



**YOUR NEXTGEN
AVIONICS LEADER**

RANGR ADS-B DATALINK FAMILY **COST-EFFECTIVE, MODULAR ADS-B SOLUTIONS** **FOR ANY AIRCRAFT**

Automatic Dependent Surveillance-Broadcast, ADS-B, is the global replacement for radar based Air Traffic Control. Utilizing precise GPS positioning and a high integrity datalink, ADS-B is the core component of the NextGen Air Transportation System. By the end of 2019, essentially all aircraft that are equipped with transponders today will be required to equip with ADS-B. In the US, ADS-B is a two way system with subscription free, safety-enhancing data being uplinked by the FAA. Flight Information Services (or FIS-B) contain graphical weather and other data (see below), and Traffic Information Services (or TIS-B) provides traffic information that is relevant to your own aircraft. There are two ADS-B link frequencies - FIS-B is only available on the 978 MHz link and TIS-B is available on both 978MHz and 1090MHz links

FreeFlight System's RANGR ADS-B Datalink family offers low cost, light-weight, modular solutions for adding ADS-B capability to your aircraft. Our TSO RANGR transceiver provides full ADS-B capability in a single box. We offer solutions that meet your needs today.

FIS-B (Flight Information System-Broadcast)

- Aviation Routine Weather Reports (METARs)
- Non-Routine Aviation Weather Reports (SPECIs)
- Terminal Area Forecasts (TAFs) and their amendments
- NEXRAD (regional and CONUS) precipitation maps
- Notice to Airmen (NOTAM) Distant and Flight Data Center
- Airmen's Meteorological Conditions (AIRMET)
- Significant Meteorological Conditions (SIGMET) and Convective SIGMET
- Status of Special Use Airspace (SUA)
- Temporary Flight Restrictions (TFRs)
- Winds and Temperatures Aloft
- Pilot Reports (PIREPS)



RANGR 978
(front panel view)



TC-978 Control Head

For additional product information and specifications, please visit our website
www.freeflightsystems.com or
www.adsbuniversity.com

RANGR ADS-B DATALINK FAMILY

A summary of the RANGR products and their capabilities is in the table below.

	RANGR RX	RANGR TX	RANGR XVR
Model Number	FDL-978-RX Receiver	FDL-978-TX Transmitter	FDL-978-XVR Transceiver
Capabilities	TSO Rule Compliant ADS-B In	TSO Rule Compliant ADS-B Out	TSO Rule Compliant ADS-B In/Out
Link Frequency	978 MHz	978 MHz	978 MHz
Display Options	iPad*, FAA Published Capstone Standard MFD (FIS-B, Traffic), TIS-ARINC 429 (Traffic)	N/A	iPad*, FAA Published Capstone Standard MFD (FIS-B, Traffic), TIS-ARINC 429 (Traffic)
OPTIONAL INTERNAL WAAS/GPS SENSOR AVAILABLE WITH ALL PRODUCTS *OPTIONAL WIFI MODULE AVAILABLE FOR IPAD			
CERTIFICATIONS System	TSO-C157a (FISB) TSO-C195a (TIS-B/Traffic) TSO-C154c (UAT) Option TSO C-145c for GNSS	TSO-C154c (UAT) Option TSO C-145c for GNSS (DO-282B)	TSO-C157a (FISB) TSO-C195a (TIS-B/Traffic) TSO-C154c (UAT) Option TSO C-145c for GNSS (DO-282B)
Software Assurance	DO-160G DO-178B Level C DO-254 Level C	DO-160G DO-178B Level C	DO-160G DO-178B Level C DO-254 Level C SW/HW
Installation Approvals	STC approved in accordance with AC 20-165A		

PHYSICAL CHARACTERISTICS

Size (Includes Mounting Flanges)	5" W 5.75" D 1.7" H
Weight	Less than 1 pound
Transponder Interface	Mode A/C Mode S
Interface	2 ARINC 429 Inputs 1 ARINC 429 Output 4 RS-232/422 1 RS-485 4 Discrete Inputs 2 Discrete Outputs
Input Voltage	10-40 VDC
Input Current	0.2 A @12 VDC
Output Voltage	6.5 VDC
Output Current	350 mA

SERIAL-WIFI TRANSCEIVER (86943-00)

Certifications	PMAd
FCC Identification	T9JRN171-1
Physical Dimensions	1.0" (25.6 mm) H 3.1" (83.8 mm) W 4.0" (101.6 mm) D
Weight	2.9 oz (82.5 g)
Operating Temp	-40°C to +70°C
Storage Temp	-55°C to +85°C
Power Requirements	10 – 37 VDC, 40mA@28 VDC
Frequency	2402 ~ 2480MHz
Receiver Sensitivity	-83dBm typical

Safety notes:

Once installed, an ADS-B system becomes your aircraft's primary interface with both Air Traffic Control and other aircraft in your area. Certified systems, which are required by the FAA for this application, have been developed under rigorous processes and have undergone the necessary thorough testing to be suitable for this application. Operation of uncertified ADS-B out systems, which have not demonstrated this level of integrity, creates risk for you and for other users of the airspace system who are relying on the reports you are providing for safe separation.

Made in the U.S.A.
Specifications subject to change without notice.

TC-978 CONTROL HEAD

TSO Compliance	C154c (incomplete system) C88b
ETSO Compliance	C88a
Software	DO-178B Level B
Physical Dimensions	1.756" H 2.504" W 2.030" D
Panel cut-out	Standard 2.25 inch (round adapters provided)
Weight	0.11 lbs. (90 g)
Altitude	35,000 ft.
Power Requirements	5.5 – 10 VDC, -provided by FDL-978 unit



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