

# TRP-C24H

**16 channels isolated digital output  
(Open Collector) Modbus TCP module**



## User's Manual

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# 1. Introduction

TRP-C24H is an Isolated open collector digital outputs Modbus TCP Module, provides 16 channels that allow you output open collector signal (100mA) to driven your devices on network, it supports 3 communication Protocols, TRP-ASCII, Modbus RTU / ASCII, TRP-C24H can be easy and convenient to use application supports Modbus. Software engineers can use the TRP-ASCII or Modbus RTU command set quickly and easily integrated into the self-development program, such as Microsoft VB, VC...

The TRP-C24H built-in independent IP, WEB-browsing more convenient to rewrite the configuration and collect information through computers, tablet computers, smart phones, will be available!

TRP-C24H built-in watchdog function to ensure the normal operation of the module, and a built-in voltage monitoring to ensure that the boot, excellent and advanced hardware for harsh environment.

TRP-C24H with TRP-C26H, 16 remote control directly, do not need to run the software and equipment.

TRP-C24H also offers the maximum connection 16 host client to link the network server that is easy to operate in Modscan32 ,Modbus Poll,CAS Modbus Scanner and SCADA ...application uses TCP mode and Virtual-COM mode.

## 1-1 Features

- Wide input range DC power supply.
- Automatically determine 3 TRP-ASCII and Modbus RTU/ASCII communication protocol.
- 16 TCP Port can be open at the same time.
- Heart Beat function ensures a reliable communicating connection.
- Support Virtual-COM mode.
- IO status can be set in the boot.
- WEB PAGE can be directly output and read IO status.
- Easily update the firmware using the Internet.
- Back to factory configuration by external touch Button.
- Auto reconnection when power or Ethernet fail.
- Digital output signal with 3750Vrms isolation protection.
- Built-In watchdog function prevents system boot fail.
- LED for each I/O channels working status.
- Support Auto-MDIX twisted pair crossover detection and Auto-Correction.
- Power/Link/16 CH DO LED indicator.
- DIN-Rail and panel mount support.
- Dual power input select from screw terminal or DC-Jack.

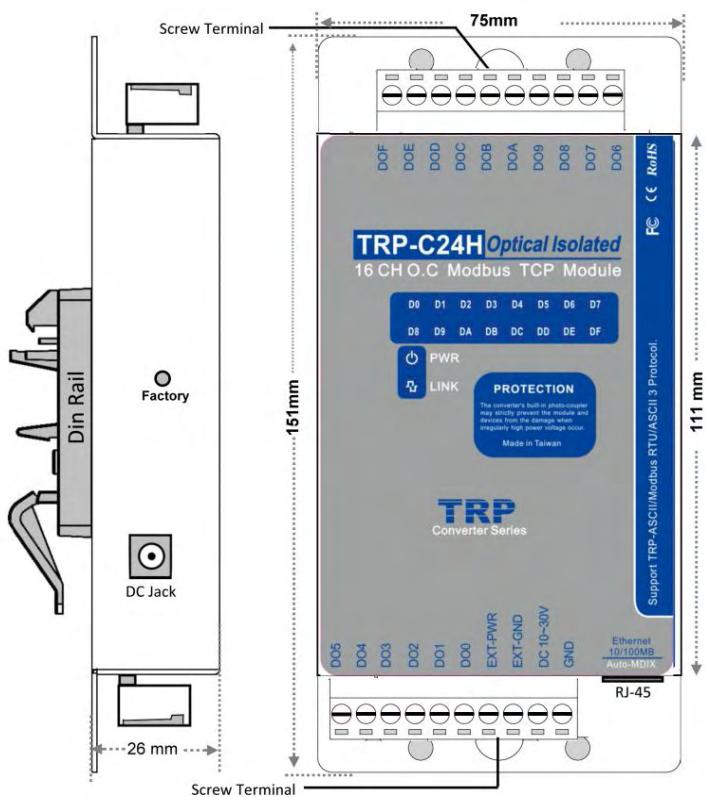
## 1-2 Specification.

- Power Input Voltage DC +10V to +30V.
- Protocol: TRP-ASCII and Modbus RTU/ASCII.
- Digital output maximum voltage:+30V.
- Digital output maximum current: 100mA.
- Digital output isolation: 3750Vrms.
- Communication interface: Ethernet RJ45.
- Configuration mode: Trycom Device Manager, WEB settings.
- Matching remote control: with TRP-C26H.
- Heart Beat: TCP Port sent string every 5 seconds.
- TCP Maximum Connection:1~16.
- Module ID :1~255.

- Connection type: Screw terminal for maximum AWG 12 wire.
- Power supply: Screw terminal, or external DC adapter.
- Power consumption 240mA/12V.
- Operating environment: 0 to 50°C.
- Storage temperature: -10 to 70°C.
- Humidity: 10~90% Non-condensing.
- Dimension: 151mm X 75mm X 26mm .
- Weight: 395g .

## 2. Hardware Description

### 2-1. Panel layout



**Notice:** The Module provides two type power inputs, optional DC-JACK or Screw Terminal input, not to two used together!

### 2-2. Block Diagram

**PWR LED:** Blinking is ready.

**LINK LED:** RJ-45 cable connection and data active.

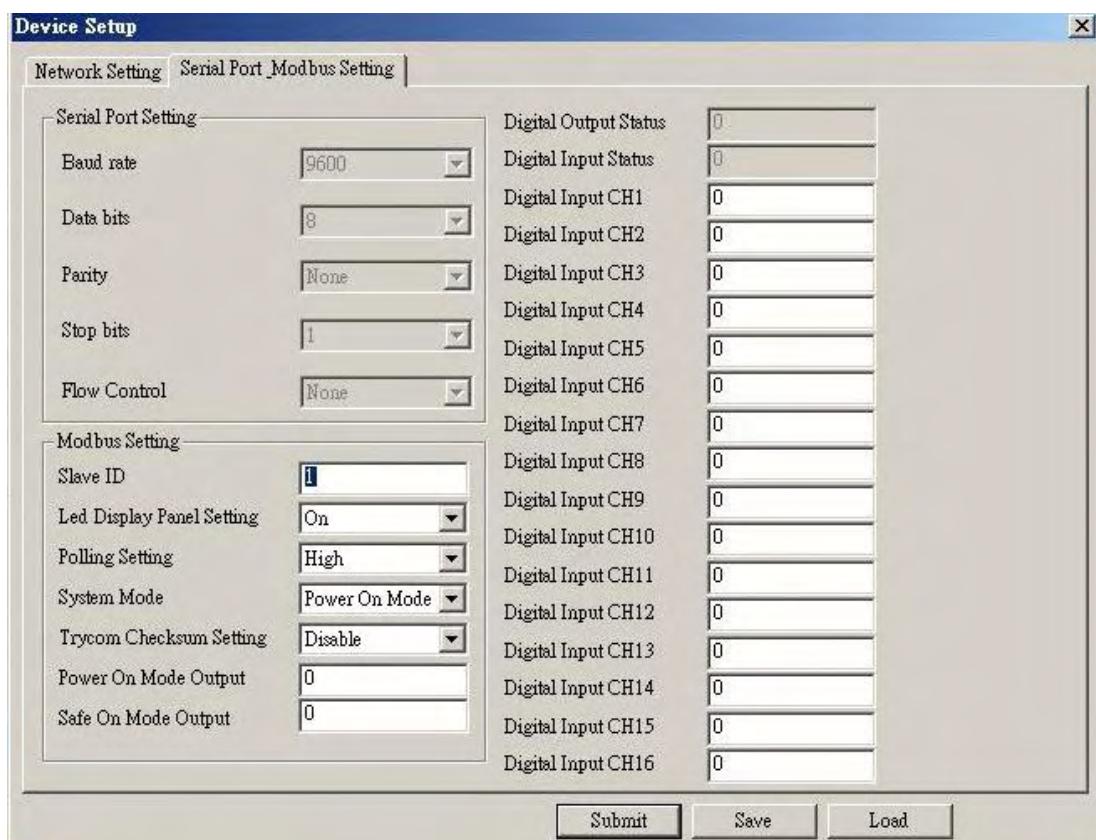
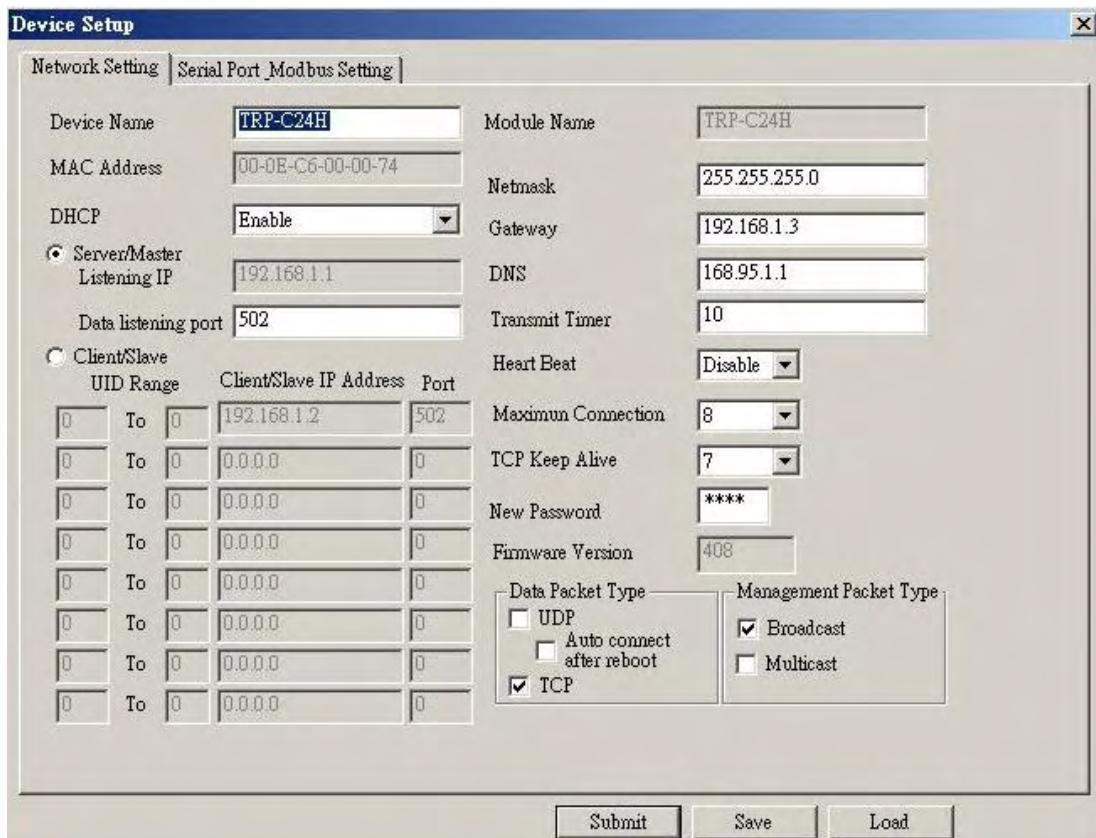
**D0~DF LED:** Each digital status indication.

**DC Jack:** Power Input DC +10V to +30V, Please use the 5.5\*2.1mm DC JACK.

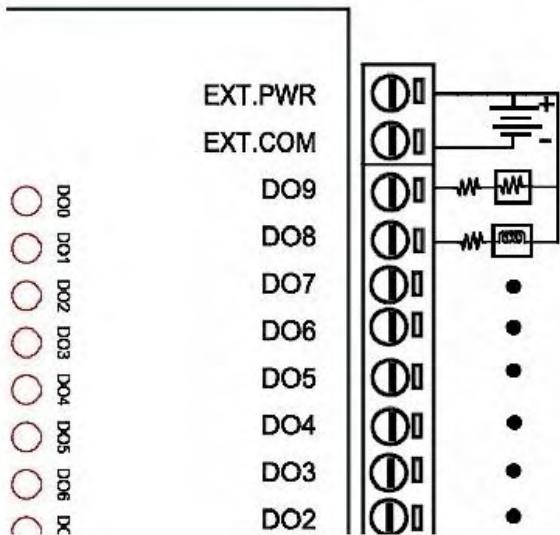
### 2-3. Factory Button

Hold down the button, and then power on, until the power light flashes, Release the button.

