

# TRP-C26H

**16 channels isolated digital input  
with counter Modbus TCP module.**



## User's Manual

Printed Nov 2015 Rev:1.4

Firmware Version:608

**Trycom Technology Co., Ltd**

No.35, Zhongxing Rd., Guishan Township, Taoyuan County 333, Taiwan.

Tel : 886-3-350-3351 Fax: 886-3-350-3352

Web: [www.trycom.com.tw](http://www.trycom.com.tw)

### Copyright

Copyright Notice: The information in this manual is subject to change without notice to improve reliability, design and function and does not represent a commitment on the part manufacturer. No part of this manual may be reproduced, copied, or transmitted in any form, without prior written permission by the manufacturer. Products mentioned in this manual are mentioned for identification purposes only. In this manual, product names appearing may or may not be registered trademarks of their respective companies or copyright.

# 1. Introduction

TRP-C26H an Isolated Digital Input with counter Modbus TCP Module, provides 16 optical isolated digital input channels and counter that allow you to input the logic signal from +/- 0 to 30V DC on network, it supports 3 communication Protocol, TRP-ASCII, Modbus RTU / ASCII, TRP-C26H 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-C26H 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-C26H 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-C26H with TRP-C24H, 16 remote control directly, do not need to run the software and equipment.

TRP-C26H 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.
- Maximum 8 sets host IP that limits network access.
- Support Virtual-COM mode.
- WEB PAGE can be directly 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 input signal from +/- 0 to 30V DC.
- 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 DI LED indicator.
- DIN-Rail and panel mount support.
- Dual power input select from screw terminal or DC-Jack.

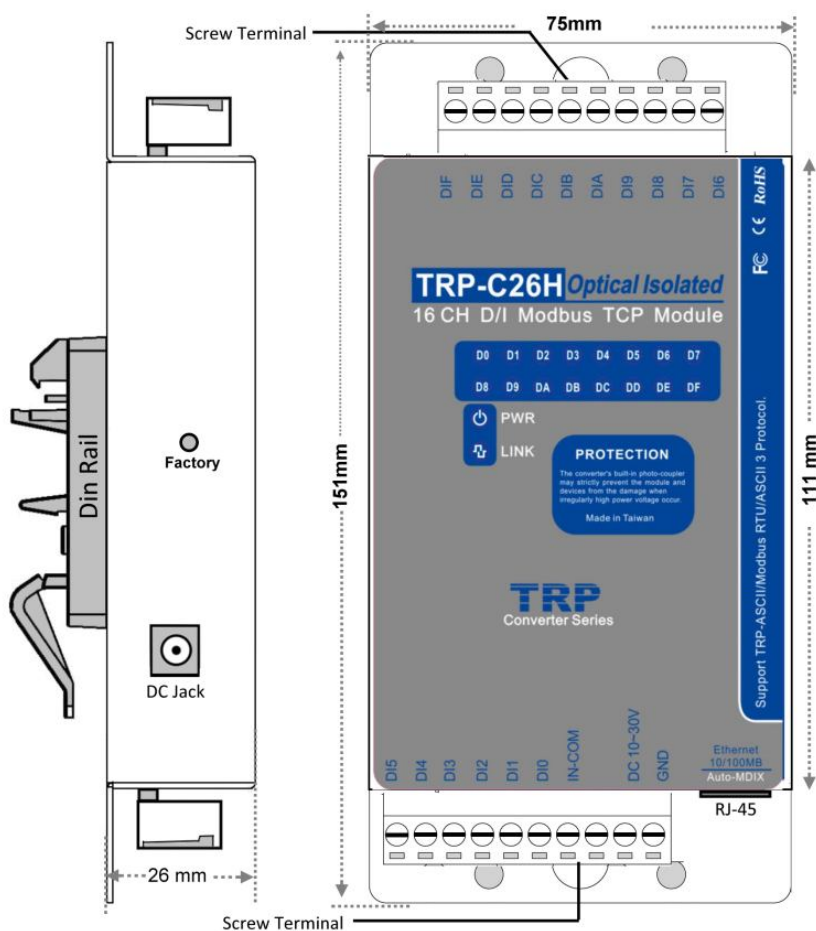
## 1-2.Specification.

- Power Input Voltage DC +10V to +30V.
- Protocol: TRP-ASCII and Modbus RTU/ASCII.
- Input channel: 16 digital input channels with counter.

- Input digital input counter: 0~65535.
- Input optical isolation: 3750 Vrms.
- Input logical level 0 +1V (max).
- Input logical level 1 +4.0V ~ +30V.
- Communication interface: Ethernet RJ45.
- Configuration mode: Trycom Device Manager, WEB settings.
- Matching remote control: with TRP-C24H.
- 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!

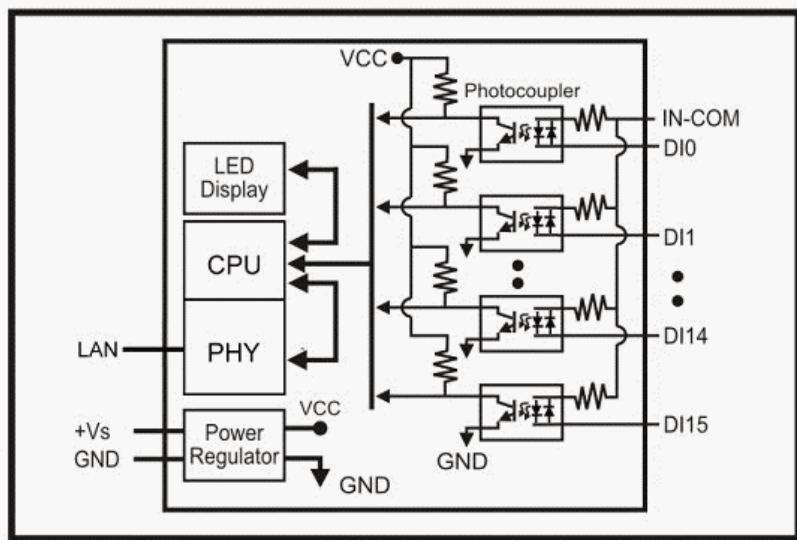
**PWR LED:** Blinking is ready.

**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.

## 2-2. Block Diagram



## 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

**Device Setup**

Network Setting | Serial Port\_Modbus Setting

Device Name: TRP-C26H      Module Name: TRP-C26H

MAC Address: 00-0E-C6-00-03-43      Netmask: 255.255.255.0

DHCP: Enable      Gateway: 192.168.1.3

Server/Master      DNS: 168.95.1.1

Listening IP: 192.168.0.123      Transmit Time/Plus: 10

Data listening port: 502      Heart Beat: Disable

Client/Slave

UID	Range	Client/Slave IP Address	Port
0	To 0	0.0.0.0	502
0	To 0	0.0.0.0	0
0	To 0	0.0.0.0	0
0	To 0	0.0.0.0	0
0	To 0	0.0.0.0	0
0	To 0	0.0.0.0	0
0	To 0	0.0.0.0	0
0	To 0	0.0.0.0	0

