

Before You Begin

- The ESTeem Horizon wireless Ethernet radio is compatible with many different applications. The most common application is to bridge two or more Ethernet devices. This guide will demonstrate the basic configuration and testing of a pair of Horizon radios. For more detailed information, please see the ESTeem Horizon Series User's Manual.
- This guide assumes you have a working knowledge of Ethernet networking, TCP/IP protocol and how to identify and set the TCP/IP address on your computer.
- You must be familiar with using web browser software such as Google Chrome, Firefox or Internet Explorer
- The following procedure will provide an initial communication link between two or more Horizon radios for testing purposes. All the example commands listed in this guide can be adjusted to fit your communication network. Please consult the ESTeem Horizon Series User's Manual for more details.

Unpack Contents

To begin the configuration, unpack the ESTeem Horizon shipping boxes and locate the items below for initial configuration. Take a few minutes to inventory your equipment before you proceed. Report any missing or damaged items to Customer Support (509-735-9092) as soon as possible. Each node in your ESTeem Horizon's network may have different hardware components based upon the final installation location (i.e. Outdoor, Indoor, Point-to-point or Multi-Point). Antenna types, cable lengths, power supplies may be different, but the following items will be required for basic setup:

Horizon Radio



Antenna
(AA20DMEg Displayed)



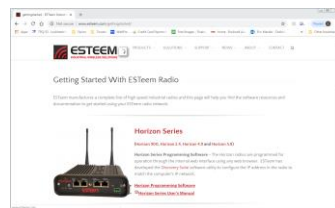
Power Supply
(AA175.5 Displayed)



(2) Ethernet Cables



ESTeem Software Utilities
(esteem.com/gettingstarted)



Note: Your accessory model numbers may vary from the above, but you will need to locate each of above items to continue configuration.

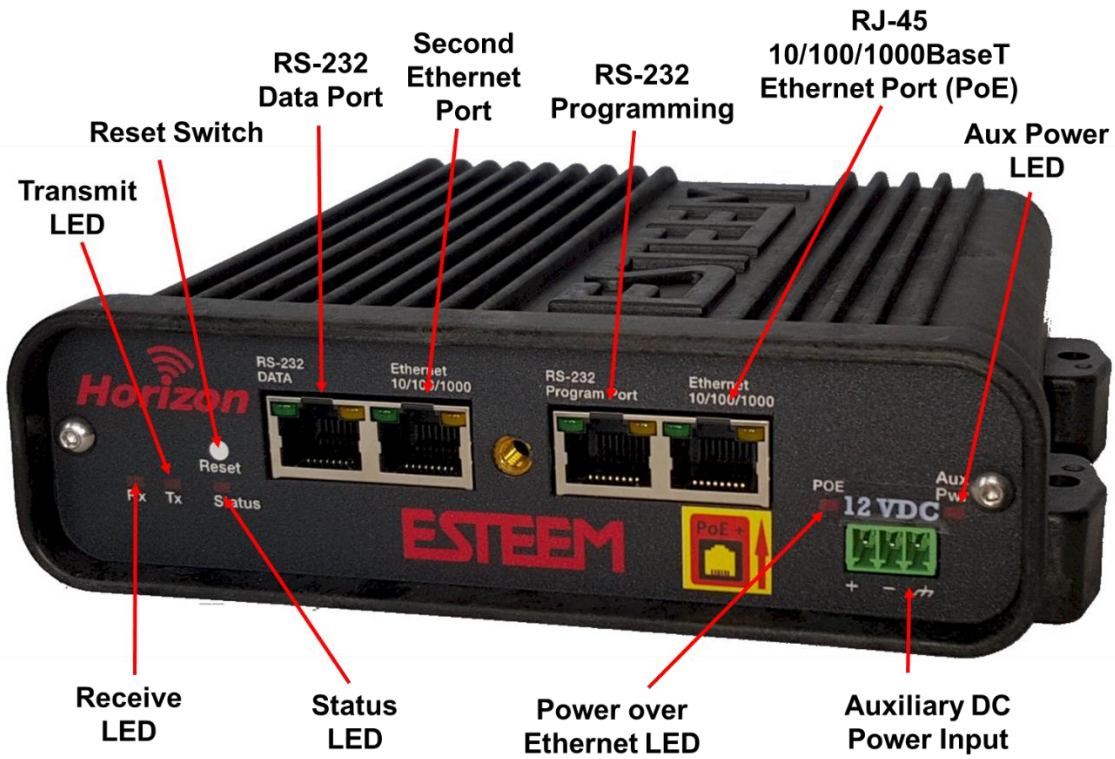
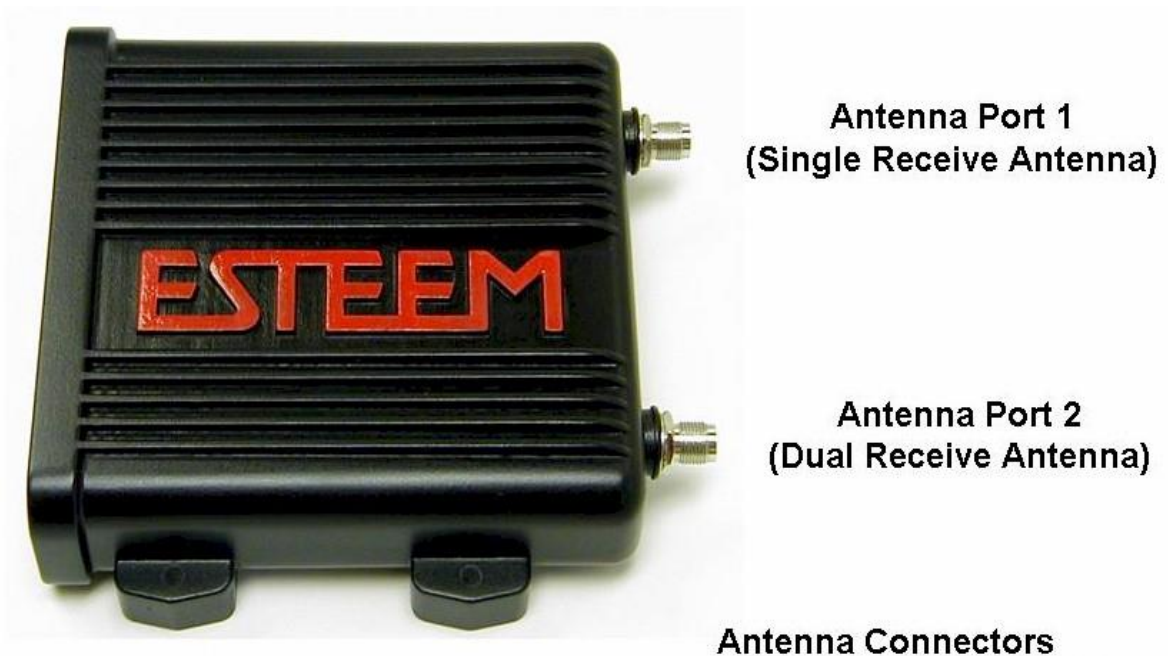


Figure 1: Horizon Front Panel Overview



Antenna Connectors

Figure 2: Horizon Antenna Overview

HORIZON HARDWARE CONFIGURATION

The following steps should be completed to begin configuration of the ESTeem Horizon:

1. Connect the antenna to the antenna connector on the Horizon (Figure 3). For a single antenna use Antenna Port 1 and connect both if using dual antennas.

