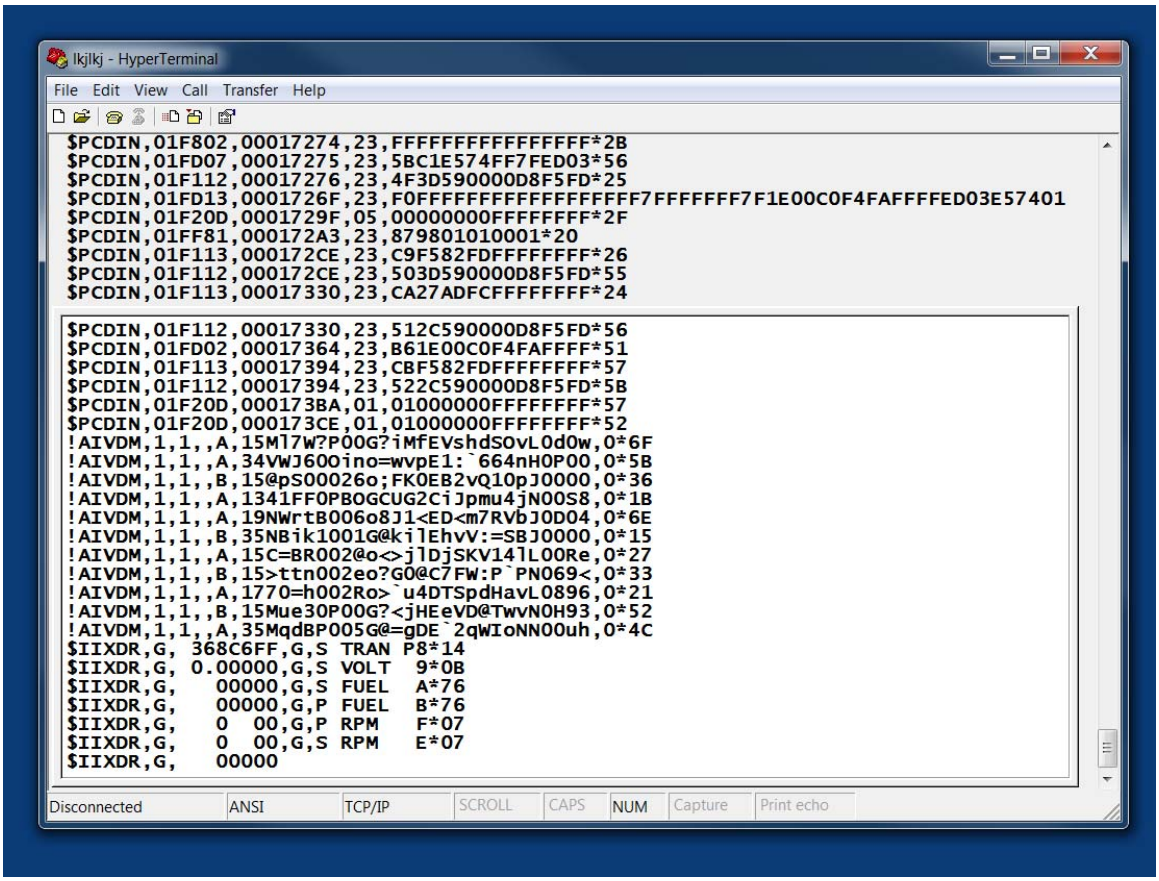
SeaSmart.net adapters can support both NMEA 2000 and NMEA 0183 Inputs via two serial ports on the adapter. Port 1(Line 1) is for NMEA 2000 and Port 2 (Line 2) for NMEA 0183.

This App Note explains how to configure the adapter to accept both NMEA 2000 and NMEA 0183 data from both ports and combine them into one TCP connection.

