

Lantech

LSC-1102B

SERIAL TO TCP/IP CONVERTER

User Manual



V1.0
Sep 2016

Table of Contents

1. Introduction	3
Overview	4
Product Specifications	8
2. Description & Installation	10
Product Panel Views	10
LED Indicators	12
Wiring Architecture	13
RS-232	13
RS-422/RS-485	13
3. Converter Configuration	15
4. Setting Verification	32
Hyper Terminal for TCP/IP WinSock	33
Hyper Terminal for COM Port	38
Data Transmission	39
Appendix A - FAQ	40
Appendix B - Pin Outs and Cable Wiring	41
B.1 DC-In Jack	41
B.2 RJ-45 Pin Assignment	41
B.3 RS-232 Pin Assignment	41
B.4 RS-232 Wiring Diagram	42
B.5 RS-422 Pin Assignment	42
B.6 RS-422 Wiring Diagram	42
B.7 RS-485 Wiring Diagram	42
Appendix C Firmware Upgrade	43

Lantech LSC-1102B is a full set serial device within two serial ports as one is a RS-232 port and other one is a 422/ 485 (Auto-Detective) and it provides one socket connection port.

Lantech provides new ways of connecting legacy serial devices to a Local Area Network (LAN) or Wide Area Network (WAN). TCP/IP serial devices are designed to operate serial ports over 100Mbit/s Ethernet networks. The data is transmitted via TCP/IP protocol. Therefore control is available via Ethernet, Intranet and Internet. LSC-1102B serial device is packaged in a PVC material case well suited for industrial environments. All serial ports operate in common industrial configuration. The serial device can be configured as network server or network client. In the client mode, it can be installed in network which is protected by NAT router or firewall, without the need of a real IP address. The firmware of LSC-1102B can be reprogrammed directly via Ethernet network to keep up with latest network standards. Lantech LSC-1102B is one of the best serial devices for industrial applications.

Product Specifications

Serial Ports	
Port	RS-232 * 1 Port (DB9) , RS- 422 / 485 * 1 Port (Auto Detect)
Speed	300 bps ~ 230.4 Kbps
Parity	None , Odd , Even , Mark , Space
Data Bit	5 , 6 , 7 , 8
Stop Bit	1 , 2
Port-1	RS-232 Pins : Rx , Tx , GND , RTS , CTS , DTR , DSR , DCD
Port-2 (RS-422)	Rx+ , Rx- , Tx+ , Tx- (Surge Protect)
Port-2 (RS-485)	Data+ , Data- (Surge Protect)
Resistor	Built-in RS-422 / RS-485 pull high / low Resistor
ESD	15KV ESD for all signal
Ethernet Port	
Port Type	RJ-45 Connector
Speed	10 / 100 Mbps (Auto Detect)
Protocol	ARP , IP , ICMP , UDP , TCP , HTTP , DHCP , TELNET
Mode	TCP Server / TCP Client / UDP / Virtual Com / Pairing
Setup	HTTP Browser Setup (IE)
Security	Login Password
Protection	Built-in 1.5KV Magnetic Isolation
General Specification	
CPU	32-bits ARM-Cortex-M4 CPU , 120 MHz
ROM	512K bytes Flash ROM
RAM	128K bytes SRAM
Digital I/O	Digital I/O * 16 TTL
Watch Dog Function	Present
IP Search Utility	Supports Win-7, Win-8 , Vista , Win-XP , Win-2003 server , Win-2000, Win-10
Virtual COM	Supports Windows 2000 / 2003 / XP / Vista / Win-7 / Win-8 / Win-10
Firmware Update	Firmware On-line Updated Via Ethernet
LED	SYS (PWR) , DI/DO, Port2(RS-422/485), Port1(RS-232)
Power	DC 9 ~ 30 V , 300mA @ 12VDC
Operating Temperature	-10°C~70°C
Storage Temperature	-20°C~85°C
Installation	Din-Rail and Panel mounting options
Dimensions	90 x 60 x 25 mm (W * D * H)
Weight	100g
EMC	FCC Class A, CE Class A
Warranty	2 years

Converter Description & Installation

Product Panel Views



Serial I/O Port of RS-232 and RS-422/485

Connect the serial data cable between the converter device and the serial devices. Follow the parameter setup procedures to configure the converter (see the following chapters).

Digital I/O

Transforming the sensor which connecting on the Lantech TCP/IP converters equipment statuses into the TCP/IP package data and send out by the Ethernet DataStream (The Lantech TCP/IP converters must indicate the IP address and Com Port) or activating the indicated Digital output (Remote WinSock must indicate the

Lantech TCP/IP converters)Connect the data wires between the Lantech TCP/IP converters and the RS-485/RS-422 device. Follow the parameter setup procedures to configure the converter (see the following chapters).

Power Supply

LSC-1102B TCP/IP converter device is powered by a single 9Vdc (inner positive/outer negative) power supply and 500mA of current. A suitable power supply adapter is part of the packaging. Connect the power line to the power jack at the left side of LSC-1102B TCP/IP converter device and put the adapter into the socket. If the power is properly supplied, the “PWR” red color LED will be on..

Ethernet LAN Port

The connector for network is the usual RJ45. Simply connect it to your network switch or Hub. When the connection is made, the LAN LED indicator will light. When data traffic occurs on the network, red DATA LED indicator will blink during data transferring and receiving.

Reset Button

If by any chance, you forget the setup password, or have incorrect settings making Lantech TCP/IP converter inoperable. First, turn off the power. Second, use any point tip to push this button and hold it to turn on the power at the same time for 5 second. All the parameters will be reset to the factory default.

LED Indicators



PWR (Red):

It is a power indicator (When the power is on, the LED will be on.)

Tx (Green):

Data sent indicator (When data are sending to the network, the LED will blink.)

Rx (Red):

Data received indicator (When data are receiving to the network, the LED will blink.)

SYS (Green):

It is a device status indicator (When Lantech TCP/IP converter is operated in normal status, the LED will blink once per second.)

