



Amplifiers

Model 750S1G6C

Features:

- 750 W CW, 1.0 - 4.2 GHz
- 500 W CW, 4.2 - 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 750S1G6C 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 750 W across its operating bandwidth of 1.0 - 4.2 GHz and 500 W from 4.2 - 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 750S1G6C

- 750 W, 1.0 - 4.2 GHz
- 500 W, 4.2 - 6.0 GHz

Electrical Specifications					
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output (1.0-4.2 GHz)	PSAT	750	900	>1100	W
Rated Power Output (4.2-6.0 GHz)	PSAT	500	750	>900	W
Input for Rated Output	Pin			1	mW
				0	dBm
Power Output @ 3dB Compression (1.0-4.2 GHz)	P3dB	750	900	>1100	W
Power Output @ 3dB Compression (4.2-6.0 GHz)	P3dB	550	800	>900	W
Power Output @ 1dB Compression (1.0-4.2 GHz)	P1dB	600	800	>900	W
Power Output @ 1dB Compression (4.2-6.0 GHz)	P1dB	450	650	>750	W
Operating Frequency	BW	1.0		6.0	GHz
Gain (Small Signal)		59	63	67	dB
Gain Reduction Adjustment (when below gain compression)		10	12	15	dB
Flatness @ small signal (-20dBm input) (1.0-4.2 GHz)	ΔG		± 2.0	± 2.5	dB
Flatness @ small signal (-20dBm input) (4.2-6.0 GHz)	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		+67		dBm
Noise Figure	NF		10		dB
Harmonic Distortion @ 600 W for entire band except 2 - 3 GHz	H2, H3		-30	-20	dBc
Harmonic Distortion @ 600 W for 2 - 3 GHz	H2, H3		-22	-18	dBc
Spurious			-73		dBc
Power Consumption	P _D			5200	W



Model 750S1G6C

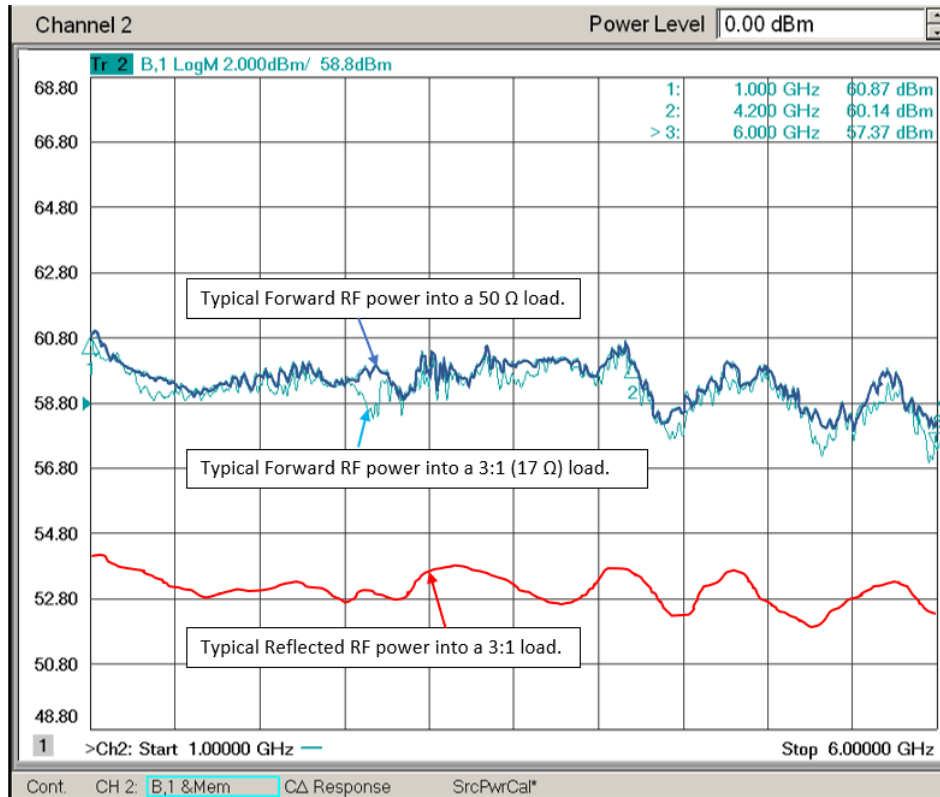
- 750 W, 1.0 - 4.2 GHz
- 500 W, 4.2 - 6.0 GHz

