

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

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

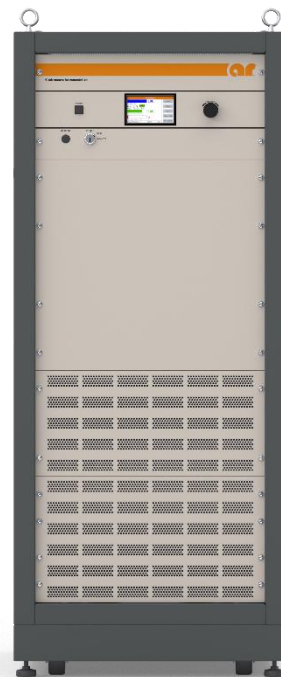
AR RF/Microwave Instrumentation
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Souderton, PA 18964
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ISO 9001: 2015 Certified
ISO 17025 :2017 Accredited

The Model 750S1G6C 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 750 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.



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- 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)		61	64	66	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	
Spurious			-73		dBc
Power Consumption	PD			5200	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. 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	60	63	Hz
Ambient Temperature	+5	+25	+40	°C
Storage Temperature	-20		+50	°C
Altitude			1000	m
Shock/Vibration	MIL-STD-810G Method 514 and 516			



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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 (With Cabinet)	203	kg
	448	lb
Cooling	Forced air (self-contained fans)	
Acoustic Noise Measured @ 1 Meter	66	dBA

Connector Interfaces	
Function	Type
RF Input	N, female, rear (50 Ω) (option front)
RF Output	7/16 DIN, female, rear (50 Ω)
RF Sample	N, female (50 Ω) (57dB 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	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.

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

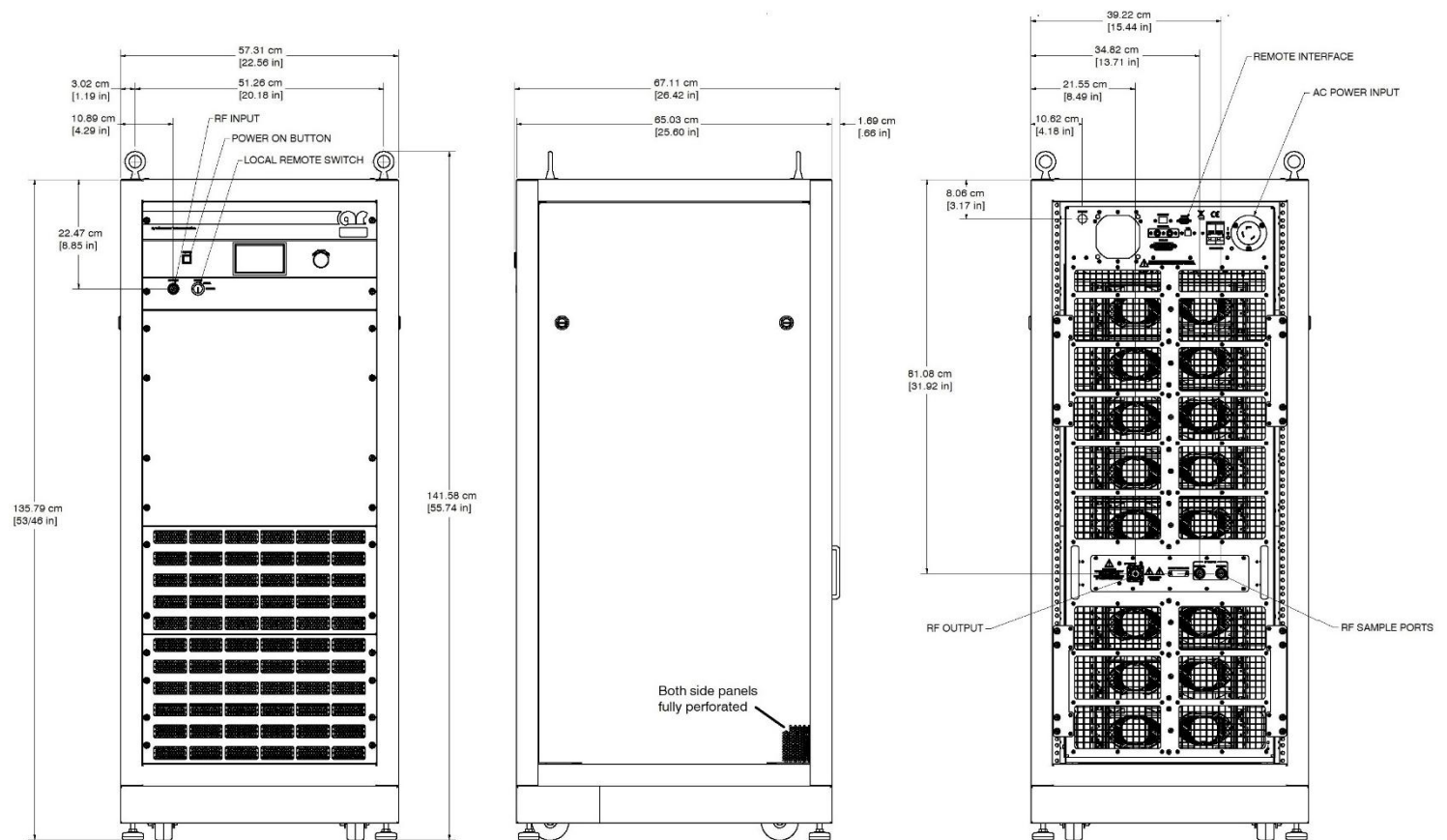
750S1G6C	-	-	N	-	R	-	716	-	
Model			RF IN Conn		RF OUT Conn		RF Sample		
			Location, Type		Location, Type		Ports		
			Connector		RF Sample Ports				
			Front	F	Front	SPF			
			Rear	R	Rear	SPR			