Maximum Connection: 8

TCP Keep Alive: 7

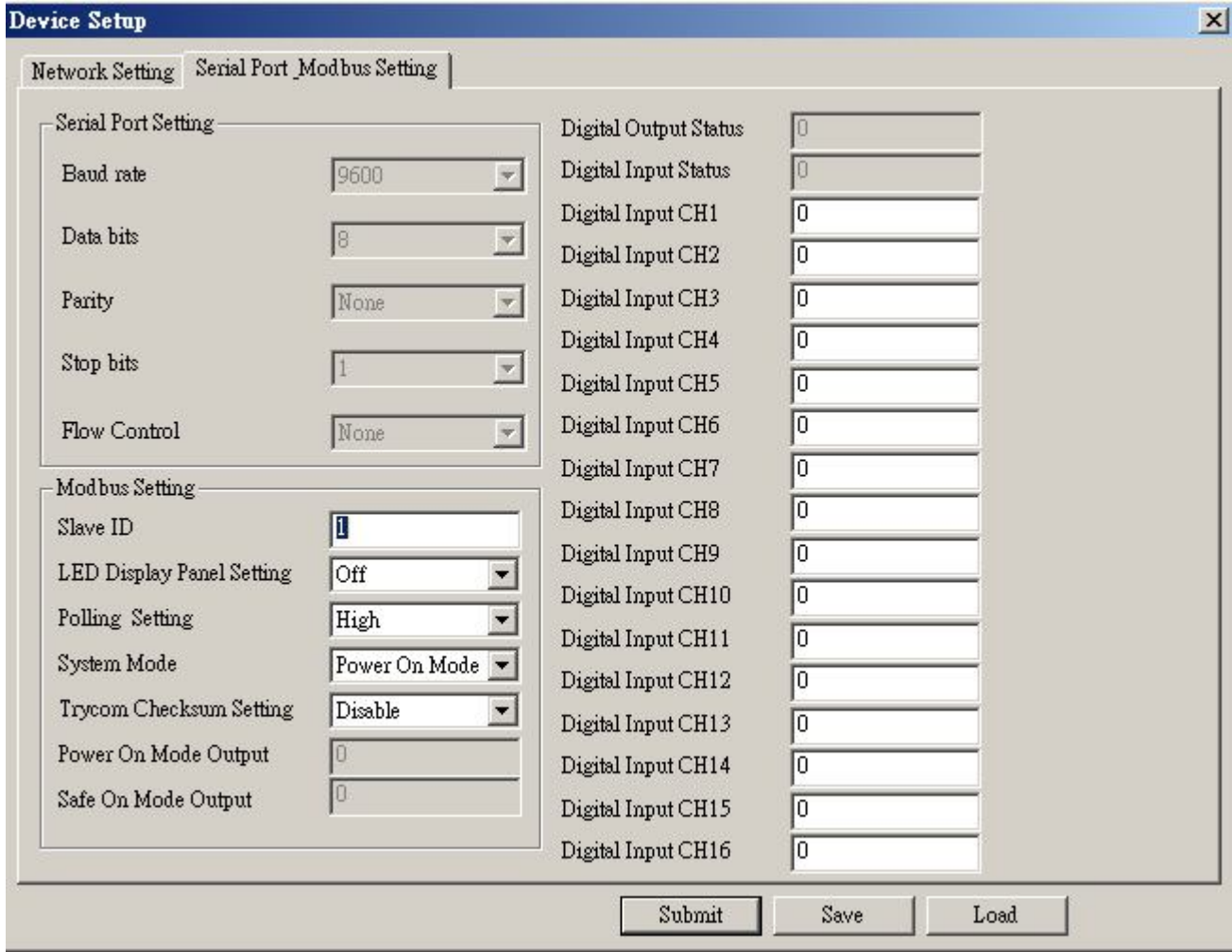
New Password: \*\*\*\*\*

Firmware Version: 608

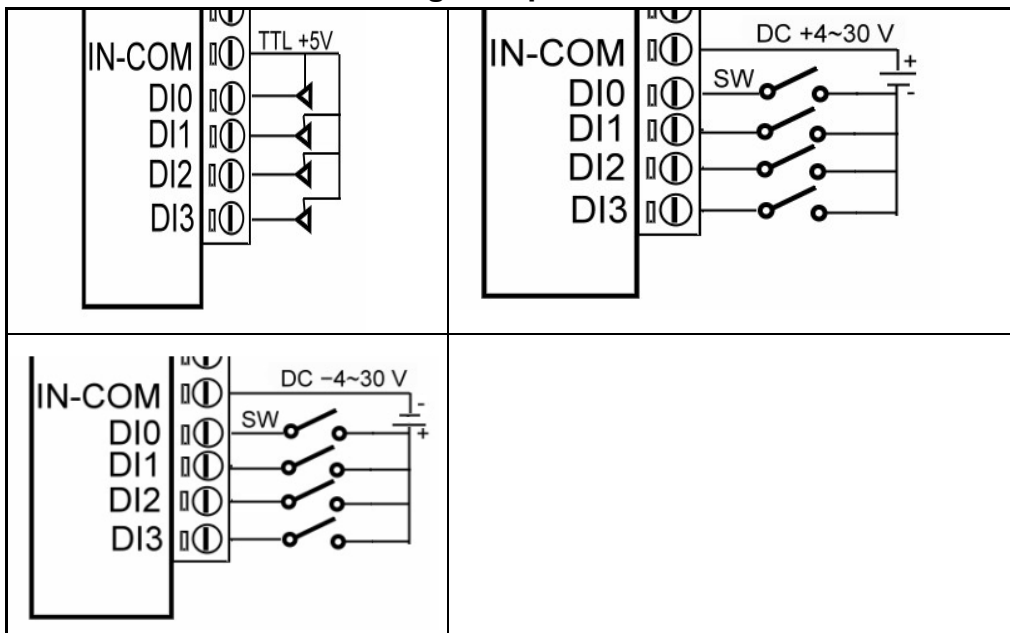
Data Packet Type:  UDP,  Auto connect after reboot,  TCP

Management Packet Type:  Broadcast,  Multicast

Submit      Save      Load



## 2-5. Wire Connection For Digital Input



## 2-6. Pin Description

DI5	Digital Input Channel 5	DIF	Digital Input Channel F
DI4	Digital Input Channel 4	DIE	Digital Input Channel E
DI3	Digital Input Channel 3	DID	Digital Input Channel D
DI2	Digital Input Channel 2	DIC	Digital Input Channel C
DI1	Digital Input Channel 1	DIB	Digital Input Channel B
DI0	Digital Input Channel 0	DIA	Digital Input Channel A
IN-COM	The isolated side power input MAX.30V	DI9	Digital Input Channel 9
N.C	Empty Foot	DI8	Digital Input Channel 8
DC 10~30V	Input DC 10~30V	DI7	Digital Input Channel 7
GND	Power Ground	DI6	Digital Input Channel 6

## 3. Install TRP-C26H Hardware

**STEP1:** Connect power source with TRP-C26H, the PWR LED will blinking.

**STEP2:** Connect TRP-C26H with network by RJ45 cable.

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

\*The TRP-C26H 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-C26H screw terminal wiring, such as 2-5 picture description.

## 4. How to configure TRP-C26H

*\*Please note that the computer's IP segment adjusted with TRP-C26H same section, modify the parameter values in order to effectively store!*

*For example:*

*Computer IP is 192.168.1.xx*

*TRP-C26H 192.168.1.1*

There are 2 ways can change the module parameter values.

### A. DSM Software



# TRP-Ethernet Series DSM

TRP-C37/C37M/C37A/C37MA/C24H/C26H/C28H/C29H/C68H

DSM Setting

Setting

DSM Function

Search

IP Search

Device Setup

Web Browser

Restore

Reboot

Upgrade

Device Status List

NO.	Device Name	MAC Address	DHCP	IP	Port	Mode	Status	
<input type="checkbox"/>	1	TRP-C26H	00-0E-C6-00-03-43	Enable	192.168.0.123	502	Master	Idle

DSM Status: Idle


Progress:





## B. WEB Server

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

	<b>TRP-C26H</b> WDT-inside	<b>Isolated 16 CH. DI Modbus TCP Module</b>
---	-------------------------------	---

**TRP-C26H Setting**

Slave ID (1~255)	<input type="text" value="1"/>
LED Display Panel Setting	OFF ▾
Polling Setting	High ▾
System Mode	Power On Mo ▾
Trycom Checksum	Disable ▾
Digital Input Status	0000
Digital Input CH1	<input type="text" value="0"/>
Digital Input CH2	<input type="text" value="0"/>
Digital Input CH3	<input type="text" value="0"/>
Digital Input CH4	<input type="text" value="0"/>
Digital Input CH5	<input type="text" value="0"/>
Digital Input CH6	<input type="text" value="0"/>
Digital Input CH7	<input type="text" value="0"/>
Digital Input CH8	<input type="text" value="0"/>
Digital Input CH9	<input type="text" value="0"/>
Digital Input CH10	<input type="text" value="0"/>
Digital Input CH11	<input type="text" value="0"/>
Digital Input CH12	<input type="text" value="0"/>
Digital Input CH13	<input type="text" value="0"/>
Digital Input CH14	<input type="text" value="0"/>
Digital Input CH15	<input type="text" value="0"/>
Digital Input CH16	<input type="text" value="0"/>

**Network Settings**

	<input checked="" type="checkbox"/> Enable DHCP
Static IP Address	<input type="text" value="192.168.1.1"/>
Static Subnet Mask	<input type="text" value="255.255.255.0"/>
Static Default Gateway	<input type="text" value="192.168.1.3"/>
Static DNS Server	<input type="text" value="168.95.1.1"/>
Connection Type	TCP ▾
Max Connection(1~16)	<input type="text" value="8"/>

**Master/Slave**

**Master:**

Master Listening Port	<input type="text" value="502"/>
-----------------------	----------------------------------

**Slave:**

Slave IP Address	<input type="text" value="0.0.0.0"/>
Slave Port	<input type="text" value="502"/>

**New Password (10000~65535)**

Enable Reboot

## 4-1. Using DSM Utility

The DSM utility software performs several functions:

A: Searching for TRP-C26H connected to the network.

