

◆ Product Description

The MPAR-020180S45 is a 2-18GHz, 35W solid state high gain ultra-broadband high power amplifier 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 broadband Test & Measurement System, EMC.

◆ Features

Frequency Range: 2-18GHz	Class AB High efficiency design
Output Power: 44.5dBm Min., 45.5dBm Typ.	High linearity, high efficiency
P1dB: 42dBm Min., 44dBm Typ.	Suitable for pulse or CW applications
50 ohm input/output impedance	Small and light weight
Built-in control, monitoring and protection circuits	High reliability and ruggedness

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

Description	Min	Typ	Max	Unit
Operating Frequency	2		18	GHz
Output Power CW* @ Pin=0dBm	44.5	45.5		dBm
Output P1dB* CW	42	44		dBm
Gain @ Pin= 0dBm		45		dB
Gain Flatness @ Pin=0dBm		±1.5	±2.5	dB
2nd/3rd Harmonics @ Pin=0dBm		-20/-20	-12/-15	dBc
Spurious Signals @ Pin=0dBm		-70	-60	dBc
Small Signal Gain @ Pin= -30dBm		50		dB
Small Signal Flatness @ Pin= -30dBm		±3	±4.5	dB
Isolation (Disable Status)		90		dB
Input VSWR		1.6	2	/
Output VSWR		2.2		/
Third Order Intercept Point 2-Tone @35dBm/Tone, 10MHz**	+47	+50		dBm
Supply Voltage (47~61Hz) /Single-Phase	180	220/50Hz	260	V
Power Consumption @ Pout =44~46 dBm		600	800	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	°C
Storage Temperature Range	-20	55	°C
Relative-Humidity		95	%
Altitude*2	N/A		
Vibration/Shock*2	N/A		

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

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

◆ Limits

Pin<10 dBm(Input RF level without damage)	Load VSWR<1.5:1 (50 Ohm)
Pin=-7 dBm	Load open or short for up to 10 minutes.
Pin=0 dBm	Load VSWR<3:1 for continuous operation
Thermal Degradation	55°C

◆ 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

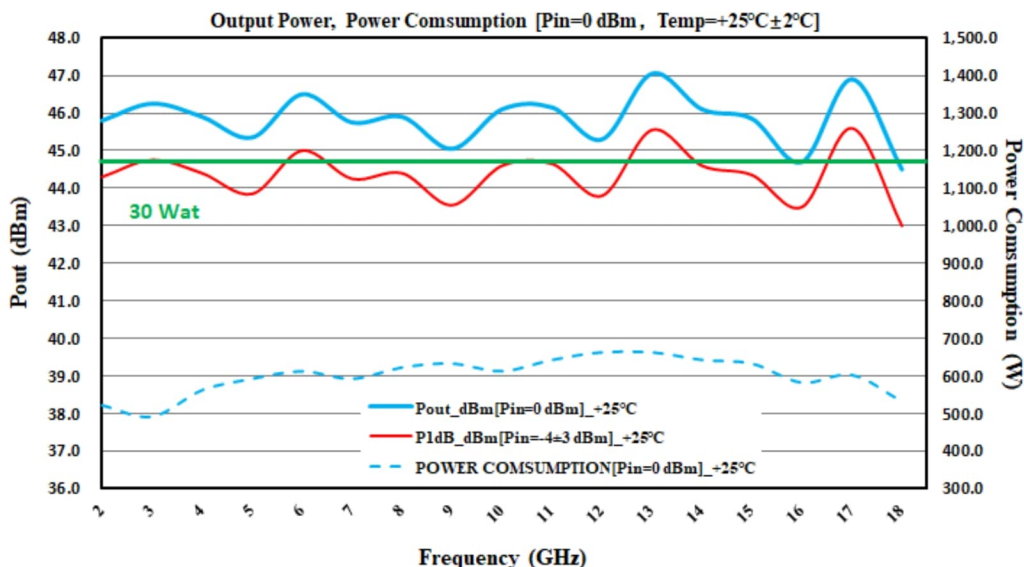
◆ Front Panel LED Indicators

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°C case operating temperature.
2. Handle only in approved ESD Workstation.
3. Unit is cooled by air-forced condition.



Pout@ Pin= 0dBm & P1dB (CW, Load VSWR≤1.2, 25°C), for reference only (Shipped Products)