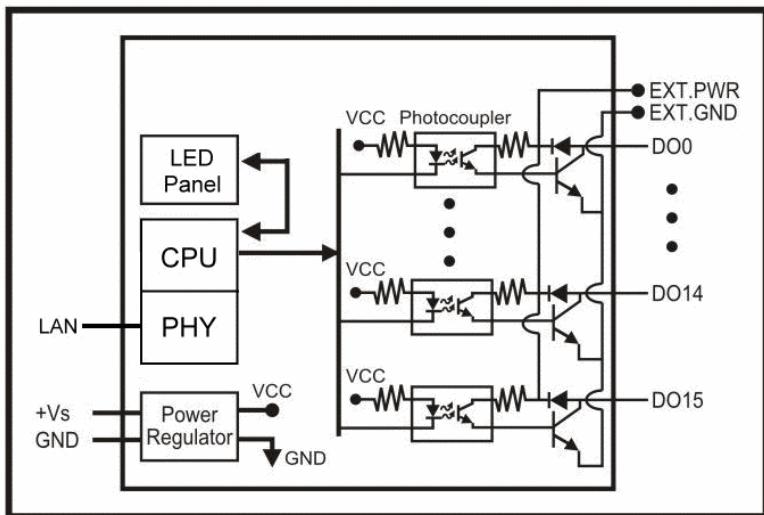
## 2-4. Factory parameter values



## 2-5. Screw Terminal Pin assignment Description



## 2-6. Block Diagram



## 2-7. Pin Description

|           |                                       |     |                          |
|-----------|---------------------------------------|-----|--------------------------|
| DO5       | Digital output Channel 5              | DOF | Digital output Channel F |
| DO4       | Digital output Channel 4              | DOE | Digital output Channel E |
| DO3       | Digital output Channel 3              | DOD | Digital output Channel D |
| DO2       | Digital output Channel 2              | DOC | Digital output Channel C |
| DO1       | Digital output Channel 1              | DOB | Digital output Channel B |
| DO0       | Digital output Channel 0              | DOA | Digital output Channel A |
| EXT.PWR   | The isolated side power input MAX.30V | DO9 | Digital output Channel 9 |
| EXT.GND   | The isolated side ground              | DO8 | Digital output Channel 8 |
| DC 10~30V | Input DC 10~30V                       | DO7 | Digital output Channel 7 |
| GND       | Power Ground                          | DO6 | Digital output Channel 6 |

### 3. Install TRP-C24H Hardware

**STEP1:** Connect power source with TRP-C24H, the PWR LED will blinking.

**STEP2:** Connect TRP-C24H with network by RJ45 cable.

If the cable is properly connected the “LINK” LED will light up.

\*The TRP-C24H Support Auto-MDIX, A straight-through or crossover RJ45 cable can be used to make a connection directly to the HUB/Router/PC LAN port.

**STEP3:** Connect TRP-C24H screw terminal wiring, such as 2-5 picture description.

### 4. How to configure TRP-C24H

*\*Please note that the computer's IP segment adjusted with TRP-C24H same section, modify the parameter values in order to effectively store!*

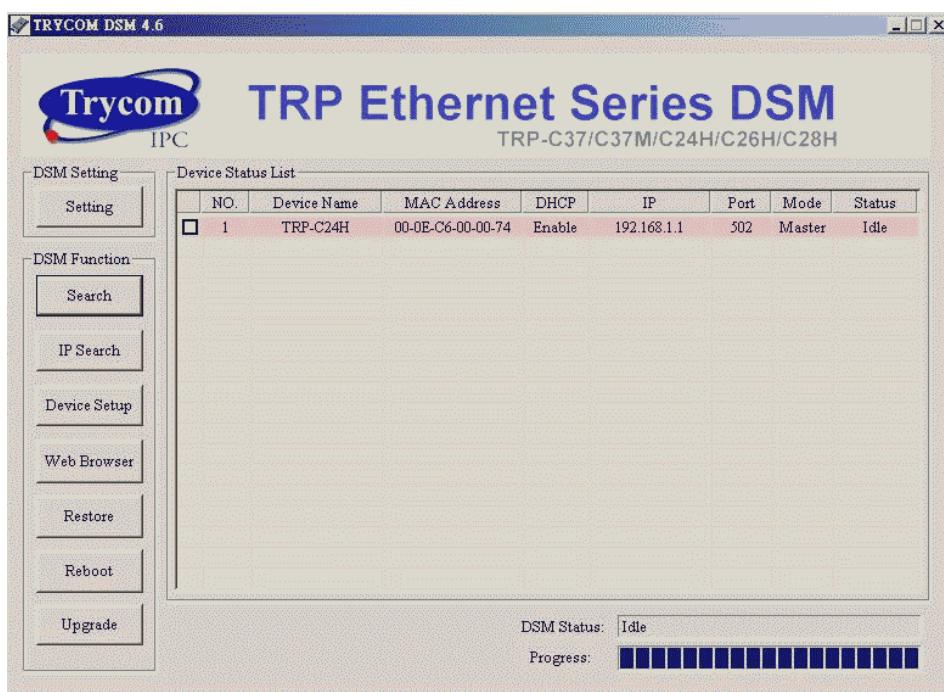
For example:

Computer IP is 192.168.1.xx

TRP-C24H 192.168.1.1

There are 2 ways can change the module parameter values.

#### A. DSM Software



#### B. WEB Server

<http://www.trycom.com.tw>

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>TRP-C24H</b><br>WDT-inside | Isolated 16 CH. O.C Modbus TCP<br>Module        |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| <b>TRP-C24H Setting</b> <table border="1"> <tr> <td>Slave ID (1~255)</td> <td>1</td> </tr> <tr> <td>LED Display Panel Setting</td> <td>OFF</td> </tr> <tr> <td>Polling Setting</td> <td>High</td> </tr> <tr> <td>System Mode</td> <td>Power On Mode</td> </tr> <tr> <td>Trycom Checksum</td> <td>Disable</td> </tr> <tr> <td>Power On Mode Output</td> <td>0000</td> </tr> <tr> <td>Safe Mode Output</td> <td>0000</td> </tr> <tr> <td>Digital Output Status</td> <td>0000</td> </tr> </table><br><b>Network Settings</b> <table border="1"> <tr> <td>Static IP Address</td> <td>192.168.1.1</td> <td><input checked="" type="checkbox"/> Enable DHCP</td> </tr> <tr> <td>Static Subnet Mask</td> <td>255.255.255.0</td> <td></td> </tr> <tr> <td>Static Default Gateway</td> <td>192.168.1.3</td> <td></td> </tr> <tr> <td>Static DNS Server</td> <td>168.95.1.1</td> <td></td> </tr> <tr> <td>Connection Type</td> <td>TCP</td> <td></td> </tr> <tr> <td>Max Connection(1~16)</td> <td>8</td> <td></td> </tr> </table><br><b>Master/Slave</b> <table border="1"> <tr> <td>Master:</td> <td>Master</td> </tr> <tr> <td>Master Listening Port</td> <td>502</td> </tr> <tr> <td>Slave:</td> <td></td> </tr> <tr> <td>Slave IP Address</td> <td>192.168.1.2</td> </tr> <tr> <td>Slave Port</td> <td>502</td> </tr> </table><br><b>New Password (1000~9999)</b> <table border="1"> <tr> <td>*****</td> </tr> <tr> <td><input type="checkbox"/> Enable Reboot</td> </tr> <tr> <td><input type="button" value="Apply"/> <input type="button" value="Reset"/></td> </tr> </table> |                               |                                                 | Slave ID (1~255) | 1 | LED Display Panel Setting | OFF | Polling Setting | High | System Mode | Power On Mode | Trycom Checksum | Disable | Power On Mode Output | 0000 | Safe Mode Output | 0000 | Digital Output Status | 0000 | Static IP Address | 192.168.1.1 | <input checked="" type="checkbox"/> Enable DHCP | Static Subnet Mask | 255.255.255.0 |  | Static Default Gateway | 192.168.1.3 |  | Static DNS Server | 168.95.1.1 |  | Connection Type | TCP |  | Max Connection(1~16) | 8 |  | Master: | Master | Master Listening Port | 502 | Slave: |  | Slave IP Address | 192.168.1.2 | Slave Port | 502 | ***** | <input type="checkbox"/> Enable Reboot | <input type="button" value="Apply"/> <input type="button" value="Reset"/> |
| Slave ID (1~255)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1                             |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| LED Display Panel Setting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | OFF                           |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Polling Setting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | High                          |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| System Mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Power On Mode                 |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Trycom Checksum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Disable                       |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Power On Mode Output                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0000                          |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Safe Mode Output                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0000                          |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Digital Output Status                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0000                          |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Static IP Address                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 192.168.1.1                   | <input checked="" type="checkbox"/> Enable DHCP |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Static Subnet Mask                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 255.255.255.0                 |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Static Default Gateway                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 192.168.1.3                   |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Static DNS Server                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 168.95.1.1                    |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Connection Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | TCP                           |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Max Connection(1~16)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 8                             |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Master:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Master                        |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Master Listening Port                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 502                           |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Slave:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                               |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Slave IP Address                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 192.168.1.2                   |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| Slave Port                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 502                           |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| *****                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| <input type="checkbox"/> Enable Reboot                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                               |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |
| <input type="button" value="Apply"/> <input type="button" value="Reset"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                 |                  |   |                           |     |                 |      |             |               |                 |         |                      |      |                  |      |                       |      |                   |             |                                                 |                    |               |  |                        |             |  |                   |            |  |                 |     |  |                      |   |  |         |        |                       |     |        |  |                  |             |            |     |       |                                        |                                                                           |

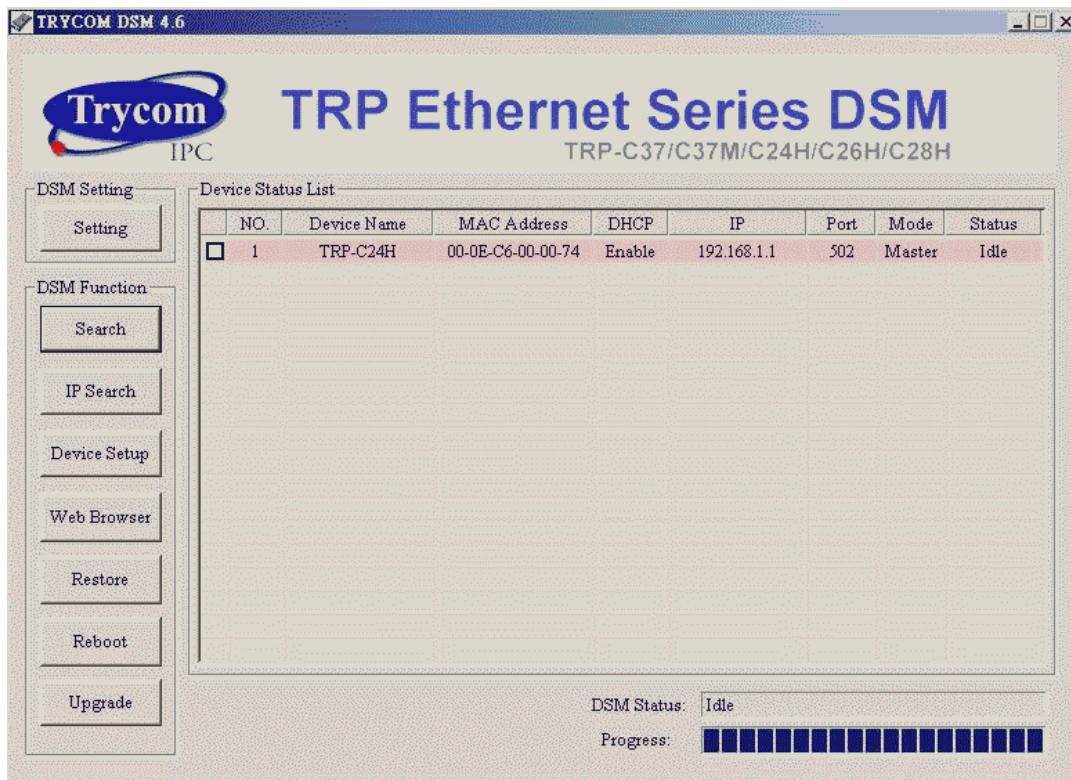
#### 4-1. Using DSM Utility

The DSM utility software performs several functions:

- A: Searching for TRP-C24H connected to the network.
- B: Displaying and changing the configuration.
- C: Upgrading the TRP-C24H firmware, Refer the Firmware upgrade help file.
- D: Saving and Loading Configuration from external log File or EEPROM.

