

AIS BS610



KONGSBERG

Kongsberg AIS Base Station

AIS BS610 is a product in the new generation AIS Base Station range from Kongsberg Seatex. The AIS BS610 has a sensitivity better than -115 dBm and 1U 19" rack mountable smooth design. The AIS BS610 is designed and tested in accordance with all relevant international standards including IEC 62320-1 and ITU M-1371-4.

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 etc, within the VHF coverage area.

The AIS system provides a valuable tool to increase the situation awareness, the efficiency of operations and 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 Service Management Application Suite a single AIS BS610, or a network of base stations, can be remotely operated and maintained. The AIS BS610 supports configuration and firmware upgrade via a web interface. All base station functions can be configured and effectuated remotely via this interface.

Hot stand-by

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. In case of an automatic change in the redundancy configuration, the control centre will be notified.

Sensitivity

Kongsberg Seatex 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.

Functionality	BS 600	BS610
Extended sensitivity	x	x
Web configuration interface	x	x
SNMP v.2 support	x	x
Configurable channels	3	3
SW upgrade via USB interface	x	x
Remote SW update via WEB interface	x	x
LAN interface	x	x
RTCM support via LAN, for msg17 transmission	x	x
Virtual AIS ATon support, subset of IEC62320-2 functionality	x	x
Redundancy support	x	x
Built-in IALA DGPS receiver (option), for msg17 transmission	x	
RTCM support via serial line, for msg17 transmission	x	
PI serial interface	x	
Local storage	x	
AIS data filtering	x	
Display for status monitoring and IP config	x	
Retransmission of AIS data (repeating)	x	

Differences between the AIS BS600 and AIS BS610

Features AIS BS610

- Sensitivity better than -115 dBm
- SNMP v.2
- WEB interface for remote configuration and SW upgrade
- RTCM v.2.3 support for reception of DGPS corrections on LAN
- Three remotely configurable receivers (TDMA/DSC)
- USB interface for firmware upgrade
- Transmission of virtual AtoN, implementation of a subset of IEC62320-2 functionality
- Redundancy support (RS-232)

A broad range of auxiliary equipment can be interfaced to enable functionality such as:

- Separate or combined transmitting and receiving antennas
- Remotely controlled hard power reset of PSS equipment
- DGNSS reference and monitor stations



Technical specifications

Interfaces

Communication ports	Service and redundancy, RS-232
Message formats	NMEA
LAN	100 Mbs BaseT Ethernet

Radio module

VHF transmitter	12.5 W or 2 W (Remote switchable)
Sensitivity	Better than -115 dBm
Bandwidth	25 kHz
Frequencies	156.025 to 162.025 MHz Default Ch. 87B (161.975 MHz) Default Ch. 88B (162.025 MHz)
Protocol	FATDMA

GPS module

GPS receiver	12 channel
Output rate	1 Hz

Physical dimensions

AIS BS610	3 kg, 44 mm x 485 mm x 345 mm
GPS antenna	0.15 kg, 230 mm (h) x 33 mm (d)
VHF antenna	1.0 kg, 1250 mm

Power

AIS BS610	100 to 240 V AC (50 to 60 Hz)
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Power consumption

Continuous	15 W
Peak	30 W

Operating temperature

AIS BS610	-15 to +55 °C
GPS antenna	-30 to +70 °C
VHF antenna	-55 to +70 °C

Humidity

AIS BS610	< 95 % relative, non-condensing
GPS 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
Radio	IEC 61993-2 (clause 15) ITU-R M. 1371-4
MTBF (hours)	>100.000 (designed to meet)

Specification subject to change without further notice.



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