The steps to receive both NMEA 2000 and NMEA 0183 data over a single TCP Port

1. Connect NMEA 0183 Device TX to Pin 6 (RX) on SeaSmart.net Adapter
2. Connect Ground from NMEA 0183 device to Pin 8 (GND) on adapter
3. Change Baud Rate for Line 2 to desired rate (4800, 38400, 57600)
4. Change Tunnel 1 Mode from 10001 (single) to 10003 (dual)
5. Reboot adapter.



Connect NMEA 0183 Device

The 8-pin SeaSmart.net Serial/USB connector supports both a USB connection for communication with the NMEA 2000 interface and a separate Serial (RS232) port (LINE 2) for NMEA 0183 data.

Serial/USB – Conxall 8-pin to USB or Conxall 8-Pin to Conxall 8-pin Serial (RS232)

1 (dot)	No Connect
2	TX RS232
3	USB -
4	+ 5 V (input from USB only) 150 mA max
5	USB +
6	RX RS232
7	No Connect
8	Ground

NMEA 0183 data from External Devices will use Pins 2 (TX), Pin 6 (RX), and Pin 8 (Ground). Since this App Note covers receiving NMEA 0183 data connect the TX from the External Device to the RX of the SeaSmart.net adapter. Also connect the Ground from both devices.

Note – The SeaSmart.net USB port is only used to configure the NMEA 2000 adapter. It is not connected to Line 2 of the adapter and cannot receive or transmit NMEA 0183 data.

The USB port can be used with NMEA 2000 bus monitoring utilities to view NMEA 2000 bus traffic. However, NMEA 0183 functions will be disabled when the USB interface is active.

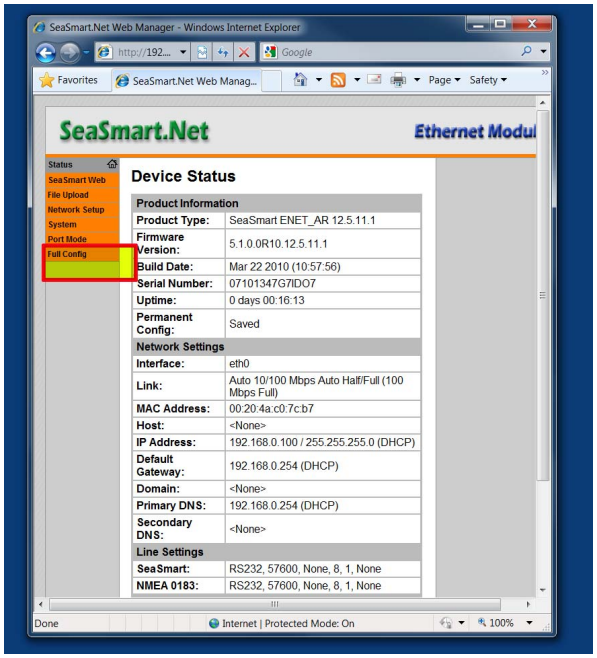
Set Baud Rate

The Baud Rate for Line 2 of the SeaSmart.net adapter must match the Baud rate of the source NMEA 0183 device.

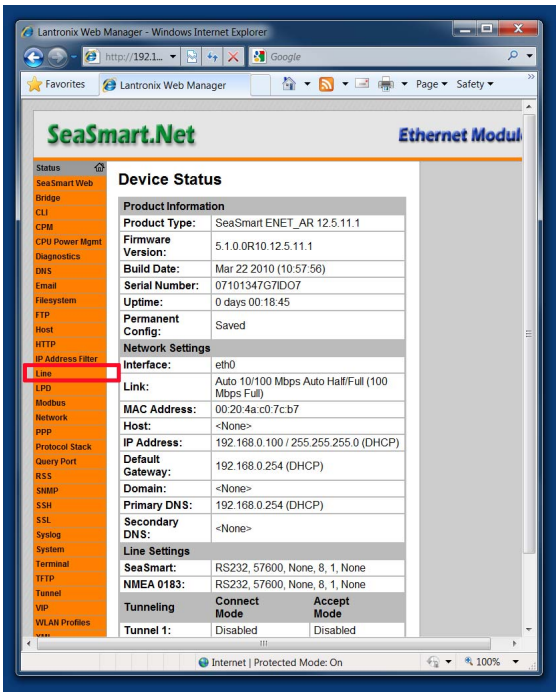
SeaSmart,net adapters can be configured by a set of Web Pages contained in the embedded Web Server. All that is required is a Browser enabled device and the known IP address of the adapter.

