



# Amplifiers

## Model 2000S1G2z8

### Features:

- 2000 W CW, 1.0 – 2.8 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

### Applications:

- EMC (military, aviation, automotive, commercial)
- Radiated and conducted EMC testing
- General purpose, antenna, and component testing

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ISO 9001:2015 Certified  
ISO 17025 :2017 Accredited

The Model 2000S1G2z8 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 2000 W across its operating bandwidth of 1.0 – 2.8 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.



- 2000 W
- 1.0 - 2.8 GHz

Electrical Specifications					
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output	PSAT	2000	2500	>3000	W
Input for Rated Output	Pin			1	mW
				0	dBm
Power Output @ 3dB Compression	P3dB	1800	2400	>2750	W
Power Output @ 1dB Compression	P1dB	1500	1800	>2250	W
Operating Frequency	BW	1.0		2.8	GHz
Gain (Small Signal)		67	69	71	dB
Gain Reduction Adjustment (when below gain compression)		10	12	15	dB
Flatness @ small signal (-20dBm input)	$\Delta G$		$\pm 1.5$	$\pm 2.0$	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		+70		dBm
Noise Figure	NF		10		dB
Harmonic Distortion @ 1500 W	H2, H3		-30	-20	dBc
Spurious			-73		dBc
Power Consumption	Pd			15	kW

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 or from an open circuit to a short circuit, without the aid of foldback circuitry. However, mismatch above 6:1 may limit output to 1000 watts reflected power.			50	%
AC Power (option 3-Phase, Low Voltage, Delta 4-wire)	200		240	VAC
AC Power (option 3-Phase, High Voltage, Wye 5-wire)	380		415	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 (38U Rack) (W x H x D)	57.3 x 193.8 x 103.1	cm
	22.6 x 76.3 x 40.6	in
Weight	363	kg
	800	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)	70 (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

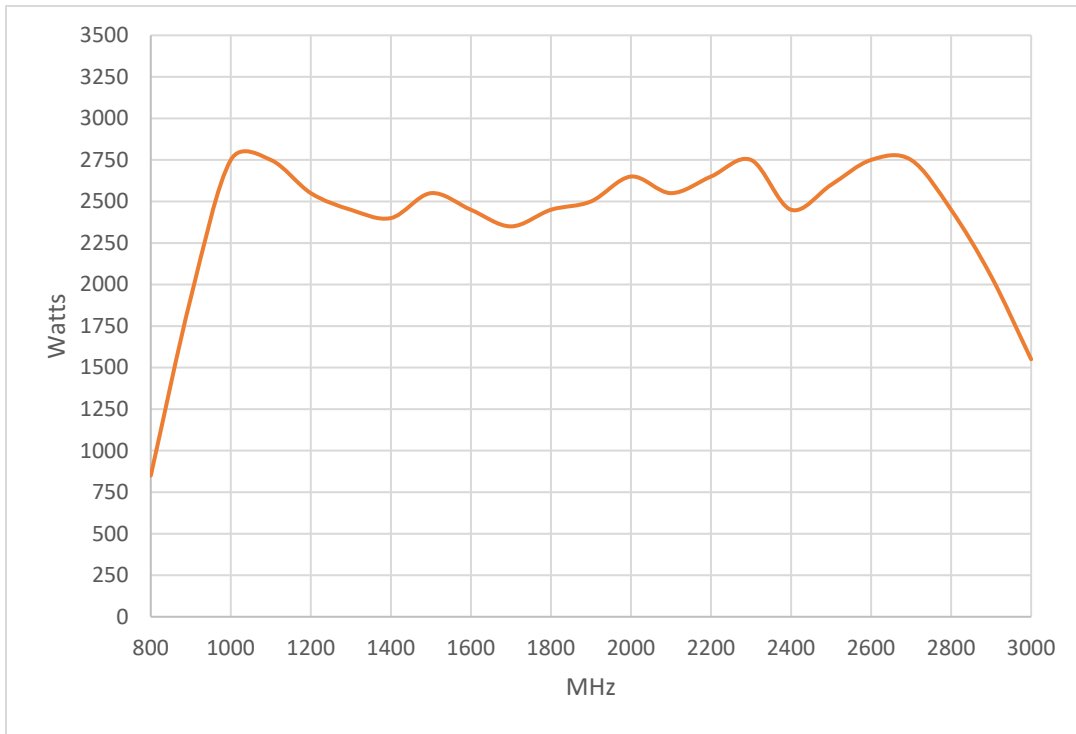
Connector interfaces	
Function	Type
RF input	N female (50 $\Omega$ ), rear
RF output	1-5/8 EIA female (50 $\Omega$ ), rear
RF sample	N female (50 $\Omega$ ), rear (63dB typical)
IEEE-488	24-pin
RS-232	9-pin subminiature D female
RS-232 (fiber optic)	ST
USB 2.0	Type B
Ethernet	RJ-45
Interlock	15-pin subminiature 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.



