

# PPM Technology Ltd *htV-m* Wireless

## Operation Instructions

### Introduction.

The *htV-m* that you've received is equipped with a new WiFi module that will allow a copy of the *htV-m Download Software* to access the instrument settings and data from a remote location without having to use any cables. By connecting to an existing WiFi network the *htV-m* could potentially be accessed from any location on the globe through the internet.

The module is capable of connecting to either an existing IEEE802.11b/g/n network or hosting it's own network with numerous types of security and encryption (WEP128, WPA-PSK, TKIP, AES etc.) and is configured with an easy to use web page hosted on the module itself.

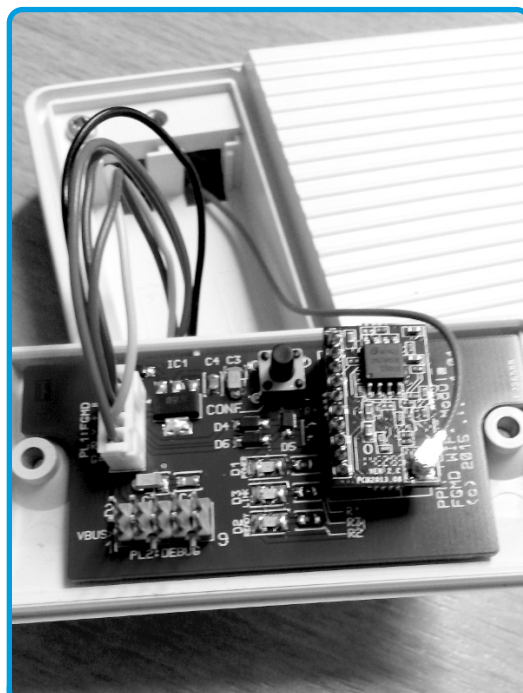
### Initial Configuration.

After receipt of the module it needs to be configured to connect to the local network, this step only needs to be carried out once. The procedure involves returning the module to it's factory default settings and then connecting to the hosted network to access the web page where the correct settings can be entered. Once the correct settings have been entered and the module connects to the correct network there's no need to repeat this step unless the network settings change.


To access the module, remove power from the instrument and locate the cover at the back of the instrument towards the bottom (in the *Instrument Operation Manual* the cover is referred to as the *Battery Compartment*). Use a *Phillips* or cross-head screwdriver to remove the two screws holding the cover in place and carefully lift it off. The WiFi module is affixed to the cover and is connected to the instrument by data cables and an antenna — take care not to accidentally disconnect these when lifting the cover.

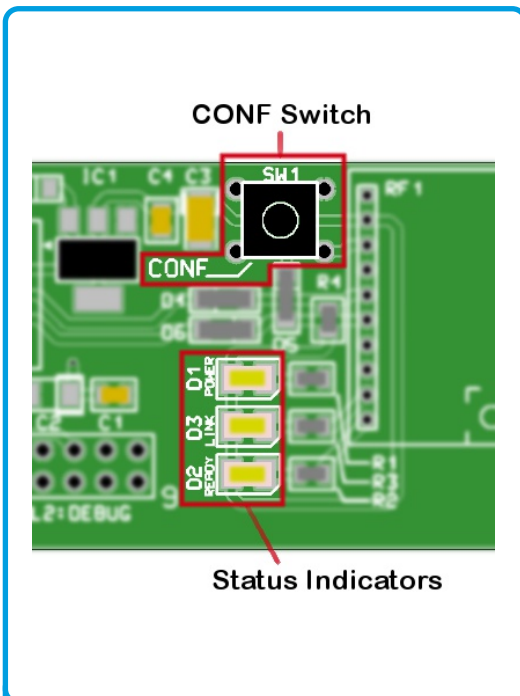


Opening the rear cover.



The module inside the rear cover.

