

TRP-C31M

MODBUS TCP to RTU/ASCII

Gateway



User's Manual

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1. Introduction.

The TRP-C31M, MODBUS gateway allows the legacy MODBUS RTU/ASCII devices to operate on a MODBUS TCP network. It allows either MODBUS serial master or slave to communicate with MODBUS TCP's slave or master. When TRP-C31M function as "MODBUS TCP masters to RTU/ASCII slaves": It allows multiple MODBUS TCP masters to communicate with a MODBUS serial network. the queries from different masters are pipelined and processed one by one. When TRP-C31M function as MODBUS RTU/ASCII master to MODBUS TCP slaves: it can connect up to 8 MODBUS TCP slaves. User can specify a UID range for each MODBUS TCP slave. TRP-C31M provides inactive timeout that allows user to specify a time period to disconnect TCP/IP connection to prevent one connection slot was occupied if there is no activity in the network., or prevent any another connection again. A friendly management software provides user an easy way of configuration over Ethernet. TRP-C31M can work at Loop back Mode, all data is sent back immediately. This feature makes the connection testing easy. The industry standard DIN rail and panel mount design enable user a fast and professional installation.

1-1. Features

- DIN rail or Panel mount.
- Supports 10/100 Mbps Ethernet.
- Supports RS-232, RS-422, and RS-485 serial interface.
- Supports LAN and WAN communications.
- Management access password protected.
- High speed up to 230.4Kbps
- Supports 8 MODBUS TCP master to MODBUS RTU/ASCII slave (up to 31).
- Supports MODBUS RTU/ASCII master to MODBUS/TCP slave devices (up to 8).
- Provide inactive timeout for connection auto-recovery when power failures.
- Automatically generate exception when RTU/ASCII slave device does not response.
- Remote IP address filtering function to reject unwanted incoming connection source.

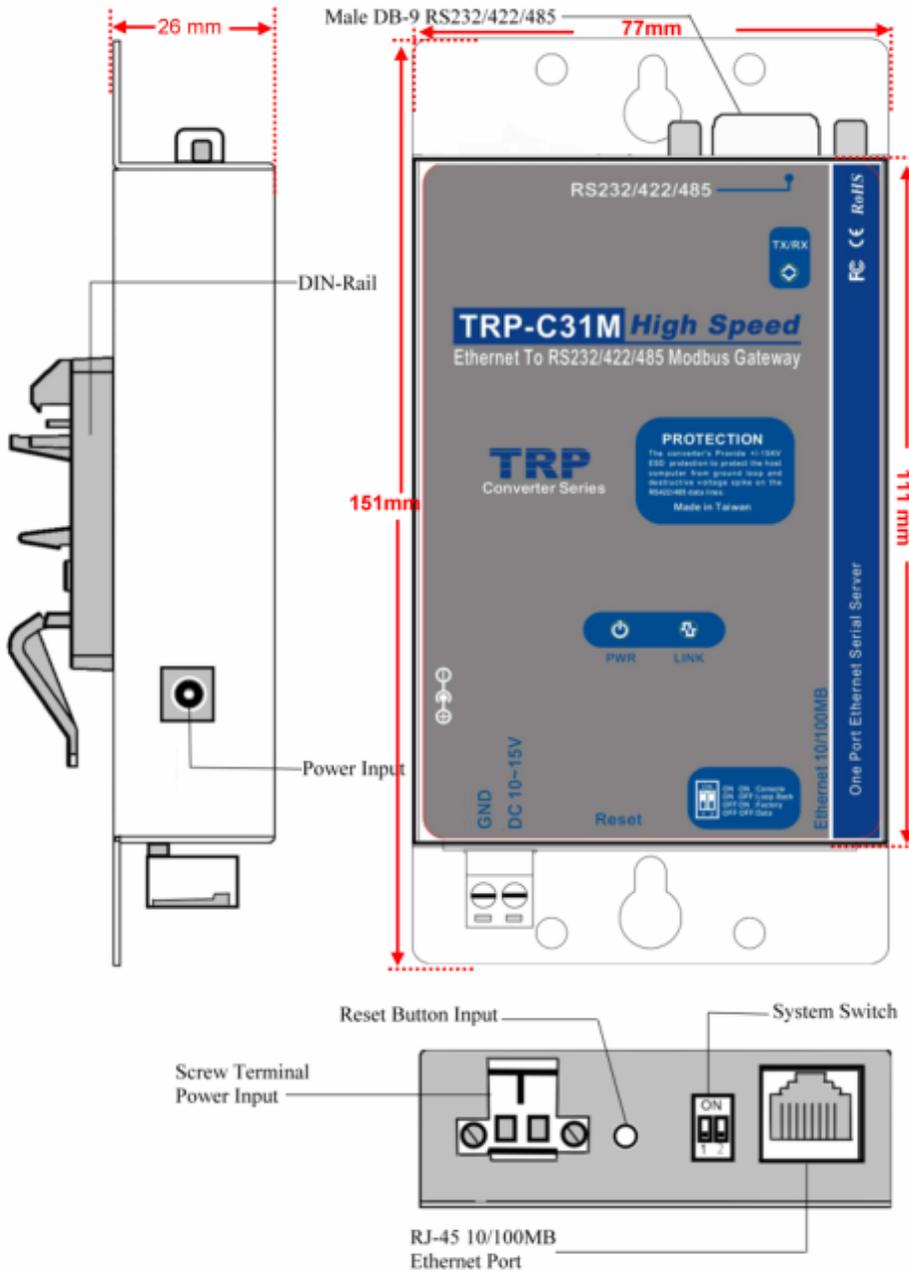
1-2. Specifications

- Output: 64K bytes.
- Input: 8K bytes.
- Serial Connection: DTE – BD-9 male
- LAN: 10/100 Mbps Auto-detecting.
- RS-232: TX, RX, RTS, CTS, DTR, DSR, DCD, GND.
- RS-422: TX+, TX-, RX+, RX-, RTS+, RTS-, CTS+, CTS-, GND.
- RS-485: Data +, Data –, GND.
- Data Rate: 110 bps to 230.4 k bps.
- Parity: none, even, odd, mark, space.
- Data Bits: 5, 6, 7 or 8.
- Stop Bits: 1, 1.5 or 2.
- Protocol: TCP, IP, ARP, DHCP, Telnet, HTTP, UDP, ICMP.

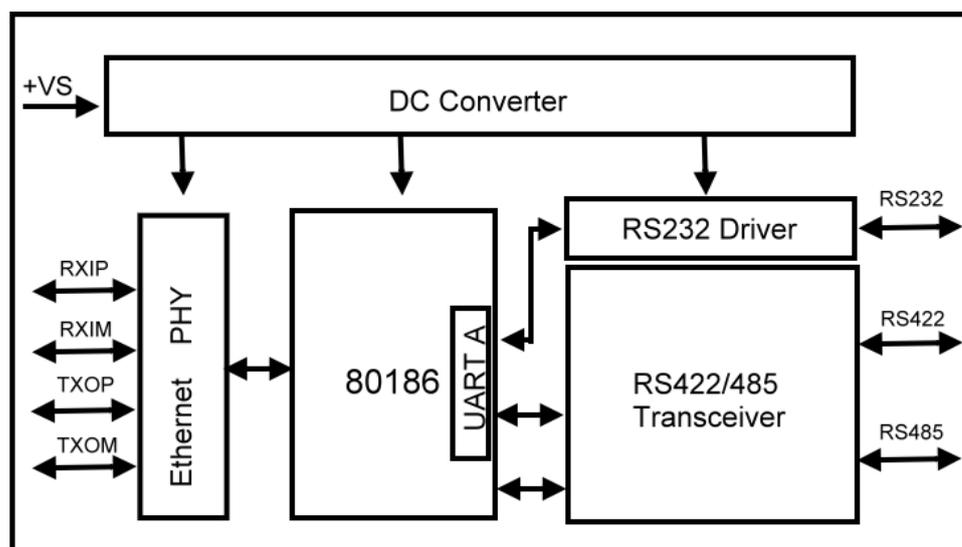
- Power Requirements: 9 ~15 VDC / 500 Ma.
- Operating Temperature: 0 to 60 °C.
- Storage Temperature: -20 to 70 °C
- Humidity: 10~ 90% Non-Condensing.
- Dimensions: 151mm x 77mm x 26mm.
- Weight: 377g.

2. Hardware Description

2-1.Panel Layout



2-2. Block Diagram



2-3. LED display

PWR LED: System is ready.

RX LED: Data receiving.

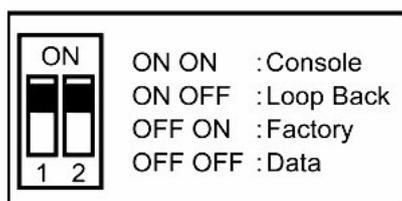
TX LED: Data transmitting.

2-4. Reset Button

The reset button can be found between the switch and terminal block. To reset the unit manually apply power, insert a small plastic tool, and press lightly depressing switch. Hold for 1 second and release. The Link and Run LED will go out and turn back on.