#### 4-2. Searching TRP-C24H

Once TRP-C24H is connected to the network the **DSM** software will search it and display it in a window by name, IP address, Mac....Information.

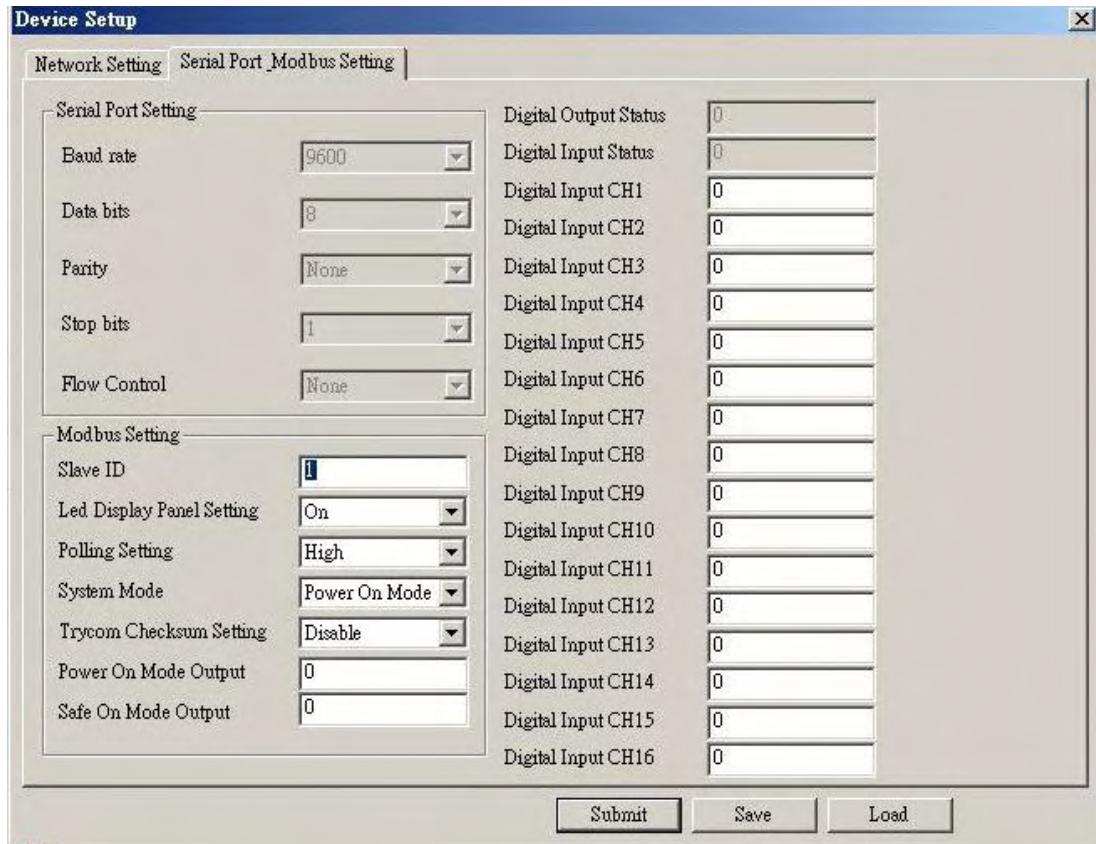


### 4-3.Configuring Server Properties

Select the “NO.” item and Double click to open the module configuration, after setting then click “Submit” will save the configuration to memory.

**Device Setup**

| Network Setting                                                                                               |                         | Serial Port Modbus Setting |                                                       |
|---------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------|-------------------------------------------------------|
| Device Name                                                                                                   | TRP-C24H                | Module Name                | TRP-C24H                                              |
| MAC Address                                                                                                   | 00-0E-C6-00-00-74       | Netmask                    | 255.255.255.0                                         |
| DHCP                                                                                                          | Enable                  | Gateway                    | 192.168.1.3                                           |
| <input checked="" type="radio"/> Server/Master<br>Listening IP                                                | 192.168.1.1             | DNS                        | 168.95.1.1                                            |
| Data listening port                                                                                           | 502                     | Transmit Timer             | 10                                                    |
| <input type="radio"/> Client/Slave<br>UID Range                                                               | Client/Slave IP Address | Port                       | Heart Beat                                            |
| 0                                                                                                             | To 0                    | 192.168.1.2                | Disable                                               |
| 0                                                                                                             | To 0                    | 0.0.0                      | Maximum Connection                                    |
| 0                                                                                                             | To 0                    | 0.0.0                      | 7                                                     |
| 0                                                                                                             | To 0                    | 0.0.0                      | TCP Keep Alive                                        |
| 0                                                                                                             | To 0                    | 0.0.0                      | New Password                                          |
| 0                                                                                                             | To 0                    | 0.0.0                      | Firmware Version                                      |
| 0                                                                                                             | To 0                    | 0.0.0                      | Data Packet Type                                      |
| 0                                                                                                             | To 0                    | 0.0.0                      | <input type="checkbox"/> UDP                          |
| 0                                                                                                             | To 0                    | 0.0.0                      | <input type="checkbox"/> Auto connect<br>after reboot |
| 0                                                                                                             | To 0                    | 0.0.0                      | <input checked="" type="checkbox"/> TCP               |
| 0                                                                                                             | To 0                    | 0.0.0                      | Management Packet Type                                |
| 0                                                                                                             | To 0                    | 0.0.0                      | <input checked="" type="checkbox"/> Broadcast         |
| 0                                                                                                             | To 0                    | 0.0.0                      | <input type="checkbox"/> Multicast                    |
| <input type="button" value="Submit"/> <input type="button" value="Save"/> <input type="button" value="Load"/> |                         |                            |                                                       |



### ◆ Device Name:

Device server name, Maximum 10 chars.

### ◆ Model Name:

TRP-C24H.

### ◆ MAC Address

The TRP-C24H MAC address.

### ◆ DHCP

If DHCP is disabled, it allows user setting the IP address, Subnet mask, Gateway.

If DHCP is enabled, the IP address, Subnet mask, Gateway address will be dynamically configuration by DHCP server such router.

When DHCP is enabled, but the DHCP server is not available on the network, the TRP-C24H will timeout then back to factory setting IP=192.168.1.1.

### ◆ Server Listening IP

The TRP-C24H IP address.

### ◆ Server Data listening port

TRP-C24H port address.

### ◆ Client Destination IP

When user using the pair mode, the client setting need to input module IP and port which one need to connect.

### ◆ Client Destination port

Client port address.

Port: 16 bit number. (1 ~ 65535)

### ◆ Netmask

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

## ◆ **Gateway**

Input the gateway IP address that can be allows users to access the serial server from internet.

## ◆ **DNS**

Short for Domain Name System, an Internet service that translates domain names into IP addresses. Because domain names are alphabetic, they're easier to remember. The Internet however, is really based on IP addresses. Every time you use a domain name, therefore, a DNS service must translate the name into the corresponding IP address.

## ◆ **Transmit Timer:** This feature is only available to Serial Server TRP-C37 and TRP-C37M.

## ◆ **Maximum Connection: 1~16**

The function allows the user to configure the TRP-C24H in Server mode, adjust 1~16 TCP client host connections.

## ◆ **TCP Keep Alive: 1~7 /Minute**

When TRP-C24H in Server or Client mode, the TRP-C24H without data over the 1~7 Min setting value,

The TRP-C24H will be disconnecting TCP port.

## ◆ **New Password: 1234**

It only accepts value from 1000~9999 integer, if input the wrong password over 5 times, the WEB-Page will lock until the TRP-C24H re-boot.

## ◆ **Firmware Version: ABC**

## ◆ **Slave ID:1~255.**

ID performs MODBUS RTU / ASCII and TRP-ASCII will use to address.

## ◆ **LED Display Panel Setting :ON/OFF**

The setting will turn on all panels LED or Turn off panel LED.

## ◆ **Polling Setting: High/Low.**

Digital High / Low potential settings, Applies only TRP-C26H/C28H

## ◆ **System Mode**

**Power ON Mode:** Digital output state when the TRP-C24H Power On.

**Save ON Mode:** The digital output state when the TRP-C24H is working, Once this mode is set, the digital output state cannot be rewritten.

**Pair Mode:** It can be used as a remote manual remote control, when the TRP-C24H 16 DO 和 TRP-C26H 16 CH DI, TRP-C28H 4 D I/O with TRP-C28H 4 D I / O. Without any driver.

## **Trycom Checksum setting: Disable/Enable.**

TRP-ASCII command used bit checksum.

## ◆ **Power On Mode Output: 0000~FFFF.**

Digital output state when TRP-C24H Boot!

## ◆ **Save ON Mode Output:0000~FFFF.**

Digital output state when watchdog enable!

## ◆ **Digital Output Status**

Display last stored in the memory of the digital output state.

## ◆ **Digital Input Status**

This feature is only available to TRP-C26H and TRP-C28H,

Display last stored in the memory of the digital input state.

## ◆ **Digital Input CH1~CH16**

Display last stored in the memory of the digital input counter value.

This feature is only available to TRP-C26H and TRP-C28H.

◆ **Submit**

Save the setting value to memory.

◆ **Save**

Save the setting value to external log file.

◆ **Load**

Load the setting value to external log file.

◆ **Upgrade**

Upgrade the TRP-C24H firmware.

