

# Amplifiers

## Model 20S6G18A-L

### Features:

- 20 W CW, 6 - 18 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
- CDMA, W-CDMA, TDMA, GSM, UWB, WiMAX etc.

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 20S6G18A-L is a solid-state, Class A design, self-contained, liquid-cooled, broadband power amplifier designed for applications where instantaneous bandwidth, high gain and linearity are required. It will provide a minimum of 20 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 a variety of communication technologies such as CDMA, W-CDMA, TDMA, GSM, UWB, WiMAX etc.

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.

Model 20S6G18A-L

- 20 W
- 6 - 18 GHz

Electrical Specifications					
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output (6 - 18 GHz)	PSAT	20	30	>60	W
Input for Rated Output	Pin			1.0	mW
				0	dBm
Power Output @ 1 dB Compression	P1dB	15	22	>45	W
Power Output @ 3 dB Compression	P3dB	18	25	>55	W
Operating Frequency	BW	6.0		18.0	GHz
Gain (Small Signal)		45	47	49	dB
Gain Reduction Adjustment (when below compression)		10			dB
Flatness	$\Delta G$		$\pm 2.0$	$\pm 2.5$	dB
Input Impedance	Z in		50		Ohm
				2.5:1	VSWR
Output Impedance	Z out		50		Ohm
3 <sup>rd</sup> Order Intercept	IP3		49		dBm
Harmonic Distortion @ 20 W	H2, H3			20	dBc
