

# Amplifiers

## Model 75S1G6C

### Features:

- 75 Watts CW, 1.0 - 6.0 GHz
- Class A design
- 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 75S1G6C 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 75 W across its operating bandwidth. 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.

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- 75 W
- 1.0 - 6.0 GHz

Electrical Specifications					
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output	PSAT	75	85	>125	W
Input for Rated Output	Pin			1.0	mW
				0	dBm
Power Output @ 1 dB Compression	P1dB	50	70	>100	W
Power Output @ 3 dB Compression	P3dB	65	85	>120	W
Operating Frequency	BW	1.0		6.0	GHz
Gain (Small Signal)		51	54	56	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		+56		dBm
Noise Figure	NF		10		dB
Harmonic Distortion @ 75 W	H2, H3		-30	-20	dBc
Spurious			-73		dBc
Power Consumption	PD			450	W

Mechanical Specifications		
Parameters	Nominal	Unit
Dimensions (With Cabinet) (W x H x D)	51.0 x 17.0 x 65.3	cm
	20.1 x 6.7 x 25.7	in
Dimensions (No Cabinet) - 3U for 19" Rack	48.3 x 13.4 x 65.3	cm
	19.0 x 5.3 x 25.7	in
Weight (With Cabinet)	26.5	kg
	58.5	lb
Weight (No Cabinet)	15.8	kg
	34.75	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



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**Absolute Maximum Rating**

Exposure to maximum rating conditions for extended periods may reduce device reliability. 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
AC Power (single phase)	100		240	VAC
AC Power	50		60	Hz
Ambient Temperature	+5	+25	+40	°C
Storage Temperature	-20		+50	°C
Altitude			2000	m
Shock/Vibration	Normal Truck Transport			

**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)
RF output	N 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**

75S1G6C - - N - - N - -  
 Model RF IN Conn RF OUT Conn Enclosure  
 Location, Type Location, Type No Enclosure

