DataHub
By PredictWind

User Manual

Welcome

Welcome to the DataHub by PredictWind, your gateway to sharing your voyage with friends and family using PredictWind GPS Tracking and Blogs. The DataHub is full of powerful additional features that will make your offshore tracking, data and communications easier than ever.

The DataHub can track, blog, save and broadcast all your onboard data sources including GPS and your NMEA 2000 instrumentation network. Additional features allow you to Broadcast WiFi, Broadcast GPS data via WiFi, Broadcast Wind Data, Log Data, create custom Boat Polars and access Remote Support.

Simply connect the DataHub to an existing internet connection and your vessels NMEA 2000 network to get started. Internet connections supported are Android or iOS hotspots, USB connected Android or iOS devices, , Netgear Aircard, Verizon JetPack, or an ethernet connection to a satellite terminal or vessel router.
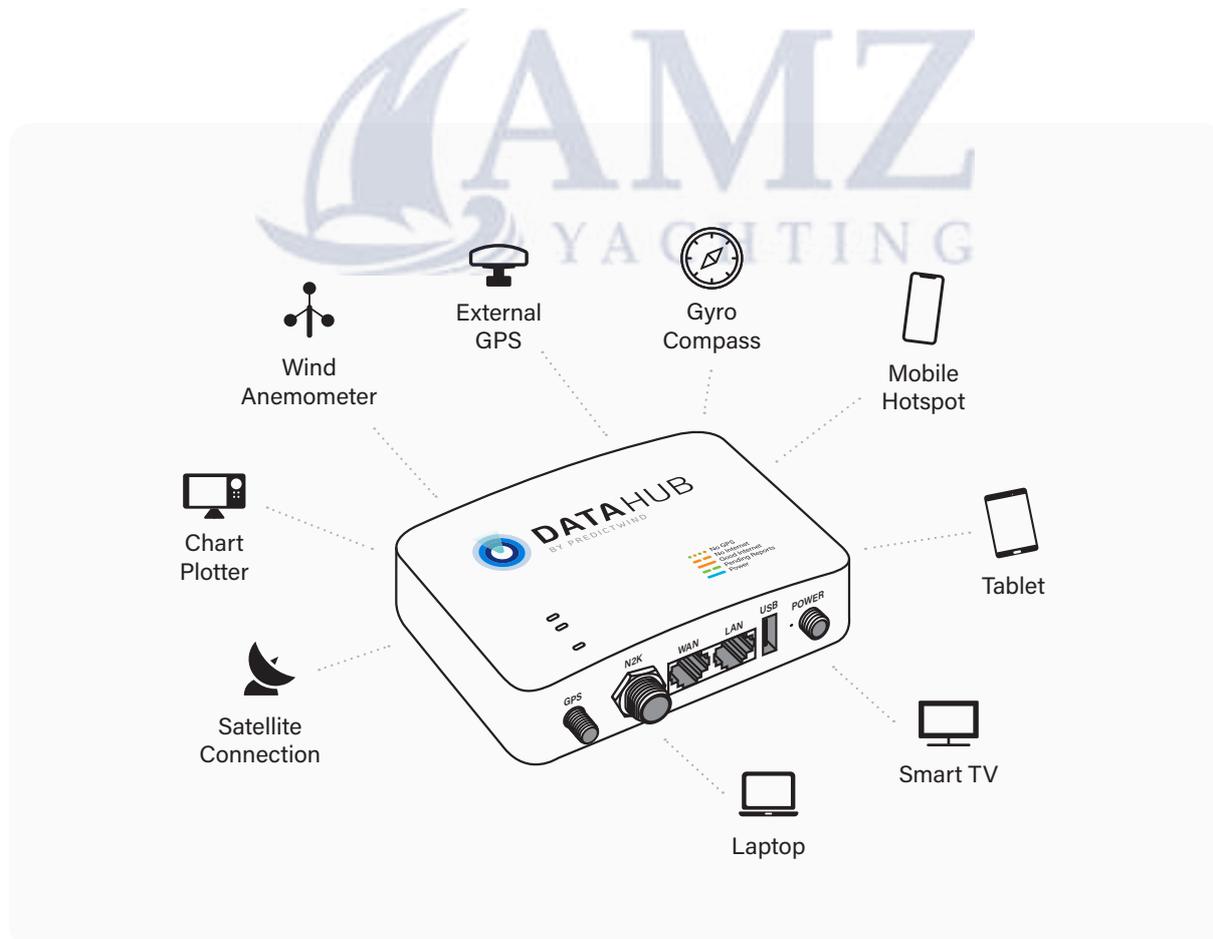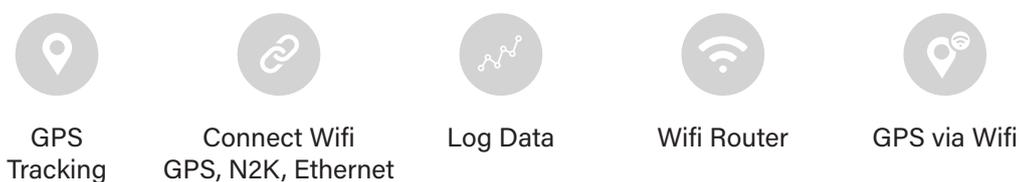
| GPS Tracking | Connect Wifi GPS, N2K, Ethernet | Log Data | Wifi Router | GPS via Wifi |

Wind Anemometer

External GPS

Gyro Compass

Mobile Hotspot

Chart Plotter

Tablet

Satellite Connection

Smart TV

Laptop

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Powering up 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 centre 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 (The black wire is positive, the wire with a white stripe is negative) and wire to the vessel's switch panel. Before powering the DataHub use a voltmeter to ascertain that the centre pin in the connector has a positive voltage. 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, enable and set the tracking interval, and secure its WiFi with a password.

Before you can start the configuration process, you must first establish a connection either via Ethernet or WiFi to log in to the 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.
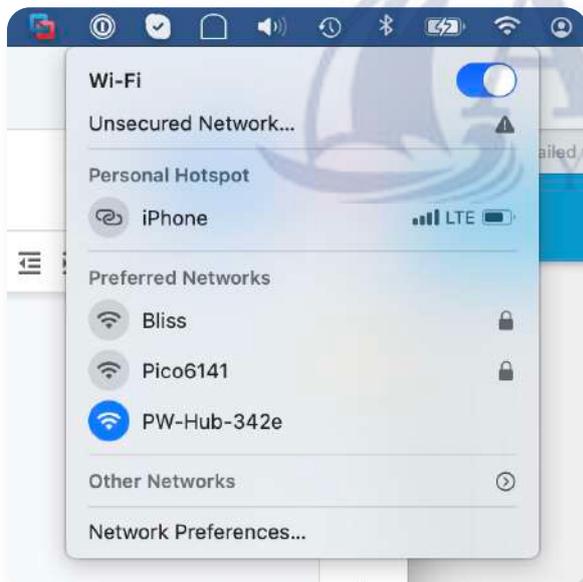
Access via Ethernet

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.
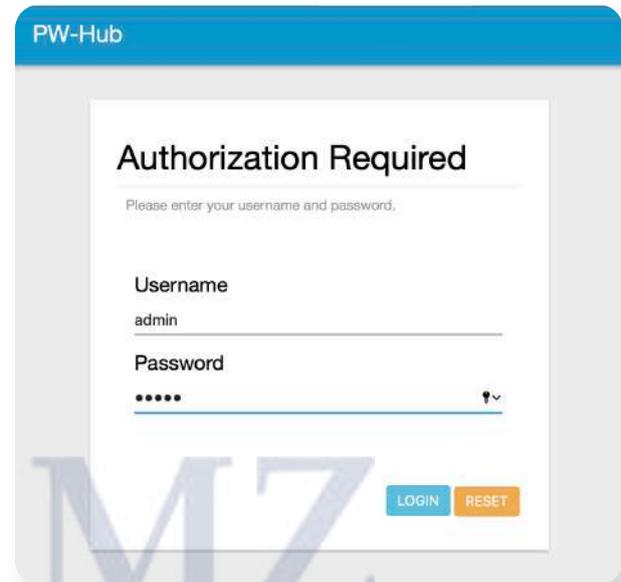

Accessing the Web UI

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 default details below.

Username: admin
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 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.
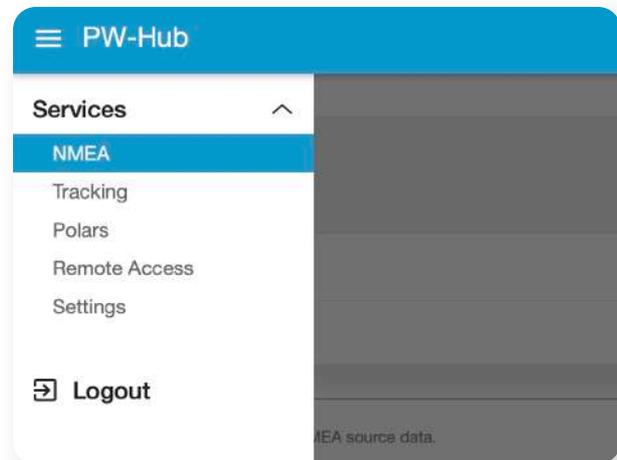
Using the built-in GPS

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 the GPS signal.

