

# TMB AWS 1700 MHz Multi Carrier High Power Outdoor Boosting System

Model No: TMB-M-1700-O-50W15



#### **Features:**

- Employed best advanced pre-distortion and feed-forward technology
- Support multi-carrier WCDMA with high system efficiency
- 100 W Downlink output power, supports multi-carrier amplifier (Lower / higher Power types are also available)
- Support flexible downlink input either duplexed or un-duplexed
- Support system full diversity
- Downlink and uplink gain adjustable with wide dynamic range
- Lower uplink noise figure
- Comprehensive product monitoring and control (local and remote);
- Centralized system control/display/alarms, Great system reliability supported by architecture built-in redundancy (Optional)
- All Models available operating power of 220/110VAC or -48VDC
- Extensive protection for lightning, voltage surge,
- Compact system size and light weight

#### Introduction

Wireless operators have used multi-carrier power amplifiers (MCPA) to increase the coverage and capacity of existing base stations. The use of MCPA has increased operator revenues without the excessive costs of adding of swapping out equipment and with no need to build additional cell sites.

The Multi-Carrier High Power Booster system (TMB) provides higher downlink EIRP and improved uplink sensitivity at the same time to extend the coverage of existing networks.

This multi-carrier based product platform can also work with customized BTS to extend capacity of original BTS with a low system total cost. Our MCPA product line (Tower-Mounted and Floor-Mounted) provides cost effective network coverage extension and capacity upgrade solution.

The multi-carrier based product platform can also work with customized BTS to extend capacity of original WCDMA BTS with a low system total cost. The unit is also available for different Cellular bands: 450 MHZ, 800 MHz, 900 MHz, AWS-1700 MHz, DCS 1800 MHz, PCS-1900 MHz, UMTS-2100 MHz and 2600 MHz and support multi-carrier GSM/EDGE, LTE, and WCDMA signals, with mixed mode.



**EMTS** Telecom Services Ltd. offers a comprehensive portfolio of enhanced coverage solutions for the Wireless Networks, Based on advanced technologies. **EMTS** proven, indoor and outdoor solutions solve a wide range of network challenges including interference and oscillation problems, challenging coverage holes, rapid response deployment and inadequate inbuilding 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 Specifications**