The adapter must be powered and attached to a network to access the Web Content. SeaSmart TCP/IP adapters (Ethernet and WiFi) are normally powered from the NMEA 2000 bus cable. If a powered NMEA 2000 bus is not available, the adapter can be configured while powered from a USB source with the supplied USB cable. A 5 Volt USB power supply can also be used to complete configuration.

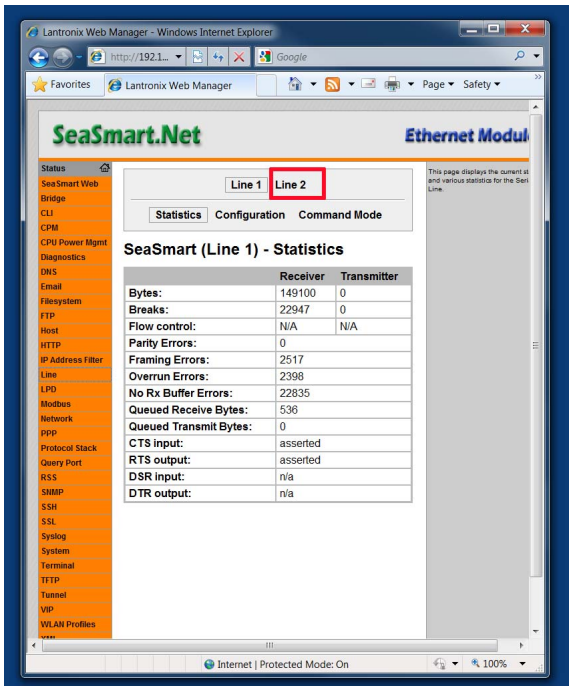
Select Adapter Setup from Main SeaSmart Web Page. (type in network address of adapter)



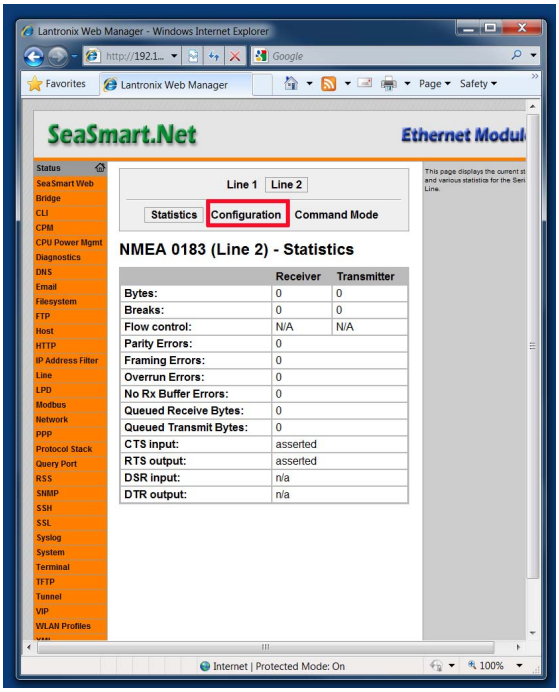
Select Full Config to expand the default menus to include the Line Config



