

# Compact C-Band GaN BUC

*80/100 W*



Lightweight (6 lbs.) and compact (6.5" x 6.5" x 4")

Up to 100 W  $P_{SAT}$

Superior RF performance

Optional remote monitor and control panel

Ideal for feed horn mounting

## Overview

General Dynamics SATCOM Technologies' compact C-Band GaN BUC / SSPA series are revolutionary in size, weight and power density and offer superior performance in an extremely compact package. Weighing only 6 pounds, the feature-rich GaN BUC is exceptionally powerful for its size, with up to 100 W  $P_{SAT}$ . The built-in AC power supply provides a simple and least expensive wall-pluggable solution. The GaN BUC features best-in-class RF characteristics, embedded WG circulator, extensive monitor and control capabilities enabled via Ethernet, serial and / or analog interfaces. The small size and low power consumption results in better heat extraction which reduces overall system size and cost, making it ideal for portable, mobile and VSAT on-the-move applications. Its small size and weight allows direct feed horn mounting, which makes it the most economical solution for fixed VSAT applications.

## Key Features

- **Superior RF performance:**
  - Phase noise 6 dB better than IESS308/309
  - $P_{SAT}$  of 49 dBm
  - Spurious below -60 dBc
  - Wide dynamic range of gain control
  - High linearity
- RF overdrive protection
- Available also in super-extended, Palapa and Insat C-Band frequency options.
- Internal / autosense 10 MHz reference (optional)
- Low power consumption
- Built-in output isolator provides full output VSWR protection
- Output power measurement — True RMS detector
- Configuration via RS-232 serial console, packet protocol RS-485 — User-friendly HTTP-based GUI and SNMP (optional)
- 48VDC isolated power supply
- Built in auto-ranging AC power supply (optional)
- Field upgradable software
- Status LED
- Antenna mounting kit (optional)
- Redundant ready with no need of external controller

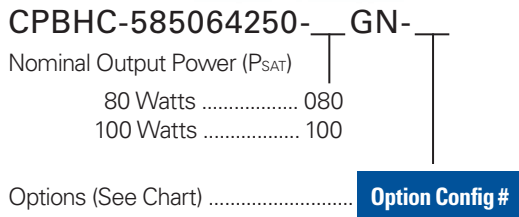
## Compact C-Band GaN BUC 80/100 W

### Specifications

Parameter	Notes	80 W	100 W
<i>RF Performance</i>			
RF Frequency Range	Available in/switched	5.85-6.425 GHz (other frequency options available)	
IF Frequency Range	Available in/switched	950-1525 MHz	
LO Frequency	Switchable	4.9 GHz	
Conversion		Single-conversion, non-inverting	
Rated Power		49 dBm	50 dBm
Conversion Gain		72 dB min., 75 dB typ.	
Gain Flatness	Over full band	±1 dB typ. ±1.5 dB max.	
	Over any 40 MHz segment	±0.5 dB max.	
Gain Stability	Over full temperature range	±1.5 dB	
Gain Control	Dynamic range	20 dB min.	
External Reference Frequency	Multiplexed with IF In	10 MHz	
Ext. Ref. Required Phase Noise	dBc/Hz @ Offset	130 dBc/Hz @ 100 Hz -140 dBc/Hz @ 1 kHz -150 dBc/Hz @ 10 kHz -155 dBc/Hz @ 100 kHz	
Upconverter Phase Noise	dBc/Hz @ Offset	-70 dBc/Hz @ 100 Hz -80 dBc/Hz @ 1 kHz -90 dBc/Hz @ 10 kHz -95 dBc/Hz @ 100 kHz -115 dBc/Hz @ 1 MHz	
Linearity	2-tone IMD	-25 dBc at 3 dB total power back off from rated power 30 dBc at 6 dB total backoff from rated power	
	Spectral Regrowth	-30 dBc for QPSK at 1.5x symbol rate at 2 dB back off from rated power	
Output Spurious	Non-signal-related	-60 dBc	
	Signal-related	-55 dBc	
<i>Power</i>			
48 Vdc Range / 28 Vdc Range (option)		36-72 Vdc Isolated	
AC Voltage Range	Optional	90-265 VAC 50-60 Hz; Auto-Ranging	
Power Consumption	DC Power In	360 W at rated power; 320 W at 3 dB backoff	400 W at rated power; 350 W at 3 dB backoff
	AC Power In	280 W at rated power; 240 W at 3 dB backoff	420 W at rated power; 380 W at 3 dB backoff
<i>Mechanical</i>			
Size		6.5" x 6.5" x 4" (10.5 long with WG circulator)	
Weight		6.0 lbs; 7.5 lbs with WG circulator	
Cooling		Forced Air	
Operating Temperature		-40 °C to +55 °C	
Relative Humidity		Up to 100% Condensing	
<i>Interfaces</i>			
IF Input Connector		Type N Female	
RF Output Connector		CPR137 Grooved	
AC Power In		MS3112E10-8P	
RS-485/RS-232/Ethernet/SNMP		MS3112E14-19S	

## Compact C-Band GaN BUC 80/100 W

### Part Number/Ordering Information



PS Type	Option	PS Type (3 pin)		M&C		Reference			RF Output Interface		Option Config #		
		DC Via IFL	Transmit Key Line	DC Via Line	AC	No	Full Set	Int	Auto	Ext		WG	N-type
					X		X			X	X		0
				X			X			X	X		1
				X			X	X				X	2
				X			X	X			X		3
				X			X	X			X		4
X							X			X	X		5
X							X	X			X		6
					X		X			X		X	7
				X			X			X		X	8
					X		X	X				X	9
				X			X			X	X		10
				X			X		X		X		11
					X		X		X		X		12
	X			X (6pin)			X			X	X		13
	X				X (6pin)		X			X	X		14
X	X						X			X	X		15

**Example:**

CPBHC-58506425-080GN-0: Compact BUC/SSPB, Outdoor, C-Band, 5.85-6.425 GHz Output, 80 W ( $P_{SAT}$ ), GaN, with Option Configuration 0: 90-265 VAC Power, Full Set M&C, External Reference, and CPR137 Waveguide Output.

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## Optional Remote Monitor & Control Panel (RCPR)

The RCPR is a 1U, indoor, rack-mount remote panel designed to control the key functions of the amplifier. The RCPR enables remote, real-time monitoring and operation of any single SSPA, making it ideal for installations where the SSPA is located in an inaccessible or inconvenient location. It features extensive monitor and control via front panel, serial ports EIA232/EIA485, and Ethernet TCP/IP interface with SNMP support. The RCPR is available in single-thread, 1:1 Redundant and 1:2 Redundant models.

### Key Features

- Serial port RS-485 link uplink and downlink telemetry
- User friendly front panel with menu driven display
- Front panel manual attenuator
- Full featured M&C interface via RS-232 serial console, packet protocol RS-485 and user friendly HTTP based GUI and SNMP:

### Part Number/Ordering Information

RCPR-XXXX	Single-Thread Amplifier
RCPR-11XX	1:1 Redundant Amplifier System
RCPR-11AL	1:1 Air/Load Redundant Amplifier System
RCPR-12XX	1:2 Redundant Amplifier System
RCPR-12AL	1:2 Air/Load Redundant Amplifier System

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