

# Amplifiers

## Model 250S1G6C

### Features:

- 250 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](http://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 250S1G6C 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 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.

Model 250S1G6C

- 250 W
- 1.0 - 6.0 GHz

Electrical Specifications					
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output (1.0 – 6.0 GHz)	PSAT	250	350	>425	W
Input for Rated Output	Pin			1.0	mW
				0	dBm
Power Output @ 3 dB Compression	P3dB	225	325	>400	W
Power Output @ 1 dB Compression	P1dB	200	275	>375	W
Operating Frequency	BW	1.0		6.0	GHz
Gain (Small Signal)		58	61	63	dB
Gain Reduction Adjustment (when below compression)		10	12	15	dB
Flatness	$\Delta G$		$\pm 1.5$	$\pm 2.5$	dB
Input Impedance	Z in		50		Ohm
			1.5:1	2.0:1	VSWR
Output Impedance	Z out		50		Ohm
3 <sup>rd</sup> Order Intercept	IP3		60		dBm
Noise Figure	NF		10		dB
Harmonic Distortion @ 200 W for entire band except 2 – 3 GHz	H2, H3		-30	-20	dBc
Harmonic Distortion @ 200 W for 2 – 3 GHz	H2, H3		-22	-18	dBc
Spurious			-73		dBc
Power Consumption	PD			1750	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	$\infty$	VSWR
RF Load Reflected				100	%
Will operate without damage or oscillation when connected to any load impedance without the aid of foldback circuitry.					
AC Power (single phase)	UL/CSA	100		240	VAC
	CE	200		240	VAC
	UL/CSA/CE	47		63	Hz
Ambient Temperature		+5	+25	+40	°C
Storage Temperature		-20		+50	°C
Altitude				2000	m
Shock/Vibration		Normal Truck Transport			



Model 250S1G6C

- 250 W
- 1.0 - 6.0 GHz

Mechanical Specifications		
Parameters		Unit
Dimensions (With Cabinet) (W x H x D)	50.3 x 47 x 65.3	cm
	19.8 x 18.5 x 25.7	in
Dimensions (No Cabinet) – 10U for 19" Rack	48.3 x 44.5 x 65.3	cm
	19.0 x 17.5 x 25.7	in
Weight (With Cabinet)	58.5	kg
	129	lb
Weight (No Cabinet)	44.9	kg
	99	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)	61 (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 $\Omega$ )
RF output	7-16 DIN female (50 $\Omega$ )
RF Sample	N female (50 $\Omega$ ) (54dB typical)
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
AC	C20



