AC 110V / 220V Ultra Wide Band Low Noise Amplifier 0.01GHz~54GHz

RoHS Compliant

- Output power >+14dBm
- Low Noise Figure 4.0dB typical.
- High P1dB >14dBm full band.
- No External Matching Required
- Applicable for base station ,repeaters of cellular network
- Aerospace and military application
- LMDS multi-carrier operation
- High peak to average handle capability
- All specifications can be modified upon request

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.01		46	46		54	GHz
Gain	34	36		20	30		dB
Gain Flatness		±1.5			±9		dB
Gain Variation Over Temperature(-45 ~ +85)		±2.5			±1.5		dB
Noise Figure	2	3	6				dB
Input Return Loss	10	15		3	10		dB
Output Return Loss	10	15		8	10		dB
Output Power for 1 dB Compression (P1dB)	8	13			10		dBm
Saturated Output Power (Psat)		15			10		dBm
Output Third Order Intercept (IP3)		18			18		dBm
Supply Current (Idd) (Vcc=+12V)		185			185		mA
Isolation S12	60	70		50	60		dB
Input Max Power(no damage)			-20			0	dBm
Weight	35						g
Impedance	50						Ohms
Input /Output Connector	1.85-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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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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Absolute Maximum Ratings

Operating Voltage (AC)	110/220V
RF Input Power (RFIN)(Vcc= +12V)	-20dB m
Storage Temperature	-50 to +125 ℃
Operating Temperature	-45 to +85 ℃

Note: Maximum RF input power is set to assure safety of amplifier. Input power may be increased at own risk to achieve full power of amplifier. Please reference gain and power curves

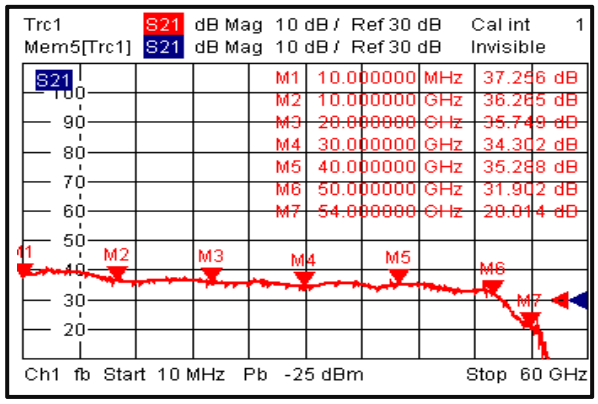
Biasing Up Procedure

Step 1	Connect input and output
Step 2	Turn on the switch
Power OFF Procedure	
Step 1	Turn off the switch
Step 2	Remove RF connection

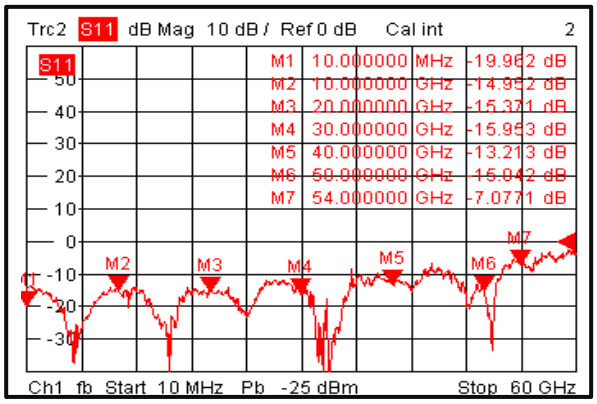
Environment specifications

Operational Temperature (C°)	-45 ~ +85
Storage Temperature (C°)	-50 ~ +125
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

