

iNavHub Wireless NMEA Router

Installation and instruction Manual




1. Introduction

Congratulations on the purchase of your iNavHub Wireless Router. It is recommended that your router is installed by a professional installer. If the iNavHub is to be connected to the internet via a Digital Yacht WL510 long range Wi-Fi Adaptor it is recommended that this installation/configuration is carried out by someone with suitable IT experience and knowledge of Ethernet networks.

The iNavHub can be used in the following configurations;

- 1) As a simple Wireless Access Point or Wireless Router for setting up a wireless network on-board a boat
- 2) In conjunction with a Digital Yacht WL510 to share the long range internet connection with everyone on-board
- 3) As an NMEA 0183 to Wireless Data Server
- 4) A combination of the above configurations

 **Before operating the unit you should familiarise yourself with this Quick Start manual and any manuals for the equipment you intend to interface with iNavHub.**

2. Before you start

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

- The iNavHub Router
- RJ45 Cat 5 cable to connect between the iNavHub and your Ethernet network
- An NMEA0183 connection to your navigation equipment
- A connection to the boat's 12v/24v DC supply where the unit is to be installed
- M3 or M4 screws or other fixings appropriate to the mounting location

To test and configure the iNavHub you will need:

- A PC, Mac, iPhone/iPad or other wireless device that has a web browser such as IE, Chrome, Firefox, etc.

To use the iNavHub to share a long range Wi-Fi internet connection on board the boat, then you will need a;

- Digital Yacht WL510 Long Range Wi-Fi Adaptor

3. Installation

Before starting installation select a suitable location for the iNavHub Router. The unit is designed for below deck mounting on board a boat and is not water resistant. It should be installed in a cool, dry location and can be mounted on a vertical or horizontal surface. When locating the unit you should consider:

- Routing of power and network cables to the unit.
- Provision of sufficient space around the unit for cable connections.
- Routing of optional network connections to a WL510 Long Range Wi-Fi Adaptor (if necessary).
- Maintaining the compass safe distance of 0.5m.
- Best location for Wi-Fi reception i.e. not inside a metal enclosure

Installation Step 1

- Siting of the iNavHub is critical for Wi-Fi reception. The unit features a 5dB antenna which should give up to 30m range but it is important that the unit is sited in a central location within the boat to try and ensure that Wi-Fi reception is good in all areas of the boat.

