



# NAVLINK BLUE

# NMEA2000 SERVER

Installation and instruction Manual



## 1. Introduction

Congratulations on the purchase of your NAVLink Blue Wireless NMEA 2000 Server. This product uses low energy wireless technology to send NMEA 2000 data to compatible products.

It is recommended that your product is installed by a professional installer, particularly when it comes to interfacing with other equipment.



**Before installing and operating this unit, please consult the user manual of the navigation equipment that you are connecting this unit to.**

## 2. Before you start

You will need the following items and tools to complete the installation:

- The NAVLink Blue Server (supplied)
- Spare/suitable connection to the NMEA2000 network
- M3 or M4 screws or other appropriate fixings (not supplied).

To receive/display Wireless data from the NAVLink Blue you will need:

- An iOS device that has the popular [NMEARemote](#) instrument App installed.
- A fully working and powered NMEA 2000 network.

## 3. Installation

The NAVLink Blue is IP54 rated (water resistant) and should be installed below deck in a dry location. When locating the unit you should consider:

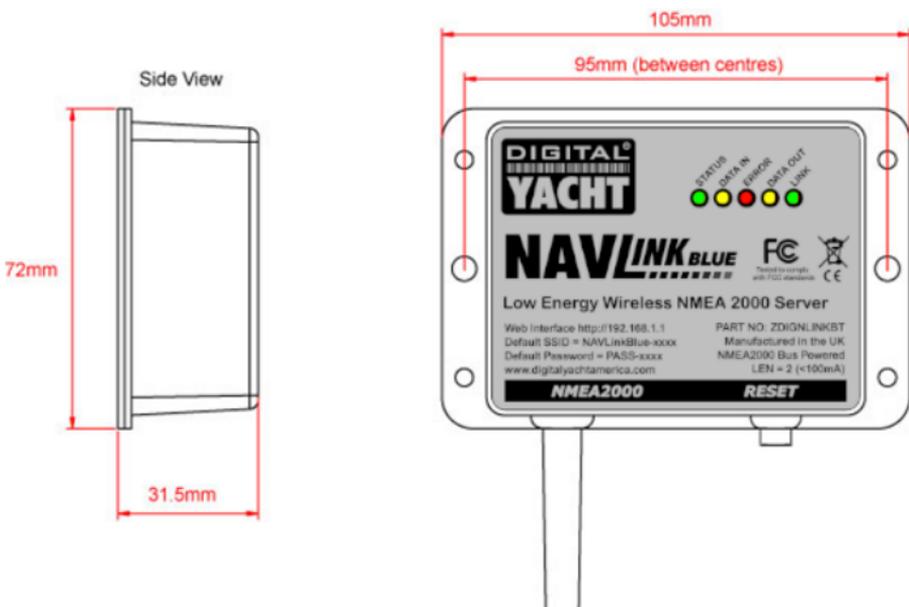
- Routing of the NMEA 2000 cable to the network.
- Sufficient space around the unit for cable connections.
- Maintaining the compass safe distance of 0.5m.
- Best location for Wireless reception i.e. not inside a metal enclosure

### 3.1 – Connecting to NMEA 2000 Network

- Connect the NAVLink Blue cable, to a spare connector on the NMEA2000 network.
- NAVLink Blue takes its power (LEN=2) from the NMEA2000 network so no additional connections are necessary.
- If you are creating a new NMEA2000 network, then you may wish to consider Digital Yacht's NMEA2000 Starter Kit, that provides all of the cables, connectors and terminators required for a basic NMEA2000 network.
- If you are connecting NAVLink Blue to a non-standard NMEA2000 network, then a suitable adaptor cable will need to be sourced from the relevant manufacturer;
  - > SeaTalkNG (Raymarine P/No A06045)
  - > Simnet (Simrad P/No 24006199)

### 3.2 – Mounting

- Using suitable fixings, attach the NAVLink Blue unit to a flat surface.
- Unit may be installed in any orientation.



