

# Instructions to setup Bullet M2HP for long range WiFi Internet access



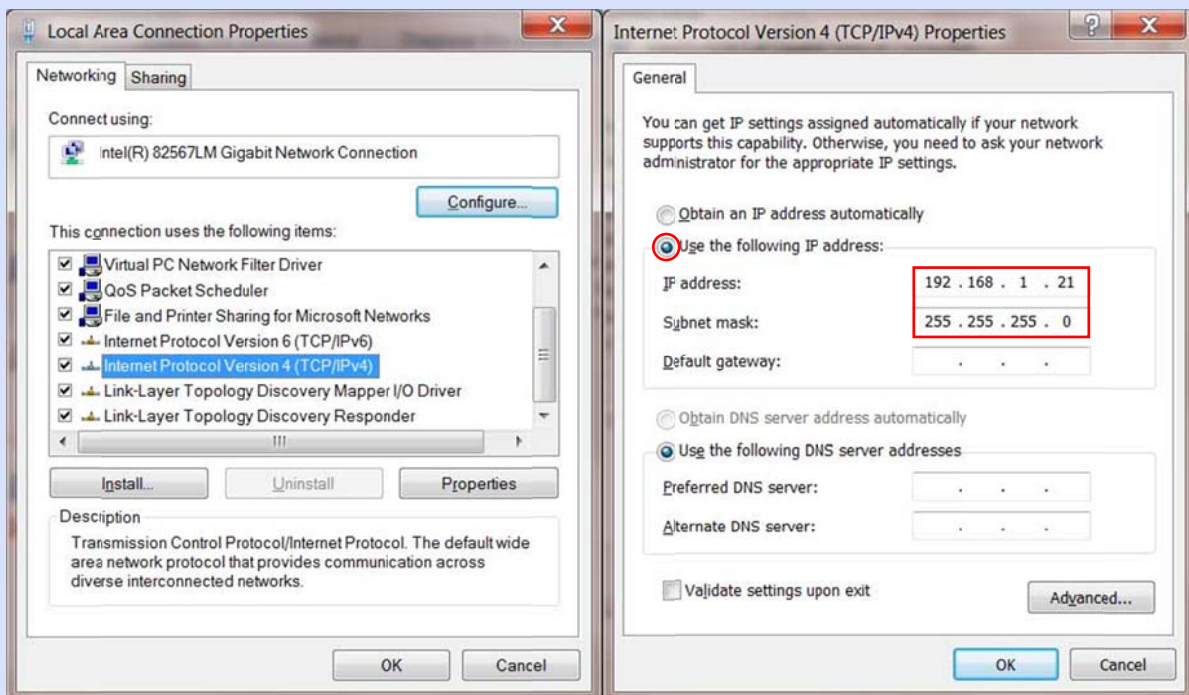
Most of these instructions apply to Bullet 2HP as well, but as this uses a different AirOS version the menus may differ

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As shipped you will need to configure your Bullet to provide WiFi Internet access. This is done through a menu accessible from your PC's web browser with a LAN cable hook-up. Check info on package to confirm Bullet IP address is 192.168.1.20 & menu access username/password are both ubnt

You first need to configure your PC LAN adapter to access this address. Select Network Connections & right click on Local Area (LAN) Connection

Select Properties then select/highlight Internet Protocol TCP/IP (TCP/IPv4 if you are using Vista/Windows 7) near the bottom of the connection items list



