

# TRP-C28H

**Isolated 4 Channel Digital Input with counter and 4 channel AC Relay  
Modbus TCP Module Support TRP-ASCII, Modbus RTU/ASCII protocol**



## User's Manual

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Firmversion: 608

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# 1. Introduction

The TRP-C28H is a 4-ch digital Input and 4-ch relay Ethernet I/O module with isolation.

It allows the user to connect the signals from 4V to 30V, and the Relay can connect AC voltage directly.

Each contact of relays we built-in safety surge protection to prevent a spark.

It has a normal I/O except the counter function.

There are 3 protocols we supports that, it includes ASCII and Modbus TCP RTU / ASCII.

The watchdog function ensures running stable under harsh environment.

It allows to connect 1~8 sets of host IP in the network security..

## 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 surge absorbers in each relay N.C and N.O.
- 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/8 CH D I/O LED indicator.
- DIN-Rail and panel mount support.
- Dual power input select from screw terminal or DC-Jack..

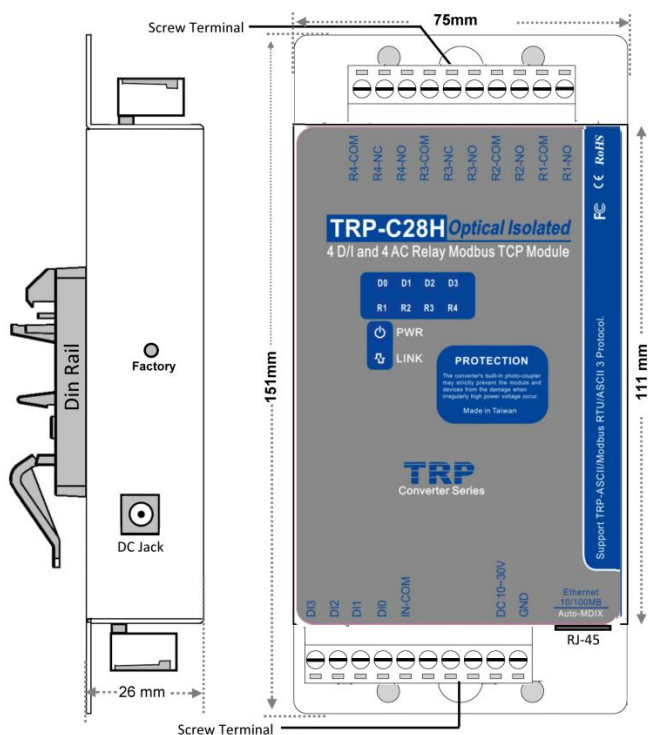
## 1-2.Specification

- 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.
- Output channel: 4 channel power reply outputs.
- Relay type: 2 Form A (RL1,RL2) , 2 Form C (RL3,RL4).
- Contact rating: 5A /30V DC , 5A /120V AC , 5A /250V AC.
- Relay surge strength: 4000V.
- Relay operating time: 3mS.
- Relay operating life: 2 X 10<sup>7</sup>.
- Communication interface: Ethernet RJ45.
- Configuration mode: Device Manager, WEB settings.
- Matching remote control: with another TRP-C28H.
- 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 320mA/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!

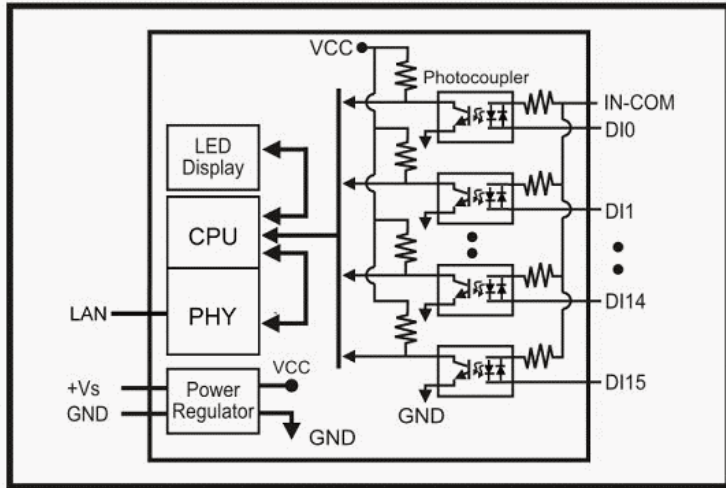
**PWR LED:** Blinking is ready.

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

**D0~D3/R1~R4 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	<input type="text" value="TRP-C28H"/>	Module Name	<input type="text" value="TRP-C28H"/>
MAC Address	<input type="text" value="00-0E-C6-00-00-9D"/>	Netmask	<input type="text" value="255.255.255.0"/>
DHCP	<input type="text" value="Enable"/>	Gateway	<input type="text" value="192.168.1.3"/>
<input checked="" type="radio"/> Server/Master	Listening IP <input type="text" value="192.168.0.127"/>	DNS	<input type="text" value="168.95.1.1"/>
	Data listening port <input type="text" value="502"/>	Transmit Time/Plus	<input type="text" value="10"/>
<input type="radio"/> Client/Slave		Heart Beat	<input type="text" value="Disable"/>
UID Range	Client/Slave IP Address	Port	Maximum Connection
<input type="text" value="0"/> To <input type="text" value="0"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="502"/>	<input type="text" value="8"/>
<input type="text" value="0"/> To <input type="text" value="0"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="0"/>	TCP Keep Alive
<input type="text" value="0"/> To <input type="text" value="0"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="0"/>	<input type="text" value="7"/>
<input type="text" value="0"/> To <input type="text" value="0"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="0"/>	New Password
<input type="text" value="0"/> To <input type="text" value="0"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="0"/>	<input type="text" value="*****"/>
<input type="text" value="0"/> To <input type="text" value="0"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="0"/>	Firmware Version
<input type="text" value="0"/> To <input type="text" value="0"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="0"/>	<input type="text" value="608"/>
<input type="text" value="0"/> To <input type="text" value="0"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="0"/>	
<input type="text" value="0"/> To <input type="text" value="0"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="0"/>	
<input type="text" value="0"/> To <input type="text" value="0"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="0"/>	
<input type="text" value="0"/> To <input type="text" value="0"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="0"/>	

