

FEATURES

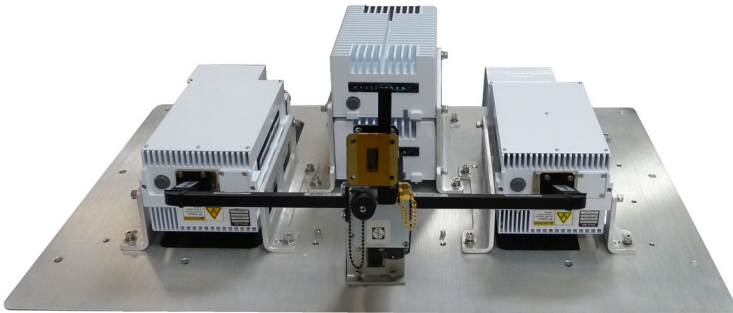
- ▶ Small, Lightweight Package
- ▶ Low Power Draw, High MTBF
- ▶ Flexible, Modular Feed-Mount Design
- ▶ Holds Specs Over Temperature and Frequency
- ▶ 1:1 Redundancy Kits Available



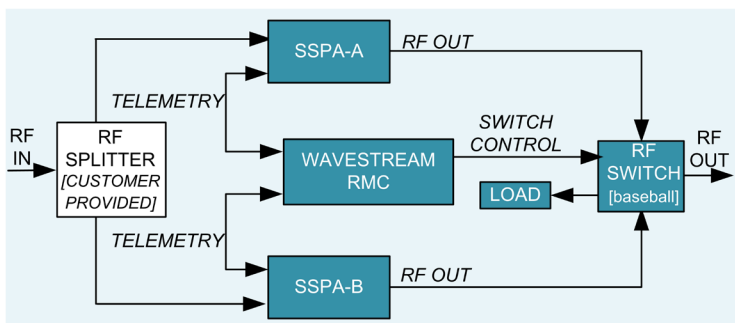
Ku-Band Matchbox Block Upconverter

The Wavestream Advantage:

- Higher output power with less energy usage.
- Compact product footprint to meet critical space and weight limitations.
- Proven reliability and efficiency.
- Reduced lifecycle maintenance costs.



1:1 Redundant Configuration with AC/DC Converter (optional)



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 Power Advantage™ technology to provide higher output power in smaller, lighter weight packages that are more reliable and use less energy. The Ku-band Matchbox BUC is field proven to withstand the most extreme environments. Every unit is thoroughly tested to guarantee performance over the full frequency band and over the full temperature range.

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 MTBF (Mean Time Between Failures) for greater reliability and lower lifecycle costs.

The Ku-band Matchbox BUC's modular design provides the flexibility needed to integrate different power levels into a system design. Wavestream's Ku-band Matchbox BUC has the same form, fit and function footprint as the 12W Ka-band Matchbox BUC, providing a convenient way to integrate a different band without changing the terminal or altering the hardware.

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.

| RF Specifications | 16W | 25W | 40W |
|---|---|---|---|
| Transmit Frequency - Standard - Extended Band Option | 14.0 - 14.5 GHz 13.75 - 14.5 GHz | 14.0 - 14.5 GHz 13.75 - 14.5 GHz | 14.0 - 14.5 GHz 13.75 - 14.5 GHz |
| IF Frequency - Standard - Extended Band Option | 950 - 1450 MHz 950 - 1700 MHz | 950 - 1450 MHz 950 - 1700 MHz | 950 - 1450 MHz 950 - 1700 MHz |
| Frequency Reference (10 MHz on IF) | 0 dBm ± 5 dB | 0 dBm ± 5 dB | 0 dBm ± 5 dB |
| Small Signal Gain | 70 dB nominal | 70 dB nominal | 70 dB nominal |
| Gain Adjustment | 20 dB, 2 dB steps nominal | 20 dB, 2 dB steps nominal | 20 dB, 2 dB steps nominal |
| Gain Variation (over frequency at fixed temperature) | 0.5 dB over 36 MHz 3 dB over 500 MHz | 0.5 dB over 36 MHz 3 dB over 500 MHz | 0.5 dB over 36 MHz 3 dB over 500 MHz |
| Gain Variation (over temperature at fixed frequency) | 3 dB p-p over operating range | 3 dB p-p over operating range | 3 dB p-p over operating range |
| Saturated Output Power | 42.5 dBm (nominal) | 44.5 dBm (nominal) | 46.5 dBm (nominal) |
| P₁dB Output Power * | >42 dBm | >44 dBm | >46 dBm |
| Rated Output Power * | 42 dBm | 44 dBm | 46 dBm |
| Intermodulation * (Third order intermodulation product relative to combined power of two carriers at 3 dB total power back-off from Rated Output Power) | -25 dBc | -25 dBc | -25 dBc |
| Spectral Regrowth (For QPSK at 1.5x and for OQPSK at 1.0x symbol rate offset at 2 dB back-off from Rated Output Power) | -30 dBc | -30 dBc | -30 dBc |
| Phase Noise | Meets IESS-308 | Meets IESS-308 | Meets IESS-308 |
| AM/PM Conversion (up to 2 dB below Rated Output Power) | 2 deg/dB | 2 deg/dB | 2 deg/dB |
| Noise Power Density - Transmit | -70 dBW/4 kHz (maximum) | -70 dBW/4 kHz (maximum) | -70 dBW/4 kHz (maximum) |
| Noise Power Density - Receive | -150 dBW/4 kHz (maximum) | -150 dBW/4 kHz (maximum) | -150 dBW/4 kHz (maximum) |
| Output Spurious | -55 dBc | -55 dBc | -55 dBc |