Frequency range         Uplink         Type A:1710-1755 MHz Type B:1710-1770 MHz           Downlink         Type B:2110-2155 MHz Type B:2110-2155 MHz Type B:2110-2170 MHz           Output power         uplink         ≥12dBm & Output IP3 (max gain ) >23 dBm           Gain         uplink         15±1dB           Max Input Power         43dBm           Ways numbers         2 inputs, 2 outputs           Supporting Carriers / way         2 /4/8 carriers           Bypass insertion loss         ≤2.0dB           Input / output voltage standing wave ratio         ≤1.5           Uplink noise figure         ≤2dB           Downlink intermodulation attenuation         -55dBc typ.           ≤36dBm @9KHz-1GHz         ≤30dBm @1G-12.75GHz           ≤47dBm @852-835MHz         ≤47dBm @852-835MHz           Spurious emission         ≤47dBm @870-880MHz           ≤47dBm @870-880MHz         ≤47dBm @880-915MHz           Gain adjustment range         15dB           Governous play         4+7dB gain Variation Over Temp <+/-1dB           Mechanical Specifications <t< th=""><th colspan="4">Electrical Specifications</th></t<>	Electrical Specifications			
Frequency range         Type A: 2110 - 2155 MHz           Output power         uplink         ≥12dBm & Output IP3 (max gain ) > 23 dBm           Gain         uplink         15±1dBm (Lower or Higher Power types are also available)           Max Input Power         43dBm           Ways numbers         2 inputs, 2 outputs           Supporting Carriers / way         2/4/8 carriers           Bypass insertion loss         ≤ 2.0dB           Input / output voltage standing wave ratio         ≤ 1.5           Uplink noise figure         ≤ 2dB           Downlink intermodulation attenuation         -55dBc typ.           Spurious emission         ≤ -36dBm @9KHz-1GHz           ≤ -30dBm @1G-12.75GHz         ≤ 47dBm @825-835MHz           ≤ -47dBm @83-6-830MHz         ≤ 47dBm @83-6-830MHz           ≤ -47dBm @83-6-830MHz         ≤ 47dBm @83-6-850MHz           Gain adjustment range         I5dB           Band fluctuations         < +/-1dB Gain Variation Over Temp < +/-1dB			Type A:1710-1755 MHz	
Output power         Itype A: 2110 − 2155 MHz           Output power         uplink         ≥12dBm & Output IP3 (max gain ) >23 dBm           Gain         down         (Lower or Higher Power types are also available)           Gain         uplink         15±1dB           Max Input Power         43dBm           Ways numbers         2 inputs, 2 outputs           Supporting Carriers / way         2/4/8 carriers           Bypass insertion loss         ≤2.0dB           Input / output voltage standing wave ratio         ≤1.5           Uplink noise figure         ≤2dB           Downlink intermodulation attenuation         -55dBc typ.           Spurious emission         ≤36dBm @8KHz-1GHz           ≤30dBm @1G-12.75GHz         ≤47dBm @825-835MHz           ≤47dBm @870-880MHz         ≤47dBm @870-880MHz           ≤47dBm @885-915MHz            Gain adjustment range         15dB           Band fluctuations         <+/td>           Load mismatch against         10:1           Power supply         AC220V±20%, 45~55Hz           Mechanical Specifications         50           Dimensions (L * W * H) (mm)         730*440*330           Net weight (kg)         50           Cooling         Forced air cooling			Type B 1710-1770 MHz	
Type 8: 2110-2170 MHz           Output power         ≥12dBm & Output IP3           down         (Lower or Higher Power types are also available)           Gain         uplink         15±1dB           Max Input Power         43dBm           Ways numbers         2 inputs, 2 outputs           Supporting Carriers / way         2½4/8 carriers           Bypass insertion loss         ≤2.0dB           Input / output voltage standing wave ratio         ≤1.5           Uplink noise figure         ≤2dB           Downlink intermodulation attenuation         -55dBc typ.           Spurious emission         ≤36dBm @9KHz-1GHz           Spurious emission         ≤36dBm @1G-12.75GHz           Spurious emission         ≤47dBm @825-835MHz           Spurious emission         ≤47dBm @83-4G-3.52G           ≤47dBm @83-G-880MHz         ≤47dBm @3.4G-3.52G           ≤47dBm @885-915MHz         Gain adjustment range         15dB           Band fluctuations         <+/th>         +/-IdB Gain Variation Over Temp <+/-IdB           Load mismatch against         10:1         Power supply         AC220V±20%, 45~55Hz           Mechanical Specifications         John the first of t		Downlink	Type A: 2110 – 2155 MHz	
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Output power         down         (max gain ) > 23 dBm (50±1dBm (Lower or Higher Power types are also available)           Gain         uplink down         15±1dB (Lower or Higher Power types are also available)           Max Input Power         43dBm           Ways numbers         2 inputs, 2 outputs           Supporting Carriers / way         2/4/8 carriers           Bypass insertion loss         ≤2.0dB           Input / output voltage standing wave ratio         ≤1.5           Uplink noise figure         ≤2.0dB           Downlink intermodulation attenuation         -55dBc typ.           SpdBdBm @9KHz-1GHz         ≤2dB           Spurious emission         ≤36dBm @9KHz-1GHz           Spurious emission         ≤47dBm @870-880MHz           Spurious emission         ≤47dBm @880-1920MHz           547dBm @880-1920MHz         ≤47dBm @885-915MHz           Gain adjustment range         15dB           Band fluctuations         <+/-1dB Gain Variation Over Temp <+/-1dB           Load mismatch against         10:1           Power	Output power	uplink	*	