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. However, mismatch above 3:1 may limit output to 200 watts reflected power, while allowing forward RF level to typically achieve rated 750 watts. (For typical performance into a 3:1 load, see power graph below.) This reflected power limit into VSWR above 3:1 is due to the RF output connector constraint.			25	%
AC Power (single phase)	200		240	VAC
AC Power	47		63	Hz
Ambient Temperature	+5	+25	+40	°C
Storage Temperature	-20		+50	°C
Altitude			1000	m
Shock/Vibration	Normal Truck Transport			

TYPICAL RF POWER INTO 3:1 MISMATCH



Model 750S1G6C

- 750 W, 1.0 - 4.2 GHz
- 500 W, 4.2 - 6.0 GHz

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	203	kg
	448	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)	66(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 (57dB 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 750S1G6C

- 750 W, 1.0 - 4.2 GHz
- 500 W, 4.2 - 6.0 GHz

Ordering Options

750S1G6C - **N** - **R** - **716** - **RF Sample Ports**

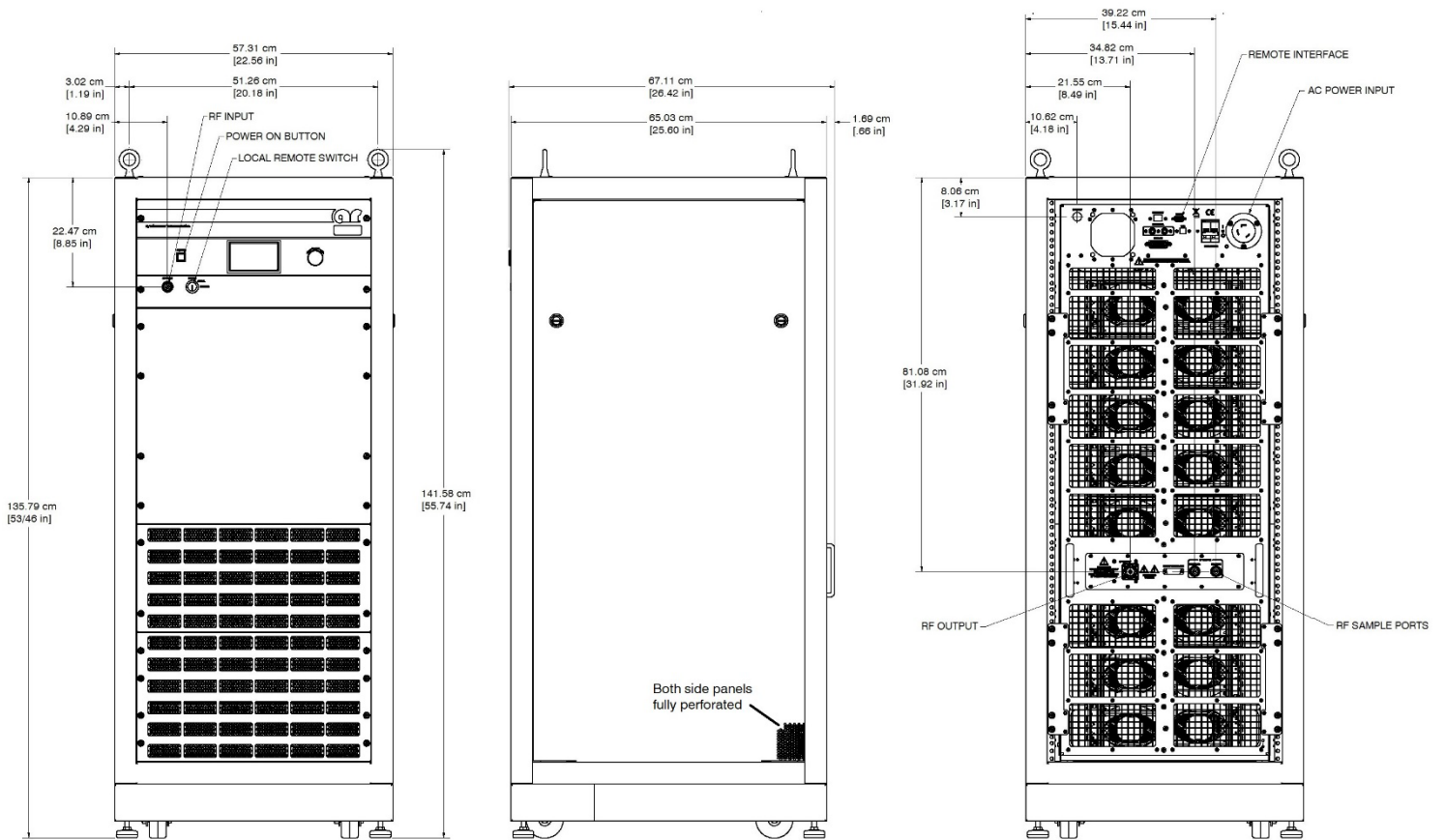
Model **RF IN Conn Location, Type** **RF OUT Conn Location, Type** **RF Sample Ports**

