

BlueAIS[®]



An indispensable
collision avoidance
tool for safer
navigation

See and be seen by other vessels
Navigate safely in poor visibility
Be alerted about possible collision early on

by **e111a**
WIRELESS DATA SOLUTIONS



AIS – Automatic Identification System

An Automatic Identification System (AIS) is a location and vessel information reporting system that greatly contributes to safety at sea:

- It is used on ships to identify and locate other AIS equipped vessels by electronically exchanging data with them.
- AIS data is also exchanged between the vessel and AIS land stations which allows maritime authorities to track and monitor vessel movements along their coasts.
- AIS stations called ATON (Aid TO Navigation) help vessels by transmitting locations of coastal threats, like shallows, reefs and islands, and offshore constructions as well.

The range of AIS operation is typically 30 nautical miles from shore or same distance from ship to ship.

Who uses AIS

The International Maritime Organization's (IMO) International Convention for the Safety of Life at Sea (SOLAS) requires AIS to be fitted aboard international voyaging ships with gross tonnage (GT) of 300 or more, as well as all passenger ships regardless of their size.

The AIS standard describes two major classes of AIS units:

- Class A - mandatory for use on SOLAS Chapter V vessels.
- Class B - a low power, lower cost derivative for leisure and non-SOLAS commercial vessels.

How it works

Vessel's position is derived from the Global Positioning System (GPS), whereas communication between vessels and vessels and stations is enabled by VHF (Very High Frequency) digital transmissions.

The information about AIS equipped entities is then graphically displayed on the chart plotter or computer of an AIS equipped vessel. The information includes dynamic information, as position, speed and course, and static information such as vessel name and MMSI number. This gives the boat driver greater awareness of nearby vessels and coastal threats.

One of the displayed information is also the CPA and TCPA (closest point of approach and time to closest point of approach), which informs the boat driver of a possible collision threat early on. This is especially useful in low visibility conditions.



BlueAIS®

BlueAIS® range of transponders reflects years of EMA's dedication to excellence in marine electronics design with creative solutions for the vessel tracking, monitoring and navigation.

BlueAIS® is a class B AIS transponder for leisure and smaller commercial vessels. It greatly contributes to safer navigation by enabling the boater to:

- See all large vessels carrying class A AIS transponders.
- See smaller vessels carrying Class B AIS transponders.
- Be seen by other AIS carrying vessels and land based stations.
- See shallows, reefs, small islands etc. marked with ATON (Aid to navigation) AIS stations.

In addition to standard AIS Class B operation, **BlueAIS®** offers a Silent Mode button functionality in order to disable the transmitter but still continue the Receive-Only operation.

BlueAIS® also has three major advantages to radar systems:

- all AIS equipped entities transmit not only their location, but also their identity information,
- there is no need to guess if the obstruction is a landmass, a construction or a vessel, and
- it is possible to "see around" obstacles like islands or peninsulas.

Safer navigation and collision avoidance with Blue AIS

Safety at sea is one of the main concerns of sailors, no matter the size or type of vessel they navigate. To see and be seen by other vessels is a key aspect of safe navigation.

BlueAIS® automatically shares your vessel's static information about:

- Call sign and name
- MMSI (Maritime Mobile Service Identity)
- Type and dimensions

BlueAIS® regularly updates and shares your vessel's important dynamic information about:

- Position and heading
- Universal Time Coordinated (UTC)
- Speed over ground (SOG)
- Course over ground (COG)

BlueAIS® is an essential safety and navigation device for collision avoidance since it continuously receives information from all Class A and Class B equipped vessels and displays this information on the standard chart/AIS plotter or PC. At the same time **BlueAIS®** will automatically transmit the position to all AIS equipped vessels or land stations. **BlueAIS®** is a vital navigation tool in poor visibility conditions due to bad weather and rough seas or at night.

The information received from other AIS equipped vessels provides the captain with vital navigation information and alerts surrounding vessels to its own location:

- Elevated safety and easier navigation in high traffic and in commercial shipping areas.

