RF Microwave System Power Amplifier
10W 1-19GHz AC 110V / 220V Powered

- Short Haul / High Capacity Links
- High Power Amplifier
- Military & Space
- Noise Figure: 5 dB
- P5dB: +40 dBm
- Gain: 38 dB
- Supply Voltage: +24V
- 50 Ohm Matched Input/Output

RoH Compliant

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	1		10	11		19	GHz
Gain	42	43	46	35	40	42	dB
Gain Flatness		±0.5			±0.5		dB
Gain Variation Over Temperature(-45 ~ +85)		±0.5			±0.5		dB
Noise Figure		5			5		dB
Input Return Loss (3dB attenuator at input)	26	30	33	15	20	22	dB
Output Return Loss (30dB attenuator at Output)	22	28	35	22	25	28	dB
Output Power for 5dB Compression (P5dB)	36	39	40	37.5	38	39	dBm
Input Max Power(no damage)			0			0	dBm
Weight	280						g
Impedance	50						Ohms
Input /Output Connector	SMA-Female						
Finishing	Standard: Gold 40 micron; Nickel 220 micron thickness						
	Option: Gold 80 micron; Nickel 180 micron thickness						
Material	Aluminum/copper						
Package Sealing	Epoxy Sealing (Standard)						
	Hermetically Seal (Option with extra charge)						

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Absolute Maximum Ratings

AC Voltage	120V / 240V AC
RF Input Power (RFIN)	0 dB m
Storage Temperature(C°)	-65 to +150

Environment specifications

Operational Temperature (C°)	-45 ~ +85(Case Temperature must be less than 85C all time)
Storage Temperature (C°)	-65 ~ +150
Altitude	30,000 ft. (Epoxy Seal Controlled environment) 60,000 ft 1.0psi min (Hermetically Seal Un-controlled environment) (Optional)
Vibration	25g rms (15 degree 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH at 40°c
Shock	20G for 11msc half sin wave,3 axis both directions

Biasing Up Procedure	
Step 1	Connect input and output
Step 2	Connect Ground Pin
Step 3	Connect AC
Power OFF Procedure	
Step 1	Turn off AC
Step 2	Remove RF connection
Step 3	Remove Ground.

Amplifier Use

Ensure that the amplifier input and output ports are safely terminated into a proper 50 ohm load before turning on the power. Never operate the amplifier without a load. A proper 50 ohm load is defined as a load with impedance less than 1.9:1 or return loss larger than 10dB relative to 50 Ohm within the specified operating band width.

Power Supply Requirements

Power supply must be able to provide adequate current for the amplifier. Power supply should be able to provide 1.5 times the typical current or 1.2 times the maximum current (whichever is greater).

In most cases, RF-Lambda amplifiers will withstand severe mismatches without damage. However, operation with poor loads is discouraged. If prolonged operation with poor or unknown loads is expected, an external device such as an isolator or circulator should be used to protect the amplifier.

Ensure that the power is off when connecting or disconnecting the input or output of the amp.

Prevent overdriving the amplifier. Do not exceed the recommended input power level.

Adequate heat-sinking required for RF amplifier modules. Please inquire.

Amplifiers do not contain Thermal protection, Reverse DC polarity or Over voltage protection with the exception of a few models. Please inquire.

Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

What is not covered with warranty?

Each of RF-Lambda amplifiers will go through power and temperature stress testing.
Due to fragile of the die, IC or MMIC, those are not covered by warranty. Any damage to those will NOT be free to repair.