### 3.3 – Powering NAVLink Blue

- Apply power to the NMEA 2000 network and the NAVLink Blue the LEDs should start to illuminate or flash, 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 Connected		System Error		Wireless Connected
Flashing	Wi-Fi Not Connected	Data Received	Data Error	Data Transmitted	Wireless Not Connected
OFF		No Data From N2K	All OK	No Data To N2K	

*Table 1*

- By default the NAVLink Blue powers up in Bluetooth mode and should be auto-discoverable by [NMEAremote](#) as long as your iOS device has Bluetooth turned ON.
- For most users this is all that you will need to do, but to help with NMEA 2000 networking issues, we have included an integral web interface which features some useful NMEA 2000 Tools. To access this web interface, you will need to enable the Wireless Network Mode as detailed in Section 3.4

### 3.4 – Enabling Wireless Network and Accessing the Web Interface

- By default, NAVLink Blue operates in Bluetooth mode but if you press and hold the Reset Switch on the bottom edge of the unit for > 4 seconds (until all of the LEDs have illuminated) NAVLink Blue will reboot and create a wireless Access Point (hotspot) on-board your boat. The Name (SSID) of the Access Point will be “NAVLinkBlue-xxxx” where xxxx is the unique four digit code of your device.
- To connect to the NAVLink Blue you will need to scan for wireless networks, find and select it in the network list and then when prompted, enter the default WPA2 password, which is “PASS-xxxx”, where xxxx is the same, unique four digit code that is in the hotspot name.

- Any device, connected to NAVLink Blue, can access its web interface by typing <http://192.168.1.1> or <http://NAVLinkBlue.local> into its browser's address bar.
- This will display the Home page shown in Figure 1, from which you can go to the NMEA 2000 Devices and PGNs pages and Settings page.

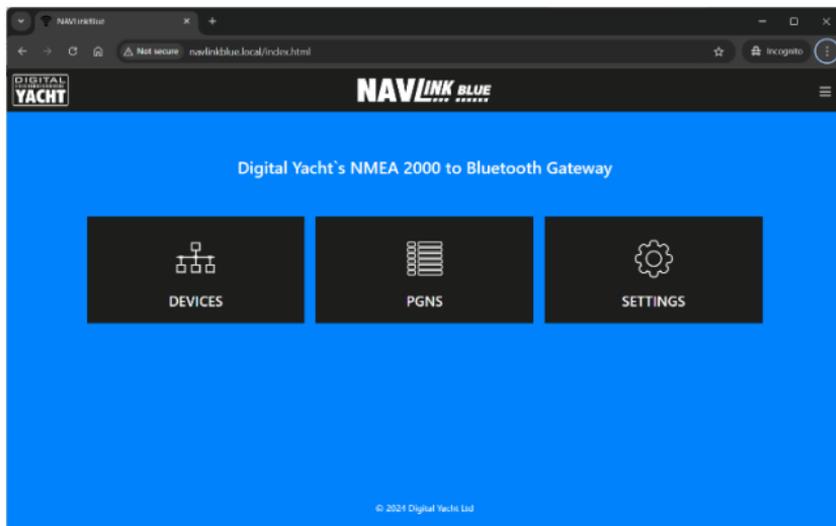


Figure 1

### 3.5 – NMEA 2000 DEVICES Page

- When first installing an NMEA 2000 network or fault finding data issues, it is very useful to be able to check what Devices are on the NMEA 2000, view what data (PGNs) they are outputting and to check their Product and Configuration information – all of this is possible from the DEVICES page.
- Each Device is listed (see Fig 2) along with its Network Address (0-252), Manufacturer, CAN Name, Device Instance and Class and Function codes. In addition a “Green Heart” icon is shown to display if a device is working correctly and outputting data.
- If you click on the Green Heart icon, a new pop-up window will appear with a list of all the PGNs that the device is transmitting and the approximate update rate in milli-seconds.

- If the device is outputting wrong/bad data or duplicated data, then you can instruct the NAVLink Blue to black list the device by clicking on the switch in the top left corner.