Model 250S1G6C

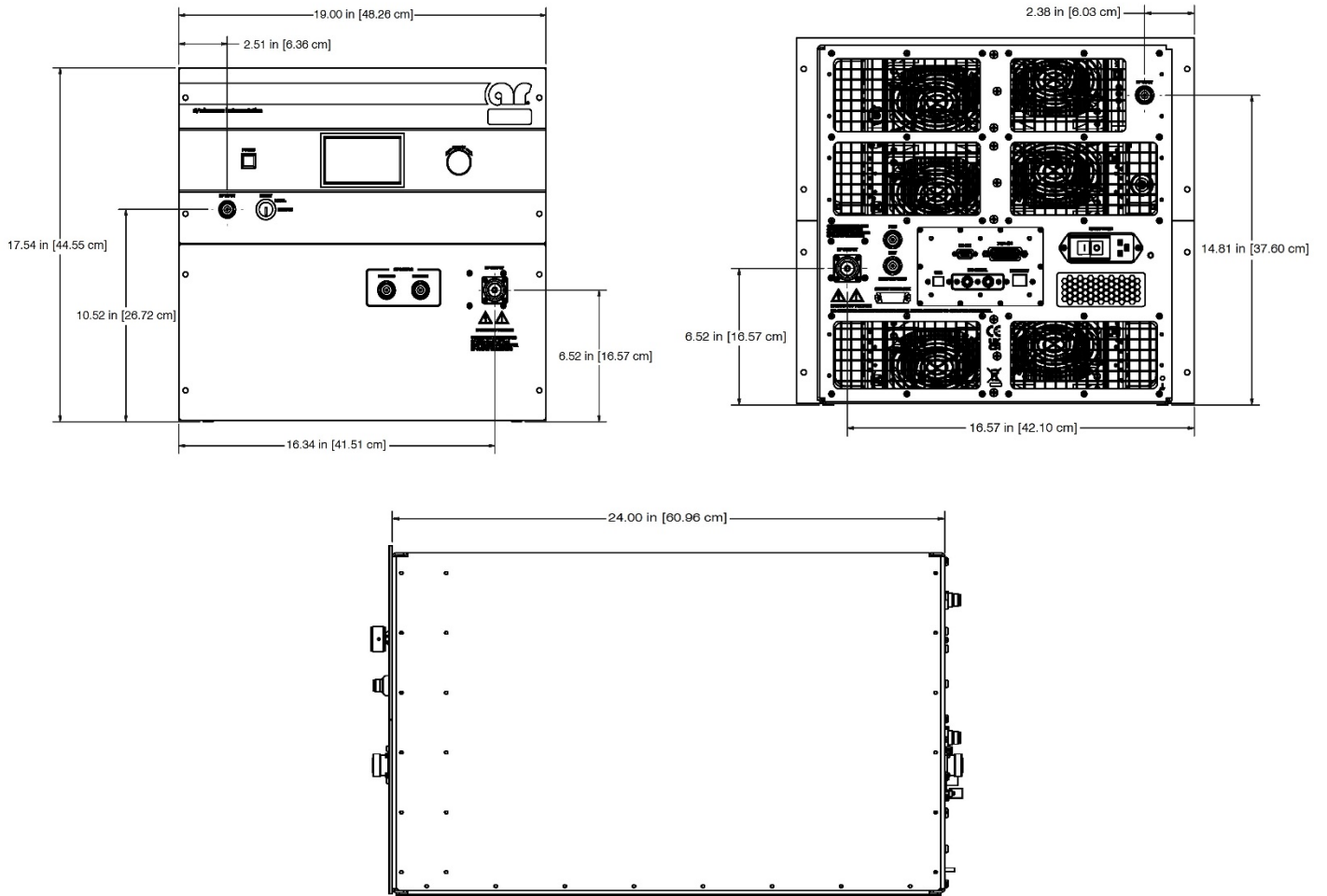
- 250 W
- 1.0 - 6.0 GHz

Ordering Options

250S1G6C	-	N	-	716	-																				
Model		RF IN Conn Location, Type		RF OUT Conn Location, Type		Enclosure No Enclosure RF Sample Ports																			
		<table border="1"> <tr><th colspan="2">Connector</th></tr> <tr><td>Front</td><td>F</td></tr> <tr><td>Rear</td><td>R</td></tr> </table>	Connector		Front	F	Rear	R			<table border="1"> <tr><th colspan="2">Enclosure</th></tr> <tr><td>Enclosure</td><td>E</td></tr> <tr><td>No Enclosure</td><td>NE</td></tr> </table>	Enclosure		Enclosure	E	No Enclosure	NE	<table border="1"> <tr><th colspan="2">RF Sample Ports</th></tr> <tr><td>Front</td><td>SPF</td></tr> <tr><td>Rear</td><td>SPR</td></tr> </table>		RF Sample Ports		Front	SPF	Rear	SPR
Connector																									
Front	F																								
Rear	R																								
Enclosure																									
Enclosure	E																								
No Enclosure	NE																								
RF Sample Ports																									
Front	SPF																								
Rear	SPR																								