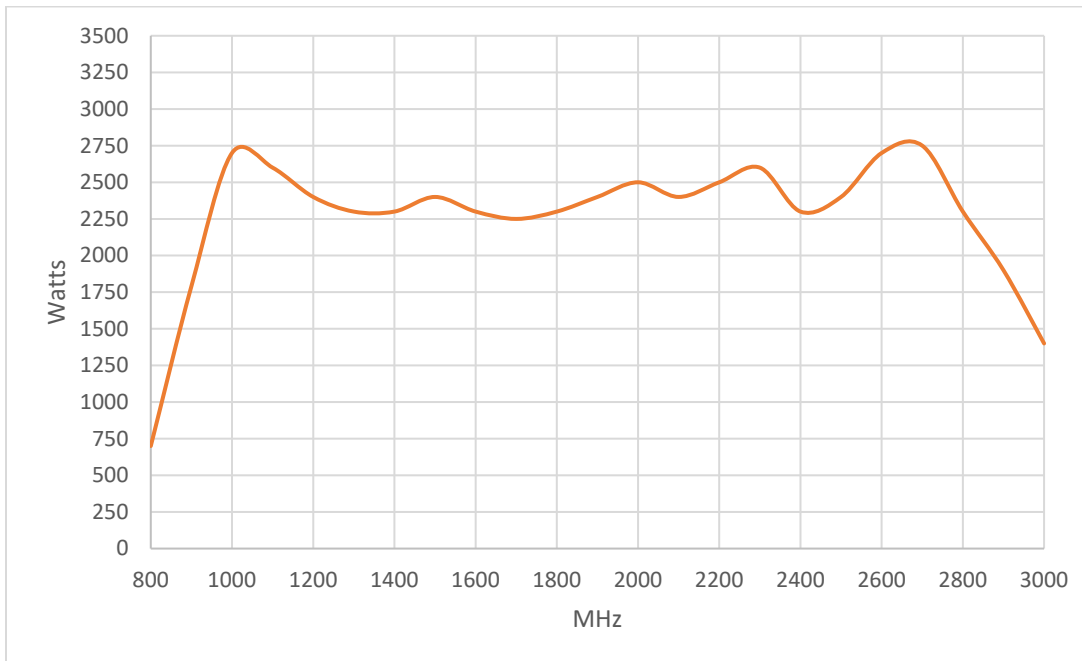


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TYPICAL PSAT POWER @ 0 dBm INPUT

