



# High Power Amplifier

## Model:RPA-50G-75G-50

50-75GHz 50W CW

Ultrabroad frequency range, high performance and exceptional RF characteristics

### Features:

- Frequency range: 50-75GHz
- High output power at saturation, 47dBm Min.
- High gain, 47dB 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-50G-75G-50 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 50W output power over its entire operating bandwidth of 50 to 75GHz. 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.



## Electrical Specifications at 25°C:

Parameter	Symbol	Min	Typ	Max	Units
Frequency range	BW	50-75			GHz
Power Gain	GP	47			dB
Linear Gain flatness	$\Delta$ GL		$\pm 5$		dB
Gain adjust Range	$\Delta$ GR		20		dB
Gain adjust Step	$\Delta$ GS		0.5		dB
Output Psat	Psat	47			dBm
Spurious@Pout=47dBm	Spur			-60	dBc
Harmonics@Pout=47dBm	HAM			-30	dBc
Input VSWR	VSWRin		3		:1
Load VSWR	VSWRload			3	:1
AC Voltage	Vac		220		V AC
Power Consumption	Pdiss			1500	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	1.85mm Female/WR-15	
Forward/Reverse Coupling Connector	1.85mm Female/1.85mm Female	
AC Supply Connector	Y50DX-2004	
Control Connector	Y50X-1219	
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	
Monitoring Function	1,Working voltage 2,Working current 3,Case/environment TEM 4,Output/reflected power	



## Mechanical Specifications:

Parameter	Value	Notes
Dimensions W x H x D	280*239*100	mm
Weight	≤20	Kg

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

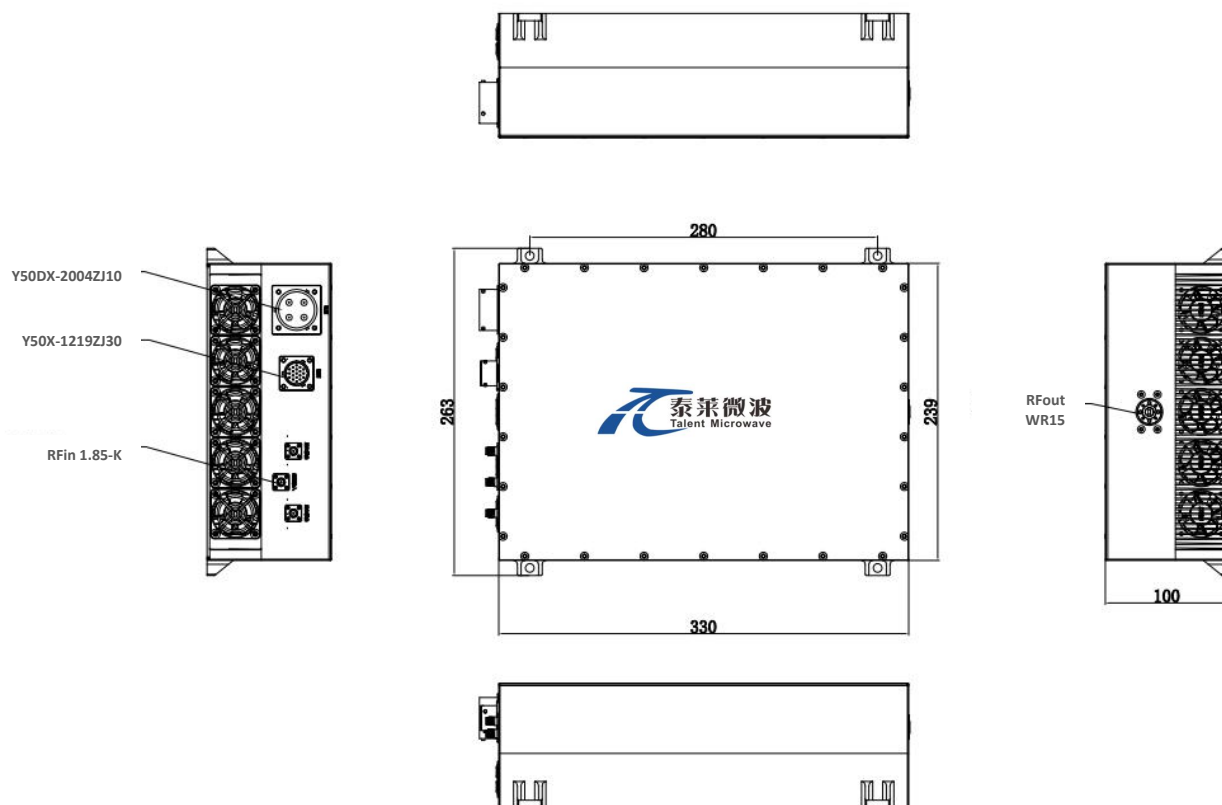
## Absolute Maximum Ratings:

Parameter	Value
RF Input Power	+5 dBm
ESD sensitivity (HBm)	Class 0, passed 150V

## Outline Drawing:

Unit:mm

RPA-50G-75G-50





## Optional items:

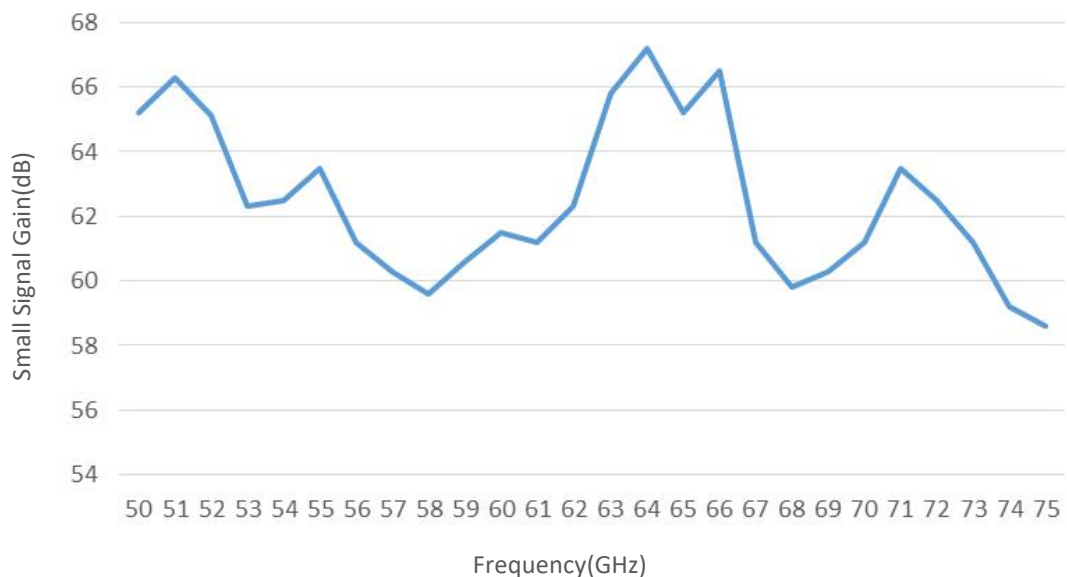
Number	Parameter
1	LCD display touchscreen
2	Ingress protection grad
3	Customized operating temperature range
4	Built in Cooling system(air or liquid)
5	Types of RF,coupling and monitor&control interfaces

## Outline Drawing:

Base Number	Description	Optional
RPA-50G-75G-50	High Power Amplifier, 50-75GHz, 50W CW, Built in air or liquid cooling, without LCD and IP grad.	Basic version
RPA-50G-75G-50-M	High Power Amplifier, 50-75GHz, 50W CW, Built in air or liquid cooling, with LCD.	Add LCD display touchscreen
RPA-50G-75G-50-IPxx	High Power Amplifier, 50-75GHz, 50W CW, Built in air or liquid cooling, with LCD and IP grad.	Add Ingress protection grad

