

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
- 4G LTE, 5G NR (FR1/FR2), OFDM, PSK/QAM, Wi-Fi etc.

To view our full amplifier portfolio visit:
www.ar.ametek-cts.com

AR RF/Microwave Instrumentation
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215.723.8181
ISO 9001: 2015 Certified
ISO 17025 :2017 Accredited

The Model 250S1G6C is a self-contained, air-cooled, solid-state Class A broadband power amplifier designed for applications demanding wide bandwidth coverage, high gain, and linear performance. It delivers a minimum of 250 W over a frequency range of 1.0 to 6.0 GHz. The unit includes safeguards against input overdrive beyond 0 dBm, as well as various fault conditions such as excessive temperature and power supply issues.

A scalable, module-based design combined with advanced forced-air cooling ensures reliable operation and long-term performance in demanding test environments. A clear front-panel display provides immediate visibility of operating status and fault conditions, enabling fast setup and confident operation. For maximum flexibility, all control and monitoring functions can be accessed either locally via the front panel or remotely through a wide range of standard interfaces, including GPIB/IEEE-488, RS-232, fiber-optic serial, USB, and Ethernet.

This Class A amplifier is engineered for EMC immunity, communications, and aerospace & defense testing, delivering exceptional stability and linearity under demanding load conditions, including high VSWR, open, or short circuits. Low spurious emissions, high spectral purity, and wideband performance make it ideal for modern wireless and 5G applications.

Export classification for this device is 3A001. These goods, technologies, or software are regulated under U.S. Export Administration Regulations, and unauthorized diversion is prohibited by U.S. law.



- 250 W
- 1.0 – 6.0 GHz

Electrical Specifications					
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output	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 gain compression)		10	12	15	dB
Flatness @ small signal (-20 dBm input)	ΔG		± 1.5	± 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		+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	
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	∞	VSWR
RF Load Reflected Will operate without damage or oscillation when connected to any load impedance without the aid of foldback circuitry.			100	%
AC Power (single phase)	100		240	VAC
AC Power	47	60	63	Hz
Ambient Temperature	+5	+25	+40	°C
Storage Temperature	-20		+50	°C
Altitude			2000	m
Shock/Vibration	MIL-STD-810G Method 514 and 516			

Mechanical Specifications		
Parameters	Typical	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)	
Acoustic Noise Measured @ 1 Meter	61	dBA

Connector Interfaces	
Function	Type
RF Input	N, female, rear (50 Ω) (option front)
RF Output	7/16 DIN, female, rear (50 Ω) (option front)
RF Sample	N, female (50 Ω) (54dB typical)
IEEE-488	24-pin
RS-232	9 pin subminiature D
Ethernet	RJ-45
RS-232 (fiber optic)	ST
USB 2.0	Type B
Interlock	15-pin subminiature D
AC	C20