2-5. Dip Switches

A double DIP switch allows the TRP-C31M to be entered into Console/Loop back/Default/Data Mode.



When all these switches are moved into the ON position, the TRP-C31M enters Console Mode, allowing configuration of the TRP-C31M from a PC running a terminal program such as Hyper-terminal. When the TRP-C31M enters Console Mode, the Console Mode screen will appear in the Hyper-terminal program window. The serial port settings must be 8-N-1 at 9600 baud.

When the DIP switches are switched to the ON OFF position, the TRP-C31M will work at Loop back Mode, all data is sent back immediately.

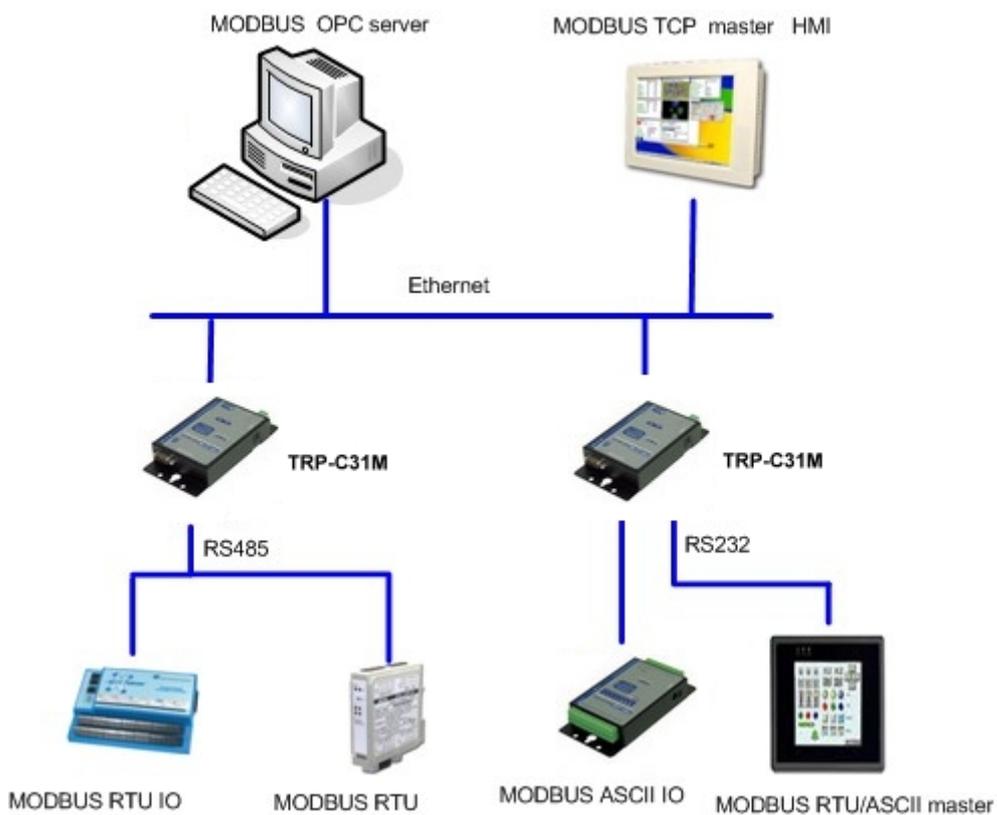
When the DIP switches are switched to the OFF ON position, the TRP-C31M will revert to its factory

version firmware no matter what newer firmware has been upgraded.

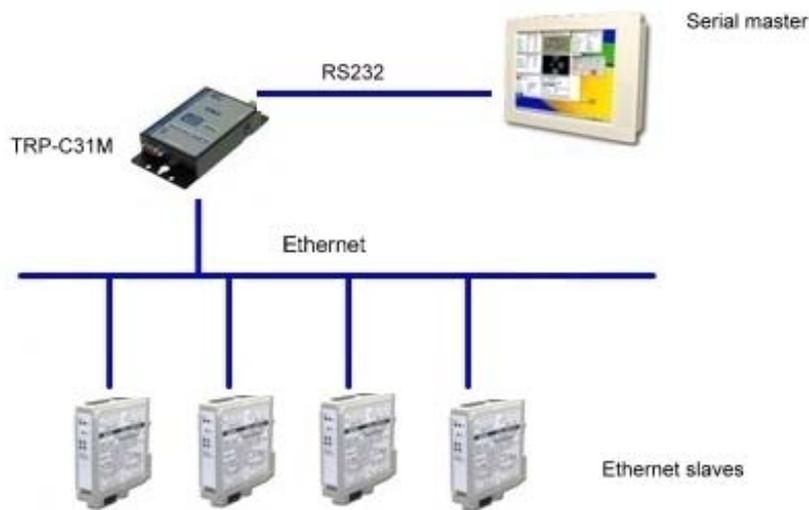
When all of the DIP switches are switched back to the OFF position, the TRP-C31M will enter Data Mode (RS-232, RS-422 or RS-485).

3. TRP-C31M typical application.

3-1. Ethernet master link to multiple serial slaves (up to 31)



3-2. Serial master link to multiple Ethernet slaves (up to 8)



4. Install TRP-C31M

The following information is provided to give the user an understanding of how to connect the TRP-C31M to the LAN and serial device. A review of the switch settings and the functionality of the LED's are also provided.

4-1.Power Connection

The TRP-C31M has a two pins terminal block and power jack. Power can apply from either terminal block or the power jack. It accepts 9VDC-15VDC 500mA power supply. When power is applied PWR LED will turn and flash every one second to indicate the system is up and ready.

4-2.Ethernet Connection

A straight-through Ethernet cable can be used to connect the MODBUS gateway to an Ethernet hub, switch, or wall plate. A crossover Ethernet cable can be used to make a connection directly to the NIC (Network Interface Card) on a PC or laptop.

4-3.Serial Connection

The TRP-C31M has one DB-9 male connector. The serial port is configured as a DTE (data terminal equipment) device just as PC's COM ports. Therefore a null modem cable is required to make a connection between a COM port on a PC to the TRP-C31M serial port. The cable to connect the TRP-C31M serial port to a DCE device must be straight-through.

The TRP-C31M has one serial port. The port can be configured as a Console Mode connection or as RS-232, RS-422 or RS-485 interface to the TRP-C31M (if all of the DIP switches are in the OFF position) using the TRP-C3XM software, via Telnet, or using the Web Server.

4-4. DB9 Pin Configuration

Pin	RS-232	RS-422	RS-485
1	DCD	RXD (-)	
2	RXD	RXD (+)	
3	TXD	TXD (+)	D (+)
4	DTR	TXD (-)	D (-)
5	GND	GND	GND
6	DSR	CTS (-)	
7	RTS	CTS (+)	
8	CTS	RTS (+)	
9	RI	RTS (-)	

5. Serial Port Operational Modes

Using the TRP-C3XM Manager software, the serial port of TRP-C31M can be set to **Console Mode**, **Default Mode** or **Upgrade Mode**. The serial port can be configured for RS-232, RS-422 or RS-485 operation. The TRP-C31M also can be set to Console Mode by placing all the DIP switches into the ON position.

5-1. Console Mode

The console mode allows TRP-C31M access to the setup menu. This is the way to reconfigure the default settings for the application. A serial connection is made between a PC COM port and the TRP-C31M serial port by using a null modem cable. In console mode, the serial port defaults to an RS-232 interface.

The serial port default settings are,

Server name:	TRP-C31M
Serial number:	Fixed
Password:	Blank
DHCP:	Disable
IP address:	192.168.1.1
Netmask:	255.255.255.0
Gateway :	192.168.1.254
MAC address:	Fixed
Version & Date:	Current firmware version number and date

Serial port

Baud rate:	9600
Data/Stop bits:	8-1
Parity:	None
Flow control:	None
Serial port mode:	RS232

MODBUS parameters

Serial data format: RTU

Character timeout: 10 ms

Message timeout: 100ms

Inactive timeout: 0 minute (Disabled)

Maximum connection: 1

Gateway type: TCP Master to Serial Slave

TCP Master to Serial Slave

Listening TCP port: TRP-C31M: 502

Use MBAP's UID: Enable

Use specific:10

Generate Exception: Off

Remote IP address/filter:255.255.255.255

TCP Slave to Serial master

UID range: 1 to 8

Slaves IP address: 0.0.0.0

Destination TCP port: 502

and must be set to VT100 emulation mode. The default settings are used when the first serial port is set to console mode regardless the actual configuration parameters are.