Power Consumption	PD			600	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	$\infty$	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
	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		Unit
Dimensions (With Cabinet) (W x H x D)	50.2 x 20.6 x 63.2	cm
	19.8 x 8.1 x 24.9	in
Dimensions (No Cabinet) - 4U for 19" Rack	48.3 x 18.0 x 62.5	cm
	19.0 x 7.1 x 24.6	in
Weight (With Cabinet)	29.5	kg
	65	lb
Weight (No Cabinet)	20.4	kg
	45	lb
Cooling	Forced air (internal self-contained liquid)	
Acoustical Noise (Measured @ 1 meter from the front)	58 (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 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

<b>20S6G18A-L</b>	-	-	<b>N</b>	-	-	<b>N</b>	-	-	-							
Model			RF IN Conn Location, Type			RF OUT Conn Location, Type			Enclosure No Enclosure							
<table border="1"> <thead> <tr> <th colspan="2">Connector</th> </tr> </thead> <tbody> <tr> <td>Front</td> <td>F</td> </tr> <tr> <td>Rear</td> <td>R</td> </tr> </tbody> </table>		Connector		Front	F	Rear	R	<table border="1"> <thead> <tr> <th colspan="2">Enclosure</th> </tr> </thead> <tbody> <tr> <td>Enclosure</td> <td>E</td> </tr> <tr> <td>No Enclosure</td> <td>NE</td> </tr> </tbody> </table>			Enclosure		Enclosure	E	No Enclosure	NE
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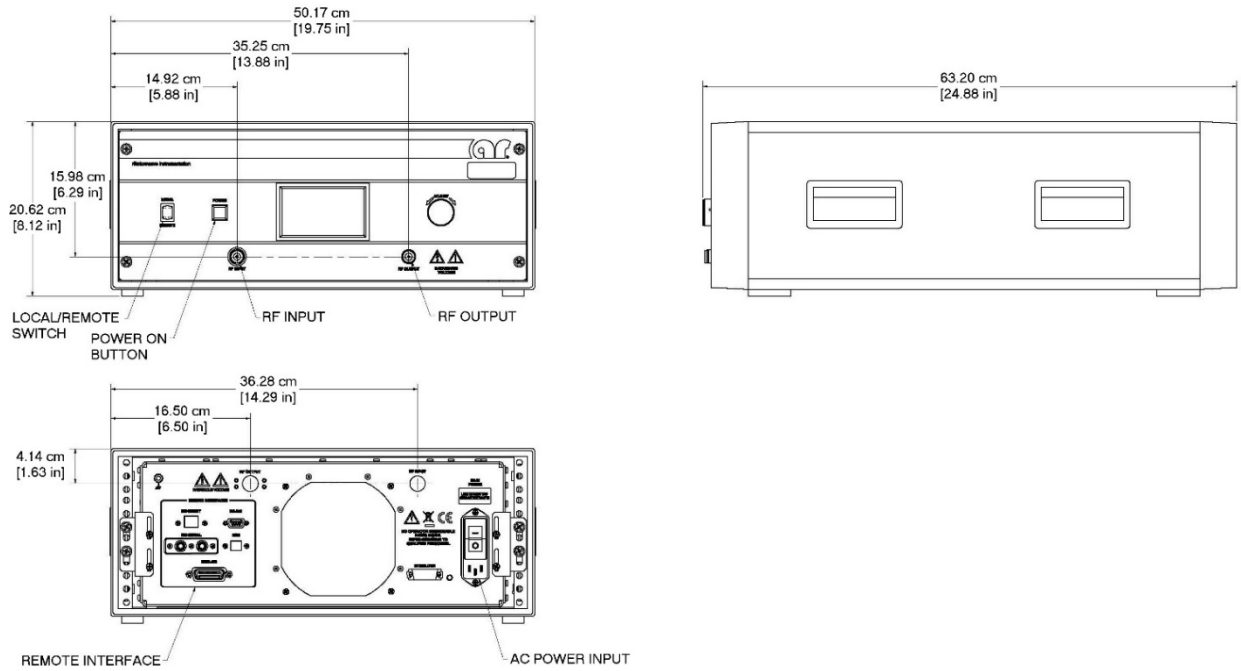