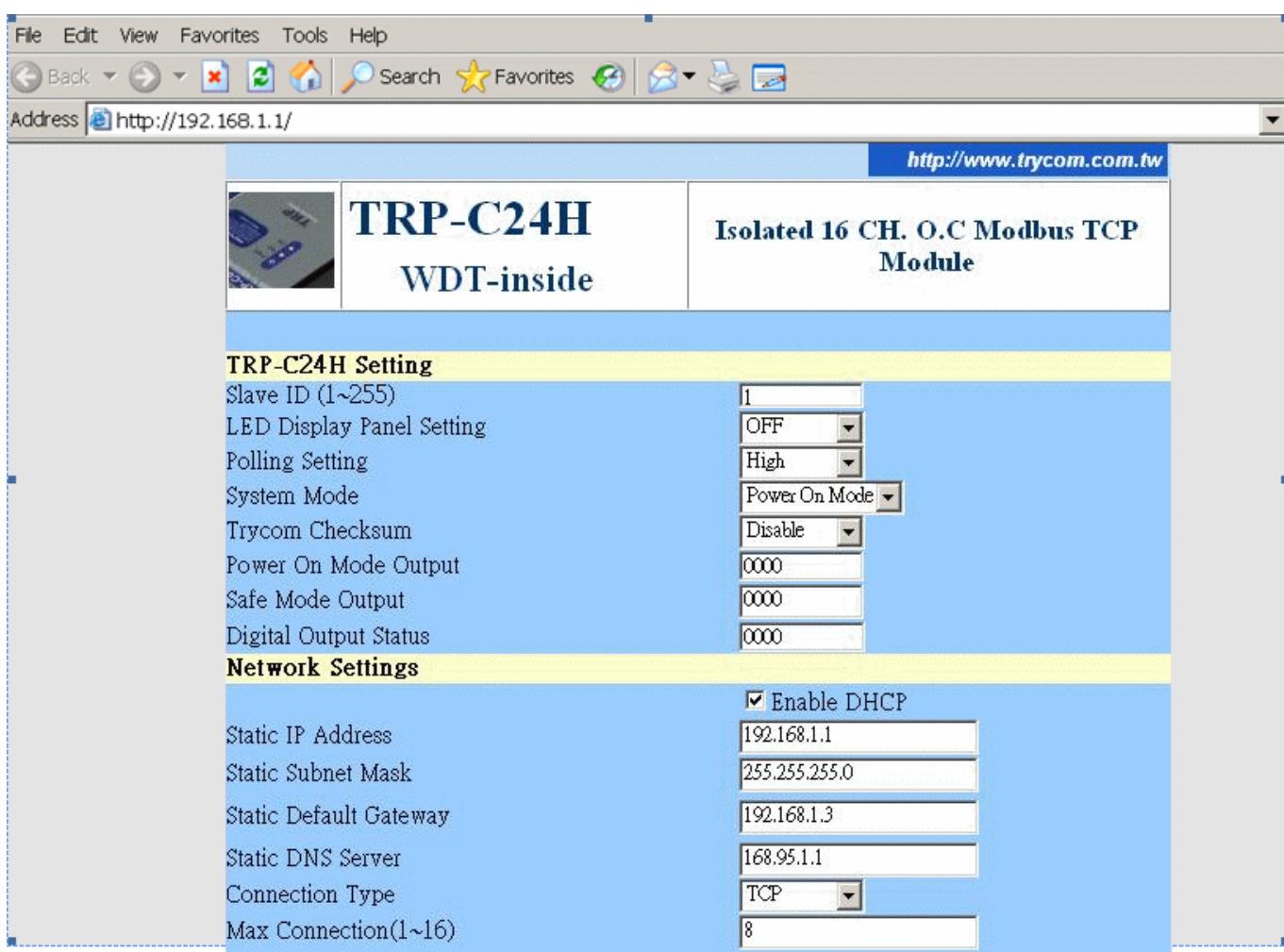
#### 4-4.Using the WEB Server mode

The Web Server can be used to configure the TRP-C24H from any web browser software (such as I.E.).

In Internet Explorer type the IP Address of the TRP-C24H into the address field and press the Enter key. The following window will appear:

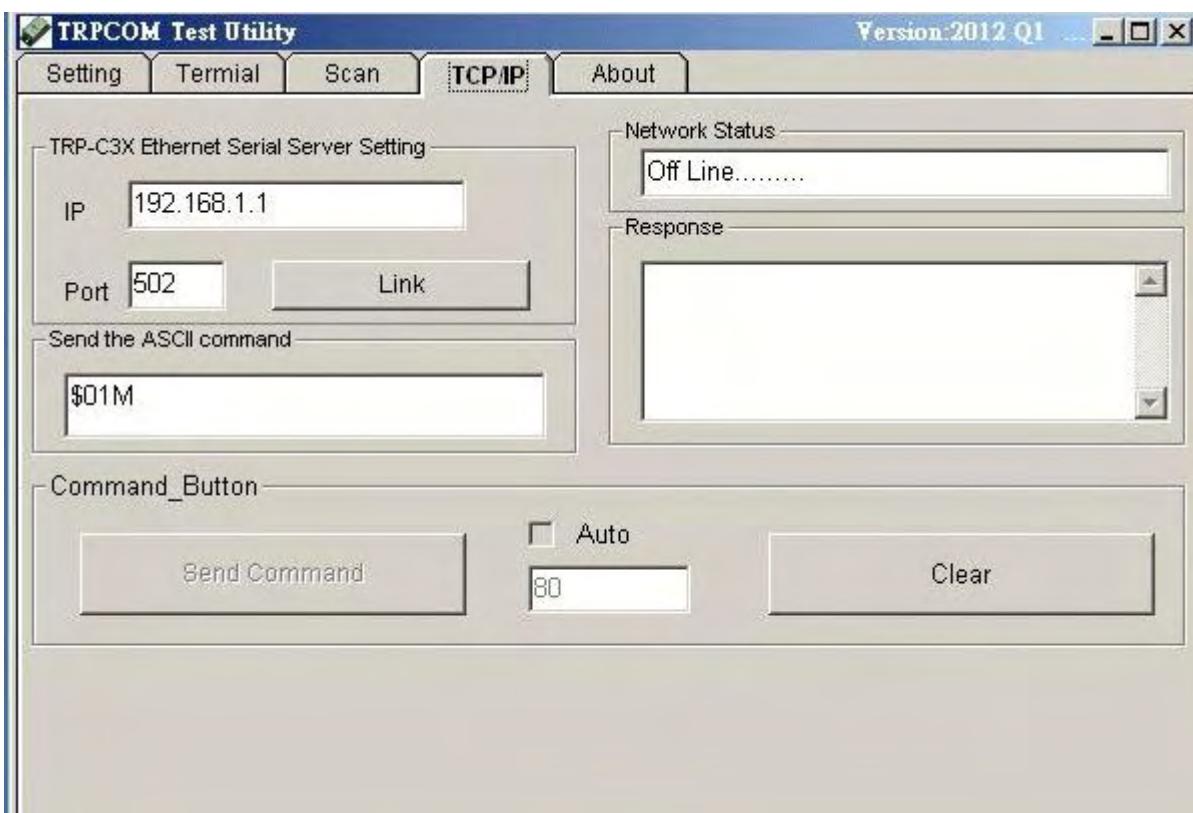
Example:

If TRP-C24H IP is 192.168.1.1 Please Input the 192.168.1.1 then enters at web address, the web-page will appear.



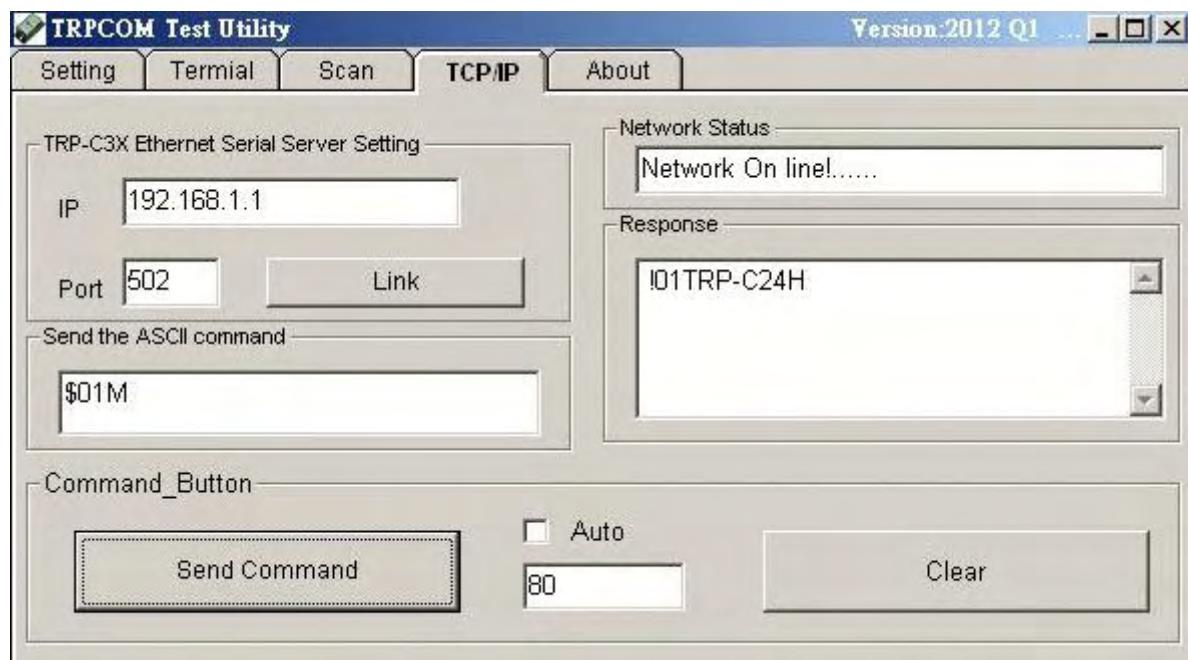
## 4-5 TRPCOM Test Utility

The TRPCOM test utility may help to use the debugging program development phase, the user can find this software in our CD internal directory copied to the hard disk, and then directly execute TRPCOM.exe.



The execution TRPCOM.exe, enter the IP & Port click "Link" button

It can be input the TRP-ASCII instruction set.



## 5. TRP-ASCII Communication Protocol

TRP-C24H supports three modes of communication Protocol TRP-ASCII, Modbus RTU, Modbus ASCII.

### TRP-ASCII Command Protocol Description

Command Format :"Leading Code"+"ID Address"+"Command"+"CHK"+(cr) .

at :"Leading Code"+"ID Address"+"Data"+"CHK"+(cr) .

#### How to calculate the checksum

1. Calculate all characters of the command string to get the ASCII sum, except the character return.
2. Mask the sum of string with 0FFH.

#### Example:

Send the command is "\$06M".

Sum of string is "\$"+"0"+"6"+"M"="24H"+"30H"+" 4D"="A1H".....The checksum and [CHK] = "A1".

Response string with checksum is :" A1" .

**TRP-ASCII:** ease of use TRP-ASCII integration to develop their own software, such as VB, VC .

| Command List         | Function Description                | Paragraph index |
|----------------------|-------------------------------------|-----------------|
| %IDNNPP00DD(CHK)(cr) | Setting module configuration        | See 5-1         |
| #IDPPDD (CHK)(cr)    | Digital Output Data                 | See 5-2         |
| \$ID6 (CHK)(cr)      | Read digital input/output status    | See 5-3         |
| \$IDF (CHK)(cr)      | Read the module's firmware version  | See 5-4         |
| \$IDM (CHK)(cr)      | Read the module's name              | See 5-5         |
| \$01RS(CHK)(cr)      | Reset Module                        | See 5-6         |
| ~IDONN (CHK)(cr)     | Change the module's name            | See 5-7         |
| ~IDLEDA(CHK)(cr)     | Set the module's LED operating mode | See 5-8         |
| ~IDWE (CHK)(cr)      | Enable watchdog                     | See 5-9         |
| ~IDWD (CHK)(cr)      | Disable watchdog                    | See 5-10        |
| ~IDWR (CHK)(cr)      | Read watchdog status                | See 5-11        |
| ~ID4V (CHK)(cr)      | Read power on/Safe on mode          | See 5-12        |
| ~ID5V (CHK)(cr)      | Store Power on/ Save on mode        | See 5-13        |

## 5-1. Setting module configuration

|                    |                      |                                          |  |  |  |  |  |  |
|--------------------|----------------------|------------------------------------------|--|--|--|--|--|--|
| Command            | %IDNNPP00DD(CHK)(cr) |                                          |  |  |  |  |  |  |
| Syntax Description | %                    | First leading code                       |  |  |  |  |  |  |
|                    | ID                   | Address of setting module 00-FF(HEX)     |  |  |  |  |  |  |
|                    | NN                   | New address of setting from 00-FF(HEX)   |  |  |  |  |  |  |
|                    | PP                   | The Digital I/O module type define to 40 |  |  |  |  |  |  |
|                    | 00                   | 00                                       |  |  |  |  |  |  |
|                    | DD                   | Data format                              |  |  |  |  |  |  |
|                    | CHK                  | Checksum                                 |  |  |  |  |  |  |
|                    | (cr)                 | Carriage return                          |  |  |  |  |  |  |
| Response           | !ID(CHK) (cr)        | Command valid                            |  |  |  |  |  |  |
|                    | ?ID (CHK)(cr)        | Command Invalid                          |  |  |  |  |  |  |

### DD: Data Format

|          |   |                                   |   |   |   |   |   |   |
|----------|---|-----------------------------------|---|---|---|---|---|---|
| Bit      | 7 | 6                                 | 5 | 4 | 3 | 2 | 1 | 0 |
| Function | 0 | Checksum<br>0:Disable<br>1:Enable | 0 | 0 | 0 | 0 | 0 | 0 |

EX: Send command:"%0103400000".

