

Amplifiers

Model 1000S1G6C

Features:

- 1000 W CW, 1.0 - 5.0 GHz
- 700 W CW, 5.0 - 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

To view our full amplifier portfolio visit:
www.arworld.us/amplifiers

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

The Model 1000S1G6C is a solid-state, Class A design, self-contained, air-cooled, broadband power amplifier designed for applications where instantaneous bandwidth, high gain and linearity are required. It will provide a minimum of 1000 W across its operating bandwidth of 1.0 - 5.0 GHz and 700 W from 5.0 - 6.0 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 5G testing applications. Due to the Class A design, it is also suitable for EMC Test applications where continued operation into high VSWR loads including open and short circuits is required

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 1000S1G6C

- 1000 W CW, 1.0 - 5.0 GHz
- 700 W CW, 5.0 - 6.0 GHz

| Electrical Specifications | | | | | |
|--|------------|---------|-----------|-----------|------|
| Parameter | Symbol | Minimum | Typical | Maximum | Unit |
| Rated Power Output (1.0 - 5.0 GHz) | PSAT | 1000 | 1200 | >1500 | W |
| Rated Power Output (5.0 - 6.0 GHz) | PSAT | 700 | 800 | >950 | W |
| Input for Rated Output | Pin | | | 1 | mW |
| | | | | 0 | dBm |
| Power Output @ 3 dB Compression (1.0 - 5.0 GHz) | P3dB | 950 | 1200 | >1500 | W |
| Power Output @ 3 dB Compression (5.0 - 6.0 GHz) | P3dB | 650 | 800 | >950 | W |
| Power Output @ 1 dB Compression (1.0 - 5.0 GHz) | P1dB | 800 | 950 | >1300 | W |
| Power Output @ 1 dB Compression (5.0 - 6.0 GHz) | P1dB | 600 | 750 | >850 | W |
| Operating Frequency | BW | 1.0 | | 6.0 | GHz |
| Gain (Small Signal) | | 60 | 64.5 | 69 | dB |
| Gain Reduction Adjustment (when below gain compression) | | 10 | 12 | 15 | dB |
| Flatness @ small signal (-20 dBm input) (1.0 - 5.0 GHz) | ΔG | | ± 2.0 | ± 2.5 | dB |
| Flatness @ small signal (-20 dBm input) (5.0 - 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 | | +68 | | dBm |
| Noise Figure | NF | | 10 | | dB |
| Harmonic Distortion @ 800 W for entire band except 2 - 3 GHz | H2, H3 | | -30 | -20 | dBc |
| Harmonic Distortion @ 800 W for 2 - 3 GHz | H2, H3 | | -22 | -18 | dBc |
| Spurious | | | -73 | | dBc |
| Power Consumption | PD | | | 8.5 | kW |

| 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 | 3:1 | 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 250 watts reflected power. | | | 25 | % |
| AC Power (3-phase) Low voltage option | 200 | | 240 | VAC |
| AC Power (3-phase) High voltage option | 380 | | 415 | VAC |
| AC Power | 47 | | 63 | Hz |
| Ambient Temperature | +5 | +25 | +35 | °C |
| Storage Temperature | -20 | | +50 | °C |
| Altitude | | | 1000 | m |
| Shock/Vibration | Normal Truck Transport | | | |

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| Mechanical Specifications | | |
|--|--|------|
| Parameters | Typical | Unit |
| Dimensions (26U Rack) (W x H x D) | 57.3 x 136.0 x 95.5 | cm |
| | 22.6 x 53.5 x 37.6 | in |
| Weight | 273 | kg |
| | 600 | lb |
| Cooling | Forced air (self-contained fans) Side inlets / rear outlet $\Delta t = +10^{\circ}\text{C}$ (typical) | |
| Acoustical Noise (Measured @ 1 meter from the front) | 68 (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 | 7-16 DIN female (50 Ω), rear |
| RF sample | N female (50 Ω), (60dB typical) |
| IEEE-488 | 24-pin |
| 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 |
| AC Input | 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. |