Power

| | | | |
|--|---------------|---------------|---------------|
| DC Power | 24V, 28V, 48V | 24V, 28V, 48V | 24V, 28V, 48V |
| DC Power Draw (typical) (at Rated Output Power) | 130W | 205W | 275W |
| DC Power Draw (at 3 dB Back-off from Rated Output Power) | 115W | 185W | 240W |

*Guaranteed over temperature and frequency

| Interfaces | 16W | 25W | 40W |
|--|--|--|--|
| IF Port Connector | Type N Female | Type N Female | Type N Female |
| IF Input Impedance | 50 ohms | 50 ohms | 50 ohms |
| IF Input VSWR | 2:1 maximum | 2:1 maximum | 2:1 maximum |
| RF Output Connector | WR-75 | WR-75 | WR-75 |
| RF Output VSWR | 1.25:1 maximum | 1.25:1 maximum | 1.25:1 maximum |
| DC Connector and Monitor & Control Connector | 12-Pin or 32-Pin Military Circular | 12-Pin or 32-Pin Military Circular | 12-Pin or 32-Pin Military Circular |
| Monitor & Control | Serial RS-485 (SA-bus), Forward Power Monitor, Step Attenuator | Serial RS-485 (SA-bus), Forward Power Monitor, Step Attenuator | Serial RS-485 (SA-bus), Forward Power Monitor, Step Attenuator |
| LED Indicators | Summary Fault (RED), Loss of Lock (YEL) | Summary Fault (RED), Loss of Lock (YEL) | Summary Fault (RED), Loss of Lock (YEL) |

Physical

| | | | |
|-------------------------------------|--|------------------------|------------------------|
| Size | 10.3"L x 5.4"W x 4.5"H | 10.3"L x 5.4"W x 4.5"H | 10.3"L x 5.4"W x 4.5"H |
| Weight | 10lbs | 10lbs | 10lbs |
| Operating Temperature (Ambient Air) | -40°C to +60°C | -40°C to +60°C | -40°C to +60°C |
| Relative Humidity | 100% Condensing | | |
| Shock & Vibration | Designed to withstand 20G at 11 ms ½ sine wave non-operating conditions, and MIL-STD-810E, method 514-4 transportation vibration | | |
| 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)

Monitor & Control - Ethernet; RS-232

1:1 Redundancy Kit - to include waveguide, switch, cable connectors, and mounting hardware

Rack Mount Controller - 1U rack mount chassis to control any Wavestream amplifier in a 1:1 configuration with LCD display and key status LEDs

Indoor to outdoor cable assemblies - available in 25', 50' and 100' lengths.

Base Model Number

MBB-KUS016/025/040

MBB-KUE016/025/040



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EMC Directive compliance through certified independent laboratory testing.

Wavestream's next generation Ka, Ku, X and C-band solid state power amplifiers and block upconverters meet the growing demand for higher performance and significant lifecycle cost reductions for mission-critical satellite communications systems worldwide.

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