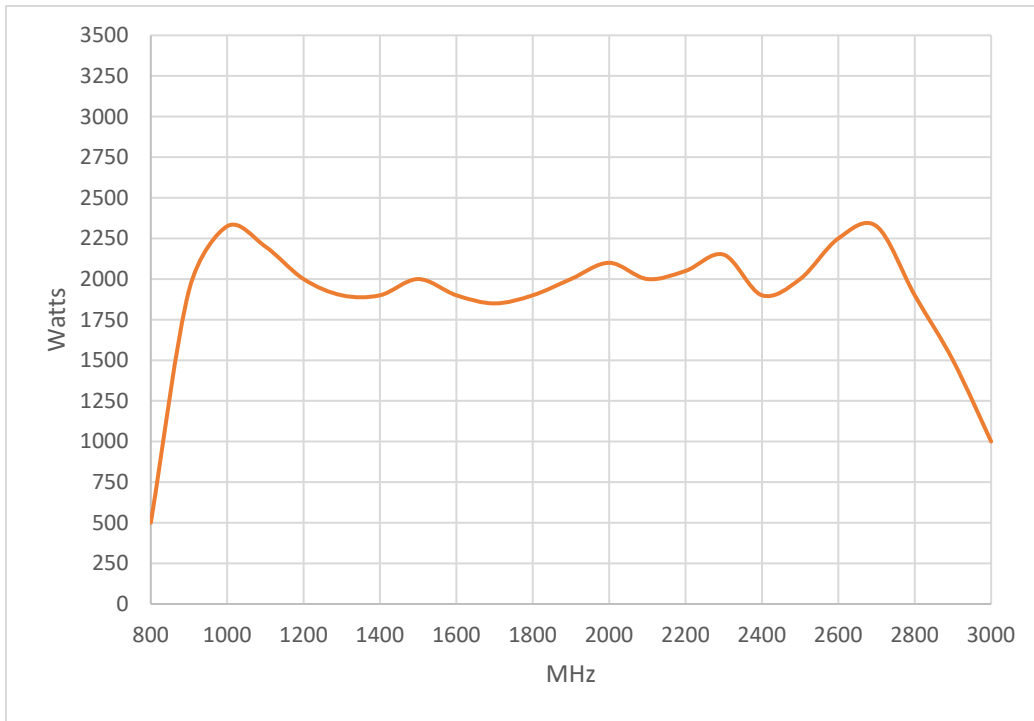


TYPICAL POWER @ P3 dB COMPRESSION

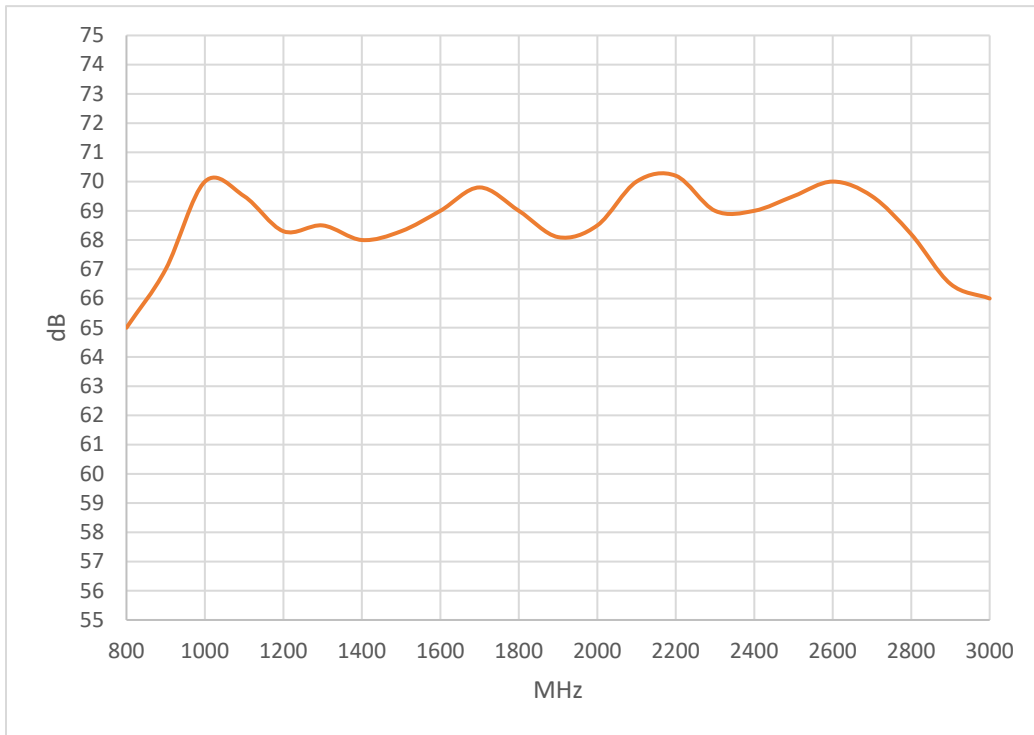


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### TYPICAL POWER @ P1dB COMPRESSION