Data Packet Type

UDP

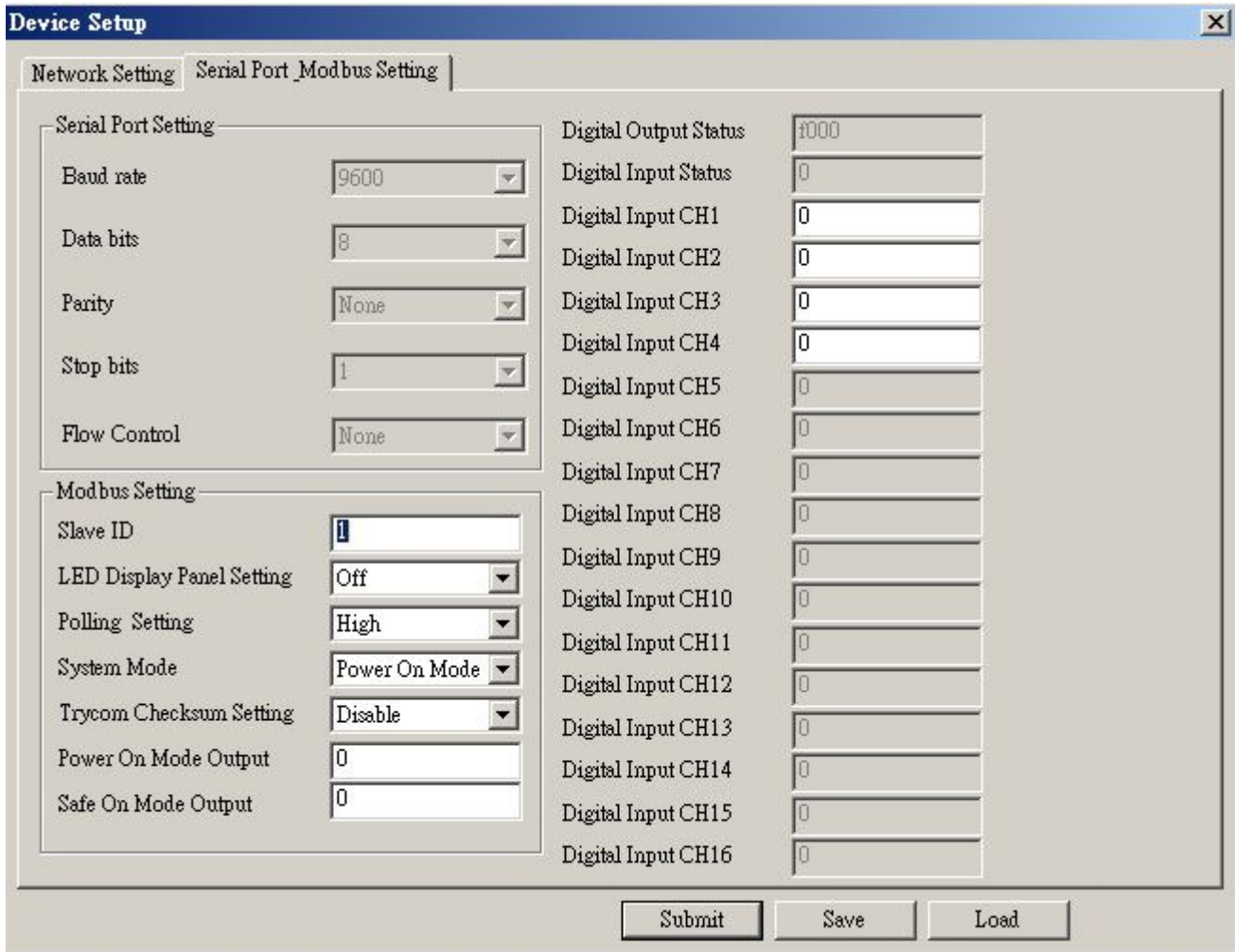
Auto connect after reboot

TCP

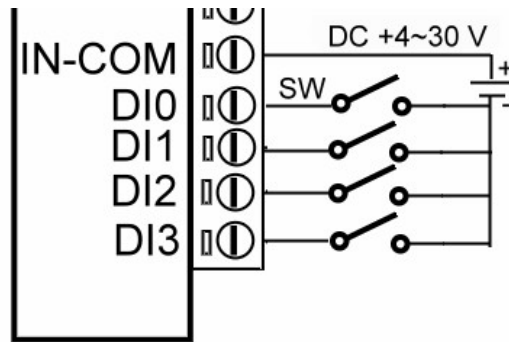
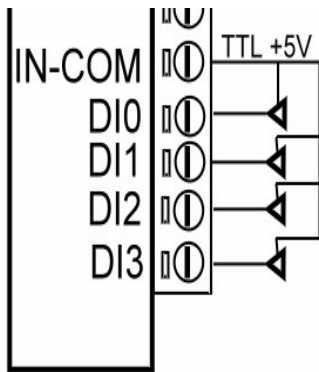
Management Packet Type

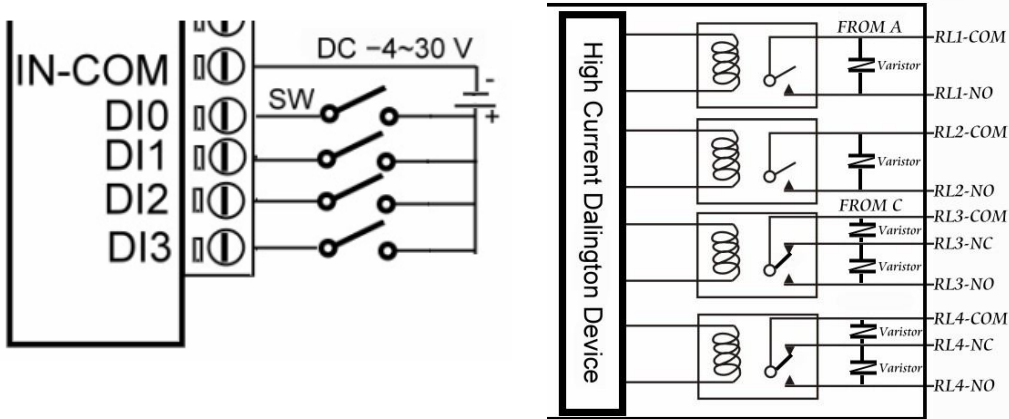
Broadcast

Multicast



## 2-5. Screw Terminal Pin assignment Description





## 2-6. Pin Description

DI3	Digital input Channel 3	R4-COM	Relay 4 common
DI2	Digital input Channel 2	R4-NC	Relay4 Normal Close
DI1	Digital input Channel 1	R4-NO	Relay4 Normal Open
DI0	Digital input Channel 0	R3-COM	Relay 3 common
IN-COM	The isolated side power input MAX.30V	R3-NC	Relay3 Normal Close
N.C	Not connected	R3-NO	Relay3 Normal Open
N.C	Not connected	R2-COM	Relay 2 common
N.C	The isolated side ground	R2-NO	Relay2 Normal Open
DC 10~30V	Input DC 10~30V	R1-COM	Relay 1 common
GND	Power Ground	R1-NO	Relay1 Normal Open

## 3. Install TRP-C28H Hardware

**STEP1:** Connect power source with TRP-C28H, the PWR LED will blinking.

**STEP2:** Connect TRP-C28H with network by RJ45 cable.

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

\*The TRP-C28H 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-C28H screw terminal wiring, such as 2-5 picture description.