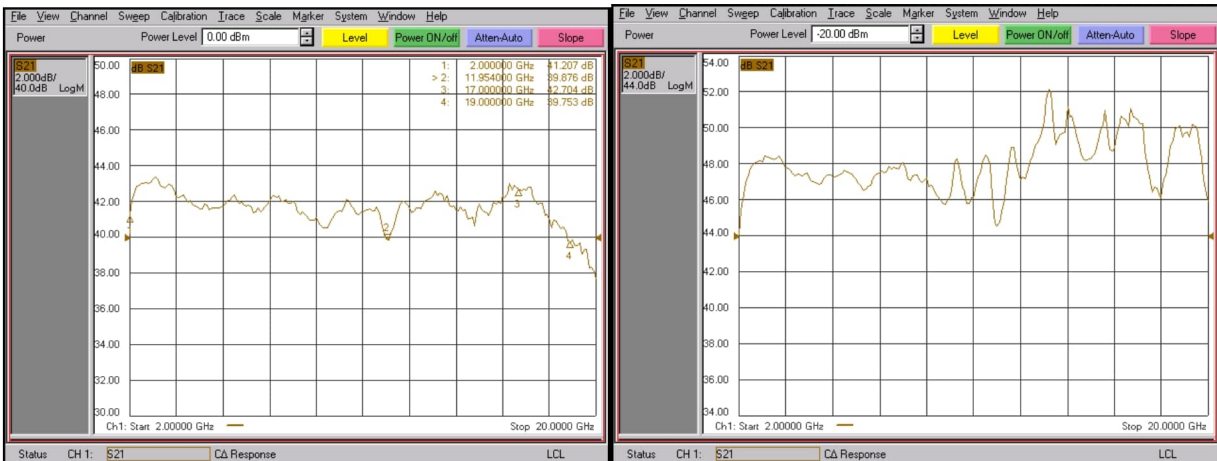
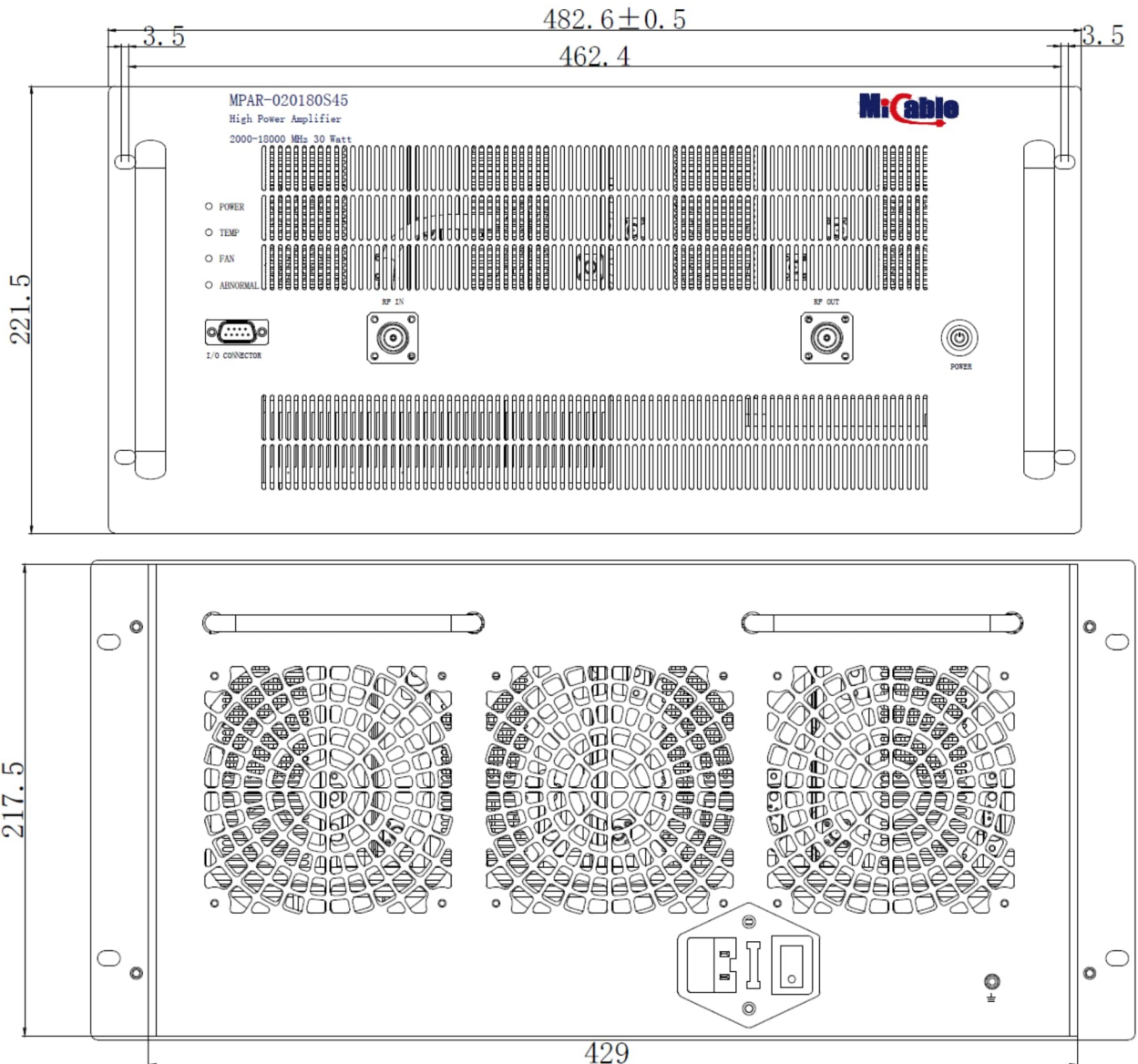


Figure left: Gain S21@ Pin= 0dBm (Ambient temp, +25±2°C, Load VSWR≤ 1.2), for reference only (Shipped Products)

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

◆ Outline Drawings (mm)



**◆ Mechanical Definition**

Dimensions (B,H,D) mm	483 x 221.5 x 560 (5U)
Weight (Kg)	35
RF-Input	N Female
RF-Output	N/TNC Female
RF Connector Forward Coupler (Optional)	N Female
DC Connector	Dsub-9 Male
AC Connector	3 WIRE A/C Power Entry