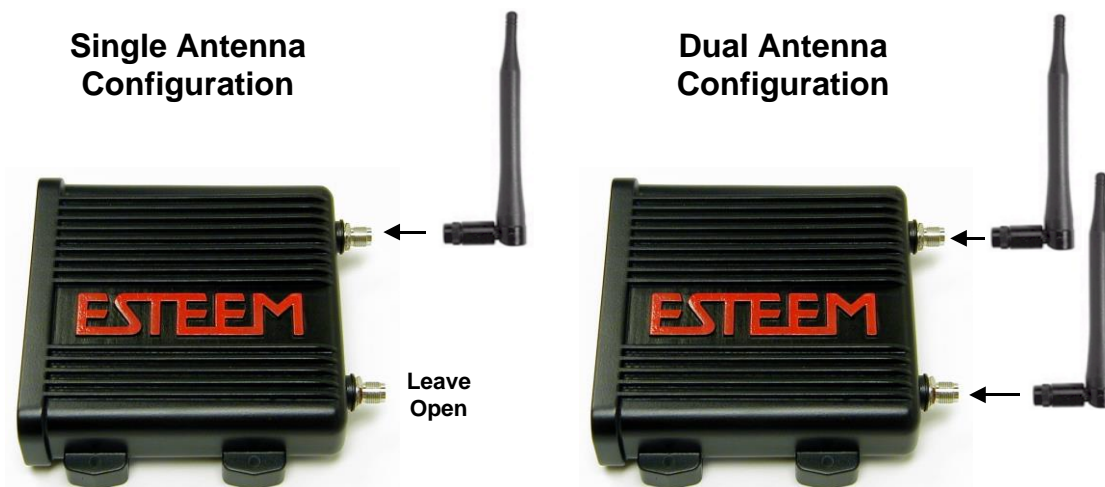
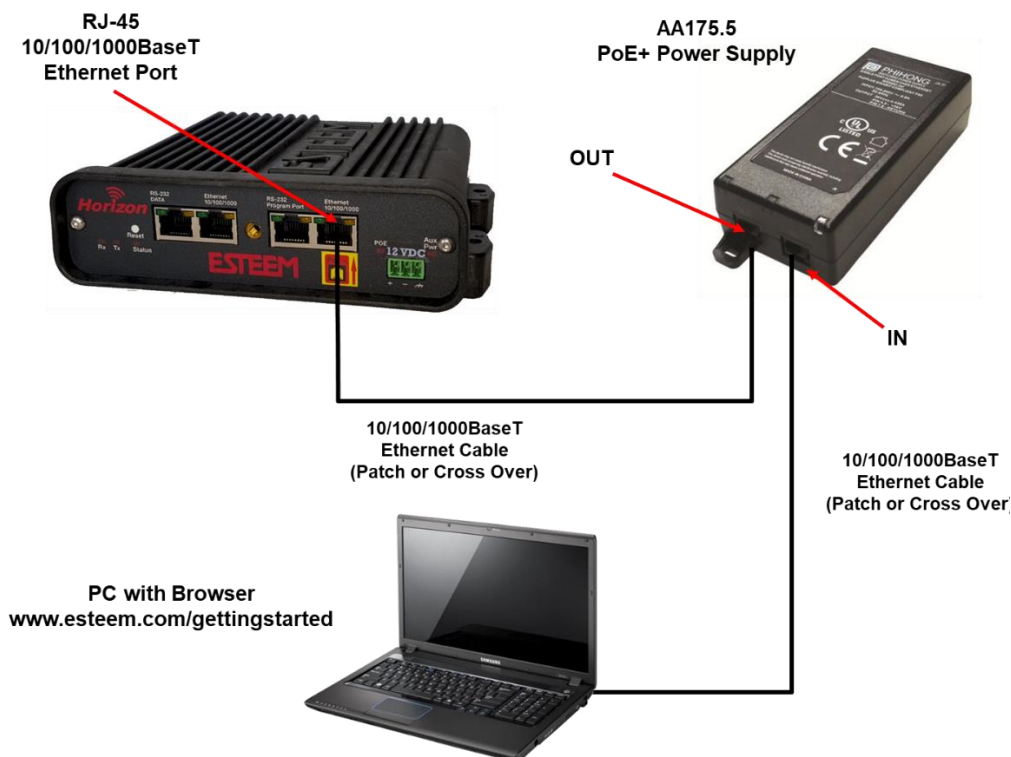


Figure 3: Antenna Configuration Diagram

2. Assemble the Horizon hardware as shown in Figure 4.



Technical Tips:

1. Configure the Horizon prior to mounting.
2. Attach antenna to the Horizon before powering up.

Figure 4: Hardware Configuration Diagram

ESTeem Discovery Utility

The ESTeem Discovery Utility will allow you to configure the IP address on the Horizon radio to match your network regardless of its current IP subnet. This utility will also allow you to update the software in the Horizon and open the web configuration for that wireless modem.

Technical Tip: If your computer is configured for DHCP and not attached to the network, you will need to assign a static IP address to program the Horizon.

Installation

The Discovery Utility can be downloaded from the ESTeem web site (<http://www.esteem.com>).

1. The Discovery Utility is a Java™ based application compatible with any computer operating system (Window, Linux, Mac, etc). The application requires two (2) additional support files to operate:

Java – Downloadable from <http://www.java.com>. The version required will be based upon your operating system.

Note: The installation and updates from Java may try and install additional web browser toolbars. Uncheck the optional installation if they are not desired.

Npcap – Downloadable from <https://nmap.org/download.html>. Select the latest stable version of the utility for your operating system. The Npcap free addition is supported up to Windows version 10. The version required will be based upon your operating system.

2. Once both the above programs have been installed, save the estDiscoverSuite.exe file to any location on your computer such as the Desktop. Double click the estDiscoverSuite.exe program and Figure 5 will be displayed.

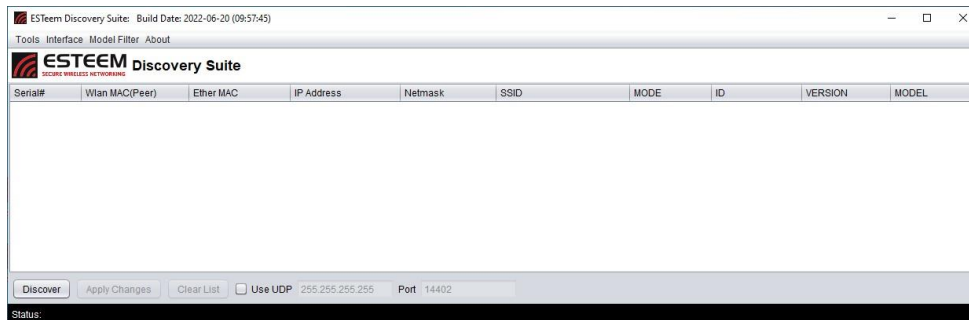


Figure 5: ESTeem Discovery Utility

3. Connect the Horizon modem to your computer either directly to the Ethernet card or through a Switch using a CAT-5e Ethernet cable. The Ethernet port supports Auto-Negotiation, so either a patch cable or crossover cable will work. Press the *Discover* button.

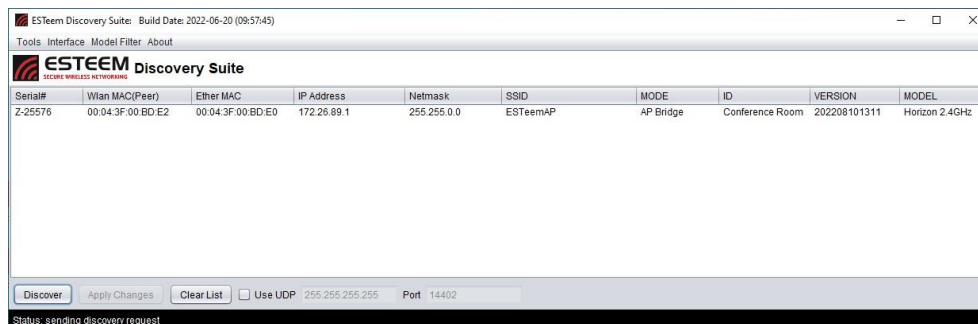


Figure 6: ESTeem Discovery Utility

- The ESTeem Horizon will be displayed (Figure 6). If the ESTeem Horizon is not on the same IP subnet as the computer, double click on the IP and/or Netmask and make the necessary changes. Press the *Apply Changes* button when complete.

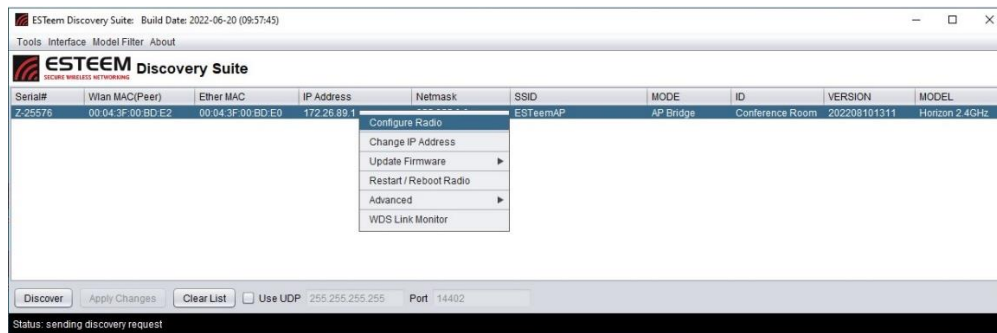


Figure 7: Opening Radio Configuration Software

- If changes were made to the IP address, you will need to press the *Discover* button again to show the changes. Right-mouse click on the Horizon and select *Configure Radio* button to begin programming.