## 4. How to configure TRP-C28H

*\*Please note that the computer's IP segment adjusted with TRP-C28H same section, modify the parameter values in order to effectively store!*

For example:

Computer IP is 192.168.1.xx

TRP-C28H 192.168.1.1

There are 2 ways can change the module parameter values.

## A. DSM Software

TRYCOM DSM 6.07

**TRYCOM**  
IPC

# 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-C28H	00-0E-C6-00-00-9D	Enable	192.168.0.127	502	Master	Idle

DSM Status: Idle

Progress:

## B. WEB Server

# TRP-C28H

WDT-inside

Isolated 4 DI and 4 AC Relay  
Modbus TCP Module;@

## TRP-C28H 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 ▼
Power On Mode Output	<input type="text" value="0000"/>
Safe Mode Output	<input type="text" value="0000"/>
Relay Current Status	<input type="text" value="0000"/>
Input Current Status	<input type="text" value="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"/>

## 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

### Slave:

Slave IP Address

Slave Port

**New Password (10000~65535)**

Enable Reboot

## 4-1. Using DSM Utility

The DSM utility software performs several functions:

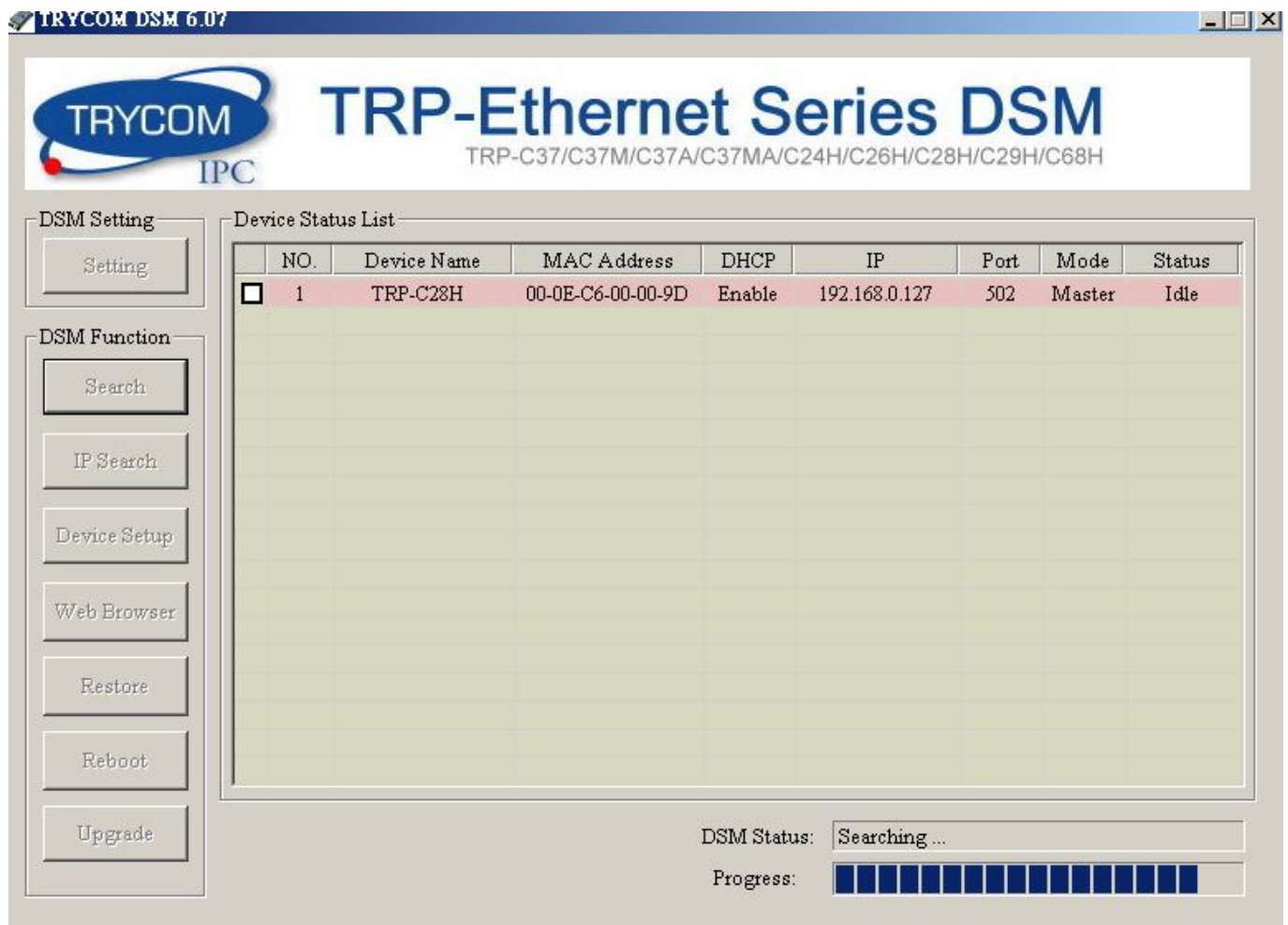
- A: Searching for TRP-C28H connected to the network.
- B: Displaying and changing the configuration.
- C: Upgrading the TRP-C28H firmware, Refer the Firmware upgrade help file.



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

#### 4-2. Searching TRP-C28H

Once TRP-C28H 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** [X]

Network Setting | Serial Port\_Modbus Setting

Device Name: TRP-C28H      Module Name: TRP-C28H

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

DHCP: Enable      Gateway: 192.168.1.3

Server/Master Listening IP: 192.168.0.127      DNS: 168.95.1.1

Data listening port: 502      Transmit Time/Plus: 10

Client/Slave Heart Beat: Disable

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

**Device Setup** [X]

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: Power On Mode

Trycom Checksum Setting: Disable

Power On Mode Output: 0

Safe On Mode Output: 0

Digital Output Status: #0000

Digital Input Status: 0

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

◆ **Device Name:**

Device server name, Maximum 10 chars.

◆ **Model Name:**

TRP-C28H.

◆ **MAC Address**

The TRP-C28H 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-C28H will timeout then back to factory setting IP=192.168.1.1.

