



# High Power Amplifier

## Model:RPA-13G5-14G5-1000

13.5-14.5GHz 1000W CW

Ultrabroad frequency range, high performance and exceptional RF characteristics

### Features:

- Frequency range: 13.5-14.5GHz
- High output power at saturation, 60dBm Min.
- High gain, 60dB 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-13G5-14G5-1000 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 1000W output power over its entire operating bandwidth of 13.5 to 14.5GHz. The control functions that RPA-13G5-14G5-1000 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 ( $\geq +55^{\circ}\text{C}$  shutdown), over voltage ( $\geq 29\text{V}$  shutdown), under voltage ( $\leq 20\text{V}$  shutdown), input overdrive ( $\geq 10\text{dBm}$  shutdown) and load VSWR protection (The unit disables RF when reverse power exceeds the safe level of 3:1 VSWR or reduces power by 6dB). It can also be remotely controlled via RS422 or LAN.



## Electrical Specifications at 25°C:

Parameter	Symbol	Min	Typ	Max	Units
Frequency range	BW	13.5-14.5			GHz
Linear Gain flatness	$\Delta$ GL	$\pm 0.3@40\text{MHz}; \pm 2@full\ band$			dB
Power Gain	Gp	60			dB
Gain adjust Range	$\Delta$ GR	20			dB
Gain adjust Step	$\Delta$ GS		0.5		dB
Output Psat	Psat	60			dBm
Spurious@Pout=60dBm	Spur			-60	dBc
Harmonics@Pout=60dBm	HAM			-30	dBc
Gain stability@24h	Gstb			$\pm 0.25$	dB
Two-tone intermodulation(5MHz space)	IMD	-25 dBc max at total output power 56dBm			dBc
Input VSWR	VSWRin			1.5	:1
Output VSWR	VSWRout		1.5	2.0	:1
AC Voltage@3-phase (50-60Hz)	Vac		380	420	V AC
Power Consumption@Pout=60dBm	Pdiss			8	kW
Power Consumption@Psat	Pdiss			9	kW
Impedance	I/O-IMP		50		Ohms

## Mechanical Specifications:

Parameter	Value	Notes
Operating Temperature*	-20 to +50	°C
Non-operating Temperature*	-40 to +70	°C
Relative humidity	95	%
RF Input/Output Connector	N Female/WR62	
Forward/Reverse Coupling	N Female/N Female	
Communication Connector	Serial:RS422;Ethernet: RJ-45	
AC Power Connector	Y50DX-3205	
Front Panel LCD Screen Display	7 inch LCD Screen Display	
Digital Monitor & Control	Serial:RS422; LAN	Optional: GPIB
Cooling	Built in Cooling system,forcedair cooling	
Altitude	10,000	feet



## Mechanical Specifications:

Parameter	Value	Notes
Monitoring function	1,Input voltage 2,nput current 3,Input power(rf) 4,output VSWR 5,output power 6,reverse power 7,status of gate voltages 8,temp	
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	20U	mm
Weight	≤350	Kg