Wiring Architecture

RS-232 Wiring Architecture

RS-232 Wiring



RS-232(RTS/CTS) Wiring



RS-232(RTS/CTS , DTR/DSR) Wiring



RS-422/RS-485 Wiring Architecture

RS-422 Wiring



RS-485 Wiring

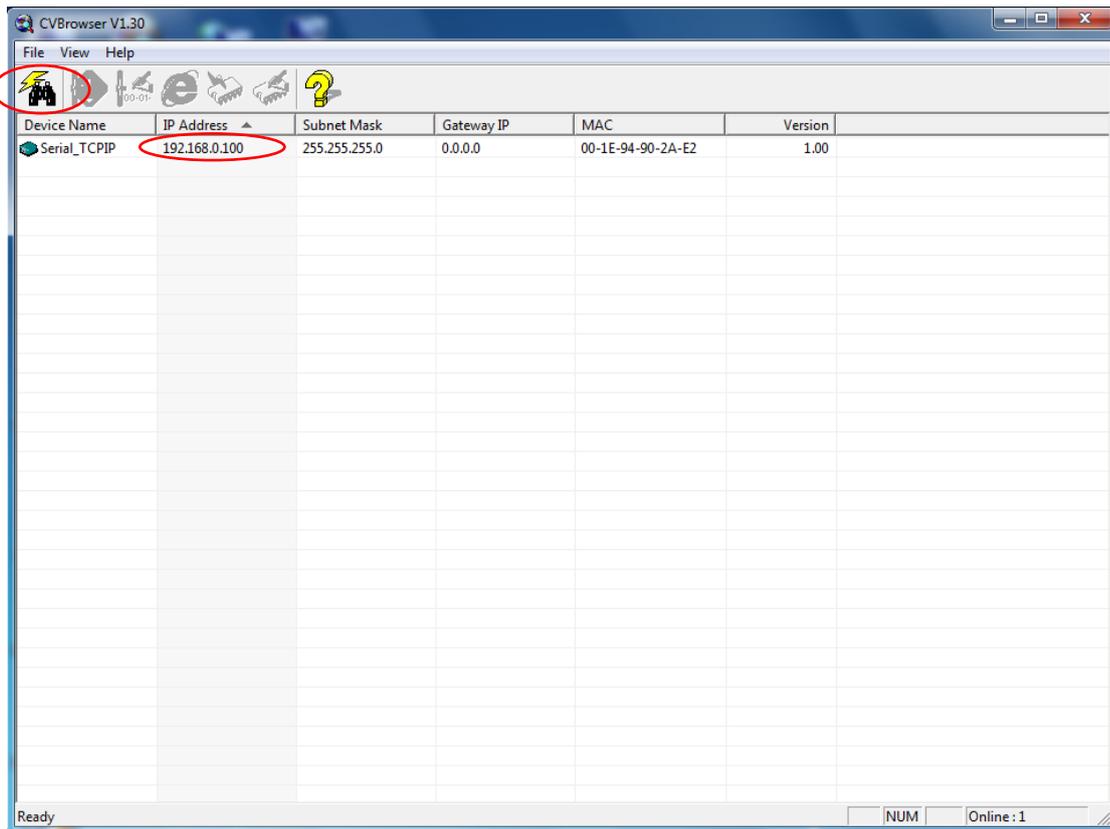


When you finish the steps mentioned above and the LED indicators are as shown, the converter is installed correctly. You can use the Setup Tool “CVBrowser.exe” to setup the IP Address.

To proceed the advanced parameter setup, please use a web browser (IE or Netscape) to continue the detailed settings.

Hardware Installation

1. Connect LSC-1102B to your desktop directly or by switch.
2. Power on LSC-1102B
3. Click scope icon of CVBrowser to search the LSC-1102B(Default IP 192.168.0.100)

