CYT-100SC

User Manual

Document Version 1.0

Web Version 1.1 2011-02-09

Firmware Version 1.01.00,Mar 4 2011
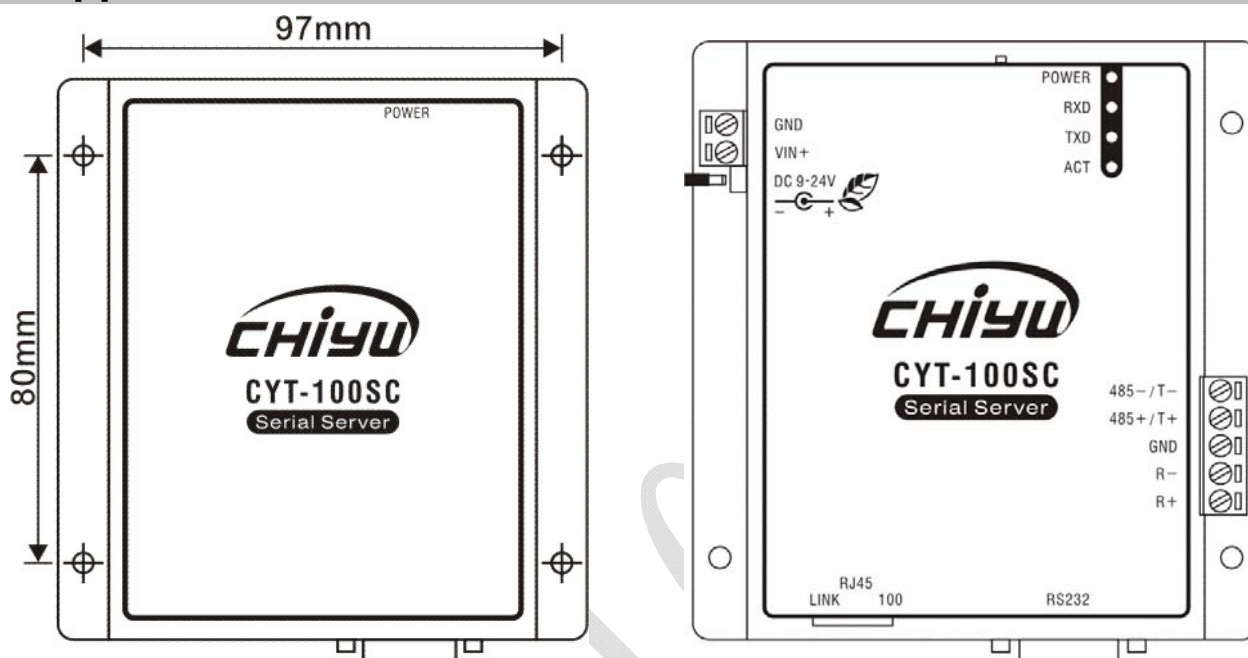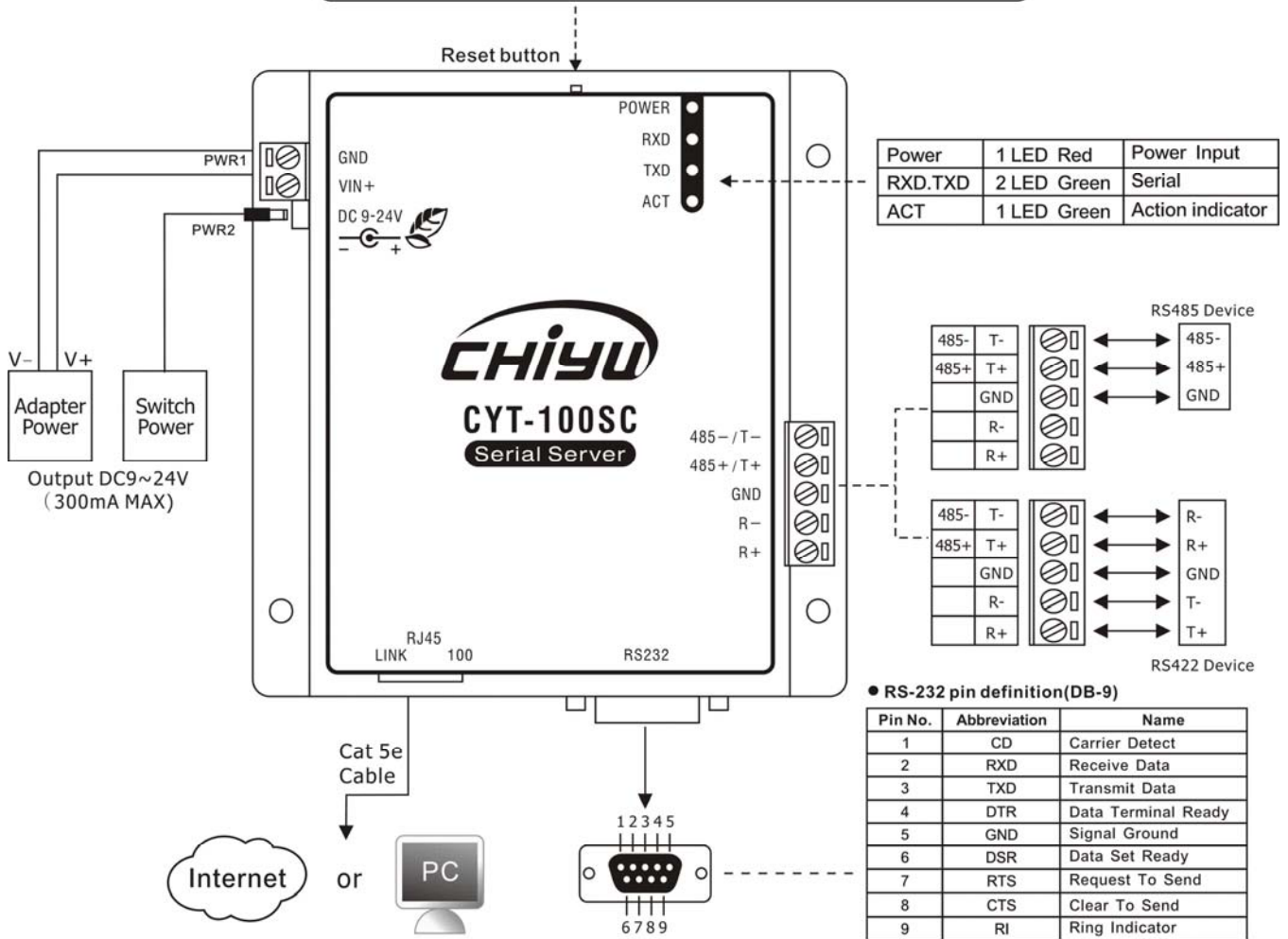
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Ⅰ、Hardware Introduction

