Product Description

The MPAR-060180S45 is a 6-18GHz, 30W solid state high gain broadband high power amplifier system with state-of-art GaN design technology. Its built-in control and monitoring, with protection functions improve amplifier's reliability & usability. And it can adapt to a variety of different signal modes such as continuous wave, pulse, wide instantaneous bandwidth signal, high-order modulation signal and etc. It is designed for applications, such as Test & Measurement System, EMC.

Features

- Frequency Range: 6-18GHz
- Output Power: 43dBm Min., 44.8dBm Typ.
- P1dB: 41.8dBm Min., 43dBm Typ.,
- 50 ohm input/output impedance
- Built-in control, monitoring and protection circuits
- Solid-state Class AB broadband design
- High linearity, high efficiency
- Suitable for CW or pulse applications
- Small and lightweight
- High reliability and ruggedness

Electrical Specification (T=25℃±3℃, VAC =220V, CW, Load VSWR<1.2)

Description	Min	Typ	Max	Unit
Operating Frequency	6		18	GHz
Output Power CW* @Pin=-10dBm	43	44.8		dBm
Output P1dB* CW	41.8	43		dBm
Gain @Pin=-10dBm		53		dB
Gain Flatness @Pin=-10dBm		±1.5	±2.5	dB
2^{nd}/3^{rd} Harmonics @Pin=-10dBm		-20/-30	-12/-12	dBc
Spurious Signals @Pin=-10dBm		-65	-60	dBc
Small Signal Gain @Pin=-30 dBm		63		dB
Small Signal Flatness @Pin=-30 dBm		±3	±4	dB
Isolation（Disable Status)		90		dB
Input VSWR		1.6	2	/
Output VSWR		2.2		/
IMD3 2-Tone @ 33dBm/Tone, 10MHz Spacing**		-25	-22	dBc
Supply Voltage (47~61Hz) /Single-Phase	180	220/50Hz	260	V
Power Consumption @ Pout=49~51dBm		500	600	W

Note*: Fundamental Power, harmonics are excluded.
Note:** 100MHz Data is Available, please contact sales for further information.

Environmental Specifications (Design Goal)

Operation Temperature*1	-10	45	℃
Storage Temperature Range	-20	55	℃
Relative-Humidity		95	%
Altitude*2	N/A		
Vibration/Shock*2	N/A		

Notes *1: Operation Temperature can be extended to -40~65℃. Contact Sales for update.
Notes *2: Altitude /Vibration are designed with considerations, but without tests and experiments. Contact Sales for experimental verification.

Limits

Pin<10 dBm(Input RF level without damage)	Load VSWR<1.5:1 (50 Ohm)
Pin=-20 dBm	Load open or short for up to 10 minutes.
Pin=-10 dBm	Load VSWR<3:1 for continuous operation
Thermal Degradation	55℃

DC Interface Connector (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

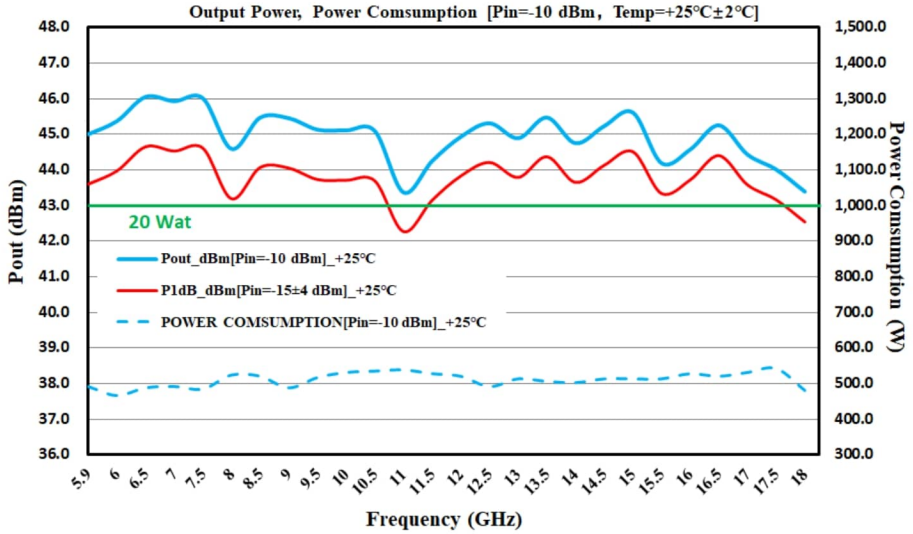
Front Panel LED Indicators

Description	Specifications
POWER	GREEN: AC-220V is POWER ON status
TEMP	RED: Temperature is over-limited, Amplifier shutdown
FAN	RED: Fan is abnormal, Amplifier shutdown
ABNORMAL	RED: Amplifier is abnormal, Amplifier shutdown, Connect D-Sub 9 to debug

Plotted and other Data

Notes:

1. All specifications are guaranteed at +25 ℃ case operating temperature.
2. Handle only in approved ESD Workstation.
3. Unit is cooled by air-forced condition.



