PredictWind DataHub Users Guide

Welcome to the PredictWind DataHub, your gateway to sharing your voyage with friends and family using the PredictWind tracking and blogging service. DataHub is a small appliance that once installed samples GPS position reports either via it's built-in GPS or the vessels NMEA2000 network and sends them to PredictWind using an existing Internet connection. Internet connections supported are USB connected Android or iOS devices, WiFi bridge to an internet connected hotspot such as a Netgear Aircard or Verizon JetPack, or an Ethernet connection to an internet connected satellite terminal or vessel router.

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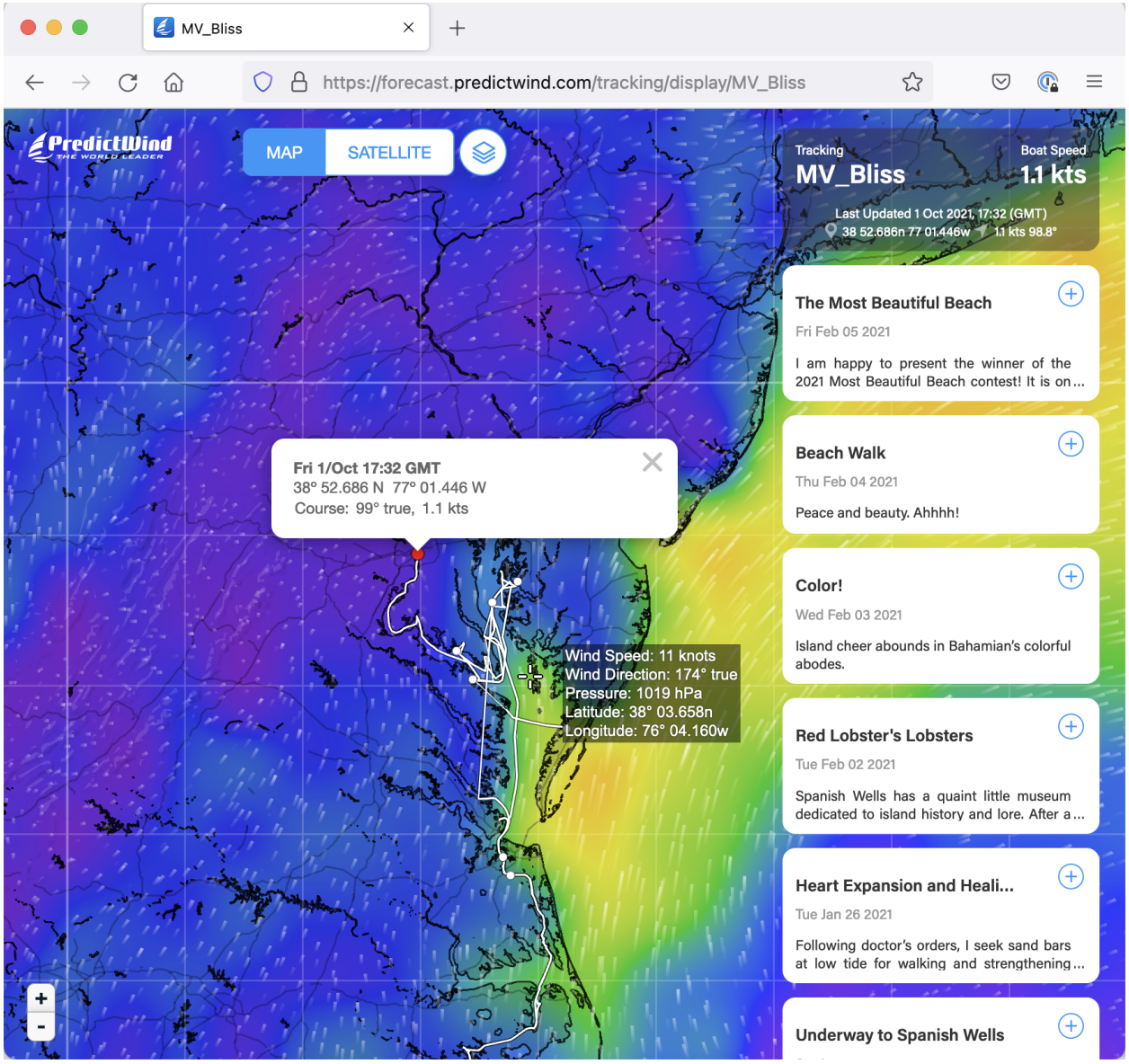
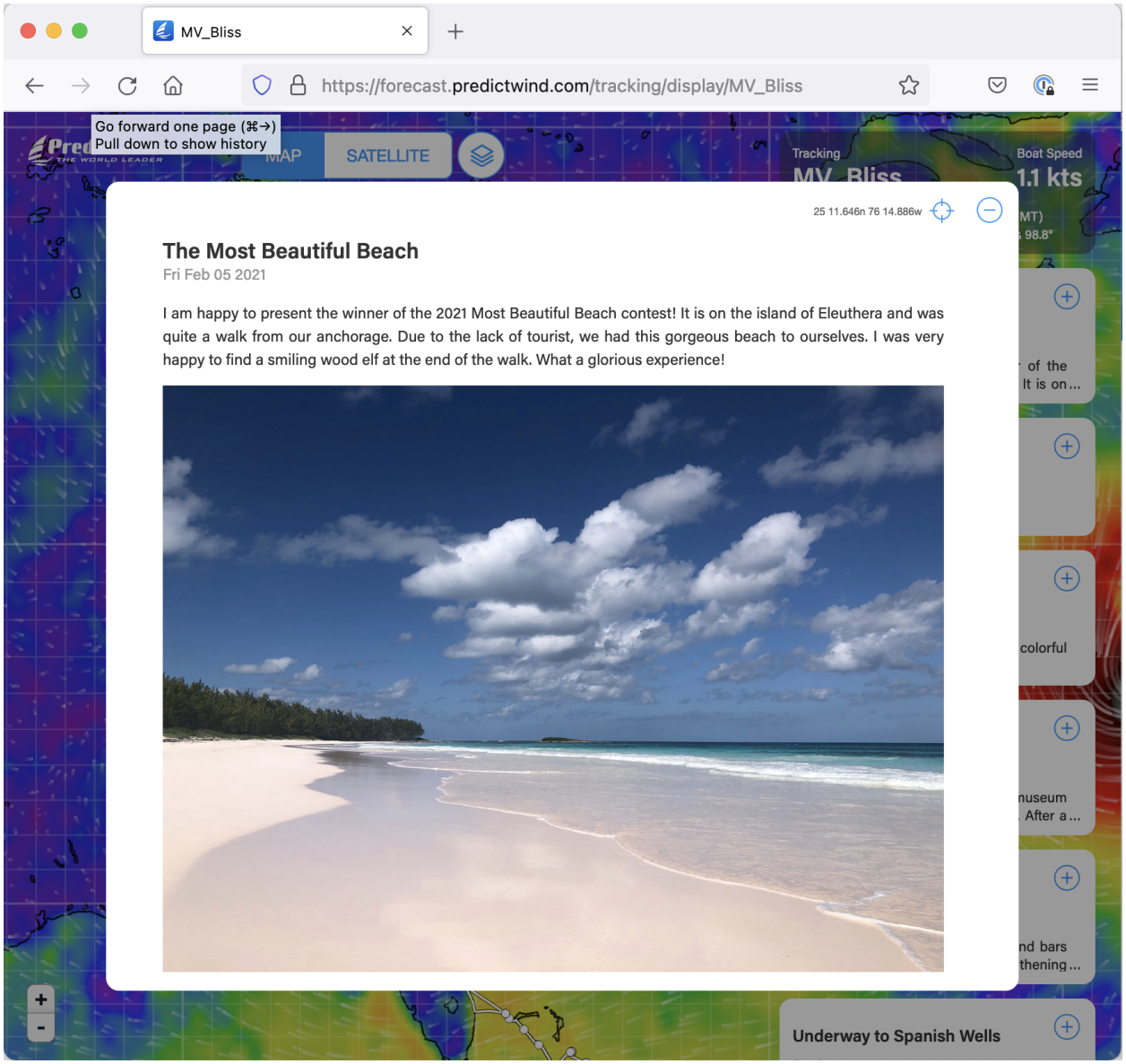
Tracking and Blogging

