



# Amplifiers

## Model 125S1G6C

### Features:

- 125 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)

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ISO 9001:2015 Certified  
ISO 17025 :2017 Accredited

The Model 125S1G6C 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 125 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.



- 125 W
- 1.0 - 6.0 GHz

Electrical Specifications					
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output (1.0 – 6.0 GHz)	PSAT	125	150	>175	W
Input for Rated Output	Pin			1.0	mW
				0	dBm
Power Output @ 3 dB Compression	P3dB	120	125	>135	W
Power Output @ 1 dB Compression	P1dB	100	115	>125	W
Operating Frequency	BW	1.0		6.0	GHz
Gain (Small Signal)		55	58	60	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		58		dBm
Noise Figure	NF		10		dB
Harmonic Distortion @ 100 W for entire band except 2 – 3 GHz	H2, H3		-30	-20	dBc
Harmonic Distortion @ 100 W for 2 – 3 GHz	H2, H3		-22	-18	dBc
Spurious			-73		dBc
Power Consumption	PD			1150	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	%
AC Power (single phase)	100		240	VAC
	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 35.5 x 65.3	cm
	19.8 x 14.0 x 25.7	in
Dimensions (No Cabinet) – 8U for 19” Rack	48.3 x 35.5 x 65.3	cm
	19.0 x 14.0 x 25.7	in
Weight (With Cabinet)	29.5	kg
	65	lb
Weight (No Cabinet)	22.7	kg
	50	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)	60 (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	N female (50 $\Omega$ )
RF Sample	N female (50 $\Omega$ ) (51dB 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	C14



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## Ordering Options

<b>125S1G6C</b>	-	<b>N</b>	-	<b>N</b>	-																					
<b>Model</b>		<b>RF IN Conn</b>		<b>RF OUT Conn</b>		<b>Enclosure</b>	<b>RF Sample</b>																			
		<b>Location, Type</b>		<b>Location, Type</b>		<b>No Enclosure</b>	<b>Ports</b>																			
		<table border="1"><tr><td colspan="2"><b>Connector</b></td></tr><tr><td>Front</td><td>F</td></tr><tr><td>Rear</td><td>R</td></tr></table>	<b>Connector</b>		Front	F	Rear	R		<table border="1"><tr><td colspan="2"><b>Enclosure</b></td></tr><tr><td>Enclosure</td><td>E</td></tr><tr><td>No Enclosure</td><td>NE</td></tr></table>	<b>Enclosure</b>		Enclosure	E	No Enclosure	NE		<table border="1"><tr><td colspan="2"><b>RF Sample Ports</b></td></tr><tr><td>Front</td><td>SPF</td></tr><tr><td>Rear</td><td>SPR</td></tr></table>	<b>RF Sample Ports</b>		Front	SPF	Rear	SPR		
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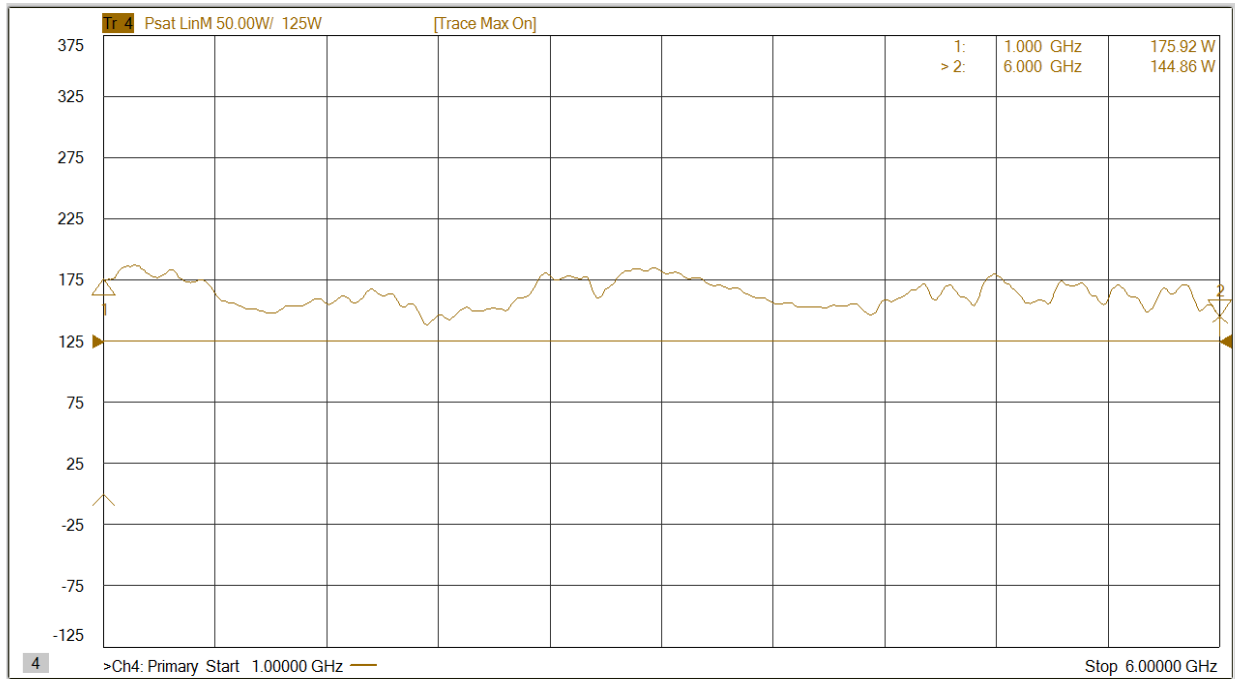
Contact your AR RF/Microwave Instrumentation Sales Associate for specific model configuration pricing.



