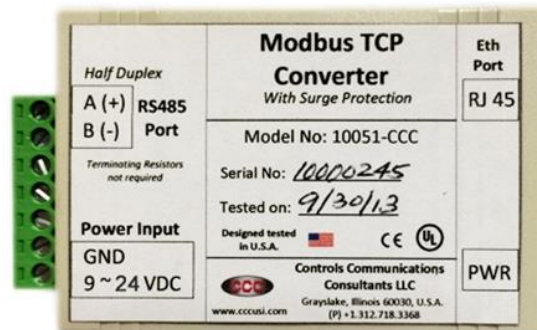




Instructions for setting up – Modbus TCP Converter (Model: 10051-CCC)





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1. Requirements

Below are the items required for setting up and testing the Modbus TCP converter.

Part No.	Description	Qty	Comments
10051-CCC	Modbus TCP Converter	1	
10066-CCC	Ethernet Crossover cable	1	Part of 10051-CCC
	12VDC Adapter	1	Part of 10051-CCC
	Computer	1	Any computer with Win OS (Win XP or higher)

2. Download device driver software

Below is the link to download the device driver for Modbus TCP Converter.

http://www.cccusi.com/Images/custDownloads/setup_di_x86x64cd_4.3.0.9.zip



3. Install device driver software

3.1 This section assumes that device driver software was downloaded on the computer.

3.2 Unzip the driver, open the folder, and then double click “setup_di_x86x64cd_4.3.0.9.exe” to follow the onscreen instructions to install the driver.

3.3 If Microsoft .Net Framework (as shown in Fig 3.3.1) is not installed, install the Framework first. Otherwise click “Install” to install the “DeviceInstaller 4.3.0.9”.

