

Amplifiers

Model 250S6G18C

Features:

- 250 W CW, 6.0 - 12.0 GHz
- 200 W CW 12.0 - 18.0 GHz
- 100% mismatch tolerant
- Class A design
- Built-in fault monitoring, logging and protection
- Touch screen display
- RF sample ports with forward and reverse power monitoring
- VSWR monitor with user settable limit
- User settable ALC
- Remote control: Ethernet, USB, GPIB, fiber-optic serial, RS-232
- Modular design for easy maintenance and service
- Low acoustical noise
- 3 Year Warranty

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

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ISO 9001: 2015 Certified
ISO 17025 :2017 Accredited

The Model 250S6G18C 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 6.0 to 18 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.



Model 250S6G18C

- 250 W, 6.0 – 12.0 GHz
- 200 W, 12.0 – 18.0 GHz



Electrical Specifications					
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output (6.0 - 12.0 GHz)	PSAT	250	300	>350	W
Rated Power Output (12.0 - 18.0 GHz)	PSAT	200	250	>350	W
Input for Rated Output	Pin			1.0	mW
				0	dBm
Power Output @ 3 dB Compression (6.0 - 12.0 GHz)	P3dB	250	300	>350	W
Power Output @ 3 dB Compression (12.0 - 18.0 GHz)	P3dB	175	250	>350	W
Power Output @ 1 dB Compression (6.0 - 12.0 GHz)	P1dB	200	250	>350	W
Power Output @ 1 dB Compression (12.0 - 18.0 GHz)	P1dB	120	200	>300	W
Operating Frequency	BW	6.0		18.0	GHz
Gain (Small Signal)		55	59	63	dB
Gain Reduction Adjustment (when below compression)		10	15	20	dB
Flatness	ΔG		±2.5	±3.5	dB
Input Impedance	Z in		50		Ohm
			2.0:1	2.5:1	VSWR
Output Impedance	Z out		50		Ohm
3 rd Order Intercept	IP3		+59		dBm
Noise Figure	NF		10		dB
Harmonic Distortion @ 250 W, 6.0 - 9.0 GHz,	H2, H3		-20	-17	dBc
Harmonic Distortion @ 250 W, 9.0 - 12.0 GHz,	H2, H3		-30	-25	dbc
Harmonic Distortion @ 200 W, 12.0 - 18.0 GHz,	H2, H3		-30	-25	dbc
Spurious			-75		dBc
Power Consumption	Pd			4500	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.			50	%
AC Power (single phase)	200		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	Typical	Unit
Dimensions (With Rack) (16U Rack) (W x H x D)	57.3 x 96.0 x 95.5	cm
	22.6 x 37.8 x 37.6	in
Dimensions (No Rack) – 16U for 19" Rack	48.3 x 71.0 x 99.6	cm
	19.0 x 28.0 x 39.2	in
Weight (With Cabinet)	117	kg
	258	lb
Weight (No Cabinet)	88	kg
	194	lb
Cooling	Forced air (self-contained fans)	
Acoustic Noise Measured @ 1 Meter	68	dBA

Connector Interfaces	
Function	Type
RF Input	N, female, rear (50 Ω) (option front)
RF Output	WRD650, rear (50 Ω)
RF Sample	N, female (50 Ω), 56 dB 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

