DIGITAL YACHT

SAIL BOAT   SPORT FISHING   MOTOR BOAT

LANLink NMEA2000 TO NETWORK SERVER

Installation and instruction Manual

1. Introduction

Congratulations on the purchase of your LANLink NMEA2000 to Network Server. It is recommended that this unit is installed by a professional installer.

ⓘ **This Quick Start Guide will provide basic information on the LANLink to allow you to install and get the LANLink working. We recommend reading and familiarising yourself with the manuals of the equipment you wish to connect to LANLink.**

2. Before you start

You will need the following items and tools to complete the installation:
- LANLink NMEA2000 to Network Server
- Network cable (supplied)
- A suitable NMEA2000 connection to the vessel's navigation system
- A spare wired network connection to the vessel's Ethernet based network
- Access to 12V or 24v DC power supply where the unit is to be installed
- Two or more M4 screws or other fixings appropriate to the mounting location

To configure the unit you will need:
- A device that can be connected via cable or Wi-Fi to the network the LANLink will be plugged in to
- Information about the vessel's network configuration
- Information about the Navigation Software or mobile App that will use the networked NMEA data

3. Installation

Before starting installation select a suitable location for the LANLink and iKonvert Gateway. The units should be installed below deck in a dry location. When locating the units you should consider:

- Routing of power and data cables to the units.
- Provision of sufficient space below the units for cable connections.
- Maintaining the compass safe distance of 0.5m.
- Routing of network cable to the unit.

You can extend the ISO cable of the iKonvert Gateway using any reasonable quality multi-core cable. Security Alarm cabling is usually a good choice and we would recommend using screened cable,

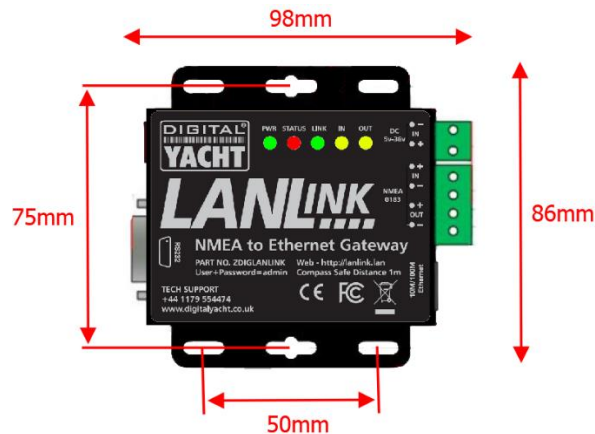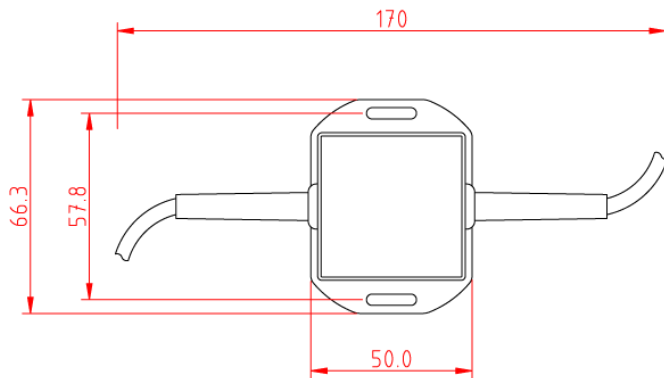## Installation Step 1 - Cabling

- LANLink is designed to be connected directly to the vessel's 12v or 24v DC system. You will need to route a suitable power cable to the location where the LANLink will be installed. The supply to the LANLink should be fused with a 1A fuse/circuit breaker in the positive supply lead.

- LANLink is fitted with a standard RJ45 network socket. You should route a standard Cat5 (or better) network cable from the vessel's Ethernet network through to the location where the LANLink will be installed.

- The LANLink NMEA2000 is supplied with and pre-configured to work with the supplied iKonvert ISO NMEA2000 gateway.

- A decision on where best to take an NMEA2000 connection from your existing navigation network will need to be made. If you are unsure, we recommend using the services of a local Marine Electronics Dealer who can evaluate the existing equipment and make the best connections for you.

