

This compact yet powerful 40W outdoor BUC harnesses advanced Gen III GaN technology, delivering industry-leading broadband RF performance, exceptional efficiency, outstanding linearity, and long-term 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

- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) 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

MODELS		
RF CHARACTERISTICS	SBB0040KL	SBB0040KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range	950-1450 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	46 dBm / 40 W	
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	44 dBm / 25 W	
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	43 dBm / 20 W	
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 max	
Linearity: IMD3, measured with 2 equal CW carriers 5 MHz apart	-25 dBc max 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; -140 dBc/Hz @ 1 kHz; -165 dBc/Hz @ 100 kHz;	-125 dBc/Hz @ 100 Hz; -155 dBc/Hz @ 10 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; -115 dBc/Hz @ 1 MHz	
Up-Converter SSB Phase Noise, max		
Integrated Phase Noise	1° RMS max	
Output Spurious: In-band	< -13 dBm	
Out-of-band	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	WR75 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 Connector	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)

POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P _{Sat}	300 W
Power Consumption at P _{Lin2C}	250 W

ENVIRONMENTAL	
Cooling system	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	5°C/1000 m
Factor)	
Ingress Protection	IP67

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
** Switchable Local Oscillator