N-Connector	
Front	F
Rear	R

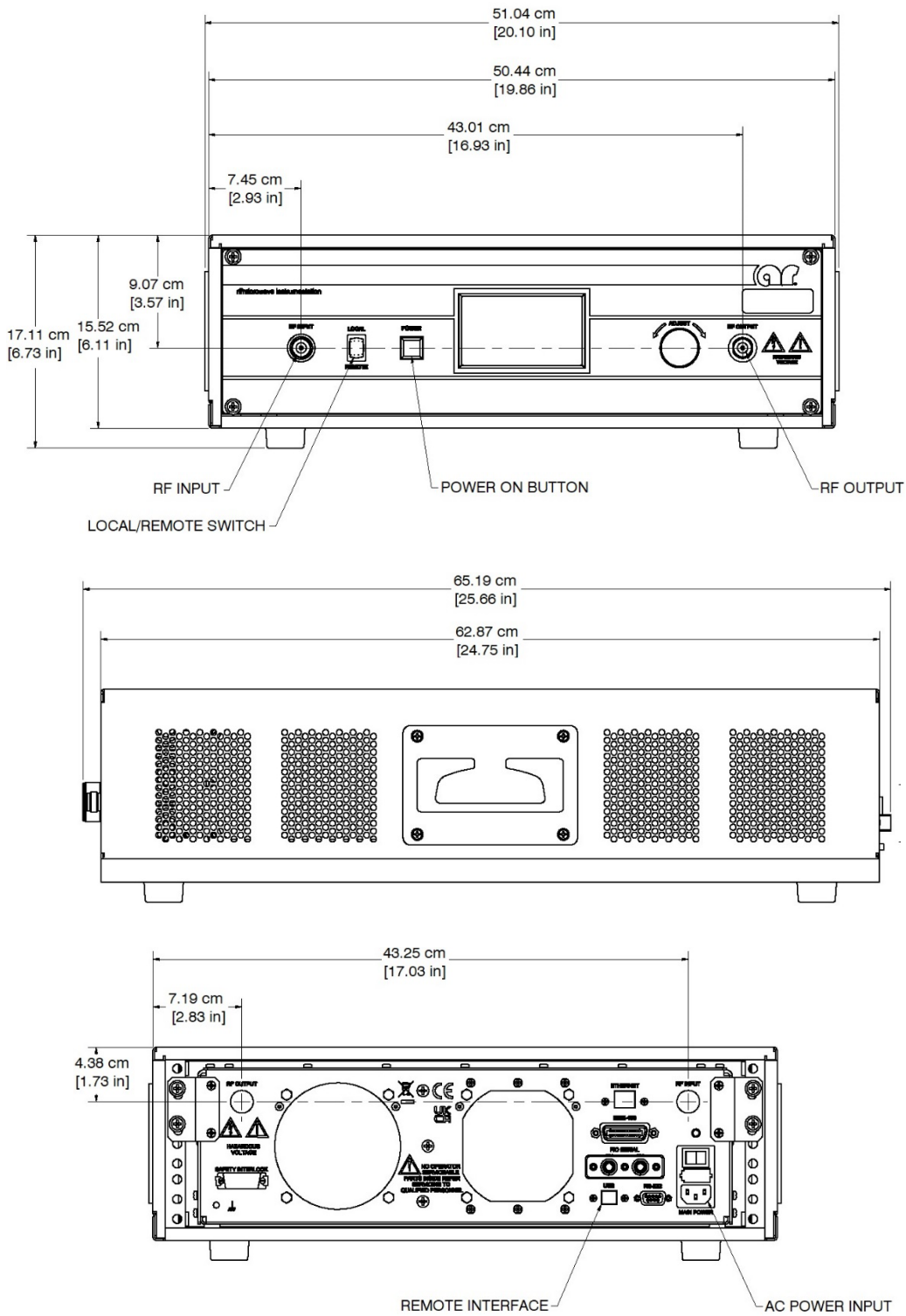
Enclosure	
Enclosure	E
No Enclosure	NE



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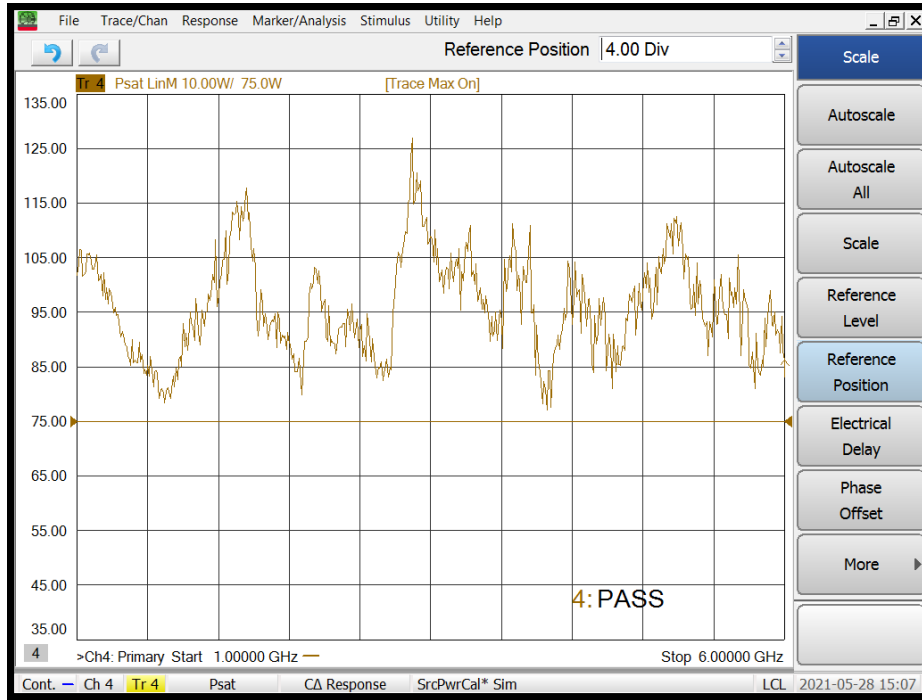
Envelope Drawing



