



High Power Amplifier

Model:RPA-2G5-7G5-500

2.5-7.5GHz 500W CW

Ultrabroad frequency range, high performance and exceptional RF characteristics

Features:

- Frequency range: 2.5-7.5GHz
- High output power at saturation, 57dBm Min
- High gain, 57dB Min
- Operates from AC line power: 380V

Applications:

- Laboratory test instrument
- RF Power stress test
- EMI and antenna testing
- Reliability testing

Product Overview:

The RPA-2G5-7G5-500 is a high power, rack mount amplifier with a self-contained AC power supply which can be used for a wide variety of laboratory testing applications. This rugged amplifier is capable of amplifying signals up to 500W output power over its entire operating bandwidth of 2.5 to 7.5GHz. The control functions RPA-2G5-7G5-500 possesses include the on/off of the power supply, output power can be controlled by the automatic ALC system and on/off of the RF setting. Built-in safety features include fans alarms and automatic shut down mechanism to prevent damage in the event of excessive internal temperatures. The amplifier's output stage is further protected in the event of a fault condition, allowing high power operation for up to 5 minutes into an open or short load (refer to the maximum input power specifications). And it has built-in protection functions included over TEM, over voltage, over current and over VSWR protection. It can also be remotely controlled via RS422 or Ethernet.



Electrical Specifications at 25°C:

| Parameter | Symbol | Min | Typ | Max | Units |
|---------------------|-------------|---------|---------|------|-------|
| Frequency range | BW | 2.5-7.5 | | | GHz |
| Power Gain | GP | 57 | | | dB |
| Gain flatness | Δ GL | | ± 4 | | dB |
| Output Psat | Psat | 57 | | | dBm |
| Spurious@Pout=57dBm | Spur | | -60 | -50 | dBc |
| Harmonics | HAM | | -15 | -10 | dBc |
| Input VSWR | VSWRin | | | 2.0 | :1 |
| AC Voltage | Vac | | 380 | | V AC |
| Power Consumption | Pdiss | | | 5000 | W |
| Impedance | I/O-IMP | 50 | | | Ohms |

Mechanical Specifications:

| Parameter | Value | Notes |
|---------------------------------|---|-------|
| Operating Temperature* | -20 to +40 | °C |
| Non-operating Temperature* | -30 to +50 | °C |
| Relative humidity | 95 | % |
| RF Input/Output Connector | N Female/L29 Female or WRD250 | |
| Digital Monitor & Control | RS422;Ethernet | |
| Cooling system | Built in Cooling system,forced air cooling | |
| Altitude | 10,000 | feet |
| Shock / Vibration(MIL-STD-810F) | 25g rms (15 degree 2KHz) endurance, 1 hour per axis | |
| Shock(non operating) | 20G for 11msc half sin wave,3 axis both directions | |
| Dimensions W x H x D | 12U | mm |
| Weight | ≤ 150 | Kg |

*Note: For a wider temperature range, please consult the manufacturer.



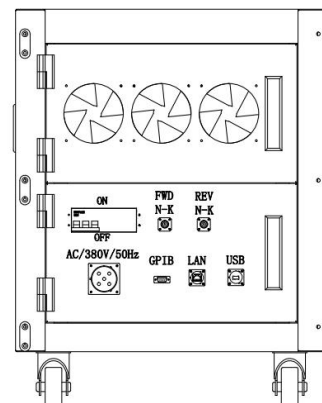
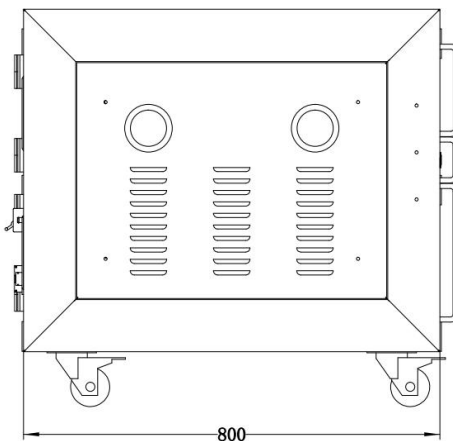
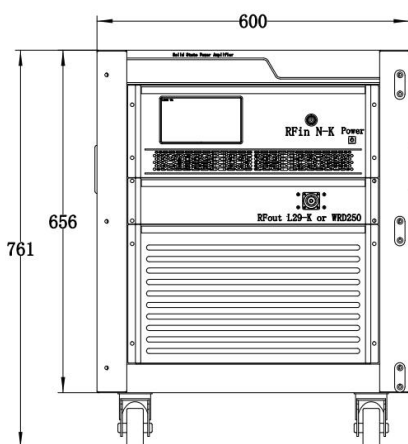
Absolute Maximum Ratings:

| Parameter | Value |
|-----------------------|----------------------|
| RF Input Power | 0 dBm |
| ESD sensitivity (HBm) | Class 0, passed 150V |

Outline Drawing:

Unit:mm

RPA-2G5-7G5-500



Optional items:

| Number | Parameter |
|--------|---|
| 1 | LCD display touchscreen |
| 2 | Ingress protection grad |
| 3 | Customized operating temperature range |
| 4 | Built in Cooling system(air or liquid) |
| 5 | Types of RF,coupling and monitor&control interfaces |

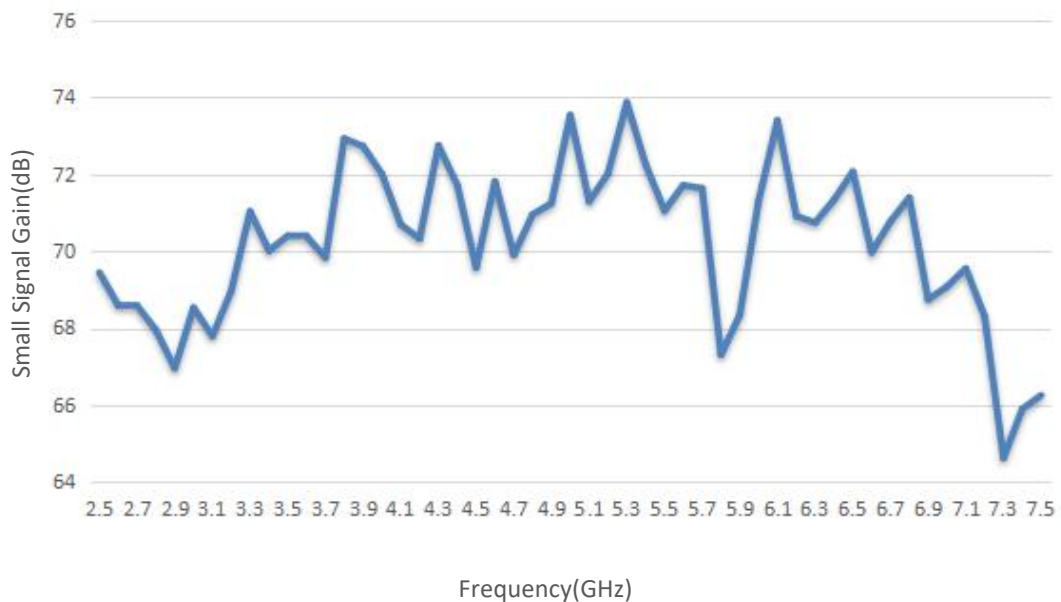


Outline Drawing:

| Base Number | Description | Optional |
|----------------------|---|-----------------------------|
| RPA-2G5-7G5-500 | High Power Amplifier, 2.5-7.5GHz, 500W CW, Built in air or liquid cooling, without LCD and IP grad. | Basic version |
| RPA-2G5-7G5-500-M | High Power Amplifier, 2.5-7.5GHz, 500W CW, Built in air or liquid cooling, with LCD. | Add LCD display touchscreen |
| RPA-2G5-7G5-500-IPxx | High Power Amplifier, 2.5-7.5GHz, 500W CW, Built in air or liquid cooling, with LCD and IP grad. | Add Ingress protection grad |

Typical Performance Data:

Small Signal Gain vs Frequency

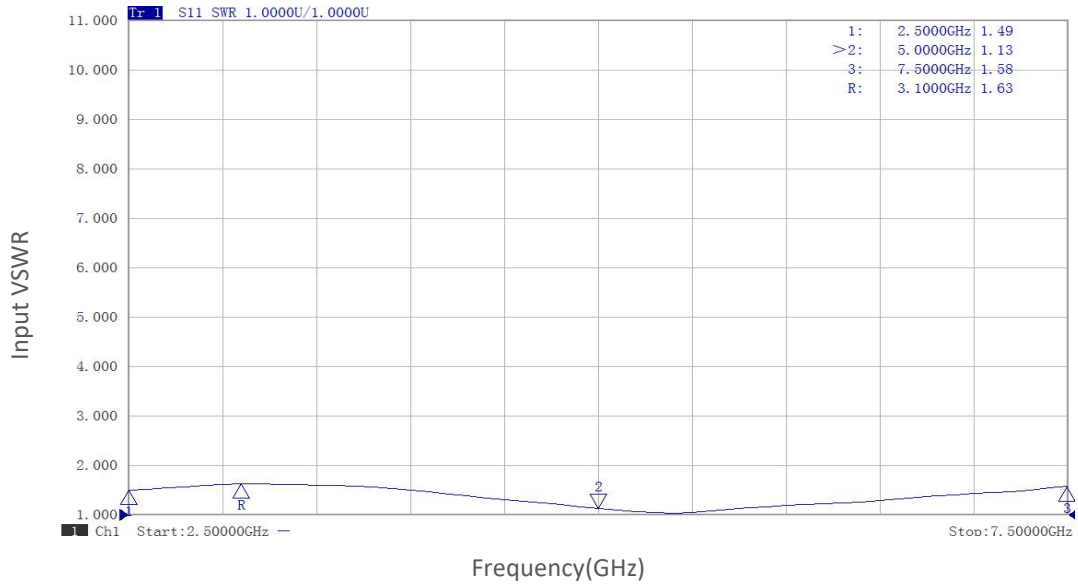


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

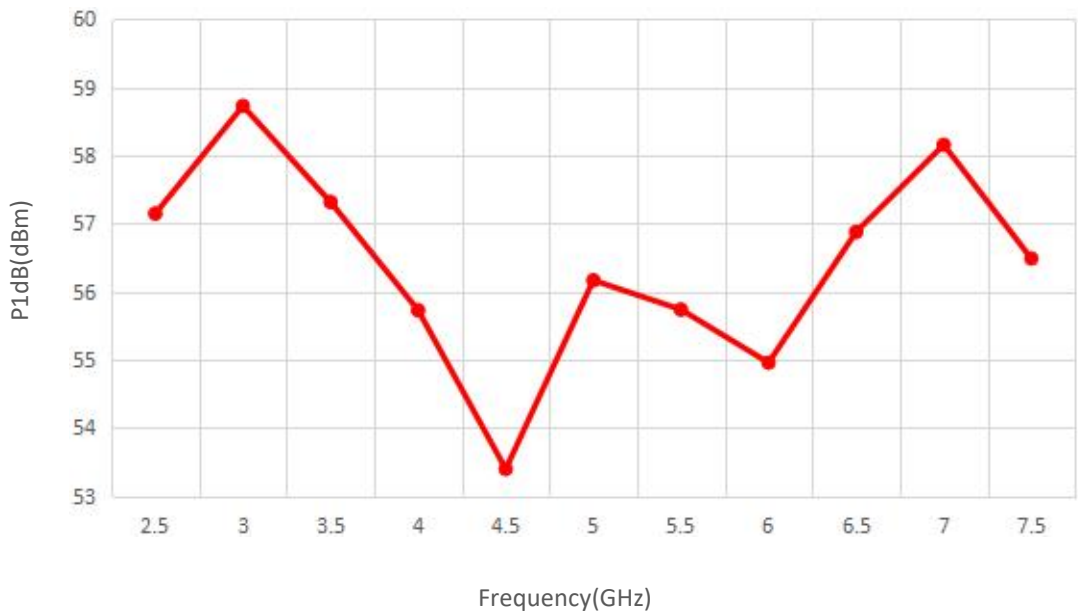


Typical Performance Data:

Input VSWR vs Frequency



P1dB vs Frequency

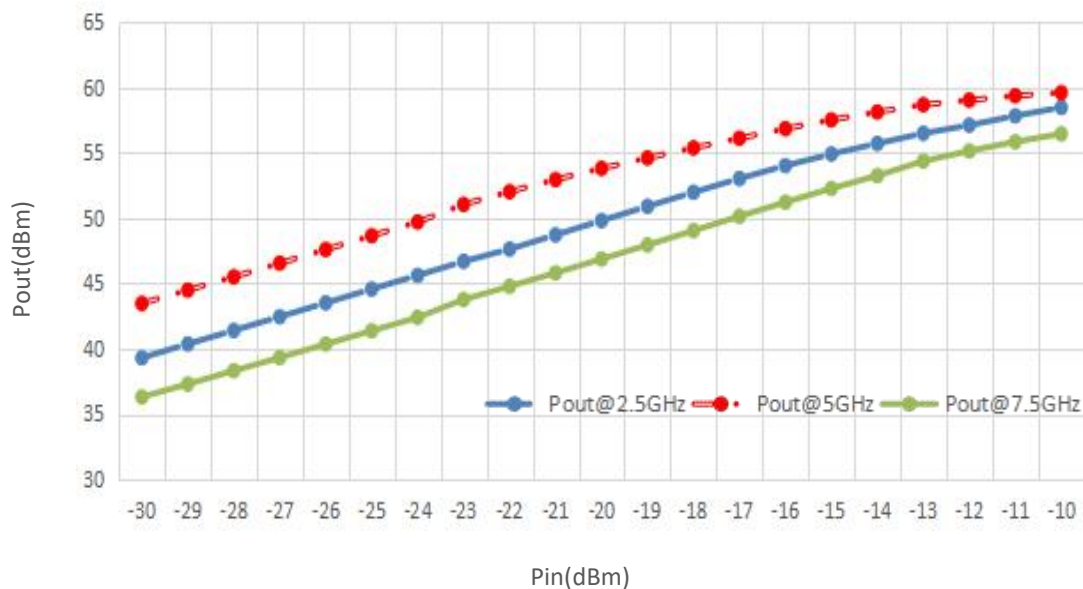


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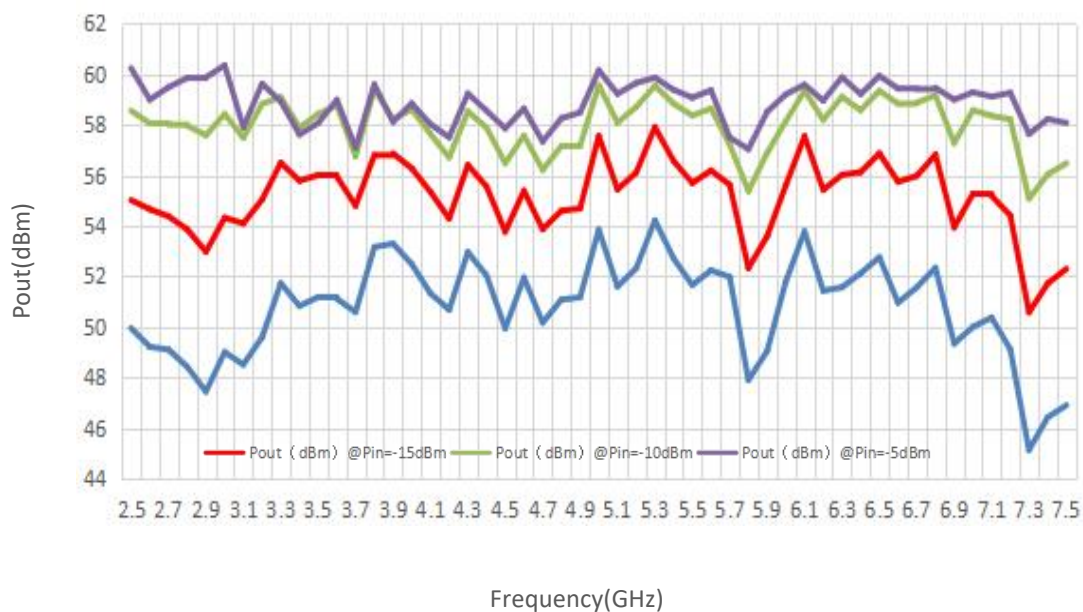


Typical Performance Data:

Pout@Pin



Pout@Equal_Pin

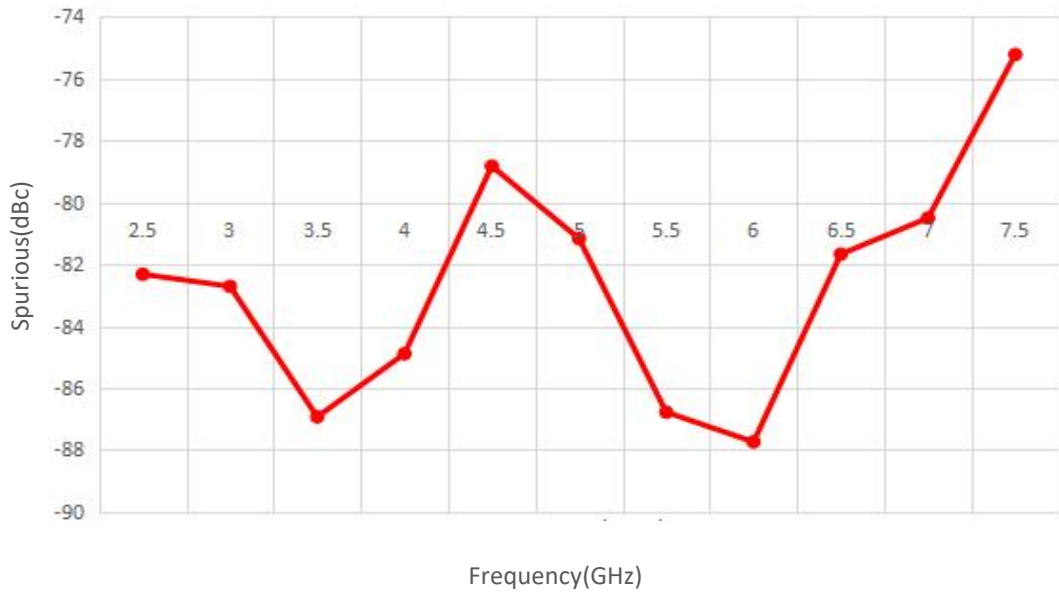


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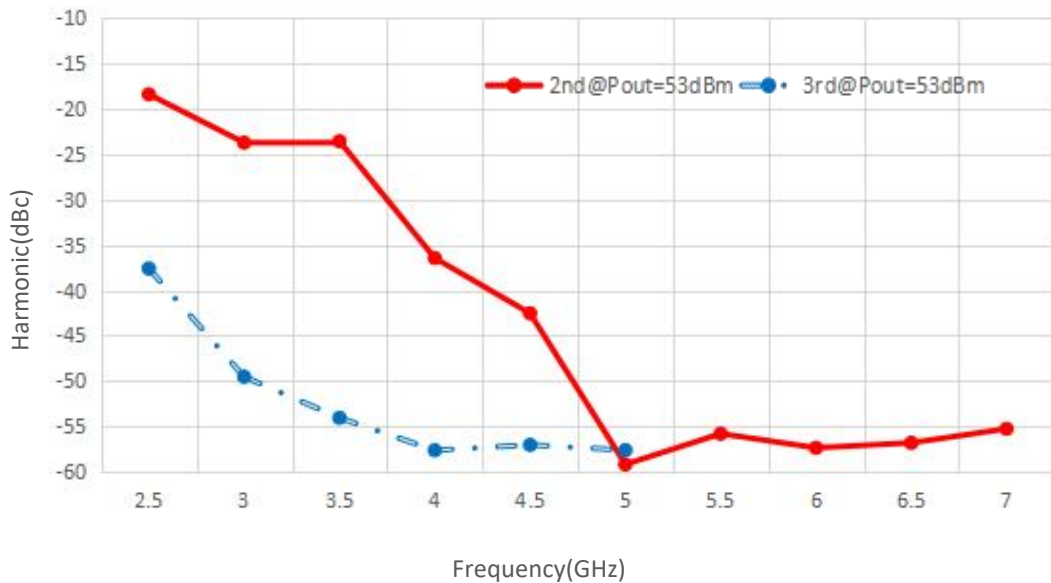


Typical Performance Data:

Spurious vs Frequency



Harmonic vs Frequency



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