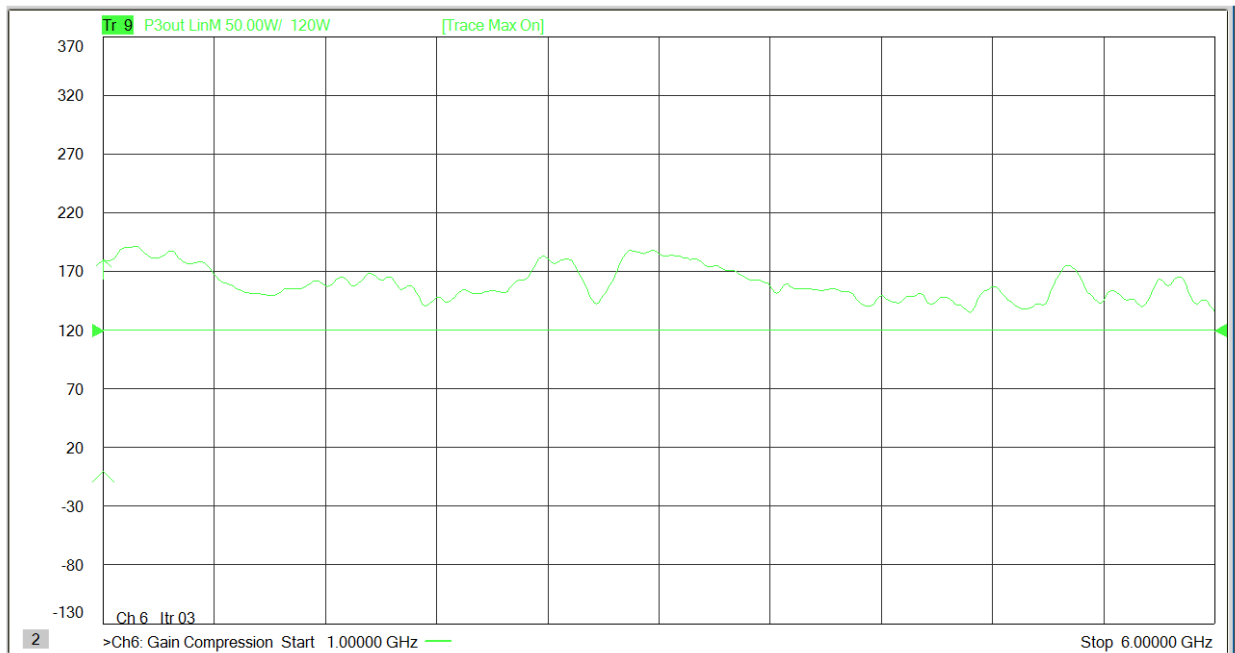
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### TYPICAL PSAT POWER @ 0 dBm INPUT