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Ordering Options

1000S1G6C - **- N** - **R** - **716** -
Model **RF IN Conn** **RF OUT Conn** **Primary** **RF Sample**
 Location, Type **Location,** **Power** **Ports**
 Type

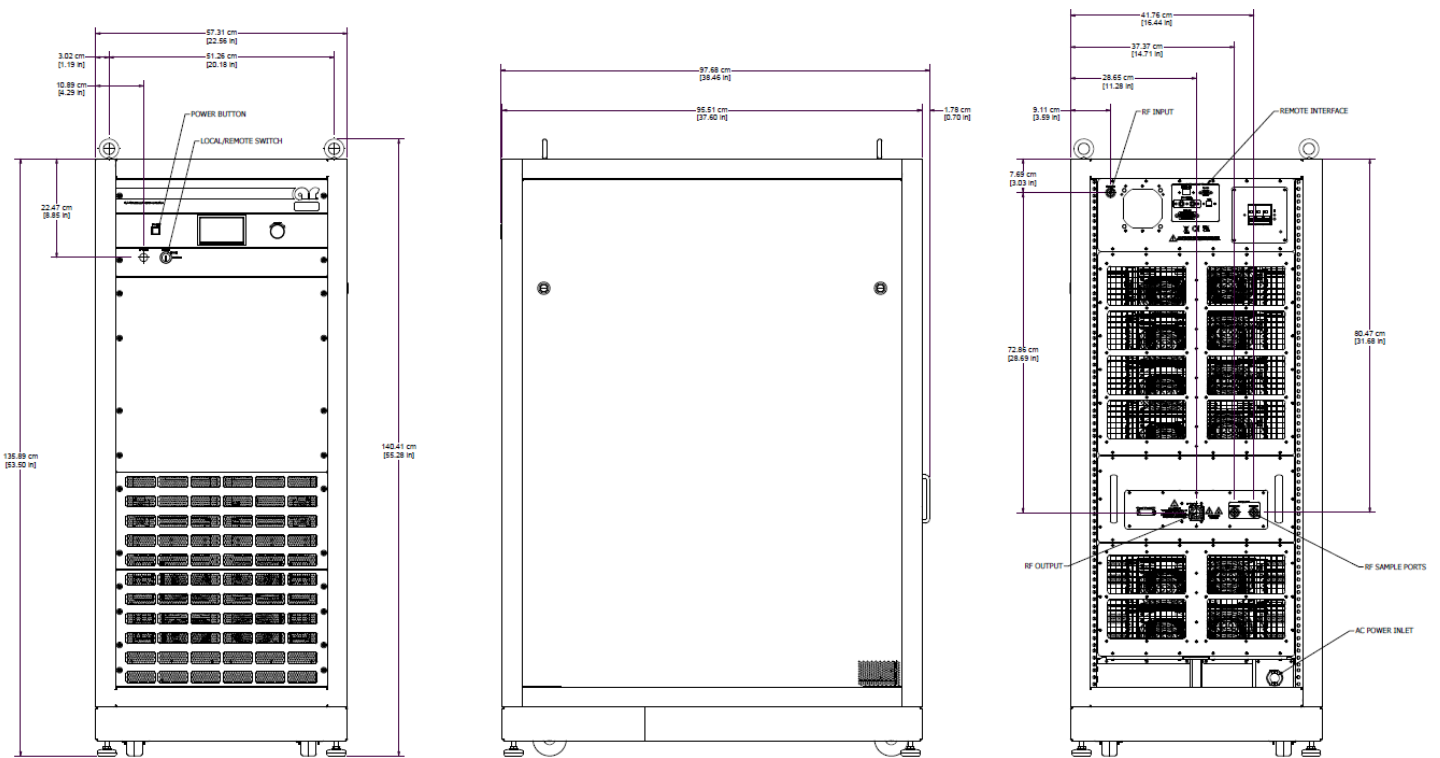
| CONNECTOR LOCATION | |
|--------------------|---|
| Front | F |
| Rear | R |

| PRIMARY POWER | |
|---------------|----|
| 200-240 VAC | LV |
| 380-415 VAC | HV |

| RF SAMPLE PORTS | |
|-----------------|-----|
| Front | SPF |
| Rear | SPR |

Contact your AR RF/Microwave Instrumentation Sales Associate for specific model configuration pricing.

