

This compact yet powerful 1000W 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 1750W / 1000W  $P_{sat}$
- 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: SBS1000K; SSPB (BUC): SBB1000K

# SBS1000K/SBB1000K 1000W Appendix 30B-15 and Kx-band Outdoor Multicarrier Gen III GaN SSPA/BUC

## Technical Specifications

	MODELS	
	SBS1000KL/SBB1000KL	SBS1000KX/SBB1000KX
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 <sub>Sat</sub> , Rated Output Power	60 dBm / 1000 W min
P <sub>Lin1C</sub> , Linear Power as defined by MIL-STD-188-164C, 1 carrier	58 dBm / 630 W min
P <sub>Lin2C</sub> , Linear Power as defined by MIL-STD-188-164C, 2 carriers	57 dBm / 500 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 <sub>Lin2C</sub>
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; -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;
Up-Converter SSB Phase Noise, max* (not present if SSPA)	
Integrated Phase Noise	1° RMS max < -60 dBc
Output Spurious: In-band Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P <sub>Lin2C</sub>	< -60 dBc
AM/PM Conversion	2.0°/dB max at P <sub>Lin1C</sub>
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	MS3102E20-51P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S

POWER	
AC Voltage Range	180-265 VAC
Frequency Range	47-63 Hz
Power Consumption at P <sub>Sat</sub>	6500 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	
Operating	-40°C to +55°C
Storage	-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

MECHANICAL	
Dimensions (LxWxH)	28.6 x 25 x 6.5 in 727.2 x 635.0 x 164.7 mm
Weight	120 lb (54 kg)

\* Related to the BUC option  
\*\* Selectable via M&C interface