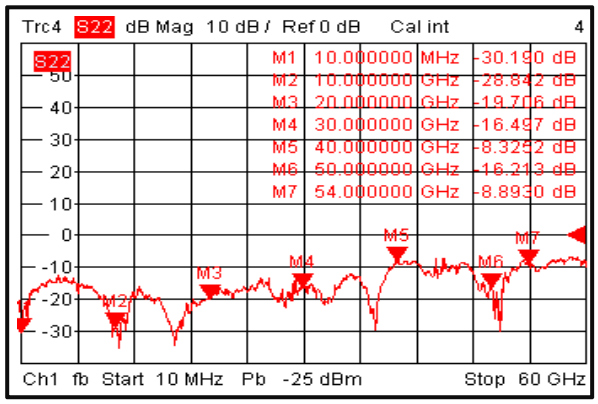
Gain



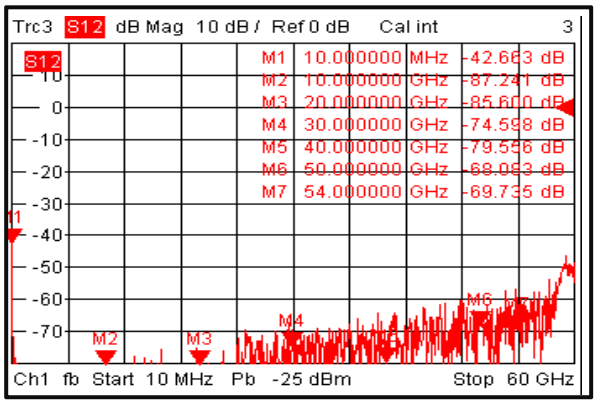
Input Return Loss



Output Return Loss



Isolation



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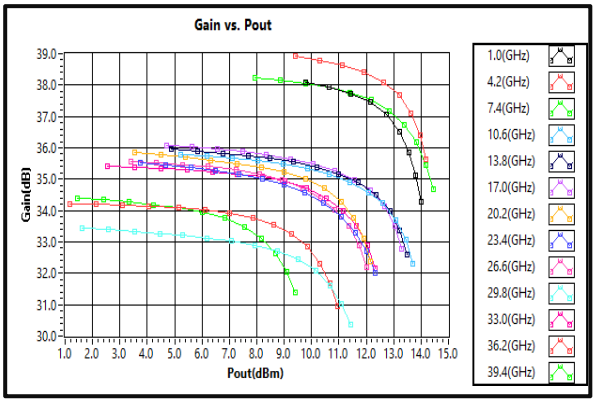
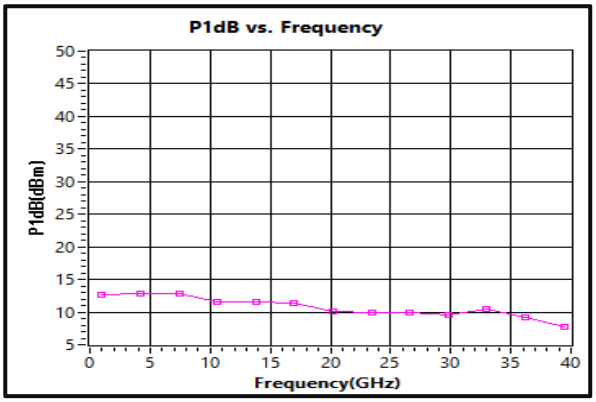
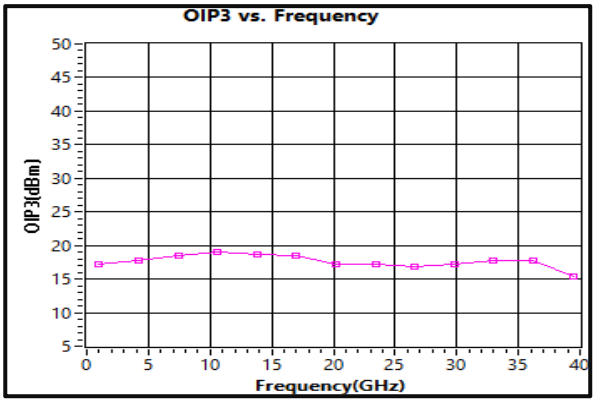
Cain vs. output power