◆ Appearance

◆ Specification

Item	Specification
CPU	16 Bits, 100MHz
Memory	256KB Flash & 2MB SDRAM
Watchdog	System never halt
Ethernet	10/100 Base-T/Tx/, Automatic MSI/MDI-x port
Communication Port	RS232, RS 422, RS 485
Connectors	DB9(MALE)/RJ-45
RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD,RI,GND
RS-422	Tx+,Tx-, Rx+, Rx-,GND (1200M for the longest distance)
RS-485	Data+, Data-,GND (1200M for the longest distance)
Power Input	Choose one： PWR1: DC9~24V(300MA MAX) 2-pin Separate terminal PWR2: DC9~24V(300MA MAX) DC power to DC socket
Operating Temperature	0℃ ~ 55℃
Operating Humidity	5 ~ 95%RH
Storage Temperature	-20℃ ~ 85℃
Surge Protection	Serial port 15KV ESD
Electromagnetic protection	Ethernet port 1.5KV
LED Indicator	Power / RXD / TXD / ACT
Weight	315g
Dimensions (L x W x H)	106.5(86.5 without ear loop)*115(110 without RS232)*28mm

◆ End point

Reset button
Reboot: Push button 2 seconds at power on status
Factory Default: Push button at power off status then power on and keep push around 5 seconds

Reset button

Power	1 LED Red	Power Input
RXD.TXD	2 LED Green	Serial
ACT	1 LED Green	Action indicator

POWER
RXD
TXD
ACT

CHIYU
CYT-100SC
Serial Server

GND
VIN+
DC 9-24V

PWR1
PWR2

V−   V+
Adapter Power
Switch Power

Output DC9~24V
（300mA MAX）

485−/T−
485+/T+
GND
R−
R+

RS485 Device

485-	T-		485-
485+	T+		485+
	GND		GND
	R-		
	R+		

485-	T-		R-
485+	T+		R+
	GND		GND
	R-		T-
	R+		T+

RS422 Device

RJ45
LINK   100
RS232

Cat 5e Cable

Internet   or   PC

1 2 3 4 5
6 7 8 9

● RS-232 pin definition(DB-9)

Pin No.	Abbreviation	Name
1	CD	Carrier Detect
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Signal Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicator

Ⅱ、Product Overview

CYT-100SC is a RS232/RS485/RS422 converter for the integration of system and Ethernet management, designed and applied to enable traditional industrial serial devices to access data and control devices through Ethernet (intranet or internet)

Real time operation system and complete TCP/IP protocol enable CHIYU's CYT-100SC powerful converter not only providing complete system with highly efficiency but also able to link with network. Easy to install and wire. The Web interface of CYT-100SC is simple, easily to operate, and without operation system limitation.

◆ Features

- CYT-100SC support 4 kinds of connection: TCP server, TCP client, UDP, Real com Users can select suitable connecting way.

- Support DHCP Client, when activate this function, CYT-100SC can get TCP/IP default from DHCP Server when the system activates, Includes IP address, default getaway IP and DNS server.

- Support PPPoE, PPPoE is an internet protocol for the link simulation of dial-up connection and remote host.

- Support Dynamic DNS, this enable CYT-100SC connect with dynamic IP by fixed Domain Name, enable hosts situated in different location to get access to CYT-100SC through internet.

- Auto detecting 10/100 M Ethernet.

- Enable users to conduct data access or management on CYT-100SC through various operation system of IE , Netscape browser.

- Allows users to back up and store file system parameter and restore it, for security reasons the backup file will be stored encrypted.

- Over Voltage protection on Serial port.

- Can be mounted on DIN-Rail, available for TS35 DIN Rail

- Provide status and connection of serial port and IP port monitoring and alert on web management automatically

Ⅲ、WEB Login

CYT-100SC contains a HTTP server, thus CYT-100SC can link and connect through Web browser, and then conduct setting.

◆ Preparation

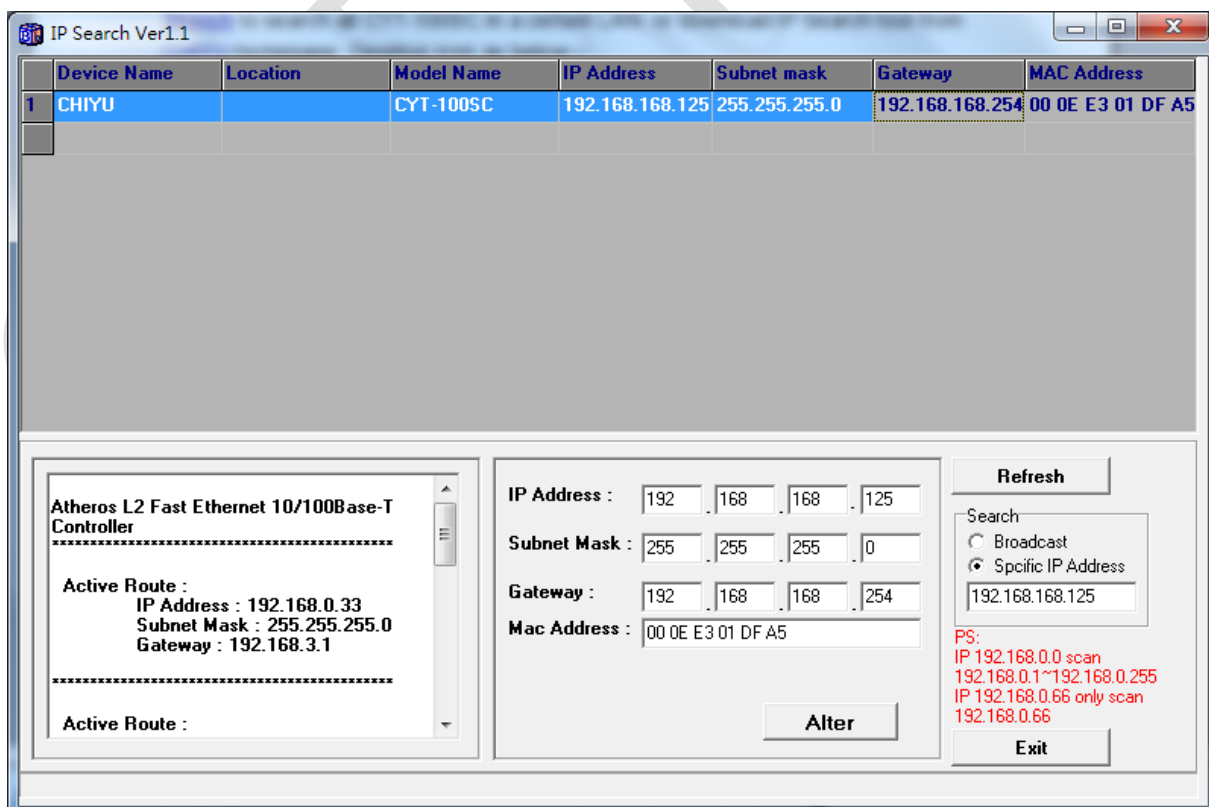Before conducting CYT-100SC setting, please assure the following:

- PC has connected to CYT-100SC, and PC and CYT-100SC are situated in the same WAN with power supplied.
- If the default IP address (192.168.168.125) is occupied by else device, then it is a must to shut down that device first till the setting is over, and then allocate new IP address to CYT-100SC.

◆ How to search CYT-100SC

1、After installation of CYT-100SC and network cable is completed, use CYT-100SC's **IP Search** to search all CYT-100SC in a certain LAN, or download IP Search tool from CHIYU homepage. Desktop icon as below:

2、Click IP Search icon, will display a window, as shown:

3、While the IP Search window shows up, it will display all CYT-100SC in LAN, and show its Device name, Location, Model Name, IP Address, Subnet Mark, Gateway, Mac Address. Select particular CYT-100SC, then its related information will appear below the window, as shown:
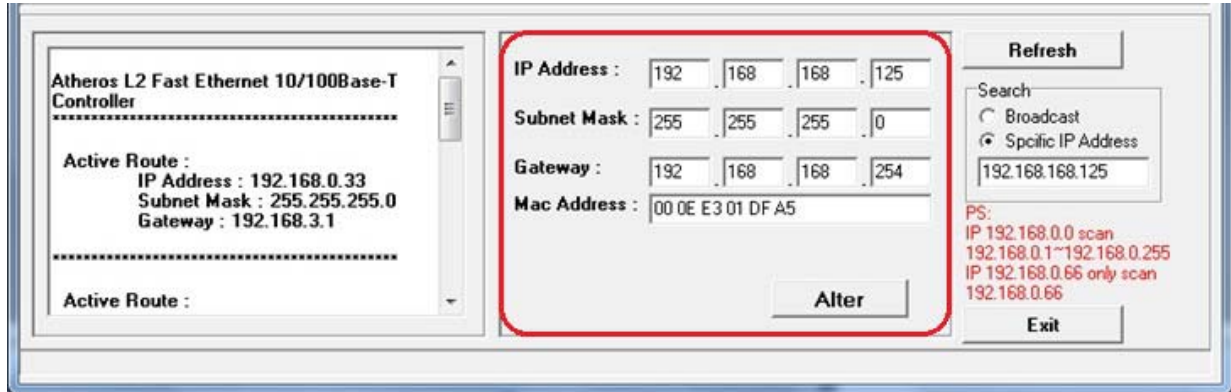