Installation Step 2 – Mechanical Fixings

- Secure the LANLink and iKonvert units to a flat surface in the selected location. Use M4 wood screws or other fixings suited to the material the units are being fixed to. The units may be installed in any orientation

Dimensioned Drawings

Installation Step 3 - Power

- LANLink has a removable 2 way screw terminal (top right) that is the recommended connection to use for permanent installation in a 12v or 24v installation. It also has a 2.1mm DC Jack socket, Center pin +, (top left) for powering the unit from an AC power pack. Any input voltage from 5v to 36v can be used.

- LANLink only consumes 53mA of current at 12v. We recommend using suitably rated power cable to connect 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.

- The iKonvert ISO NMEA2000 Gateway takes its power from the NMEA2000 network.

Installation Step 4 – Interfacing

- The LANLink and iKonvert NMEA2000 Gateway are connected to the NMEA2000 network as shown;
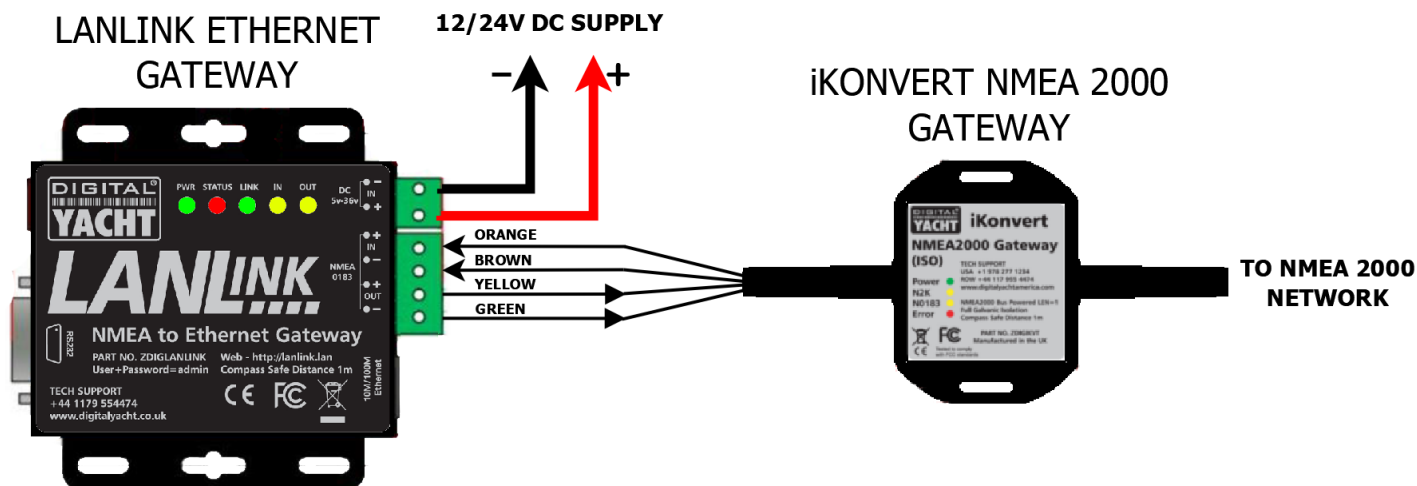
Installation Step 5 – Network

- The LANLink NMEA2000 Network Server is designed to automatically get its network address and other network settings from the network's DHCP server (router). If you are going to install the LANLink on a network which uses static IP addresses, then you will need to configure the network settings in the LANLink's web interface which is covered in Section 4.

- By default, the LANLink transmits the NMEA2000 data it receives as TCP data packets on Port 2000. Up to five devices on the same network can receive this TCP data as long as the Navigation Software or App supports TCP data connections. Normally all you have to do on the Navigation Software or App is select TCP mode, set the IP address of the LANLink and Port Number to 2000.

- If the vessel's network includes a wireless access point or wireless router, the same TCP data on Port 2000 will be transmitted wirelessly around the boat to any wireless devices like iPhones, iPads, Android Tablets and Smart Phones.

- The LANLink also supports UDP connections – with UDP, every device on the network can receive the same data, BUT it is not guaranteed that a device will receive all UDP packets and there may be some sentences that are "dropped" if a UDP packet is lost.or split.