PredictWind provides a tracking and blogging service that allows friends and family to experience, participate, and interact with you during your travels. The service post tracks for your vessel and hosts textual descriptions with pictures (blogs) of your travels. The tracking and service is included with your “Standard” PredictWind service. The tracking and blogging service requires a “Standard” service subscription, a DataHub or a satellite device compatible with the service, and one time setup and registration. Contact support@predictwind.com for information regarding the registration of your vessel for service.

The picture below shows screenshots of our tracking site at http://tracking.predictwind.com/MV_Bliss as showing off some of the features available publicly at no charge to our followers. The tracks were acquired and posted to the site using the PredictWind DataHub described in this document.



PredictWind Tracking site showing our current location, current weather conditions, our latest tracks and a listing of our blog posts



Sample blog post showing text and pictures at one of the locations we visited in the Bahamas this last winter.

Powering the DataHub

DataHub can be powered with either the supplied AC/DC power supply or directly from the vessel's house battery bank. The unit requires 9-60 VDC and is reverse polarity protected. The center pin of the power connector is positive.

To wire the DataHub directly to the vessel's house battery, start by cutting the power lead off of the supplied AC/DC adapter. Connect a 1 amp fuse to the positive power lead and wire to the vessel’s switch panel. Before powering the DataHub use a voltmeter to ascertain that the

center pin in the connector has positive current. Reversing the polarity on the connector will not damage the DataHub but it will prevent it from powering on.

You will notice a blue status LED on the top of the unit illuminates when the unit is correctly powered on.

Accessing the Web User Interface

Once powered on the DataHub needs to be configured to select the GPS data source, establish an Internet connection, to enable and set the tracking interval, and to password secure it's WiFi.

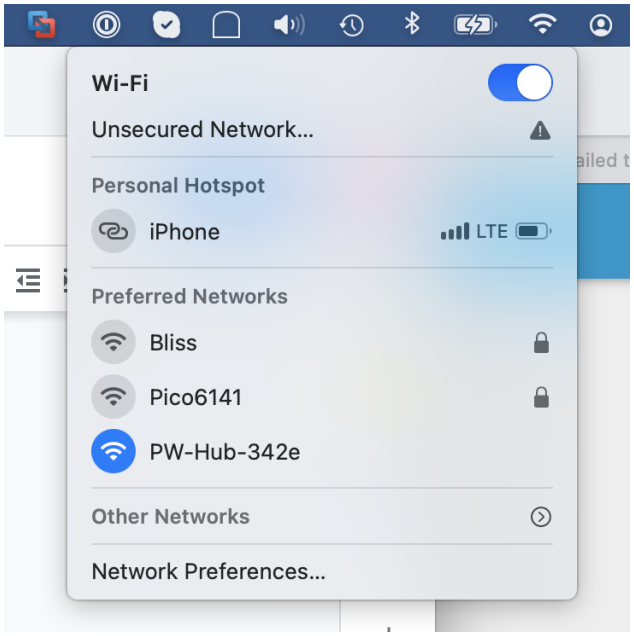
Before you can start the configuration process you must first establish a connection either via Ethernet or WiFi to login to its web administrative interface.

The DataHub web interface is mobile friendly and supports all popular web browsers.

Access via WiFi

The DataHub advertises itself via WiFi with an SSID "PW-Hub-XXXX" where XXXX is an alphanumeric sequence specific to the device. By default the DataHub WiFi is unprotected. As part of the configuration process you may change the SSID of the unit and encrypt and password protect the unit. Procedures for assigning a password are discussed later on in the "Securing DataHub" section of this document.

To WiFi connect to the DataHub scan for available access point SSIDs and select the one that corresponds to your unit. The following image depicts the process for Mac OS X. Other OS's use a similar process.