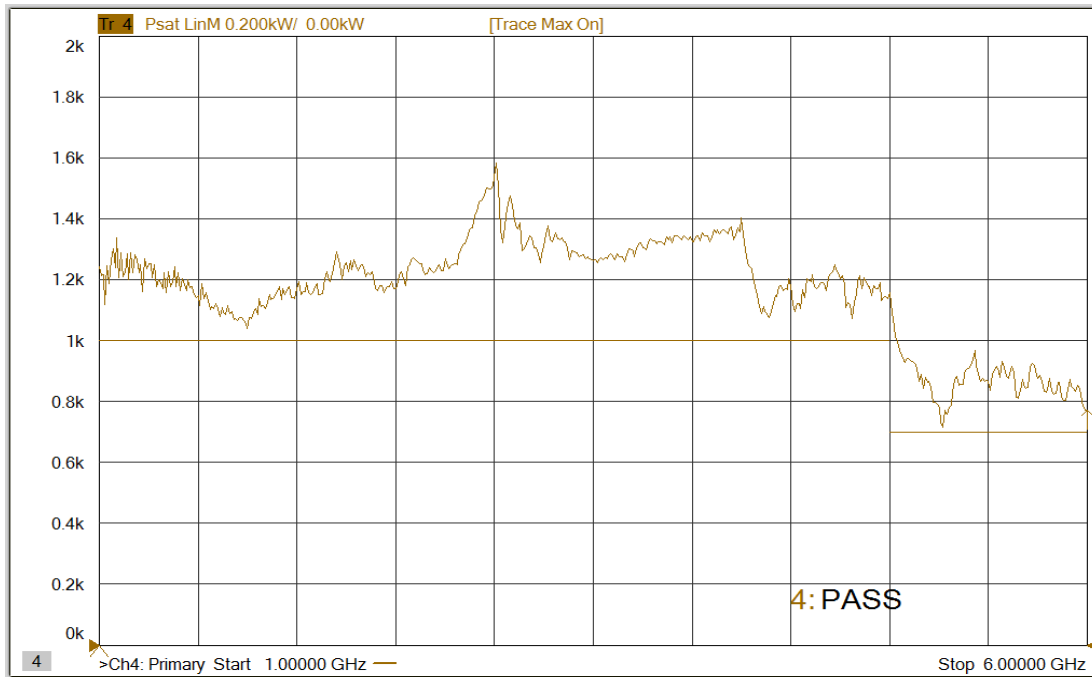
Envelope Drawing



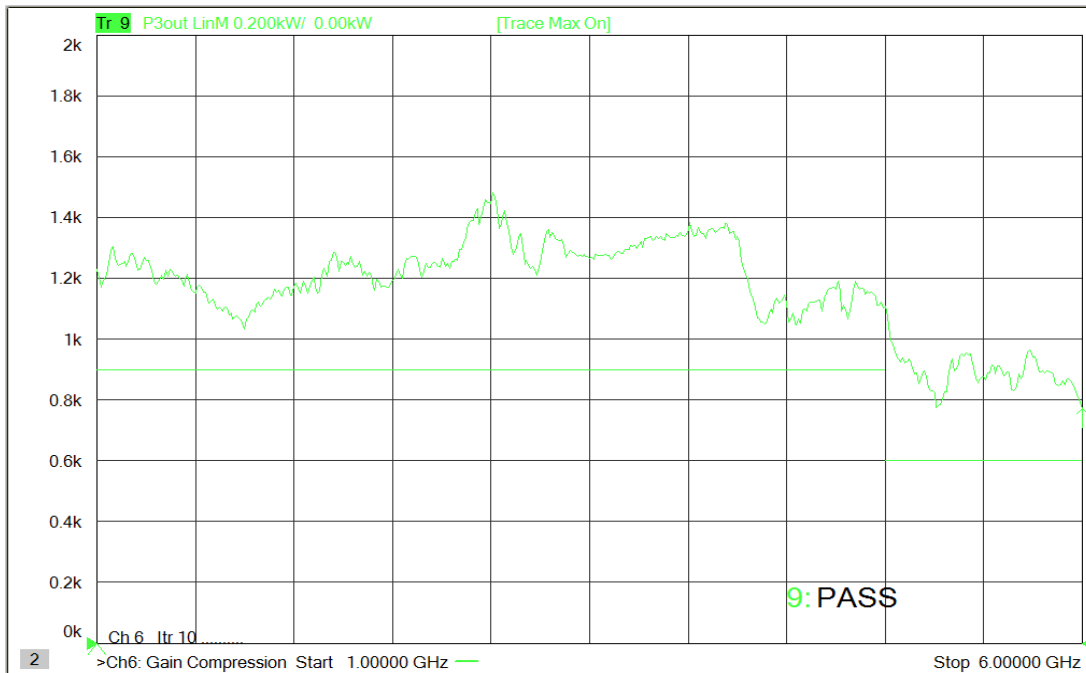
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TYPICAL PSAT POWER @ 0 dBm



