

# Amplifiers

## Model 75S6G18A-L

### Features:

- 75 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.

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[www.arworld.us/amplifiers](http://www.arworld.us/amplifiers)

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ISO 9001:2015 Certified

ISO 17025 :2017 Accredited



The Model 75S6G18A-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 75 W across its operating bandwidth of 6.0 - 12.0 GHz and 65 W from 12.0 - 18.0 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 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 75S6G18A-L

- 75 W, 6.0 - 12.0 GHz
- 65 W, 12.0 - 18.0 GHz

| Electrical Specifications   |                 |         |           |           |      |
|---|-----------------|---------|-----------|-----------|------|
| Parameter   | Symbol          | Minimum | Typical   | Maximum   | Unit |
| Rated Power Output (6.0 – 12.0 GHz)                                   | PSAT            | 75      | 110       | >180      | W    |
| Rated Power Output (12.0 – 18.0 GHz)                                  | PSAT            | 65      | 100       | >140      | W    |
| Input for Rated Output  | Pin             |         |           | 1.0       | mW   |
|   |                 |         |           | 0         | dBm  |
| Power Output @ 3 dB Compression (6.0 – 12.0 GHz)                      | P3dB            | 75      | 110       | >180      | W    |
| Power Output @ 3 dB Compression (12.0 – 18.0 GHz)                     | P3dB            | 65      | 100       | >140      | W    |
| Power Output @ 1 dB Compression (6.0 – 12.0 GHz)                      | P1dB            | 60      | 80        | >120      | W    |
| Power Output @ 1 dB Compression (12.0 – 18.0 GHz)                     | P1dB            | 50      | 70        | >110      | W    |
| Operating Frequency   | BW              | 6.0     |           | 18.0      | GHz  |
| Gain (Small Signal)   |                 | 50      | 54        | 58        | dB   |
| Gain Reduction Adjustment (when below compression)                    |                 | 10      | 15        | 20        | dB   |
| Flatness  | $\Delta G$      |         | $\pm 2.5$ | $\pm 3.5$ | dB   |
| Input Impedance   | Z in            |         | 50        |           | Ohm  |
|   |                 |         | 2.0:1     | 2.5:1     | VSWR |
| Output Impedance  | Z out           |         | 50        |           | Ohm  |
| 3 <sup>rd</sup> Order Intercept                                       | IP3             |         | +54       |           | dBm  |
| Harmonic Distortion @ 75 W, 6.0 – 12.0 GHz,<br>@ 65W, 12.0 – 18.0 GHz | H2, H3          |         | -25       | -20       | dBc  |
| Power Consumption   | PD              |         |           | 1200      | W    |
| Modulation Capability   | AM, FM or Pulse |         |           |           |      |

| 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<br>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 |         |          |      |



Model 75S6G18A-L

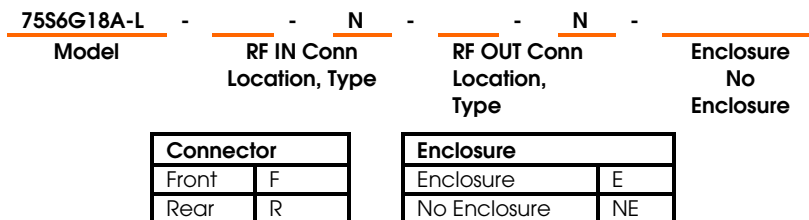
- 75 W, 6.0 - 12.0 GHz
- 65 W, 12.0 - 18.0 GHz

| 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)                                | 35  | kg   |
|  | 77  | lb   |
| Weight (No Cabinet)                                  | 25.9  | kg   |
|  | 57  | 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