B: Displaying and changing the configuration.

C: Upgrading the TRP-C26H firmware, Refer the Firmware upgrade help file.

D: Saving and Loading Configuration from external log File or memory.

## 4-2. Searching TRP-C26H

Once TRP-C26H is connected to the network the **DSM** software will search it and display it in a window by name, IP address, Mac....Information.

NO.	Device Name	MAC Address	DHCP	IP	Port	Mode	Status
<input type="checkbox"/> 1	TRP-C26H	00-0E-C6-00-03-43	Enable	192.168.0.123	502	Master	Idle

## 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** [X]

Network Setting | Serial Port\_Modbus Setting

Device Name: TRP-C26H      Module Name: TRP-C26H

MAC Address: 00-0E-C6-00-03-43      Netmask: 255.255.255.0

DHCP: Enable      Gateway: 192.168.1.3

Server/Master      DNS: 168.95.1.1

    Listening IP: 192.168.0.123      Transmit Time/Plus: 10

    Data listening port: 502      Heart Beat: Disable

Client/Slave

UID Range	Client/Slave IP Address	Port
0 To 0	0.0.0.0	502
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0

    Maximum Connection: 8

    TCP Keep Alive: 7

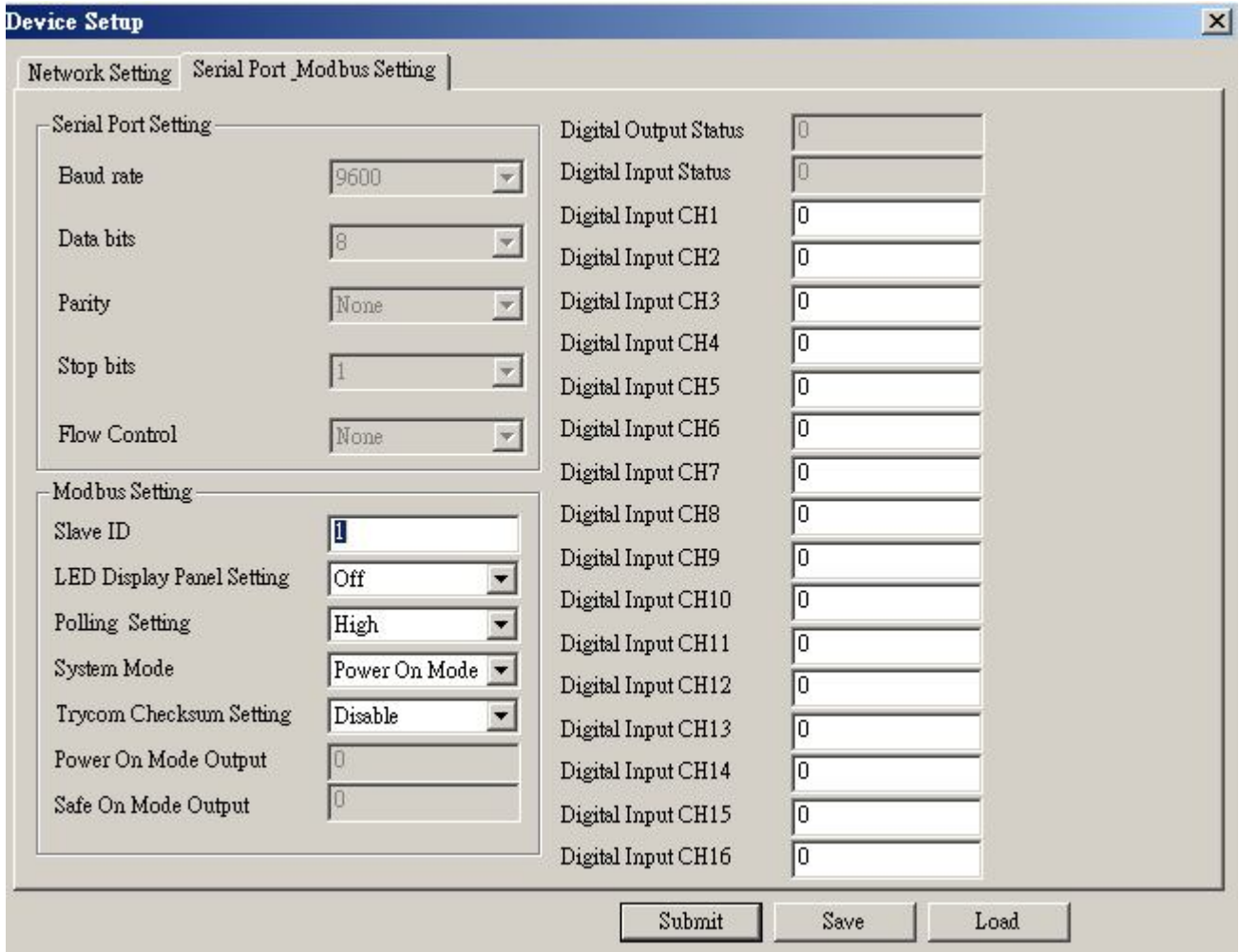
    New Password: \*\*\*\*\*

    Firmware Version: 608

    Data Packet Type:  UDP,  Auto connect after reboot,  TCP

    Management Packet Type:  Broadcast,  Multicast

Submit      Save      Load



◆ **Device Name:**

Device server name, Maximum 10 chars.

◆ **Model Name:**

TRP-C26H.

◆ **MAC Address**

The TRP-C26H 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-C26H will timeout then back to factory setting IP=192.168.1.1.

◆ **Server Listening IP**

The TRP-C26H IP address.

◆ **Server Data listening port**

TRP-C26H 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 may be 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-C26H in Server mode, adjust 1~16 TCP client host connections.

◆ **TCP Keep Alive: 1~7 /Minute**

When TRP-C26H in Server or Client mode, the TRP-C26H without data over the 1~7 Min setting value, The TRP-C26H 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-C26H 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:** Applies only TRP-C24H/C28H.

**Save ON Mode:** Applies only TRP-C24H/C28H.

**Pair Mode:** It can be used as a remote manual remote control, when the TRP-C26H 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-C26H Boot!

◆ **Save ON Mode Output:0000~FFFF.**

Applies only TRP-C24H/C28H.

◆ **Digital Output Status**

Applies only TRP-C24H/C28H.

◆ **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-C26H firmware.