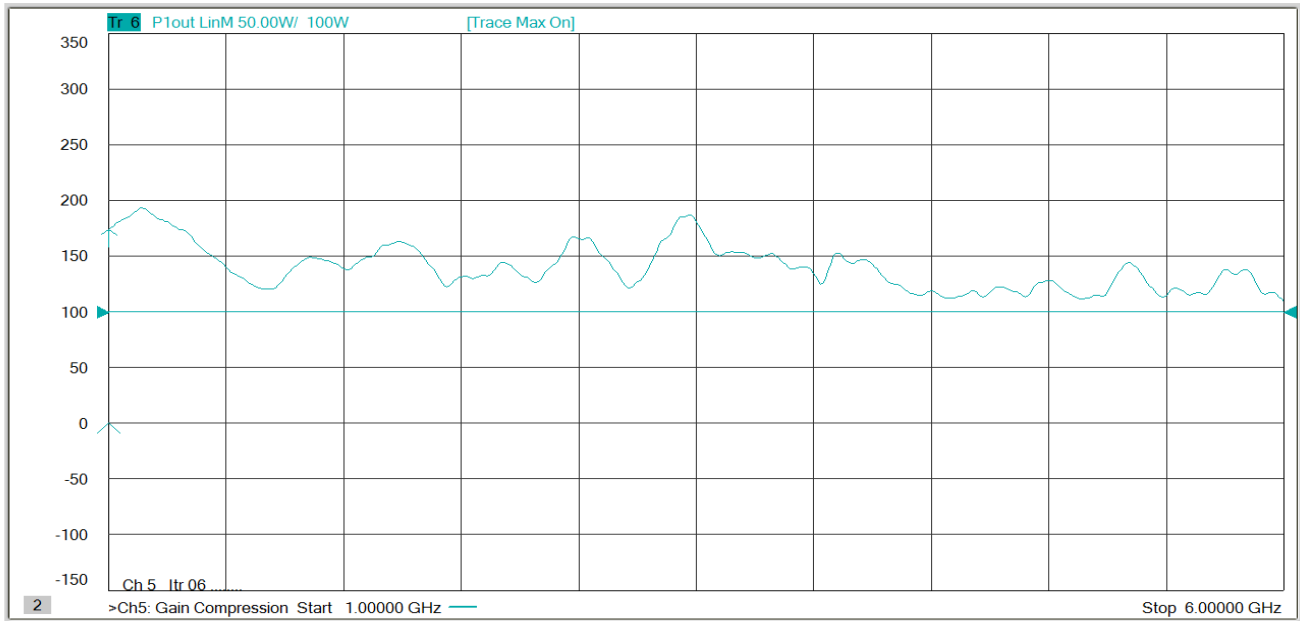


### TYPICAL POWER @ P3 dB COMPRESSION

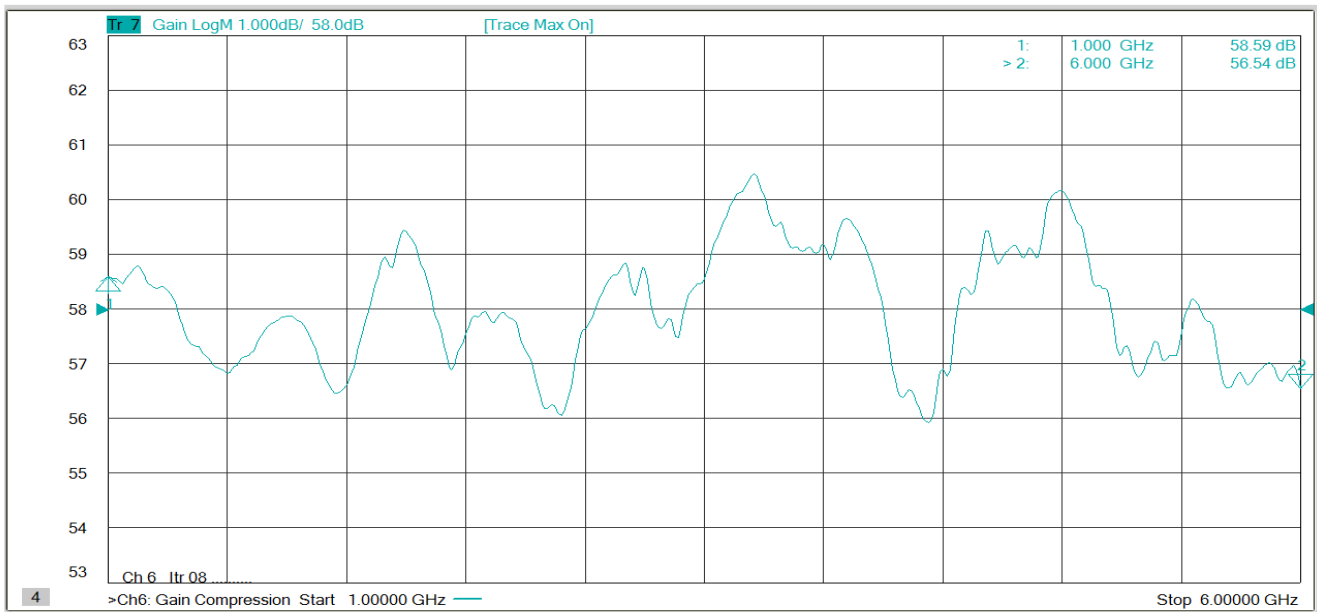


- 125 W