The built-in GPS in the DataHub should only be used if you do not have an NMEA 2000 instrument system with external GPS. By interfacing with the NMEA 2000 instrumentation (with the optional PredictWind Cable/Tee) you will also be able to transmit Wind Speed and Direction from your instrumentation so friends and family can see the conditions you are experiencing. Note: An externally mounted GPS will be more accurate.
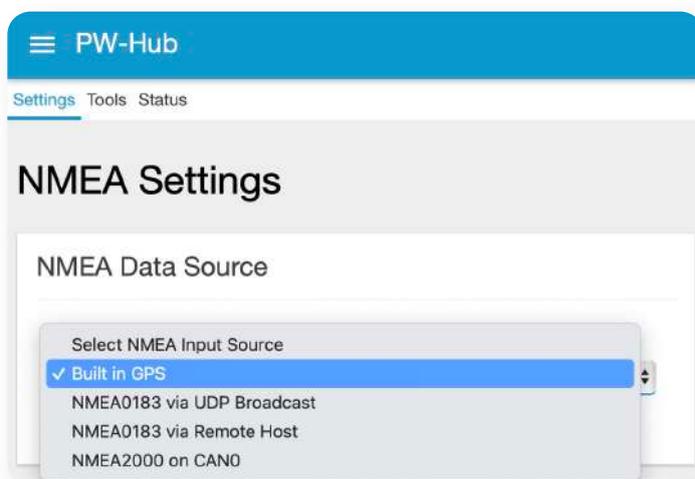
Using NMEA 2000 for GPS

If using your vessels NMEA 2000 network (recommended), then connect the optional device cable from the M12 connector on the back of the DataHub to a tee on your NMEA 2000 backbone. NMEA 2000 device cables and tees can be purchased directly from PredictWind with your DataHub order.

Once connected to the NMEA 2000 network, select **NMEA 2000 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.
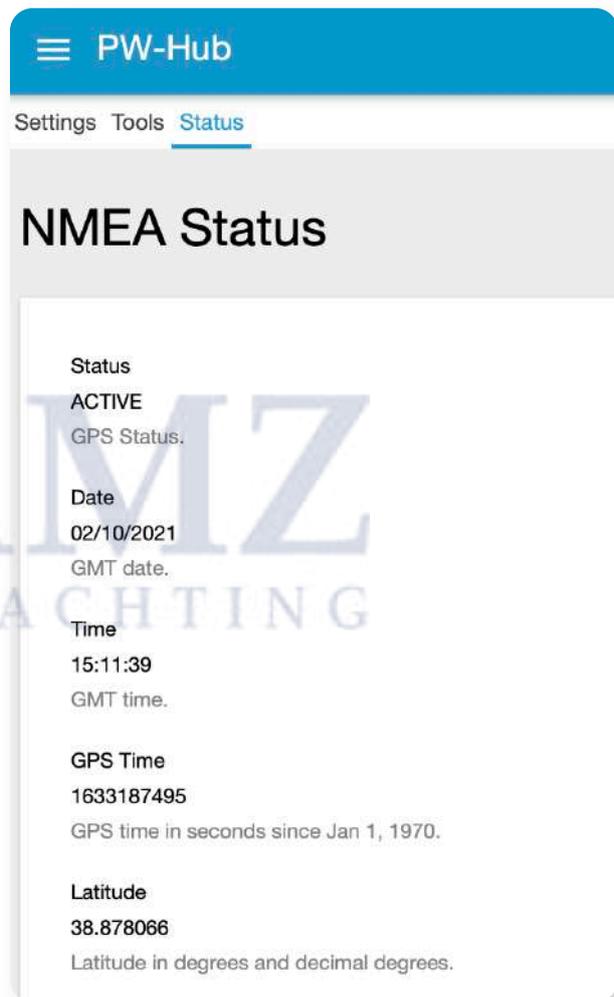
NMEA 2000 to NMEA 183 Repeater via WiFi

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 Aqua Map, GPS Nav X, Navionics Boating etc to use your vessel's GPS for navigation. This results in much more accurate GPS data with the addition of other NMEA 2000 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.
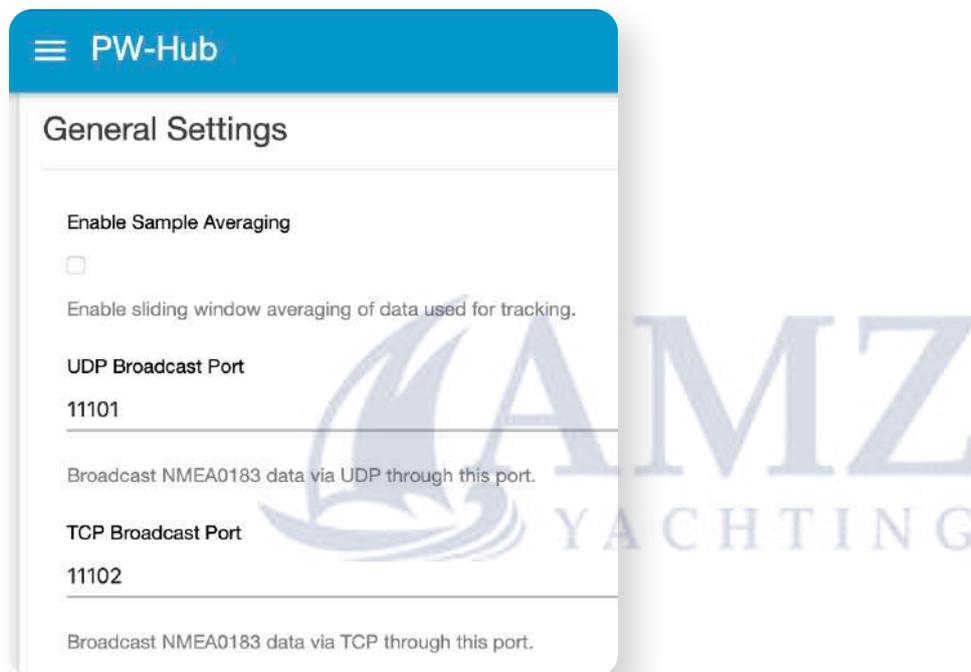
To configure your charting application to use DataHub generated data, please refer to the software documentation for the software. You will need to configure the following:

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.

The following are the configuration settings for the iOS version of Aqua Map and Navionics Boating apps. Note that Aqua Map has a predefined configuration for the PredictWind Datahub.

Aqua Map

Navionics Boating

Configuring Internet Access

Access to the internet is required to send position information from the DataHub to PredictWind. Although a dedicated internet connection is desired for real-time updates to your tracking website it is not required. DataHub will store acquired position reports internally for later transmission if an internet connection is not available.

This, for example, might be used by sailors sailing offshore away from cell phone coverage who do not own satellite phones. Someone could cross the North Atlantic from Newfoundland, CA to Ireland while tracking their voyage. Initially, their tracks while cruising in coastal Canada will be updated in real-time. As they leave Canada and spend a full month offshore in the North Atlantic, position reports will be stored in the DataHub's internal non-volatile memory. Once the vessel arrives in Ireland and cell phone internet access is arranged, all the stored position reports will be uploaded to PredictWind for display on the tracking page. Real-time tracking can only occur while there is internet access, but users can track their global voyages without it.

DataHub provides four different ways to connect to the internet. These include:
- USB Connected iOS devices
- USB Connected Android Devices
- Ethernet connected router with internet access such as a broadband satellite device (Iridium Certus, Inmarsat Fleet Broadband, KVH Vsat, etc) or an LTE enabled router such as a Pepwave.
- WiFi bridge to Android or iOS devices and MyFi devices such as a Netgear Aircard, Cricket wireless router, Verizon Jetpack, and others.

Multiple internet connections can be configured at the same time. For example, users could use a USB connected Android phone as well as an Ethernet-connected satellite terminal. When the satellite phone is on, then data is routed through it. If the satellite phone is off, then data is routed through the Android connected device. If none of the two is available, then the position reports are stored internally in non-volatile memory until an internet connection is available.

Internet via USB connected iOS device

Use a standard lightning iOS USB charging cable to connect your iPhone or iPad to the USB port on the DataHub.

Once connected, iOS will prompt you whether the DataHub should be trusted or not. Select **Trust.**

On the iOS device, navigate to **Settings > Personal Hotspot** and enable it as depicted below.
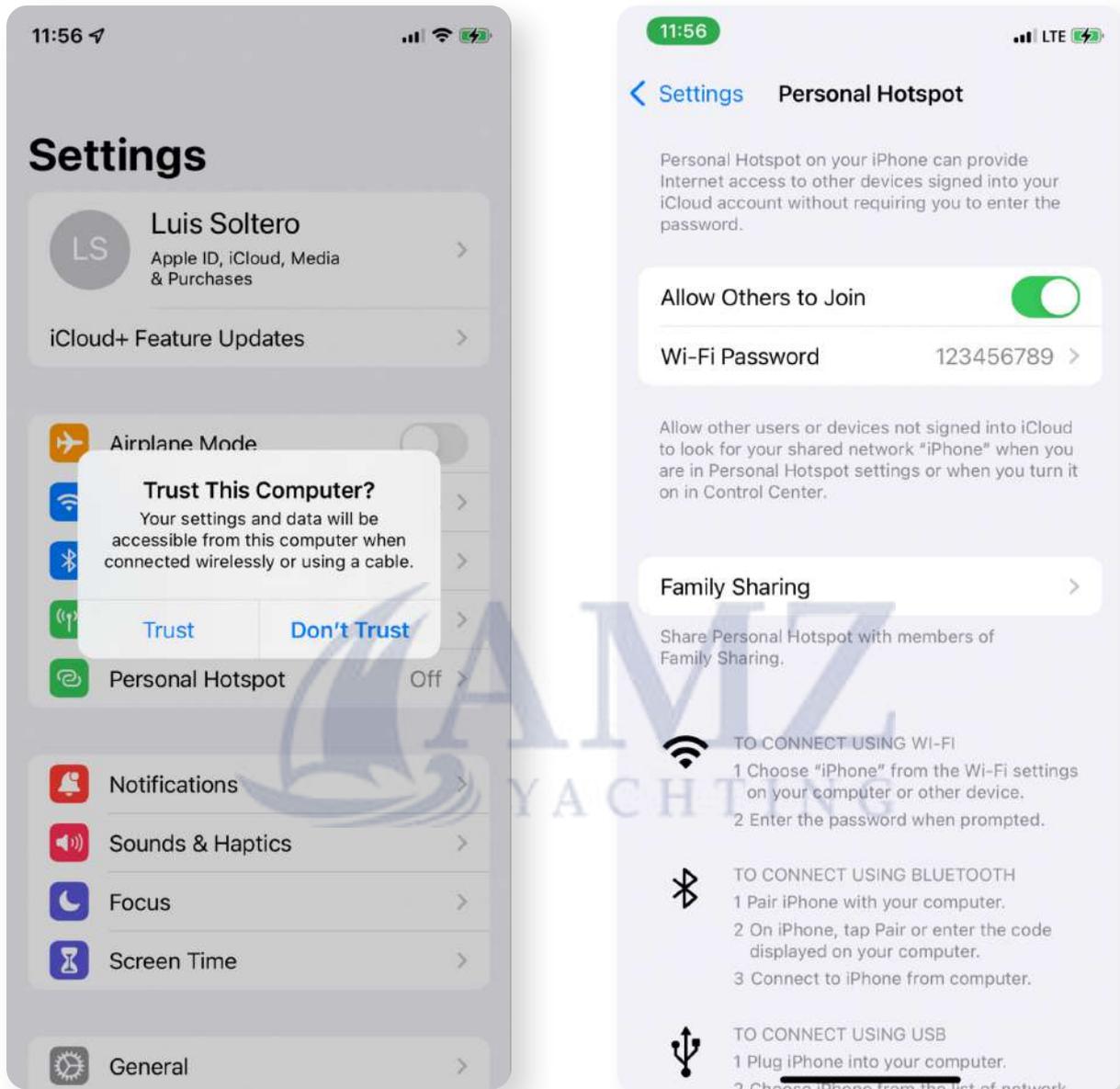
The DataHub should now be connected to the internet if your iOS device has internet connectivity. See section below called **Verifying Internet Connectivity** to confirm that the device is connected to the internet.