New ID is “03”,D I/O type is “40” ,Checksum setting disable is “00”, Response:”!01”.

## 5-2.Digital Output Data

|                       |                  |                                                                                                                                                                                                                            |
|-----------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Command               | #IDPPDD(CHK)(cr) |                                                                                                                                                                                                                            |
| Syntax<br>description | #                | First leading code                                                                                                                                                                                                         |
|                       | ID               | Address of setting module 00-FF(HEX)                                                                                                                                                                                       |
|                       | PP               | D I/O type<br>:0A/ 00 DO0~DO7 low byte data (Multi-Channel)<br>:0B high byte data D8-D15(Multi-Channel)<br>:1L/ AL: DO0~DO7 low byte data (Single-Channel)<br>L=0~7<br>:BL : high byte dataD8-D15(Single-Channel)<br>L=0~7 |
|                       | DD               | DD:00~FF (Milti-Channel) DD:00 or 01 (Single-Channel)                                                                                                                                                                      |
|                       | CHK              | Checksum                                                                                                                                                                                                                   |
|                       | (cr)             | Carriage return                                                                                                                                                                                                            |
| Response              | >(CHK)(cr)       | Command valid                                                                                                                                                                                                              |
|                       | !ID(CHK) (cr)    | Parameter invalid (*Command data error!)                                                                                                                                                                                   |
|                       | ?ID (CHK)(cr)    | Command Invalid                                                                                                                                                                                                            |

\*Multi-Channel mode (Output control for one BYTE)

EX: Send command :"#010A12" ....Data="12":DO0~DO7="10000100" ...1=Output Enable.

Response:">"..... Command valid.

EX: Send command :"#010B34" ....Data="34":DO8~DO15="110000010" ...1=Output Enable.

Response:">"..... Command valid.

EX: Send command :"#01000G" ...Data="0G" .....Data error!

Response:"?0".....Parameter error! .

\*Single-Channel mode( Output control for one BIT)

EX: Send command :"#011001" .... Data="01":DO0="1"....1=Output Enable.

Response:">"..... Command valid.

Send command :"#011201" .... Data="01":DO2="1" ..1=Output Enable.

Response:">"..... Command valid.

Send command:#01B301.....Data="00":DO11="1"... 1=Output Enable.

Response:">".....Command valid.

### 5-3.Read digital input/output status

|                    |                  |                                        |
|--------------------|------------------|----------------------------------------|
| Command            | \$ID6(CHK)(cr)   |                                        |
| Syntax description | \$               | First leading code                     |
|                    | ID               | Address of setting module 00-FF(HEX)   |
|                    | 6                | Read digital output status             |
|                    | CHK              | Checksum                               |
|                    | (cr)             | Carriage return                        |
| Response           | !IDLLHH(CHK)(cr) | LL=DO0~DO7 status, HH=DO8~DO15 status. |
|                    | ?ID(CHK) (cr)    | Command Invalid                        |

EX: Send command:\$016.....Read digital output status .

Response:"!011234".....DO1,DO5,DO8,DO9 Output Enable.

### 5-4. Read firmware version

|                    |                       |                                                               |
|--------------------|-----------------------|---------------------------------------------------------------|
| Command            | \$IDF(CHK)(cr)        |                                                               |
| Syntax description | \$                    | First leading code                                            |
|                    | ID                    | Address of setting module 00-FF(HEX)                          |
|                    | F                     | Command for reading module's version                          |
|                    | CHK                   | Checksum                                                      |
|                    | (cr)                  | Carriage return                                               |
| Response           | !IDMODDDMMYY(CHK)(cr) | MOD :The module's model<br>DD: Date<br>MM: Month<br>YY : Year |
|                    | ?ID(CHK)(cr)          | Command Invalid                                               |

EX: Send command:\$01F...Read the TRP-C24H's version.

Response:"!01C24H090113"..... The TRP-C24H's version date is "01/09/2013".

## 5-5. Read the module's name

|                       |                       |                                      |
|-----------------------|-----------------------|--------------------------------------|
| Command               | \$IDM(CHK)(cr)        |                                      |
| Syntax<br>description | \$                    | First leading code                   |
|                       | ID                    | Address of setting module 00-FF(HEX) |
|                       | M                     | Reading module's name                |
|                       | CHK                   | Checksum                             |
|                       | (cr)                  | Carriage return                      |
| Response              | !IDNNNNNNNNN(CHK)(cr) | NNNNNN :The chars from 1~9 chars     |
|                       | ?ID(CHK)(cr)          | Command Invalid                      |

EX: Send command:\$01M...Read the TRP-C24H's name.

Response:"!01TRPC24H"..... The module's name is "TRPC24H".

## 5-6. Reset Module

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Command               | \$IDRS(CHK)(cr) |                                      |
| Syntax<br>description | \$              | First leading code                   |
|                       | ID              | Address of setting module 00-FF(HEX) |
|                       | RS              | Reset Module                         |
|                       | (cr)            | Carriage return                      |
| Response              | !ID (CHK)(cr)   | Command valid                        |
|                       | ?ID(CHK)(cr)    | Command Invalid                      |

EX: Send Command:"\$01RS"

Response:" !01"..... Command valid!

## 5-7. Change Module 's name

|                    |                 |                                      |
|--------------------|-----------------|--------------------------------------|
| Command            | ~IDONN(CHK)(cr) |                                      |
| Syntax description | ~               | First leading code                   |
|                    | ID              | Address of setting module 00-FF(HEX) |
|                    | O               | Change Module Name                   |
|                    | NN              | NN : 1~9 characters char             |
|                    | (cr)            | Carriage return                      |
| Response           | !ID (CHK)(cr)   | Command valid                        |
|                    | ?ID(CHK)(cr)    | Command Invalid                      |

EX: Send Command:"~01O123456789"...Change Name.

Response:"!01"..... Command valid!

Send command:\$01M...Read the TRP-C24H's name.

Response:"!01123456789"..... The module's name is "TRPC24H".

## 5-8. Set LED operating mode

|                    |                  |                                                                                                  |
|--------------------|------------------|--------------------------------------------------------------------------------------------------|
| Command            | ~IDLEDA(CHK)(cr) |                                                                                                  |
| Syntax description | ~                | First leading code                                                                               |
|                    | ID               | Address of setting module 00-FF(HEX)                                                             |
|                    | LED              | Set the module's LED operating mode                                                              |
|                    | A                | A=1 Turn off all LEDS, when Output Enable= ON.<br>A=0 Turn on all LEDS, when Output Enable= OFF. |
|                    | CHK              | Checksum                                                                                         |
|                    | (cr)             | Carriage return                                                                                  |
| Response           | !IDNN(CHK)(cr)   | NN=ON or OFF Command valid                                                                       |
|                    | ?ID(CHK)(cr)     | Command Invalid                                                                                  |

EX: Send command:"~01LED1".... Turn off all LED, when Channel Enable ON.

Response:"!01OFF"..... Command valid.

## 5-9 Enable Watchdog

|                    |                |                                      |
|--------------------|----------------|--------------------------------------|
| Command            | ~IDWE(CHK)(cr) |                                      |
| Syntax description | ~              | First leading code                   |
|                    | ID             | Address of setting module 00-FF(HEX) |
|                    | WE             | Watchdog function                    |
|                    | CHK            | Checksum                             |
|                    | (cr)           | Carriage return                      |
| Response           | !ID(CHK)(cr)   | Command valid                        |
|                    | ?ID(CHK)(cr)   | Command Invalid                      |

EX: Send Command:"~01WE".....Enable Watchdog .

.. Response:" !01"..... Command valid.

*\*The user can not change the digital output state when watchdog enable,*

*this mode will keep until the watchdog disable.*

*When the watchdog enable digital output into safe mode.*

*There are 3 ways you can set the safe mode, command / WEB / DSM.*

## 5-10 Disable Watchdog

|                    |                |                                      |
|--------------------|----------------|--------------------------------------|
| Command            | ~IDWD(CHK)(cr) |                                      |
| Syntax description | ~              | First leading code                   |
|                    | ID             | Address of setting module 00-FF(HEX) |
|                    | WD             | Disable Watchdog                     |
|                    | (cr)           | Carriage return                      |
|                    | !ID (CHK)(cr)  | Command valid                        |
| Response           | ?ID(CHK)(cr)   | Command Invalid                      |

EX: Send Command:"~01WD"...Watchdog Disable.

Response:" !01"..... Command valid!

## 5-11 Read Watchdog State

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Command               | ~IDWR(CHK)(cr)  |                                      |
| Syntax<br>description | ~               | First leading code                   |
|                       | ID              | Address of setting module 00-FF(HEX) |
|                       | WR              | Read Watchdog State                  |
|                       | (cr)            | Carriage return                      |
| Response              | !IDWN (CHK)(cr) | N=E Enable<br>N=D Disable            |
|                       | ?ID(CHK)(cr)    | Command Invalid                      |

EX: Send Command:"~01WR"...Read Watchdog state.

Response:" !01WE"..... . Watchdog Enable.

## 5-12 Read Power on/Safe Mode

|                       |                   |                                      |
|-----------------------|-------------------|--------------------------------------|
| Command               | ~ID4V(CHK)(cr)    |                                      |
| Syntax<br>description | ~                 | First leading code                   |
|                       | ID                | Address of setting module 00-FF(HEX) |
|                       | 4                 | Read power on/safe mode status       |
|                       | V                 | V=P: Power on<br>V=S: Safe mode      |
|                       | CHK               | Checksum                             |
|                       | (cr)              | Carriage return                      |
| Response              | !IDLLHH (CHK)(cr) | HH:DO15~DO8<br>LL:DO7~DO0            |
|                       | ?ID(CHK)(cr)      | Command Invalid                      |

EX: Send Command:~014P.....Read Power on output status.

.. Response:" !011234"..... . Command valid.

### 5-13 Set the digital output status Power on/Save Mode status

|                       |                |                                                          |
|-----------------------|----------------|----------------------------------------------------------|
| Command               | ~ID5V(CHK)(cr) |                                                          |
| Syntax<br>description | ~              | First leading code                                       |
|                       | ID             | Address of setting module 00-FF(HEX)                     |
|                       | 5              | Save the current digital output is save or power on mode |
|                       | V              | V=P Power on<br>V=S Safe mode                            |
|                       | (cr)           | Carriage return                                          |
| Response              | !ID (CHK)(cr)  | Command valid                                            |
|                       | ?ID(CHK)(cr)   | Command Invalid                                          |

EX: Send Command:"#010A33"…Digital output DO0~DO7= “11001100”

Send Command:"#010B17"… Digital output DO8~DOF= “10001110”

Send Command: “~015P”……Save Power on.

Send Command:”~014P” ……Read Power on

Response:”!013317”.

## 6. Modbus RTU/ASCII Communication Protocol

\* For more modbus RTU / ASCII protocol specification, please download from <http://www.modbus.org> website.  
Obtain more modbus TCP instruction test, we recommend user can be downloaded from the following Web site  
Modbus Poll Test utility <http://www.modbustools.com/>  
Modbusscan Test utility <http://www.win-tech.com/html/modbus1.htm>.  
User can use the virtual-com program with TRPCOM.exe for Modbus RTU test; these programs can be found in our directory of the CD!