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Envelope Drawing

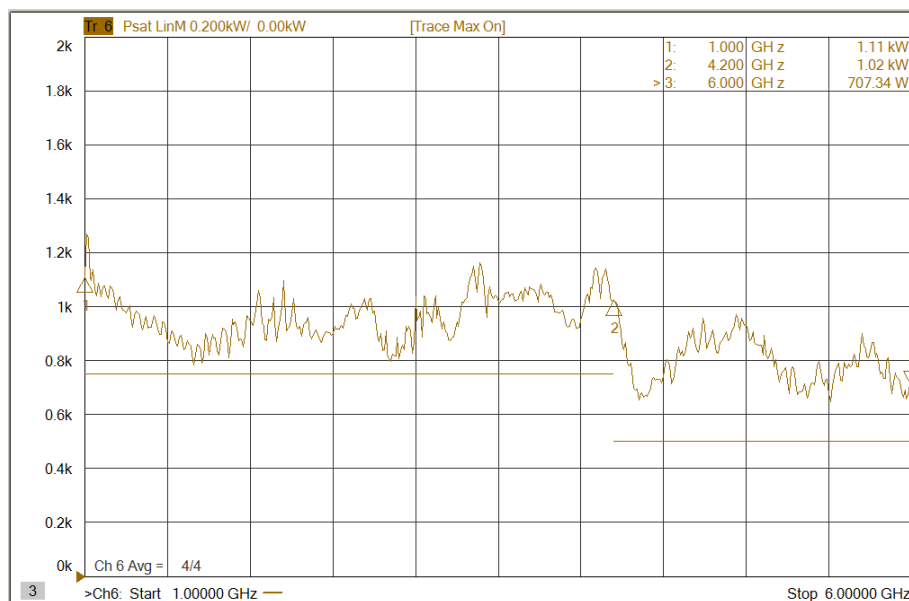


Model 750S1G6C

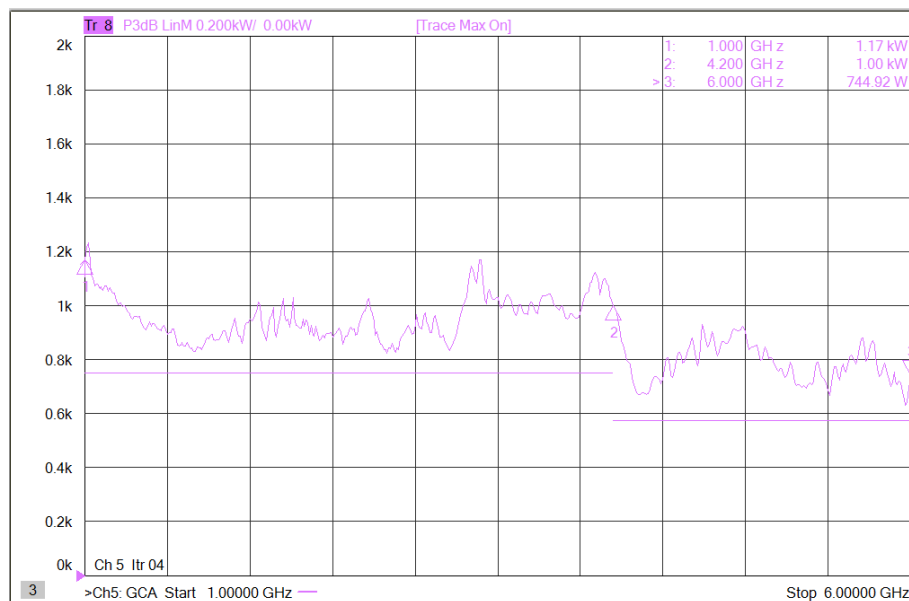
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TYPICAL PSAT POWER @ 0 dBm INPUT



