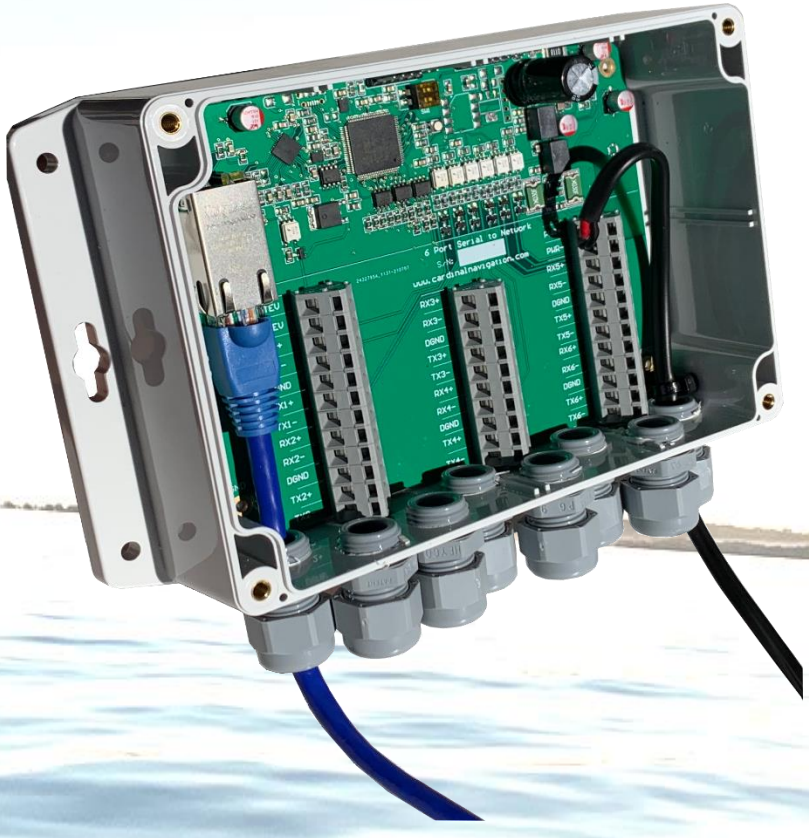
Cardinal Navigation

Serial to Ethernet Unit



Contents

Quick Start Information

Connection

The Ser2net work device is set at https://ser2eth

Please ensure that you log in to the device using https

DHCP Connect

To find the IP Address of the unit. Open the Command Prompt window. Then Type: ping ser2eth The response should be the IP Address of the unit.

Direct Connect

If the unit is connected without a DHCP Server. The unit should default to 192.168.100.10

Ensure the Computer Is set to manual IP with an IP address in the range of

192.168.100.11 to 192.168.100.240

Network configuration

The login password for the Network configuration page is

- login: admin
- password: cardinal

DIPSwitch Configuration

There is a single dipswitch configuration on the Board. In default mode, these should be set to ON. To Reset the configuration of the device. Set DIPSwitch 1 to off (Slide to right hand Side). The LED should then flash Yellow.

LED Indication

- Blue Startup.
- Red Waiting for Network Flashing
- Green Flashing. Connected to Network with IP Address.
- Yellow Flashing. In Reset Mode.

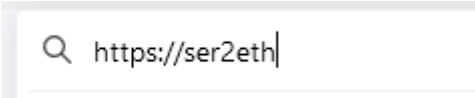
Power

- The Unit will operation from 8VDC – 50V DC.
- Power input is recommended for 12 Volts DC.
- Current Draw @12 Volts is 130mA.

