M2M-710D

User Manual

V2.20



http://www.icpdas.com

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List of Revision

Date	Author	Version	Revision
2009/03/13	Jiunan	1.00	Release
2010/01/26	Jiunan	1.01	Increase Virtual COM Function
2011/03/31	Bird	1.02	Modify some description
2011/12/22	Bird	2.00	Increase VxServer Function

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1. Introduction

The M2M-710D module is specially designed for the remote maintenance solution. It can be used to maintain the remote machines with other module(ex：M2M-710D、M2M-711D、M-4132…etc) through Ethernet. Servicemen can maintain remote machines as real as he has been on the spot. That can not only reduce the business travel cost, but also save the time of waiting for maintaining equipments. The remote maintenance solution redefines maintenance service that we pass understood, and the equipment manufacturer may solve the problem to grasp the customer demand and the opportunity rapidly. M2M-710D also integrates the Virtual com and VxServer technologies. That can resolve the insufficiency of real com port in PC. By applying this technology, the maintenance man can take the remote maintenance or monitor whenever the time is and whatever the place is.

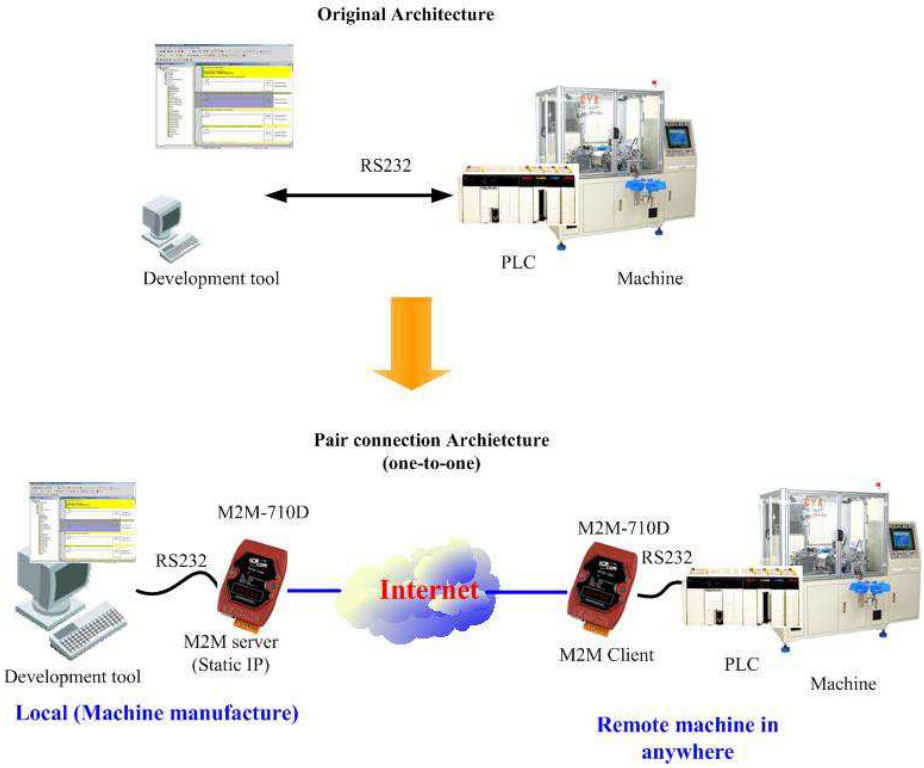


Figure 1 frame of maintenance remote machine

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It is more flexible to management the remote machines with M-4132. The application frame is as following:

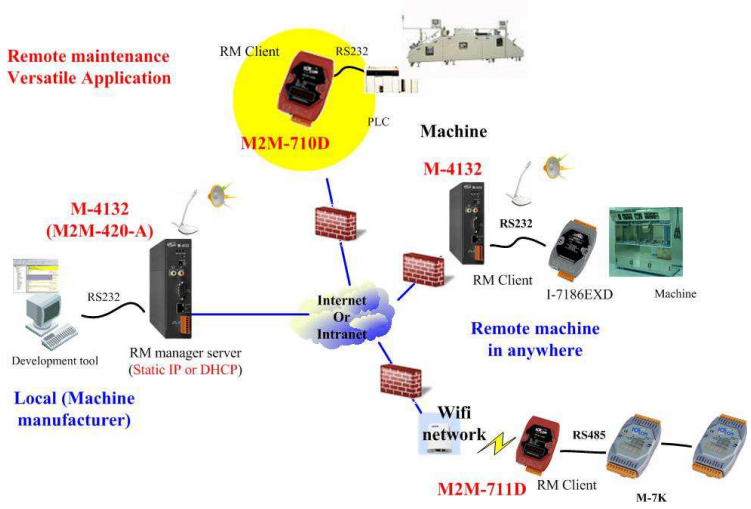


Figure 2 apply with M-4132

Besides the above function, the M2M-710D may help the serial system to upgrade to internet frame without changing any software.