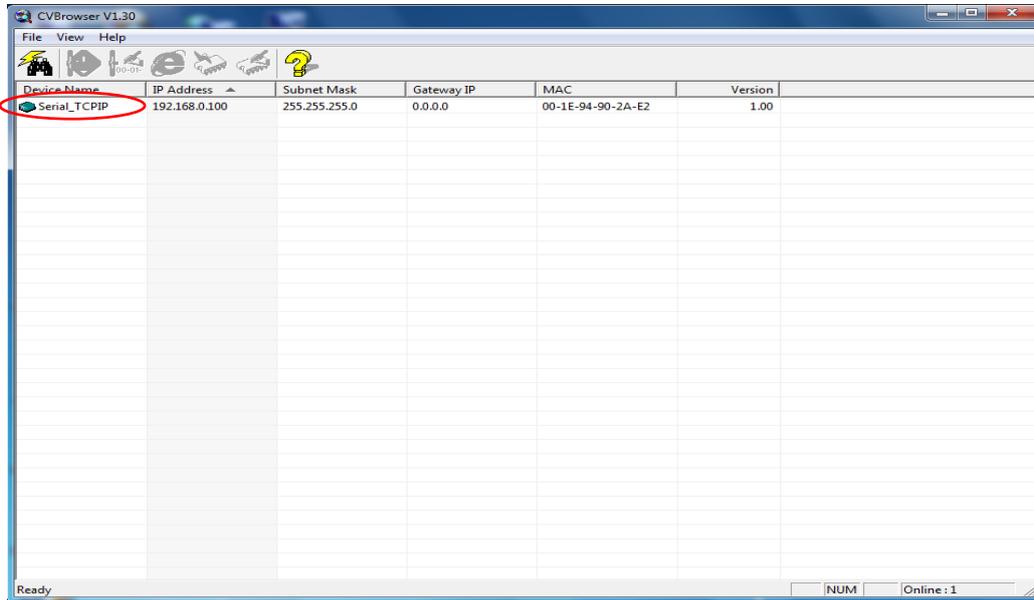


4. Make sure the IP of your desktop and LSC-1102B are in the same domain (192.168.0.x)

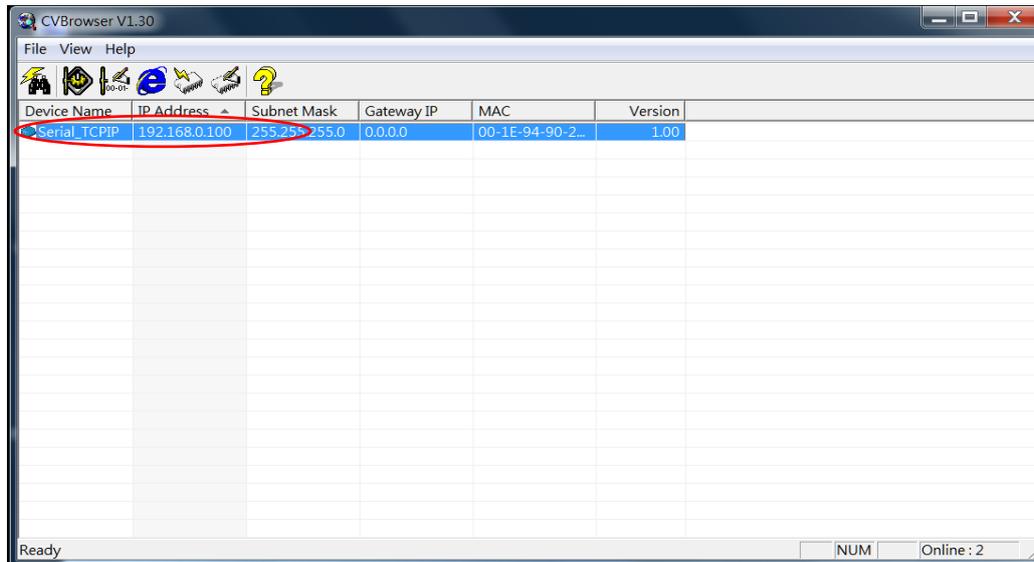


How to change the IP address of LSC-1102B

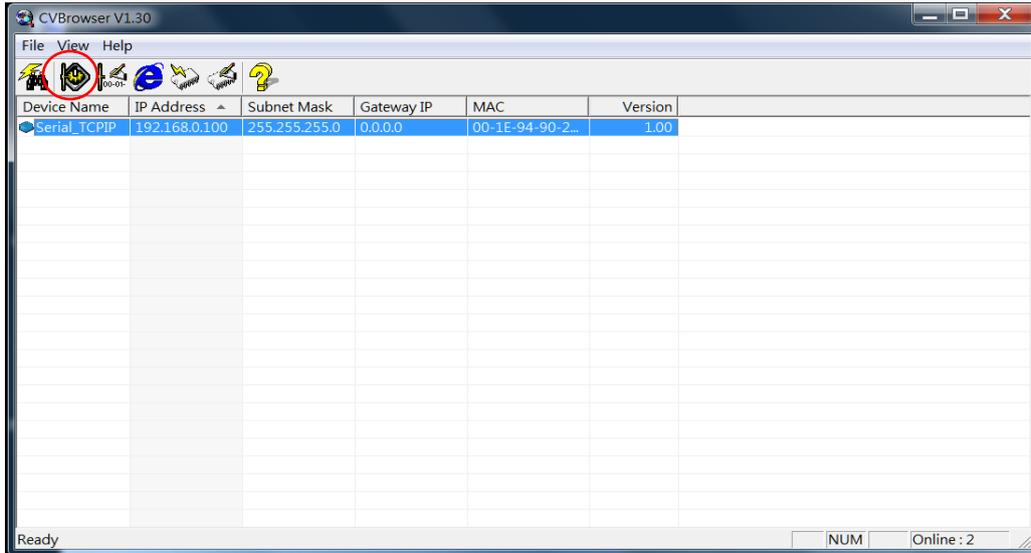
5-1. Hoover your mouse to the icon of LSC-1102B



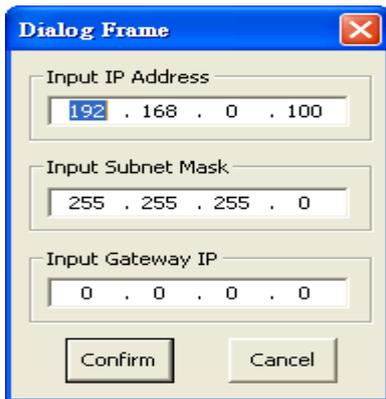
5-2. click the icon and it will be highlight by blue color



