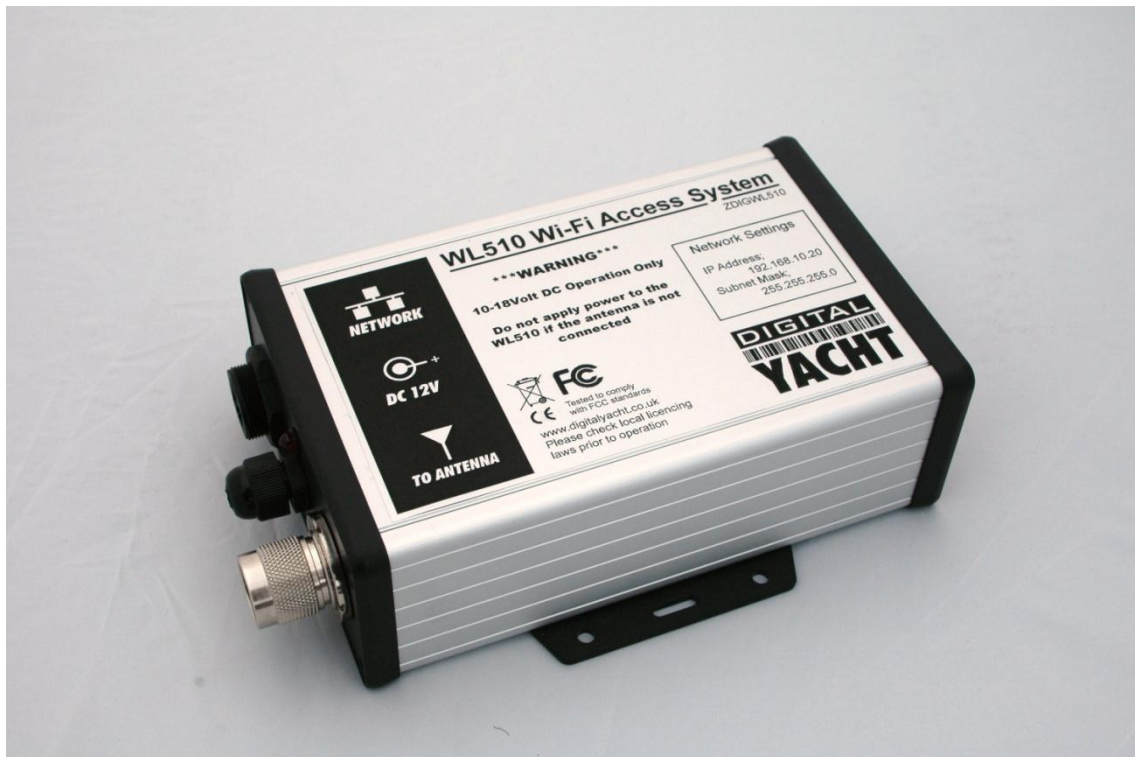

Installation & Quick Start Guide

WL510 Wireless Adaptor/Antenna



IMPORTANT INFORMATION ABOUT YOUR WL510

IP Address = 192.168.10.20

Password = wl510

1. Introduction

Congratulations on the purchase of your WL510 Wireless Adaptor/Antenna. This unit is designed for permanent installation on board a sail or motor boat. The WL510 comprises the following parts;

- 2.4GHZ external antenna
- Base mount for antenna
- 10M LMR400 coax cable assembly
- WL510 Modem unit
- 1m RJ45 Cat5 network cable
- Manual

i Before operating this unit you should familiarise yourself with this Quick Start Guide and user manual for any equipment you wish to connect to it.

2. Before you start

The WL510 is configured and controlled via its built-in web interface. In order to access this, you will need a PC with one RJ45 Ethernet (LAN) connection and a suitable modern web browser such as Internet Explorer, Chrome or Firefox. No drivers are required to be installed to make the WL510 work and any Windows, Mac OSX or LINUX powered PC can work with the WL510.

i Do not plug in the WL510 to the Ethernet port of your computer whilst the WL510 is powered up and always ensure that the WL510 is connected to the Antenna before powering up the WL510.

