Bench Top RF System Amplifier
18GHz~47GHz

RoHS Compliant

Features

- High output power
- Microwave radio systems
- Satellite VSAT and DBS systems
- LMDS & Pt-Pt mmW Long Haul
- 802.16 & 802.20 WiMax BWA
- High Linearity and low noise figure

Typical Applications

- Wireless Infrastructure
- Short Haul / High Capacity Links
- RF Microwave and Vsat
- Military & Aerospace Applications
- Test Instrumentation

Electrical Specifications, T_A = +25°C, Vcc = 110/220 VAC

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	18 – 30			30 – 47			GHz
Gain		35			33		dB
Gain Flatness		±7			±5		dB
Gain Variation Over Temperature (-45 ~ +85)		±3			±3		dB
Noise Figure		13			13		dB
Input Return Loss		9			8		dB
Output Return Loss		10			10		dB
Output Power for 3 dB Compression (P3dB)		31.5			31.5		dBm
Output Third Order Intercept (IP3)		34			33		dBm
Supply Current		2200	4000		2200	4000	mA
Isolation S12	79	85		76	86		dB
Power Supply Voltage	110/220						VAC
Input Max Power (No Damage)	Psat – Gain			Psat – Gain			dBm
Weight	1000						g
Impedance	50						Ohms
Input / Output Connectors	2.4mm-Female (2.92mm female optional)						
Finish	Black Painted Finish						
Material	Aluminum / Copper						

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Absolute Maximum Ratings	
Supply Voltage	110/220 VAC
RF Input Power (RFIN) Pin_max = Psat - Gainsat	Psat – Gain

Note: Maximum RF input power is defined to protect the amplifier from damage.
Input power may be increased at the users own risk to achieve the full output power of the amplifier. Please reference gain and power curves and monitor the temperature.

Biasing Up Procedure	
Step 1	Connect input and output with 50 Ohm source/load. (in band VSWR<1.9:1 or >10dB return loss)
Step 2	Connect AC plug
Step 3	Flip switch to "ON" position
Power OFF Procedure	
Step 1	Flip switch to "OFF" position
Step 2	Remove AC plug
Step 3	Remove RF connection

Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45℃~+85℃
Storage Temperature		-55℃~+125℃
Thermal Shock		1 Hour@ -45℃→ 1 Hour @ +85℃ (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85℃ for 72 Hours
Shock		1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude		Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883	MIL-STD-883 (For Hermetically Sealed Units)

Note: The operating temperature for the unit is specified at the package base. It is the user's responsibility to ensure the part is in an environment capable of maintaining the temperature within the specified limits

Ordering Information	
Part No.	Description
RAMP18G47GD	18-47GHz System Amplifier

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.

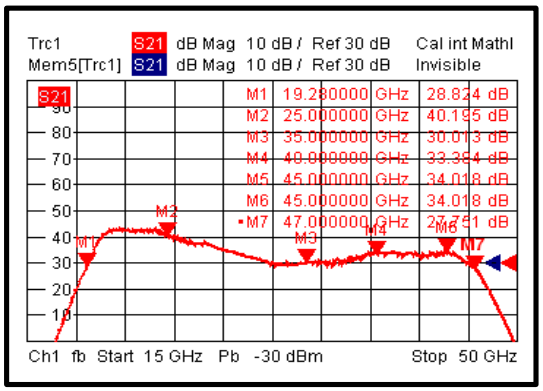
Amplifiers do not contain Thermal protection, Reverse DC polarity or Over voltage protection with the exception of a few models. Please inquire.

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

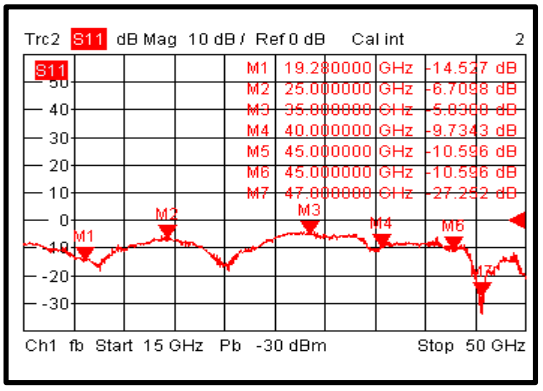
What is not covered with warranty?

Each RF - Lambda amplifier will go through power and temperature stress testing.
Since the die, ICs or MMICs are fragile, these are not covered by warranty. Any damage to these will NOT be free to repair.

