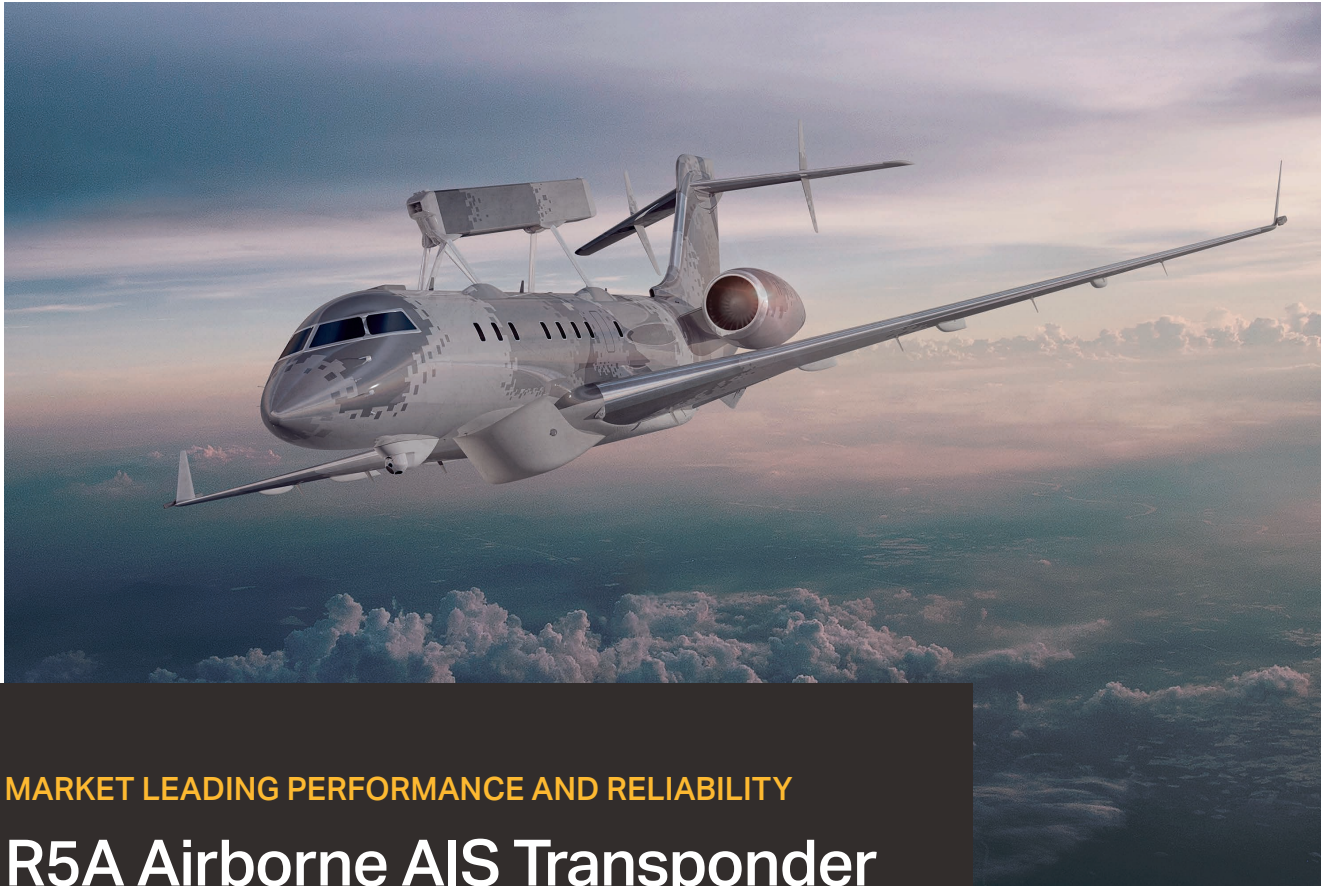




SAAB



MARKET LEADING PERFORMANCE AND RELIABILITY

R5A Airborne AIS Transponder

The **SAAB R5A** is based upon our latest generation SDR (Software Defined Radio) technology, and offers outstanding performance and flexibility in a very compact design.

R5A has been extensively tested and qualified, and also has a statement of conformity from the well recognized AIS test institute BSH in Germany.