The module has a single push-switch ('CONF') and three status lights ('Power', 'Link' & 'Ready'), locate these on the module before connecting the power supply to the instrument. Note that you do not need to turn the instrument on with the  button in order to power the WiFi module. Confirm that at least the 'Power' and 'Link' lights are illuminated.



Switch and Indicators on the module.

To return the module to its factory default state press and hold 'CONF' for at least five seconds. When you release the switch the module will restart and you should see the 'Link' light go out and then back on, the 'Ready' light should remain off. The module is now operating as its own Access Point and hosting its own WiFi network.

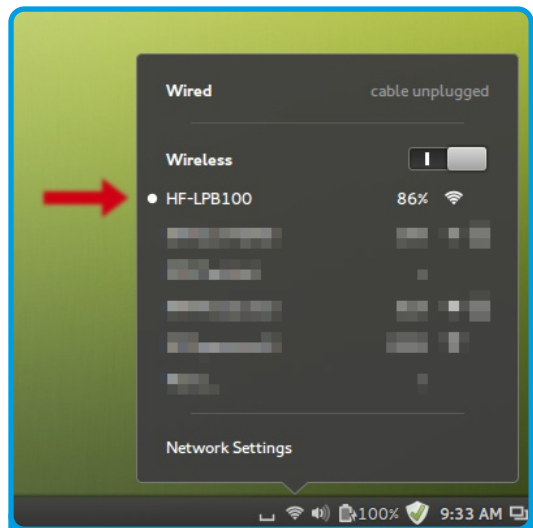
The next step is to connect to the module's WiFi network and access the settings web page on the module. With a WiFi enabled device search for and connect to the "HF-LPB100" network. Please note that you will not have access to the internet on the device whilst connected to the HF-LPB100 network so make sure you have a local copy of any

information you may need whilst setting up the module already downloaded to the device before you connect to the HF-LPB100 network.

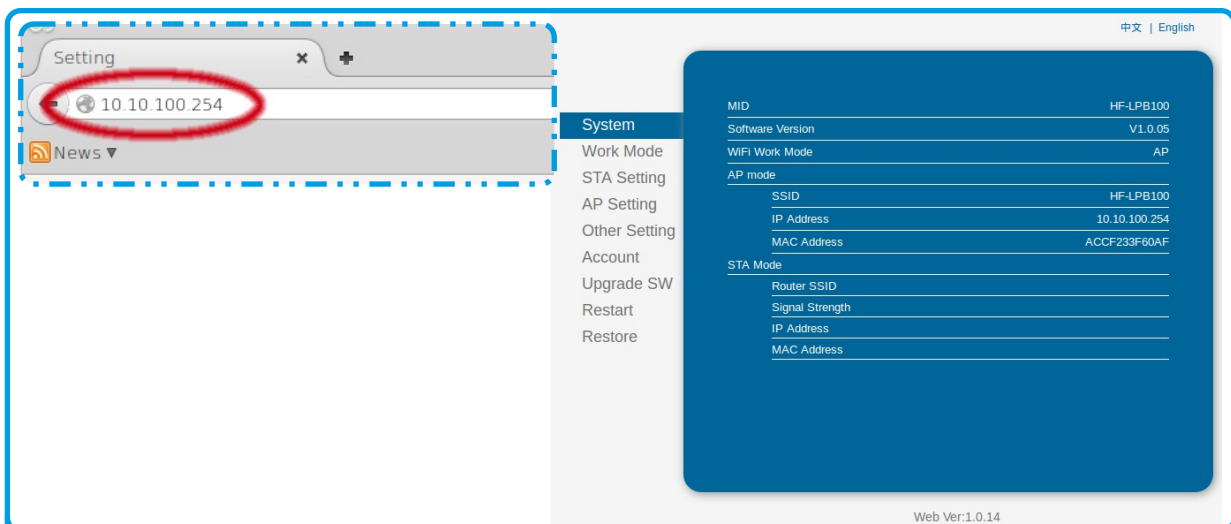
Once connected to the network, open a web browser and enter "http://10.10.100.254" as the web address, the username and password for the site are both "admin".

