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

Saturation 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 QPSK, alpha = 0.2
RF Output VSWR: 1.5:1
Phase Noise:
- 100 Hz: -53 dBC/Hz
- 1 kHz: -75 dBC/Hz
- 10 kHz: -95 dBC/Hz
- 100 kHz: -105 dBC/Hz
- 1 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