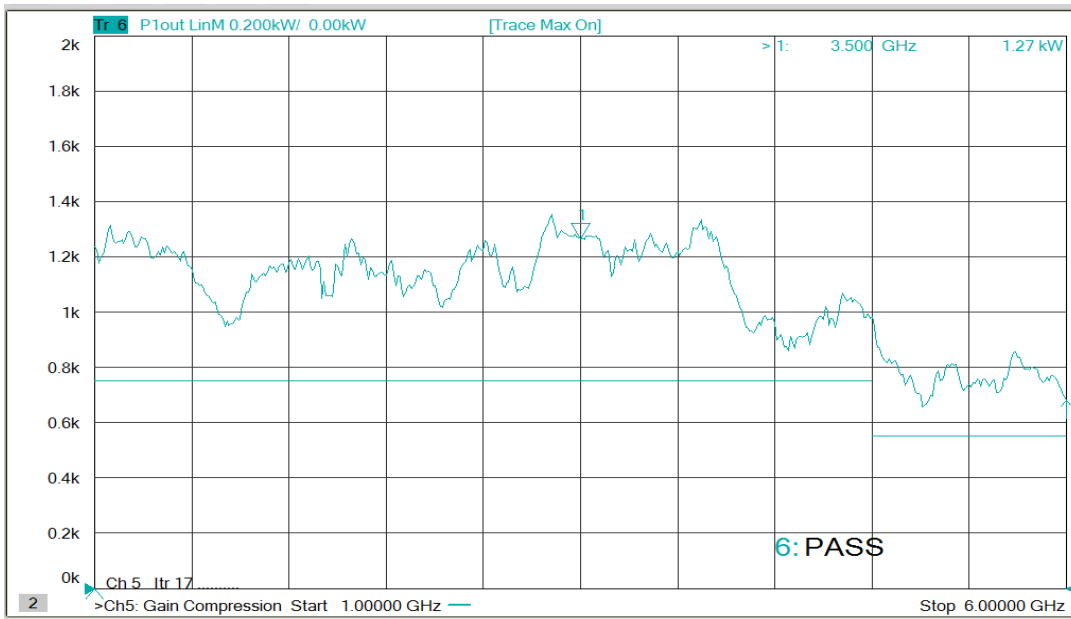
TYPICAL POWER @ P3 dB COMPRESSION



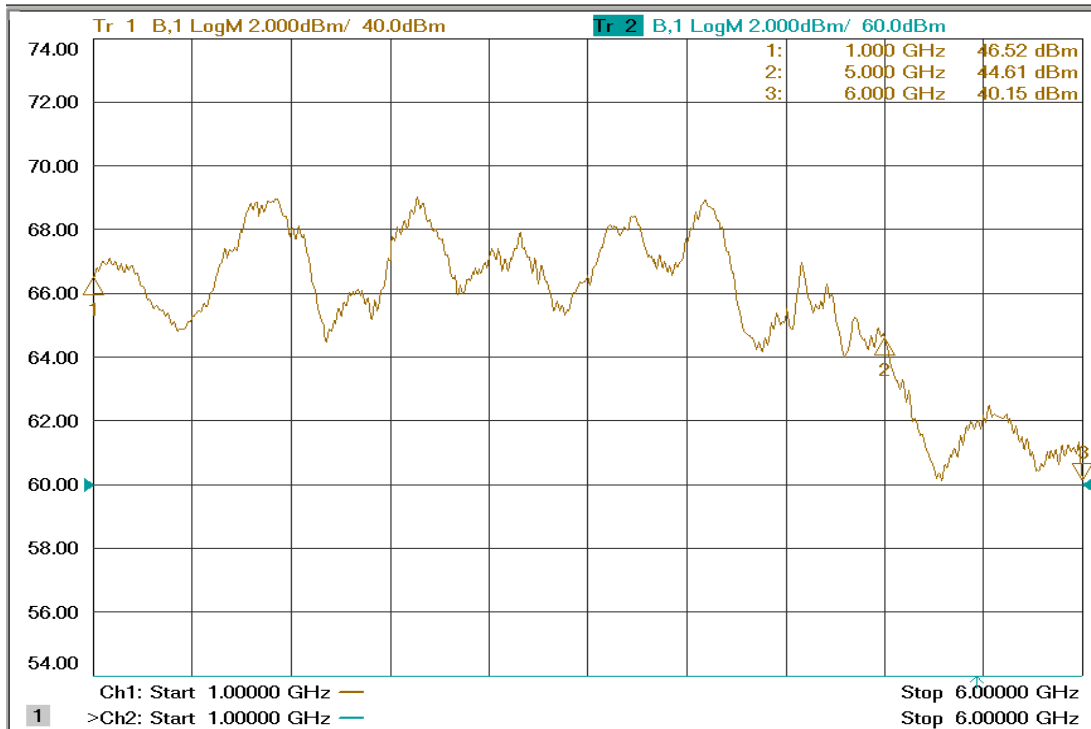
Model 1000S1G6C

