SPACEBRIDGE
ALL THINGS CONNECTED

SBB0050C 50W C-band Outdoor Gen III GaN BUC

This compact yet powerful 50W outdoor Gen III GaN BUC harnesses advanced technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220 VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 48 VDC power feed



In addition to its industry-leading performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require environmentally controlled shelters, reducing ongoing operating (OPEX) and maintenance costs, while eliminating the need for nearby shelter construction

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Technical Specifications

MODELS			
RF CHARACTERISTICS	**SBB0050CS**	**SBB0050CX**	**SBB0050CI**
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range	950-1525 MHz	950-1825 MHz	975-1275 MHz
LO Frequency	4.9 GHz	4.9 GHz	5.750 GHz

RF CHARACTERISTICS	
P_{sat} , Saturated Output Power	47 dBm / 50 W min
P_{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	45 dBm / 32 W min
P_{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	44 dBm / 25W min
Small Signal Gain	70 dB typ
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.4 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max
Gain stability over 24h at constant drive and temperature	±0.5 dB
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power @ P_{Lin2C}
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level	0 dBm, ±5 dB
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max (not present if SSPA)	-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz
Integrated Phase Noise	1° RMS max
Output Spurious: In-band Out-of-band	< -13 dBm Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P_{Lin2C}	< -60 dBc
AM/PM Conversion	2.0 °/dB max at P_{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 145 dBm/Hz
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR137 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature Operating Storage	-40 °C to +55 °C -55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P_{Sat}	400 W
Power Consumption at P_{Lin2C}	340 W

MECHANICAL	
Dimensions (LxWxH)	9" x 5" x 6.5" 229 x 127 x 165 mm
Weight	10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available

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