

SERIOUS MARINE

# wi-fi

PORT NETWORKS  
MWB-200

## MWB-200

## Quick Start Guide

- ▶ Connects one or more computers to any Wi-Fi network, at up to 54Mbps
- ▶ 25x 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-200 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](mailto:support@portnetworks.com), or call us at (410) 637-3707.

## What You Should Have

Please check that you have received the following items:



MWB-200 Base Unit



110V Power-Over-Ethernet Injector with AC power cord



12V Power-Over-Ethernet Injector with DC power cord



Ethernet Power/Data Cable



Ethernet Data Cable

## WARNING!

The Wi-Fi transmitter inside the MWB-200 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-200 if it has been operating long enough for the case temperature to be elevated. When the MWB-200 is not in use, it can be powered off by disconnecting 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-200 will connect to almost any Wi-Fi network, and almost any computer with an Ethernet port can connect to the MWB-200.

To perform this role, the MWB-200 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-200 has a wireless connection to the Internet.

At the same time, the MWB-200 monitors whether any computers are connected to its Ethernet port. 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-200.

Once these two connections are in place, any data that the computer tries to send to the Internet is received by the MWB-200 and passed on through the wireless network to the Internet, and any data sent back to the computer is received by the MWB-200 from the wireless Internet, and passed back through its Ethernet cable.

## Setting Up the MWB-200

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

1. Place the MWB-200 above deck, in a location with good line-of-sight to the wireless access point to which you are trying to connect. The MWB-200 should be placed on its base, with its labels on top.
2. Rotate the antenna so that it is pointing straight up and down.
3. Locate the larger, waterproof connector at the end of the black Ethernet power and data cable, and the black threaded connector on the MWB. Plug the end of the cable into the MWB, then screw the waterproof cover over the plug to seal the connection.
4. Run the other end of the Ethernet power and data cable below deck and plug it into the port labeled "MWB" on the power injector.
5. Plug one end of the white Ethernet cable into the port labeled "DATA" on the power injector. Plug the other end into your computer, or if you are using multiple computers, into an open port on your network switch or hub, or the WAN or Internet port on your router.
6. Plug the power cord into the power injector, then plug the other end into either a properly-grounded 100V-240V AC outlet (for the 110V power injector) or a properly-grounded 12V cigarette-lighter-style outlet (for the 12V power injector).

**IMPORTANT NOTE:** *Both types of power injector must be properly grounded! For the 12V power injector, connect a 16AWG (or better) ground wire between the grounding bolt on the injector (top right) and the power system ground. For the 110V power injector, connect the supplied power plug only to a grounded three-prong outlet. DAMAGE CAUSED BY FAILURE TO PROPERLY GROUND YOUR SYSTEM IS NOT COVERED BY OUR WARRANTY.*

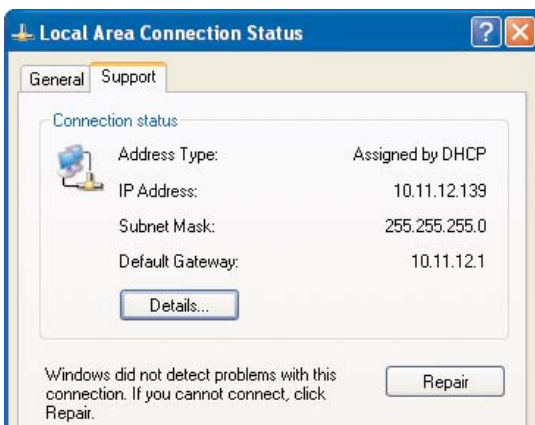
## Configuring a Windows XP Computer

To communicate with the MWB-200, 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-200 using your computer's Ethernet port.

3. Right-click on *Local Area Connection* (or its equivalent) and select *Properties* from the pop-up menu. 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)*.
4. In the next Properties window, click the round buttons next to *Obtain an IP address automatically* and *Obtain DNS server address automatically*. Click *OK* to close the Properties windows.
5. Right-click again on the *Local Area Connection* (or its equivalent) and select *Status* from the pop-up menu. Choose the *Support* tab on the Status window that opens. If your IP Address is 10.11.12.xxx, you have successfully connected to the MWB.