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TYPICAL POWER @ P1 dB COMPRESSION



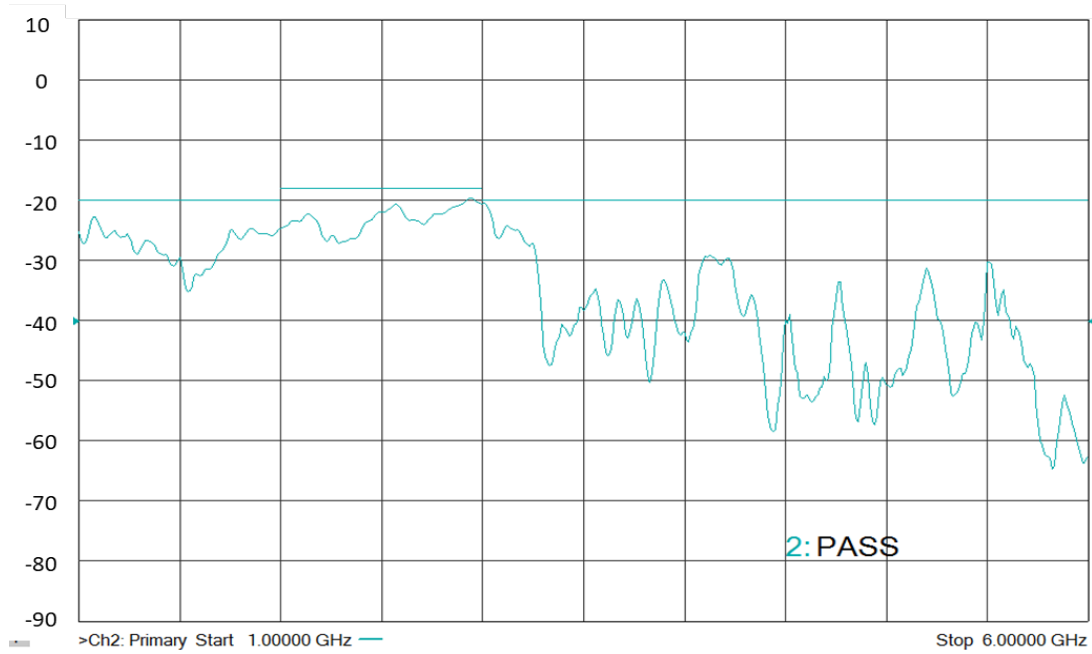
TYPICAL SMALL SIGNAL GAIN @ -20 dBm INPUT



