

Amplifiers

Model 125W1000A

Features:

- 125 Watts CW, 80 - 1000 MHz
- 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

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ISO 9001:2015 Certified
ISO 17025 :2017 Accredited



The Model 125W1000A 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 125 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 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 EAR99. 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 125W1000A

- 125 W
- 80 - 1000 MHz

| Electrical Specifications | | | | | |
|--|------------|---------|-----------|-----------|------|
| Parameter | Symbol | Minimum | Typical | Maximum | Unit |
| Rated Power Output | PSAT | 125 | 140 | >155 | W |
| Input for Rated Output | Pin | | | 1.0 | mW |
| | | | | 0 | dBm |
| Power Output @ 1 dB Compression | P1dB | 100 | 120 | >135 | W |
| Power Output @ 3 dB Compression | P3dB | 120 | 130 | >150 | W |
| Operating Frequency | BW | 80 | | 1000 | MHz |
| Gain (Small Signal) | | 55 | 57 | 59 | dB |
| Gain Reduction Adjustment (when below compression) | | 20 | 22 | 25 | dB |
| Flatness | ΔG | | ± 1.5 | ± 2.0 | 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 | | +58 | | dBm |
| Noise Figure | NF | | 6 | 8 | dB |
| Harmonic Distortion @ 100 W | H2, H3 | | -30 | -20 | dBc |
| Spurious | | | -73 | | dBc |
| Power Consumption | PD | | | 600 | W |

| Absolute Maximum Rating | | | | |
|--|------------------------|---------|----------|------|
| Exceeding any of the limits here may result in permanent damage to the device. | | | | |
| Parameter | Minimum | Typical | Maximum | Unit |
| RF Drive | | 0 | +13 | dBm |
| RF Load | | 1:1 | ∞ | VSWR |
| AC Power (single phase) | 100 | | 240 | VAC |
| AC Power | 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 | Nominal | Unit |
| Dimensions (With Cabinet) (W x H x D) | 51.0 x 17.0 x 65.3 | cm |
| | 20.1 x 6.7 x 25.7 | in |
| Dimensions (No Cabinet) – 3U for 19" Rack | 48.3 x 13.4 x 65.3 | cm |
| | 19.0 x 5.3 x 25.7 | in |
| Weight (With Cabinet) | 26.5 | kg |
| | 58.5 | lb |
| Weight (No Cabinet) | 15.8 | kg |
| | 34.75 | lb |
| Cooling | Forced air (self-contained fans) Side inlets / rear outlet $\Delta t = +7^{\circ}\text{C}$ (typical) | |
| Acoustical Noise (Measured @ 1 meter from the front) | 56 (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 | EAR99 |

| 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 |
| AC | C14 |

Ordering Options

125W1000A - - N - - N - -
 Model RF IN Conn RF OUT Conn Enclosure
 Location, Type Location, Type No Enclosure

