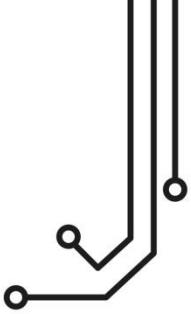
DIGITAL YACHT



ENGINELINK NMEA 2000 ENGINE MONITOR

Installation and instruction Manual

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www.digitalyacht.co.uk

Version 1.00

1. Introduction

Congratulations on the purchase of your EngineLink Wireless NMEA 2000 Engine Monitor. In addition to this quick start guide, we recommend watching our EngineLink video, simply scan the QR code to be taken to our YouTube video….

SCAN ME

This product is designed for use by Dealers and End Users with knowledge/experience of NMEA 2000, Digital Yacht cannot provide technical support or training on NMEA 2000 networking.

2. Before you start

To use your EngineLink you will need:

- A wireless device with web browser i.e. Smart Phone, Tablet or Laptop
- A spare "T-Piece" connection on a working/powered NMEA 2000 network.

3. Installation

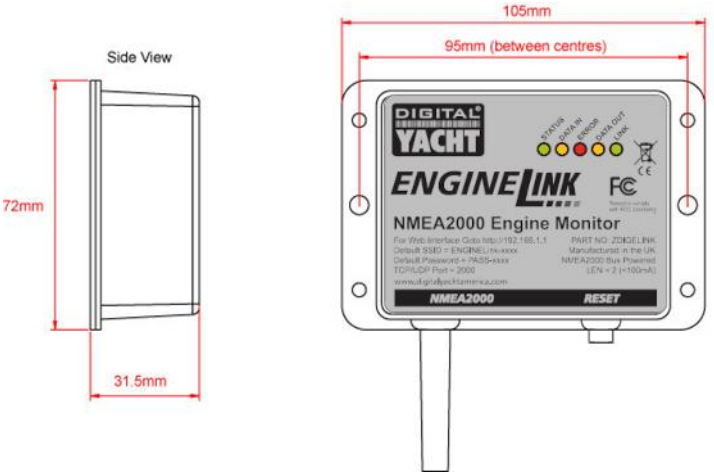
The EngineLink is IP54 rated (water resistant) and care should be taken when installing it, to ensure it is never submerged in water.

3.1 – Connecting to the NMEA 2000 Network

- Connect the EngineLink cable, to a spare connector on the NMEA2000 network.
- EngineLink takes its power (LEN=2) from the NMEA2000 network, so no additional connections are necessary.
- If you are connecting EngineLink to a non-standard NMEA2000 network, then a suitable adaptor cable will need to be sourced from the manufacturer;
  - SeaTalkNG (Raymarine P/No A06045)
  - Simnet (Simrad P/No 24006199)

3.2 – Mounting and Location

- Install EngineLink to a flat bulkhead using suitable fixings.
- EngineLink can be installed in any orientation.
- A location should be chosen for best WiFi performance, i.e. central location on the boat with minimum metallic obstructions



3.3 – Powering EngineLink

- Apply power to the NMEA 2000 network and the EngineLink's LEDs will briefly flash once and then after a few seconds the Status and Data LEDs should be illuminated, as per Table 1…

Condition	STATUS LED (Green)	DATA IN LED (Yellow)	ERROR LED (Red)	DATA OUT LED (Yellow)	LINK LED (Green)
ON (Solid)	Wi-Fi STA Mode Connected		System Error		Web Connection
Flashing	Wi-Fi AP-Mode Active	Data Received	Data Error	Data Transmitted	
OFF	Wi-Fi STA Mode Disconnected*	No Data From N2K	All OK	No Data To N2K	No Web Connection

Table 1

*** Note** – Short flash every 2 seconds indicates EngineLink cannot connect in STA Mode, check wireless network is visible and password is correct.