Internet via Android

To establish an internet connection via Android, connect the device's USB charging cable to the DataHub's USB connection.

On the Android device now navigate to **Settings > Network & Internet > Hotspot & Tethering** and enable USB tethering.

The DataHub should now be connected to the internet. See the section below called **Verifying Internet Connectivity** to confirm that the device is connected to the internet.

You will need to repeat the process every time you disconnect and reconnect the Android device to the DataHub's USB port. However, there is a good trick that allows you to automate this process so that the phone enters USB tethering mode automatically when you plug it in. Detailed instructions on configuring automatic USB tethering are beyond the scope of this guide but are described in detail in the following article.

Internet via Ethernet WAN port

This is the simplest of all methods. Run an Ethernet cable from your vessels router LAN port to the port labelled WAN on the DataHub. DataHub's WAN port is the RJ-45 jack furthest away from the power connector.

The DataHub should now be connected to the internet. See the section below called **Verifying Internet Connectivity** to confirm that the device is connected to the internet.

Internet connection via WiFi Tethering

Although WiFi tethering is the most complex of all internet connectivity methods, it is quite effective and once configured very convenient to use. The DataHub will persistently search for the remote access point and once found will automatically connect to it. No buttons or settings need to be changed between power up/down. The DataHub searches and automatically connects.

Access points can be your phone in mobile hotspot mode or a dedicated WiFi access point. When using your phone, enable hotspot mode and the DataHub will automatically connect to it. This for many is more convenient than plugging the phone into the USB port on the DataHub since the DataHub connects to the phone wirelessly. If you have your DataHub installed in a cabinet, then you will probably want to use this method for internet connectivity.

To configure WiFi tethering, WiFi connect to the DataHub, login into the web administrator, browse to **Services > Settings** and navigate to the **WiFi** tab.
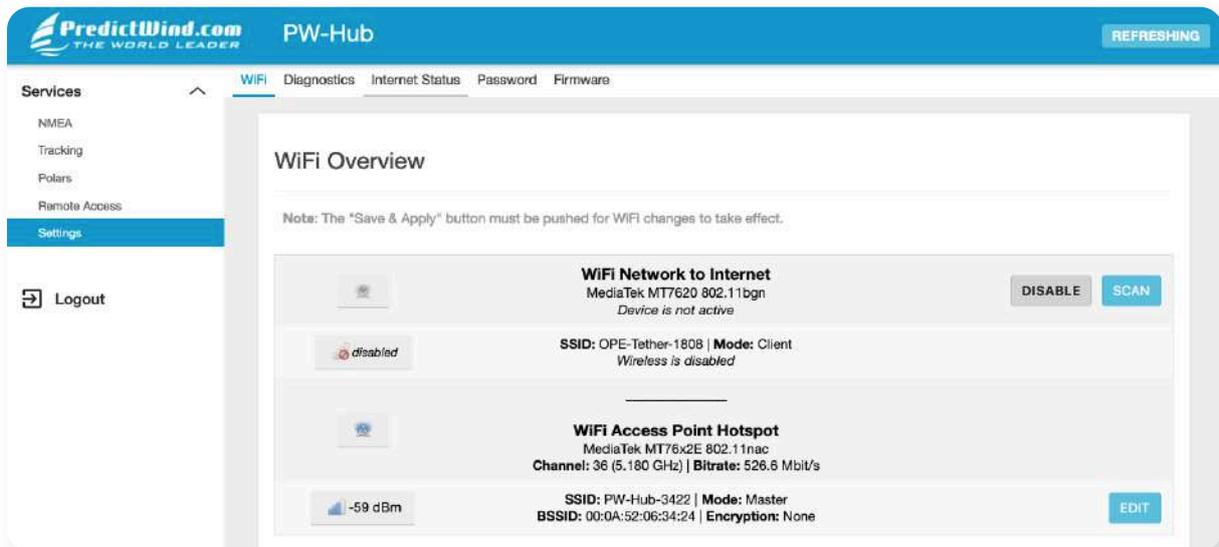
Under **WiFi Overview** you will see two Wi-Fi transmitters listed. The first called **WiFi Network to Internet** is used to establish a WiFi link to a remote hotspot that provides internet access. This transmitter in essence can be used to connect the DataHub to the internet via a WiFi link.

The second transmitter called **WiFi Access Point Hotspot** is the transmitter used by the DataHub to provide WiFi connectivity to devices on the vessel wishing to access the web administrator and the internet. Notice the SSID for this transmitter is listed as **SSID: PW-Hub-XXXX** where the Xs represent alphanumeric digits unique to the unit. This is the SSID that clients use to WiFi connect to the DataHub. We will return to this transmitter later in the guide when we discuss how to password protect the WiFi connection to your DataHub and change its broadcast WiFi name or SSID.

Push the **SCAN** button to list all the available WiFi access points near you. Select the one you desire to connect to and tap **JOIN NETWORK**. In the example below, the iPhone hotspot is selected. Next, enter the passphrase for the WiFi access point then tap **SUBMIT** at the bottom of the page.