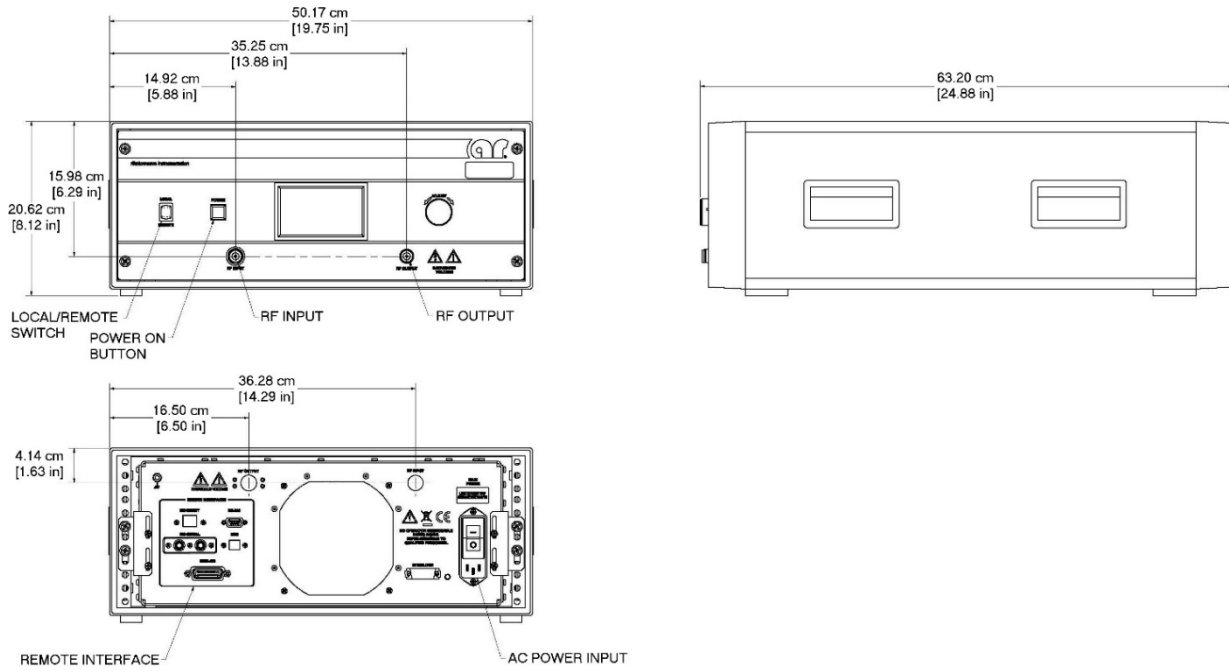


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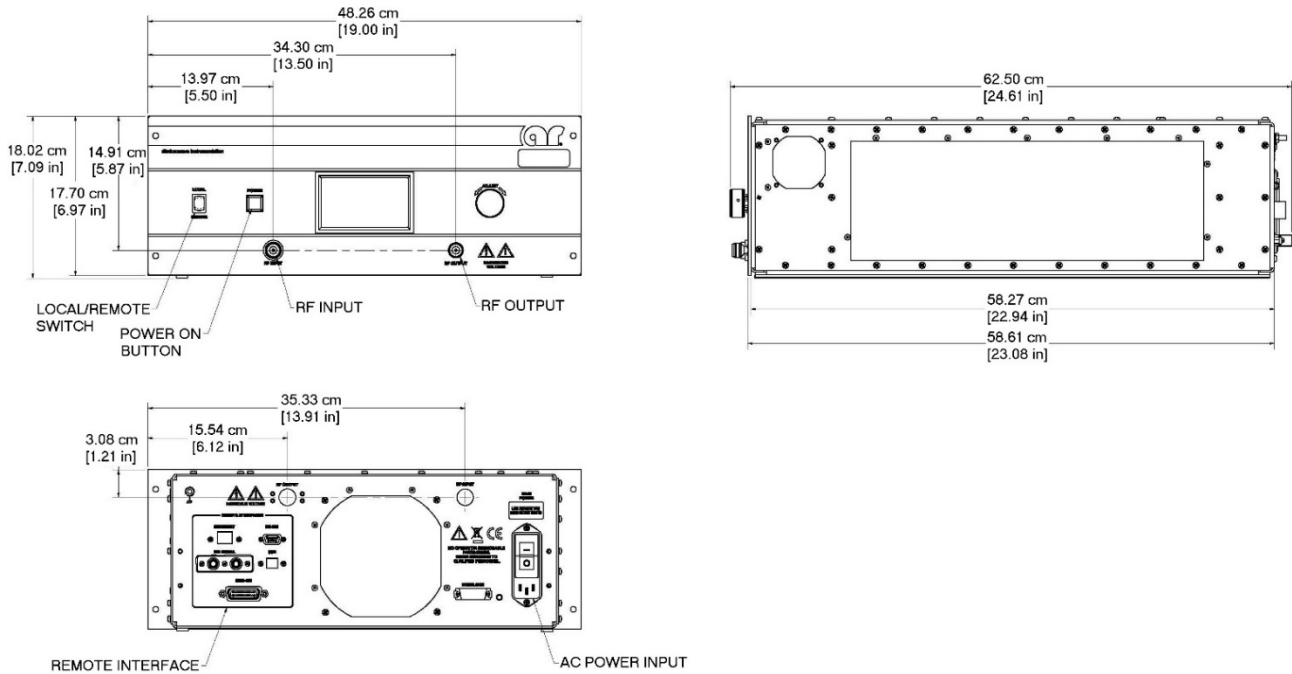
- 75 W, 6.0 - 12.0 GHz
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Envelope Drawing