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### TYPICAL POWER @ P1 dB COMPRESSION



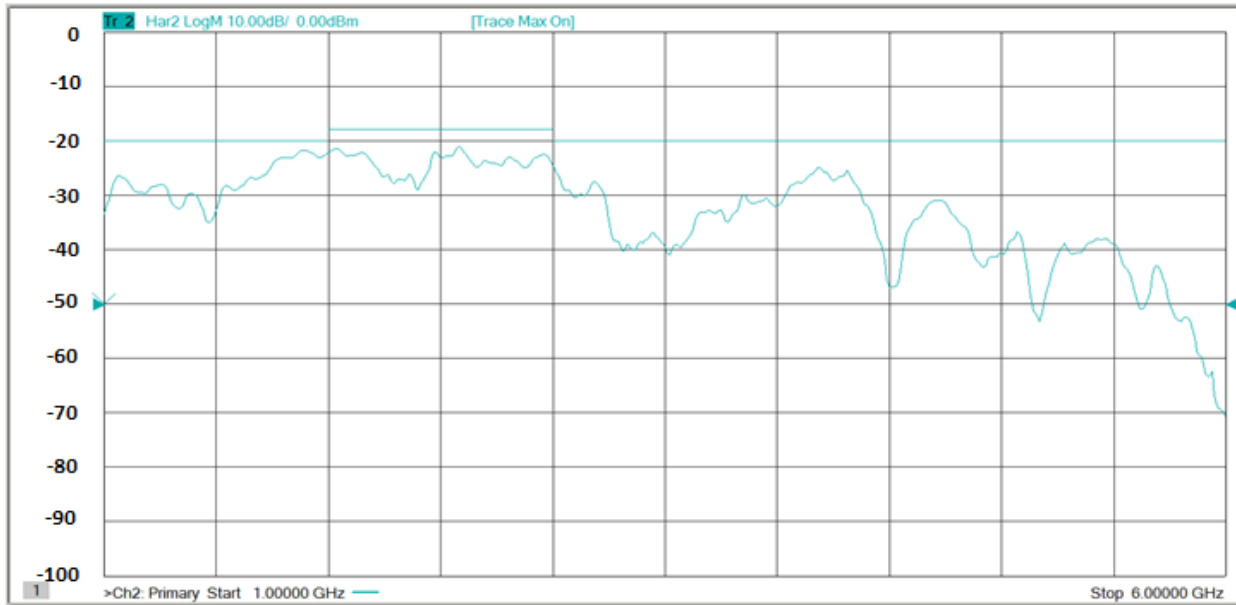
### TYPICAL SMALL SIGNAL GAIN @ -20 dBm INPUT



