



16W Ku-band Matchbox BUC

MBB-KUS016 // MBB-KUE016

Field-Proven Performance

Wavestream's Ku-band Matchbox Block Upconverter (BUC) offers unmatched efficiency and performance suitable for mobile SATCOM, flyaway and VSAT systems.

The Ku-band Matchbox BUC incorporates Wavestream's next generation Spatial advantEdge™ technology to provide higher output power in smaller, lighter weight packages that are more reliable and use less energy. Every unit is thoroughly tested to guarantee performance over the full frequency band and over the full temperature range.

Features

- Small, Lightweight Package
- Low Power Draw, High MTBF
- Flexible, Modular Feed-Mount Design
- Holds Specs Over Temperature and Frequency
- 1:1 Redundancy Kits Available

Wavestream Advantages

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 costs.

Optional 1:1 Redundancy Kits are available to provide an integrated solution for uninterrupted, reliable satellite transmissions. The 1:1 Redundancy Kit integrates the waveguide, switch and mounting hardware, and offers ease of installation and subsequent maintenance to accommodate outdoor mounts.



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:**
 - 14.0 GHz - 14.5 GHz (Standard)
 - 13.75 GHz - 14.5 GHz (Extended Band Option)
- **IF Frequency:**
 - 950 - 1450 MHz (Standard)
 - 950 - 1700 MHz (Extended Band Option)
- **Frequency Reference** (10 MHz on IF): 0 dBm \pm 5 dB
- **Small Signal Gain:** 70 dB nominal
- **Gain Adjustment:** 20 dB in 1 or 2 dB steps nominal
- **Gain Variation:**
 - **Over frequency at fixed temp:** 3 dB p-p over 500 MHz
 - **Over temp at fixed frequency:** 3 dB p-p over operating range
- **Saturated Output Power:** 42.5 dBm (nominal)
- **Rated Output Power** (P_{1dB}): 42 dBm
Linear Output Power defined as:
 - **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 2 dB back-off from Saturated Output Power): -30dBc
 - **AM / PM Conversion** (up to 2 dB below Rated Output Power): 2 deg/dB
- **Phase Noise:** Meets IESS-308
- **Noise Power Density Transmit:** -70 dBW/4 kHz (maximum)
- **Noise Power Density Receive:** -150 dBW/4 kHz (maximum)
- **Output Spurious:** -55 dBc

Interfaces

- **IF Input Connector:** Type N Female
- **IF Input Impedance:** 50 Ohms
- **IF Input VSWR:** 2:1 maximum
- **RF Output Connector:** WR-75
- **RF Output VSWR:** 1.25:1 maximum
- **DC and M&C Connector:** 12-pin or 32-pin MIL Circular
- **M&C:** Serial RS-485 (SA-bus), Forward Power Monitor, Step Attenuator

Power

- **DC Power:** 28VDC or 48VDC
- **DC Power Draw** (typical) (at Rated Output Power): 180W
- **DC Power Draw** (at 3 dB back-off from Rated Output Power): 140W

Physical

- **Size:** 10.3" L x 5.4" W x 4.5" H (26.2 x 13.7 x 11.4 cm)
- **Weight:** 10 lbs (4.5 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)

Options

- **External Power Supply:**
 - AC-DC Converter, 90-264 VAC
 - DC Power, IFL Option (48V only at 40W)
- **M&C:** Ethernet Option; RS-232

Base Model

- **MBB-KUS016-xxxx**
- **MBB-KUE016-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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EMC Directive compliance through certified independent laboratory testing.



25W Ku-band Matchbox BUC

MBB-KUS025 // MBB-KUE025

Field-Proven Performance

Wavestream's Ku-band Matchbox Block Upconverter (BUC) offers unmatched efficiency and performance suitable for mobile SATCOM, flyaway and VSAT systems.

The Ku-band Matchbox BUC incorporates Wavestream's next generation Spatial advantEdge™ technology to provide higher output power in smaller, lighter weight packages that are more reliable and use less energy. Every unit is thoroughly tested to guarantee performance over the full frequency band and over the full temperature range.

Features

- Small, Lightweight Package
- Low Power Draw, High MTBF
- Flexible, Modular Feed-Mount Design
- Holds Specs Over Temperature and Frequency
- 1:1 Redundancy Kits Available

Wavestream Advantages

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 costs.

Optional 1:1 Redundancy Kits are available to provide an integrated solution for uninterrupted, reliable satellite transmissions. The 1:1 Redundancy Kit integrates the waveguide, switch and mounting hardware, and offers ease of installation and subsequent maintenance to accommodate outdoor mounts.



