

## IMPORTANT INFORMATION

The default Wireless Network Name	=	4GLittoral
The default Wireless Password	=	4GLittoral
The default Web Interface User	=	admin
The default Web Interface Password	=	4GLittoral

# Littoral Link 4G ROUTER

Installation and instruction Manual



## 1. Introduction

Congratulations on the purchase of your Littoral Link 4G Router. This unit is designed for permanent installation on board a sail or motor boat. The Littoral Link comprises of the following parts;

- 1x internal Wi-Fi antenna
- 1x external LTE antenna
- Littoral Link Router/Modem unit
- User Manual

**i** Before operating Littoral Link you should familiarise yourself with this User Manual and the manuals for any other equipment you wish to connect to it.

## 2. Before you start

The Littoral Link is configured and controlled via its built-in web interface. In order to access this, you will need a wireless device such as a PC/Mac, Tablet or Smart Phone running a modern web browser such as Chrome, Safari, Edge or Firefox. No special drivers or software are required to make the Littoral Link work.

**i** Please ensure that the Littoral Link antennas are connected before powering up the Littoral Link.

## 3. Installation

The Littoral Link Router/Modem unit is designed to be mounted below deck. When deciding on the best location, the two biggest factors for consideration will be the cable run to the external LTE antenna and Wi-Fi coverage around the vessel.

Mounting location is always a compromise on boats and space, access to the unit, Wi-Fi reception and cable runs will all be factors in deciding the best location.

With the supplied 5dB Wi-Fi antenna, wireless network connection to the Littoral Link should not be a problem on most pleasure boats but we recommend mounting it centrally on the boat or as close to the area where mobile devices will be used.

The power cable can be easily extended.

**i** The default settings of the Littoral Link have been chosen for optimum performance and we do not recommend users make any changes to them, except to change the default wireless network name (SSID) and wireless password, to secure the unit against malicious activities.

### 3.1 Mounting the Littoral Link

The Littoral Link should be mounted in position using M4 screws or other fixings appropriate to the mounting location. It can be mounted in any orientation, as the wireless antenna can be rotated and bent for best reception. If possible though, we recommend mounting the Littoral Link vertically with the Wi-Fi antenna pointing upwards. The two cables to the external LTE antenna, should be supported or cable tied to avoid undue stress and we recommend the use of a "drip loop" on both cables to avoid moisture/condensation dripping down the cable on to the SMA connectors.

On the next page (Fig.1) is a dimensioned drawing of the Littoral Link. When rotating the Wi-Fi antenna, always rotate it clockwise to avoid loosening it.

**Please Note** that there are two SMA connectors for the external LTE antenna cables and a single reverse polarity RP SMA connector for the Wi-Fi antenna, it is very important that you connect the cables and antenna to the right connectors, otherwise damage can occur to the connectors.