3.4 – Setting up the Wireless Network

- By default, EngineLink creates a wireless network (Access Point), with Name (SSID) = "**enginelink-xxxx**" and Password = "**PASS-xxxx**", where xxxx is a four-digit code, unique to your device.
- To connect to EngineLink you need to scan for wireless networks, find it, select it and then enter the default password when prompted.
- **IMPORTANT NOTE** - Multiple devices can connect to EngineLink and display the web pages in their browser, but after a settings change, you must refresh the other browser sessions for the new settings to be applied.

3.5 – Accessing the Web Interface

- The EngineLink has a built-in web interface, consisting of a series of pages that allow you to monitor single or dual engine installations.
- A wireless device, connected to EngineLink, can access its web interface in a browser at http://192.168.1.1 or http://enginelink.local which should bring up the EngineLink home page as shown in Figure 1.
- When there is an active web browser session in progress, the Green LINK LED on the EngineLink unit will be ON.

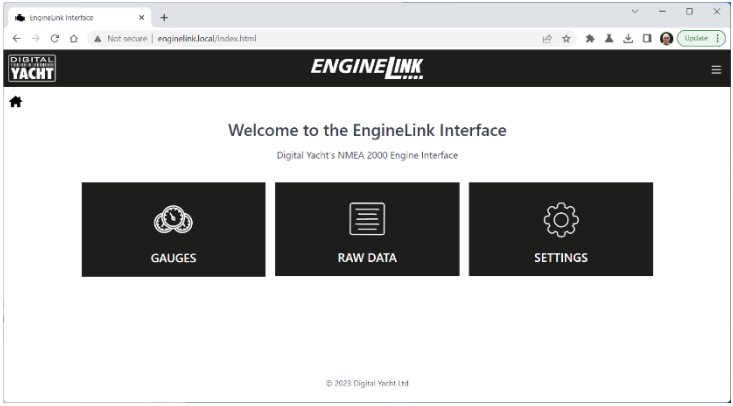


Figure 1

4. Operation

By default, EngineLink is configured for a single internal combustion engine, but can be configured for dual engine operation and/or compatible electric engines (see section xxx). In addition, the Gauges page is fully editable, allowing you to change, hide or add gauges, to suit the engine data on your NMEA 2000 network.

A list of the NMEA 2000 PGNs that your engine or engine gateway generates should be provided in the relevant operational manual or from the engine dealer.

4.1 – Gauges Page

- On the Home page, click the GAUGES button and this page will be displayed (Figure 2).

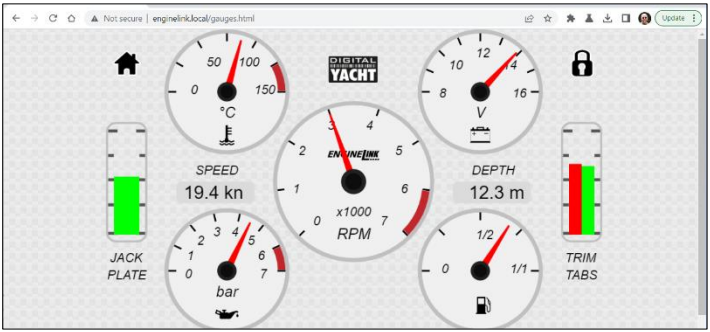


Figure 2

- If the engine or engine gateway, is not currently transmitting data, then the gauges will be displayed with no needle and "N/A" displayed in the centre of the gauge, while the digital and sliders will be blank.

- If the value of data being received, is outside of the range of the analogue gauge, the gauge will display no needle and "OoR will be displayed in the centre of the gauge.

Each Gauge can be edited to show different data, be hidden from view (if no data available) or have the range of the analogue gauge changed. To edit a gauge, click the "Padlock" icon. The icon will now change to an open padlock and a series of "Spanner" icons will appear in the centre of each gauge – see Figure 3.