PROGRAMMING EXAMPLE

The Horizon radios will be programmed through the internal web browser accessed by the IP address for each radio. The default IP address programmed in each Horizon radio is listed on the Quality Assurance (QA) sheet in the following format:

172.16.8.1xx (where xx is the last two digits of the serial number)

Default IP Address = Class B Net Mask (255.255.0.0)

Example = Horizon serial number Z-25673 would have the default IP address of 172.16.8.173

Enter the IP address of the Horizon to program in the address line of the browser or use the Discovery Utility (see above) to change the IP to match the computer's IP subnet. The following examples will use the default IP addresses assigned at the factory.

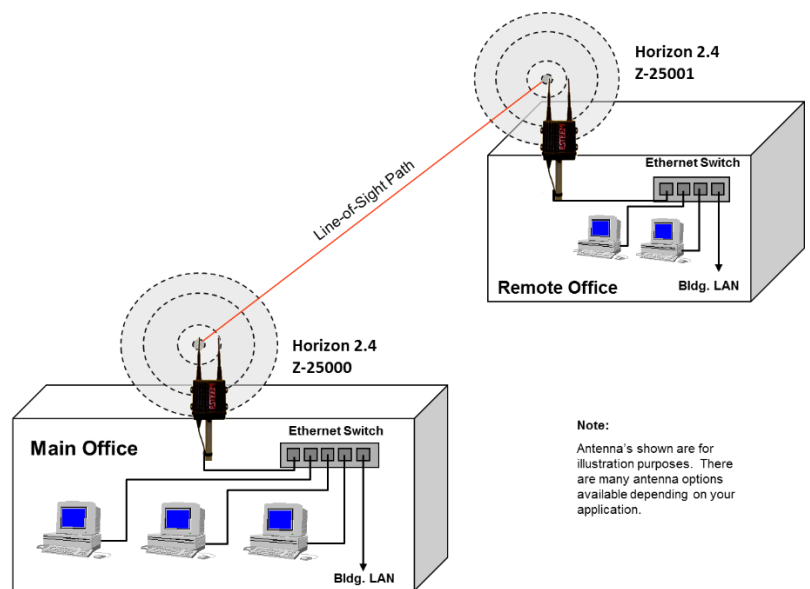


Figure 8: Point to Point Ethernet Bridge Example

Ethernet Bridge Mode Example 1 (Figure 8)

Point to Point Ethernet Bridge

(2) ESTeem Horizon 2.4 GHz

Serial Numbers: Z-25673 (Main Office) and Z-25674 (Remote Office)

Main Office

1. Open the Horizon 2.4 GHz web configuration manager by either selecting “Configure Radio” from the Discovery Utility or typing the IP address in the address line of the web browser.
2. If this is the first configuration of the radio, enter the default Username “admin” and the default password will be the case sensitive, alphanumeric serial number for each radio (Example Z-24000). The serial number can be found on the back label of each radio. Press the Enter key or the “Log in” button on the browser to open the Home page of the radio (Figure 9).

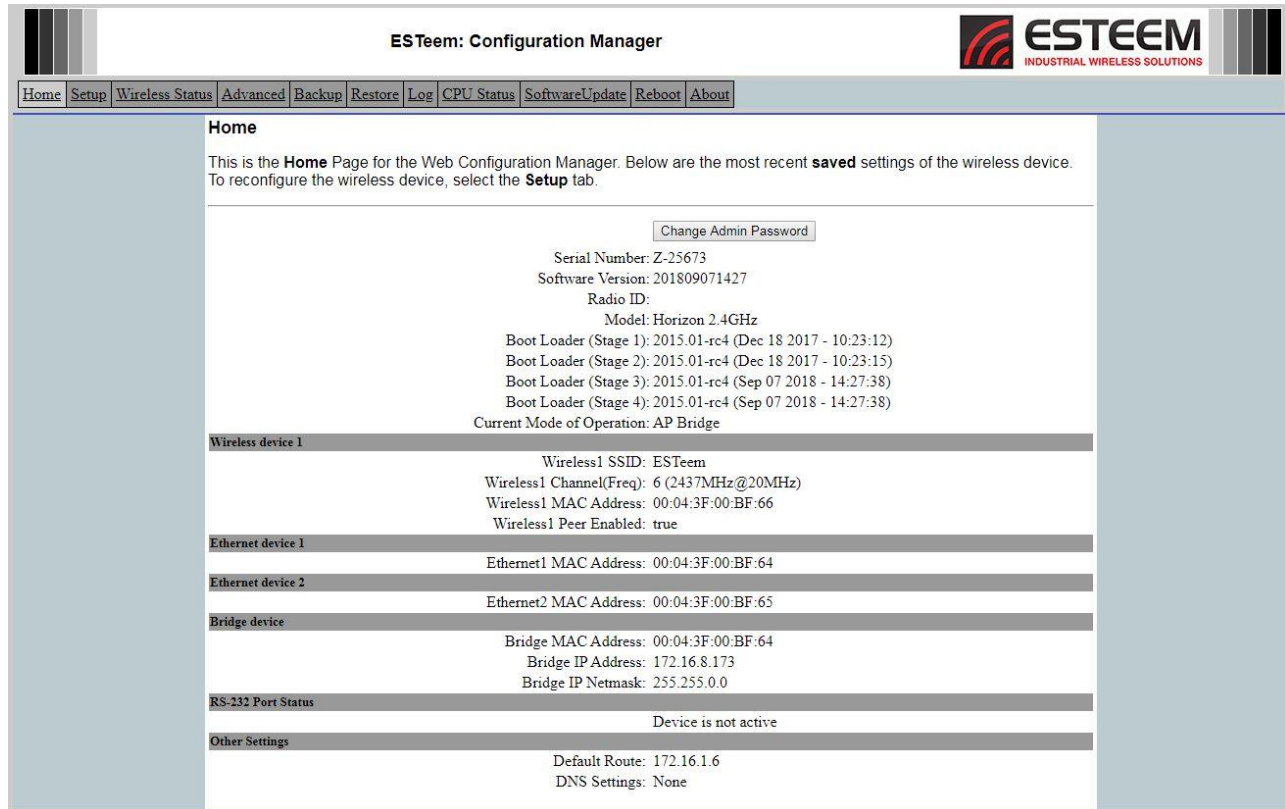


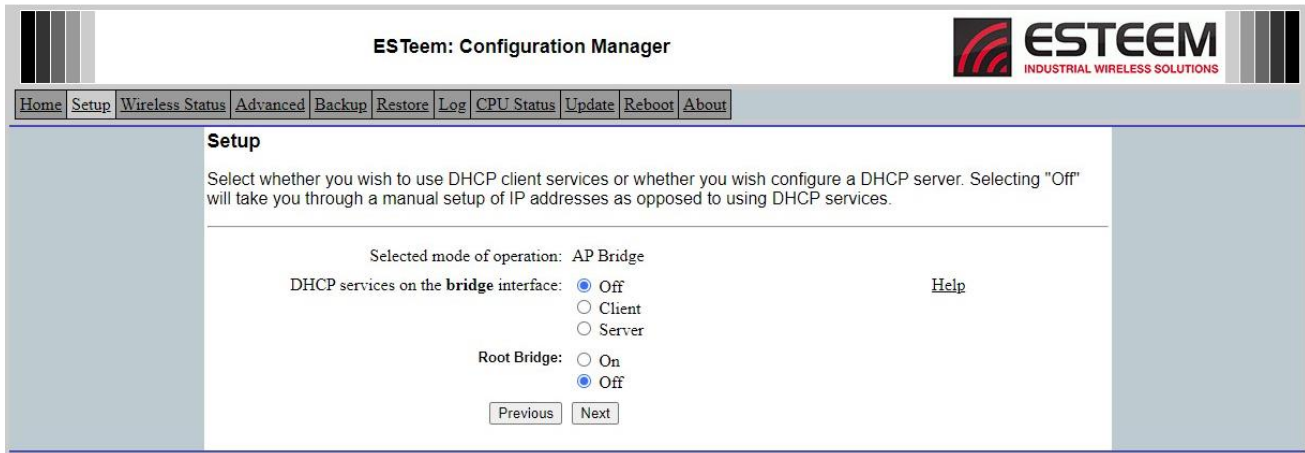
Figure 9: Horizon Home Page

3. Select the Setup tab from the menu. This first menu will set the mode of operation for the Horizon radio. For this example, use the drop-down arrow and select AP Bridge (Figure 10). Press the “Next” button to continue.



