



40W KU-BAND AEROSTREAM™ TRANSCEIVER WTUE-040A01



FIELD-PROVEN PERFORMANCE

Wavestream's AeroStream™ Transceiver offers unmatched efficiency and performance for the challenging airborne environment. AeroStream™ products meet the requirements of RTCA/DO-160G, for commercial aircraft as well as MIL-STD requirements for military aircraft.

AeroStream™ incorporates Wavestream's next generation Spatial Power Advantage™ technology to provide high power output with greater efficiency and reliability for airborne satellite communications system applications.

FEATURES

- Airborne Qualified for Commercial and Military Applications
- Designed for inside the aircraft installations
- Transceiver Available in 40W Transmit Output and Full Ku-band Receive
- Designed for backward compatibility with heritage modems.
- Supports next generation modems utilizing high performance references.

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 also generate less heat, ensuring higher Mean Time Between Failures (MTBF) for greater reliability and lower life cycle maintenance costs.

BENEFITS

- **Higher output power with less energy usage**
- **Industry leading reliability with field proven 30,000+ hours of MTBF**
- **Qualified for both line-fit and retrofit installations**
- **Compact footprint to meet critical space and weight limitations**



TECHNICAL SPECIFICATIONS

RF SPECIFICATIONS

Transmit Frequency:

13.75 - 14.5 GHz

IF Frequency:

950 - 1700 MHz

IF Input VSWR: 1.5:1**Small Signal Gain:**

52 dB (nominal)

Gain Adjustment: 20 dB**Gain Variation:**

-Over frequency at fixed temp:

4 dB p-p over full band

-Over temp at fixed frequency:

6 dB p-p over operating range

Saturated Output Power:

48.5 dBm (nominal)

Rated Output Power:

(P1dB): 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): -30 dBc

AM/PM Conversion:

(up to Linear Output Power): 2 deg/dB

RF Output VSWR: 2:1**Phase Noise:**

- 1 kHz: -69 dBc/Hz
- 10 kHz: -69 dBc/Hz
- 100 kHz: -90 dBc/Hz
- 1 MHz: -100 dBc/Hz
- 10 MHz: -122 dBc/Hz

Noise Power Density**Transmit:**

-69 dBW/4 kHz

Noise Power Density Receive:

-60 dBm/MHz (maximum)

Output Spurious:

-60 dBc

INTERFACES

Input Power: 3-pin MIL Circular

Ethernet: 4-pin MIL Circular

ACU Discrete: 6-pin MIL

Circular

TX IF: TNC

RX IF: TNC

Reference Output: TNC

TX Output: WR-62 Waveguide, Type N (Optional)

RX Input: Type N

M & C Protocol: Ethernet

POWER

AC Power: 115 AC; 360-800 Hz

AC Power Draw (at Rated Output Power):

350W (nominal)

AC Power (at 3dB back-off from Rated Output Power):

245W

RECEIVE SPECIFICATIONS

Receive Frequency:

Band A: 10.7 GHz - 11.7 GHz

Band B: 11.7 GHz - 12.75 GHz

IF Frequency:

950 - 2000 MHz

Small Signal Gain:

20 dB (nominal)

Gain Variation:

Over frequency at fixed temp:

3 dB p-p over full band

Over temp at fixed frequency:

2.4 dB p-p over operating range

Intermodulation Products**(Third Order Intercept):**

0 dBm (minimum)

Noise Figure: 13.5 dB (max)

Image Rejection:

40 dB (minimum)

Group Delay (linear):

± 1 ns over 36 MHz

Output Spurious:

-88 dBm (maximum) in band

-84 dBm (maximum) out of band

band

Phase Noise:

- 10 Hz: -30 dBc/Hz
- 100 Hz: -56 dBc/Hz
- 1 kHz: -72 dBc/Hz
- 10 kHz: -80 dBc/Hz
- 100 kHz: -90 dBc/Hz
- 1 MHz: -120 dBc/Hz
- 10 MHz: -120 dBc/Hz

PHYSICAL

Size: 17.75" L x 13.6" W x 2.6" H (45 x 34.5 x 6.6 cm)

Weight: 21 lbs (9.5 kg)

Operating Temperature

(Ambient Air):

5°F to +131°F

(15°C to +55°C)

Relative Humidity:

100% Condensing

Shock & Vibration:

D6-36440, DO-160G, ABD 513, MIL-STD-810

Altitude:

35,000 ft above sea level

(operating)

FREQUENCY REFERENCE

10 MHz Reference

- Accuracy: 0.03 PPM at 25° C
- Stability: 0.03 PPM first year, 0.12 PPM over 20 years
- Output Level: ± 7 dBm (nominal)

10 MHz or 50 MHz**External Reference (Switchable)**

BASE MODEL

WTUE-040A01

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 and X-band Solid State Power Amplifiers (SSPAs), Block Upconverters (BUCs) and transceivers provide system 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.

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