

47dB Gain, 50W Psat, 0.5GHz-18GHz
Solid State Broadband High Power Amplifier (CW & Pulse)

The AB500M18G4747AC is a 50W high gain Solid State Broadband High Power Amplifier System utilizing the latest high power RF GaN devices . 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.

Features

0.5GHz-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=25°C,VAC =220V, CW, Load VSWR<1.2)

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW ₁	512		2700	MHz
	BW ₂	2700		6000	MHz
	BW ₃	6000		18000	MHz
Output Power-CW @ Pin=0dBm	P _{SAT}	50	55		W
Power Gain @ Pin= 0dBm	Gp		47		dB
	Δ Gp ₁		±1	±1.5	dB
	Δ Gp ₂		±1	±1.5	dB
	Δ Gp ₃		±1.5	±2	dB
Input Power for Rated P _{SAT}	P _{IN}	-5	0	2	dBm
2nd/3rd Harmonics @ Pin=-10 dBm	2 nd /3 rd		-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 ₁₁			-10	dB
Supply Voltage (47~61Hz) /Single-Phase	V _{AC}	180	220/50Hz	260	V
Peak Power Consumption @ Pout =50~60W-CW	P _D		1000	1200	W
System Turn-On Time	Ton		1		S

Note*: IP3 or IMD3 data, please contact sales engineer.

MECHANICAL SPECIFICATIONS

Cooling : Built-in internal forced air cooling system
Width*Height*Deep[inch]: 19.0 x 8.7 x 18.9 (5U)
Weight: 77 lb

Datasheet: REV 1.0/01.13.2025

Elite RF LLC

1700 Tower Drive, Hanover Park, IL 60133, USA
Call us for customer service/technical support at: 847-592-6350
Email: sales@eliterf.com Web: www.eliterfllc.com

47dB Gain, 50W Psat, 0.5GHz-18GHz
Solid State Broadband High Power Amplifier (CW & Pulse)

RF Connector Input	Type N, Female
RF Connector Output	Type N, Female
DC Connector RS-232	Dsub-9, Male
Communication Connector	RJ-45 Ethernet 10/100Mbps (optional)
AC Connector* ¹	3 position Standard Circular Connectors

Notes *¹: AC connector can be modified to 3 WIRE A/C Power Entry , Contact Sales for update..

ENVIRONMENTAL SPECIFICATIONS

Module Operation Temperature* ¹	-10	45	°C
Storage Temperature Range	-20	55	°C
Relative-Humidity		95	%
Altitude* ²	N/A		
Vibration/Shock* ²	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	$\text{Pin} \leq 10$	dBm
Load VSWR @ POUT =30W	$\text{VSWR} \leq 5:1$ [Design To Meet]	N/A
Thermal Degradation	$65 \pm 5^\circ\text{C}$ @ heatsink [recovery@ $55 \pm 5^\circ\text{C}$]	°C

Notes*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

DC INTERFACE CONNECTOR –RS-232 [D-Sub 9-Pin, Male]

Pin #	Description	Specifications
1	GND	Ground
2	Shutdown	Amplifier Disable: TTL Logic High (3.3~5V) (Internally Pulled-Low)
3	RS-232-TxD	Transmitted Data - TxD* ¹
4	RS-232-RxD	Received Data - RxD* ¹
5	GND	GND, Sig.GND
6~9	Reserved	Reserved

Datasheet: REV 1.0/01.13.2025

Elite RF LLC

1700 Tower Drive, Hanover Park, IL 60133, USA
Call us for customer service/technical support at: 847-592-6350
Email: sales@eliterf.com Web: www.eliterfllc.com

47dB Gain, 50W Psat, 0.5GHz-18GHz
Solid State Broadband High Power Amplifier (CW & Pulse)

Note*¹: SSPAs are designed to be easy to operate and maintain. All features can be fully remote controlled through standard RS-232/-422/-485/422 and network interfaces. Please contact sales engineer

Front Panel LED Indicators*

Description	Specifications
RUN	GREEN: Internal DC supply turn on, Amplifier is awoken and ready to work.
500-2700MHz	GREEN: 500-2700MHz 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.
ALARM	RED: Amplifier is abnormal, Amplifier shutdown, Connect D-Sub 9 to debug

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

Available options:

AB500M18G4747AC	180-260VAC, 1-phase, 47-63 Hz, Rear RF Connectors, Without LCD Display
AB500M18G4747AC-LCD	180-260VAC, 1-phase, 47-63 Hz, Rear RF Connectors, With LCD Display
AB500M18G4747AC	180-260VAC, 1-phase, 47-63 Hz, Rear RF Connectors, USB, RS232, Lan and MGC functions, With LCD Display
AB500M18G4747AC	Other Feature: -LCD Control, Ethernet & Serial -Main RF Connectors: Input & Output [Front] -Sample Port: SMA-F [Forward & Reverse] -Blanking/Gating Port: BNC-F -Rack Slides, Handles and Rackmount Bracket