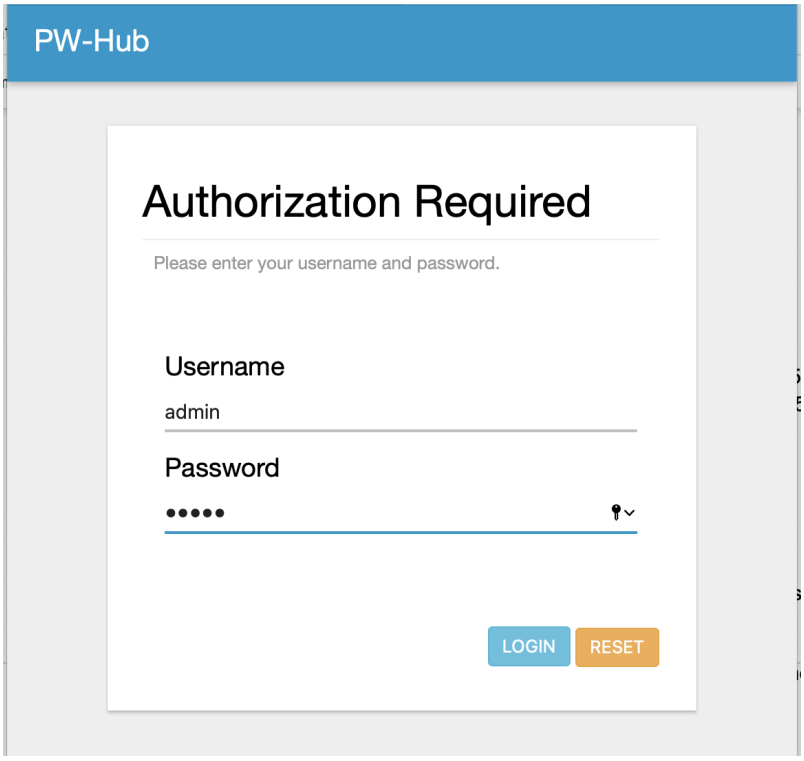
Access via Ethernet

To access the unit via a wired connection run an Ethernet cable between the RJ45 port on your laptop computer and the LAN port on the DataHub. The LAN port is the RJ45 port closest to the power connector.

Accessing the Web UI

To login to the DataHub's administrative web page open a web browser and browse to http://10.10.10.1

You should see a login page pop up in your browser. Login with the fault username: admin and password: admin. Then push the "Login" button to access the administration pages.

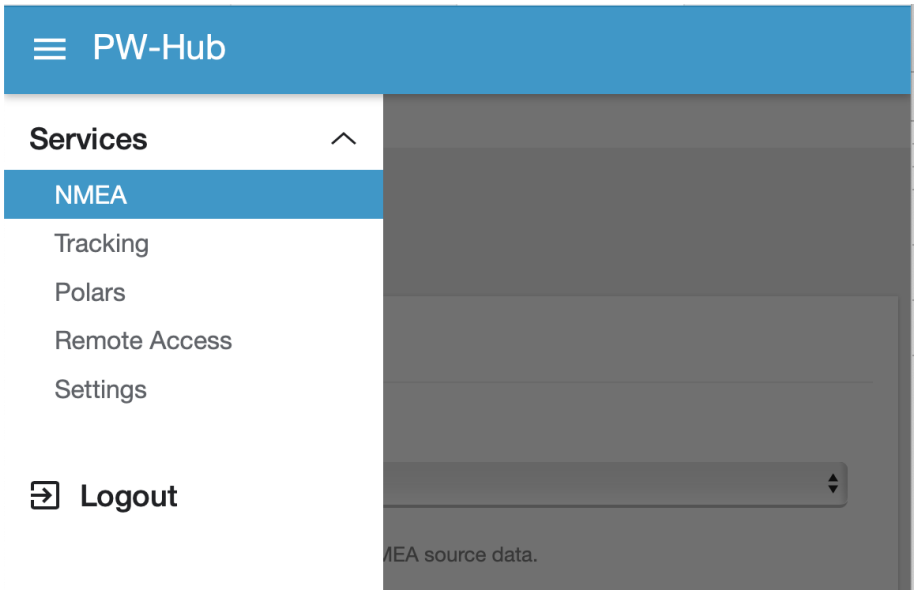


Configuring the DataHub

A GPS feed, an Internet connection, and tracking at minimum need to be configured to allow the tracking of your vessel on your personal tracking and blogging page at PredictWind.