◆ **Server Listening IP**

The TRP-C28H IP address.

◆ **Server Data listening port**

TRP-C28H 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-C28H in Server mode, adjust 1~16 TCP client host connections.

◆ **TCP Keep Alive: 1~7 /Minute**

When TRP-C28H in Server or Client mode, the TRP-C28H without data over the 1~7 Min setting value,

The TRP-C28H 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-C28H 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-C28H Power On.

**Save ON Mode:** The digital output state when the TRP-C28H 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-C28H 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-C28H firmware.

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

The Web Server can be used to configure the TRP-C28H from any web browser software (such as I.E).

In Internet Explorer type the IP Address of the TRP-C28H into the address field and press the Enter key. The following window will appear:

Example:


If TRP-C28H's IP is 192.168.1.1 ,Please Input the 192.168.1.1 then enters at web address, the web-page will appear.

File Edit View Favorites Tools Help

Back Search Favorites

Address <http://192.168.1.1/>

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



## TRP-C28H

### WDT-inside

### Isolated 4 DI and 4 AC Relay

### Modbus TCP Module

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**TRP-C28H Setting**

Slave ID (1~255)	<input type="text" value="1"/>
LED Display Panel Setting	<input type="text" value="ON"/>
Polling Setting	<input type="text" value="High"/>
System Mode	<input type="text" value="Power On Mode"/>
Trycom Checksum	<input type="text" value="Disable"/>
Power On Mode Output	<input type="text" value="0000"/>
Safe Mode Output	<input type="text" value="0000"/>
Relay Current Status	<input type="text" value="0000"/>
Input Current Status	<input type="text" value="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"/>

## 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: 192.168.0.108 Port: 502 Link

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

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

Response  
010000

TRP-C26H/28H Digital Input Counter Value

D0	D1	D2	D3	D4	D5	D6	D7
00072	00073	00066	00109	00000	00000	00000	00000
D8	D9	DA	DB	DC	DD	DE	DF
00000	00000	00000	00000	00000	00000	00000	00000

DO/DI Status: 0000 Command: #012 Response: 0100066  Auto Read

TRP-C24H Digital Output Control

D0	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.

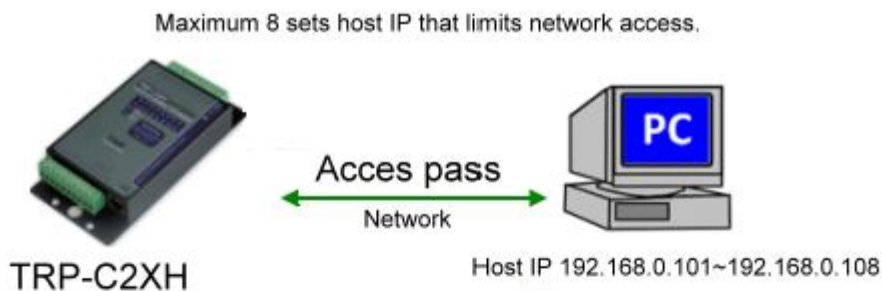
#### 4-6 How to setup the network security

In network security, the TRP-C28H is able to setup 1~ 8 sets host IP, only these host IP can access the TRP-C28H.

The TRP-C28H actually can make connections with any Host IP, Once the user has filled in the Host IP, these IP are valid, the TRP-C28H 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.



Device Setup

Network Setting | Serial Port | Modbus Setting

Device Name: TRP-C24H | Module Name: TRP-C24H

MAC Address: 00-0E-C6-00-01-38 | Netmask: 255.255.255.0

DHCP: Enable | Gateway: 192.168.1.3

Server/Master | Listening IP: 192.168.0.125 | DNS: 168.95.1.1

Data listening port: 502 | Transmit Time/Plus: 0

Client/Slave | Heart Beat: Disable

UID	Range	Client/Slave IP Address	Port	Maximum Connection
0	To 0	192.168.0.101	502	8
0	To 0	192.168.0.102	0	TCP Keep Alive: 7
0	To 0	192.168.0.103	0	New Password: ****
0	To 0	192.168.0.104	0	Firmware Version: 610
0	To 0	192.168.0.105	0	Data Packet Type: <input type="checkbox"/> UDP, <input checked="" type="checkbox"/> TCP
0	To 0	192.168.0.106	0	Management Packet Type: <input checked="" type="checkbox"/> Broadcast, <input type="checkbox"/> Multicast
0	To 0	192.168.0.107	0	
0	To 0	192.168.0.108	0	

Submit | Save | Load

## 5. TRP-ASCII Communication Protocol

TRP-C28H 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
%IDNPP0DD(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
#IDPPDD (CHK)(cr)	Digital Output Data	See 5-8
\$ID6 (CHK)(cr)	Read digital input/output status	See 5-9
\$IDF (CHK)(cr)	Read the module's firmware version	See 5-10
\$IDM (CHK)(cr)	Read the module's name	See 5-11
\$01RS(CHK)(cr)	Reset Module	See 5-12
~IDONN (CHK)(cr)	Change the module's name	See 5-13
~IDLEDA(CHK)(cr)	Set the module's LED operating mode	See 5-14
~IDWE (CHK)(cr)	Enable watchdog	See 5-15
~IDWD (CHK)(cr)	Disable watchdog	See 5-16
~IDWR (CHK)(cr)	Read watchdog status	See 5-17



~ID4V (CHK)(cr)	Read power on/Safe on mode	See 5-18
~ID5V (CHK)(cr)	Set the digital output status Power on/Save Mode status	See 5-19
~**(CHK)(cr)	Read Module ID and mode name	See 5-20
#**(CHK)(cr)	Back to factory	See 5-21

### 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	<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 0~3
	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	!IDLLHH(CHK)(cr)	LL=DI0~DI7 status, HH=DI8~DI15 status.
	?ID(CHK) (cr)	Command Invalid

**Ex:**Send command:"#01L0"...Read all channels latch value.

Response: "!01000F"..... All channels have been trigger.

### 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 Lactch.
	CHK	Checksum
	(cr)	Carriage return
Response	!ID(CHK)(cr)	Command vaild
	?ID(CHK) (cr)	Command Invalid

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

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

## 5-8.Digital Output Data

Command	#IDPPDD(CHK)(cr)	
Syntax description	#	First leading code
	ID	Address of setting module 00-FF(HEX)
	PP	D I/O type :0A/ 00 DO0~DO3 low byte data (Multi-Channel) :1L/ AL: DO0~DO3 low byte data (Single-Channel) L=0~3
	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:”#010A02”.....CH 1 Relay 1 ON.

Response:”>” ..... Command valid.