PLOTTED AND OTHER DATA

Notes:

1. Values at +25°C , sea level.

Datasheet: REV 1.0/01.13.2025

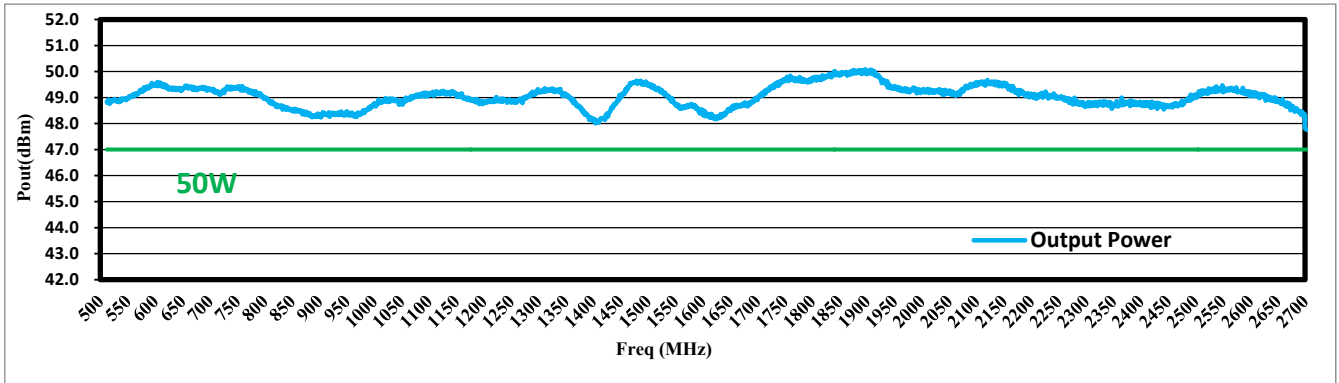
Elite RF LLC

1700 Tower Drive, Hanover Park, IL 60133, USA
Call us for customer service/technical support at: 847-592-6350
Email: sales@eliterf.com Web: www.eliterfllc.com

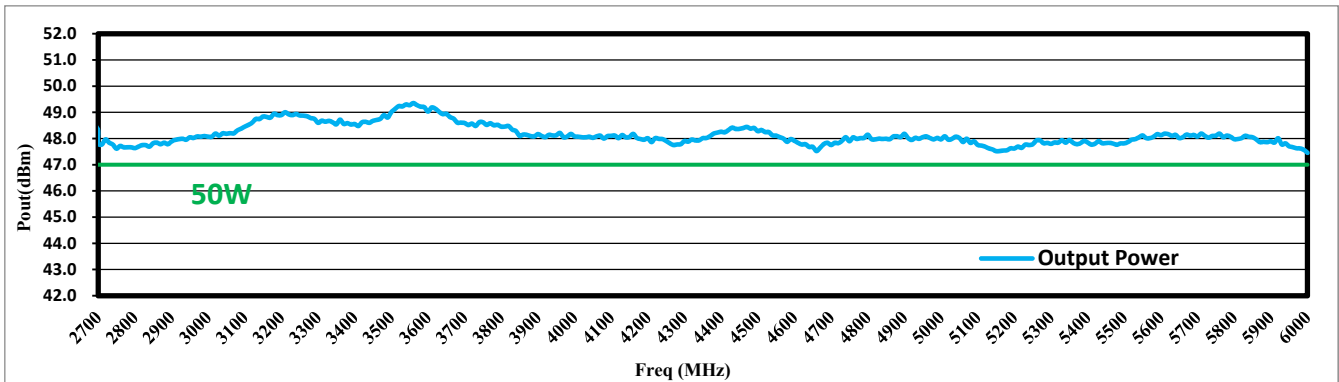
47dB Gain, 50W Psat, 0.5GHz-18GHz
Solid State Broadband High Power Amplifier (CW & Pulse)

TYPICAL PERFORMANCE DATA [Volume Shipment product data for Reference] [AC Voltage= 220V,Load VSWR ≤