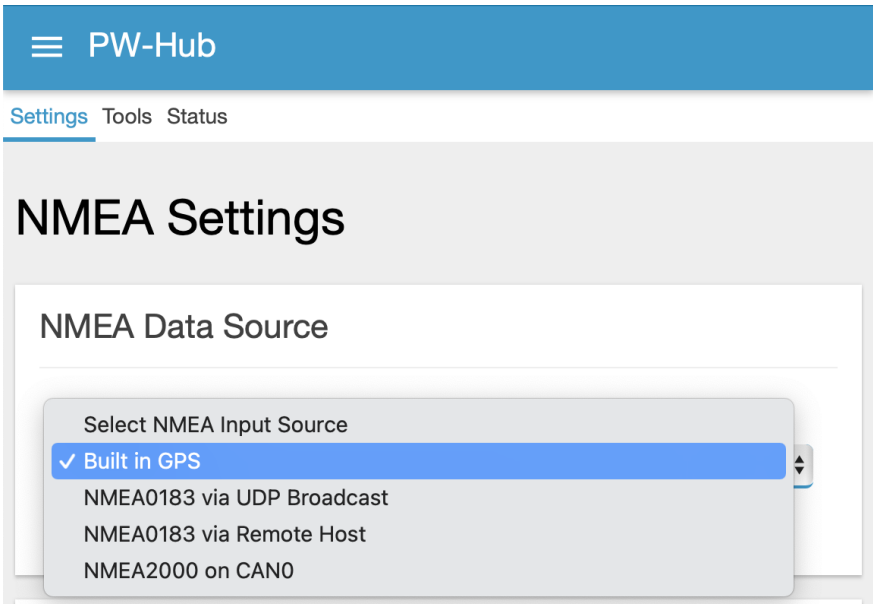
Configuring the GPS feed

Once logged into DataHub's administrative website browse to Services->NMEA to configure the GPS feed. On a mobile device you do this by clicking on the "Hamburger" icon on the top left of the page and under services selecting NMEA. On a laptop with a larger display area you will see the "Services" menu on the left.



Using the built in GPS

Use the “Source” pull down menu to select the GPS source. If using the built-in GPS make sure that the DataHub is installed with the supplied GPS antenna and with good access to GPS signal.



