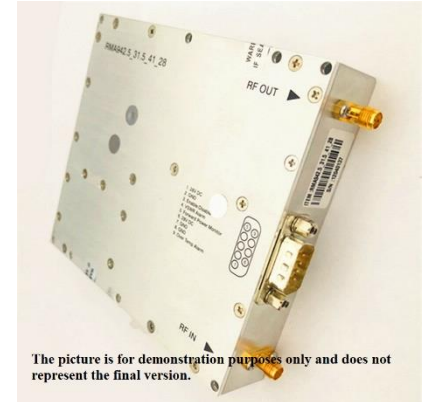


53dBm 617MHz to 821MHz Multi-Carrier Solid State Wide Band Power Amplifier

Model: MCPA-6182-53W45A

Main Features

- **High Efficiency & Linearity:** The amplifier uses digital pre-distortion (DPD) to ensure high linearity, reducing out-of-band emissions and improving overall efficiency. This is critical for ensuring compliance with 4G standards and reducing power consumption
- **GaAs Technology:** The use of GaAs allows for a compact, high-performance design that maintains high gain and efficiency, even under heavy load conditions. This material is known for its superior performance in RF and microwave frequencies, making it ideal for 5G base stations
- **Designed for 4G:** Specifically tuned for the 617 to 821 MHz frequency range, this amplifier supports key 4G bands, delivering the high power and bandwidth necessary for modern wireless communications
- **Compact and Integrated Design:** The amplifier's compact size allows easy integration into existing systems with minimal redesign, and its full input/output matching simplifies installation



Introduction

The EMTS Telecom Services 617-821 MHz High-Efficiency Power Amplifier (MCPA) is a state-of-the-art, DPD-friendly amplifier designed for optimal performance in the 4G -3GPP Bands n71, n12, n14, n28 within wireless infrastructure. Leveraging **GaN-on-SiC** and advanced **Doherty Architectures**, it offers superior efficiency, robust linearity, and cost-effectiveness, making it ideal for high-power applications. With full input and output matching, this amplifier simplifies system integration while delivering high power with minimal signal distortion, ensuring reliable and efficient operation across the designated frequency range.



EMTS Telecom Services offers a comprehensive portfolio of enhanced coverage solutions for the Wireless Networks, based on advanced technologies, EMTS's proven indoor and outdoor solutions solve a wide range of network issues including interference and oscillation problems, challenging coverage holes, rapid response deployment, and inadequate in-building coverage. Regardless of the technology or frequency, EMTS can provide customized coverage solutions that address any combination of unique and complex network needs for the Wireless Networks.

Technical Specification

Test items	Specification
Frequency range (MHz)	617-821
Maximum input power(dBm)	≤20dBm
Output power P1dB(dBm)	53±2 dBm
Output power Pmax(dBm)	50±1 dBm
Signal mode	LTE
ACPR@PAR=9.5(dBc)/Po=44 dBm	≤ -30dBc
EVM@ Po=44dBm of PAR=9.5	≤5%
Gain(dB)	45±1 dB
Passband Ripple(dB)	±2.0dB
ALC control range(dB)	≥20dB
ATT range(dB)	NC
Port VSWR	≤1.5
Power amplifier switch	Have
Input power detection(dBm)	NC
Output power detection(dBm)	15dBm~50dBm
Reflected power detection(dBm)	15dBm~50dBm
Temperature detection (°C)	-40~100°C
Working voltage (VDC)	48VDC
Static working current (A)	≤2.5A
Dynamic working current(A)	≤4A@Po=44dBm
Operating temperature range(°C)	-40~85°C
Size (mm)	165*135*26mm

About EMTS Telecom Services:

EMTS Telecom Services is a leading supplier of high-quality RF coverage solutions designed to maximize wireless network coverage in difficult RF environments and complex settings. The company specializes in extending RF radio coverage to rural areas, office buildings, subways, tunnels, and shadowed areas. The EMTS coverage solution supports all major mobile technologies and standards of wireless Networks.

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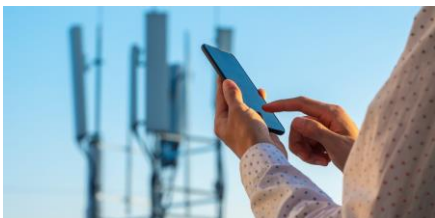