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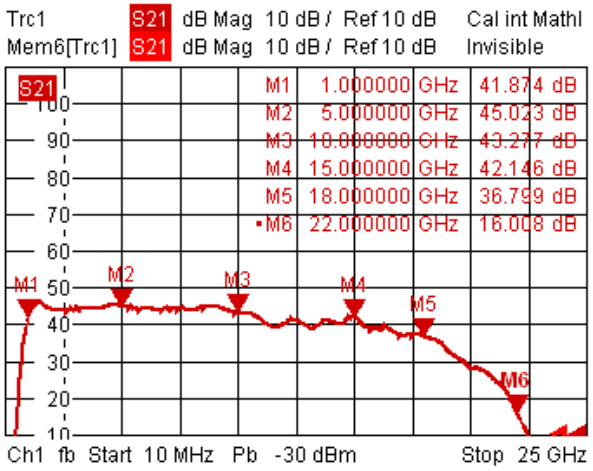
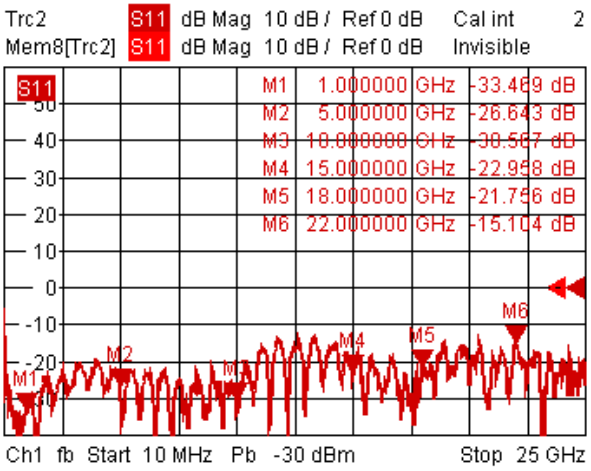
Mechanical and Environmental Specifications			
Operation Temperature:	-40°C to 85°C base plate	Mechanical shock	30G,11mSec half sin wave,3 axis both directions
Vibration:	14.2g RMS(15-2000Hz) functional	Humidity	95% relative humidity,65°C 96Hour
	16.2g RMS(15-2000Hz) endurance, 1 hour per axis	MTBF	50000 hour min
Connectors:	SMA-Female	Case	Condutive no paint
	Supply RFI fiter solder pin	Dimension (LxWxH):	See drawing. (Heat Sink is a option)

Ordering Information	
Part No	Description
RAMP02G18GA	1-19GHz Narrow Band Power Amplifier

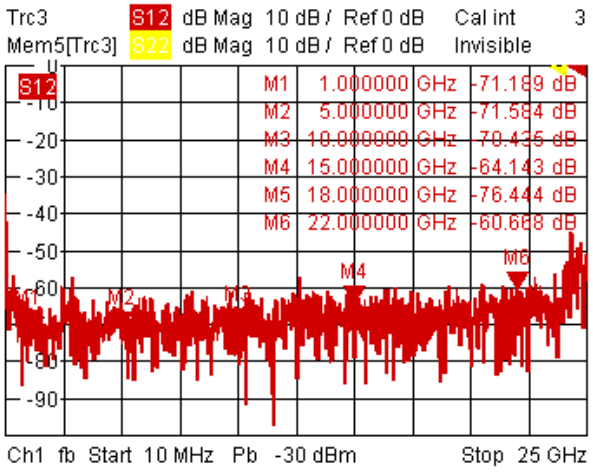
Gain



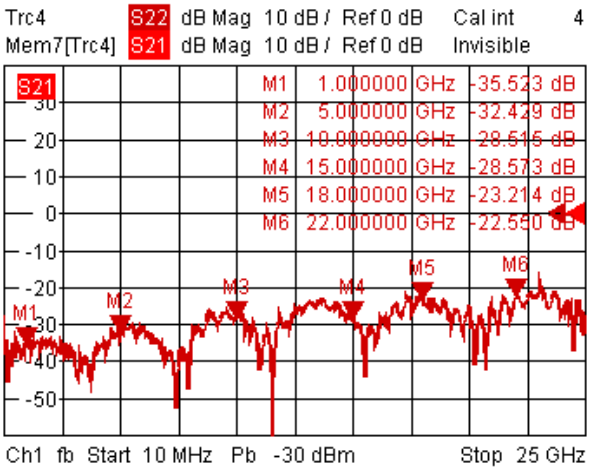
Input Return Loss (3dB attenuator at input)



Isolation (33dB attenuator applied)



Output Return Loss (30dB attenuator at Output)