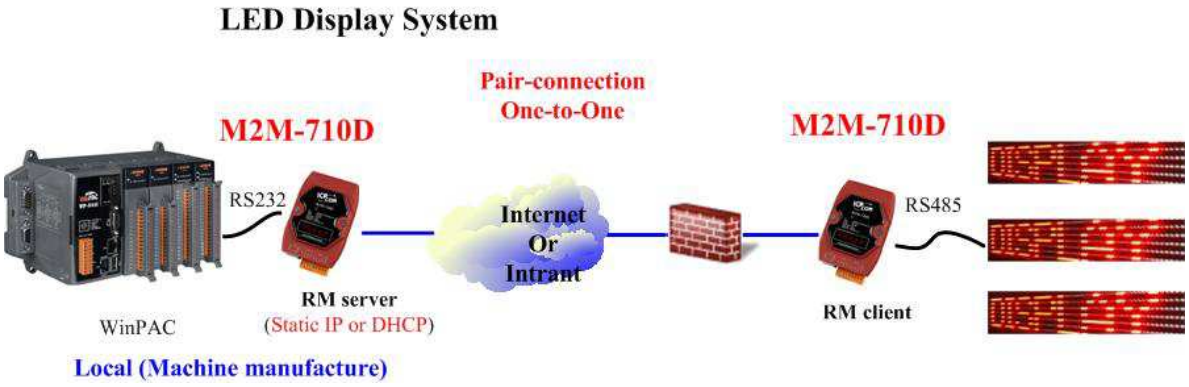


Figure 3 example of serial communication

The remote system includes a server, and more than one for clients. Server must have physical IP address, and adjust the firewall before the Server module is applied appropriately. Users can provide the remote maintenance service real time under the stable network communication. M2M-710D integrates the Virtual com technology. That can resolve the insufficiency of real com port in PC. By applying this technology, the maintenance man can take the remote maintenance or monitor whenever the time is and whatever the place is.

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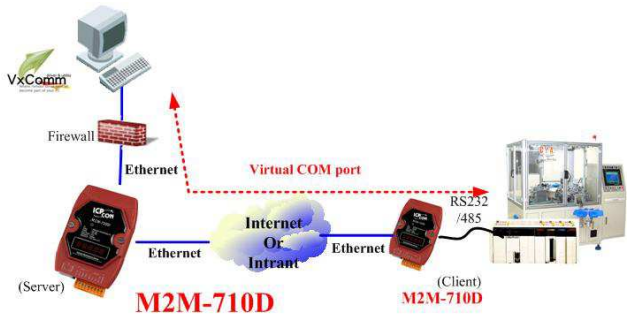


Figure 4. serial port communication application

Support VxServer technology to achieve the function of one-to-many serial ports.