**Dimensioned Drawing**

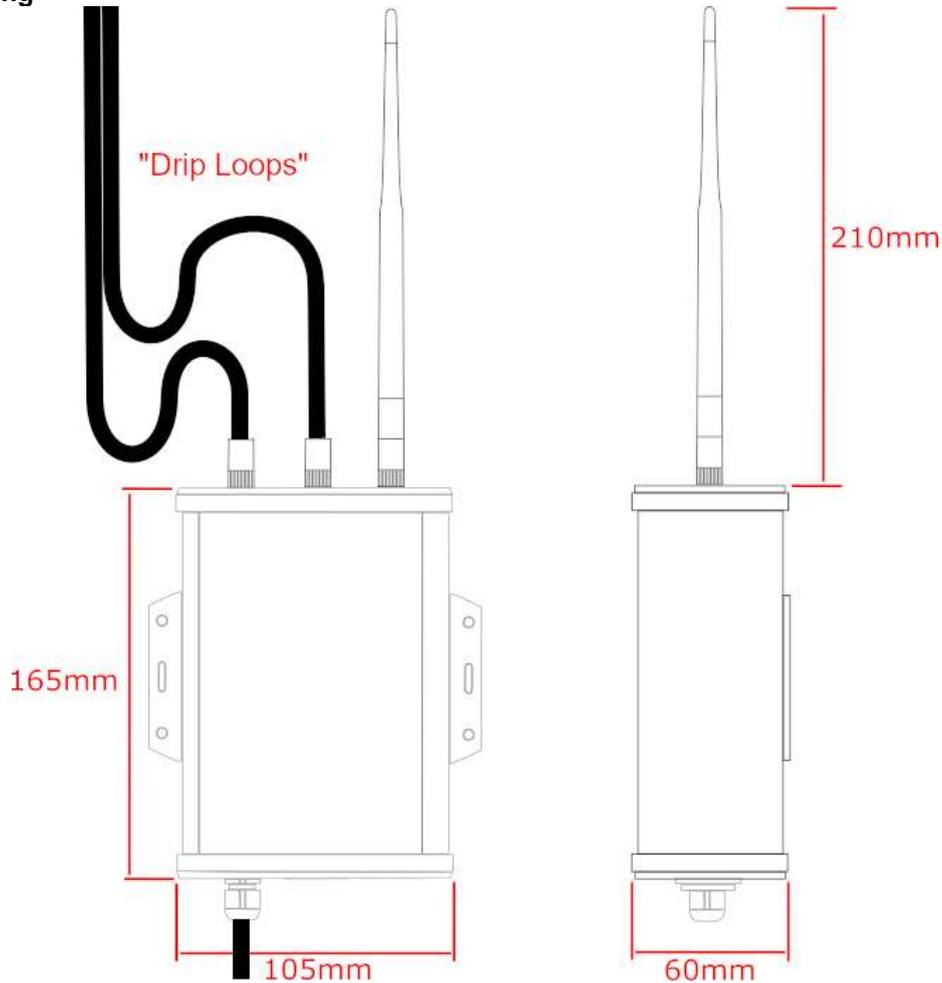


Figure 1

**3.2 Mounting the External LTE Antenna**

The external LTE antenna is actually two high gain antennas in one compact enclosure. The two 7m coax cables that exit at the base of the unit, are terminated in SMA connectors that screw in to the two matching connectors on the Littoral Link main unit – they can be connected either way round.

The external LTE antenna can either be flush mounted to a bulkhead (horizontal or vertical), pole mounted or screwed on to a standard 1"x14TPI mount such as those used for VHF/GPS antennas.

If you wish to flush mount the antenna (NOTE - bulkhead must be no thicker than 12.5mm) then it is necessary to cut a Ø28mm diameter hole in the bulkhead. The antenna is supplied with a mounting nut and rubber gasket (see Fig 3) and once the cables are inserted through the bulkhead (and through the mounting nut), tighten the mounting nut to hold the antenna in place (do not over tighten the nut – torque must be <6Nm).

The antenna is also supplied with a plastic pole mount adaptor and a stainless 1"x14TPI thread mount adaptor (see Fig 4). The pole mount adaptor screws on to the base of the antenna, in place of the mounting nut and can be used to mount the antenna on a 42mm outside diameter pole. Once the antenna is fitted to the pole, secure it using the two grub screws.

If you wish to mount the external LTE antenna on a standard 1"x14TPI VHF/GPS mount (not supplied), fully insert the stainless adaptor in to the plastic pole mount adaptor and secure it with the two grub screws. Now screw the antenna on to the mount.

