

OPERATIONAL DESCRIPTION OVERVIEW

Each AIS system consists of one VHF transmitter, two VHF TDMA receivers, one VHF DSC receiver, and a standard marine electronic communications link (IEC 61162/NMEA 0183) to shipboard display and sensor systems. Position and timing information is normally derived from an integral or external global navigation satellite system (e.g. GPS) receiver, including a medium frequency differential GNSS receiver for precise position in coastal and inland waters. Other information broadcast by the AIS, if available, is electronically obtained from shipboard equipment through standard marine data connections.

The AIS transponder normally works in an autonomous and continuous mode, regardless of whether it is operating in the open seas or coastal or inland areas. Transmissions use 9.6 kb GMSK FM modulation over [25 or 12.5 kHz channels](#) using HDLC packet protocols. Although only one radio channel is necessary, each station transmits and receives over two radio channels to avoid interference problems, and to allow channels to be shifted without communications loss from other ships. The system provides for automatic contention resolution between itself and other stations, and communications integrity is maintained even in overload situations. **

The MX531/DEBEG 3400 is a UIAS Transponder, which receives data from other vessels by means of a VHF radio and sends these data to the display systems such as a MKD LCD control and display unit as well as to radar/navigation systems.

In the opposite direction the UAIS receives data from the various radar and navigation systems and the ships sensors and transmits these data by means of the VHF radio.

Access to these data and access to the VHF radio for a pilot use is prepared by means of an additional port access called the pilot port.

The UAIS has a long range port to connect a long distance communication system, for instance a satellite communications system. In this way, the UAIS can be called to send the ships data. These data are sent back via the long range port to the questioner.

For addition system information. Please refer to the USCG web page www.navcen.uscg.gov.