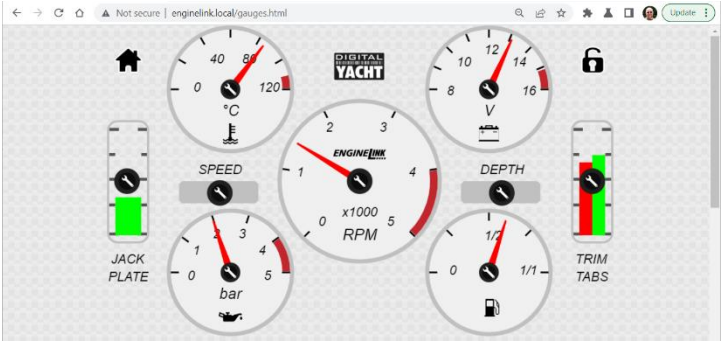


Figure 3

Click on the Spanner Icon of the gauge you wish to edit and a Gauge Configuration pop-up window will appear (see Fig 4).

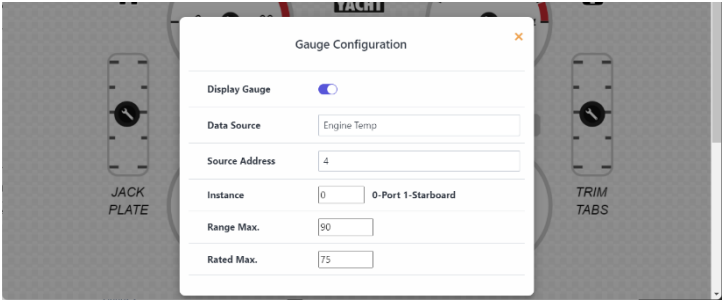


Figure 4

If you wish to change the gauge to display different data, click on the drop down "Data Source" and select the data you want (see Fig 5). If there are multiple devices outputting the same data, you can set the Source Address of the device whose data you wish to use and if there are multiple engines, you can set the Instance of the data you want to use – in dual engine installations the convention is for the Port Engine to be Instance 0 and the Starboard Engine to be Instance 1.

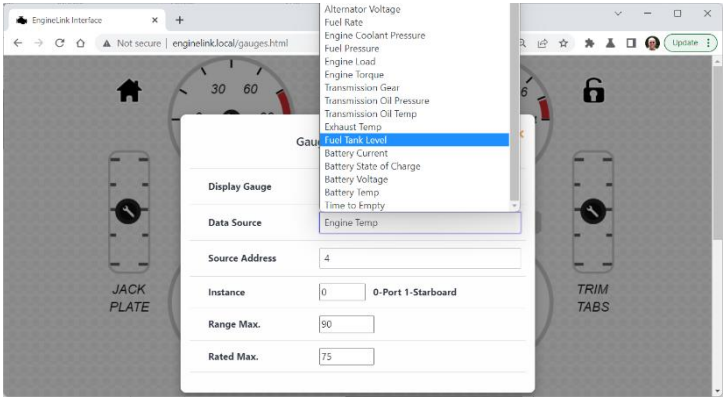


Figure 5

Below the main dashboard, there are six additional gauges (eight gauges on the Dual Engine dashboard) that you can edit and add any extra gauges that you need (see Fig 6). Click on the Spanner Icon in the position that you want the gauge to appear and the Gauge Configuration pop-up will appear, just as if you were editing an existing gauge.

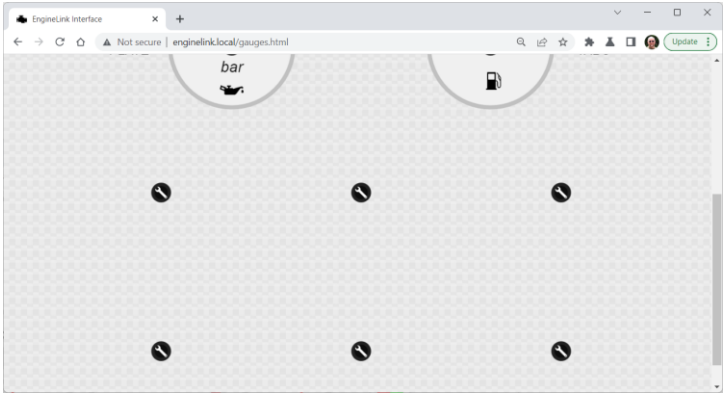


Figure 6

Set the gauge configuration as previously detailed and repeat for as many gauges as you wish to add.