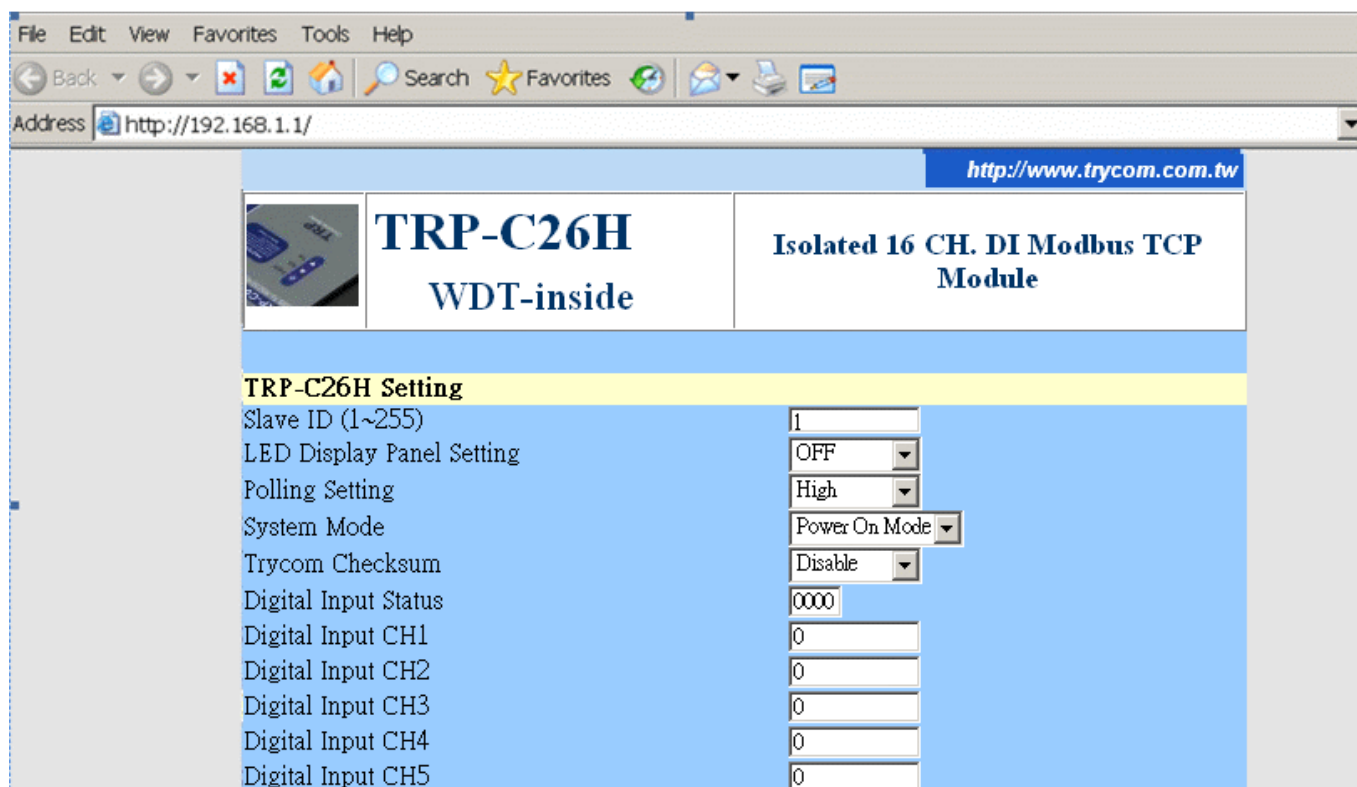
## 4-4.Using the WEB Server mode

The Web Server can be used to configure the TRP-C26H from any web browser software (such as I.E).

In Internet Explorer type the IP Address of the TRP-C26H into the address field and press the Enter key. The following window will appear:

Example:

If TRP-C26H 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.

TRPCOM utility can automatically detect the model, it will list the corresponding function key,

It helps developers to understand and control the digital state.

**TRPCOM 2013 Test Utility** Version:1020928

Setting Terminal Scan **TCP/IP** About

Ethernet Serial Server/Ethernet I/O address  
IP: 192.168.0.111 Port: 502 Link

Network Status  
Network On line!..... Stop Link

Send the ASCII command  
\$01M Auto  80  
Send Command

Response  
010000

TRP-C26H/28H Digital Input Counter Value

D0	D1	D2	D3	D4	D5	D6	D7
00025	00009	00023	00027	00037	00016	00101	00118
D8	D9	DA	DB	DC	DD	DE	DF
00032	00041	00109	00043	00106	00043	00108	00119

DO/DI Status: 0000 Command: #014 Response: 0100037  Auto Read

TRP-C24H Digital Output Control

DO	D1	D2	D3	D4	D5	D6	D7
D8	D9	DA	DB	DC	DD	DE	DF

TRP-C2XH Common commands

Back to Factory Reset Counter Clear D/O Value Setting Power On

**Description**  
The TCP / IP Function:  
Please enter the test device's IP and Port, then press the Link button,  
The program will automatically determine the type and lists function keys.  
1.Test device serial Server loop back wiring.  
2.Test TRP-C24H/C26H/C26H Ethernet I / O.

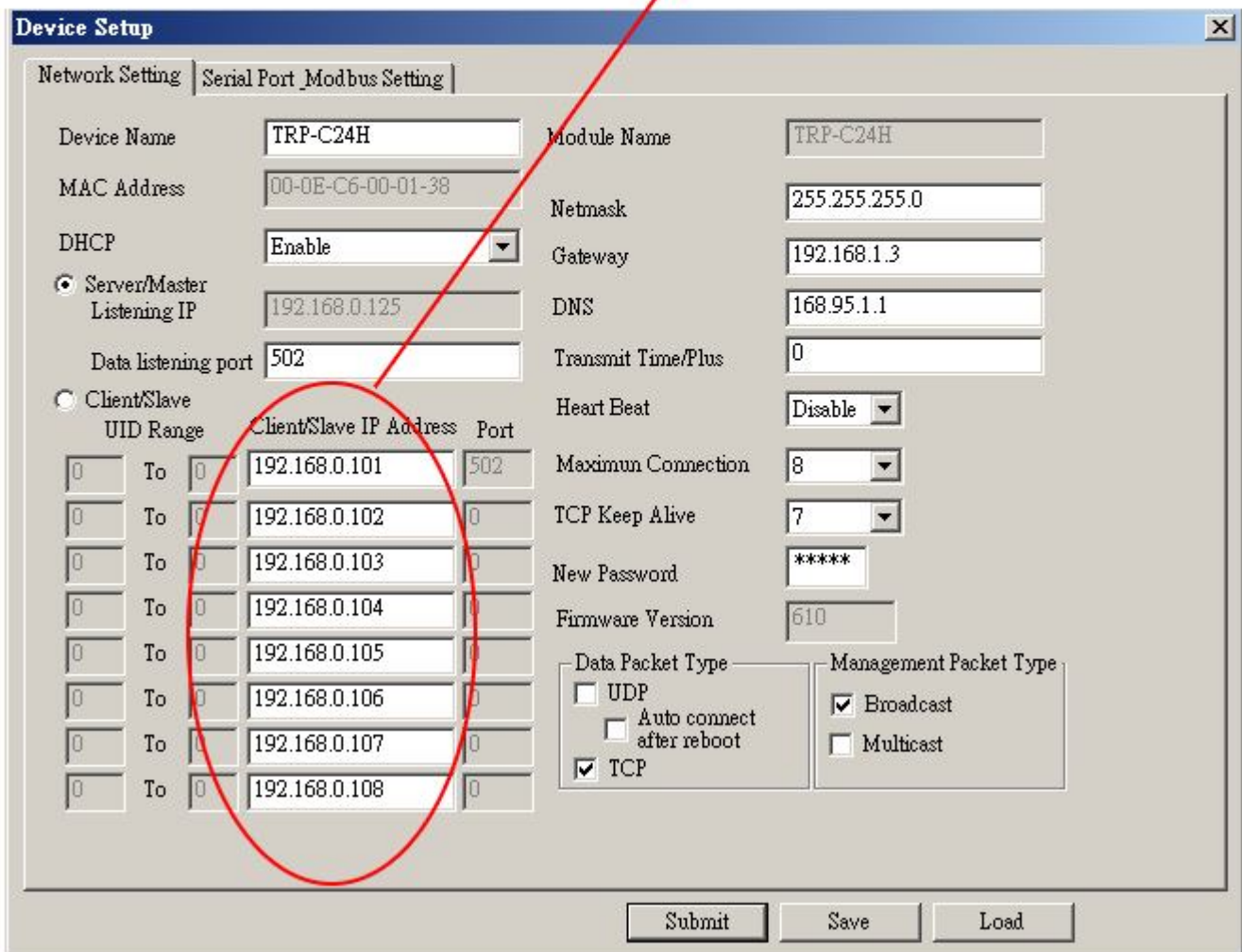
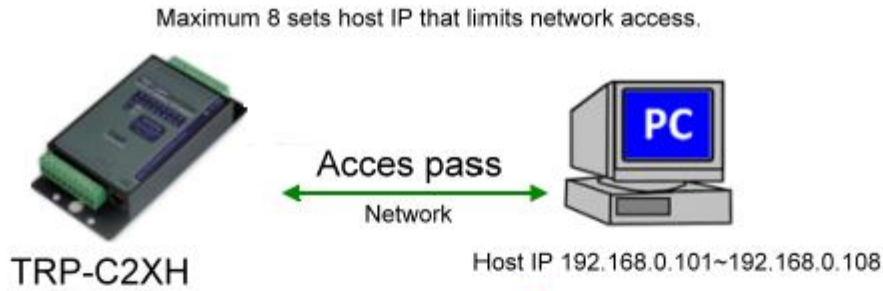
### 4-6 How to setup the network security

In network security, the TRP-C26H is able to setup 1~ 8 sets host IP, only these host IP can access the TRP-C26H.