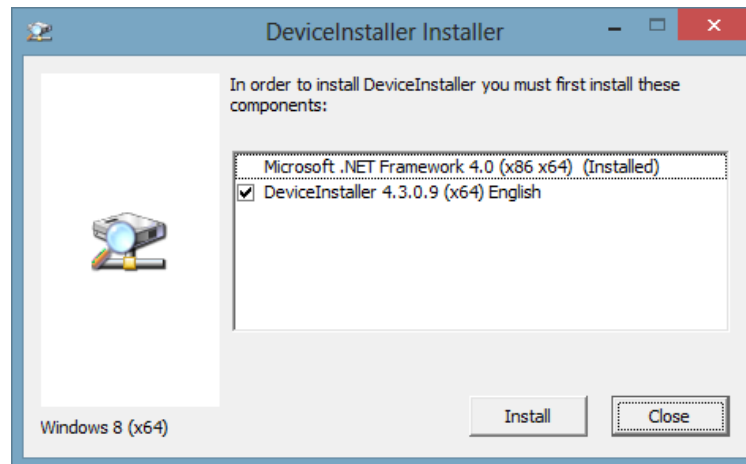


Fig 3.3.1



3.4 In fig 3.4.1, click “Next” to proceed.

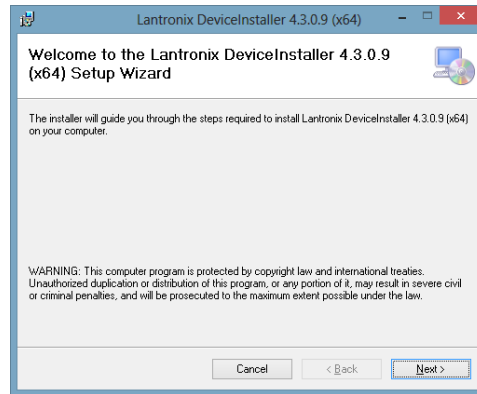


Fig 3.4.1

3.5 In fig 3.5.1, click “Next” to accept the default directory.

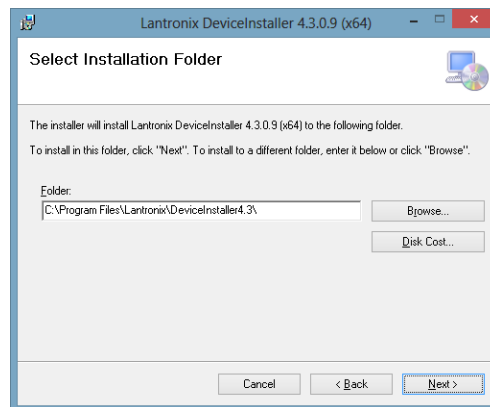


Fig 3.5.1



3.6 In fig 3.6.1, click “Next” to proceed.

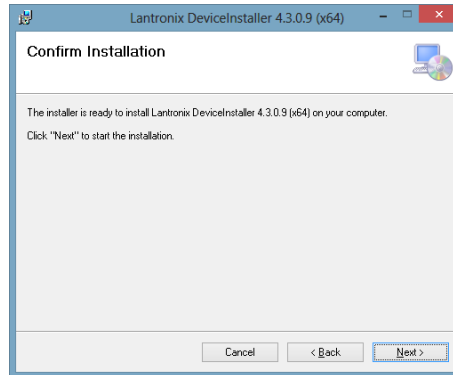


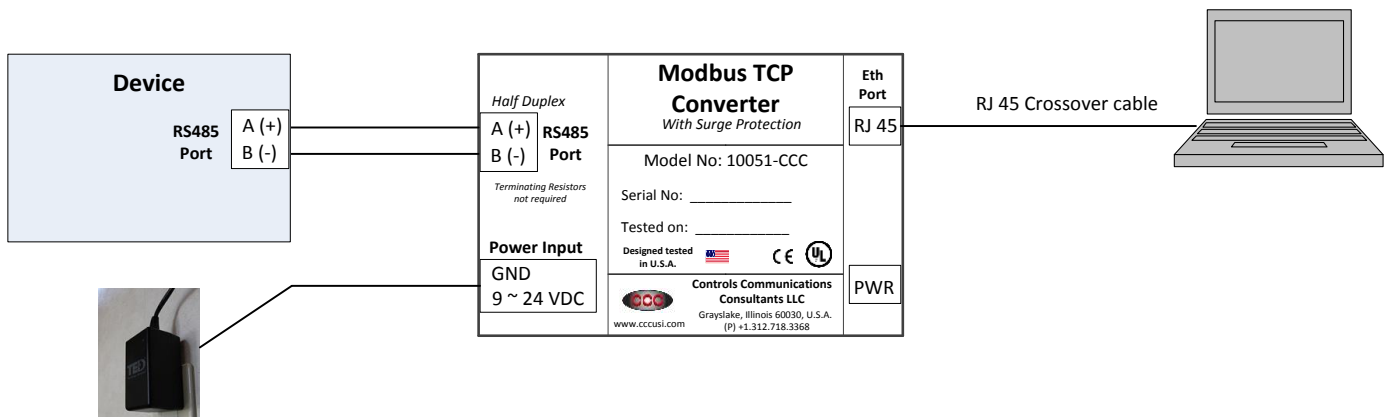
Fig 3.6.1

3.7 If icon is not created on desktop, go to the directory "C:\Program Files\Lantronix\DeviceInstaller4.3\" to create a shortcut.



4. Hardware Connections

Suggested hardware connection is shown below.





5. Configure Modbus TCP Converter

5.1 Once the software is installed, double click the icon “DeviceInstaller” (as shown in Fig 5.1.1) to start the software.

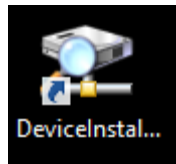


Fig 5.1.1

5.2 In fig 5.2.1, once the software started, select “Do not prompt me about this”. Then click “No”.

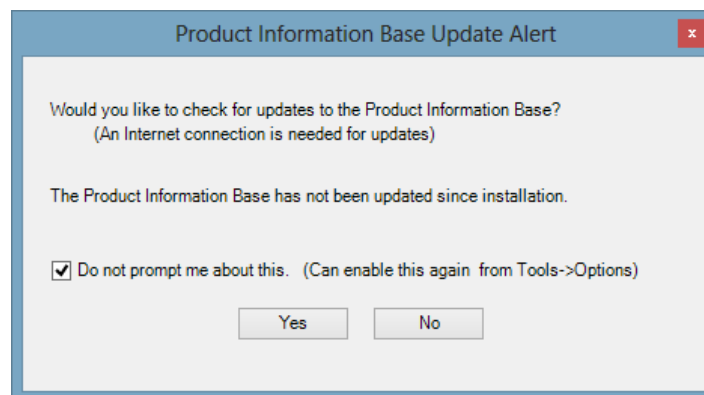


Fig 5.2.1



- 5.3 Be sure to set up static IP address of computer by using the instructions shown in Section A.
- 5.4 In File menu, click “Tool>Option” (as shown in Fig 5.4.1) to open the “Option” page.

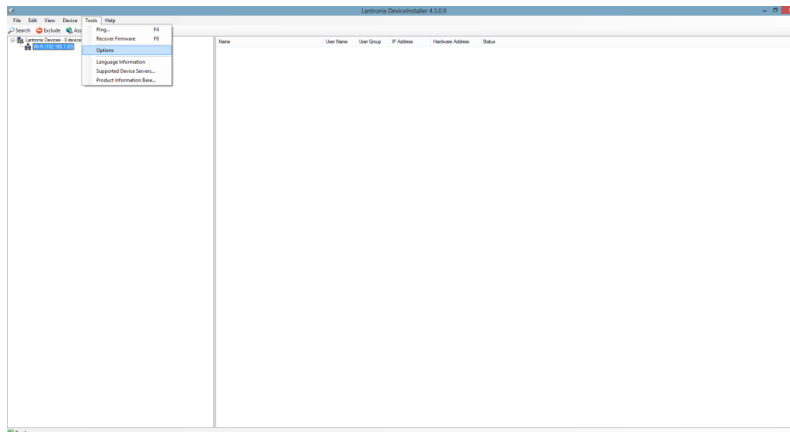


Fig 5.4.1

- 5.5 In the “Network” tab of “Option” page (as shown in Fig 5.5.1), select “Ethernet”. Then Click “Apply” and then click “Ok” to exit the page.

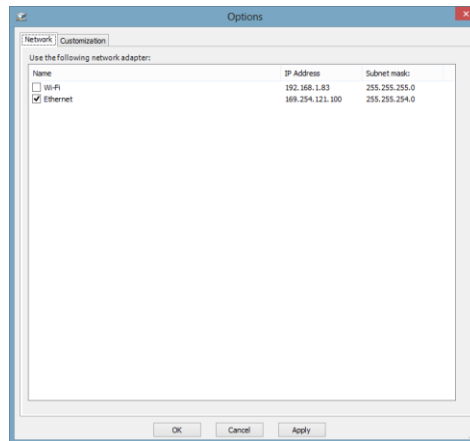


Fig 5.5.1



5.6 If the Modbus TCP Converter is connected according to session 4, then the software will display the found IP address of converter in less than a minute. Note that if the computer’s IP does not match with converter’s IP, the software will display “unreachable” status.

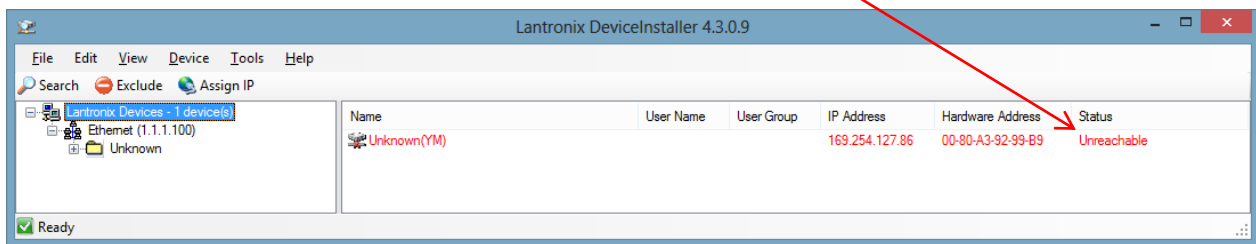


Fig 5.6.1

5.7 If the converter is not display, then in File menu, click “Device>Search” (as shown in Fig 5.7.1) to search for the Modbus TCP Converter.