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

Ordering Options

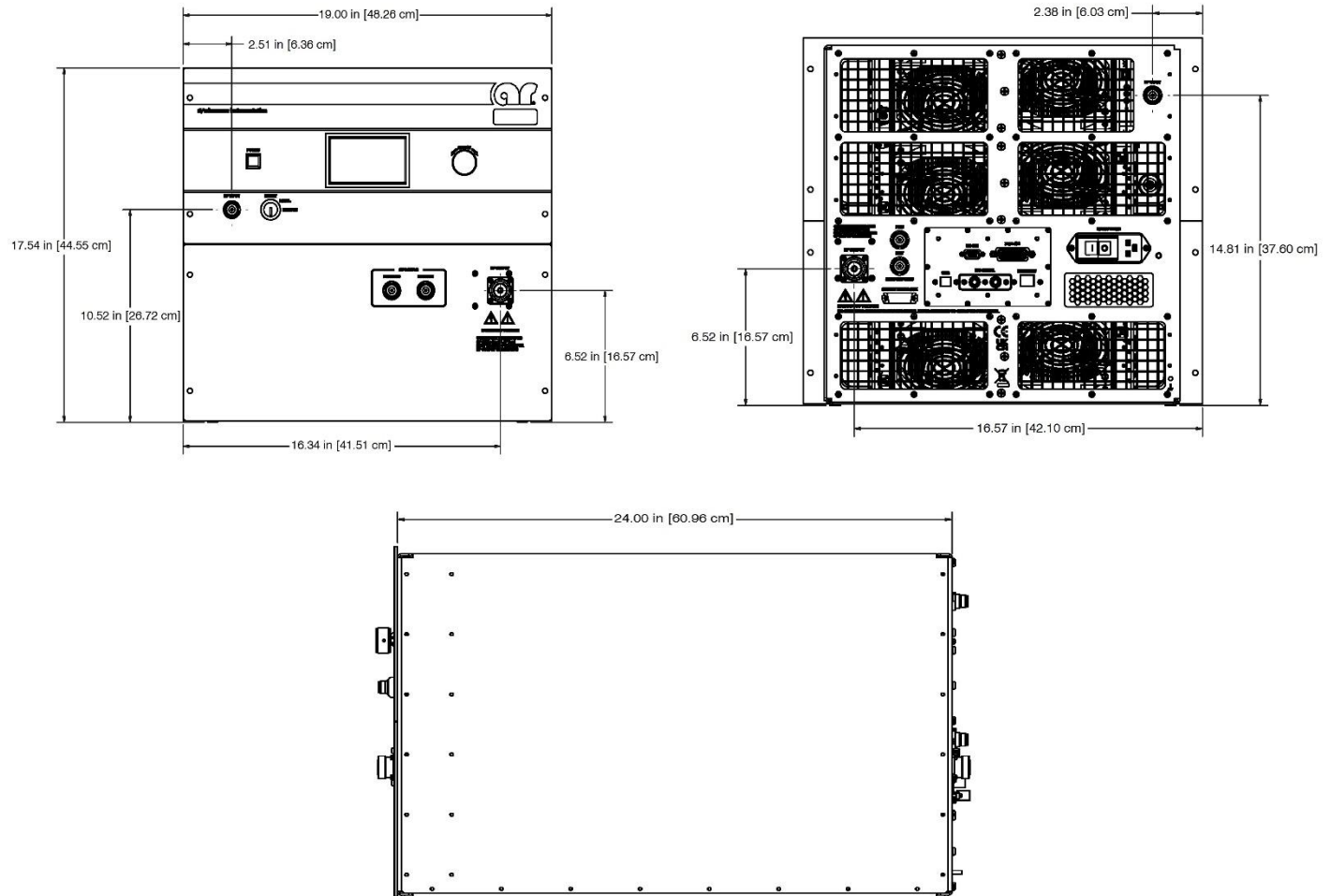
250S1G6C	-	-	N	-	-	716	-	-	-
Model	RF IN Conn Location, Type		RF OUT Conn Location, Type		Enclosure No Enclosure		RF Sample Ports		
Connector		Enclosure		RF Sample Ports					
Front	F	Enclosure	E	Front	SPF				
Rear	R	No Enclosure	NE	Rear	SPR				