Once you have edited the gauges and have the dashboard that you want, click the open padlock icon and the changes will be saved and applied.

It is also worth backing up your Gauge Configuration using the backup function in the Settings page. If you ever factory reset the EngineLink then you will need to restore your dashboard using the backup file you have saved.

If your engine outputs “Status Warning Light” data, then should a condition occur, a red warning triangle icon will appear below the RPM gauge of the engine or transmission that has the warning (see Fig 7).

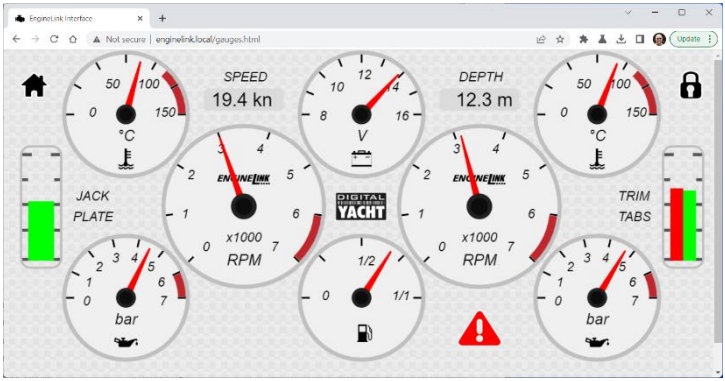


Figure 7

To see what the warning condition is, click on the red warning triangle icon and a pop-up window will appear listing the condition or conditions that have caused the warning icon to appear (see Fig 8).

The red warning triangle icon will be displayed for as long as the condition is present and cannot be cancelled or cleared by EngineLink.

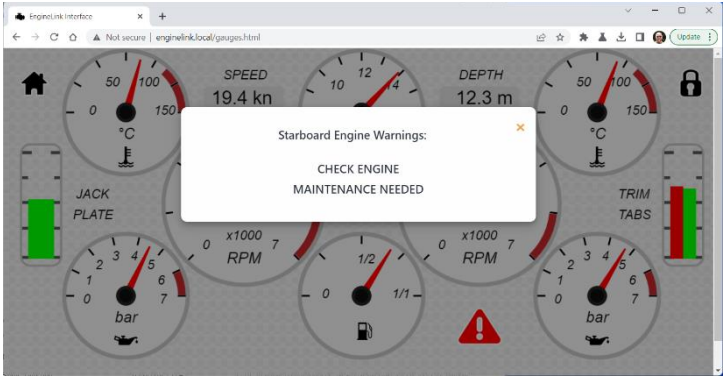


Figure 8

4.2 – View Data Page

EngineLink receives the NMEA 2000 data in Digital Yacht's RAW data format which you can view by clicking on the "View Data" button of the home page (see Fig 9).

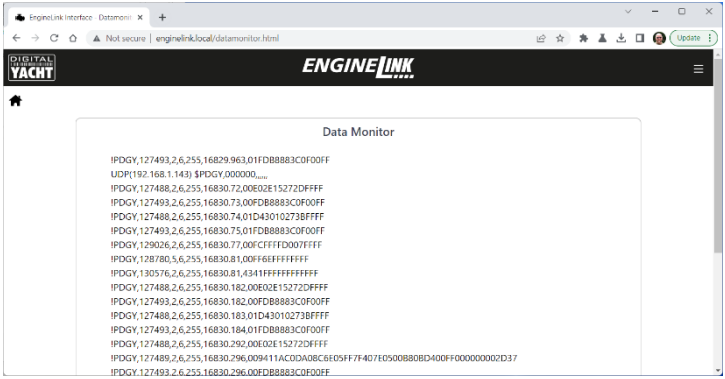


Figure 9

This data includes all of the NMEA 2000 data on the network, which can be logged and analysed if required.

To log the RAW data, scroll to the bottom of the page (see Fig 10) and click the “Start Log” button to ON. Wait a suitable length of time (at least a few minutes) and then click the “Start Log” button to OFF. The “Save Log” button should now be active and if you click this button, you will be able to select the filename and location of where you wish to save the log file.

