Connecting Your PC to the Spider Front-End

IP Config Introduction

You can connect the Spider modules to your PC either through a LAN (Local Area Network) or directly using an Ethernet cable. There is an Ethernet port on the rear of the Spider modules for connection.


Each Spider module supports up to 8 input channels. Multiple Spider modules can be "daisy-chained" in a network configuration to support applications requiring more than 8 channels.

To detect the Spider module, the PC must be on the same network as the Spider(s). Two IP addresses are "compatible", or on the same network, if the **first three numbers are matching but the fourth number is different**. We strongly recommend our users to set compatible static IP addresses for both their PC and Spider units.

The **Subnet Mask** should be **255.255.255.0**, and the **Gateway** should be either empty for all devices, or another shared compatible IP address for all devices.

Below is a sample configuration for a PC connecting to two Spider modules:
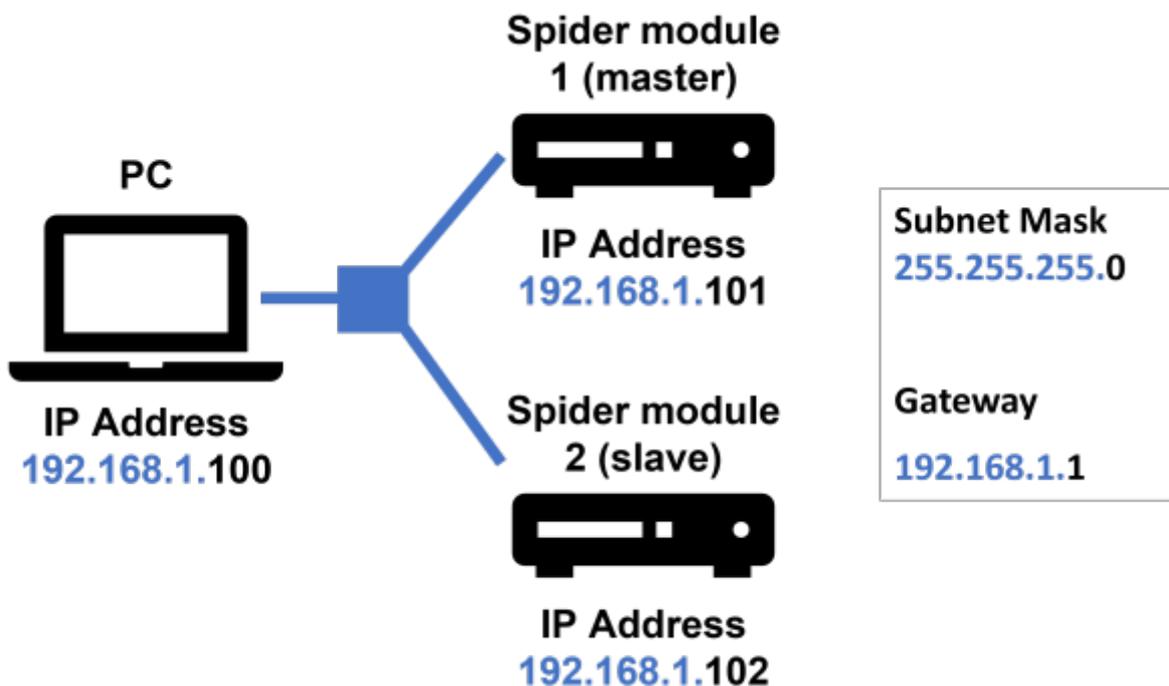
Configuring the Hardware

Master or Slave Mode

The M/S switch on the back of each unit is used to control whether it is configured as a Master or a Slave.

For a system with multiple units, exactly one unit should configured as a **master**. All units must be set as **slave**.

Power Adapter

Connect the power adapter to the power jack on the rear of the device and to an AC power source. The power adapter is an AC to DC converter that accepts 100 – 240 VAC and outputs 15 VDC. The total power consumption is less than 10 watts during full operation.

Drive and Measurement Inputs

OUT 1 is the drive channel. Connect it to the input side of shaker power amplifier (if you are using our hardware to control a shaker, skip this step if you are just acquiring data)

CH1 – 8 are input channels. Connect these channels to the sensor outputs.

