25W Ka-Band Matchbox BUC

WAVESTREAM MBB-KAM025

Field-Proven Performance

Wavestream's Ka-band Matchbox Block Upconverter (BUC) leads the industry in linear power for a feedmount-ready package, to ensure maximum available power at the feed flange. The 25W Ka-band Matchbox BUC is compatible with Wavestream's Ku-band and X-band BUCs, providing a truly modular approach for multi-band capable mobile, flyaway and VSAT terminals.

Features

- 25W Ka-band Output in a Rugged 14-lb package
- Industry-leading Efficiency with DC Prime Power
- Lightweight Package Mounts on Feed Arm for Simple Integration

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

- 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:** 30.0 GHz - 31.0 GHz
- **IF Frequency:** 1000 - 2000 MHz
- **Frequency Reference (10 MHz on IF):** 0 dBm ±5 dB
- **Small Signal Gain:** 60 dB (nominal)
- **Gain Adjustment:** 30 dB in 0.25 dB steps (nominal)
- **Gain Variation:**
  - **Over frequency at fixed temp:**
    - 3.5 dB p-p over 1000 MHz
    - 2.5 dB p-p over any 120 MHz
    - 0.7 dB p-p over any 10 MHz
- **Saturated Output Power:** 44 dBm (nominal)
- **Linear Output Power, defined by MIL-STD-188-164 (for -40°C to +45°C):**
  - **Spectral Regrowth (for QPSK at 1.5x and OQPSK at 1.0x rate offset at -30dB down):** 41 dBm (derates to 40 dBm at +60°C)
- **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:** -65 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:** 2:1 maximum
- **RF Output Connector:** WR-28
- **RF Output VSWR:** 1.25:1 maximum
- **RF Power Detector:** Forward, Reflected
- **RF Sample Port Connector:** K-type Female
- **RF Sample Port:** -65 dBc
- **DC Connector and M&C Connector:** 12-pin MIL Circular
- **M&C Protocol:** Serial RS-485 (SA-bus)

Power

- **DC Power:** 28V or 48V
- **DC Power Draw:**
  - 360W (typical, at Linear Output Power)

Physical

- **Size:** 12.5" L x 5.5" W x 4.9" H (31.8 x 14.0 x 12.4 cm)
- **Weight:** 14 lbs (6.4 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**
- **M&C Protocol:** Serial RS-232, Ethernet (SNMP, TCP/IP, Web GUI)

Base Model

- **MBB-KAM025-xxxx**

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, X and C-band Solid State Power Amplifiers (SSPAs) and Block Upconverters (BUCs) provide systems integrators with field-proven, high performance solutions designed for mobile and fixed defense and broadcast satellite communication systems worldwide.

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