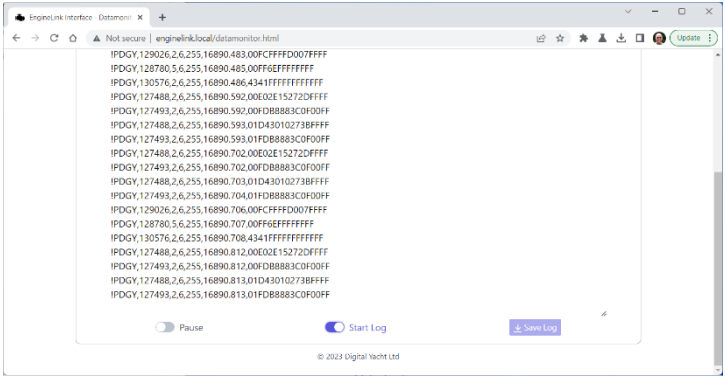


Figure 10

4.3 – Settings Page

To change any of the EngineLink Settings, click the “Settings” button on the Home Page. Available settings include….

- Network settings – whether EngineLink creates its own wireless network (default) or joins another wireless network on the boat
- Ports Setting – the Port number (default = 2000) that EngineLink uses for UDP and TCP connections (Fig 13)
- Engine and Units Settings (Fig 14)
- NMEA 2000 Device List (Fig 15)
- Firmware Update and About Information (Fig 16)

By default, EngineLink operates in Access Point (AP) mode and creates its own wireless network with a default name and password. You can change the network name and wireless password as shown in Fig 11.

Any wireless network changes must be saved by clicking the “Update Settings” button. A confirmation pop-up will appear saying that the settings have been applied and that EngineLink will reboot within 20 seconds.

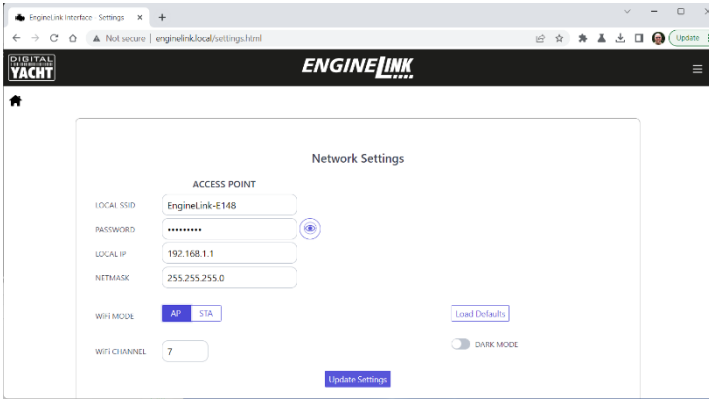


Figure 11

If you want EngineLink to join an existing wireless network, click the Station (STA) button, select the wireless network from the drop down list and enter the wireless password. Click the "Update Settings" button and after EngineLink reboots, it should join the selected network – Status LED will be ON.

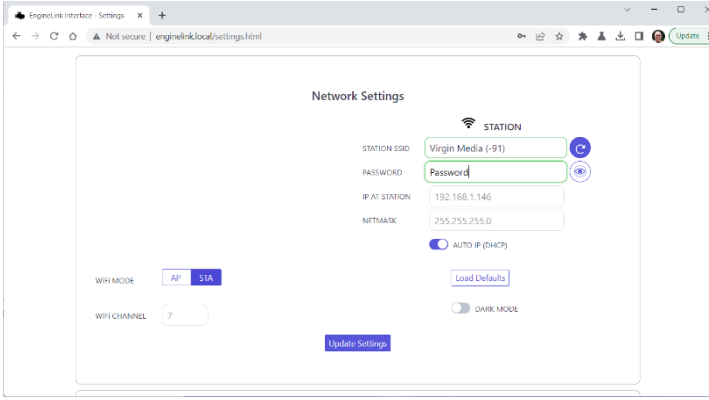


Figure 12

If the Status LED is OFF with a short flash every two seconds, then EngineLink has failed to connect to the selected network. Wait 30-45secs for EngineLink to revert to AP mode or press and hold the reset button for >10secs for a factory reset.

