EMTS Telecom Services

TURNING TECHNOLOGY INTO SOLUTIONS

40dBm 2.3-2.7 GHz B40/B41 4G/5G Solid State Multi-Carrier Power Amplifier

The picture is for illustration purposes only

Model No: MCPA-2500-40W50

Main Features:

- **Dual-Mode Support:** Fully optimized for LTE and 5G NR air protocols (2.3–2.7 GHz).
- **Compliance:** Engineered to exceed ETSI requirements for 4G/5G infrastructure.
- **TDD Optimized:** Integrated high-speed switching for TDD applications, supporting both Uplink and Downlink paths.
- **Advanced Linearization:** Solid-state design utilizing **Analog Pre-Distortion (APD)** to ensure superior EVM and low distortion.
- **High-Efficiency Architecture:** Leverages **Doherty Design** and advanced matching networks to maximize power-added efficiency (PAE).
- **Intelligence & Control:** Features built-in monitoring and control circuitry for real-time diagnostics.
- **Ruggedized Reliability:** Field-proven performance with stable thermal characteristics across wide operating temperature ranges.

Product Overview

The **EMTS Telecom Services MCPA-2500-40W50** is a high-performance, multi-carrier power amplifier specifically engineered for the 2.3–2.7 GHz band. By utilizing high-linearity **GaN-based**,devices, this amplifier delivers exceptional gain, wide dynamic range, and superior phase linearity.
To meet the rigorous demands of modern 5G networks, the MCPA integrates **APD (Analog Pre-Distortion)** and **Doherty architecture**, achieving a perfect balance between high efficiency and long-term reliability. The unit is housed in a precision-machined, EMI/RFI-shielded enclosure and is built with qualified high-reliability components.

Designed with versatility in mind, the MCPA is the ideal solution for:

- **Distributed Antenna Systems (DAS)**
- **Base Transceiver Stations (BTS)**
- **High-Power RF Repeaters**

With its focus on low Error Vector Magnitude (EVM) and stable environmental performance, the MCPA-2500-40W50 ensures seamless connectivity and maximum throughput for mission-critical cellular infrastructure.

EMTS Telecom Services Ltd. offers a comprehensive portfolio of enhanced coverage solutions for the Wireless Networks, based on advancedtechnologies, 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.

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Technical Specification

Item	Indicator		Remark
	RX	TX	
Test source	5G NR-FR1-TM3.1(TDD) (PAR=10dB@CCDF0.01%)		Typical 20M signaltest
Electrical Performance			
Frequency range	2300-2400/2496-2690MHz		
Maximum input level	-10dBm	10dBm	No damage for 30minutes
Output power P_{max}	-10dBm	40dBm	
Gain	35±1 dB	50±1 dB	
Passband Ripple	$\triangle G_P \leq 3.0$dB		
ACLR(ACPR)	≤-45dBc @±5MHz output power -5dBm	≤-30dBc @±5MHz	
ALC control range	≥10dB		
ATT range	/	≥22dB	
Noise	≤4dB	/	
EVM(TM3.1/3.2/3.3 mode)	≤9%		
VSWR	≤1.5:1		
RF T/R switch	Comply		
TX&RX Switch switching delay	≤1us		
RX to TX Isolation	80dBc		
Input power detection	-30 dBm to 0 dBm		
Output power detection	15dBm to 40dBm		
Reflected power detection	10dBm to 40dBm		
Fault alarm	Have		
VSWR alarm	default 2.5		Settable
Temperature detection	-40 to 100℃		
Working voltage	28DCV		28-30DCV
Static working current	≤2A		
Dynamic working current	≤3.0A		

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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Mechanical and Environmental Performance		
temperature range	-40~85℃	Operating
RF interface	Pending design	Customizable
RS485 interface +	Pending design	(Factory equipped with 30cm long connecting cable)
synchronous control	Pending design	
Power interface	Pending design	Factory equipped with 30cm long connecting cable
Module appearance	Aluminum natural color	
Size	Pending design	
Mounting hole size	M4	

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