SPACEBRIDGE
ALL THINGS CONNECTED

SBS0400K/SBB0400K* 400W Appendix 30B-15 and Kx-band Outdoor Multicarrier Gen III GaN SSPA/BUC

This compact yet powerful 400W 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
- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands
- Phase Combining/Fail Safe two units to achieve 700W / 400W 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 exceptional 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

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 air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while often eliminating the need for nearby shelter construction

* SSPA: SBS0400K; SSPB (BUC): SBB0400K

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Technical Specifications

MODELS		
	SBB0400KL	**SBB0400KX**
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950-1525 MHz	950 - 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz**

RF CHARACTERISTICS	
P_{Sat} , Rated Output Power	56 dBm / 400 W min
P_{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	54 dBm / 250 W min
P_{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	53 dBm / 200 W min
Small Signal Gain	80 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; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 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	WR75 grooved
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}	2500 W
Power Consumption at P_{Lin2C}	2150 W

MECHANICAL		
Dimensions (LxWxH)	28.63 x 16.00 x 6.50 in	727.2 x 406.4 x 164.7 mm
Weight	99 lb (45 kg)	

*Parameters marked with asterisk related to the BUC option

**Switchable Local Oscillator