- Indispensable in low visibility conditions such as fog, heavy rain, high waves and darkness.
- Exact overview of the position, speed and heading of the nearby moving vessels.
- It enables the 'around the corner' view for elevated safety of navigation.
- Graphically displays vessels position in relation to other vessels on a chart or AIS plotter.
- Awareness about possible collision paths early on with graphic and audio alerting.
- Position reporting to authorities and nearby vessels in will speed-up the rescue missions in case of emergency.

BlueAIS® is a valuable collision avoidance tool that greatly improves safety at sea. It is especially valuable in low visibility conditions such as heavy rain, fog, high waves, darkness, and in congested waters.



BlueAIS® model range

Beside the exceptional **BlueAIS® Premium**, the **BlueAIS®** range offers two additional models - **BlueAIS® ext-B** and **BlueAIS® 12W**, both with distinct advantages.

BlueAIS® Premium transponder

BlueAIS® Premium is a fully integrated AIS solution in a single, open air installable housing. The VHF and GPS electronics and both antennas are integrated on or inside an IP69 grade waterproof enclosure. **BlueAIS® Premium's** design reduces overall cabling from typically 3 cables run for the common AIS design to one cable only.

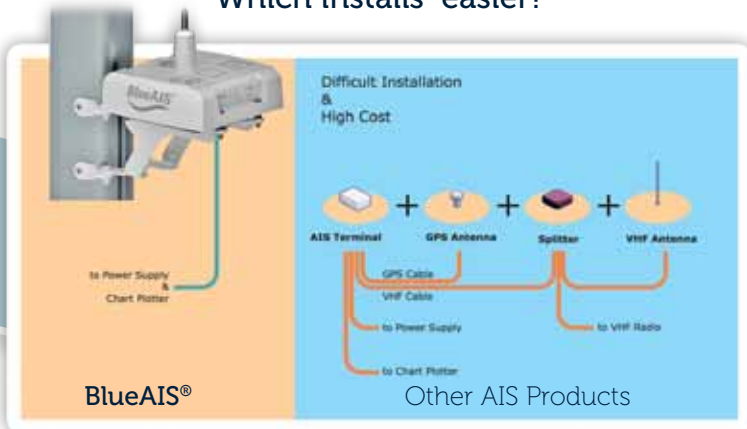


BlueAIS® key features and advantages

All integrated design – simple and low cost installation

BlueAIS® Premium has a unique all integrated design where all electronics and antennas - VHF and GPS - are built in a single housing. With no additional antenna wiring the installation is simple and cost effective.

Which installs easier?



Designed for outdoor Installation – resistant to all weather conditions

All **BlueAIS®** models are especially designed for outdoor installation and therefore don't occupy any valuable under deck space. It is a feature every small vessel owner will know to appreciate.

The "Double Shell" housing is dust- and water resistant as well as resistant to a salt laden atmosphere and high UV radiation. It operates in a temperature range from -25 Co to +55 Co. **BlueAIS®** can therefore be relied upon in any climate or weather condition.

BlueAIS® ext-B: new feature – new advantage

BlueAIS® ext-B transponder offers the possibility to connect any standard VHF antenna through the cable and mount it separately from the device itself. That way, even higher positioning of antenna is achievable, enhancing the visibility range of the vessel.

In case that you wish to use the antenna already mounted on your vessel, you have the possibility to do so with **BlueAIS® ext-B** transponder.