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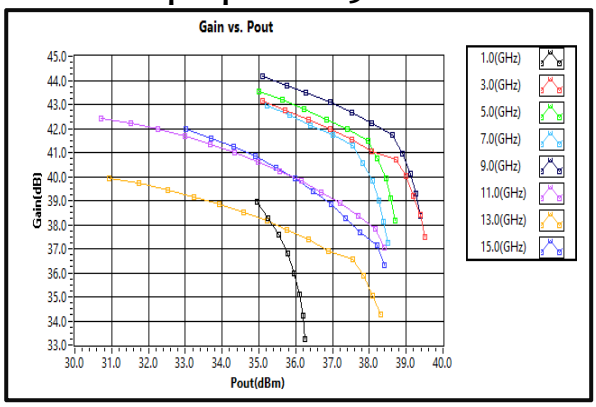
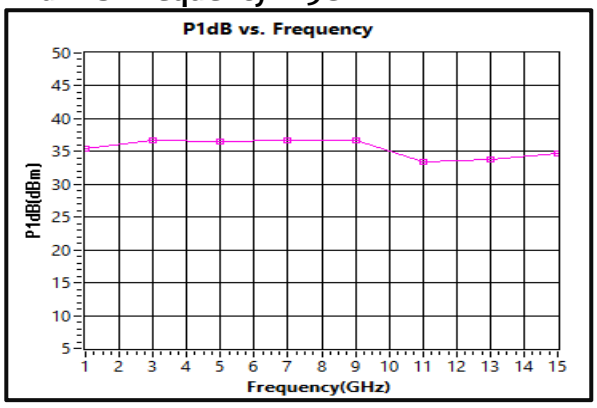
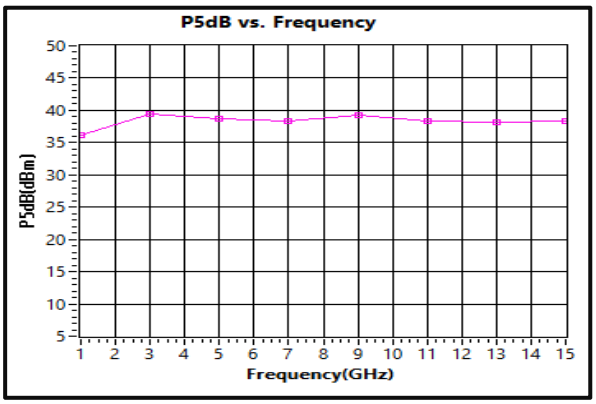
Gain vs. output power 1-15GHz



