# High Power Amplifier

# Model:RPA-27G-32G-400

## 27-32GHz 400W CW

## Ultrabroad frequency range, high performanceand exceptional RF characteristics

### Features:

- Frequency range: 27-32GHz
- High output power at saturation, 56dBm Min.
- High gain, 56dB Min.
- Operates from AC line power: 220V

### Applications:

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

### Product Overview：

The RPA-27G-32G-400 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 400W output power over its entire operating bandwidth of 27 to 32GHz. The control functions that RPA-27G-32G-400 possesses include the on/off of the power supply and output power can be controlled by the automatic ALC system. 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℃:

| Parameter | Symbol | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| Frequency range | BW | | 27-32 | | GHz |
| Gain | GP | 56 | | | dB |
| Gain flatness | ΔGL | | ±3 | | dB |
| Output Psat | Psat | 56 | | | dBm |
| Spurious | Spur | | | -55 | dBc |
| Input VSWR | VSWRin | | | 2.0 | :1 |
| AC Voltage | Vac | | 220 | | V AC |
| Power Consumption | Pdiss | | 5500 | 6000 | W |
| Impedance | I/O-IMP | | 50 | | Ohms |

## Mechanical Specifications:

| Parameter | Value | Notes |
|---|---|---|
| Operating Temerature* | -20 to +40 | ℃ |
| Non-operating Temperature* | -30 to +50 | ℃ |
| Relative humidity | 95 | % |
| RF Input/Output Connector | 2.92mm Female/WR28 | |
| Forward/Reverse Coupling | 2.92mm Female/2.92mmFemale | |
| Communication Connector | DB9/RJ-45 | |
| Digital Monitor & Control | Serial:RS422;Ethernet | Optional: GPIB |
| Cooling | 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 | |
| Display functions | Displays the current output power, reflectedpower,and fault information | |
| Dimensions W x H x D | 19 Inch 8U*550 | mm |
| Weight | ≤80 | Kg |

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

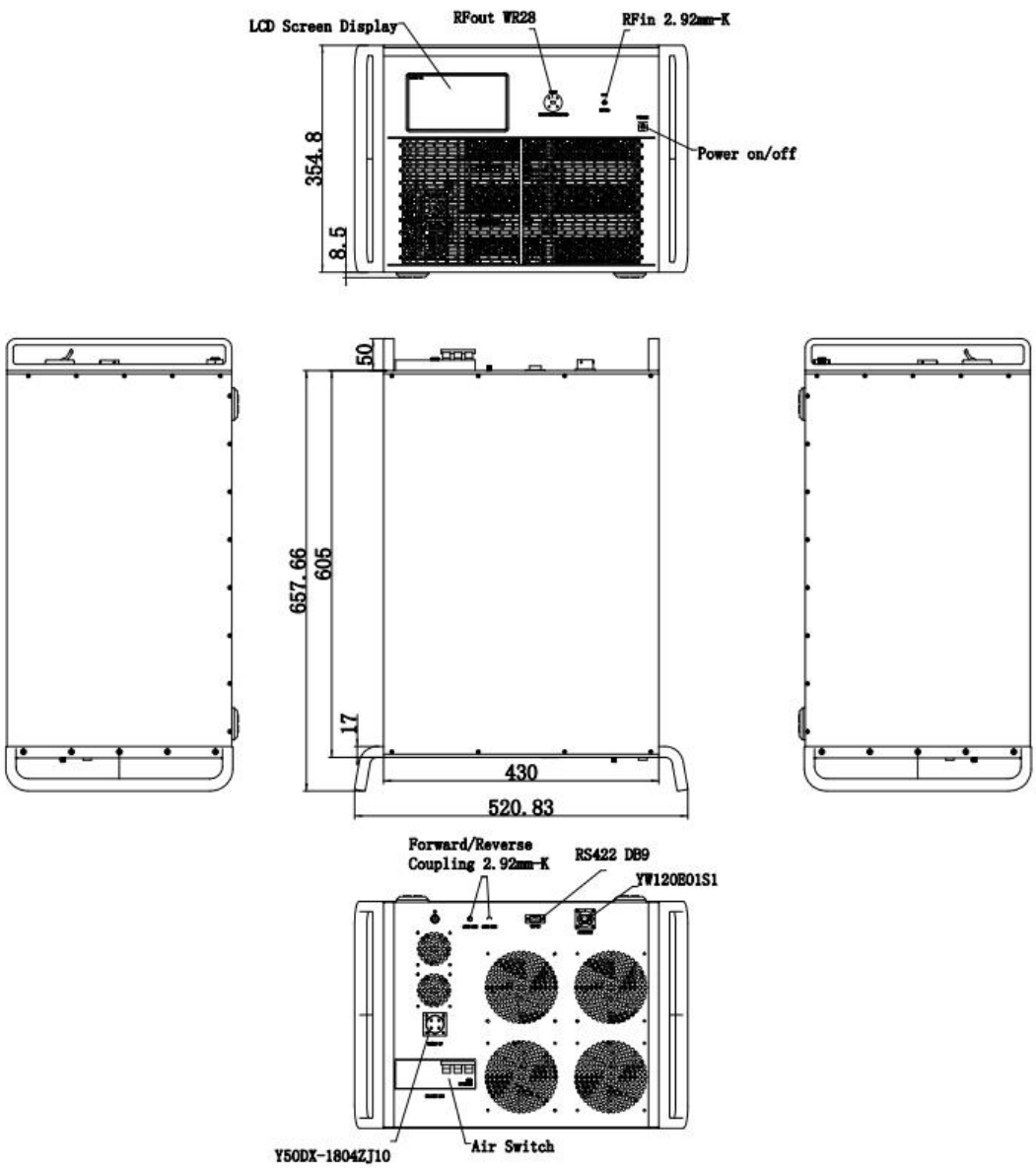
## Absolute Maximum Ratings:

| Parameter | Value |
|---|---|
| RF Input Power | +10 dBm |
| ESD sensitivity (HBm) | Class 0, passed 150V |