9-way D-Sub Male Connector

Pin	Description	Specification
1	Temperature Monitor	Analog voltage (0V to 3V) proportional to PA temperature (-20 to +70 °C). Typical Gain: 10 mV / °C Typical Offset: 500 mV @ 0°C $V_{out} = (10\text{mV}/^{\circ}\text{C} \times \text{Temp } ^{\circ}\text{C}) + 500 \text{ mV}$ $V_{out} = +1.750\text{V}$ at +125°C $V_{out} = +750 \text{ mV}$ at +25°C $V_{out} = +100\text{mV}$ at -40°C
2	Forward Power Monitor	Analog voltage (0V to 3V) proportional to PA Forward Output Power (30dBm to 53dBm, CW) $V_{out} (\text{max}) \leq 3\text{V}$ @ Pout 53dBm Typical Gain: 27mV/dB
3	Reverse Power Monitor	Analog voltage (0V to 3V) proportional to PA Reverse Output Power (27dBm to 50dBm, CW) $V_{out} (\text{max}) \leq 3\text{V}$ @ Pout 50dBm Typical Gain: 27mV/dB
4	PA id	Connect fixed resistor from GND to pin 4. *The Customer* will connect to 3.3V via a pull-up resistor for PA identification Resistor value: 3.32K, 1%
5	TX Enable (Active low)	Internal pull-up, resistor value chosen to comply with Tx Enable/Disable Rise & Fall Time. The customer will connect to open drain control, resistor value and pull-up voltage subject to approval. Pull-up voltage of 3.3V or 5V preferred.
6	VCC monitor	Connect fixed resistor from VCC to pin 6. The customer will connect to pull-down resistor to create potential divider for PA voltage monitoring. Typical resistor: 1M, 1% @ VCC 48V. Other resistor values and VCC supply voltages subject to approval.
7	Not connected	RS485A
8	Not connected	RS485B
9	GND	Ground

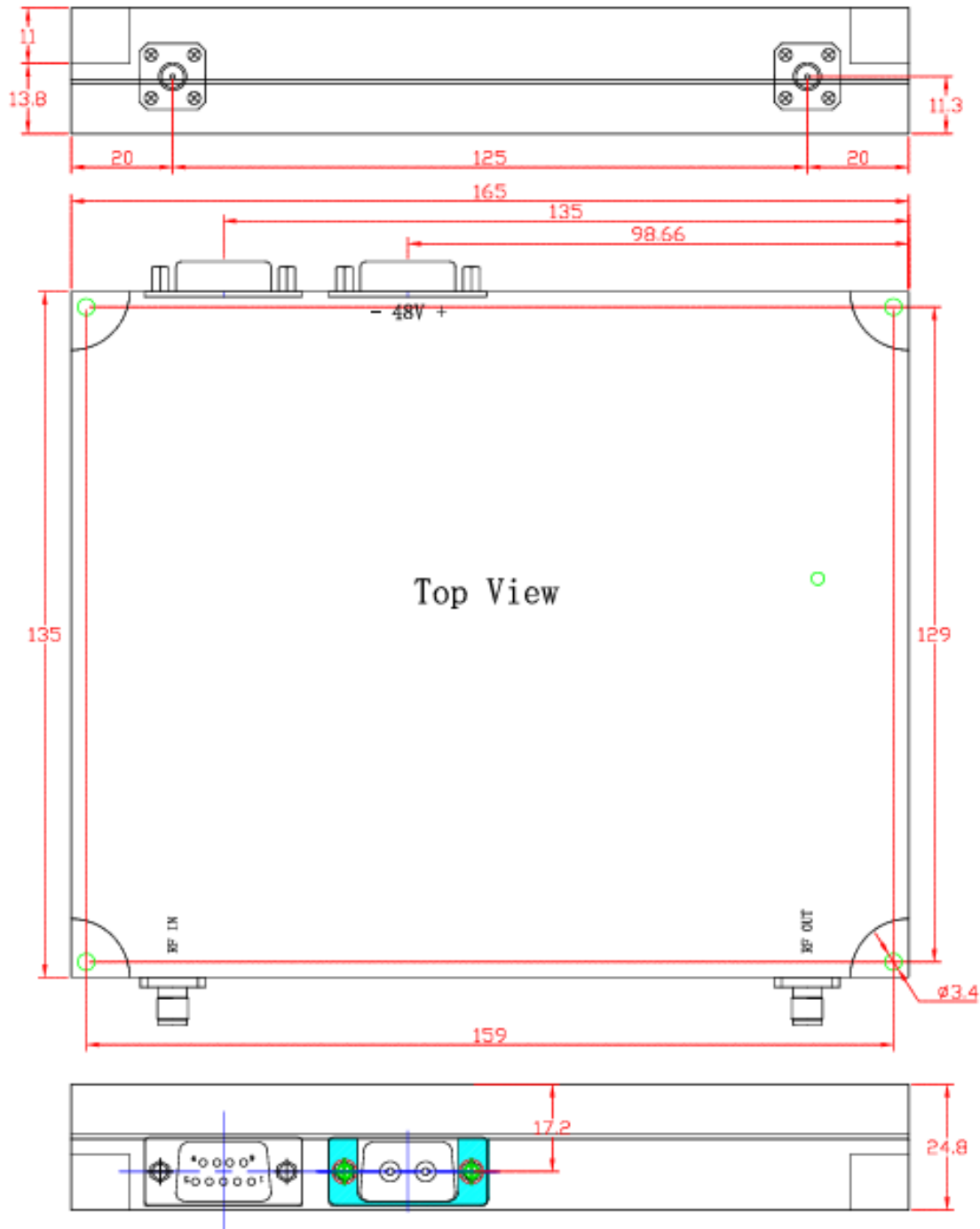
2W2 D-Sub Male Connector

Pin	Description	Specification
A1	VCC	+48V
A2	GND	Ground



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Outline



About EMTS Telecom Services:

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