

TESTING COMMUNICATION LINK

After you have configured at least two of the Model 195Ep wireless Ethernet modems for operation, you can verify communication with each the following steps:

Status Light

The quickest source of link status is to view the Status Light on the face of the 195Ep (Figure 1). If the Status light is solid, the Model 195Ep has a connection to another Model 195Ep listed in the Peer Table.

Status LED
Solid Red on Link



Figure 1: Connection Status Light

Status Screen/Peer Table

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 Status Screen from the Web Interface. After press the Status tab at the top of the screen the Status: Summary will be displayed showing the status of all ports and memory in the 195Ep. Under the Wireless Status heading click on the [View Peer Table](#) (Figure 2). The Peer Table will list all other 802.11b or 802.11g wireless activity seen by the 195Ep and how it is classified.

EST195E Web Configuration Manager

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Status: Peer Table

This page is a summary view of the peer table for WLAN device wlan0. Click on a given MAC address for more details about that peer.

[Return to Status Summary Page](#)

Associated Stations

None

Opposite Modem's Wireless MAC

Receive Signal Strength (dBm)

Repeater Peers

MAC Addr	Signal	LastRx (sec@kbps)	Modem ID
00:04:3f:00:09:66	-36	0@11000	Remote ← Peer Modem ID

Access Points

MAC Addr	Signal	LastRx (sec@kbps)	Enc	SSID
00:02:2d:03:2a:78	-70	0@2000	y	← Other Access Points
00:02:2d:3f:7d:d3	-89	8@2000	y	
00:04:3f:00:09:66	-36	0@11000	y	

Figure 2: Repeater Peer Table

*Note: The data rate displayed is **not necessarily** indicative of the RF data rate between the ESTEems. The rate show in the Repeater Peer table will be the last RF packet, which could consist of either data, repeater beacon or network probes.*

Repeater Peers - The Peer Table will display all connected 195Eps configured to repeat to this ESTeem by their Wireless (WLAN) MAC address.

Received Signal Strength – This is the first of the two numbers listed in the block. This signal strength value is listed in dBm.

Last RX – 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.

Current Data Rate – This is the current speed the last data packet received by the Model 195Ep. This may not be the data rate between the radio modems. Note that the speed is listed in kbps, so that 11000 kbps is equal to 11 Mbps.

Note: The ESTeem Model 195Ep 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 e-mail your application to support@esteem.com.

Modem ID – This is Modem ID for the opposite repeater peer.