4、The showed information of CYT-100SC can be revised directly in the window, the part can be modified: IP Address, Subnet Mask, Gateway. After modification completed (MAC Address can not modify),click **Alter** then it will display the modified information, as shown:
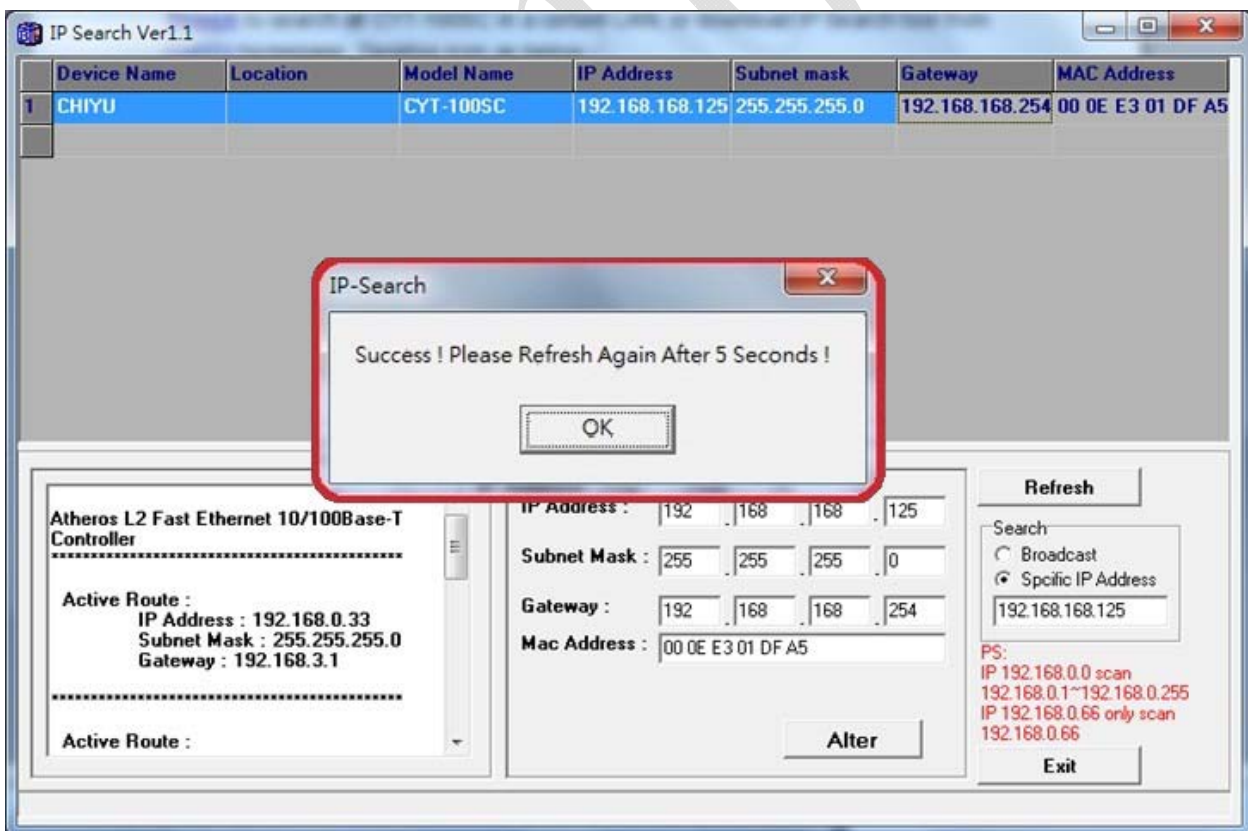
5、After modification, if want to confirm whether the modification is correct or not, click Refresh button to refresh and check information（Fig-1）, click Exit button to leave.(Fig-2)
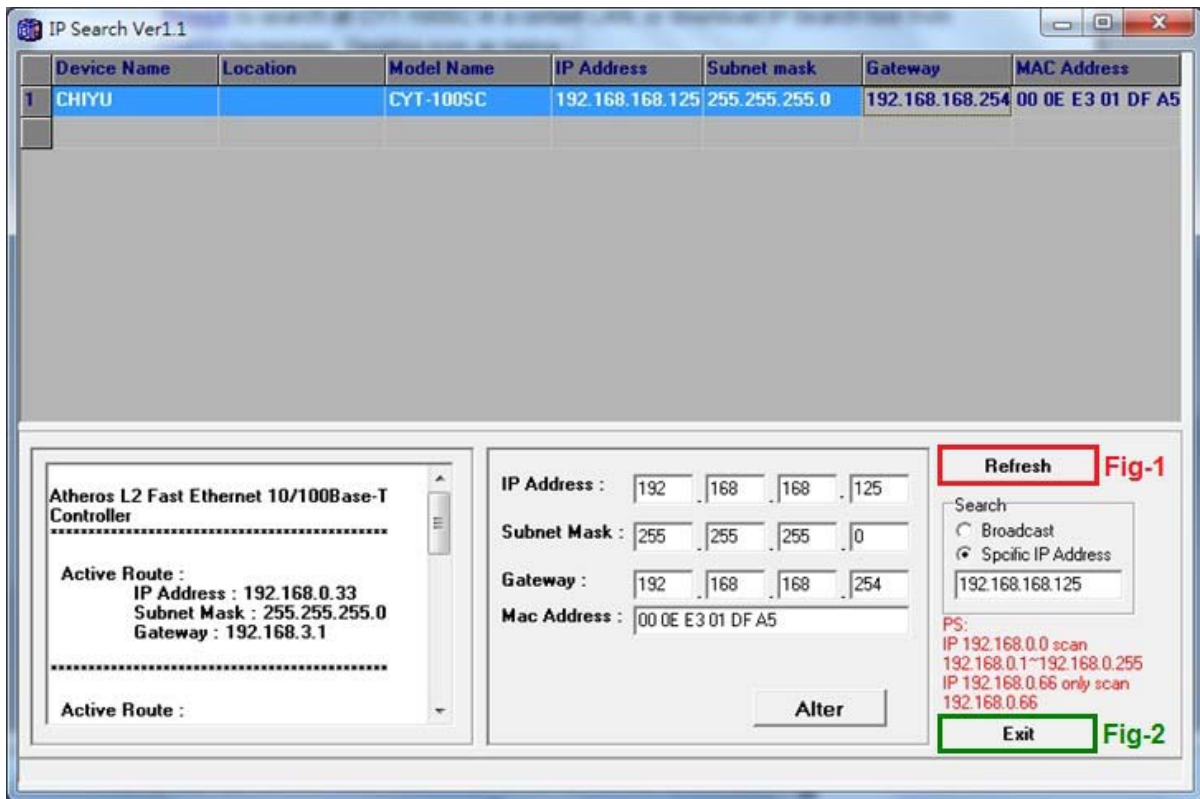
6、After modification, the IP address of CYT-100SC has matched with its WAN, if want to get access into the Web of CYT-100SC, has two methods:

　　(1)Open IP Search, select and double click particular CTY-100SC, then to enter its webpage.

　　(2)While the internet explorer opened, input CYT-100SC IP address to enter its webpage

Remark：

　　WINDOWS XP：

　　《Step 1》

Click WINDOWS XP my computer　My Computer　, Open Control Pan　Control Panel　on the left side, please turn to traditional overview and select network link