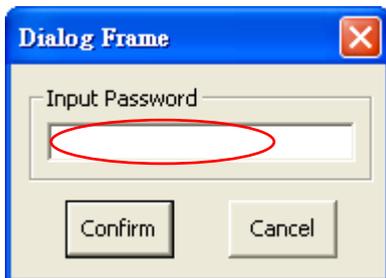
5-3. choose Modify IP



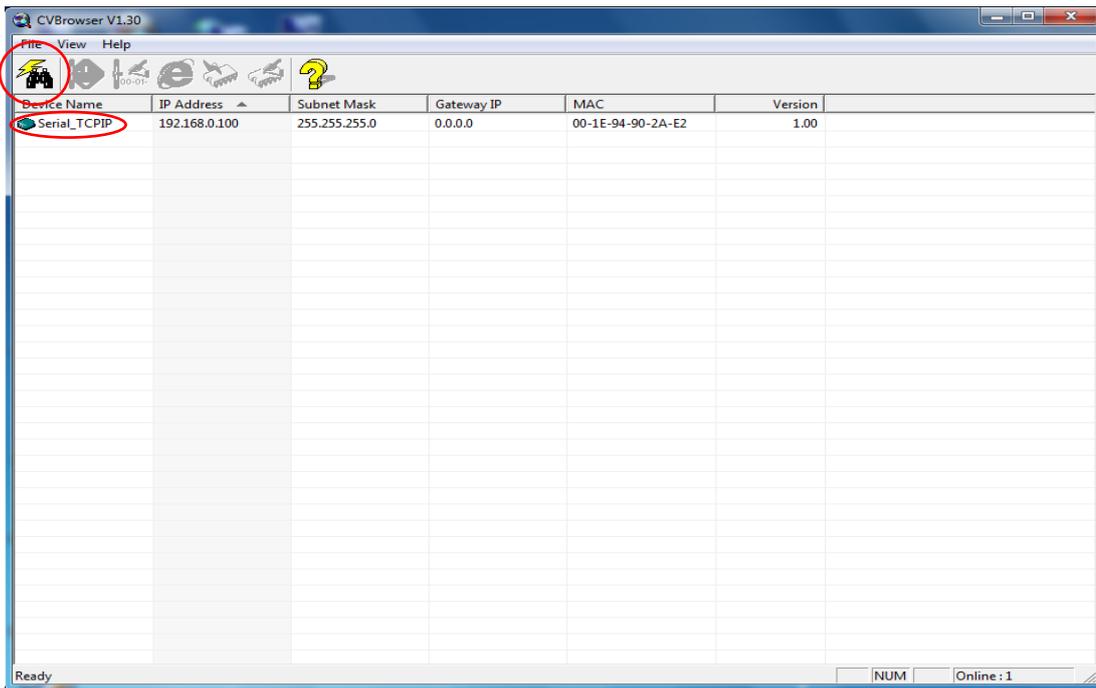
5-4. Change the IP address of LSC-1102B



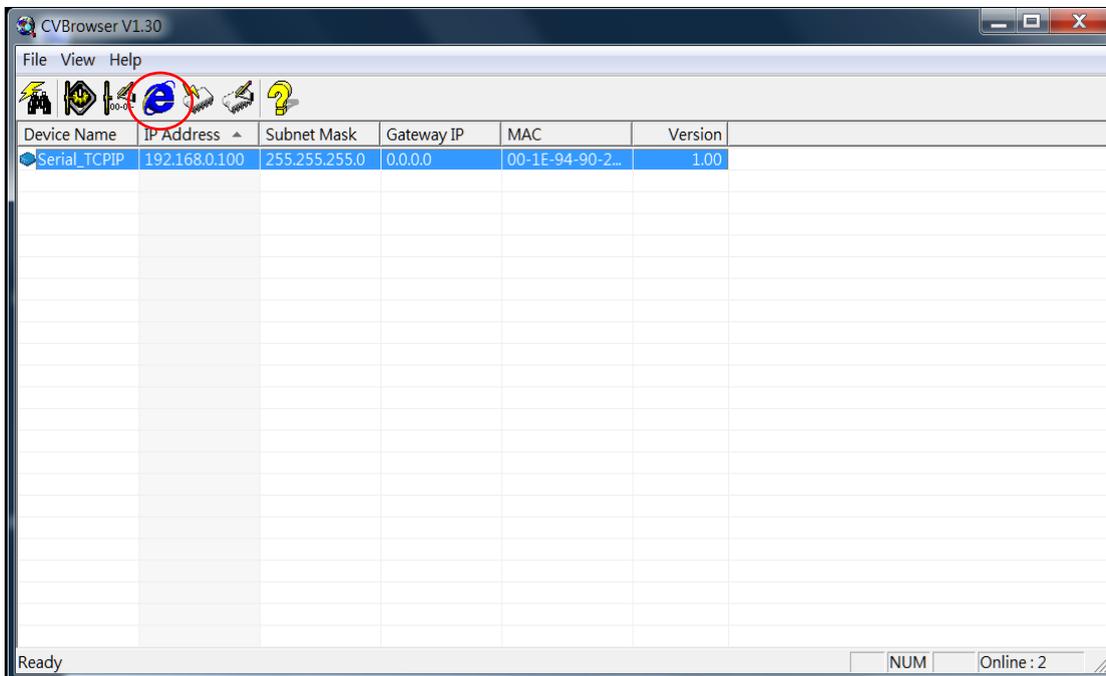
5-5. Set the password of log in



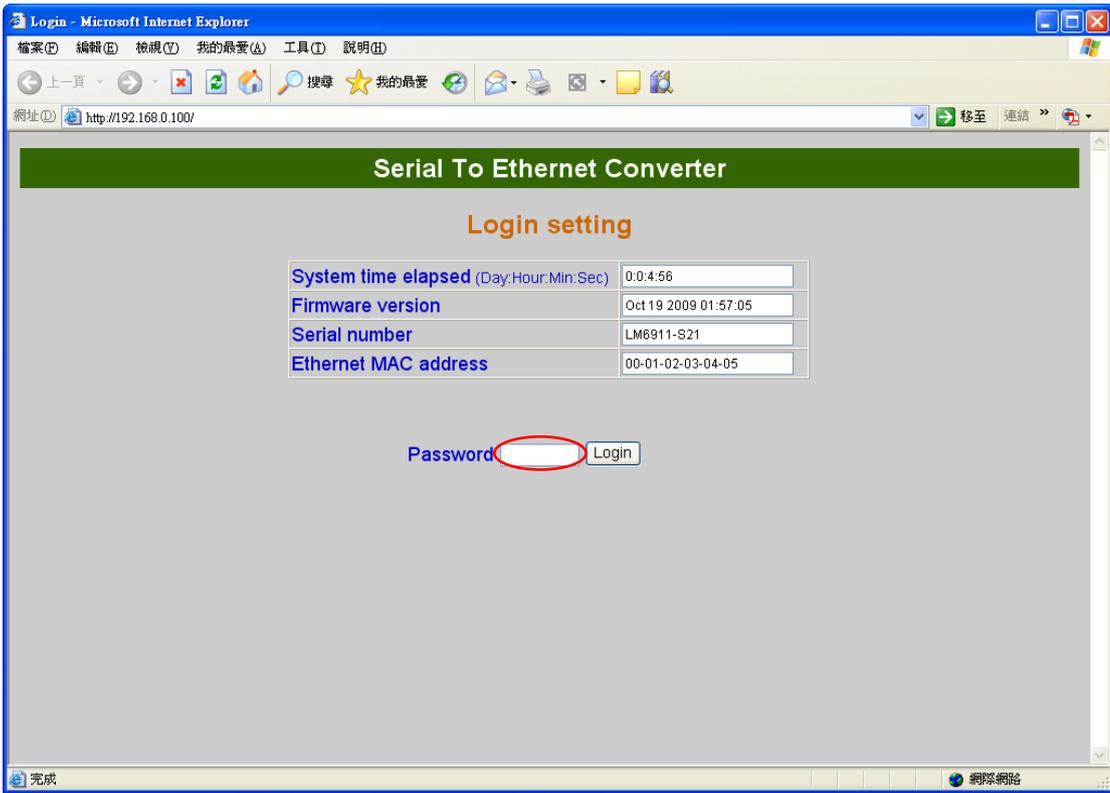
5. Fresh the CVBrowser and find the new IP address