75S6G18-L with Cabinet



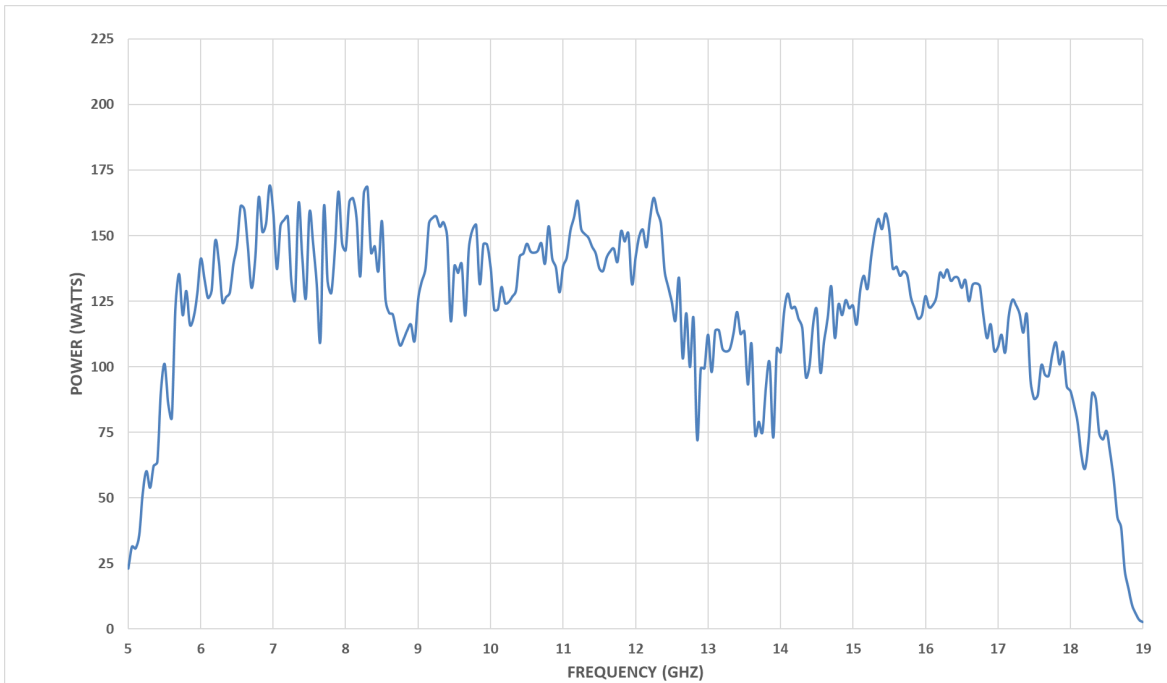
75S6G18-L without Cabinet



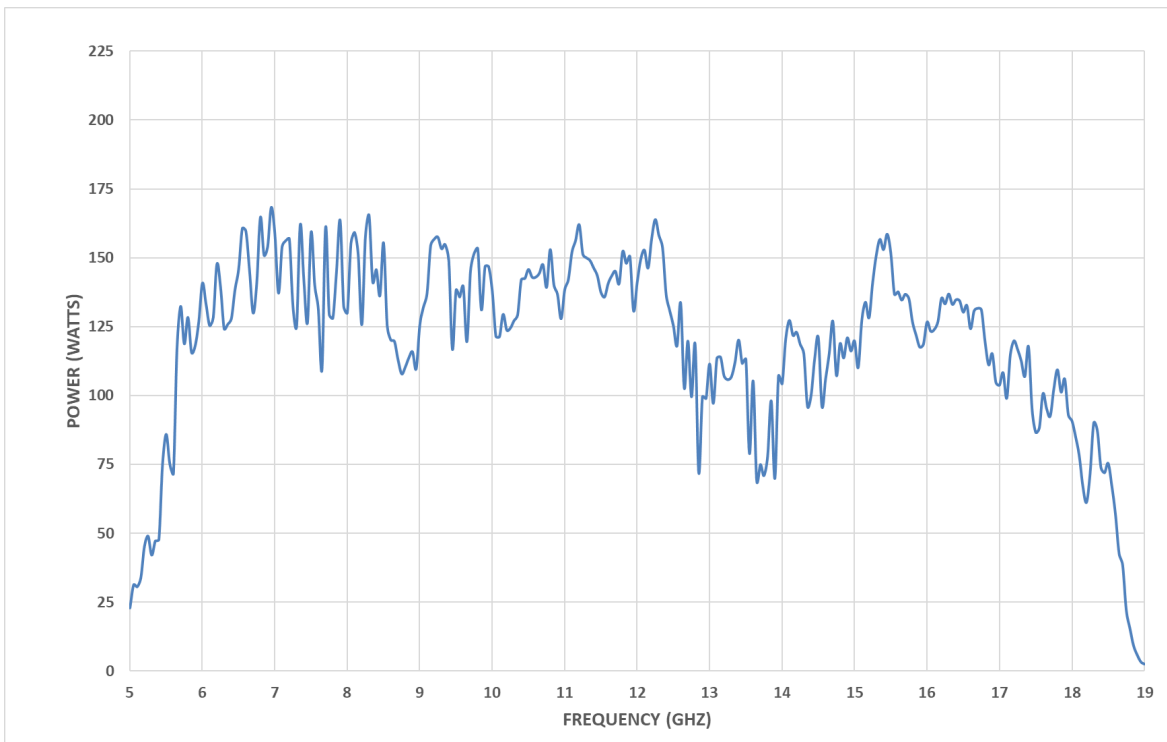
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TYPICAL PSAT POWER @ 0dBm INPUT