| N-Connector | |
|-------------|---|
| Front | F |
| Rear | R |

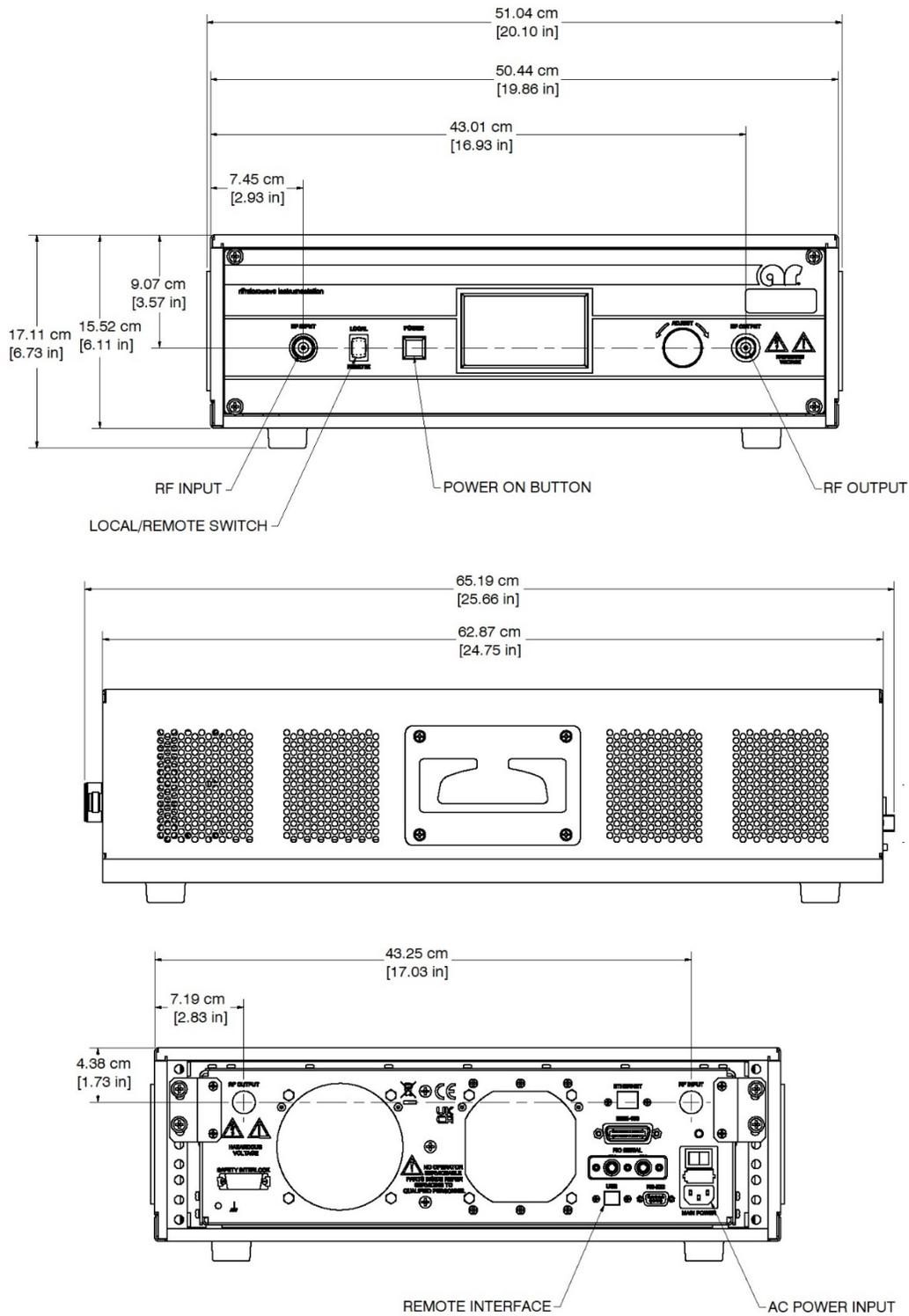
| Enclosure | |
|--------------|----|
| Enclosure | E |
| No Enclosure | NE |



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Envelope Drawing



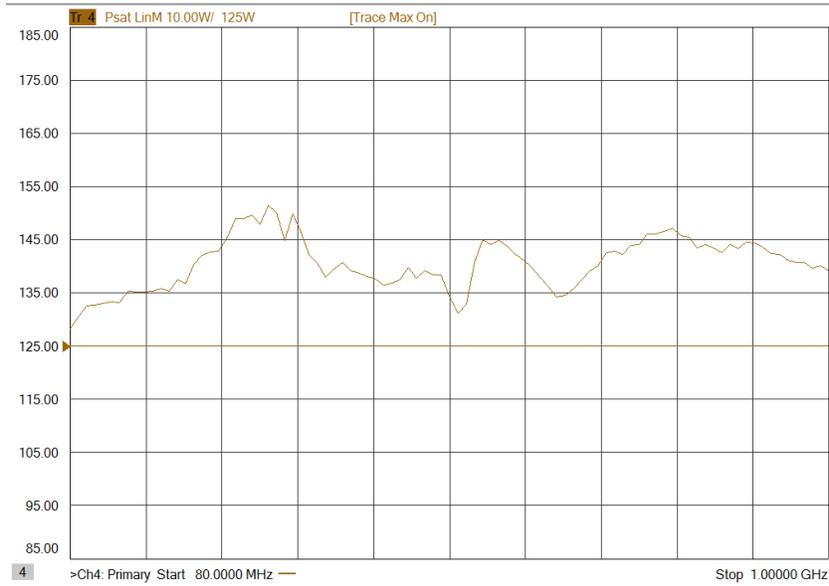
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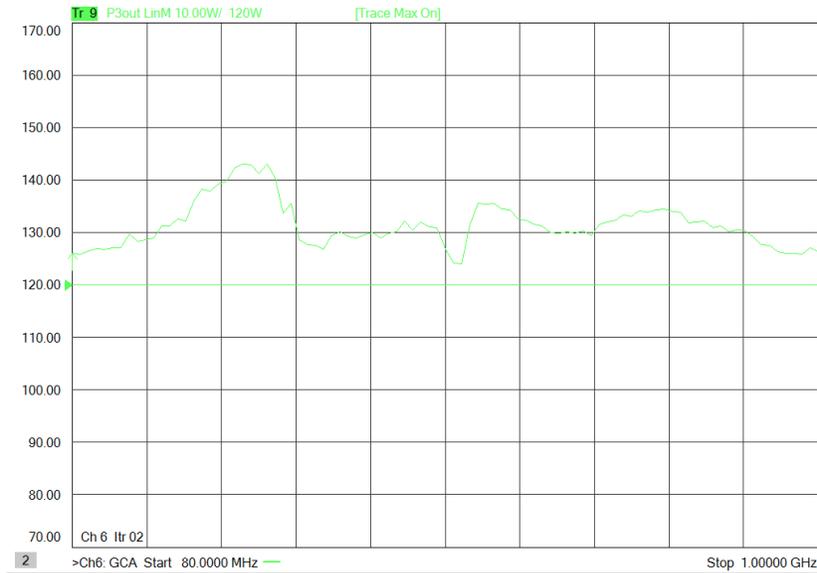
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TYPICAL PSAT POWER @ 0 dBm INPUT



