

# AIS BS610



KONGSBERG



## Automatic Identification System - Base Station

The AIS BS610 is a product in the 4<sup>th</sup> generation AIS base station range from Kongsberg Discovery. It has a sensitivity better than -115 dBm and a smooth 1U 19" rack mountable enclosure. The AIS BS610 is designed and tested in accordance with all relevant international standards including IEC 62320-1/2 and ITU-R M. 1371.

The AIS Base Station is the primary component in an AIS Physical Shore Station (PSS), and therefore the most vital component in a coastal AIS network. The AIS BS610 receives and communicates AIS data from all AIS sources: AIS mobile stations, other AIS base stations, AIS Aids-to-Navigation units, Search and Rescue units, within the VHF coverage area.

The AIS system provides a valuable tool to increase the situation awareness, the efficiency of operations and the safety. Experience shows that the workload for operators involved in vessel tracking and monitoring, is considerably reduced after the introduction of AIS.

### Remote configuration and operation

The AIS BS610 has an Ethernet/LAN interface, making it easy to interface the base station to other equipment or data networks. From the AIS Central Monitor Application Suite a single AIS BS610, or a network of base stations, can be remotely operated and maintained. The AIS BS610 also supports configuration and firmware upgrade via a web interface. All base station functions can be configured and effectuated remotely via this interface.

### Hot standby

In order to obtain a very high level of service and availability, a redundant base station configuration can be established. Two AIS BS610 units will operate autonomously in such a configuration when connecting them with a 0-modem cable and enabling the redundancy functionality. The redundancy communication can also take place over LAN. In that case, the serial cable is not needed. In case of an automatic change in redundancy status, the control centre will be notified.

### Sensitivity

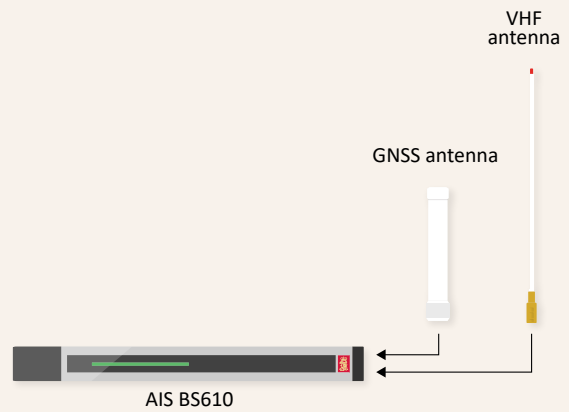
Kongsberg Discovery has also developed satellite based AIS receivers and this space-based AIS technology has strong focus on receiver sensitivity. The high sensitivity has been incorporated in the AIS BS610. The increased sensitivity exceeds the requirements in international standards and regulations, and is an incredible enhancement in terms of signal reception.

### DGNSS correction distribution

The AIS BS610 is able to broadcast DGNSS corrections through the standardized AIS message 17. Hence, differential corrections can be transmitted to all vessels which carry an AIS mobile station, if the vessel is located within the base station's coverage area.

## FEATURES

- Sensitivity better than -115 dBm
- SNMP v.2
- Optional redundant AC/DC power supply:
  - \* Combined 100 - 240 VAC and 24 VDC (10 - 36 VDC) version
  - \* Combined 100 - 240 VAC and 48 VDC (36 - 75 VDC) version
- Web interface for remote configuration and software upgrade
- RTCM v. 2.3 support for reception of DGNSS corrections on LAN
- Three remotely configurable receivers (TDMA/DSC)
- USB interface for firmware upgrade
- Transmission of virtual Aids-to-Navigation (AtoN), implementation of a subset of IEC 62320-2 functionality
- AIS repeater functionality in accordance with IEC 62320-3
- Redundancy support
- Supporting NTP as client and server
- Separate Rx and Tx connector (optional)
- Supporting 10 parallel consecutive TCP connections
- Available auxiliary equipment enabling functionality such as:
  - \* Remotely controlled hard power reset of PSS equipment
  - \* DGNSS reference and monitoring stations



## Technical specifications

### AIS BS610

#### Interfaces

Communication ports	Service and redundancy, RS-232. Local software upgrade, USB 2.0
Message formats	NMEA
LAN	100 Mbps BaseT Ethernet

#### Radio module

VHF antenna	N-connector, 50 ohm
GNSS antenna	TNC-connector, 50 ohm
VHF transmitter	12.5 W or 1 W (remotely selectable)
Sensitivity	Better than -115 dBm
Bandwidth	25 kHz
Frequencies	156.025 - 162.025 MHz Default Ch. 87B (161.975 MHz) Default Ch. 88B (162.025 MHz)
Protocol	FATDMA

#### GNSS module

GNSS receiver	72 channels, GPS, GLONASS, Galileo, BeiDou, SBAS
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#### Weights and dimensions

AIS Unit	3 kg, 44 × 485 × 345 mm
AIS Unit 24/48 VDC	3.3 kg, 44 × 485 × 345 mm
GNSS antenna	0.15 kg, 230 × 33 mm
VHF antenna	1.0 kg, 1250 mm

#### Power specifications

AIS Unit	100 - 240 VAC, 50/60 Hz
AIS Unit 24 VDC	Optional combined 100 - 240 VAC & 24 VDC
AIS Unit 48 VDC	Optional combined 100 - 240 VAC & 48 VDC
AIS Unit power consumption	Average 9 W, peak 39 W

GNSS antenna 5 V DC from AIS Unit

#### Environmental specifications

##### Operating temperature range

AIS Unit	-15 - 55 °C
GNSS antenna	-50 - 70 °C
VHF antenna	-55 - 70 °C

##### Humidity

AIS Unit	< 95 % relative, non-condensing
GNSS antenna	100 %, hermetically sealed
VHF antenna	100 %, hermetically sealed

#### Standards and regulations

Electrical safety	EN 60950-1
Electromagnetic compatibility	EN 60945/EN 61000-6-3/6-2
Electrical interface	IEC 61162-1/2
IALA recommendation	A-124
Base station operation	IEC 62320-1:2015, 62320-2:2016 (ex. clause 4.6) IEC 61993-2 (clause 15), ITU-R M. 1371-5 > 100.000 (designed to meet)
Radio	
MTBF (hours)	

Specifications subject to change without any further notice.