Model 20S6G18A-L

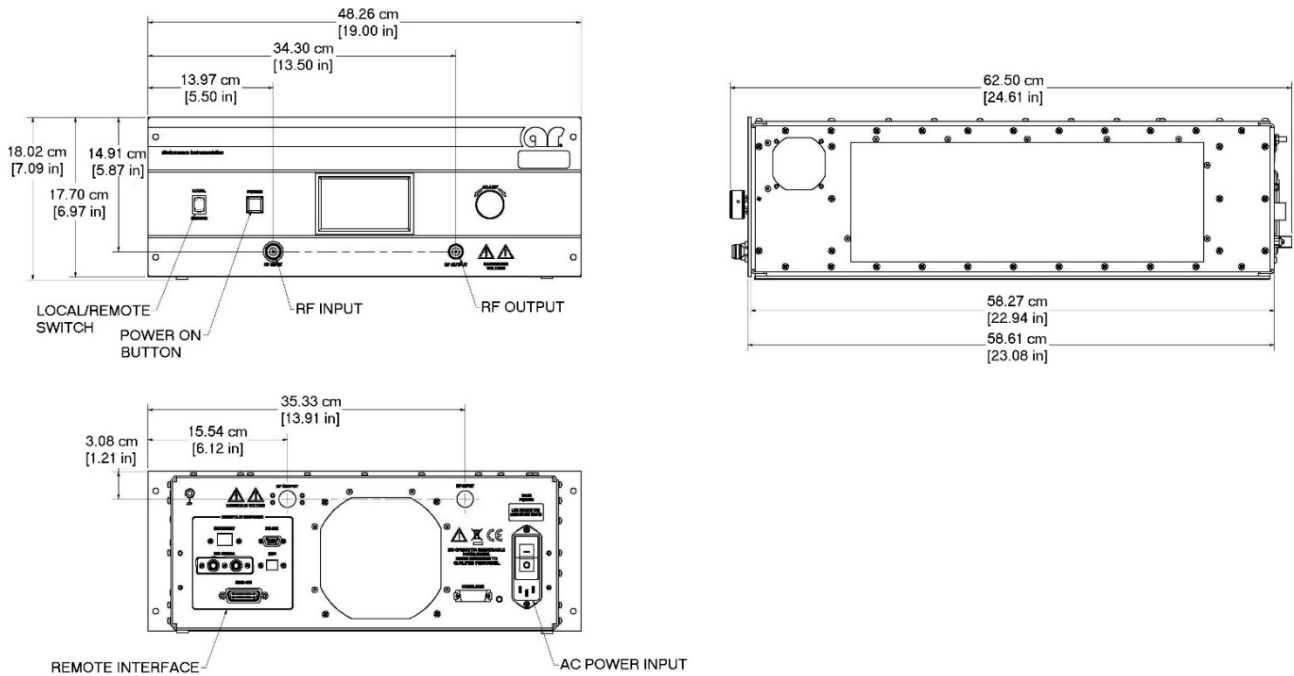
- 20 W
- 6 - 18 GHz

Envelope Drawing

20S6G18-L with Cabinet



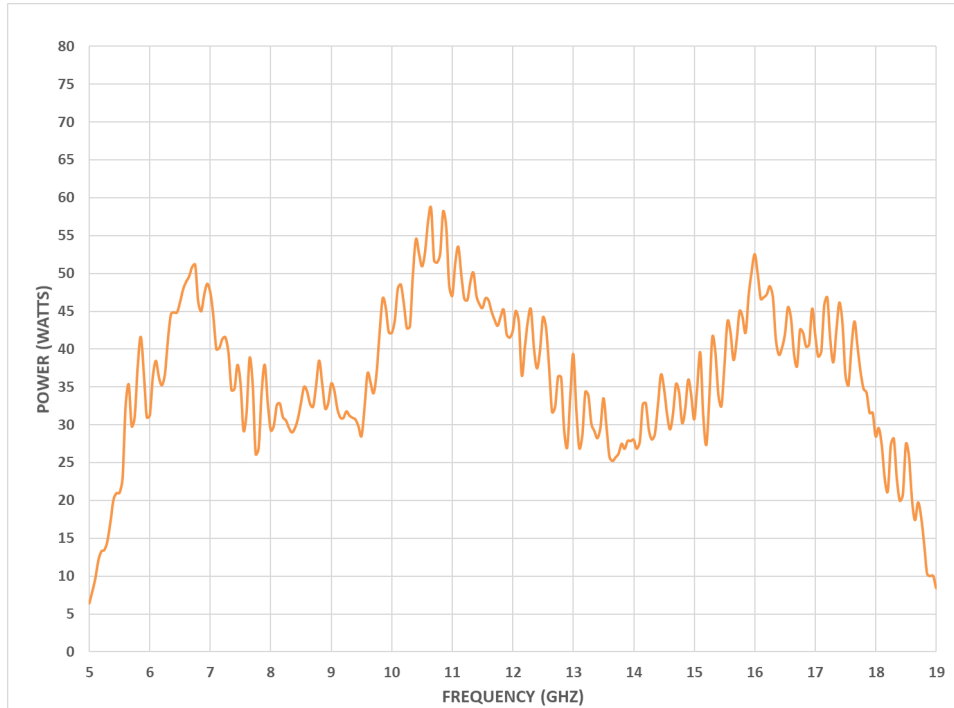