5-2. Upgrade Mode

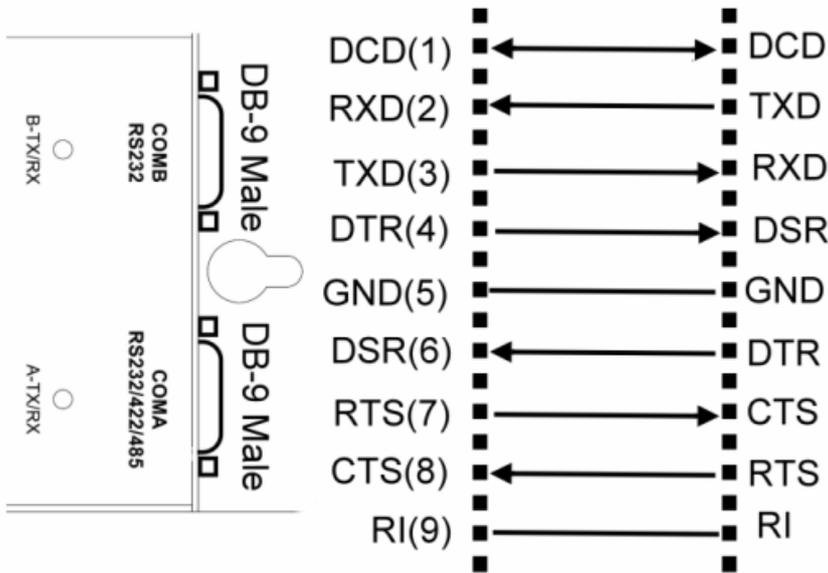
The newest firmware can be upgraded to TRP-C31M using the PC's serial port .

5-3.Default Mode

When Default Mode is selected and the Gateway Properties are updated (saved), all configuration settings return to their default values.

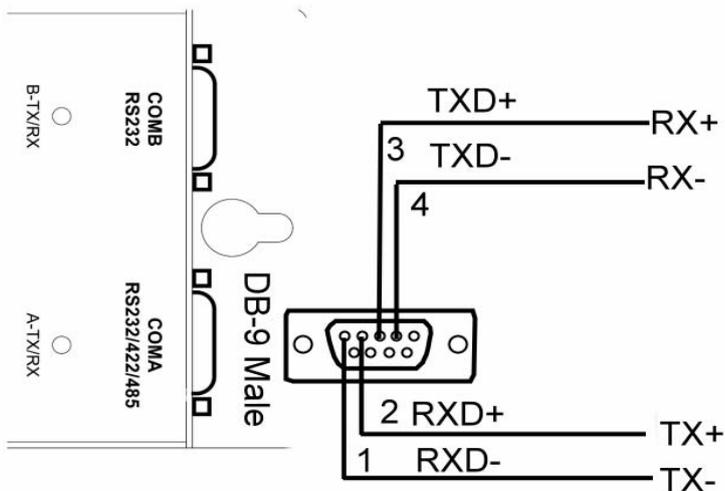
5-4.RS-232 Mode

The RS-232 supports 8 channels plus Signal Ground and is configured as DTE like a computer. Signals are single ended and referenced to Ground. To use handshaking, Flow Control must be set to RTS/CTS during Configuration. Refer to the next Pin out for connections.



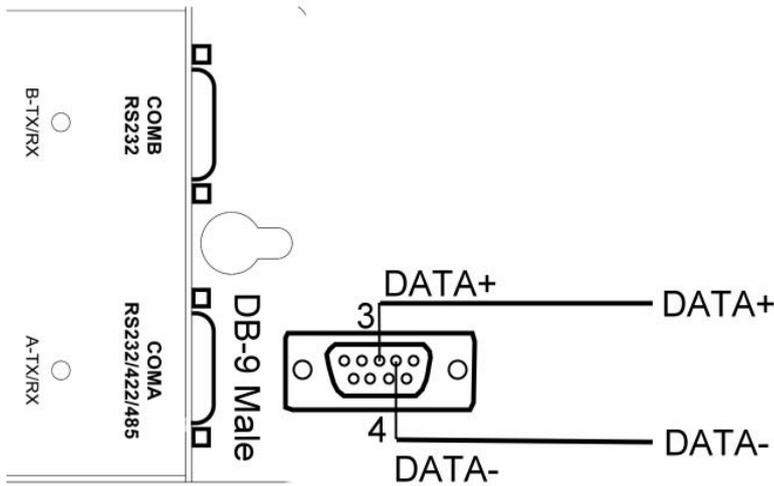
5-5.RS-422 Mode

The RS-422 mode supports 4 channels with full duplex operation for Receive, Transmit, RTS (Request to send) and CTS (Clear to Send). The data lines are in differential pairs. Ground provides a common mode reference. To use handshaking Flow Control must be set to RTS/CTS during configuration. Refer to the next pin out for connections.



5-6.RS-485 Mode

The RS-485 mode supports the Transmit and Receive Channels using 2-wire half-duplex operation. The data lines are differential pair Ground provides a common mode reference. Refer to the Pin out table for connections.



6. TRP-C31M Software Installation

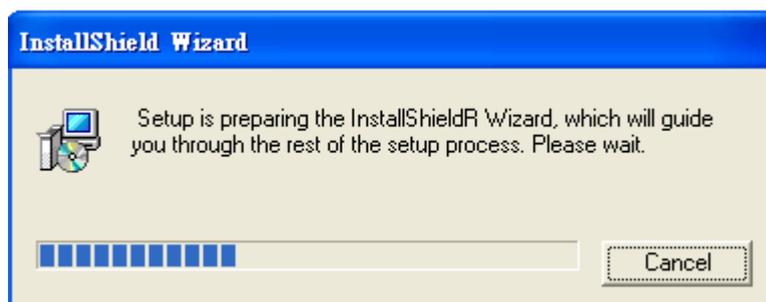
Trycom TRP-C3XM is a manager software provides user an easy way of TRP-C31M configuration over Ethernet. User may find the software in Trycom support CD or download from Trycom web www.trycom.com.tw. Configuring TRP-C31M to meet your LAN and application requirement is an easy process with the available setup menu in the TRP-C3XM manager software. So It is recommended the user install the TRP-C3XM software and do a search for all TRP-C31M over the network. When the searching process is completed, a window will list all the on LAN devices, user may make them available for configuration.

6-1.New Installation

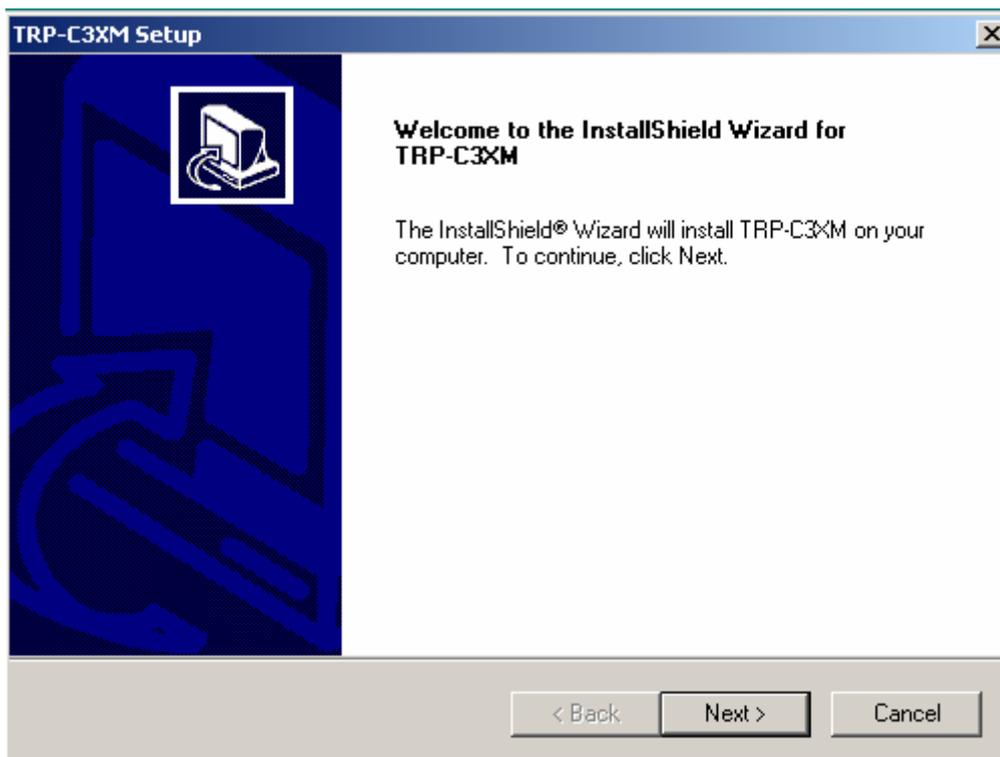
The following procedures are for the TRP-C3XM Manager Software installation.

Step1. Inserting the TRP-C31M support CD in the CD-ROM, it will automatically launch the InstallShield Wizard. To manually start the software installation, select the **Start** button on the desktop. At the Run command line type D:start.exe, then select OK. The D: is the drive letter for the CD Rom.