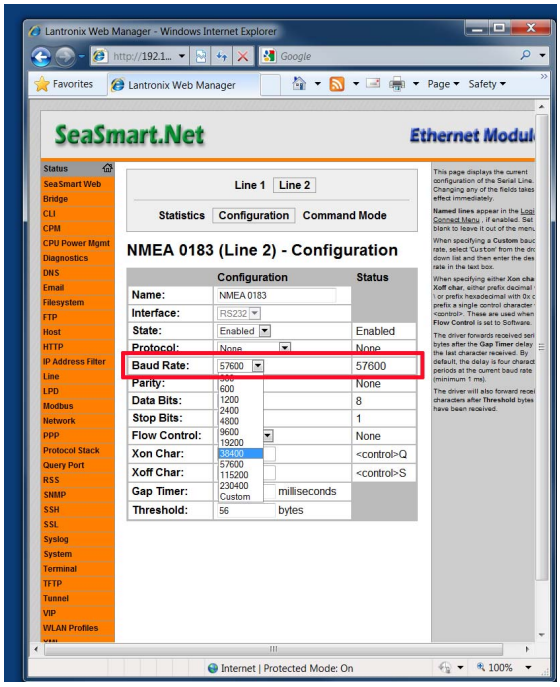
Select LINE from the Config Menus



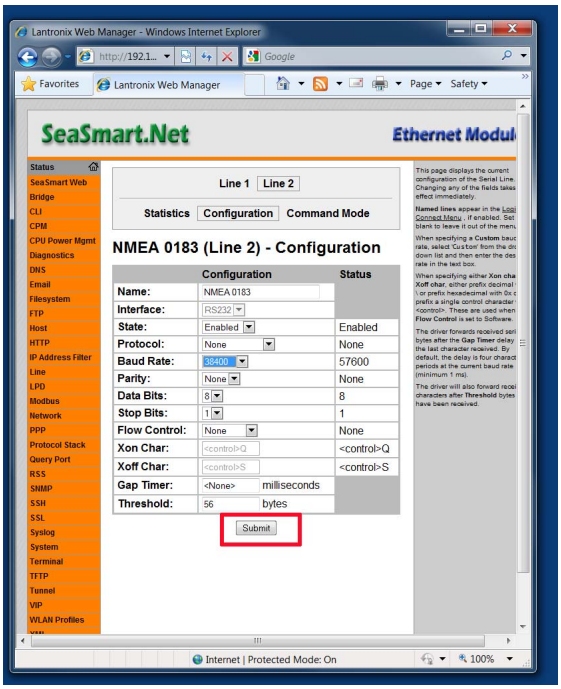
Select LINE 2 to adjust the Baud rate for the NMEA 0183 Port.



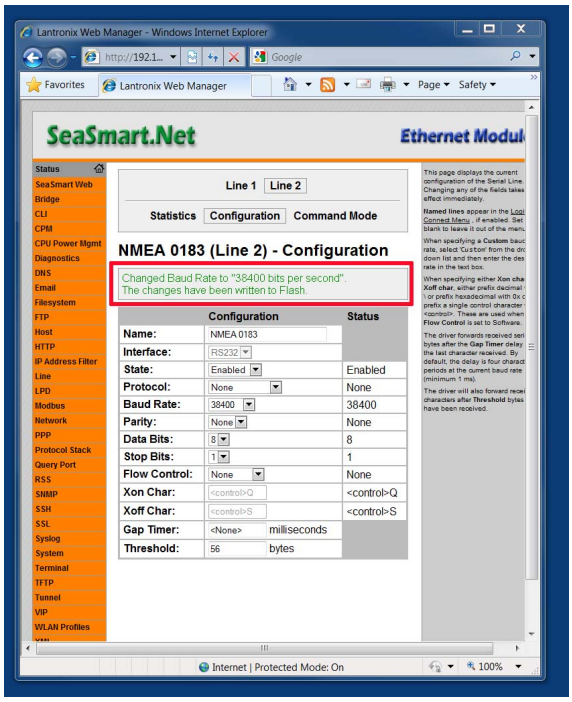
Select Configuration for LINE 2



Select the Drop-Down box to change the Baud rate to match the external device.