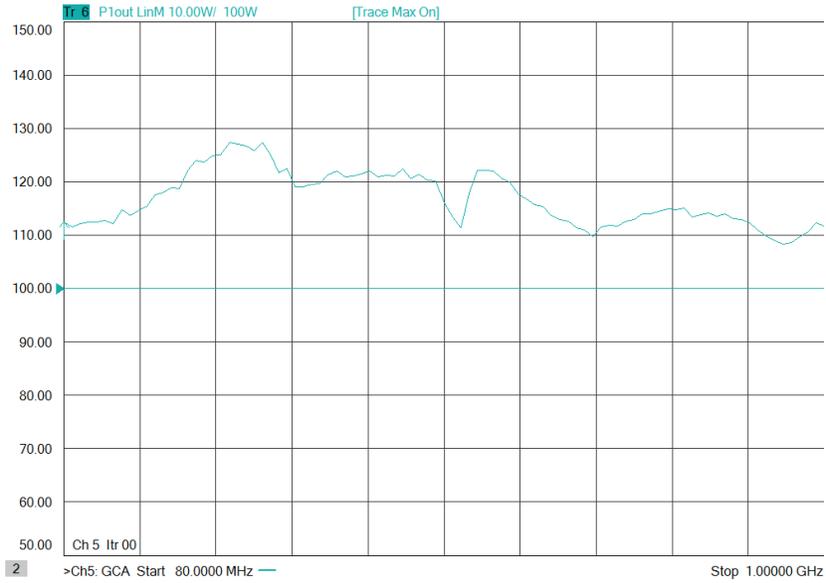
TYPICAL POWER @ P3 dB COMPRESSION



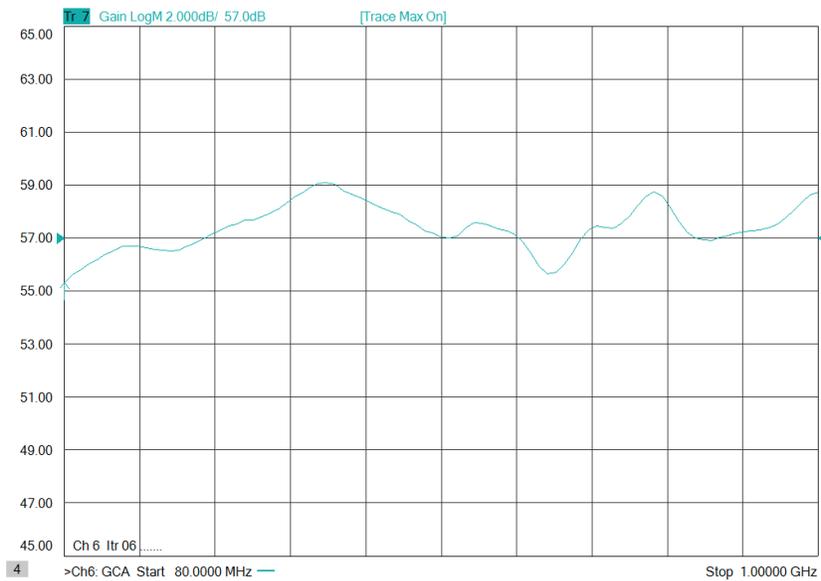
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TYPICAL POWER @ P1dB COMPRESSION



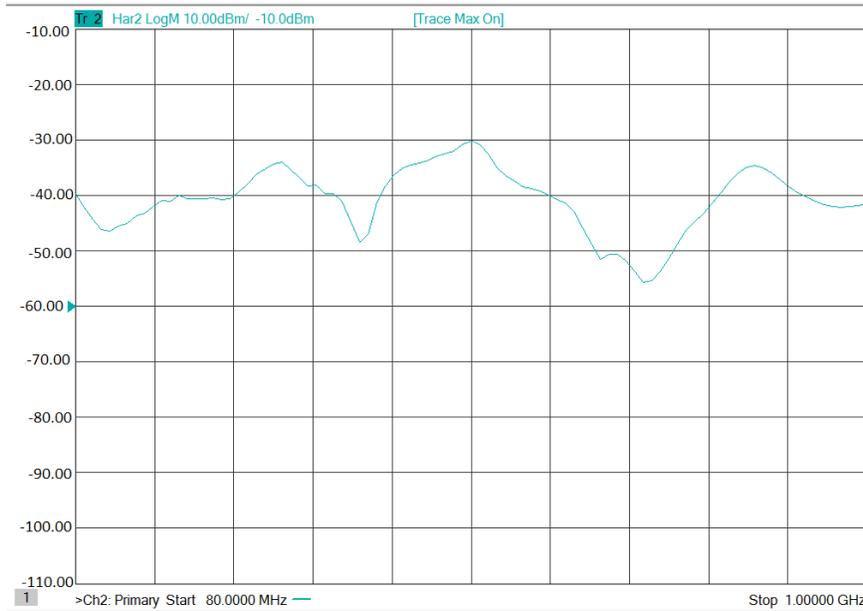
TYPICAL SMALL SIGNAL GAIN @ -20 dBm INPUT