20S6G18-L without Cabinet



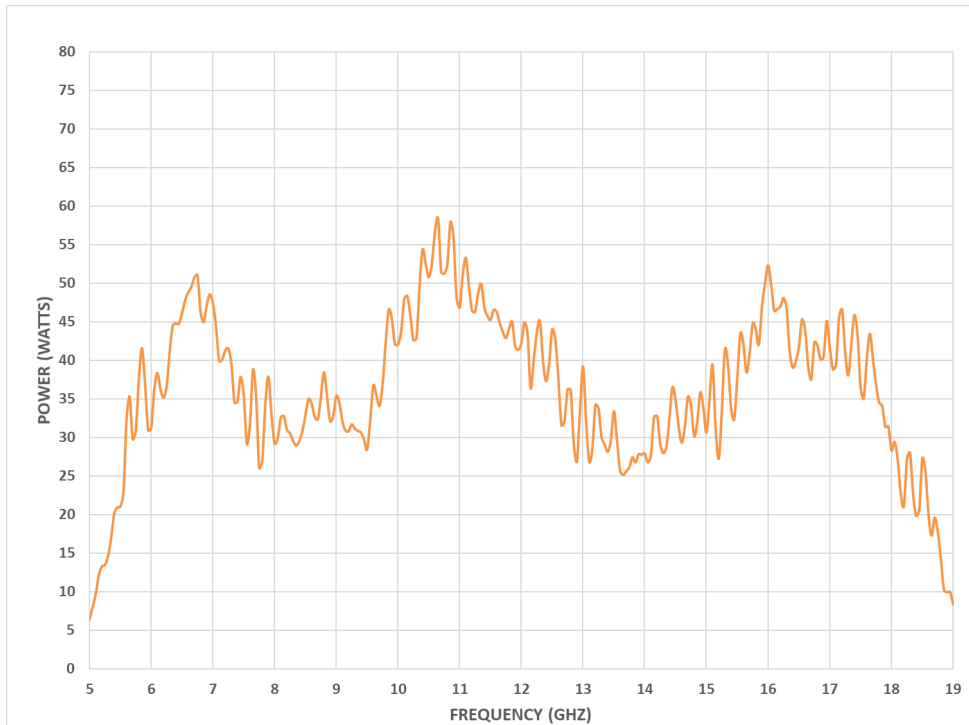
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TYPICAL PSAT POWER @ 0dBm INPUT



