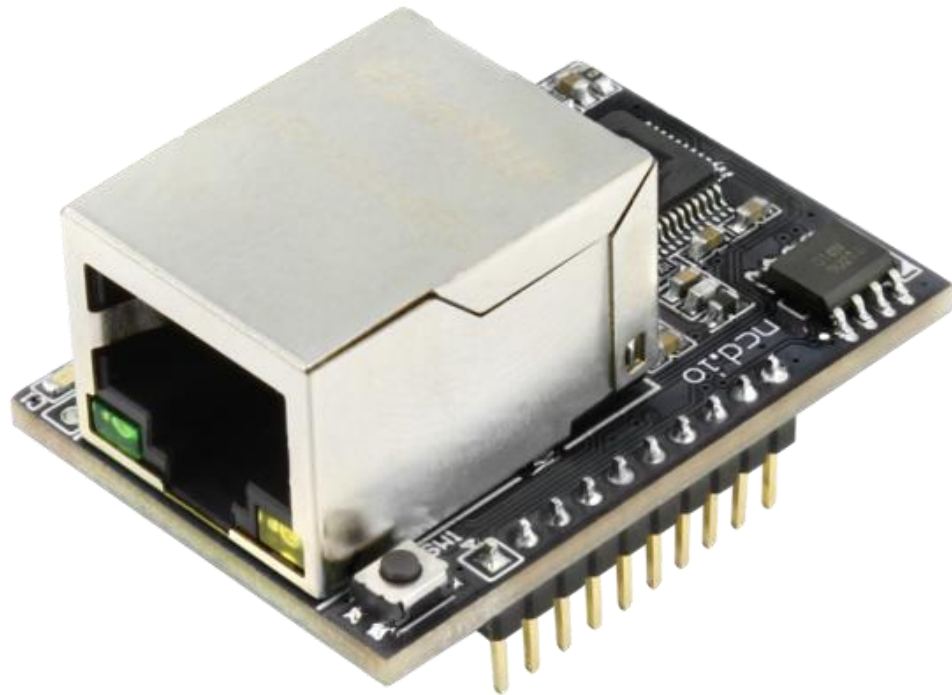


# GEN3 ETHERNET MIRC / MIRX

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## Ethernet Quick Start Guide

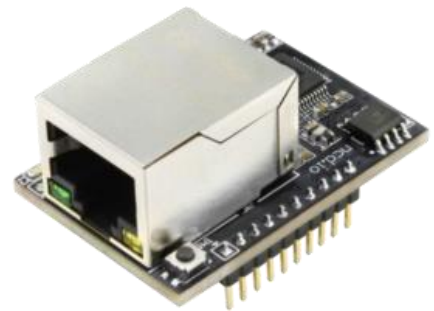


National Control Devices

## Introduction

### Gen3 Ethernet Module

This configuration guide applies to MirC and MirX Ethernet boards which utilize the NCD5500 Gen 3 Ethernet module (right). In this guide we will cover configuring these Ethernet modules for the MirC and MirX boards. MirC and MirX series boards were designed to communicate with each other over an Ethernet network connection. The contact closure inputs in one location control the relays in the remote location. These boards will not communicate if the cables are connected directly to each other.



### Getting Started

Visit our online Getting Started Page where you will find a link to the required NCD5500 Ethernet Configuration Software. Visit our start page here: [relaypros.com/start.htm](http://relaypros.com/start.htm)

## Before You Start (Requirements)

It should be noted that these products do not work over an internet connection. Both boards must be on the same LAN. Also, both boards will require an assigned static IP address. We recommend that you assign the boards with IP addresses outside the DHCP range of your network router. If you are connecting these devices to an IT managed network, it is recommended that you review this guide with the Network Administrator prior to proceeding.

Each board will utilize a static IP address. One board will act as the server while the second board will act as the client. The connection between the two boards is via a TCP socket. The port number used by this TCP socket is arbitrary and can be configured to any port you wish. In our setup we used port 2101. This may be important information if the boards are on separate subnets. NCD or Relay Pros are not capable of providing technical support for complex networks, this should be handled by the Network Admin.