Note the **WPA passphrase** field will not be present for open WiFi networks without passwords.
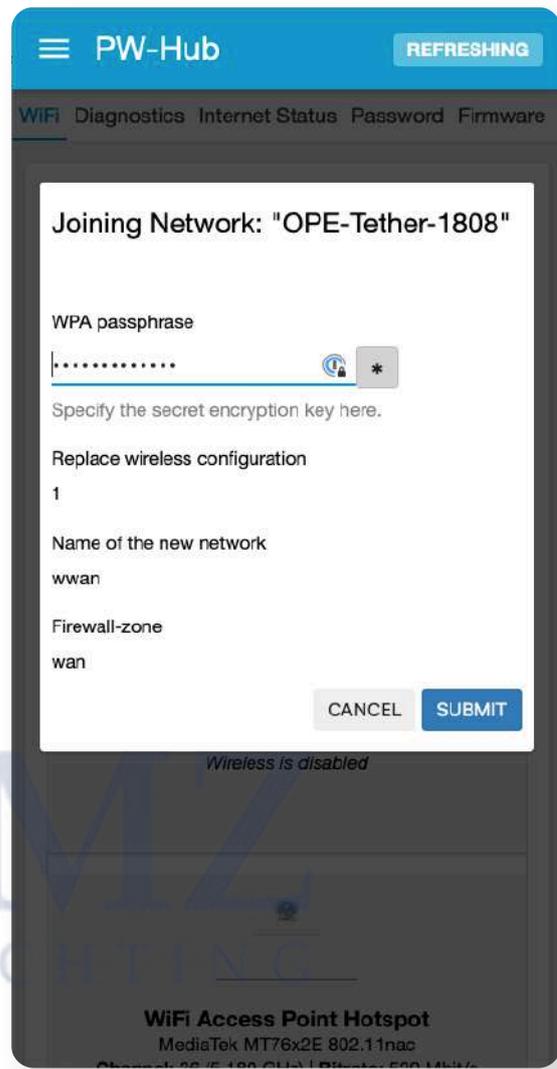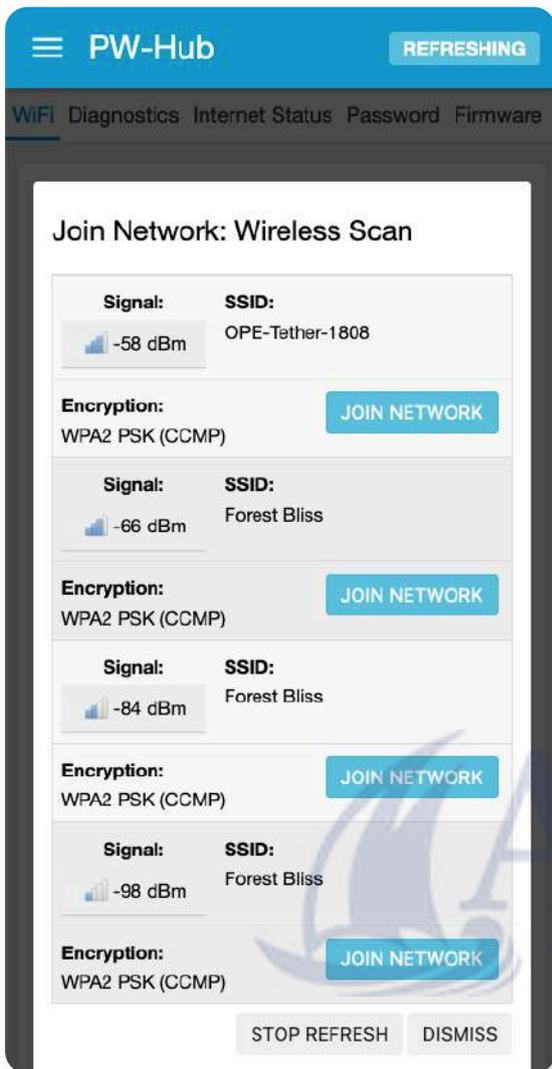
On the following page, review and hit **SAVE** at the bottom of the page. Back on the wireless overview page, scroll to the bottom and push **SAVE & APPLY** to confirm your settings and activate them. You can push the **UNSAVED CHANGES** button at the top right of the page if you want to discard the session without connecting.
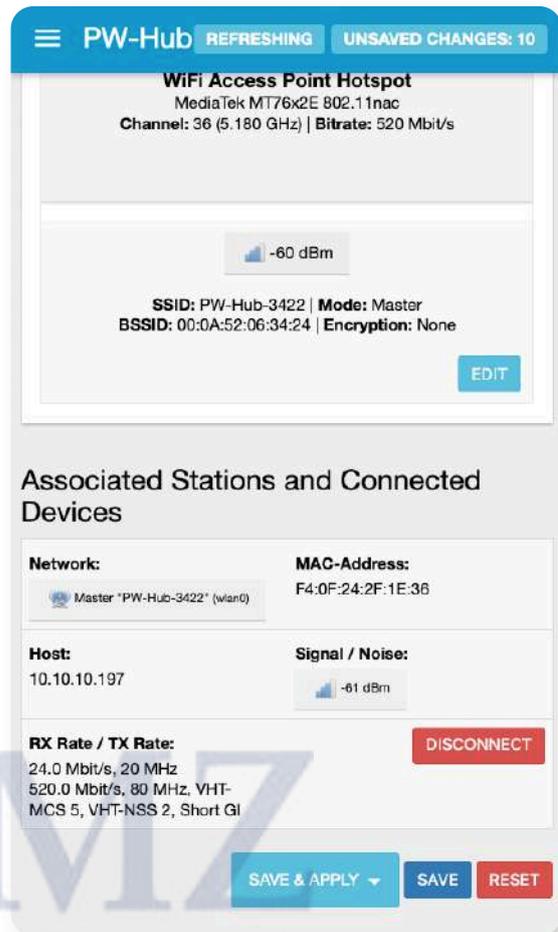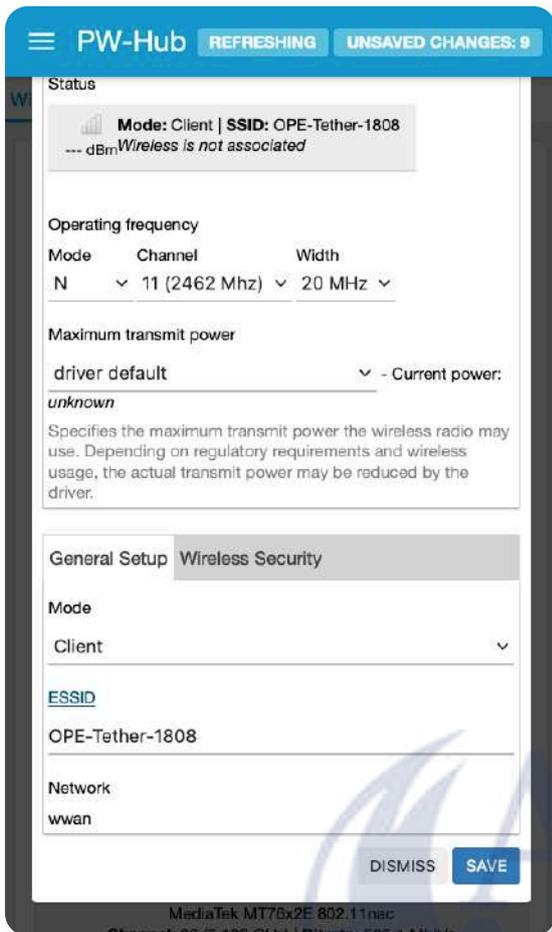
To confirm if you have successfully WiFi tethered to the remote access point, look at the status in **Associated Stations and Connected Devices**.

You will see the SSID of the remote station listed with signal strength and a transmit (TX) and receive (RX) rate. You will know that the station is not available, or you were not successful (if say you entered the password incorrectly) when the signal bounces between 0 and some value and the RX/TX rates drop to zero.

Note there are easier and better ways to know if you are connected to the internet as described in the **Verifying Internet Connectivity** section.

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 posts tracks for your vessel and hosts blog posts with pictures of your travels. The tracking and blogging service requires a Standard or Professional forecast subscription, a DataHub or a satellite device compatible with the service, and a one-time setup and registration.

Below, are screenshots of a tracking page at http://tracking.predictwind.com/MV_Bliss showing current location, current weather conditions, latest tracks and a list of blog posts. The tracks were acquired and posted to the site using the PredictWind DataHub described in this document.
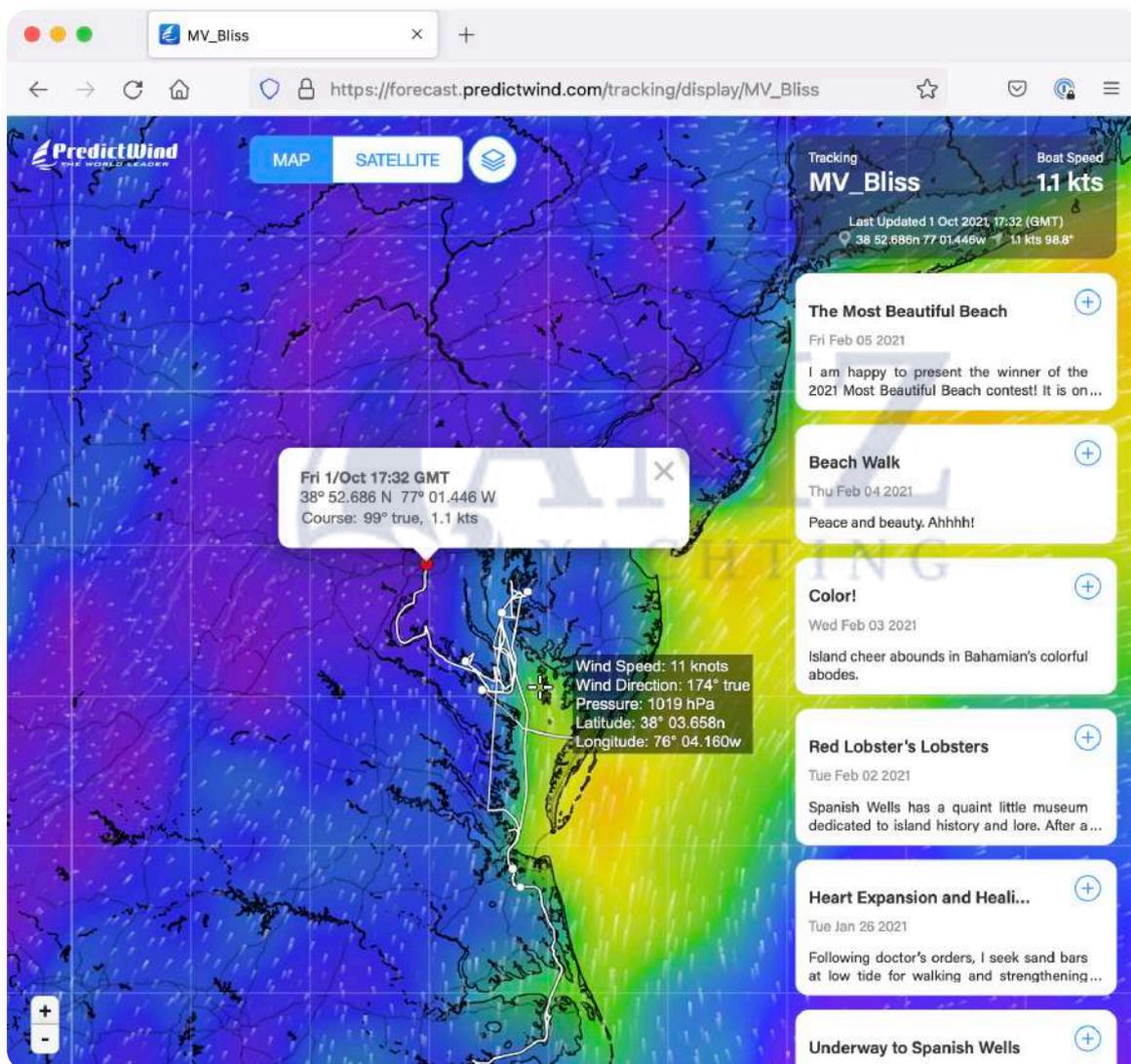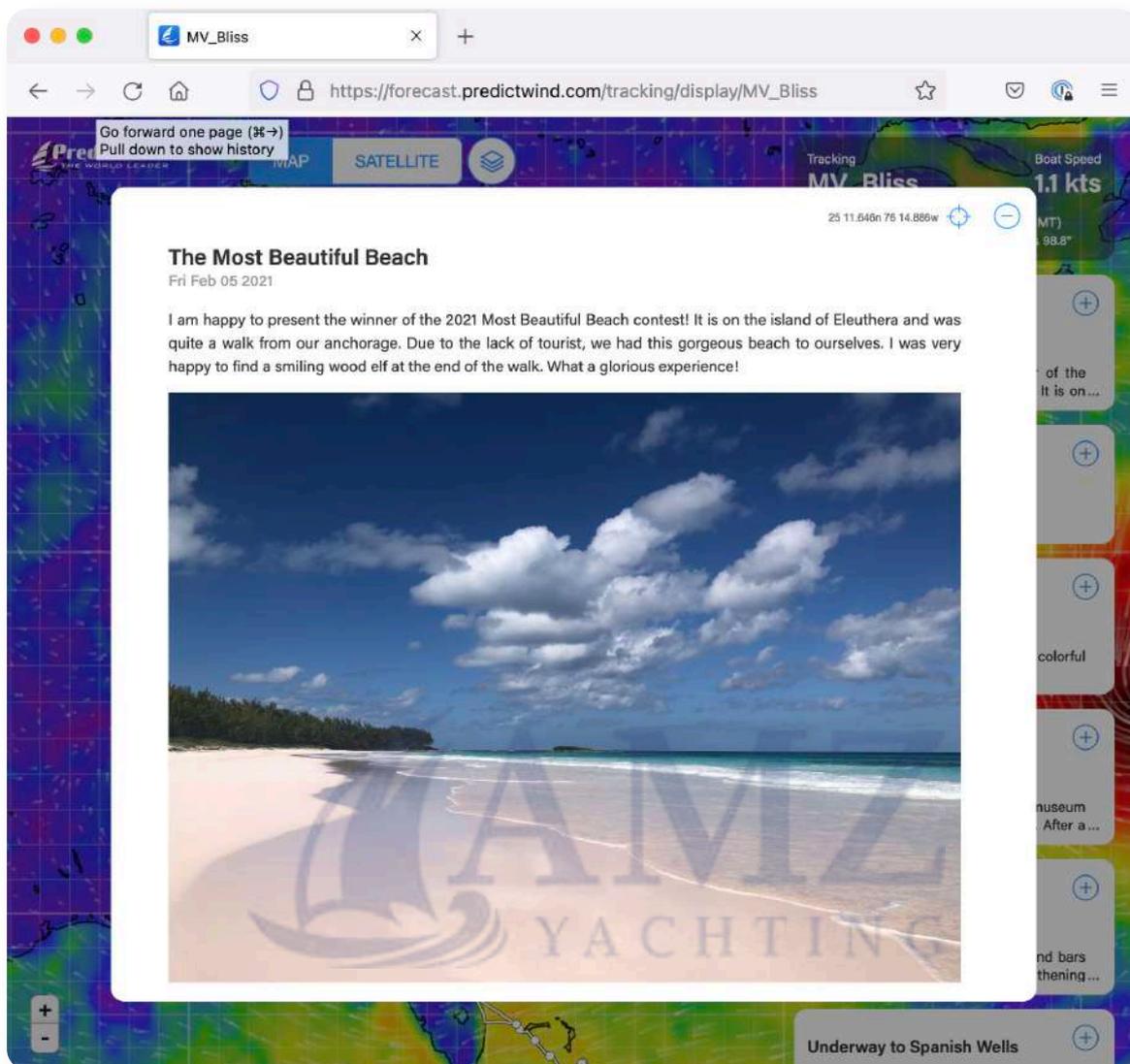
Setting up your
GPS Tracking page