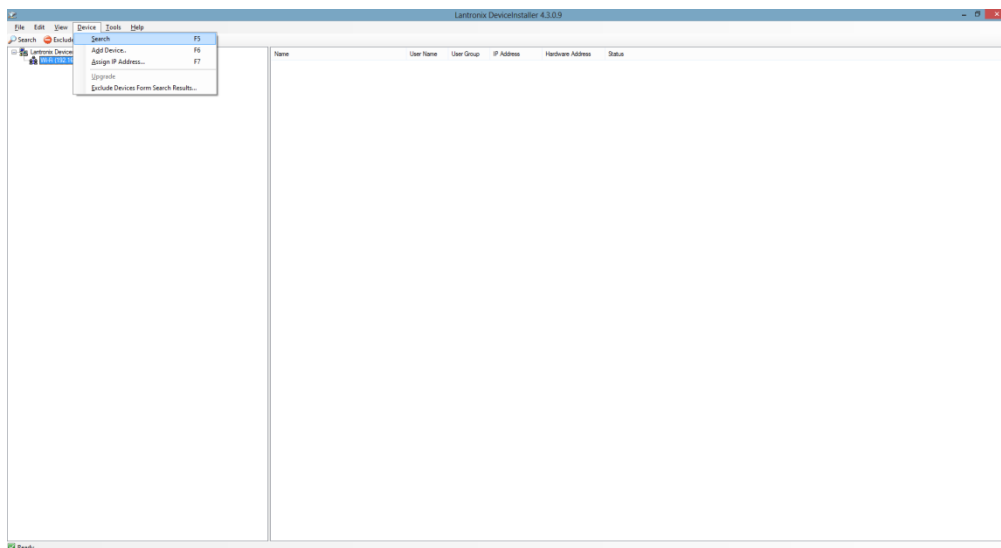


Fig 5.7.1



5.8 Using the procedure in session A, change the first 3 fields of computer’s IP and default gateway to match with the Modbus TCP Converter so that the computer can communicate with it. Note: Leave Subnet Mask as “255.255.255.0”.

For example:

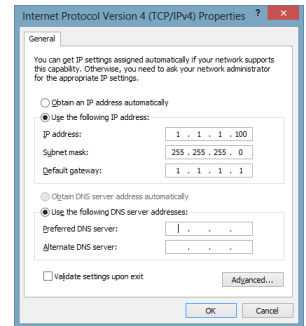
Before change:

IP address -

1 st Field		2 nd field		3 rd field		4 th field
1	.	1	.	1	.	100

Default gateway -

1 st Field		2 nd field		3 rd field		4 th field
1	.	1	.	1	.	1



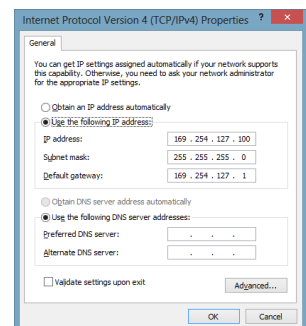
After change:

IP address -

1 st Field		2 nd field		3 rd field		4 th field
169	.	254	.	127	.	100

Default gateway -

1 st Field		2 nd field		3 rd field		4 th field
169	.	254	.	127	.	1





5.9 Once step 5.8 is done, exit the software and then restart again. In a few seconds, the software will display the device being online. See fig 5.9.1.

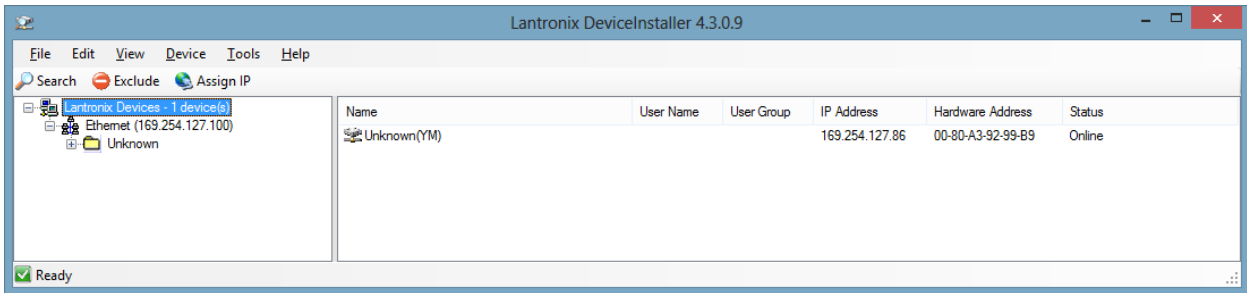


Fig 5.9.1



6. Configure serial communication settings

This session shows the steps to configure the Modbus TCP converter so that serial communication settings match with the slave device.