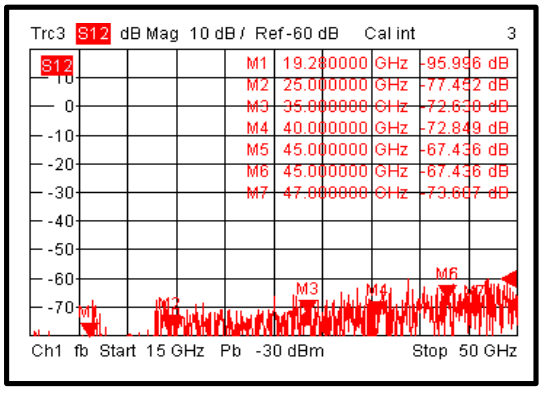
Gain



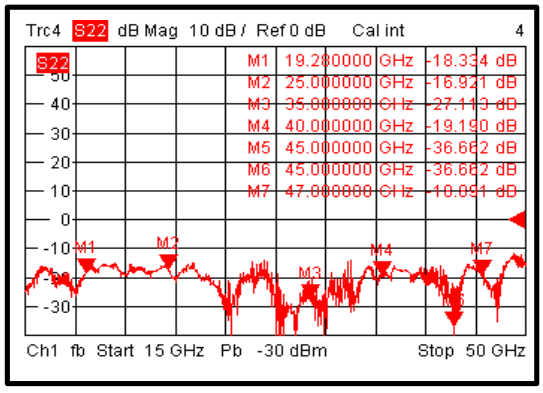
Input Return Loss



Isolation



Output Return Loss



Note: Input/output return loss measurements include attenuators to protect equipment

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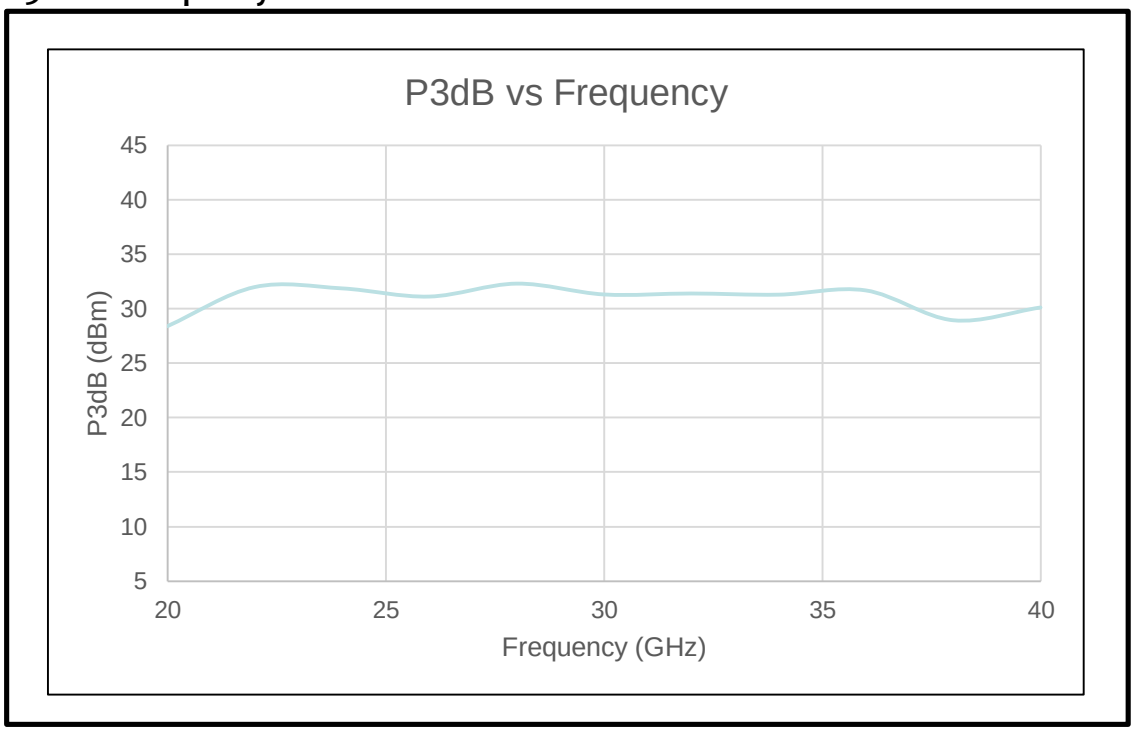
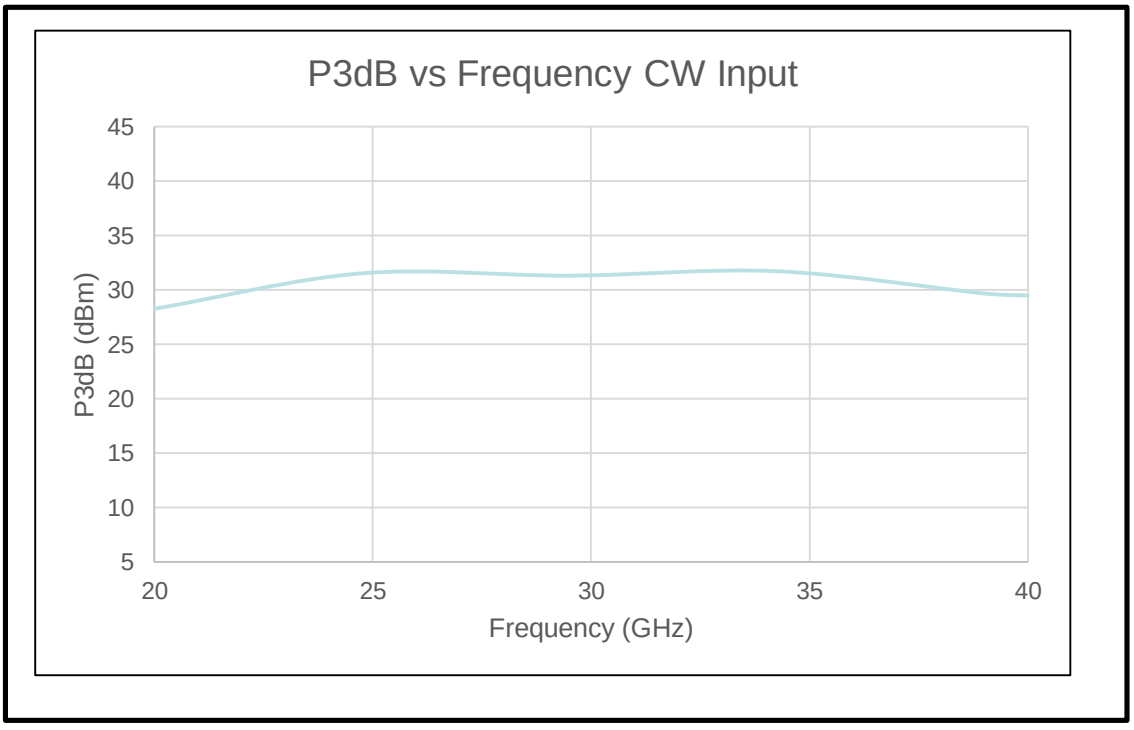
P3dB vs. Frequency