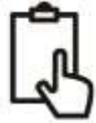


Figure 3

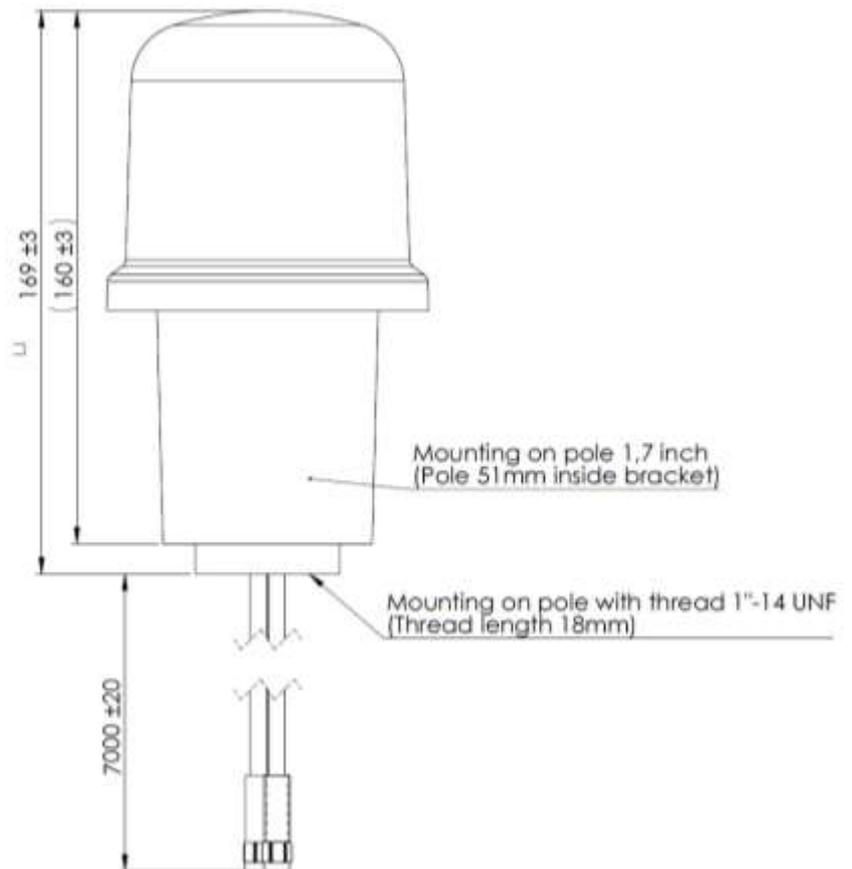
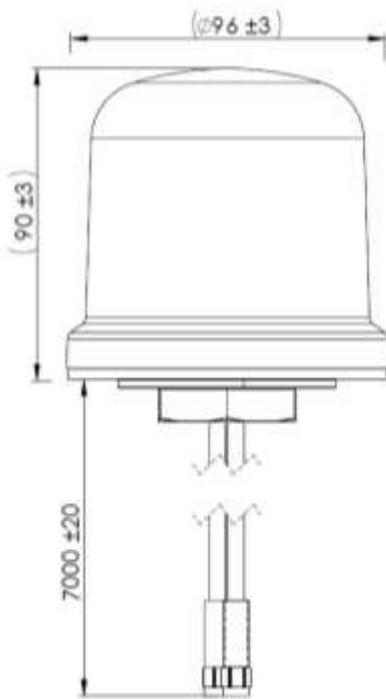


Figure 2



Figure 4

**Dimensioned Drawing**





### 3.3 Power Requirements

The unit is designed to work on vessels with a 12V or 24V DC system (9-30V DC Input voltage). It should be wired to a 1 Amp fused or circuit breaker protected circuit and if connected to a higher amperage circuit, then a 1A in-line fuse should be used to protect the Littoral Link wiring.

The Littoral Link has a two-core power cable with a Red (+) and Black (-) wire. Be very careful to ensure that the correct supply voltage polarity is connected to the Littoral Link, as reverse polarity will damage the unit.

Once the Littoral Link is correctly wired to the vessel's 12v/24v DC system, do not apply power to the unit but continue with the installation steps below.

### 3.4 Inserting a 4G data SIM card

To connect to the internet via a 4G mobile connection, the Littoral Link must have a 4G data SIM inserted which is registered to a valid mobile operator account. Any mobile operator's data SIM card can be used if it is a Standard SIM (15 x 25mm) size.

To insert the SIM, it is necessary to unscrew the four screws of the Littoral Link's "connectors" end cap plus the top two screws of the "antennas" end cap, as shown in Fig.5...