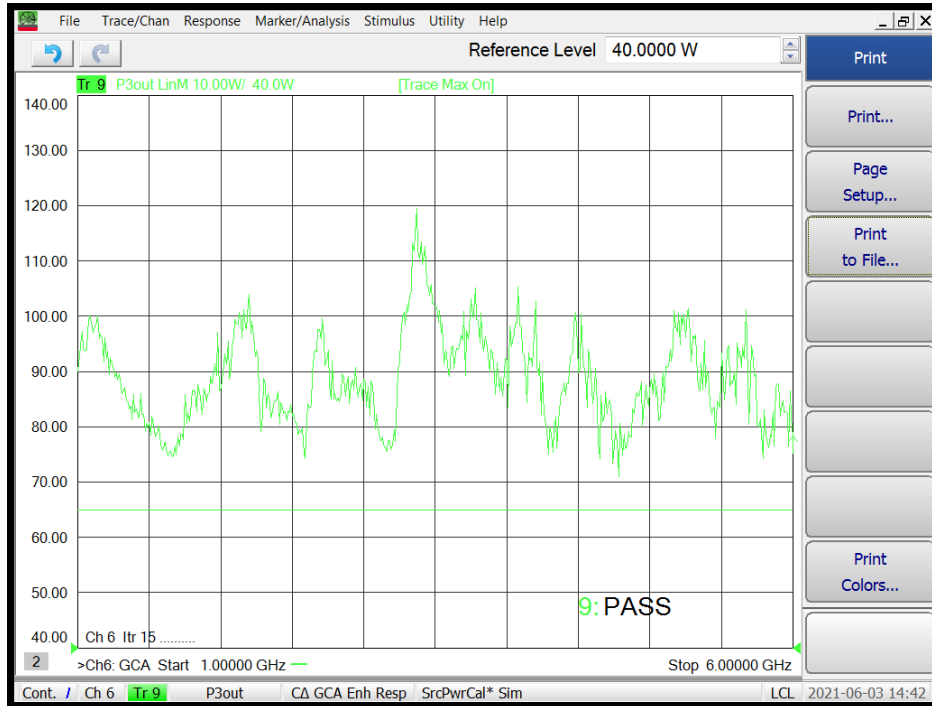
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## TYPICAL PSAT POWER @ 0 dBm INPUT