## Outline Drawing:

Unit:mm

RPA-27G-32G-400



## Optional items:

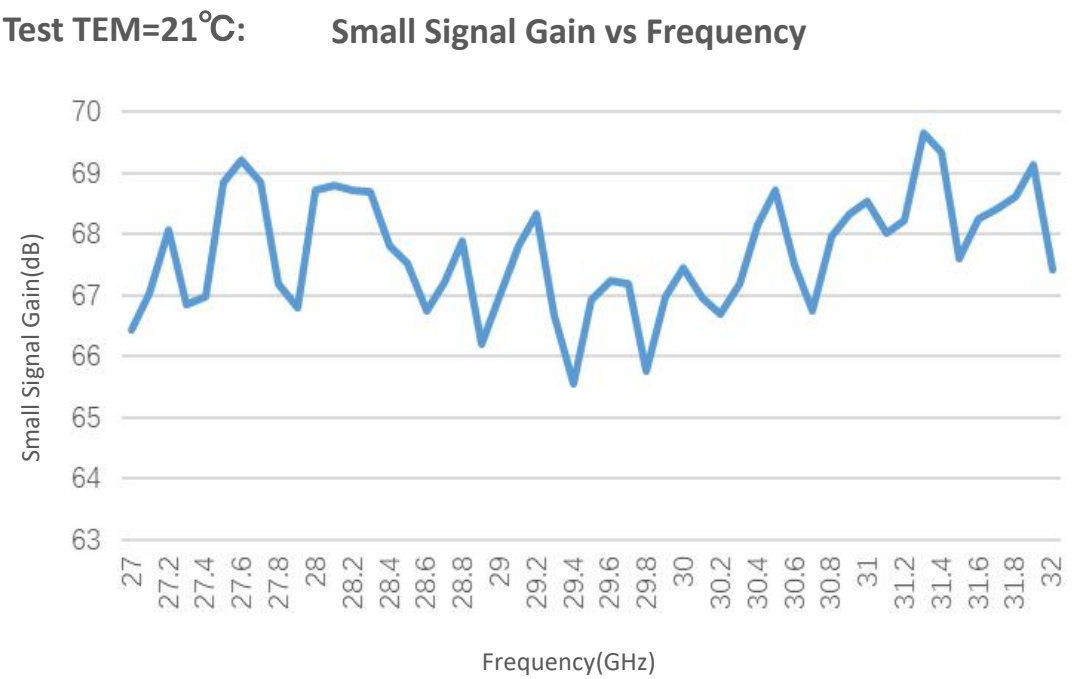
| Number | Parameter |
|---|---|
| 1 | LCD display touchscreen |
| 2 | Ingress protection grad |
| 3 | Customized operating temperature range |
| 4 | Built in Cooling system(air or liquid) |
| 5 | Types of RF,coupling and monitor&control interfaces |

## Outline Drawing:

| Base Number | Description | Optional |
|---|---|---|
| RPA-27G-32G-400 | High Power Amplifier, 27-32GHz, 400W CW, Built in air or liquid cooling, without LCD and IP grad. | Basic version |
| RPA-27G-32G-400-M | High Power Amplifier, 27-32GHz, 400W CW, Built in air or liquid cooling, with LCD. | Add LCD display touchscreen |
| RPA-27G-32G-400-IPxx | High Power Amplifier, 27-32GHz, 400W CW, Built in air or liquid cooling, with LCD and IP grad. | Add Ingress protection grad |

## Typical Performance Data:

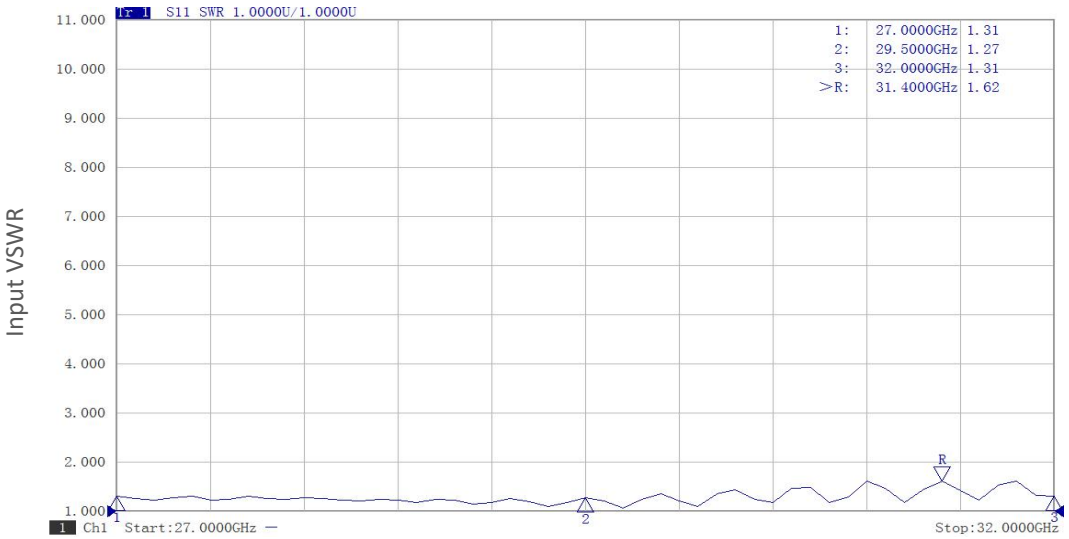
Test TEM=21℃:



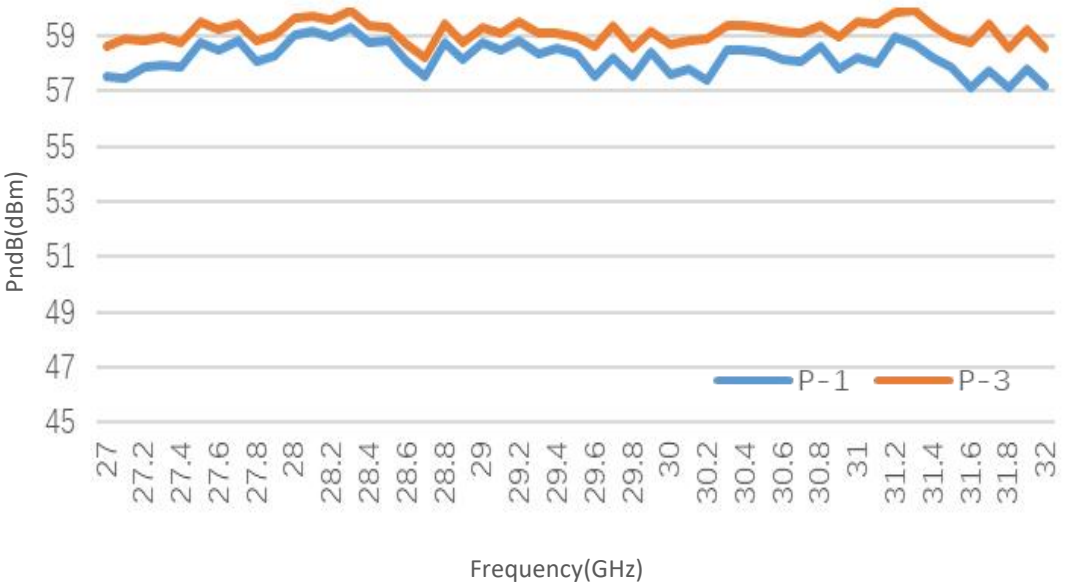

Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

## Typical Performance Data:

### Test TEM=21℃:  Input VSWR vs Frequency




### PndB vs Frequency

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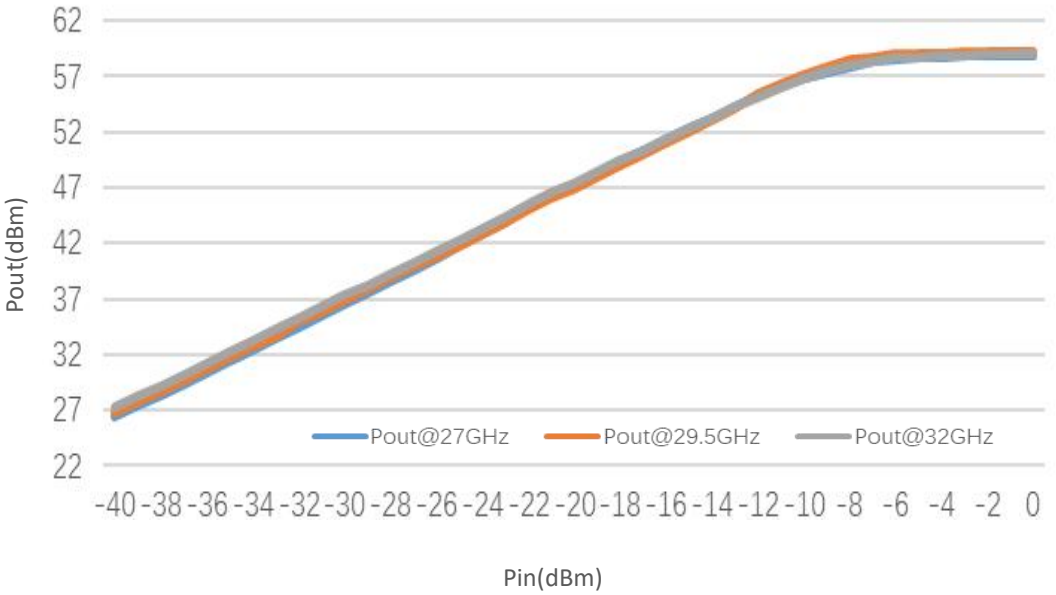
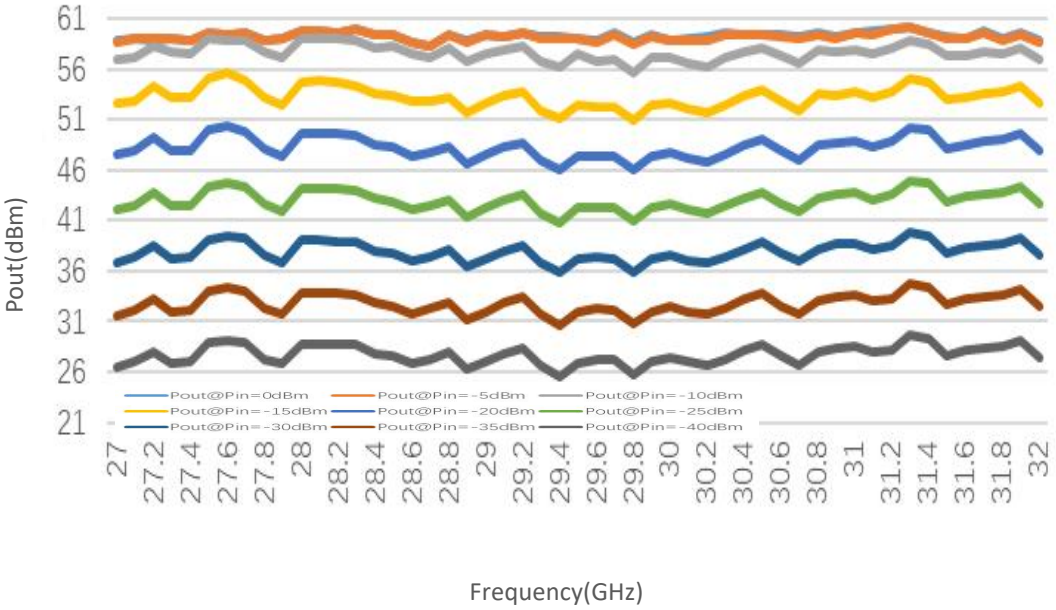
## Typical Performance Data:

**Test TEM=21℃:** **Pout@Pin**




**Pout@Equal_Pin**

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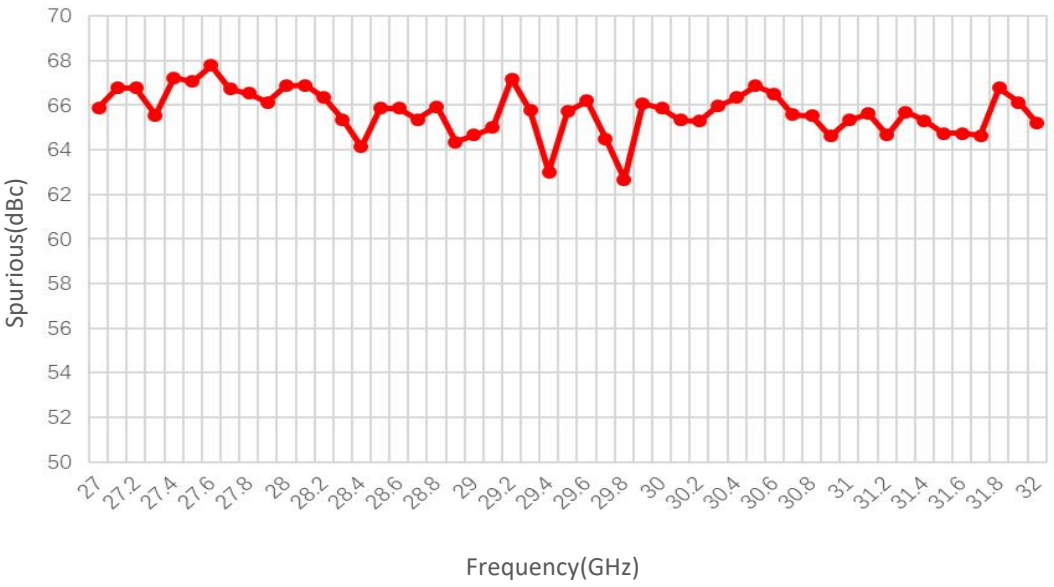
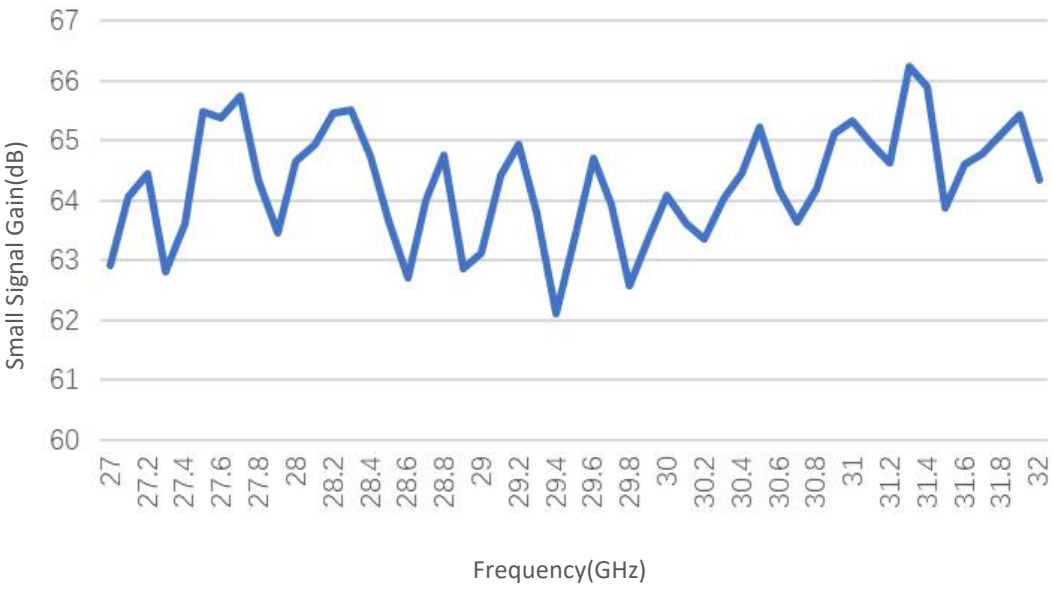
## Typical Performance Data:

**Test TEM=21℃:** **Spurious vs Frequency**




**Test TEM=50℃:** **Small Signal Gain vs Frequency**

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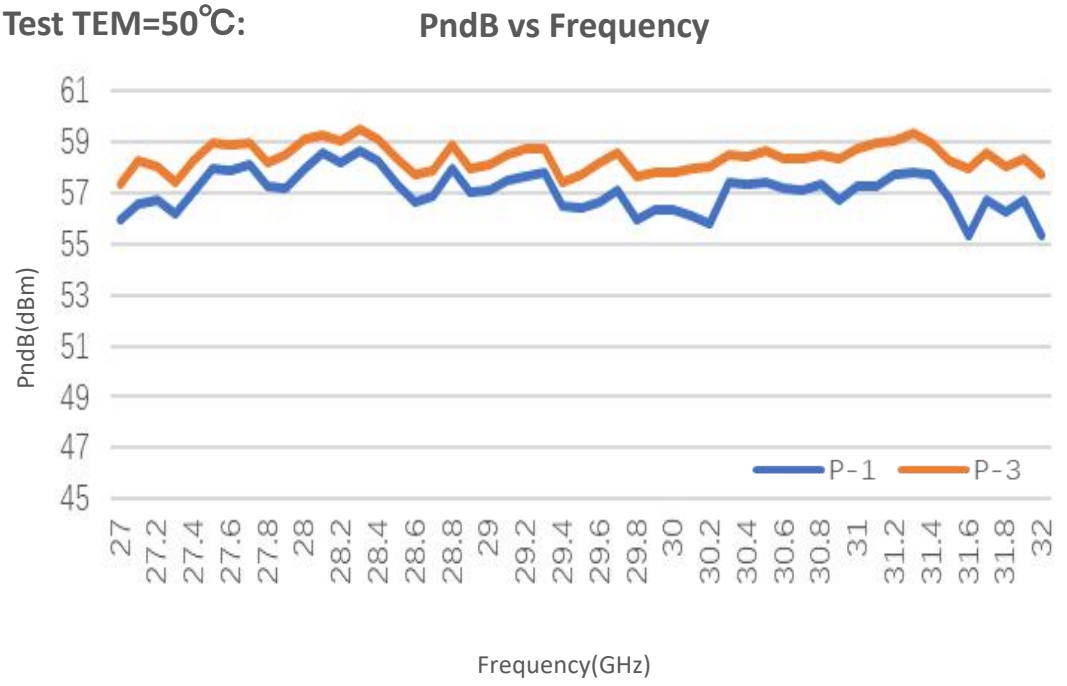
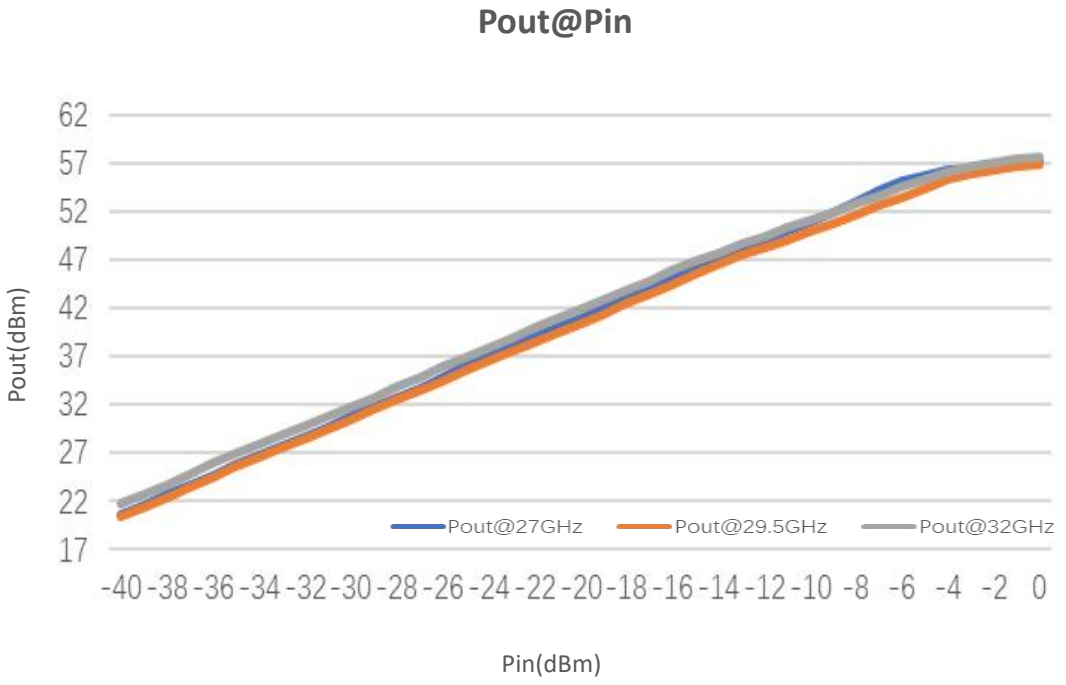
## Typical Performance Data:

**Test TEM=50℃:**

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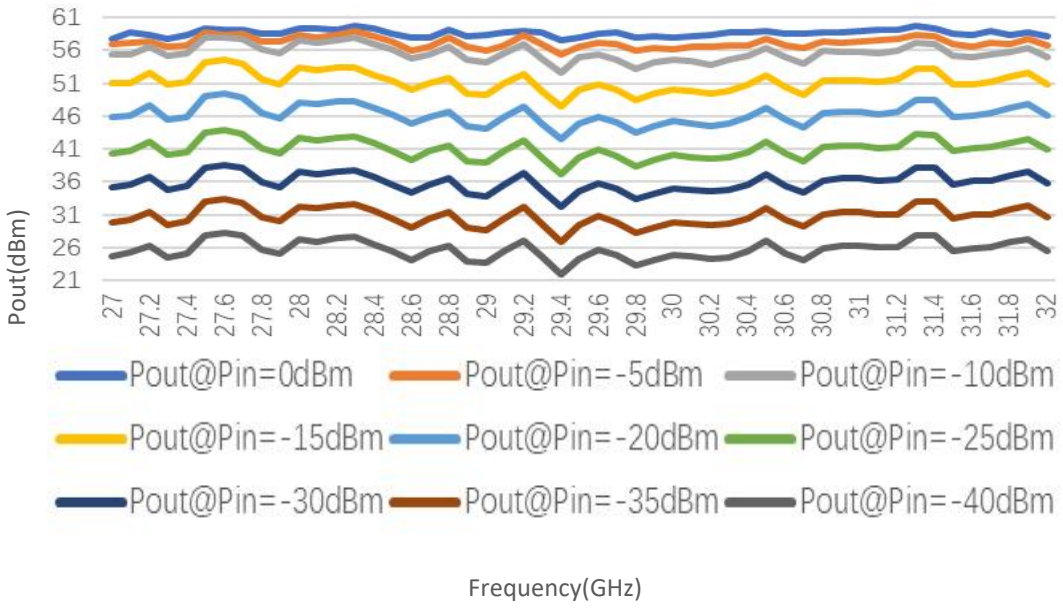
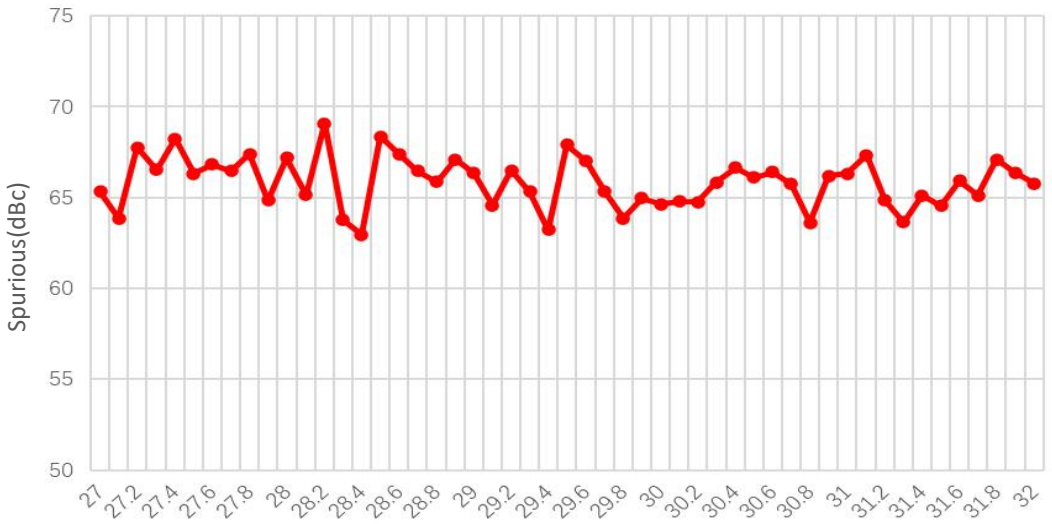
## Typical Performance Data:

**Test TEM=50℃:** **Pout@Equal_Pin**




Frequency(GHz)

**Spurious vs Frequency**




Frequency(GHz)