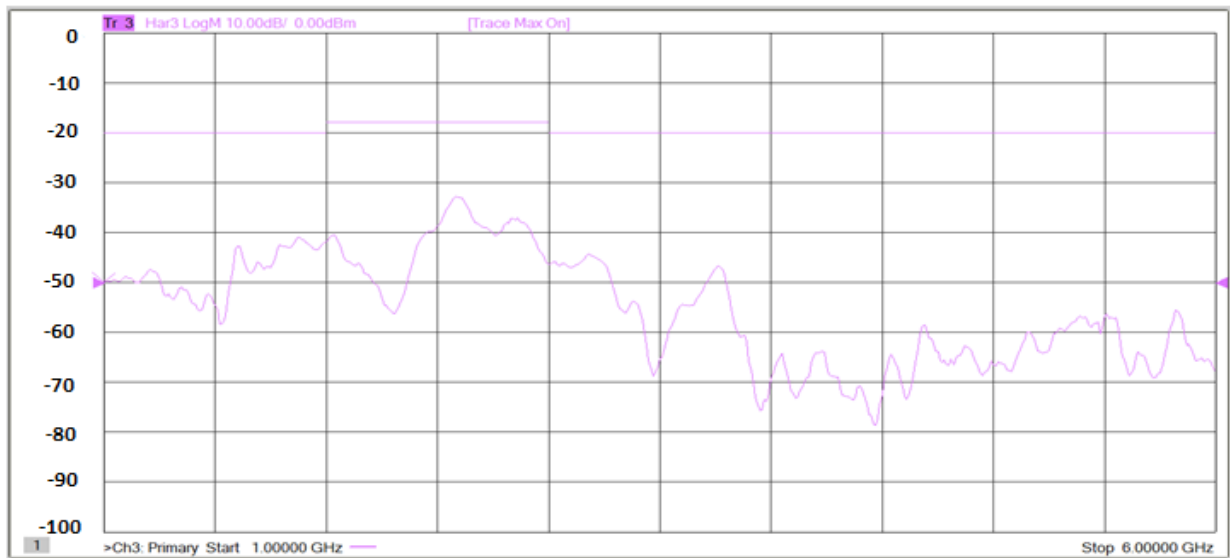
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### TYPICAL 2<sup>nd</sup> HARMONIC @ 100 W OUTPUT

