

The AB1.5M18G4747AC is a 50W high gain Solid State Broadband High Power Amplifier System utilizing the latest high power RF LDMOS devices for 1.5-512MHz band and GaN devices for 512-18000MHz band. Built in control and monitoring, protection functions to ensure high reliability. This amplifier is suitable for high power CW or Pulse Radar system applications, EMC application. The amplifier comes with an industry leading warranty.

## Features

- |  |                                       |
|--|---------------------------------------|
| 1.5MHz-18GHz frequency range                   | Solid-state Class AB Broadband design |
| Psat 47.8dBm typ., 47dBm Min                   | Instantaneous ultra-broadband         |
| Power gain 47 dB typ.                          | Suitable for pulse or CW applications |
| 50 ohm input/output impedance                  | ALC and MGC is available in options   |
| Reverse and forward power Display ( optional ) | High reliability and ruggedness       |

## ELECTRICAL SPECIFICATIONS (T=25C, VAC =220V, CW, Load VSWR<1.2)

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW <sub>1</sub>	1.5		30	MHz
	BW <sub>2</sub>	30		512	MHz
	BW <sub>3</sub>	512		2700	MHz
	BW <sub>4</sub>	2700		6000	MHz
	BW <sub>5</sub>	6000		18000	MHz
Output Power-CW @ Pin=0dBm	P <sub>SAT</sub>	50	55		W
	Gp		47		dB
Power Gain @ Pin= 0dBm	Δ Gp <sub>1</sub>		±0.6	±1	dB
	Δ Gp <sub>2</sub>		±1	±1.5	dB
	Δ Gp <sub>3</sub>		±1	±1.5	dB
	Δ Gp <sub>4</sub>		±1	±1.5	dB
	Δ Gp <sub>5</sub>		±1.5	±2	dB
Input Power for Rated P <sub>SAT</sub>	P <sub>IN</sub>	-5	0	2	dBm
2nd/3rd Harmonics @ Pin=-10 dBm	2 <sup>nd</sup> /3 <sup>rd</sup>		-15/-25	-10/-15	dBc
Spurious Signals@ Pin=0dBm	Spur		-70	-60	dBc
Third Order Intercept Point					
2-Tone @ 40dBm/Tone, 100kHz Spacing**	IP3		N/A		dBm
Input Return Loss	S <sub>11</sub>			-10	dB
Supply Voltage (47~61Hz) /Single-Phase	V <sub>AC</sub>	180	220/50Hz	260	V
Peak Power Consumption @ P <sub>out</sub> =50~60W-CW	P <sub>D</sub>		1000	1200	W
System Turn-On Time	Ton		1		S

**Note\*:** IP3 or IMD3 data, please contact sales@eliterf.com

## MECHANICAL SPECIFICATIONS

Cooling	Built-in internal forced air cooling system
Width*Height*Depth[ mm ]	482.6*480*221.5 (5U)
Weight[ Kg ]*	40 (Net Weight, without package)
RF Connector Input	Type N, Female
RF Connector Output	Type N, Female
Communication Connector	RJ-45 Ethernet 10/100Mbps*
AC Connector	3 position Standard Circular Connectors

**Note\*:** RS-232, RS-422, RS-232, RS-485, USB communication adapt, please contact sales@eliterf.com

## ENVIRONMENTAL SPECIFICATIONS

Module Operation Temperature* <sup>1</sup>	-10	45	°C
Storage Temperature Range	-20	55	°C
Relative-Humidity		95	%
Altitude* <sup>2</sup>	N/A		
Vibration/Shock* <sup>2</sup>	N/A		

**Notes \*1:** Amplifier Operation Temperature can be extended to -25~65°C, Contact Sales for update.

**Notes \*2:** Altitude /Vibration are designed with considerations, but without tests and experiments. Contact Sales for experimental verification.