## Typical Performance Data:

### Small Signal Gain vs Frequency

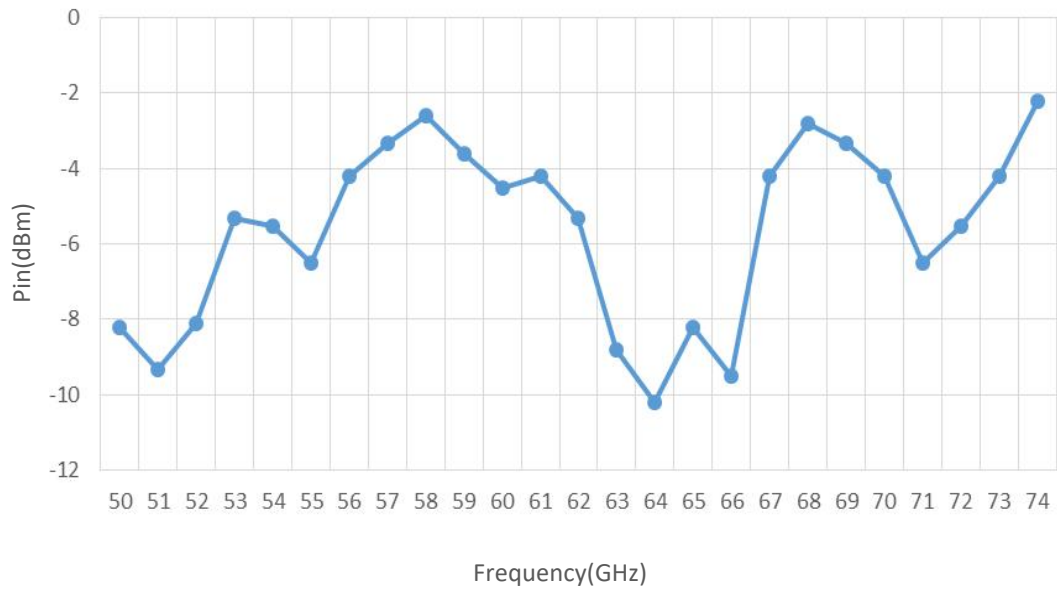


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

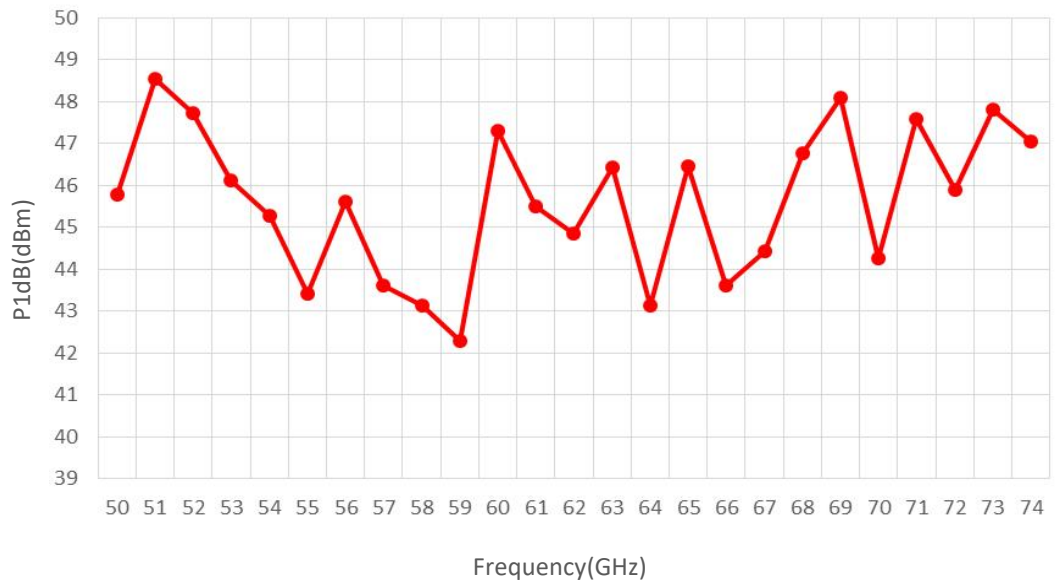


## Typical Performance Data:

### Pin@Equal\_Pout vs