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:**
 - 14.0 GHz - 14.5 GHz (Standard)
 - 13.75 GHz - 14.5 GHz (Extended Band Option)
- **IF Frequency:**
 - 950 - 1450 MHz (Standard)
 - 950 - 1700 MHz (Extended Band Option)
- **Frequency Reference** (10 MHz on IF): 0 dBm \pm 5 dB
- **Small Signal Gain:** 70 dB nominal
- **Gain Adjustment:** 20 dB in 1 or 2 dB steps nominal
- **Gain Variation:**
 - **Over frequency at fixed temp:** 3 dB p-p over 500 MHz
 - **Over temp at fixed frequency:** 3 dB p-p over operating range
- **Saturated Output Power:** 44.5 dBm (nominal)
- **Rated Output Power** (P_{1dB}): 44 dBm
Linear Output Power defined as:
 - **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 2 dB back-off from Saturated Output Power): -30dBc
 - **AM / PM Conversion** (up to 2 dB below Rated Output Power): 2 deg/dB
- **Phase Noise:** Meets IESS-308
- **Noise Power Density Transmit:** -70 dBW/4 kHz (maximum)
- **Noise Power Density Receive:** -150 dBW/4 kHz (maximum)
- **Output Spurious:** -55 dBc

Interfaces

- **IF Input Connector:** Type N Female
- **IF Input Impedance:** 50 Ohms
- **IF Input VSWR:** 2:1 maximum
- **RF Output Connector:** WR-75
- **RF Output VSWR:** 1.25:1 maximum
- **DC and M&C Connector:** 12-pin or 32-pin MIL Circular
- **M&C:** Serial RS-485 (SA-bus), Forward Power Monitor, Step Attenuator

Power

- **DC Power:** 28VDC or 48VDC
- **DC Power Draw** (typical) (at Rated Output Power): 250W
- **DC Power Draw** (at 3 dB back-off from Rated Output Power): 190W

Physical

- **Size:** 10.3" L x 5.4" W x 4.5" H (26.2 x 13.7 x 11.4 cm)
- **Weight:** 10 lbs (4.5 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)

Options

- **External Power Supply:**
 - AC-DC Converter, 90-264 VAC
 - DC Power, IFL Option (48V only at 40W)
- **M&C:** Ethernet Option; RS-232

Base Model

- **MBB-KUS025-xxxx**
- **MBB-KUE025-xxxx**

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40W Ku-band Matchbox BUC

MBB-KUS040 // MBB-KUE040

Field-Proven Performance

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Benefits

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- **Proven reliability and efficiency**
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- **Compact footprint to meet critical space and weight limitations**



Technical Specifications

RF Specifications

- **Transmit Frequency:**
 - 14.0 GHz - 14.5 GHz (Standard)
 - 13.75 GHz - 14.5 GHz (Extended Band Option)
- **IF Frequency:**
 - 950 - 1450 MHz (Standard)
 - 950 - 1700 MHz (Extended Band Option)
- **Frequency Reference** (10 MHz on IF): 0 dBm ± 5 dB
- **Small Signal Gain:** 70 dB nominal
- **Gain Adjustment:** 20 dB in 1 or 2 dB steps nominal
- **Gain Variation:**
 - **Over frequency at fixed temp:** 3 dB p-p over 500 MHz
 - **Over temp at fixed frequency:** 3 dB p-p over operating range
- **Saturated Output Power:** 46.5 dBm (nominal)
- **Rated Output Power** (P_{1dB}): 46 dBm
Linear Output Power defined as:
 - **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 2 dB back-off from Saturated Output Power): -30dBc
 - **AM / PM Conversion** (up to 2 dB below Rated Output Power): 2 deg/dB
- **Phase Noise:** Meets IESS-308
- **Noise Power Density Transmit:** -70 dBW/4 kHz (maximum)
- **Noise Power Density Receive:** -150 dBW/4 kHz (maximum)
- **Output Spurious:** -55 dBc

Interfaces

- **IF Input Connector:** Type N Female
- **IF Input Impedance:** 50 Ohms
- **IF Input VSWR:** 2:1 maximum
- **RF Output Connector:** WR-75
- **RF Output VSWR:** 1.25:1 maximum
- **DC and M&C Connector:** 12-pin or 32-pin MIL Circular
- **M&C:** Serial RS-485 (SA-bus), Forward Power Monitor, Step Attenuator

Power

- **DC Power:** 28VDC or 48VDC
- **DC Power Draw** (typical) (at Rated Output Power): 350W
- **DC Power Draw** (at 3 dB back-off from Rated Output Power): 290W

Physical

- **Size:** 10.3" L x 5.4" W x 4.5" H (26.2 x 13.7 x 11.4 cm)
- **Weight:** 10 lbs (4.5 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)

Options

- **External Power Supply:**
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 - DC Power, IFL Option (48V only at 40W)
- **M&C:** Ethernet Option; RS-232

Base Model

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