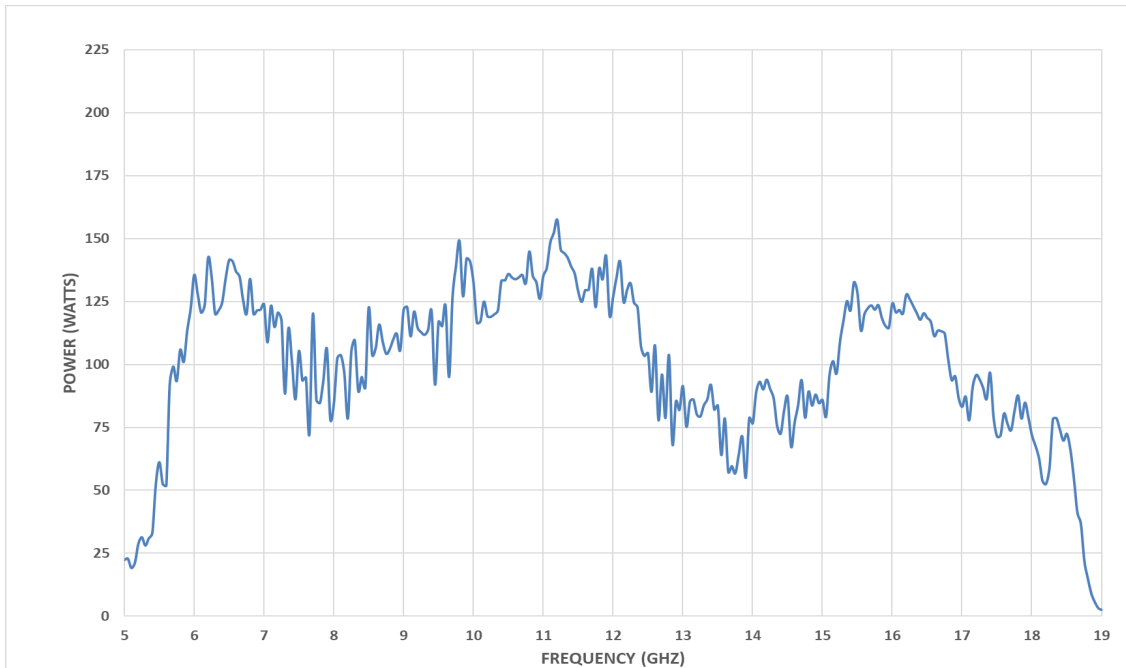
TYPICAL POWER @ P3dB COMPRESSION



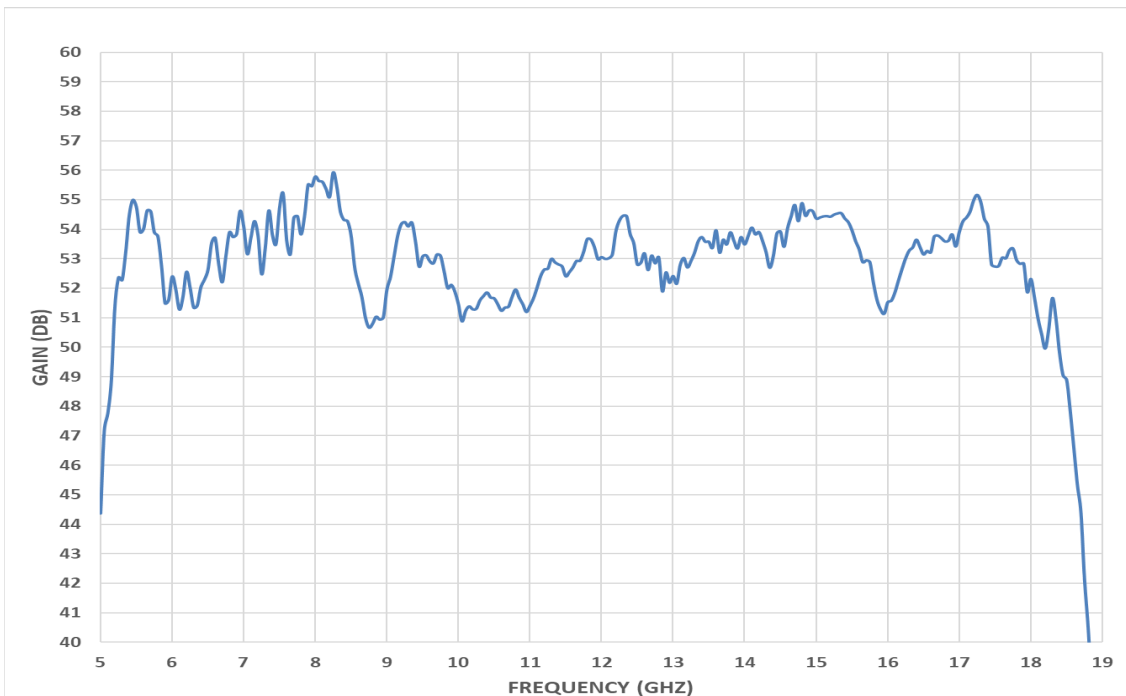
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