EX: Send command:”#01000A”.....CH1 nad CH3 Relay ON.

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”..... CH0 Relay ON.

Response:”>” ..... Command valid.

Send command:”#011201”..... CH2 Relay ON.

Response:”>” ..... Command valid.

### 5-9. 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	!ID0L0H(CHK)(cr)	L=DO0~DO3 status, H=DI0~DI3 status.
	?ID(CHK) (cr)	Command Invalid

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

Response:"!010308".....DO1,DO2,DI3...Enable.

### 5-10. Read the module's 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-C28H's version.

Response:"!01C24H090113"..... The TRP-C28H's version date is "01/09/2013".

### 5-11. 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-C28H's name.

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

### 5-12. 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!

### 5-13. Change the 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-C28H's name.

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

### 5-14. 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. 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.



## 5-15. 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.*

## 5-16. 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
Response	!ID (CHK)(cr)	Command valid
	?ID(CHK)(cr)	Command Invalid

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

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

### 5-17. Read Watchdog State

Command	~IDWR(CHK)(cr)	
Syntax 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 N=D Disable
	?ID(CHK)(cr)	Command Invalid

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

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

### 5-18. Read Power on/Safe Mode

Command	~ID4V(CHK)(cr)	
Syntax description	~	First leading code
	ID	Address of setting module 00-FF(HEX)
	4	Read power on/safe mode status
	V	V=P: Power on V=S: Safe mode
	CHK	Checksum
	(cr)	Carriage return
Response	!ID0L (CHK)(cr)	L:DO7~DO0
	?ID(CHK)(cr)	Command Invalid

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

Response: "!0107"..... Command valid.

EX: Send Command: "~014S".....Read save mode output status.

Response: "!0108"..... Command valid.

### 5-19. Set the digital output status Power on/Save Mode status

Command	~ID5V(CHK)(cr)	
Syntax 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 V=S Safe mode
	(cr)	Carriage return
Response	!ID (CHK)(cr)	Command valid
	?ID(CHK)(cr)	Command Invalid

EX: Send Command:"#010A07"... Digital output  
 Send Command: "~015P" .....Save Power on.  
 Send Command:"~014P" .....Read Power on  
 Response:"!0107".

### 5-20. 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".

## 5-21. 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>.

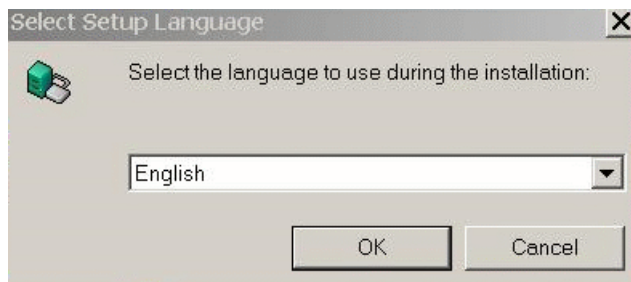
User can use the virtual-com program with TRPCOM.exe for Modbus RTU test; these programs can be found in our directory of the CD!

### Install the Virtual-COM

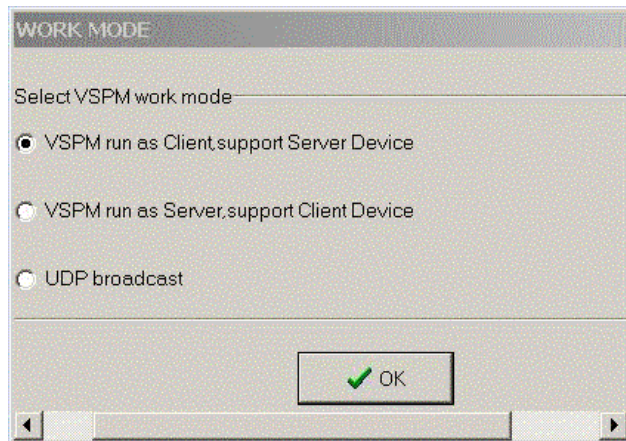
**Step 1.** Insert the TRP-Serial CD and find the TRP-C28H folder.

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

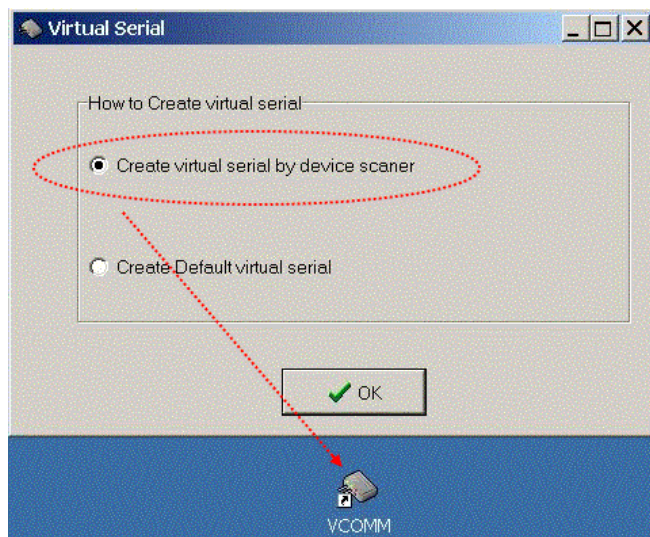
\*The Virtual COM utility support multi-language, please select which language do you need.



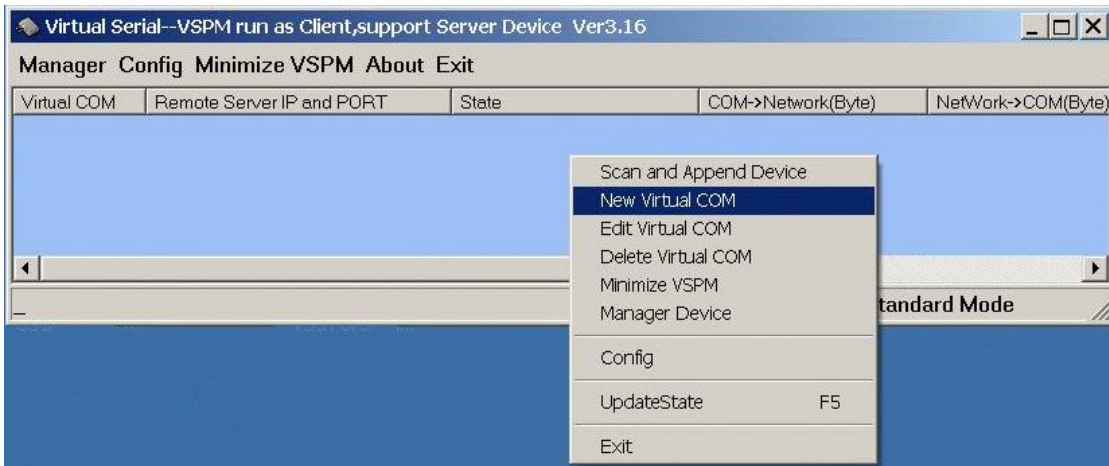
**Step3.** Click "OK" button and select "VSP run as Client support Server Device".