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

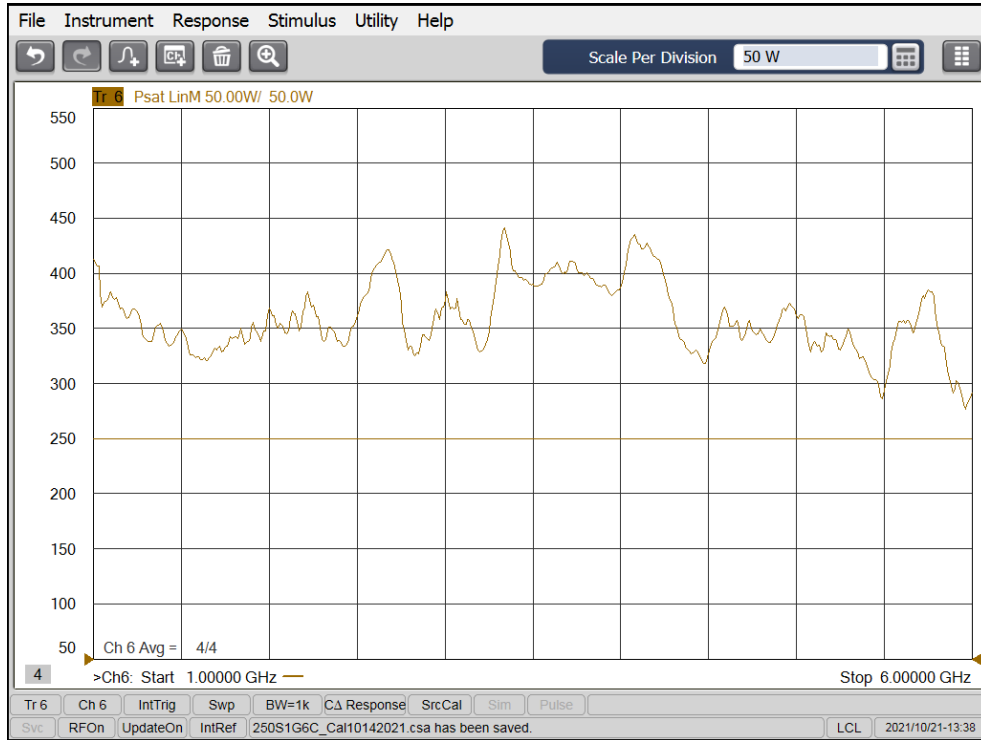
Envelope Drawing



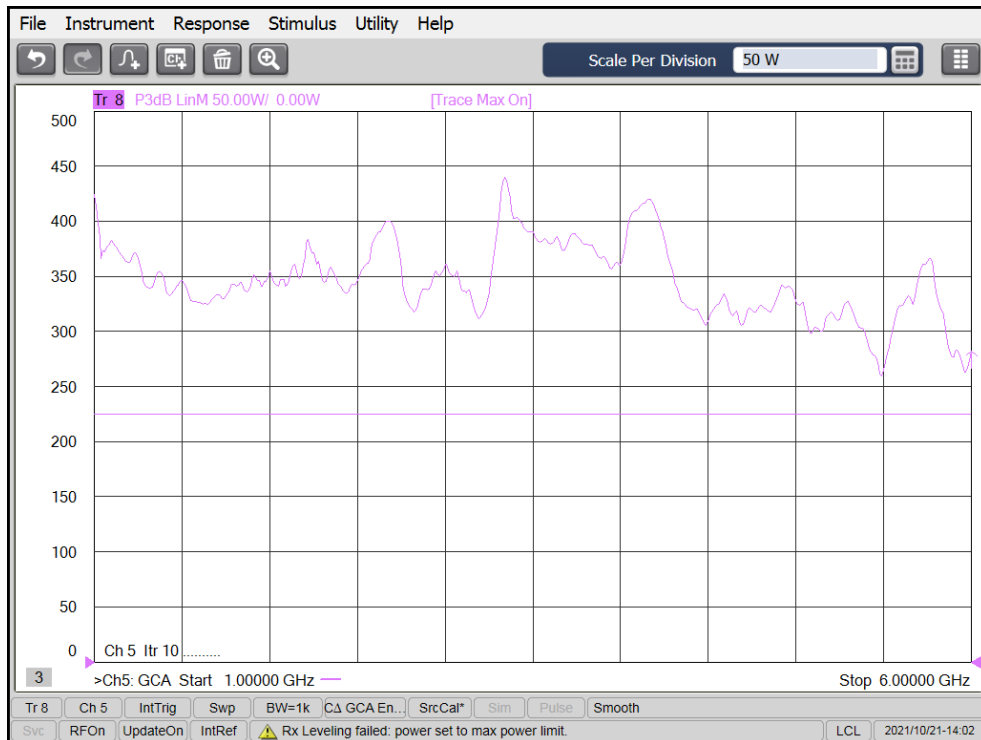
# Model 250S1G6C

- 250 W
- 1.0 - 6.0 GHz

## TYPICAL PSAT POWER @ 0dBm INPUT



## TYPICAL