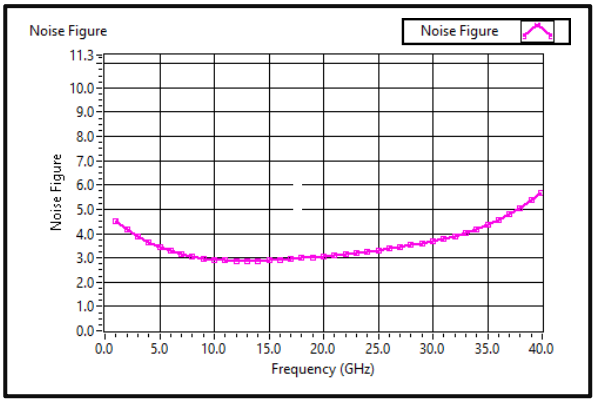
P1dB vs. Frequency



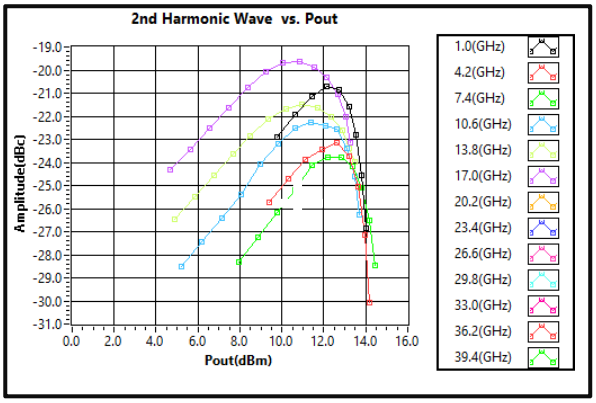
Output Third Order Intercept (IP3)



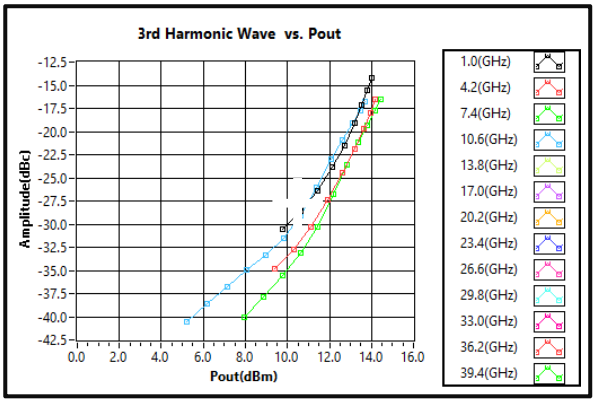
Noise Figure



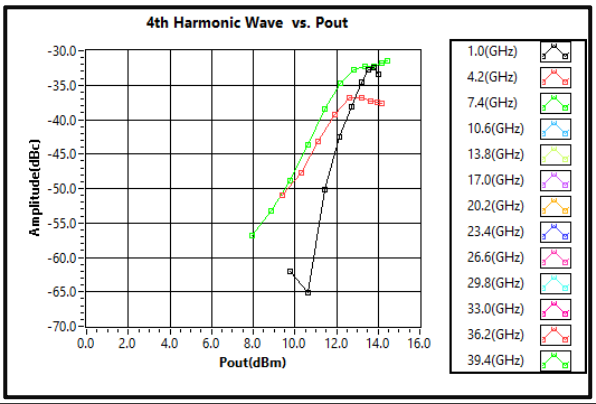
2nd Harmonic Wave output Power

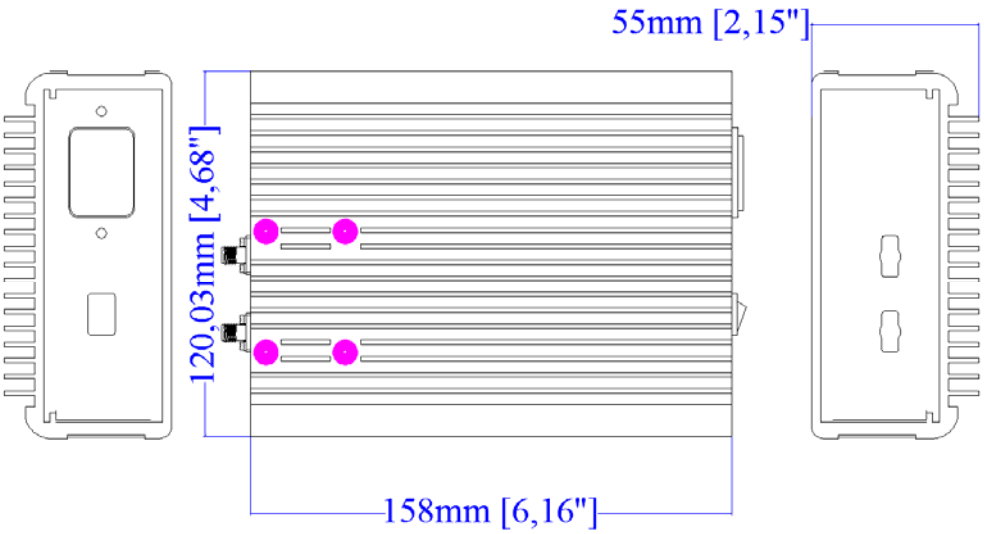


3th Harmonic Wave output Power



4nd Harmonic Wave output Power





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