Powering On

After the Ethernet cable and power adapter are connected to the Spider, press the Power button on the front of the unit. The LAN LED will illuminate.

Warning: Never press this button to turn the power off while the controller is running. In the case of emergency, press the Stop button on the front, or use the Abort contact switch connected to the back.

IP Setup (Spider)

To connect to the Spider, we need to set the PC and Spider to compatible static IP addresses.

To configure the Spider static IP address, open the **Front-End IP Address Setup Tool** that was installed with EDM. This tool is located in the EDM installation folder. Alternatively, it can be searched using the Windows search feature.

Each connected hardware module will be listed by serial number. To change settings, select a module, enter the desired IP address, subnet mask, and default gateway, and click **Set IP Address**.
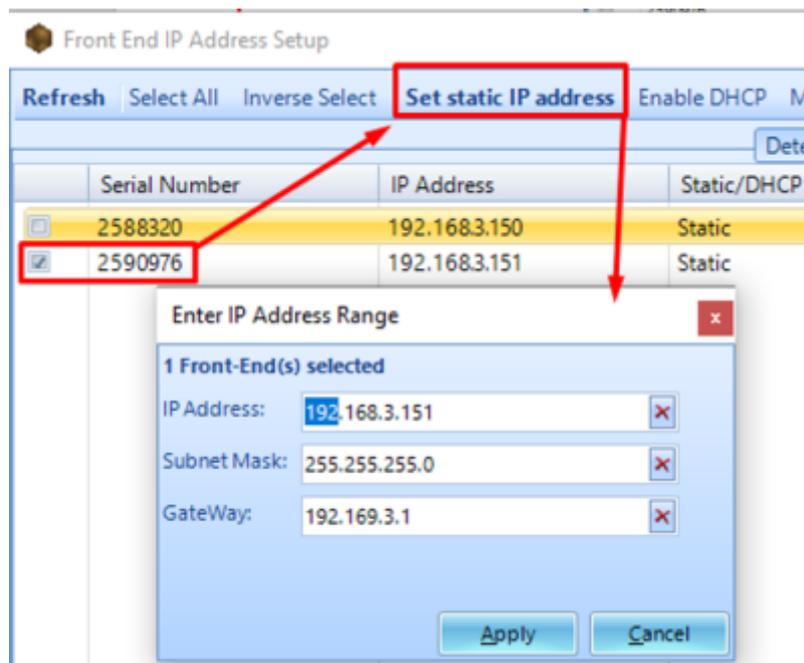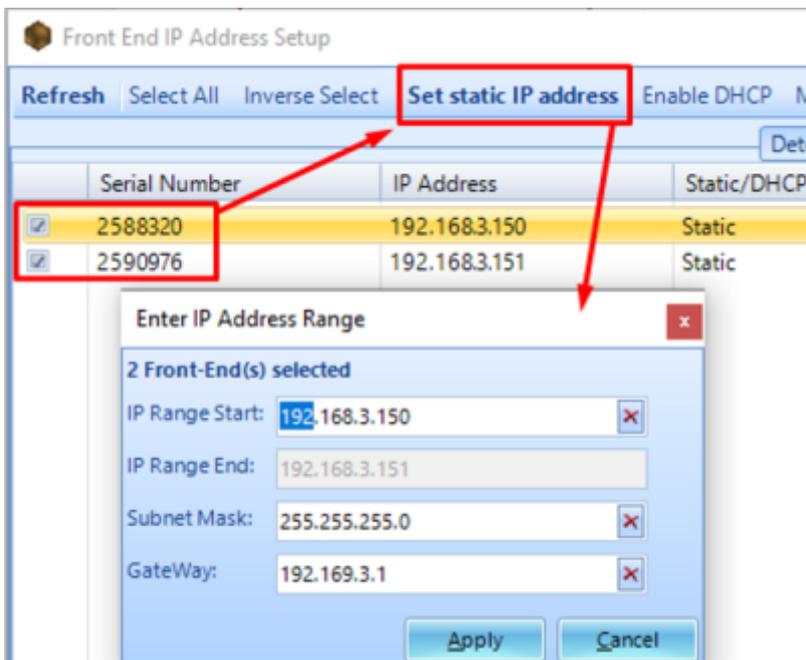
Resetting the Spider

Sometimes, the Spider device cannot be detected, and we need to reset the Spider back to factory IP conditions.

