50W Ka-Band Grid BUC

WAVESTREAM JNB-KAM050

Field-Proven Performance

Wavestream's 50W Ka-band Grid Block Upconverter (BUC) is the smallest, lightest and most efficient solid state amplifier built at this power level. Wavestream enables a full 25 Watts of linear power into the feed by packing it into a compact, rugged unit that can be mounted directly onto the feed arm of medium aperture antennas.

The 50W Ka-band Grid 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-band Grid BUC includes L-band to Ka-band upconversion, serial monitor and control, adjustable attenuation and forward and reverse output power monitoring.

Features

- 25W Linear Power for Higher Data Rate Capability
- Rugged, Lightweight Package Mounts on Feed Arm for Simple Integration
- High Reliability with 70,000 hr Mean Time Between Failure (MTBF) Lowers Lifecycle Costs

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 effi ciency
- Reduced lifecycle maintenance costs
- Compact footprint to meet critical space and weight limitations

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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:** 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 over 1000 MHz
  - **Over temp at fixed frequency:** 3 dB p-p over operating range
- **Saturated Output Power:** 47 dBm (nominal)
- **Linear Output Power, defined by MIL-STD-188-164 (for -40°C to +45°C):**
  - **Intermodulation (Third order intermodulation product relative to combined power of two carriers at 3 dB total power back-off from Saturated Output Power):** 44 dBm
  - **Spectral Regrowth (for QPSK at 1.5x and OQPSK at 1.0x rate offset at -30 dB down):** 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:** -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
- **AC Connector:** Amphenol #C016 20C003 100 12
- **M&C Connector:** Amphenol #360011
- **M&C Protocol:** Serial RS-485 (SA-bus) or Ethernet

Power

- **AC Power:** 90-264 VAC, 50-60 Hz
- **AC Power Draw:**
  - 600W (typical) (at Linear Output Power)

Physical

- **Size:** 12.5” L x 14.0” W x 6.5” H (31.8 x 35.6 x 16.5 cm)
- **Weight:** 32 lbs (14.5 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)

Base Model

- **JNB-KAM050-xxxx**

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