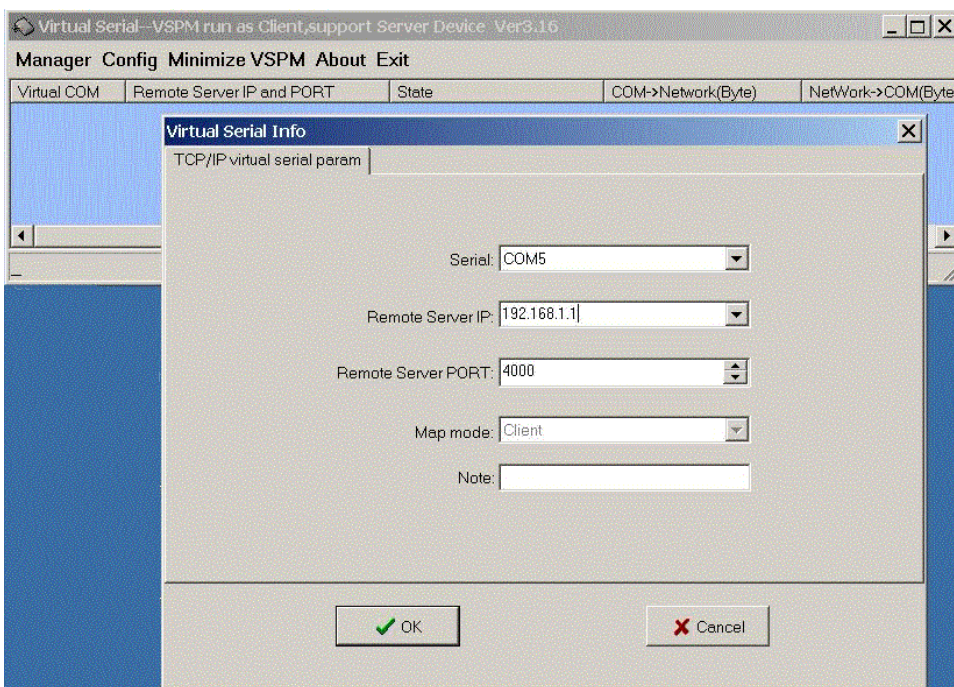
**Step4.** Select "Create virtual serial by device scanner", then press "OK"



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



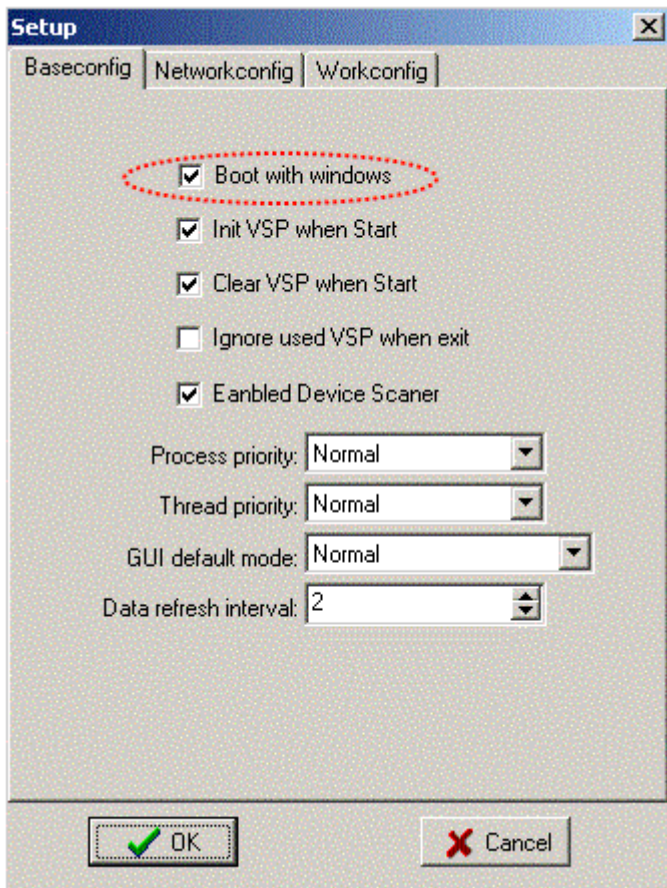
Step6. Select “Select Serial Port” and input TRP-C28H IP and port then press “OK”.



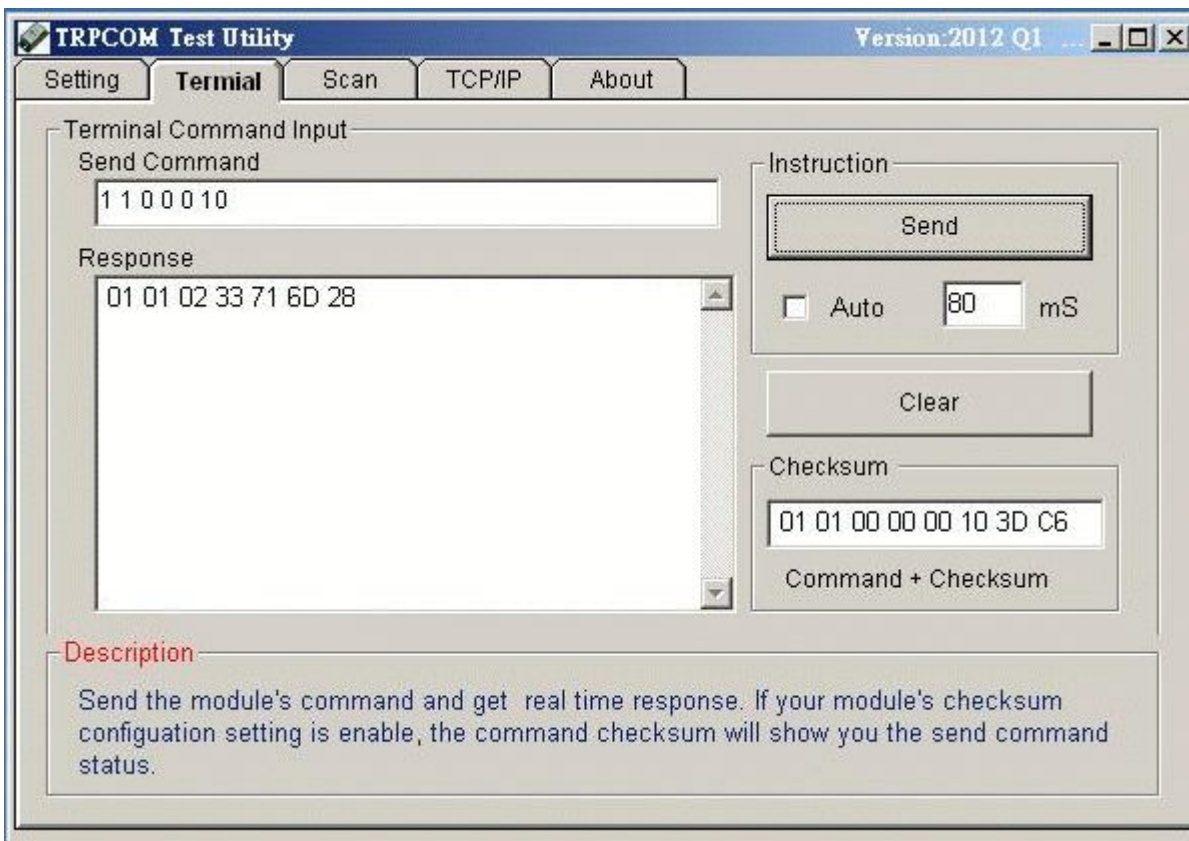
Step7. If Virtual-Com setting success, the display will appear bellow.

