150W Solid State Broadband EMC Benchtop Power Amplifier 6-18GHz

Features

- High Saturated Output Power 50~52dBm.
- Telecom Infrastructure Applications.
- High peak to average handling capability.
- High linearity and low noise figure.
- Convenient AC Power Input.
- Integrated Cooling.

Typical Applications

- Microwave Radio and VSAT.
- Aerospace and Military Applications.
- EMC / Radiated Immunity Testing.

***Electrical Specifications, T_A=25 ℃ Voltage* = 110v/220v AC**

Parameter	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range		6-13			13-18		GHz
Gain		50			45		dB
Gain Flatness		±6			±2		dB
Gain Adjustment Step (20dB Range)		0.1			0.1		dB
Noise Figure		6.5			7		dB
Input Return Loss		15			15		dB
Output Return Loss		25			25		dB
Output Power for 1 dB Compression (P1dB)		44			43		dBm
Output Power for 3 dB Compression (P3dB)		47			46		dBm
Saturated Output Power (Psat)		51.5			50		dBm
Output Third Order Intercept (IP3)		42			40		dBm
Harmonic Compression		10			10		dBc
Maximum Input Power (No Damage)		Psat-Gain			Psat-Gain		dBm
Weight	50						lbs
Impedance	50						Ohms
Input / Output Connectors	N-Female						
Finish	White Painted Finish						

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Absolute Maximum Ratings	
Supply Voltage	230v AC
RF Input Power (RFIN) Pin_max = Psat - Gainsat	Psat – Gain
Storage Temperature (°C)	-50 to +125

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.

Ordering Information	
Part No.	Description
RAMP06G18GF	6GHz~18GHz Power Amplifier

Power ON Procedure	
Step 1	Connect input and output with 50 Ohm source/load. (in band VSWR<1.9:1 or >10dB return loss)
Step 2	Turn on AC power.
Step 3	Follow Front Panel Instructions
Power OFF Procedure	
Step 1	Turn off RF Output Power
Step 2	Turn Off AC power
Step 3	Disconnect input and output

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.

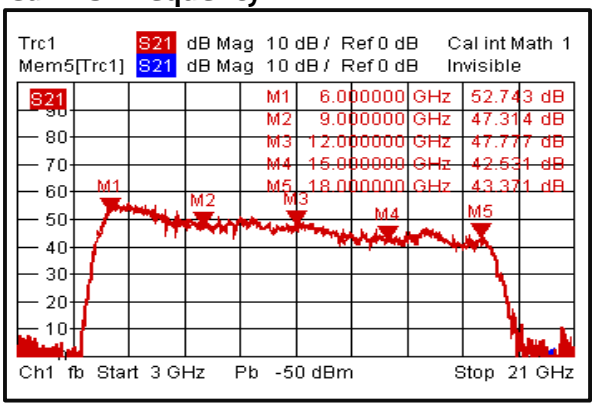
Amplifiers do not contain Thermal protection, Reverse DC polarity or Over voltage protection with the exception of a few models. Please inquire.

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

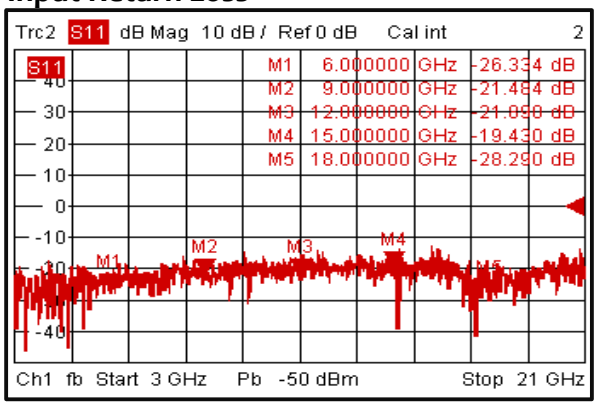
What is not covered with warranty?

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.