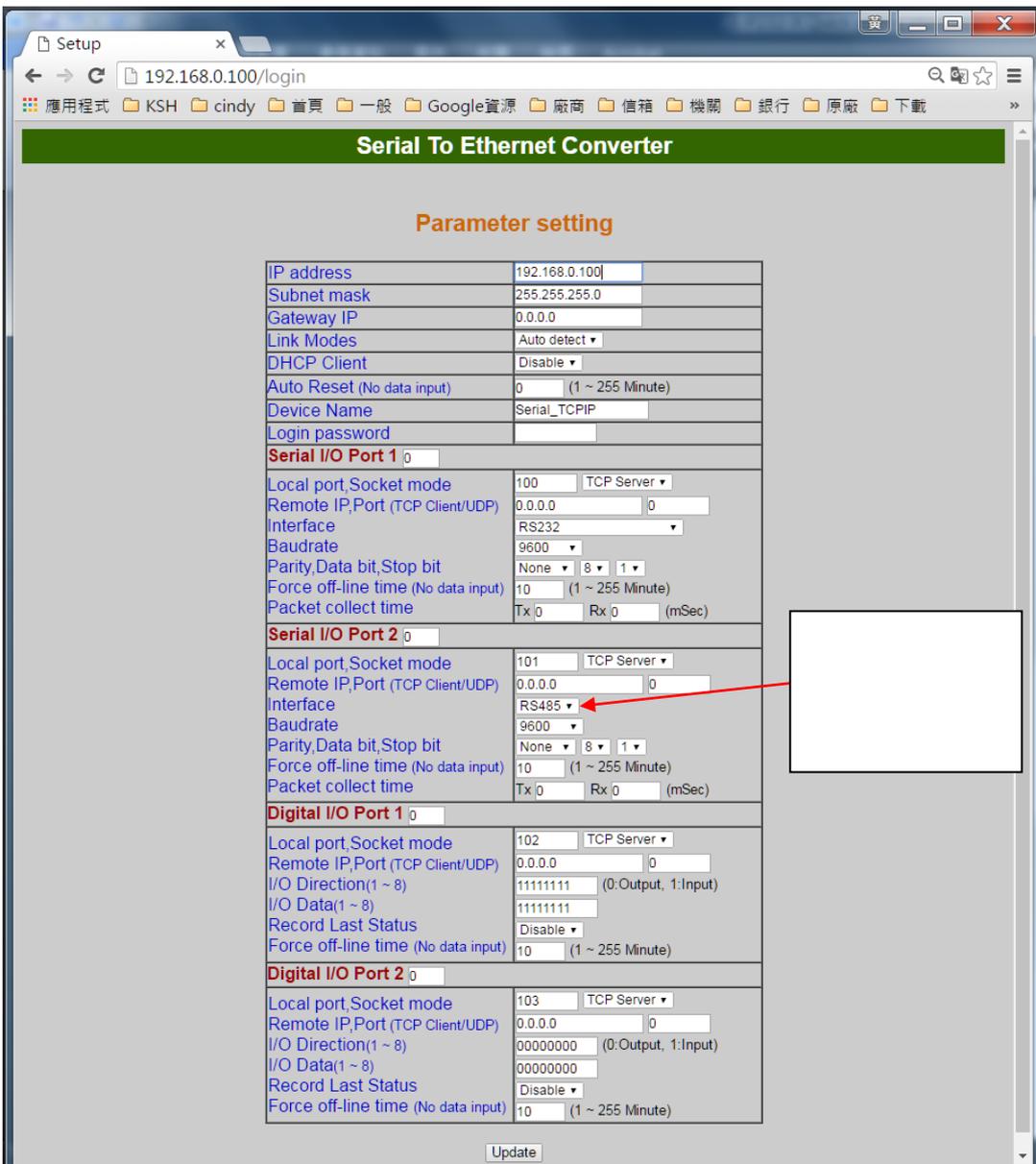
6. Press WEB Browser



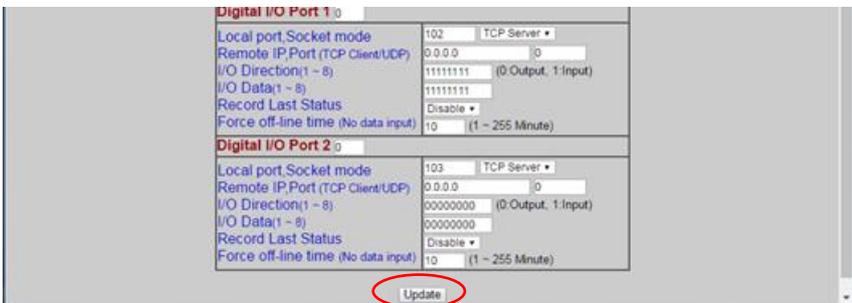
7. Log in LSC-1102B via web browser.



9. Set Serial I/O Port



10. Remember to press update after you modify the setting



Factory Default Setting

If by chance, you forget the setup password, or have incorrect settings making the converter inoperable, there are two ways to reset the setting and the following procedures can be used to reset all settings to factory default:

A:

1. you can turn off the power and then use any point tip to push “Reset” button and hold it to turn on the power at the same time for **5 seconds**. The password will be reset to the factory default as “**empty**”.

B:

1. Turn off the power of the converter.
2. Use a pin or any point tip to push the screw driver or any conductor to short DTR and CTS (pin 4 and pin 8 in DB9) of RS232 connector.
3. Turn on the power of the converter.
4. Remove screwed driver or conductor.

Setting Verification

After completing the wiring and parameter setting, we should verify if the setting is correct. This chapter will introduce how to use a single computer to test if the converter behaves well.

The operating system can be Windows 95, 98, ME, XP, 2000. The “Hyper Terminal” utility should be installed on your PC (see Figure 6.1). It can be found in your Windows installation CD.

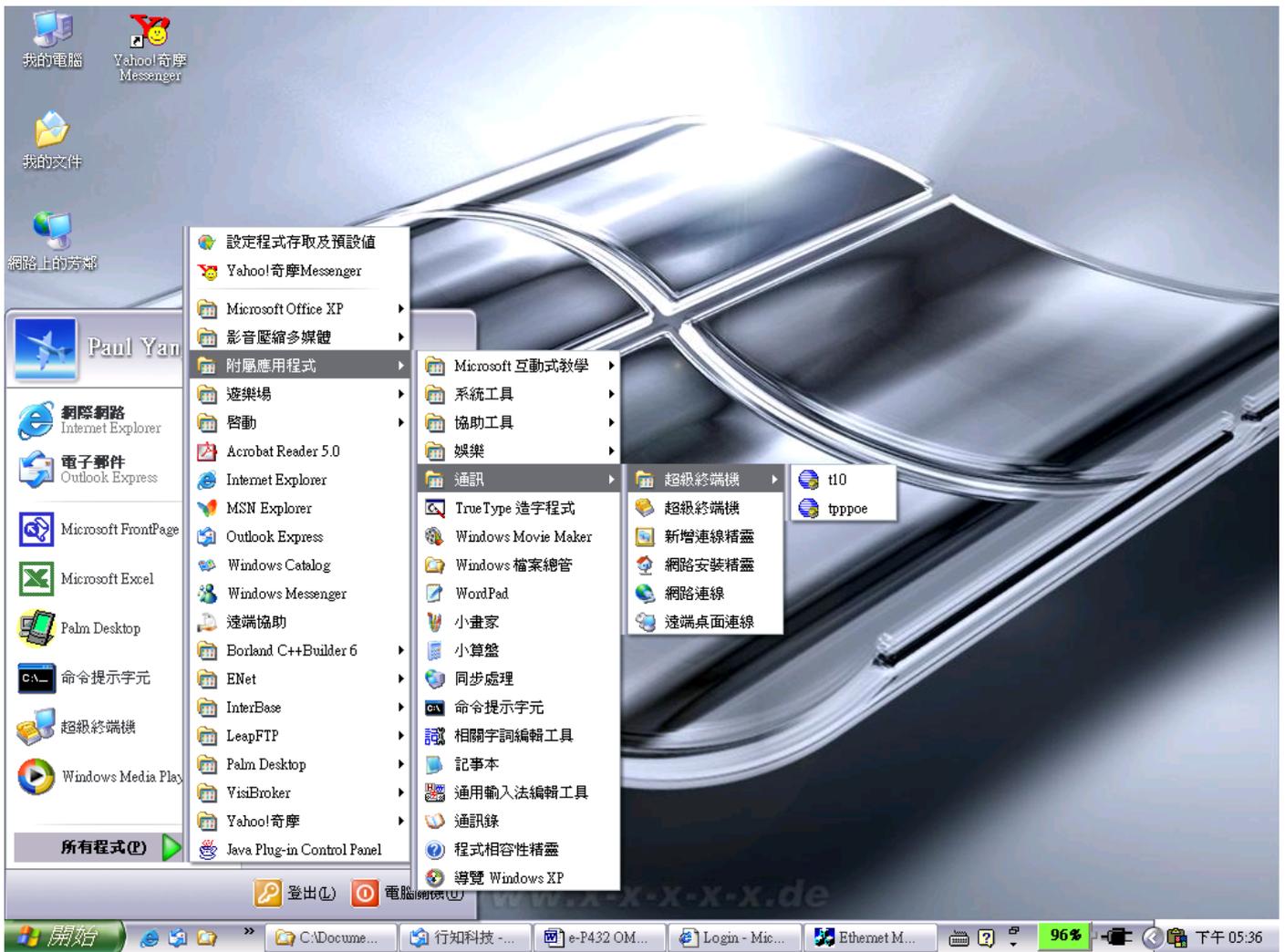
The wiring architecture is similar to “RS-232 Wiring” in chapter 3, and the “Serial Device” is replaced by the PC’s COM 1. The same PC also plays the roll of the Remote Host.