As well as displaying Engine data, EngineLink also converts GPS, Depth and AIS PGNs in to wireless NMEA data that popular mobile Apps such as Navionics Boating, can receive.

By default, EngineLink will allow apps to connect using UDP or TCP protocol, on Port 2000. Up to 3xTCP connections and 7xUDP connections are supported at the same time, with no need to select which protocol to use.

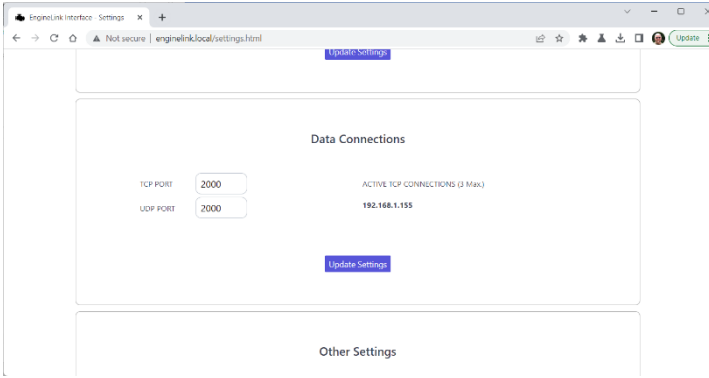


Figure 13

As a successful TCP connection is made, the IP address of the connected device is displayed.

There is normally no reason to change either of the Port settings from the default 2000, unless this port is being used by another device, in which case you can change the value as shown in Fig 13.

By default EngineLink is configured for a Single, Combustion Engine, on a 12v DC system, using the GPS SOG for speed and set to display European Metric Units. All of these can be easily changed in the Other Settings section as shown in Fig 14.

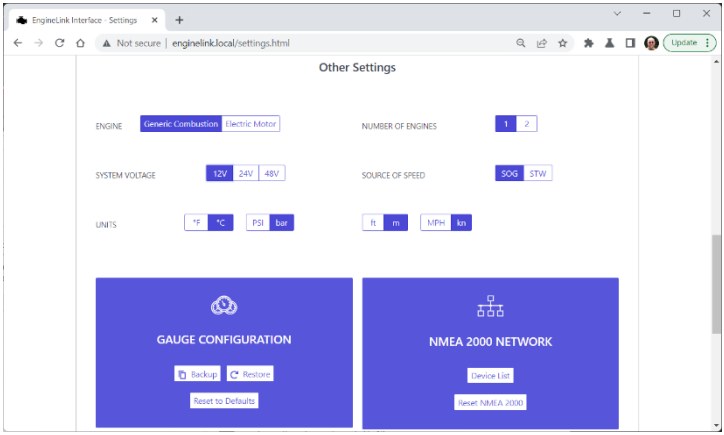


Figure 14

Changing any of these settings, will cause the new value to be instantly applied and if you change to Electric Motor you will be asked to confirm the mode change.

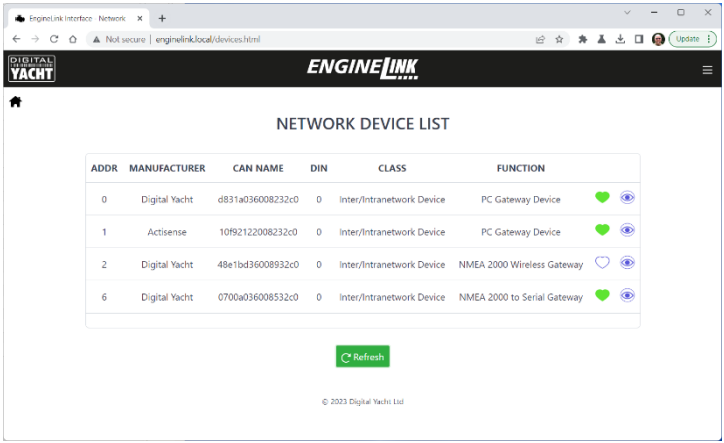


Figure 15

Once you have the EngineLink settings and gauges setup to your requirements, it is recommended that you take a Backup of the configuration, so that you can easily restore everything after a firmware update or factory reset.