Step8.Run TRPCOM utility then select virtual-com port make a TRP-C28H command.

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



\* TRP-C28H 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	C28H Description	Index
ID 01 00 SS 00 NN	Read Coils	Read relay output readback value	6-1
ID 02 00 SS 00 NN	Read Discrete Inputs	Read the current digital input value	6-2
ID 03 00 SS 00 NN	Read Holding Registers	Read the current relay output readback count value	6-3
ID 04 00 SS 00 NN	Read Input Registers	Read the current digital input count value	6-4
ID 05 00 SS DD 00	Write Single Coil	Write Single channel output data	6-5
ID 0F 00 SS 00 NN BC 0L	Write Coils	Write multi channel output data	6-6
ID 06 00 SS DD DD	Write single register	Write single channel counter value	6-7
ID 10 00 SS 00 CN BC DD DD ..	Write multiple registers	Write multi channel counter value	6-8
ID 10 00 00 00 01	Save multiple registers	Save multi channel counter value to memory	6-9

## Additional modbus RTU command set

Command List	Function Description	Index
ID 46 00 00	Read the module's name	6-10
ID 46 04 IP 00 00 00	Setting module new ID	6-11
ID 46 07 00	Read the module's Firmware	6-12
ID 46 0B WS 00	Enable/Disable watchdog.	6-13
ID 46 0C 00	Read watchdog status	6-14
ID 46 0D 0S 00	Set up LED ON/OFF	6-15

### 6-1. Read Coils

#### Read relay 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, 0x0000~0x0004
	00 NN	2 Bytes	Output channel number,0x0001~0x0004
Response	ID 01 BC 0L	4 Bytes	ID=1~247 01:Function Code BC: Byte counter 0L : Relay output read back value
Error Response	ID 81 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 01 00 00 00 04”.....Read RL1~RL4 relay Output read back value.

Response:” 01 01 01 08”..... RL4 Enable.



## 6-2. 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	Input channel number,0x0001~0x0004
Response	ID 02 BC LL	4 Bytes	ID=1~247 02:Function Code BC: Byte counter LL : 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 04”.....Read DI0~DI3 Digital Input readback value.

Response:” 01 02 01 08 ”..... DI3=Enable.

## 6-3. Read Holding Registers

### Read the current relay 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, 0x0000~0x0004
	00 NN	2 Bytes	Output channel number,0x0001~0x0004
Response	ID 03 BC NN NN	5 Bytes	ID=1~247 03:Function Code BC: Byte counter NN NN: Digital output read back value
Error Response	ID 83 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 03 00 00 00 04 ”.....Read digital RL11~RL4 readback counter value.

Response:” 01 03 08 00 03 00 12 00 37 00 12 ”.

## 6-4. 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, 0x0000~0x0004
	00 NN	2 Bytes	Output channel number,0x0001~0x0004
Response	ID 0 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 84 :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 04 ”.....Read CH0~CH3 read back counter value.

Response:” 01 04 08 00 01 00 01 03 FC 00 1E ”..... Bytes Counter=8,DI0 =1, DI1=1,DI2=1020,DI3=30.

## 6-5. 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, 0x0000~0x0003
	DD 00	2 Bytes	Write output data DD=FF.. Relay Enable DD=00 Relay Disable
Response	ID 05 00 SS DD 00	5 Bytes	Command Line
Error Response	ID 85 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 05 00 03 FF 00 ”.....RLY4 Output Enable.

Response:” 01 05 00 03 FF 00“...Command Valid.

## 6-6. Write Coils

### Write multi channel output data

Command	ID 0F 00 SS 00 NN BC 0L		
Syntax Description	ID	1Byte	Address of setting module 1~247
	0F	1 Byte	Function Code
	00 SS	2 Bytes	Start channel number, 0x0000~0x0003
	00 NN	2 Bytes	Output channel number=0x0001~0x0004
	BC	1 Bytes	Byte counter
	0L	1 Bytes	Write output data L=0~F
Response	ID 0F 00 SS 00 NN	6 Bytes	Command Line
Error Response	ID 8F ER	3 Bytes	ID=1~247 8F :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 0F 00 00 00 04 01 0B"...RL1,RL2,RL4 Enable.

Response:"01 0F 00 00 00 04"...Command Valid.

## 6-7. 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, 0x0000~0x0003
	DD DD	2 Bytes	Write Counter Vaile DDDD=0x0000~0xFFFF
Response	ID 06 00 SS DD DD	6 Bytes	Command Line
	ID 86 ER (CRC)	4 Bytes	ID 86 :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 03 00 63 ".....Write DI3 Counter Value=99.

Response:"01 06 00 03 00 63 "..... Command Valid.

## 6-8. 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, 0x0000~0x0003
	00 CN	2 Bytes	Counter Number =0x0001~0x0004
	BC	1 Byte	Byte Counter
	DD DD.....	2~8 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 00 00 04 08 00 0A 00 14 00 1E 00 28 "... Write DI0~DI3 Counter Value.

Response:"01 10 00 00 00 04"..... Command Valid.