Select SUBMIT to save changes



Status Box will confirm changes

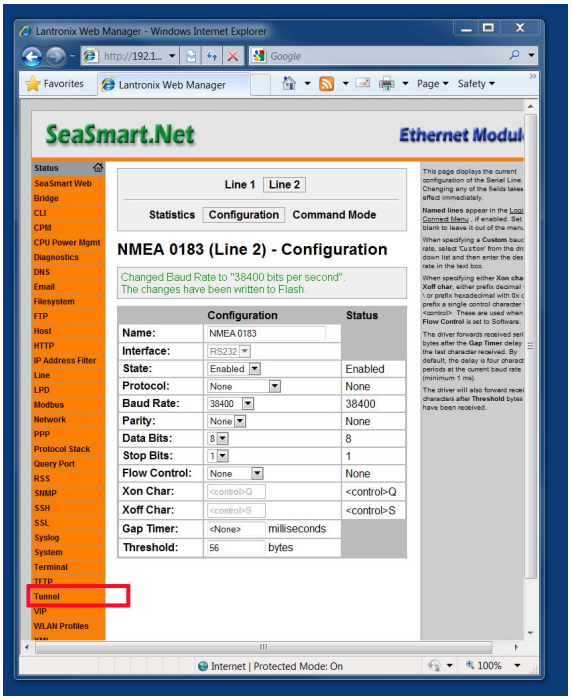
Configure Tunnel 1

SeaSmart.net adapters use two Tunnels to pass data from serial ports to TCP or UDP connections. Tunnel 1 is normally used for NMEA 2000 data. Tunnel 2 can be enabled for NMEA 0183 data on a separate port number.

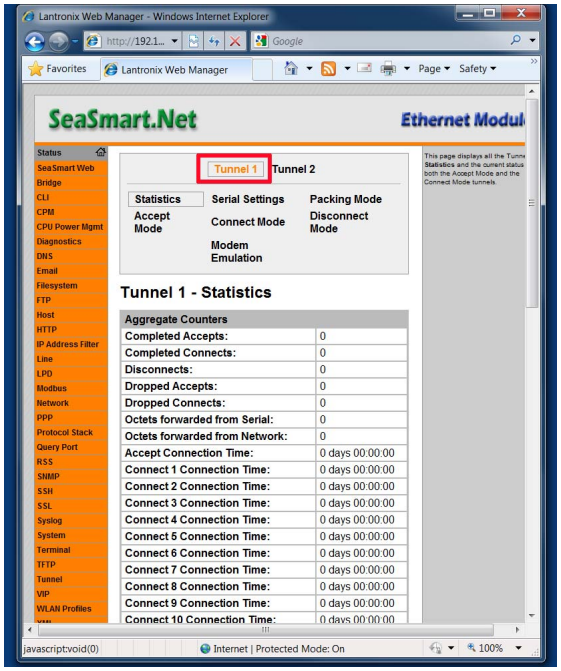
Tunnel 1 has several modes of operation depending on the port number assigned

- TCP PORT 10001 – Translated NGT NMEA 2000 data to SeaSmart.net Protocol
- TCP PORT 10002 – Serial Data from External RS232 connector
- TCP PORT 10003 – Combined SeaSmart.net NMEA 2000 data and External Serial (RS232) data
- TCP PORT 10004 – RAW un-translated NGT NMEA 2000 data

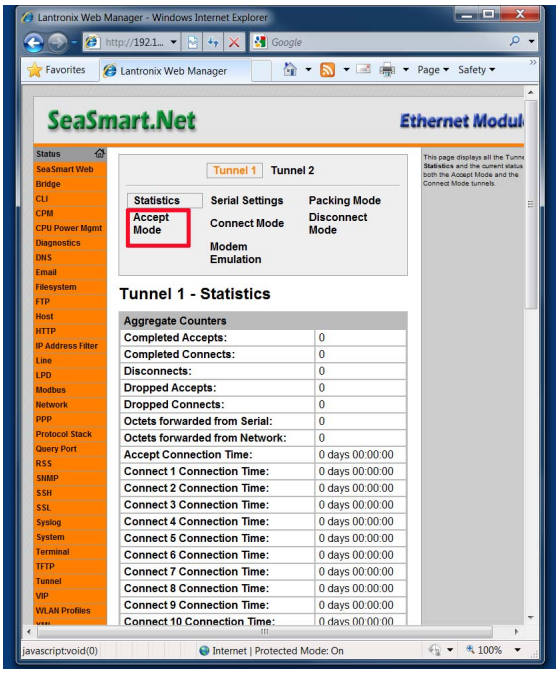
To allow both NMEA 2000 data (Line 1) and NMEA 0183 data (Line 2) on the same TCP port (10003) Tunnel 1 Accept mode must be set to 10003.