　　《Step 2》

Click LAN, then select content, the link configuration will be shown, click Internet Protocol (TCP/IP), then input the same setting as CYT-100SC, as below figure:
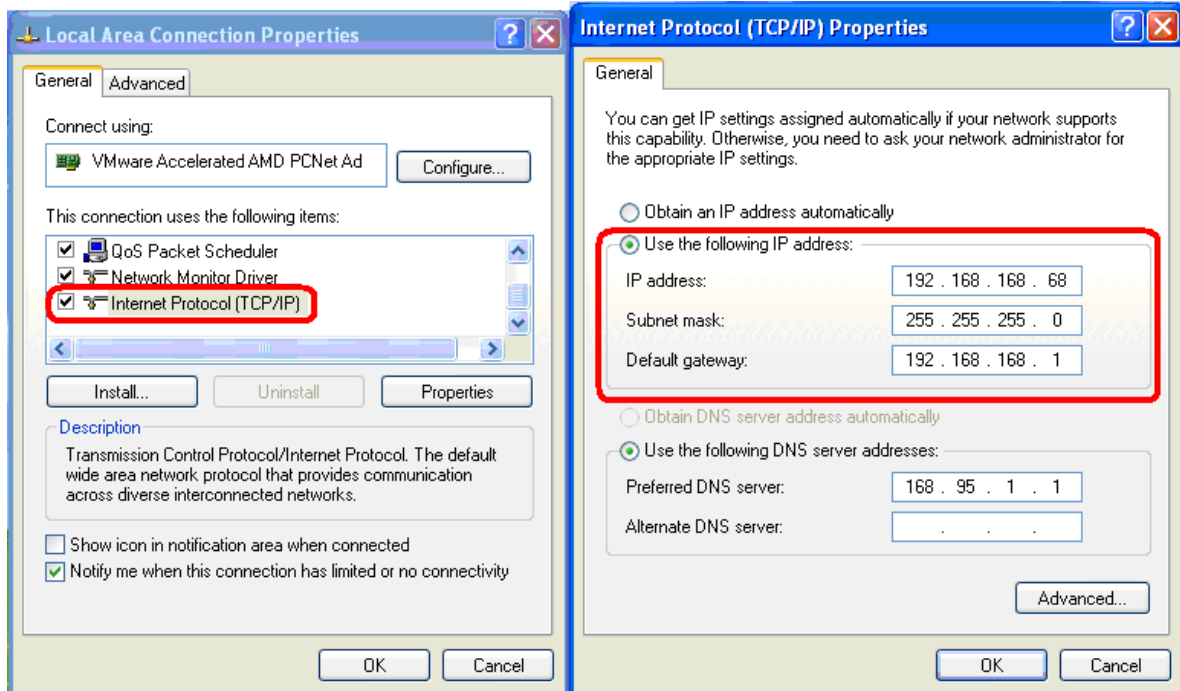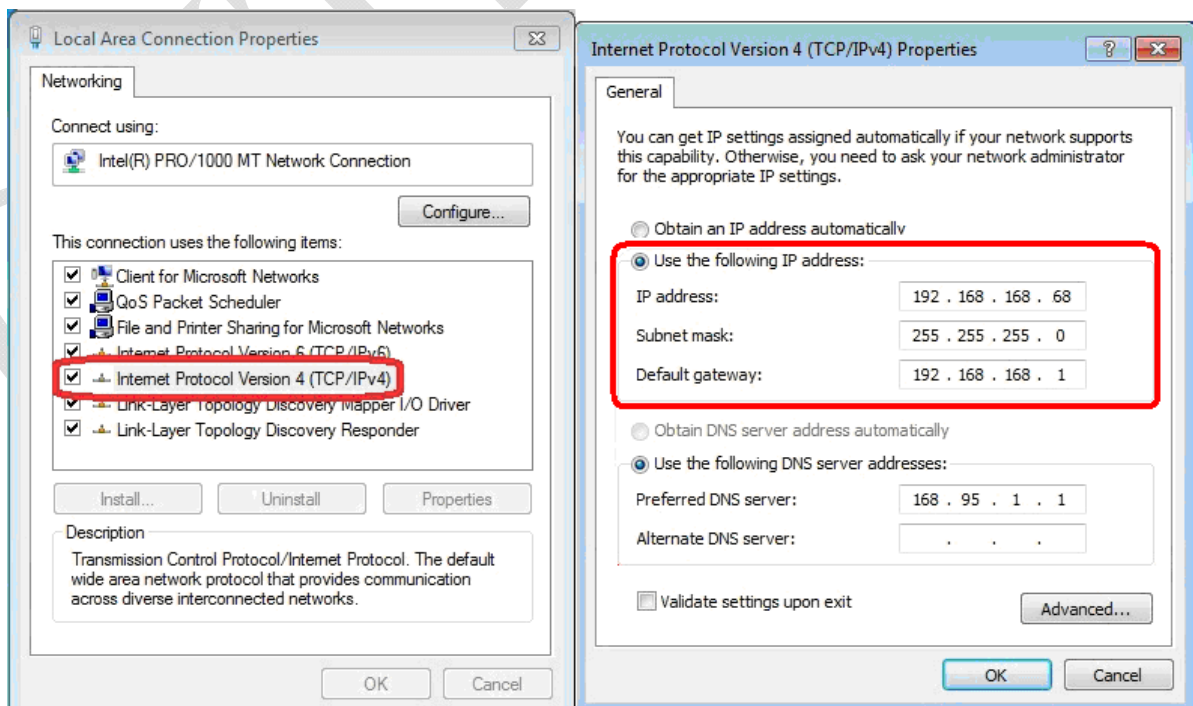
WINDOWS 7：

《Step 1》

Click Windows 7 icon, [icon] select [Control Panel] , open and search for ,
[Network and Sharing Center] click Alter Interface Card on the upper-left side.
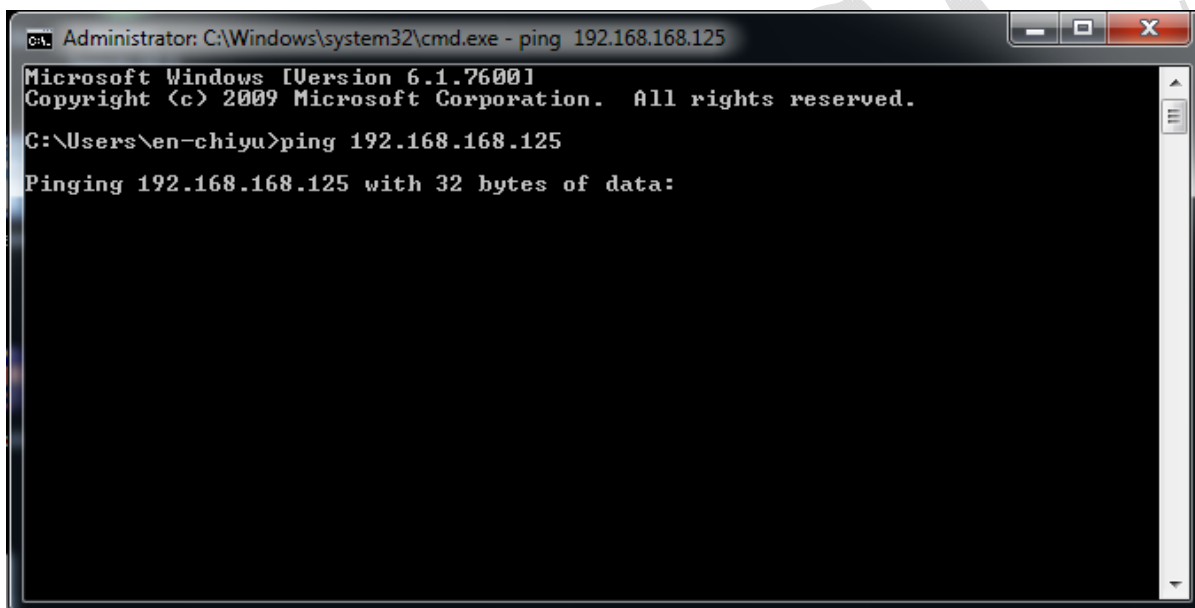
《Step 2》