The following topics are covered in this chapter:

- ▣ **Hyper Terminal for TCP/IP WinSock**
- ▣ **Hyper Terminal for COM Port**
- ▣ **Data Transmission**

Hyper Terminal for TCP/IP WinSock

Initiate a Hyper Terminal from the Start Menu in Windows (see Figure 6.1), give a terminal name, choose an icon, and press “OK” button (see Figure 6.2).

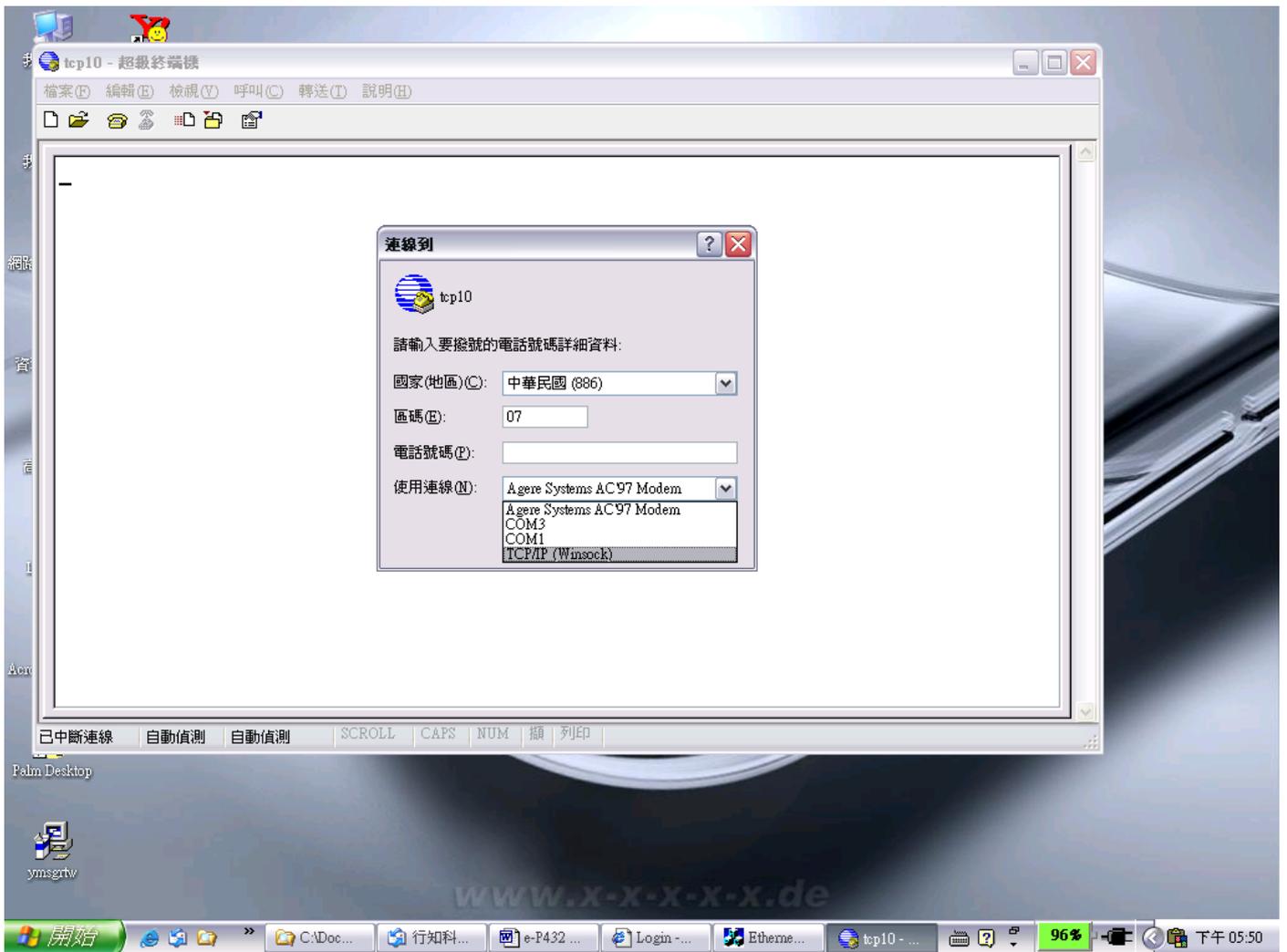


(Figure 6.1)



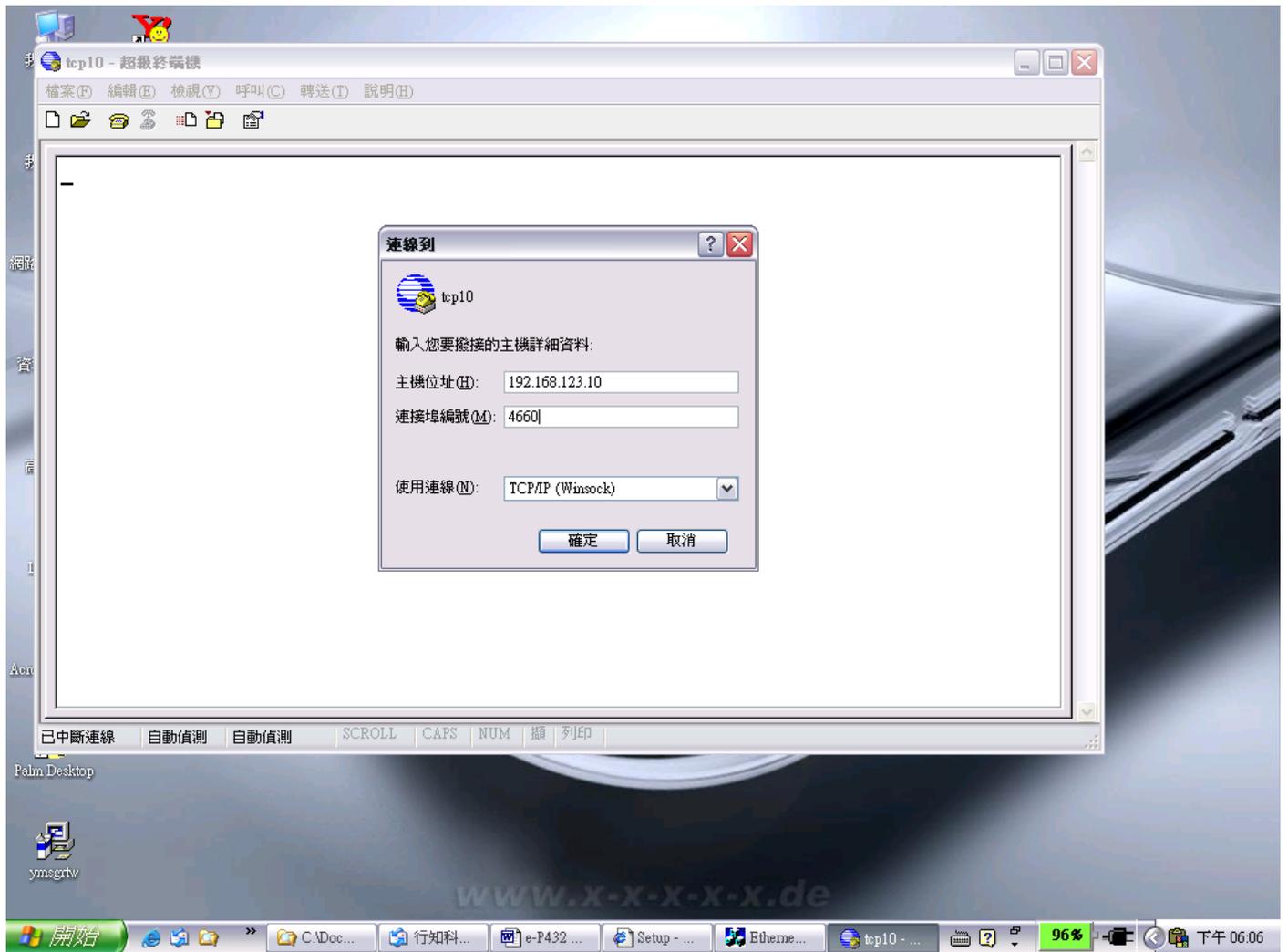
(Figure 6.2)

