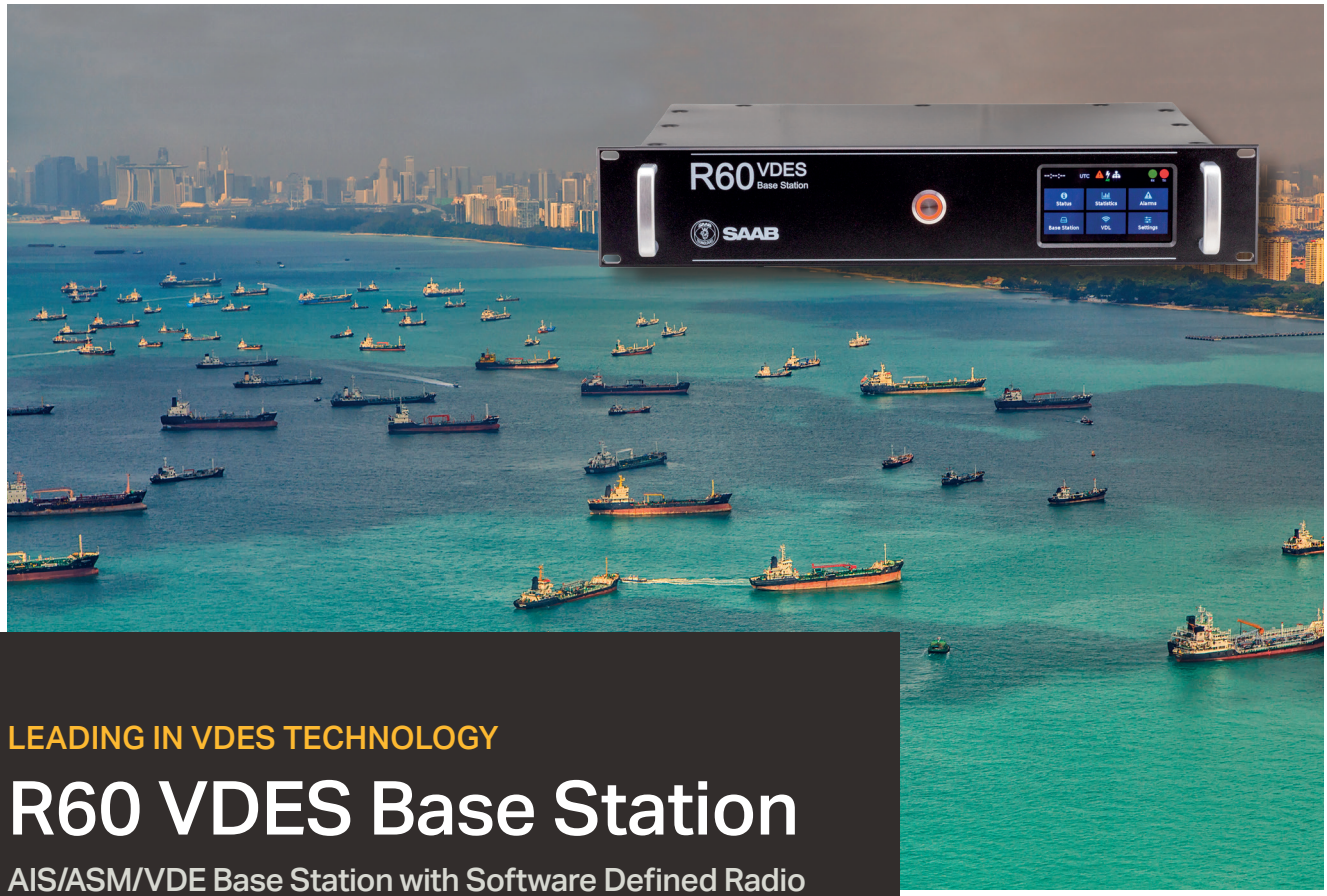

LEADING IN VDES TECHNOLOGY

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 VDES Base Station 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

- 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 * 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

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

Technical specifications

PHYSICAL DATA

Type	19" Rack-mount. Unit height: 2U
Dimensions	
Height	89 millimetres (3.51")
Width	483 millimetres (19.02")
Depth	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	20 A (T20A 50VDC) 5x20 mm, 3 A (T3A 250V) 5x20 mm

GNSS INTERNAL RECEIVER

Number of channels	> 50 channels
Supported systems	GPS, BeiDou, Galileo, GLONASS
Sensitivity	Better than –162 dBm
Frequency	L1 (1575 MHz)
Update rate	1 Hz

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 -118 dBm (AIS) and -115 dBm (ASM) at 20% PER
Bit 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). The VDES Base Station supports up to ten simultaneous connections via the Ethernet interface.
GNSS-Antenna	TNC-Female, with 5V @ 40mA power supply to GNSS antenna pre-amplifier
VHF-Antenna	N-Female, separate RX and TX antenna ports (option)
1PPS and IRIG-B 003	Via the 9-pin D-sub (male)
Digital Input/Output Port	Via the 9-pin D-sub (male)
AC-power	IEC 320 connector
DC-power	AMP CPC Type III+
Serial data	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	-20°C to +55°C (Operational), -55°C to +85°C (Storage)
Humidity	0-95%
MTBF	MTBF is >> TBD hours and availability figure is TBD %

COOLING

Fanless design	No cooling required within the operational temperature range

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Draft specifications subject to change without further notice.
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