The TRP-C26H actually can make connections with any Host IP, Once the user has filled in the Host IP, these IP are valid, the TRP-C26H will be pass with them. Other host IP will not pass.

Refer to the following example illustrates.

\*Please make sure the firmware version is 608 above, and the DSM utility version is 6.07 above.



## 5. TRP-ASCII Communication Protocol

TRP-C26H 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
%IDNPP00DD(CHK)(cr)	Setting module configuration	See 5-1
#IDN (CHK)(cr)	Read digital input channel counter value	See 5-2
#IDCN(CHK)(cr)	Clear digital input N channel counter value	See 5-3
#IDCW(CHK)(cr)	Clear all digital input counters value	See 5-4
#IDCS(CHK)(cr)	Save all digital input counters value	See 5-5
\$IDLS(CHK)(cr)	Read digital input latched	See 5-6
\$IDC(CHK)(cr)	Clear digital input latched	See 5-7
\$ID6 (CHK)(cr)	Read digital input status	See 5-8
\$IDF (CHK)(cr)	Read the module’s firmware version	See 5-9
\$IDM (CHK)(cr)	Read the module’s name	See 5-10
\$01RS(CHK)(cr)	Reset Module	See 5-11
~IDONN (CHK)(cr)	Change the module’s name	See 5-12
~IDLEDA(CHK)(cr)	Set the module’s LED operating mode	See 5-13
~**(CHK)(cr)	Read Module ID and mode name	See 5-14
#**(CHK)(cr)	Back to factory	See 5-15

## 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...See 5-1-1
	CHK	Checksum
	(cr)	Carriage return
Response	!ID(CHK) (cr)	Command valid
	?ID (CHK)(cr)	Command Invalid

### 5-1-1.DD: Data Format

Bit	7	6	5	4	3	2	1	0
Function	0	<i>Checksum</i> <i>0:Disable</i> <i>1:Enable</i>	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. Read digital input channel counter value

Command	#IDN(CHK)(cr)	
Syntax description	#	First leading code
	ID	Address of setting module 00-FF(HEX)
	N	Digital Input channel 0~F
	CHK	Checksum
	(cr)	Carriage return
Response	!IDCCCC(CHK) (cr)	Command valid CCCCC from 0~65535
	?ID (CHK)(cr)	Command Invalid

**Ex:**Send command:"#012" Read the TRP-C26H channel 2 counter value

Response: "!0100023".....The digital input have been trigger 23 times.

### 5-3. Clear digital input N channel counter value

Command	#IDCN(CHK)(cr)	
Syntax description	#	First leading code
	ID	Address of setting module 00-FF(HEX)
	CN	Digital Input channel N=0~F
	CHK	Checksum
	(cr)	Carriage return
Response	!ID(CHK) (cr)	Command valid
	?ID (CHK)(cr)	Command Invalid

**Ex:**Send command:"#01C0"...Clear channel 0 counter value.

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

### 5-4. Clear all digital input counters value

Command	#IDCW(CHK)(cr)	
Syntax description	#	First leading code
	ID	Address of setting module 00-FF(HEX)
	CW	Clear all channels counter values
	CHK	Checksum
	(cr)	Carriage return
Response	!ID(CHK) (cr)	Command valid
	?ID (CHK)(cr)	Command Invalid

**Ex:**Send command:"#01CW"...Clear all channels counter value.

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

### 5-5. Save all digital input counters value

Command	#IDCS(CHK)(cr)	
Syntax description	#	First leading code
	ID	Address of setting module 00-FF(HEX)
	CS	save all channels counter values
	CHK	Checksum
	(cr)	Carriage return
Response	!ID(CHK) (cr)	Command valid
	?ID (CHK)(cr)	Command Invalid

**Ex:**Send command:"#01CS"...Clear all channels counter value.

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

### 5-6. Read digital input latched

Command	\$IDLS(CHK)(cr)	
Syntax description	\$	First leading code
	ID	Address of setting module 00-FF(HEX)
	LS	S=0 Latch logic 0, S=1 No use.
	CHK	Checksum
	(cr)	Carriage return
Response	!DLLHH00(CHK)(cr)	LL=DI0~DI7 status, HH=DI8~DI15 status.
	?ID(CHK) (cr)	Command Invalid

**Ex:**Send command:"\$01L0"...Read latch.

Response: "!01161200"..... DI0,DI5,DI6,DI7...have been latched.

### 5-7. Clear digital input latched

Command	\$IDC(CHK)(cr)	
Syntax description	\$	First leading code
	ID	Address of setting module 00-FF(HEX)
	C	Clear CH0~CHF Latch.
	CHK	Checksum
	(cr)	Carriage return
Response	!ID(CHK)(cr)	Command valid
	?ID(CHK) (cr)	Command Invalid

Send command:"\$01C".....Clear digital input latch .

Response:"!01 "..... Latch have been clear.

### 5-8. 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 input status
	CHK	Checksum
	(cr)	Carriage return
Response	!DLLHH(CHK)(cr)	LL=DI0~DI7 status, HH=DI8~DI15 status.
	?ID(CHK) (cr)	Command Invalid

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

Response:"!011234".....DI1,DI5,DI8,DI9 input enable.

### 5-9. 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 DD: Date MM: Month YY : Year
	?ID(CHK)(cr)	Command Invalid

EX: Send command:\$01F...Read the TRP-C26H's version.

Response:"!01C26H080113"..... The TRP-C26H's version date is "08/13/2013".

### 5-10. Read the module's name

Command	\$IDM(CHK)(cr)	
Syntax 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-C26H's name.

Response:"!01TRPC26H"..... The module's name is "TRPC26H".

### 5-11. Reset Module

Command	\$IDRS(CHK)(cr)	
Syntax 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!

### 5-12 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-C26H's name.

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

### 5-13. Set LED operating mode

Command	~IDLEDA(CHK)(cr)	
	~	First leading code

Syntax description	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. 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.

#### 5-14 Read Module ID and Model Name

Command	~**(CHK)(cr)	
Syntax description	~	First leading code
	**	When TCP connected, get online module ID and Model Name.
	(cr)	Carriage return
Response	!IDName (CHK)(cr)	ID: Decimal Name: Model Name.
	?ID(CHK)(cr)	Command Invalid

EX: Send Command:"~\*\*"... When TCP connected, get online module ID and model name.

Response:"!001TRP-C24H".



## 5-15 Back to Factory

Command	#**(CHK)(cr)	
Syntax description	#	First leading code
	**	Back to factory.
	(cr)	Carriage return
Response	!ID (CHK)(cr)	Command valid
	?ID(CHK)(cr)	Command Invalid

EX: Send Command:"~\*\*" ... Back to factory.

Response:"!01".

## 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>.

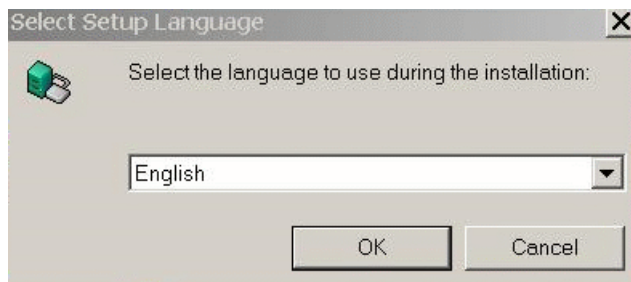
User can use the virtual-com program with TRPCOM.exe for Modbus RTU test; these programs can be found in our directory of the CD!

