

TECHNICAL DATASHEET

AVBR0960U46

The AVBR0960U46 is a 40W high gain Solid State Broadband High Power Amplifier System. This amplifier utilizes the latest high power RF GaN transistors and also features built in control and monitoring, with protection functions to ensure high availability. This amplifier is suitable for high power CW or Pulse system applications, Communication Modulated Signal Test(LTE&& 5G), or EMC testing situation.

Features

- 0.9GHz-6GHz frequency range
- Psat **46dBm** Typ, 44.7dBm Min
- Power gain **46dB**
- 50 ohm input/output impedance
- Built-in control, monitoring and protection circuits
- Solid-state Class AB Broadband design
- Ultra-broadband Instantaneous Bandwidth
- Suitable for pulse or CW applications
- Small and lightweight
- High reliability and ruggedness

ELECTRICAL SPECIFICATIONS(T=25°C ± 3°C, VAC=220V, CW , Gain 1/2MAX, Load VSWR<1.2)

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	0.9		6	GHz
Output Power CW* @Pin= 0dBm	Psat	44.8	46		dBm
Output P1dB* CW	P1dB	42	44		dBm
Power Gain @Pin= 0dBm	Gp		46		dB
Power Gain Flatness @Pin=0dBm	ΔGp		± 1.5	± 2	dB
Harmonics @Pin=0dBm	2 nd /3 rd		-20/-25	-12/-15	dBc
Noise Figure (Optional)	NF		N/A		dB
Spurious Signals@Pin= 0dBm	Spur		-70	-60	dBc
Small Signal Gain @Pin= -30 dBm	Gss		46		dB
Small Signal Flatness @Pin= -30 dBm	ΔGs		± 2.5	± 3.5	dB
Isolation[Disable Status]	Iso		90		dB
Input VSWR	VSWR_IN		1.5	1.8	/
Output VSWR	VSWR_OUT		1.8		/
Gain Adjustment Range (Optional)		15			dB
Third Intermodulation Third Order 2-Tone @ 34dBm/Tone, 10MHz**	IMD3		-30	-25	dBc
Group Delay	Gd		15	20	nS
Supply Voltage (47~61Hz) /Single-Phase	VAC	180	220/50Hz	260	V
Power Consumption @ Pout =45~46dBm	PC		260	340	W

Note*: Fundamental Power, Harmonics are excluded.

Note:**100MHz Data is Available, please contact sales for further information.

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MECHANICAL SPECIFICATIONS

Length*Width*Height[mm]	503 x 482.6 x132.5 (3U)
Weight[Kg]	18
RF Connector Input	Type N, Female
RF Connector Output	Type N, Female
RF Connector Forward Coupler (Optional)	Type N, Female
DC Connector RS-232	Dsub-9, Male
AC Connector	3 WIRE A/C Power Entry

ENVIRONMENTAL SPECIFICATIONS (Design to Meet)

System Operation Temperature*1	-10	45	°C
Storage Temperature Range	-25	75	°C
Relative-Humidity		95	%
Altitude*2	N/A		
Vibration/Shock*2	N/A		

Notes *1: System Operation Temperature can be extended to -40~65°C, Contact Sales for update.

Notes *2: Altitude/Vibration is designed with experienced considerations, but without tests and experiments, Contact Sales for experimentally verified.

LIMITS

Pin<10dBm (Input RF level without damage)	Load VSWR<1.5:1 (50 Ohm)
Pin=-5dBm	Load open or short for up to 10 minutes.
Pin=0dBm	Load VSWR<3:1 for continuous operation
Thermal Degradation	55 °C

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

Pin #	Description	Specifications
1	GND	Ground
2	SHUTDOWN	Amplifier Disable: TTL Logic High (3.3V) (Internally Pulled-Low)
3	Temperature Alarm	Abnormal: Logic High (3.3V) (Internally Pulled-Low)
4	Fan Alarm	Abnormal: Logic High (3.3V) (Internally Pulled-Low)
5	Power Amplifier Alarm	Abnormal: Logic High (3.3V) (Internally Pulled-Low)
6~9	N/C	No electrical connected, Reserved

Front Panel LED Indicators

Description	Specifications
POWER ON	GREEN: AC-220V is POWER ON status
TEMP	RED: Temperature is over-limited, Amplifier shutdown