TYPICAL POWER @ P1dB COMPRESSION



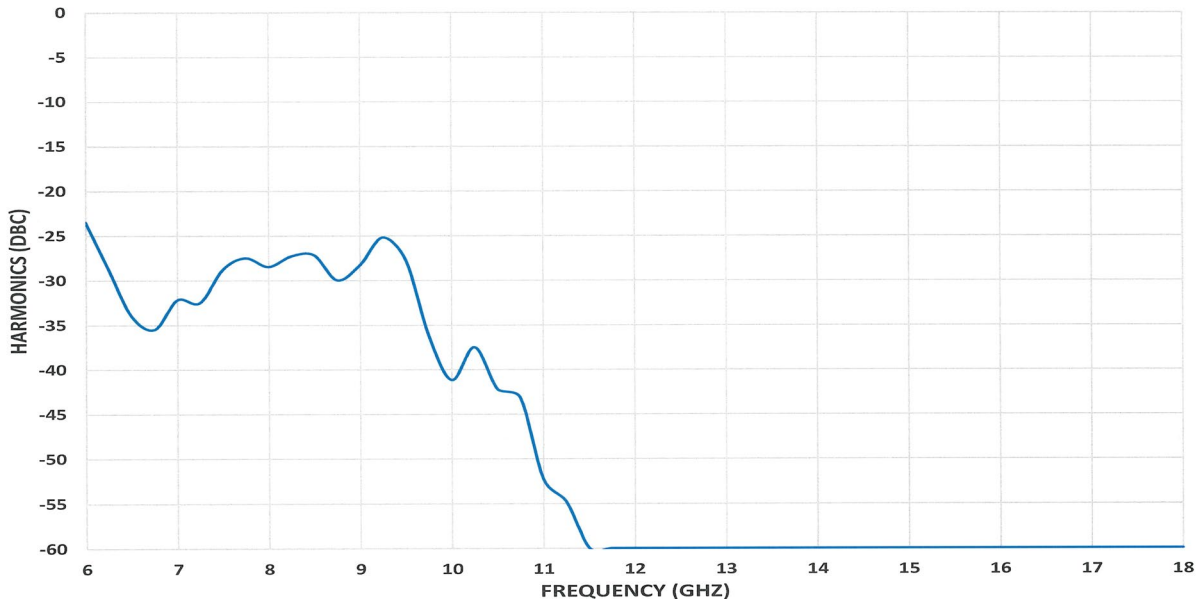
TYPICAL SMALL SIGNAL GAIN @ -20dBm INPUT



