AIS BS600

KONGSBERG

AUTOMATIC IDENTIFICATION SYSTEM - BASE STATION

The AIS BS600 is the new and fourth generation RoHS compatible AIS Base Station from Kongsberg Seatex with built-in storage capability, sensitivity better than -115 dBm, software defined radio (SDR) and a 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 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 BS600 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 decreased after the introduction of AIS. The base station test standard (IEC 62320-1) introduces two variants of AIS base stations: dependent and independent. AIS BS600 supports both.

Remote configuration and operation
The AIS BS600 has several serial interfaces and 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 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 stand-by
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.

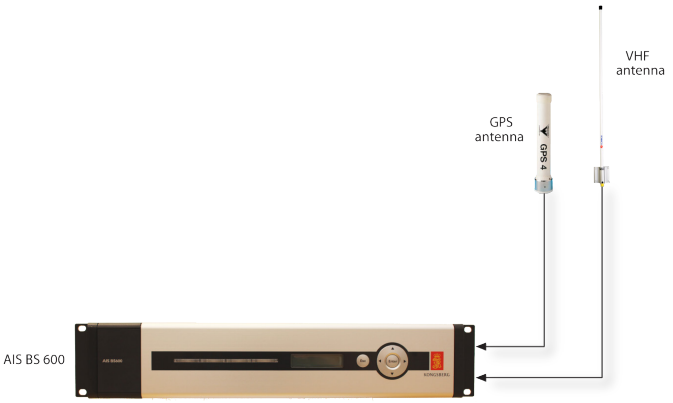
Sensitivity
Kongsberg Seatex has also been developing satellite based AIS receivers and this space-based AIS technology has strong focus on receiver sensitivity. The high sensitivity has been incorporated in the AIS BS600. The increased sensitivity exceeds the requirements in international standards and regulations, and is an incredible enhancement in terms of signal reception.

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 able to broadcast DGNSS corrections through the standardized AIS Msg 17. Hence, differential corrections can be transmitted to all vessels which carries an AIS mobile station if the vessel is located within the base stations coverage area. The AIS BS600 supports RTCM via serial and LAN interface.

FEATURES AIS BS600

- 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
- Three remotely configurable receivers (TDMA/DSC)
- Built-in repeater functionality
- USB interface for firmware upgrade
- Transmission of virtual AtoN, implementation of a subset of IEC62320-2 functionality
- Built-in display in front of unit for easy onsite configuration



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

INTERFACES

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

RADIO MODULE

VHF transmitter	12.5 W or 2 W (remotely switchable)
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

GPS MODULE

GPS receiver	12-channel
Output rate	1 Hz

WEIGHTS AND DIMENSIONS

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

POWER SPECIFICATIONS

AIS Unit

Input voltage	100 to 240 V AC (50 to 60 Hz)
Power consumption	Max. 55 W
GPS antenna	5 V DC from AIS Unit

ENVIRONMENTAL SPECIFICATIONS

Operating temperature range

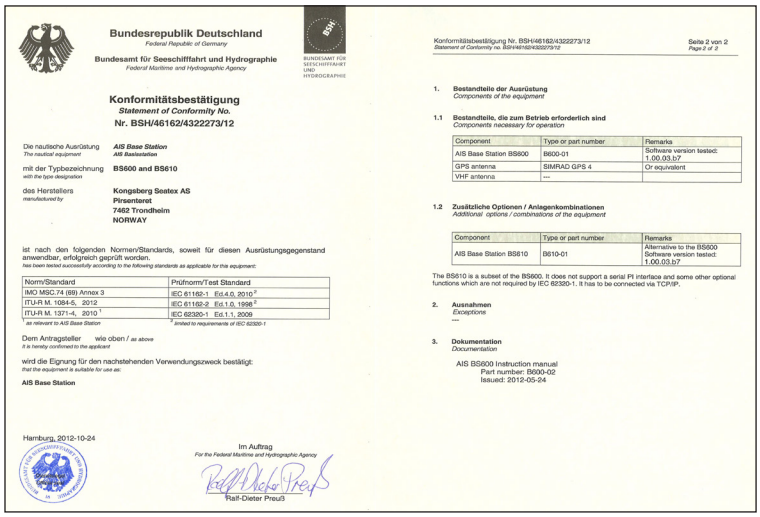
AIS Unit	-15 to +55 ºC
GPS antenna	-50 to +70 ºC
VHF antenna	-55 to +70 ºC

Humidity

AIS Unit	<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)



Bundesrepublik Deutschland
Federal Republic of Germany
Bundesamt für Seeschiffahrt und Hydrographie
Federal Maritime and Hydrographic Agency

Konformitätsbestätigung
Statement of Conformity No.
Nr. BSH/46162/4322273/12

Die nautische Ausrüstung — *The nautical equipment*: *AIS Base Station* / *AIS Basisstation*
mit der Typbezeichnung — *with the type designation*: BS600 and BS610
des Herstellers — *manufactured by*: Kongsberg Seatex AS, Pirsenteret, 7462 Trondheim, NORWAY

ist nach den folgenden Normen/Standards, soweit für diesen Ausrüstungsgegenstand anwendbar, erfolgreich geprüft worden.
has been tested successfully according to the following standards as applicable for this equipment:

Norm/Standard	Prüfnorm/Test Standard
IMO MSC.74 (69) Annex 3	IEC 61162-1 Ed.4.0, 2010 [2]
ITU-R M. 1084-5, 2012	IEC 61162-2 Ed.1.0, 1998 [2]
ITU-R M. 1371-4, 2010 [1]	IEC 62320-1 Ed.1.1, 2009 [2]

[1] *as relevant to AIS Base Station* [2] *limited to requirements of IEC 62320-1*

Dem Antragsteller wie oben / *as above*
It is hereby confirmed to the applicant
wird die Eignung für den nachstehenden Verwendungszweck bestätigt:
that the equipment is suitable for use as:
AIS Base Station

Hamburg, 2012-10-24
Im Auftrag
For the Federal Maritime and Hydrographic Agency
Ralf-Dieter Preuß

Konformitätsbestätigung Nr. BSH/46162/4322273/12 — Seite 2 von 2 / *Page 2 of 2*

1. **Bestandteile der Ausrüstung** / *Components of the equipment*

1.1 **Bestandteile, die zum Betrieb erforderlich sind** / *Components necessary for operation*

Component	Type or part number	Remarks
AIS Base Station BS600	B600-01	Software version tested: 1.00.03.b7
GPS antenna	SIMRAD GPS 4	Or equivalent
VHF antenna	---	

1.2 **Zusätzliche Optionen / Anlagenkombinationen** / *Additional options / combinations of the equipment*

Component	Type or part number	Remarks
AIS Base Station BS610	B610-01	Alternative to the BS600 Software version tested: 1.00.03.b7

The BS610 is a subset of the BS600. It does not support a serial PI interface and some other optional functions which are not required by IEC 62320-1. It has to be connected via TCP/IP.

2. **Ausnahmen** / *Exceptions*
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3. **Dokumentation** / *Documentation*
AIS BS600 Instruction manual
Part number: B600-02
Issued: 2012-05-24

July 2015

Specifications subject to change without any further notice.

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