

Electrical Specifications					
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output (1.0 - 6.0 GHz)	PSAT	500	550	>600	W
Input for Rated Output	Pin			1	mW
				0	dBm
Power Output @ 3 dB Compression	P3dB	475	525	>575	W
Power Output @ 1 dB Compression	P1dB	400	450	>500	W
Operating Frequency	BW	1.0		6.0	GHz
Gain (Small Signal)		59	62	64	dB
Gain Reduction Adjustment (when below gain compression)		10	12	15	dB
Flatness @ small signal (-20 dBm input)	ΔG		± 2.0	± 2.5	dB
Input Impedance	Z in		50		Ohm
			1.5:1	2.0:1	VSWR
Output Impedance	Z out		50		Ohm
3 rd Order Intercept	IP3		+63		dBm
Noise Figure	NF		10		dB
Harmonic Distortion @ 400 W for entire band except 2 - 3 GHz	H2, H3		-30	-22	dBc
Harmonic Distortion @ 400 W for 2 - 3 GHz	H2, H3		-22	-18	dBc
Spurious			-73		dBc
Power Consumption	P _D			4200	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	6:1	VSWR
RF Load Reflected Will operate without damage or oscillation when connected to any load impedance without the aid of foldback circuitry. However, mismatch above 6:1 may limit output to 250 W reflected power.			50	%
AC Power (single phase)	200		240	VAC
AC Power	47		63	Hz
Ambient Temperature	+5	+25	+35	°C
Storage Temperature	-20		+50	°C
Altitude			1000	m
Shock/Vibration	Normal Truck Transport			



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Mechanical Specifications		
Parameters	Typical	Unit
Dimensions (26U Rack) (W x H x D)	57.3 x 136.0 x 67.1	cm
	22.6 x 53.5 x 26.5	in
Weight	177	kg
	390	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)	62 (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	3A001

Connector interfaces	
Function	Type
RF input	N female (50 Ω), rear
RF output	7-16 DIN female (50 Ω), rear
RF sample	N female (50 Ω), rear (57 dB typical)
IEEE-488	24-pin
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
AC Input	5-meter harmonized power cord supplied with amplifier. The power cord is left open-ended to allow for facility power connection of user's choice.