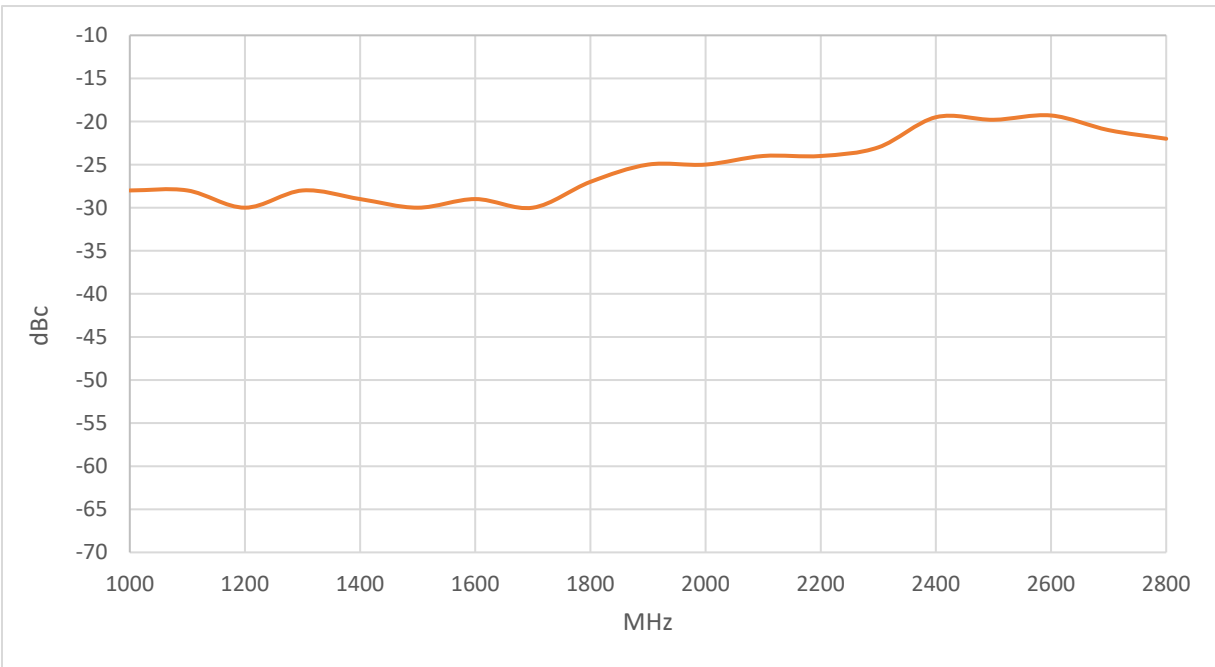


### TYPICAL SMALL SIGNAL GAIN @ -20 dBm INPUT

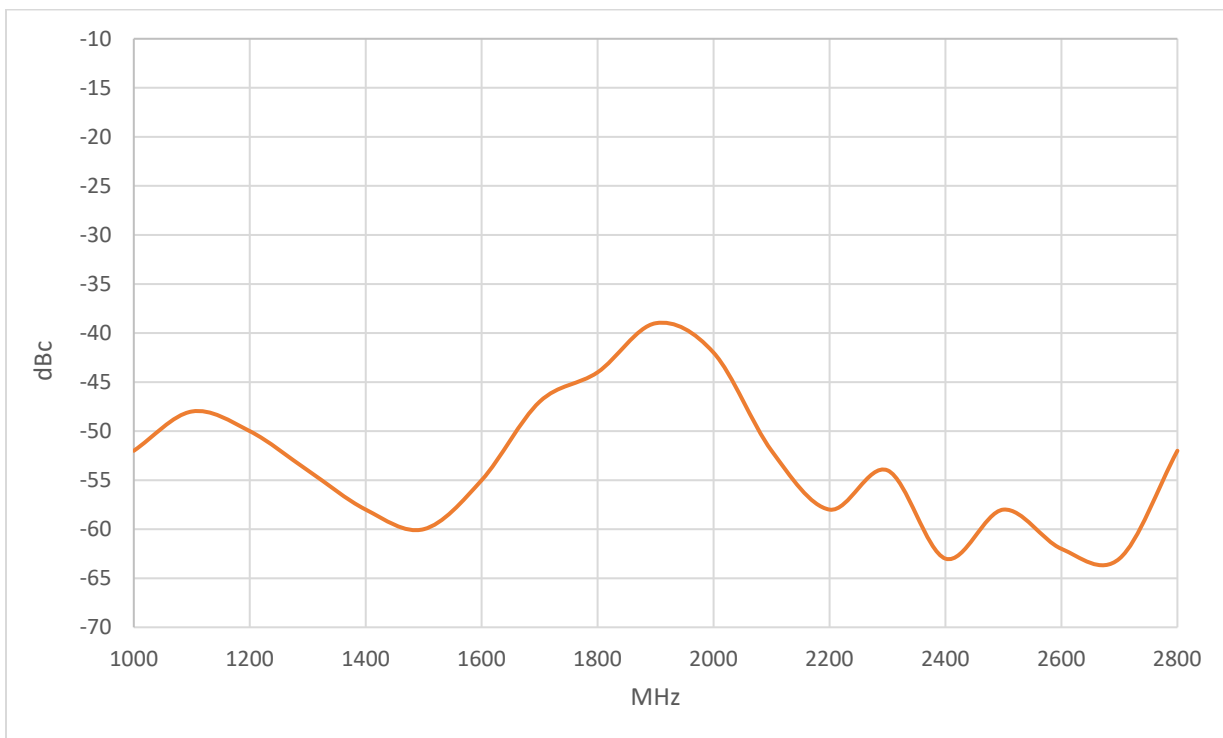


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TYPICAL 2<sup>ND</sup> HARMONIC @ 1500 W



TYPICAL 3<sup>RD</sup> HARMONIC @ 1500 W