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

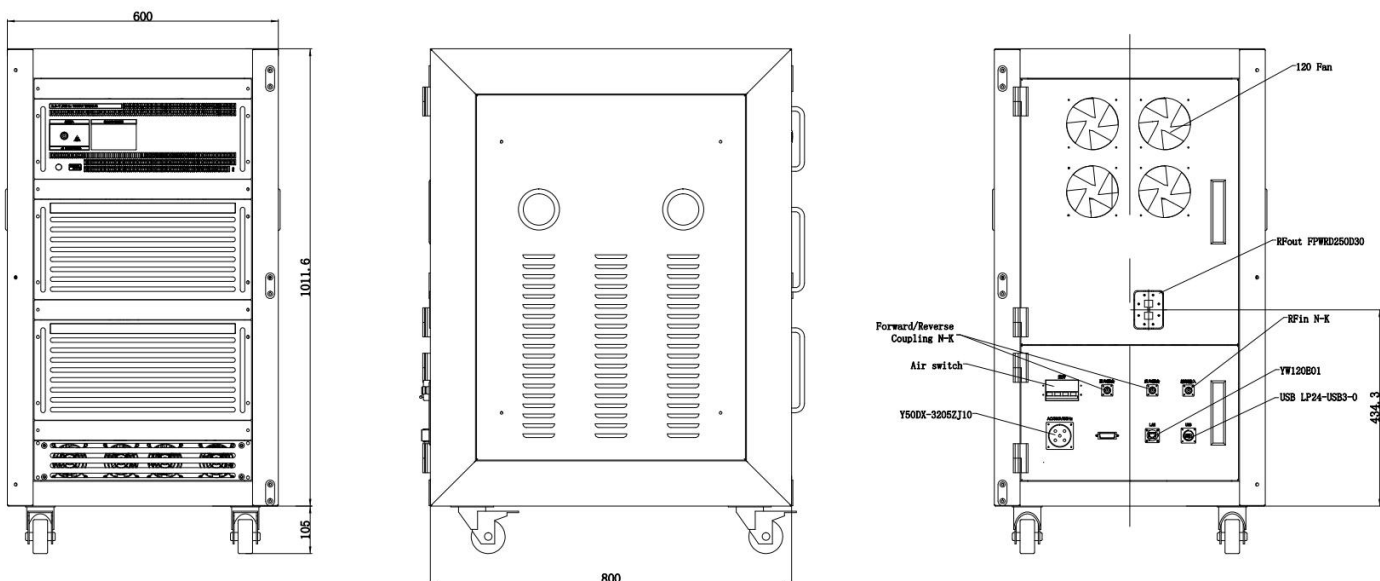
## Absolute Maximum Ratings:

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

## Outline Drawing:

Unit:mm

RPA-13G5-14G5-1000(Vesion 1)

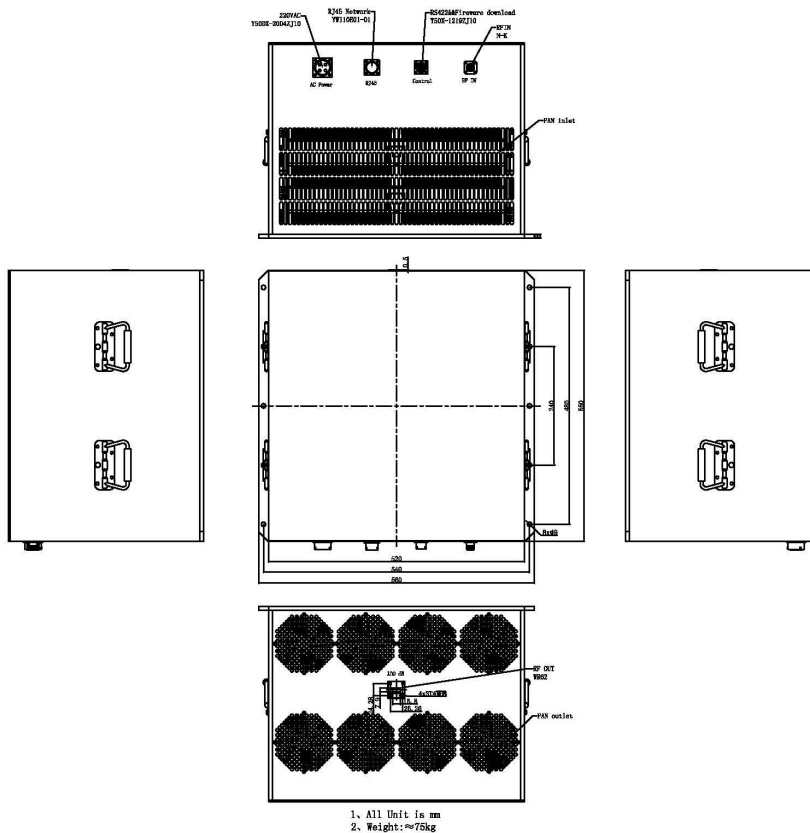




## Outline Drawing:

Unit:mm

RPA-13G5-14G5-1000(Vesion 2(designing, current outline is not correct))



## 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-13G5-14G5-1000	High Power Amplifier, 13.5-14.5GHz, 1000W CW, Built in air or liquid cooling, without LCD and IP grad.	Basic version
RPA-13G5-14G5-1000-M	High Power Amplifier, 13.5-14.5GHz, 1000W CW,Built in air or liquid cooling, with LCD.	Add LCD display touchscreen
RPA-13G5-14G5-1000-IPxx	High Power Amplifier, 13.5-14.5GHz, 1000W CW, Built in air or liquid cooling, with LCD and IP grad.	Add Ingress protection grad