ADDR	MANUFACTURER	CAN NAME	DIN	CLASS	FUNCTION
100	Digital Yacht	48e1bd36008932c0	0	Inter/Intranetwork Device	NMEA 2000 Wireless Gateway
0	Digital Yacht	e627a036008732c0	0	Inter/Intranetwork Device	NMEA 0183 Gateway
1	Vetus Maxwell INC	9f01a083008a32c0	0	Unknown	Unknown
225	Victron Energy	f601c02c039946c0	3	Electrical Generation	AC Mains (Utility/Shore)
226	Victron Energy	f701c02c049a46c0	4	Electrical Generation	AC Output
227	Victron Energy	f501c02c02a046c0	2	Electrical Generation	Power Converter Battery Charger
228	Victron Energy	f901c02c01aa46c0	1	Electrical Generation	Battery
229	Victron Energy	fa01c02c0faa46c0	239	Electrical Generation	Battery

Figure 2

PGN	DESCRIPTION	PERIOD(ms)
130306	Wind Data	999
129025	Position Rapid Update	998
129026	COG & SOG Rapid Update	997
130312	Temperature	998
127250	Vessel Heading	499
129044	Datum	998
128275	Distance Log	997
129029	GNSS Position Data	998
128259	Speed Water Referenced	998

Figure 3

- To query the Product or Configuration Info of an NMEA 2000 Device, click on its “Eye” icon – to the right of the Green Heart icon. A pop-up window will appear showing the Product Info (Fig 4) or if you click the Config Info tab, the Configuration Info (Fig 5)