4. Configuration

LANLink has a built-in web interface for configuration. Digital Yacht have pre-configured the LANLink and iKonvert Gateway, so that they will work with no additional changes to their default settings.

By default the LANLink and iKonvert operate at 38400 baud and the following NMEA sentences are output over the TCP link, assuming that the necessary NMEA 2000 data is available on the network…

RMC, HDG, VHW, MWV, DPT, MTW, MDA, APB, RMB, VLW, XTE, ROT, RSA, VDO and VDM

This includes AIS, GPS and common Instrument data, which should be compatible with the majority of navigation applications on the market today.

When the LANLink and NMEA2000 network are powered up, the Yellow N2K Data LED on the iKonvert should be flashing to indicate that it is receiving NMEA 2000 data and the LANLink's Yellow Data IN LED should also be flashing to show that it is receiving this converted NMEA 2000 data from the iKonvert.

If your navigation application can output NMEA data, then the LANLink's Yellow Data OUT LED should flash as it receives data from the application, which should in turn cause the iKonvert's Yellow N0183 Data LED to also flash.

There are many settings and options that are outside the scope of this manual and which we would not recommend are used on the vast majority of boat installations. However, there are some key settings; such as baud rate and network settings that it maybe necessary to change. We recommend that you only change these settings, if you are confident and knowledgeable on NMEA and Ethernet networks.

To access the LANLink web interface, you need to connect a computer or suitable mobile device to the same network that the LANLink is connected to. Then it should be possible to open an internet browser on the computer/mobile device and go to the following web address…

http://lanlink.lan

This should cause the LANLink login popup to appear as shown in figure 1.
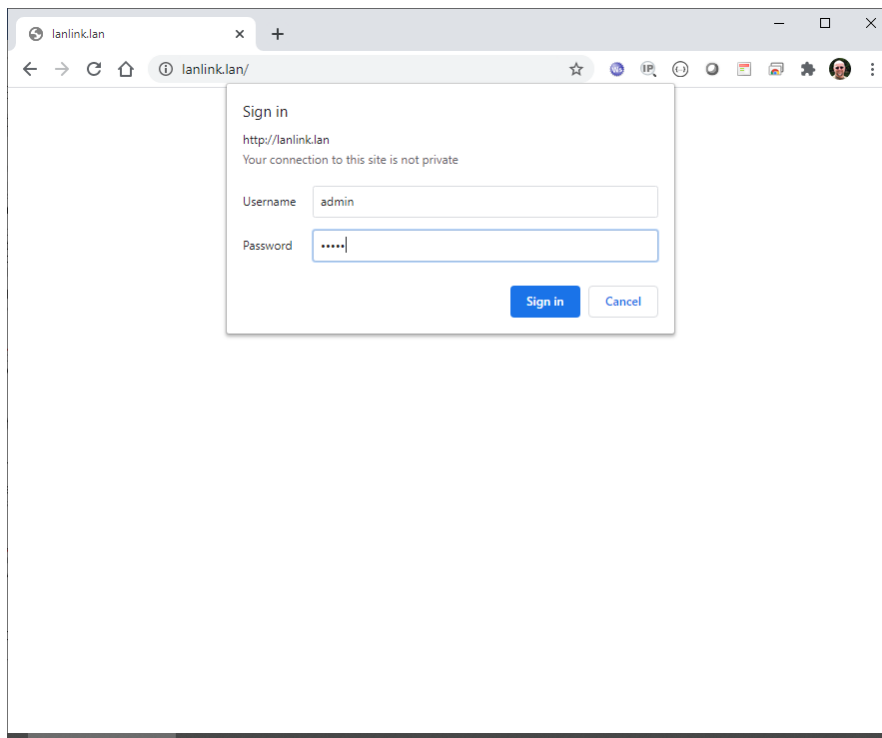
Figure 1