Connecting to Webpage

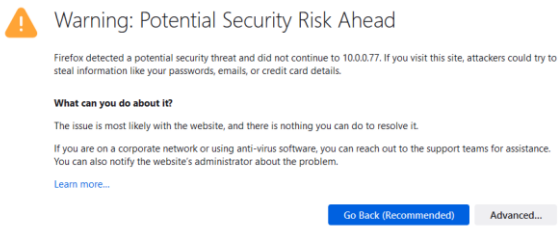
If the unit is connected to a DHCP enabled server or network router, connection to the Serial to Ethernet page has to be done using https and

Entering

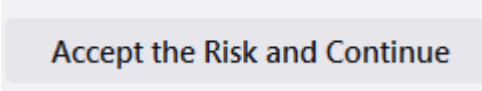


Will get you to the index page for the serial to Ethernet unit.

In some cases, you may experience a Certificate Error,



In this case. Click Advanced, and accept the Risk and continue.



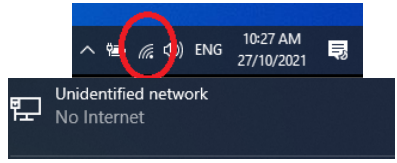
If you do not have a DHCP server, then you will have to connect using Direct Connection on the next page.

Connecting Direct to Computer or Network with no DHCP

The Serial to Ethernet can be connected directly to your Computer.

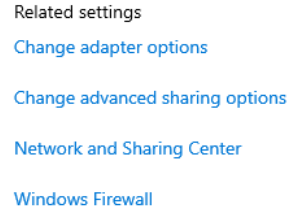
To connect to the webpage the computers IP address will need to be changed so that the Computer is on the same Subnet as the Serial to Ethernet unit.

Clicking on the unidentified network shown near the clock. Circled to the right in Red.

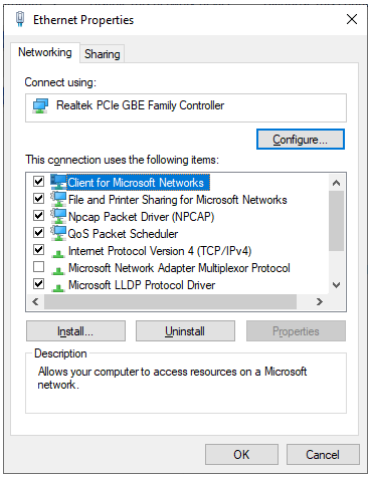


Then Click on the Unidentified network.

On The right hand side of the page,



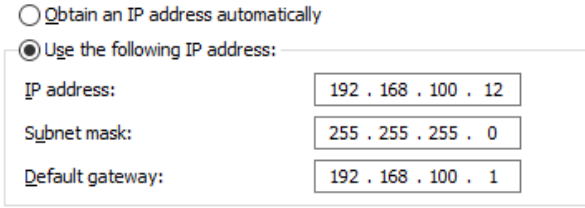
Change adaptor Options



Right click on the Ethernet Adaptor and select properties.

Select the Internet Protocol Version 4. Click on properties.

Set the IP address to the following Similar. As shown.



You should then be able to connect in the web browser to the Serial to Ethernet unit by entering

https://192.168.10.10

Serial Port

Overview

Port	Name	BaudRate	Rx Control	Tx Control	Rx Rate	Tx Rate	Tx Overrun
1	Rx1Port	4800	NORMAL	NORMAL	0	0	0
2	Rx2Port	4800	NORMAL	NORMAL	0	0	0
3	Rx3Port	4800	NORMAL	NORMAL	0	0	0
4	Rx4Port	4800	NORMAL	NORMAL	0	0	0
5	Rx5Port	4800	NORMAL	NORMAL	0	0	0
6	Rx6Port	38400	NORMAL	NORMAL	0	0	0

This page shows current connection information and performance of the serial port.

Baud rates for each port are selectable as. 4800, 9600, 19200, 38400, 57600, 115200.

Another feature of the Serial to Ethernet controller is to be able to invert the polarity of receive and transmit. This is useful if the wires have been reversed to the connected device.

The Rate data indicates the number of characters being received and transmitted. If The TX Overrun is greater than 0, then you will experience errors out of this serial port.

Selecting the Serial port to Configure by clicking on the Port Side tab, or the required port to configure.