Model 500S1G6C

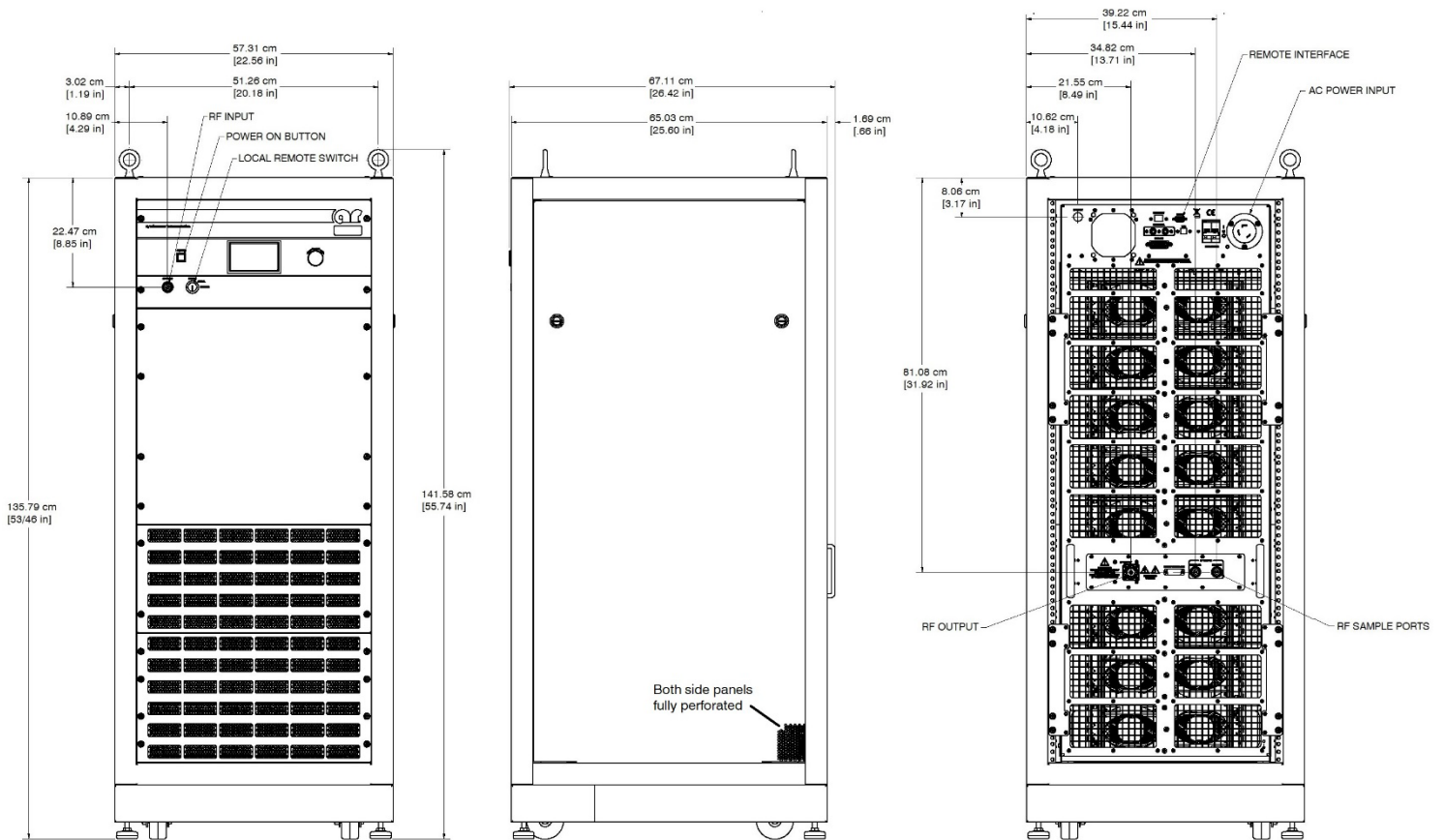
- 500 W
- 1.0 - 6.0 GHz

Ordering Options

500S1G6C	-	N	-	R	-	7-16	-	RF
Model		RF IN Conn Location, Type		RF OUT Conn Location, Type		RF Sample Ports		
		Connector Location		RF Sample Ports				
		Front	F	Front	SPF			
		Rear	R	Rear	SPR			

