DIGITAL YACHT

TECHNICAL NOTES

Article Number -   00051-2017

Updated -   23rd May 2017

Article applies to - WLN10 + WLN10HS Products

ISSUE: Updating a WLN10/WLN10HS to Latest AP Firmware

A recent firmware update V4.00 now allows WLN10 products to work in Access Point mode rather than Ad-Hoc Mode. This results in a more stable and reliable network connection and also allows Android devices (which do not support Ad-Hoc networking) to connect to a WLN10.

This Tech Note details a procedure that will allow you to update a WLN10 using a home/office wireless network, assuming that this network provides network settings automatically (using DHCP), that it has an internet connection and you know the SSID and Password of the network.
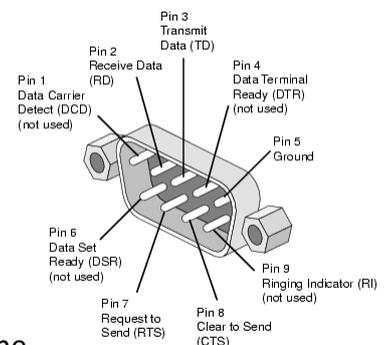
Updating a WLN10/WLN10HS involves connecting the WLN10 to a PC via an NMEA to USB adaptor. Sending it commands via Tera Term running on the PC and then instructing the WLN10 to connect to your home/office wireless network and to go online via the internet to download the latest firmware from an FTP site.

IMPORTANT - Prior to starting this process, please make a note of the four digits in the wireless network name (SSID) of your WLN10 unit i.e. DY-WLN10-**1234** you will need this number later after updating your WLN10.

EQUIPMENT NEEDED:
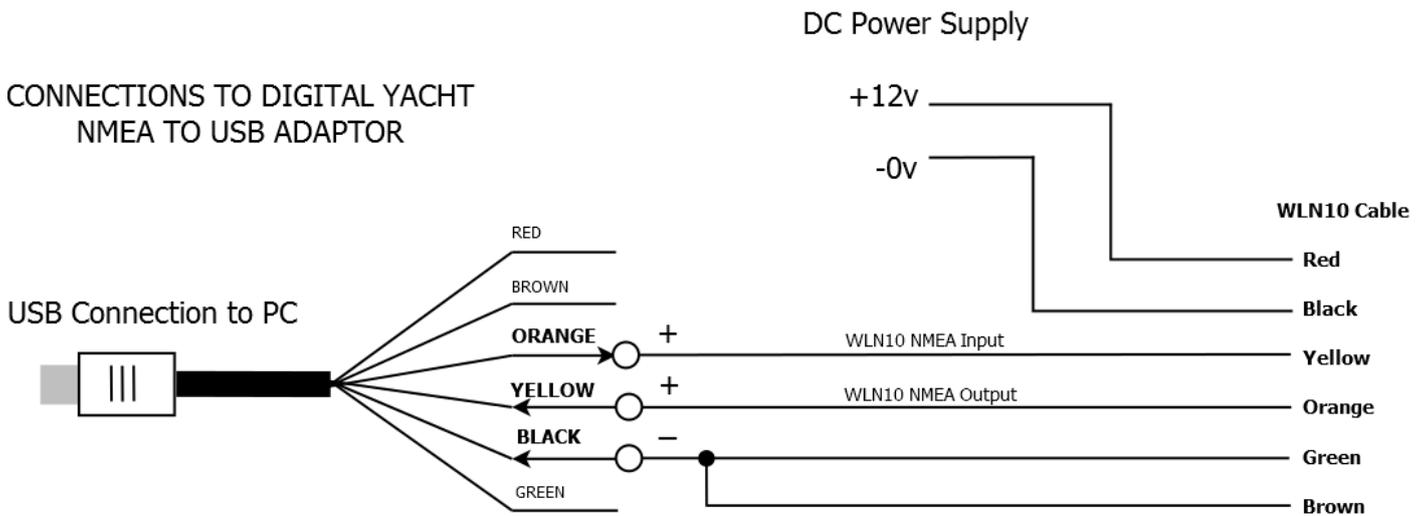
1) PC with latest copy of Tera Term installed

2) Copy of "TTL Editor", part of the Tera Term installer for editing the Tera Term Macro Script