To login to the LANLink web interface, the username and password are both - **admin**
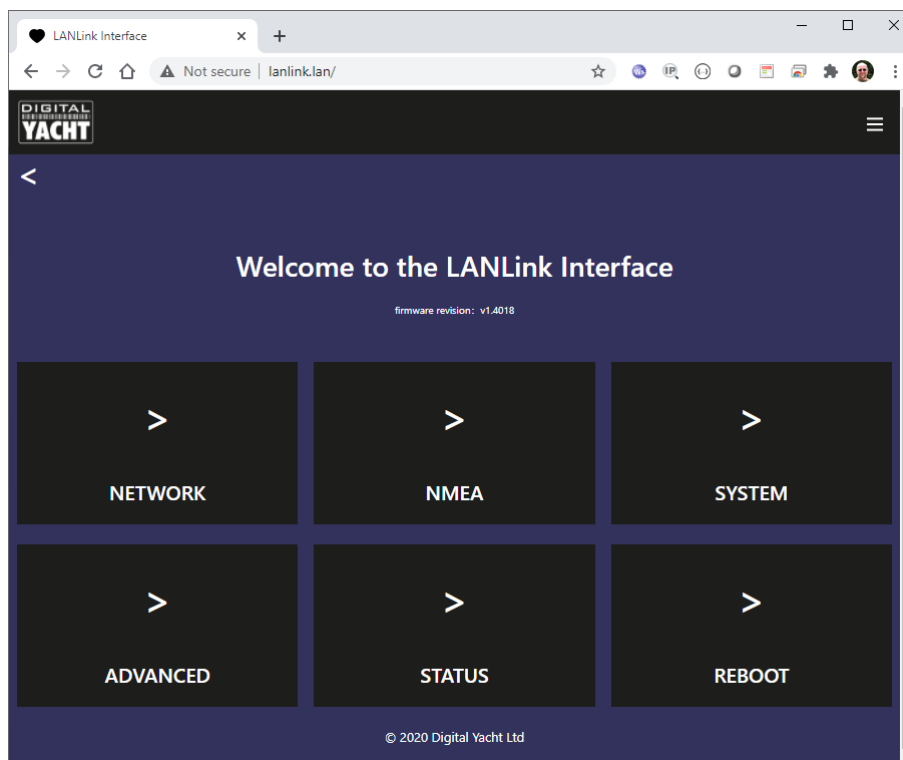Once you have logged in, you will see the homepage as shown in Figure 2.

Figure 2

LANLink is pre-configured for NMEA 0183 High Speed (HS) at a 38400 baud rate. To set standard NMEA 0183 4800 baud rate or a custom baud rate, click on the NMEA button and you will be taken to the NMEA webpage in Figure 3.
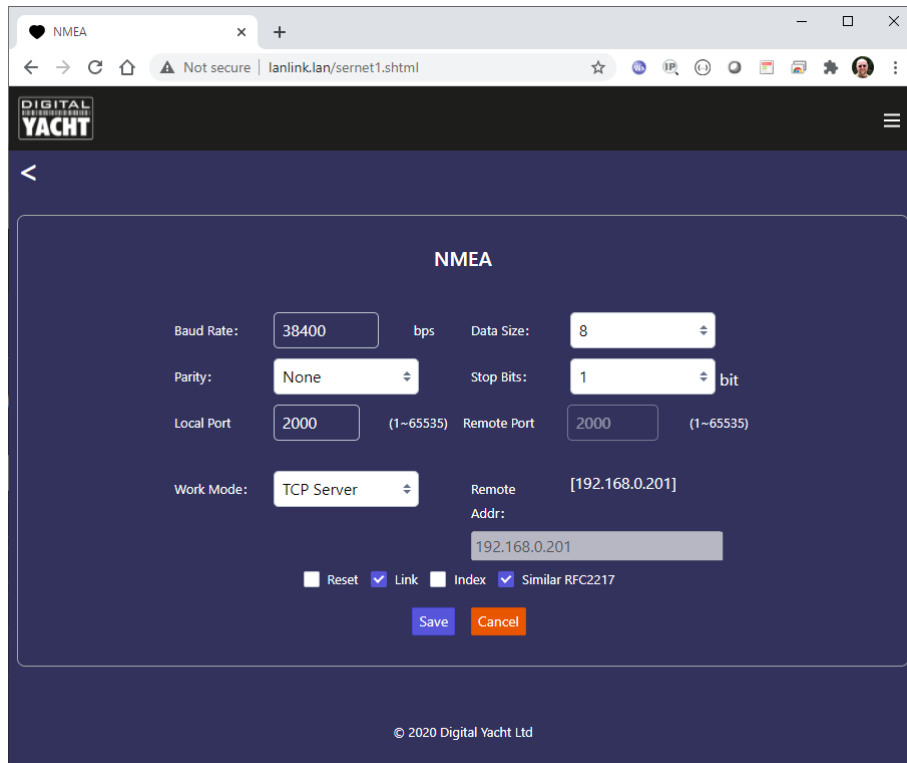
Figure 3