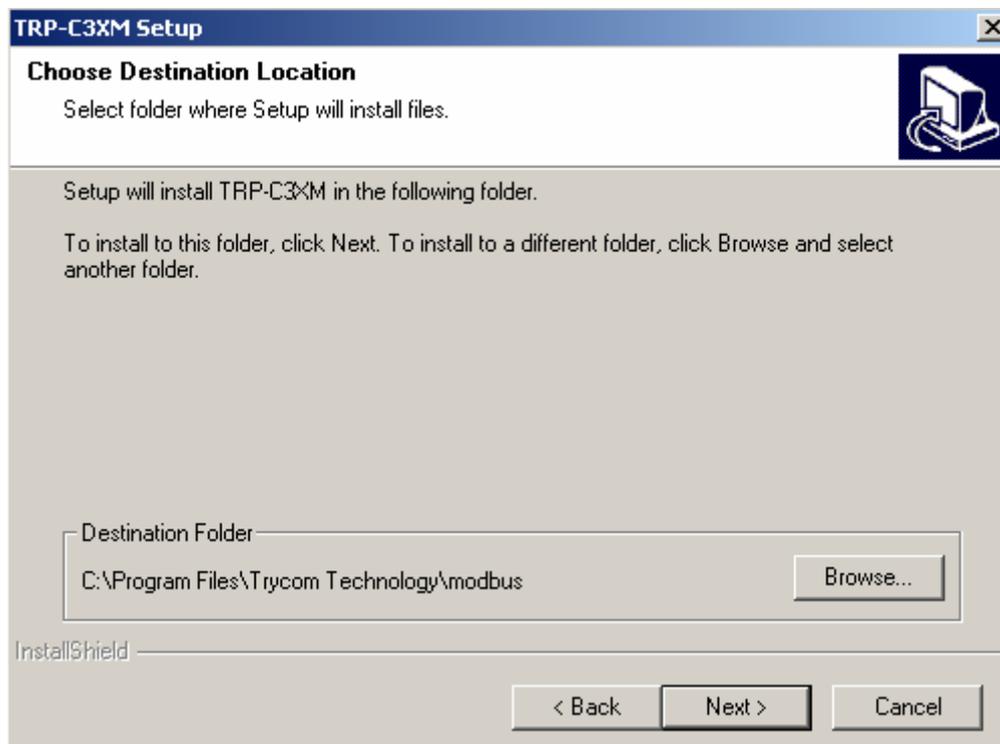
The InstallShield Wizard window automatically displays to begin the setup procedure.



Step2.Select Next when the TRP-C31M **Setup** window appears.



Step3 .In the **Choose Destination Location** window, select “Next” to install the TRP-C3XM software in the default location, or select “Browse” to install into a user selected directory.



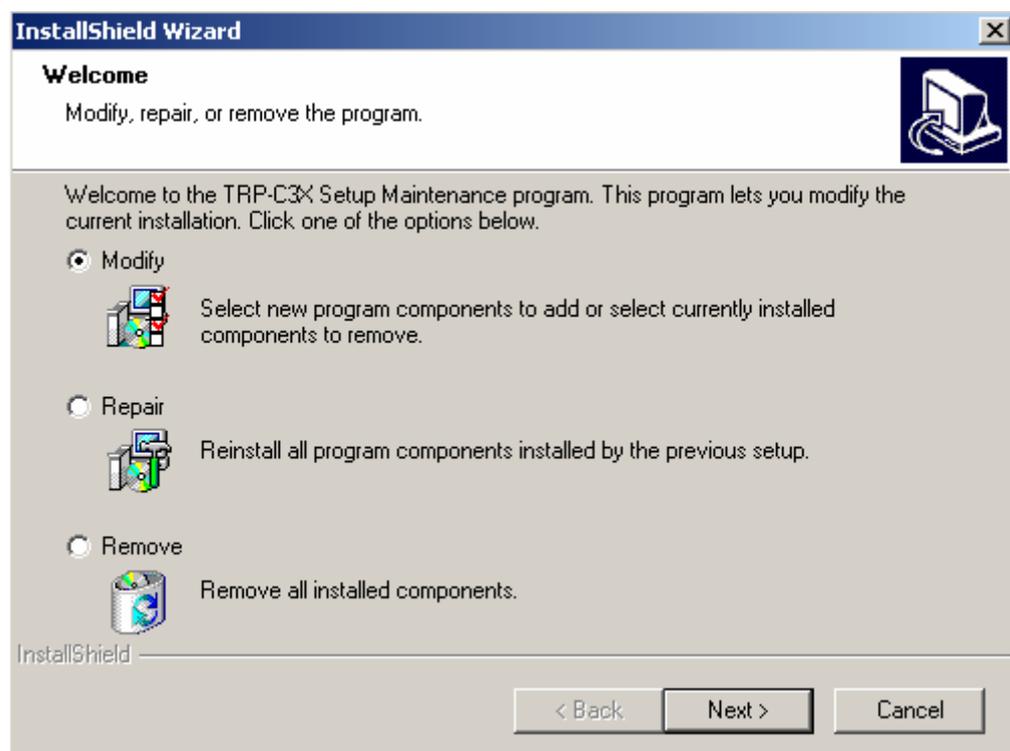
The installation progress will be shown until complete.

Step4. Select “Finish” when the InstallShield Wizard Complete screen appears. When the installation is complete the Install window closes allowing the user to access the Manager software in the program files. If loaded in the default location Go to **Start/Programs/Modbus/TRP-C3XM** manager to open.

Connect the TRP-C31M to the LAN and apply power. The PWE LED will flash indicating power has been applied and communications begin; and the Link LED indicates an Ethernet connection has been made.

6-2.Updating an Existing Installation

If an older version of the TRP-C3XM Manager software is already installed, the Modify, Repair or Remove the program window will appear when the installation process is initiated:



The recommended procedure is to remove all installed components first. Once the software has been removed, install the new software.

6-3.Using TRP-C3XM Manager Software

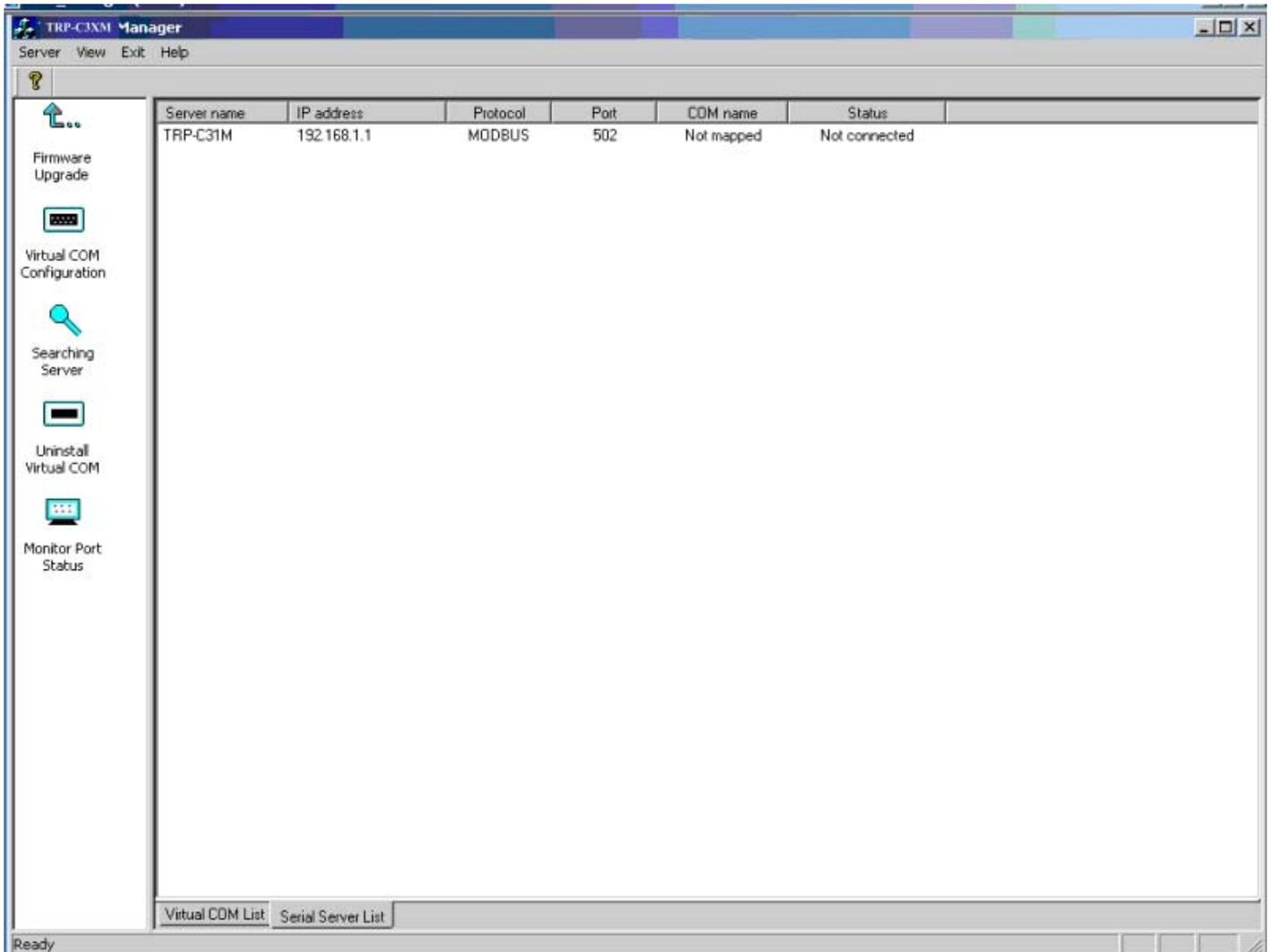
The Manager software performs several functions:

- Searching on LAN TRP-C31M.
- Displaying and changing the configuration of TRP-C31M
- Upgrading the TRP-C31M firmware
- Monitoring Port Status
- Saving and Loading Configuration Files

6-4. Searching on LAN TRP-C31M

Once the TRP-C31M is connected to the LAN the TRP-C3XM Manager software will search all the on LAN TRP-C31M and display them in a window by name and IP address.