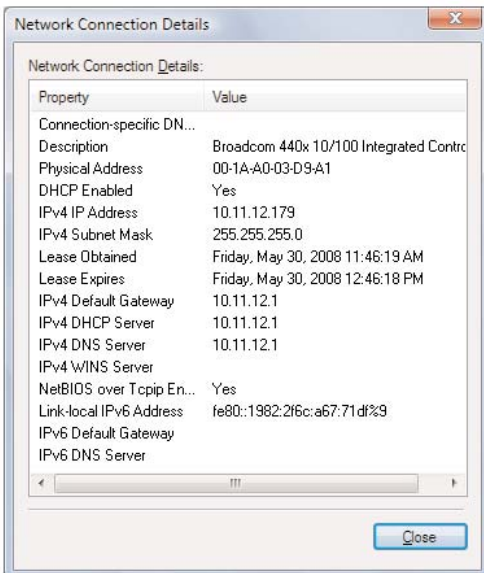


## Configuring a Windows Vista Computer

1. From the Start Menu, choose *Control Panels*, then *Network and Internet*, then *Network and Sharing Center*, then *Manage 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-200 using your computer's Ethernet port.

3. Right-click on *Local Area Connection* (or its equivalent) and select *Properties* from the pop-up menu. In the Properties window that opens, select *Internet Protocol Version 4 (TCP/IPv4)* and click *Properties*.
4. In the next Properties window, click the round buttons next to *Obtain an IP address automatically* and *Obtain DNS server address automatically*. Click *OK* to close the Properties windows.
5. Right-click again on the *Local Area Connection* (or its equivalent) and select *Status* from the pop-up menu. Click the *Details* button on the Status window that opens. If your IPv4 IP Address is 10.11.12.xxx, you have successfully connected to the MWB.



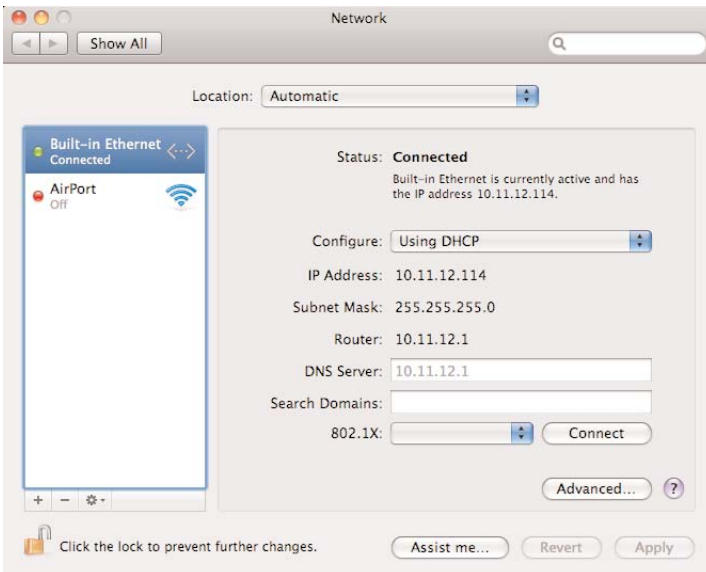
## Configuring a Macintosh Computer

To communicate with the MWB-200, 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 in the latest version of the Macintosh operating system:

1. From the Apple Menu, choose *System Preferences*, then *Network*.
2. From the list of network interfaces, choose *Built-In Ethernet* and click *Configure*. The *TCP/IP* tab should be highlighted. If the lock on the lower right is closed, you must open it to make changes.

**Note:** although you are trying to connect to a wireless network, you do not want to change the configuration on any Airport adapter that may already be installed in your computer. You will be connecting to the MWB-200 using your computer's Ethernet port.

3. From the pull-down menu labeled *Configure IPv4* choose *Using DHCP* and then click *Apply Now*.
4. Click on the *PPPoE* tab, and make sure the box that is labeled *Connect using PPPoE* is unchecked. If you made a change, click *Apply Now*.
5. Close the Network system preferences panel.



## Configuring the MWB-200

Once your computer is connected to the MWB-200, you can configure the unit by opening a web browser (Internet Explorer, FireFox, etc.) and in the address bar, entering `http://10.11.12.1` (the IP address of the MWB-200). The default username is *admin* and the password is *mwb*, but you can change these settings on the *System* tab. Once you sign in, your computer will load a set of configuration pages from the MWB-200. You may want to bookmark this IP address for future use.

On the Main page, you will see the wireless network to which the MWB is trying to connect, along with the status of its wireless link. At the bottom are the unit's Wide Area and Local network settings.