Figure 10: Mode of Operation

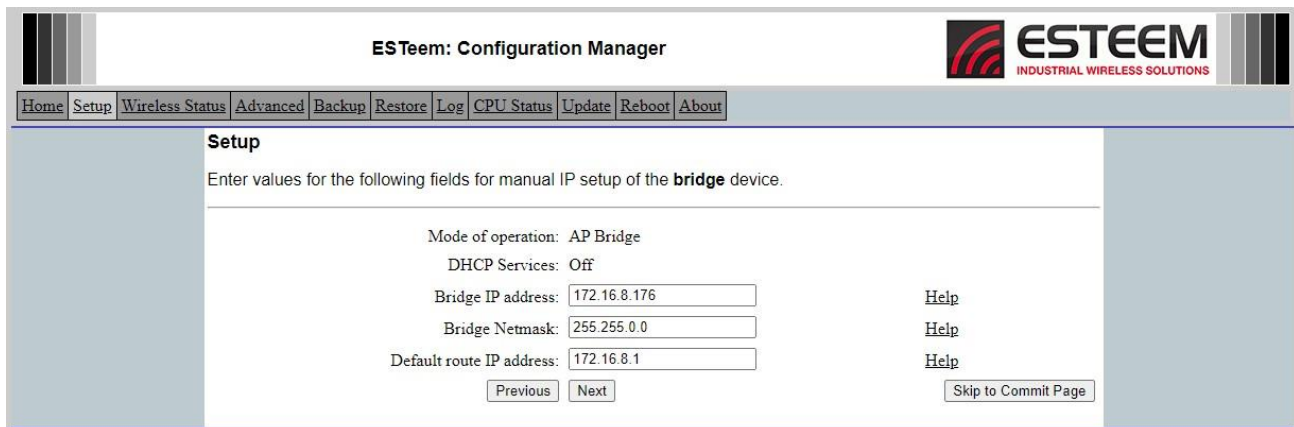
- This next screen (Figure 11) sets the DHCP setting for the Ethernet port on the radio. The Ethernet port on the Horizon radio can be configured as either a DHCP client or server as required. The Root Bridge is used at the Master site in a Mesh configuration so it will not be used in this example. To use a fixed IP address, as in this example, select the Off radial and press the “Next” button to continue.



The screenshot shows the ESTeem Configuration Manager interface. At the top, there is a navigation menu with options: Home, Setup, Wireless Status, Advanced, Backup, Restore, Log, CPU Status, Update, Reboot, and About. The main content area is titled "Setup" and contains the following text: "Select whether you wish to use DHCP client services or whether you wish configure a DHCP server. Selecting 'Off' will take you through a manual setup of IP addresses as opposed to using DHCP services." Below this text, it states "Selected mode of operation: AP Bridge". The "DHCP services on the bridge interface:" section has three radio button options: "Off" (selected), "Client", and "Server". The "Root Bridge:" section has two radio button options: "On" and "Off" (selected). At the bottom, there are "Previous" and "Next" buttons. A "Help" link is also present.

Figure 11: DHCP Settings

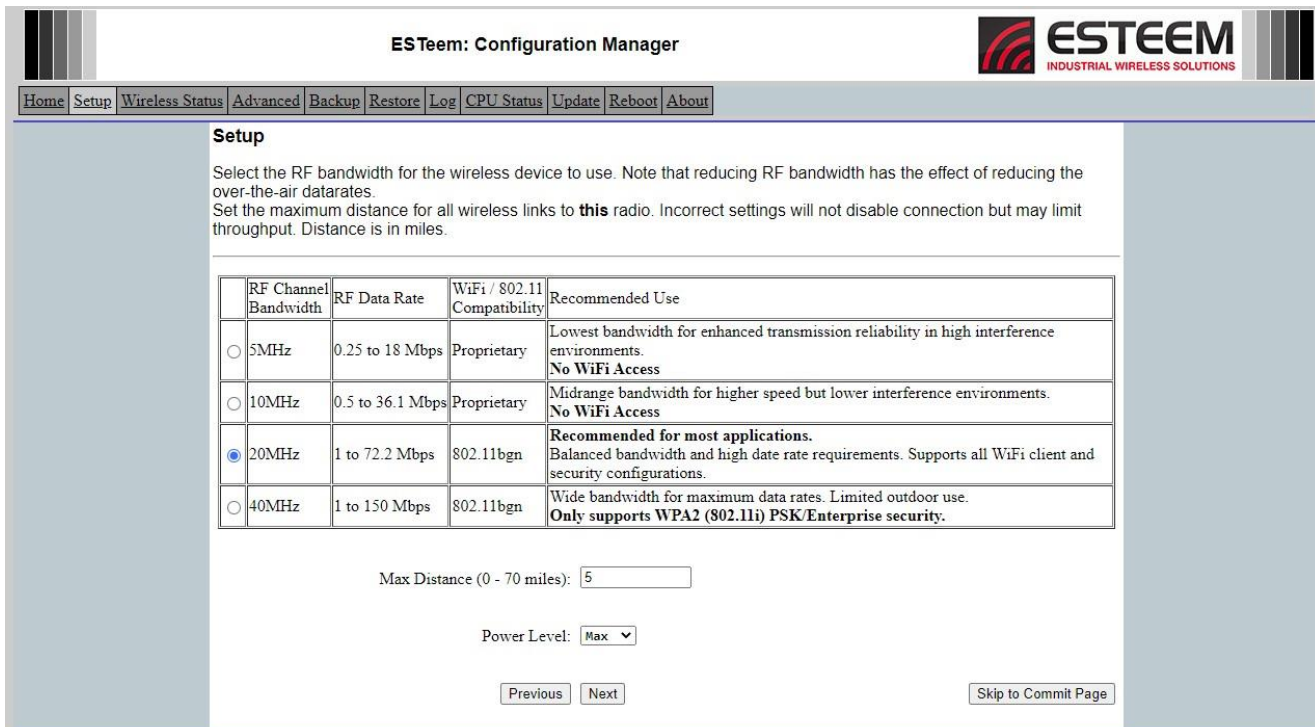
- Enter the IP address, IP Netmask and default route IP (gateway) address for the radio being programmed (Figure 12). Press the “Next” button to proceed.



The screenshot shows the ESTeem Configuration Manager interface. At the top, there is a navigation menu with options: Home, Setup, Wireless Status, Advanced, Backup, Restore, Log, CPU Status, Update, Reboot, and About. The main content area is titled "Setup" and contains the following text: "Enter values for the following fields for manual IP setup of the bridge device." Below this text, it states "Mode of operation: AP Bridge" and "DHCP Services: Off". There are three input fields: "Bridge IP address:" with the value "172.16.8.176", "Bridge Netmask:" with the value "255.255.0.0", and "Default route IP address:" with the value "172.16.8.1". Each input field has a "Help" link to its right. At the bottom, there are "Previous" and "Next" buttons, and a "Skip to Commit Page" button.

Figure 12: IP Addressing

- The next screen is the configuration for the RF Channel Bandwidth, setting the maximum distance and radio's output power (Figure 13). The RF channel bandwidth is how wide a frequency channel the Horizon radio will operate. Changes to the channel bandwidth will affect RF data rates and compatibility with WiFi or older radio series. All radios in the same network must use the same bandwidth. Set the maximum (max) distance setting to the furthest wireless link with which the Horizon being programmed will communicate. If there are more than one remote radio connections, set the max distance to the furthest radio link. The Power Level will only need adjustment if the radios are used in very close proximity to each other. Press the "Next" button to proceed.



ESTeem: Configuration Manager

ESTEEM
INDUSTRIAL WIRELESS SOLUTIONS

Home Setup **Wireless Status** Advanced Backup Restore Log CPU Status Update Reboot About

Setup

Select the RF bandwidth for the wireless device to use. Note that reducing RF bandwidth has the effect of reducing the over-the-air data rates.
Set the maximum distance for all wireless links to **this** radio. Incorrect settings will not disable connection but may limit throughput. Distance is in miles.