3. Mounting the WL510 Antenna

The WL510 should be mounted in line of sight with the wireless router that you wish to connect to. Unlike VHF antennas, height is not critical and popular antenna locations include; cockpit guard rail, radar arch or wheel house roof. The WL510 antenna requires a 1.25" BSP thread mount which is larger than the popular 1" x 14TPI thread mount used by many VHF antennas. The WL510 is supplied with an antenna mount that is suitable for mounting to a flat horizontal surface (see Fig 1 below). However, if you wish to mount the WL510 antenna in a different manner, a variety of different brackets are available for this type of threaded mount but do not confuse it with the smaller 1" x 14TPI types. Please consult your local marine electronics dealer or chandlery for more information.

i Use of this system may be prohibited in certain localities and territories. Please check with Digital Yacht prior to operation. It is intended for offshore use only. The WL510 is a high power wifi access system with an ERP of 1W

Installation

The maximum distance from the antenna to the below deck modem unit is 10m as per the supplied cable. This is a specialist coax cable assembly and it should not be cut or lengthened.

Mount the deck base using the supplied fasteners. Drill a clearance hole for the cable and connector through the deck. Screw the N type connector to antenna and mount the antenna onto base.

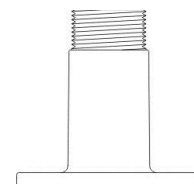


Figure 1

Power Requirements

The unit is only designed to work on vessels with a 12V DC system (10-18V DC Input voltage). It is supplied with an in-line 3.15A fuse which should be connected if there is no suitable circuit breaker or fuse protected circuit for the WL510 to be connected to.

The WL510 has a two core power cable with a Red (+12v) and Black (-0v) wire. Be very careful to ensure that the correct supply voltage polarity is connected to the WL510, as reverse polarity will damage the unit.

3. Connecting the WL510 to a single PC

The WL510 can be connected directly to a single PC or via a Wireless Router so that it can be shared by multiple PCs and other wireless devices. If you wish to connect it to a Wireless Router please skip to section 4.

The WL510 acts as a DHCP server on its LAN connection and will allocate an IP address to any PC connected to it, so it is important that your PC is set to “Obtain an IP address automatically” in the LAN Network Connection properties (as shown in Fig 1 to Fig 3)