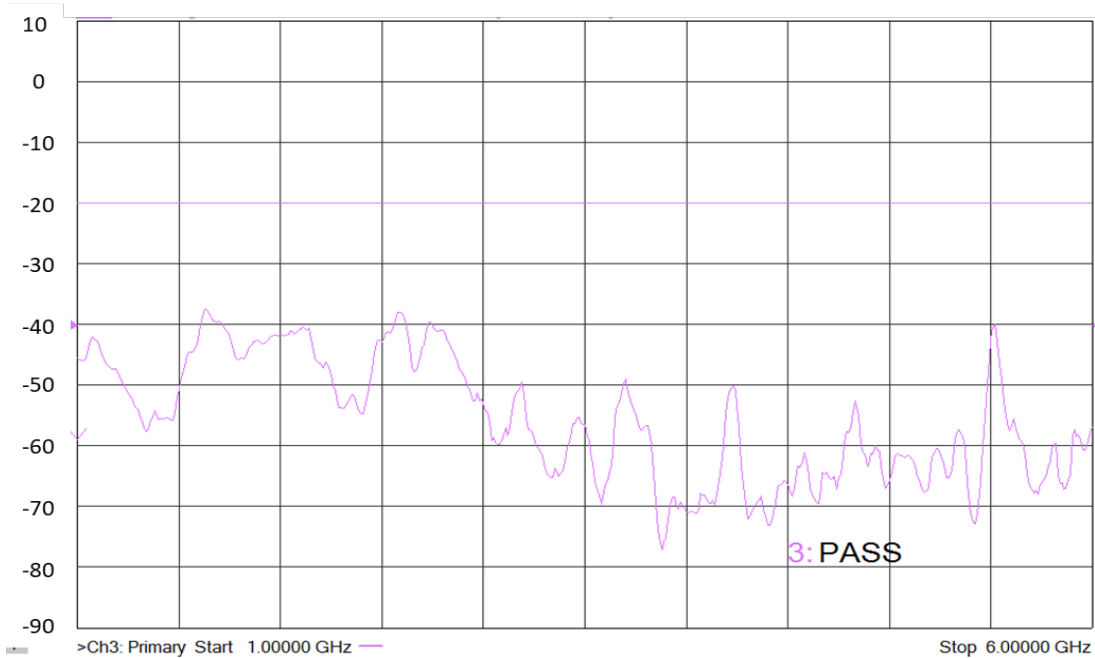
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TYPICAL 2ND HARMONIC @ 800 W