### Install the Virtual-COM

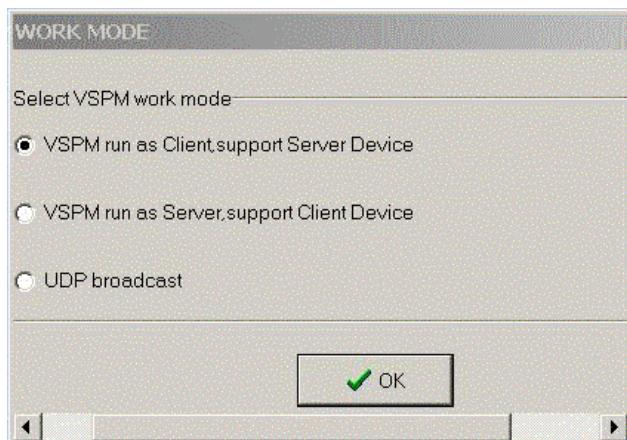
**Step 1.** Insert the TRP-Serial CD and find the TRP-C24H folder.

**Step 2.** Click “Vcomm.exe” icon then install Virtual-COM utility.

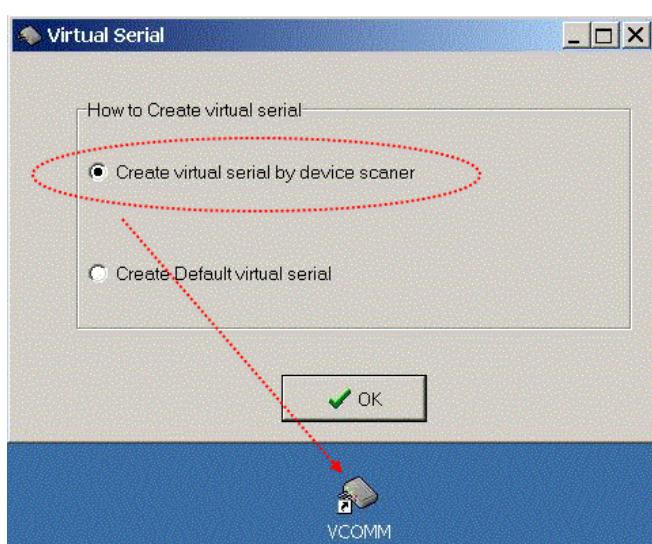
\*The Virtual COM utility support multi-language, please select which language do you need.



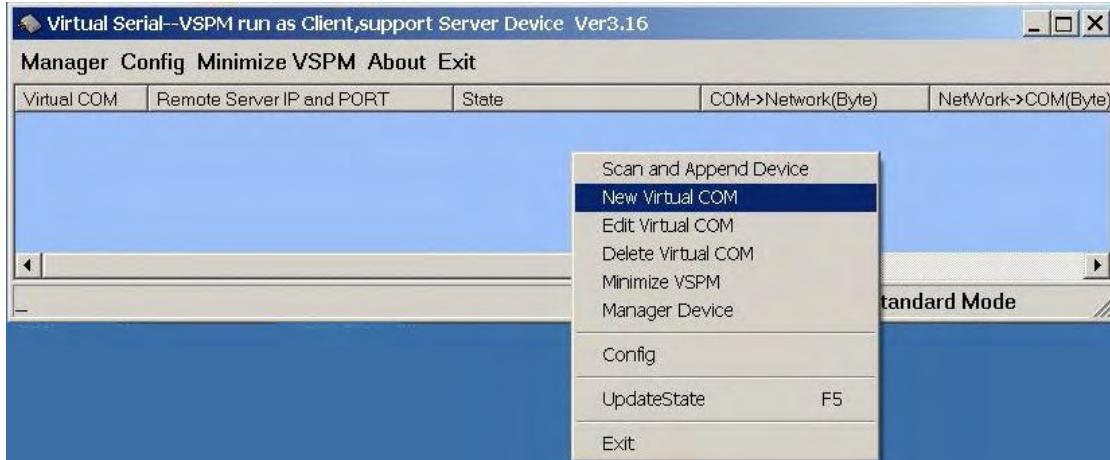
**Step3.** Click “OK” button and select “VSP run as Client support Server Device”.



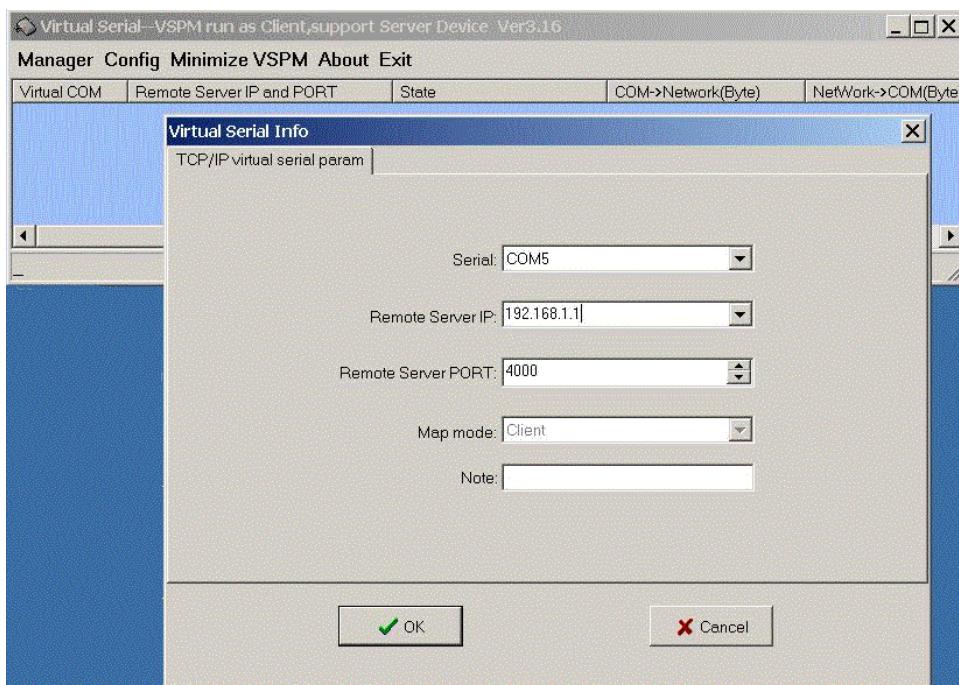
**Step4.** Select “Create virtual serial by device scanner”, then press “OK”



Step5. Run VCOMM.exe then click right button select “New Virtual COM”



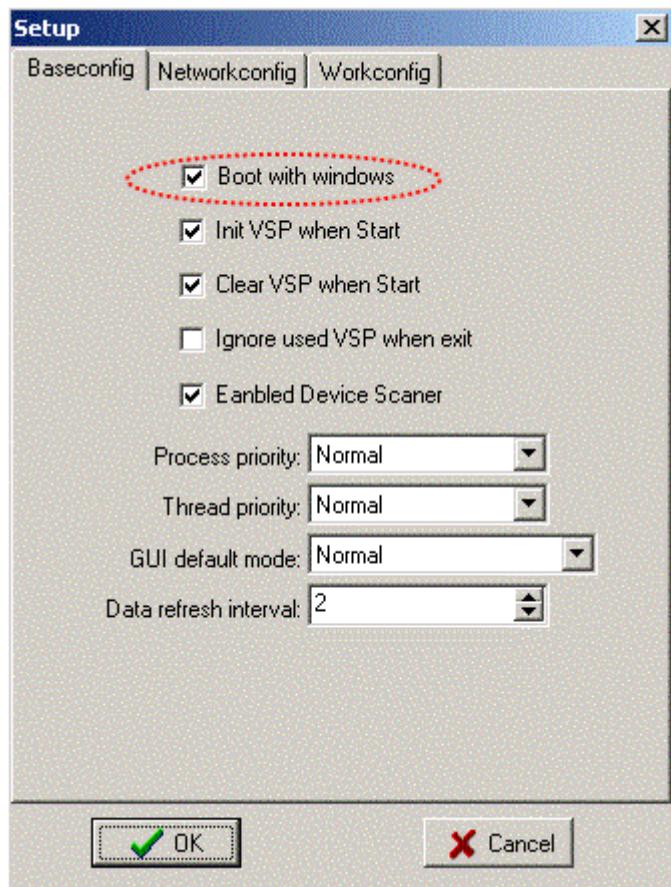
Step6. Select “Select Serial Port” and input TRP-C24H IP and port then press “OK”.



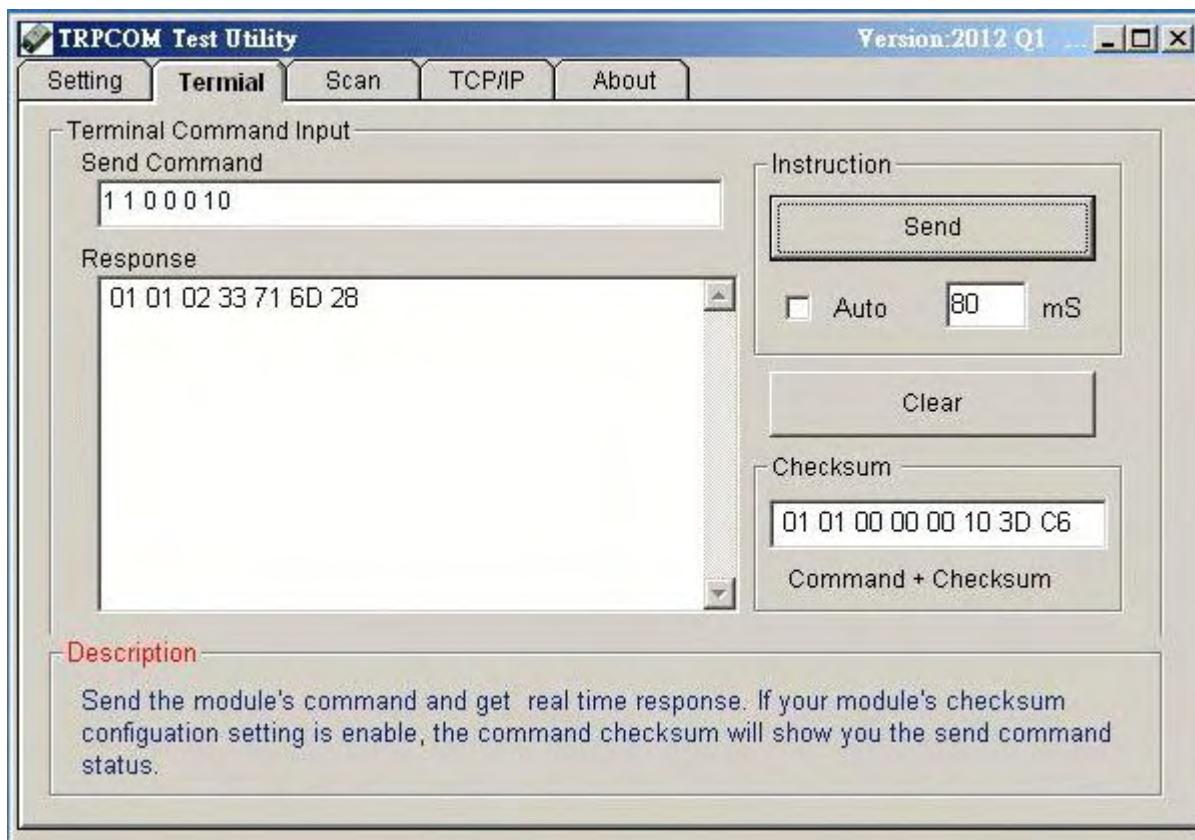
**Step7.** If Virtual-Com setting success, the display will appear bellow.

**Step8.** Run TRPCOM utility then select virtual-com port make a TRP-C24H command.

\*If in VCOMM's configuration select “Boot with windows”, the virtual-com will Auto-connection when windows start.



\* TRP-C24H in use the Virtual com mode, the default data format is 9600, N, 8,1, this mode is not allowed to change.