## LIMITS

Input RF drive level without damage	$P_{in} \leq 10$	dBm
Load VSWR @ POUT = 40W	$VSWR \leq 5:1$ [Design To Meet]	N/A
Thermal Degradation	65@heatsink * <sup>1</sup>	°C

**NNotes \*1:** Amplifier will shutdown and hold the status.

## AC INTERFACE CONNECTOR-Standard Circular Connectors

Pin #	Description	Specifications
1	L	Live Wire
2	N	Neutral Wire
3	GND	Earth Wire

**Front Panel LED Indicators\*\***

Description	Specifications
RUN	GREEN: Internal DC supply turn on, Amplifier is awoken and ready to work.
1.5-30MHz	GREEN: 1.5-30MHz amplifier enable turn on, Amplifier working.
30-512MHz	GREEN: 30-512MHz amplifier enable turn on, Amplifier working.
512-2700MHz	GREEN: 512-2700MHz amplifier enable turn on, Amplifier working.
2700-6000MHz	GREEN: 2700-6000MHz amplifier enable turn on, Amplifier working.
6000-18000MHz	GREEN: 6000-18000MHz amplifier enable turn on, Amplifier working.

\*\*Note: LCD display is available; LED Indicator is for version without LCD.

**Available options:**

AB1.5M18G4747AC-1	180-260VAC, 1-phase, 47-63 Hz, Rear RF Connectors, Without LCD Display
AB1.5M18G4747AC-1-001	28 VDC, Rear RF Connectors , Without LCD Display
AB1.5M18G4747AC-1-002	180-260VAC, 1-phase, 47-63 Hz, Rear RF Connectors, With LCD Display
AB1.5M18G4747AC-1-003	180-260VAC, 1-phase, 47-63 Hz, Rear RF Connectors, USB, RS232, Lan and MGC functions, With LCD Display
AB1.5M18G4747AC-1-XXX	<p><b>Other Feature:</b></p> <ul style="list-style-type: none"> <li>-LCD Control, Ethernet &amp; Serial</li> <li>-Main RF Connectors: <b>Input &amp; Output</b> [Front]</li> <li>-Sample Port: SMA-F [Forward &amp; Reverse]</li> <li>-Blanking/Gating Port: BNC-F</li> <li>-Rack Slides, Handles and Rackmount Bracket</li> </ul>

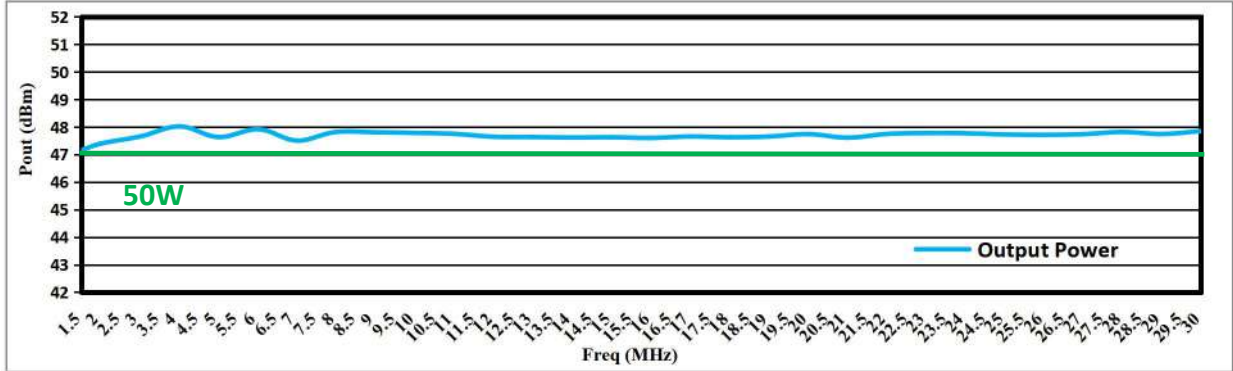
**PLOTTED AND OTHER DATA**

Notes:

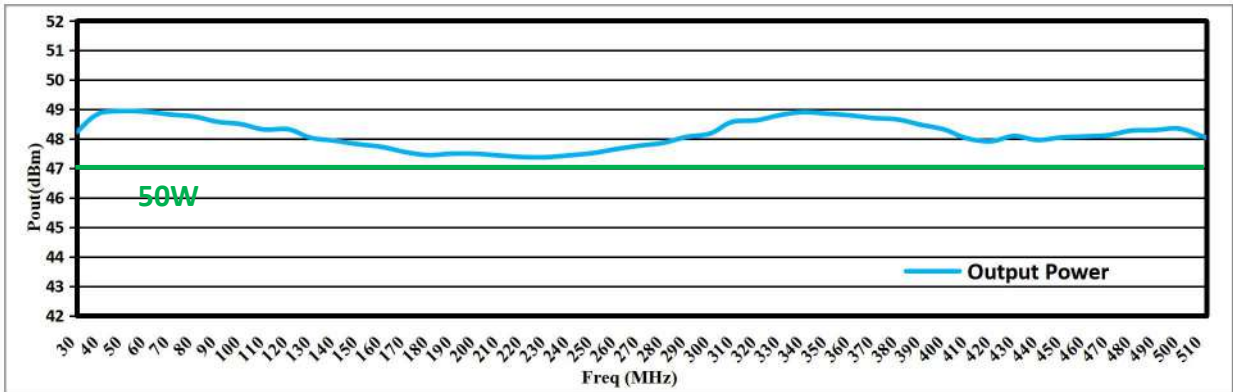
1. Values at +25 °C, sea level.
2. Handle only in approved ESD Workstation.

**TYPICAL PERFORMANCE DATA [Volume Shipment product data for Reference]**

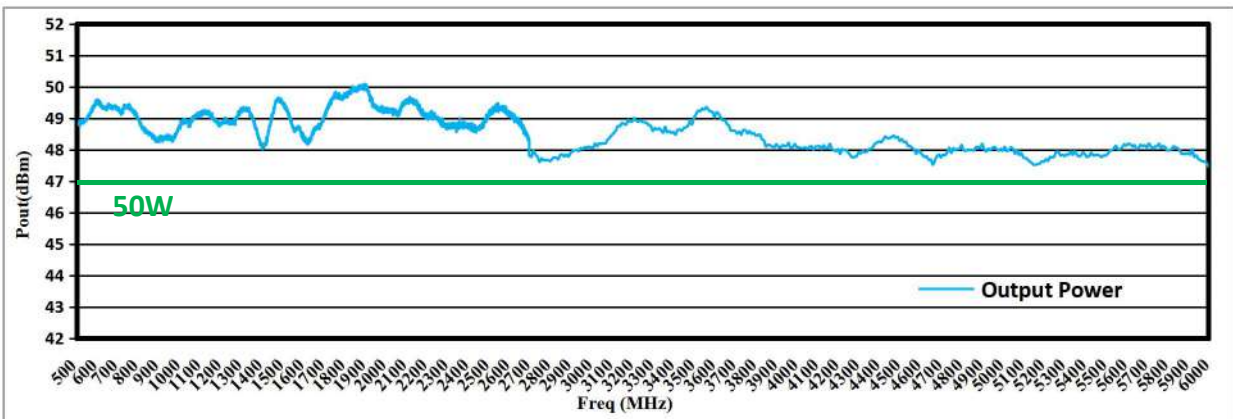
[ AC Voltage= 220V, Load VSWR ≤ 1.2, Ambient temp. +25±3 °C ]