### Install the Virtual-COM

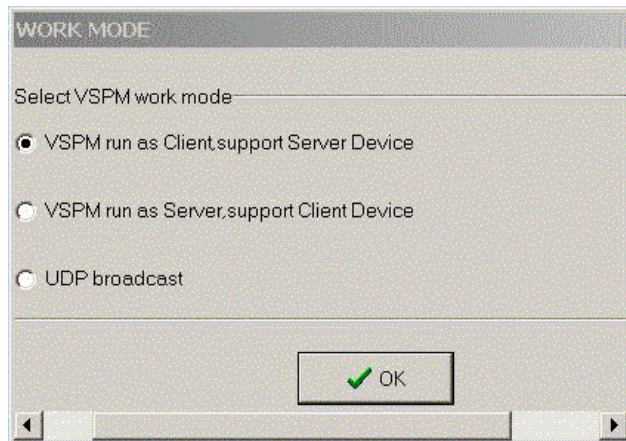
**Step 1.** Insert the TRP-Serial CD and find the TRP-C26H folder.

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

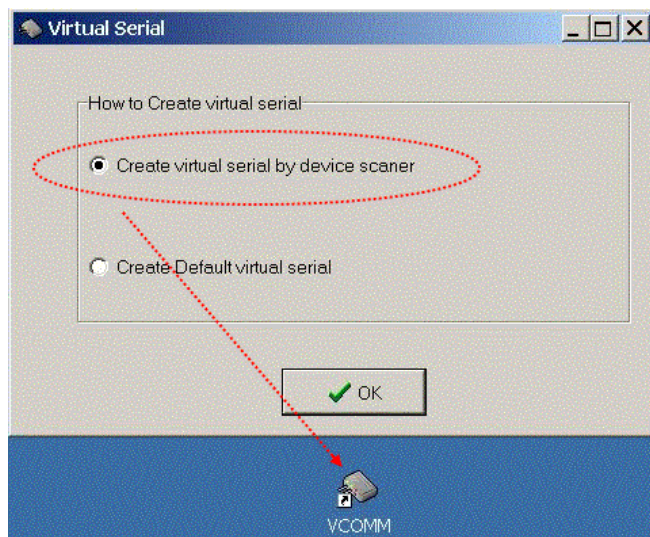
\*The Virtual COM utility support multi-language, please select which language do you need.



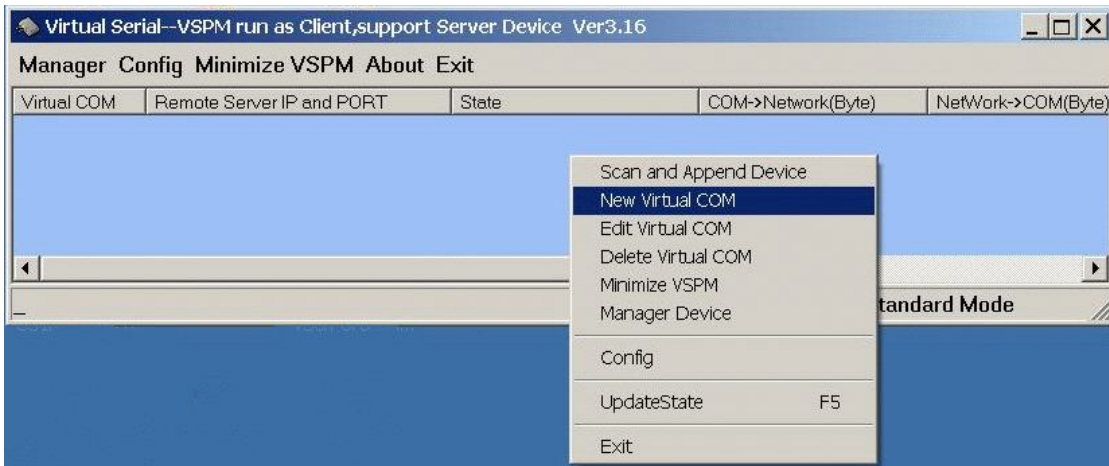
**Step3.** Click "OK" button and select "VSP run as Client support Server Device".



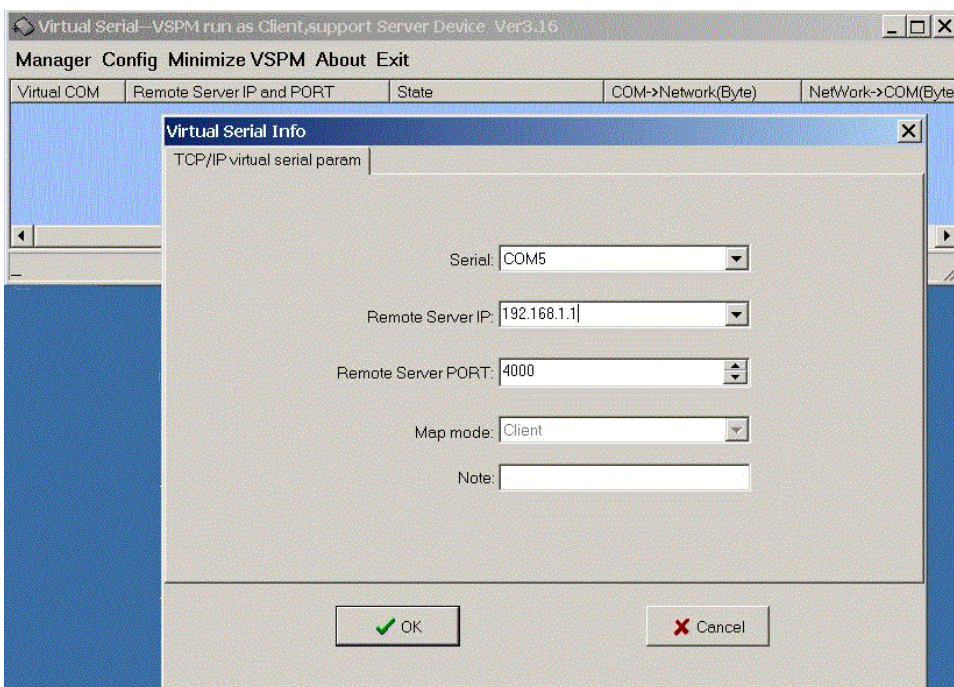
**Step4.** Select "Create virtual serial by device scanner", then press "OK"



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



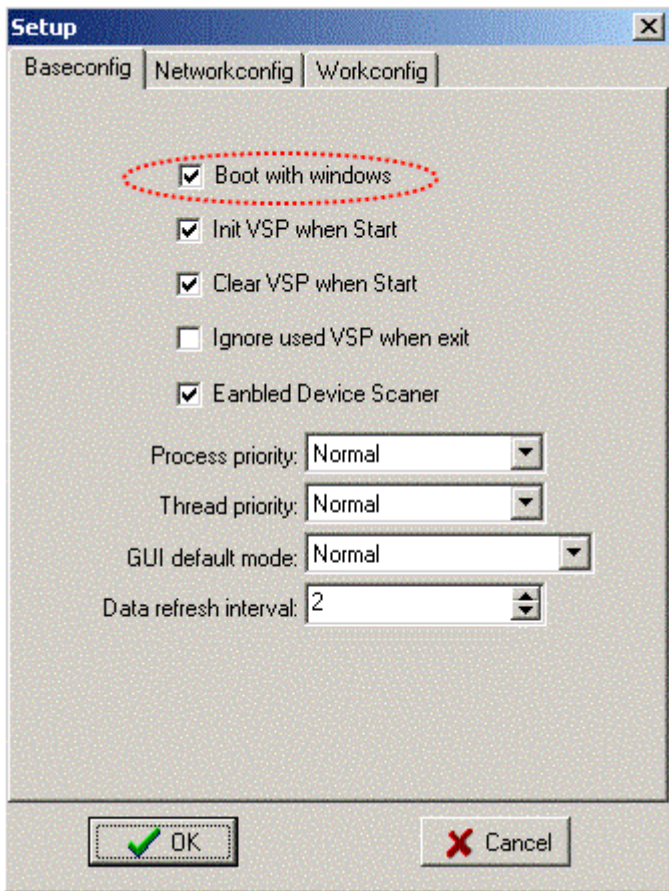
Step6. Select “Select Serial Port” and input TRP-C26H IP and port then press “OK”.