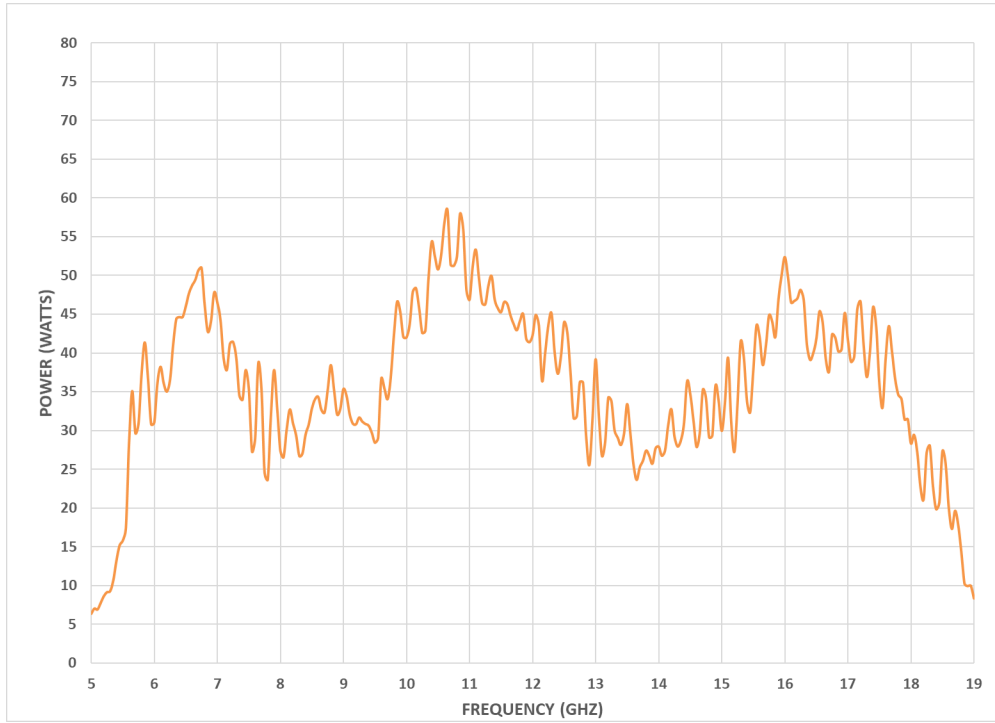
TYPICAL POWER @ P3dB COMPRESSION



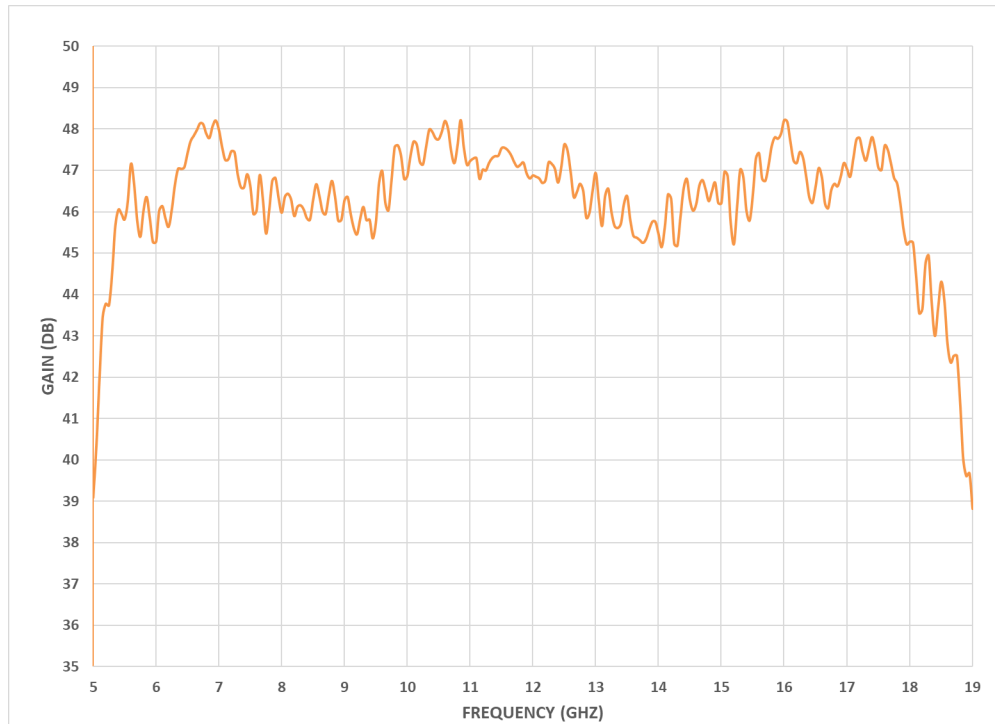
Model 20S6G18A-L

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TYPICAL POWER @ P1dB COMPRESSION