6.1 In the “DeviceInstaller” software, expand the cross (in the left pane) as shown in Fig 6.1.1.

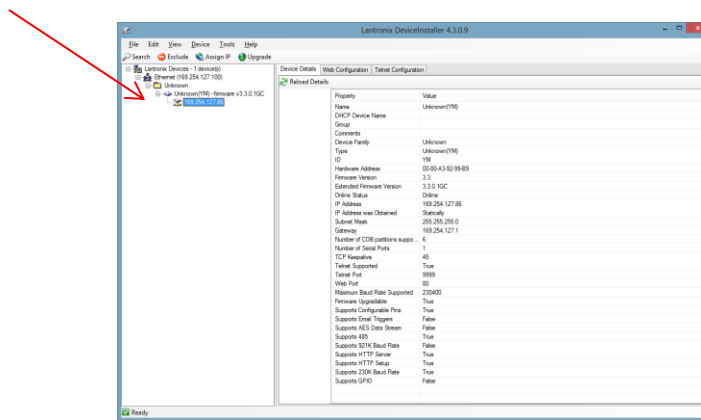


Fig 6.1.1

6.2 In Fig 6.2.1. Click “Telnet Configuration” tab, then click “Connect”.

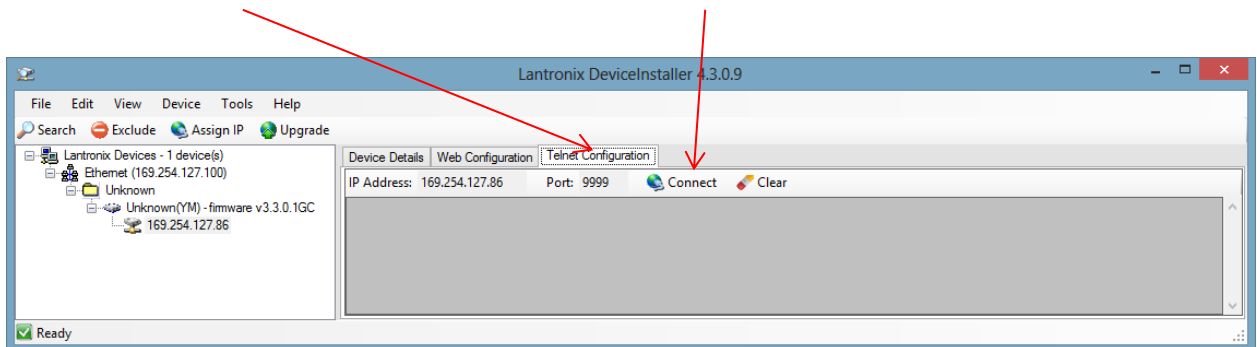


Fig 6.2.1



6.3 As shown in fig 6.3.1, press the enter key.

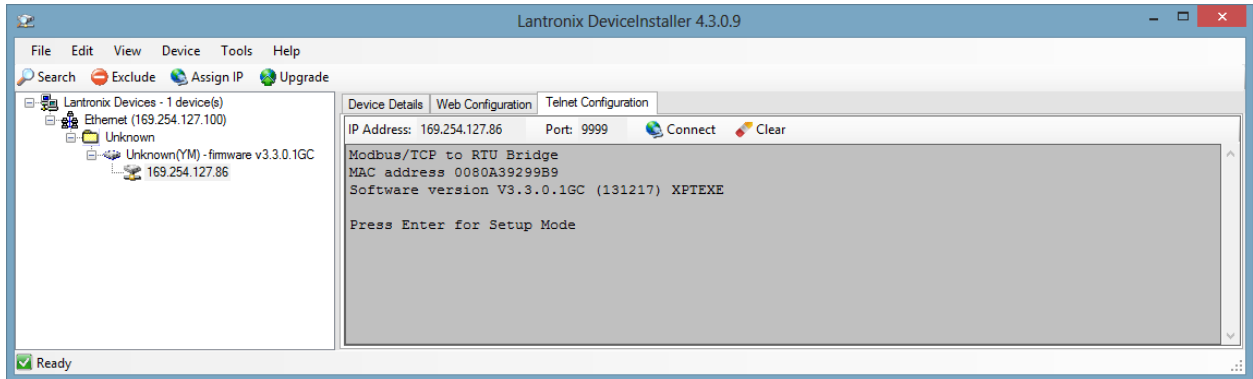


Fig 6.3.1

6.4 As shown in fig 6.4.1, enter '2' to select "Serial & Mode Settings".

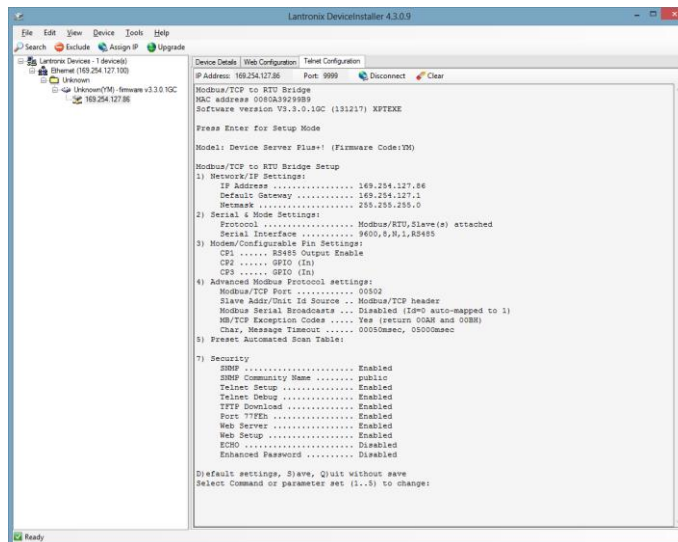


Fig 6.4.1



6.5 As shown in fig 6.5.1, enter '1' to select "Slave" device.

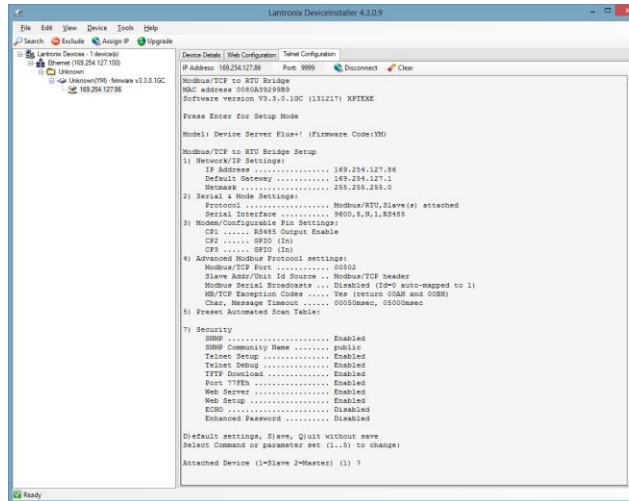


Fig 6.5.1

6.6 As shown in fig 6.6.1, enter '1' to select "Modbus/RTU" protocol.

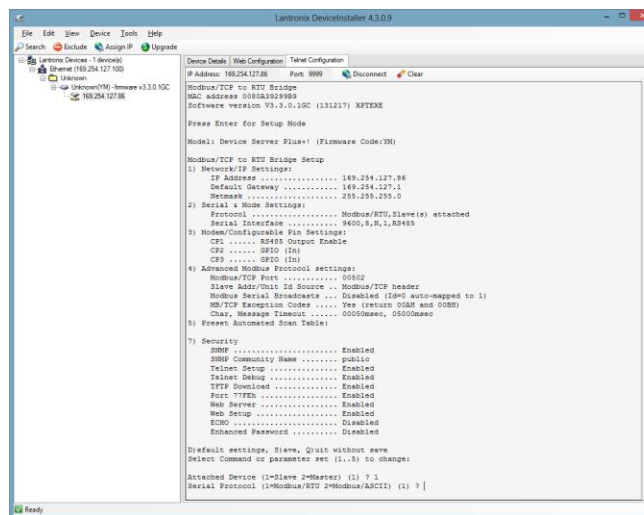


Fig 6.6.1



6.7 As shown in fig 6.7.1, enter (9600, 8, N, 2) to imply “Baud rate = 9600, Databit = 8, Parity = None, Stop bit = 2”.

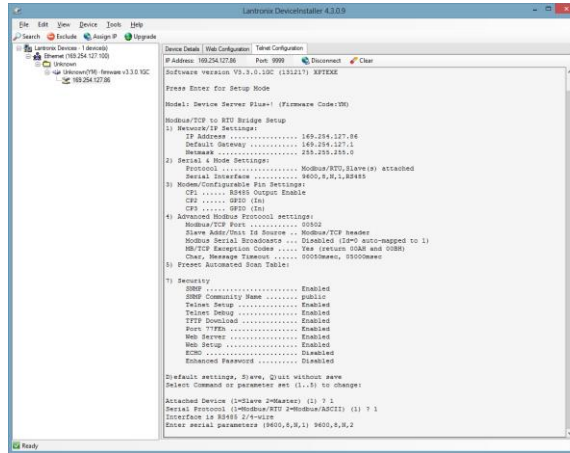


Fig 6.7.1

6.8 As shown in fig 6.8.1, enter ‘S’ or ‘s’ to save the changes. Then click “Connect” to verify the changes.

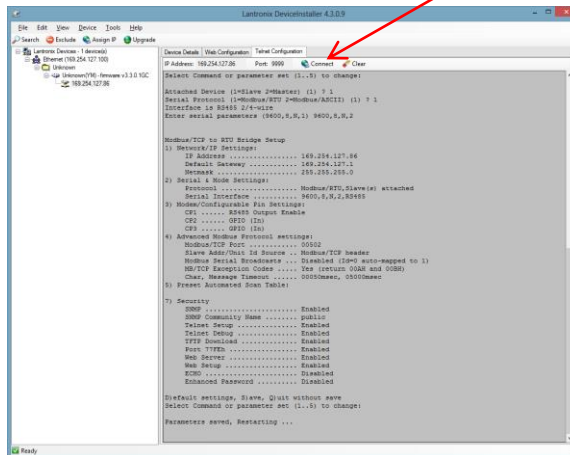


Fig 6.8.1



6.9 As shown in fig 6.9.1, verify the Web communication settings as “Baud rate = 9600, Databit = 8, Parity = None, Stop bit = 2”.