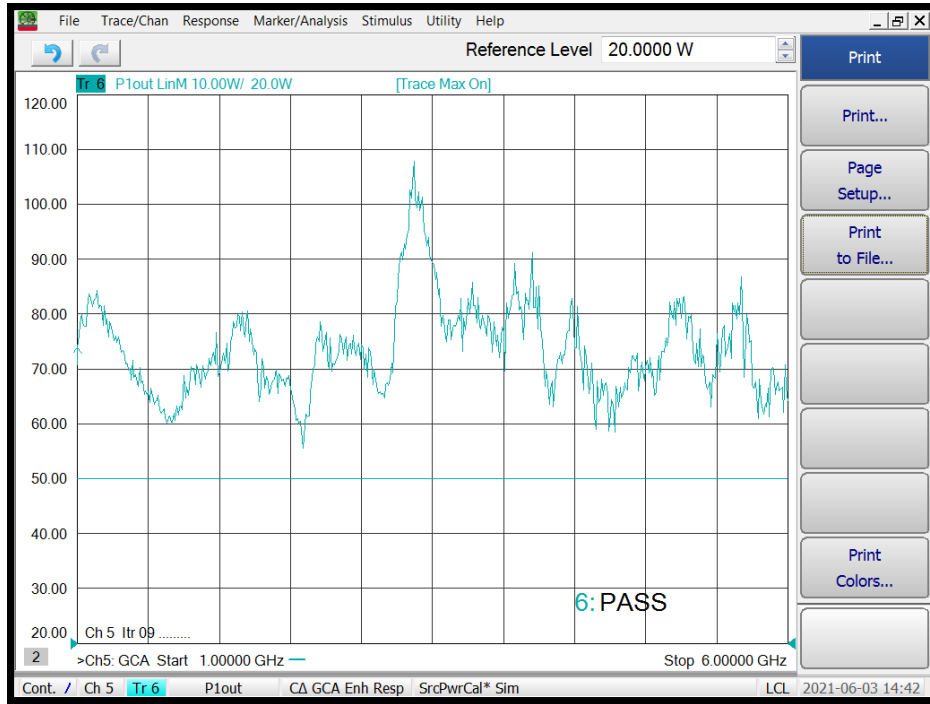
## TYPICAL POWER @ P3 dB COMPRESSION



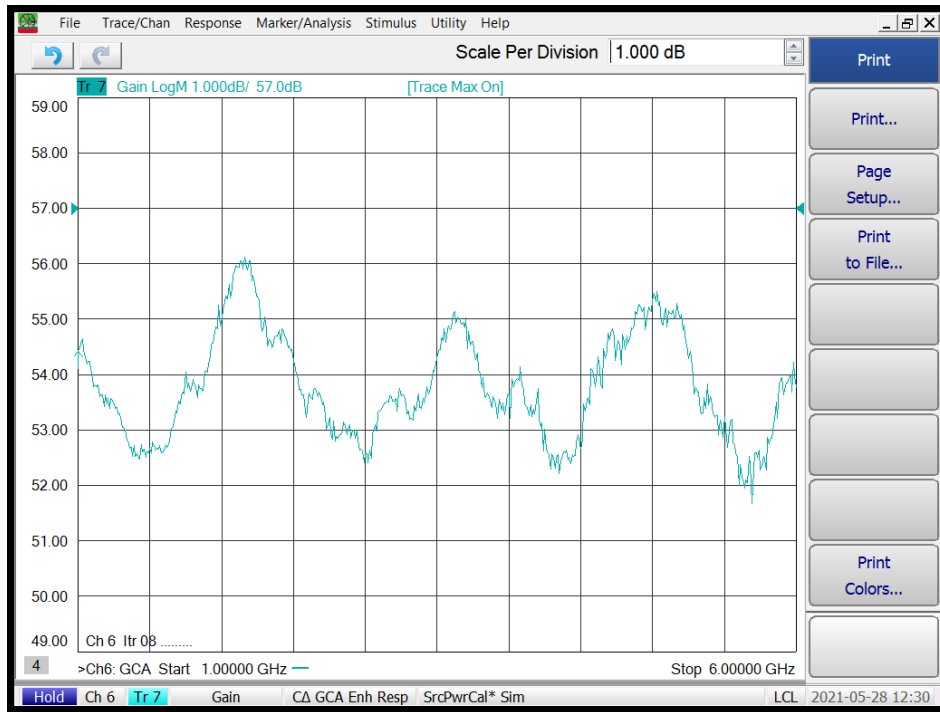
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TYPICAL POWER @ P1dB COMPRESSION



