SERIOUS MARINE

Wi-fi

Quick Start Guide

MWB-220

- Connects one or more computers to any Wi-Fi network, at up to 54Mbps
- 32x more powerful than most Wi-Fi adapters, for better long-range links
- Weatherproof transmitter uses one thin cable for both data and power

PORT NETWORKS

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Thank you for purchasing this Marine Wireless Bridge from Port Networks. We designed the MWB-220 to help boat owners connect to wireless networks more easily, and we hope it will serve you well in that regard. This Quick Start Guide provides the information you will need to get the most out of your Marine Wireless Bridge. If you have any questions that aren't answered by this Guide, please send an email to support@portnetworks.com, or call us at (410) 637-3707.

What You Should Have

You should have received the following items with this Guide:

The MWB-220 itself, with its high-gain internal antenna and detachable Ethernet cable (yellow=25', black=50').

48V Power Injector, with AC power cord or 12V-48V boost converter.

An Ethernet crossover cable. (You can substitute another Category 5 crossover cable of any length up to 100 meters.)

WARNING!

The Wi-Fi transmitter inside the MWB-220 generates significant heat while operating. Because of the unit's weatherproof design, this heat is dissipated through the outer case, rather than through air flow out of the unit. As a result, the case may become warm or even hot to the touch. Please exercise care while handling the MWB-220 if it has been operating long enough for the case temperature to be elevated. When the MWB-220 is not in use, it can be powered off by disconnnecting its network cable from the power injector unit.

How it Works

A wireless bridge acts as an intermediary between your computer and a wireless network. The MWB-220 will connect to almost any Wi-Fi network, and almost any computer with an Ethernet port can connect to the MWB-220.

To perform this role, the MWB-220 performs two tasks simultaneously. In order to connect to the Internet, it uses its transmitter and antenna to look for an available wireless network. When it finds one, it asks for an Internet Protocol (IP) address. (An IP address is similar to a street address, in that it tells servers where a web page or an email should be sent in order to reach you.) Once it has an IP address, the MWB-220 has a wireless connection to the Internet.

At the same time, the MWB-220 monitors whether any computers are connected to its Ethernet cable. If one is, and it requests an IP address of its own, the bridge gives out an address from its own list, and the computer then has a wired connection to the MWB-220.

Once these two connections are in place, any data that the computer tries to send to the Internet is received by the MWB-220 and passed on through the wireless network to the Internet, and any data sent back to the computer is received by the MWB-220 from the wireless Internet, and passed back through its Ethernet cable.

Setting Up the MWB-220

Setting up your new Marine Wireless Bridge should take only a few minutes. Please follow these steps:

1. Place the MWB-220 above deck, in a location with good line-of-sight to the wireless access point to which you are trying to connect. The MWB-220 should be fastened in place so that its data/power cable is pointed down when in operation.

2. Rotate and/or angle the unit so that its antenna face (the one with the labels) is pointed directly at the access point you are trying to connect to. The antenna will find access points within a 90 degree horizontal range and a 38 degree vertical range.

3. Find the end of the Ethernet cable that runs inside a black waterproof connector. Remove the small retaining nut from the connector, but leave the rubber washer on the threads. Plug the end of the Ethernet cable into the jack inside the black collar that is on the outside of the MWB-220, then screw the waterproof connector into the black collar. Lastly, tighten the large nut at the other end of the waterproof connector until the connector firmly grips the Ethernet cable.

4. Run the other end of the Ethernet cable below deck and plug it into the port labeled “MWB” on the 48V Power Injector.

5. Plug one end of the crossover cable into the port labeled “DATA” on the 48V Power Injector, plug the other end of the crossover cable into your computer, or if you are using multiple computers, into an open port on your network switch, hub, or router.

6. Plug the AC power cord into the 48V Power Injector, then plug the other end into a properly-grounded 100V-240V AC outlet. Or, if you are using the optional 12V-48V Boost Converter, plug the converter cord into the 48V Power Injector and plug the lighter plug into a properly-grounded receptacle.

Configuring a Windows XP Computer

To communicate with the MWB-220, your computer(s) must be set to request an IP address automatically. Most computers are set this way by default, but here are instructions for confirming or switching to this configuration:

1. From the Start Menu, choose *Control Panels*, then *Network Connections*.

2. Look for the network connection that uses your computer's Ethernet port. This is usually labeled *Local Area Connection*.

   Note: although you are trying to connect to a wireless network, you do not want to change the configuration on any Network Connection labeled "Wireless." You will be connecting to the MWB-220 using your computer's Ethernet port, and will not be using any wireless adapter that may already be installed in your computer.

3. Right-click on *Local Area Connection* (or its equivalent) and select *Properties* from the pop-up menu.

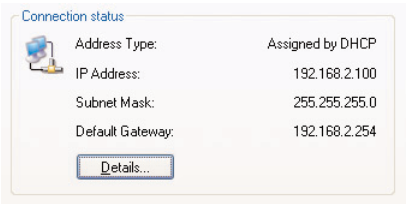
4. In the Properties window that opens, there will be a list under the heading *This connection uses the following items.* Scroll to the bottom of this list and double-click on *Internet Protocol (TCP/IP).*

5. In the next Properties window that opens, click the round buttons next to *Obtain an IP address automatically* and *Obtain DNS server address automatically.*

6. Click *OK* to close that Properties window, then *OK* again to close the Properties window before it.

7. Right-click again on the *Local Area Connection* (or its equivalent) and select *Status* from the pop-up menu.

8. Choose the *Support* tab on the Status window that opens. If the top half of the window looks like the following, your settings are correct.