Hardware

The serial port hardware for Ports 5 and 6 is powered by an isolated Supply. This allows connection to hardware where isolation is required. Connection of the hardware where isolated ground is required such as VHF Radio GPS Input or PC Direct serial port connect it is recommended to use the Port 5 or Port 6 DGND (Isolated Ground) as the negative, and the TX5+ or TX6+ as the positive going data source.

Serial Port Serial Destinations

Serial Port	Serial Destination
Serial 1	Tx2
Serial 2	Tx6
Serial 3	Tx4
Serial 4	Tx2
Serial 5	Tx4 Tx5 Tx6
Serial 6	Tx4 Tx6

Each Serial port can be configured to output received data to any serial port required.

To modify the Serial port, Click on the Serial port of interest.

A feature on the Serial port destinations is configuring parsing of Data from each serial port. To do this, click on the Destination Port.

Port Parser Setup

Each serial to serial port can be configured to accept only required NMEA sentences.

In the below example.

- HDT is output at 50 ms Interval.
- GGA is output at 1 Second interval.
- VDO. All sentences are output.

Serial Rx1 to Tx2	Delete	Rate
$**HDT	☐	50ms
$**GGA	☐	1S
!**VDO	☐	All
Sentence to add:	Update	

UDP Port Setup

The serial to Ethernet unit allows for 10 UDP inputs and 10 UDP Outputs.

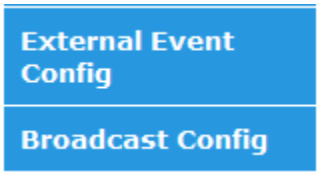
Multiple Serial sources can be selected. And Serial sources can be sent to more than 1 UDP port.

Port #	Rx Port	Tx Port	Serial Source	Serial Destination	Delete
UDP1	7891	2001	Rx1	Tx1	☐
UDP2	7892	2002	Rx2	Tx2	☐
UDP3	7893	2003	Rx3	Tx3	☐
UDP4	7894	2004	Rx4	Tx4	☐
UDP5	7895	2005	Rx5	Tx5	☐
UDP6	7896	2006	Rx6	Tx6	☐
UDP7	0	0			☐
UDP8	0	0			☐
UDP9	0	0			☐
UDP10	0	0			☐

If you do not wish to use a port, the port can be deleted. To add a port, Select a Port this is currently set to 0.

The serial to Ethernet unit is configured with Standard Configurations.