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Gain         uplink down         15±1dB           Max Input Power         43dBm           Ways numbers         2 inputs, 2 outputs           Supporting Carriers / way         2/4/8 carriers           Bypass insertion loss         ≤2.0dB           Input / output voltage standing wave ratio         ≤1.5           Uplink noise figure         ≤2dB           Downlink intermodulation attenuation         -55dBc typ.           ≤36dBm @9KHz-1GHz         ≤30dBm @9KHz-1GHz           ≤30dBm @9KHz-1GHz         ≤30dBm @870-880MHz           ≤47dBm @825-835MHz         ≤47dBm @870-880MHz           ≤47dBm @870-880MHz         ≤47dBm @885-915MHz           Gain adjustment range         15dB           Band fluctuations         <+/-1dB Gain Variation Over Temp <+/-1dB			* * *	
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Supporting Carriers / way         2/4/8 carriers           Bypass insertion loss         ≤2.0dB           Input / output voltage standing wave ratio         ≤1.5           Uplink noise figure         ≤2dB           Downlink intermodulation attenuation         -55dBc typ.           ≤-36dBm @9KHz-1GHz         ≤-30dBm @9KHz-1GHz           ≤-30dBm @1G-12.75GHz         ≤-47dBm @825-835MHz           ≤-47dBm @870-880MHz         ≤-47dBm @870-880MHz           ≤-47dBm @1800-1920MHz         ≤-47dBm @1800-1920MHz           ≤-47dBm @3.4G-3.52G         ≤-98dBm @885-915MHz           Gain adjustment range         15dB           Band fluctuations         <+/-1dB Gain Variation Over Temp <+/-1dB				
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Input / output voltage standing wave ratio   \$\leq 2\text{dB}\$     Downlink intermodulation attenuation   \$\leq 5\text{5dBc typ.}     \$\leq 3\text{6dBm @9KHz-1GHz}     \$\leq -3\text{6dBm @9KHz-1GHz}     \$\leq -3\text{6dBm @9KHz-1GHz}     \$\leq -3\text{6dBm @9KHz-1GHz}     \$\leq -3\text{6dBm @9KHz-1GHz}     \$\leq -4\text{7dBm @ 825-835MHz}     \$\leq 4\text{7dBm @ 8870-880MHz}     \$\leq 4\text{7dBm @ 1800-1920MHz}     \$\leq -4\text{7dBm @ 1800-1920MHz}     \$\leq -4\text{7dBm @ 3.4G-3.52G}     \$\leq -9\text{8dBm @ 885-915MHz}     \$\leq 6\text{ain adjustment range}   \$\leq 15\text{dB}     \$\leq 4\text{7dBm @ 885-915MHz}     \$\leq 6\text{3dB}     \$\leq 4\text{1dB Gain Variation Over Temp \$< +/-1dB}     \$\leq 4\text{1dB Gain Variation Over Temp \$< +/-1dB}     \$\leq 4\text{1dB Gain Variation Over Temp \$< +/-1dB}     \$\leq 4\text{1dB Cain Variation Over Temp \$< +/-1dB}     \$\leq 41dB Cain Var				
Uplink noise figure         ≤ 2dB           Downlink intermodulation attenuation         -55dBc typ.           ≤-36dBm @9KHz-1GHz         ≤-30dBm @1G-12.75GHz           ≤-47dBm @ 825-835MHz         ≤-47dBm @870-880MHz           ≤-47dBm @1800-1920MHz         ≤-47dBm @3.4G-3.52G           ≤-98dBm @885-915MHz            Gain adjustment range         15dB           Band fluctuations         <+/-1dB Gain Variation Over Temp <+/-1dB			_	
Downlink intermodulation attenuation         -55dBc typ.           ≤-36dBm @9KHz-1GHz         ≤-30dBm @1G-12.75GHz           ≤-47dBm @825-835MHz         ≤-47dBm @870-880MHz           ≤-47dBm @1800-1920MHz         ≤-47dBm @1800-1920MHz           ≤-47dBm @3.4G-3.52G         ≤-98dBm @885-915MHz           Gain adjustment range         15dB           Band fluctuations         <+/-1dB Gain Variation Over Temp <+/-1dB				
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Spurious emission       ≤-47dBm @870-880MHz         ≤-47dBm @1800-1920MHz       ≤-47dBm @3.4G-3.52G         ≤-47dBm @3.4G-3.52G       ≤-98dBm @885-915MHz         Gain adjustment range       15dB         Band fluctuations       <+/-1dB Gain Variation Over Temp <+/-1dB				
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Gain adjustment range15dBBand fluctuations<+/-1dB Gain Variation Over Temp <+/-1dB			≤-47dBm @3.4G-3.52G	
Band fluctuations $<+/-1dB$ Gain Variation Over Temp $<+/-1dB$ Load mismatch against $10:1$ Power supply $AC220V\pm20\%$ , $45\sim55Hz$ Mechanical Specifications         Dimensions (L * W * H) (mm) $730*440*330$ Net weight (kg) $45$ Gross weight (kg) $50$ Cooling       Forced air cooling         Input and output impedance $50\Omega$ Environmental Characteristics         Operating temperature $-40  ^{\circ}C$ to $55  ^{\circ}C$ Humidity $\le 95\%$			≤-98dBm @885-915MHz	
Load mismatch against $10:1$ Power supplyAC220V±20%, $45\sim55$ HzMechanical Specifications $10:1$ Dimensions (L * W * H) (mm) $10:1$ Net weight (kg) $10:1$ Gross weight (kg) $10:1$ CoolingForced air coolingInput and output impedance $10:1$ Environmental Characteristics $10:1$ Operating temperature $10:1$ Humidity $10:1$	Gain adjustment range		15dB	
Power supply         Mechanical Specifications         Dimensions (L * W * H) (mm) $730*440*330$ Net weight (kg)       45         Gross weight (kg)       50         Cooling       Forced air cooling         Input and output impedance $50\Omega$ Environmental Characteristics         Operating temperature $-40^{\circ}$ C to $55^{\circ}$ C         Humidity $\leq 95\%$	Band fluctuations		<+/-1dB Gain Variation Over Temp <+/-1dB	
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Net weight (kg)45Gross weight (kg)50CoolingForced air coolingInput and output impedance $50\Omega$ Environmental CharacteristicsOperating temperature $-40^{\circ}\!$	Mechanical Specific	eations		
Gross weight (kg)       50         Cooling       Forced air cooling         Input and output impedance $50\Omega$ Environmental Characteristics $-40^{\circ}$ C to $55^{\circ}$ C         Operating temperature $-40^{\circ}$ C to $55^{\circ}$ C         Humidity $\leq 95\%$	Dimensions (L * W * H) (mm)		730*440*330	
Cooling       Forced air cooling         Input and output impedance $50Ω$ Environmental Characteristics $-40 °C$ to $55 °C$ Operating temperature $-40 °C$ to $55 °C$ Humidity $\le 95\%$	Net weight (kg)		45	
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Environmental Characteristics  Operating temperature  -40°C to 55°C  Humidity  ≤95%	Cooling		Forced air cooling	
Operating temperature $-40^{\circ}\text{C}$ to $55^{\circ}\text{C}$ Humidity $\leq 95\%$	Input and output impedance		50Ω	
Humidity ≤95%	<b>Environmental Cha</b>	racteristics		
	Operating temperature		-40°C to 55°C	
Protection class IP66	Humidity		≤95%	
	Protection class		IP66	