Reset the IP address

To reset to the factory default IP address of **192.168.1.153** for the Spider-80X:

1. Press and hold the **Reset** button on the back of the unit for 4 seconds.

For the Spider-81, it is recommended to use the front panel LCD and menu buttons to make changes to the IP settings.

Reset the Firmware and IP address

If the above reset fails, there is a more aggressive reset function that resets both the IP and DSP settings:

1. Turn off the Spider
2. Press and hold the reset key
3. Then, press and hold the power key, while the reset key is still pressed
4. Press and hold both the buttons for about 10 seconds
5. The **Play** and **Stop** button LEDs will blink alternatively if the reset was successful

IP Setup (PC)

For Windows 10 or Windows 11, type in the Windows search bar "View Network Connections"
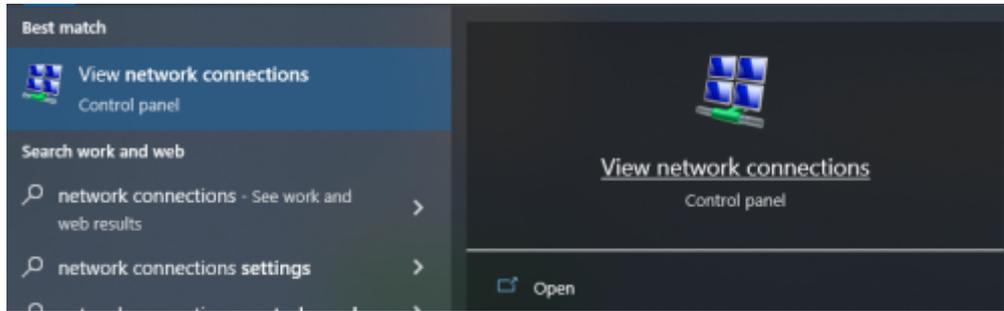
Right-click on the Ethernet connection to the Spider, click "Properties". Then, select "Internet Protocol Version 4 (TCP/IPv4)" and click "Properties". Then, select "Use the following IP address:" and enter in the desired static IP address values.
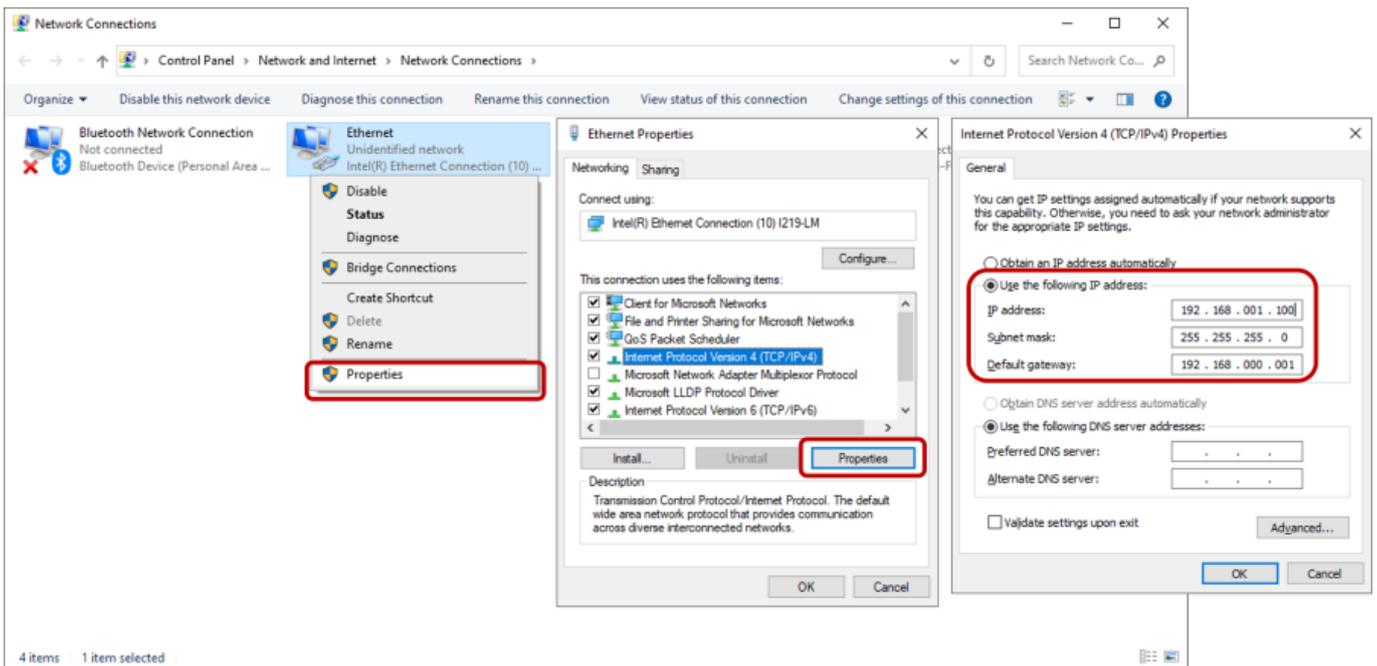
The PC IP address, Spider IP address, and gateway should all share the first three numbers, while having a unique fourth number. The subnet mask should be "255.255.255.0".