Figure 5

With the six screws removed gently lever the "connectors" end cap away from the aluminium housing and then let it drop down slightly, enough so that the top aluminium panel (one with the product label on) can be gently slid out as shown in Fig.6.



With the top aluminium panel removed, you can now access the 4G router module. To make it easier for you, we have not inserted the SIM holder and it is attached to the power cable with a twist tie as shown in Fig.7. Simply remove the twist tie, insert your SIM card into the SIM holder and then carefully insert the SIM holder in to the router module as shown in Fig.8.



Figure 6



Figure 7



Figure 8



Figure 9

If too much force or too little care is taken, it is physically possible for the SIM holder to be pushed in to the space below the holder, so care should be taken to ensure the SIM holder locates correctly in the two grey runners at the top of the SIM slot as shown in Fig.9.

Once the SIM is correctly inserted, you should re-assemble the Littoral Link, check that all power and Ethernet connections are correctly made and then apply power for the first time.

There are no external LED indicators as most Littoral Links will spend their time hidden behind a bulkhead or inside a locker, but after power is applied the "Littoral Link" wireless network (SSID) should appear within 50-60 seconds.

If after 60 seconds, you scan for wireless networks and cannot see "Littoral Link" contact Digital Yacht support by email [support@digitalyacht.co.uk](mailto:support@digitalyacht.co.uk)



## 4. Configuration

On your wireless device, scan for wireless passwords and connect to the “Littoral Link” network, using the default wireless password, shown below...

**Password = 4GLittoral**

Once connected, your device should automatically get an IP address, via DHCP, in the 192.168.1.xxx range. You should now be able to type <http://littoral> or <http://192.168.1.1> in to the address bar of your browser and see the Littoral Link login page appear.

Figure 7, shows the Login Page with the default username and password, we do not recommend changing these, only the wireless network name and wireless password as detailed later in this manual.

The default login username and password are...

**Username = admin**

**Password = 4GLittoral**

Once logged in you will be taken to the main Overview Page as shown in Fig.8.

This page provides a “Dashboard” showing the status of the Littoral Link’s network connections and settings. From this page, you can access the main menu bar along the top of the page which will take you to various status, configuration, tools and services menus.

The default Littoral Link settings have been carefully chosen to work well in most situations/installations, commonly found on pleasure boats.

