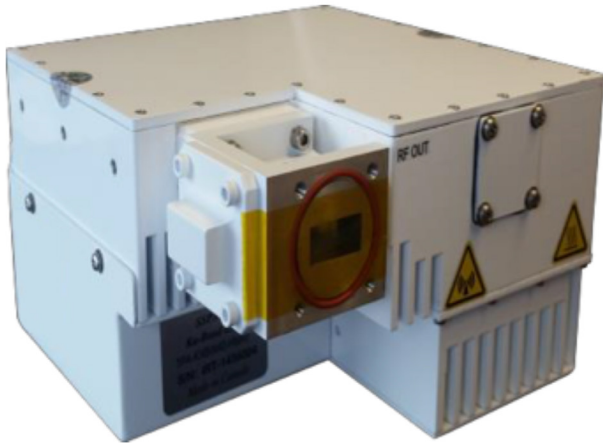


Compact Ku-Band GaN BUC

40/50/60 W



Lightweight (8.8 lbs) and compact (6.5" x 7.6" x 4.2")

Low power – 290 W power consumption at 60 W output

Superior RF performance

Optional remote monitor and control panel

Overview

General Dynamics SATCOM Technologies' compact Ku-Band GaN BuC / SSPA series are revolutionary in size, weight and power density and offer superior performance in an extremely compact package. Weighing only 8.8 pounds, our feature-rich GaN BUC is exceptionally powerful for its size: up to 60 W P_{SAT} . The built-in AC power supply provides the customer with the simplest and least expensive plug-into-the wall 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 remarkably small size and low power consumption results in better heat extraction that leads to overall system size and cost reduction making it the ideal candidate for portable, mobile and VSAT on-the-move applications. Its small size and weight allows direct feed horn mounting, which makes it a most economical solution for fixed VSAT applications.

Features

- Up to 60 W P_{SAT} output power
- 200 W power consumption at 3 dB back off
- Superior RF performance:
 - Phase noise 6 dB better than IESS308/309
 - High Linearity
 - Spurious below -60 dBc
 - Wide dynamic range of Gain Control
- Switchable LO option—Standard and extended Ku- Band in one unit
- RF overdrive protection
- Internal/Autosense 10 MHz reference options
- Output power measurement—True RMS detector (optional)
- Built-in waveguide output circulator provides full output VSWR protection
- Configuration via RS-232 serial console, packet protocol RS-485 and user-friendly Ethernet HTTP-based GUI and SNMP support
- 48 VDC isolated power supply
- Built-in auto-ranging AC power supply (optional)
- Redundant ready with no external controller
- Field upgradable software
- Antenna mounting kit (optional)
- Status LED

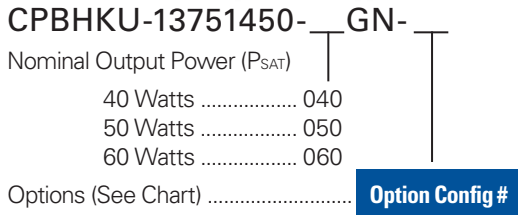
Compact Ku-Band GaN BUC 40/50/60 W

Specifications

Parameter	Notes	40 W	50 W	60 W
<i>RF Performance</i>				
RF Frequency Range	Available in/switched	14-14.5 GHz / 13.75-14.5 GHz		
IF Frequency Range	Available in/switched	950-1450 MHz / 950-1700 MHz		
LO Frequency	Switchable	13.05 GHz / 12.8 GHz		
Conversion		Single-conversion, non-inverting		
Saturated Power		46 dBm typ.	47 dBm typ.	48 dBm typ.
Linear Power		43 dBm min.	44 dBm min.	45 dBm min.
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 power back off from rated power		
	Spectral Regrowth	-30 dBc for QPSK at 1.5x symbol rate at 3 dB back off from rated power		
Noise Power Density	Transmit Band	-85 dBm/Hz max.		
	Receive Band	-140 dBm/Hz max.		
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 / 24-75 Vdc Isolated (option)		
AC Voltage Range	Optional	90-265 VAC 50-60 Hz; Auto-Ranging		
Power Consumption, DC Power In	@ PSAT / PLIN	225 W / 160 W typ.	280 W / 220 W typ.	290 W / 230 W typ.
Power Consumption, AC Power In	@ PSAT / PLIN	250 W / 180 W typ.	260 W / 200 W typ.	270 W / 210 W typ.
<i>Mechanical</i>				
Size		6.5" x 7.6" x 4.2"		
Weight		8.8 lb		
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		WR75 Grooved		
AC Power In		MS3112E10-8P		
RS-485/RS-232/Ethernet/SNMP		MS3112E14-19S		

Compact Ku-Band GaN BUC 40/50/60 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
					X					X		0
				X						X		1
				X			X				X	2
				X			X			X		3
				X			X			X		4
X							X			X		5
X							X	X		X		6
					X					X	X	7
				X						X	X	8
					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:

CPBHKU-13751450-040GN-0: Compact BUC/SSPB, Outdoor, Ku-Band, 13.75-14.50 GHz Output, 40 W (P_{SAT}), GaN, with Option Configuration 0: 90-265 VAC Power, Full Set M&C, External Reference, and WR75 Waveguide Output.

Compact Ku-Band GaN BUC 40/50/60 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

GENERAL DYNAMICS
SATCOM Technologies

customer@gd-ms.com • www.gdsatcom.com • Phone: +1-770-689-2040