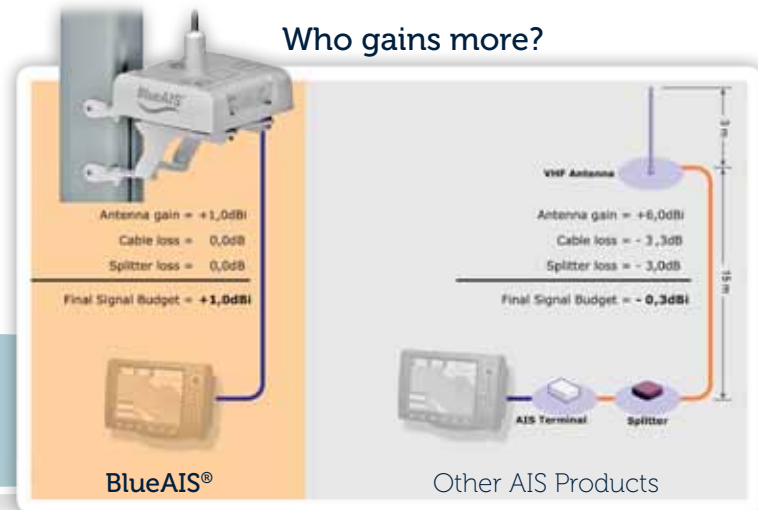
BlueAIS® 12W: more power - extended range

BlueAIS® 12W, a Power Class B transponder is developed especially for captains who navigate far from coastal areas and are obligated by national mandatory tracking rules. Its range is extended up to AIS class A range, since the transmission power is increased to 12 W. **BlueAIS® 12W** is connected to an external VHF antenna.

All digital output – no signal loss

The **BlueAIS®** model range offers the highest quality of signal and reliability of operation under all conditions. A single digital cable is linking the device to a power supply and chart or AIS plotter, whereas with other AIS devices 3 cables are the standard. As both antennas are already integrated in the single housing, antenna cables and splitters are also unnecessary.

Who gains more?



Silent Mode Button – privacy when needed

Optionally, all **BlueAIS®** transmitters can be equipped with a "silent mode button" which turns the device to receive mode only. The **BlueAIS®** is receiving all AIS signals, but doesn't transmit - the boater will see, but will not be seen.

Various mounting options – simple installation and connectivity

There is a mounting option available for every type of vessel, be it motor yacht or sailboat.

ConBoxAIS

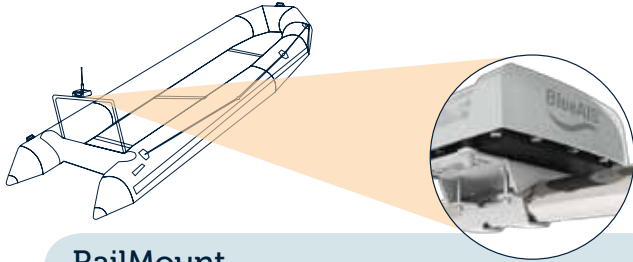
Your **BlueAIS®** connection is easy and compliant with electrical wiring standards; the ConBoxAIS connection box enables water tight cable and wire connectivity (optional).



BlueAIS® cable

It's a weather and oil resistant shielded cable with IP69 grade connector with Security seal option. Even the cable length up to 50 m does not degrade system specification and it's available on request.

15 m BlueAIS® cable is included in the price of BlueAIS®.

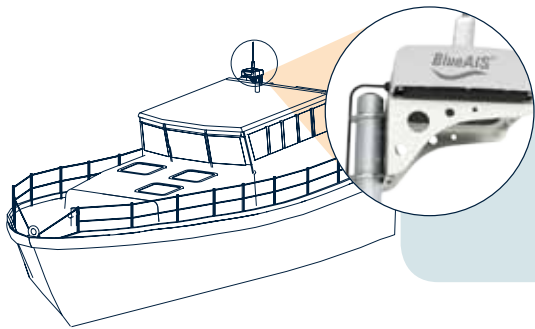
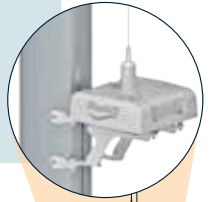


RailMount

A **BlueAIS®** mounting bracket made of marine stainless steel for installation on horizontal rails and poles. It is light and robust at the same time and it is **included in the price of BlueAIS®**.

MastMount

A sleek mounting accessory finished in white enamel and made of aluminium alloy. An efficient and easy mounting of **BlueAIS®** on sail boats.