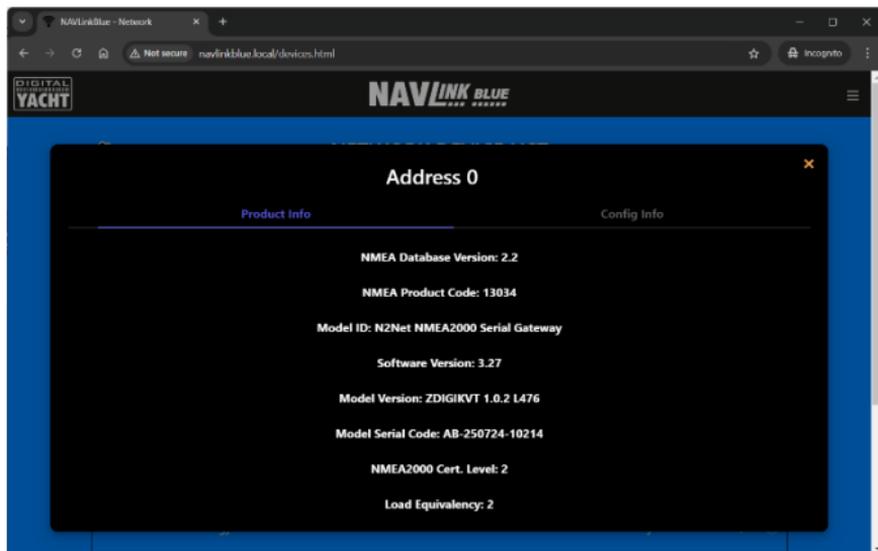


Figure 4

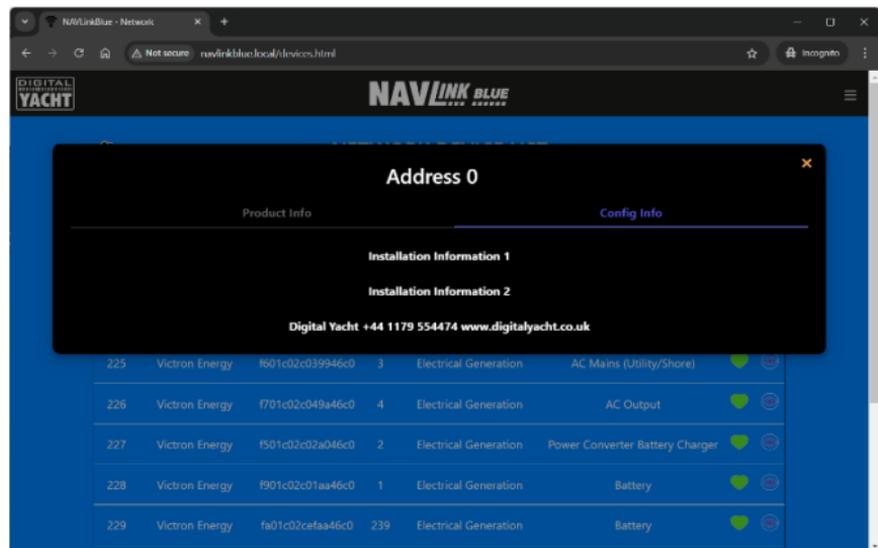
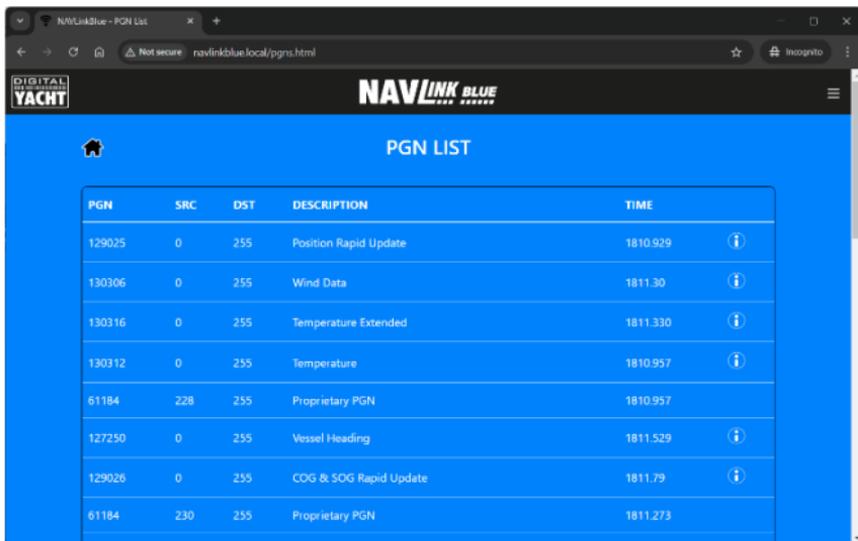


Figure 5

### 3.6 – NMEA 2000 PGNs Page

- If you wish to dig even deeper in to the NMEA 2000 data on the network, from the web interface Home Page, click on the PGNs page and a list of PGNs being received will be displayed – see Fig 6.



PGN	SRC	DST	DESCRIPTION	TIME	
129025	0	255	Position Rapid Update	1810.929	ⓘ
130306	0	255	Wind Data	1811.30	ⓘ
130316	0	255	Temperature Extended	1811.330	ⓘ
130312	0	255	Temperature	1810.957	ⓘ
61184	228	255	Proprietary PGN	1810.957	
127250	0	255	Vessel Heading	1811.529	ⓘ
129026	0	255	COG & SOG Rapid Update	1811.79	ⓘ
61184	230	255	Proprietary PGN	1811.273	

Figure 6

- Each PGN is listed with its PGN Number, Source Address of the Device that sent it, Destination Address of the Device it was sent to (255 = All Devices), the PGN Description and the relative time it was received since power up.
- If you wish to see the PGN's data values, click on the "Info" icon at the end of the PGN line and a new pop-up window will appear as seen in Fig 7.
- This pop-up window shows the values of each of the fields in the PGN and the values will update in real time as the data changes.
- By default the PGNs are listed in time order and the time value shown is the time in seconds, since the NAVLink Blue was turned ON.
- Each of the columns can be sorted in alphanumeric order, just click on the column name at the top of the list and you can sort by PGN number, Source Address, Destination Address of Description.
- A Bluetooth data connection is limited in bandwidth, compared to WiFi or wired Ethernet, and NAVLink Blue can filter particular groups of PGNs, to reduce the amount of data that it transmits – see section 3.7

The screenshot shows a web browser window with the URL `navlinkblue.local/pgns.html`. The page header includes the 'DIGITAL YACHT' logo and 'NAVLINK BLUE' branding. A modal window titled '130306 - Wind Data' is displayed over the main content. The modal contains a table with the following data:

Sequence ID	0	bit
Wind Speed	19.89	knots
Wind Direction	106.50	deg
Wind Reference	2	
NMEA Reserved	-	

Below the modal, a table of PGNs is visible:

127250	0	255	Vessel Heading	1888.97	<a href="#">i</a>
129026	0	255	COG & SOG Rapid Update	1887.947	<a href="#">i</a>
61184	230	255	Proprietary PGN	1887.326	

Figure 7

### 3.7 – SETTINGS Page

- To access the NAVLink Blue settings click on the SETTINGS button on the Home page and the page show in Fig 8 will appear.

