



SAAB



MULTI-CHANNEL MARINE RECEIVER

R5A RX – Airborne AIS

The R5A RX is a future-proof multi-channel receiver specifically designed for airborne applications and based on Saab's SDR (Software Defined Radio) technology, R5A RX offers outstanding performance and flexibility in a very compact design. The unit has been extensively tested and qualified towards aviation standards.

Simultaneous data reception from all services

The R5A RX has an exceptional receiver sensitivity which significantly increases the detection range. The receiver's cutting-edge digital radio design is the result of many years' research and development of software defined radios. The highly versatile radio platform will continue to evolve as new requirements are introduced and will remain at the forefront for many years to come.

The R5A RX includes full AIS receiver capability, which means that it is possible to receive messages from AIS units within range. The high-performance multi-channel receiver supports a total of 8 parallel radio channels, including 2 standard AIS channels, that can simultaneously receive data from other services such as LR (Long-Range) AIS and DSC.



The R5A RX is developed specifically for airborne use meeting the relevant requirements and standards for on-board installation. The R5A RX can easily be integrated with other on-board systems such as Mission Management Systems, radar or other display solutions. The multitude of available interfaces make the system highly appropriate for integration into any external system for configuration, operation and display of data. Due to its low weight, the receiver is also highly suitable for applications where there are payload constraints, such as UAV solutions.

Each unit is delivered with versatile, PC-based utility software for convenient configuration, verification and trouble shooting.



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R5A RX Airborne AIS applications

- Search and Rescue (SAR): Locate vessels in distress.
- Maritime Surveillance/Coast Guard patrol monitoring of surface traffic: Keep track of vessels and their destination.
- The active identification of a vessel can in combination with radar surveillance detect potential suspects.
- Homing for Maritime Helicopter Operations: Aid to return to ship.

Special features

- Reception of LR AIS channels 75 and 76 enables detection of AIS targets over greater distances and in environments where the standard AIS 1 and 2 channels are congested.
- Embedded support for Digital Selective Calling (DSC) reception. (Requires support from an external application).
- Support for AMRD – Autonomous Maritime Radio Devices.

Options

- Saab Secure AIS, offering reception of encrypted communication on a dedicated channel.
- NATO W-AIS encryption modes according to STANAG 4668 Edition 2.
- Saab's Electronic Chart System software if a quickly deployed standalone AIS solution is requested.



Physical data

Dimensions (HxWxD)	34 mm (1.34")x144 mm (5.66")x200 mm (7.87")
Weight	0.55 kilograms (1.21 Lbs)

Cooling

No forced air cooling is required

Input power

Power input requirements	12-28 VDC
Power consumption	11 W
Recommended fuse size	5 Amp slow-blow fuse or circuit breaker

VHF receiver

Frequency	155 - 163 MHz
Channel Bandwidth	25 kHz
Receiver sensitivity (AIS)	Better than -115 dBm at 20% PER
Bit rate (Rx)	9600 - 307 200 bps
Modulation	GMSK/FSK
Number of receivers	8 (eight)

Electrical interfaces

Data Ports	2 RS422 Data Ports (M801 series Micro38999 compatible)
TCP/IP	Ethernet 10/100/1000 Mbit (M801 series Micro38999 compatible)
VHF antenna	VHF 50 Ω antenna connector (N female)
Power	MIL-C-38999 series 3

Applicable standards

- RTCA DO-160G Environmental Conditions and Test Procedures for Airborne Equipment
- ITU-R recommendation for AIS (ITU-R.M. 1371-5)
- RTCA DO-178C Software Considerations in Airborne Systems
- IEC 61993-2, IEC 63135 Automatic Identification Systems (AIS) – SAR Airborne equipment

Supported data output formats

- AIS (ITU-R.M. 1371-5)
- AIS Long Range (ITU-R.M. 1371-5)
- DSC VHF Ch 70 (156,525 MHz)

Environmental data

Temperature	-40°C to +55°C (Operational), -55°C to +85°C (Storage)
Humidity	0-95%
Altitude	> 16 700 m (55 000 ft)