Pout@ Pin=-10dBm &P1dB (CW, Load VSWR≤1.2, 25℃), for reference only (Shipped Products)

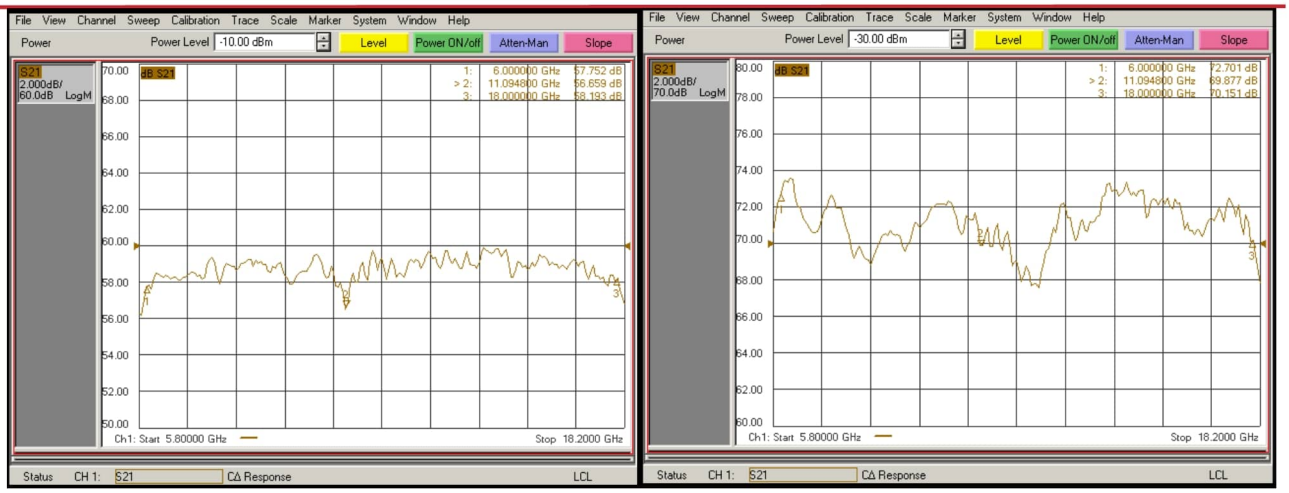
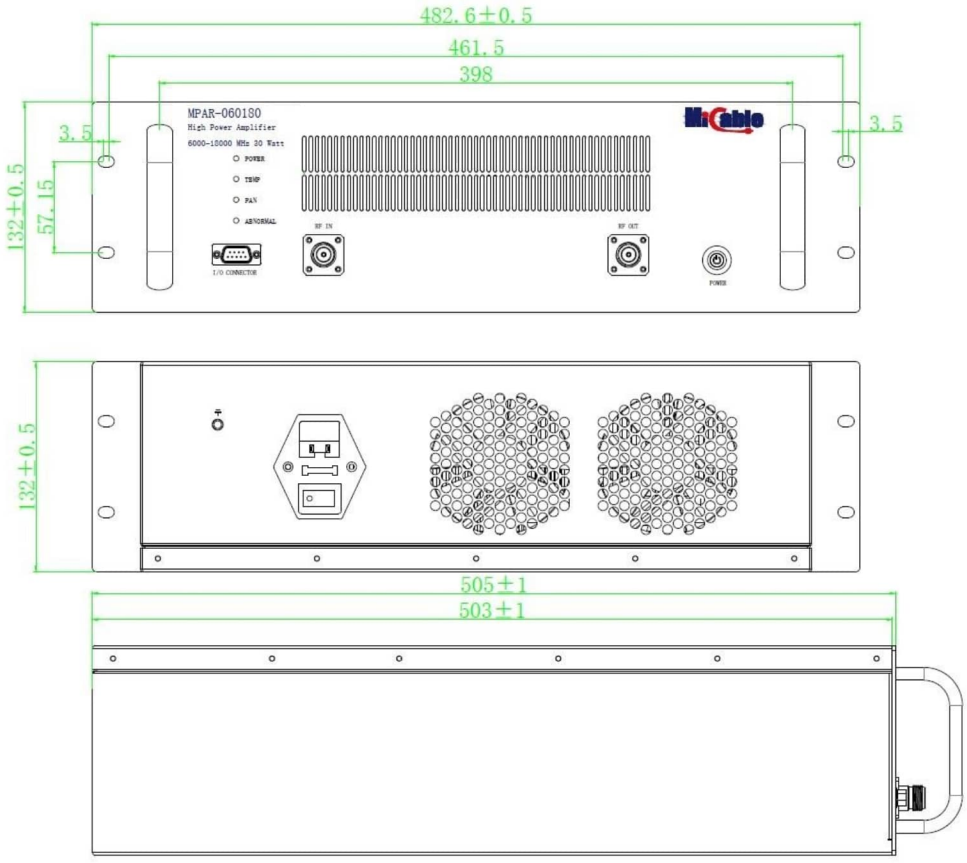


Figure left: Gain S21@ Pin=-10dBm (Ambient temp, +25±2℃, Load VSWR≤ 1.2), for reference only (Shipped Products)

Figure right: Small signal gain @Pin=-30dBm (Ambient temp, +25±2℃, Load VSWR≤ 1.2), for reference only (Shipped Products)

Outline Drawings (mm)



Mechanical Definition

Dimensions (B,H,D) mm	482.6 x 132 x 503 (3U)
Weight (Kg)	25
RF-Input	N Female
RF-Output	N Female
RF Connector Forward Coupler (Optional)	N Female
DC Connector	Dsub-9 Male
AC Connector	3 WIRE A/C Power Entry