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

250S6G18C	-	N	-	R	-	WRD650	-		-																		
Model		RF IN Conn Location, Type		RF OUT Conn Location, Type		Enclosure No Enclosure		RF Sample Ports																			
		<table><tr><th colspan="2">Connector</th></tr><tr><td>Front</td><td>F</td></tr><tr><td>Rear</td><td>R</td></tr></table>	Connector		Front	F	Rear	R			<table><tr><th colspan="2">Enclosure</th></tr><tr><td>Enclosure</td><td>E</td></tr><tr><td>No Enclosure</td><td>NE</td></tr></table>	Enclosure		Enclosure	E	No Enclosure	NE		<table><tr><th colspan="2">RF Sample Ports</th></tr><tr><td>Front</td><td>SPF</td></tr><tr><td>Rear</td><td>SPR</td></tr></table>	RF Sample Ports		Front	SPF	Rear	SPR		
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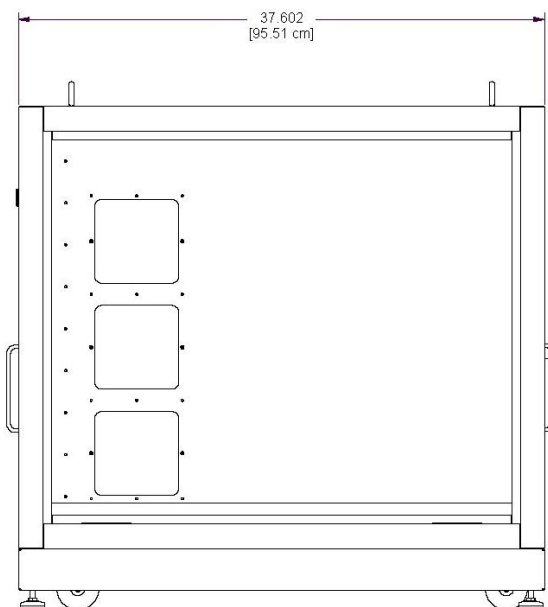
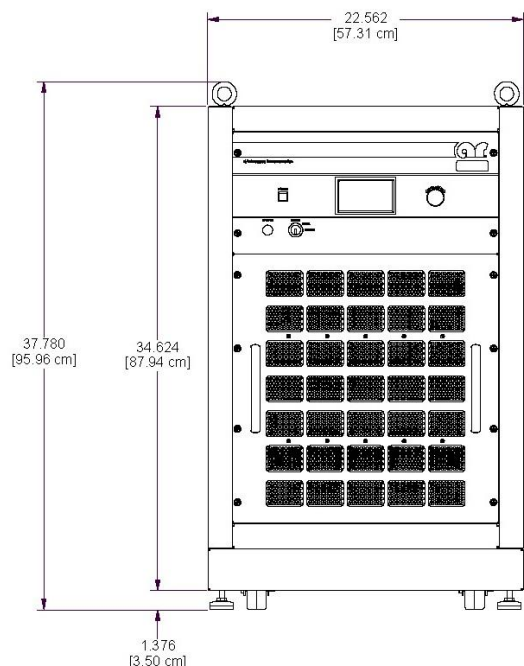
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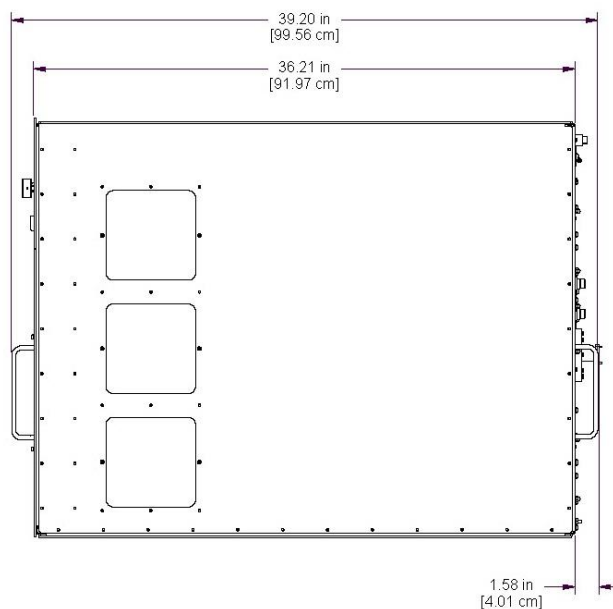
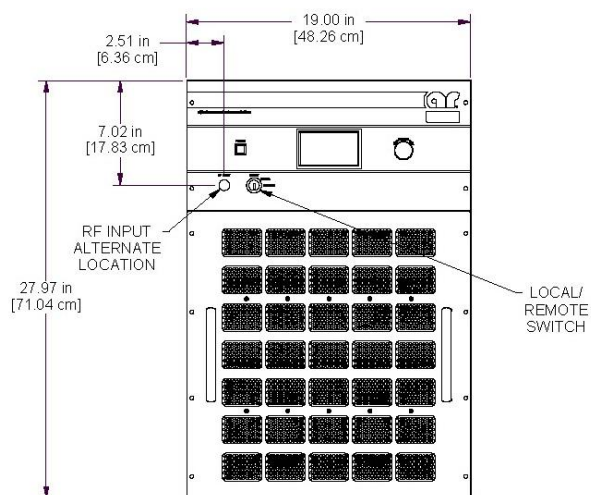