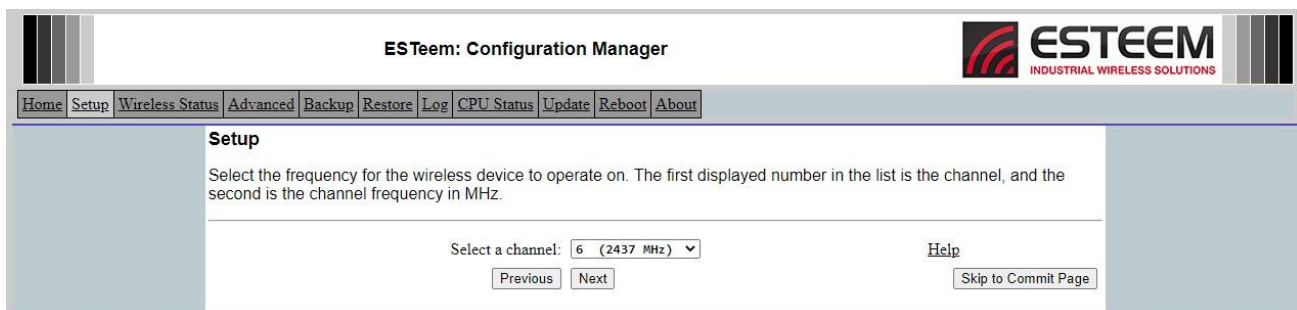
RF Channel Bandwidth	RF Data Rate	WiFi / 802.11 Compatibility	Recommended Use
<input type="radio"/> 5MHz	0.25 to 18 Mbps	Proprietary	Lowest bandwidth for enhanced transmission reliability in high interference environments. No WiFi Access
<input type="radio"/> 10MHz	0.5 to 36.1 Mbps	Proprietary	Midrange bandwidth for higher speed but lower interference environments. No WiFi Access
<input checked="" type="radio"/> 20MHz	1 to 72.2 Mbps	802.11bgn	Recommended for most applications. Balanced bandwidth and high data rate requirements. Supports all WiFi client and security configurations.
<input type="radio"/> 40MHz	1 to 150 Mbps	802.11bgn	Wide bandwidth for maximum data rates. Limited outdoor use. Only supports WPA2 (802.11i) PSK/Enterprise security.

Max Distance (0 - 70 miles):

Power Level:

Figure 13: RF Channel Bandwidth

- Select the radio frequency channel for operation. All radios in the same network must use the same frequency channel. For this example, Channel 6 (2.437 GHz) is selected (Figure 14). Press the "Next" button to proceed.



ESTeem: Configuration Manager

ESTEEM
INDUSTRIAL WIRELESS SOLUTIONS

Home Setup **Wireless Status** Advanced Backup Restore Log CPU Status Update Reboot About

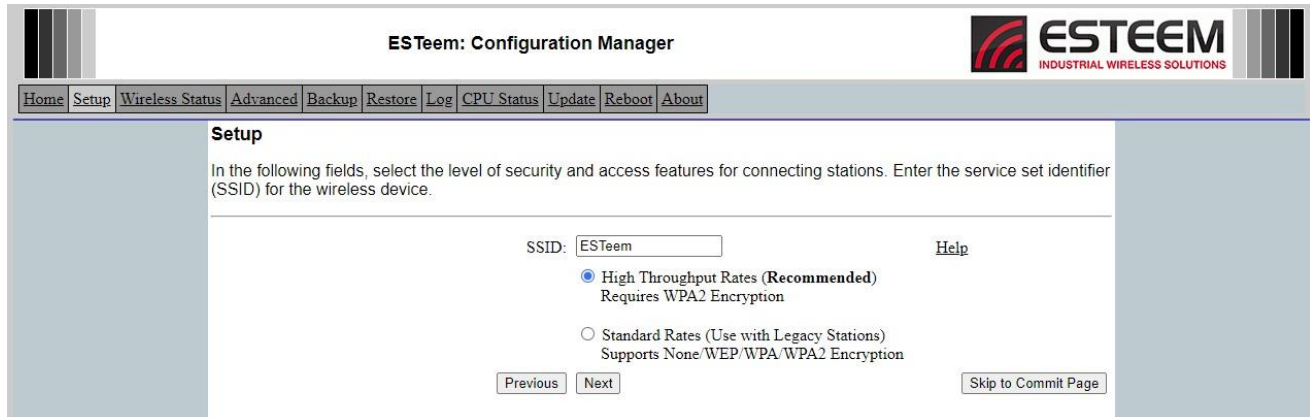
Setup

Select the frequency for the wireless device to operate on. The first displayed number in the list is the channel, and the second is the channel frequency in MHz.

Select a channel:

Figure 14: RF Frequency Channel

8. The next screen (Figure 15) will set the SSID (network name) and Encryption level for mobile devices connecting to the Horizon radio as an Access Point (AP). Even if there are no mobile devices in the network, the AP configuration must be completed. The SSID can be any letter and number combination up to 32 characters and is case sensitive. The recommendation is to use the High Throughput Rates for mobile clients. If older ESTeem models or WiFi clients must be supported, select the Standard Rates. Press the “Next” button to proceed.



The screenshot shows the 'ESTeem: Configuration Manager' interface. At the top, there is a navigation menu with 'Home', 'Setup', 'Wireless Status', 'Advanced', 'Backup', 'Restore', 'Log', 'CPU Status', 'Update', 'Reboot', and 'About'. The 'Setup' tab is selected. Below the navigation, the page title is 'Setup'. The main content area contains the following text: 'In the following fields, select the level of security and access features for connecting stations. Enter the service set identifier (SSID) for the wireless device.' Below this text, there is a text input field for 'SSID' containing 'ESTeem' and a 'Help' link. There are two radio button options: 'High Throughput Rates (Recommended) Requires WPA2 Encryption' (which is selected) and 'Standard Rates (Use with Legacy Stations) Supports None/WEP/WPA/WPA2 Encryption'. At the bottom, there are 'Previous', 'Next', and 'Skip to Commit Page' buttons.

Figure 15: SSID

9. If High Throughput Rates was selected on the previous screen, Figure 16 will be displayed. Select the appropriate level of encryption for the mobile clients (see Appendix D – Security for full details) using either Pre-Shared Key (PSK) or Enterprise. The Protected Management Frames is a new feature available for client devices using WPA2 and must match both the client and AP (either ON or OFF). The Hide Beacon SSID will keep the Horizon radio from broadcasting its own SSID to mobile devices. For this example, mobile clients will not be used so all setting will be left at default. Press the “Next” button to proceed.



The screenshot shows the 'ESTeem: Configuration Manager' interface. At the top, there is a navigation menu with 'Home', 'Setup', 'Wireless Status', 'Advanced', 'Backup', 'Restore', 'Log', 'CPU Status', 'Update', 'Reboot', and 'About'. The 'Setup' tab is selected. Below the navigation, the page title is 'Setup'. The main content area contains the following text: 'Enter/select values for the following fields to set up wireless security features for the wireless device.' Below this text, there are three sections: 'Select an encryption type:' with four radio button options: 'WPA2 (CCMP/AES-128) PSK' (selected), 'WPA2 (CCMP/AES-128) Enterprise', 'WPA2 (CCMP/AES-256) PSK', and 'WPA2 (CCMP/AES-256) Enterprise'; 'Protected Management Frames:' with two radio button options: 'On' and 'Off' (selected); and 'Hide Beacon SSID:' with two radio button options: 'On' and 'Off' (selected). Each section has a 'Help' link. At the bottom, there are 'Previous' and 'Next' buttons.

Figure 16: AP Encryption Level

10. If using the default setting of PSK from the previous screen, the passphrase entry will be displayed (Figure 17). The passphrase is randomized by default but used to generate an encryption key on both the AP and client device and must be entered exactly the same. For this example, mobile clients will not be used so all setting will be left at default. Press the “Next” button to proceed.

