60W Wide Band Power Amplifier
20MHz~6000MHz

Features

- Frequency Range: 20MHz to 6000MHz
- Typical Output Power: 50W @ ≤ 5GHz
- Small Signal Open Loop Gain: > 50dB
- Module With: Input over driven, Output Open Circuit, Short Circuit Protection and Other Functions.
- DB15 Interface serial port

Electrical Specifications, T_A = +25°C

Parameter		Min.	Typ.	Max.	Units
Frequency Range		20		6000	MHz
Open Loop Gain (ALC Open Loop)		50	55		dB
Gain Flatness (ALC Closed Loop)			±3.5		dB
Gain Adjustment Range (ALC Closed Loop)			15		dB
Built-in Power Detection (Full band error)			±3.0	±4.5	dBm
Saturated Output Power (Input to 0dBm closed loop)		45.5	48		dBm
Output Third Order Intercept (IP3) @Output Power 5~16W		47	51.0		dBm
Input VSWR(Maximum output power)			1.5	2	:1
Harmonic Suppression (2nd and 3rd at the output 50W)			-15	-12	dBc
Spurious Compression			-50		dBc
Efficiency @ Output Power 60W		22	40		%
Logic Control Voltage	Logic Low	0.0		0.8	V
	Logic High	1.8		3.3	V
Power Supply / Output Voltage	5V		0.5	0.6	A
	50V	5	6	8	A
Input / Output Connectors		SMA-Female			

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Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-20℃~+55℃
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)

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.

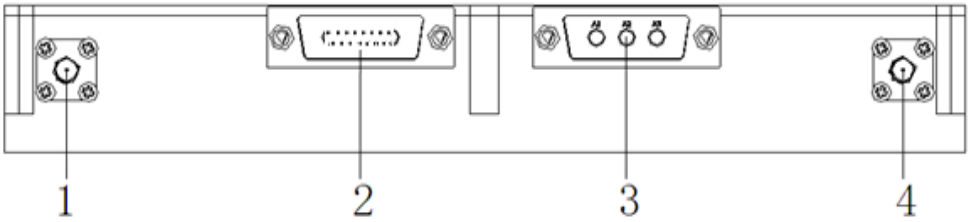
Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

What is not covered with warranty?

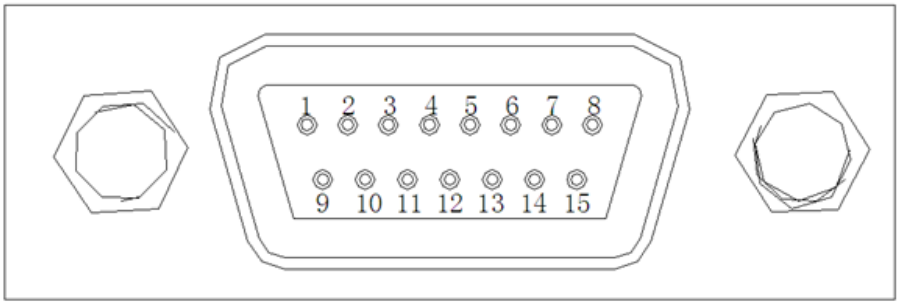
Each RF - Lambda amplifier will go through power and temperature stress testing.
Since the die, ICs or MMICs are fragile, these are not covered by warranty. Any damage to these will NOT be free to repair.