Select TRP-C3XM Manager in the program file menu. If the default location was selected during the installation the program will be found under Start/Programs/Modbus. Select TRP-C3XM Manager. As soon as the TRP-C3XM Manager opens it will initiate Searching Server and after a few seconds the MODBUS gateway list will display all (TRP-C31M) MODBUS gateways on the local area network.



To manually initiate a searching, on the menu side bar double click the **Searching Server** button. The Search Setup box will appear. It provides two options for searching for servers on the network:

- Specify the IP address of the MODBUS gateway
- Search all reachable servers

Enter the IP Address assigned to the desired MODBUS gateway or click Search all reachable servers, then OK. The Searching window is shown until all active MODBUS gateways on the LAN

are listed in the MODBUS gateway List window.

6-5. Configuring Gateway Properties

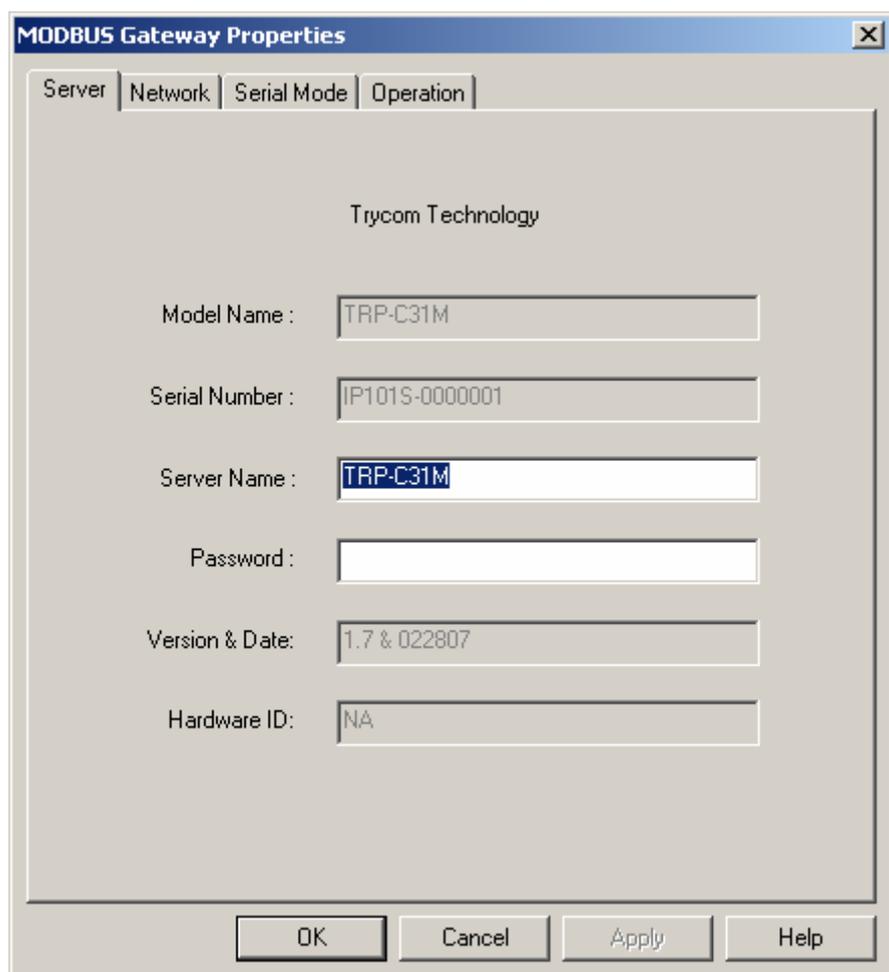
Highlight the MODBUS gateway in the list window and double click to open the Gateway Properties window. The Gateway Properties window is used to configure and store the Server configuration settings. Details for setting Properties are described in the next chapter. After configuring as needed, click Update to store the configuration in the server and click “Yes” to restart the server to make sure all settings are changed and conform to the desired application.

7. Gateway Properties

There are four ways to access the Gateway Properties and program, the **TRP-C3XM manager Software, Console mode, Telnet or Web Server.**

Instructions on how to move around in the user interface and change settings pertains to the TRP-C3XM Manager software are similar in others.

7-1. Server Configuration



The screenshot shows a dialog box titled "MODBUS Gateway Properties" with a close button (X) in the top right corner. The "Server" tab is selected, and the "Trycom Technology" logo is displayed at the top. Below the logo, there are several input fields for configuration:

- Model Name: TRP-C31M
- Serial Number: IP101S-0000001
- Server Name: TRP-C31M (highlighted in blue)
- Password: (empty)
- Version & Date: 1.7 & 022807
- Hardware ID: NA

At the bottom of the dialog box, there are four buttons: OK, Cancel, Apply, and Help.

Server Name

The server name is user configurable. The default server name is TRP-C31M. It is recommended users assign different server name on each TRP-C31M if more than one TRP-C31M connected to the LAN. When the TRP-C3XM Manager software searches for servers on the LAN it will display the server name allowing the user to distinguish between TRP-C31Ms.

Serial Number

Each TRP-C31M has a unique serial number. This is locked and cannot be changed.

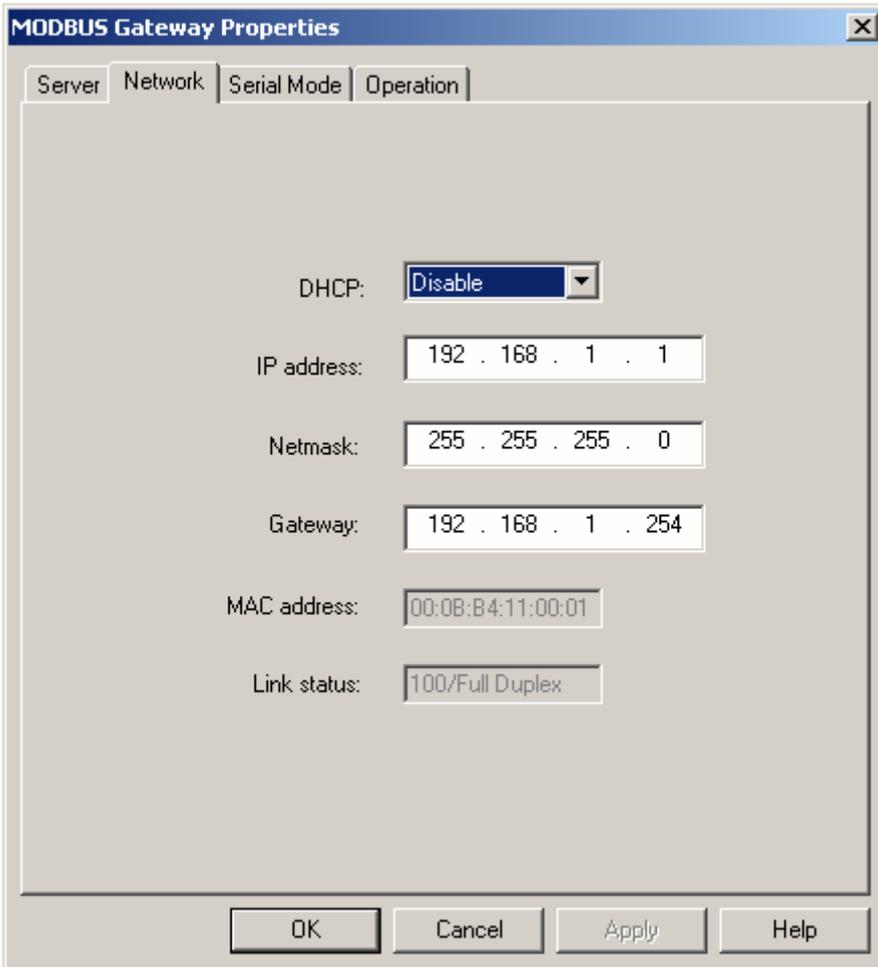
Password

Entering a password activates a security feature on the MODBUS gateway. Once a password is entered it will be required to access the menu and make changes.

Version & Date

The currently loaded version of the firmware, and when it was released, are shown here.

7-2. Network configuration



The screenshot shows a dialog box titled "MODBUS Gateway Properties" with a close button (X) in the top right corner. The dialog has four tabs: "Server", "Network", "Serial Mode", and "Operation". The "Network" tab is selected. The dialog contains the following fields:

- DHCP: A dropdown menu set to "Disable".
- IP address: A text box containing "192 . 168 . 1 . 1".
- Netmask: A text box containing "255 . 255 . 255 . 0".
- Gateway: A text box containing "192 . 168 . 1 . 254".
- MAC address: A text box containing "00:0B:B4:11:00:01".
- Link status: A text box containing "100/Full Duplex".