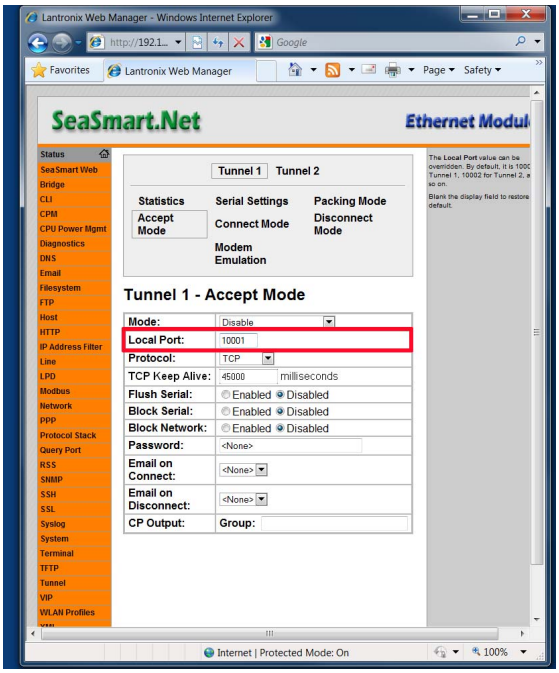
Select TUNNEL to go to config both Tunnels



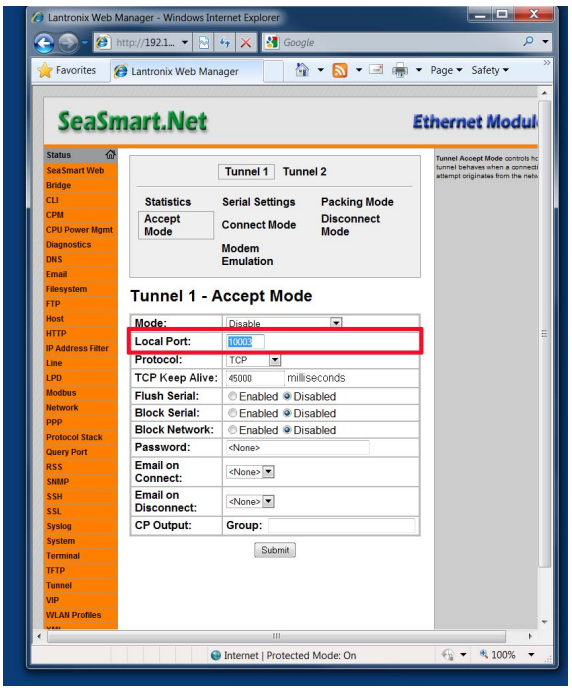
Select TUNNEL 1 to go to config for TCP Accept Port 10001



