R60 VDES Base Station

AIS/ASM/VDE Base Station with Software Defined Radio

The R60 VDES Base Station from Saab TransponderTech is a VDES compliant base station, including AIS and ASM functionality. It is also prepared for the new VDE channels, pending international approval. The R60 is the successor to the market-leading R40 AIS Base Station, which assures for high quality and stable performance.

Thanks to its market leading Software Defined Radio (SDR) design, it is built to be future proof and support coming changes to international standards and requirements.

The R60 is compliant with the RED Directive and applicable international standards such as VDES-standard, AIS Base Station Standard IEC 62320-1, Aton Standard IEC 62320-2 and AIS Repeater Standard 62320-3.

The R60 VDES Base Station is the main component of a Physical AIS Shore Station as defined by IALA. Its main purpose is to receive data from and transmit data to AIS/VDES equipped vessels travelling within the coverage area of the Base Station. The R60 can either be installed on a stand-alone basis or integrated into a network, such as the market leading Saab MARITIME**CONTROL** platform.

Ensuring a high degree of reliability and availability has been the key design goal during the development of the R60, resulting in an MTBF better than 100,000 hours. Furthermore, the R60 includes several Ethernet ports to allow for full network connection redundancy and remote power cycling of the base station.

The R60 also has a built in NTP-server option to support local time synchronisation for LAN connected equipment.

Furthermore, it supports extensive possibilities for VDL analysis via FSR/VSI-message information, giving details such as Received Signal Strength, Time of Arrival and Signal to Noise Ratio. The R60 also supports channel management via both AIS and DSC.

To allow for simple monitoring and configuration a colour display with touch interface is available on the front. For more advanced configuration, monitoring and remote updates, there is a built in WEB server.

FEATURES OVERVIEW

- Fully Compliant to all AIS Base Station Requirements (IEC 62320-1)
- Aids to navigation (AtoN) functionality (IEC 62320-2)
- Built in Repeater (IEC 62320-3)
- Reception and transmission of all applicable AIS and ASM messages
- Simultaneously supports AIS 1, AIS 2, ASM 1, ASM 2 *1) and Secure AIS (option)
- Software Defined Radio (SDR)
- Sensitivity better than -115 dBm
- Multiple Ethernet and serial ports, supporting redundancy and adaptation for Cyber Security
- Dedicated Ethernet service port for independent remote power control
- Built in advanced WEB-server
- Supports SNMP status monitoring
- Support for VDL Signal Information Message (VSI)
- Support for Frame summary of AIS reception (FSR)
- Internal memory for storage of data
- Built in Base Station Controller (BSC)
- MTBF > 100,000 hours
- Hot Standby Support
- NTP-server functionality (option)
- Optional support for Secure AIS, which offers encrypted communication

*1) As defined in VDES standard ITU-R M.2092-0 (2015), Annex 2. / IALA G.1139 (dec-2017)

PHYSICAL DATA		
Type	19” Rack-mount. Unit height: 2U	
Dimensions Height Width Depth	 89 millimetres (3.51”) 483 millimetres (19.02”) 357 millimetres (14.06”)	
Weight	6 kilograms (13 Lbs)	
DISPLAY		
Colour display	4.3” WQVGA with touch interface	
INPUT POWER		
Power input requirements	12-24 VDC	AC 100-240 volts @ 50/60 Hz
Recommended fuse size	5 A (T5A 250V)	2 A (T2A 250V)
GNSS INTERNAL RECEIVER		
Number of channels Supported systems Sensitivity	> 50 channels GPS, BeiDou, Galileo, GLONASS Better than –162 dBm	
VHF TRANSCEIVER		
Frequency	155 – 163 MHz	
Channel Bandwidth	25 kHz, future VDE options 50 kHz, 100 kHz	
Channel Selection	Channel numbers as in ITU-R M. 1084-4	
Output power	AIS: LOW (1W) and HIGH (12.5W) ASM: from 1W to 12.5W	
Receiver sensitivity	Better than -115 dBm at 20% PER	
Bite rate (Tx/Rx)	9.6 kbps (AIS), 19.2 kbps (ASM), 307.2 kbps (VDE option max bit rate)	
ELECTRICAL INTERFACES		
Data Ports	RS-232/422 V11. Bit-rate up to 115 200 bps	
TCP/IP Ports	3 x Ethernet (UDP, UDP Multicast, TCP)	
GNSS-Antenna	TNC-Female, with 5V @ 40mA power supply to GNSS antenna pre-amplifier	
1PPS and IRIG-B 003	9-pin D-sub (male)	
VHF-Antenna	N-Female, separate RX and TX antenna ports (option)	
Digital Input and Output Port	Via 9-pin D-sub (male)	
AC-power DC-power Serial data	IEC 320 connector AMP CPC Type III+ 9-pin D-sub (male)	
STANDARDS		
Compliance to standards	Radio Equipment Directive (RED) 2014/53/EU VDES-standard ITU-R M.2092-0 AIS Base Station Standard IEC 62320-1 Aton Standard IEC 62320-2 AIS Repeater Standard 62320-3	
ENVIRONMENTAL DATA		
Temperature Humidity	-20°C to +55°C (Operational), -55°C to +85°C (Storage) 0-95%	

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