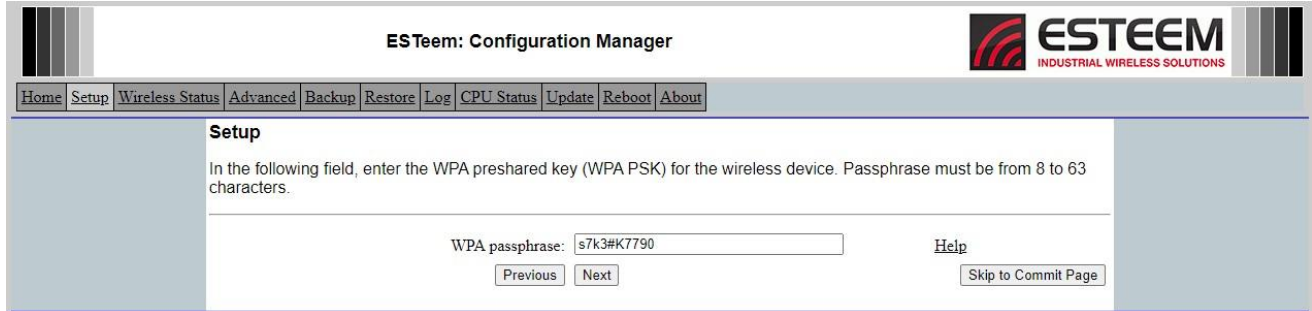


Figure 17: Passphrase Entry

11. The Access Control List (ACL) configuration is the next screen (Figure 18). This is last AP configuration screen for the Horizon and will be left at default for this example. The ACL is a very powerful tool by allowing (or denying) specific mobile clients to connect to the Horizon as an AP. The mobile client’s unique MAC address can be entered in the list and then set to allow (or deny) only those in the list. This configuration will only affect mobile clients, so it is not required to enter any Horizon radio in the network configured as an AP. For this example, mobile clients will not be used so all setting will be left at default. Press the “Next” button to proceed.

Technical Tip: To disable **ALL** mobile client access including WiFi clients, set the ACL to “allow only those station MAC s in the list below” and leave the list blank. The Horizon will then reject all client requests.

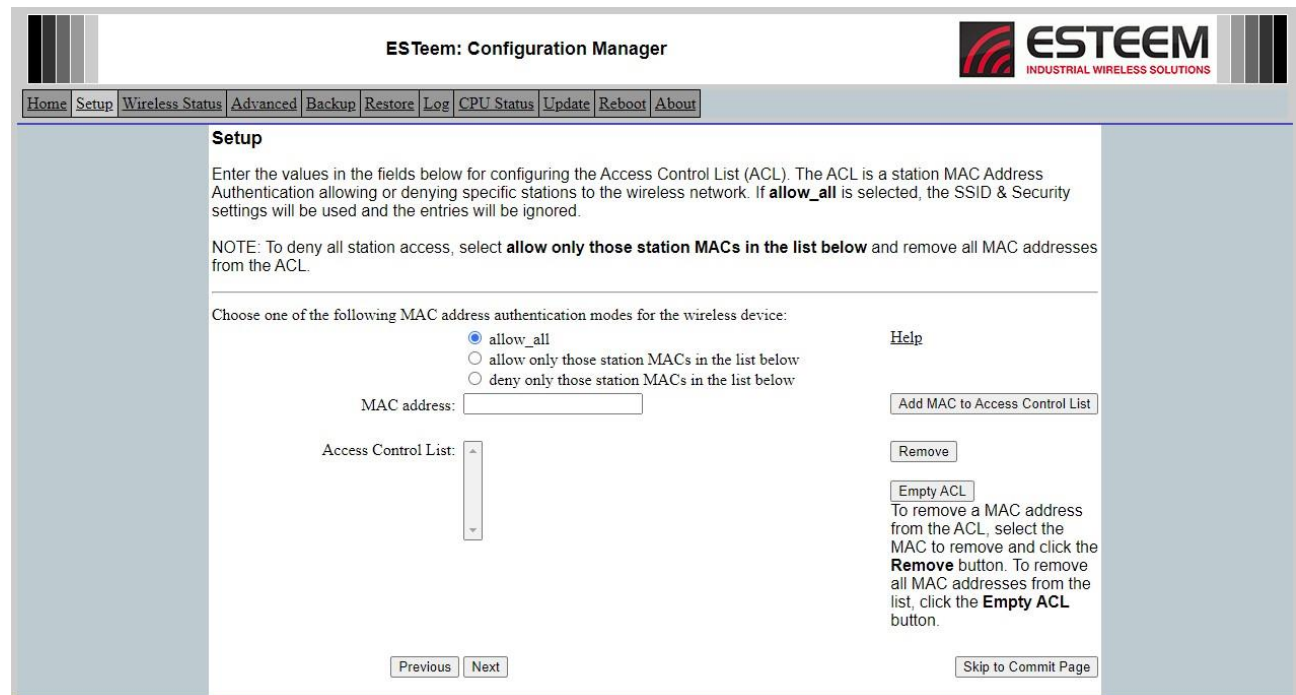
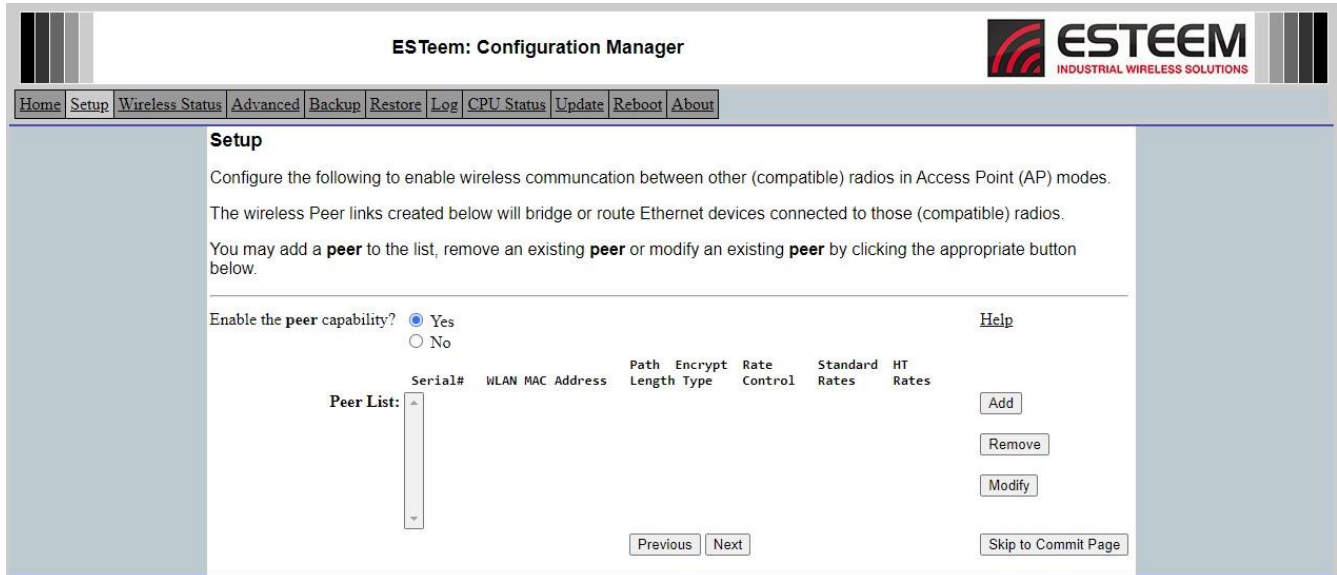



Figure 18: Access Control List

12. The next screen to be displayed will be the Peer Configuration (Figure 19). Most applications with the Horizon radios will be between fixed (non-mobile) stations configured as Access Points (Bridge, Router or Firewall). The peer configuration will create a wireless link between Horizon radios configured as AP's.

This example application is to create a wireless Ethernet bridge between two (2) Horizon 2.4 GHz radios both configured in AP Bridge mode. Each radio will be a "peer" of the other so the peer capability must be enabled. For this example application, the Main Office will enter the Remote Office's Horizon as a peer link. Press the "Add" button on the right of the screen to proceed.



ESTeem: Configuration Manager

 **ESTEEM**
INDUSTRIAL WIRELESS SOLUTIONS

Home Setup **Wireless Status** Advanced Backup Restore Log CPU Status Update Reboot About

Setup

Configure the following to enable wireless communication between other (compatible) radios in Access Point (AP) modes.

The wireless Peer links created below will bridge or route Ethernet devices connected to those (compatible) radios.

You may add a **peer** to the list, remove an existing **peer** or modify an existing **peer** by clicking the appropriate button below.

Enable the **peer** capability? Yes No [Help](#)


Serial#	WLAN MAC Address	Path Length	Encrypt Type	Rate Control	Standard Rates	HT Rates
Peer List:						

Figure 19: Peer Configuration

13. The peer entry screen will be displayed (Figure 20). From this page all setting for this peer link can be adjusted. The serial number or wireless MAC (WLAN MAC) of the opposite Horizon will be entered in the first field. The serial number can be either the complete number containing the “Z-” (i.e. Z-25674) or just the numbers as shown in Figure 20. The path length will only need adjustment in certain cases in a Mesh network (see Chapter 7 – Bridge/Meshing for full details). The Rate Control will need to be set to Horizon as the remote is also a Horizon series radio (not a legacy ESTeem 195E radio). The encryption type and key must be identical on both sides of the peer link. The Encryption key can be manually entered or generated by using a Link ID and Passphrase, which must be the same in both radios. For this example, the default key will be used so press the “Default Key” button and the “Create Peer” button to continue.