Select "TCP/IP(Winsock)" option at the "Connect using:" field (see Figure 6.3).



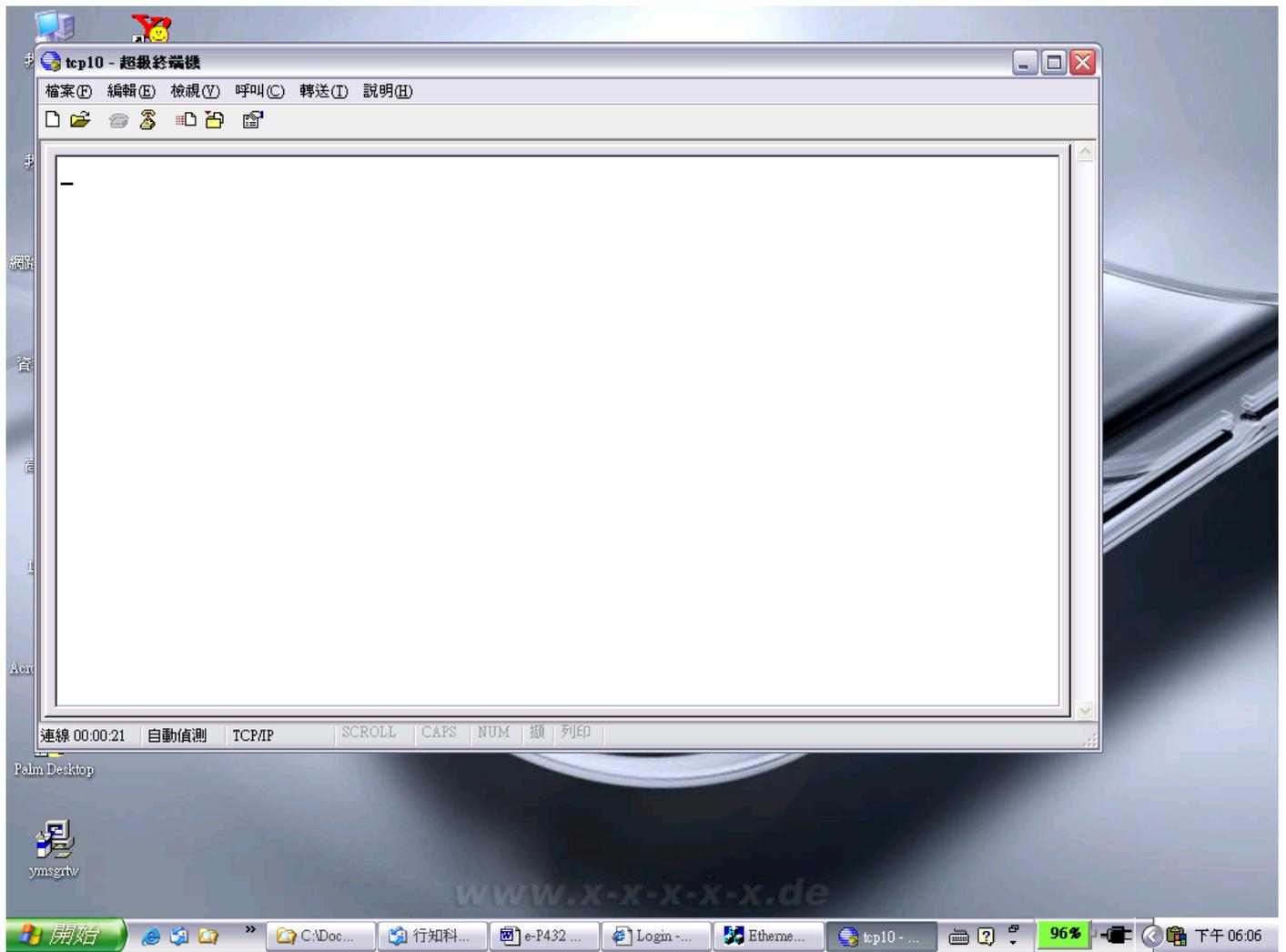
(Figure 6.3)

After “OK” button is pressed, Figure 6.4 appears. Enter the converter’s IP address (e.g. 192.168.123.10) at the “Host address:” field, and the Socket port number set for the Serial Port 1 at the “Port number:” field (e.g 4660). (The Socket type of the Serial Port 1 should be “TCP Server”.)



(Figure 6.4)