3) 12v Power Supply to provide power to WLN10

4) Wireless Network with connection to internet

5) Digital Yacht NMEA to USB Adaptor (or similar)

The procedure shows how to do this using one of our USB to NMEA adaptors but you can use an old PC with a 9 pin serial port or another make of serial to USB adaptor. If connecting to a 9 pin D-Type connector, you should connect the WLN10 Yellow wire to the RS232 TD (pin 3), the Orange Wire to the RS232 RD (pin 2) and the Green+Brown wires to RS232 Ground (pin 5) – see image.
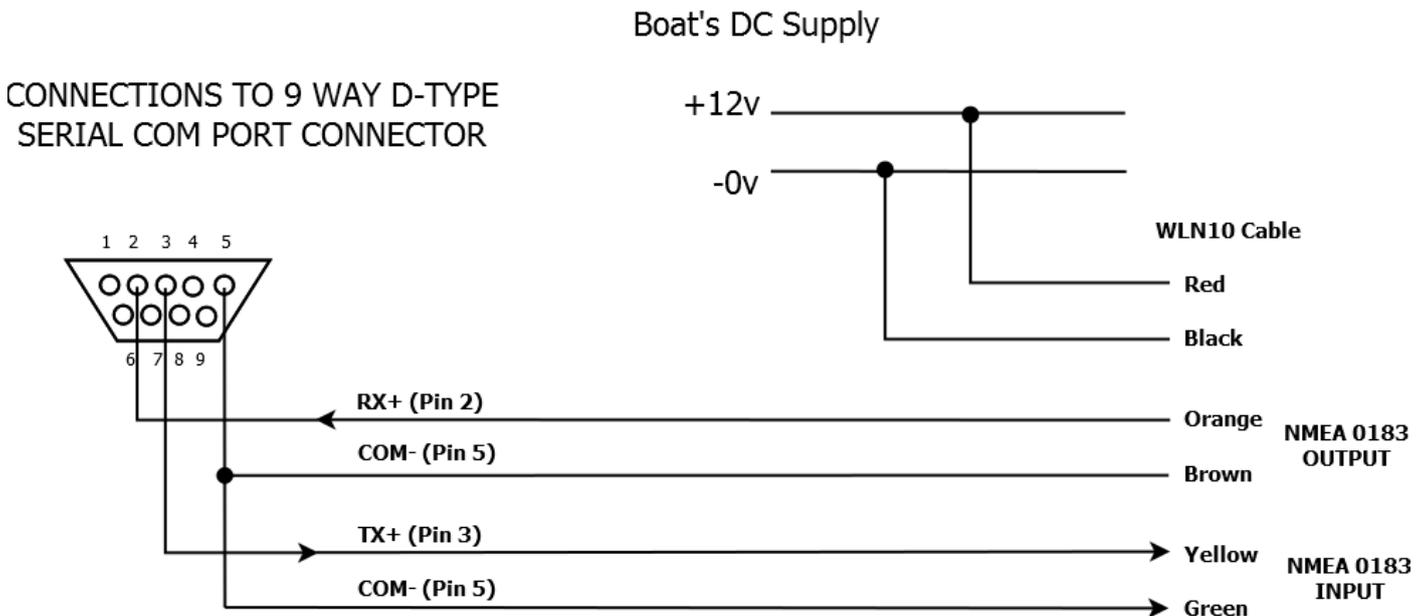
CONNECTIONS:

Connect the WLN10 to the PC using a Digital Yacht NMEA to USB adaptor, as shown below...

Connect the WLN10 to a 9 Way D-Type RS232 connector on an older PC or to a 3rd Party Serial to USB adaptor, as shown below...