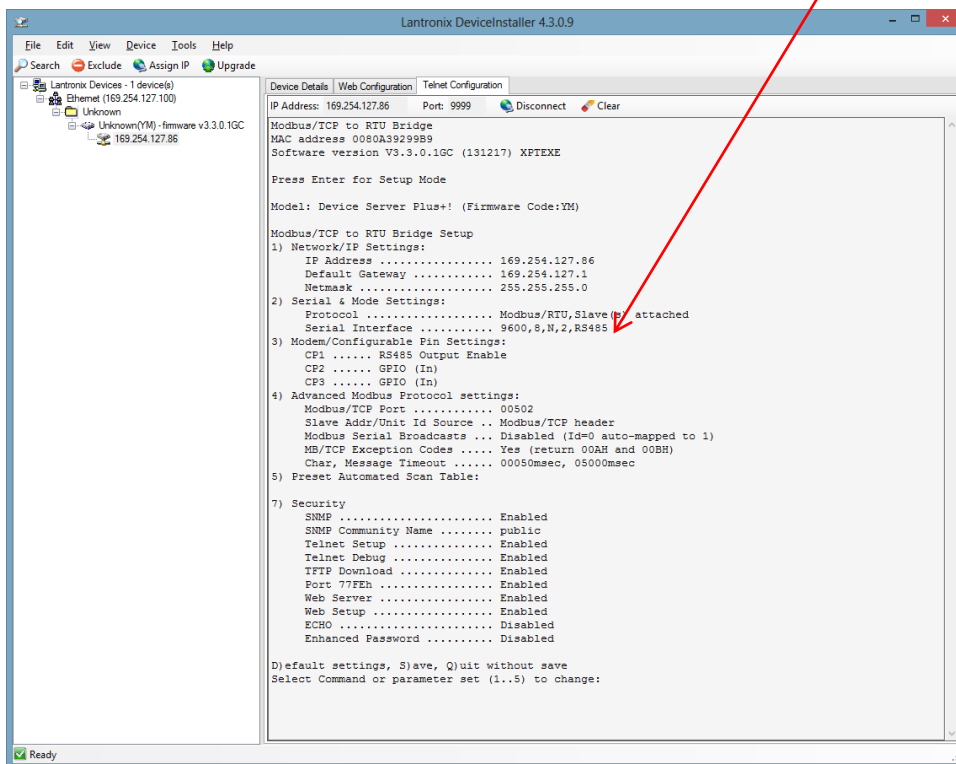


Fig 6.9.1



6.10 In file menu, press 'F4' or click "Tools > Ping ...".

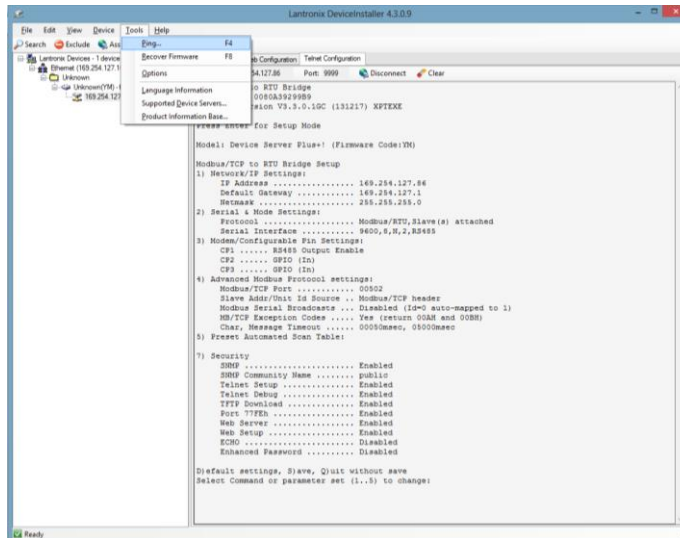


Fig 6.10.1

6.11 Enter the IP address (e.g. 169.254.127.86) of the converter, then click "Ping".

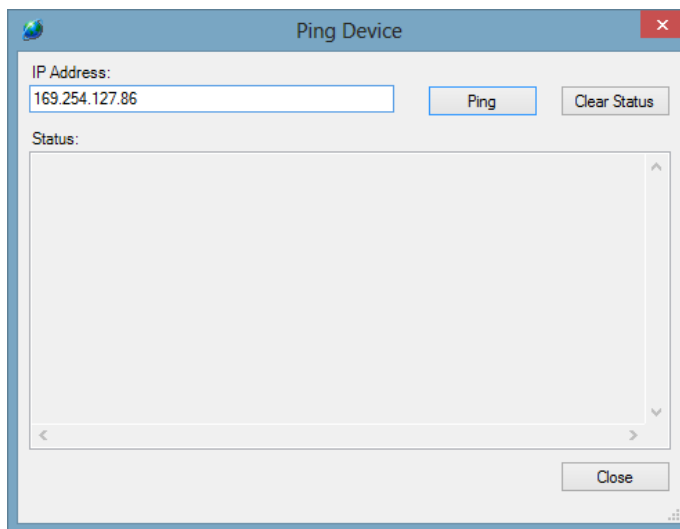


Fig 6.11.1



6.12 If the converter responses, it will display 4 lines of message as shown in Fig 6.12.1

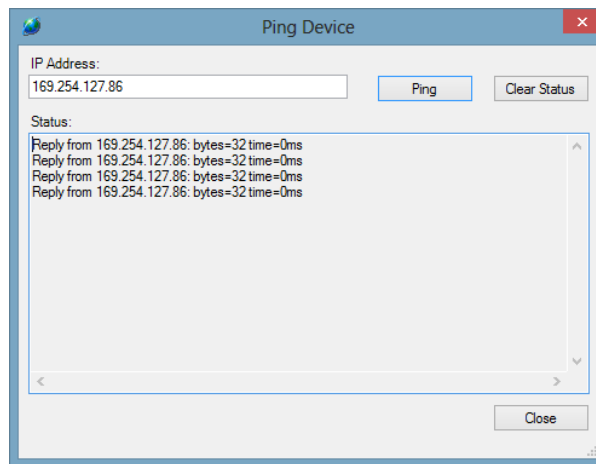


Fig 6.12.1



7. Verify Connectivity with Slave Device

This session assumes that user had already verified the communication with slave device using USB-to-serial cable.

