

AIS BS600



KONGSBERG



Automatic Identification System - Base Station

The AIS BS600 is a product in the 4th generation AIS base station range from Kongsberg Discovery. It has a built-in storage capability, a sensitivity better than -115 dBm, a software defined radio (SDR) and the smooth design of a 2U 19" rack mountable platform. The BS600 is designed and tested in accordance with all relevant international standards including IEC 62320-1/2 and ITU-R M.1371-5.

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 BS600 receives and communicates AIS data from all AIS sources: AIS mobile stations, other AIS Base Stations, AIS Aids to Navigation units and 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 safety. Experience shows that the workload for operators involved in vessel tracking and monitoring, is considerably decreased after the introduction of AIS. The base station test standard (IEC 62320-1) introduces two variants of AIS base stations: dependent and independent. The AIS BS600 supports both.

Remote configuration and operation

The AIS BS600 has several serial interfaces and multiple Ethernet/LAN interfaces, making it easy to connect the base station to other equipment or data networks. From the AIS Service Management Application Suite a single AIS BS600, or a network of base stations, can be remotely operated and maintained. The AIS BS600 supports configuration and firmware upgrade via a web interface. All base station functions can be configured and effectuated 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 BS600 units will operate autonomously in such a configuration without any additional hardware. In case of an automatic change in the redundancy configuration, the control centre will be notified.

Sensitivity

Kongsberg Discovery has been developing satellite based AIS receivers since 2010 and this space-based AIS technology has strong focus on receiver sensitivity. The high sensitivity performance has been incorporated in the AIS BS600. The increased sensitivity exceeds the requirements in international standards and regulations, and is an incredible enhancement in terms of signal reception, greatly increasing the offered base station range.

Efficient deployment

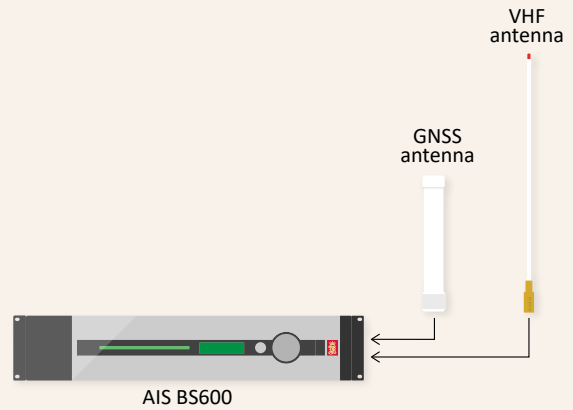
An integrated display and keyboard enables easy configuration of essential parameters. Detailed setup can be carried out via the web interface.

DGNSS correction distribution

The AIS BS600 is capable of broadcasting DGNSS corrections through the standardized AIS message type 17. Hence, differential corrections can be transmitted to all vessels which carries an AIS mobile station if the vessel is located within the coverage area of the base station. The AIS BS600 also supports RTCM via serial and LAN interface.

FEATURES

- Sensitivity better than -115 dBm
- Built-in storage capability of AIS raw data
- SNMP v.2
- WEB interface for remote configuration and SW update
- AIS data filtering capabilities
- RTCM v.2.3 support for reception of DGPS corrections on LAN or serial interface
- Can optionally be delivered with built-in IALA correction receiver
- Three remotely configurable receivers (TDMA/DSC)
- AIS repeater functionality in accordance with IEC 62320-3
- USB interface for firmware upgrade
- Transmission of up to 20 virtual Aids-to-Navigation, implementation of a subset of IEC 62320-2 functionality
- Built-in display in front of unit for easy onsite configuration
- Supporting NTP as client and server
- Available auxiliary equipment enabling 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

AIS BS600

Interfaces

Communication ports	RS-422/RS-232 incl. RTCM input
Message formats	NMEA
LAN	100/1000 Mbps BaseT Ethernet

Radio module

VHF transmitter	12.5 W or 1 W (remotely switchable)
VHF antenna	N-connector, 50 ohm
GNSS antenna	N-connector, 50 ohm
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, RATDMA

GNSS module

GNSS receiver	72 channels, GPS, GLONASS, Galileo, BeiDou
---------------	--

Weights and dimensions

AIS Unit	5.2 kg, 89 mm x 485 mm x 345 mm
GNSS antenna	0.15 kg, 230 mm x 33 mm
VHF antenna	1.0 kg, 1250 mm

Power specifications

Input voltage	100 - 240 V AC (50 - 60 Hz)
Power consumption	Average 30 W, peak 55 W
GNSS antenna	5 VDC from AIS Unit

Environmental specifications

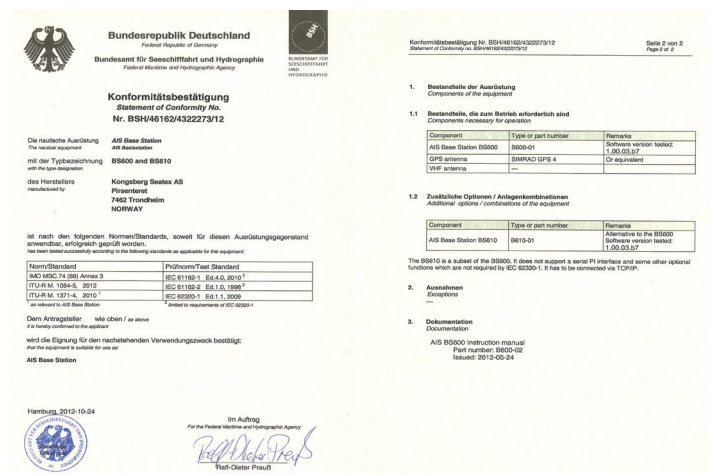
Operating temperature range	
AIS Unit	-15 - +55 °C
GNSS antenna	-50 - +70 °C
VHF antenna	-55 - +70 °C

Humidity

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

Standards and regulations

Environmental	IEC/EN 60945-1:2002 (HW platform)
Electrical safety	IEC/EN 61010-1:2010
Electromagnetic compatibility	IEC/EN 60945:2002
	ETSI/EN 301 489-1 (V1.8.1)
	ETSI/EN 301 489-5 (V1.3.1)
Electrical interface	IEC 61162-1:2010/IEC 61162-2:1998
IALA recommendation	A-124
Base station operation	IEC 62320-1:2015, IEC 62320-2:2016 (ex. clause 4.6)
	IMO MSC.74 (69) Annex 3
Radio	IEC 62320-1:2009
	ITU-R M. 1371-5
MTBF (hours)	>100.000 (designed to meet)



Specifications subject to change without any further notice.