IMPORTANT - The above connections should be made with the 12v DC Power Supply turned off.
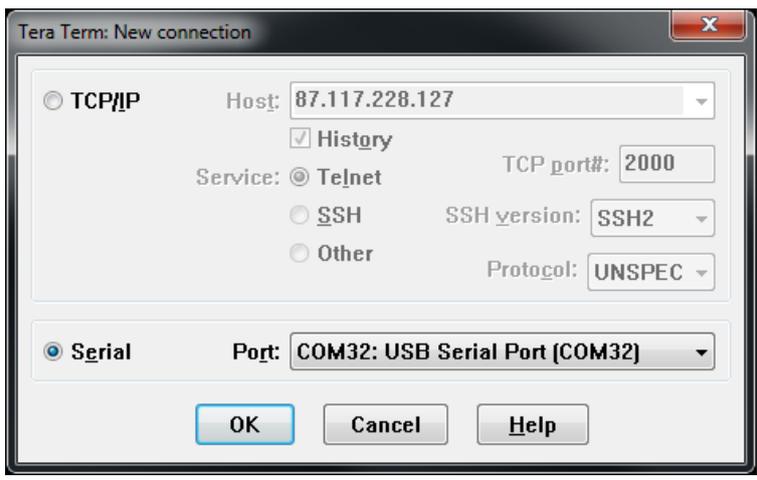

SOLUTION:

To update a WLN10 you need to install a free terminal program called Tera Term on your PC. A copy of this program is included on the Digital Yacht "Software and Drivers" CD-Rom (in the Utilities folder), or is available for download at the link shown below.

http://en.sourceforge.jp/projects/ttssh2/downloads/51174/teraterm-4.69.exe/
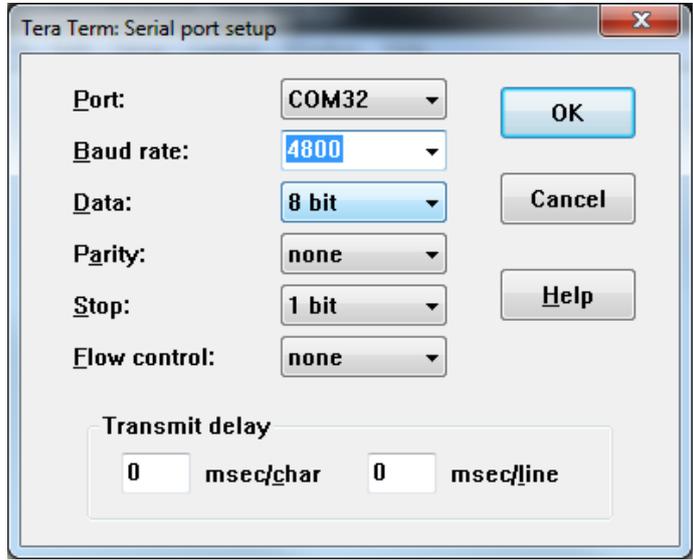
Once installed, you will need to know what the COM port number is of the USB adaptor or COM port you have connected the WLN10 to. This can be found in the Windows Device Manager.
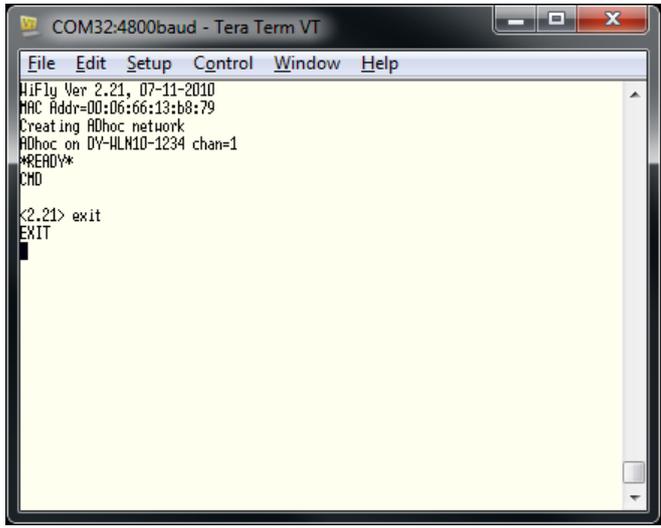
Run Tera Term and when the "New Connection" window is displayed, select a "Serial" connection and from the drop down list select the COM Port that the WLN10 is connected to as found in Device Manager.

Once the new connection window is opened, click on Setup>Serial Port and set the serial port Baud Rate to 4800 for a WLN10 or 38400 for a WLN10HS (see left image below).

Now apply power to the WLN10. You should see the Boot Up text from the WLN10, as shown below. This proves that the PC is receiving WLN10 data and to confirm that the PC is transmitting to the WLN10, type $$$ which should make the WLN10 respond with the word CMD to indicate it is in now in Command mode. **NOTE** - the three dollar signs that you type to put the WLN10 in to Command mode will not be displayed.