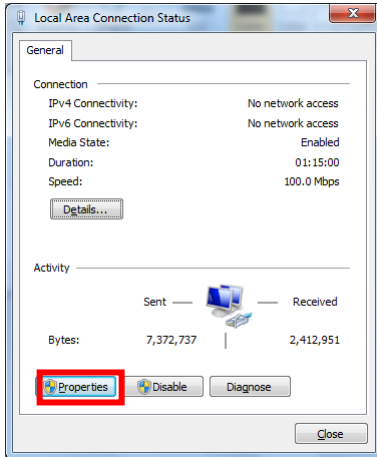


Fig 1

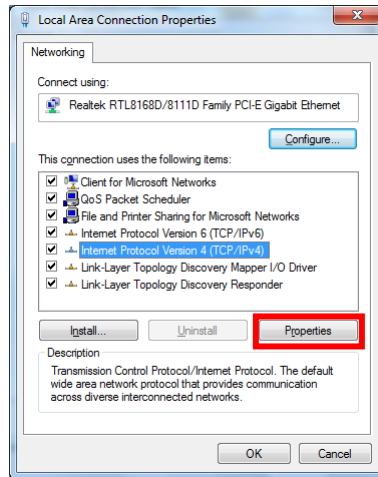


Fig 2

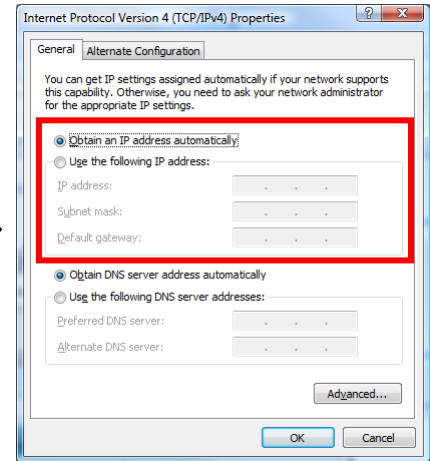


Fig 3

This is the default network settings for PCs, so once you have confirmed these settings or reset them, ensure the WL510 is turned off and then connect your PC's ethernet RJ45 LAN socket to the WL510 LAN socket using the conventional 1m network cable (not cross over) supplied. This cable can be replaced with any length of normal RJ45 Cat5 network cable up to 60m in length.

Confirm that you have connected the antenna to the WL510 and then apply power to the WL510. Over the next 10-20 seconds as the WL510 powers up, you should see some network activity and your PC will receive an IP address from the WL510 in the range 192.168.10.100 to 192.168.10.200.

Your WL510 is now ready to connect to a Hotspot and provide long range internet connectivity to your PC. Proceed to Section 5 for details of how to scan for available networks (hotspots) and connect to them.

4. Connecting the WL510 to a Router

The WL510 really comes in to its own when you connect it to a Router (wireless or wired) and share its long range wireless connection with multiple PCs and mobile devices. The easiest solution is to use a Wireless Router designed to connect to a cable modem (rather than a phone line ADSL type). There are plenty of units available from manufacturers like Netgear, Belkin, Linksys, TP-Link, Cisco, etc. and although Digital Yacht have not exhaustively tested all of them, every unit that we have so far tested, worked fine with the WL510.

Connection should be made with both the router and WL510 turned off and simply involves connecting the ethernet RJ45 WAN socket of the router to the WL510 LAN socket using the conventional 1m network cable (not cross over) supplied. It is important that the WL510 is connected to the router's WAN socket and not one of the router's LAN sockets.

Confirm that you have connected the antenna to the WL510 and then apply power to the WL510, wait a couple of seconds and then apply power to the router. Over the next 10-20 seconds as the two devices power up, you should see some network activity and your router will receive an IP address from the WL510 in the range 192.168.10.100 to 192.168.10.200.

Your WL510 is now ready to connect to a Hotspot and provide long range internet connectivity to your router. Proceed to Section 5 for details of how to scan for available networks (hotspots) and connect to them.

5. Using the WL510 to connect to a Hotspot

The WL510 always has an IP address of 192.168.10.20. Whether you are connecting just one PC to the WL510 or multiple PCs via a router, to talk to the WL510, you must enter the IP address 192.168.10.20 in to the address bar of a browser on the PC or mobile device connected to the WL510 or router.

You should then see the WL510 home page as shown in Fig 4. To log in, enter the password which is “wl510” by default.

It is possible to change the default password, but if you do, please make a careful note of it. If forgotten, it will be necessary for the WL510 to be reset by a qualified service dealer.

Once logged in to the WL510, you will see the “MAIN” screen – see Fig 5. Normally this screen would display the connection status but as this is the first time you have logged in, there is no wireless connection to a network established.

On the “MAIN” screen, there are three key settings that need to be configured....

- 1) **Country Code** – you must select the country you are in from the drop down box. This sets the wireless channels to be used and the maximum legal power output for that country.
- 2) **“Obey Regulatory Rules”** – this tick box automatically regulates the maximum power that the WL510 transmits to keep it within the legal limits of the country you have selected. If you are off shore and want the maximum possible range, untick this box and manually adjust the “Output Power”.
- 3) **Output Power** – This slider is used to manually adjust the power output of the WL510

Once the above settings are configured click the “Change” button and then click the “Apply” button that will appear at the top of the page.

To scan for available networks (hotspots), click on the “SCAN” button. A pop-up window will appear - see Fig 7.

From the list of available networks, select the one that you wish to connect to by clicking the tick box to the left of the networks “MAC Address”. Then click on the “Select” button. If the network is protected with a WEP/WPA/WPA2 password, you will be taken back to the “MAIN” screen and you will need to type in the password.