POWER @ P3dB COMPRESSION



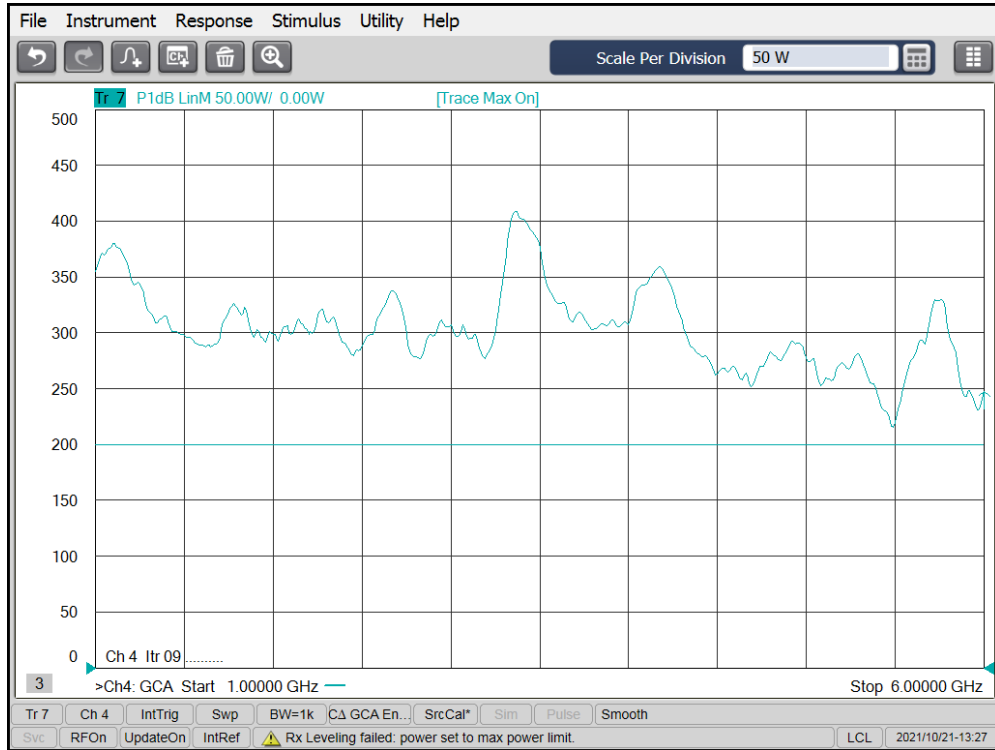
AR RF/Microwave Instrumentation • 160 Schoolhouse Rd, Souderton, PA 18964 • 215-723-8181 • info@arworld.us • www.arworld.us • ISO 9001:2015 Certified • ISO 17025:2017 Accredited