At the bottom of the dialog, there are four buttons: "OK", "Cancel", "Apply", and "Help".

DHCP

DHCP servers are a part of numerous LAN management systems. The DHCP field has two selections, "Enable" or "Disable". Arrow to the desired selection and select enter.

When enabled, TRP-C31M will send a DHCP request to the DHCP server, which will assign a dynamic IP address, Netmask, and gateway to the TRP-C31M. If a DHCP server is not available on the network the TRP-C31M will time out after 10 seconds and the default values will remain. When DHCP is enabled, the IP address, Netmask and Gateway fields become inaccessible and cannot be changed by the user.

IP Address

A static IP address can also be assigned in this section of the menu. A dynamic address assigned by the DHCP server may change if the TRP-C31M loses the Ethernet connection or power is removed. The host (client) communication software requests a connection to the specific IP address of the MODBUS gateway. If the DHCP reassigns a different IP address the software will not be able to communicate with the hardware. It is recommended to use a static IP address.

A static IP address is permanent and will not change unless changed in the menu. In most cases the network administrator establishes the static address to be used.

Netmask

The default LAN Netmask is configured for a Class C address. This may be reconfigured by the user.

Gateway

The gateway IP address allows users to access the MODBUS gateway from outside of the LAN.

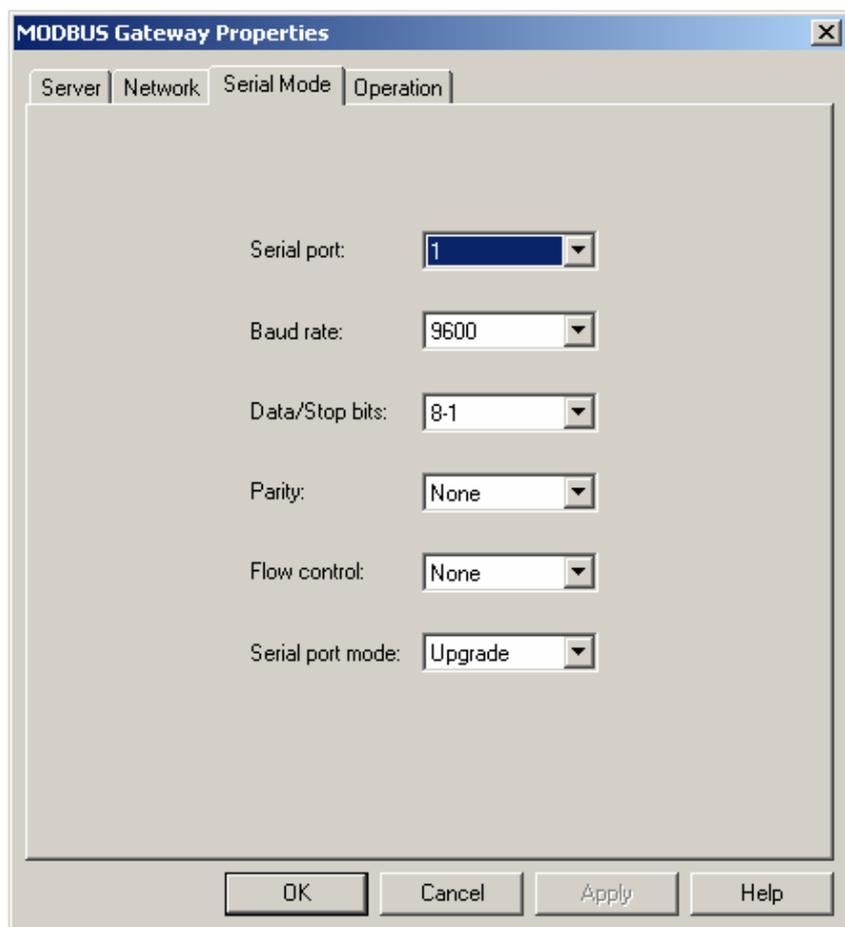
MAC Address

The MAC address is not adjustable. This is assigned in the factory. Every Ethernet device manufactured has its own unique MAC address.

Link Status

Link status automatically displays the type of Ethernet connection. It will either display 10 Base-T or 100Base-TX in full duplex or half duplex. This will depend on the LAN, switches, hubs used in the LAN topology.

7-3. Serial Interface Configuration



The image shows a screenshot of the 'MODBUS Gateway Properties' dialog box, specifically the 'Serial Mode' tab. The dialog box has a title bar with a close button (X) and four tabs: 'Server', 'Network', 'Serial Mode', and 'Operation'. The 'Serial Mode' tab is selected. The main area contains seven configuration fields, each with a label and a dropdown menu:

- Serial port: 1
- Baud rate: 9600
- Data/Stop bits: 8-1
- Parity: None
- Flow control: None
- Serial port mode: Upgrade

At the bottom of the dialog box, there are four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.

Serial Port

This field indicates the number of the port for with MODBUS gateway properties are currently being displayed. Changing the number in this field will cause all the other fields to display the properties for the specified port. Note, however, that before changing ports, any change to properties must be updated (Saved) or the MODBUS gateway will not retain them.

Baud Rate

The serial port baud rate on the TRP-C31M must match the serial baud rate of the connected device unless using Virtual COM mode. In Virtual COM mode the application program can setup this parameter on the fly by sending normal COM command and TRP-C31M will set it on the fly as if TRP-C31M's serial port is one of PC's COM port.

Data/Parity/Stop

This setting will have to match the data format of the connected device unless using Virtual COM mode. In Virtual COM mode the application program can setup this parameter on the fly by sending normal COM command and TRP-C31M will set it on the fly as if TRP-C31M's serial port is one of PC's COM port.

Flow Control

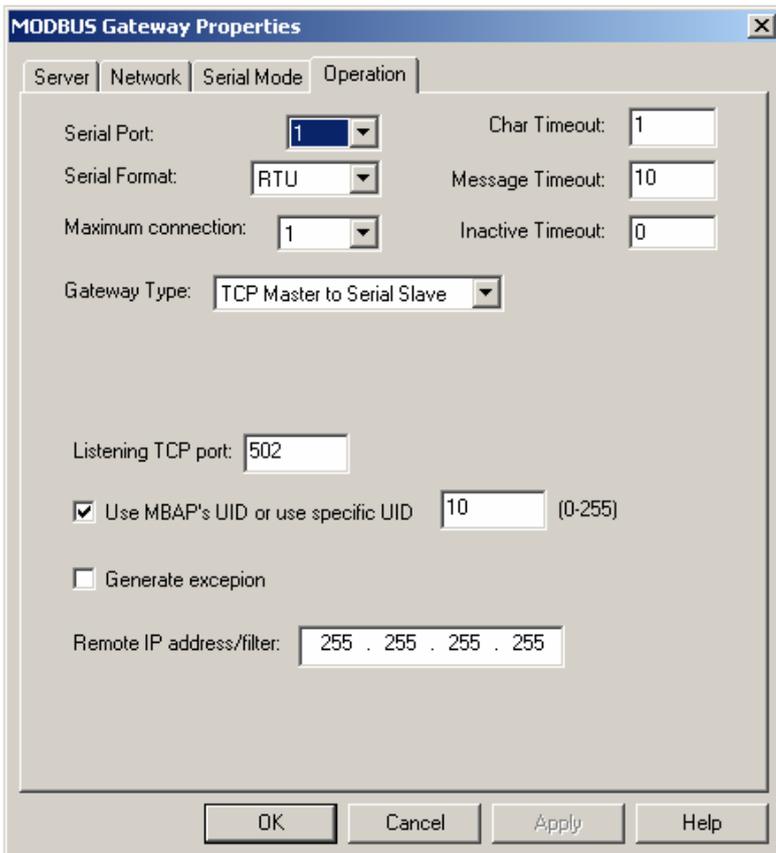
The flow control setting must match the connected serial device unless using Virtual COM mode. In Virtual COM mode the application program can setup this parameter on the fly by sending normal COM command and TRP-C31M will set it on the fly as if TRP-C31M's serial port is one of PC's COM port.

Serial Port Mode

This allows configuration of the MODBUS gateway for the following modes of operation:

- RS232 – When this mode is selected and the gateway is updated, the selected serial port will become a RS232 serial port on the gateway.
- RS422 – When this mode is selected and the gateway is updated, the selected serial port will become a RS422 serial port on the gateway.
- RS485 – When this mode is selected and the gateway is updated, the selected serial port will become a RS485 serial port on the gateway.
- Console – When this mode is selected and the gateway is updated, a PC running a communication program such as Hyperterminal can communicate with the MODBUS gateway via the Console Mode serial port.
- Upgrade – When this mode is selected and the gateway is updated, firmware can be uploaded into the MODBUS gateway via the Console Mode serial port or a virtual COM port mapped to the number of the Console Mode serial port.
- Default – When this mode is selected and the gateway is updated, it will revert the gateway to its default configuration.