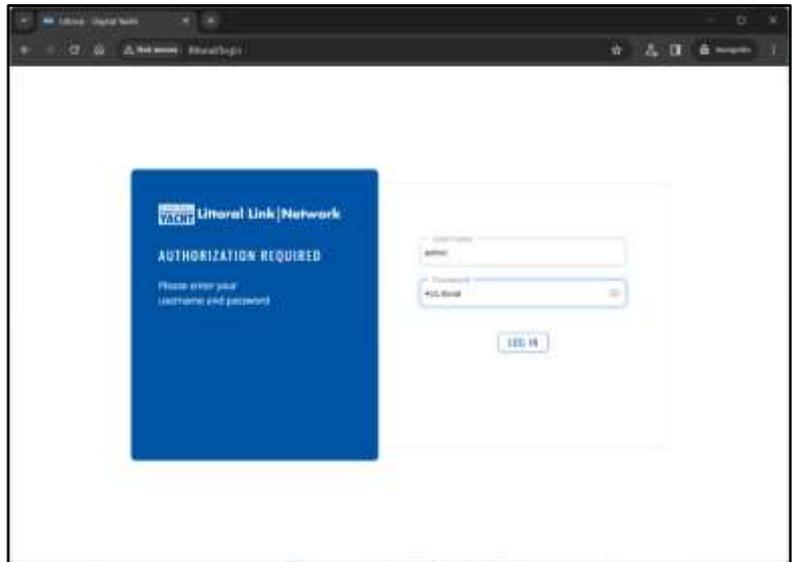


Figure 7

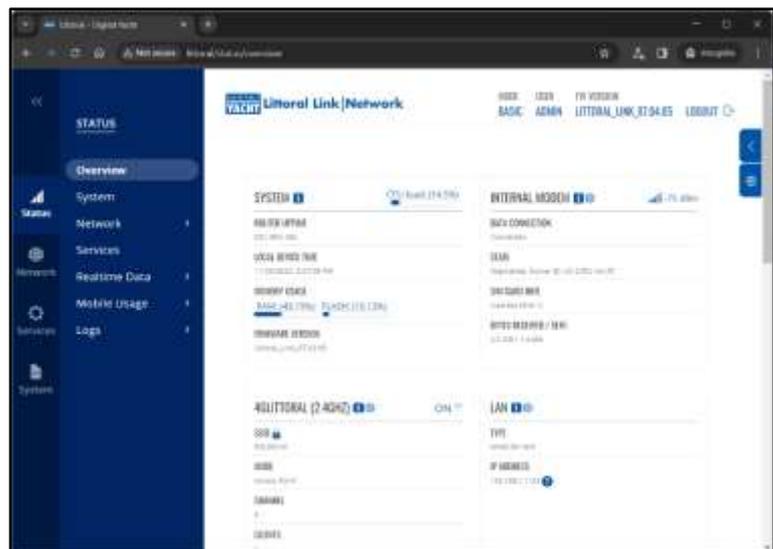


Figure 8

**Digital Yacht strongly recommend that you do not change any settings except those specifically mentioned in this manual and we cannot support or warranty repair any Littoral Link that fails due to wrong settings**



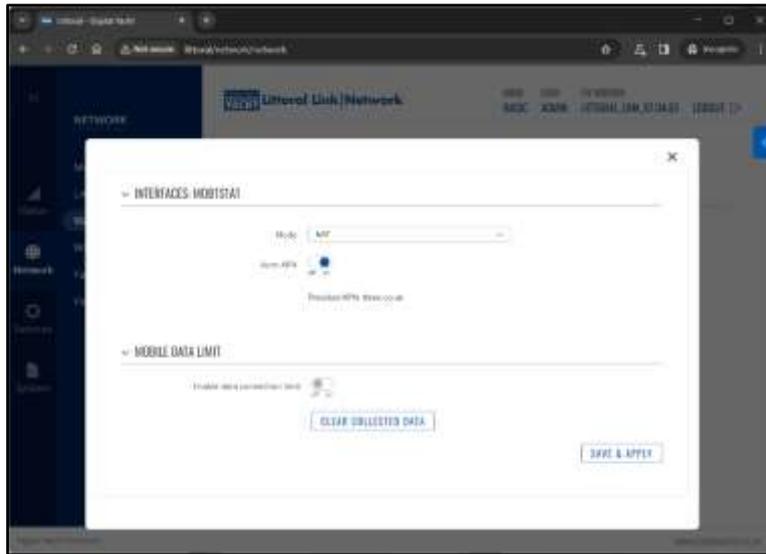


Figure 10

If the automatic APN settings do not work for your data SIM, turn the “Auto APN” mode to OFF and then some extra entry boxes will appear as shown in Fig.11.

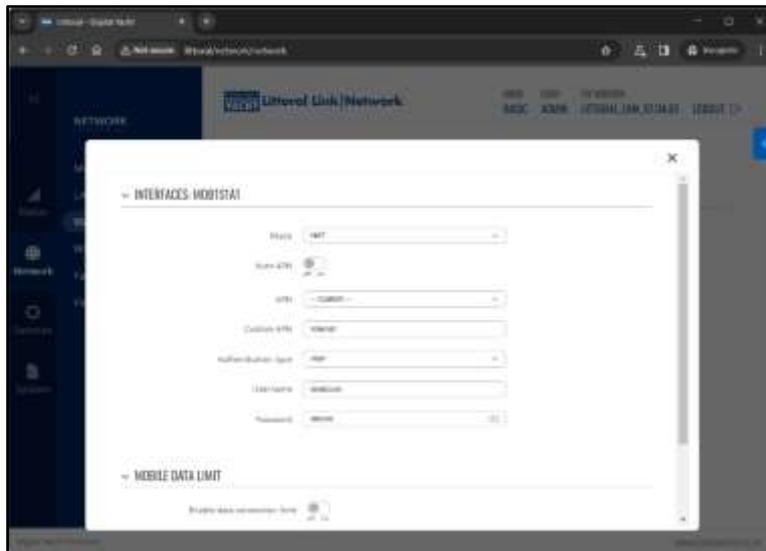


Figure 11

Select “Custom” from the APN drop down menu and then type the APN name, authentication type and the Username and Password that are applicable for your network operator’s data SIM. You will either need to search for this information online or contact your network operator.