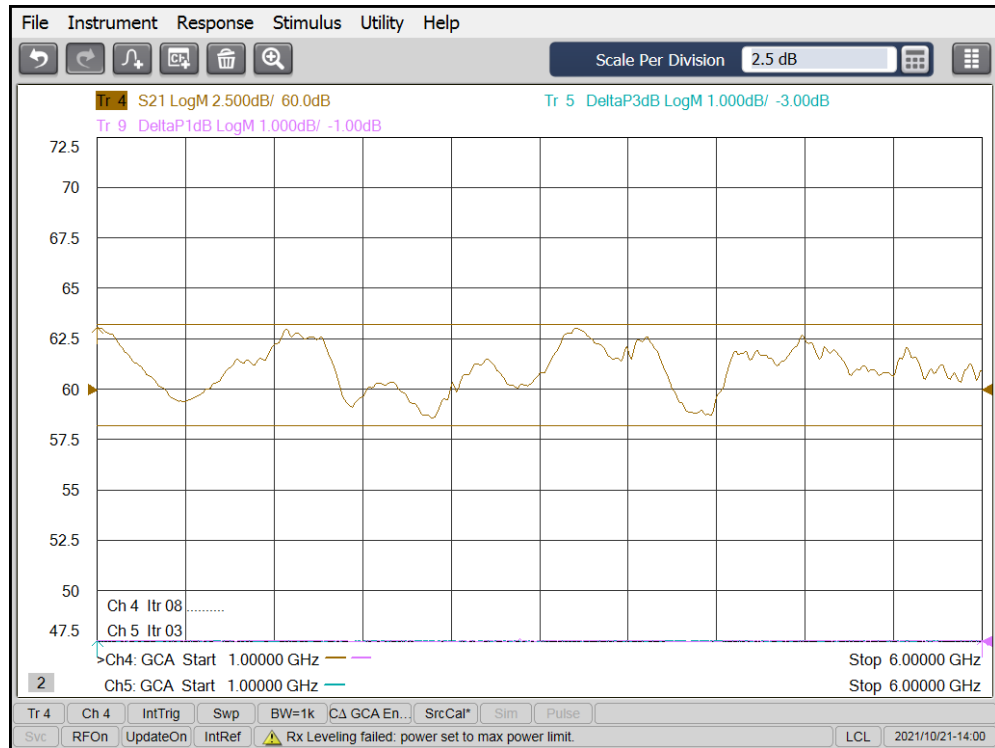
# Model 250S1G6C

- 250 W
- 1.0 - 6.0 GHz

## TYPICAL POWER @ P1dB COMPRESSION



## TYPICAL SMALL SIGNAL GAIN @ -20dBm INPUT



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



Model 250S1G6C

- 250 W
- 1.0 - 6.0 GHz

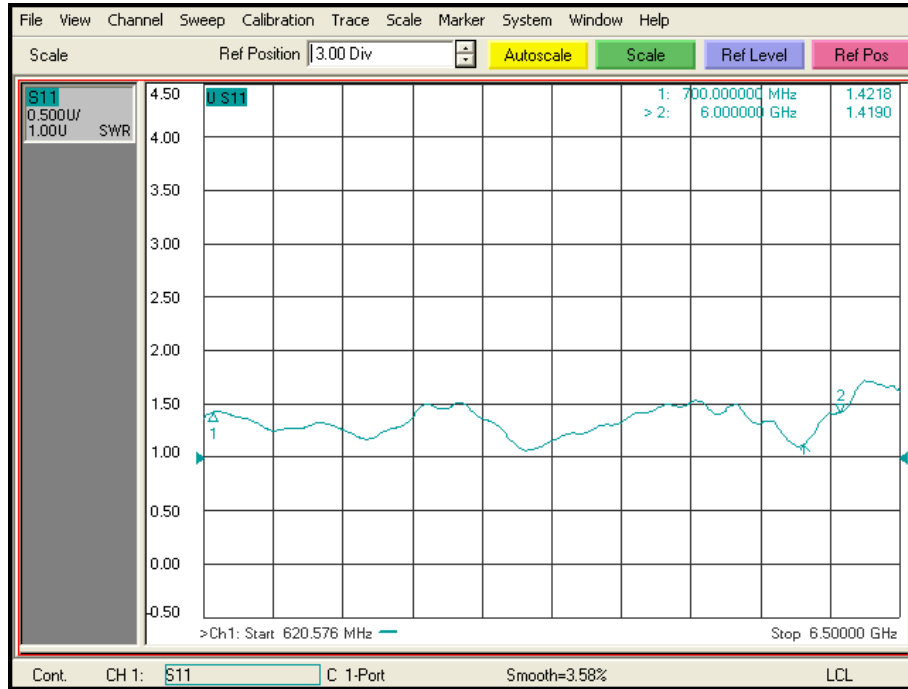
TYPICAL 2<sup>nd</sup>, 3<sup>rd</sup> HARMONICS @ 200 W



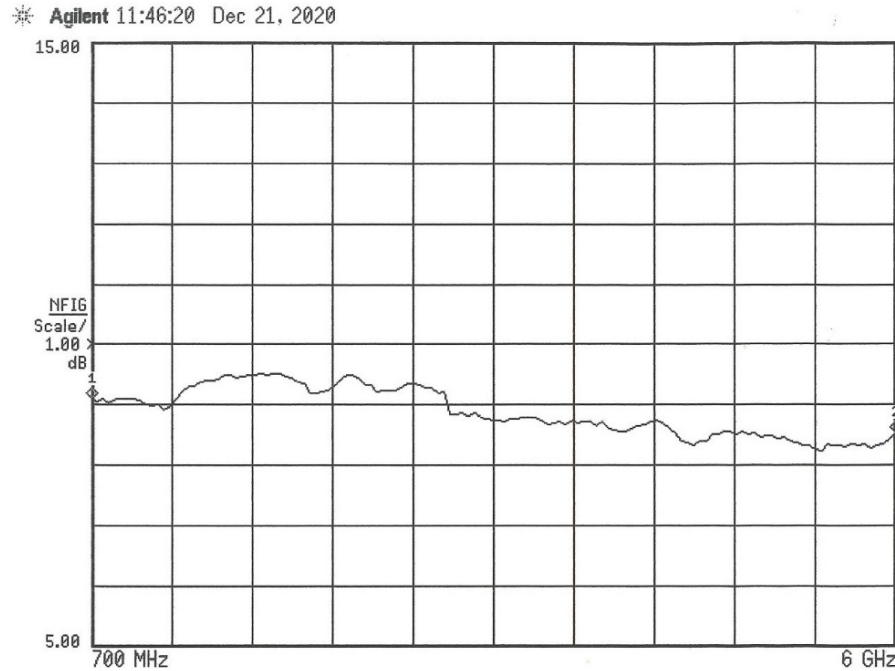
Model 250S1G6C

- 250 W
- 1.0 - 6.0 GHz

TYPICAL INPUT VSWR



TYPICAL NOISE FIGURE



AR RF/Microwave Instrumentation • 160 Schoolhouse Rd, Souderton, PA 18964  
To order AR Products, call: 215.723.8181. For an applications engineer, call: 800.933.8181. Direct to Service call: 215.723.0275 or email: [service@arworld.us](mailto:service@arworld.us)  
For Faxing Orders: 866.859.0582 (Orders Only Please) [info@arworld.us](mailto:info@arworld.us)  
Approved for public release by AR RF/Microwave Instrumentation ISO 9001:2015 Certified • ISO 17025:2017 accredited

Revision 120921