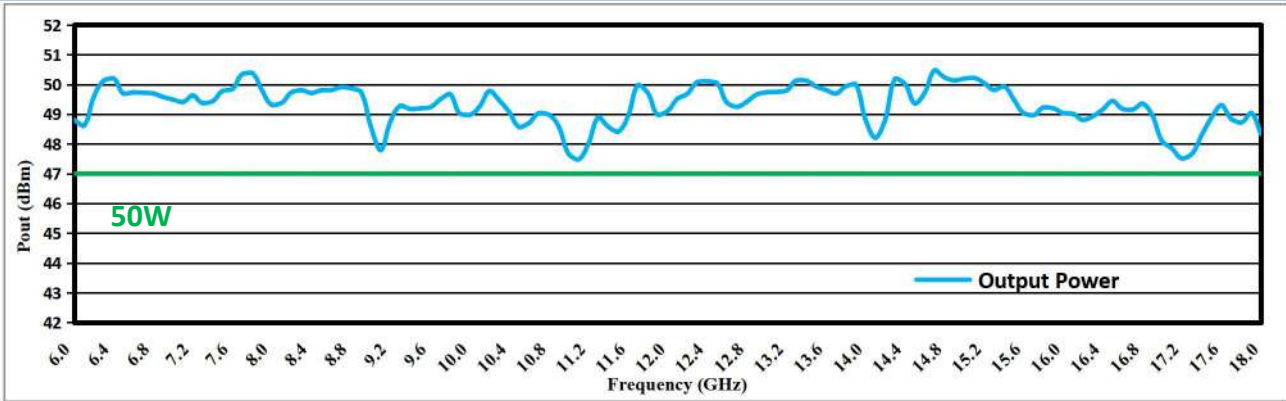
**Output Power@BW<sub>1</sub>:Pin=0dBm**



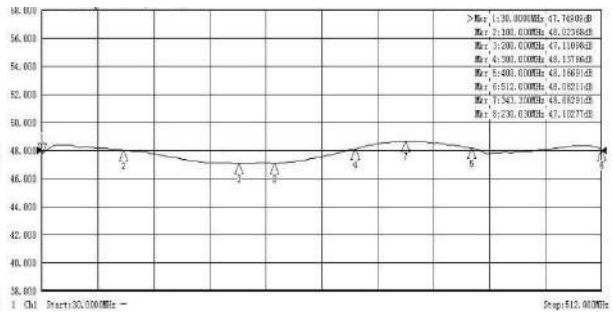
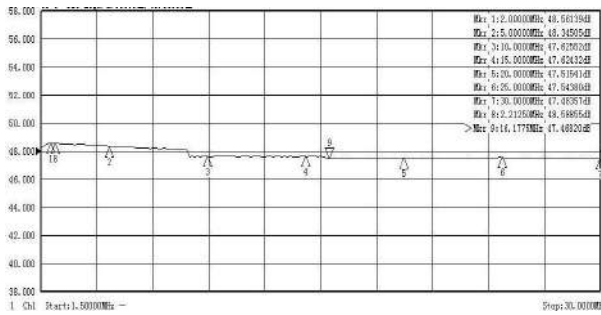
**Output Power@BW<sub>2</sub>:Pin=0dBm**



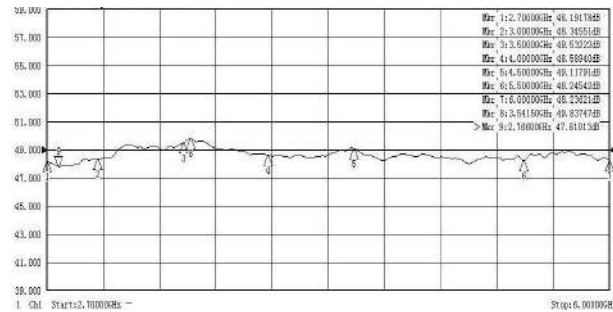
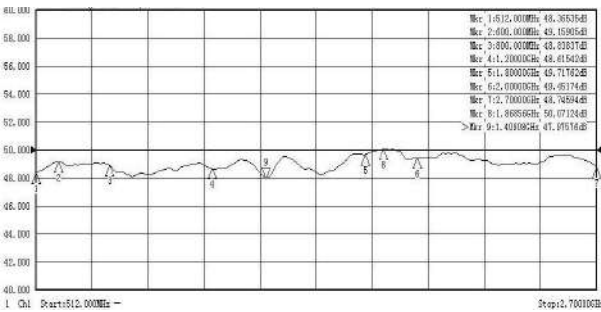
**Output Power@BW<sub>3</sub>&BW<sub>4</sub>:Pin=0dBm**