1. Get started by scanning the QR code on the back of your DataHub device. This will take you to the tracking setup page for your DataHub.

2. Select **New Customer** or **Existing Customer**.

3. Input your account email, vessel type and boat name (if you are a new customer). The mac address will be autofilled and is also on the back of the DataHub device.

4. Select the PredictWind **Onboarding Service** if you require technical support with your DataHub set up or **Continue without Onboarding Service**

NOTE: If you select **Continue with Onboarding Service** you will be taken to payment and checkout.
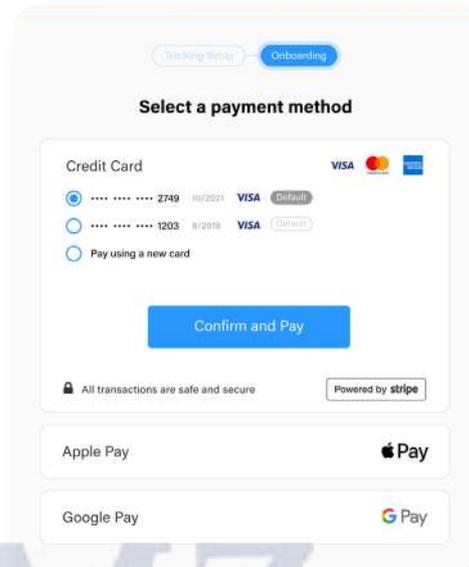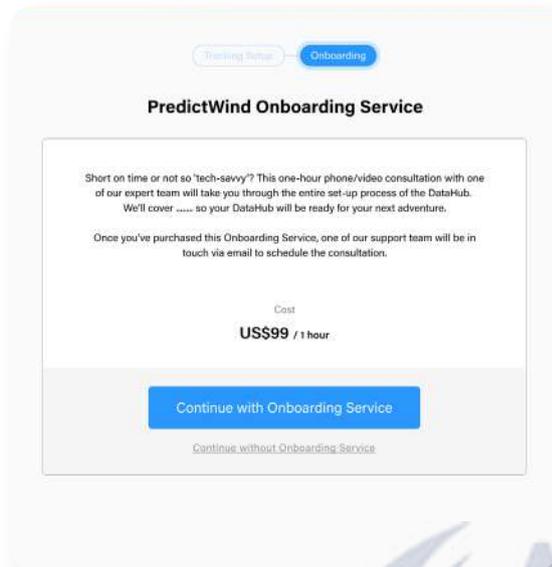
5. You will receive a confirmation that your GPS Tracking page has been successfully set up and an email with further instructions. Check your junk email folder if you don't see it in your inbox.
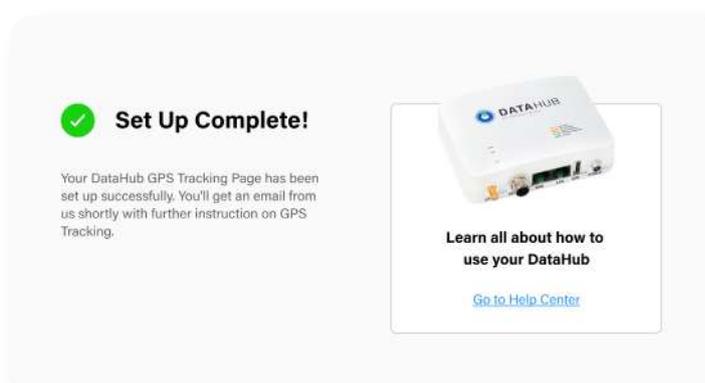
6. Once you have your tracking page set up, the next step is to enable tracking on the DataHub itself. To enable tracking, browse to the **Services > Tracking** page. Once there, check the **Enable Tracking** checkbox, note the **Serial Number**, and set the **Tracking Interval** to the desired value. The default tracking interval is 15 minutes per position report. This value is fine for vessels moving at displacement speeds. Faster moving vessels may want to decrease the interval period.

7. Press the **Save & Apply** button at the bottom of the page to start the tracking service.

This concludes the GPS Tracking setup. You should now be able to see tracks on your tracking/blogging portal at PredictWind provided you have valid GPS information and an internet connection to the DataHub.

For any further assistance contact support@predictwind.com along with a photo of your DataHub QR code, located on the underside of the device.

DataHub Status LEDs

DataHub provides a status LED on its top cover that rapidly allows you to know the status of the GPS feed, internet connectivity, and if you have position reports stored on the device that have not yet been sent to PredictWind.

There are a total of 3 LEDs, blue, orange, and green.

The **blue LED** is illuminated when power is supplied to the DataHub.

The **orange and green LEDs** serve multiple purposes to display both GPS status, internet connectivity, and tracking spool state (positions waiting to be sent).

Invalid GPS

The **orange and green LED** will blink very rapidly in alternating succession when there is invalid or NO GPS data. Fast alternating **orange/green LEDs** means that you will not be able to send tracking position reports to predict wind no matter the state of the internet connection. Read section **Configuring the GPS Feed** to address this problem.

No Internet

With valid GPS positions, a no internet connectivity issue is displayed by a slow blinking **orange LED**. The **orange LED** blinks once every 3 seconds when there is no active internet connection.

Spooled Position Reports

With valid GPS positions, a slowly blinking **green LED** indicates that position reports have been sampled but not sent to PredictWind for processing. Normally you see slow blinking green along with slow blinking orange. The blinking **orange LED** indicates no internet, while the slow blinking **green LED** means that you have position reports queued but not sent.

When an internet connection avails itself, the DataHub will automatically send the position reports and the **green LED** will be turned off.

Verifying Internet Connectivity

The DataHub provides several methods to determine if you are internet-connected. The simplest way to know if you are connected to the internet is to WiFi connect to the unit and try to browse pages online. Try Google.com. If the page shows up, then you have an internet connection.

Alternatively, a solid **orange LED** on the top of the DataHub indicates a valid internet connection.

There is a detailed internet status page found under **Services > Settings** under the **Internet Status tab**. A green square represents an active internet connection. In the image displayed below, we see that **wwan** or wireless wan (wide area network) is active as well as **wan** (the Ethernet WAN connection). The squares indicate that the interfaces are online and the uptime for the connection. A red box means that the interface is available, but there is no internet connection through it. In other words, the interface exists, but it's offline. A yellow box indicates that there is no interface. In this case, an Android phone or USB LTE modem has not been detected by the DataHub.
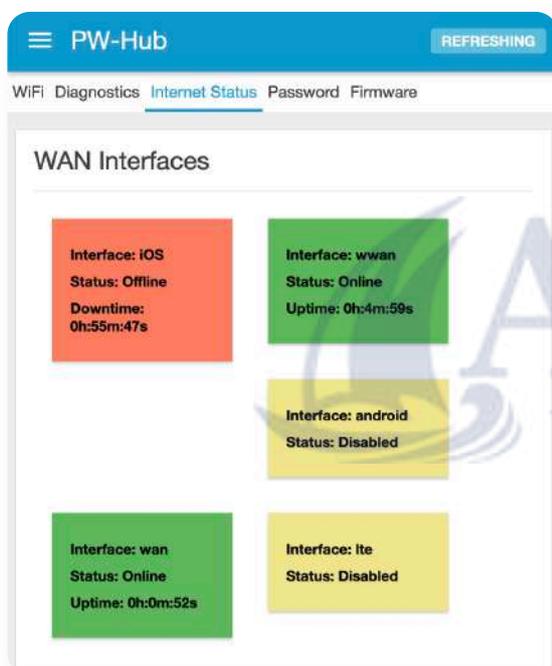
More advanced users can use the tools under the **Diagnostics tab** under **Services > Settings** to diagnose internet connectivity problems.

Logging

DataHub can log position reports and/or NMEA data and store it in its internal non-volatile storage for later analysis. Logged data can be viewed, downloaded, deleted, and (in the case of NMEA data) played back through the NMEA 2000 network. This feature allows race coordinators, for example, to use the remote support feature to download and analyze the vessels measured instrumentation data for analysis in real-time.