Envelope Drawing

Top Level Layout



Amplifier Layout

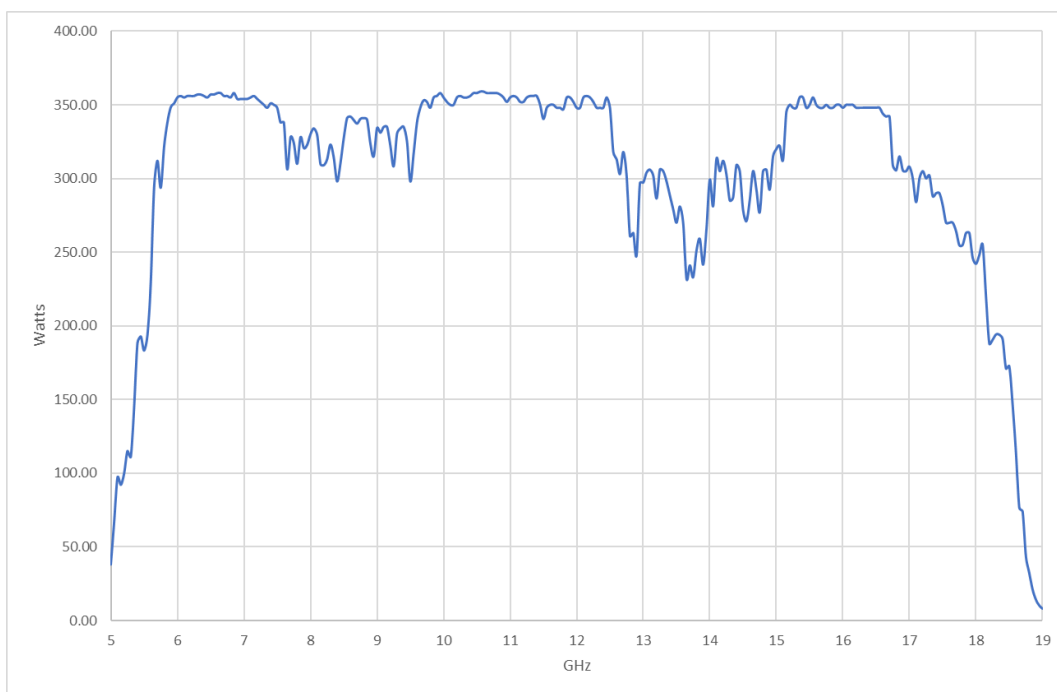


Model 250S6G18C

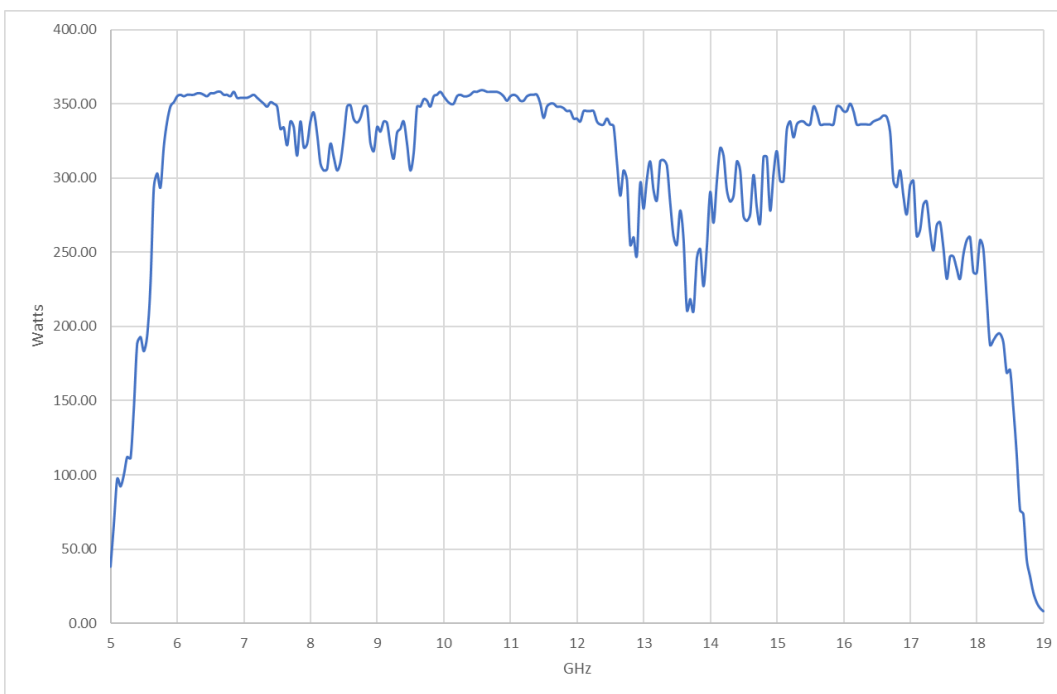
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TYPICAL PSAT POWER @ 0dBm INPUT