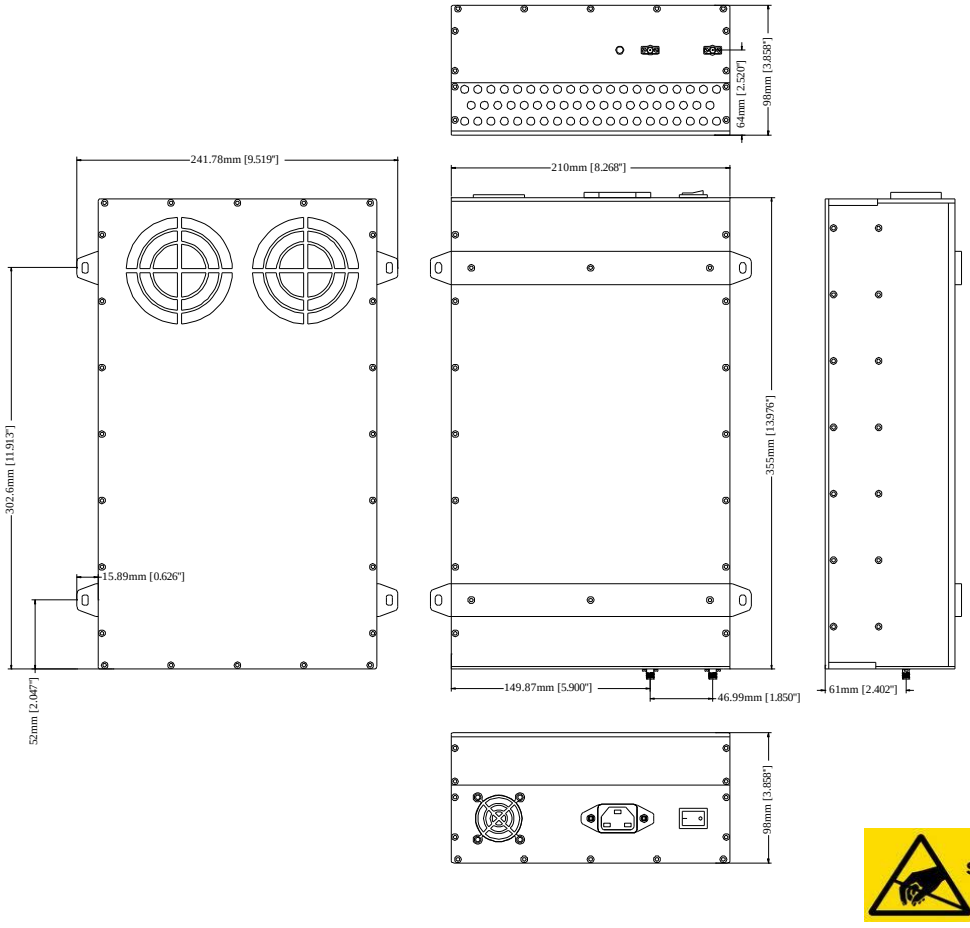


P3dB vs. Frequency CW Input



Outline Drawing:

All Dimensions in mm [inches]



Important Notice

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