To verify the network connection, use the PING command in the Command Prompt window on the PC. In the Windows Start Menu, select **Run**, type **ping 192.168.1.101** (or whatever the Spider IP address is), and press enter.

If it is correctly configured, the **ping** command will receive responses, as shown below.
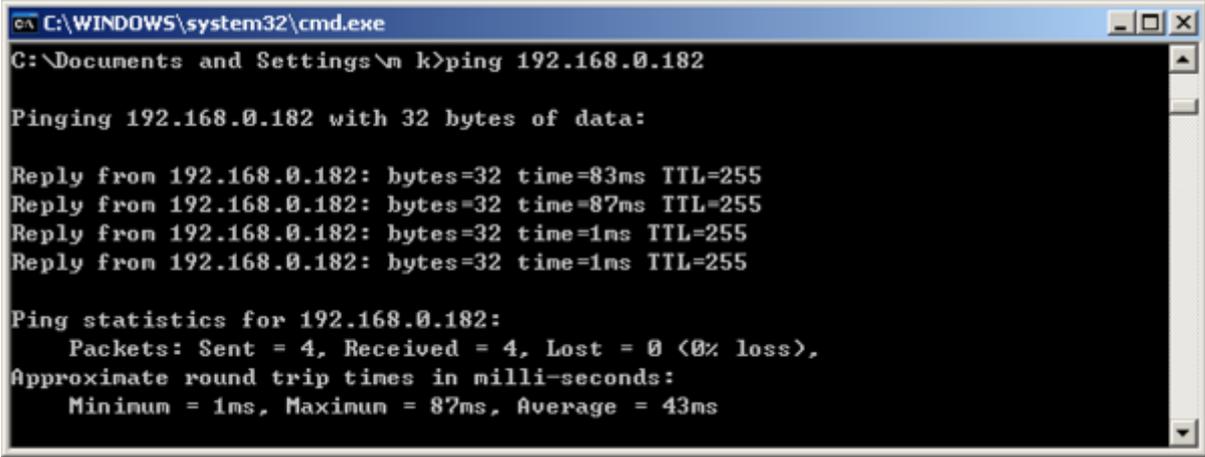
```
C:\WINDOWS\system32\cmd.exe                                    _ □ X

C:\Documents and Settings\m k>ping 192.168.0.182

Pinging 192.168.0.182 with 32 bytes of data:

Reply from 192.168.0.182: bytes=32 time=83ms TTL=255
Reply from 192.168.0.182: bytes=32 time=87ms TTL=255
Reply from 192.168.0.182: bytes=32 time=1ms TTL=255
Reply from 192.168.0.182: bytes=32 time=1ms TTL=255

Ping statistics for 192.168.0.182:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 87ms, Average = 43ms
```