After entering the correct details you should now be looking at the system settings pages for the module indicating that the module is in "AP Mode".

If you fail to connect or can't find the HF-LPB100 network then repeat the steps above by pressing the 'CONF' again for at least five seconds.



Connect to the HF-LPB100 network.



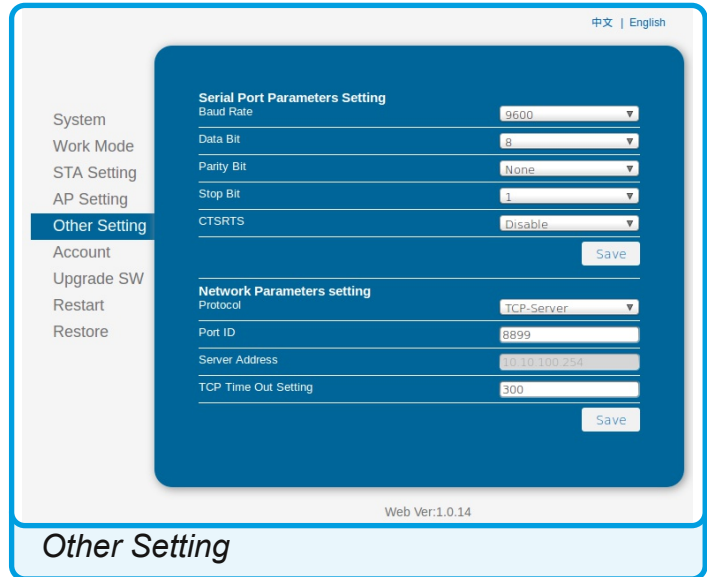
Open the settings page in a web browser.

## Other Settings.

In order to correctly communicate with the instrument the Serial Port and Network Parameter settings must match those of the software and instrument. Regardless of how you decide to use the module you must ensure that these settings are correct in order to successfully connect to the instrument through the WiFi network.

Select the Other Setting page and compare it to the required settings shown here, from the factory default settings only the Baud Rate needs altering to 9600 but double-check all the settings.

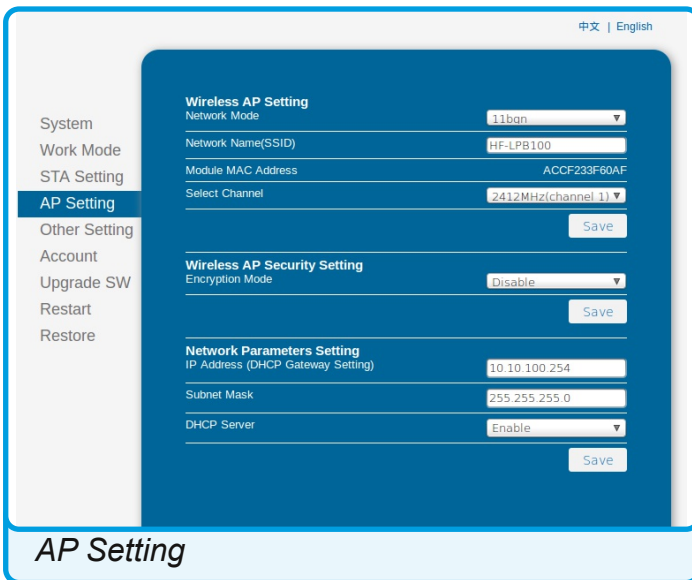
Don't forget to save your changes but do not restart the module just yet.



*Other Setting*

## Direct Connection.

If you do not want to have the instrument connected to an existing network but rather host its own network then no further configuration is required. Bear in mind that the network hosted by the instrument will not be as strong so the range at which communication is reliable may be quite short in this mode. If you have several instruments you may want to change the Network name (SSID) from **HF-LPB100** to something that reflects the instrument location or serial number. You can do this on the AP Setting page as shown. You'll need to restart the module after saving these settings.