## Modbus TCP Command List

| Command List            | Function Description     | C24H Description                                     | Index |
|-------------------------|--------------------------|------------------------------------------------------|-------|
| ID 01 00 SS 00 NN       | Read Coils               | Read digital output readback value                   | 6-1   |
| ID 03 00 SS 00 NN       | Read Holding Registers   | Read the current digital output readback count value | 6-2   |
| ID 05 00 NN DD 00       | Write Single Coil        | Write Single channel output data                     | 6-3   |
| ID 0F 00 SS 00 NN 01 XX | Write Coils              | Write multi channel output data                      | 6-4   |
| ID 06 00 SS DD NN 01 XX | Write single register    | Write single channel counter value                   | 6-5   |
| ID 16 00 SS 00 NN 01    | Write multiple registers | Write multi channel counter value                    | 6-6   |

## Additional Modbus TCP Command List

| Command List         | Function Description       | Index |
|----------------------|----------------------------|-------|
| ID 46 00 00          | Read the module's name     | 6-7   |
| ID 46 04 IP 00 00 00 | Setting module new ID      | 6-8   |
| ID 46 07 00          | Read the module's Firmware | 6-9   |
| ID 46 0B WS 00       | Enable/Disable watchdog.   | 6-10  |
| ID 46 0C 00          | Read watchdog status       | 6-11  |
| ID 46 0D 0S 00       | Set up LED ON/OFF          | 6-12  |

### 6-1. Read Coils

#### Read digital output readback value

|                    |                   |         |                                                                                                                                       |
|--------------------|-------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------|
| Command            | ID 01 00 SS 00 NN |         |                                                                                                                                       |
| Syntax Description | ID                | 1Byte   | Address of setting module 1~247                                                                                                       |
|                    | 01                | 1 Byte  | Function Code                                                                                                                         |
|                    | 00 SS             | 2 Bytes | Start channel number, 0x0000~0x000F                                                                                                   |
|                    | 00 NN             | 2 Bytes | Output channel number,0x0001~0x0010                                                                                                   |
| Response           | ID 01 BC LL HH    | 5 Bytes | ID=1~247<br>01:Function Code<br>BC: Byte counter<br>LL HH: Digital output read back value                                             |
| Error Response     | ID 81 ER          | 3 Bytes | ID=1~247<br>81 :Function Code<br>ER=00 Syntax error<br>ER=01 Data Format error<br>ER=02 Start channel error<br>ER=03 I/O out of range |

#### Example:

Send command :" 01 01 00 00 00 10".....Read DO0~DOF Output read back value.

Response:" 01 01 02 21 43"..... 2bye,DO7~DO0=21,DOF~DO8=43.

## 6-2. Read Holding Registers

**Read the current digital output readback count value**

|                    |                   |         |                                                                                                                                       |
|--------------------|-------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------|
| Command            | ID 03 00 SS 00 NN |         |                                                                                                                                       |
| Syntax Description | ID                | 1Byte   | Address of setting module 1~247                                                                                                       |
|                    | 03                | 1 Byte  | Function Code                                                                                                                         |
|                    | 00 SS             | 2 Bytes | Start channel number, 0x0000~0x000F                                                                                                   |
|                    | 00 NN             | 2 Bytes | Output channel number,0x0001~0x0010                                                                                                   |
| Response           | ID 03 BC NN NN    | 5 Bytes | ID=1~247<br>03:Function Code<br>BC: Byte counter<br>NN NN: Digital output read back value                                             |
| Error Response     | ID 83 ER          | 3 Bytes | ID=1~247<br>83 :Function Code<br>ER=00 Syntax error<br>ER=01 Data Format error<br>ER=02 Start channel error<br>ER=03 I/O out of range |

**Example:**

Send command :" 01 03 00 00 00 03 ".....Read DO0~DO3 read back counter value.

Response:" 01 03 06 00 12 00 06 03 0A "..... Byes Counter=6.

CH0 Counter Value=12, DO1 Counter Value=06, DO3 Counter Value=778.

## 6-3. Write Single Coil

**Write Single channel output data**

|                    |                   |         |                                                                                                                                       |
|--------------------|-------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------|
| Command            | ID 05 00 SS DD 00 |         |                                                                                                                                       |
| Syntax Description | ID                | 1Byte   | Address of setting module 1~247                                                                                                       |
|                    | 05                | 1 Byte  | Function Code                                                                                                                         |
|                    | 00 SS             | 2 Bytes | Start channel number, 0x0000~0x000F                                                                                                   |
|                    | DD 00             | 2 Bytes | Write output data DD=00 Output Disable<br>DD=FF Output Enable                                                                         |
| Response           | ID 05 00 SS DD 00 | 5 Bytes | Command Line                                                                                                                          |
| Error Response     | ID 85 ER          | 3 Bytes | ID=1~247<br>85 :Function Code<br>ER=00 Syntax error<br>ER=01 Data Format error<br>ER=02 Start channel error<br>ER=03 I/O out of range |

**Example:**Send command :" 01 05 00 06 FF 00 ".....DO6 Output Enable.

Response:" 01 05 00 06 FF 00 "...Command Valid.

## 6-4. Write Coils

### Write multi channel output data

|                    |                            |         |                                                                                                                                       |
|--------------------|----------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------|
| Command            | ID 0F 00 SS 00 NN BC LL HH |         |                                                                                                                                       |
| Syntax Description | ID                         | 1Byte   | Address of setting module 1~247                                                                                                       |
|                    | 0F                         | 1 Byte  | Function Code                                                                                                                         |
|                    | 00 SS                      | 2 Bytes | Start channel number, 0x0000~0x000F                                                                                                   |
|                    | 00 NN                      | 2 Bytes | Output channel number=0x0001~0x0010                                                                                                   |
|                    | BC                         | 1 Bytes | Byte counter                                                                                                                          |
|                    | LL HH                      | 2 Bytes | Write output data LL=00~FF<br>HH=00~FF                                                                                                |
| Response           | ID 0F 00 SS 00 NN          | 6 Bytes | Command Line                                                                                                                          |
| Error Response     | ID 8F ER                   | 3 Bytes | ID=1~247<br>8F :Function Code<br>ER=00 Syntax error<br>ER=01 Data Format error<br>ER=02 Start channel error<br>ER=03 I/O out of range |

**Example:**

Send command:"01 0F 00 00 00 10 02 12 34"...Output DO Data DO0~DO7=21,DO8~DOF=43,Byte Counter=02

Response:"01 0F 00 00 00 10"...Command Valid.

## 6-5. Write single register

### Write single channel counter value

|                    |                   |         |                                                                                                                              |
|--------------------|-------------------|---------|------------------------------------------------------------------------------------------------------------------------------|
| Command            | ID 06 00 SS DD DD |         |                                                                                                                              |
| Syntax Description | ID                | 1Byte   | Address of setting module 1~247                                                                                              |
|                    | 06                | 1 Byte  | Function Code                                                                                                                |
|                    | 00 SS             | 2 Bytes | Start channel number, 0x0000~0x000F                                                                                          |
|                    | DD DD             | 2 Bytes | Write Counter Value DDDD=0x0000~0xFFFF                                                                                       |
| Response           | ID 06 00 SS DD 00 | 6 Bytes | Command Line                                                                                                                 |
|                    | ID 86 ER (CRC)    | 4 Bytes | ID 86 :Function Code<br>ER=00 Syntax error<br>ER=01 Data Format error<br>ER=02 Start channel error<br>ER=03 I/O out of range |

**Example:**Send command :" 01 06 00 09 1A 37 ".....Write DO9 Counter Value=1A37.

Response:"01 06 00 09 1A 37 "... Command Valid.

## 6-6. Write multiple registers

### Write multi channel counter value

|                    |                            |            |                                                                                                                              |
|--------------------|----------------------------|------------|------------------------------------------------------------------------------------------------------------------------------|
| Command            | ID 10 00 SS 00 CN BC DD DD |            |                                                                                                                              |
| Syntax Description | ID                         | 1Byte      | Address of setting module 1~247                                                                                              |
|                    | 10                         | 1Byte      | 10=Function Code                                                                                                             |
|                    | 00 SS                      | 2 Bytes    | Start channel number, 0x0000~0x000F                                                                                          |
|                    | 00 CN                      | 2 Bytes    | Counter Number =0x0001~0x0010                                                                                                |
|                    | BC                         | 1 Byte     | Byte Counter                                                                                                                 |
|                    | DD DD.....                 | 2~32 Bytes | Counter Vaile DDDD=0000~FFFF                                                                                                 |
| Response           | ID 10 00 SS 00 CN          | 6 Bytes    | Command Line                                                                                                                 |
|                    | ID 90 ER                   | 3 Bytes    | ID 90 :Function Code<br>ER=00 Syntax error<br>ER=01 Data Format error<br>ER=02 Start channel error<br>ER=03 I/O out of range |

Send command:" 01 10 00 00 00 03 06 00 0A 00 14 00 1E "... Write DO 1~3 Counter Value.

Response:"01 10 00 00 00 03"..... Command Valid.

## 6-7.Read the module's name

|                    |                      |                                                                    |
|--------------------|----------------------|--------------------------------------------------------------------|
| Command            | ID 46 00 00          |                                                                    |
| Syntax Description | ID                   | Address of setting module 1~247                                    |
|                    | 46                   | Function code                                                      |
|                    | 00                   | Read module's name                                                 |
|                    | 00                   | Reserved code                                                      |
| Response           | ID 46 00 00 0C 24 00 | ID 46 00 00 ....Module command Line<br>0C 24 :Module's Name is C24 |
|                    | ID C6 00             | ID C6 C6:Function Code 00: Reserved code                           |

EX: Send Command:"01 46 00 00".....Read the TRP-C24's name.

Response:"01 46 00 00 0C 24 00 ".....Module's name is C24.

Error Response: "01 C6 00".....Error code.

## 6-8. Setting module new ID

|                    |                      |                                          |
|--------------------|----------------------|------------------------------------------|
| Command            | ID 46 04 IP 00 00 00 |                                          |
| Syntax Description | ID                   | Address of setting module 1~247          |
|                    | 46                   | Function Code                            |
|                    | 04                   | Setting module ID                        |
|                    | IP                   | New module's ID                          |
|                    | 00 00 00             | Reserved code                            |
| Response           | ID 46 04 00 00       | ID 46 04 00 00 ....Command valid         |
|                    | ID C6 00             | ID C6 C6:Function Code 00: Reserved code |

EX: Send Command:"01 46 04 08 00 00 00".....Set up the new ID is "03".

Response:"01 46 04 00 00 ".....New ID is 08.

Error Response: "01 C6 00".....Error code.

## 6-9. Read the module's Firmware

|                    |                      |                                                                                      |
|--------------------|----------------------|--------------------------------------------------------------------------------------|
| Command            | ID 46 07 00          |                                                                                      |
| Syntax Description | ID                   | Address of setting module 1~247                                                      |
|                    | 46                   | Function Code                                                                        |
|                    | 07                   | Read module's Firmware                                                               |
|                    | 00                   | Reserved code                                                                        |
| Response           | ID 46 07 YY MM DD 00 | ID 46 07 .....Module command Line<br>YY:Year MM :Month DD:Date<br>00 : Reserved code |
|                    | ID C6 00             | ID C6 C6:Function Code 00: Reserved code                                             |

### Example:

Send Command:"01 46 07 00".....Read Firmware Version.

Response:"01 46 07 13 01 10 00"....Firmware Version 01/10/2013.

Error Response: "01 C6 00".....Error code.

## 6-10.Enable/Disable watchdog

|                    |                |                                                 |
|--------------------|----------------|-------------------------------------------------|
| Command            | ID 46 0B WS 00 |                                                 |
| Syntax Description | ID             | Address of setting module 1~247                 |
|                    | 46             | Function Code                                   |
|                    | 0B             | Setting Watchdog Status                         |
|                    | WS             | WS=00 Watchdog Disable<br>WS=01 Watchdog Enable |
|                    | 00             | Reserved code                                   |
| Response           | ID 46 0B 00    | 00 ID 46 0B 00 .....Command valid               |
|                    | ID C6 00       | ID C6 C6:Function Code 00: Reserved code        |

**Example:**

Send Command:"01 46 0B 01 00".....Watchdog Enable.