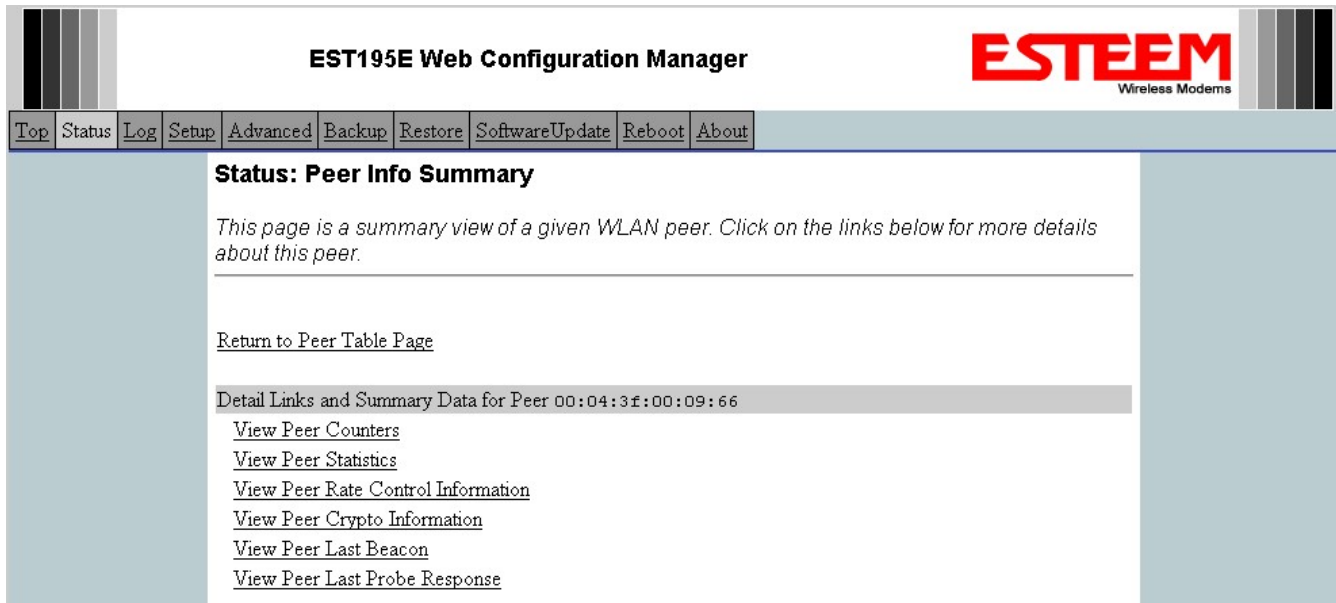


Figure 3: Peer Summary Table

Viewing RF Data Rates

The value shown on the Peer Status Screen for data rate may not be the actual rate of the RF link. To view the link information, click on the Opposite Modems WLAN MAC address in the Repeater Peer list (Figure 2) and further link status information will be displayed (Figure 3).

Once loaded, click on View Peer Rate Control Information. (Figure 4)

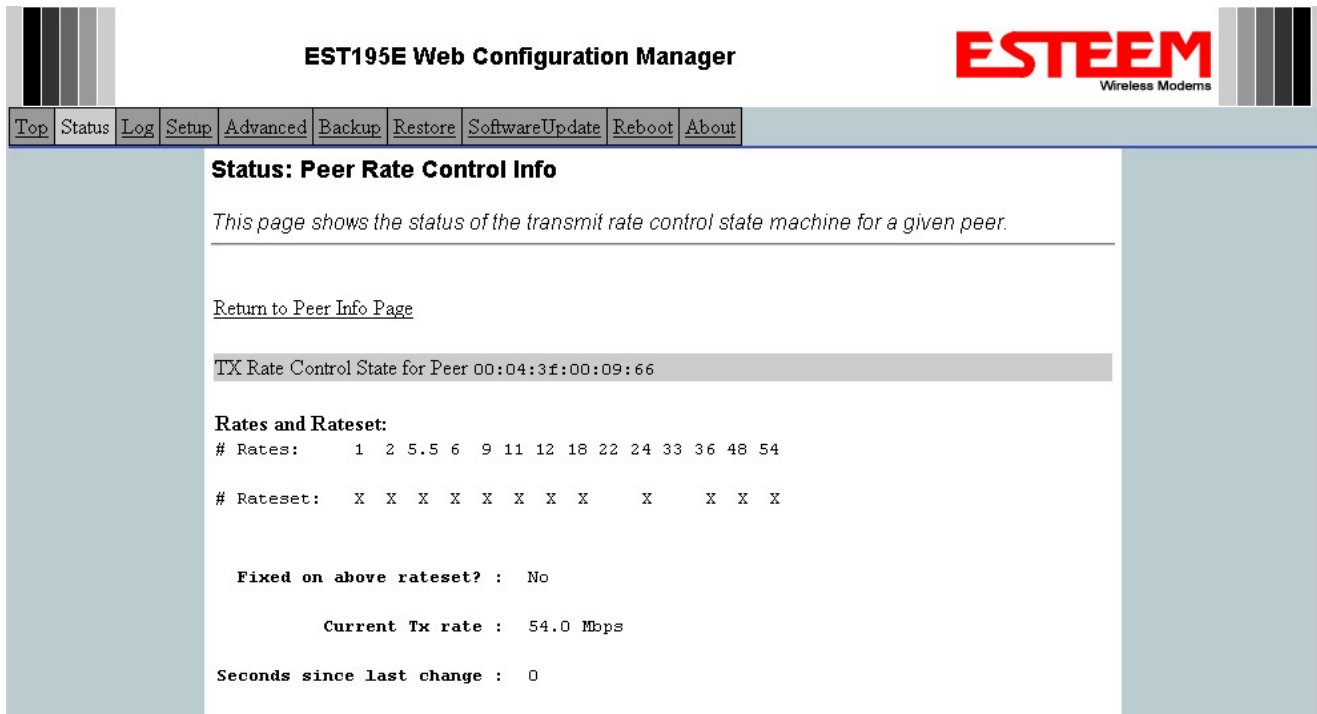


Figure 4: Rate Control Information

The value of the Current TX rate is the RF data rate between the two ESTeem Model 195Ep.

ETHERSTATION STATUS PROGRAM

When configured for EtherStation mode, the Web Configuration Manager is turned off. To gather information from the 195Ep on Access Point, link status and received signal strength you will need to install the ESTeem 195E Status Utility. This software program is found on the AA109 Resources Disk or available from the ESTeem web site. To install the utility, please complete the following:

ESTEEM DISCOVERY UTILITY

The ESTeem Discovery Utility will allow you to configure the IP address on the Model 195Ep to match your network. Install the Discovery Utility on your computer by inserting the Resource Disk in your CD drive.