Datasheet: REVA.1/03.11.2020

Unique Amplifier With Innovation

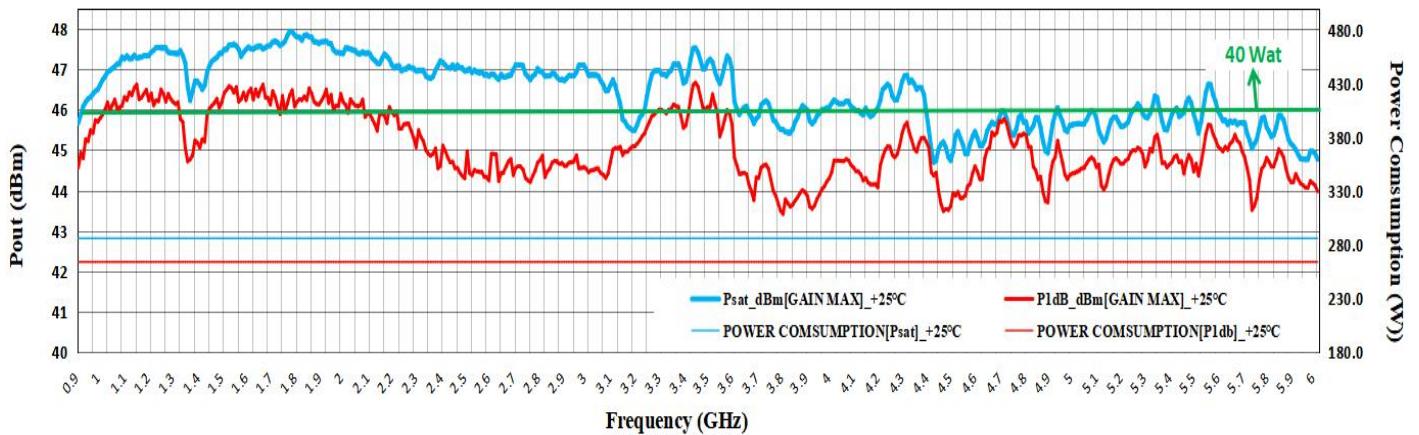
FAN
 ABNORMAL

RED: Fan is abnormal, Amplifier shutdown
 RED: Amplifier is abnormal, Amplifier shutdown, Connect D-Sub 9 to debug

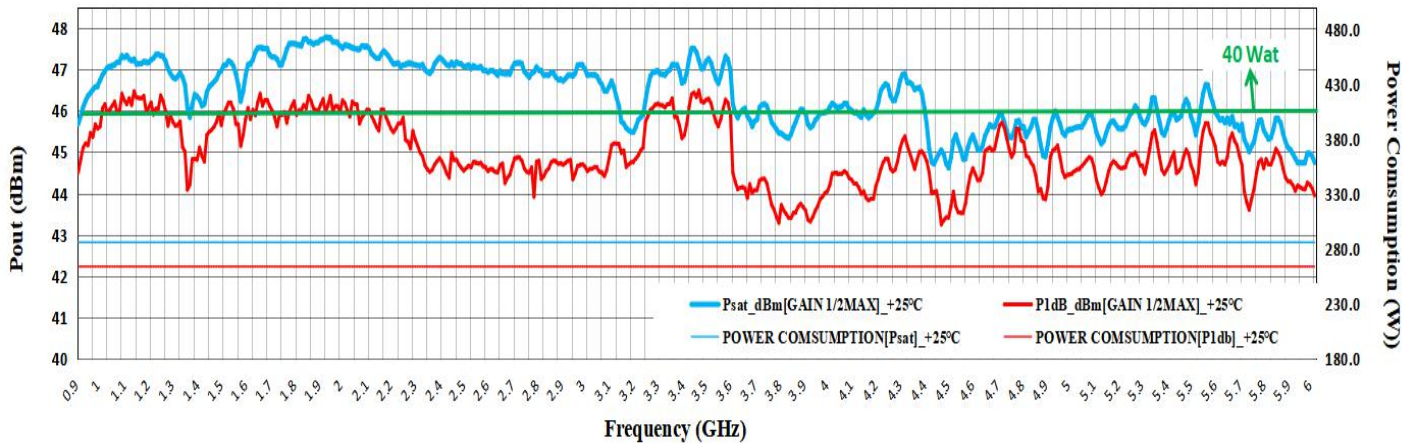
PLOTTED AND OTHER DATA

Notes:

1. Values at +25°C, sea level.
2. Handle only in approved ESD Workstation.
3. Unit is cooled by air-forced condition.



Pout@ Pin=0dBm && P1dB (Gain MAX, AC Voltage= 220V, CW, Load VSWR ≤ 1.2,25°C) , For Reference Only(Shipped Products)