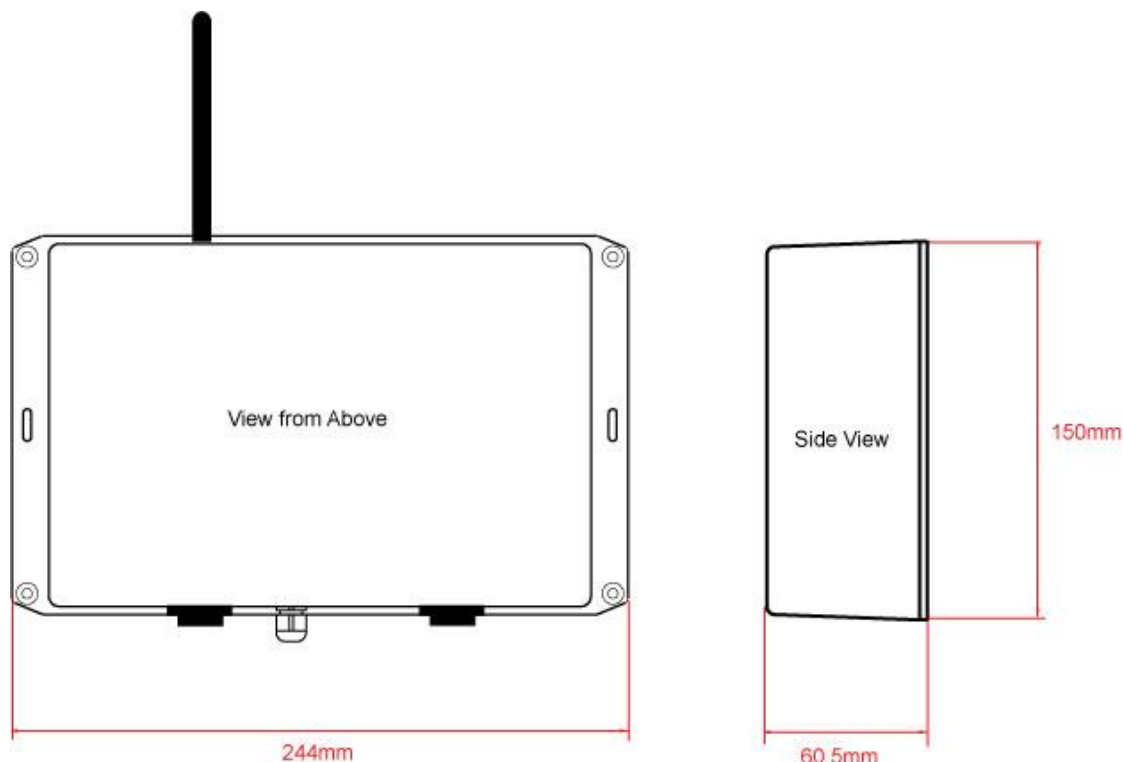


- If the unit is to be hidden away behind a bulkhead, Wi-Fi reception maybe reduced. In this situation, it is advisable to fit an SMA extension cable, which is available from many suppliers. The Extension cable length should be kept to a minimum, between 1m and 3m would be recommended.
- To fit an SMA Extension cable, unscrew the 5dB antenna from the iNavHub and screw the extension cable between the iNavHub and the antenna. Now you will be able to hide the iNavHub unit behind a bulkhead and mount the antenna in the cabin for maximum Wi-Fi range.
- Provide power connections to the unit from the boat's supply. Power is connected to the iNavHub's two core Power cable on the Red and Black wires. The Red wire is the positive (+) connection. The Black wire is the negative (-) connection.
- Connect the stripped wires to the nearest source of primary 12V or 24V DC power. **Ensure that the supply is connected via the supplied 1A fuse or suitable circuit breaker.** Add the fuse in the positive power connection to the unit if necessary.

Installation Step 2

- Use suitable fixings (not supplied) to fix the INavHub to a flat surface – using the dimensions and details shown in the drawing below. Note that the unit may be installed in any orientation.

Dimension drawing



- Once the unit is secured in place, position the antenna so that it is pointing vertically upwards or if connected via an extension lead, mount and secure the antenna within the cabin area.