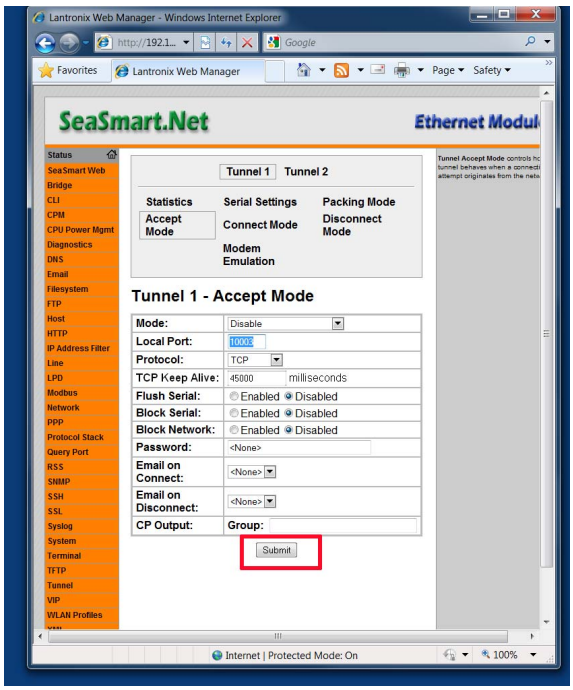
Select ACCEPT MODE for Tunnel 1



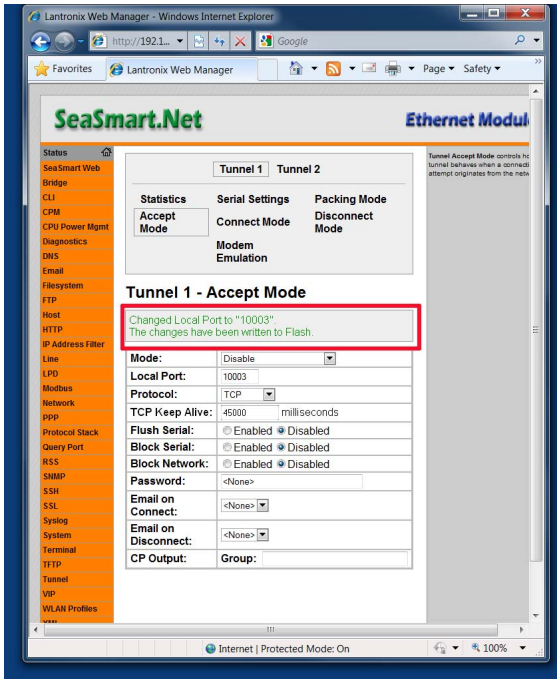
Change the Local Port Number from 10001 (NMEA 2000 only) to 10003



Enter port number 10003 (both NMEA 2000 and NMEA 0183 data on same port)