TYPICAL POWER @ P3 dB COMPRESSION

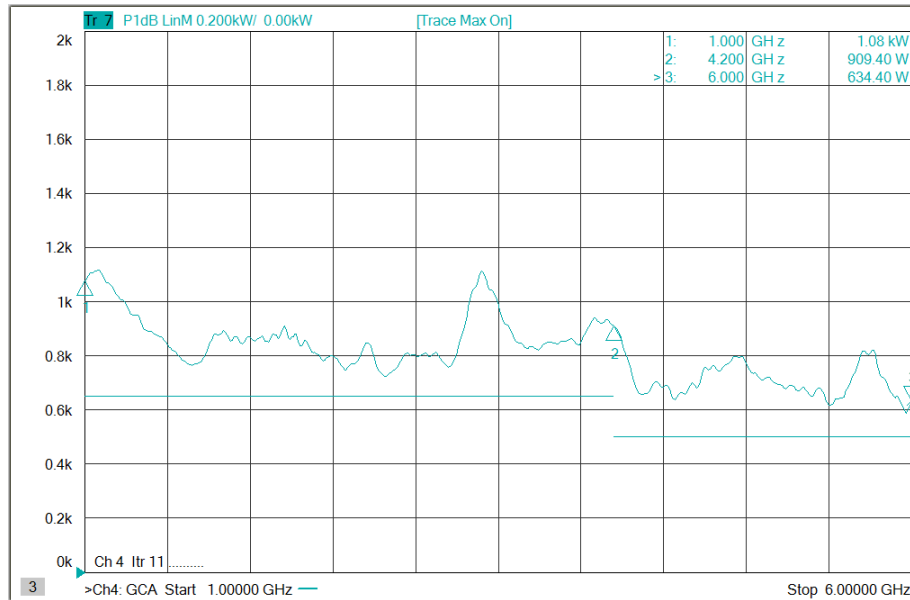


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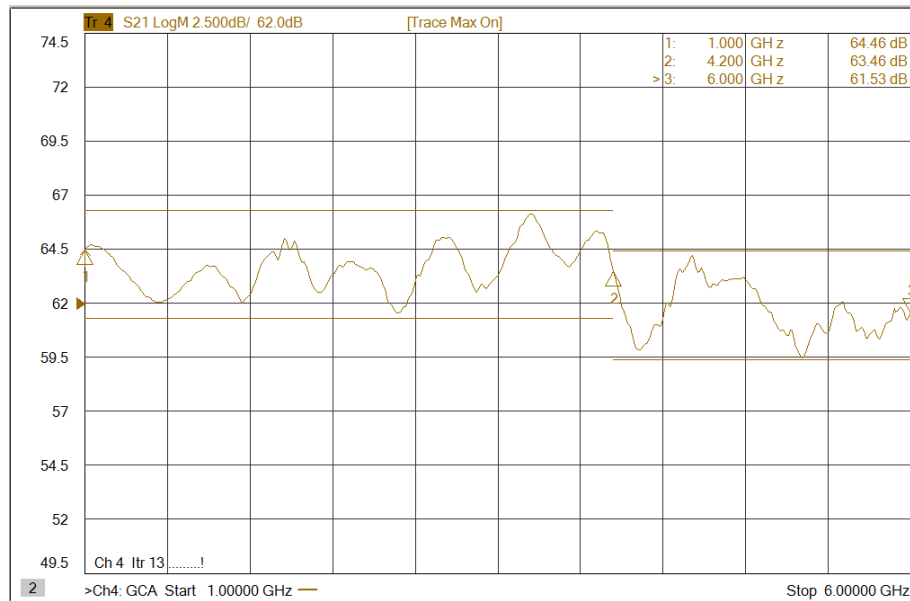
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TYPICAL POWER @ P1dB COMPRESSION



