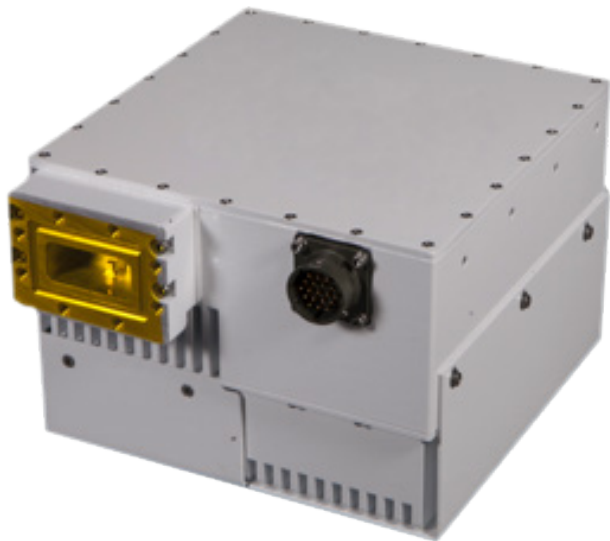


# Compact C-Band BUC

*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  $P_{\text{SAT}}$

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  $P_{\text{SAT}}$ . 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.

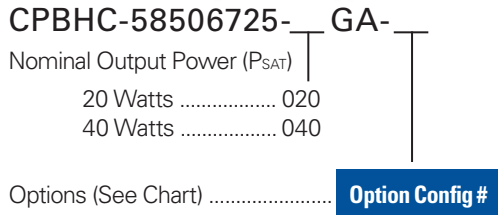
## Key Features

- **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<br>-140 dBc/Hz @ 1 kHz<br>-150 dBc/Hz @ 10 kHz<br>-155 dBc/Hz @ 100 kHz                     |               |
| Upconverter Phase Noise              | dBc/Hz @ Offset             | -70 dBc/Hz @ 100 Hz<br>-80 dBc/Hz @ 1 kHz<br>-90 dBc/Hz @ 10 kHz<br>-95 dBc/Hz @ 100 kHz<br>-115 dBc/Hz @ 1 MHz |               |
| Linearity                            | 2-tone IMD                  | -25 dBc at 3 dB total power back off from P <sub>1dB</sub>                                                      |               |
|                                      | Spectral Regrowth           | -30 dBc for QPSK at 1.5x symbol rate<br>at 2 dB back off from P <sub>1dB</sub>                                  |               |
| 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<sub>SAT</sub>), with Option Configuration 0: 90-265 VAC Power, Full Set M&C, External Reference, and CPR137 Waveguide Output.

# Compact C-Band BUC 20/40 W

## 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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