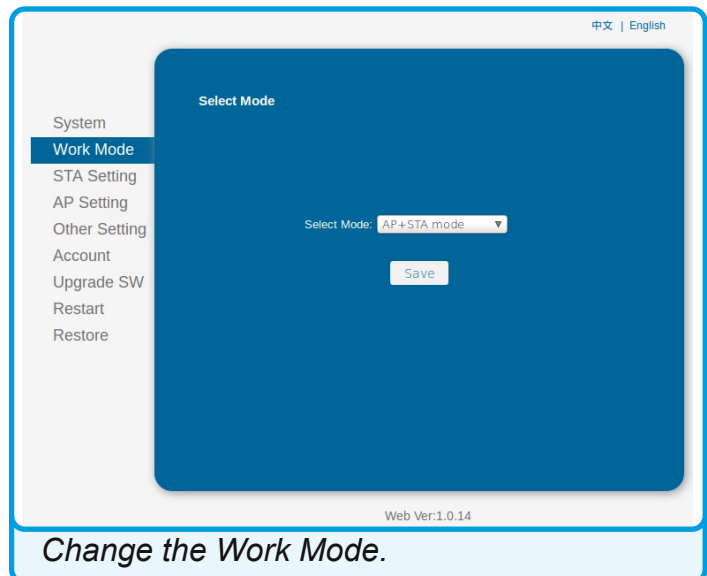


*AP Setting*

## Join a Network.

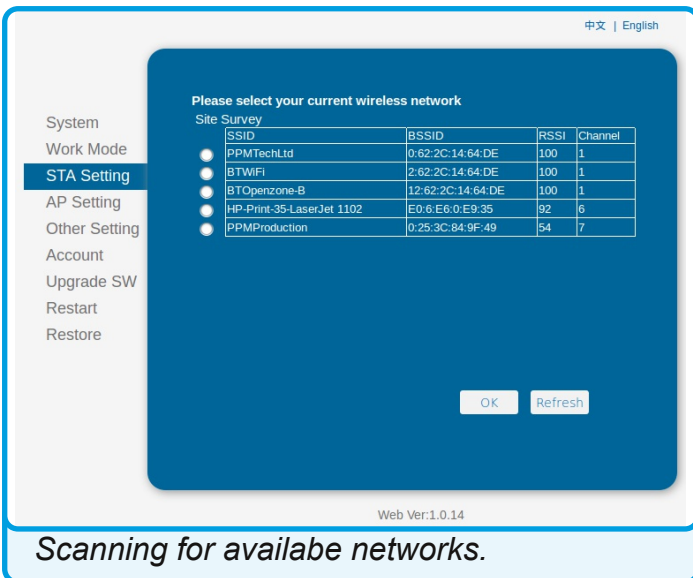
In order to connect the module to an existing network the module must be changed from **AP Mode** into **AP+STA Mode**. Select the Work Mode page and change the setting using the drop down. Click on Save but do not restart the module just yet as more settings need to be changed.

Next go to the STA Setting page and click on the Scan button to survey for available WiFi networks. Select your preferred network from the list and click on OK to return to the main STA Setting page. Confirm the security settings are correct and enter the security password, if needed.