Installation Step 3

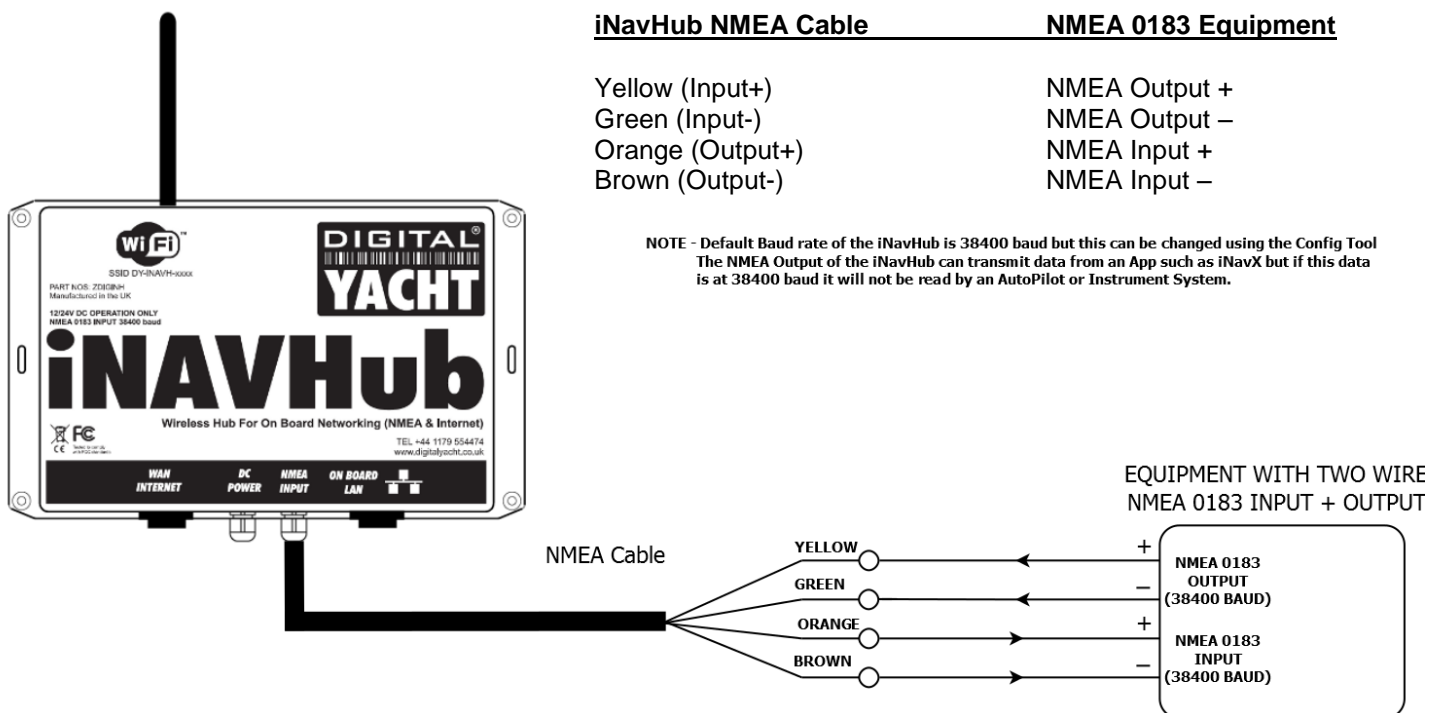
- The following steps only need to be followed if you are connecting the iNavHub to a Digital Yacht WL510 long range Wi-Fi Adaptor.
- Using the network cable supplied with the iNavHub or the WL510, insert one end in to the iNavHub socket labelled “**WAN Internet (WL510 option)**” and the other end in to the WL510 network socket.
- We have had reports of the Login Page of some “Captive Portal” marina hotspots, not appearing when you try to go to the internet and in this situation your browser will report that the internet connection is not available. Please consult our latest Tech Note 00042-2013 for information on how to fix this problem.

Installation Step 4

- The following steps only need to be followed if you are connecting the iNavHub to an NMEA 0183 device on the boat. The iNavHub is pre-configured to handle data at 38400 baud which is the high speed NMEA 0183 format used by AIS units and NMEA Multiplexers. If you wish to use the iNavHub with standard 4800 baud NMEA equipment, you will need to download and install the AISNet Configuration tool.

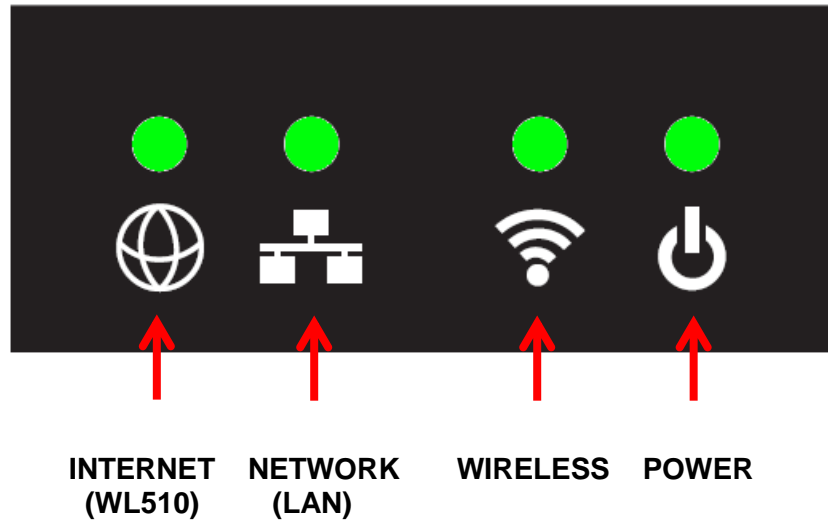
http://www.digitalyacht.co.uk/files/AISnet_Config_V3_0_2.zip

- Connect the iNavHub to compatible NMEA0183 equipment as follows;



Installation Step 5

- Now that we have all of the connections made, we can apply power to the iNavHub. If you are using the iNavHub with a Digital Yacht WL510, it is recommended that the two devices are powered from the same circuit breaker/switch, so that they power up together at exactly the same time. The WL510 should supply the iNavHub a WAN network address in the range of 192.168.10.xxx
- As the iNavHub powers up the LEDs on the top side of the unit will briefly illuminate and then only the Power LED will stay illuminated. Below is an image that shows what each LED indicates.