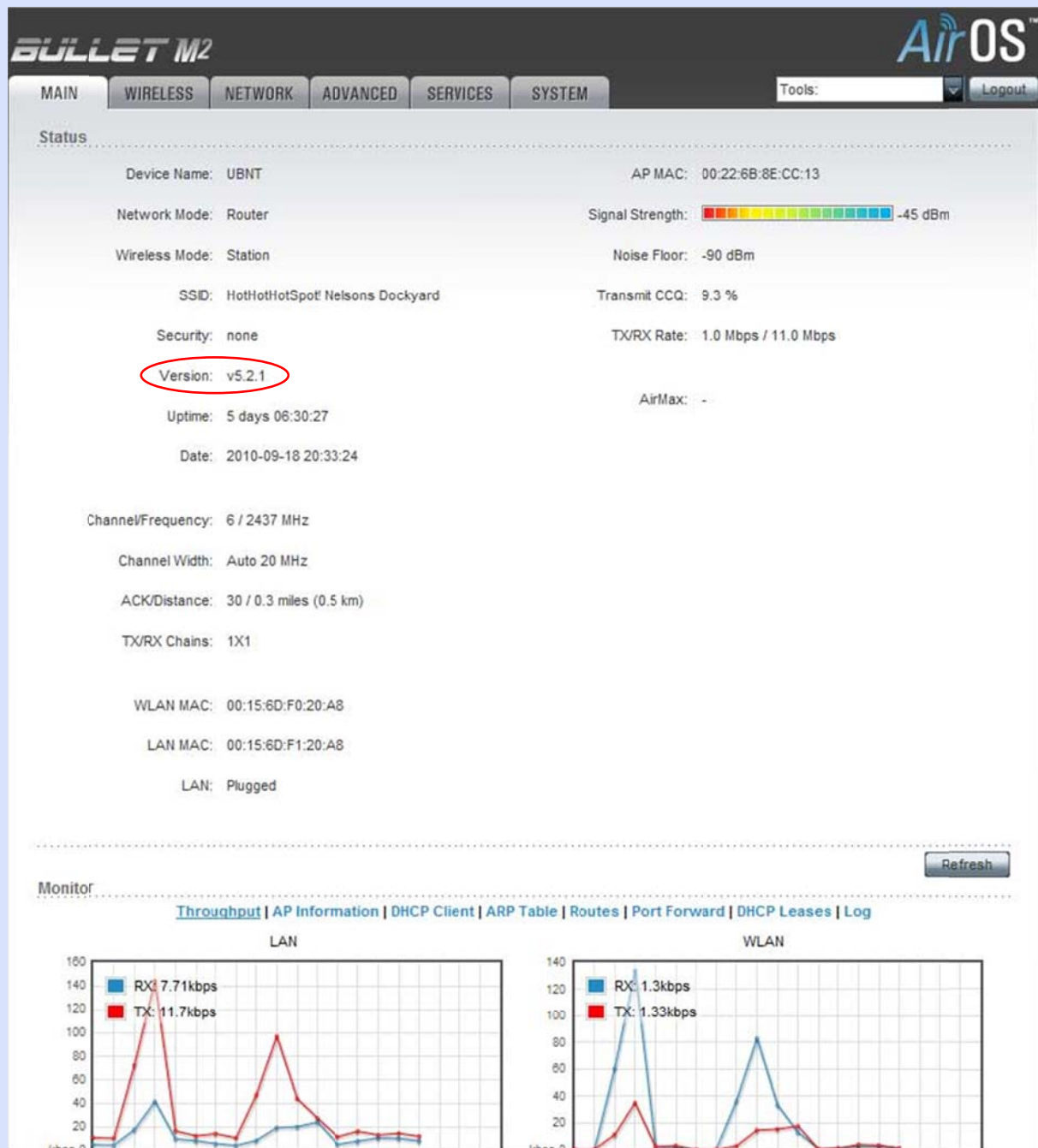
Press Properties & enter settings in right hand screenshot. We need adapter set to other than Bullet IP address but on same subnet. Press OK, Press Close

Hook up LAN cables to Bullet & PC with POE (Power over Ethernet) injection point in between

Power up & look for two green LED's on Bullet after connection established

Enter 192.168.1.20 into your browser web address window. You should see log-on page. Enter ubnt for both username & password

AirOS setup menu should appear in MAIN tab



First & most important check which firmware the Bullet is using. This is displayed after Version: in Status list (see above). If you have Bullet M2HP & have AirOS v5.2 or lower, you need to upgrade firmware to at least v5.2.1

Earlier versions had serious flaws which won't allow your Bullet to work as you wish. In any case it's a good idea to have the latest firmware release installed