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TYPICAL 2ND HARMONIC @ 100 W OUTPUT



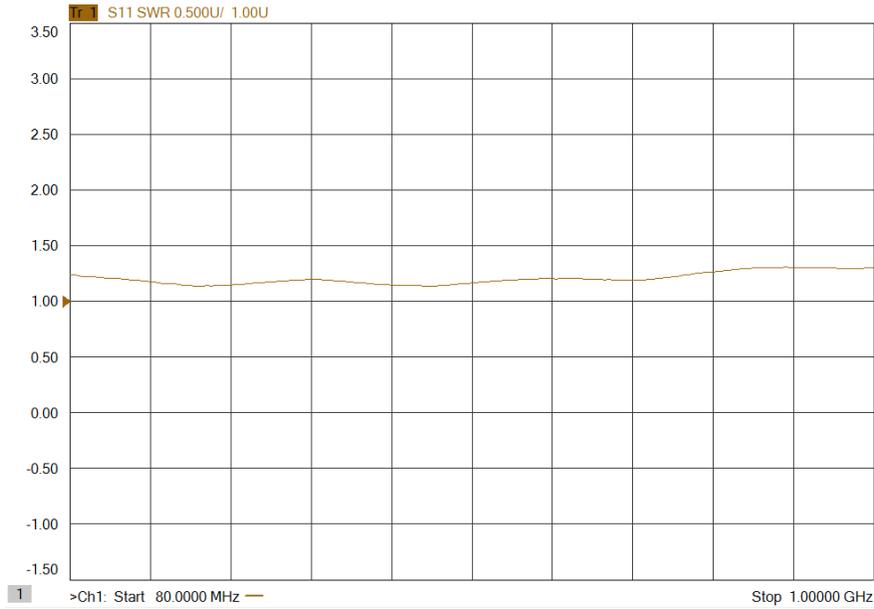
TYPICAL 3RD HARMONIC @ 100 W OUTPUT



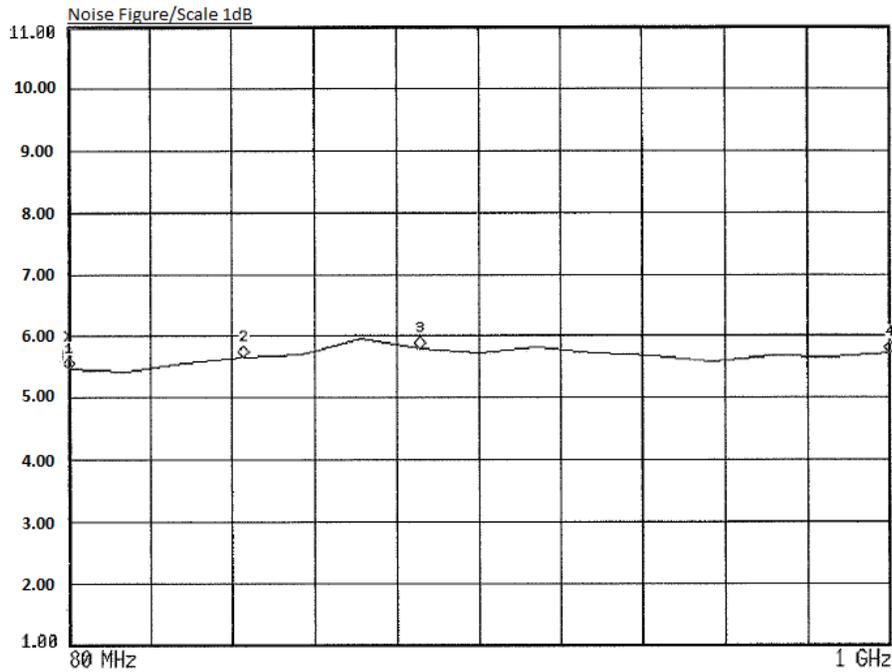
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TYPICAL INPUT VSWR



TYPICAL NOISE FIGURE



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