Note: The ESTeem Resource Disk is stand-alone copy of the ESTeem Web site (Figure 5). Navigation of the Resource Disk is as simple as using your web browser. All technical documentation, User's Manuals and the ESTeem Utility Program is available on the disk.

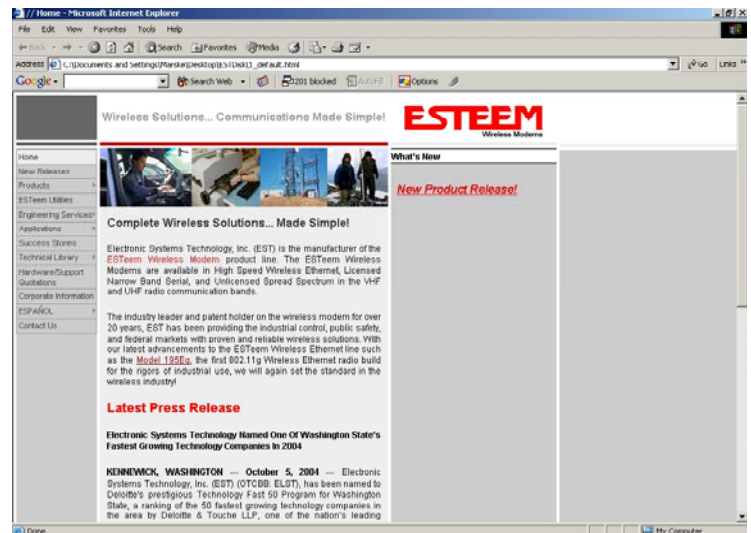


Figure 5: ESTeem Resource Main Page

1. Place the ESTeem Utility CD in your CD-ROM drive. The CD will auto load the ESTeem main page

Note: If the page does not auto load, open your web browser and set your address line to D:\I_default.html (Where D: is

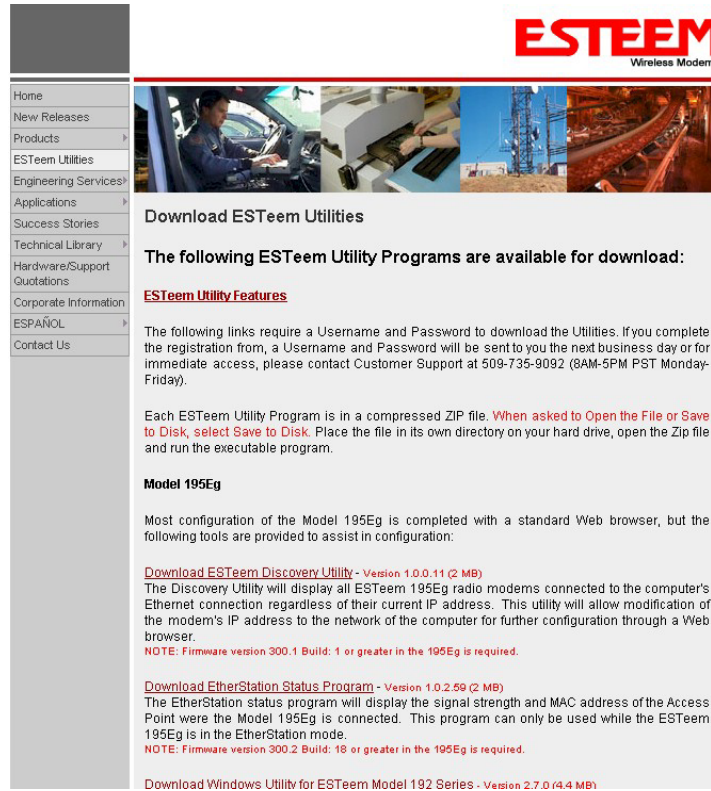


Figure 6: Discovery Utility Download

the drive letter for your CD-ROM drive).

- From the Main Page select ESTEEM Utilities and click on Download EtherStation Status Utility

Note: This program is saved in a compressed file format. Microsoft Windows XP® will open the file directly, but other operating systems will require a common compression program such as WinZip available for download at <http://www.winzip.com>

- Double click on the 195EStatusSetup.exe file listed in the window to install the program.
- Connect the Model 195Ep to your computer either direct to the Ethernet card or through a HUB/Switch using a CAT-5e Ethernet cable. The Ethernet port on the 195Ep supports Auto-Negotiation so either a patch cable or crossover cable will work. Open the ESTEEM Status Program and a status icons will appear in your system tray (Figure 7). When the status menu is opened from the system tray, the status window will be displayed (Figure 7) to show the Access Point MAC address and signal strength. The tray icon and Signal Strength bar will display the colors from Green, Yellow to Red on progressively poorer signal or will show Grey if roaming.