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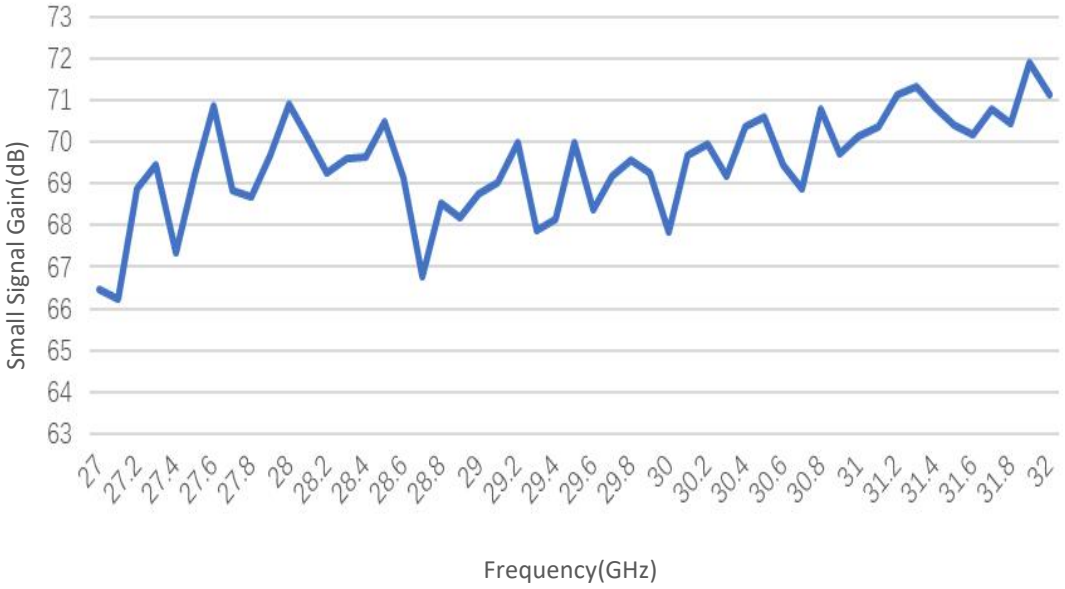
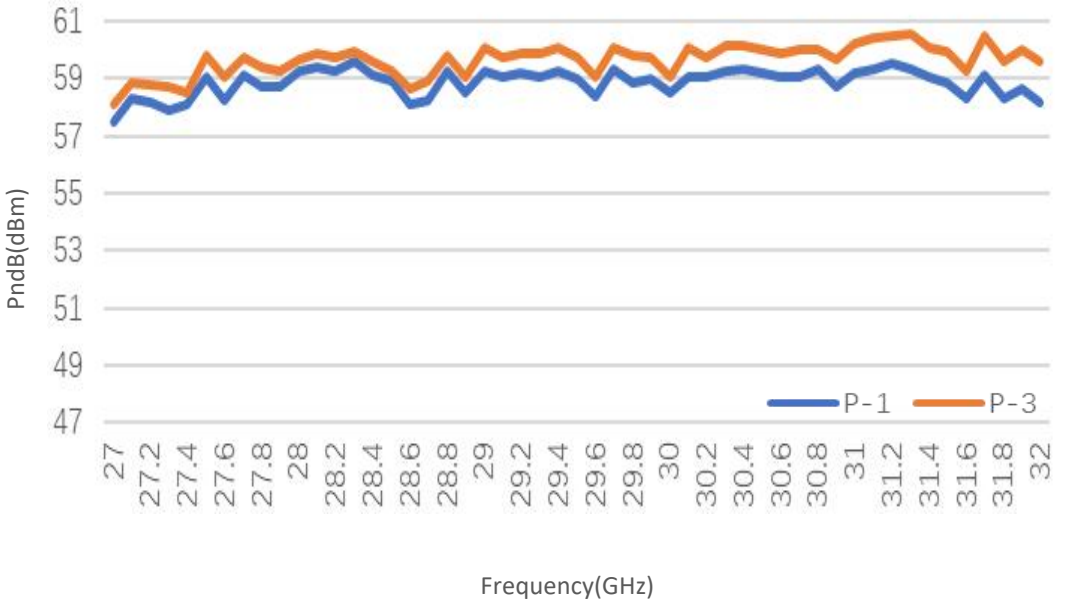
## Typical Performance Data:

**Test TEM=20℃:** **Small Signal Gain vs Frequency**




**PndB vs Frequency**

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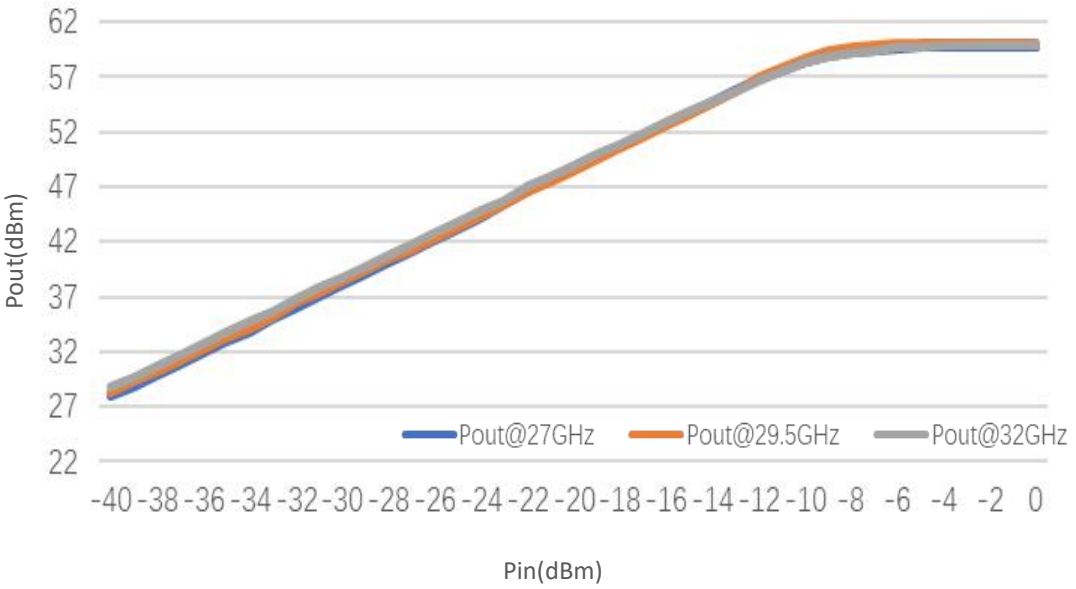
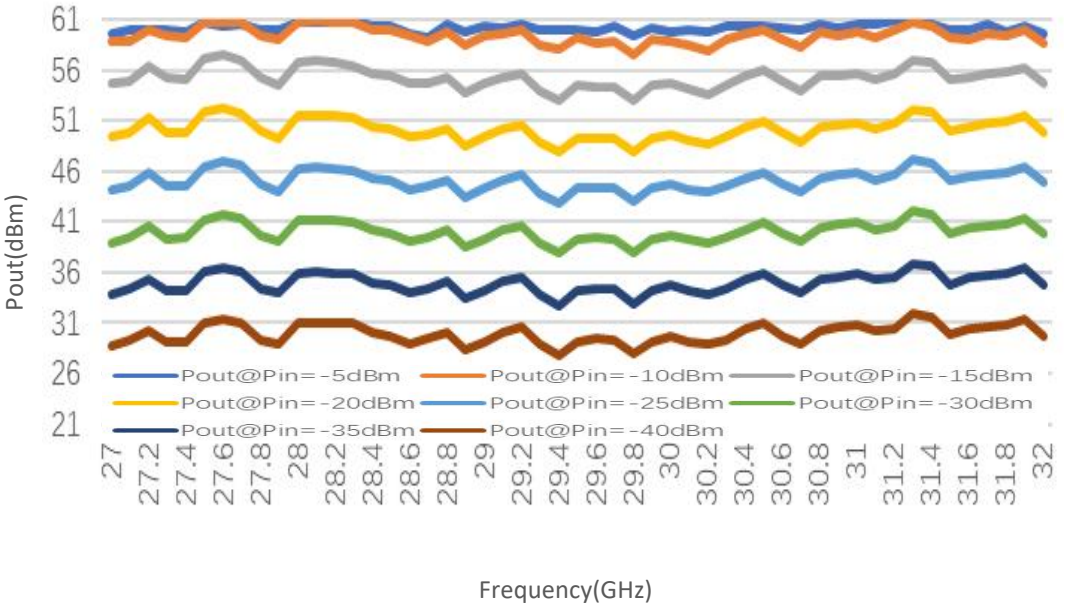
## Typical Performance Data:

**Test TEM=-20℃:** **Pout@Pin**




**Pout@Equal_Pin**

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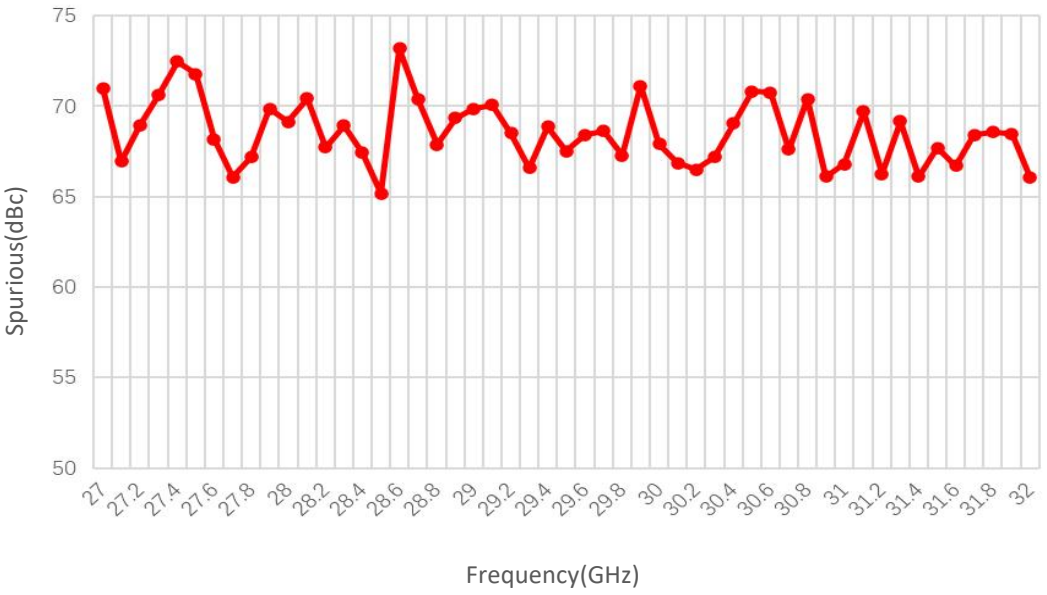
## Typical Performance Data:

**Test TEM=-20℃:** **Spurious vs Frequency**

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