



# High Power Amplifier

## Model:RPA-18G-40G-20

18-40GHz 20W CW

Ultrabroad frequency range, high performance and exceptional RF characteristics

### Features:

- Frequency range: 18-40GHz
- High output power at saturation, 43dBm Min.
- High gain, 43dB 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-18G-40G-20 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 20W output power over its entire operating bandwidth of 18 to 40GHz. The control functions that RPA-18G-40G-20 possesses include the on/off of the power supply. 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	18-40			GHz
Power Gain	GP	43			dB
Gain flatness	ΔGL		±5		dB
Output Psat	Psat	43	44		dBm
ALC Accuracy	ALC			±0.5	dB
Spurious@Pout=43dBm	Spur			-50	dBc
Harmonics@Pout=43dBm	HAM			-15	dBc
Rise/Fall Time	Tr		50		ns
Input VSWR	VSWRin			2.0	:1
AC Voltage	Vac		220		V AC
Power Consumption	Pdiss			600	W
Working Mode	MOD	CW/PULSE compatible			
Impedance	I/O-IMP		50		Ohms

## Mechanical Specifications:

Parameter	Value	Notes
Operating Temperature*	-20 to +50	°C
Non-operating Temperature*	-30 to +60	°C
Relative humidity	95	%
RF Input/Output Connector	2.92mm Female/2.92mm Female	
Communication Connector	DB9/RJ45	
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	1,Output/reflected power 2,Fault informations	
Dimensions W x H x D	19 Inch 3U*550	mm
Weight	≤35	Kg

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



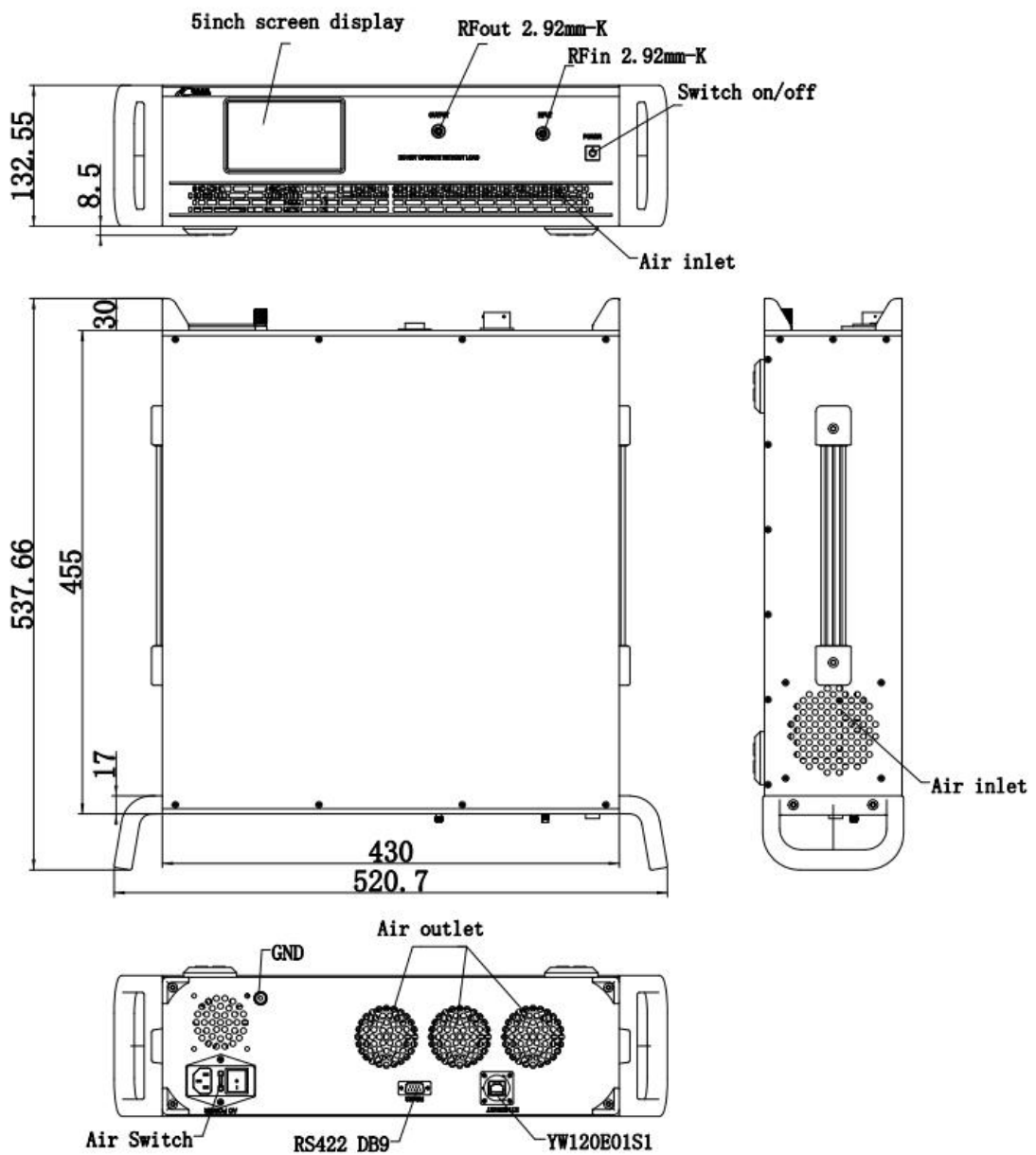
## Absolute Maximum Ratings:

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

## Outline Drawing:

Unit:mm

RPA-18G-40G-20





## 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-18G-40G-20	High Power Amplifier, 18-40GHz, 20W CW, Built in air or liquid cooling, without LCD and IP grad.	Basic version
RPA-18G-40G-20-M	High Power Amplifier, 18-40GHz, 20W CW, Built in air or liquid cooling, with LCD.	Add LCD display touchscreen
RPA-18G-40G-20-IPxx	High Power Amplifier, 18-40GHz, 20W CW, Built in air or liquid cooling, with LCD and IP grad.	Add Ingress protection grad

## Typical Performance Data:

Small Signal Gain vs Frequency

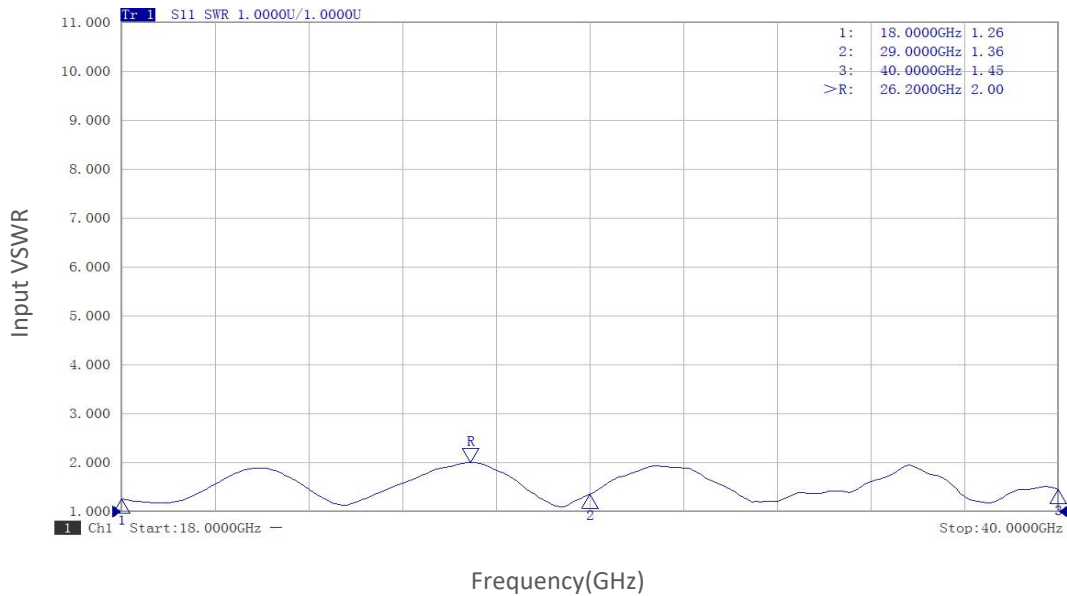


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

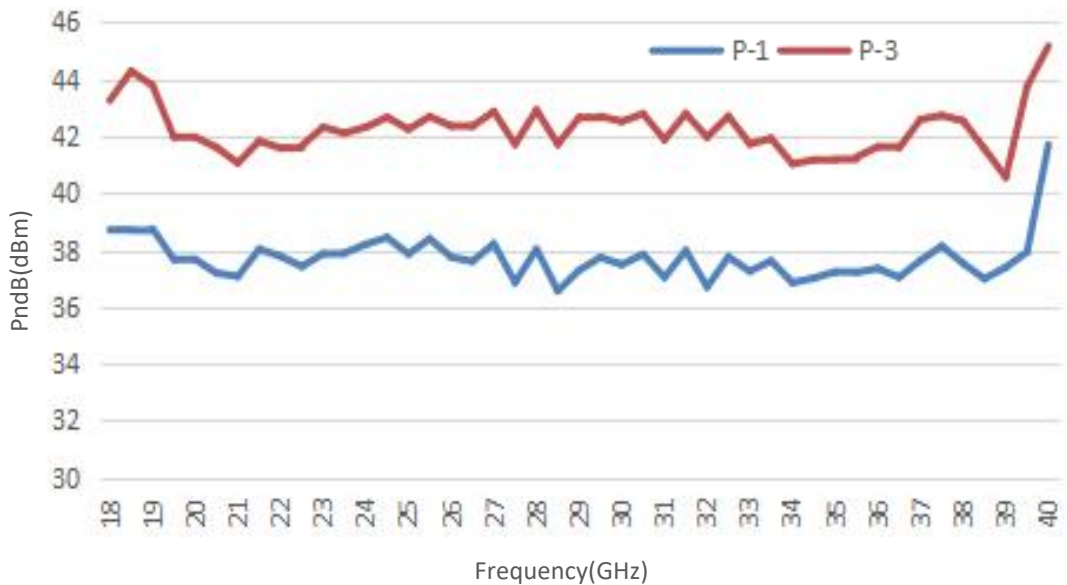


## Typical Performance Data:

### Input VSWR vs Frequency



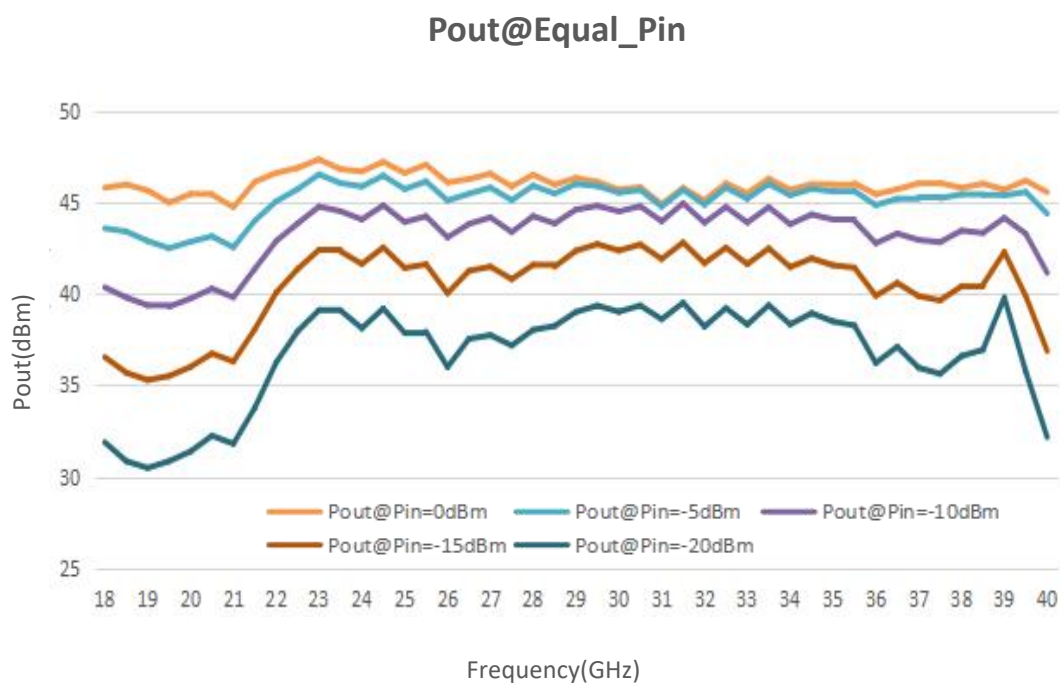
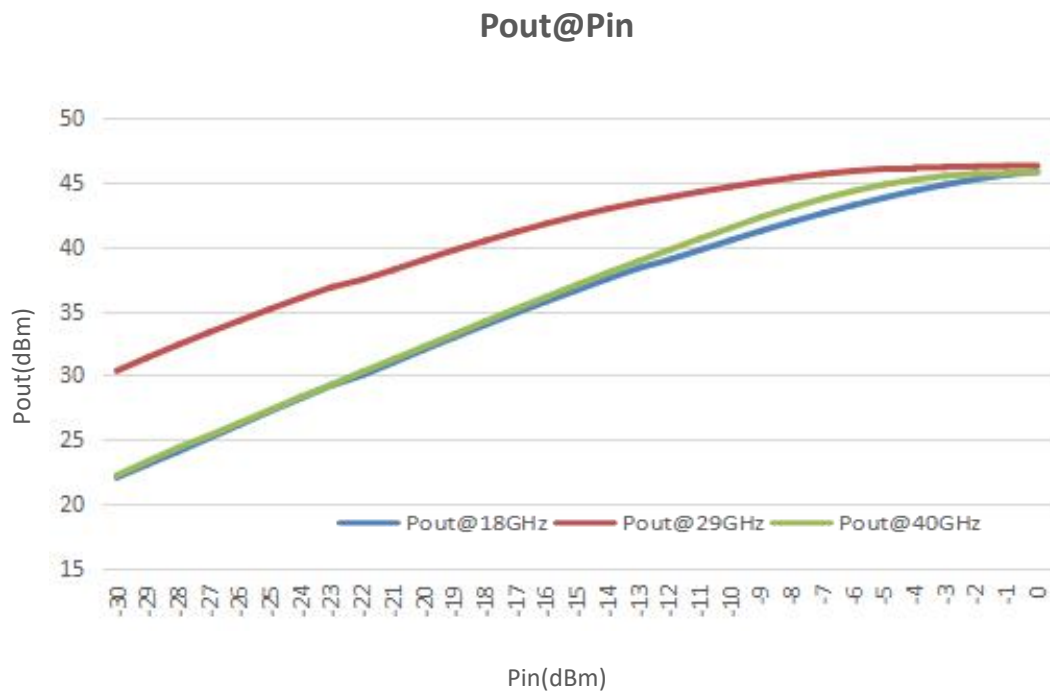
### PndB vs Frequency



