Digital Yacht Ltd
CLA1000 Class A AIS Transceiver
Fault Finding Guide

Digital Yacht Limited
E-Mail – support@digitalyacht.co.uk

Section 1: Initial inspection.

Inspect unit for obvious damage / signs of misuse

- Unit appears to be water damaged → Unit is IP rated to IP52, so if unit appears to have been immersed in water or subject to extensive water ingress, this will be caused by incorrect installation or misuse.
- Unit has been damaged thru misuse
- Unit has been opened

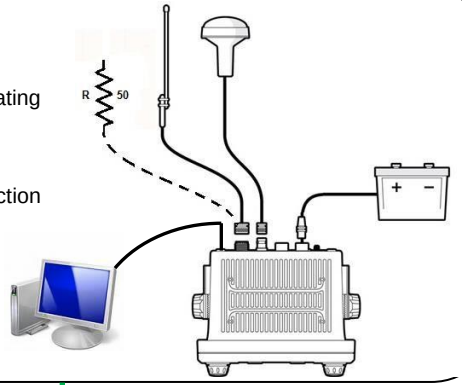
→ Warrant Void Digital Yacht will charge for repair

Unit has not been opened / no obvious signs of damage or water ingress

Connect unit to:

- 12/24V Power Supply with Min 5A rating
- Suitable VHF antenna / Load *
- GPS antenna with clear view of sky
- PC / Laptop preloaded with ConfigAIS software via serial connection

* Refer to Section 4 of this guide for advice and notes about Antenna systems.



Switch on power supply to unit

- Screen does not light up at all. → Check power supply is active and connection is correct
  - Screen does not light up at all. → Unit will require Repair by Digital Yacht, email us at support@digitalyacht.co.uk
  - Check power supply is active and connection is correct → Power down unit
- Screen Lights Up and Screen options appear → **Continue on next page**
- Screen Lights Up but no text appears → Contact us for latest Software support@digitalyacht.co.uk
  - Software updated successfully → Power down unit
  - Software updated successfully but screen still does not light up / Software Update unsuccessful → Unit will require Repair by Digital Yacht, email us at support@digitalyacht.co.uk
- Discoloured pixels / Lines missing on screen → Unit will require Repair by Digital Yacht, email us at support@digitalyacht.co.uk

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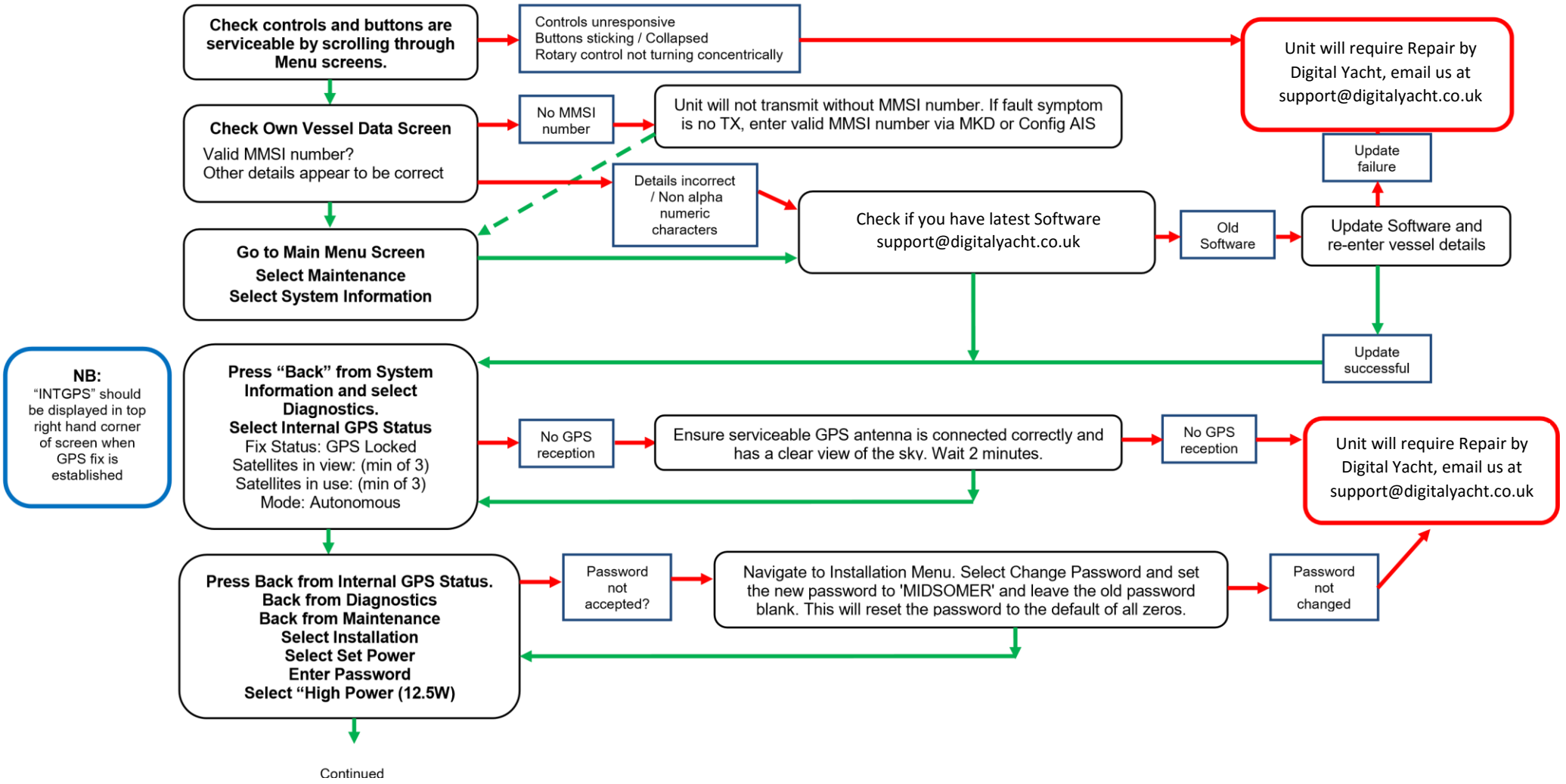