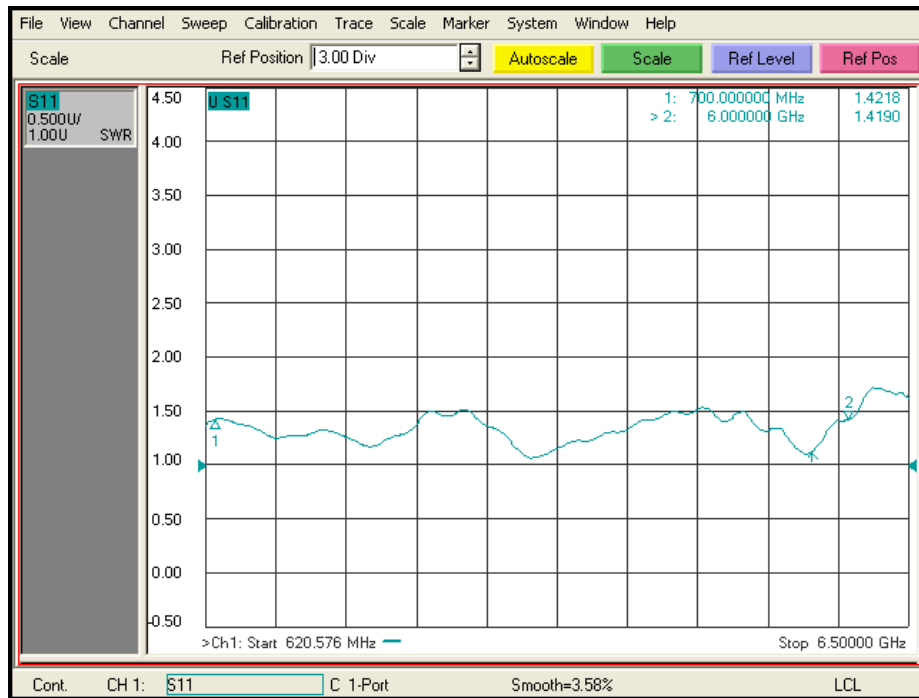


### TYPICAL 3<sup>rd</sup> HARMONIC @ 100 W OUTPUT



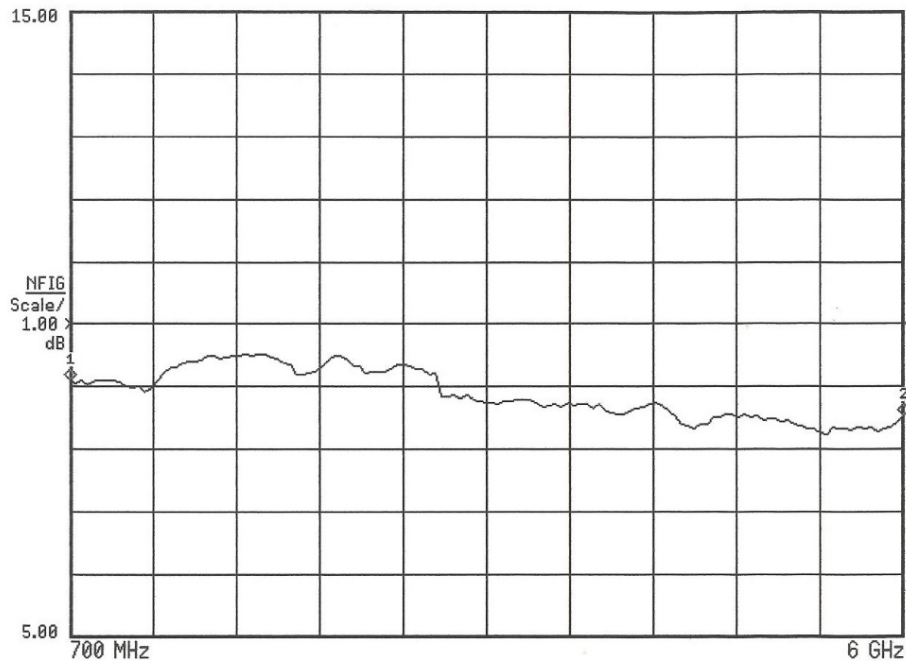
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### TYPICAL INPUT VSWR



### TYPICAL NOISE FIGURE

Agilent 11:46:20 Dec 21, 2020



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