Envelope Drawing

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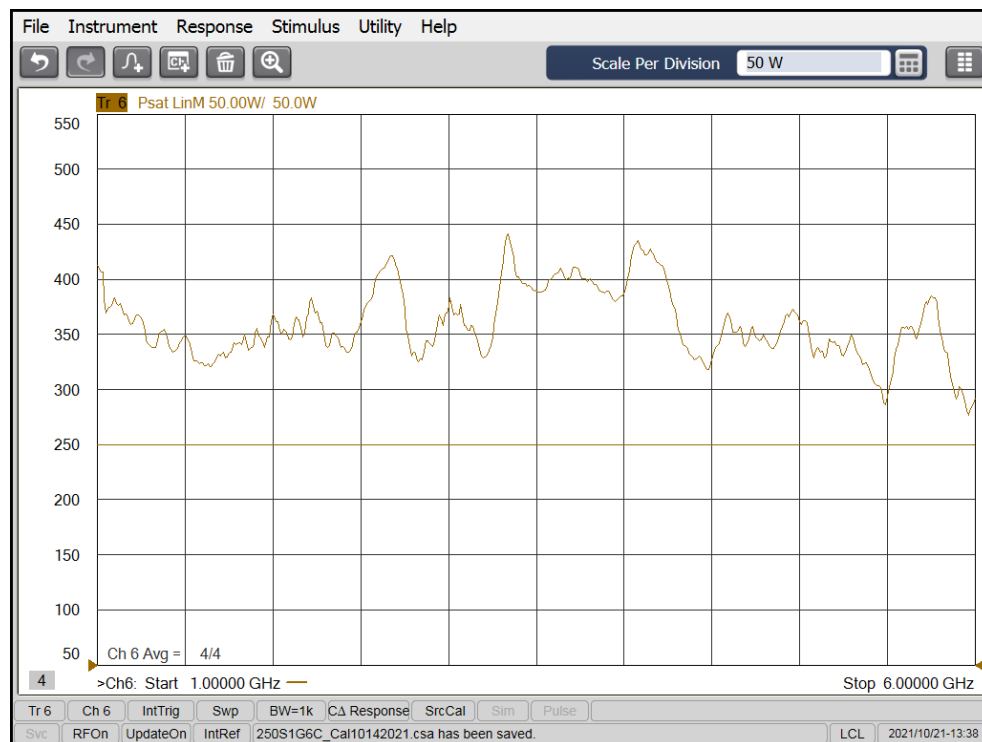
Model 250S1G6C

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- 1.0 – 6.0 GHz

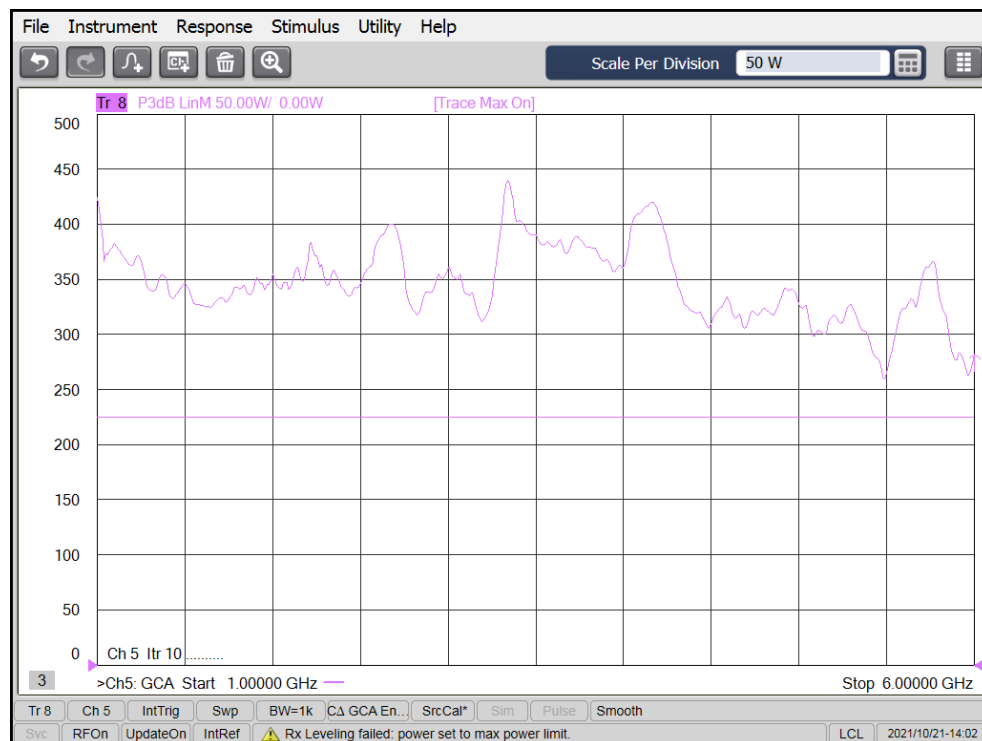


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TYPICAL PSAT POWER @ 0dBm INPUT