The screenshot displays the configuration web interface for the MWB-200. At the top, there is a navigation bar with tabs for 'Main', 'Link Setup', 'Network', 'Advanced', 'Services', and 'System', along with a 'Logout' button. The main content area is divided into three sections:

- WIRELESS LINK SETTINGS:** This section includes fields for 'Network SSID' (Port Networks Public Wi-Fi - WTC), 'MAC Address' (00:11:7C:02:03:BD), 'Security' (none), and 'QoS Status' (No QoS). A note below states: "To change wireless networks, go to the Link Setup tab."
- WIRELESS LINK STATUS:** This section shows the current status of the wireless link. It includes a 'Signal Strength' indicator (a bar chart showing -39 dBm) with an 'Align Antenna...' button. Other fields include 'TX Rate' (11.0 Mbps), 'RX Rate' (11.0 Mbps), 'Frequency' (2462 MHz), 'Channel' (11), 'ACK Timeout' (48), 'Transmit CCQ' (20.3%), 'Uptime' (00:37:28), and 'Date' (2008-05-29 12:36:27).
- NETWORK SETTINGS:** This section includes fields for 'LAN Cable' (ON), 'Host Name' (MWB-250), 'LAN MAC' (00:15:6D:E0:1C:0C), 'LAN IP Address' (10.11.12.1), 'WLAN MAC' (00:15:6D:A6:1C:0C), and 'WLAN IP Address' (216.230.124.97). A note below states: "To change settings go to the Network tab."

At the bottom of the interface, there are 'Extra info' and 'Tools' dropdown menus, and a 'Refresh' button.

At startup, the MWB-200 will automatically attempt to connect to the strongest, unsecured network. If it's successful, and that network is properly configured to provide you with Internet access, you will not need to make any changes to the MWB-200 configuration pages.

## Choosing a Wi-Fi Network

If you do want to select a different wireless network, move to the Link Setup tab and click on *Select Network*. The MWB-200 will display a Site Survey list showing each of the available access points, with its MAC Address (a unique network “serial number”), Network Name (also known as the SSID), Security Method, Signal Strength, Frequency, and Wi-Fi Channel.

**PORT NETWORKS** **MWB-200**  
MARINE WIRELESS BRIDGE

Main Link Setup **Network** Advanced Services System Logout

**BASIC WIRELESS SETTINGS**

Wireless Mode: Station  
 Network SSID: MWB-200 Select Network

**Site Survey - Mozilla Firefox 3 Beta 5**

MAC Address	Network Name	Security Method	Signal Strength	Frequency	Wi-Fi Channel
02:0E:35:07:E9:D4	hpsetup	-	-93	2,462	11
00:09:92:01:C0:76	Port Networks Public Wi-Fi	-	-81	2,462	11
00:15:63:6E:E4:90	CEG	WEP	-94	2,437	6
00:1F:CA:2C:6C:60	NetworkAccess	WEP	-90	2,462	11
02:1C:BF:00:00:8D	Panasonic Display1	-	-92	2,412	1
00:12:0E:6A:F6:9D	07B403199417	WEP	-94	2,437	6
00:1F:CA:2C:CC:F0	NetworkAccess	WEP	-91	2,412	1
02:0E:35:07:E9:D4	hpsetup	-	-95	2,462	11
00:03:52:C0:A5:70	PANERA	-	-91	2,447	8
00:12:0E:8D:F1:86	07FX10116820	WEP	-95	2,437	6
00:15:6D:A3:07:4B	Port Networks Wi-Fi @ IHEM	-	-90	2,412	1
00:17:59:09:05:00	CEG	WEP	-94	2,437	6
00:11:45:02:5A:B6	ESPN Zone	-	-91	2,462	11
00:0D:ED:A5:4E:10		WPA	-82	2,462	11
00:1C:10:A7:5E:89	EDSA	WPA2	-91	2,462	11
00:14:70:AB:9D:1C	EDSA	WPA2	-94	2,462	11
00:1D:7E:29:20:DB	digneyyork	WPA	-94	2,437	6
00:15:6D:A6:2B:66	Harbor Point	WPA	-93	2,447	8

Select this network Scan Close this window

To connect to a particular network, simply click the button next to it in the list, and then click *Select This Network*. Once the Site Survey window closes, click *Save Changes* and then *Apply*.