## 6-9.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.

### 6-10. 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 28 00	ID 46 00 00 ....Module command Line 0C 28 :Module's Name is C28
	ID C6 00	ID C6 C6:Function Code 00: Reserved code

EX: Send Command:"01 46 00 00".....Read the TRP-C28's name.

Response:"01 46 00 00 0C 28 00 " .....Module's name is C28.

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

### 6-11. 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.

## 6-12. 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 <b>YY MM DD</b> 00	ID 46 07 .....Module command Line <b>YY</b> :Year <b>MM</b> :Month <b>DD</b> :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 02 28 00"...Firmware Version 02/28/2013.

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

## 6-13. 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 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.

## 6-14. 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
Response	ID 46 0C WT	ID 46 0C .....Module command line WT=01 Watchdog enable WT=00 Watchdog Disable
	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.

## 6-15. 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.

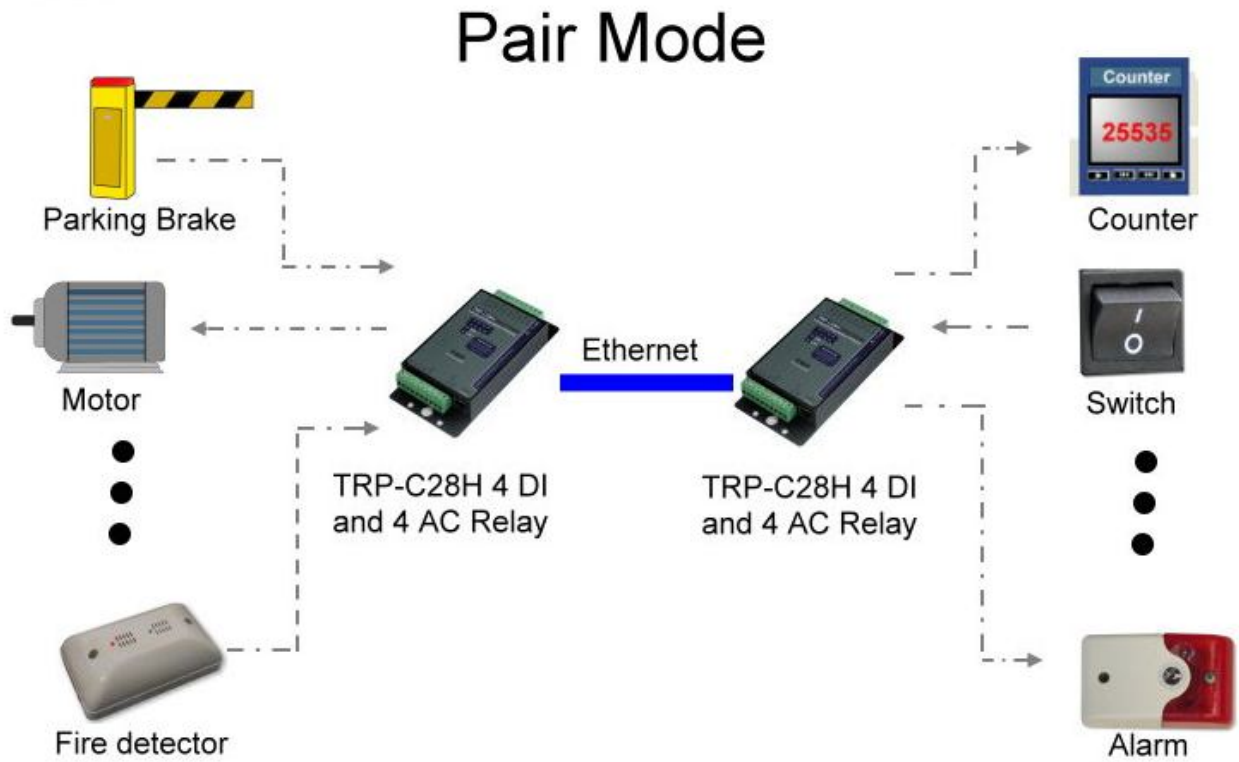
Response:"01 46 0D 00.

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

## 7. Pair Mode

TRP-C28H support pairing mode with the TRP-C28H, Applied to 4 digital channels input and 4 AC relay 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-C28H 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-C28H server parameter setting

The screenshot displays the TRYCOM DSM 4.7 interface for configuring a TRP Ethernet Series DSM (TRP-C37/C37M/C24H/C26H/C28H). The main window shows the 'Device Status List' and the 'Device Setup' configuration window.

**Device Status List:**

NO.	Device Name	MAC Address	DHCP	IP	Port	Mode	Status
1	TRP-C28H	00-0E-C6-00-00-9D	Disable	192.168.1.1	502	Master	Connected

**Device Setup - Network Setting:**

- Device Name: TRP-C28H
- MAC Address: 00-0E-C6-00-00-9D
- DHCP: Disable
- Server/Master
- Listening IP: 192.168.1.1
- Data listening port: 502
- Module Name: TRP-C28H
- Netmask: 255.255.255.0
- Gateway: 192.168.1.3
- DNS: 168.95.1.1
- Transmit Timer: 10
- Heart Beat: Disable
- Maximum Connection: 8
- TCP Keep Alive: 7
- New Password: \*\*\*\*
- Firmware Version: 426
- Data Packet Type:  TCP,  UDP,  Auto connect after reboot
- Management Packet Type:  Broadcast,  Multicast

**Device Setup - 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 (7000), Safe On Mode Output (8000)
- Digital Output Status: 0
- Digital Input Status: 0
- Digital Input CH1: 0
- Digital Input CH2: 0
- Digital Input CH3: 1010
- 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: 1
- Digital Input CH13: 0
- Digital Input CH14: 0
- Digital Input CH15: 0
- Digital Input CH16: 0

● TRP-C28H Client parameter setting

TRYCOM DSM 4.7

**Trycom**  
IPC

# TRP Ethernet Series DSM

TRP-C37/C37M/C24H/C26H/C28H

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 checked="" type="checkbox"/>	1	TRP-C28H	00-0E-C6-00-00-A0	Enable	192.168.1.2	502	Slave Connected

**Device Setup**

Network Setting | Serial Port | Modbus Setting

Device Name: TRP-C28H    Module Name: TRP-C28H

MAC Address: 00-0E-C6-00-00-A0    Netmask: 255.255.255.0

DHCP: Enable    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    **Maximum Connection: 8**

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

TCP Keep Alive: 7

New Password: \*\*\*\*

Firmware Version: 426

Data Packet Type:  UDP,  TCP

Management Packet Type:  Broadcast,  Multicast

Submit    Save    Load

**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: 0

Digital Input Status: 1800

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