Technical Tip: If the WLAN MAC address is entered in the peer field, the hexadecimal digits must be separated by full colons. Example – 00:04:3f:01:02:03

ESTeem: Configuration Manager



Home
Setup
Wireless Status
Advanced
Backup
Restore
Log
CPU Status
Update
Reboot
About

Setup - Add a Wireless Peer

To add a new **wireless** peer, enter the (compatible) radio's serial number or wireless lan (WLAN) MAC address, the pather cost, key type, the key and the rate set. Click the "Create Peer" button when complete.

Serial Number or WLAN MAC address:
Enter the (compatible) radio serial number or WLAN MAC address containing 6 colon separated hex bytes.

Path Length (1-256):

Rate Control: **Horizon High Throughput Rates (Recommended)**
Requires CCMP Encryption

195E Standard Rates
Supports None/WEP64/WEP128/TKIP/CCMP Encryption

Encryption type: None
 WEP 64-bit
 WEP 128-bit
 TKIP
 CCMP/AES-128
 CCMP/AES-256

Select the peer link encryption method. Note: the encryption method and key setting **must** be the same on **both** peers.

Link ID:

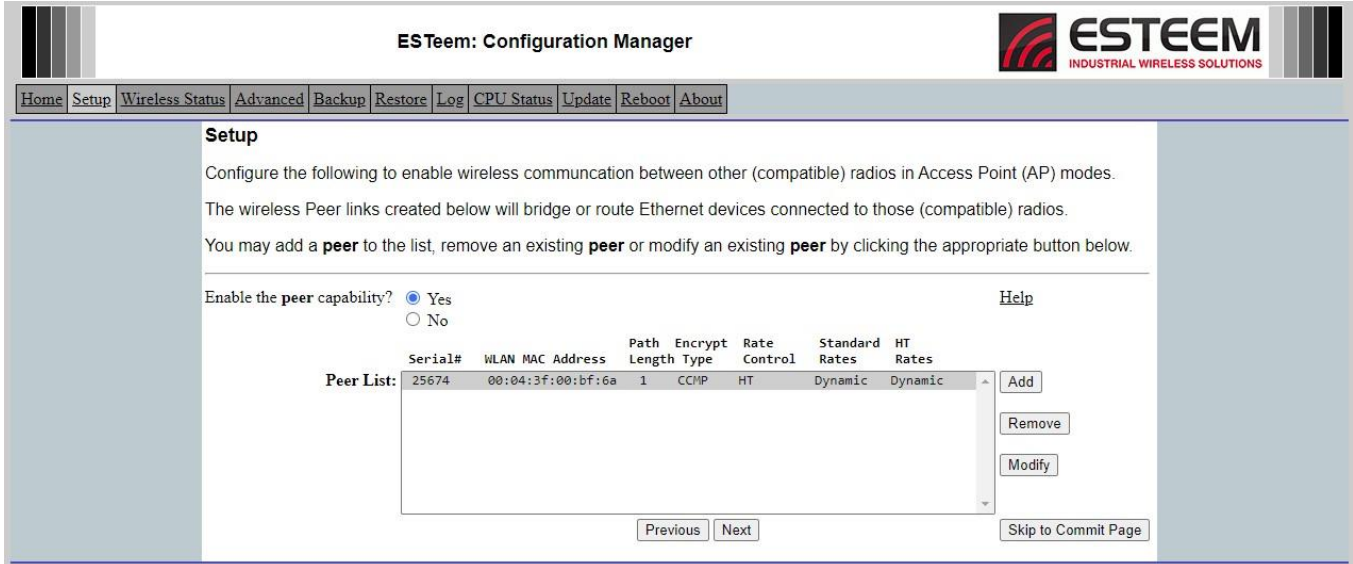
Passphrase:

Status:

Encryption key:
Enter the encryption key as a sequence of hexadecimal 16 bytes. eg. 11:22:33:44:55:66:77:88:99:00:aa:bb:cc:dd:ee:ff

Figure 20: Peer Configuration

14. The main Peer Configuration screen will again be displayed but will now contain an entry Horizon radio peer created in step 13 (Figure 21). If more than one peer is required, press the “Add” button and complete the entry for each peer connection. Only radios directly connected (not mobile devices or other radios through repeater sites) to the Horizon will need to be entered in the peer list. Press the “Next” button to proceed.



ESTeem: Configuration Manager

Home Setup **Wireless Status** Advanced Backup Restore Log CPU Status Update Reboot About

Setup

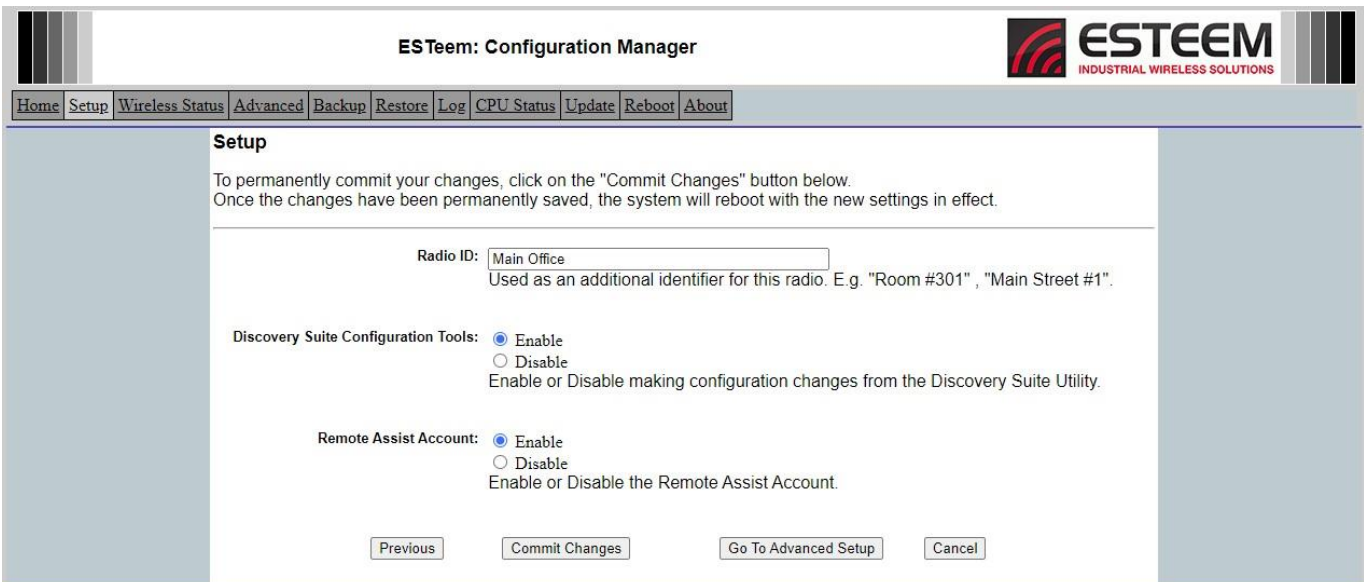
Configure the following to enable wireless communication between other (compatible) radios in Access Point (AP) modes. The wireless Peer links created below will bridge or route Ethernet devices connected to those (compatible) radios. You may add a **peer** to the list, remove an existing **peer** or modify an existing **peer** by clicking the appropriate button below.

Enable the peer capability? Yes No [Help](#)

Serial#	WLAN MAC Address	Path Length	Encrypt Type	Rate Control	Standard Rates	HT Rates	
25674	00:04:3f:00:bf:6a	1	CCMP	HT	Dynamic	Dynamic	<input type="button" value="Add"/> <input type="button" value="Remove"/> <input type="button" value="Modify"/>

Figure 21: Completed Peer Entry

15. The final configuration page will be displayed (Figure 22). The Radio ID is a simple text name for the radio that will help identify it in the larger network. The Discovery Tools and Remote Assistance can be disabled if required for security. Once all entries and selections have been made, press the “Commit Changes” button to complete the programming of the Horizon. The radio will reboot and be ready for operation in approximately 45 seconds.