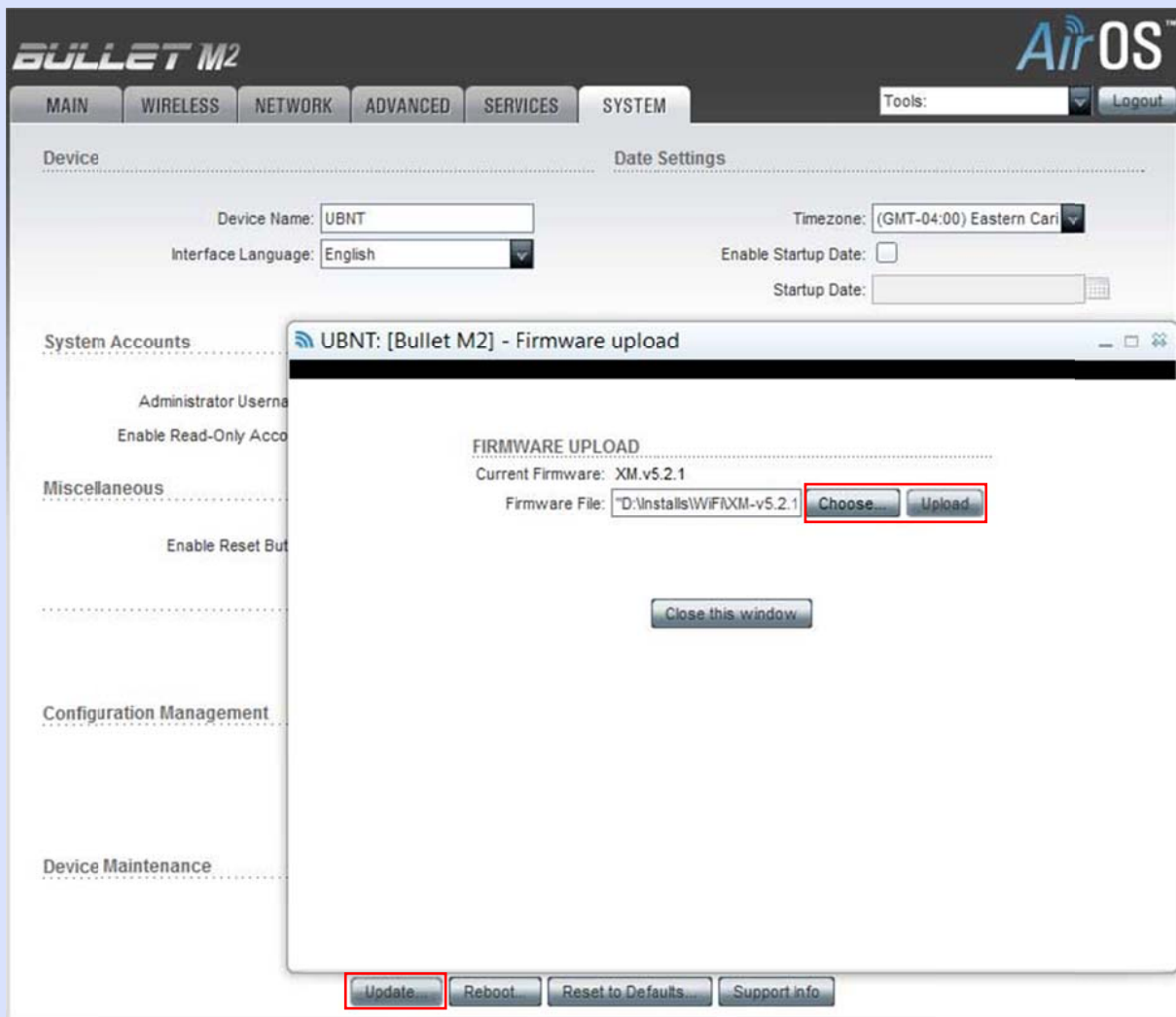
Go to this site: <http://www.ubnt.com/support/downloads>

Select your model & view latest AirOS version for your device

If version number is higher than present, download firmware & save to location of choice on PC

Installing new firmware is painless:

Select SYSTEM tab on Bullet setup menu. At bottom of page under Device Maintenance press Update. A new window will open. Press Choose & browse to your firmware location



Press Upload

After successful upload you will be invited to install the firmware

It's very important that the power is maintained to the Bullet during this process which includes a progress bar

After successful upgrade Bullet will reboot & new firmware version will be displayed

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Select NETWORK tab & change settings as follows:

**BULLET M2** **AirOS™**

MAIN WIRELESS **NETWORK** ADVANCED SERVICES SYSTEM Tools: [ ] Logout

**Network Role**

Network Mode: Router  
Disable Network: None

**WLAN Network Settings**

WLAN IP Address:  DHCP  PPPoE  Static  
DHCP Fallback IP: 192.168.1.20  
DHCP Fallback NetMask: 255.255.255.0  
Enable DMZ:   
Auto IP Aliasing:   
IP Aliases: [Configure...](#)  
Change MAC Address:

**LAN Network Settings**

IP Address: 192.168.10.20  
Netmask: 255.255.255.0  
Auto IP Aliasing:   
IP Aliases: [Configure...](#)  
Enable NAT:   
Enable NAT Protocol:  SIP  PPTP  FTP  RTSP  
Enable DHCP Server:   
Range Start: 192.168.10.100  
Range End: 192.168.10.200  
Netmask: 255.255.255.0  
Lease Time: 3600 seconds  
Enable DNS Proxy:   
Port Forwarding:  [Configure...](#)

**Multicast Routing Settings**

Enable Multicast Routing:   
Multicast Upstream: WLAN

**Firewall Settings**

Enable Firewall:  [Configure...](#)

Press Change button which will bring up Apply dialogue - DON'T Apply yet

Using Router rather than Bridge mode allows Bullet to provide DHCP service & range of our choosing to the connected LAN adapter. This saves dependency on the connected Access Point (AP) for this service & provides a consistent Bullet IP address to access its menu.

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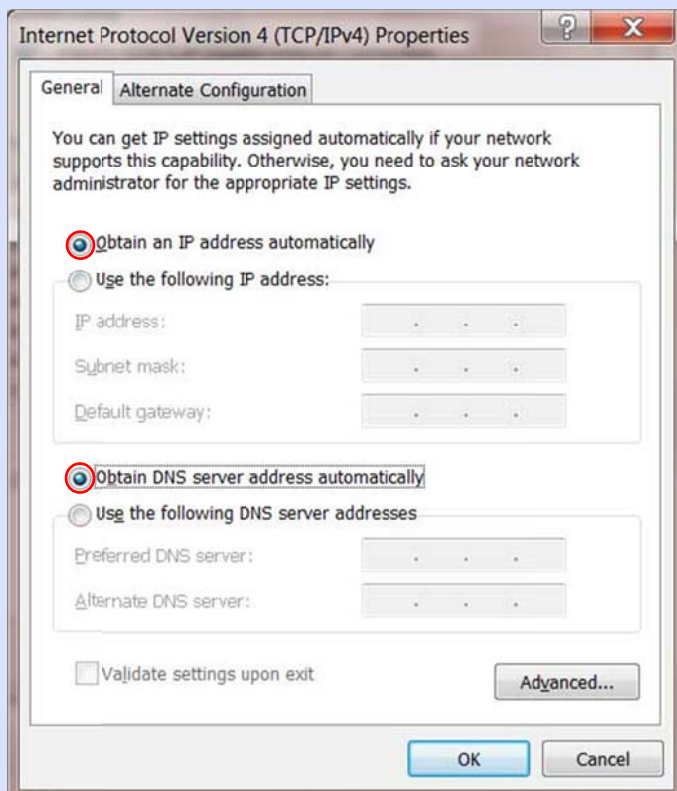
Select ADVANCED tab. The only parameter you need to change here is Distance. Set it to 0

Press Change button but NOT Apply – we still need to make further changes

Select WIRELESS tab & change Wireless mode to Station since we want to use Bullet to connect to WiFi access points rather than being one itself.