Once all of the APN settings are entered, scroll to the bottom of the page and click the “Save & Apply” button. It will take 10-20 seconds for the modem to restart with the new settings and to register on the mobile network

To check that the 4G mobile connection is working, go to *Status>Network* and look at the “Connection” panel. It should show the name of the mobile network operator and the “Data Transmission” panel it should show the Bytes Received/Sent counting up, as shown in Fig.12.

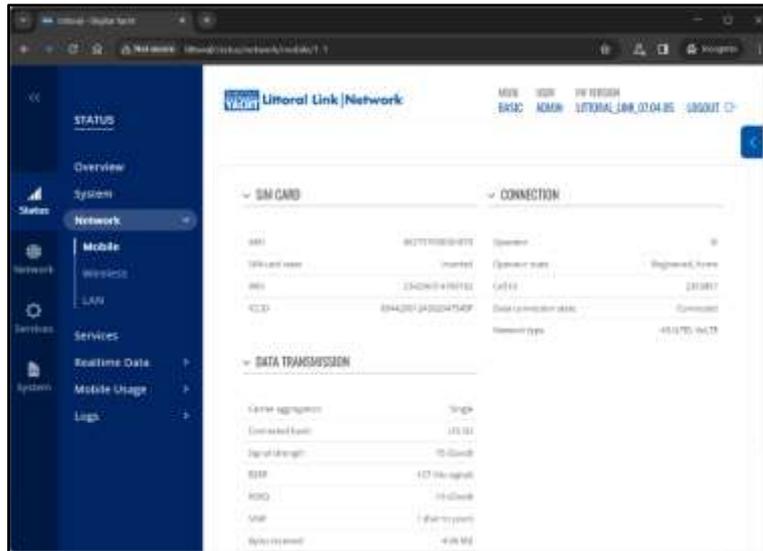


Figure 12

## 4.2 Changing the Wireless Network Settings

It is very important that you “lock down” your wireless network, with your own network name (ESSID) and wireless password. This ensures that only people that you give the network information to, can connect, and stops other less trust worthy individuals from connecting to your network and using your internet connection.

To change the default wireless network name and password of your Littoral Link, login to the web interface and click on the Network>Wireless menu options, which will take you to the page shown in Fig.13.

Click the “Pencil” (edit) icon and you will be taken to the page shown in Fig.14 where you can change the Network Name (ESSID) and the Password.

When choosing network names, it is best to avoid spaces and special characters (such as apostrophes) in the ESSID or password, otherwise some wireless devices will not connect properly. Instead of using a space, use the underscore character, i.e. for “My Network” use “My\_Network”.

The password must be 8 characters or more and we recommend using a strong password with at least one capital letter and a mix of numbers and letters. Make sure to record the details of your password somewhere secure but easy for you to access, as resetting a wireless password involves a Factory Reset of the Littoral Link which is not always easy or practical.