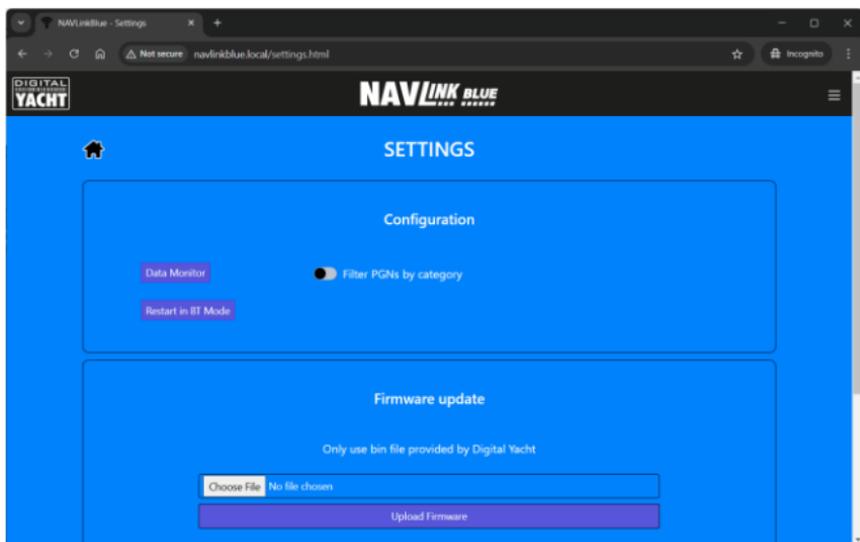


Figure 8

- If you are using NAVLink Blue to send Bluetooth data to an App like NMEA Remote, then the default settings will in most cases be fine. However, there are some configuration settings that may be required for other applications.
- If you have a very large NMEA 2000 network, which has a lot of data on it that is not supported or required by the App you are using, then you can filter out particular categories of PGNs to reduce the amount of data being sent to the App. Click on the “Filter PGNs by category” switch and a series of six categories will appear, each with a switch next to them.