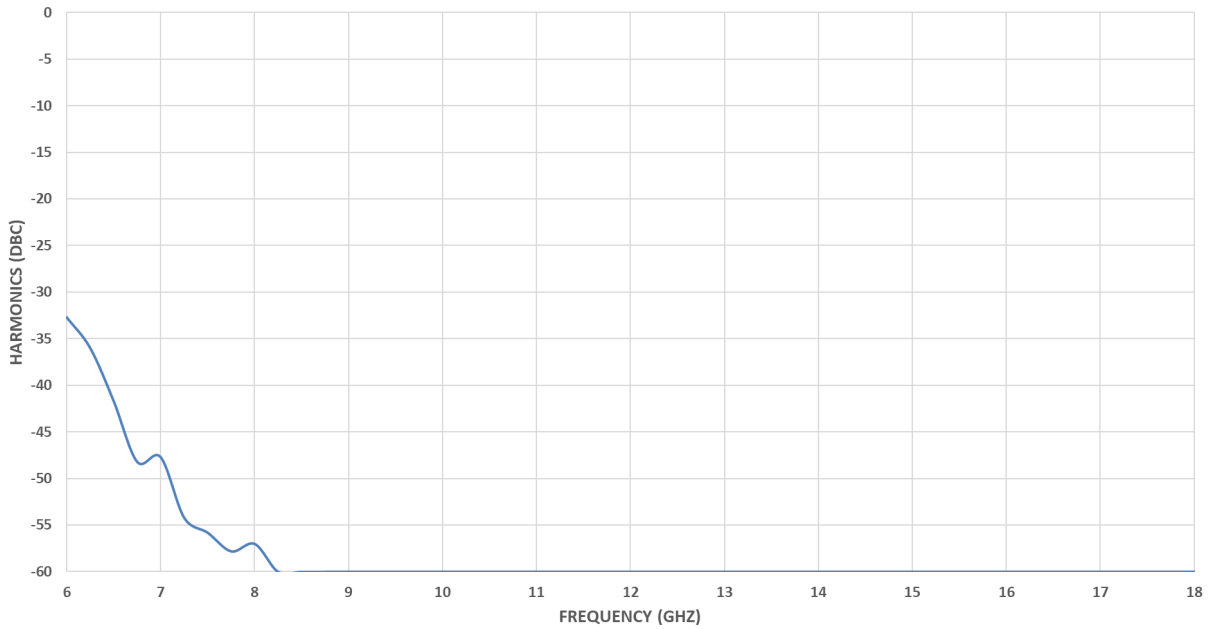
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- 65 W, 12.0 - 18.0 GHz

