



## Remote Lab Connection

This document outlines the process users should follow to remotely connect a process control piece of equipment to a network or internet to allow remote control.

### **Accessing using local network using Ethernet**

The default IP address of the Control hardware is 192.168.1.150 and the default port is 1245. The IP address and Port can be changed by connecting to the box using a USB connection and running the Configure application. The Ethernet connection must be connected to the network and then the IP address and Port can be used in the software applications to connect to Process Control. The IP address provided should be on the same subnet as the Ethernet network and should also be assigned a unique and unused address.



### **Accessing using local network using Wifi**

To use the Control box with a Wifi network connection you must first connect to the box using a USB connection and run the Configure application. You can then enable Wifi and decide whether to join an existing network or host its own independent network. You can also specify the network connection details such as the network name (SSID) and password. Once you have enabled Wifi you can use the WIFI Get IP button to report the IP address of the box. When connecting to an existing Wifi network this IP address will be provided by the router and may be subject to change depending on the lease timeout configured for your router. If the Control box is hosting the Wifi network then the IP address for the control box will be 192.168.4.1, you will need to join the boxes Wifi network to communicate with the box and no internet connectivity will be available. The default port for both Wifi connection types is 1245.



## Accessing using the Internet

Before accessing Process control box from the internet make sure the equipment is functioning correctly on the local network. This helps to pinpoint any connection problems down to the IP and Port of the box or the configuration of the router. To access Process control from the Internet the user must ensure they have enabled port forwarding on their own router, (the connection from your local network to the internet). This takes incoming connections from the internet and routes them to the correct internal IP address. Use the routers IP address in the software applications.

*Information on enabling Port Forwarding on your router:* <https://portforward.com/>

*Information on finding your routers IP address.* <https://whatismyipaddress.com/>

On a home router (for example in the students' or lecturers home) you may also need to enable a demilitarised zone (DMZ) to the Process Control IP address to allow incoming Internet traffic to reach it. A commercial router may not have to do this.

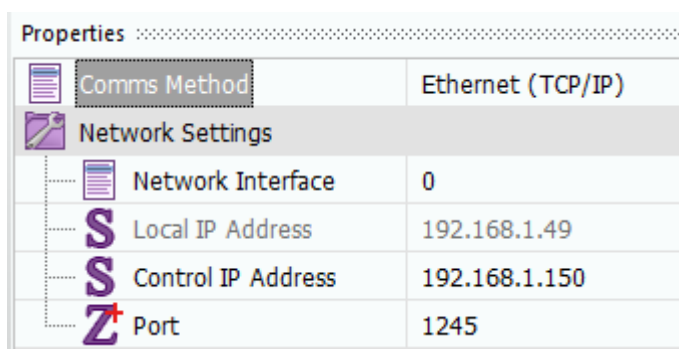
## Configuring the software application

Using the software application downloadable from the Matrix website:

<https://www.matrixtsl.com/processcontrol/resources/>

The software will need to be extracted to a folder on your local machine and can then be launched by using the Open XXX.bat batch files.

Before clicking the Play button in the software ensure the Comms Method property is set to Ethernet or WIFI. Under the Network Settings menu, select the Network Interface that provides a sensible IP value, this is your machine's local IP address. For the Control IP address property enter the IP for your control box. For the Port property enter the Port number for your control box.



NB: Matrix TSL are unable to provide full support for internet based connections. We will make suggestions to enable this feature but in no way will be configuring institutions networks or routers.