Connector Location	
Front	F
Rear	R

RF Sample Ports	
Front	SPF
Rear	SPR

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

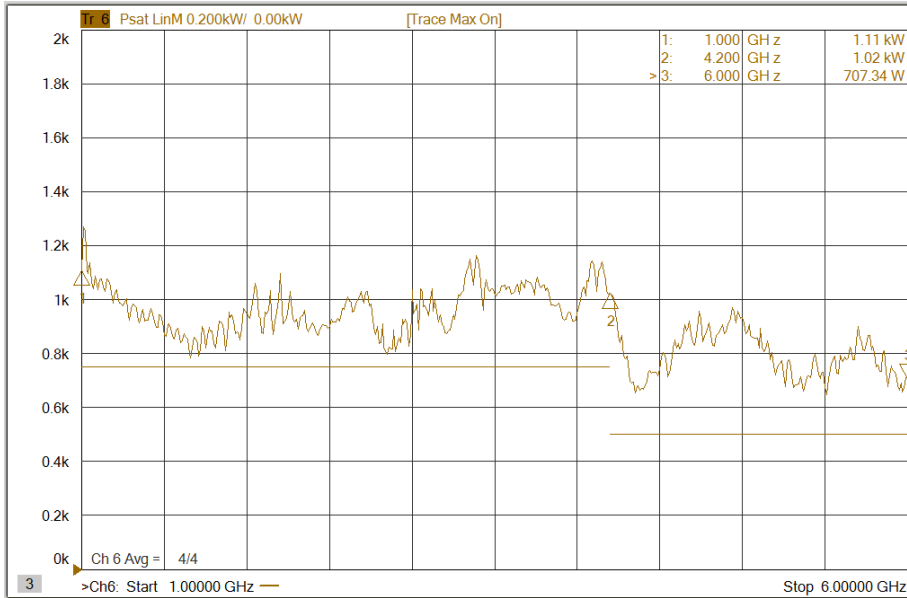
Envelope Drawing



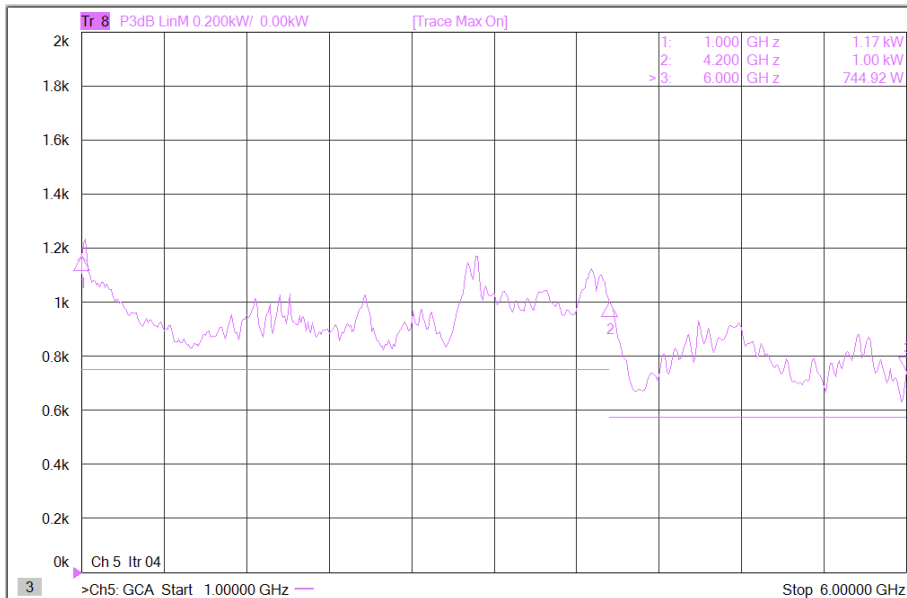
Model 750S1G6C

- 750 W, 1.0 - 4.2 GHz
- 500 W, 4.2 - 6.0 GHz

TYPICAL PSAT POWER @ 0 dBm INPUT



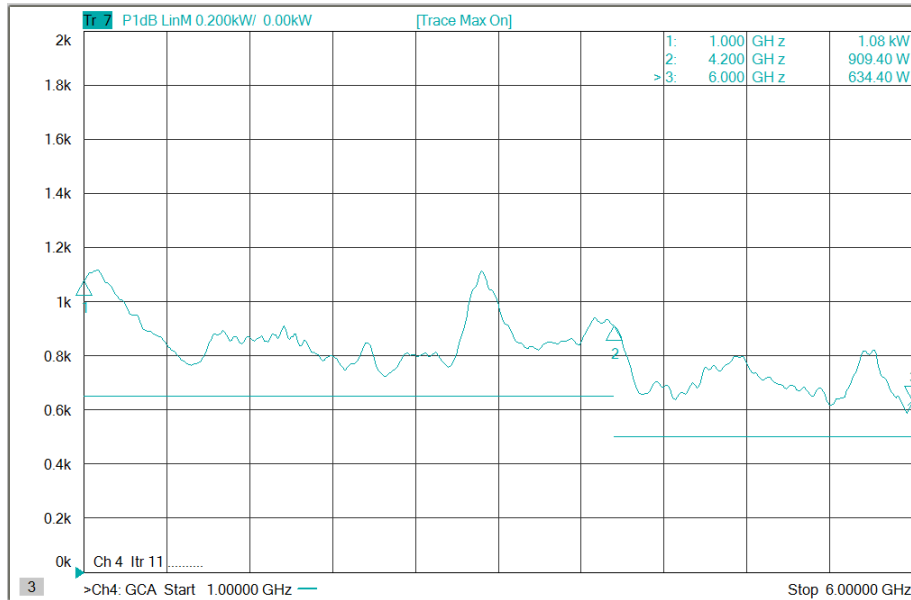