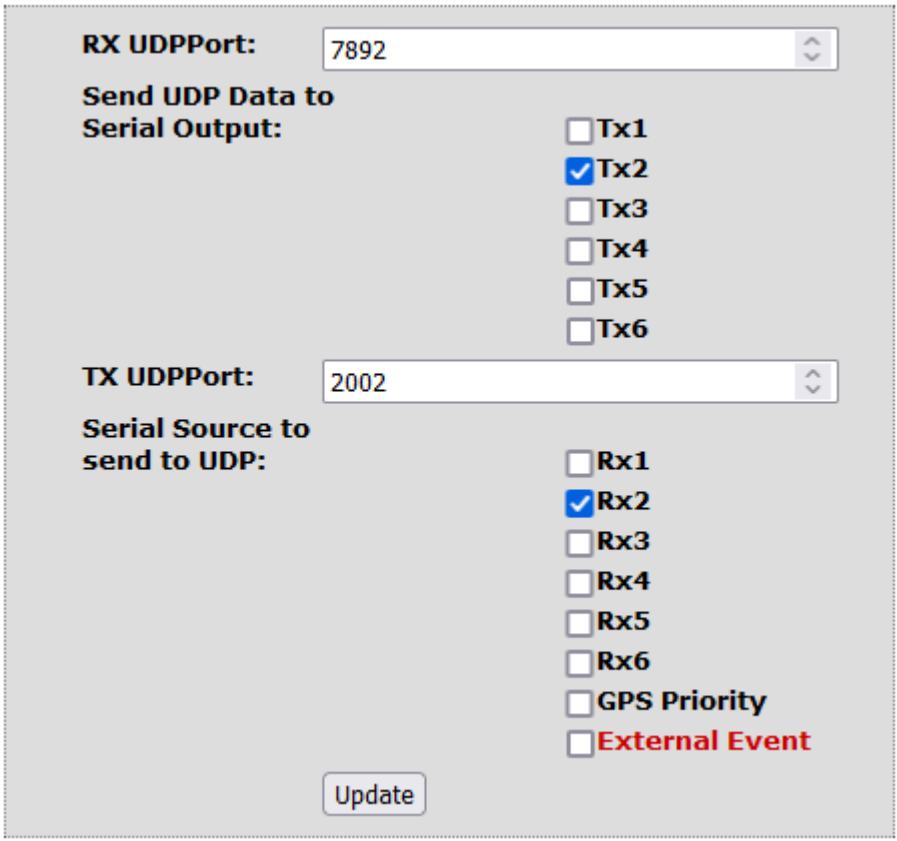
Extra configuration



External Event configuration and the UDP broadcast configuration can be set.

UDP Configuration

Port configuration is configured in the Port configuration page.



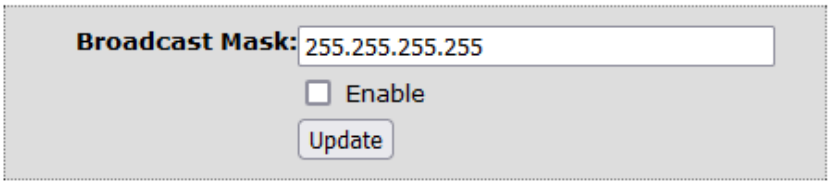
All serial ports can be configured to UDP. An error will occur however if all ports are selected due to software limitations.

External Event Configuration

An external event input is provided for on PCB. This is requires a contact closure, (such as a switch or Relay) The message will be sent out the configured UDP Port.

Broadcast Configuration

In an Ethernet network. Multiple subnets can be configured. UDP data is can be Broadcast, or directed to a specific network. Modifying and enabling the broadcast mask will cause all UDP packets to be sent to specific networks.

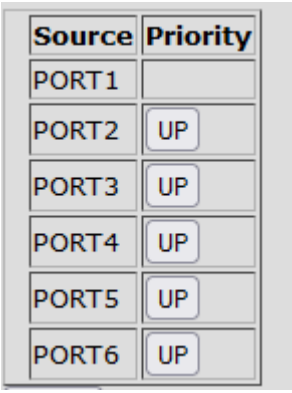


GPS Priority

Configuration

The system is configured to be able to send Valid GPS Data to udp or serial.

The GPS message will be sent based on Priority and Validity.



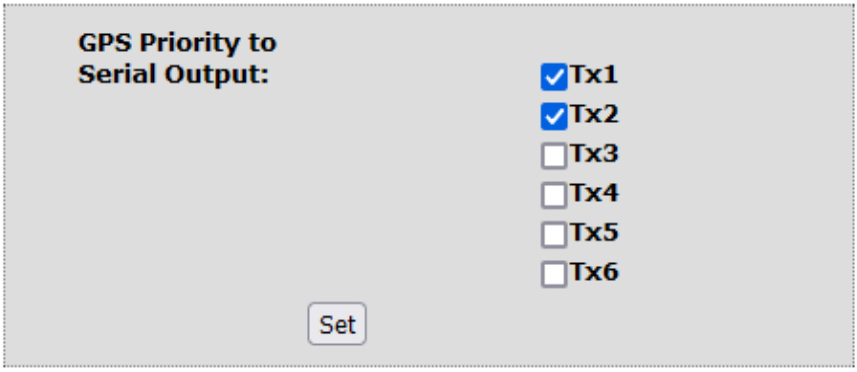
Source	Priority
PORT1	
PORT2	UP
PORT3	UP
PORT4	UP
PORT5	UP
PORT6	UP

Configuring UP will increase the priority. The system will default through the above priority if GPS data is found. If GPS Data returns, then this will automatically be used.