TYPICAL POWER @ P3dB COMPRESSION

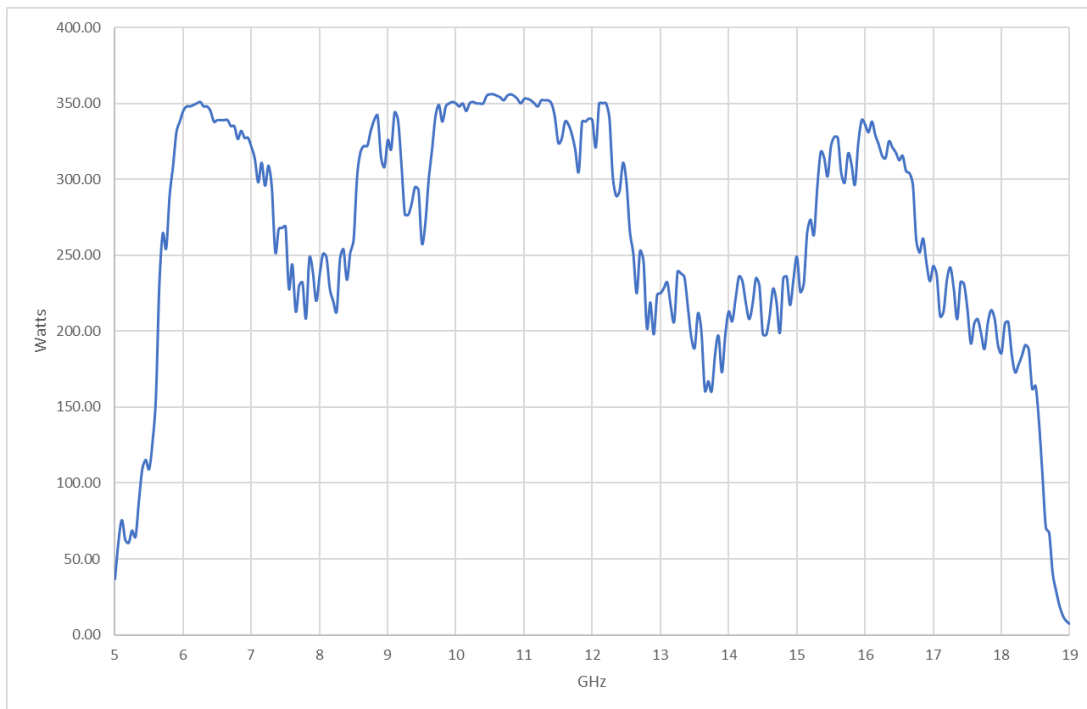


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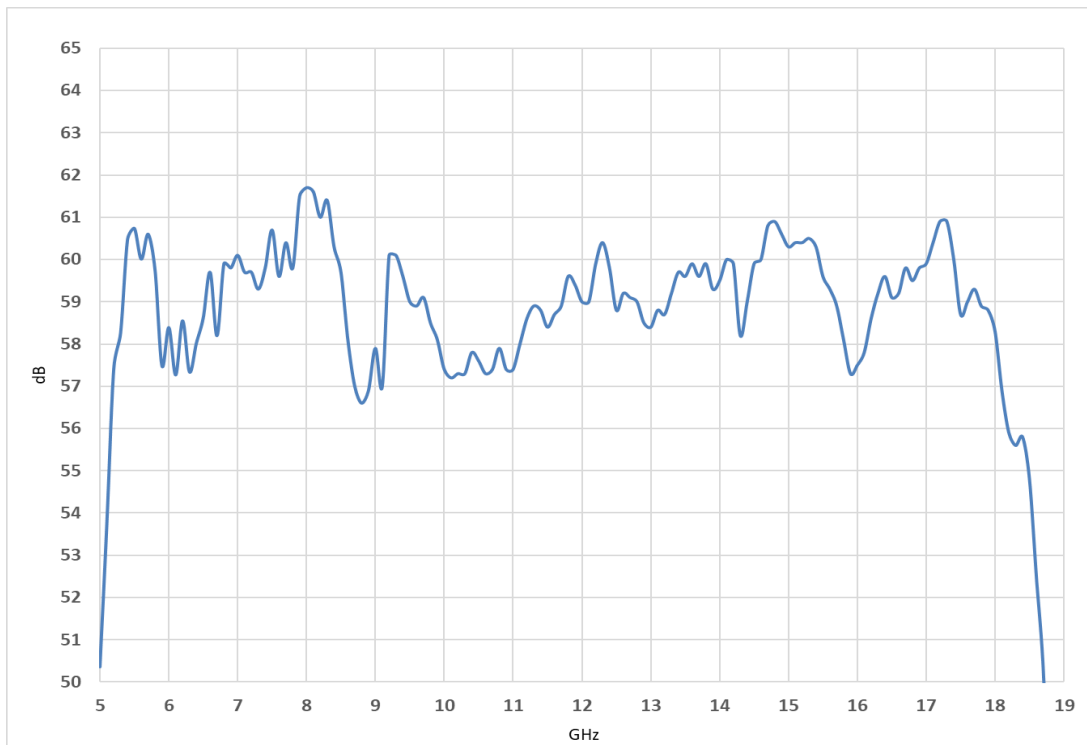
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TYPICAL POWER @ P1dB COMPRESSION