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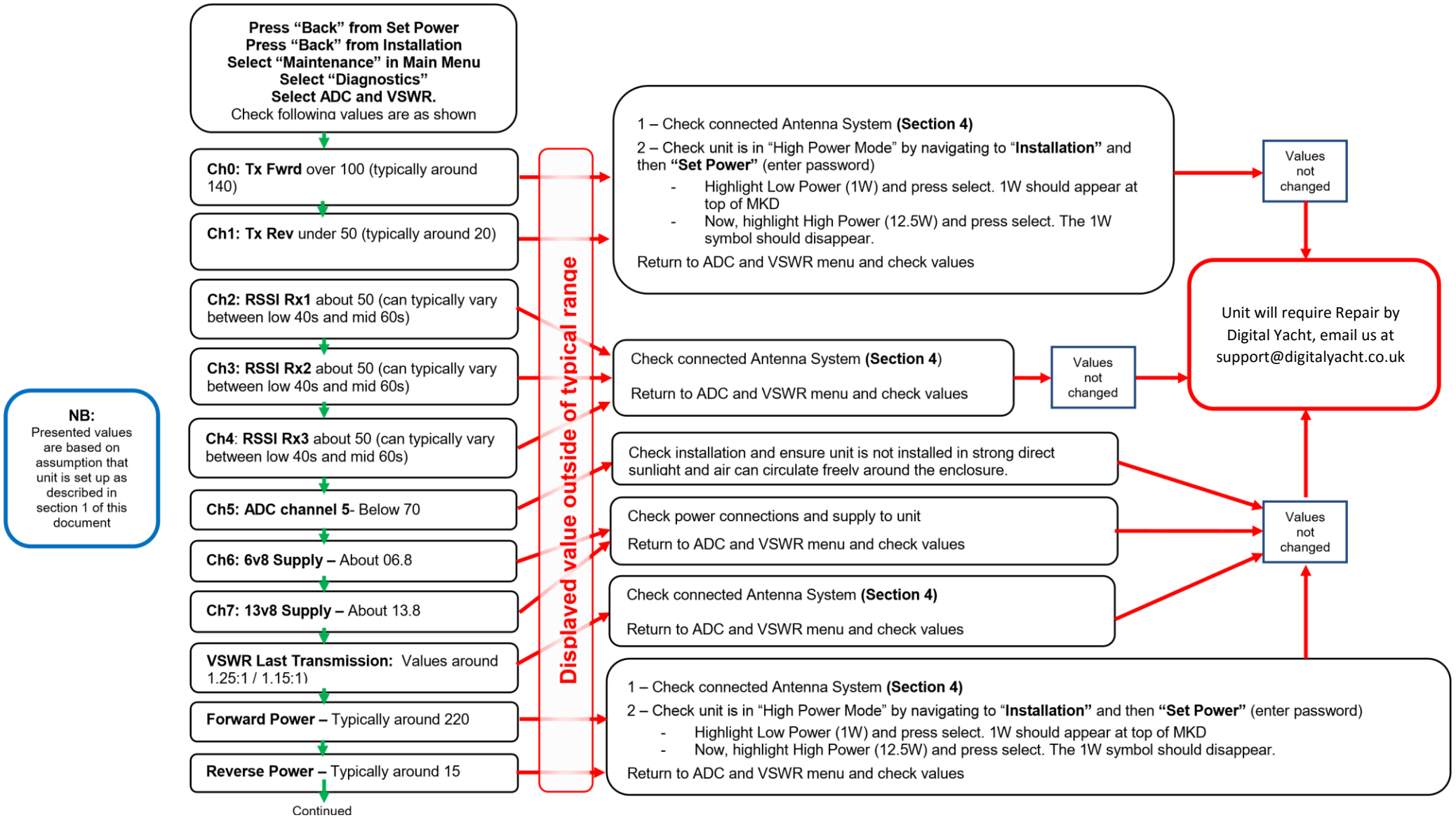