Logging is enabled by checking the **Enable Logging** checkbox at the bottom of the **NMEA and/or Tracking Settings** page. Check the box followed by pushing the **Save & Apply** button to enable logging.

Log Rotation

Data logs can be quite large since they are storing all the data that is being generated by the vessel's instrumentation. The DataHub is supplied with 4 gigabytes of non-volatile memory. Larger sizes are available as a custom option. Log rotation prevents the log data from growing forever and filling up available storage space. This is done by storing the logs in individual files and then periodically deleting the older data sets.

A log rotation scheduling dialogue appears when logging is enabled. Note that the log rotation schedule for NMEA data can be different from that for position reports. Position reports are sampled infrequently and are comparatively small so these logs don't occupy as much space as NMEA data logs and can be rotated less frequently.

In the above screenshot, we have selected the logs to be rotated daily with a maximum of 5 log files (4 days worth) to be stored. File names are logged by name followed by a **.** (full stop) and a number. The larger the number the older the data set. For example in a list containing:

- Tracking
- Tracking.1
- Tracking.2
- Tracking.3
- Tracking.4

Tracking will contain data that is currently being logged. **Tracking.4** contains data that was acquired 4 days ago.

Logs can be rotated on a **daily**, **weekly** or **monthly** schedule. A maximum of 10 log files can be stored in the DataHub's internal memory.

Tracking Logger

Enabling logging under **Settings > Tracking > General** causes the tracking application to log all position reports recorded by the DataHub. You will notice that once enabled, a new tab appears in the user interface under **Services > Tracking** called **Logs**. All of the tracking logs can be found under the **Logs** tab.
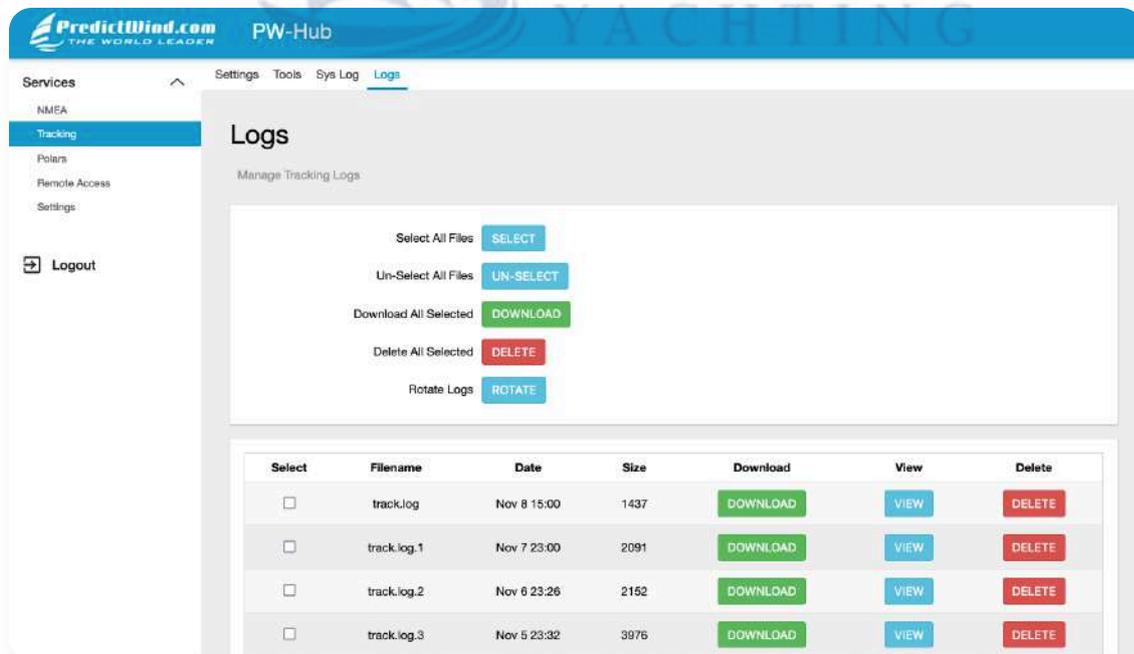
The **Logs** page is broken down into two sections. The top section contains actions that apply to all the logs while the bottom section allows you to perform actions on individual log files.

Log files are listed in reverse chronological time order and can be downloaded to your computer, viewed, or deleted. Log files are stored in CSV (comma separated records) which should be viewable in any spreadsheet program. The first row has headers describing each field. Subsequent rows contain the tracking position reports.

Tap the **View** button to view the log data in detail.

```
unixtime,time,date,status,lat,lon,sog,cog,alt,tws,twd,sow,thw,heave,yaw,pitch,roll,variation,deviation
1636329604,00:00:04,08/11/2021,ACTIVE,35.638382,-83.987425,0.019438,,298.4,,,,,,,,,,
1636333204,01:00:04,08/11/2021,ACTIVE,35.638385,-83.987487,0.155508,,319.4,,,,,,,,,,
1636336804,02:00:04,08/11/2021,ACTIVE,35.638383,-83.987448,0.116631,,294,,,,,,,,,,
1636340404,03:00:04,08/11/2021,ACTIVE,35.638238,-83.98742,0.291577,,319.2,,,,,,,,,,
1636344004,04:00:04,08/11/2021,ACTIVE,35.63839,-83.987383,0.058315,,,,,,,,,,,,
1636347604,05:00:04,08/11/2021,ACTIVE,35.63839,-83.987418,0.077754,,302.5,,,,,,,,,,
1636351204,06:00:04,08/11/2021,ACTIVE,35.63829,-83.987448,0.330454,,348.9,,,,,,,,,,
1636354804,07:00:04,08/11/2021,ACTIVE,35.638323,-83.987425,0.155508,,,,,,,,,,,,
1636358404,08:00:04,08/11/2021,ACTIVE,35.638328,-83.98733,0.155508,,341.3,,,,,,,,,,
1636362004,09:00:04,08/11/2021,ACTIVE,35.638417,-83.987475,0.097192,,302.2,,,,,,,,,,
1636365604,10:00:04,08/11/2021,ACTIVE,35.638418,-83.987432,0.388769,,292.2,,,,,,,,,,
1636369204,11:00:04,08/11/2021,ACTIVE,35.63847,-83.987592,0.116631,,,,,,,,,,,,
1636372804,12:00:04,08/11/2021,ACTIVE,35.63841,-83.987412,0.174946,,307.7,,,,,,,,,,
1636376404,13:00:04,08/11/2021,ACTIVE,35.63833,-83.987343,0.388769,,315.2,,,,,,,,,,
1636380005,14:00:05,08/11/2021,ACTIVE,35.63835,-83.987405,0.155508,,305.8,,,,,,,,,,
1636383605,15:00:05,08/11/2021,ACTIVE,35.638442,-83.987485,0.155508,,316.6,,,,,,,,,,
```

NMEA Logger

Enabling the tracking feature under **Services > NMEA** results in the appearance of a new **Logs** tab under which the NMEA logs appear.

As with the **Tracking Logger**, the NMEA logs page is broken into two sections. The first section contains actions that apply to all the log files while the second section lists the log files in reverse chronological time order.
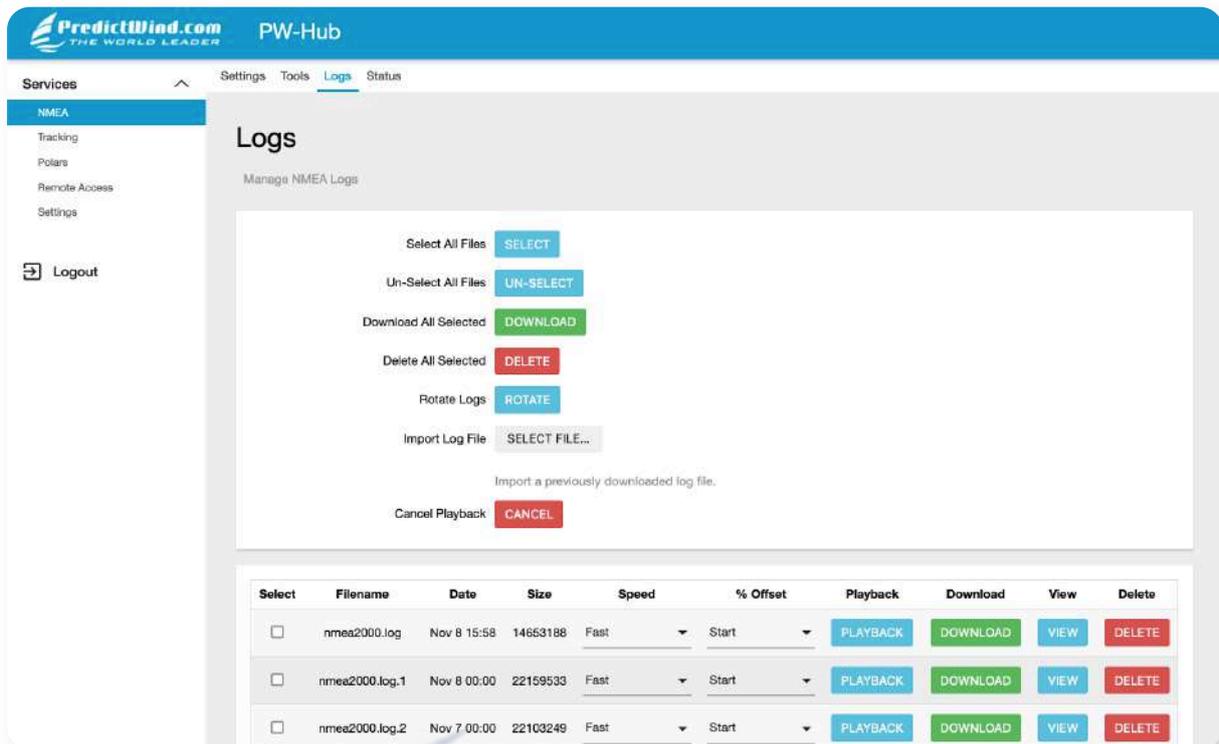
Of note in the top section is the **Import Logs** action. This feature allows the import of NMEA data logs acquired on a different DataHub into the unit. As we will see shortly, the DataHub allows for playback of NMEA data. The import feature allows technicians to receive recorded NMEA data from a vessel at sea (via email, direct download, or another method), import them into their local DataHub, and then play the data back onto their local NMEA network as if they were on the vessel.