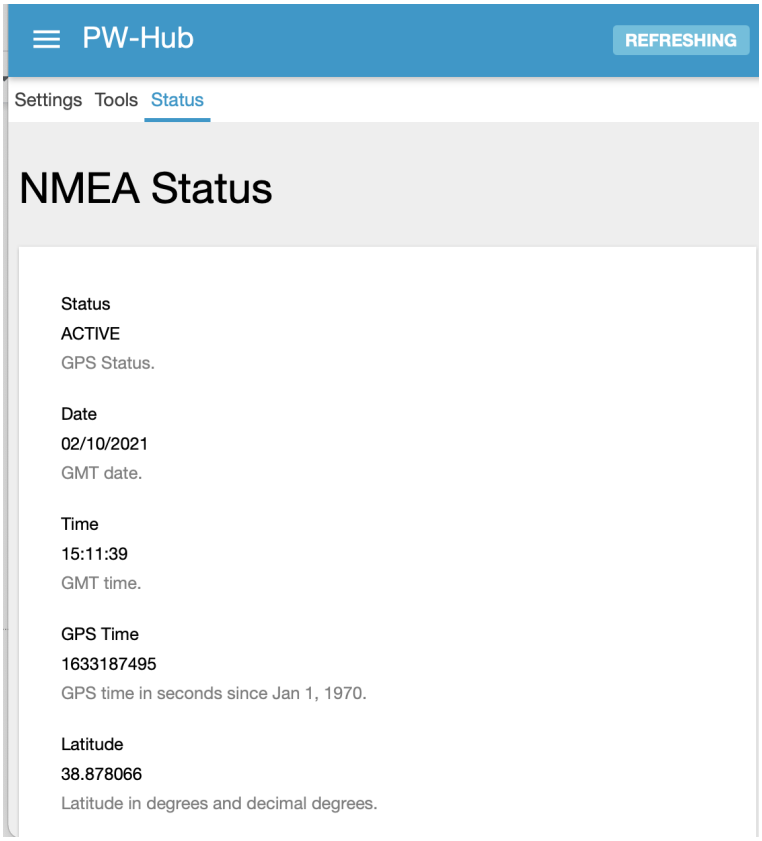
Using NMEA2000 for GPS

If using your vessels NMEA2000 network then connect the optional device cable from the M12 connector on the back of the DataHub to a tee on your NMEA2000 backbone. NMEA200 device cables and tees can be purchased directly from PredictWind with your DataHub order.

Once connected to the NME2000 network select “NMEA2000 on CAN0” as the GPS source.

Verifying your GPS data feed

Selecting the “Status” tab in the NMEA section will display live GPS data as it streams into the device.



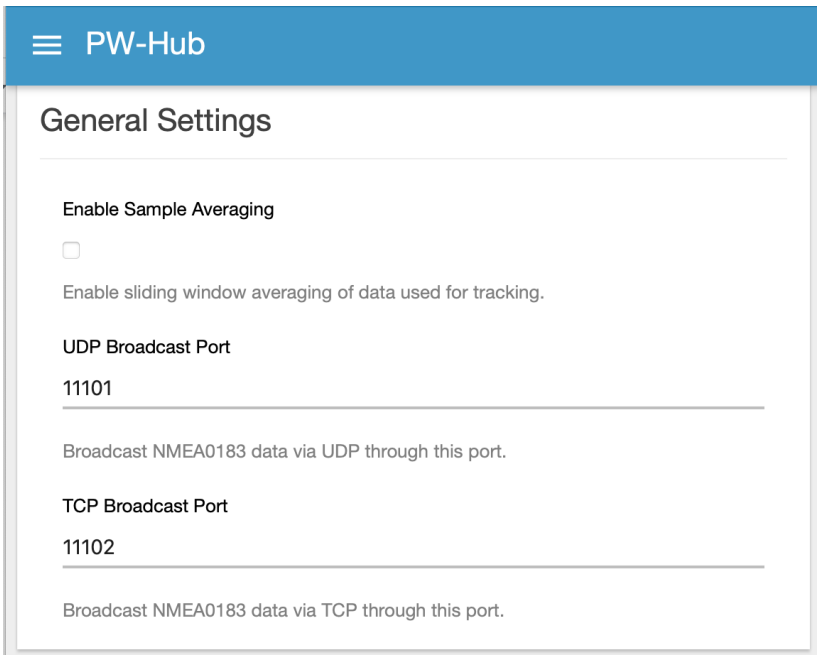
ACTIVE under “Status” means that you have valid GPS data. A “Status” of VOID indicates that NO or invalid GPS data is being received.

Please confirm that you are indeed getting valid GPS data before proceeding.

NMEA2000 to NMEA183 Repeater via WiFi

One of the nice features of the DataHub is that it will broadcast NMEA0183 data via WiFi regardless of the GPS input source. This WiFi broadcast allows external navigation applications such as Aquamap, GPS Nav X, Navionics Boating App, etc to use your vessel's GPS for navigation. This results in much more accurate GPS data with the addition of other NMEA2000 data such as wind speed and direction, depth, etc.

NMEA0183 data is broadcast by default via UDP on port 11101 and TCP on port 11102. The ports are user selectable and can be changed under “Settings” in the NMEA configuration section.



To configure your charting application to use DataHub generated data please refer to the software documentation for the software. You will need to configure the following

- Host: 10.10.10.1
- Protocol: UDP or TCP
- Port number: 11101 (for UDP) or 11102 (for TCP)
- WiFi connection between mobile or laptop and DataHub.

Following is the configuration settings for the iOS version for Navionics Boating and Acquamap apps. Note that Acqua Map has a predefined configuration for the PredictWind Datahub.