7-4.MODBUS configuration



The screenshot shows the 'MODBUS Gateway Properties' dialog box with the 'Operation' tab selected. The configuration is as follows:

Parameter	Value
Serial Port	1
Char Timeout	1
Serial Format	RTU
Message Timeout	10
Maximum connection	1
Inactive Timeout	0
Gateway Type	TCP Master to Serial Slave
Listening TCP port	502
Use MBAP's UID or use specific UID	<input checked="" type="checkbox"/> 10 (0-255)
Generate exception	<input type="checkbox"/>
Remote IP address/filter	255 . 255 . 255 . 255

Buttons at the bottom: OK, Cancel, Apply, Help.

MODBUS Gateway Properties

Server | Network | Serial Mode | **Operation**

Serial Port: 1 Char Timeout: 1
 Serial Format: RTU Message Timeout: 10
 Maximum connection: 1 Inactive Timeout: 0
 Gateway Type: TCP Slave to Serial Master

UID range	Slave IP address	TCP port
1 to 8	0 . 0 . 0 . 0	502
9 to 16	0 . 0 . 0 . 0	502
17 to 24	0 . 0 . 0 . 0	502
25 to 32	0 . 0 . 0 . 0	502
33 to 40	0 . 0 . 0 . 0	502
41 to 48	0 . 0 . 0 . 0	502
49 to 56	0 . 0 . 0 . 0	502
57 to 64	0 . 0 . 0 . 0	502

OK Cancel Apply Help

Serial Format

Serial format define the data format on the serial interface where it is RTU or ASCII. The default setting is RTU.

Character Timeout

In the MODBUS RTU protocol, character timeout is used to signal the end of a message. If there is an improper timeout occurs during sending message time period, it will cause a CRC checksum error and the message will be discarded. To improve this situation, whenever TRP-C31M receives a byte from its serial port, it will check the data in its buffer and estimate the message length. Base on the message length TRP-C31M calculates CRC checksum. If the CRC checksum matches, we know that is the end of the message. Therefore even there is a timeout error with the message. TRP-C31M can correctly parse the message and convert the MODBUS RTU packet into MODBUS TCP packet.

Message Timeout

This parameter allows you to set the time during for TRP-C31M to wait for the response message. When message timeout occurs, TRP-C31M would response an exception to MODBUS master if generate exception is enabled.

Inactive Timeout

Inactive timeout allows TRP-C31M to tear down a TCP/IP connection when there is no activity for a period of time. In case there is a networks failure or power outage. All the TCP/IP connection resource would be occupied by previous connection that prevent from TRP-C31M to accept further incoming connection.

Maximum Connection

This parameter defines the number of TCP connection to the gateway in either MODBUS TCP master or slave mode. The maximum number of the connection is 8. When TRP-C31M is set as gateway of TCP master to serial slave, it can accept Polling/Query from up to 8 different TCP masters. Each query will handle in sequence since MODBUS serial interface can only handle one query at a time. All other queries will be queued until the previous query is finished or timeout. TRP-C31M can queue up to 8 queries. If there are more than 8 queries at one time, those queries will be discarded and eventually TCP master will get a timeout.

Gateway Type

This parameter defines what kind of MODBUS devices which TRP-C31M is connected to. There are two types of connection.

- MODBUS TCP master to MODBUS serial slave.
- MODBUS TCP slave to MODBUS serial master.

The default setting is MODBUS TCP master to MODBUS serial slave. Each serial port in TRP-C31M can be configured into different gateway type.

Listening TCP port

The default listening MODBUS TCP port number is 502. It is recommended to use port number larger than 1024, if use TCP port number other than 502. Since most of TCP port number under 1024 are used by particular protocol.

Use MBAP's UID or Use Specific UID

If this parameter is enabled, TRP-C31M will extract the UID in MBAP's header and convert the message into MODBUS serial format with the extracted UID. If this parameter is disabled, TRP-C31M sends the converted message to MODBUS serial slave device with UID defined in the "Use Specific UID" field.

Generate exception

When this parameter is enabled, TRP-C31M will generate exception message when slave device does not response to the query command or message timeout.

Remote IP Address/filter

This is a security feature that is activated when the IP address of the desired client is programmed into the remote IP Address setting of the menu. This tells the TRP-C31M to communicate with only the listed IP address and to filter out all other requests for connection. This feature is only enabled at gateway type TCP Master to Serial Slave.

The default setting is 255.255.255.255. It is recommended not to change this setting until the application has been tested and is communicating properly. At that point the address filtering feature of the TRP-C31M can be activated.

UID Range

TRP-C31M use UID range to map a query from a MODBUS serial master with an UID within this range to an IP address and a TCP port. This is only used when the gateway type is MODBUS TCP slave to MODBUS serial master.

Slave IP Address and TCP port

This is only used when the gateway type is MODBUS TCP slave to MODBUS serial master. TRP-C31M maps a message from MODBUS serial master to a MODBUS serial slave.

7-5.Update/Save

Gateway Properties must be updated separately for each serial port. Updating varies slightly depending on which of the four configuration user interfaces are used.

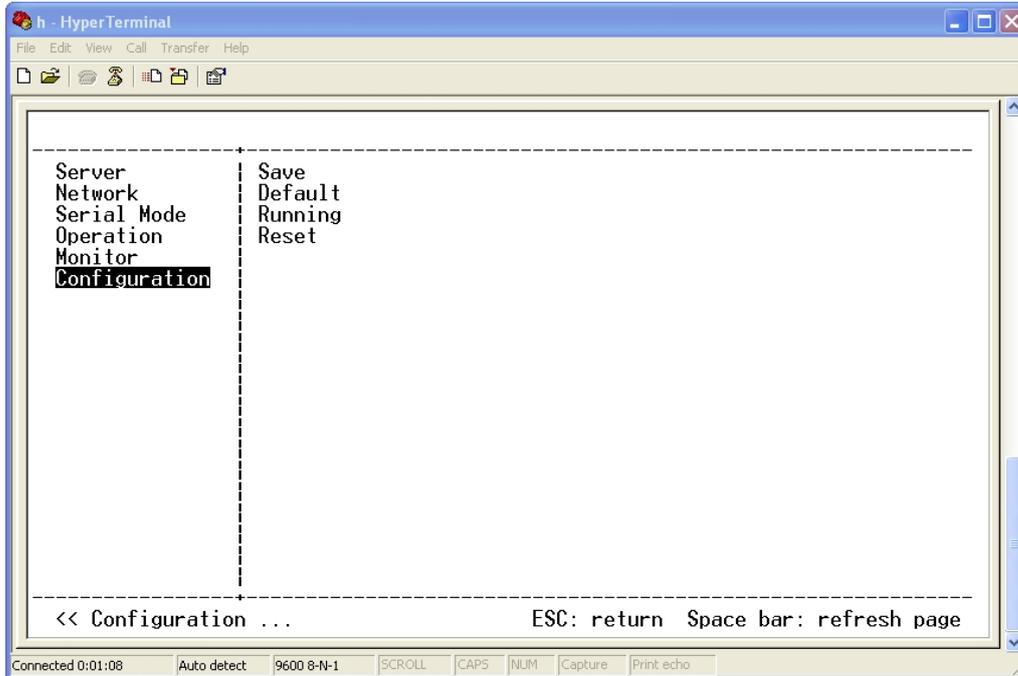
Updating the Gateway Properties in TRP-C3XM Manager Software

From the Gateway Properties screen, click the Update button to store the configuration settings for the currently selected port. The vcomui dialogue box will appear indicating you must restart the device before the new settings will take effect. Click Yes.



Saving Configuration Data in Console Mode or Telnet

Saving (updating) Gateway Properties is done from the Configuration screen. Access the Configuration screen by tabbing through the list of screens on the left side of the window and highlighting Configuration. There are four options shown on the right side of the Configuration screen: Save, Default, Running and Reset. Use Tab, Backspace, or arrow keys to move the cursor to the option position, then press Enter.



- Save – stores the configuration data to the MODBUS gateway flash memory and resets it.
- Default – restores the configuration data to factory default settings.
- Running – restores the configuration data to the last values stored in the flash memory.
- Reset – re-boots the MODBUS gateway, making it available for a client connection.

Web Server Interface

The Web Server interface provides the same updating options as Console Mode and Telnet. These are located at the bottom of all three Web Server pages. If a field is changed, you must click Save before leaving that page or the changes will be ignored.

TRP-C31M Web Configuration - TRP-C31M

Note: If you leave this page without saving, all changes will be ignored!

Server	Server name:	<input type="text" value="TRP-C31M"/>
Serial Port	Serial number:	<input type="text" value="IP101S-0000001"/>
Operation	Version & Date:	<input type="text" value="1.7 & 022807"/>
	Password:	<input type="password"/>
	DHCP:	<input type="text" value="Disable"/>
	IP address:	<input type="text" value="192.168.1.1"/>
	Netmask:	<input type="text" value="255.255.255.0"/>
	Gateway:	<input type="text" value="192.168.1.254"/>
	MAC address:	<input type="text" value="00:0B:B4:11:00:01"/>
	Link status:	<input type="text" value="100/Full Duplex"/>
	Hardware ID:	<input type="text" value="NA"/>

Note: If you leave this page without saving, all changes will be ignored!