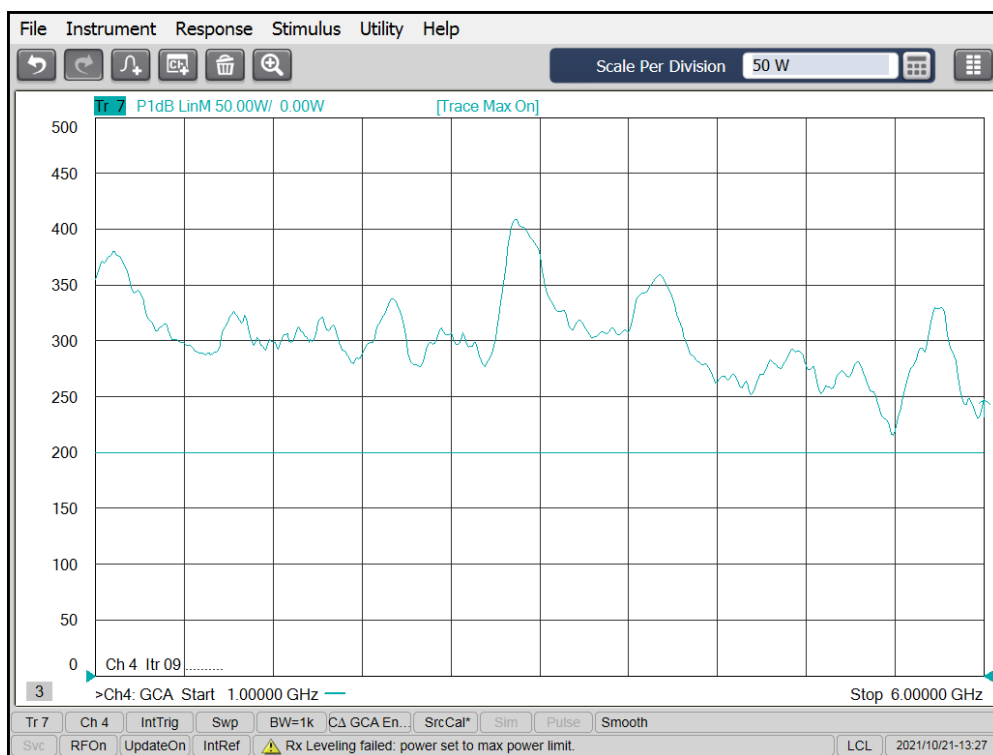


TYPICAL POWER @ P3dB COMPRESSION

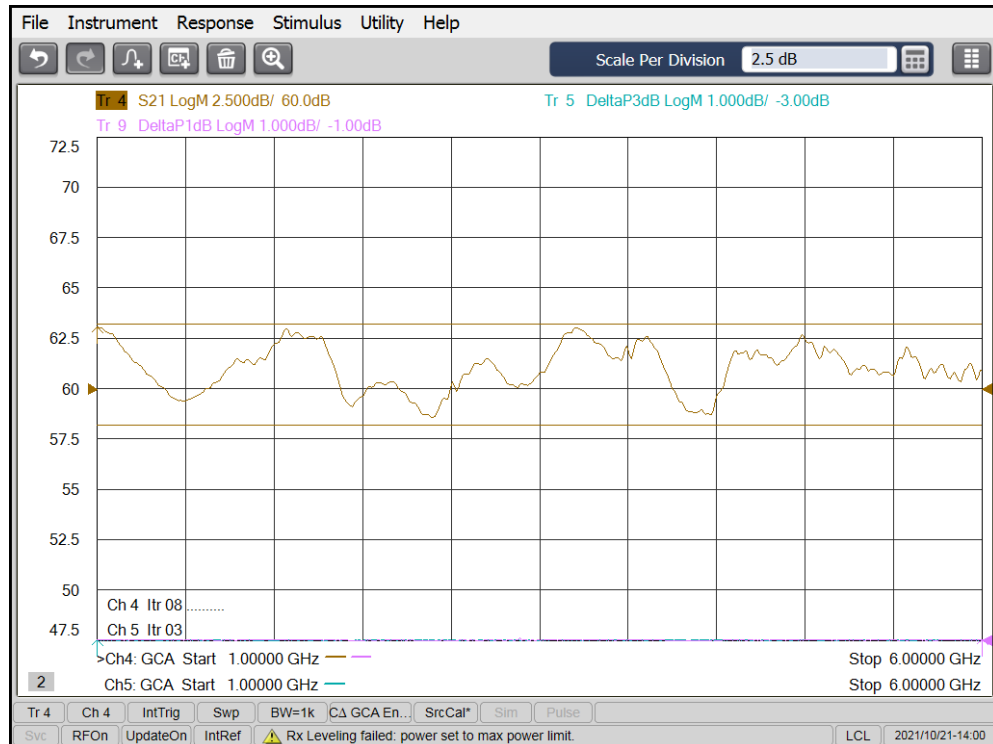


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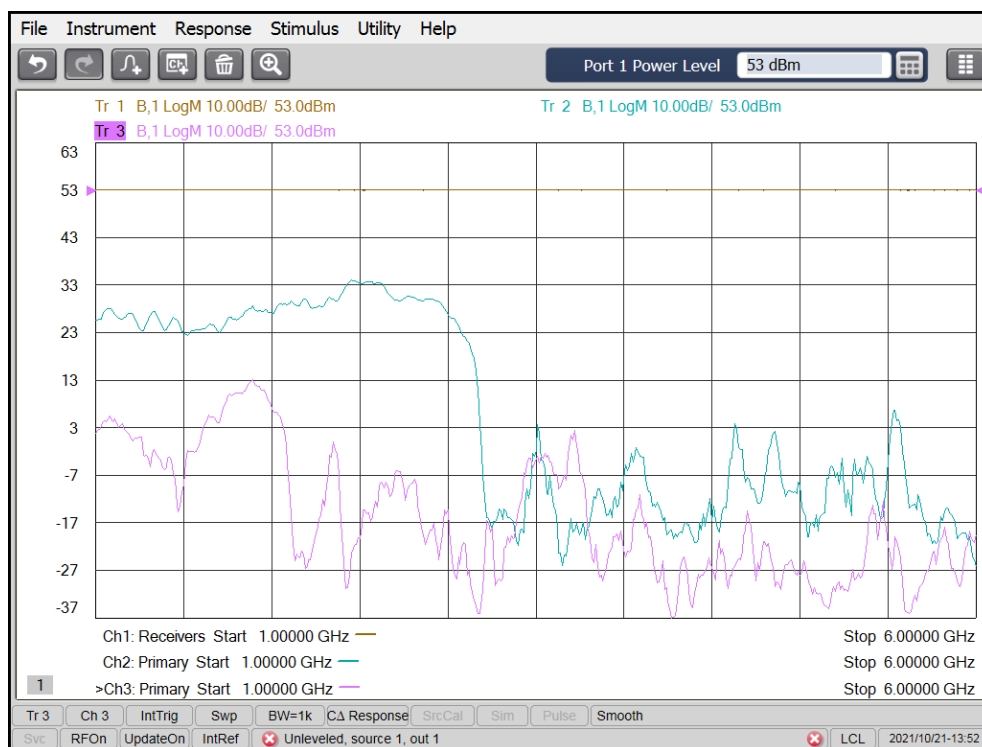
TYPICAL POWER @ P1dB COMPRESSION



TYPICAL SMALL SIGNAL GAIN @ -20dBm INPUT



- 250 W
- 1.0 – 6.0 GHz

TYPICAL 2nd, 3rd HARMONICS @ 200 W

Model 250S1G6C

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TYPICAL INPUT VSWR



TYPICAL NOISE FIGURE

Agilent 11:46:20 Dec 21, 2020