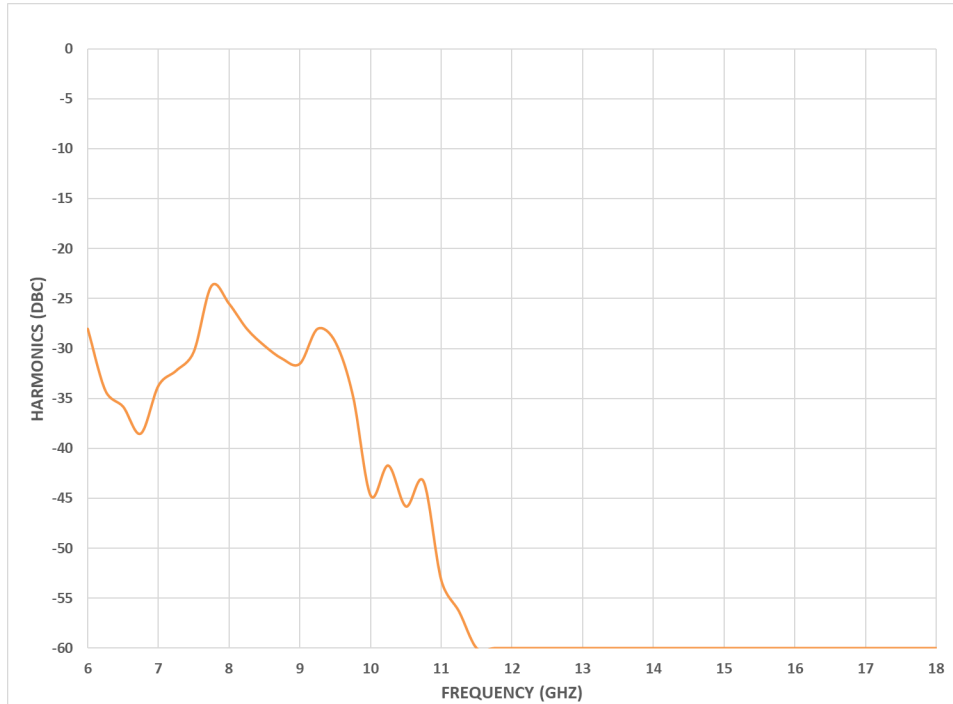
TYPICAL SMALL SIGNAL GAIN @ -20dBm INPUT



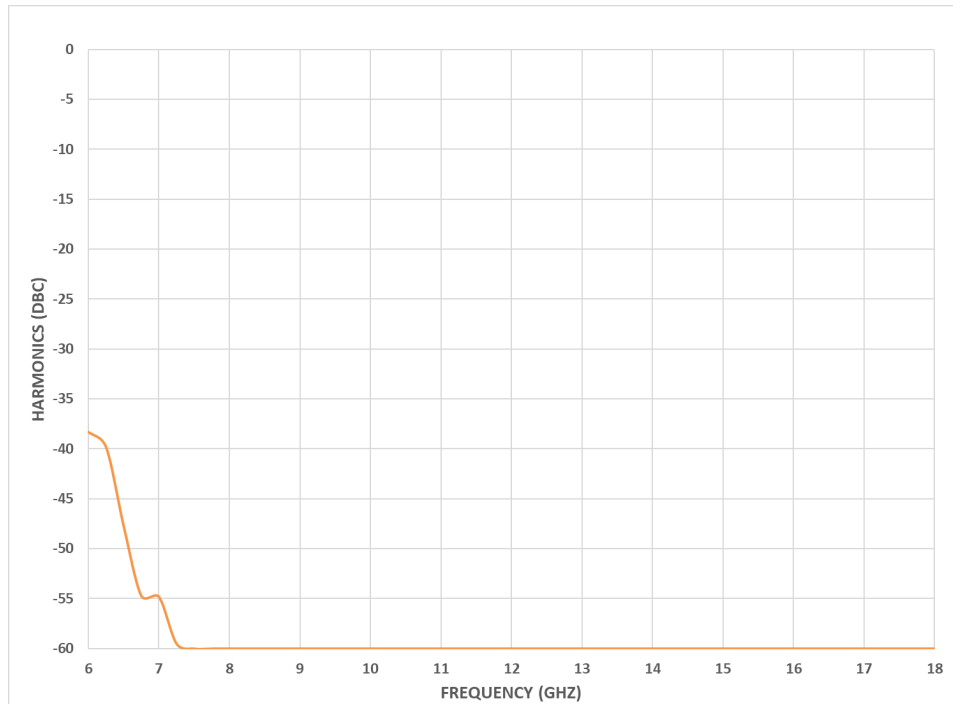
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TYPICAL 2<sup>nd</sup> HARMONIC @ 20 WATTS OUTPUT



TYPICAL 3<sup>rd</sup> HARMONIC @ 20 WATTS OUTPUT



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