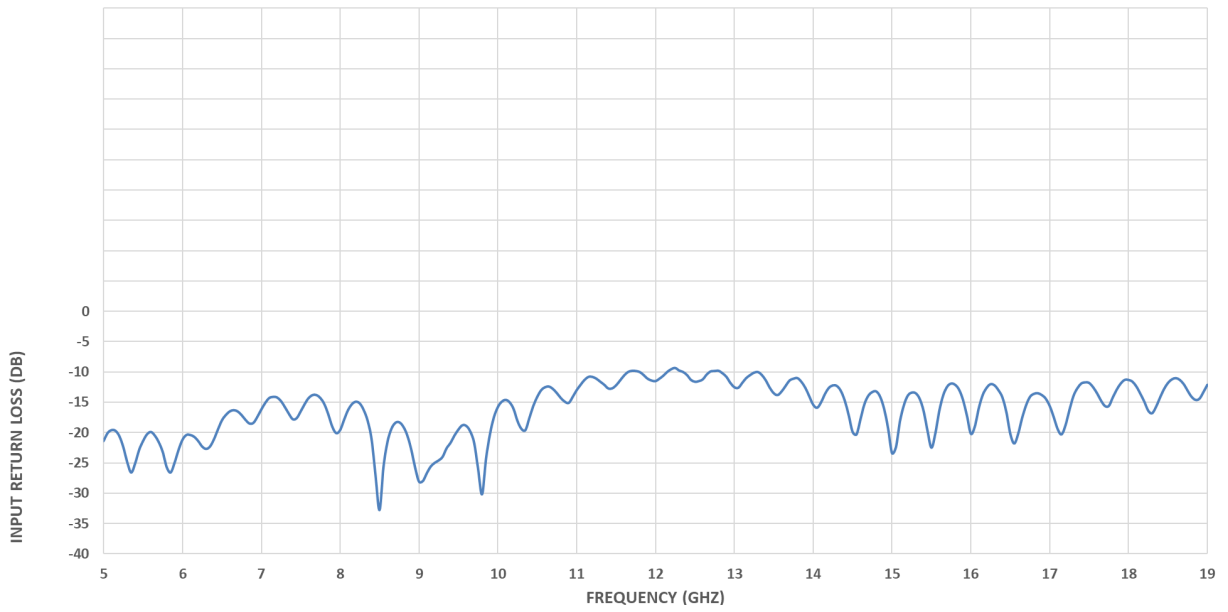
TYPICAL 2<sup>nd</sup> HARMONIC @ 75 WATTS OUTPUT



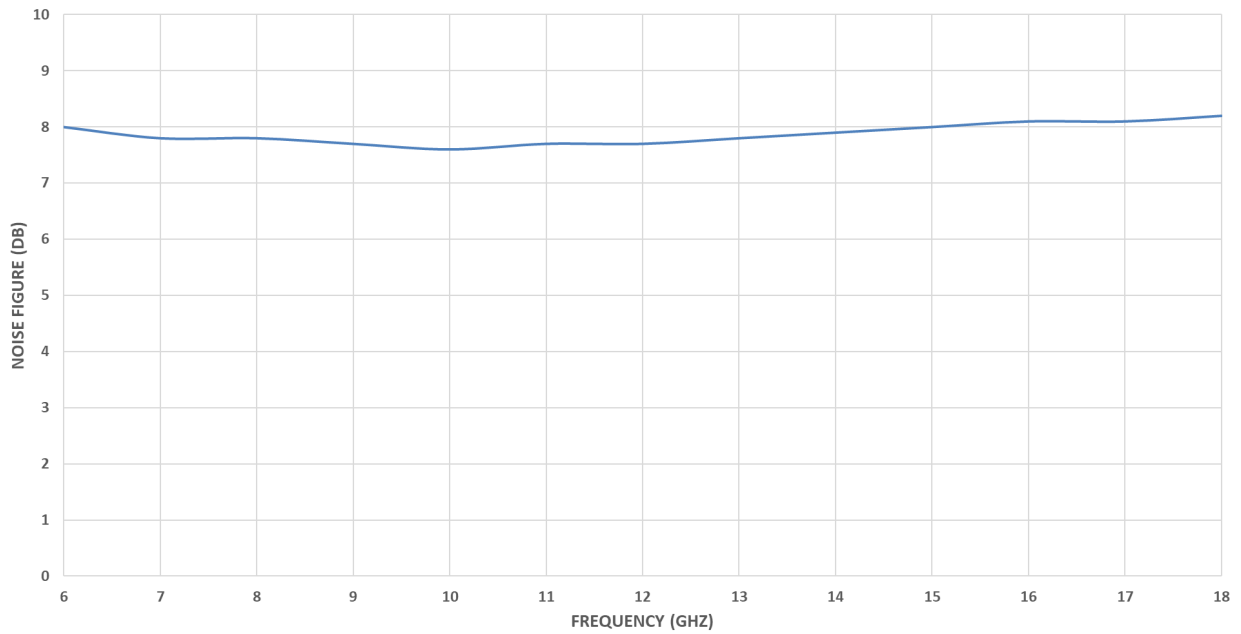
TYPICAL 3<sup>rd</sup> HARMONIC @ 75 WATTS OUTPUT



### TYPICAL INPUT VSWR



### TYPICAL NOISE FIGURE



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