Press Change & this time Apply as well

At this point you will lose connection to Bullet as we changed its IP address. As we have enabled LAN DHCP on Bullet, we need to change PC LAN adaptor settings back to default to accept DHCP request. On PC, select LAN adapter TCP/IP properties as on first page, & set as follows:



Press OK, Press Close

These default settings will allow PC to accept the DHCP address offered by the Bullet as with any other DHCP enabled connection

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To access setup menu again, enter new address 192.168.10.20 in browser

Suggest you bookmark this address which will be used to access the Bullet in future every time you change to a new AP

Enter ubnt/ubnt to log in as before

Select WIRELESS tab

To connect to AP, Press Select button to right of SSID box

A new window will appear. After a brief scan all compatible AP's will be displayed

The image shows the AirOS configuration interface for a Bullet M2 device. The 'WIRELESS' tab is selected, displaying 'Basic Wireless Settings'. The 'Wireless Mode' is set to 'Station', and the 'SSID' is 'HotHotHotSpot Nelsons Dock'. A 'Select' button is visible next to the SSID field. Below this, there are settings for 'Country Code' (United Kingdom), 'IEEE 802.11 Mode' (B/G/N mixed), 'Channel Width' (Auto 20/40 MHz), 'Channel Shifting' (Disabled), 'Antenna Gain' (12 dBi), 'Cable Loss' (0 dB), 'Output Power' (28 dBm), and 'Max TX Rate' (MCS 7 - 65 [150]).

Overlaid on the bottom right is a 'Site Survey' window titled 'UBNT: [Bullet M2] - Site Survey'. It shows a table of scanned frequencies and detected APs. The 'Signal / Noise, dBm' column is circled in red. The table lists various APs with their MAC addresses, SSIDs, device names, encryption types, and signal/noise levels.

MAC Address	SSID	Device Name	Encryption	Signal / Noise, dBm	Frequency, GHz	Channel
00:22:68:8E:CC:13	HotHotHotSpot Nelsons Dockyard		NONE	-45 / -91	2.437	6
00:23:69:FA:66:C4	HotHotHotSpot Pay Office		NONE	-62 / -90	2.462	11
00:24:2B:5E:FB:94	Hula Boat WiFi		WPA	-83 / -89	2.412	1
00:02:2D:AA:68:7B	ACT-Online Nelson Dockyard		NONE	-67 / -89	2.447	8
00:00:97:08:0D:A6			NONE	-69 / -90	2.422	3
00:00:97:08:02:BA			NONE	-74 / -90	2.422	3
02:1A:70:65:72:70	Casaldia 3		NONE	-75 / -96	2.457	10
00:22:75:E8:CB:37	Pigeon Nest		WPA	-83 / -91	2.437	6
94:44:52:32:32:07	Johnny CoconAt		WPA	-84 / -91	2.437	6
00:24:01:E2:D6:83	Paul		WEP	-86 / -90	2.417	2
00:14:BF:28:F1:A0	Stanley's Estate Agents		WEP	-86 / -91	2.437	6
00:13:10:93:A4:0A	TheAnchorage		NONE	-88 / -91	2.437	6
00:22:68:67:E0:CA	Ocean Inn		NONE	-89 / -90	2.462	11
00:0F:66:BC:DE:75	dd-wrt		NONE	-90 / -91	2.437	6

Clicking on Signal strength header will list them in order of strength. The lower the negative number showing dBm, the stronger the signal

AP's without security (Open) will display NONE

Select button against AP you wish to connect to & press Select

Back on the WIRELESS page any security/encryption type should be detected & you can manually enter the key in WEP/WPA box at the bottom of the page

Press Change, Press Apply

If key/security is correct or there is none, Bullet should now connect to AP after a short wait

On MAIN page the signal strength should show up as coloured bands matching LED's on Bullet. AP MAC address should show top right

Check you have Internet connectivity either on Windows taskbar icon or checking you can browse the net

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Repeat the Select/Select/Change/Apply sequence above to connect to another AP

If you wish, the LAN cable can be connected without further changes to WAN/LAN port on local WLAN router, to give distributed wireless Internet access on your boat. In this case suggest turning off DHCP on your WLAN router as Bullet is already doing this job.