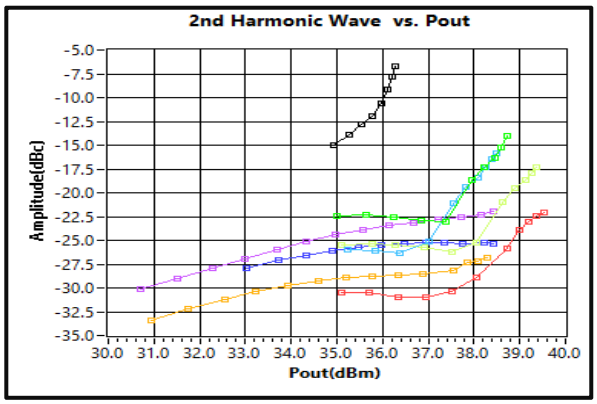
P1dB vs. Frequency 1-15GHz



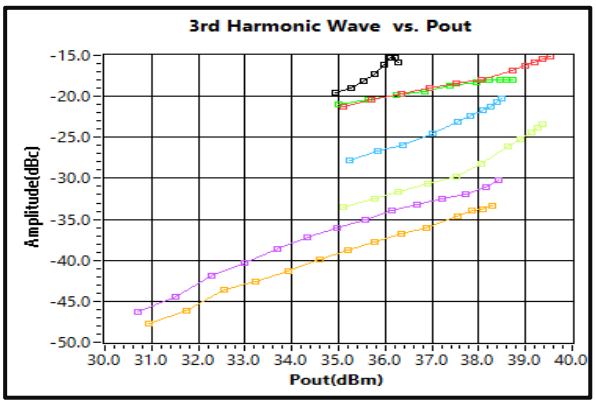
P5dB vs. Frequency 1-15GHz



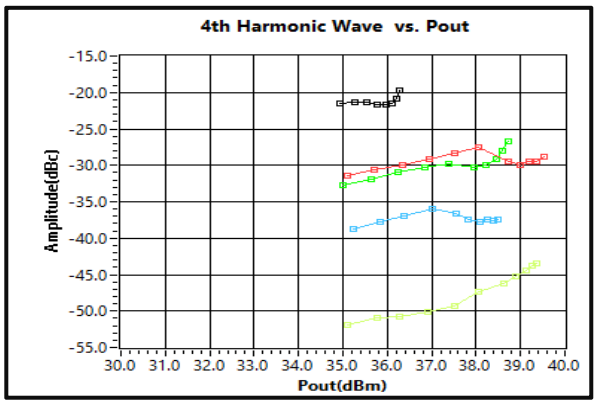
2nd Harmonic Wave Output Power 1-15GHz



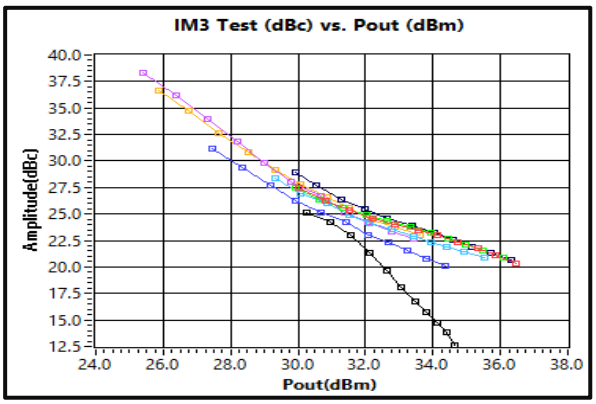
3rd Harmonic Wave output Power 1-15GHz



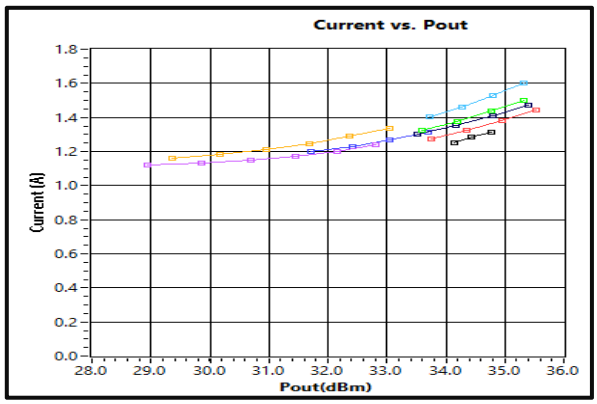
4th Harmonic Wave output Power 1-15GHz



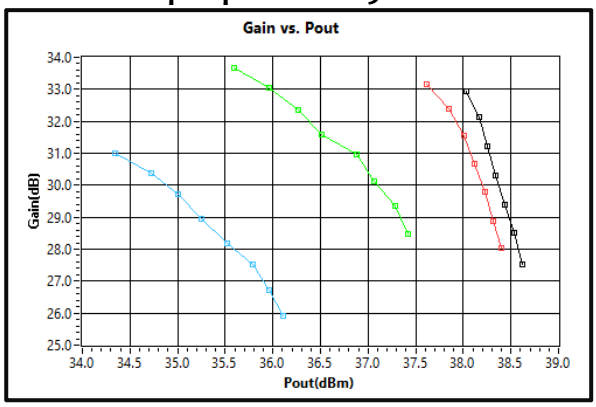
IM3 Test (dBc) vs. Pout (dBm) 1-15GHz



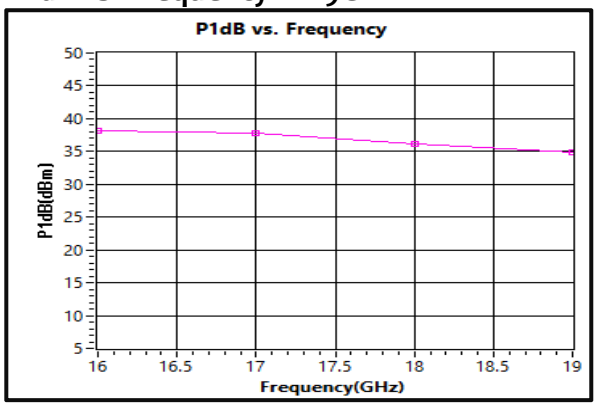
Current (A) vs. Pout (dBm) 1-15GHz



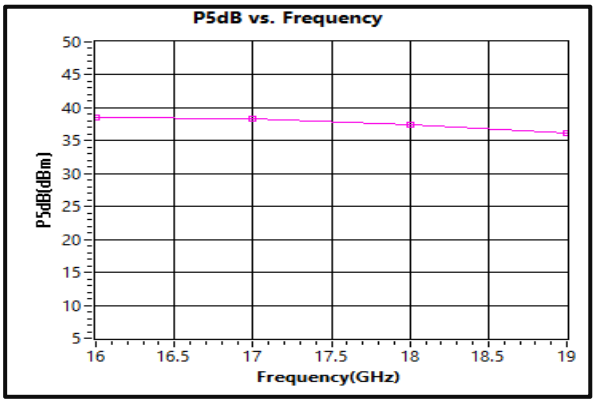