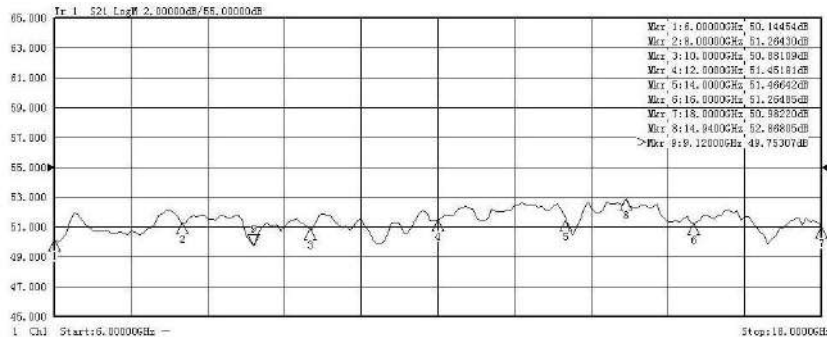
**Output Power@BW<sub>5</sub>: Pin=0dBm**



**Figure left Power Gain @BW<sub>1</sub>: Pin=0 dBm, Figure right Power Gain @BW<sub>2</sub>: Pin=0 dBm**

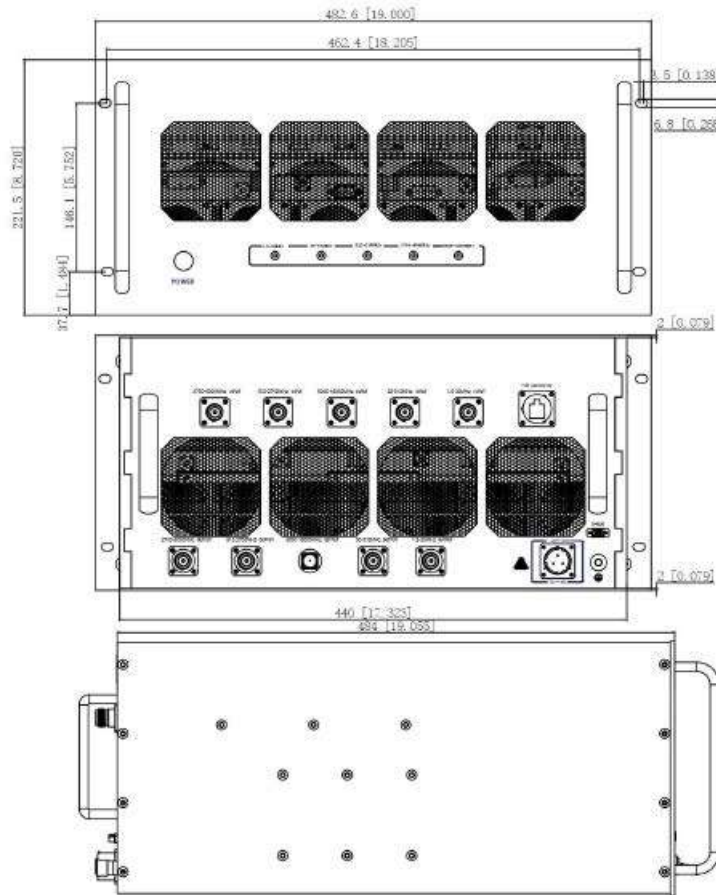


**Figure left Power Gain @BW<sub>3</sub>: Pin=0 dBm, Figure right Power Gain @BW<sub>4</sub>: Pin=0 dBm**



**Power Gain @BW<sub>5</sub>: Pin=0 dBm**

**Rack Mounted System - Detailed Dimensions (mm) - Standard Case Style A5U2 Surface: Spray paint**



Unit: mm[inch]Tolerance:  $\pm 1.5[0.059]$

Note\*\*: The Outline and Functions can be customized, please contact [sales@eliterf.com](mailto:sales@eliterf.com)