Frequency



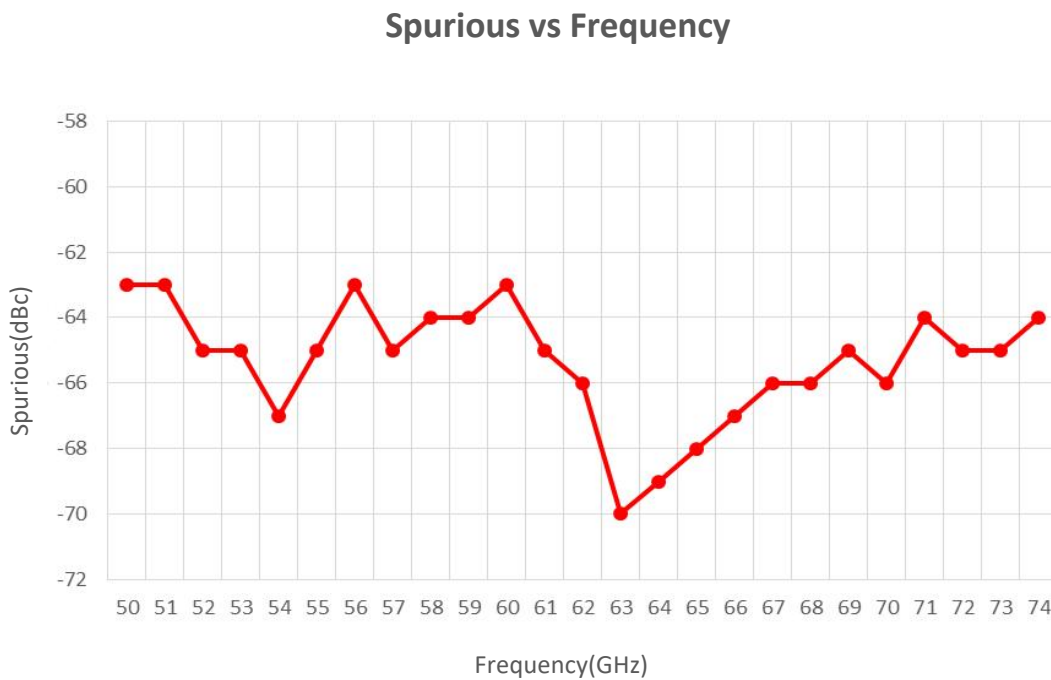
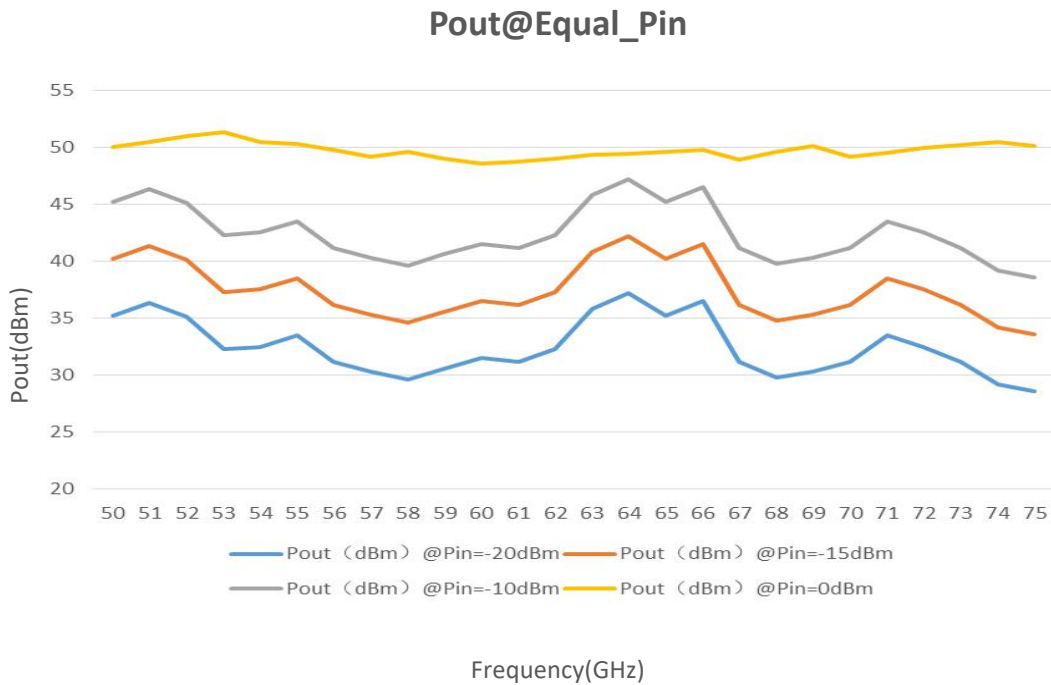
### P1dB vs Frequency



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## Typical Performance Data:



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