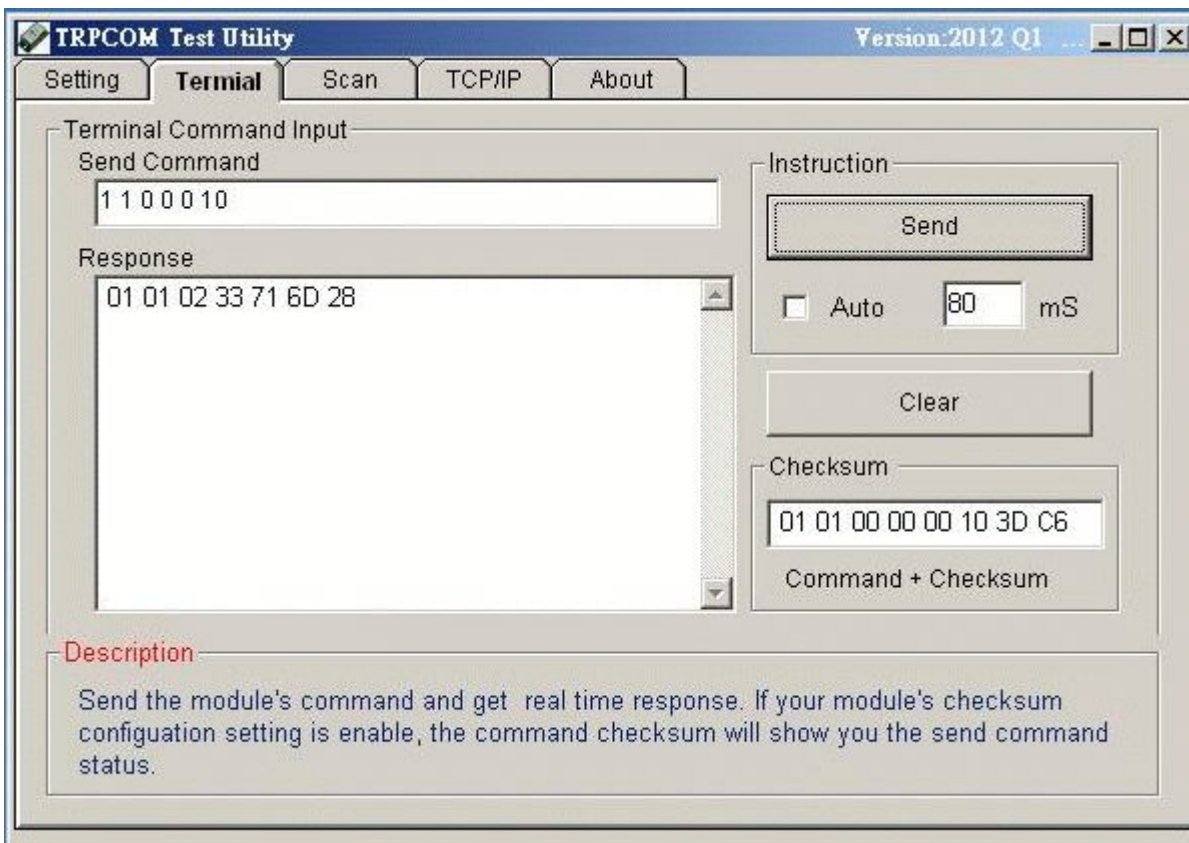
Step7. If Virtual-Com setting success, the display will appear bellow.

Step8.Run TRPCOM utility then select virtual-com port make a TRP-C26H command.

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



\* TRP-C26H 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	C26H Description	Index
ID 02 00 SS 00 NN	Read Discrete Inputs	Read the current digital input value	6-1
ID 04 00 SS 00 NN	Read Input Registers	Read the current digital input count value	6-2
ID 06 00 NN DD 00	Write Single Register	Write Single channel counter value	6-3
ID 10 00 SS 00 NN 01 XX	Write multiple registers	Write multi channel counter value	6-4
ID 10 00 00 00 01	Save multiple registers	Save multi channel counter value to memory	6-5

## Additional Modbus TCP Command List

Command List	Function Description	Index
ID 46 00 00	Read the module's name	6-6
ID 46 04 IP 00 00 00	Setting module new ID	6-7
ID 46 07 00	Read the module's Firmware	6-8
ID 46 0D 0S 00	Set up LED ON/OFF	6-9

### 6-1. Read Discrete Inputs

#### Read the current digital input value

Command	ID 02 00 00 00 NN		
Syntax Description	ID	1Byte	Address of setting module 1~247
	02	1 Byte	Function Code
	00 SS	2 Bytes	Start channel number, 0x0000
	00 NN	2 Bytes	Output channel number,0x0001~0x0010
Response	ID 02 BC LL HH	4~5 Bytes	ID=1~247 02:Function Code BC: Byte counter LL HH: Digital current input value
Error Response	ID 82 ER	3 Bytes	ID=1~247 81 :Function Code ER=00 Syntax error ER=01 Data Format error ER=02 Start channel error ER=03 I/O out of range

#### Example:

Send command : " 01 02 00 00 00 10".....Read D0~DF Output read back value.

Response: " 01 02 02 08 40"..... 2byte,D3=enable,DE=Enable.

## 6-2. Read Input Registers

### Read the current digital input count value

Command	ID 04 00 SS 00 NN		
Syntax Description	ID	1Byte	Address of setting module 1~247
	04	1 Byte	Function Code
	00 SS	2 Bytes	Start channel number, 0x0000~0x000F
	00 NN	2 Bytes	Output channel number,0x0001~0x0010
Response	ID 04 BC NN NN	5 Bytes	ID=1~247 04:Function Code BC: Byte counter NN NN: Digital output read back value
Error Response	ID 84 ER	3 Bytes	ID=1~247 83 :Function Code ER=00 Syntax error ER=01 Data Format error ER=02 Start channel error ER=03 I/O out of range

#### Example:

Send command :” 01 04 00 00 00 03 ”.....Read CH0~CH3 read back counter value.

Response:” 01 04 06 00 09 00 0C 00 20 ”..... Bytes Counter=6.

CH0 Counter Value=9, CH1 Counter Value=12, CH3 Counter Value=32.

## 6-3. Write Single Register

### Write Single channel counter value

Command	ID 06 00 SS DD 00		
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 input counter value DDDD=0x0000~0x000F
Response	ID 06 00 SS DD DD	6 Bytes	Command Line
Error Response	ID 86 ER	3 Bytes	ID=1~247 85 :Function Code ER=00 Syntax error ER=01 Data Format error ER=02 Start channel error ER=03 I/O out of range

#### Example:

Send command :” 01 06 00 0C 5C 0F ”.....Write CHC Value 23567 .

Response:” 01 05 00 06 0C 0F“...Command Valid.

## 6-4. 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	1 Byte	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 ER=00 Syntax error ER=01 Data Format error ER=02 Start channel error ER=03 I/O out of range

Send command:" 01 10 00 0E 00 02 04 00 08 00 07"... Write Counter Value DI15=08, DI16=07.

Response:"01 10 00 00 00 02"..... Command Valid.

## 6-5. Save multiple registers

### Save current multi channel counter value to memory

Command	ID 10 00 00 00 01 02 00 00		
Syntax Description	ID	1Byte	Address of setting module 1~247
	10	1 Byte	10=Function Code
	00 00	2 Bytes	Start channel number, 0x0000
	00 01	2 Bytes	Counter Number =0x0001
	02 00 00	3 Bytes	Save all counters to memory
Response	ID 10 00 00 00 01	6 Bytes	Command valid
	ID 90 ER	3 Bytes	ID 90 :Function Code ER=00 Syntax error ER=01 Data Format error ER=02 Start channel error ER=03 I/O out of range

Send command:" 01 10 00 00 01 02 00 00"... Save all current counters Value to memory.

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

## 6-6. 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 26 00	ID 46 00 00 ....Module command Line 0C 26 :Module's Name is C26
	ID C6 00	ID C6 C6:Function Code 00: Reserved code

EX: Send Command:"01 46 00 00".....Read the TRP-C26's name.

Response:"01 46 00 00 0C 26 00 ".....Module's name is C26.

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

## 6-7. 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.



## 6-8. 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 YY:Year MM :Month DD:Date 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.