TYPICAL SMALL SIGNAL GAIN @ -20dBm INPUT

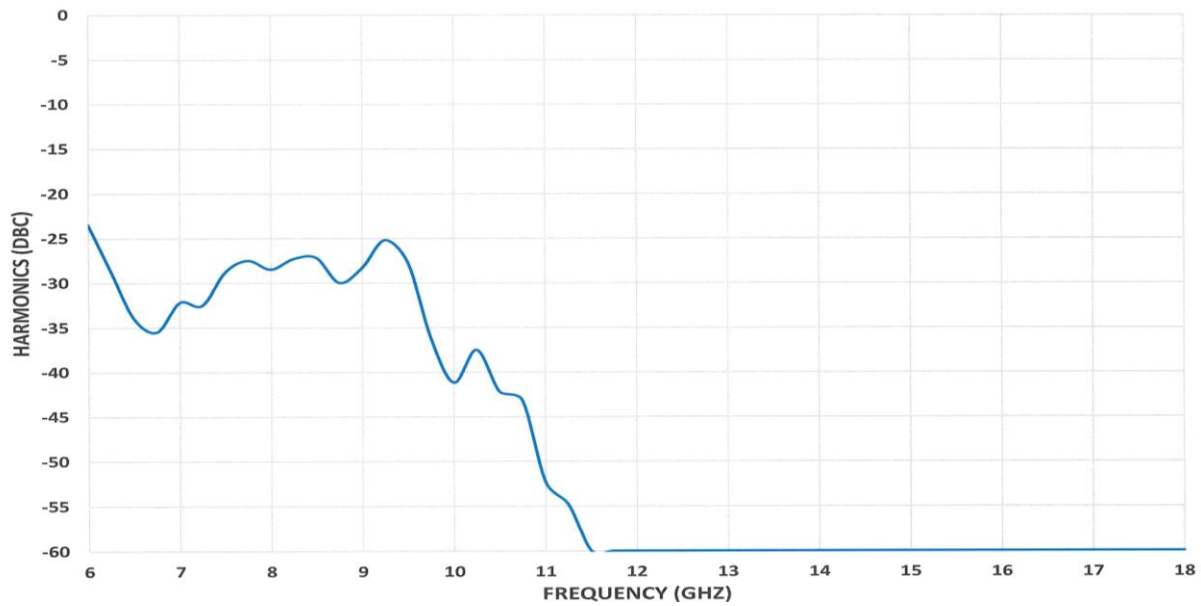


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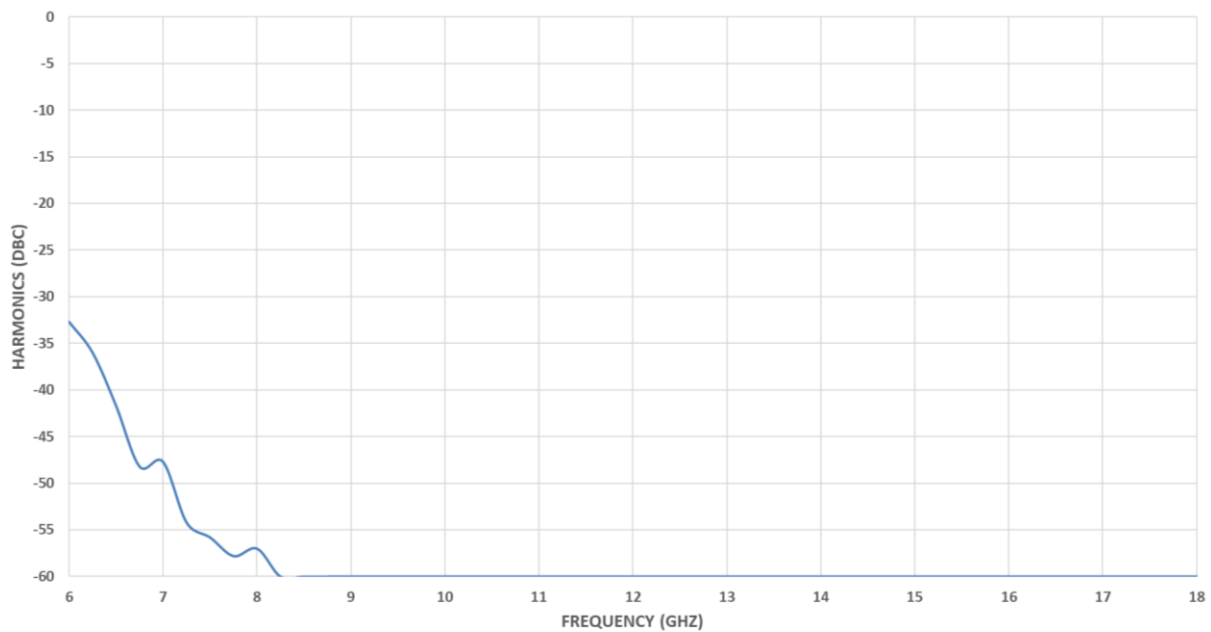
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TYPICAL 