Response:"01 46 0B 00"...Command valid.

Error Response: "01 C6 00".....Error code.

## 6-11.Read watchdog status

|                    |             |                                                                                      |
|--------------------|-------------|--------------------------------------------------------------------------------------|
| Command            | ID 46 0C 00 |                                                                                      |
| Syntax Description | ID          | Address of setting module 1~247                                                      |
|                    | 46          | Function Code                                                                        |
|                    | 0C          | Read watchdog status                                                                 |
|                    | 00          | Reserved code                                                                        |
|                    | ID 46 0C WT | ID 46 0C .....Module command line<br>WT=00 Watchdog Disable<br>WT=01 Watchdog Enable |
| Response           | ID C6 00    | ID C6 C6:Function Code 00: Reserved code                                             |

**Example:**

Send Command:"01 46 0C 00"...Read watchdog status.

Response:"01 46 0C 01 ....Watchdog enable.

Error Response: "01 C6 00"....Error code.

## 6-12. Set up LED ON/OFF

|                    |                |                                                                                        |
|--------------------|----------------|----------------------------------------------------------------------------------------|
| Command            | ID 46 0D 0S 00 |                                                                                        |
| Syntax Description | ID             | Address of setting module 1~247                                                        |
|                    | 46             | Function Code                                                                          |
|                    | 0D             | Set Up LED Status Value                                                                |
|                    | 0S             | S = 0 Turn on all LED when DIO enable off<br>S = 1 Turn off all LED when DIO enable on |
|                    | 00             | Reserved code                                                                          |
| Response           | ID 46 0D 00    | ID 46 0D .....Command valid                                                            |
|                    | ID C6 00       | ID C6 C6:Function Code 00: Reserved code                                               |

**Example:**

Send Command: "01 46 0D 01 00.

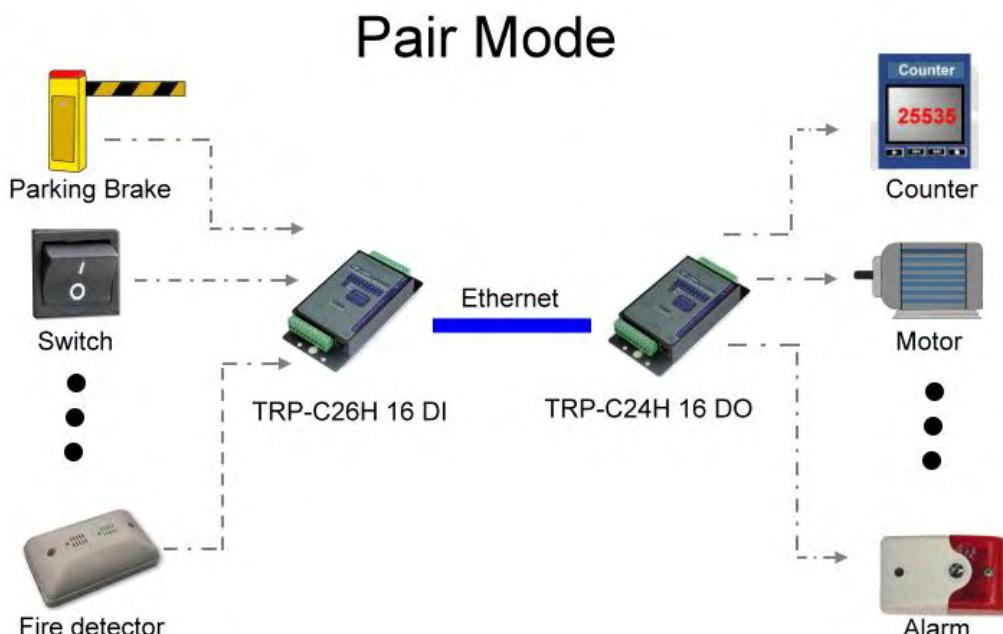
Response: "01 46 0D 00.

Error Response: "01 C6 00" ...Error code.

## 7. Pair Mode

TRP-C24H support pairing mode with the TRP-C26H, Applied to 16 digital channels input and 16 digital output with over the network, without any driver with computer hardware.

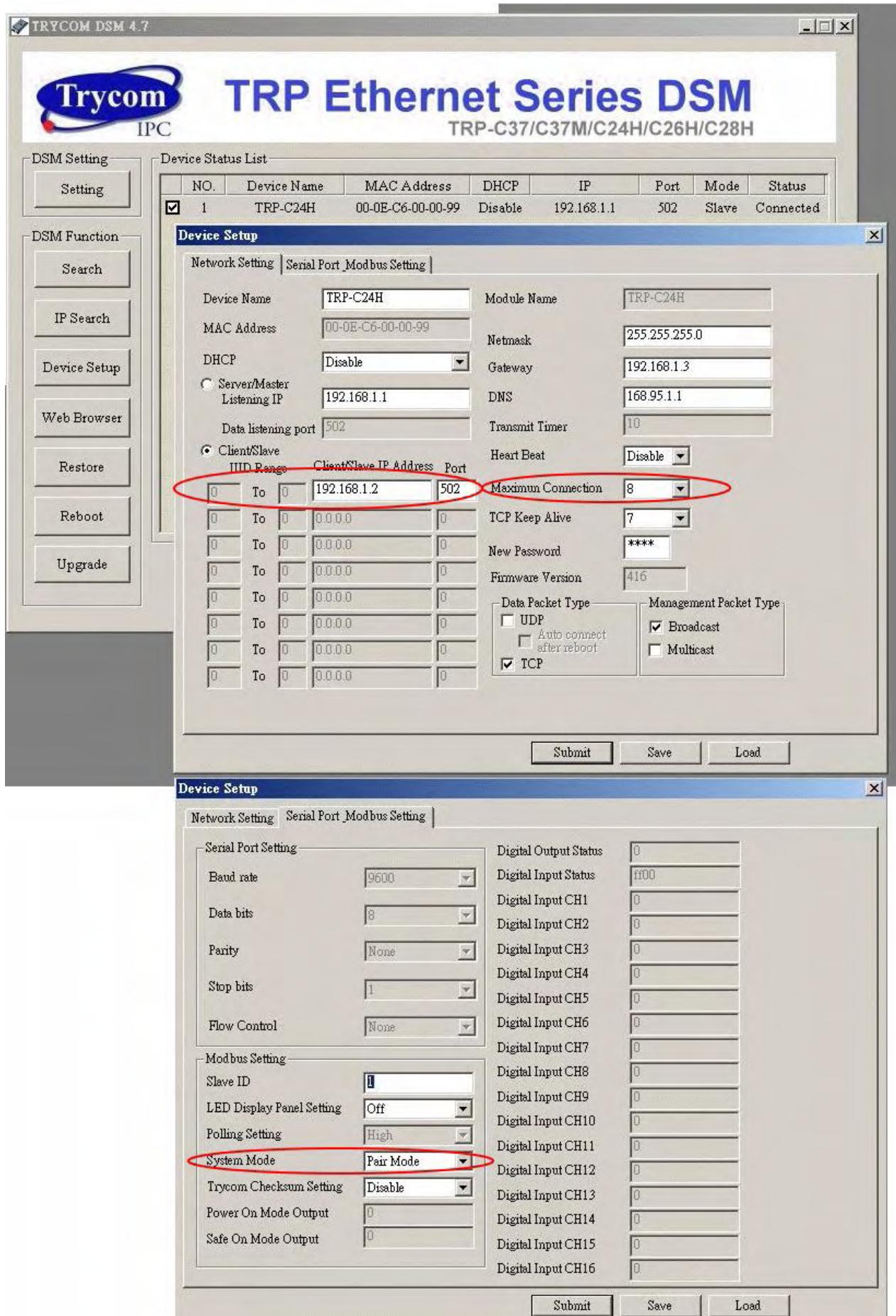
All digital LED flashes in pairing mode until successfully paired will stop blinking; TRP-C24H sustained in connection automatically, regardless of any party the power to re-open or network disconnection to ensure normal transmission. product application are as follows:



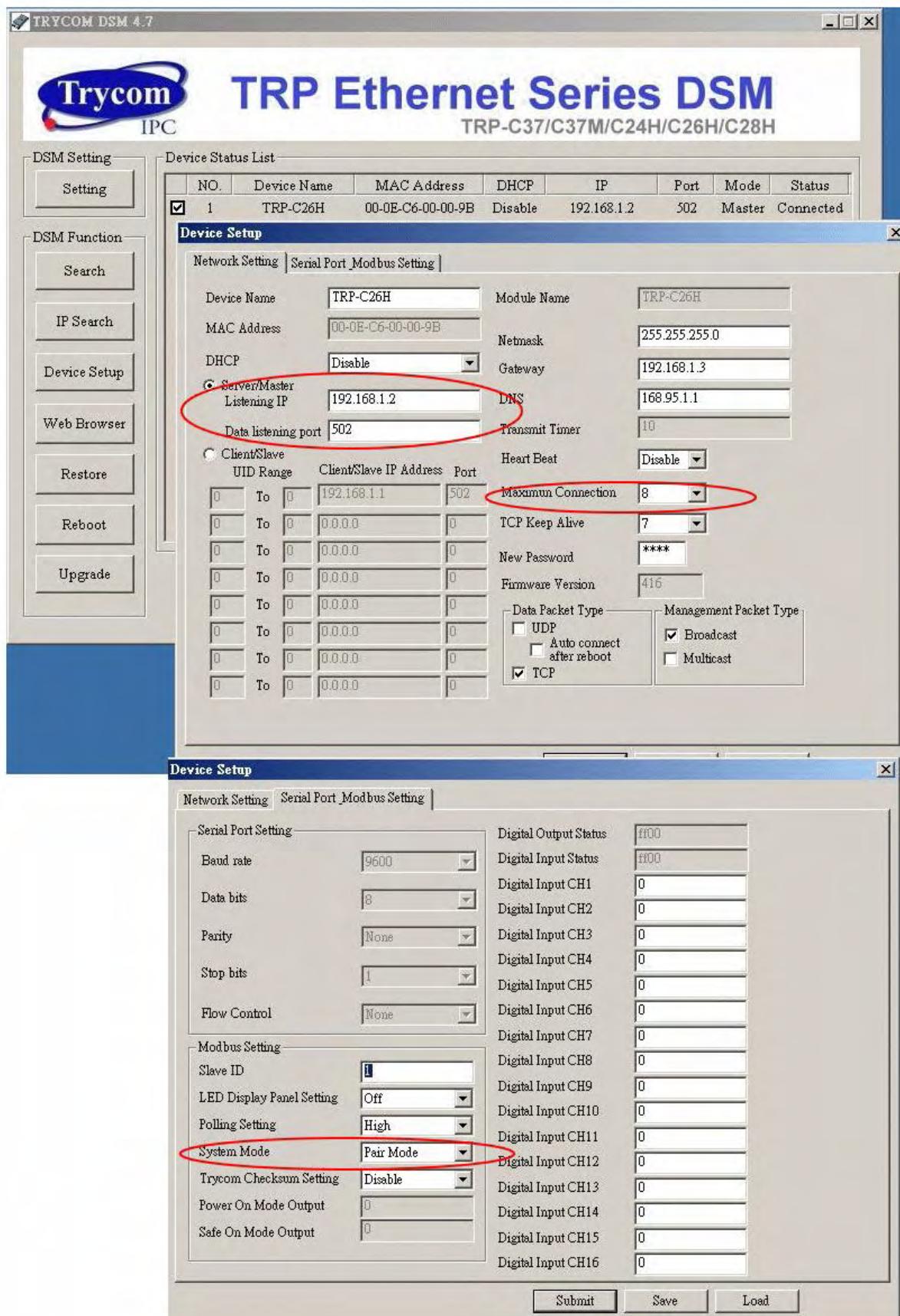
## 7-1 Parameter setting example

Perform DSM utility to change the parameters

- TRP-C24H parameter setting



- TRP-C26H parameter setting



## 8. Application

