

# 12W Ka Wideband Mini Matchbox BUC

MMB-KAD012  
WBAD-012G01

## Field-Proven Performance

Gilat'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 or RS-232.

## 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

## Gilat Advantages

What sets Gilat 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. Gilat 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



12W Ka Wideband Mini Matchbox BUC

## 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:**

&gt; 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:**

–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:**

1.5:1 maximum

(950 MHz – 1950 MHz)

2.0:1 maximum

(1000 MHz – 2000 MHz)

**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)

### Power

**DC Power:** 22V – 48V,

on 12-pin connector

**DC Power Draw:**

&lt; 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:**

WBAD-012G01: 3.5 lbs

(1.6 kg) maximum

MMB-KAD012: 4.0 lbs

(1.8 kg) maximum

**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&amp;C Protocol: Serial RS-232,

Contact factory for ethernet

options

### Base Models

MMB-KAD012

WBAD-012G01

## About Gilat Wavestream

Gilat 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.

## Contact Us

545 West Terrace Drive  
San Dimas, California 91773 USA

T. +1 909 599 9080

F. +1 909 599 9082

[www.wavestream.com](http://www.wavestream.com)[sales@wavestream.com](mailto:sales@wavestream.com)