Click LAN link, select content, then the LAN settings will be shown, click Internet Protocol(TCP/IPv4) , then input the same setting as CYT-100SC, as below figure:

## ◆ How to login to CYT-100SC Web via web browser

1、Start Web browser (ig: WIN 7 IE), input CYT-100SC's IP Address, for example: use the default CYT-100SC IP Address: http://192.168.168.125

2、If connection failed, should check:

- If CYT-100SC installed and its power supplied properly

- To examine the LAN connection, can use start tools→Execute→Input cmd open MS-DOS, Input " ping" to test CYT-100SC connection, input command: ping 192.168.168.125, as shown below:

```
Administrator: C:\Windows\system32\cmd.exe - ping  192.168.168.125

Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\en-chiyu>ping 192.168.168.125

Pinging 192.168.168.125 with 32 bytes of data:
```

- If no response received, it explains the link has troubles either the connection is not proper or the PC's IP address can not match with CYT-100SC's IP address

- Set the PC's IP address with CYT-100SC's IP address with same segment, if the PC uses fixed IP address, the address must be ranged in: 192.168.168.1 ~ 192.168.168.65 or 192.168.168.67 ~ 192.168.168.254 , thus it can be compatible with CYT-100SC's default IP address: 192.168.168.125, the **Subnet Mask'**s setting must be: 255.255.255.0, please refer to page 6 ~ 7

3、If the connection with CYT-100SC is successful, then it will display a message window for User name and Password, the default for user name and Password is: admin/admin, as shown below:
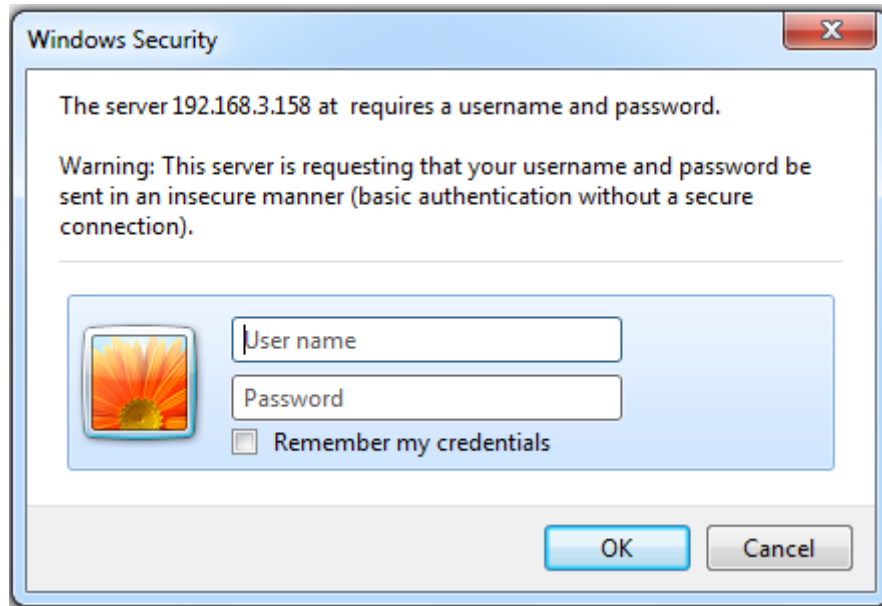
4、While the user name and password entered, a Web setting interface of CTY-100SC will be showed, enter it will then display a **" One Page Quick Setup "** page.

◆ One Page Quick Setup

● Function instruction of STATIC IP

Function	Description
IP Address	Set the IP address of the CYT-100SC，default setting is **192.168.168.125**
Subnet mask	Set the subnet mask of the CYT-100SC，default setting is **255.255.255.0**
Gateway	Set the gateway of the CYT-100SC，default setting is **192.168.168.254**
Primary DNS	Set the DNS of the CYT-100SC，default setting is **168.95.1.1**
Serial Port Mode	
Baud Rate	1.Set serial port baud rate, the parameters can be selected：**1200、2400、4800、9600、19200、38400、57600、115200、230400 and Others** 2.After selecting **Others** , fill custom baud rate into the user defined 3.Default setting is **19200**
Operation Mode	
Connection Mode	There are **4 modes** to set into connection mode, such as： ● **Real Com** ● **TCP SERVER** ● **TCP CLIENT** ● **UDP**
Connection Port Number	Set CYT-100SC connection port number, default setting is **50000**
Remote Host IP/Domain Name(For Client Only)	1.Set the remote host IP or domain name，default setting is **0.0.0.0** 2.For Client Only

One Page Quick Setup (DHCP Client)

TYPE: DHCP CLIENT ▼

CHIYU
www.chiyu-t.com.tw

CYT-100SC

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Advanced Setup
   Operation Mode
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Host Name (optional)	CHIYU
Serial Port Mode	
Baud Rate	19200 ▼ 0 (User Defined)
Operation Mode	
Connection Mode	TCP SERVER ▼
Connection Port Number	50000
Remote Host IP/Domain Name (For Client Only)	0.0.0.0

APPLY   CANCEL   BACK

● **Function instruction of DHCP CLIENT**

Function	Description
Host Name (optional)	Fill in the host name , default setting is **CHIYU** (optional)
Serial Port Mode	
Baud Rate	1.Set serial port baud rate, the parameters can be selected :**1200、2400、4800、9600、19200、38400、57600、115200、230400 and Others** 2.After selecting **Others** , fill custom baud rate into the user defined 3.Default setting is **19200**
Operation Mode	
Connection Mode	There are **4 modes** to set into connection mode, such as： ● **Real Com** ● **TCP SERVER** ● **TCP CLIENT** ● **UDP**
Connection Port Number	Set CYT-100SC connection port number, default setting is **50000**
Remote Host IP/Domain Name (For Client Only)	1.Set the remote host IP or domain name，default setting is **0.0.0.0** 2.For Client Only

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TYPE: PPPoE

User Name		(1 - 47)
Password		(1 - 35)
Service Name(optional)		(1 - 47)
Close Connection when Idle Time Over	0	(seconds)
PPPoE with Fixed IP Address	DISABLE	. . .