PC not Detecting Spider Devices

If for some reason the PC does not detect the spider devices or one day the PC no longer detects spider devices despite it used to just yesterday or last week, then there are some initial checks or solutions to try below:

- Checking the PC's IPv4 config
- If another PC can detect the spider devices
- Changing to a different ethernet port or using a ethernet to usb adapter
- Changing ethernet cables
- Changing the network switch

If all the above items failed and the PC still does not detect the spider devices, then the PC ethernet adapter needs to updated, its TCP/IP reseted and its DNS flushed.

To update the PC ethernet adapter:

1. Go to **Device Manager**
2. Drop down **Network adapters**
3. Find the name of the PC ethernet connection, such as Intel Ethernet Connection I219-V
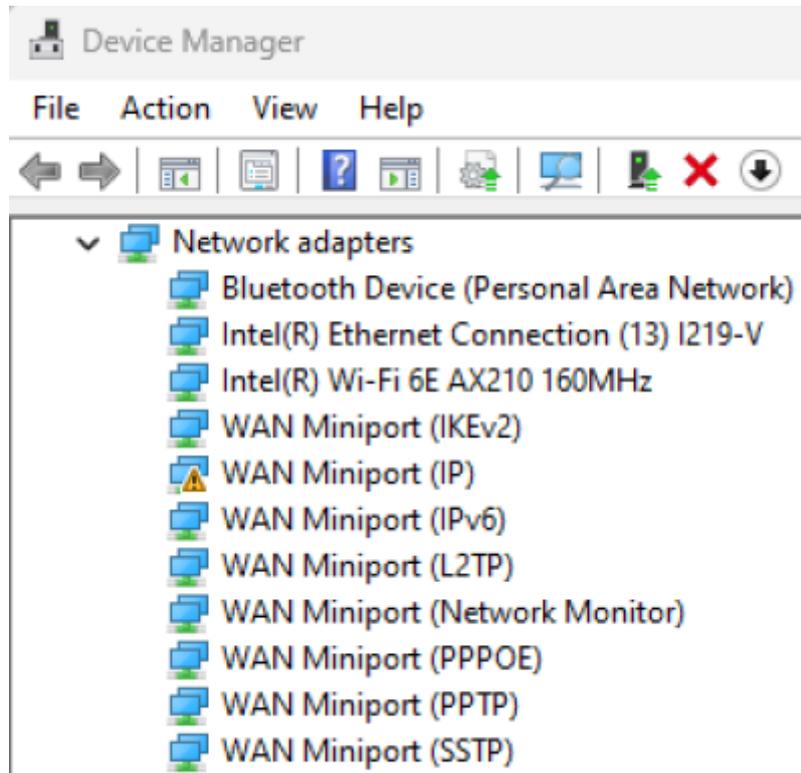
1. Google search the name of the PC ethernet connection with driver, such as Intel Ethernet Connection I219-V driver or visit the manufacturer website and search for the PC ethernet connection model
2. Download the latest PC ethernet connection driver
3. Extract it if it is in a zip file
4. Go to **Device Manager**
5. Right click the PC ethernet connection
6. Select **Update driver**
7. Select **Browse my computer for drivers**
8. Select **Browse…**
9. Locate the PC ethernet connection latest driver folder
10. Select **Next**, wait and select **Close**

Then to reset the PC TCP/IP and flush the DNS:

1. Search Command Prompt and run as admin
2. Type in **netsh int ip reset c:\resetlog.txt** and press **Enter**
3. Type in **ipconfig /flushdns** and press **Enter**
4. Restart computer

If following the above does not work, send us an email at support@go-ci.com for further support.

Configure a Hardware System with Multiple Modules

EDM supports hardware systems with multiple front-end modules, which can be configured under **Tools > Spider Configuration**. All modules must be on the same IP network, connected by a Spider-HUB or chassis.

Next: Running EDM

[Running EDM](https://help.go-ci.com/)

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