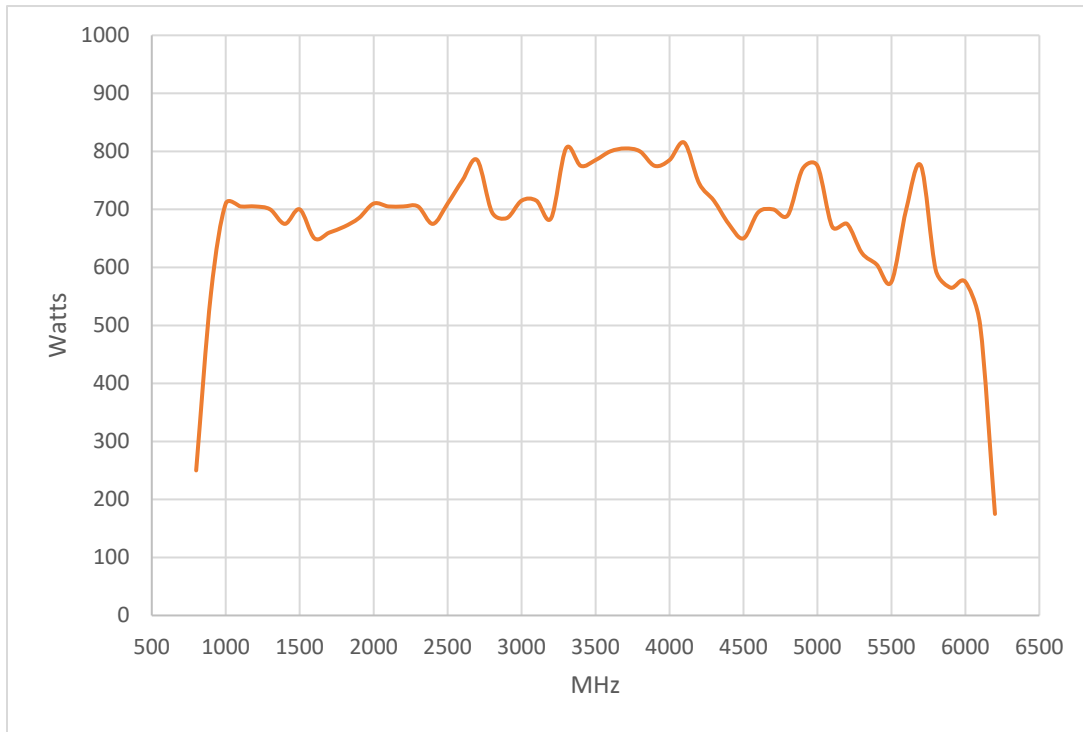
Contact your AR RF/Microwave Instrumentation Sales Associate for specific model configuration pricing.

Envelope Drawing

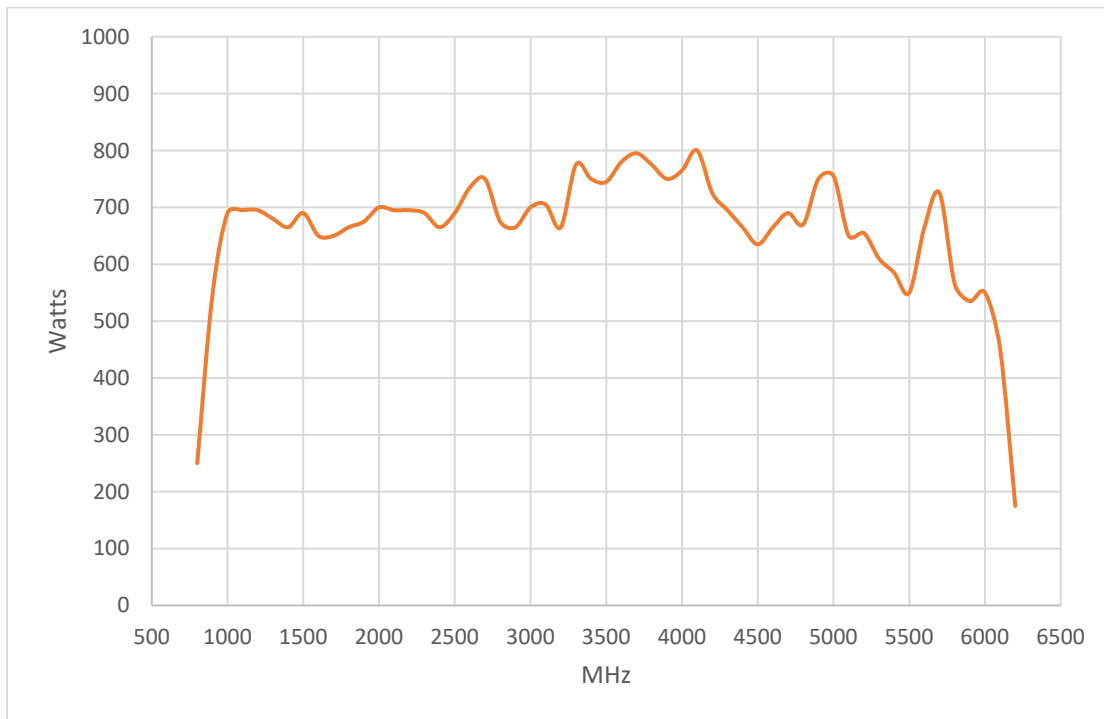


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TYPICAL PSAT POWER @ 0 dBm INPUT