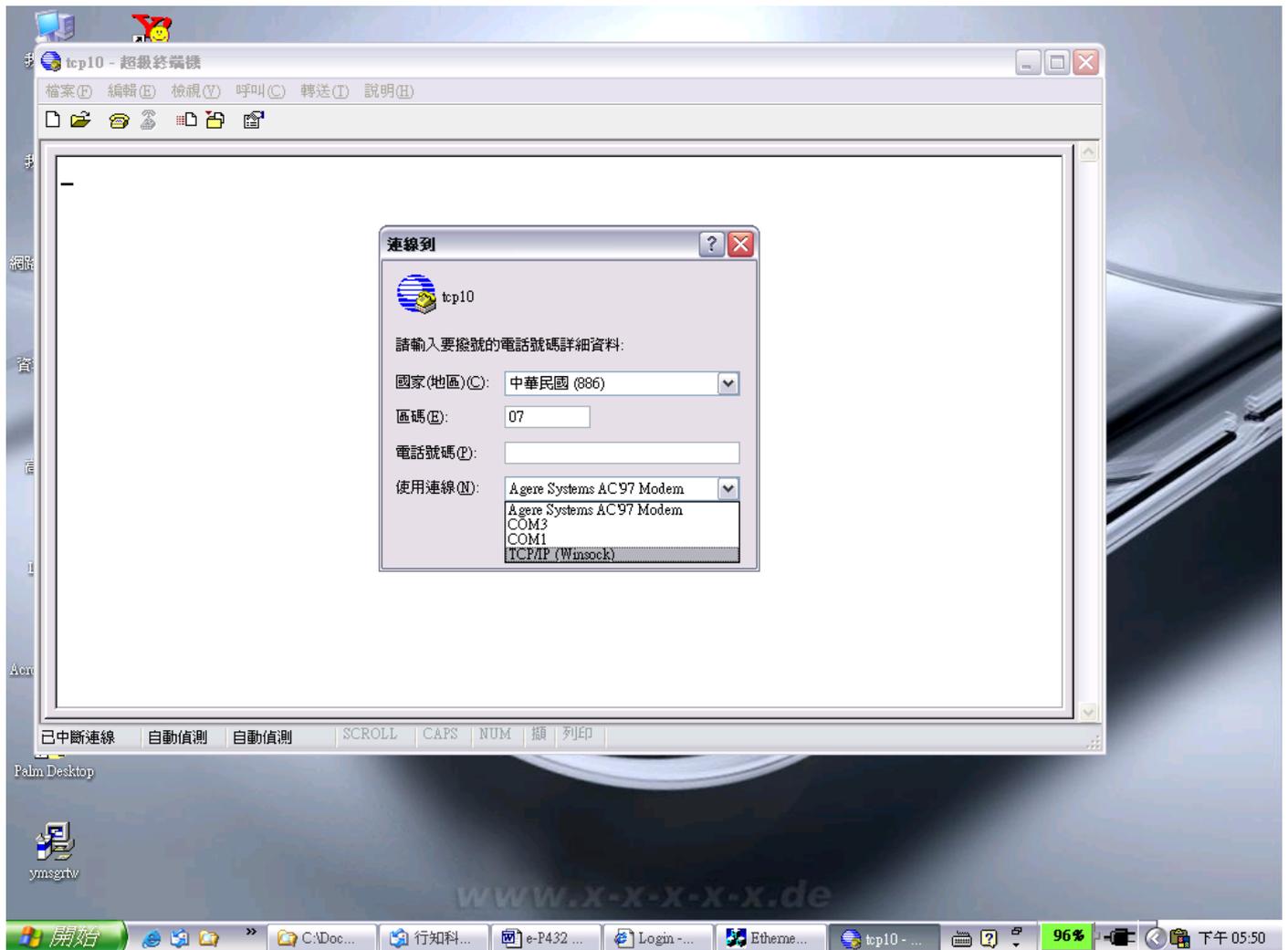
After “OK” button is pressed, Figure 6.5 appears. If the Hyper Terminal connects with the converter successfully, the time clock at the left lower corner “Connected hh:mm:ss” will start counting.



(Figure 6.5)

Hyper Terminal for COM Port

Initiate another Hyper Terminal as a COM Port Terminal (in Figure 6.3, select COM 1 or other COM port instead of “TCP/IP (Winsock)”). Set the COM port Properties to be the same as those set for the Serial Port 1 of the converter.



(Figure 6.3)

Data Transmission

When all steps described above are finished, type any characters on the COM Port Terminal and check if the typed characters are also displayed on the TCP/IP Winsock Terminal. Alternatively, check if the characters typed on the TCP/IP Winsock Terminal are also displayed on the COM Port Terminal. If yes, then all settings are correct and the converter can operate properly.

Appendix A

FAQ

Q. Why can't the CVBROWSER.exe detect the converter on the network?

A. Please check

- ❑ if the power is properly plugged to the converter.
- ❑ if the network cable is properly connected between the converter and the Hub.

Refer to the "Hardware Installation" steps in Chapter 3.

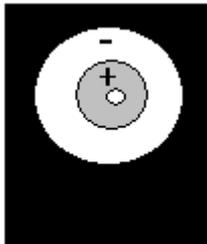
Q. Why can't I use IE to setup the converter?

A. Please check if the network domain of your PC is the same as that of the converter.

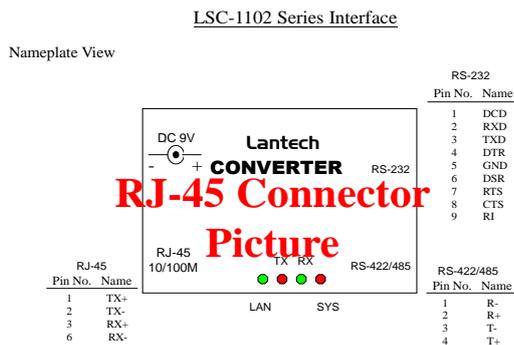
Appendix B

Pin outs and Cable Wiring

DC-In Jack

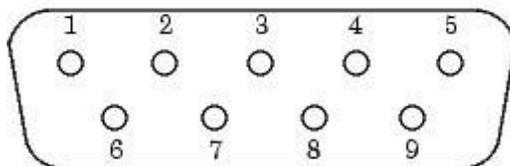


RJ-45 Pin Assignment



RS-232 Pin Assignment

The pin assignment scheme for a 9-pin male connector on a DTE is given below.



PIN 1 : N/A

PIN 2 : RXD

PIN 3 : TXD

PIN 4 : N/A

PIN 5 : GND

PIN 6 : N/A

PIN 7 : RTS

PIN 8 : CTS

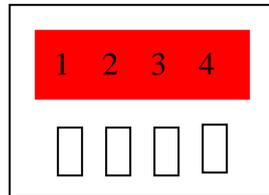
PIN 9 : N/A

❏ **RS-232 Wiring Diagram**

Serial Device	Lantech Converter
2 RX	3 TX
3 TX	2 RX
5 GND	5 GND
7 RTS	8 CTS
8 CTS	7 RTS

❏ **RS-422 Pin Assignment**

The pin assignment scheme for a 4-pin RS-422 is given below.



PIN 1 : R- PIN 2 : R+ PIN 3 : T- PIN 4 : T+

❏ **RS-422 Wiring Diagram**

Serial Device	Lantech Converter
R-	3 T-
R+	4 T+
T-	1 R-
T+	2 R+

❏ **RS-485 Wiring Diagram**

Serial Device	Lantech Converter
R- T-	1 R- 3 T-
R+ T+	2 R+ 4 T+

Appendix D

Firmware Upgrade

As the firmware of the converter always keeps on enhancing with latest technologies and network standards, if your applications need the latest release of firmware, you will receive a Win32 executable utility and a ROM binary file to upgrade the converter firmware through network:

1. Set the target converter to have IP address in the same subnet as your host computer.
2. In the DOS Prompt environment of Windows, execute the upgrade utility eUpg32.exe, with the ROM file name you received as the first parameter and the target converter IP address as the optional second parameter. For example:

```
eUpg32 ROM. bin 10.0.0.123
```

If you omit the target IP address, the upgrade software will try to find one automatically.

3. The upgrade will start immediately with percent finished displayed on screen. Wait until 100% complete. Please note during upgrade, do not stop the software or remove the power of the converter, or it will cause permanent damage of firmware and can not be recovered.