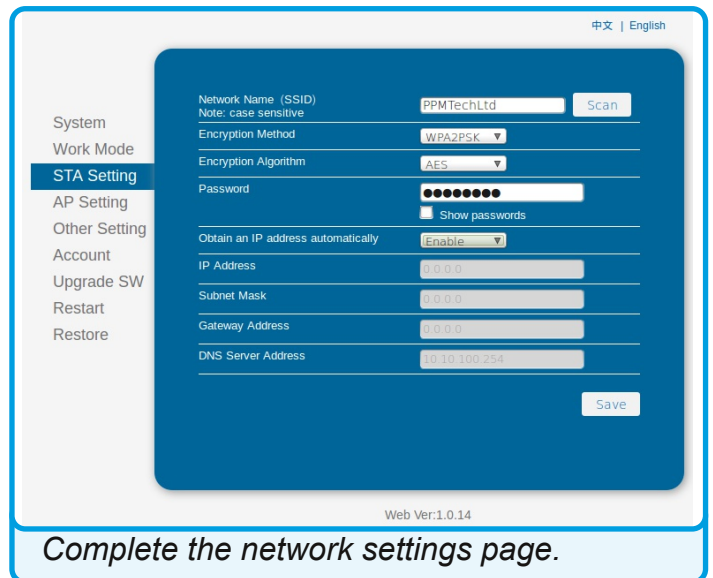


*Change the Work Mode.*



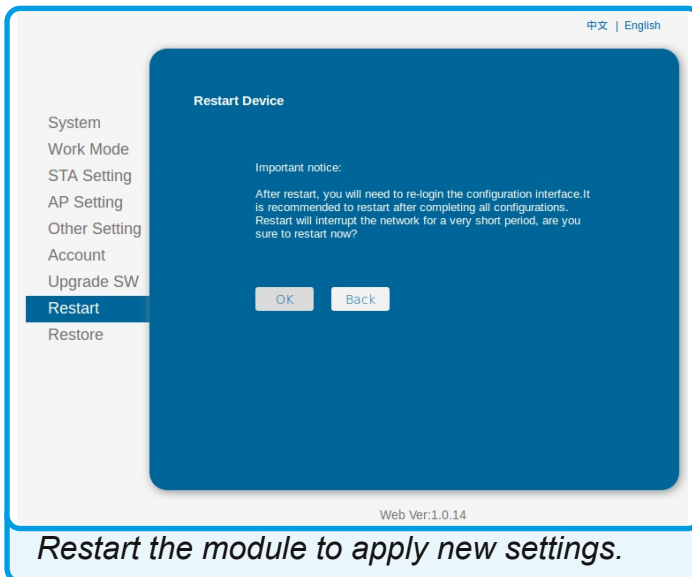


Scanning for available networks.



Complete the network settings page.

The remainder of the STA Setting page is for configuring the IP Addressing policy for the module, for most users and networks enabling the “Obtain an IP Address Automatically” setting is suitable but do check with your network administrator first.



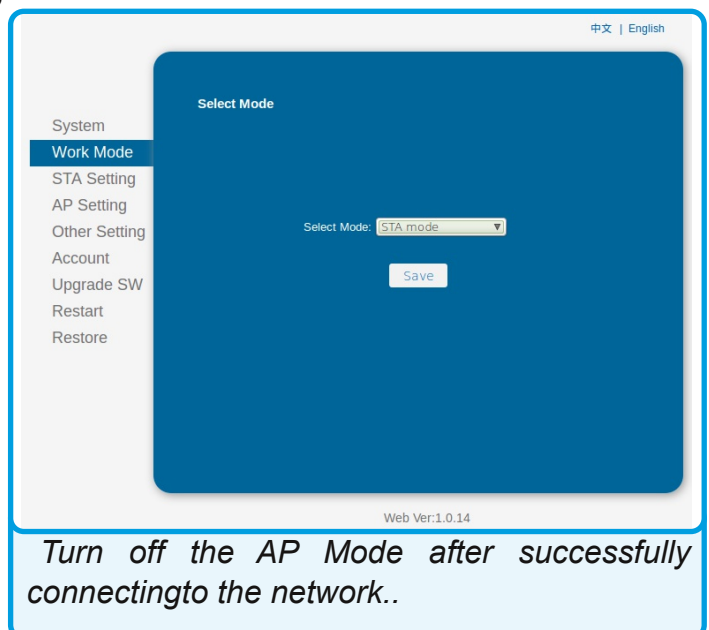
Restart the module to apply new settings.