Gain vs. output power 16-19GHz



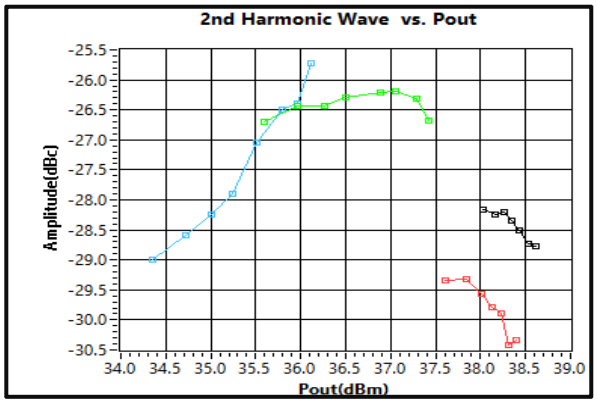
P1dB vs. Frequency 16-19GHz



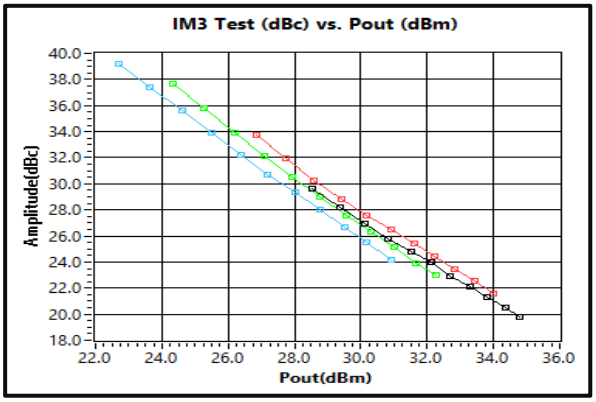
P5dB vs. Frequency 16-19GHz



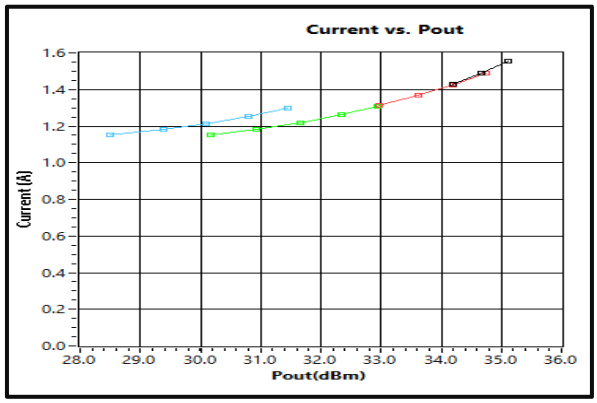
2nd Harmonic Wave Output Power 16-19GHz



IM3 Test (dBc) vs. Pout (dBm) 16-19GHz



Current (A) vs. Pout (dBm) 16-19GHz



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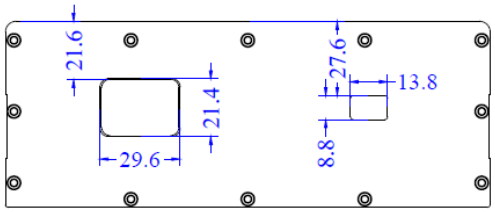
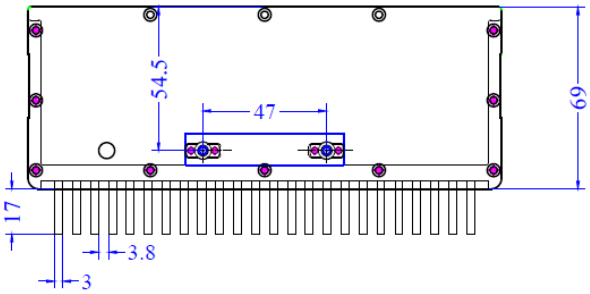
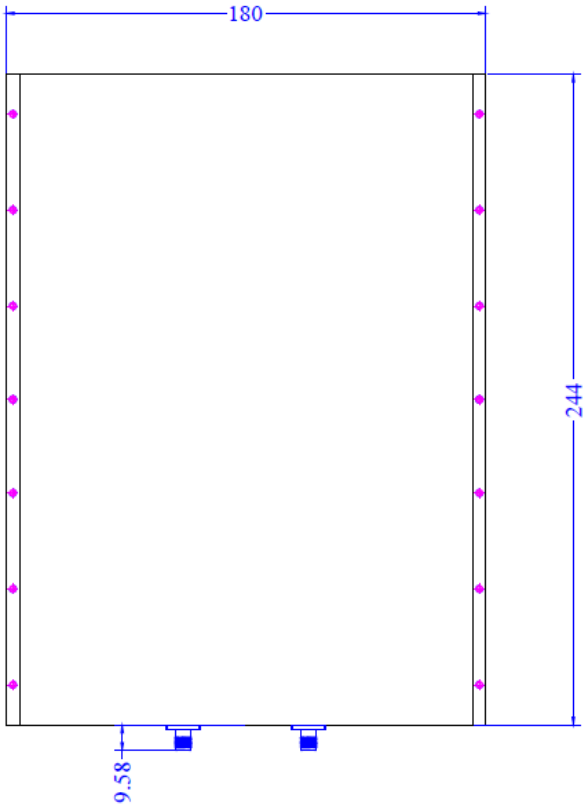




Units in mm



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