



# MATCHBOX 50W KA-WIDEBAND BUC

WBAN-050G01-0005

## FIELD-PROVEN PERFORMANCE

Wavestream's Matchbox 50W Ka-Wideband Deck Block Up-Converter (BUC) is the next generation of the world's most widely deployed solid state amplifier built at this power level. Wavestream enables a full 25 Watts of linear power into the feed with a rugged unit that can be mounted directly onto the feed arm of medium aperture antennas.

The 50W Ka-Wideband Deck BUC is designed to operate in the most extreme environments, and offers field-proven reliability to support the most demanding satellite communications applications. The 50W Ka-Wideband Deck BUC includes L-band to Ka-band upconversion, serial / Ethernet monitor and control, adjustable attenuation and forward and reverse output power monitoring.

Weighing just 13.2 pounds, this compact unit provides the same power as its previous generation but with 52% less volume and a 60% reduction in weight.

## FEATURES

- 25W Linear Power for Higher Data Rate Capability
- Rugged; Mounts on Feed for Simple Integration
- High Reliability
- Supports Multiple Commercial Ka Bands
- 52% decrease in volume
- 60% decrease in weight

## WAVESTREAM ADVANTAGES

What sets Wavestream products apart from traditional amplifier solutions is the innovative Spatial advantEdge™ technology. This unique patented technology allows generation of higher output power in lighter, more compact product packages that use less energy and are more reliable. 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.

## BENEFITS

- Operate on GEO, MEO, and LEO Ka-Band Satellites
- Field proven reliability and efficiency
- Higher output power w/ less energy usage
- Reduced lifecycle maintenance costs



## TECHNICAL SPECIFICATIONS

### RF SPECIFICATIONS

**Transmit Frequency:**

27.5-28.5 GHz  
28.25-29.25 GHz  
29.0 GHz-30.0 GHz

**IF Frequency:**

950 MHz - 1950 MHz

**Frequency Reference**

(10 MHz on IF): 0 dBm ± 5 dB

**Small Signal Gain:**

62.5 dB ± 2.5 dB (nominal)

**Gain Adjustment:**

30 dB in 0.25 dB steps  
(nominal)

**Gain Variation:**

- Over frequency at fixed temp:  
3 dB p-p (max) over  
1000 MHz
- Over temp at fixed frequency:  
3 dB p-p (max) over  
operating range

**Saturated Output Power:**

47 dBm (nominal)

**Linear Output Power, defined  
by MIL-STD-188-164:**

- Multi-carrier  
(Intermodulation): 44 dBm
- Single-carrier (Spectral  
Regrowth): 44 dBm

**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:**

-75 dBm/Hz (maximum)

**Noise Power Density Receive:**

-156 dBm/Hz (maximum)

**Output Spurious:** -60 dBc

### INTERFACES

**IF Input Connector:**

Type N Female

**IF Input Impedance:** 50 Ohms**IF Input VSWR:**

1.67:1 maximum

**RF Output Connector:**

WR-28

**RF Output VSWR:**

1.25:1 maximum

**DC Connector:**

ITT Cannon

CIR030FP - 20A - 9P - F80 - 20

**M&C Connector:**

Amphenol #360011

**M&C Protocol:**

Serial RS-485 (SA-bus)  
or Ethernet (SNMP)

### POWER

**DC Power:**

20 - 56 VDC

**DC Power Draw:**

360W maximum (at Linear  
Output Power)

### PHYSICAL

**Size:**

12.0" L x 7.0" W x 6.5" H  
(30.5 x 17.8 x 16.5 cm)

**Weight:** 13.2 lbs (6 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)

### BASE MODEL

WBAN-050G01-0005

## ABOUT WAVESTREAM

Wavestream sets the standard in the design and manufacture of next generation high power solid state amplifiers. Wavestream's Family of Ka, Ku and X-band Solid State Power Amplifiers (SSPAs), Block Upconverters (BUCs) and transceivers provide systems integrators with field-proven, high performance solutions designed for ground mobile and fixed, gateway and airborne satellite communication systems worldwide.

These items are subject to the Export Administration Regulations (EAR), 15 C.F.R. Parts 730-774, and may not be exported or transferred to any non-U.S. person, except as authorized by the U. S. Department of Commerce.

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