Once you have entered the correct password (if necessary), click the “Change” button followed by the “Apply” button that will appear at the top of the page.

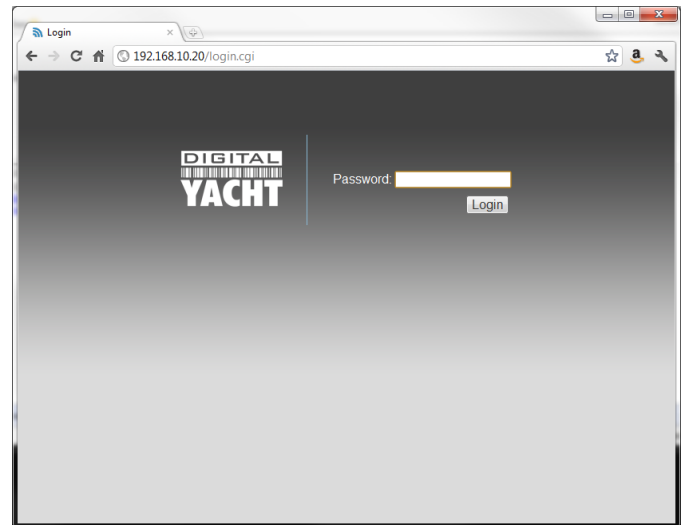


Figure 4

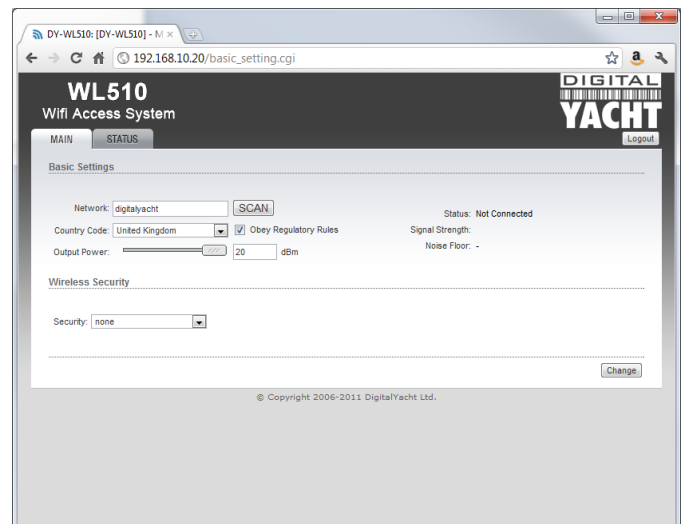


Figure 5

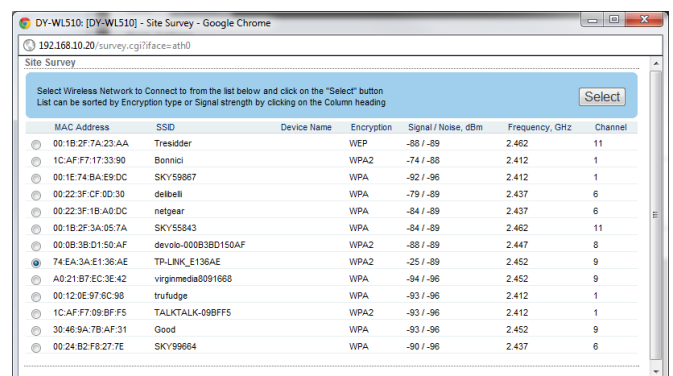


Figure 7

It usually takes between 10-20 seconds for the connection to be established and when successful, a coloured signal strength meter will appear in the top right hand panel of the "MAIN" screen – see Fig 8.

If the coloured signal strength meter starts a cycle of appearing and then disappearing, this means that the password you have entered is incorrect. Try correcting the password and then click the "Change" followed by the "Apply" buttons again.

If the signal strength meter is stable and is indicating a value between -10db and -84db, then you should now be connected to the hotspot. Any values less than -84db and the connection may start to drop out.