TYPICAL SMALL SIGNAL GAIN @ -20 dBm INPUT

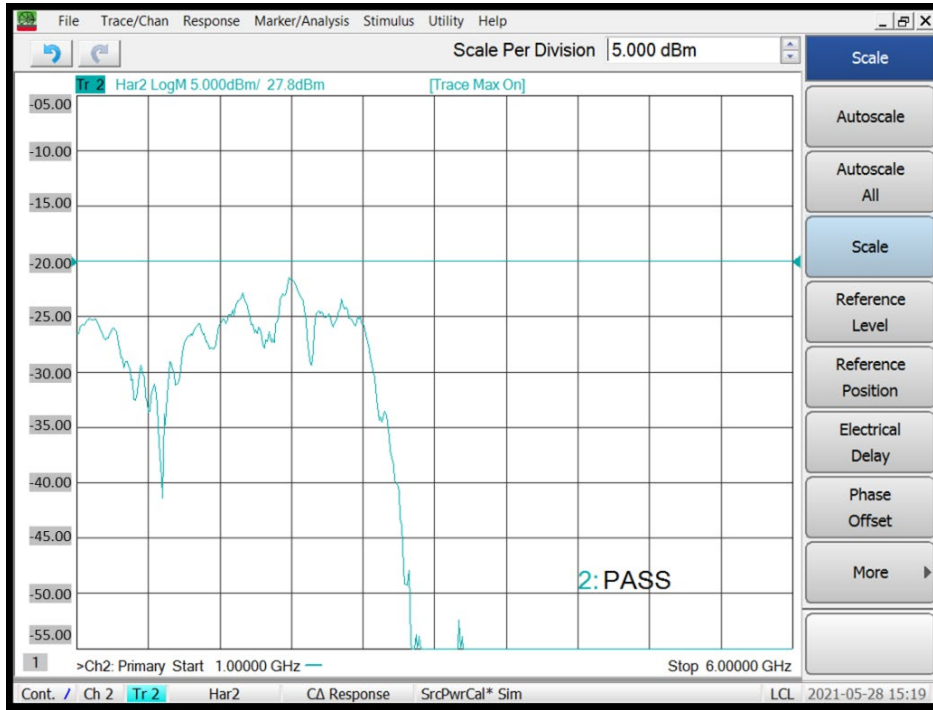




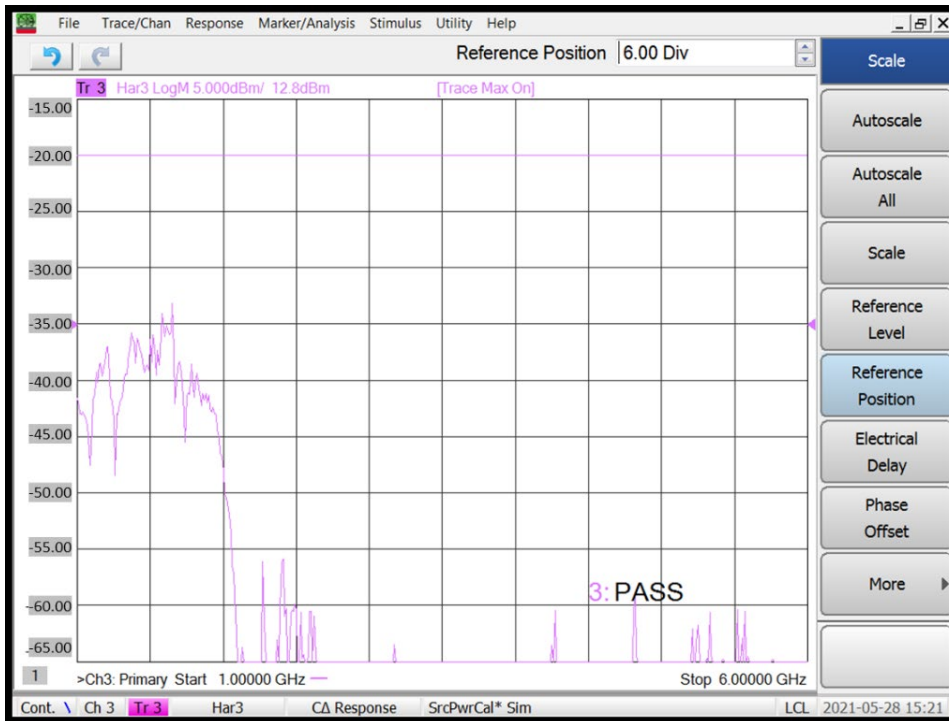
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TYPICAL 2<sup>ND</sup> HARMONIC @ 75 WATTS OUTPUT