Pout@ Pin=0dBm && P1dB (Gain 1/2MAX, AC Voltage= 220V, CW, Load VSWR ≤ 1.2,25°C) , For Reference Only(Shipped Products)

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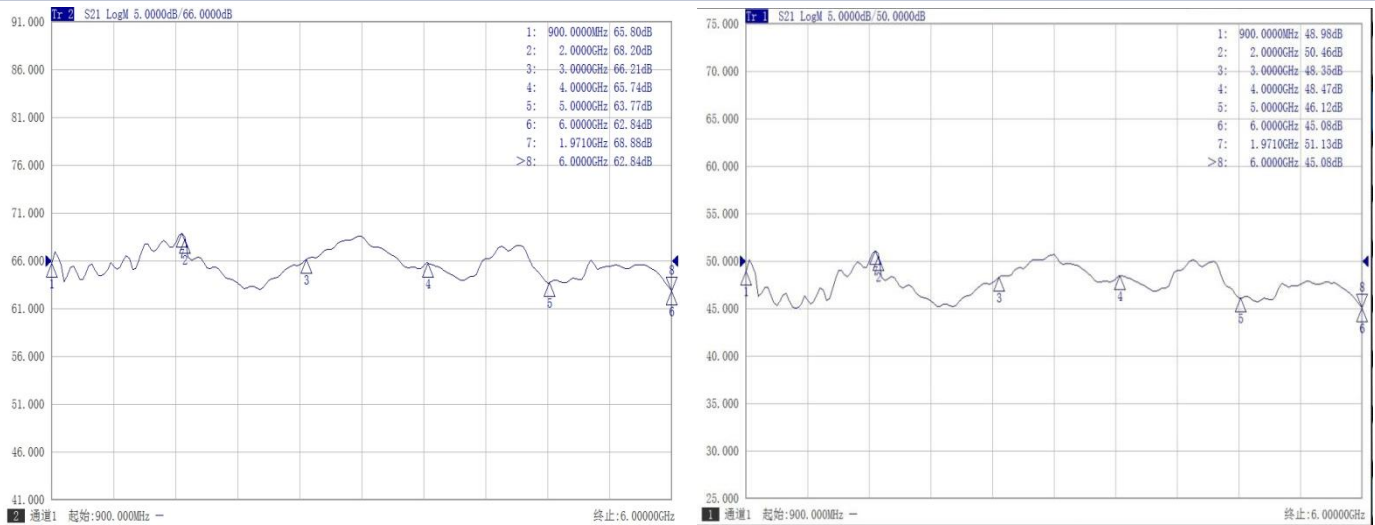


Figure left: Small signal gain S21@ Pin=-30dBm Gain MAX (Ambient temp. +25±2°C, Load VSWR ≤ 1.2), For Reference Only(Shipped Products)

Figure right: Small signal gain S21@ Pin=-30dBm Gain 1/2MAX (Ambient temp. +25±2°C, Load VSWR ≤ 1.2), For Reference Only(Shipped Products)