## 6-9. 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 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.

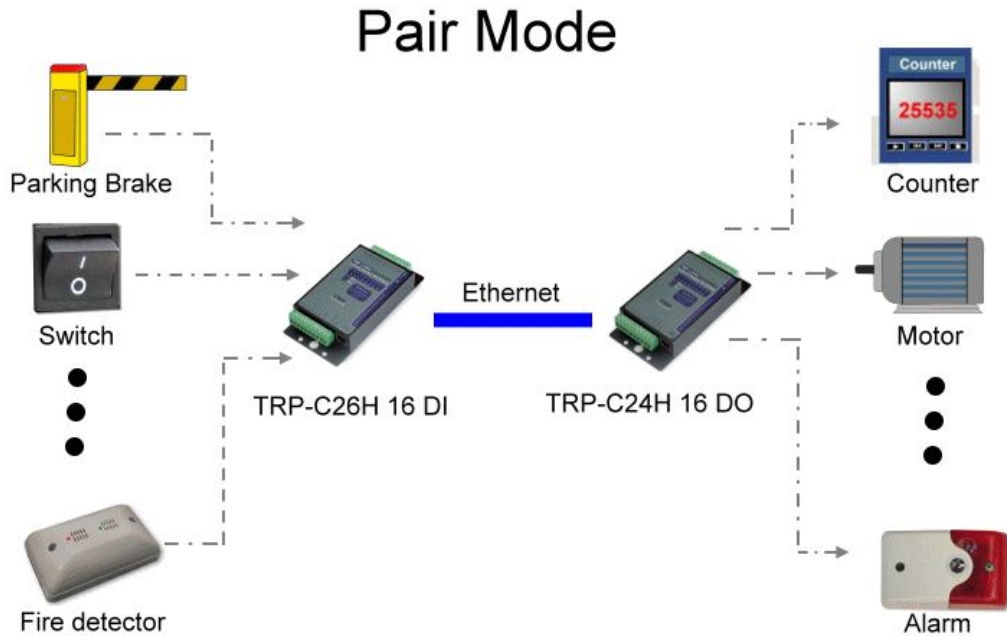
Response:"01 46 0D 00.

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

## 7. Pair Mode

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

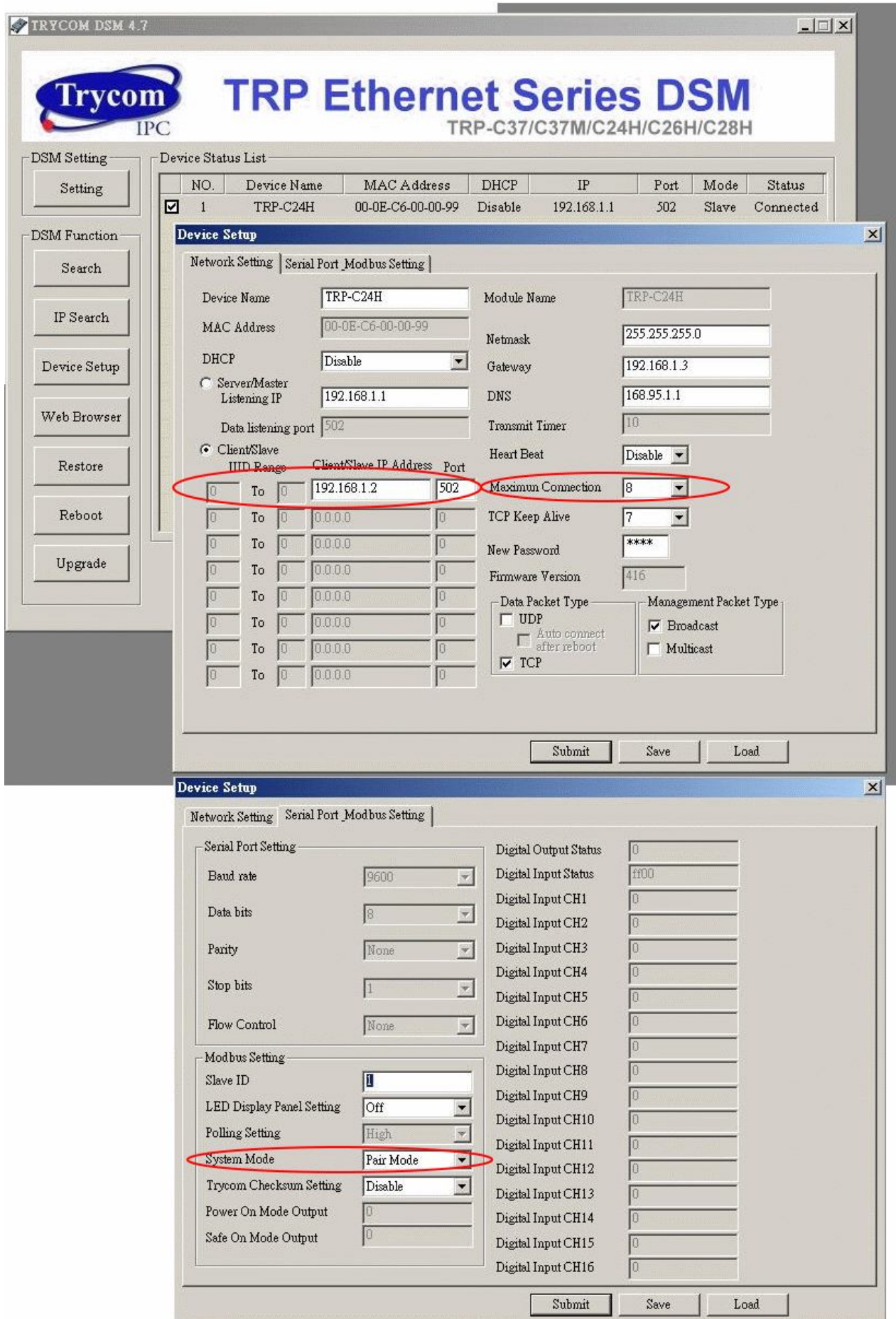
All digital LED flashes in pairing mode until successfully paired will stop blinking; TRP-C26H sustained in connection automatically, regardless of any party the power to re-open or network disconnection to ensure normal transmission. product application are as follows:



### 7-1 Parameter setting example

Perform DSM utility to change the parameters

- TRP-C24H parameter setting



- TRP-C26H parameter setting

TRYCOM DSM 4.7

# Trycom TRP Ethernet Series DSM

TRP-C37/C37M/C24H/C26H/C28H

DSM Setting

Setting

Device Status List

NO.	Device Name	MAC Address	DHCP	IP	Port	Mode	Status
1	TRP-C26H	00-0E-C6-00-00-9B	Disable	192.168.1.2	502	Master	Connected

DSM Function

Search

IP Search

Device Setup

Web Browser

Restore

Reboot

Upgrade

**Device Setup**

Network Setting | Serial Port Modbus Setting

Device Name: TRP-C26H    Module Name: TRP-C26H

MAC Address: 00-0E-C6-00-00-9B    Netmask: 255.255.255.0

DHCP: Disable    Gateway: 192.168.1.3

**Server/Master**    DNS: 168.95.1.1

Listening IP: 192.168.1.2    Transmit Timer: 10

Data listening port: 502    Heart Beat: Disable

**Client/Slave**

UID Range	Client/Slave IP Address	Port
0 To 0	192.168.1.1	502
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0
0 To 0	0.0.0.0	0

Maximum Connection: 8

TCP Keep Alive: 7

New Password: \*\*\*\*

Firmware Version: 416

Data Packet Type:  UDP     TCP

Management Packet Type:  Broadcast     Multicast

Auto connect after reboot

**Device Setup**

Network Setting | Serial Port Modbus Setting

Serial Port Setting

Baud rate: 9600

Data bits: 8

Parity: None

Stop bits: 1

Flow Control: None

Modbus Setting

Slave ID: 1

LED Display Panel Setting: Off

Polling Setting: High

**System Mode: Pair Mode**

Trycom Checksum Setting: Disable

Power On Mode Output: 0

Safe On Mode Output: 0

Digital Output Status: ff00

Digital Input Status: ff00

Digital Input CH1: 0

Digital Input CH2: 0

Digital Input CH3: 0

Digital Input CH4: 0

Digital Input CH5: 0

Digital Input CH6: 0

Digital Input CH7: 0

Digital Input CH8: 0

Digital Input CH9: 0

Digital Input CH10: 0

Digital Input CH11: 0

Digital Input CH12: 0

Digital Input CH13: 0

Digital Input CH14: 0

Digital Input CH15: 0

Digital Input CH16: 0

Submit    Save    Load

## 8. Application