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NB:
Presented values are based on assumption that unit is static and connected to supplied GPS

Press "Back" from ADC and VSWR
Select "Sensor Port Status"

Press "Back" from Sensor Status
Press "Back" from Maintenance
Select Installation
Select Sensor configuration
Enter Password

- Highlight "Require DTM" and press "Edit".
- Set to "Yes" and press Save
- Highlight "Require DTM" again and press "Edit"
- Set to "No" and press Save again.

GNSS in use: Internal GNSS
SOG in use: Internal
COG in use: Internal
Heading: Lost/Invalid
ROT in use: No valid information
UTC Clock: Lost

Values not as shown

Check GPS antenna connection and installation is correct

Unit will require Repair by Digital Yacht, email us at support@digitalyacht.co.uk

Check unit is set to factory defaults:

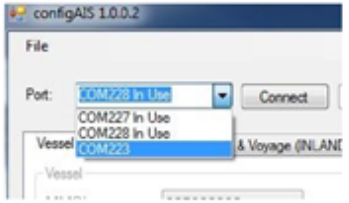
Sensor 1 Port Baud :	4800
Sensor 2 Port Baud :	4800
Sensor 3 Port baud :	4800
Long Range Port Baud :	4800
Beacon Port Baud :	4800
Ext KeyDisp Baud :	38400
Pilot Port Baud :	38400
RS232 Port Baud :	38400

Press Edit and use the Rotary knob to change Baud rates if required.
Remember to "Save" any changes

NB:
Before tests to establish faults with connection to external devices/computers etc. are carried out, it is important to first ensure that the unit is operating in its factory "default" mode.

Check connection from RS232 port on unit on test to PC (we recommend you use an Easysync adaptor if a USB adaptor is required for your PC, contact us for advice on suitability of adaptors

Open ConfigAIS software on connected PC and connect to unit on test by selecting appropriate comm port from drop down list in top left hand corner of ConfigAIS.



Connection established

Connection not established

Check Vessel Details, Alarm and Sensor Repeat settings are as required and Serial Data Tab is showing NMEA sentences

Check connection to PC is sound. Check suitability of adaptor if using USB-Serial converter.

Still no connection

Proceed to Section 2

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Section 3: Basic Receive/Transmit check.

NB:

Suggested set-up of remote test unit:
Poseidon Class AIS Transceiver set up as follows:

- 5A 12V Power Supply
- VHF Antenna
- GPS antenna with good signal reception
- Power set to Low (1W)
- "Test" Vessel data programmed into Own Vessel Data

Ensure unit to be tested is set up and tested as detailed in Section 1 of this guide.

To check content and frequency of transmission from Class A under test, leave Remote unit on Target List screen.

When unit being tested appears on the Target List of the remote unit, click on it to reveal transmitted vessel data.

Please allow at least 2 minutes for the unit on test to transmit.

Nothing received on remote unit

Check unit under test is configured with valid MMSI number.