UniMount

A universal mounting bracket made of marine stainless steel for **BlueAIS®** installation on poles of various diameters, horizontal and vertical rails, and on flat vertical surfaces as well.



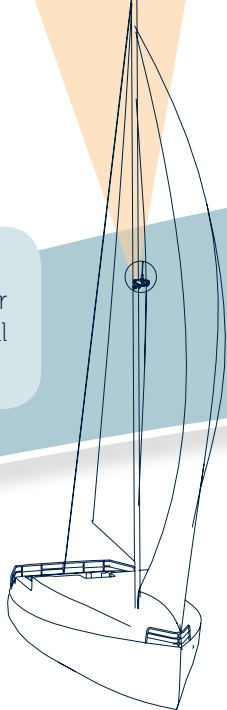
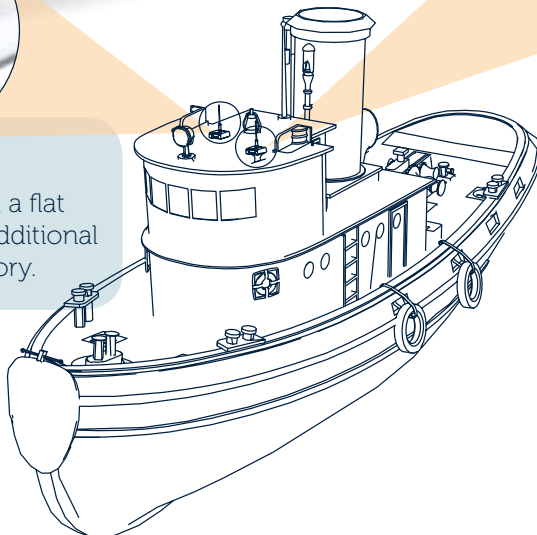
FlushMount

For installation on a flat surface without additional mounting accessory.



TowerMount

A dynamically looking and stylish mounting accessory made of electro statically white painted marine aluminium alloy. Fits best on yachts where even surfaces like fiberglass roofs can home the **BlueAIS®** best.



ISO 9001:2008
Q-463



BlueAIS® technical specification

| | |
|---|---|
| Dimensions: | 198 x 198 x 70 mm (L x W x H) |
| Power supply Power Consumption | 12V DC nominal (9.6 -15.6V) 4 W on average, 0.33 A continuous |
| Data Interfaces | RS232 38.4k baud bi-directional RS422 NMEA 38.4baud bi-directional |
| GPS Receiver | 16 channel U-blox (including internal GPS active antenna) Antenna input is ESD protected to 15kV against hostile damaging RADAR fields |
| VHF Transceiver | Transmitter x 1 Receiver x 2 Transmit power: 2W Frequency: 156.025 to 162.025 MHz in 25KHz steps Output power: 33dBm ± 1.5 dB Channel bandwidth: 25KHz Channel step: 25KHz Modulation modes: 25KHz GMSK (AIS, TX and RX) 25KHz FSK (RX only) Bit rate: 9600 b/s ± 50 ppm (GMSK) 1200 b/s ± 30 ppm (FSK) RX sensitivity: - 107dBm 25Khz |
| Integrated antennas | VHF antenna GPS active antenna (ceramic patch antenna with integrated ultra-low noise LNA) |
| Connecting Cable | 15m standard length, weather and UV resistant cable |
| Environmental parameters | "Double Shell" housing is certified to be dust and water resistant to IP69 Operating temperature: -25°C to +55°C; |
| Compliance | Approved by BSH (Bundesamt für Seeschifffahrt und Hydrographie) |
| Compliant with the following standards: | IEC62287-1 IEC - Class B ship borne equipment IEC60945 IEC - environmental requirements ITU-RM.1371-3 universal AIS technical characteristics IEC61162-1 IEC - digital interfaces part 1 IEC61108-1 IEC - GPS receiver equipment |



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