TYPICAL POWER @ P3 dB COMPRESSION



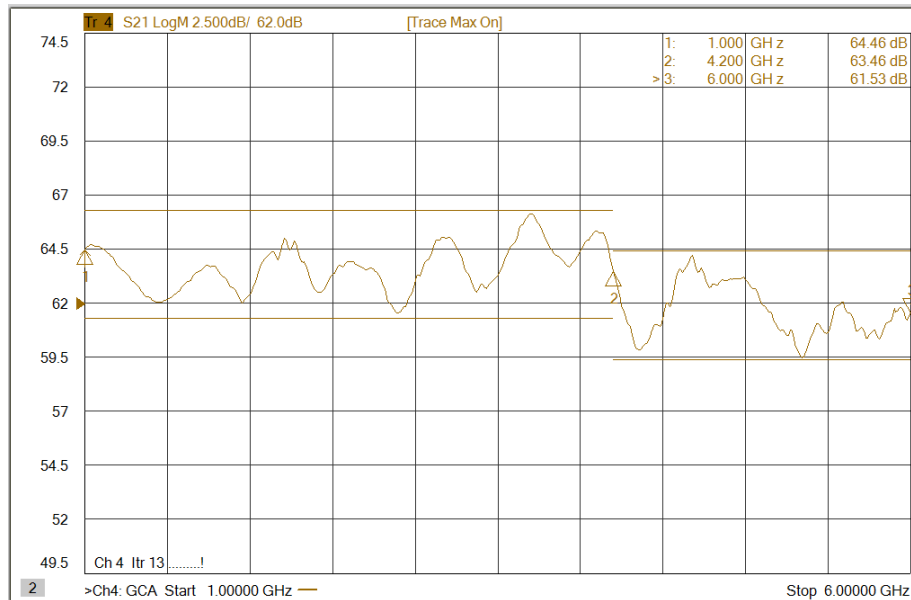
Model 750S1G6C

- 750 W, 1.0 - 4.2 GHz
- 500 W, 4.2 - 6.0 GHz

TYPICAL POWER @ P1dB COMPRESSION



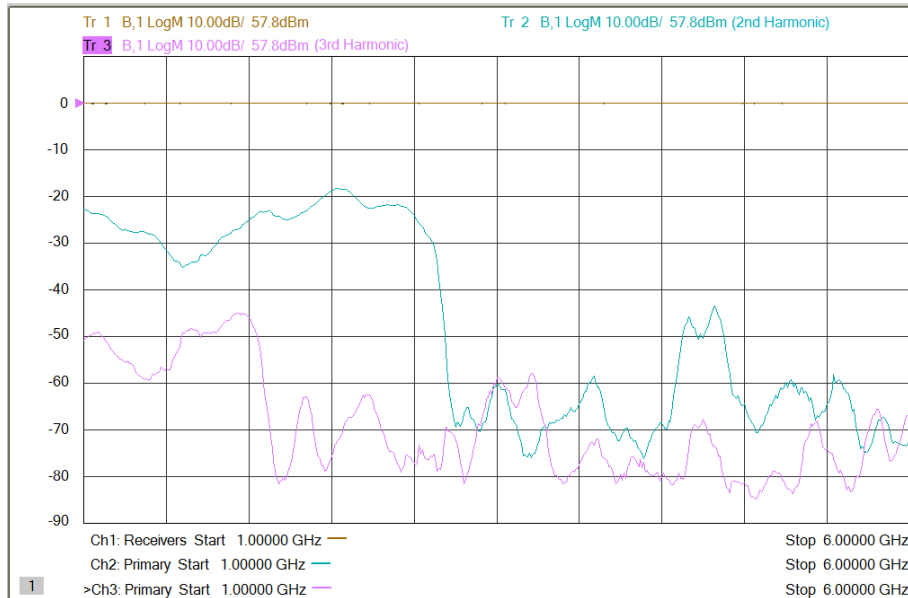
TYPICAL SMALL SIGNAL GAIN @ -20 dBm INPUT



Model 750S1G6C

- 750 W, 1.0 - 4.2 GHz
- 500 W, 4.2 - 6.0 GHz

TYPICAL 2nd, 3rd HARMONICS @ 600 W