#### **About EMTS Telecom Services Ltd.:**

EMTS 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. All rights reserved - Specifications are subject to change without notice

Note: All specifications subject to change without notice.

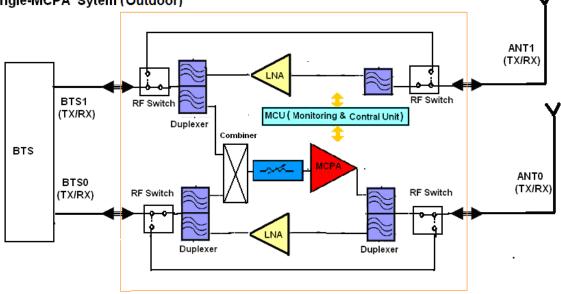


## **Technical Specification (Cont.)**

Monitoring features			
Local / remote monitoring	Local: DB-9 RS232 serial port Remote: Wireless MODEM via SMS (SMS)		
Others Specifications			
EMC	ETS 300 342-3		
Lightening	IEC-1312-1		
Connectors	For RF7/16 DIN female / For Alarm pull push mail		
MTBF	100,000 hours		

### **Diagram of TMB System**

Figure 1: Single-MCPA Sytem (Outdoor)



#### **Ordering Information:**

For full band cellular use Model No: TMB-M-2100-O -50W15



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