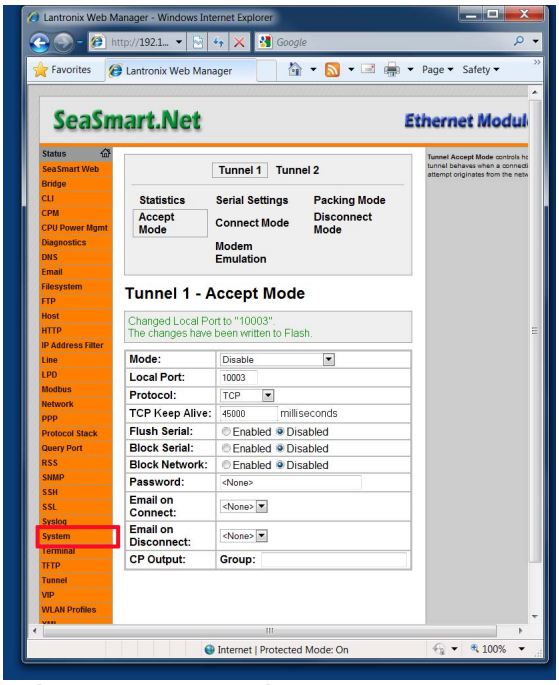


Select SUBMIT to save changes

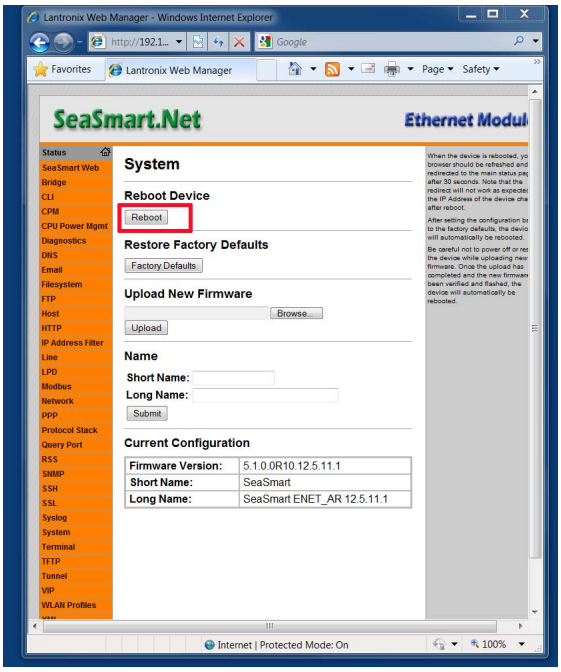


Status Box will confirm changes

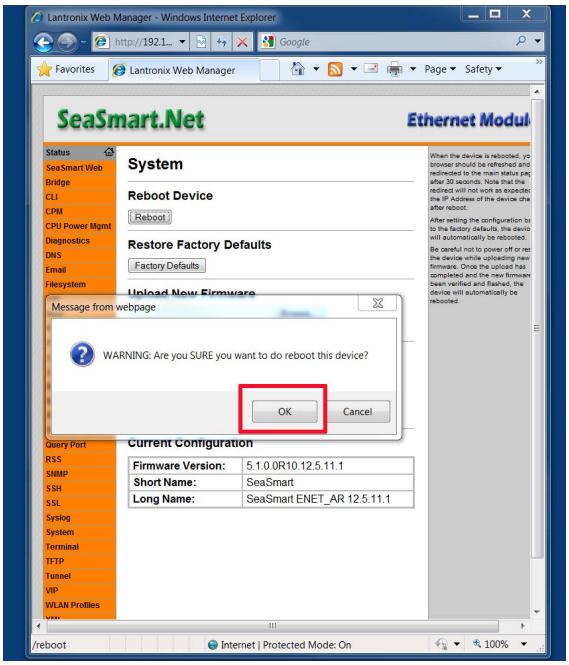
Reboot Adapter



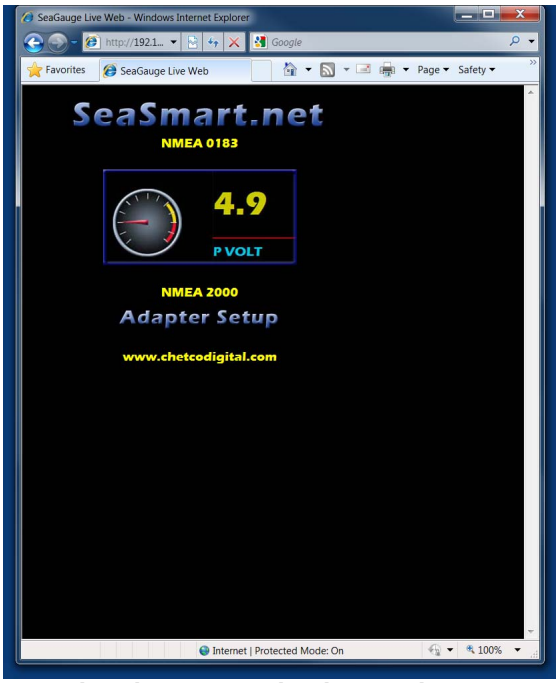
Select SYSTEM to reboot



Select REBOOT



Confirm Reboot



Completed REBOOT, back to Web Page

Dual Mode TCP Connection

Confirm correct operation by connecting to new TCP Port 10003.

In this example, NMEA 2000 data is received on LINE 1 and NEMA 0183 AIS data is received on LINE 2. Both are combined into a single TCP port (10003) connection.