ESTeem: Configuration Manager

Home Setup Wireless Status **Advanced** Backup Restore Log CPU Status Update Reboot About

Setup

To permanently commit your changes, click on the “Commit Changes” button below. Once the changes have been permanently saved, the system will reboot with the new settings in effect.

Radio ID:
 Used as an additional identifier for this radio. E.g. "Room #301", "Main Street #1".

Discovery Suite Configuration Tools: Enable Disable
 Enable or Disable making configuration changes from the Discovery Suite Utility.

Remote Assist Account: Enable Disable
 Enable or Disable the Remote Assist Account.

Figure 22: Completed Peer Entry

Remote Office

The configuration of the Horizon for the Remote Office will be almost identical to the configuration for the Main Office. Only a unique Bridge IP address will be entered on Step #5 and the Peer configuration screen for the Remote Office Horizon radio will contain the serial number of the Main Office (Figure 23).

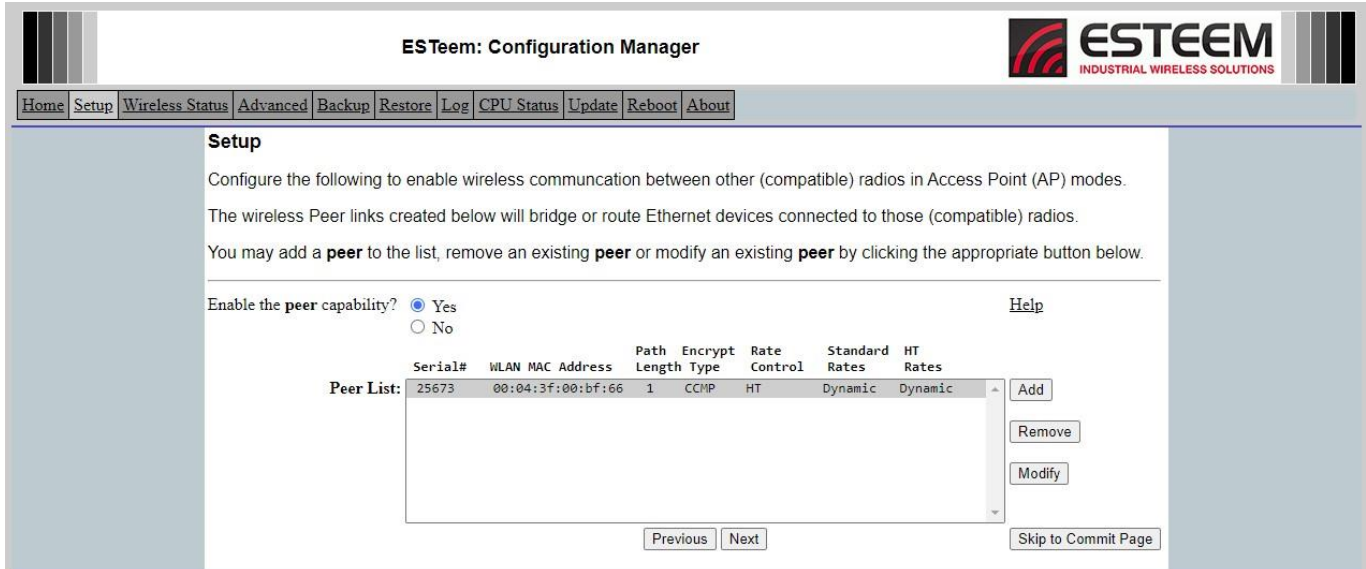


Figure 23: Remote Office Peer Configuration

Once both Horizon radios have been programmed and finished rebooting, the Peer link and the Ethernet bridge link will be enabled. The Status LED on the face of both Horizon radios will illuminate and Ethernet devices can be accessed across the radios.

Testing Communication Link

After you have configured at least two of the Horizon radios for operation, you can verify communication with each the following steps:

Status Light – The quickest source of link status is to view the Status LED on the face of the Horizon (Figure 24). If the Status light is solid, the Horizon has a connection to another Horizon configured as a Peer link or a client has connected to it as an Access Point (AP).



Figure 24: Connection Status Light

Wireless Status Screen

To view detailed information on the status of the communication link (such as connection speed, signal strength and last update time) you can open the Wireless Status Screen from the Web Interface. After logging into the radio, press the Wireless Status tab at the top of the screen to go to the Wireless Status page (Figure 25).

Peers - The Peer Table will display all connected Horizons configured as a Peer link to this ESTeem by their Wireless (WLAN) MAC address.

Received Signal Strength - The AntSignal column will display the receive signal strength for each of the two antenna ports. The first antenna port is listed as A1 while the second (receive only) port is listed as A2. You may receive a signal level on A2 although no antenna is attached. This signal strength value is listed in dBm.

Last RX and Data Rate - This is the time of the last received data packet. When monitoring the status menu, it is important to note the time the last transmission was updated so you are not looking at "stale" data. A value of 0 in the time represents a current (less than 1 second) receive value. The current data rate of the last data packet received will also be shown by the Horizon. The speed is displayed in Mbps. For example, in Figure 25 a LastRx value of 0@72.2 represents an RF packet received within the last second running at 72.2Mbps.

Wireless Status									
This page is a summary view of the wireless device.									
wlan0 Associated Stations									
MAC Addr	Ant	Signal	A1	A2	LastRx (sec@Mbps)				
c6:c2:fb:32:6b:c3		-60	-61		0@144.4				
12:e1:ea:16:e6:21		-61	-70		38@1				
62:6a:06:f6:89:73		-62	-63		1@1				
62:a4:eb:ea:27:6d		-65	-62		0@1				
wlan1 Associated Stations									
MAC Addr	Ant	Signal	A1	A2	LastRx (sec@Mbps)				
be:d9:50:90:e8:b1		-65	-60		5@24				
wlan0 Peers									
MAC Addr	Ant	Signal	A1	A2	LastRx (sec@Mbps)	SSID	Port State	Radio ID	Peer Device
00:04:3f:00:bf:66		-43	-55		0@72.2	ESTeemTB	FORWARDING	Test Bench	wlan0wds0
wlan1 Peers									
MAC Addr	Ant	Signal	A1	A2	LastRx (sec@Mbps)	SSID	Port State	Radio ID	Peer Device
Access Points									
MAC Addr	Ant	Signal	A1	A2	LastRx (sec@Mbps)	SSID	Radio ID		
00:04:3f:00:bf:66		-43	-54		0@72.2	ESTeemTB	Test Bench		
a8:9a:93:a9:39:c6		-76	-79		0@1	UniWest_SE			
b0:a7:37:45:41:d9		-52	-53		0@6	DIRECT-roku-649			
fc:ec:da:62:e5:62		-92	-95		18@1	wines			

Figure 25: Peer Status

Note: The ESTeem Horizon uses spread spectrum technology that analyzes each data packet for signal strength and data quality (strength vs. noise). The higher your signal, the more background noise you can sustain without causing degradation in the data transfer. This is also true for lower signal strengths with a very low background noise. These values are provided for guidance and if you have any questions about the values in your application, please contact ESTeem Customer Support at 509-735-9092 or email your application to support@esteem.com.

Modem ID - This is Modem ID for the opposite ESTeem peer.

Ping Testing - The easiest method for testing the efficiency of data flow between the radios is to conduct a Ping test to the opposite modem's IP address. This will test all links in the Ethernet bridge.

```

Administrator: Command Prompt
C:\Users\Office>ping 172.16.8.174 -t

Pinging 172.16.8.174 with 32 bytes of data:
Reply from 172.16.8.174: bytes=32 time=1ms TTL=64
Reply from 172.16.8.174: bytes=32 time=2ms TTL=64
Reply from 172.16.8.174: bytes=32 time=2ms TTL=64
Reply from 172.16.8.174: bytes=32 time=1ms TTL=64
Reply from 172.16.8.174: bytes=32 time=1ms TTL=64
Reply from 172.16.8.174: bytes=32 time=1ms TTL=64
Reply from 172.16.8.174: bytes=32 time=5ms TTL=64
Reply from 172.16.8.174: bytes=32 time=1ms TTL=64
Reply from 172.16.8.174: bytes=32 time=4ms TTL=64
Reply from 172.16.8.174: bytes=32 time=4ms TTL=64
Reply from 172.16.8.174: bytes=32 time=1ms TTL=64
Reply from 172.16.8.174: bytes=32 time=2ms TTL=64

Ping statistics for 172.16.8.174:
    Packets: Sent = 12, Received = 12, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 5ms, Average = 2ms
Control-C
^C
C:\Users\Office>
  
```