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:

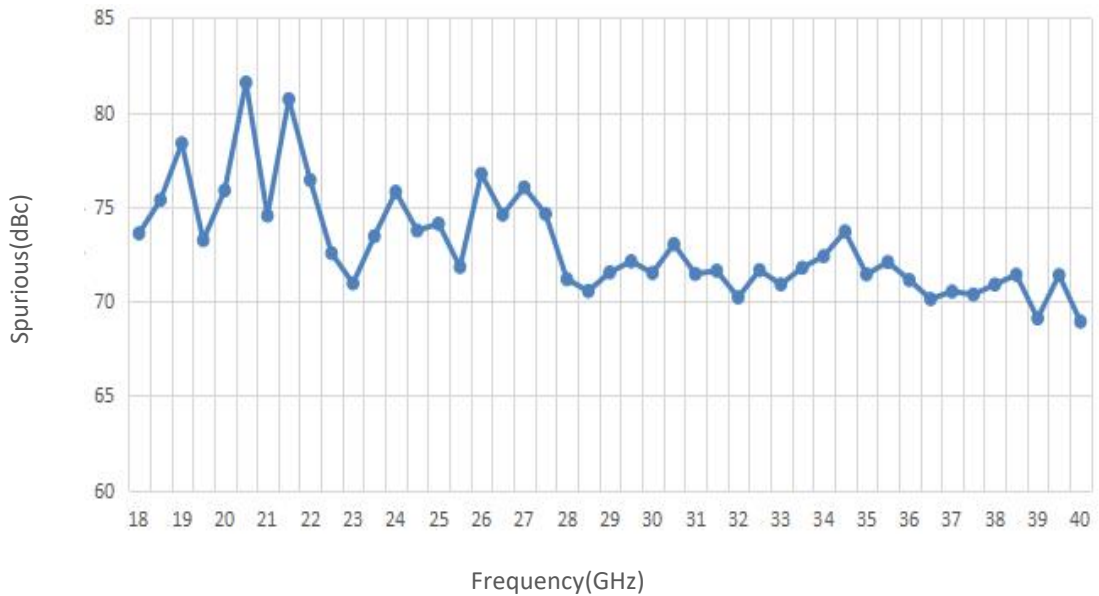


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.



## Typical Performance Data:

### Spurious vs Frequency



### 2nd Harmonic 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.