- After a few seconds the Wireless LED will illuminate to indicate that the iNavHub has created the Wireless network – once this occurs your wireless devices should be able to scan and connect to iNavHub.
- If you have a WL510 connected the “INTERNET (WL510)” LED should illuminate and if you have an NMEA 0183 device connected, there should be a noticeable increase in flashes on the NETWORK (LAN) LED when the NMEA 0183 data is being received.
- When you connect a wireless device to the iNavHub, the “WIRELESS” LED will flash.

4. Network Configuration

Digital Yacht have pre-configured the iNavHub so that in most situations it will work straight out of the box with no additional configuration required. The iNavHub default settings are as follows;

IP Address	-	192.168.1.1
Subnet Mask	-	255.255.255.0
DHCP Range	-	192.168.1.100 to 192.168.1.200
SSID	-	iNavHub
Password	-	inavhubpass

The choice of IP addresses is suitable for most situations, but if you wish to change this or change the SSID and password then this can be done by any device connected to the iNavHub by typing 192.168.1.1 in to the address bar of your browser software.

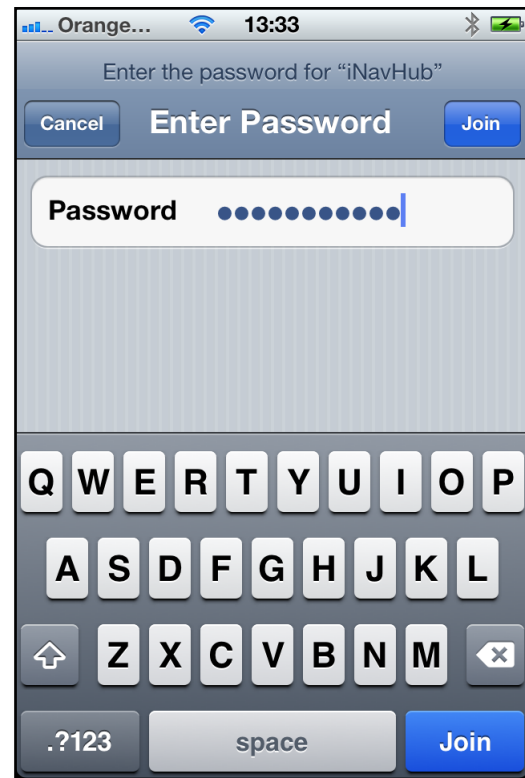
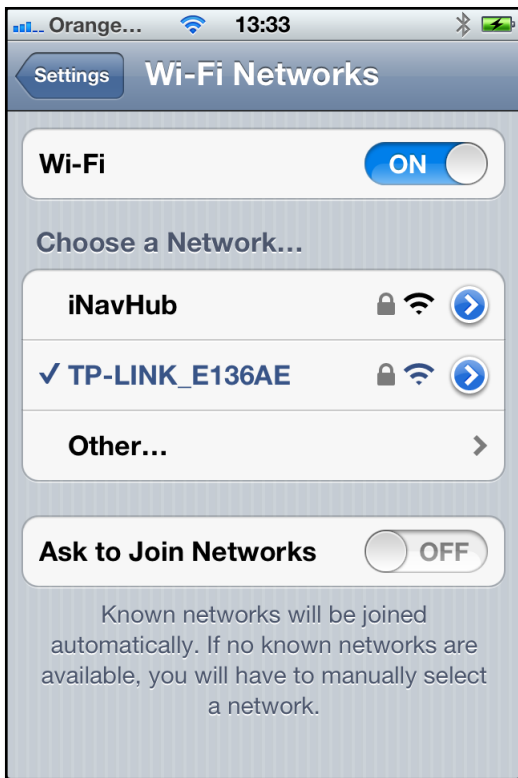
If you are experienced with configuring PC networks and wireless routers you can easily change all of the network settings via the iNavHub’s web interface in the normal manner – this procedure is not covered in this Quick Start Guide but if you need further assistance in setting up your iNavHub please contact; support@digitalyacht.co.uk.