Module Interface and Description

1. RF Input: Power Amplifier Input Interface, Maximum Input Level 10dBm.

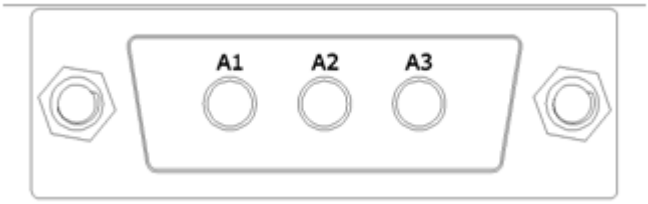


2. Control Interface: Module Software Control Interface (DB15 pin)



Pin #	Defination	Memo
1	LOOP Ctrl	Closed loop control (high level is closed loop gain, low level is open-loop gain)
2	LED	External light emitting diodes as working instructions
3	GND	GND of +5V output
4	TX3	UART Standard TX
5	RX3	UART Standard RX
6	+5V OUT	+5V output, can be used to drive LCD display
7	TX1	Tx LCD
8	RX1	RX LCD
9	NC	N/A
10	NC	N/A
11	Encode A	Keyboard control
12	Encode B	Keyboard control
13	PA ON/OFF	PA ON or OFF
14	Reset	Reset
15	GND	Grounding

3.Power Input Interface: 48V Input Interface



Power Input Interface Table

Pin Number	Definition
A1	NC
A2	GND
A3	+48V

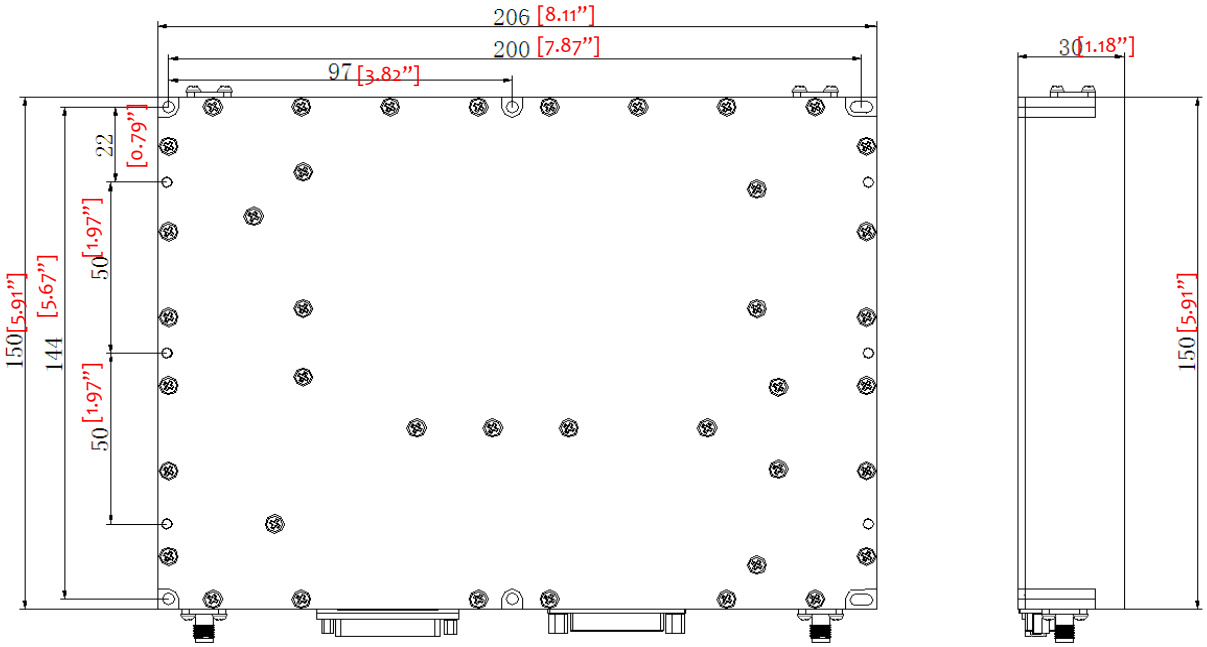
4.Power Input Interface: 48V Input Interface

Test Data

Input	Frequency	0.02	0.1	0.25	0.5	0.8	1.0	2.0	3.0	4.0	5.0	5.5	6.0
odBm	Output dBm	49.2	48.5	49.3	48.3	48.2	47.6	48.2	47.8	47.4	47.6	46.6	45.7

Outline Drawing:

All Dimensions in mm [inches]



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Important Notice