Restart the module and wait a few moments before refreshing the web page and returning to the System page to confirm that the module has connected to the correct network. Make note of the **STA Mode IP Address**, you will need this to connect to the instrument over the selected network with the *htv-m Download Software*.

Once the module is connected to your selected network you can finally return to the Work Mode page and change the setting from **AP+STA Mode** to **STA Mode**, this will turn off the **HF-LPB100** network. After restarting the

module confirm that the **HF-LPB100** network is no longer available, join the same network you configured the module for and enter the **IP Address** you noted earlier into your web browser — you should see the Settings page again which confirms that the module is connected correctly to the network.

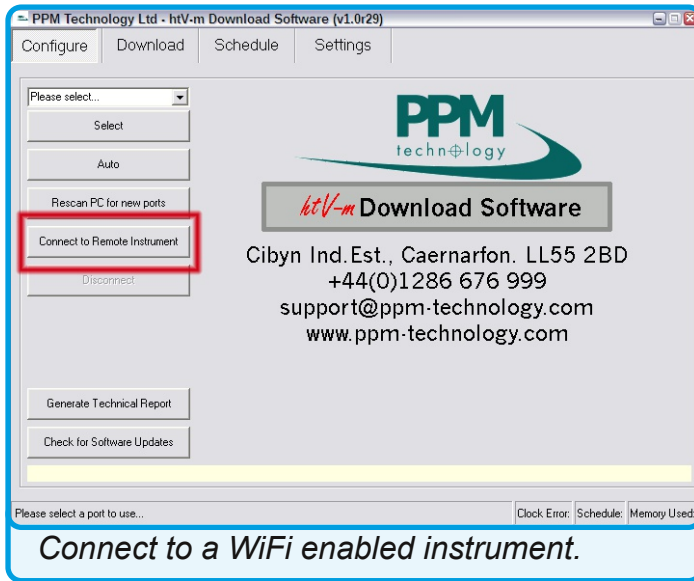
Once the module is set up you can replace the cover on the instrument, being careful that the cables are not pressing on the ‘CONF’ switch. The instrument is now ready to be used as normal, the WiFi settings will be stored on the module even when the power is removed so you should not need to repeat these steps unless the network settings change or you want to reconfigure the module for a different network.



Turn off the AP Mode after successfully connecting to the network..

## htV-m Download Software.

Install and run v1.0.29 of the software [url] wich has been modified to include support for the WiFi module.



To use the software with an instrument fitted with the WiFi module click on the "Connect to Remote Insturment" button.

Enter the correct IP Address for the instument, you should have noted this when setting up the module. If the module is in AP Mode then the IP Address is 10.10.100.254.

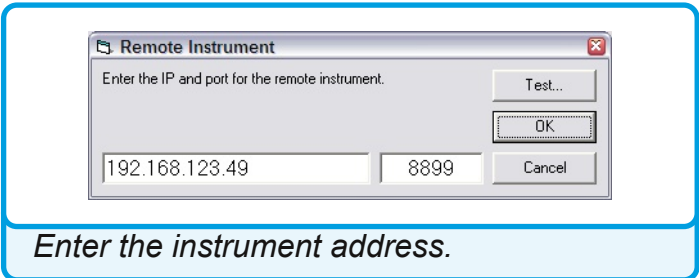
Unless you've change the module settings from the default ones keep the Port setting as 8899.

Click TEST to check that the software can communicate with the instrument throught the network.

Click OK to connect to the instrument

through the network and return to the main software.

Use as normal but remember that transfer speeds may be slower than expected if the network strength is weak. If you have persistent problems downloading data from the instrument then either move closer to the instrument or consider adding network extenders or repeaters to the network to improve the signal strength.



The software will also work with normal RS232 or USB insturments in the normal way but you should not use the WiFi module and the USB connection on an instrument at the same time as this may damage the instrument. If you need to use the USB connection then it's recommended that the WiFi module be physically disconnected first.