

# Ultra-Compact GaAs / GaN 20W-120W C-Band BUC / SSPA

Smaller, lighter and more powerful, this series allows significant high-power BUC / SSPA size and weight reduction and at the same time substantially improves thermal efficiency, which leads to higher reliability and longer MTBF.

This series provides up to 120W maximum output power in ultra-compact package and features best in class RF characteristics, embedded output isolator, extensive monitor and control capabilities, enabled via Ethernet, Serial and/or Analog Interfaces.

With low power consumption and smart heat extraction technology, this series remarkably compact size and high thermal efficiency results in overall system size and cost reduction making it the ideal candidate for mobile DSNG and fixed medium earth station applications.

## Options

- Internal 10MHz Reference clock
- Built in auto-ranging AC Power Supply
- DC supply via IFL (20W / 40W units only)
- Automatic Level Control (ALC)
- Antenna Mounting Kit
- 1:1 and 1:2 Redundancy Kit
- Remote Control Panel

## Features

- Ultra-compact design and light weight
- o Up to 120W Psat in 15.2x15.2x10.6 cms
  - Superior RF performance
- o Superior Phase Noise: 8 dB better than IESS308/309 recommendation
- o Spurious emission below -60 dBc
- o Wide range Gain Control
- o Highest Linearity at small back-off
  - Built In Output Isolator provides full output VSWR Protection
  - Input and output True RMS power detection
  - Redundancy ready with no external controller required
  - Status LED
  - Field upgradable software



- Available in different frequency options
  - o Super-extended 5.85-6.725GHz
  - o Palapa 6.425-6.725GHz
  - o Insat 6.725-7.025GHz
    - Extensive M&C capability
  - o Serial: RS 232 & RS 485
  - o Ethernet: embedded Web browser



RF Parameters		
Output Frequency Band, GHz	5.85-6.425GHz / 5.85-6.725GHz; other options available	
Input L Band Frequencies, MHz	950-1525MHz / 950-1825MHz	
Conversion Gain, dB	75 minimum, 77 typical	
Gain Flatness, dB	+/-1 typical +/-1.5 maximum over full band +/-0.4 maximum over any 40MHz	
Gain Stability, dB	+/-1.5 maximum over full temperature range	
Gain Control, dB	20dB minimum dynamic range	
Linearity at Pout=Plin:	2 tone IMD	-25dBc max
	Spectral Regrowth	-30dBc for QPSK at 1 x symbol rate
Input Impedance, Ohm	50Ohm	
Input/Output VSWR	1.4:1 / 1.3:1	
Noise Power Density, dBm/Hz	-70 in Transmit Band, -145 in Receive Band	
Spurious Emission dBc; Non-signal related / Signal related (at Plin)	-60 / -55 max	
AM/PM conversion at Plinear, °/dB	1.0 maximum	
Group Delay	Ripple 1 nsec p-p max over any 40MHz band	

BUC Parameters	
LO Frequency, MHz	4900MHz
Type of Conversion	Single conversion, non-inverting
External 10MHz	Over IF L Band cable with multiplexing
Phase Noise, dBc/Hz	-70 @ 100Hz; -80 @ 1kHz; -90 @ 10kHz; -95 @ 100kHz; -115 @ 1MHz

Power & Mechanical	
48V DC Voltage Range	32-72VDC Isolated (other options available)
AC Voltage Range	90-265V AC 50-60Hz auto-ranging; PFC
Size	15.2 x 15.2 x 10.6 cms
Weight	2.7KG (6lbs)
Cooling	Forced Air
Operating Temperature / Relative Humidity	-40°C to +55°C / Up to 100% condensing



Interfaces	
IF Input Connector	N-type Female
RF Output Connector	CPR137 Grooved
AC Power In	MS3112E12-3P
RS485 – Ethernet – SNMPv3	MS3112E14-19S

Part Number	Output Power (W)	Psat (dBm / W)	Prated (dBm / W)	Plinear (dBm / W)	P Cons at Prated	P Cons at Plin	GaAs / GaN
TPB-CB00430-HMA X*	20W	44 / 25	43 / 20	40 / 10	140W	90W	GaAs**
TPB-CB00460-HMA X*	40W	47 / 50	46 / 40	43 / 20	220W	190W	GaAs**
TPB-CB00480-HMS X*	60W	48 / 60	48 / 60	45 / 30	350W	320W	GaN
TPB-CB00490-HMS X*	80W	49 / 80	49 / 80	46 / 40	390W	340W	GaN
TPB-CB00500-HMS X*	100W	50 / 100	50 / 100	47 / 50	420W	350W	GaN
TPB-CB00510-HMS X*	120W	51 / 120	51 / 120	48 / 60	450W	360W	GaN

Note 1: The specification is subject to regular reviews and will be updated from time to time as part of our continuing product development and improved spec accuracy.  
Note 2: Operation beyond the quoted limits stated above may cause instantaneous and permanent damage.