GPS Priority to serial Port

The GPS priority to serial port is handled in this page. Ensure configuration of Serial output does not affect the sourcing of priority GPS.

Ie, If using GPS priority, ensure that Ports that contain GPS data are not configured in the Serial port configuration.



Parse configuration is also available for GPS priority Data. Please see parse configuration under serial port.

Serial Port	Serial Destination Settings
GPS Priority Parse	Tx1 Tx2

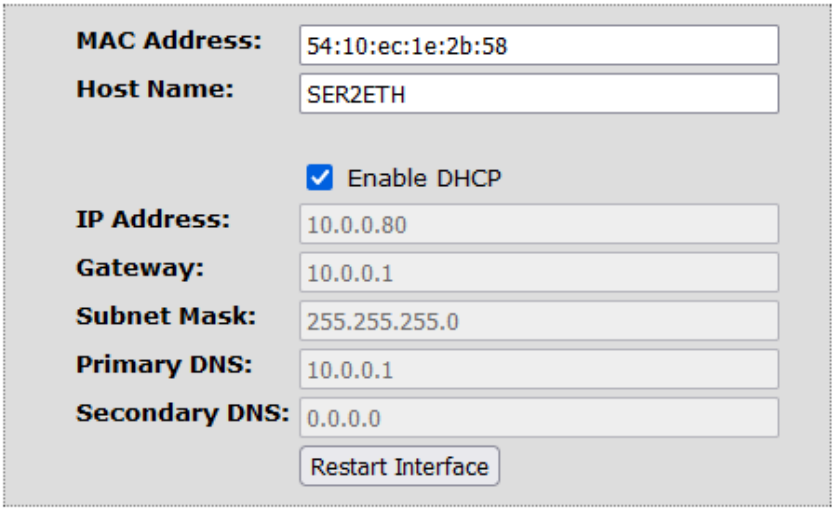
Terminal mode

Data input and output is seen in the terminal. Select the Port to View, and click update. Data is then shown on the terminal screen.

Network Configuration

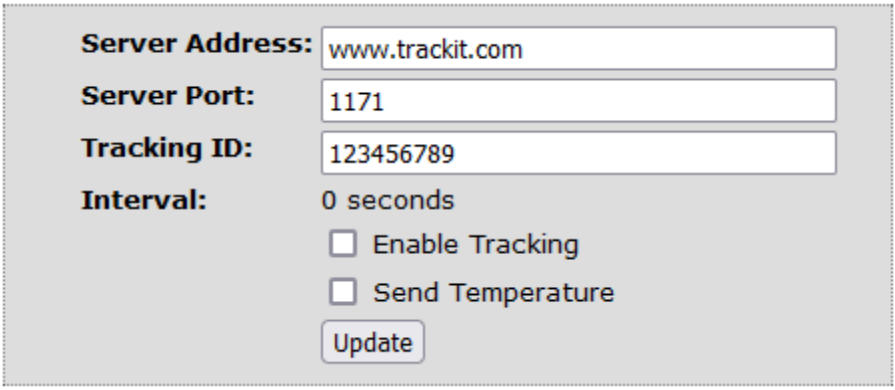
Network configuration can be used to change the settings of IP address. If using DHCP IP address is automatically assigned by the Router.

If there is No DHCP server, then a method of Auto IP is used and the IP defaults to 192.168.100.10.



Tracking

If the unit is connected to the outside world, a tracking packet can be sent to an assigned server. Please contact your distributor for further information.



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- Acceptable in appearance and finish.
- Fit for purpose of which goods of that kind are commonly supplied.

To initiate a support request. Please contact your supplier, or Cardinal Navigation Pty Ltd. support@cardinalnavigation.com