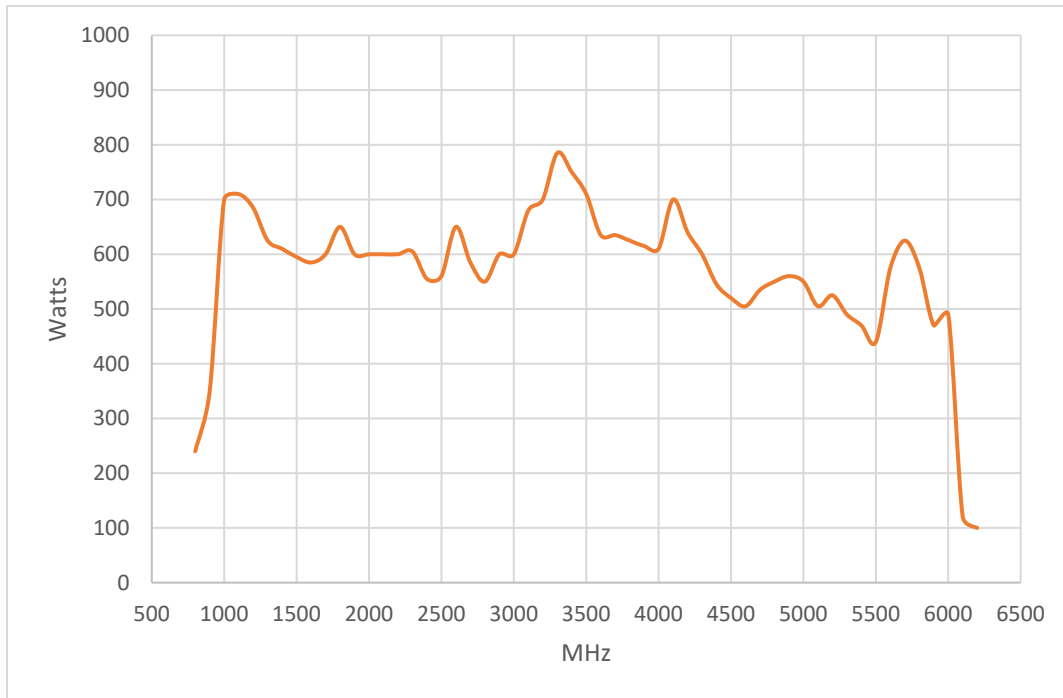


TYPICAL POWER @ P3 dB COMPRESSION

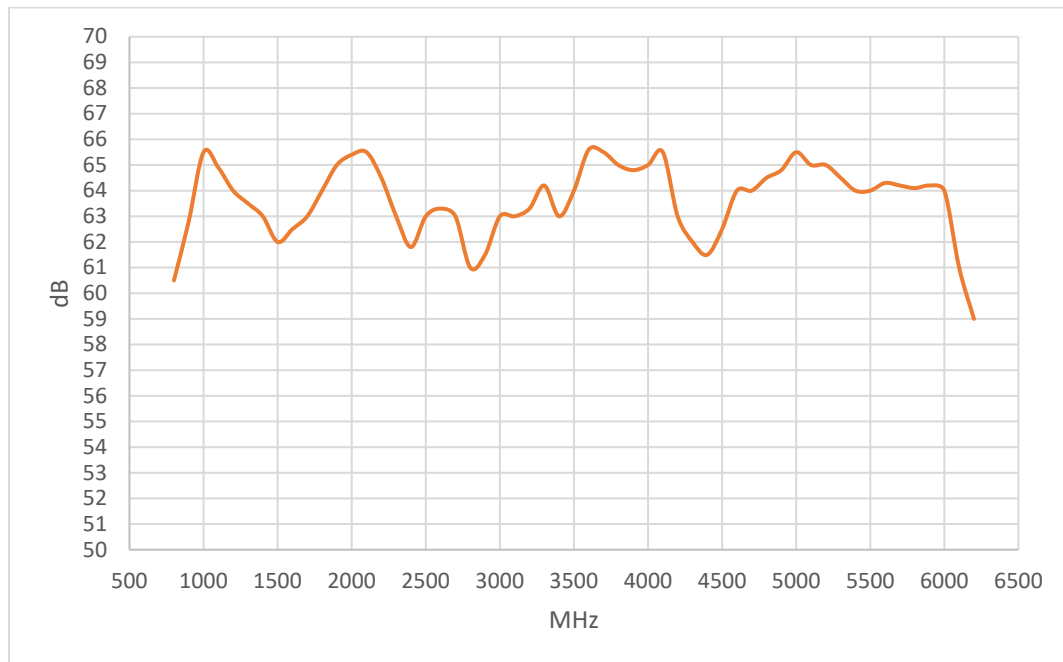


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TYPICAL POWER @ P1 dB COMPRESSION