Serial Port Mode

Baud Rate	19200 / 0	(User Defined)

Operation Mode

Connection Mode	TCP SERVER
Connection Port Number	50000
Remote Host IP/Domain Name(For Client Only)	0.0.0.0

APPLY   CANCEL   BACK

● **Function instruction of PPPoE**

Function	Description
User Name	Fill in the user name, up to **47** characters
Password	Fill in the password, up to **35** characters
Service Name (optional)	Fill in the service name (optional), up to **47** characters
Close Connection when Idle Time Over	● Default setting is **0 second**, the range is from 0 ~ 4294967295 ● Keep the connection of CYT-100SC and ISP always must set the no into 0 or the connection with PPPoE will be disabled when Idle time over.
PPPoE with Fixed IP Address	● After selecting **ENABLE** , fill in fixed IP ● Default setting is **DISABLE** ● optional
Serial Port Mode	
Baud Rate	1.Set serial port baud rate, the parameters can be set：**1200、2400、4800、9600、19200、38400、57600、115200、230400 and Others** 2.After selecting Others , fill custom baud rate into the user defined 3.Default setting is **19200**
Operation Mode	
Connection Mode	There are **4 modes** to set into connection mode, such as： ● **Real Com** ● **TCP SERVER** ●**TCP CLIENT** ● **UDP**
Connection Port Number	Set CYT-100SC connection port number, default setting is **50000**
Remote Host IP/Domain Name(For Client Only)	1.Set the remote host IP or domain name，default setting is **0.0.0.0** 2.For Client Only

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◆ Advanced Setup

1、Operation Mode

(1)TCP Server

● **Function instruction**

Function	Description
Local Listen Port Number	● If data transmit thru TCP/IP remote command, must select Serial Server Mode into TCP SERVER and set LISTEN PORT NUMBER into the same value with monitoring side. ● Default setting is **50000**
Close Connection When Remote Idle	● The default setting of close connection time is **100** seconds and the range is from 0 ~ 32768 ● The value must set to be 0 if you want to keep CYT-100SC connect with monitoring side or the connection will be off automatically when remote idle.
Access Password	● Make sure the data secure, user must set the code for management. User must inset the correct password and process the further procedure after authority. ● up to **31** characters
Keep Alive Check	● Set Enable or Disable keep alive check function，default setting is **Disable** ● While keep alive check enable, the pin packet will be send to Gateway every **30 seconds** to make cure the connection.
Max TCP Connection	The maximum TCP connection is **4 sets** , default setting is **1**
Real COM	When using the **Virtual COM**, if you need CYT-100SC with VCOM to send each other RTS / CTS, DTR / DSR signal, this option must be checked

(2) TCP Client

Operation Mode Setup (TCP Client)

MODE: TCP CLIENT

Remote Connection Port Number	50000 (0 - 65535)
Remote Host IP Address/Domain Name	0.0.0.0
TCP Connection	○ Start Up ● Any Character

APPLY   CANCEL   BACK

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● **Function instruction**

Function	Description
Remote Connection Port Number	Set the remote connection port number，the range is 0 ~ 65535，default setting is **50000**
Remote Host IP Address/Domain Name	Set remote host IP address or domain name，default setting is **0.0.0.0**
TCP Connection	● There are 2 modes to set TCP connection to server： 1.**Start Up**：This mode means when CYT-100SC enable, it will build the TCP connection with SERVER immediately. It will automatically build the TCP connection after disable and then re-connect again. 2.**Any Character**：This mode means only when CYT-100SC receives data from RS232/422/485, it will build TCP connection with SERVER. TCP connection will be disable if not receiving the data from RS232/422/485.

(3)UDP

● Function instruction

Function	Description
Remote Connection Port Number	Set the remote connection port number，the range is 0 ~ 65535，default setting is **50000**
Remote Host　IP Address/Domain Name	Set remote host IP address or domain name，default setting is **0.0.0.0**
Local Listen Port	Set the local listen port，default setting is **50000**
Heart Beat	How many seconds to transmit a UDP heart beat to server can be selected. It's helpful to know the connection with SERVER enabled. Default setting is **Disabled**, and the maximum setting is 65535 seconds.

2、Serial Port Setup

Serial Port Setup

Baud Rate	19200 ▾ 0	(User Defined)
Data Bits	8 ▾	
Parity Check	None ▾	
Stop Bits	1 ▾	
Flow Control	None ▾	
Force Packet Transmit Time	2	(10ms unit)
Force Packet Transmit Length	1000	(1 - 1500)bytes
Delimiter 1	0x 00 (HEX) ○Enable ◉Disable	
Delimiter 2	0x 00 (HEX) ○Enable ◉Disable	

