



RANGR 978MHZ ADS-B DATALINK FAMILY

Cost-effective, modular ADS-B solutions for general aviation in the United States



RANGR Transmitter



RANGR Transmitter w/GPS and RANGR Transceiver

FreeFlight System's RANGR 978MHz ADS-B Datalink family provides several low cost, light-weight solutions for becoming ADS-B compliant and adding datalink traffic and weather in the aircraft.

Automatic Dependent Surveillance-Broadcast (ADS-B) technology is the new advanced air-space management system currently being implemented worldwide. In addition to ATC situational awareness, expanded radar coverage and search and rescue capabilities, the 978 MHz system (available only in the United States) offers traffic information and free datalink weather. The FreeFlight Systems RANGR family provides a low-cost, light-weight ADS-B compliant solution for general aviation aircraft flying in the United States below 18,000 feet.

Full ADS-B Compliance

The final FAA rule dictates an ADS-B compliant system must have a high integrity position source and a radio that sends specific information from that position source to ATC. The easiest way to achieve this requirement is to pair a TSO-C145/C146 WAAS GPS with an ADS-B approved transmitter. In addition, 978MHz compliance requires a small control head for entering squawk codes.

The RANGR family allows customers the most flexibility by offering complete stand-alone solutions with certified GPS and 978MHz transmitter all-in-one or separate, modular solutions to interface with current systems in the aircraft. This will keep cost to the customer as low as possible while still achieving ADS-B compliance.

Add the receive functionality and the customer receives additional benefit beyond the standard ATC coverage.

TIS-B

When coupled with an ADS-B receiver, the FAA will send a customized traffic picture relative to aircraft position. Because it is relative to aircraft position it is crucial to have a GPS installed with the proper integrity. As more aircraft are equipped with ADS-B, direct communication with other aircraft will also be available. All RANGR systems will offer dual antennas for improved traffic coverage.

FIS-B

The same datalink weather available today through monthly service providers is available through ADS-B at no charge. The weather can be displayed on any compatible MFD, EFB or IPAD display. This is only available on 978Mhz receivers and will eventually require a valid ADS-B transmission to receive the data.

Fleet Tracking

Fleet owners can track and view their aircraft using their own 978MHz datalink ground based receiver, which is also available through FreeFlight Systems.

HIGHLIGHTS

- Several models offer flexibility in capability and price
- Designed to the most stringent FAA standards, certified to TSO-C154c
- Lightweight and easy to install
- Enables real time traffic and free weather on compatible MFDs and/ or EFBs
- Increased ATC Coverage
- Allows for search and rescue operations
- In flight aircraft can receive vital information from remote ADS-B beacons on the ground
- Flight Schools or fleets can easily track their aircraft

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FEATURES

The RANGR family is UAT equipment class B1 (Dual Antennas) and B1S (Single Antenna), 978MHz transmitter and transceiver designed to meet TSO-C154c requirements. The RANGR family is intended to provide a low cost UAT ADS-B solution to meet the FAA mandate for ADS-B installation.

The RANGR family collects position, velocity, and other aircraft information from aircraft GPS, altitude sensor, and pilot control inputs and transmits this data once per second through non-diversity or diversity antennas. The GPS, altitude sensor, and pilot control inputs are received by the transmitter and transceiver through configurable RS-232/422/485 serial interfaces, ARINC-429 serial interfaces, and/or discrete interfaces. Status information about the RANGR family's health and state are output on the configured serial links and/or discrete signals for display to the pilot. Two year warranty included.

INTERFACE

UARTs	4
ARINC 429 outputs	2
ARINC 429 inputs	4
USB 2.0	1
I2C	1
Discrete inputs	6
Discrete outputs	3
Discrete in/out	1
Antenna	Diversity Capable
Control:	Compatible with TC978 controller with altitude sensor or third party controller using discrete & RS-232 or ARINC 429 signals

PHYSICAL CHARACTERISTICS

Dimensions:	1.37 x 5 x 5.75 (HxWxD inches)
Weight:	1.4 lb Transmitter 2 lb Transceiver
Input Voltage:	10 - 40 VDC
Input Current (Steady State):	0.7 A at 12 VDC
Output Voltage (To Control Head):	6.5 VDC
Output Current (To Control Head):	0.35 A

REGULATORY COMPLIANCE

Environmental:	DO-160F
Certifications:	DO-282B DO-178B Level C TSO-C154c*

- * RANGR Transmitter scheduled to achieve TSO Q4, 2010
- * RANGR Transmitter with GPS scheduled to achieve TSO Q1, 2011
- * RANGR Transceiver scheduled to achieve TSO Q3, 2011



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