If you are struggling with low signal strength, you can try unticking the "Obey Regulatory Rules" box and sliding the Output Power slider to the right to increase the transmit power of the WL510. If this still fails to improve the signal strength of the connection then you may need to move closer to the HotSpot or re-position the vessel so that the WL510 antenna has a clearer line of sight to the HotSpot.

If you click on the "STATUS" tab, you will display more information about the connection status including speed and data graphs, IP address information and a whole set of different status information that is useful for diagnostic purposes. In Fig 9 you can see an example of the information provided on the "STATUS" screen.

Assuming that;

- The hotspot you connected to has an Internet connection
- You have paid any necessary connection fees
- Entered any access codes

Then your PC and any devices connected to the Router should now be able to connect to the internet.

You can now log out from the WL510 web connection or simply navigate to another webpage on the internet.

Although the WL510 does have many other settings, in reality, these are very rarely needed and for simplicity are not covered by this Quick Start Guide. To access these advanced settings, you can click on the "Advanced.." button on the "STATUS" screen but it is recommended that only experienced network technicians should attempt changing any of these advanced menu settings. If you do get in to problems with any advanced WL510 settings, it is recommended that you click the "Reset to Defaults.." button on the "STATUS" screen.

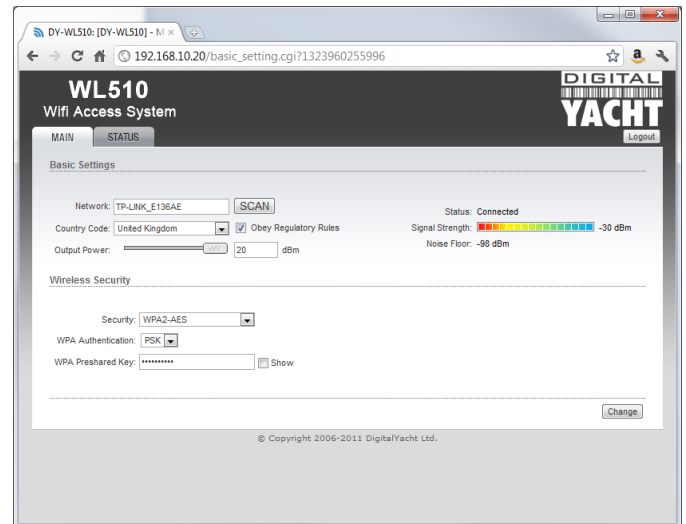


Figure 8

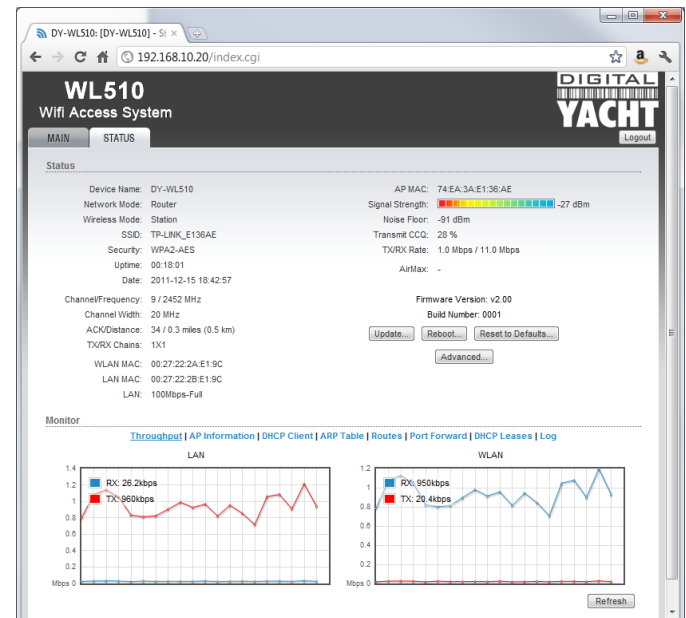


Figure 9