Note: This Utility will only operate with an ESTEEM Model 195Ep in EtherStation mode.

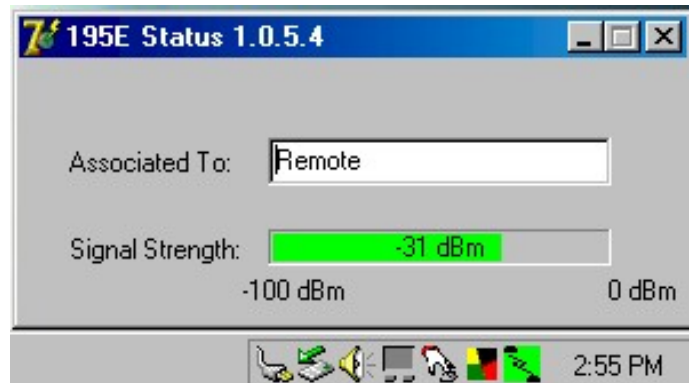


Figure 7: EtherStation Status Program

TROUBLESHOOTING TIPS

General (Applicable to All Modes of Operation)

Where do I find the latest firmware version number? – We have the latest version number of the Model 195Ep firmware listed on the ESTeem Web site (www.esteem.com) under the Model 195Ep product page.

How and when do I update the Model 195Ep firmware? – You should only update the Model 195Ep firmware if you are having a specific problem and it is recommended that you do so by ESTeem Customer Support personnel. All the update instructions and files are located on the ESTeem FTP site at the following address:

<ftp://www.esteem.com/195Ep>

Do all firmware versions have to be the same to communicate between the Model 195Ep? – It is not necessary for all the firmware versions to be the same revision to communication, but the later version may have added features that the other versions will not recognize.

What characters are valid for WEP Key entry? – Only the Hexadecimal characters 0-9 and A-F are valid for key entry.

What ESTeem Utility version is required to program the Model 195Ep? – The ESTeem Utility program is not required to program the Model 195Ep. The 195Ep can be programmed using any Terminal Emulation program (such as Windows HyperTerminal) and any web browser program.

What is the speed and duplex configuration on the Model 195Ep? – The Model 195Ep is an auto-negotiation full/half-duplex 10/100 Base-T interface. Either a cross-over or patch cable is supported.

Access Point Mode

Wireless LAN cards are not connecting – Verify that the wireless LAN cards are set to Infrastructure Mode, have a matching SSID (or ESSIS) set the same as the Model 195Ep and that all encryption codes are the same.

My Wireless LAN card shows a solid connection, but I can not pass any data – Verify the encryption and the ACL setting on the Model 195Ep match the wireless LAN card.

Access Point Repeater Mode

How long does it take to re-establish the Wireless Ethernet Network? – If a communication link is lost and the Wireless Network needs to re-establish the repeater routes, the time can take up to 30 seconds.

Should the AP Repeater Mode be used on mobile equipment? – The AP Repeater mode should be used on equipment that will not change the Repeater Route as it moves. For example, if a mobile device such as a crane can communicate directly to another ESTeem and will not lose the link in its travel, the AP Repeater Mode could be used. If the device requires two ESTeem Model 195Ep's (Base and Repeater) to maintain communication across its complete travel, the Station Modes should be used on the mobile device. The problem will be in the time that the mobile ESTeem will take to transfer between the two sites. In Access Point Repeater mode the transfer can take up to 30 seconds, while the EtherStation mode will transfer without a packet loss.

Does WEP have to be used? – The WEP does not have to be enabled for the modems to communicate, but all modems must be configured the same way.

Correct configuration, but cannot establish communications. – In addition to the network configuration, all 195Ep modems configured in the AP mode must share the same SSID and be on the same frequency channel. The most likely cause of the error is the WLAN MAC address is not configured in **both** 195Ep's repeater tables. If only one side is configured, everything will appear to be correct but no communication will function.

EtherStation

How do I access the Model 195Ep web page in EtherStation Mode? The Model 195Ep does not have an active web browser when configured in EtherStation mode. You must access the ESTeem with the ESTeem Discovery Program or through the RS-232 port after configuration in this mode. To monitor the link status, you can use the EtherStation Status program.

What IP address do I configure the ESTeem in EtherStation mode? – The Model 192E will not have an IP address in EtherStation mode.

I can not link my device into the wireless network – Verify that the MAC address of the device is **exactly** the same as configured in the Model 195Ep. The MAC address must have colons between the values.

Can I connect my Model 195Ep in EtherStation mode to a HUB or Ethernet Switch? – No. The modem must be connected directly to the Ethernet device for which it is programmed. In EtherStation mode the Model 195Ep can only service ONE Ethernet device.