7.1 Open Modscan software. In the file menu, click “Connection > Connect”.

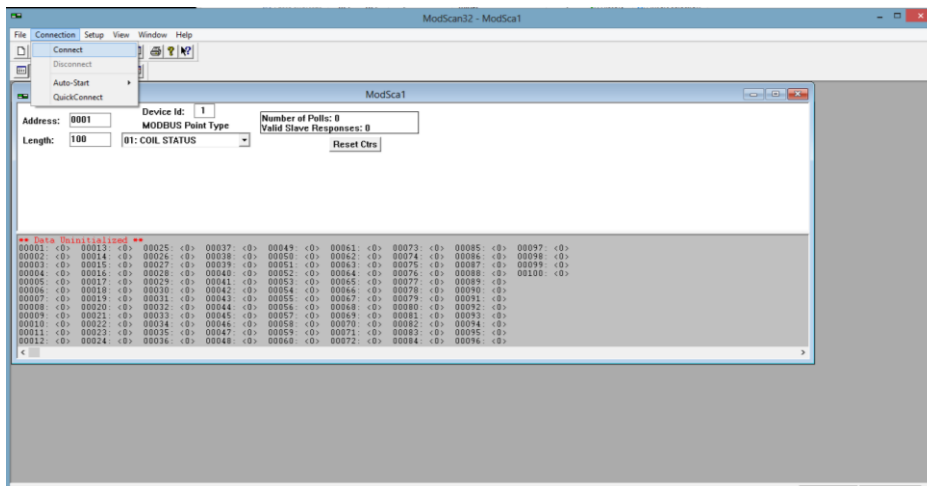


Fig 7.1.1



7.2 In the “Connect Using” field of “Connection Details” page, select “Remote Modbus TCP Server”.

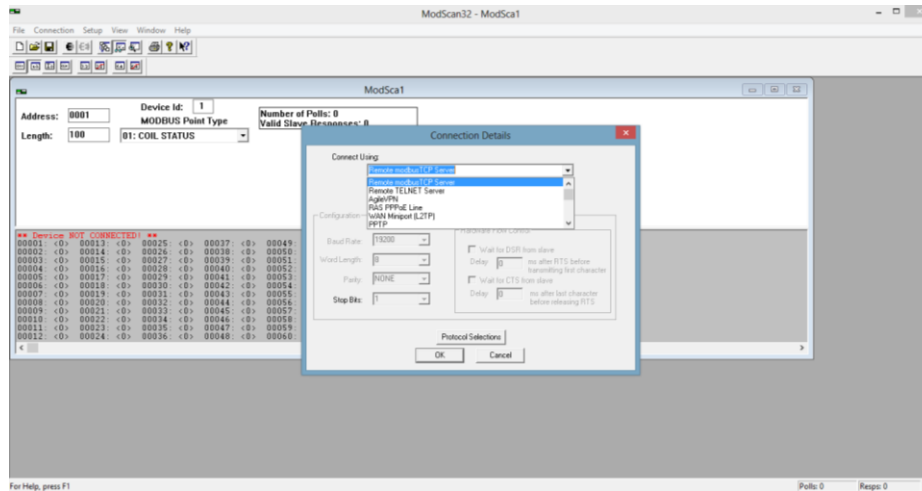


Fig 7.2.1

7.3 Enter IP address of the Modbus TCP Converter. Leave Service Port (502) unchanged. Then click “OK”.

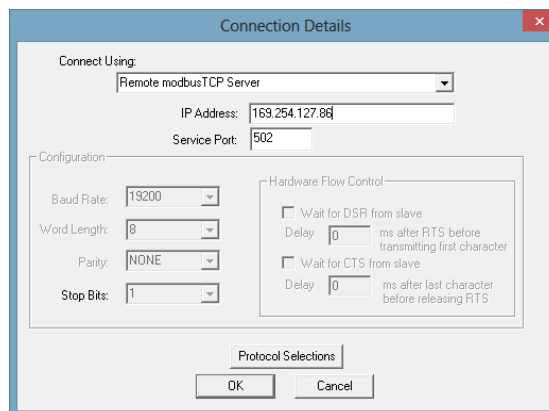


Fig 7.3.1



7.4 Enter the fields of interest (Address: 0001, Length: 100, Device Id: 1, Modbus Point Type: 03 – Holding Register). Verify “Number of Polls” and “Valid Slave Responses” match to denote Modbus TCP communication is successful.