5. Wirelessly Connecting to iNavHub

To connect wirelessly to iNavHub, simply initiate a scan of wireless networks on your wireless device i.e. Laptop, iPhone, tablet, etc. and select the “iNavHub” network.



Below are two screen shots showing this procedure on an iPhone. When you select “iNavHub” you will be prompted to enter a wireless password – type in “inavhubpass” (all lower case and do not include the quotation marks).



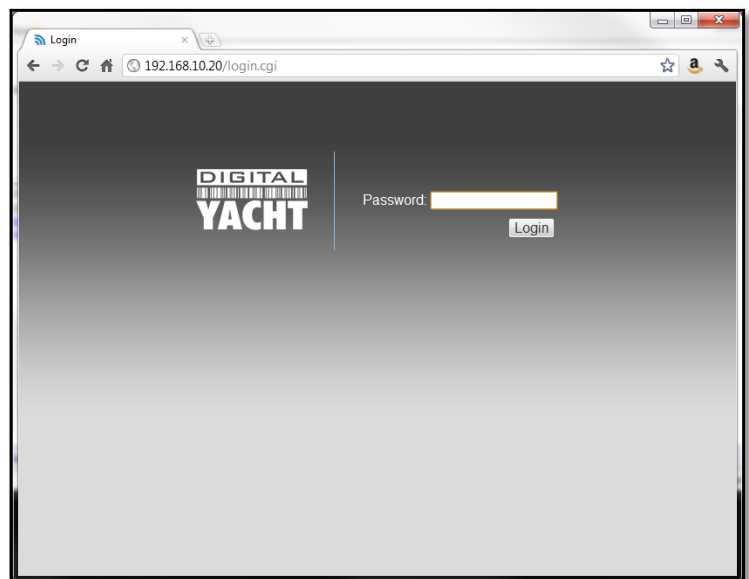
When you have wirelessly connected to iNavHub, you can start to share the long range Wi-Fi connection, if you have a WL510 connected or receive (and transmit) wireless NMEA 0183 data between an application on your wireless device and the boat’s navigation system. These two activities can be done simultaneously with no additional configuration changes or switching of wireless networks.

5. Sharing Long Range Wi-Fi Connection

When you use the iNavHub with the Digital Yacht WL510, all routing of the wireless connections to the internet are automatically configured.

After you have connected wirelessly to the iNavHub as detailed in section 4, you should be able to display the WL510 login page by typing 192.168.10.20 in to the address bar of your internet browser, see screen shot below...

This shows that communication between the iNavHub and WL510 is working correctly and you should now be able to log on to the WL510 and initiate a long range wi-fi connection with a Marina or local hotspot in the normal manner detailed in the WL510 Quick Start Guide. Once the long range connection is established then all wireless devices connected to iNavHub will be able to access the internet.





6. Using the Wireless NMEA 0183 Server Data

If you are using iNavHub with the NMEA 0183 network on the boat, then you will need to wirelessly connect your iPhone/iPad or Android device to iNavHub as detailed in section 4.

Once connected, you should run a suitable App that can receive UDP data. The most popular app for iPhones/iPads, is the iNavX app that turns your mobile device in to a fully functioning Chart Plotter using Navionics charts that you can download to your device. For more information on iNavX visit www.inavx.com

To test and prove that the system is working, you can download our free iAIS app from the Apple store and the following guide assumes that you have already done this.

Go to the Settings>Wi-Fi and ensure that your device is wirelessly connected to the iNavHub network.

Run iAIS and go to the Instruments>Setup>TCP/IP menu. Select UDP mode, Port 2000 and then switch the Link button to ON. You should now see the raw NMEA 0183 data being received in the monitor window as shown below;



This proves that the iNavHub is correctly converting NMEA 0183 data to wireless data which can be used in any UDP compatible app that you wish to use.