Clicking the “Backup” button in the Gauge Configuration panel, prompts you to name and set the file location of the backup file. Should you ever need to restore the EngineLink to this backed up configuration, simply click the “Restore” button and browse to and select the backup file.

Also included on the Settings page, is a “Device List” button that is useful for seeing what other devices are on the NMEA 2000, what CAN Address they have, etc. Clicking this button takes you to the page shown in Fig 15.

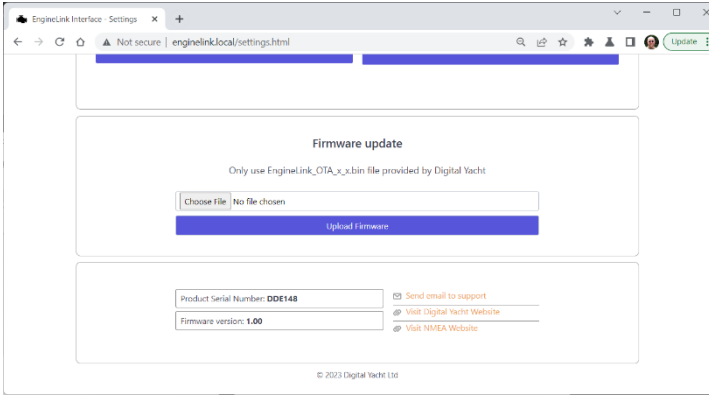


Figure 16

At the bottom of the Settings page (see Fig 16), are details of EngineLink’s Firmware version. We try to avoid firmware updates but sometimes it is necessary to fix a bug or add an important new feature. You can refer to the version number here to see what firmware your unit is running and then check on Digital Yacht’s support website to see if there are any updates.

The EngineLink firmware can be updated very easily from the web interface. Simply download the latest update (BIN file), click the **Choose File** button and browse to your download location. Select the update file and click the **Update Firmware**

button. The update takes about 10-20 seconds and at the end you should see an Update Successful pop-up window appear.

This Quick Start Manual just covers the very basic operation of EngineLink. A more detailed description is provided in our training videos. Simply scan the QR code applicable to the engine installation you have and be taken straight to our YouTube video.

Combustion Engine

Electric Engine

Appendix A- EngineLink NMEA 2000 PGN Support

In addition to the mandatory NMEA 2000 network management PGNs, EngineLink can receive and transmit the following PGNs.

Received PGNs

127488	Engine Parameters, Rapid Update
127489	Engine Parameters, Dynamic
127493	Transmission Parameters, Dynamic
127496	Trip Fuel Consumption, Vessel
127505	Fluid Level
127506	DC Detailed Status
127508	Battery Status
128259	Speed, Water Referenced
128267	Water Depth
128780	Linear Actuator Control/Status
129025	Position, Rapid Update
129026	COG & SOG, Rapid Update
129029	GNSS Position Data
129038	AIS Class A Position Report
129039	AIS Class B Position Report
129040	AIS Class B Extended Position Report
129041	AIS Aids to Navigation (AtoN) Report
129793	AIS UTC and Date Report
129794	AIS Class A Static and Voyage Related Data
129798	AIS SAR Aircraft Position Report
129802	AIS Safety Related Broadcast Message
129809	AIS Class B "CS" Static Data Report, Part A
129810	AIS Class B "CS" Static Data Report, Part B
130312	Temperature - DEPRECATED
130316	Temperature, Extended Range
130576	Trim Tab Status

Transmitted PGNs

126993	Heartbeat
126996	Product Information
126998	Configuration Information

For more information about NMEA 2000 scan this QR Code to be taken to our NMEA 2000 Networking Guide

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