Check unit under test for any active alarms on MKD (refer to section 5 for explanation of all alarms)

Check antenna system connections / setup of both units are sound.

Nothing received on remote unit

Unit will require Repair by Digital Yacht, email us at support@digitalyacht.co.uk

Transmission received on remote unit

Check transmitted information is correct (as per details entered in unit under test)

Navigate to Target List on unit under test. Remote unit details should appear.

Nothing received on test unit

Ensure remote unit is operating correctly and is correctly setup.

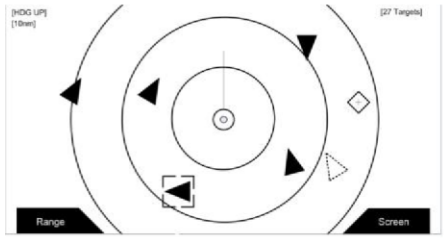
Check unit under test for any active alarms on MKD (refer to section 5 for explanation of all alarms)

Check antenna system connections / setup of both units are sound.

Nothing received on test unit

Navigate to Target Plot Screen.

Any active remote AIS transceivers within range should also be displayed here in relation to the location of the test Class A, provided the test unit has a fixed GPS position.



Test unit has INTGPS fix but no targets received.

Section 4: Antenna System Check (Class A unit only).

Important Note about Antenna Systems used for testing AIS

If you are planning on using an Antenna for the purposes of testing/evaluation of reported problems as part of your own in-house inspection process, please remember that there are factors which may affect an antennas VSWR and performance such as:

- Electrical / RFI/ MEMIC Interference
- People walking past / working close to antennas
- Metallic objects / surfaces or structures

To ensure a consistent "control" of antenna system conditions, we recommend that you use a suitable dummy load or attenuator in place of VHF antennas on both test and remote units used in in-house testing. We can recommend suitable loads for this purpose if required. Please contact if you'd like our help.

The following fault-guide will only allow you to diagnose if there is a fault with the antenna connections on the Class A itself. Please remember that issues such as VSWR alarms and TX Malfunctions can be caused through problems with faulty connectors, cables and antennas and may not indicate a fault with the unit itself.

Unit displays VSWR / TX Malfunction Alarms or customer reports VSWR error / alarm as fault condition

↓

Select Main Menu
Select "Maintenance"
Select "Diagnostics"
Select ADC and VSWR.
Check values are as defined in Section 1

↓

Values correct → **Check customers antenna type and installation is as per advice**

Values incorrect → **Check all external connectors / cables / antenna for damage and correct fitting**

↓

Values still incorrect

↓

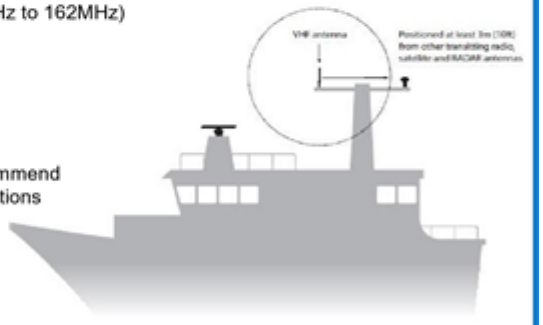
Unit will require Repair by Digital Yacht, email us at support@digitalyacht.co.uk

NB:
VSWR, TX Frwd/TX Rev/Frwd Pwr/Rev Pwr values can only be displayed if the unit has transmitted

NB:

Recommended VHF antenna specification:

Band:	Marine VHF band (nominally 156MHz to 162MHz)
Impedance:	50 Ohms
Gain:	3dBi
VSWR:	<1.5:1 at resonant frequency
Max power:	Typically >25W
Polarisation:	Vertical
Bandwidth:	Typically 6MHz
Cable:	RG58 or better. Note the IMO recommend RG214 or better for SOLAS installations
Connector:	PL-259 (sometimes called 'UHF')



General vessel antenna installation advice:

- Locate Antenna as high and as far away from other antennas as possible
- Do not install antenna adjacent to large metallic surfaces
- Any external connectors on system should be waterproof by design
- Antenna system cables should be installed in cable channels at least 10cm (4ins) away from power cables
- Ideally the AIS VHF Antenna should be mounted directly above or below the ships primary VHF radiotelephone antenna, with no horizontal separation and with a minimum of 2m vertical separation. If it is located on the same horizontal level as other antennas, the distance apart should be at least 10m