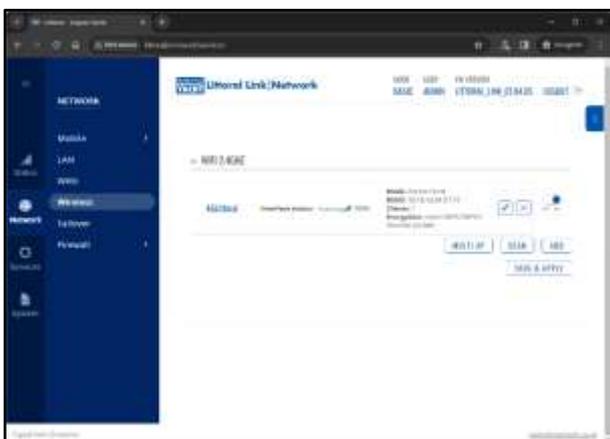


Figure 13

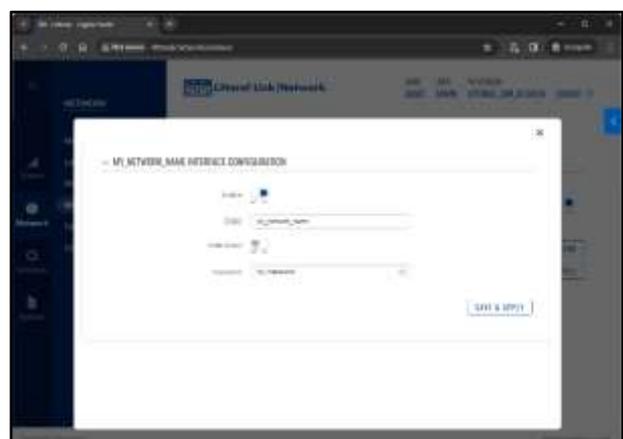


Figure 14



Once the Network Name and Password have been entered click the “SAVE & APPLY” button. The Littoral Link will apply the new settings and reboot. Due to the network name change, your wireless device will be dis-connected, so wait for the new wireless network name to appear in your Wi-Fi scan list (50-60 secs) and connect to it using the new password.

Those are all the settings you need to change and you can now proceed to the Normal Operation section.

## 5. Normal Operation

The Littoral Link will always create its own wireless network within 50-60 seconds of being powered up. A wireless device should be able to scan for wireless networks, select the Littoral Link and connect using the wireless password. Assuming you are within 4G coverage, any device connected to the Littoral Link will now be connected to the internet.

If you are not able to access the internet, please ensure the following...

- 1) Your SIM card is activated and registered with the mobile network operator
- 2) That your data allowance has not been used up
- 3) If you are in a foreign country, you have a suitable roaming service enabled

To check the status of your Littoral Link, please login into the web interface and check the following values on the main Status Overview page - see Fig 15.

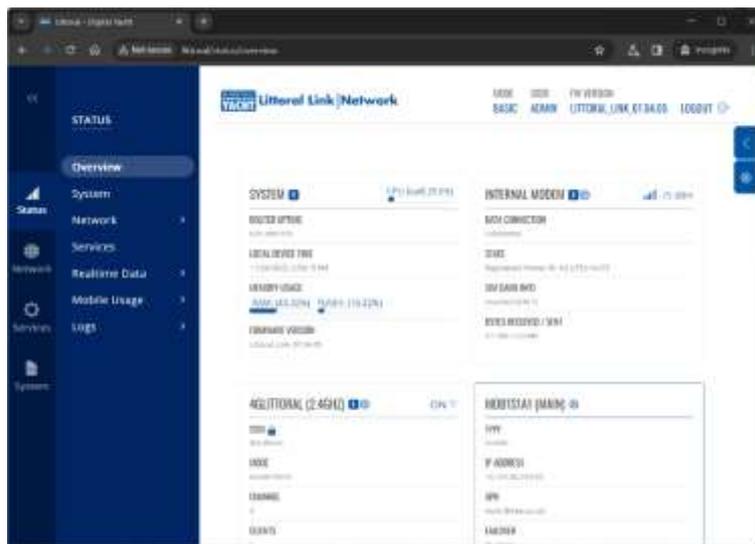


Figure 15

In the “Internal Modem” panel, check that you have a good signal strength (-75dBm in the image above), that the Data Connection says Connected and in the “MOB1S1A1” panel that you have an IP address.

Littoral Link is designed to be as automatic as possible and once you have used it for a while, you will quickly become confident in its operation and there should be very few times when it is necessary to login to the web interface. However, it is probably a good idea to bookmark the <http://Littoral Link> or <http://192.168.1.1> web address in your browser.