Individual NMEA data files can be played back onto the local NMEA network, downloaded as individual files to your computer, viewed on the screen, and deleted.

Logs can be in either NMEA183 or NMEA 2000 format depending on how the data is sampled by the DataHub. Note that NMEA 2000 is a binary specification and can't be directly viewed. The DataHub converts NMEA 2000 log data into text for viewing. So, with the DataHub it is possible to view and analyze NMEA 2000 data. Below is a sample display of NMEA 2000 data.

NMEA183 is displayed in its native text format. Below is a sample of NMEA183 data.

Of special note is the **Playback** feature. This allows a user to playback through their NMEA connected instruments, data that has either been previously acquired or imported from a second DataHub. You can control the playback speeds by using the **Speed** control next to the log file being played back. The **%Offset** control allows starting the playback from a location other than the beginning of the data log file.

Polars

Polars are a measure of performance based on wind angle, seas, displacement weight, and other factors such as sail type and condition, etc. Every boat has a unique set of polars. Many performance boat manufacturers publish "theoretical" polars for their boats. However, these are usually not that accurate and don't adequately represent the capabilities of the vessel.

DataHub along with services provided with PredictWind's back end servers can aid in generating custom polars for the vessel. This is accomplished by sample wind, seas, and environmental conditions supplied by the vessels NMEA 2000 network and then uploading to www.predictwind.com for analysis.

The process for measuring and analyzing polars is automated and controlled by the DataHub's **Polars** app found under the **Services** menu.

The Polar interface shows two sections. The topmost section displays DataHub's unique serial number, a customizable name for the polars data set initialized to the current date, and a free text description of the polars.

Note that the serial number must be registered with PredictWind before this feature can be used.

The bottom section of the interface is used to measure and upload the polars dataset to PredictWind. The first screen displays the status of the NMEA data coming into the unit and the current time along with the **START** button. Prepare your vessel and crew to sail at its maximum performance level on all wind tacks. Then, when ready, push **START**. This will start the recording process.

Pushing the **FINISH** button will stop recording data and prepare the data set for uploading to PredictWind. Once the **FINISH** button has been pressed a screen with two options is displayed.

The **UPLOAD** button will upload the polars data set to your account at PredictWind and start the polars computation process. The resultant polar is stored in your account for use with all the performance routing and guidance features available at your subscription level. The upload feature requires an internet connection (see section **Configuring Internet Access**) and will not be present if not available.

The **DOWNLOAD** button downloads the polars data set to your computer. You can then at a later date upload the data to your account at www.predictwind.com for processing. This will work even if no internet connectivity is available.

Pressing the **DONE** button will guide you back to the start page where you can start sampling another polars data set.
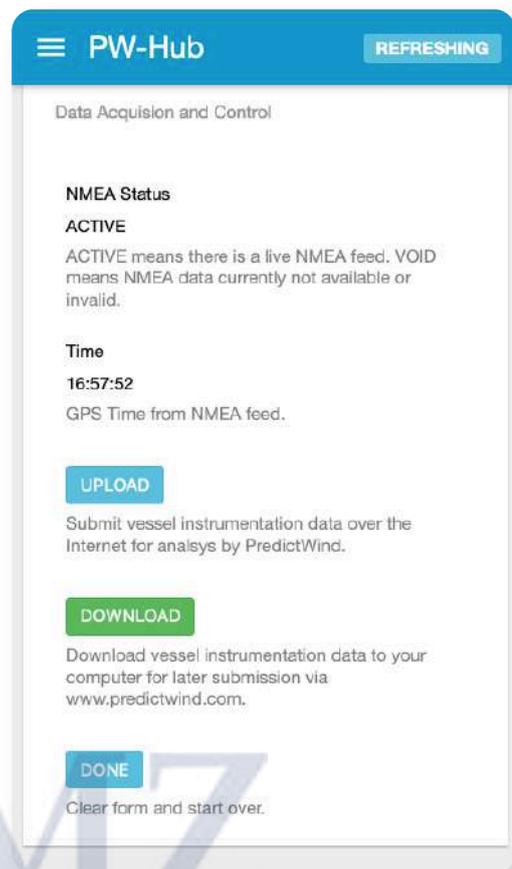
Polars data sets are also stored and available in the NMEA log.

Polars are stored under the name given to them at the time of acquisition. The screen above shows two polars acquired. One on Nov 2 and the other on Nov 8 of 2021.

Remote Support

The remote support feature allows technicians onshore to access the DataHub remotely, to aid you in solving technical problems. It also allows remote sailing experts to access real-time logs for viewing and analysis as you are sailing.

To use remote support your DataHub must have access to the internet (see section **Configuring Internet Access**). DataHub will only make the feature available if it detects a good internet connection.

To enable remote support, browse to the **Services > Remote Acess** and push the **Enable Remote Support** button.
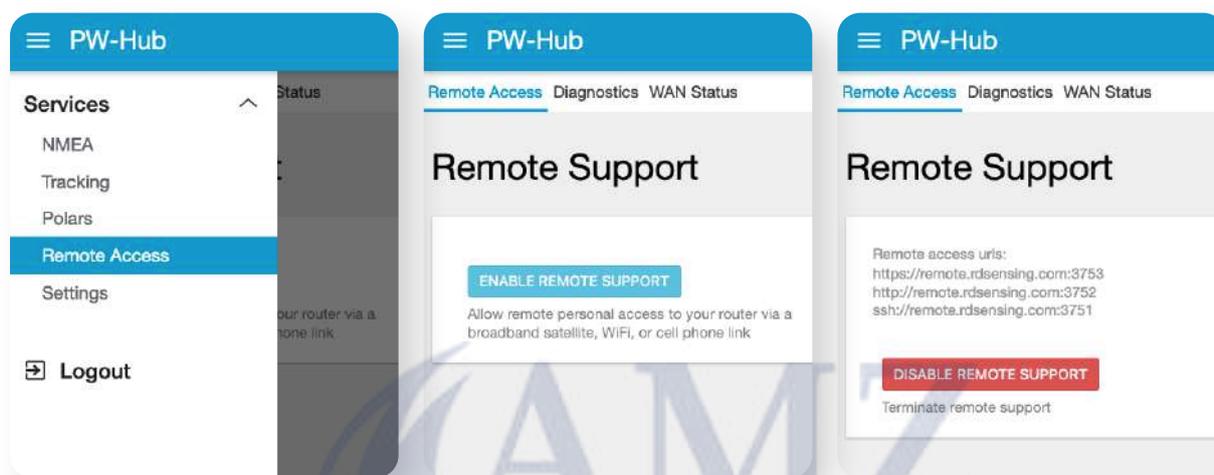
This action results in the creation of 3 URLs allowing HTTP, HTTPS, and SSH access to your unit. These URLs are randomly unique and only exist until either the **Disable Remote Support** button is pressed or internet connectivity is lost. In this example, we generated 3 URLs:

Remote access URLs:
- https://remote.rdsensing.com:3753
- http://remote.rdsensing.com:3752
- ssh://remote.rdsensing.com:3751

The DataHub is accessible via these URLs in the same way as over WiFi on your vessel. Remote-service personnel will have access to the same features and services that you do on your vessel.

Securing The DataHub

By default, the DataHub's WiFi is open and unencrypted and the administrator username and password is well known. Since the DataHub can provide internet access to any WiFi client connected to it, it is best to secure the WiFi connection to prevent unintended network access.