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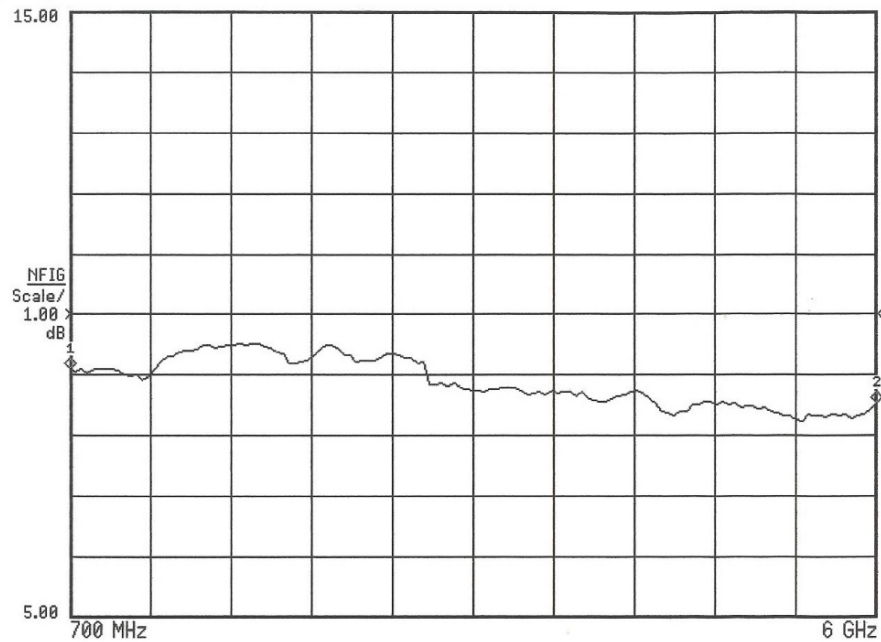
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### TYPICAL INPUT VSWR



### TYPICAL NOISE FIGURE

\* Agilent 11:46:20 Dec 21, 2020



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