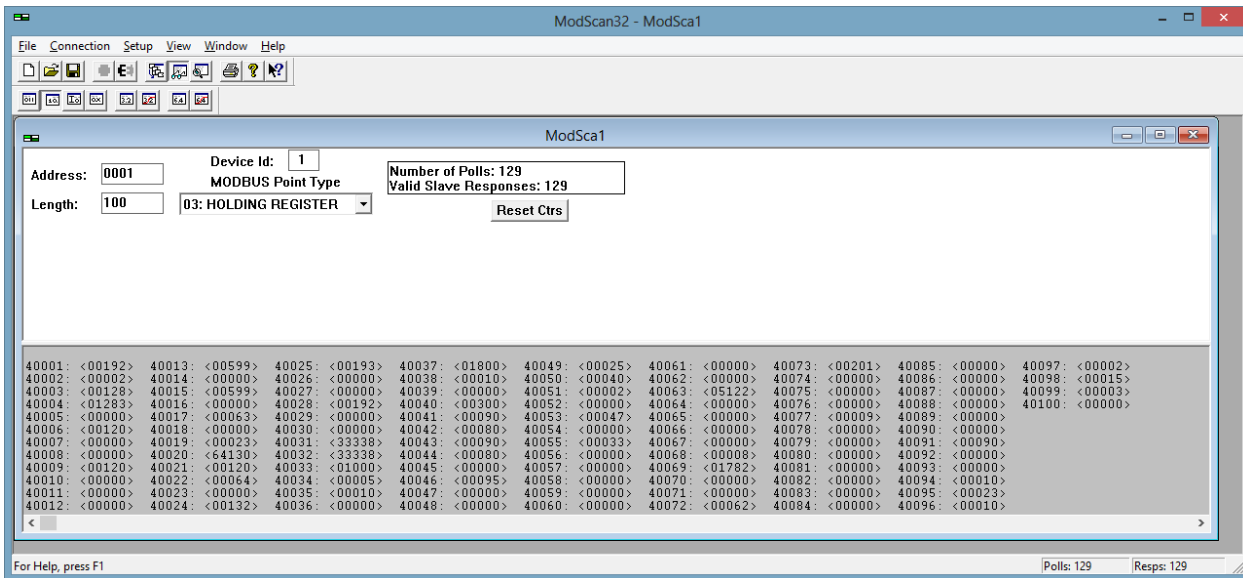


Fig 7.4.1



8. Change IP address

8.1 To change the IP address and Subnet Mask of the Modbus TCP Converter, click “Device > Assign IP Address”.

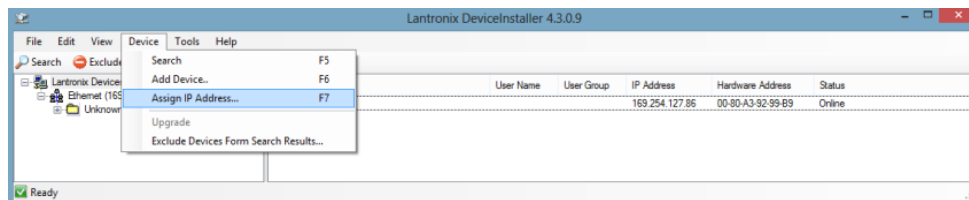


Fig 8.1.1

8.2 Select “Assign a specific IP address”, then click Next.

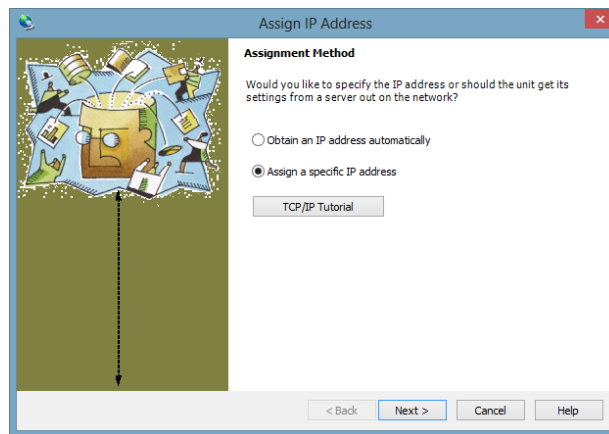


Fig 8.2.1



8.3 Enter the IP address, Subnet Mask, and Default gateway, then click Next.

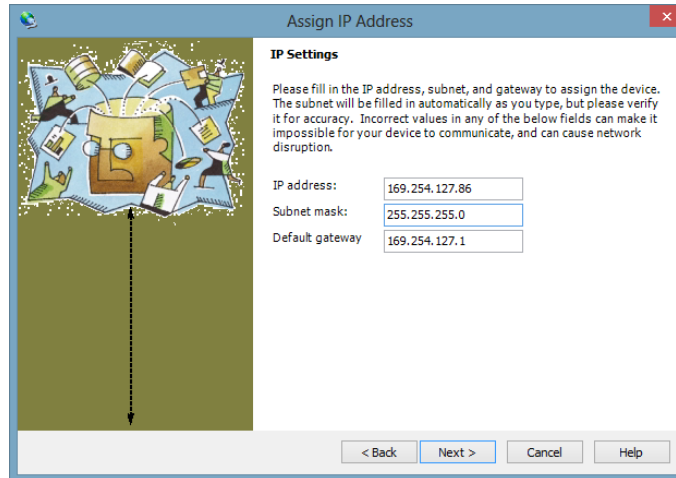


Fig 8.3.1

8.4 Click "Assign".

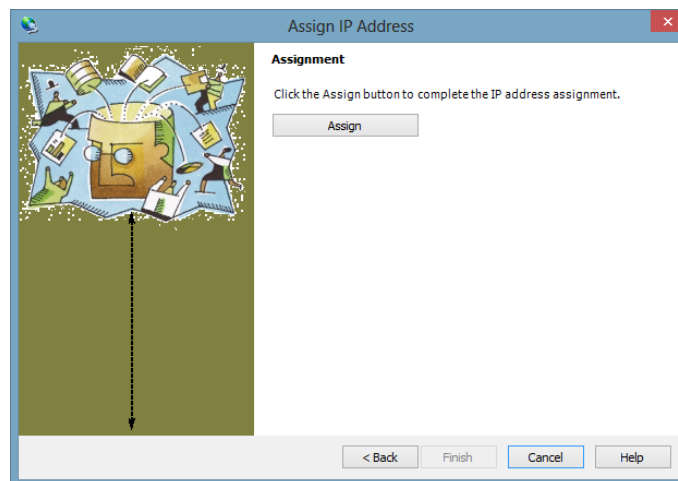


Fig 8.4.1



8.5 Click "Finish".

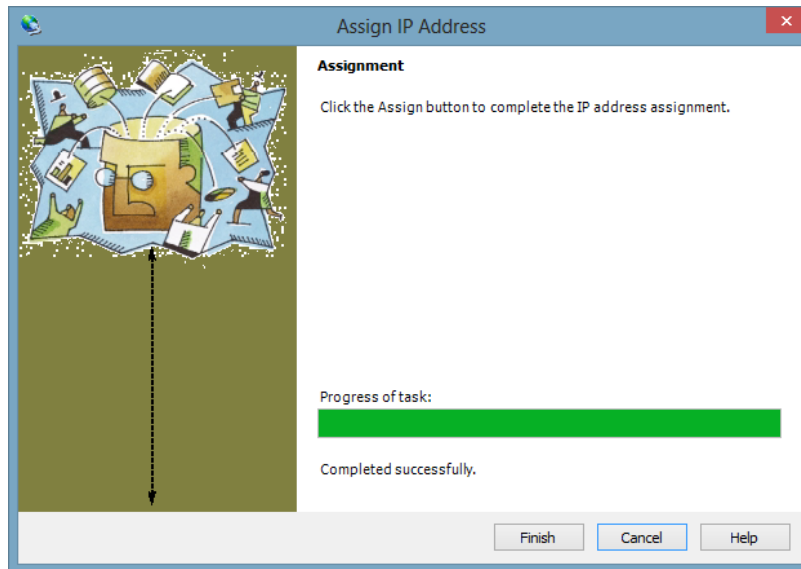


Fig 8.5.1

8.6 Note that every time the IP address is changed, the converter will default the serial communication settings to (9600, 8, N, 1). To change the com settings different from the converter default, repeat session 6.