Changing the WiFi SSID and Securing with a Password

WiFi-connect to the DataHub and browse to **Services > Settings** and select **WiFi**. Scroll down towards the bottom of the page and push the **EDIT** button for the **WiFi Access Point Hotspot**. Under the **General** tab on the next page, scroll towards the button and find the **ESSID** entry. The ESSID is the SSID that is broadcast by the DataHub. Change the ESSID entry to your desired broadcast name.
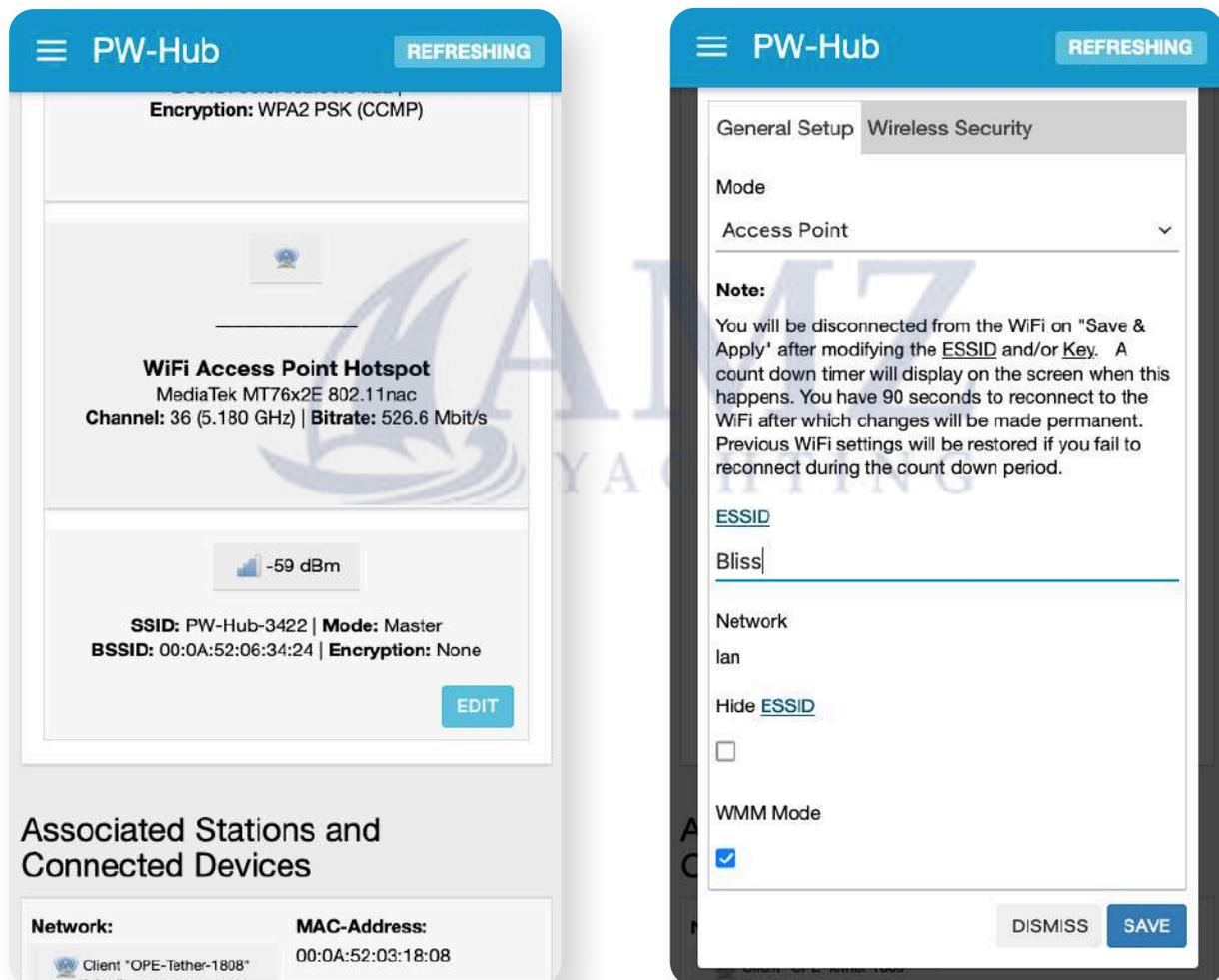
Next, click on the **Wireless Security** tab and select **WPA2-PSK (strong security)**, leave **Cipher** on **auto**, and finally enter a password for WiFi. Scroll to the bottom of the page and push **SAVE**. Back on the **Wireless Overview** scroll down to the bottom and push **SAVE & APPLY** to activate the changes. You will be momentarily disconnected from the WiFi and then when you reconnect you will be prompted for the new password.
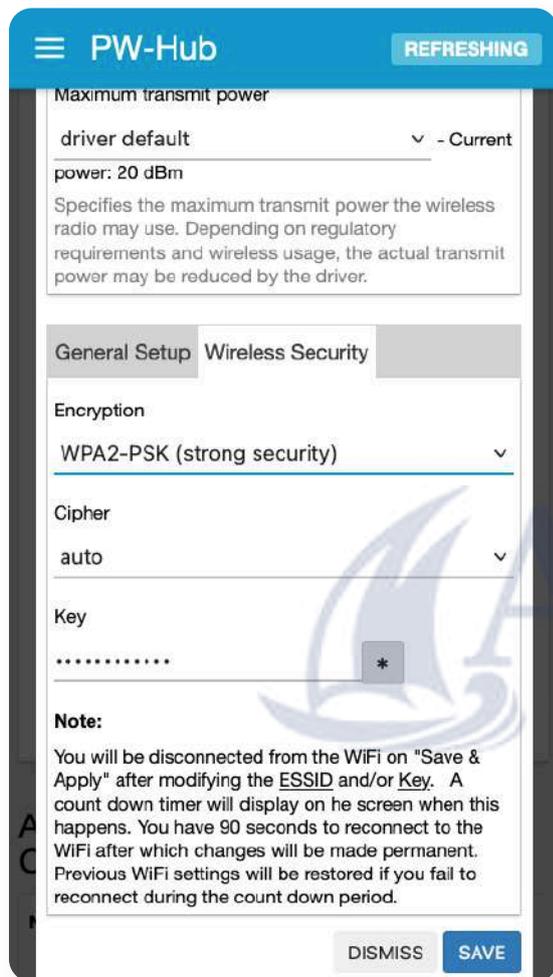
Important:
When changing the SSID and password on the DataHub you will be disconnected from the unit if you are WiFi connected to it. You are making changes to the same WiFi that you are connected to. Once the changes are made you will be forced off of the WiFi. You have 90 seconds to connect to the new WiFi SSID using the password you entered to complete the process. Failing to reconnect to the new WiFi SSID during this period will result in the DataHub restoring the original SSID and password (which by default is none). This is done as a safety precaution in the event you miss-typed in the password. The DataHub reminds you of this in the notice displayed right about the **SAVE** button.

Note below, that the DataHub WiFi **Bliss** now shows up in a WiFi scan as encrypted when scanning on a Mac.

Changing the Admin Password

Connect to the DataHub via WiFi and login with username admin using the default password (admin).

To change the admin password, browse to the **Password** tab and enter the new password twice.

Now log out from the DataHub by selecting the **Logout** menu entry under **Settings**.

Log back into the router using:
Username: superadmin
Password: superadmin

Then repeat the process.

Although we have not discussed **superadmin** this login provides advanced features to the DataHub not required for tracking and blogging. Advanced users may enjoy exploring the advanced features of the DataHub, but most users will not require these. Nonetheless, the superadmin account should be secured.
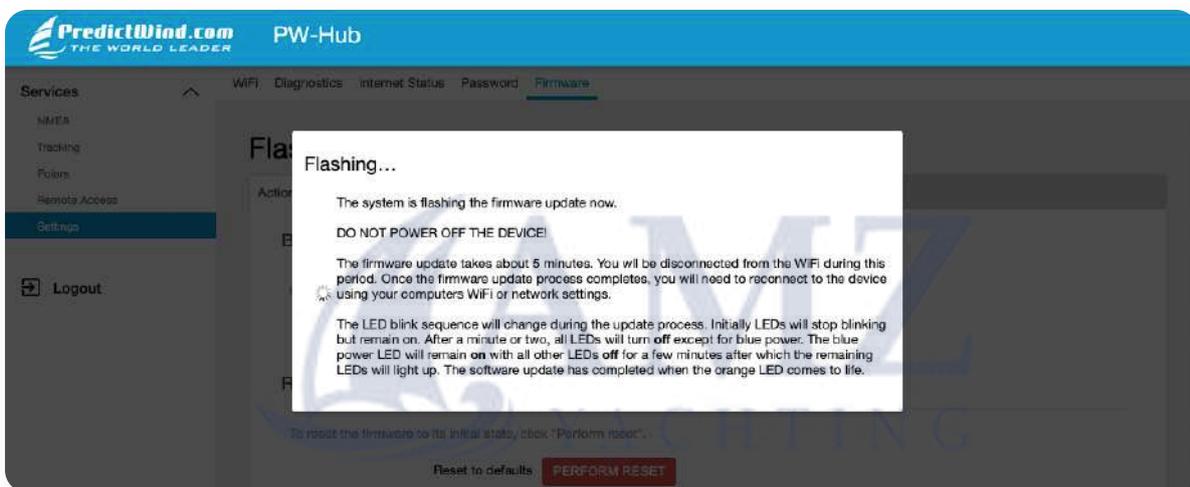
Firmware Updates

On occasion, PredictWind may provide updates to the DataHub software that includes enhancements and bug fixes. Users wishing to update their devices should download the latest version of the firmware from PredictWind and store it on their computers.

To upgrade the firmware, login to the DataHub via WiFi (or Ethernet/WAN), log in as admin and browse to **Services > Settings**. Select the Firmware tab and select **FLASH IMAGE…** at the bottom of the page and follow the prompts. You will need to browse for the software image you download to your computer, upload it to the DataHub, and then confirm that you wish to update the firmware.

You have the option of keeping the current configuration. Normally you would want to check this option, otherwise, you would need to go through the full setup of the unit as described in this document.

The following screen will pop up once you confirm to proceed with the update.

The firmware update takes about 5 minutes to complete. Note that you will be disconnected from WiFi during the update period since the unit will be offline. On completion of the software update, you will need to reconnect to the device using your computers WiFi or network settings.

The LEDs will blink during the update process in the following sequence. First, the lights will stop blinking. After a few minutes, all the LEDs will go off as the unit reboots. The blue power LED remains on during the reboot. After a few additional minutes the LEDs will resume their normal blinking pattern. The software update is complete once the orange LED comes on.

Reconnect to the unit as usual and verify the new software version by examining the page footer in any view.

Factory Reset

The DataHub can be returned to its original factory defaults (i.e. the way you originally received it) by one of two methods.

Software

If you can WiFi or Ethernet-connect to the unit and can log in to the web admin UI then browse to **Services > Settings** and select the **Firmware** tab. Push the **PERFORM RESET** button to restore the factory default settings.

Note that it takes 5-10 minutes for the process to complete. Do not interrupt the DataHub during the reset process.

Hardware Reset Switch

A hardware reset is in order if you have either lost the WIFi password, admin password or are unable to otherwise access the web admin UI for the DataHub.

To perform a hardware reset, locate the reset button next to the power inlet for the unit. You will find it through a small pinhole through the enclosure. Use a paper clip or other small object to depress the button for 15 seconds while the unit is powered on. After 15 seconds, release the button. The unit will then perform a factory reset. Note that a quick push of the button will reboot the unit, but not reset it to its defaults. The button must be held for more than 10 seconds and less than 30 for the reset action to occur.

Legal
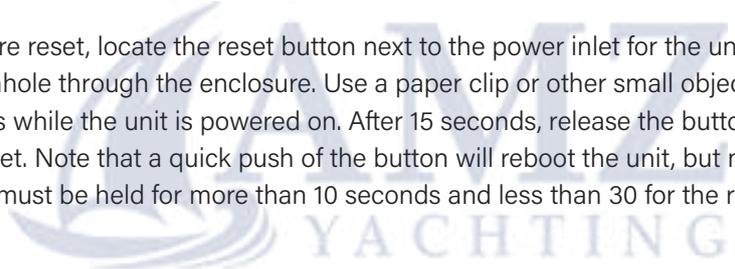
Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, according to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used as per the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimetres between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 centimetres from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC ID: 2A23ZDATAHUB
Model: DataHub

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.