We will be using configuration software which requires Windows so a Windows computer connected to the same network as the boards will be required.

Initially both boards will be in DHCP mode, a managed network is required at least for initial configuration. It is not possible to configure these devices on an unmanaged switch, however after configuration is complete it is possible to install the boards on an unmanaged network.

### Note

Always connect the Ethernet cable to the Gen 3 module and the network prior to powering the board up.

# Configuration

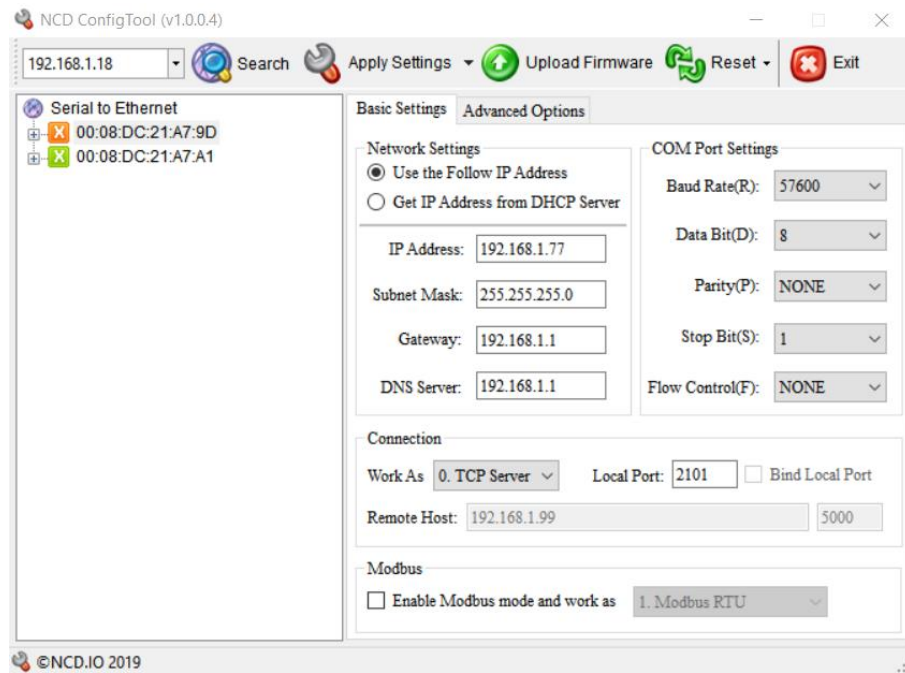
## Initial setup

1. Download and install the NCD5500 configuration software
2. Connect standard Ethernet cables to the boards and plug them into the network. Then power the boards up using a regulated 12VDC power supply source
3. Open the NCD5500 Configuration software
4. Click the Search Button in the Configuration software until you have discovered both boards. You will see them listed by their MAC address. This Mac address is also printed on top of the Ethernet module installed in the board. This information can be used to differentiate between the two boards

## First board Configuration (Server)

1. Click on one of the boards to open its settings. All settings we will be covering will be under Basic Settings. We do not need to do anything under Advanced Settings
2. Set the baud rate to 57600
3. Change the Network Settings Radio Button to Use the Follow IP Address
4. Enter a Static IP address for the board into the IP address field, and enter information into Subnet Mask, Gateway, and DNS Server as per the requirements of your network
5. If you would like this board to act as the Server (does not matter which board you choose to act as the server) then Under Connection set Work As to TCP Server. Set the Local Port field to any port you wish other than 80. This will be the port the module listens for incoming TCP Socket connections on. This information is applicable if there are any firewalls. For our setup we are using port 2101
6. Click Apply Settings