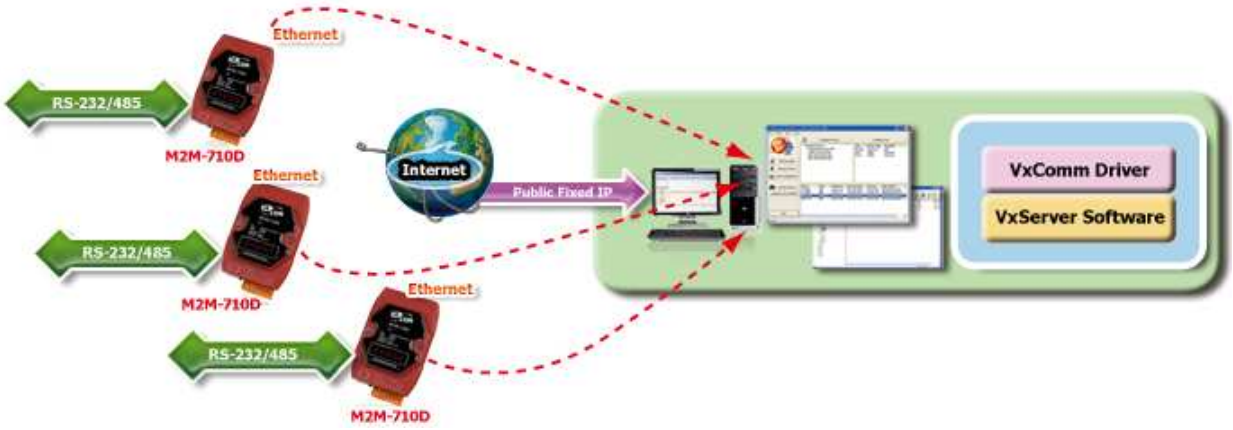


Figure 5 VxServer application

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1.1 Features

- ❖ Quick start
- ❖ Support VxServer
- ❖ Support Pair-Connection Server and Pair-Connection Client
- ❖ Do transparent transmission with other M2M devices (EX: M-4132, M2M-720-A, M2M-710D…)
- ❖ Support Virtual Com Communication
- ❖ Provide pair connection (RS-232,RS-485) on network
- ❖ Web-based administration
- ❖ Built-in MiniOS7 OS to keep the computer virus off
- ❖ Ethernet Protocol: TCP, UDP, IP, ICMP, ARP, ARP
- ❖ Provide dynamic DNS function
- ❖ Supply DDNS(Dynamic DNS), Can be used without a fixed IP
- ❖ Supply static IP/DHCP
- ❖ 5-Digit 7 Segment LED Display
- ❖ EMI, RoHS compliance

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1.2 Hardware Specifications

CPU	
CPU	80186, 80 MHz
SRAM	512 KB
Flash Memory	Flash ROM: 512 KB ; Erase unit is one sector (64 KB) ; 100,000 erase/write cycles
EEPROM	16 KB; Data retention: 40 years; 1,000,000 erase/write cycles.
Built-in Watchdog Timer	Yes
Communication Interface	
COM1	RS-232(RxD, TxD, RTS,CTS ,GND); None-isolation
COM2	RS-485(DATA+, DATA-); None-isolation
Ethernet Port	10/100 Base-TX
COM Port Formats	
Data Bit	7, 8: for COM1 and COM2
Parity	None, Even, Odd
Stop Bit	1: for COM1, COM2
Baud Rate	1200/2400/4800/9600/19200/38400/57600/115200 bps.
Mounting	
Din Rail Mount	Yes
Wall Mount	Yes
LED Display	
5-Digit 7 Segment	Yes
System LED Indicator	Yes
Mechanism	
Flammability	Fire Retardant Materials (UL94-V0 Level)
Dimension	72 mm x 33 mm x 123 mm (W x L x H) Detail
Operating Environment	
Operating Temperature	-25 ~ +75 °C
Storage Temperature	-40 ~ +80 °C
Power	
Protection	Power Reverse Polarity Protection
Required Supply Voltage	Unregulated +10 V_{DC} ~ +30 V_{DC}
Power Consumption	2.7 W for M2M-710D

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1.3 Statement of Communication Mode

M2M-710D has three kinds of communication mode. They are VxServer, Pair-Connection Client and Pair-Connection Server.

VxServer Mode:
In this mode, users must install VxServer and VxComm Driver in the PC to use serial communication.

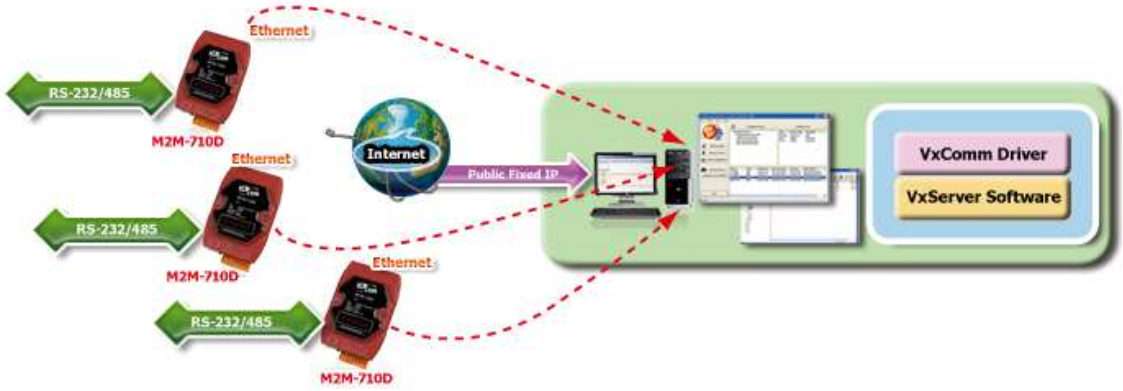
Pair-Connection Client Mode:
M2M-710D can be set to client mode to connect with remote M-4132, M2M-720-A, M2M-710D and the devices that support RM server connection. If the hostnames of client and server are the same, it can establish connection quickly and easily doesn't have to go through website.

Pair-Connection Server Mode:
M2M-710D can be set to server mode to accept the connection of remote devices such as M-7132, M2M-720-A, M2M-710D and the products that support RM client. M2M-710D only accepts one client to connect. Provide VxComm function in this mode.