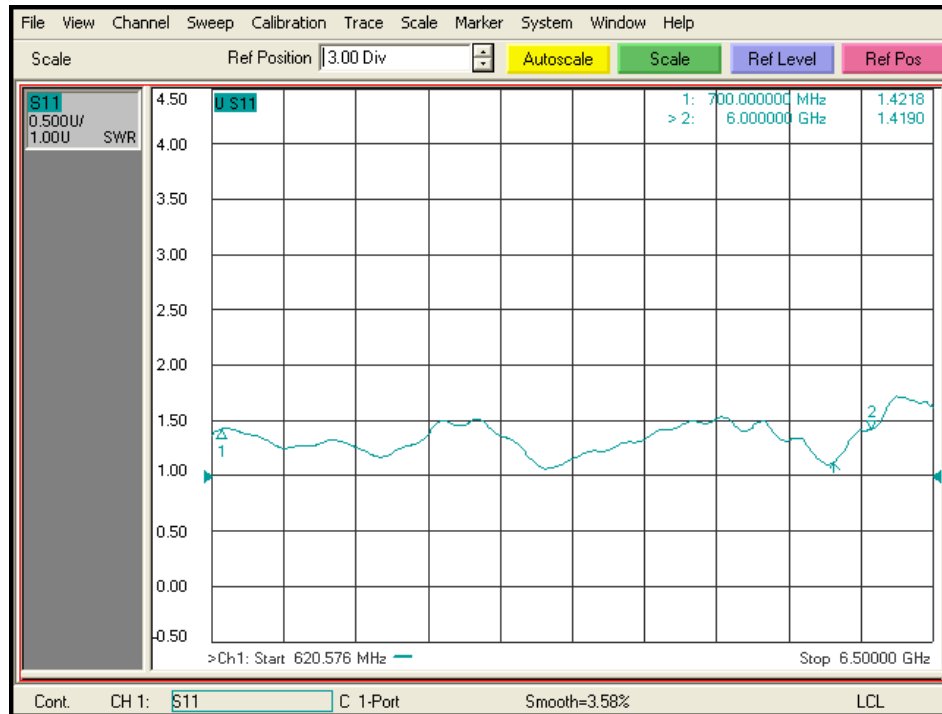
TYPICAL 3<sup>RD</sup> HARMONIC @ 75 WATTS OUTPUT



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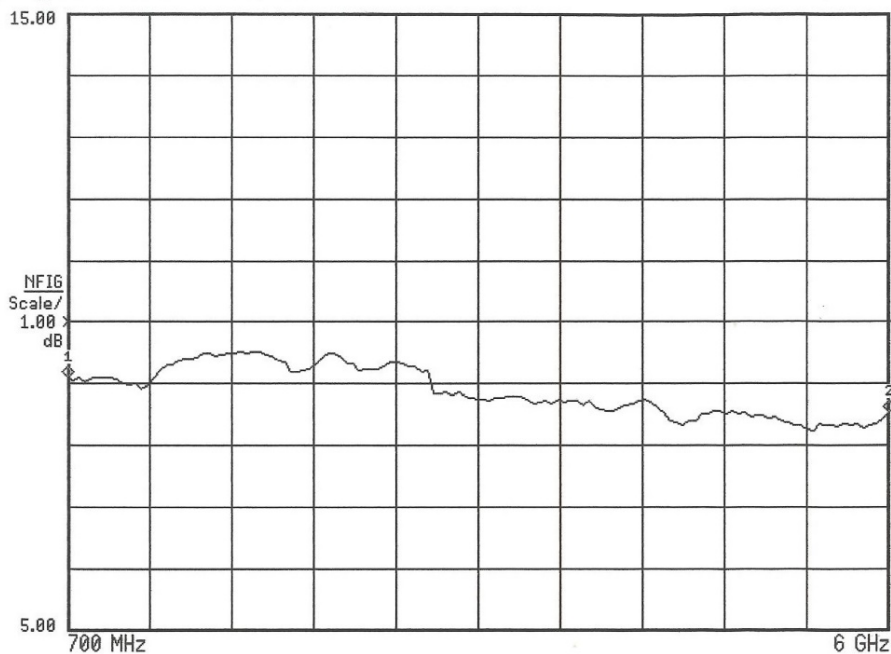
- 75 W
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## TYPICAL INPUT VSWR



## TYPICAL NOISE FIGURE

Agilent 11:46:20 Dec 21, 2020



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