TYPICAL SMALL SIGNAL GAIN @ -20 dBm INPUT

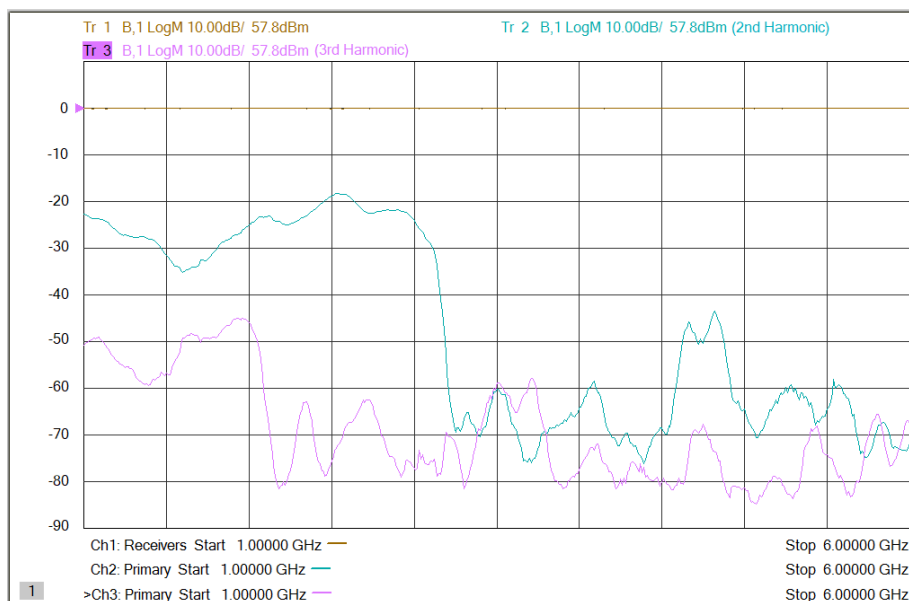


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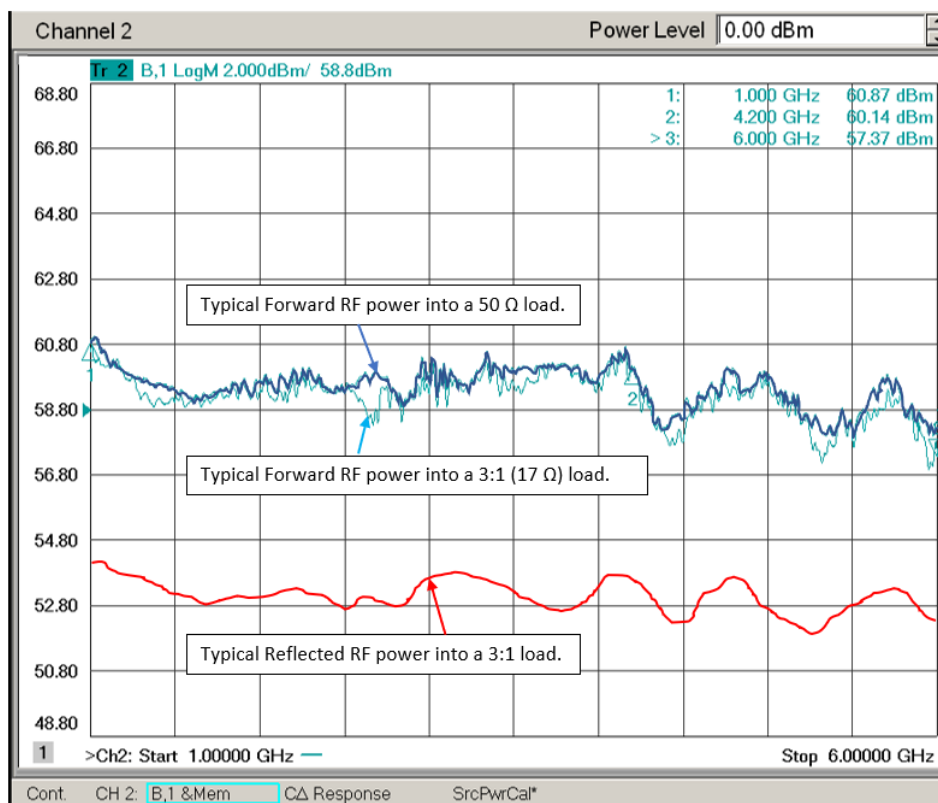
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TYPICAL 2nd, 3rd HARMONICS @ 600 W



TYPICAL RF POWER INTO 3:1 MISMATCH



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TYPICAL INPUT VSWR



TYPICAL NOISE FIGURE

