How to use ProAIS2 Software?

Establishing a connection

To connect to proAIS2 you will need to select the relevant device (usually 'AIS Class B Transceiver' for Windows and 'AIS Virtual COM port' for macOS) from the drop down menu at the top of the screen before pressing the 'Connect' button. If there is no suitable device to select, please ensure the USB cable is securely connected and that the appropriate LEDs are illuminated to indicate it has initialized.

'Configuration' tab

Vessel Details:

You will need to populate these fields using the details from your ship license.

The MMSI number will be the same as the one issued for your VHF radio. If you have not been issued with an MMSI number you will need to contact your local authority. Please contact customerservice@si-tex.com if your MMSI number has already been configured and you need to change it. The remaining vessel data can be edited using proAIS2 once configured. Configuration of the call sign is not required if you do not have one.

Ship's Dimensions and GNSS Antenna location:

Enter the position of your GPS antenna (in meters) in reference to the four dimensions of your boat. If your unit is using its internal GPS antenna you will need to enter the position of your unit.

Configure Baud Rates:

This setting controls the speed at which data is output from the NMEA 0183 port(s). You will need to ensure it matches the baud rate of the connected equipment (for example, a chartplotter or VHF radio). Typically, chart plotters require 38,400 baud and VHF radios require 4,800 baud. AIS data should not be configured for output at baud rates lower than 38,400 – this is because messages may be dropped when travelling through areas of high traffic where there is a lot of data to process.

Output GNSS Sentences:

Tick the boxes as required to output the GPS sentences over the NMEA 0183 port(s). This will usually be defined by the external equipment you're connecting to, but if unknown RMC is typically required to provide position and SOG/COG. If you require GPS data (PGNs) to be output over the NMEA 2000 port you will need to tick the RMC box.

GNSS configuration:

This setting controls the combinations of satellite constellations which are used to get a position fix. This is not displayed for first generation SI-TEX AIS products as they use GPS only.

Long range broadcast:

This setting enables/disables the transmission of Message 27, used for long range detection. It's transmitted on a different channel (frequency) and typically received by satellites. This proAIS2 feature is supported by Class B SO products only.

*Please note that any applied configuration will need to be saved by pressing the '**Write Configuration**' button.*

'GNSS Status' tab

Use this tab to check the performance of your GPS antenna. This is particularly useful if you're unsure where you need to mount your unit if it uses an internal GPS antenna. A good GPS fix is 30-40dBHz, although this may be difficult to achieve if your unit is using an internal GPS antenna and there's an obstruction interfering with the signal.

'Other Vessels' tab

This tab shows the vessels in range. The vessels can be sorted by selecting the appropriate parameter at the top of the field.

'Diagnostics' tab

Checklist:

If your unit is fully configured and installed correctly every parameter should have a green tick against it.

Internal Data:

This field displays software versions, serial numbers, and operational/performance data. You may be requested for this information if you contact customer support for assistance.

'VSWR' is Voltage Standing Wave Ratio and is an indicator of VHF antenna performance. A good VSWR is 3:1 or less and can be affected by factors such as length or quality of cable and type of VHF antenna connected. If it exceeds the threshold a red cross will appear against AIS Antenna in the checklist field.

Power supply voltage reports the voltage received at the unit. There may be a small drop in voltage between the battery / power source and the unit, depending on the length of cable. External power (12-24V) is required for the unit to receive and transmit.

Status:

Reflects the LED indicator status on your unit. Select the 'Silent Mode' button to enable / disable silent mode, where the blue LED will illuminate if enabled.

Statistics:

Displays the number of messages that have been received and transmitted.

Messages:

Occasionally messages will be output in this field depending on the operational status of your product.

Class B/CS products routinely output 'CP busy' or 'TX attempt failed' messages; these are normal and relate to the way that Carrier Sense operates, where it needs to listen out for a free slot before it can transmit. You may also see a message relating to RX1 / RX2 and DSC; this is also normal and indicates when one of the receivers is monitoring the DSC channel on a regular, time-shared basis.

Alarms:

This field displays all active alarms. The alarm will be indicated with a corresponding red LED, either flashing (high VSWR) or solid (other hardware-related failure). If the conditions change and the alarm is no longer active, it will disappear from the list and the red LED will stop.

'Wi-Fi' tab

Use this tab to configure the Wi-Fi interface on your unit. The configurable parameters will differ between the Wi-Fi variants. This tab is only available on products that support Wi-Fi.

As with the vessel data configuration, you will need to press the 'Write Configuration' button to save any changes.

'Serial Data' tab

Raw serial data is output on this tab. It can also be used to log the serial data to a file (which may be requested for diagnostic purposes if you contact customer support), and there's a field to enter command(s), if you have requested a configuration that isn't supported directly by proAIS2.

'VDR' tab

Your position is automatically logged every time your vessel moves more than 10 meters, and this tab can be used to download that data from a selectable date range. The VDR feature is only supported on Wi-Fi products.

TX attempt failed (Msg 18) and CP Busy messages

MDA-1 Class B AIS is a 'carrier sense' system. It must find a free slot to transmit in by listening just before transmission to check the slot is empty.

When a transmission is scheduled a block of 10 potential slots is selected. It will attempt to transmit in the first of these slots.

If the slot is busy the 'CP busy' (meaning 'candidate position busy') message will be output. It will then try again in the next slot, and so on for the 10 slot block.

It is quite normal to see 'CP busy' messages in an area where other AIS vessels are operating. It simply means the first slot selected was busy. 99% of the time the transmission will be successful in one of the other 9 slots.

So long as the indicator remains green transmissions are occurring on schedule. If transmissions can't be made because the AIS environment is simply too busy, then the indicator will turn amber (this is incredibly rare – I have yet to witness it outside test conditions).

In summary these messages are normal and can be ignored if the indicator is green

NB – it's not shown as an error or alarm in ProAIS2 just in the 'messages' box. Anything in the 'messages' box is just for info and not a fault or alarm; those are shown in the 'Alarms' box.