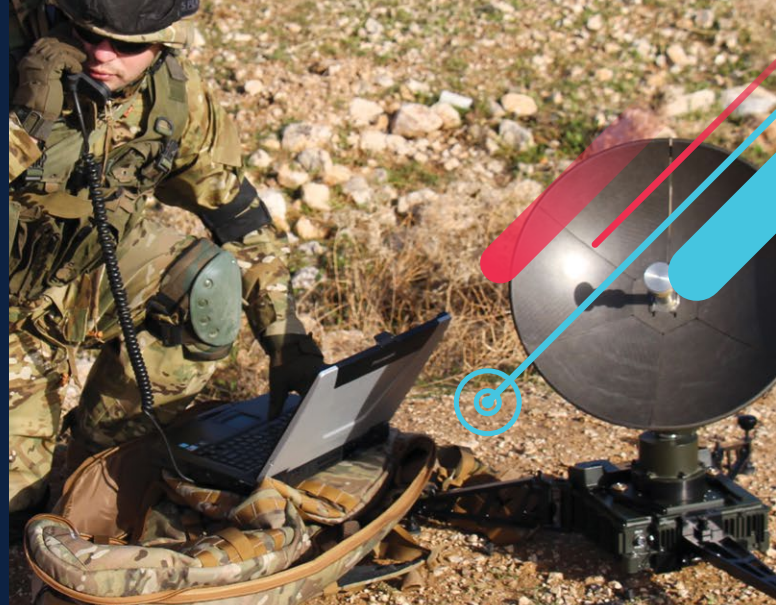




12W KA WIDEBAND MINI MATCHBOX BUC

MMB-KAD012



FIELD-PROVEN PERFORMANCE

Wavestream's 12W Ka Wideband GaN Block Upconverter (BUC) leads the Industry in linear power for a feedmount-ready package, ensuring the maximum available power at the feed flange.

This amplifier provides the ability to cover multiple frequency bands with a switchable upconverter in an Industry-leading small, rugged, outdoor package. The Ka Wideband BUC offers forward power monitoring, 30 dB of step attenuation, serial RS-422/485, RS-232, or optional Ethernet control interface, and DC input power.

FEATURES

- 12W Ka-band BUC providing >7W of linear power
- State of the art GaN Technology
- Ruggedized package weighing less than 3.5 lb (1.6 kg)
- Covers Commercial and Military Bands
- Dual-band upconverter allows coverage of up to two (2) 1000 MHz bands

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 space and weight limitations**



TECHNICAL SPECIFICATIONS

RF SPECIFICATIONS

Transmit Frequency:

29.0 GHz - 30.0 GHz

30.0 GHz - 31.0 GHz

IF Frequency:

950 MHz - 1950 MHz

1000 MHz - 2000 MHz

**Frequency Reference
(10 MHz on IF):**

0 dBm ± 5 dB

Small Signal Gain:

57 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:

41.5 dBm (nominal)

Linear Output Power:

> 38.5 dBm

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

- **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
- **Spectral Regrowth** (For QPSK at 1.5x and OQPSK at 1.0x rate offset at 3 dB back-off from Saturated Output Power): -30 dBc
- **AM/PM Conversion:**
2 deg/dB

Linear Output Power (ACPR):
40.0 dBm

- **ACPR of -20 dBc:**
(using QPSK symbol rate of 1.0 MSps, alpha 0.2)

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:**

-85 dBW/4 kHz (maximum)

Noise Power Density Receive:

-156 dBW/4 kHz (maximum)

Output Spurious: -60 dBc

INTERFACES

IF Input Connector:

Type N Female

IF Input Impedance: 50 Ohms

IF Input VSWR:

1.8:1 maximum

RF Output Connector: WR-28

RF Output VSWR:

1.3:1 maximum

**DC Connector and M&C
Connector:**

12-Pin MIL Circular or optional
Bias on IFL

M&C Protocol:

Serial RS-485 (SA-bus)
Ethernet

POWER

DC Power: 22V - 54V,
on 12-pin connector

DC Power Draw:

< 80W (typical)
(at Linear Output Power)

PHYSICAL

Size: 9" L x 3.6" W x 2.4" H
(22.9 x 9.1 x 6.1 cm)

Weight: 3.5 lbs (1.6 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)

OPTIONS

M&C Protocol: Serial RS-232,
Ethernet Optional
Bias on IFL

BASE MODEL

MMB-KAD012