



# 80W X-BAND MATCHBOX BUC

MBB-XDS080



## FIELD-PROVEN PERFORMANCE

Wavestream's X-band Matchbox Block Upconverter (BUC) offers unmatched efficiency and performance suitable for mobile SATCOM, flyaway and VSAT systems. The X-band Matchbox BUC incorporates

Wavestream's next generation Spatial advantEdge™ technology to provide higher output power in smaller, lighter weight packages that are more reliable and use less energy. The X-band Matchbox BUC is field proven to withstand the most extreme environments. Every unit is thoroughly tested to guarantee performance over the full frequency band and over the full temperature range.

## FEATURES

- Rugged, Compact 11-lb Package
- Feed-mount for Easy Integration
- Optional Integrated Filter and Feed Assemblies

## WAVESTREAM ADVANTAGES

Wavestream products are biased for Class AB operation, drawing less power when backed off to help save valuable energy resources. They generate less heat, ensuring a higher Mean Time Between Failures (MTBF) for greater reliability and lower lifecycle maintenance costs.

The X-band Matchbox BUC's modular design provides the flexibility needed to integrate different frequency bands into a system design. The X-band Matchbox BUC has a compatible form, fit and function footprint as Wavestream's 12W Ka-band and 40W Ku-band Matchbox BUCs, providing a convenient way to integrate a different band without changing the terminal or altering the hardware.

## BENEFITS

- **Higher output power with less energy usage**
- **Proven reliability and efficiency**
- **Reduced lifecycle maintenance costs**
- **Compact footprint to meet critical space and weight limitations**



## TECHNICAL SPECIFICATIONS

### RF SPECIFICATIONS

**Transmit Frequency:**

7.9 - 8.4 GHz

**IF Frequency:** 950 - 1450 MHz

**Frequency Reference (10 MHz**

**on IF):** 0 dBm ± 5 dB

**Small Signal Gain:**

62 dB nominal

**Gain Adjustment:**

30 dB, 0.25 dB steps

**Gain Variation:**

- Over frequency at fixed temp:  
3 dB p-p over 500 MHz

- Over temp at fixed frequency:  
3 dB p-p over operating range

**- Saturated Output Power:**

49 dBm

**- Linear Output Power:**

47 dBm (Single-Carrier per  
MIL-STD-188-164B)

- **Spectral Regrowth** (For QPSK  
at 1.5x and OQPSK at 1.0x  
rate offset at 2 dB back-off  
from Saturated Output Power):  
-30dBc

- **Linear Output Power:** 46  
dBm (Multi-Carrier per MIL-  
STD-188-164B)

- **Intermodulation** (Third order  
intermodulation product  
relative to combined power  
of two carriers at 3 dB  
total power back-off from  
Saturated Output Power):  
-25 dBc

- **AM / PM Conversion** (at  
Linear Output Power):  
2 deg/dB

**Phase Noise:**

- 10 Hz: -32 dBc/Hz
- 100 Hz: -62 dBc/Hz
- 1 kHz: -72 dBc/Hz
- 10 kHz: -82 dBc/Hz
- 100 kHz: -92 dBc/Hz
- 1 MHz: -102 dBc/Hz
- 10 MHz: -112 dBc/Hz

**Noise Power Density**

**Transmit:**  
-76 dBm/Hz (maximum)

**Noise Power Density Receive:**  
-76 dBm/Hz (maximum)

**Output Spurious:** -60 dBc

### INTERFACES

**IF Input Connector:**

Type N Female

**IF Input Impedance:** 50 Ohms

**IF Input VSWR:**

1.7:1 maximum

**RF Output Connector:**

WR-112, non-grooved

**RF Output VSWR:**

1.25:1 maximum

**DC and M&C Connector:**

12-pin MIL Circular

**M&C:**

Serial RS-485 (SA-bus), Step  
Attenuator

### POWER

**DC Power:** 28V or 48V

**DC Power Draw:**

(typical) (at Linear Output  
Power): 360W

### PHYSICAL

**Size:**

11" L x 5.4" W x 4.4" H  
(28 x 13.7 x 11.1 cm)

**Weight:** 11 lbs (5 kg)

**Operating Temperature**

**(Ambient Air):**

-40° F to +140° F  
(-40° C to +60° C)

**Relative Humidity:**

100% Condensing

**Shock & Vibration:**

MIL-STD-810E, method 514-4

**Altitude:**

10,000 ft above sea level  
(operating)

### OPTIONS

**External Power Supply:**

AC-DC Converter, 100-240 VAC

**M&C:** RS-232

Ethernet Option (TCP/IP,  
WebGUI, SNMP)

### BASE MODEL

MBB-XDS080