The baud rate setting is the first entry box and you can also change parity, data size and number of stop bits but these are always the same for NMEA 0183 and should not be changed from the defaults.

By default, LANLink operates in TCP Server mode and can supply data to 5 TCP Clients. All of the popular navigation software and apps support TCP connections and to create the connection you simply need the LANLink's IP address, which you can find in the Status webpage as shown in Figure 4.
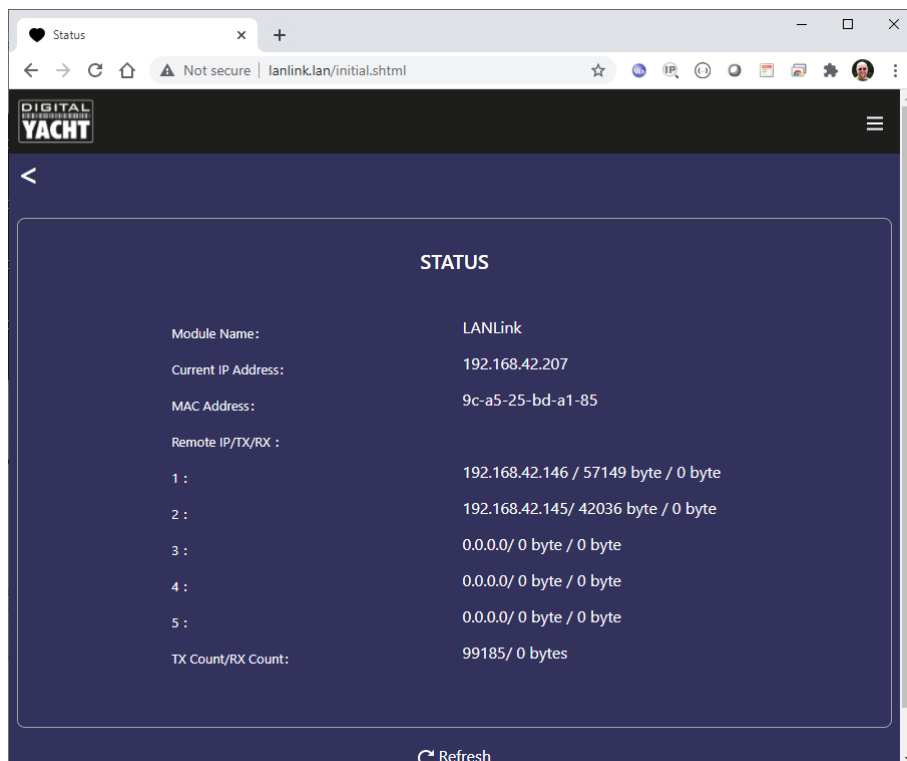

Figure 4

Once you know the IP address of LANLink, go to your application, select TCP mode and enter the IP address and Port 2000. Once a TCP connection is established, you will see it appear in the Status webpage with the IP address of the device that the application is running on and the amount of data that has been transmitted/received. In Figure 4 above, there are two TCP connections running.

It is possible to set LANLink to operate in UDP mode, although there are no benefits in using UDP mode unless you need more than five devices to receive the data or your application only supports UDP data. On larger Ethernet networks, you may experience some UDP packet losses that can cause problems with some apps. We recommend the use of TCP Server mode wherever possible.