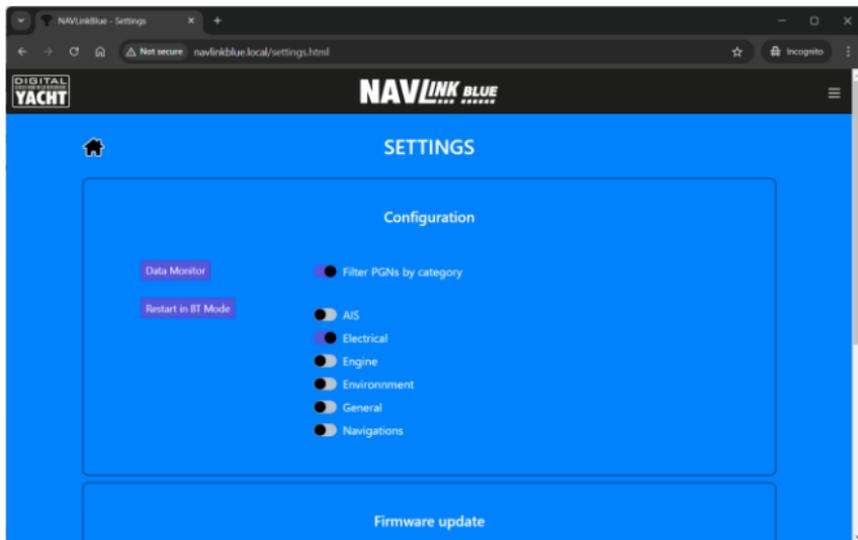


Figure 9

- In the image above, only the Electrical category of PGNs will be transmitted to the App, all other PGNs will be filtered out.
- For diagnostics purposes, it is possible to view and log all of the PGN data on the NMEA 2000 network. Click on the DATA MONITOR button and the window in Fig 10 will appear.
- You will now see all of the RAW NMEA 2000 PGN data scrolling down the page, where each line is one PGN.
- To log this data, scroll to the bottom of the page and click the START LOG button. Wait for a suitable period of time, you really want a good 5-10 minutes of data for a good log file and then click the STOP LOG button.
- To download the log file, click the SAVE LOG button and choose a suitable file location on your mobile device or email to [support@digitalyacht.co.uk](mailto:support@digitalyacht.co.uk)

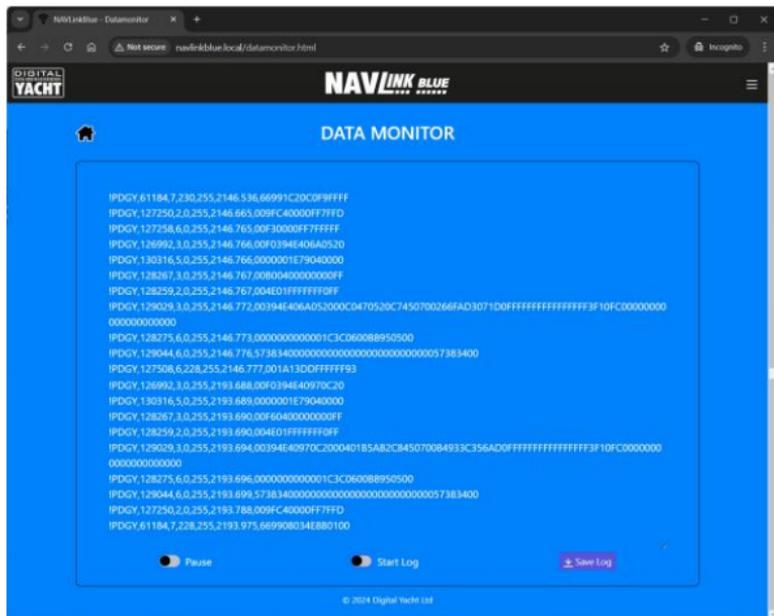


Figure 10

- Also on the Settings page you can check what firmware version the NAVLink Blue has and update the firmware if required.

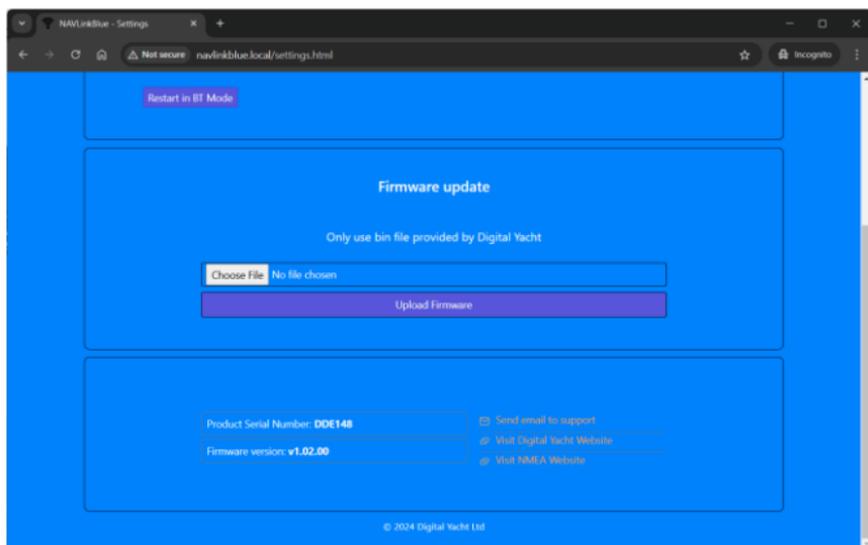


Figure 11