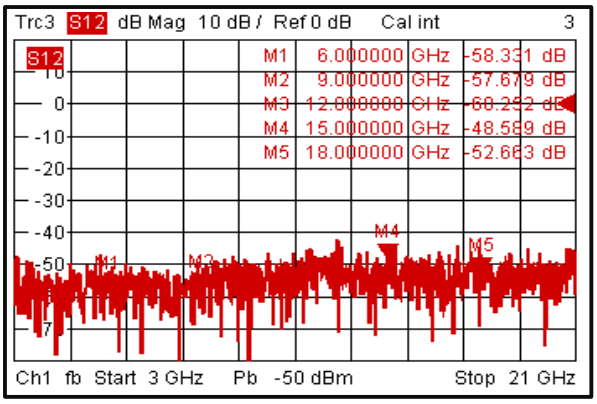
Gain vs. Frequency



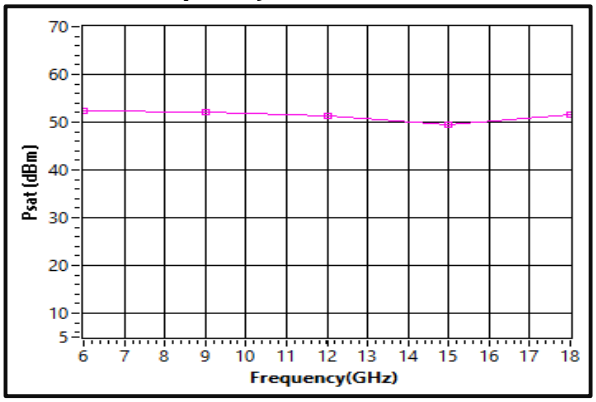
Input Return Loss



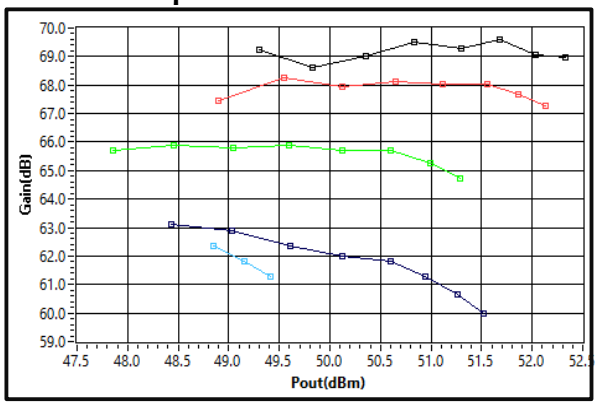
Isolation



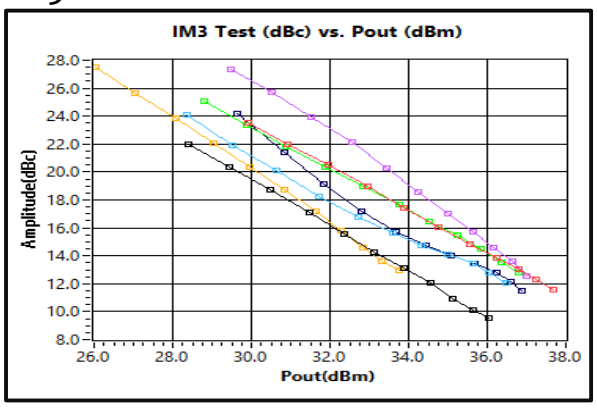
P7dB vs. Frequency



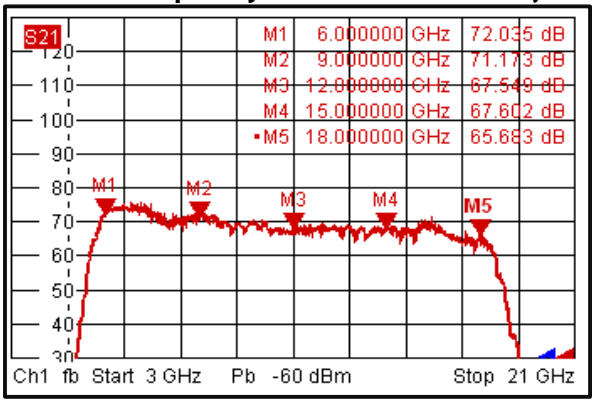
Gain vs. Output Power



IM3 vs. Pout



Gain vs. Frequency with +20dB Gain adjustment



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Front Panel

Instrument turn ON/OFF switch
Instrument Power ON Indicator
Instrument self protection alarm indicator
Output power gain adjustment rotary knob
RF output signal port
-30dB decoupling RF output signal port
RF Input signal port

Setup Keys

"RESET" restarts instrument control system
"MENU" enters Instrument functions selection menu
"BACK SPACE" deletes the last character or the selected character sequence
"ENTER" confirms the previous entry
"↑" "↓" "←" "→" Switches between several active elements in dialog and panes

Rear Panel

Instrument AC power supply switch

USER CONTROL is a D-sub connector used as an input and output for low-voltage (3.3V) TTL control signals

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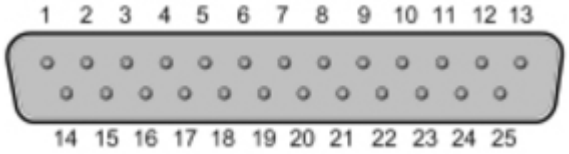
User Control Connector

