SPACEBRIDGE
ALL THINGS CONNECTED

100W X-band Outdoor MIL-STD188-164C BUC

This compact and robust 100W Outdoor BUC, powered by cutting-edge third-generation GaN technology, offers exceptional performance with its lightweight design, low power consumption, and superior linearity. Engineered for optimal efficiency and reliability, it is perfectly suited for SCOTP and SCOTM applications, including mobile and marine environments

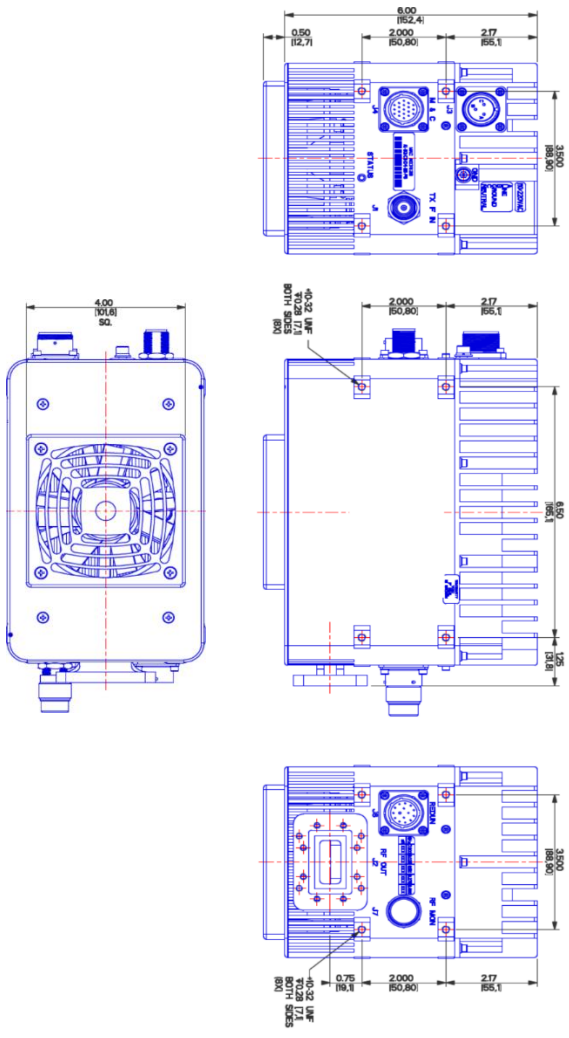
The device offers a wide range of monitoring and control capabilities, all easily accessible through Ethernet, serial RS232 and RS485 interfaces and dry contacts. It's the best-in-class solution for any demanding mobile or fixed applications designed for all-outdoor installation. Mounted at the short distance from antenna feed, usually on the antenna boom, this unit significantly improves the Link Budget.

Key Features

- MIL-STD-188-164C compliant
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Power Meter
- Web Interface, Telnet, SNMP support
- Output VSWR Protection
- Thermal shutdown

Options

- Internal High-stability 10MHz Reference
- White or 383 “CARC” Olive Green paint
- SNMP or REST API
- Handheld Terminal
- Output Overdrive Protection



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RF CHARACTERISTICS	
P_{Sat}, Rated Output Power	50 dBm / 100 W min
$P_{lin\,1C}$, Linear Power as defined by MIL-STD-188-164C, 1 carrier	48dBm / 63.1 W min
$P_{Lin\,2C}$, Linear Power as defined by MIL-STD-188-164C, 2 carriers	47 dBm / 50 W min
Gain	65 dB min, 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 range	± 1.5 dB max
Input Level without damage	Up to 0dBm
RF Frequency range	7.9 –8.4 GHz
L-band Frequency Range	950-1450 MHz
LO Frequency	6.950 GHz
External Reference Frequency	10 MHz sinusoid, multiplexed with L-band (L-band 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;
BUC SSB Phase Noise, max	-50 dBc/Hz @ 10 Hz; -63 dBc/Hz @ 100 Hz; -73 dBc/Hz @ 1 kHz; -83 dBc/Hz @ 10 kHz; -93 dBc/Hz @ 100 kHz; -105 dBc/Hz @ 1 MHz
Integrated Double-Sided Phase Noise	2° RMS max
Output Spurious: In-band Out-of-band	< -60 dBc MIL-STD-188-164C
Harmonics at P_{Lin1}	< -60 dBc
Linearity: IMD measured with 2 equal tones 5 MHz and apart	< -24 dBc at P_{Lin2} < -30 dBc at 6 dB total power back-off from P_{Sat}
Spectral Regrowth at P_{Lin1}	< -30 dBc for QPSK/OQPSK/8PSK MODCODs at 1.0xSymbol Rate away with 35% Roll-off
Output Noise Power Density	Tx < - 80 dBm/Hz Rx <- 145 dBm/Hz (with external TRF and RRF)

*Parameters marked with asterisk related to the BUC option

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MODEL	
CHARACTERISTICS	**SBB00100X**
RF Frequency range	7.9 – 8.4 GHz
IF Frequency range*	950 - 1450 MHz
LO Frequency*	6.950 GHz

INTERFACES	
IF Input connector	50 Ω, N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR112, grooved
Output VSWR	1.5:1 max
RF Sample	50 Ω, N-type (F)
AC Power In	MS3112E12-3P
M&C Interfaces: Ethernet, Serial RS-242 & RS-485	MS3100A18-19P
Redundancy	PT02E14-15P

POWER	
DC Voltage Range	190-260 VAC
	47Hz-63 Hz
Power Consumption at P_{sat}	410 W
Power Consumption at P_{Lin2C}	355 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Operating Temperature	-40°C to +55°C
Storage Temperature	-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/1000m
Environmental Rating (Ingress Protection)	IP67

MECHANICAL	
Dimensions (LxWxH)	8”x 5”x 6“ (200 x 125 x 150 mm)
Weight	10 lb (4.5 kg)

*Parameters marked with asterisk related to the BUC option