2nd HARMONIC @ RATED POWER OUTPUT



TYPICAL 3rd HARMONIC @ RATED POWER OUTPUT

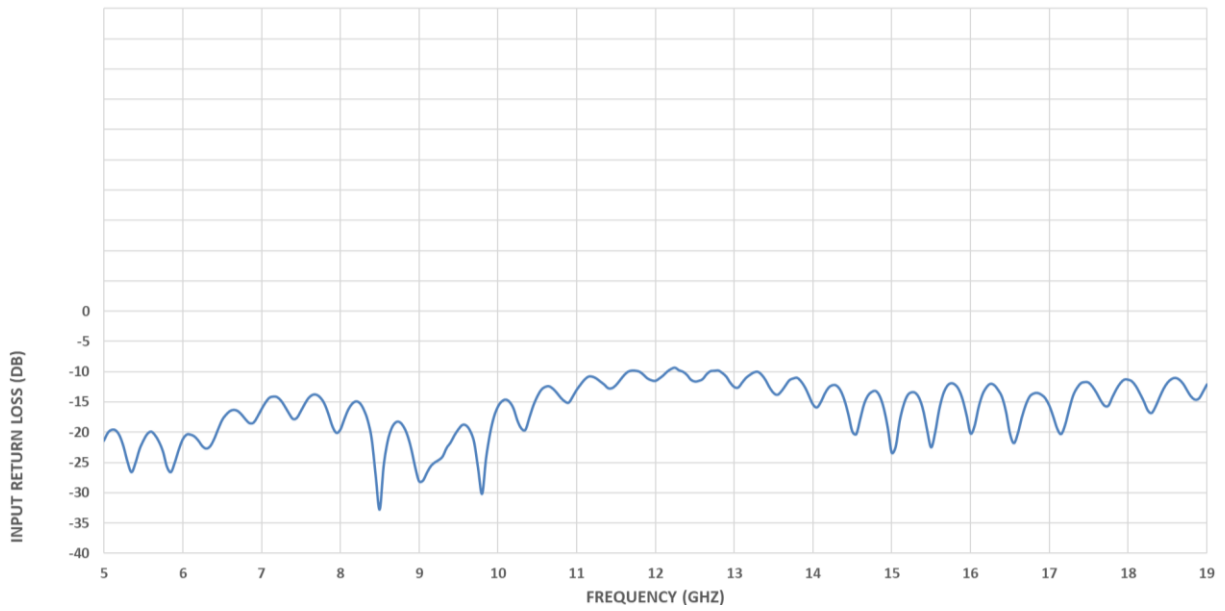


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TYPICAL INPUT VSWR



TYPICAL NOISE FIGURE