A. Setup Static IP Address

Below are the steps to setup static IP address in the computer so that one can use a cross over RJ45 cable to communicate directly with the Modbus TCP Converter.

A1. Open network page and select Ethernet connection.

A2. As shown in Fig A2.1, click “Properties”.

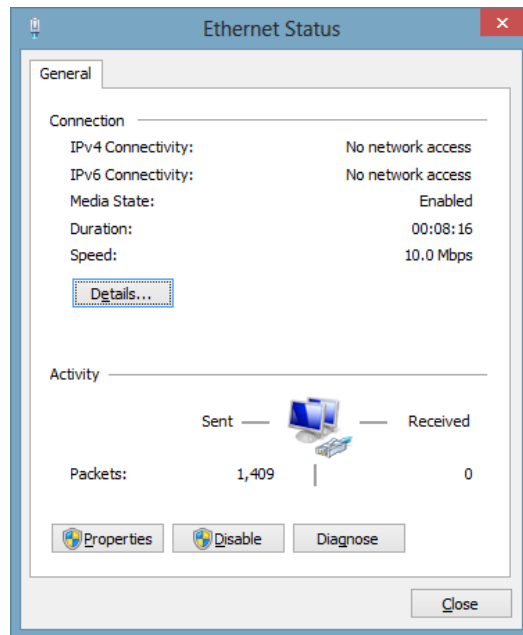


Fig A2.1



A3. Highlight “Internet Protocol Version 4 (TCP/IPv4), then click “Properties”.

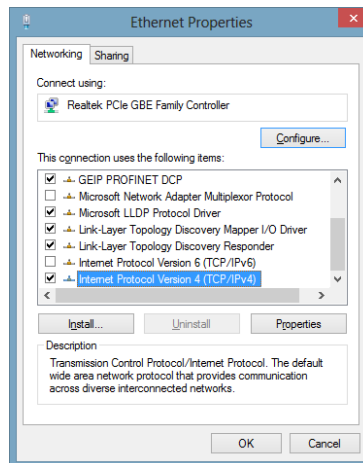


Fig A3.1

A4. Set the IP address of the computer as “1.1.1.100” (as shown in Fig A4.1) since we don’t know the IP address of the Modbus TCP Converter at first . Then click “Ok”, “Ok”, and “Close” to exit the “Ethernet Status” page.

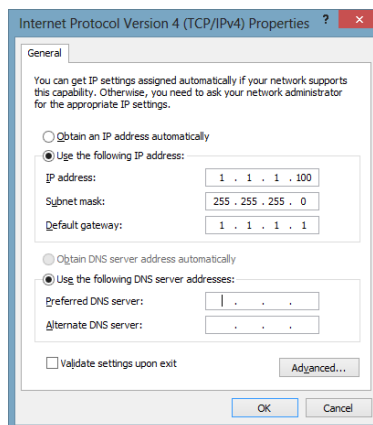


Fig A4.1