By default LANLink will automatically try and get an IP address from the network router it is connected to via DHCP. However, if you wish to install LANLink on a network that is using static IP addresses, you can manually assign an IP address to LANLink. Go to the Network webpage and you will see the screen shown in Figure 5.
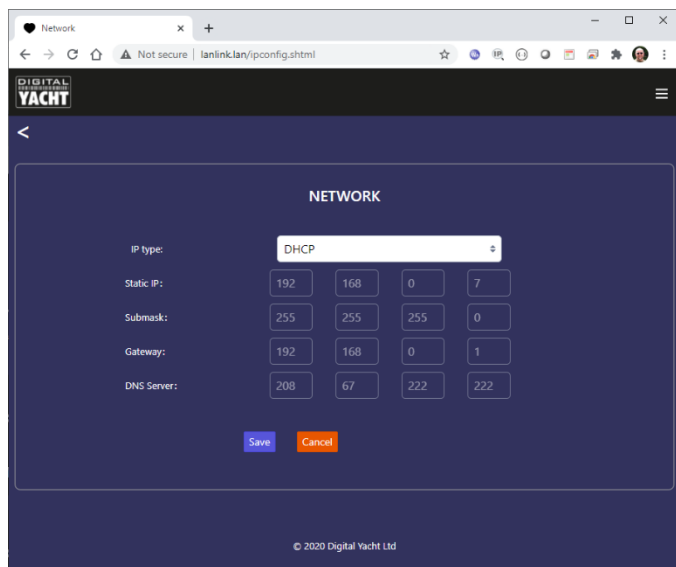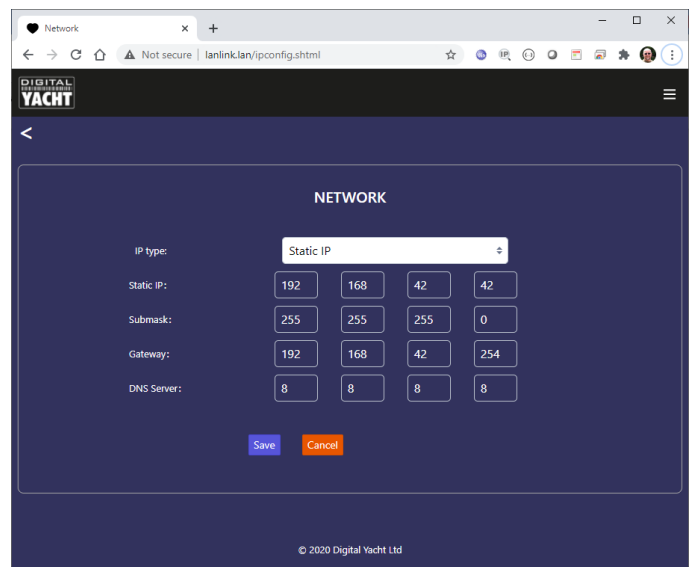

Figure 5

Figure 6

You can then select Static IP and enter the network settings you want the LANLink to use.

5. Testing LANLink

Once installed, to test that LANLink is working correctly, apply power to the NMEA 2000 equipment/network and to LANLink. Once both systems are fully powered up, ensure that the IN LED is flashing to indicate that NMEA data is being received.

Now you need to test the TCP data and the easiest way to do this is using a Terminal program such as Tera Term of PuTTY running on a laptop. You can also use similar terminal apps on iOS or Android. If you have an iOS device you can use Digital Yacht's free iAIS App which has a good data monitor feature as shown in the image

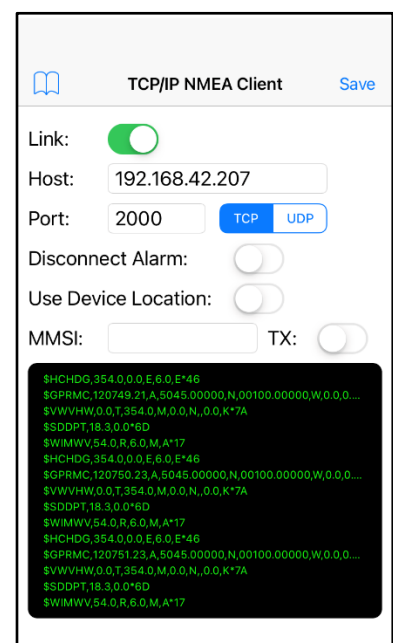To contact Digital Yacht's Tech Support Team, please E-Mail us at support@digitalyacht.co.uk

Figure 7