



25W KA-BAND AEROSTREAM™ TRANSCEIVER

AJT25A10A



FIELD-PROVEN PERFORMANCE

Wavestream's AeroStream™ Transceiver (KRFU) offers unmatched efficiency and performance for the challenging airborne environment. AeroStream™ products meet the requirements of RTCA/DO-160G, and ARINC specifications 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 Commercial Ka-Band
- Available for Pressurized and Non-Pressurized Environments

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 power 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:

29.25 GHz - 30.0 GHz

IF Frequency:

950 - 1700 MHz

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

70 dB (nominal)

Gain Adjustment:

20 dB

Gain Variation:

-Over frequency at fixed temp:

3 dB p-p over full band

-Over temp at fixed frequency:

2.75 dB p-p over operating range

Saturated Output Power:

44 dBm (nominal)

Linear Output Power: 41.5 dBm**Linear Output Power, defined as:**

-Output power for which spectral regrowth is -25dBc at one symbol rate offset from center frequency for OQPSK, alpha = 0.2

RF Output VSWR: 1.5:1**Phase Noise:**

- 100 Hz: -53 dBc/Hz
- 1 kHz: -75 dBc/Hz
- 10 kHz: -80 dBc/Hz
- 100 kHz: -95 dBc/Hz
- 1 MHz: -105 dBc/Hz
- 10 MHz: -112 dBc/Hz

Noise Power Density Transmit:

-75 dBm/Hz

Noise Power Density Receive:

-60 dBm/MHz (maximum)

Output Spurious:

Per ETSI EN 301.459 v1.4.1 (assuming off-axis antenna gain of 5dBi at >7 degrees, and nominated bandwidth wide enough to encompass all spectral elements of the transmission which have a level greater than the specified spurious radiation limits)

RECEIVE SPECIFICATIONS

Receive Frequency:

- 17.8 GHz - 18.8 GHz
- 18.3 GHz - 19.3 GHz
- 19.2 GHz - 20.2 GHz (inverted spectrum)

IF Frequency:

- 1050 - 2050 MHz
- 950 - 1950 MHz
- 1000 - 2000 MHz (inverted spectrum)

Small Signal Gain: 50 dB (nominal at min attenuation)

Gain Adjustment: 20 dB

Gain Variation:

-Over frequency at fixed temp:

4 dB p-p over full band

-Over temp at fixed frequency:

5 dB p-p over operating range

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

+17 dBm (minimum)

Noise Figure: 6 dB (maximum)

Image Rejection:

30 dB (minimum)

Group Delay (linear):

2 ns p-p over 500 MHz

Output Spurious:

-62 dBm (maximum)

Phase Noise:

- 100 Hz: -53 dBc/Hz
- 1 kHz: -75 dBc/Hz
- 10 kHz: -80 dBc/Hz
- 100 kHz: -95 dBc/Hz

INTERFACES

Input Power: 4-pin MIL

Circular

M&C: 22-pin MIL Circular,

ETHERNET

TX IF: TNC

RX IF: TNC

Reference: 50MHz, Multiplexed on TX IF

RF Output: WR-28 Waveguide

RX Input: WR-42 Waveguide

POWER

AC Power: 115 AC; 320-800 Hz

AC Power (at Linear Output

Power): 225W (nominal)

PHYSICAL

Size: 19.0" L x 9.1" W x 3.6" H (48.3 x 23.1 x 9.2 cm)

Weight: 15.5 lbs (7.1 kg)

Operating Temperature**(Ambient Air):**

- Normal Operating: 5° F to

+131° F (-15° C to +55° C)

- Short-time Survival: -40° F to

+158° F (-40° C to +70° C)

Relative Humidity:

100% Condensing

Shock & Vibration:

D6-36440, DO-160G, ABD 513,

MIL-STD-810

Altitude:

15,000 ft above sea level

(operating)

OPTIONS

Extended Frequency Range

Available

BASE MODEL

AJT25A10A

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 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.

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