Press the Enter (Return) key on your PC and the WLN10 should display the current firmware version it is running. In the image above this is V2.21. There have been a few different firmware revisions and the table below shows what they are;

- V2.21 - Original Ad-Hoc Version
- V2.32 - Updated Ad-Hoc Version that was shipped for the first 9 months in 2011
- V2.45 - First Access Point Version that was shipped for the last 3 months in 2011
- V4.00 - Latest Access Point Version that we will update to

Ad-Hoc can be less stable over long periods of time than Access Point with some operating systems, plus Ad-Hoc is not supported by Android devices.

Type exit to come out of Command mode.

You will now need to download the WLN10 Update Macro Scripts from our Support website…

http://www.digitalyachtamerica.com/index.php/en/support/support-manuals/utilities?download=464:teraterm-macros-for-tech-note-00051-2013

Once downloaded, open the ZIP file and extract the relevant Macro file for the unit you have. Run the TTL Editor program, open the Macro file and edit the Macro Script to enter the SSID and Password of your Home/Office Network.
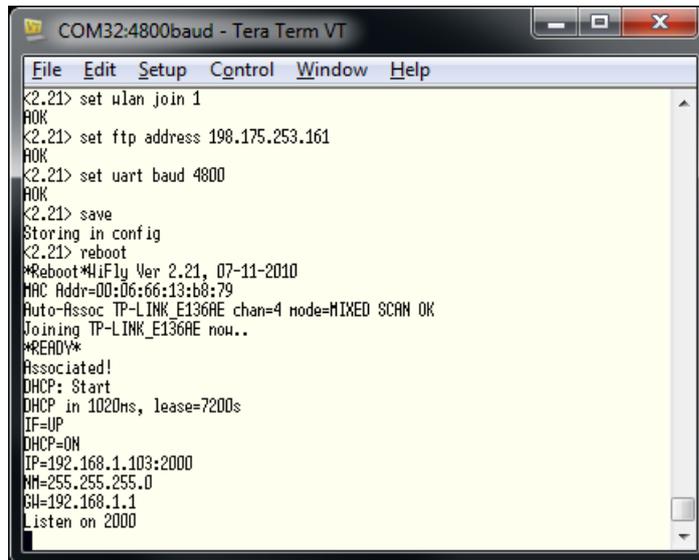

This procedure assumes that your office network is a normal DHCP enabled network connected to the internet with no special proxy or fixed IP address settings and that the Firewall will allow access to an external FTP site.

Change the text YOUR NETWORK HERE (above the Yellow line in the image) to whatever the SSID name of your office network is set to. This text will be case sensitive and make sure you do not delete the apostrophe character ' at the end of the line.
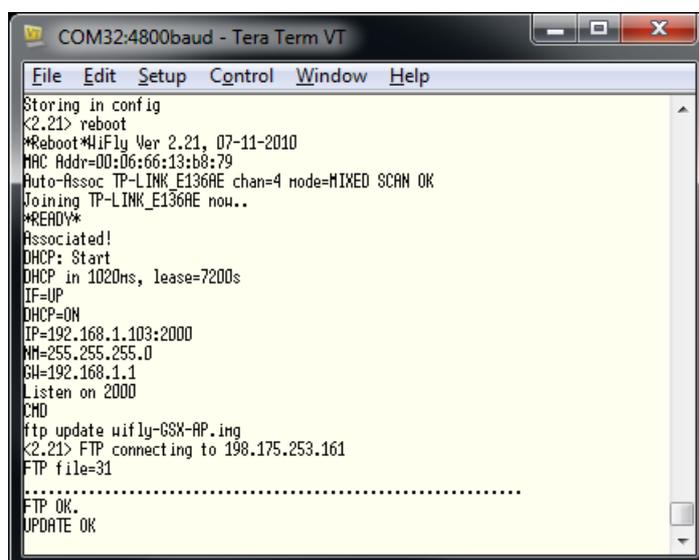
Change the text YOUR PASSWORD HERE (below the Yellow line in the image) to whatever the Password of your office network is set to. This text will be case sensitive and make sure you do not delete the apostrophe character ' at the end of the line.

