Instructions to setup Bullet M2HP for long range WiFi Internet access

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

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

etworking Sharing		General	
Connect using:	ion	You can get IP settings assigned supports this capability. Otherwis administrator for the appropriate	automatically if your network se, you need to ask your network IP settings.
This connection uses the following items:	<u>C</u> onfigure	© Obtain an IP address autom	atically
		Use the following IP address	s:
Gos Packet Scheduler	<u>^</u>	IF address:	192.168.1.21
 Brile and Printer Sharing for Microsoft Network 	vorks	Subpet mack:	255 255 255 0
Internet Protocol Version 6 (TCP/IPv6)	-	Sydner mask.	255 - 255 - 255 - 0
Internet Protocol Version 4 (TCP/IPv4)		Default gateway:	
Link-Layer Topology Discovery Mapper I	/O Driver	Column and an address	- Assessment and a
Link-Layer Topology Discovery Respond			automatically
		O Use the following DNS served	er addresses
Install Uninstall	Properties	Preferred DNS server:	
Description	and the second	Alternate DNS server:	
Transmission Control Protocol/Internet Protoco area network protocol that provides communic diverse interconnected networks.	ol. The default wide ation across	Validate settings upon exit	Advanced

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

BULLET M2			AirOS [*]
MAIN WIRELESS	NETWORK ADVANCED SERVICES	SYSTEM	Tools:
Status			
Device Name:	UBNT	AP MAC:	00:22:6B:8E:CC:13
Network Mode:	Router	Signal Strength:	-45 dBm
Wireless Mode:	Station	Noise Floor:	-90 dBm
SSID:	HotHotHotSpot! Nelsons Dockyard	Transmit CCQ:	9.3 %
Security:	none	TX/RX Rate:	1.0 Mbps / 11.0 Mbps
Version:	v5.2.1		
Uptime:	5 days 06:30:27	AirMax:	
Date:	2010-09-18 20:33:24		
Channel/Frequency:	6 / 2437 MHz		
Channel Width:	Auto 20 MHz		
ACK/Distance:	30 / 0.3 miles (0.5 km)		
TX/RX Chains:	1X1		
WLAN MAC:	00:15:6D:F0:20:A8		
LAN MAC:	00:15:6D:F1:20:A8		
LAN:	Plugged		
Monitor			Refresh
Throu	ghput AP Information DHCP Client ARP	Table Routes Port For	ward DHCP Leases Log
160	LAN	140	WLAN
140 RX 7.71kbps		120 RX: 1.3kbps	
120 TX: 11.7kbps		100 TX: 1.33kbps	3
80	∧	80	\wedge
60		40	
20		20	

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

BULLET M2						AirOS
MAIN WIRELESS NETWO	RK ADVANCED	SERVICES	SYSTEM		Tools:	Logout
Device			Date Set	tings		
Device Name:	UBNT			Timezone:	(GMT-04:00) Eas	stern Cari
Interface Language:	English	~		Enable Startup Date:		in the second
				Startup Date:		
System Accounts	UBNT: [Bullet N	12] - Firmware	e upload			_ 🗆 🛱
Administrator Userna						
Enable Read-Only Acco		FIRMWARE UPL	OAD			
Miscellaneous		Current Firmware	: XM.v5.2.1	W/FAXM us 2 1 Choose	e Holoed	
Enable Reset But		riniware rie	. D. sinstails	C1003	e	
			Ck	se this window		
Configuration Management						
Device Maintenance						
	Update	Reboot. Rese	t to Defaults			

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

Select NETWORK tab & change settings as follows:

i ji ji	ET M2							Air OS
MAIN	WIRELESS N	IETWORK	ADVANCED	SERVICES	S SYSTEM		Tools:	Logo
Network I	Role							
	Netwo	ork Mode:	Router					
	Disable	Network:	None	-				
WLAN Ne	twork Settings							
			A					
	WLAN IP	Address:		PoE 💮 Sta	tic			
	DHCP Fa	aliback IP:	192.168.1.20					
	DHCP Fallback	NetMask:	255.255.255.0					
	Ena	Aliagias						
	Auto IP	Allasing.	Configure					
	Change MAC	Address	Computering					
	change in co							
LAN Netw	ork Settings					1111200111120011		
	IP	Address:	192.168.10.20			Au	uto IP Aliasing: 📝	
		Netmask:	255.255.255.0				IP Aliases:	onfigure
	Ena	able NAT:	V				_	
	Enable NAT	Protocol:			RTSP			
	Enable DHC	P Server:	S					
	Ran	nge Start:	192.168.10.100					
	Ra	ange End:	192.168.10.200					
		Netmask:	255.255.255.0					
	Le	ase Time:	3600		seconds			
	Enable Di	IS Proxy:	S					
	Port For	warding:	Configure					
Multicast	Routing Settings					1012001012221		Mananana
	Enable Multicas	t Routing:						
	Multicast U	Ipstream:	WLAN	-				
Firewall S	ettings							
	Eachla	Firework	Configure					
	Enable	rirewall	Configure	100				

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.

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:

enera	Alternate Configuration	n				
You car suppor adminis	n get IP settings assigne ts this capability. Otherv strator for the appropria	ed automatio wise, you ne ate IP setting	cally if ed to gs.	your i ask yo	networl our netv	k vork
00	btain an IP address auto	omatically				
0	se the following IP addr	ess:				
Į₽ ad	ddress:			-		
Subr	net mask:	[•		
Defa	ult gateway:					
0	btain DNS server addres	ss automatio	ally			
0.0	s <u>e</u> the following DNS se	rver addres	ses			
Prefi	erred DNS server:					
Alter	mate DNS server:					
	/alidate settings upon e	xit			Ady	anced

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

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

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IN	WIRELESS NET	WORK ADVANCE	ED SERVICES SYST	TEM	Tools:	V Los	tuo		
ic Wi	raless Sottings								
	initial outlings								
	Wireless Mod	e:[7] Station	A						
	5	SSID: HotHotHotSpot	Nelsons Doci Select						
	Lock to AP I	AC:							
	Country C	ode: United Kingdom	🗸 🗍 Obey Re	gulatory Rules					
	IEEE 802.11 M	lode: B/G/N mixed							
	Channel Widt	th: [7] Auto 20/40 MHz							
	Channel Shiftin	o:[7] Disabled							
	Channel Scan List	MHz: Enabled							
	Antenna	Gain: 12 dBi	Cable Loss 0	dB					
	Outrut Pa	war	28 dBm						
	New TV Date, N	Her. UCC 7							
	max in Rate, in	iopa, mea 7 - 03 [130	Automatic	•					_
			S LIDNIT, ID. II. A MA	11 Cite Current					
Vireless	Security		DBNT: [Bullet M.	2] - Site Survey					- 7
Vireless	Security		S UBNT: [Bullet M.	2] - Site Survey					_
Vireless	Security	urity: none	Site Survey	2] - Site Survey					
Vireless	Security	urity: none	Site Survey Scanned Frequencies: 2.412GHz 2.417GHz	2] - Site Survey 2.422GHz 2.427GHz 2.432GHz	2.437GHz 2.442GHz 2.	447GHz 2.4520	GHz 2.457GHz 2.462GHz 2	.467GHz 2.472GHz	
Vireless	Security Sec	urity: none	Site Survey Scanned Frequencies: 2.412GHz 2.417GHz	2] - Site Survey 2.422GHz 2.427GHz 2.432GHz SSD	2.437GHz 2.442GHz 2. Device Name	447GHz 2.4520 Encryption	SHz 2.457GHz 2.462GHz 2	.467GHz 2.472GHz Frequency, GHz	Channel
Vireless	Security Sec	urity: none	UBNT: [Bullet M; Site Survey Scanned Frequencies: 2.412GHz 2.417GHz MAC Address 0.022-68.8E:CC.13	2] - Site Survey 2.422GHz 2.427GHz 2.432GHz SSD HotHotHotSpott Nelsons Dock	2.437GHz 2.442GHz 2. Device Name yard	447GHz 2.4520 Encryption NONE	Hz 2.457GHz 2.482GHz 2 Gignal / Noise, dBm -45 / -91	.467GHz 2.472GHz Frequency, GHz 2.437	Channel 6
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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.