

Compact C-Band BUC

20/40 W



Lightweight (6 lbs.) and compact (6.5" x 6.5" x 4.5")

Up to 40 W $P_{1\text{ dB}}$ / 50 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 BUC / SSPA series are revolutionary in size, weight and power density and provide superior performance in an extremely compact package. Weighing only 6 pounds, the feature-rich BUC is exceptionally powerful for its size, with up to 50 W P_{SAT} . The built-in AC power supply provides a simple and inexpensive wall-pluggable solution. The 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 the ideal candidate for portable, mobile and VSAT on-the-move applications. In addition, its small size and weight allows direct feed horn mounting, which makes it the most economical solution for fixed VSAT applications.

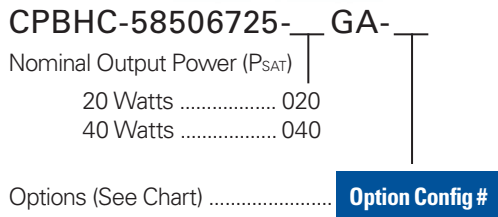
Key Features

- **Superior RF Performance:**
 - Phase noise 10 dB better than IESS308/309
 - $P_{1\text{ dB}}$ of 46 dBm min.
 - Spurious below -60 dBc
 - Wide dynamic range of gain control
- Integrated L-Band to C-Band up converter
- Available also in Super-Extended, Palapa and Insat C-Band Frequency Options.
- Internal 10 MHz reference clock (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

Specifications

Parameter	Notes	20 W	40 W
<i>RF Performance</i>			
RF Frequency Range	Available in/switched	5.85-6.425 GHz / 5.850-6.725 GHz	
IF Frequency Range	Available in/switched	950-1525 MHz / 950-1825 MHz	
LO Frequency		4.9 GHz	
Conversion		Single-conversion, non-inverting	
Output Power	At 1 dB compression point	43 dBm min.	46 dBm min.
Saturated Power		44 dBm typ.	47 dBm typ.
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 P _{1dB}	
	Spectral Regrowth	-30 dBc for QPSK at 1.5x symbol rate at 2 dB back off from P _{1dB}	
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 / AC Power In	140 W / 150 W	220 W / 230 W
<i>Mechanical</i>			
Size		6.5" x 6.5" x 4.5"	
Weight		6.0 lbs	
Cooling		Forced Air	
Operating Temperature		-40 °C to +60 °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	

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-58506725-040GA-0: Compact BUC/SSPB, Outdoor, C-Band, 5.85-6.725 GHz Output, 40 W (P_{SAT}), 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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