

i-ais-ATA

AIRBORNE MILITARY AIS TRANSPONDER



i-ais-A, Airborne AIS System, is an Automatic Identification System enhanced for military requirements defined in STANAG 4668 (Ed.2) and 4669 (Ed.2).

i-ais-ATA, Airborne Military AIS Transponder is a Class A station that also provides tactical functionalities such as secure communication and bogus transmissions in addition to standard AIS functions.

The i-ais-ATA can operate in three different modes as defined in STANAG's:

- ▶ Mode 1: Standard AIS mode (Active Mode)
- ▶ Mode 2: Receive only mode (Passive Mode)
- ▶ Mode 3: Secure mode (encrypted) (Protected Mode)



LEADING FUNCTIONS

- Ⓞ Overlapped AIS Message extraction capability
- Ⓞ Capable of receiving or transmitting encrypted information in secure operation mode
- Ⓞ The secure mode of the i-ais-ATA is provided with well known AES and Blowfish encryption algorithms
- Ⓞ Encryption keys can be entered manually or uploaded through User Interface Unit using a USB device
- Ⓞ Spoofing capability, user can generate bogus tracks
- Ⓞ Remote control functionality over ethernet
- Ⓞ OTH-Gold Conversion

Technical Specifications

GENERAL

Operating Temperature Range	-15°C to +55° C
Storage Temperature Range	-30°C to +70° C
Humidity	Up to 93% at 40°C non-condensing
Input Supply Voltage	28V DC (max 10V - 33V DC)
Power Consumption Nominal	15 W
Inrush Current / Duration	6 Amperes / 3ms
Heatload	15W
Size	106 x 196 x 292 mm (WxHxD)
Weight	4.15 kg ± %5
Connectors	VHF Antenna: N Female GPS Antenna: TNC Female Data Connector D38999/24WE35SN Power Connector 38999/24WC4PN

VHF TRANSMITTER

Operating Frequency Range	156.025 - 162.025 MHz (VHF-P frequencies are also supported)
Channel Spacing	25 kHz
Transmitter Output Power	12.5W (+41dBm) nominal 1W (+30dBm) low power mode
Modulation	GMSK

VHF RECEIVER

# of Receivers	3 x AIS 1 x AIS-DSC (all operates simultaneously)
Operating Frequency Range	156.025 - 162.025 MHz (VHF-P frequencies are also supported)
Channel Spacing	25 kHz
Receiver Sensitivity	Better than -107dBm
Co-Channel Rejection	Better than 10 dB
Adjacent Channel Selectivity	> 70 dB
Spurious Response Rejection	> 70 dB
Intermodulation Response Rejection	> 74 dB
Blocking or Desensitization	> 74 dB
Spurious Radiation (conducted)	< -57 dBm

INTERFACES

Hi Speed Input/Outputs	1 x Ethernet (configurable)
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GNSS RECEIVER

# of Channels	72
Time to First Fix	26s Cold Start 1s Hot Start 2s Aided Start
Receiver Sensitivity	-164 dBm Tracking & Navigation -159 dBm Reacquisition -147 dBm Cold Start -156 dBm Hot Start

AIRBORNE MILITARY AIS SYSTEM

i-ais-A, Airborne Military AIS System is composed of the following units:

- ▶ i-ais-ATA, Airborne Military AIS Transponder
- ▶ User Interface Software

AIRBORNE MILITARY AIS TRANSPONDER

i-ais-ATA, Airborne Military AS Transponder is a Class-A AIS transponder complies with the AIS requirements specified in ;

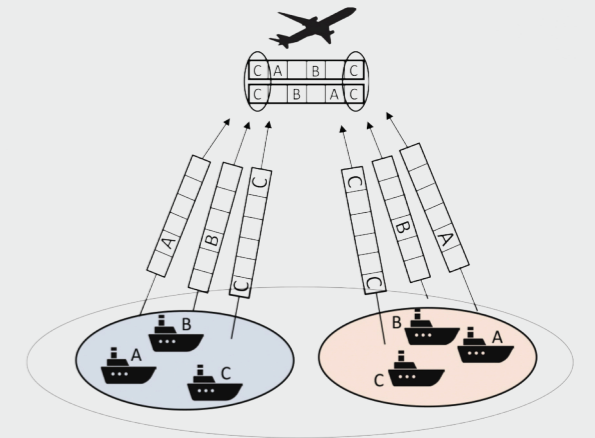
- ▶ IMO Resolution MSC.74 Annex-3, Recommendation on Performance Standards for Universal Shipborne AIS,
- ▶ ITU-R M.1371-5, Technical Characteristics for an Automatic Identification System Using Time-Division Multiple Access in the VHF Maritime Mobile Band
- ▶ IEC61993-2, Maritime Navigation and Radiocommunication Equipment and Systems - Automatic Identification Systems (AIS) - Part 2: Class A Shipborne Equipment of the Universal Automatic Identification System (AIS)Operational and Performance Requirements, Methods of Test and Required Test Results,
- ▶ IEC60945, Maritime Navigation and Radio Communication Equipment and Systems General Requirements - Methods of Testing and Required Test Results. and fulfills the military requirements specified in ;
- ▶ STANAG 4668 (Ed.2)
- ▶ STANAG 4669 (Ed.2)
- ▶ RTCA DO-160F

Overlapped AIS Message Extraction

Nearby AIS stations arrange their own network to manage transmission slots and avoid message collision. These networks can't receive any message from another one due to AIS message range on sea level.

However, an air platform can receive AIS messages from multiple network with same AIS slot management. Therefore AIS on air platforms receive many collided messages.

i-ais-ATA Airborne AIS Transponder has a state of art algorithm that can solve %99 percent of the collided messages and provides high precision on AIS message reception from multiple networks.



USER INTERFACE SOFTWARE

- ▶ Scenario Generator Module with preview functionality
- ▶ Spoofing Module
- ▶ Combat Management System Integration over IP
- ▶ Enhanced Track Filtering Module
- ▶ S63 Map Module
- ▶ Track History Module
- ▶ Message Viewer Module
- ▶ OTH-Gold Conversion
- ▶ Platform Independent Design
- ▶ Operable with or without GUI