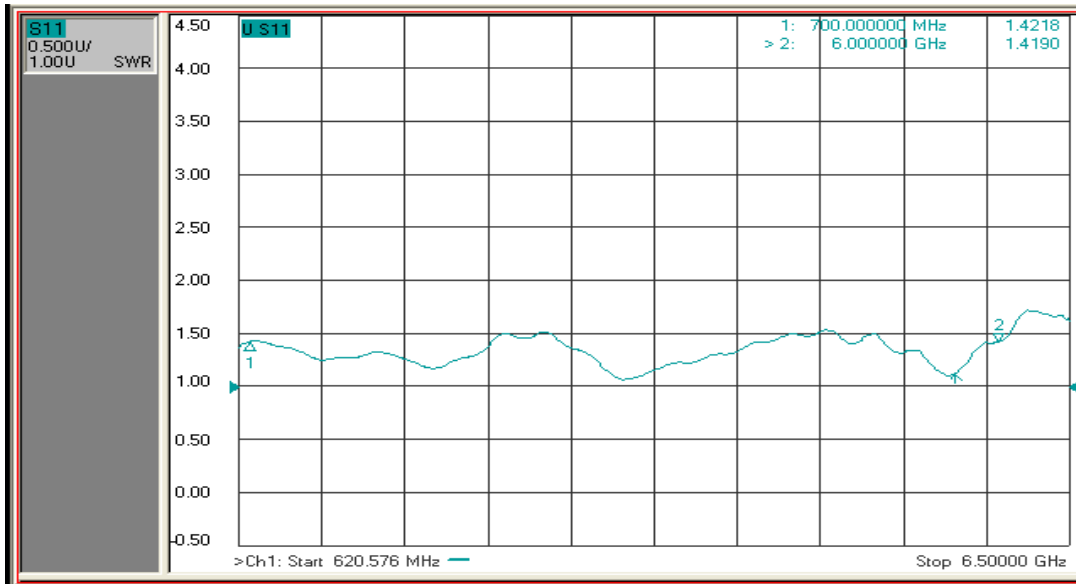
TYPICAL 3RD HARMONIC @ 800 W



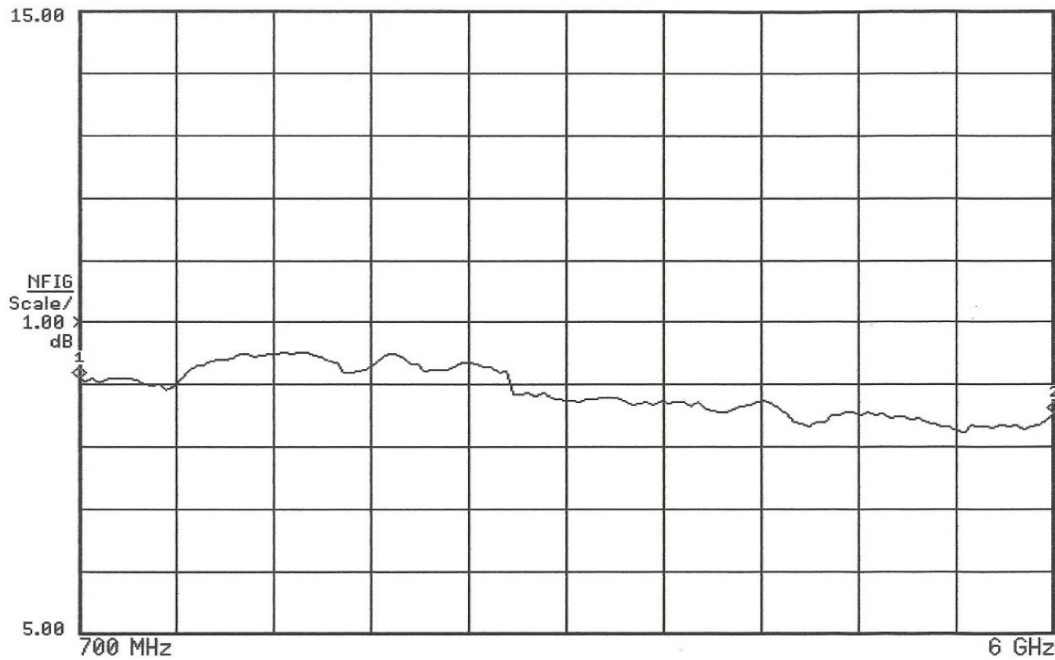
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TYPICAL INPUT VSWR



TYPICAL NOISE FIGURE



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