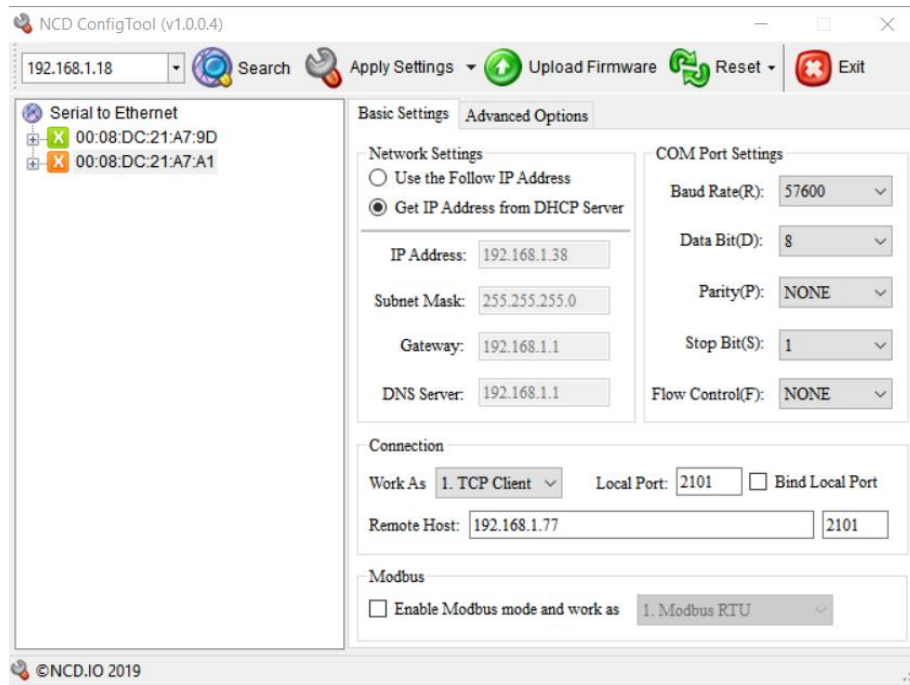
Screen shot of Server configuration window:



## Second Board Configuration (Client)


1. Click on the other board in the list to open it's settings
2. Set the baud rate to 57600
3. Change the Network Settings Radio button to Use the Follow IP address
4. Enter a Static IP address for the board into the IP address field, and enter information into Subnet Mask, Gateway, and DNS Server as per the requirements of your network
5. This board will act as the Client and will connect to the previous board we configured. Click the Work As Drop down menu and change it to TCP Client. Do not worry about the Local Port Setting as it does not apply
6. Enter the Static IP address entered for the first board acting as the server into the Remote Host field
7. Enter the Port number entered as the Local Port on the first board acting as the Server into the Port field to the right of the Remote Host Field
8. Click Apply Settings

Screen shot of Client configuration Window:



## Final Testing

Both boards should now be configured and should work. You can validate that the boards have a valid TCP socket connected by checking the Red LED on the Ethernet module adjacent to the metal Ethernet Jack. If it is on solid, then the connection is established between the boards. You may also monitor the Busy/Ready LEDs on the boards which should flash on/off periodically indicating the boards are communicating. You may now close the inputs (dry contact only) on the boards and should see the relays on the remote unit turning on/off.



### Dry Contact Input ONLY

**Please Note:** Users must **NEVER** apply any voltage to the inputs on the MirC and MirX Boards, these inputs are for Dry Contact Connections ONLY.

# Troubleshooting

## Factory Reset

1. Check that the Ethernet Module is seated correctly on the connection socket of the board it is mounted on
2. Power up the module by applying power to the board the module is mounted on
3. Press and hold the factory reset button on the side of the Ethernet module for 5 seconds to reset the module back to factory settings
4. Use the [NCD5500 Configuration Software for Windows](#) to discover the device
  - Make sure that the IP address dropdown box in the top left of the NCD5500 Configuration software is set to your computer's external IP address. If you select the dropdown and only one IP address is listed, then you do not need to change this
  - If the correct network is selected in the top left dropdown and the device is still not being discovered, try the steps in the "Static IP Configuration" section below
5. Use the NCD5500 Software to configure your device to the desired settings
6. Select Apply Settings at the top
7. Select Reset at the top

# Technical Support

## NCD Community

National Control Devices has a forum where you can search and post questions on the operation of the boards. The NCD Community is where you will get the fastest support for all NCD products right from the developers! Discussions are welcome on applications, and you are encouraged to share your experiences with other users. Visit the community here: [community.ncd.io/](https://community.ncd.io/)