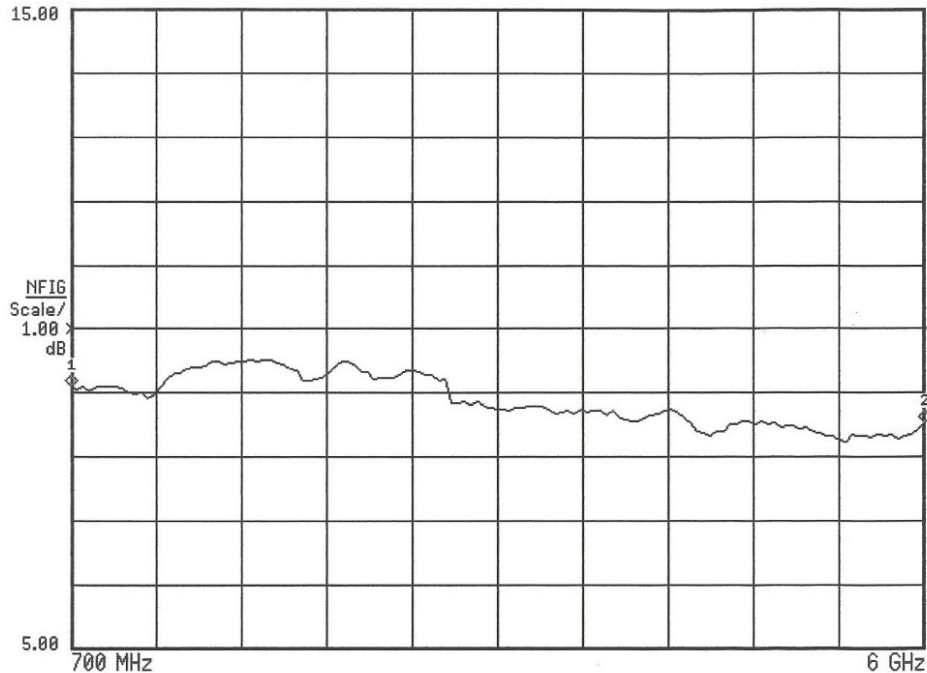
Model 750S1G6C

- 750 W, 1.0 - 4.2 GHz
- 500 W, 4.2 - 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
 For Faxing Orders: 866.859.0582 (Orders Only Please) info@arworld.us
 Approved for public release by AR RF/Microwave Instrumentation ISO 9001:2015 Certified • ISO 17025:2017 accredited

Revision 041122