8 Using Console Mode

Before the TRP-C31M is installed on a LAN the Console Mode can be used to change the settings from the defaults.

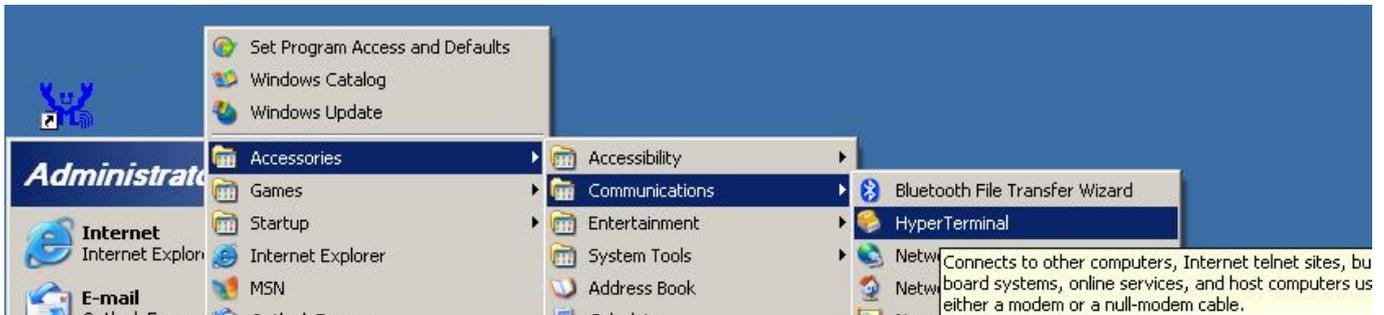
Connect a null modem cable between the TRP-C31M serial port with PC COM port. Apply power to the TRP-C31M. Using Hyper Terminal open the connected PC COM port at a baud rate of 9600, Data bits 8, Parity None, Stop bits 1, and Flow control None. Ensure all the DIP switches are in the ON position for TRP-C31M.

Hyper Terminal's serial settings are configured the same as the mentioned default settings of the TRP-C31M and must be set to VT100 emulation mode. The default settings are used only if they have not been changed

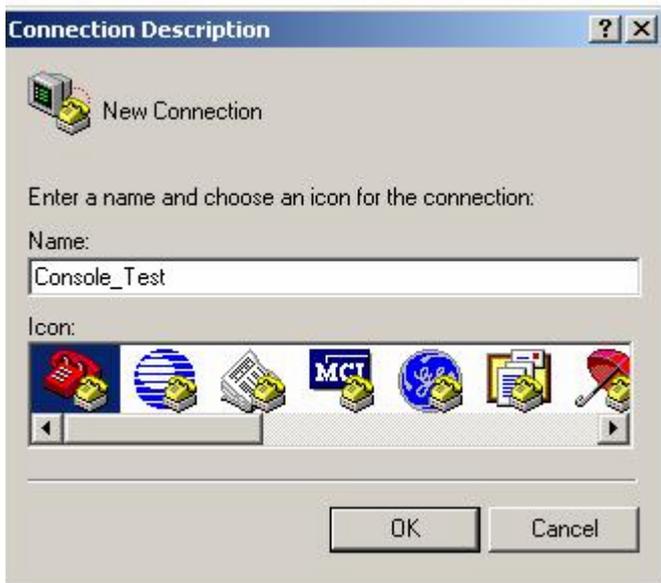
Console Mode Software Install

STEP1. Select "Hyper Terminal" WINDOWS Utility

Start ---Accessories---Communications --- Hyper Terminal



STEP2.Select “New Connection” and Enter a name, click “OK”

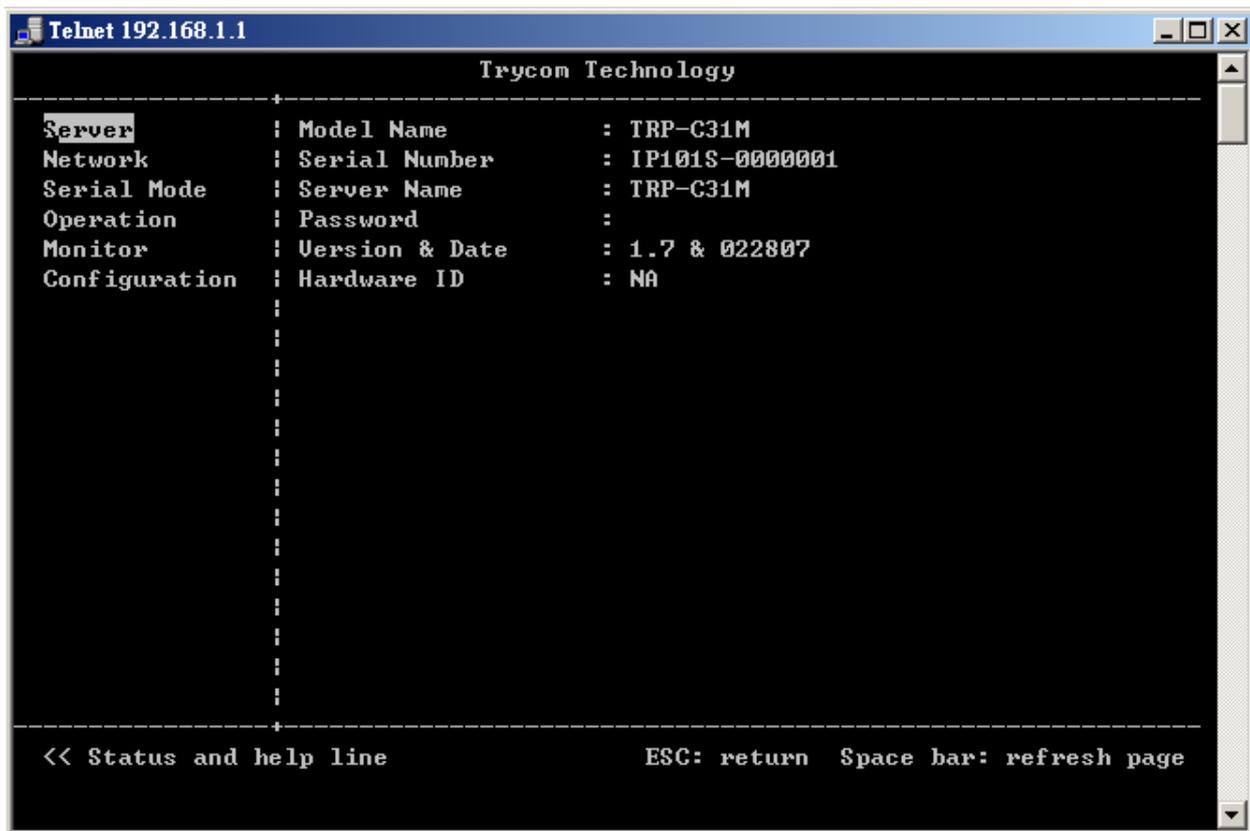


STEP3. Enter the COM Port number that TRP-C31M connect using, click “OK”





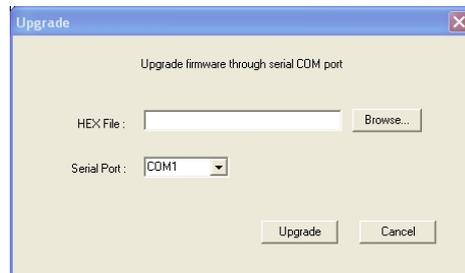
STEP2. Click the “OK” TRP-C31M firmware setting will show as following screen. You can set the TRP-C31M by Telnet mode.



10. Upgrade MODBUS gateway Firmware

New firmware may be available at times on our web site and may be downloaded and flashed to the TRP-C31M currently in use. The user can upgrade using a direct connection to the TRP-C31M serial port or the Virtual COM port feature.

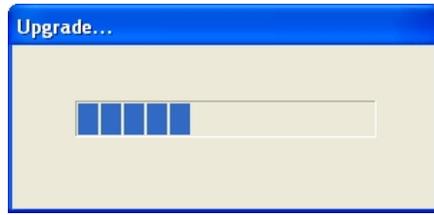
1. Download the new upgrade .hex file from www.trycom.com.tw , and place in a folder.
2. Set TRP-C31M to upgrade mode. Ensure that the DIP switches on “OFF” position.
3. Connect a null modem cable between the PC and the TRP-C31M.
4. Open the TRP-C3XM Manager software and select the **Firmware Upgrade** button.
5. In the Serial Port selection options select the COM port number used to connect the PC to the TRP-C31M.
6. Select Browse, find the location of the firmware, select Open, and then select the upgrade button.



7. A serial menu will appear allowing the upgrade software to be setup the same as the TRP-C31M serial settings. **The settings must match, or the upgrade will fail.**



8. A window showing the Upgrade progress will appear followed by a window indicating the Upgrade was successful.



9. TRP-C31M will reset itself to complete the upgrade process.