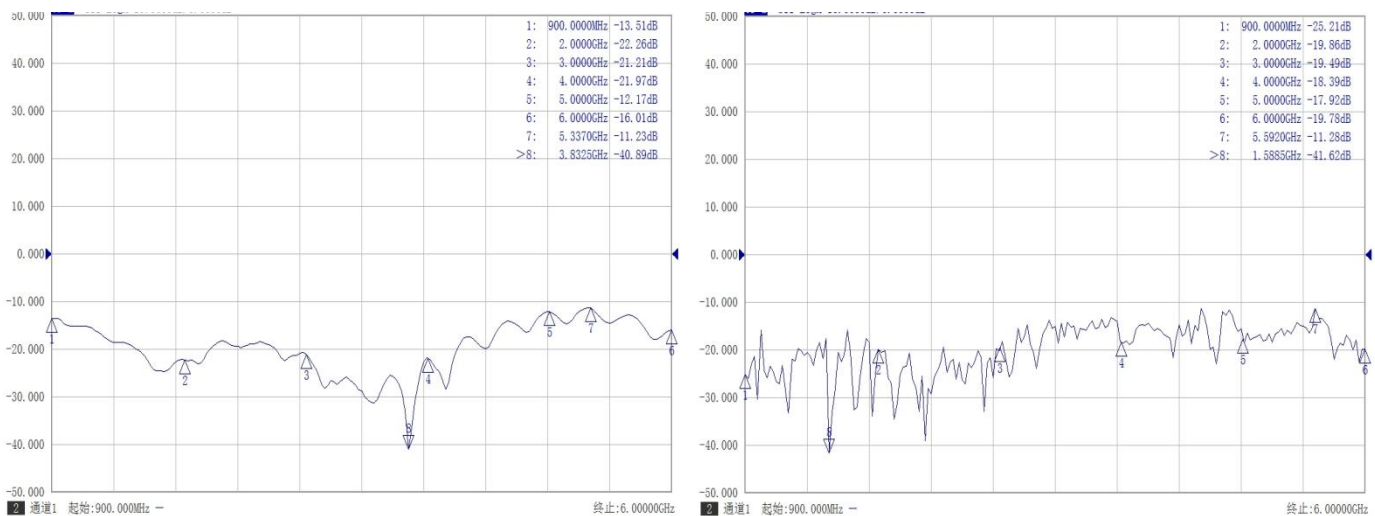


Figure left: Small signal gain S11@ Pin=-30dBm, Gain MAX (Ambient temp. +25±2°C, Load VSWR ≤ 1.2), For Reference Only(Shipped Products)

Figure right: Small signal gain S22 @ Pin=-30dBm, Gain MAX (Ambient temp. +25±2°C, Load VSWR ≤ 1.2), For Reference Only(Shipped Products)

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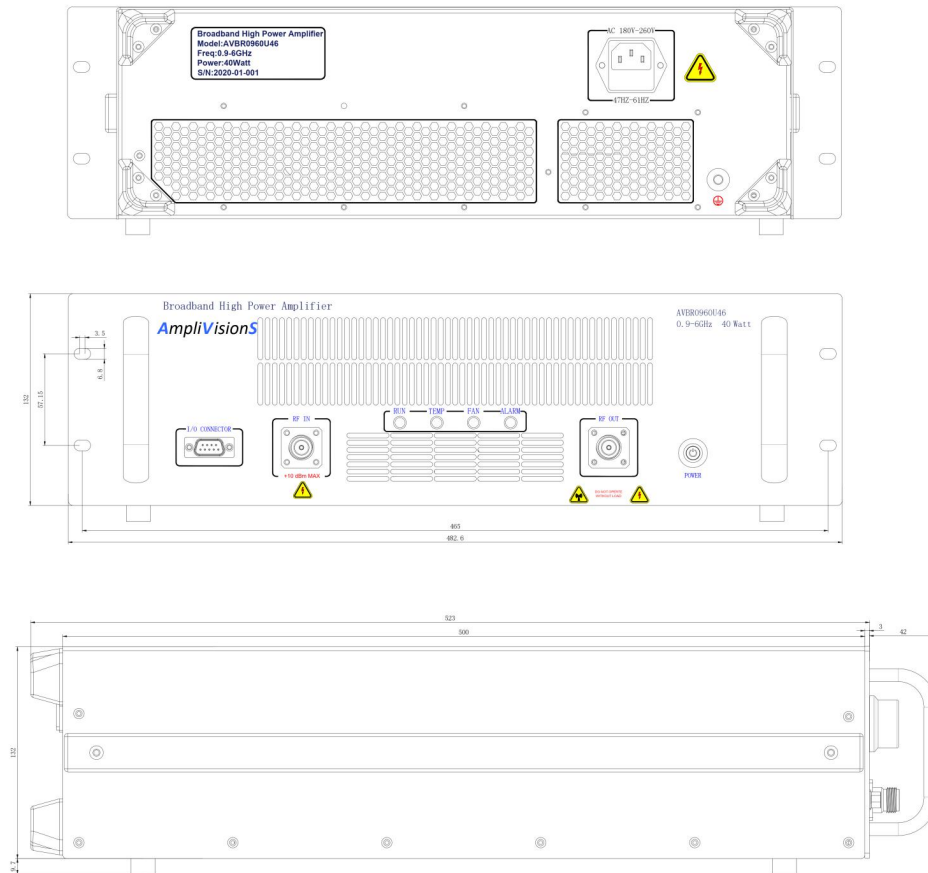
46dB Gain, 40W Psat, 0.9-6GHz
Solid State Broadband High Power Amplifier(CW&&Pulse)

AmpliVisionS

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Rack Mounted System -Detailed Outline&3D View Dimensions(mm)-Standard Case Style-A3U2



Product View



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