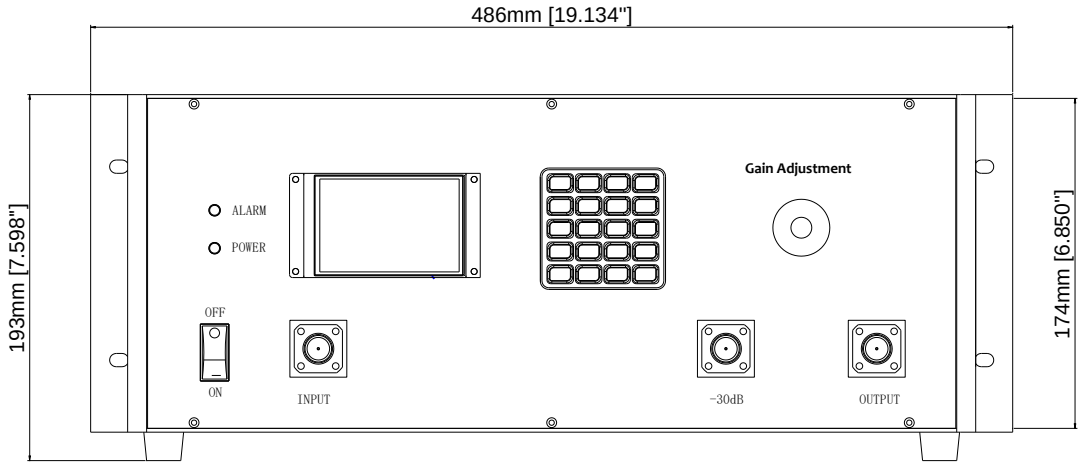


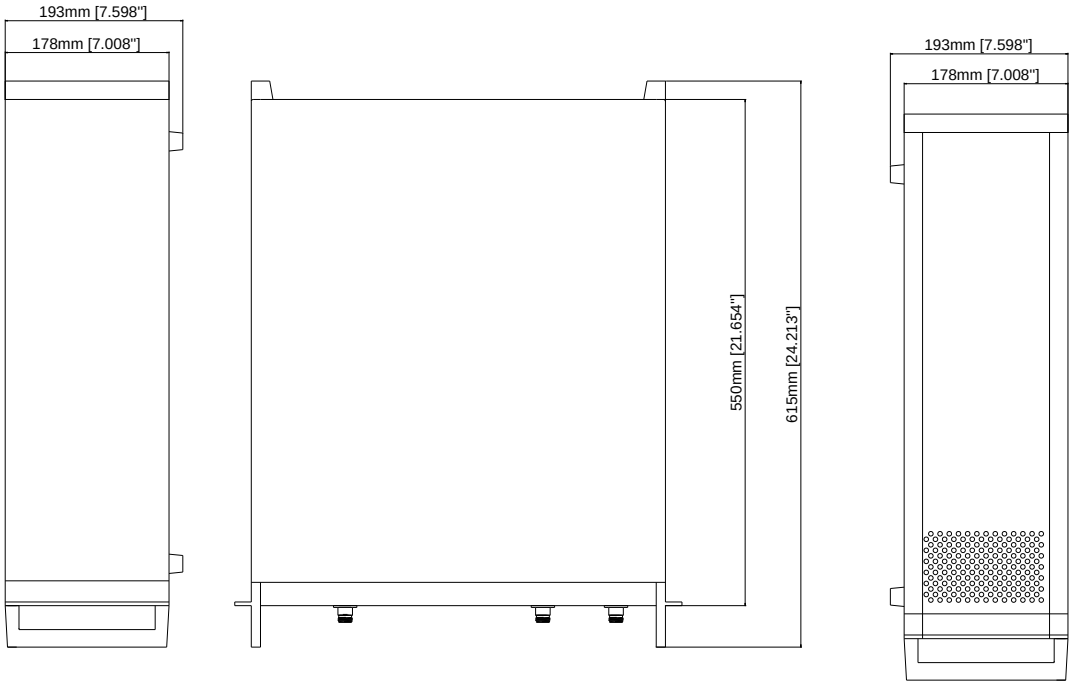
Pin #	Name	Function	Initial State	Description	Applied
1	Reset	Control		Resets PA when logic LOW is applied and released	Yes
2	Drain Disable	Control	LOW	Appling logic HIGH disables drains of amplifiers	Yes
3	Gate Disable	Control	LOW	Applying logic HIGH disables gates of amplifiers	Yes
4	RF IN Over	Indicator	LOW	Pin will be latched to logic HIGH when input signal is over limit	No
5	Temp Over	Indicator	LOW	Pin will be latched to logic HIGH when amplifier is driven over temperature	Yes
6	Current Over	Indicator	LOW	Pin will be latched to logic HIGH when drain current limit is reached	Yes
7	ID Imbalance	Indicator	LOW	Pin will be latched to logic HIGH when an imbalance in the drain current of the combining branches occurs	Yes
8	PA input power	Indicator		PA input power is represented by voltage	No
9	PA output power	Indicator		PA output power is represented by voltage	No
10	PA output reflection power	Indicator		PA output reflection power is represented by voltage	No
11	VSWR	Indicator	LOW	Pin will be latched to logic HIGH when output reflection is over limit	No
12	----------				
13	+5V	Power Supply	+5V	+5V DC is supplied for reference	Yes
14	GND	Ground	GND	Ground	Yes
15	GND	Ground	GND	Ground	Yes

HIGH/LOW voltages are standard TTL signals:
0.0V-0.8V = LOW
2V-5V = HIGH

Outline Drawing:

All Dimensions in mm [inches]





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