**IMPORTANT NOTE:** *You may not be able to connect to all of the networks you find with the Site Survey. Network operators can block new connections through the use of encryption, MAC address filtering, and other techniques. Before calling us for support, please confirm that the network to which you are trying to connect is openly available for your use.*

## 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 to first have 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-200 by moving to the *Link Setup* tab and entering the necessary information in the *Wireless Security* section

The screenshot shows the 'WIRELESS SECURITY' configuration page. It features several sections with labels and input fields:

- Security:** A dropdown menu set to 'WPA2'.
- Authentication Type:** Radio buttons for 'Open' (selected) and 'Shared Key'.
- WEP Key Length:** A dropdown menu set to '64 bit'.
- WEP Key:** An empty text input field.
- WPA Authentication:** Three dropdown menus set to 'PSK', 'EAP-TTLS', and 'MSCHAPV2'.
- WPA Preshared Key:** An empty text input field.
- WPA Identity:** An empty text input field.
- WPA User Name:** An empty text input field.
- WPA User Password:** An empty text input field.
- Key Type:** A dropdown menu set to 'HEX'.
- Key Index:** A dropdown menu set to '1'.

Choose the security method and authentication type (Open or Shared Key) used by the access point to which you want to connect, then enter details in the fields below. For WEP security, you will need a key length and key. For WPA, you will need to specify an authentication system and a preshared key or username/password.

After you have finished entering information, click on *Save Changes* at the bottom of the page, then click *Apply* to use the new settings.

## Advanced Settings

The MWB-200 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-200, please visit [www.portnetworks.com](http://www.portnetworks.com), then choose Support > Marine Wireless Bridges.

## 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. Using Windows Vista, go to the *Start Menu*, right-click *Network*, then choose *Properties*. In the *Network and Sharing Center*, click on *Local Area Connection > View Status*, then click *Details* and look for *IPv4 Address*. On a Macintosh computer, go to the Apple menu, choose *System Preferences*, then *Network*. Select *Built-In Ethernet* and click the *TCP/IP* tab, where the IP address will be listed.

Your computer should have an IP address of 10.11.12.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-200.

2. Check that you are connected to the MWB-200. Begin by making sure that all Ethernet cables and power cords are plugged in tightly. Make sure that the Link light for the Ethernet port on your computer, switch, or access point comes on when you insert the Ethernet data cable.

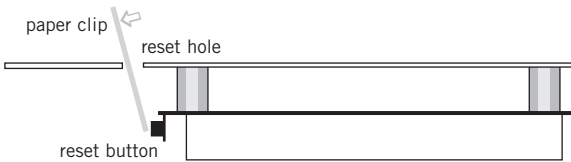
From your computer, open a web browser and enter the IP address <http://10.11.12.1> in the address bar. If the MWB-200 settings pages come up, you are connected to the MWB-200. If not, check connections.

3. Confirm that the MWB-200 is connected to a Wi-Fi network. In the Network Settings section of the Main configuration page, check that the unit has a *WLAN MAC address* and *WLAN IP Address*. If it does not, repeat the procedure in this Guide for connecting to a Wi-Fi network.
4. Confirm that the MWB-200 is set to request an IP address. On the *Network* configuration page, make sure *WLAN IP Address* is set to *DHCP*.
5. Confirm that the Wi-Fi network to which you are connected is available. There are many reasons a Wi-Fi network may be unavailable, even if it appears to allow open connections. Some private access points are set up with filters that only allow traffic to pass through to pre-approved computers. Some access points are set up with authentication pages that load slowly or don't load at all. Some access points are simply so

overloaded that they will not pass traffic to a new client, even though they allow new clients to connect. If you aren't sure whether a particular Wi-Fi network is available, try connecting to a different network. If you can successfully connect to the Internet through a different network, the first network you were trying to connect to is probably unavailable.

## Standard Settings

To reset the unit to its original configuration, open the MWB enclosure while the unit is powered on, and locate the hole marked "reset." Straighten a large paper clip and insert one end of the paper clip 0.5" through the hole. Tilt the paper clip to the left to depress the reset switch for 10 seconds. When you release the reset switch, the unit will reboot with standard settings.



## Support

If you have any questions that aren't answered by this Guide, please send an email to [support@portnetworks.com](mailto:support@portnetworks.com), or call us at (888) 812-7435 (outside the US, please call (410) 637-3707). Our support staff is available weekdays 9am to 9pm, and weekends 12pm to 6pm, Eastern Time.