Once you have edited the Macro file for your network settings, save the file and in Tera Term select Control>Macro and then select the file that you edited. You will immediately see a small pop up window asking if you want to Start the WLN10 update. Click the OK button to start the process. You should now see some commands being sent to the WLN10 and after a few seconds you should see a screen like the one below and a pop-up window that is asking you to "Click OK if the WLN10 has rebooted in DHCP Mode".
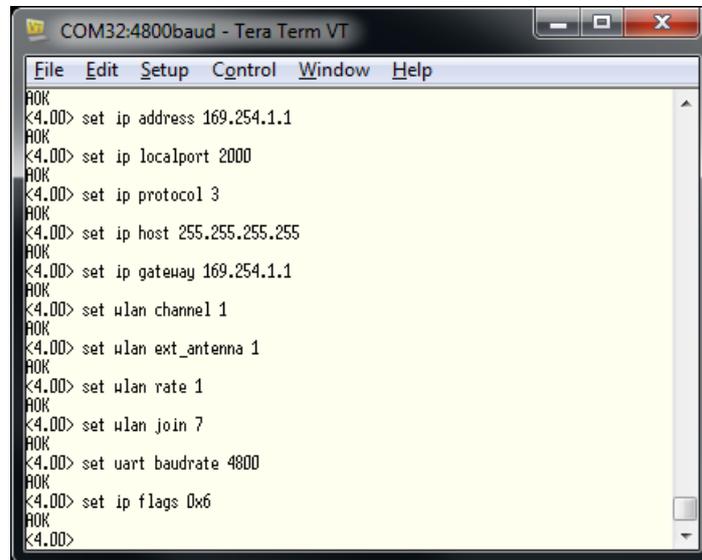

If you can see the text "Associated !" then you know that the WLN10 has correctly connected to your network and it should have an IP address (IP), a subnet mask (NM) and a Gateway address (GW) if it is to connect to the internet OK. Assuming that all of these values are OK, click the OK button to start the FTP transfer. You should now see an FTP transfer start and a series of dots will gradually display across the screen to show the status. If everything works OK, then the WLN10 should display the text UPDATE OK as shown in the image below.
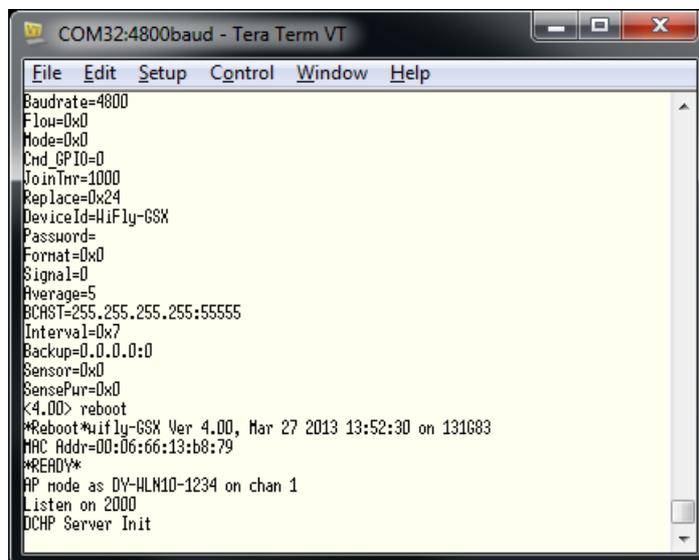

On the pop-up window that has appeared, click the OK button if the update was successful.

Now the final stage of the process will take place and the Macro will configure the WLN10 with all of the normal settings. You will see a screen like the image below and a pop-up window will appear that will ask you to enter a four digit number that will be part of the SSID of your WLN10. Enter the four digit number that you made a note of at the beginning of this Tech Note or if you forgot you can enter any four digit number here it is not critical, unless you have two units on the boat. Once you have typed in a number, click the OK button.

The configuration process will now complete and you should see the final screen that lists all of the WLN10 settings. Click the OK button on the "Update Completed" pop-up window that appears and the macro will exit and the WLN10 will reboot - see image below.

Note that the WLN10 is now booting in AP (Access Point) mode. The update process is now completed.