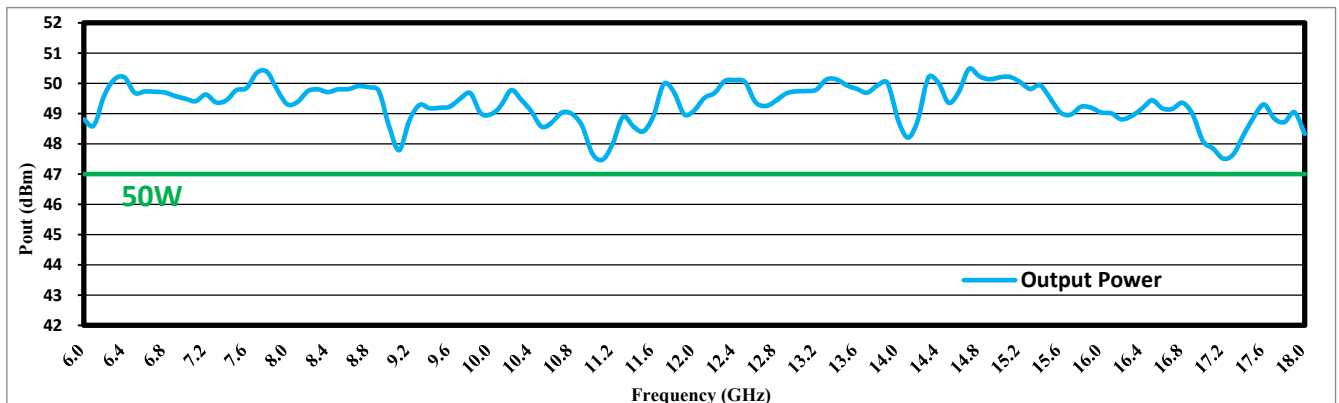
1.2,Ambient temp. +25±3°C]



Output Power@BW₁:Pin=0dBm



Output Power@BW₂:Pin=0dBm



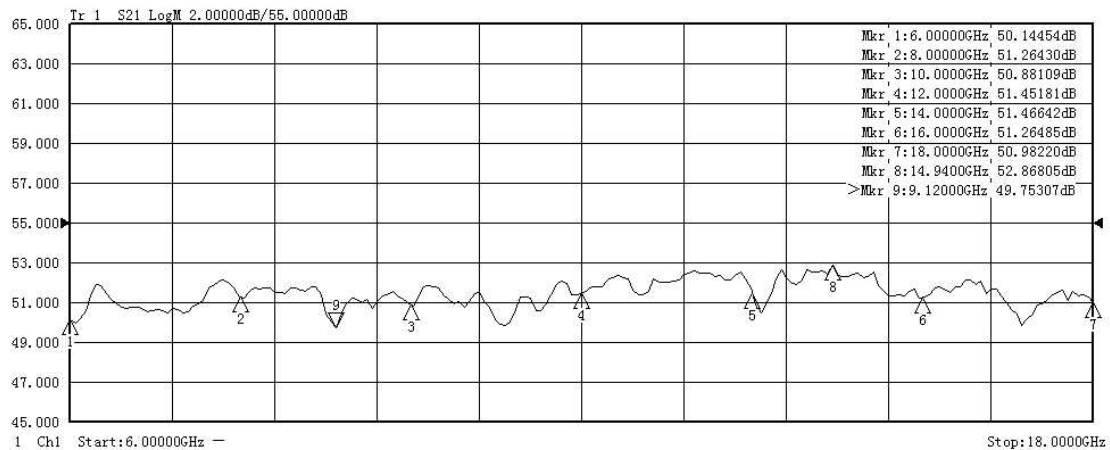
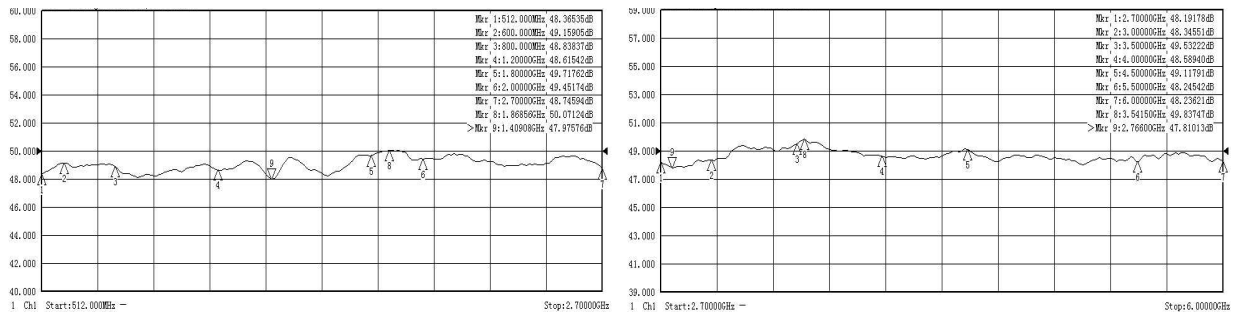
Output Power@BW₃:Pin=0dBm

Datasheet: REV 1.0/01.13.2025

Elite RF LLC

1700 Tower Drive, Hanover Park, IL 60133, USA
Call us for customer service/technical support at: 847-592-6350
Email: sales@eliterf.com Web: www.eliterfllc.com