Configuring a Macintosh Computer

To communicate with the MWB-220, your computer(s) must be set to request an IP address automatically. Most computers are set this way by default, but here are instructions for confirming or switching to this configuration:

1. From the Apple Menu, choose *System Preferences*, then *Network*.

2. Find the pull-down menu labeled *Show*, and choose *Built-In Ethernet*. The *TCP/IP* tab should be highlighted.

   Note: although you are trying to connect to a wireless network, you do not want to change the configuration on any Airport adapter. You will be connecting to the MWB-220 using your computer's Ethernet port, and will not be using any Airport adapter that may already be installed in your computer.

3. From the pull-down menu labeled *Configure IPv4* choose *Using DHCP*.

4. Click on the *PPPoE* tab, and make sure the box that is labeled *Connect using PPPoE* is unchecked.

Choosing a Wi-Fi Network

Once your computer is connected to the MWB-220, you can use it to detect and connect to a Wi-Fi network in your area. To begin, open a web browser (Internet Explorer, FireFox, etc.) and in the address bar, enter the IP address of the MWB-220, which is 192.168.2.254

Your computer will load a web page from the MWB-220, which gives you access to all of the unit's settings. However, because the MWB-220 comes pre-configured for use in a marine Wi-Fi environment, it's unlikely that you will need to run the built-in Wizard.

To detect nearby Wi-Fi networks, choose *Wireless* from the left-hand navigation menu, then click on *Site Survey*. The MWB-220 will display a list of available networks, showing the Network Name (also known as the SSID), Channel, Encryption, and Signal Strength (also known as RSSI). The MWB-220 also calculates the quality of the available signal, and lists it as a number between 0 and 100, with higher numbers indicating better quality.

Your list will look something like this:

SSID	BSSID	Channel	Type	Encrypt	RSSI	Quality	Select
Port Networks Public Wi-Fi	00:09:92:01:28:c3	2 (B)	AP	no	95 (-37 dbm)	96	○
Port Networks Public Wi-Fi	00:05:9e:80:f8:af	6 (B)	AP	no	89 (-40 dbm)	89	○
Port Networks Public Wi-Fi	00:11:7c:02:03:bd	11 (B)	AP	no	87 (-41 dbm)	87	○

The MWB-220 is pre-configured to connect to the network with the highest quality signal, provided that it is not encrypted. (Encryption is a tool for keeping a private network closed to others.) If you prefer to connect to a different network, simply click the button next to it in the *Select* column, and then click the *Connect* button.

If you don't see any wireless networks, or think you should see more, click the button labeled *Auto Refresh* and then try moving the MWB-220 transmitter to different locations while watching the screen. You may find a clearer line-of-sight that will yield more available networks. When done, click *Stop Refresh.*

Using Encryption Keys

Some wireless networks use encryption to prevent unauthorized users from connecting to their access points. In order to connect to one of these networks, you need an encryption "key" – a code that identifies you as an authorized user.

For obvious reasons, most public Wi-Fi networks don't use encryption. If you should need to connect to an encrypted network, though, you can enter an encryption key into the MWB-220 by choosing *Wireless* from the left-hand navigation menu, then clicking on *Security***.** Choose the appropriate authentication type (Open System, Shared Key, or Auto), the encryption type (WEP, WPA-TKIP, or WPA2-AES), and the settings for that encryption type. Finally, enter the pre-shared key in the space provided, and click on *Apply Changes* at the bottom of the page.

Advanced Settings

The MWB-220 is capable of a high degree of customization and includes a wide array of advanced features, but few of these will be meaningful to the boat owner who simply wants to connect to a local Wi-Fi network. If you would like to learn more about the advanced settings of the MWB-220, please visit www.portnetworks.com.

Troubleshooting

If you have followed the instructions in this Guide and cannot connect to the Internet, please follow these steps:

1. Check your computer's IP address. To do this on a Windows XP computer, go to the *Start Menu*, choose *Control Panels*, then *Network Connections*, and right-click on *Local Area Connection*. Choose *Status* and then click the *Support* tab. The IP address will be listed on the second line. On a Macintosh computer, go to the Apple menu, choose *System Preferences*, then *Network*. Select *Built-In Ethernet* and click the *TCP/IP* tab. The IP address will be listed at the bottom.

   Make sure that your computer is set to receive an address via DHCP, and that the address your computer has received is 192.168.2.xxx (where xxx could be any number between 100 and 250). If you do not have an IP address or have a different one, repeat the procedure in this Guide for setting up your computer to receive an IP address, and follow Step 2 to confirm that you are connected to the MWB-220.

Troubleshooting, cont.

2. Check that you are connected to the MWB-220. Begin by making sure that all Ethernet cables and power cords are plugged in tightly. Make sure that the Link light near your Ethernet port comes on when you insert the crossover cable.

   From your computer, open a web browser and enter the IP address 192.168.2.254 in the address bar. If the MWB-220 settings pages come up, you are connected to the MWB-220. If not, check all connections.

3. Confirm that the MWB-220 is connected to a Wi-Fi network. From the MWB-220 settings pages, choose *Management*, then *Status*. In the *Wireless Configuration* section, check that *State* is *Connected*. If it is not, repeat the procedure in this Guide for connecting to a Wi-Fi network.

4. Confirm that the MWB-220 is set to receive an IP address and DNS information. In the *TCP/IP* folder, find the *WAN Interface* page and make sure that *WAN Access Type* is set to *DHCP Client* and that there is a check next to *Obtain DNS Automatically*.

Support

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