SPACEBRIDGE
ALL THINGS CONNECTED

SBS0500C/SBB0500C* 500W C-band Outdoor Multicarrier Gen III GaN SSPA/BUC

This compact yet powerful 500W outdoor SSPA/BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as multicarrier, multi-transponder DTH contribution or distribution, CBH, HTS VSAT Hub

Key Features

- Built-in 2:1 and 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- HPA or BUC
- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Phase Combining/Fail Safe two units to achieve 700W / 500W P_{sat}
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 2U Rack mountable RCP for Phase Combining application and 2:1 redundancy



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 applications, specifically designed for outdoor installations, and because its ultra-linear performance offers the capability to utilize 256 APSK modulation on small (1.8m) antennas for contribution, as well as multicarrier, multi-transponder use for DTH distribution and data transmission, such as HTS/UHTS VSAT Hubs/UT

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, or 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

* SSPA: SBS0500C; SSPB (BUC): SBB0500C

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Technical Specifications

MODELS			
	SBS0500CS/SBB0500CS	**SBS0500CX/SBB0500CX**	**SBB0500CI/SBB0500CI**
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	1275-1575 MHz
LO Frequency*	4.9 GHz	4.9 GHz	5.45 GHz

RF CHARACTERISTICS	
P_{Sat} , Rated Output Power	57 dBm / 500 W min
P_{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	55 dBm / 316 W min
P_{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	54 dBm / 250 W min
Small Signal Gain	75 dB typ
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.5 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 2.0 dB max
Gain stability over 24h at constant drive and temperature	0.5 dB peak-to-peak
Linearity: IMD3 Measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P_{Lin2C} -30 dBc at 6 dB total power back-off from P_{Sat}
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; -81 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -102 dBc/Hz @ 100 kHz; -112 dBc/Hz @ 1 MHz;
Integrated Phase Noise	1° RMS max
Output Spurious: In-band Out-of-band	< -60 dBc 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 < - 155 dBm/Hz
Output RF Power Monitor	-50 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, threaded 10-32 UNF
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In	MS3102R14S-7P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485, Form-C	MS3112E14-19P
Redundancy	MS3112E14-19S

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	196-265 VAC
Frequency Range	47-63 Hz
Power Consumption at P_{Sat}	2250 W
Power Consumption at P_{Lin2C}	1950 W

MECHANICAL	
Dimensions (LxWxH)	20.00" x 15.00" x 5.48" 508 x 381 x 139 mm
Weight	43.3 lb (19.7 kg)

*Parameters marked with asterisk related to the BUC option

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