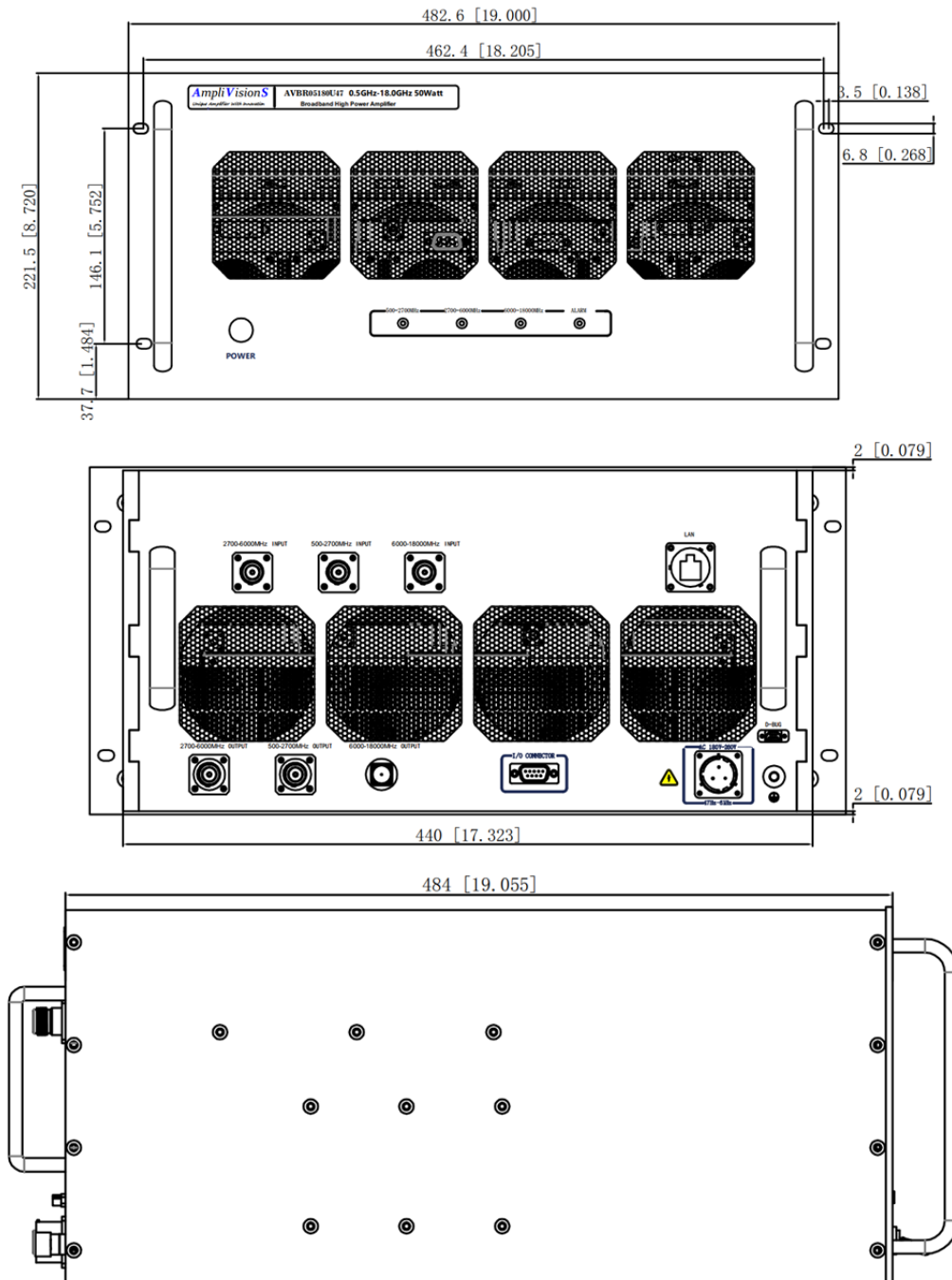
47dB Gain, 50W Psat, 0.5GHz-18GHz
Solid State Broadband High Power Amplifier(CW & Pulse)



47dB Gain, 50W Psat, 0.5GHz-18GHz
Solid State Broadband High Power Amplifier (CW & Pulse)

RACK MOUNTED SYSTEM-OUTLINE DRAWING (mm)-Standard Case Style-A5U2

Surface: Plastic spray(Color:White)



Unit: mm[inch]Tolerance: ± 1.5 [0.059]

Note**: The Outline and Functions can be customized, please contact our sales for further information

Datasheet: REV 1.0/01.13.2025

Elite RF LLC

1700 Tower Drive, Hanover Park, IL 60133, USA
Call us for customer service/technical support at: 847-592-6350
Email: sales@eliterf.com Web: www.eliterfllc.com