APPLY CANCEL BACK

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● **Function instruction**

Function	Description
Baud Rate	1.Set serial port baud rate, the parameters can be selected：**1200、2400、4800、9600、19200、38400、57600、115200、230400 and Others** 2.After selecting **Others** , fill custom baud rate into the user defined 3.Default setting is **19200**
Data Bits	Set the data bits， 5,6,7,8 parameters can be selected, default setting is **8**
Parity Check	● Set the parity check，**4 parameter**s can be selected： 1.**odd** 2.**Even** 3.**Mark** 4.**Space** ● Default setting is **None**
Stop Bits	Set the stop bits， 1,2 parameters can be selected, default setting is **1**
Flow Control	Set the flow control，2 parameters can be selected： ● Xon/Xoff：Software flow control ● CTS/RTS：Hardware flow control ● Default setting is **None**
Force Packet Transmit Time (10ms)	● **Force packet transmit time** ● The minimum setting is 10ms of setting serial interval between data. Default setting is **20ms**.
Force Packet Transmit Length (bytes)	● **Force packet transmit length.** ● The serial set length of data transmission range is from 1 ~ 1500bytes. Default setting is **1000**
Delimiter 1	● Set the transmission data end by identified delimiter and if your transmission data includes the identified delimiter, CYT-100SC will send out packet at once. ● Default setting is **disabled**. The range is from 0x00 ~ 0xFF
Delimiter 2	● Set the transmission data end by identified delimiter and if your transmission data includes the identified delimiter, CYT-100SC will send out packet at once. ● Default setting is **disabled**. The range is from 0x00 ~ 0xFF

3、DDNS Setup

(1)TZ0

● **Function instruction**

Function	Description
E-mail Address	Fill in the E-mail address for DDNS , up to **47** characters
Password key	Fill in the password key for DDNS，up to **31** characters
Device DNS Name	Fill in the device DNS name，for example：hostname.tzo.com
Registry IP Address	Display the registry IP address，when DDNS is enabled, It will show the registry IP address
Status	Display DNS Serve status，when DDNS server does not enable ,it will show "**DDNS function is disabled**"

(2) Dyndns

Function instruction

Function	Description
Username	Fill in the username for DDNS，up to **31** characters
Password	Fill in the password for DDNS，up to **31** characters
Device DNS Name	Fill in the device DNS name，for example：hostname.dyndns.org
Registry IP Address	Display the registry IP address，when DDNS is enabled, It will show the registry IP address
Status	Display DNS Serve status，when DDNS server does not enable ,it will show "**DDNS function is disabled**"

◆ Management

1、Device Administration Setting

● **Function instruction**

Function	Description
Block Standard Http Port(80) Management	● Select unblock or block standard http port，default setting is **UNBLOCK(80)** ● If other port sequence has to be set, select BLOCK, and then fill in the port sequence.
Device Management IP Address	Display and set the device management IP address , default setting is **192.168.200.200**
Device Hostname	Fill in the device hostname, default setting is **CHIYU**
Device Location	Fill in the device location , default setting is **blank**
Administrator Password	● User Name：Fill in the user name ● Password Change：Change the password, for security reasons, please fill in a new password to replace the default management ● Password Confirm：Confirm the new password
Block Ping Request	Select unblock or block ping request function , default setting is **unblock**
MAC Address Change	If you want to change the MAC address, fill in the new MAC address
Reset System to Factory Default	Execute this function will reset system to factory default
Reboot System	Execute this function will reboot system

2、System Status Monitor

Function instruction

Function	Description
Product Name	Display the product name：**CYT-100SC**
Firmware Version	Display the firmware version：**1.01.00,Mar 4 2011**
System Up Time	Display system up time，the sequence is **hour/minute/second**
Ethernet Status	
IP Configuration Mode	Display the IP configuration，default setting is **STATIC IP**
Operation Mode	Display the operation mode，default setting is **TCP SERVER**
Connection Port	Display the connection port，default setting is **50000**
MAC Address	Display the MAC address of CYT-100SC
IP Address	Display CYT-100SC address, default setting is **192.168.168.125**
Subnet mask	Display CYT-100SC Subnet mask, default setting is **255.255.255.0**
Default Gateway	Display CYT-100SC Default Gateway, default setting is **192.168.168.254**
Primary DNS	Display CYT-100SC Primary DNS address, default setting is **168.95.1.1**
STATUS	Display CYT-100SC internet status
Serial Status	
Force Packet Time/Length	Display Force Packet Time/Length, default setting is **20ms/1000bytes**
Baud Rate	Display Baud Rate, default setting is **19200**
Data Bits	Display Data Bits, default setting is **8**
Parity Check	Display Parity Check, default setting is **None**
Stop Bits	Display Stop Bits, default setting is **1**
Flow Control	Display Flow Control, default setting is **None**
Statistic	
Ethernet	RX & TX display the total data amount of data receive and transmission of **Ethernet**.
Serial	RX & TX display the total data amount of data receive and transmission of **Serials.** ⚪ TCP/UDP Session Down 🟢 Serial Communication OK 🔴 Device doesn't communicate back within 5 seconds To view latest Serial Status, please press System Status again or refesh web page.

3、Backup & Restore Configuration

Backup & Restore Configuration

Backup

[Backup]

Restore

Please select a configuration file to restore : [_____] [瀏覽...]

[Restore]

[BACK]

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● Function Instruction

Function	Description
Backup	After execution, can save the present system settings as a backup file, and save it in hardware, the sub-name of the saved file is .cfg
Restore	Browse and select saved file(.cfg), execute Restore to restore system settings

4、Firmware Upgrade

Firmware Upgrade

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Warning: Upgrade must NOT be interrupted

Please select a file to upgrade [   ] 瀏覽... [UPGRADE]

[BACK]

● Function Instruction

Function	Description
Please select a file to upgrade	● Browse and select firmware, execute Upgrade to upgrade firmware ● Has to assure the possibility of power supply during the process of upgrading, or severe damage will be caused. What if upgrade different firmware to different products, and it will also cause severe damage.

5、PING

Networking Diagnostic (PING)

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Source IP Address :	192.168.3.118
Destination IP Address :	0 . 0 . 0 . 0
Packet Number :	4 (1 ~ 4)
Packet Size :	60 (maximum 1460 Bytes)
Ping Result :	**Sent Request:** 0
	Receive Reply: 0

PING   CANCEL   BACK

● **Function Instruction**

Function	Description
Source IP Address	Display CYT-100SC IP address
Destination IP Address	Input IP address of Remote Host
Packet Number	Set up the number of PING package, ranged 1 ~4 , the default **4**
Ping Size	Set up the size of PING package, the utmost setting **1460 bytes**.
Ping Result	● Display **Sent Request** data ● Display **Receive Reply** data