TYPICAL SMALL SIGNAL GAIN @ -20 dBm INPUT

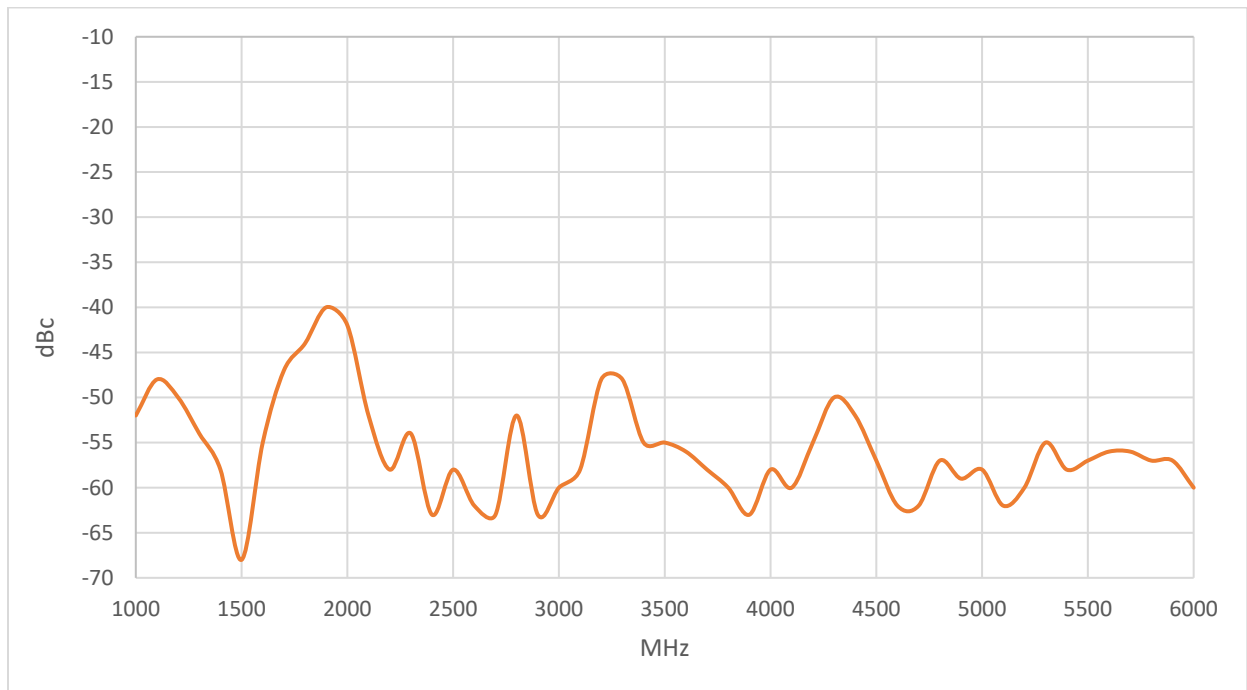


- 500 W
- 1.0 - 6.0 GHz

TYPICAL 2ND HARMONIC @ 400 W



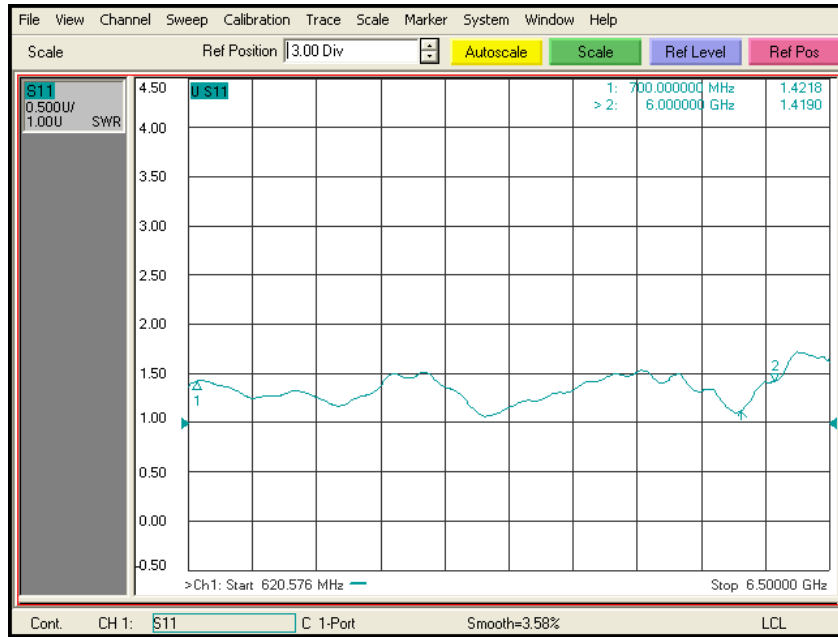
TYPICAL 3RD HARMONIC @ 400 W



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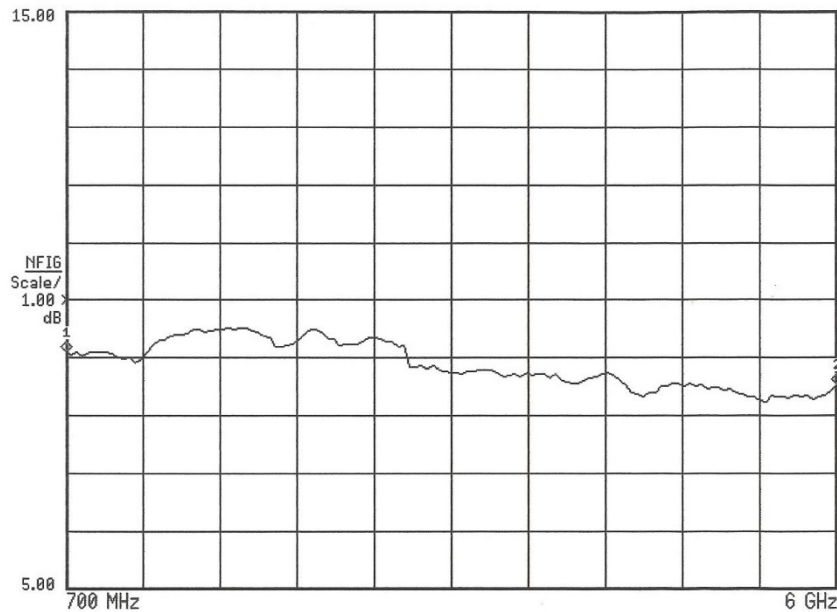
- 500 W
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TYPICAL INPUT VSWR



TYPICAL NOISE FIGURE

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For Faxing Orders: 866.859.0582 (Orders Only Please) info@arworld.us

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