The R5A includes full transceiver functionality, which means that it is possible to receive messages from all AIS units within range and also transmit selected information from the aircraft. Transmission capability is particularly useful for missions such as SAR operations, fleet management and even surveillance flights where it is occasionally desired to reveal the own position or to interrogate selected vessels for more data. When operating in Saab's optional Secure AIS mode, transmission is also an essential part of the functionality.

The R5A features cutting-edge digital radio design resulting from many years of research into software defined radios. The highly versatile R5 platform will continue to evolve as new requirements are introduced and will remain at the forefront of AIS technology for many years to come. It is also prepared for next generation AIS, called VDES (VHF Data Exchange System).



The R5A is developed specifically for airborne use meeting the relevant requirements and standards for on-board installation. The R5A can be installed either as a standalone unit or integrated with other on-board systems such as Mission Management Systems or Digital Map Generators. 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, it is also suitable for applications where there are payload constraints, such as UAS solutions.

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

R5A Airborne AIS applications

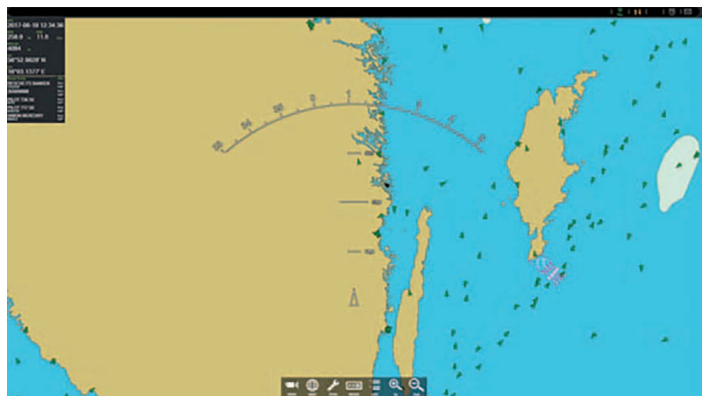
- Search and Rescue (SAR): locate vessels in distress and communicate with them while help is on the way.
- Maritime Surveillance/Coast Guard Patrol Monitoring of Surface Traffic: keep track of AIS equipped vessels and their destinations..
- The active identification by AIS in combination with radar surveillance allows detection of potentially suspect vessels.
- Homing for Maritime Helicopter Operations: find the ship that the helicopter is supposed to land on.
- Fleet Management: track a fleet of helicopters serving oil rigs, for example.

Special features

- Embedded support for Digital Selective Calling (DSC) reception and transmission of any DSC symbols (Requires support from an external application)
- ARINC 429 interface for connection of an external TSO-approved GPS receiver. Eliminates the need of a dedicated GPS antenna for the AIS transponder.
- Prepared for extended frequency range outside the maritime band.

Options

- Saab Secure AIS, offering encrypted communication on a dedicated channel. This option also provides the ability to manually or automatically download the transponder's internal AIS track list to other units.
- NATO encryption modes according to STANAG 4668 Edition 2.
- Saab's Electronic Chart Display software SeaWatch, if a quickly deployed standalone AIS solution is desired.



SeaWatch Electronic Chart Display Software

Technical specification

Physical

Size W x H x D:	144x65x200 (mm)
Weight:	1.0 kg

Power

Input:	28 V DC (MIL-C-38999 series 3)
Power consumption:	20 W (60 W peak)

GPS Receiver

Receiver:	50 channels
Frequency:	L1 (1575 MHz)
Update Rate:	1 Hz

Cooling

No forced air cooling is required

Electrical Interfaces

4 RS422 Data Ports (MIL-C-38999 series 3)
1 Tx 2 Rx ARINC 429
Ethernet 10/100/1000 Mbit
GPS 1pps input/output
GPS 50 ohm antenna connector (TNC female)
VHF 50 ohm antenna connector (N female)

Environmental Conditions

The R5A transponder is extensively qualified towards RTCA DO-160G, to a level which makes it possible to install the unit in most compartments of an aircraft, both fixed wing and helicopter.

VHF Transceiver

Frequency:	155-163 MHz (136-166 MHz option)
Channel Bandwidth:	Selectable 25 kHz (Prepared for 50/100 kHz)
Output power:	1/12.5 W
Receiver sensitivity:	<-111 dBm (<-115 dBm Marine band)
Bit Rate:	9600 bps (28800 bps/43200 bps optional)
Modulation:	GMSK/FM/FSK/D8PSK/DQPSK
Interval between position reports, 1-60 sec	
One transmitter, Three receivers	

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
Prepared for VDES (next generation AIS; ASM and VDE)