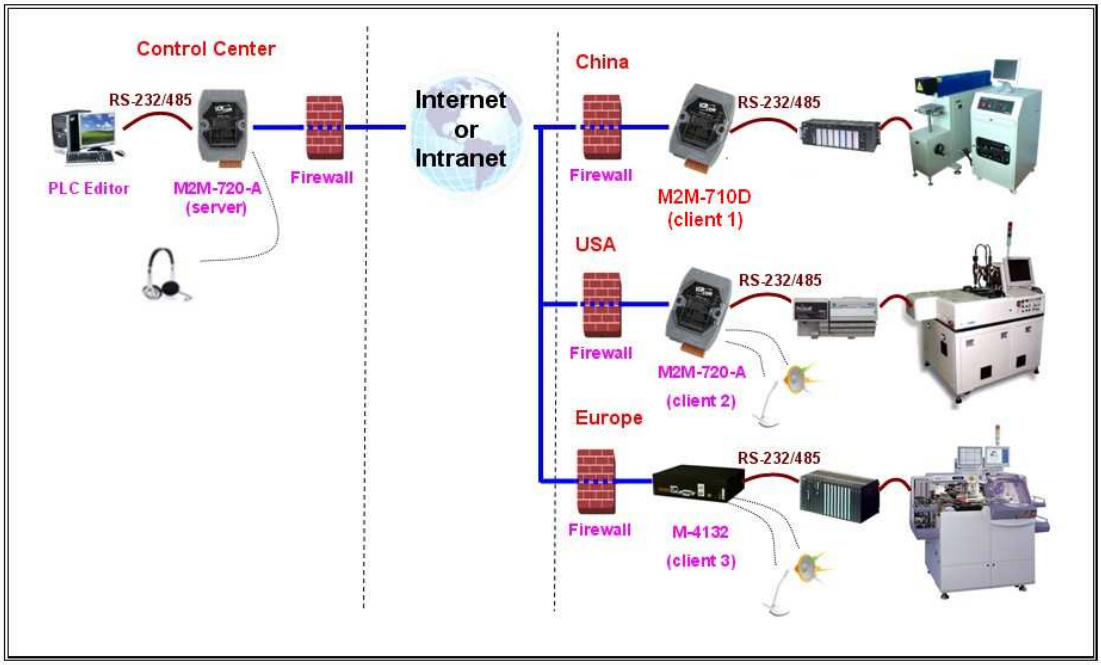
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1.4 Applications

❖ **VxServer Mode**: Do remote maintain with VxServer Software.

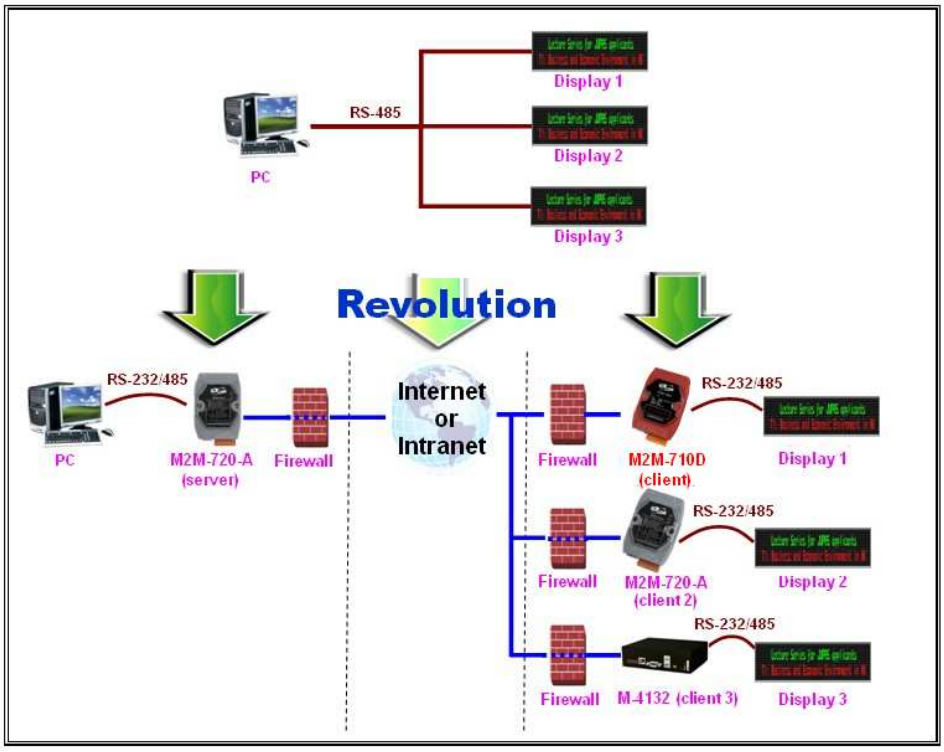


❖ **Remote Maintenance**: Build the remote maintenance system all over the world

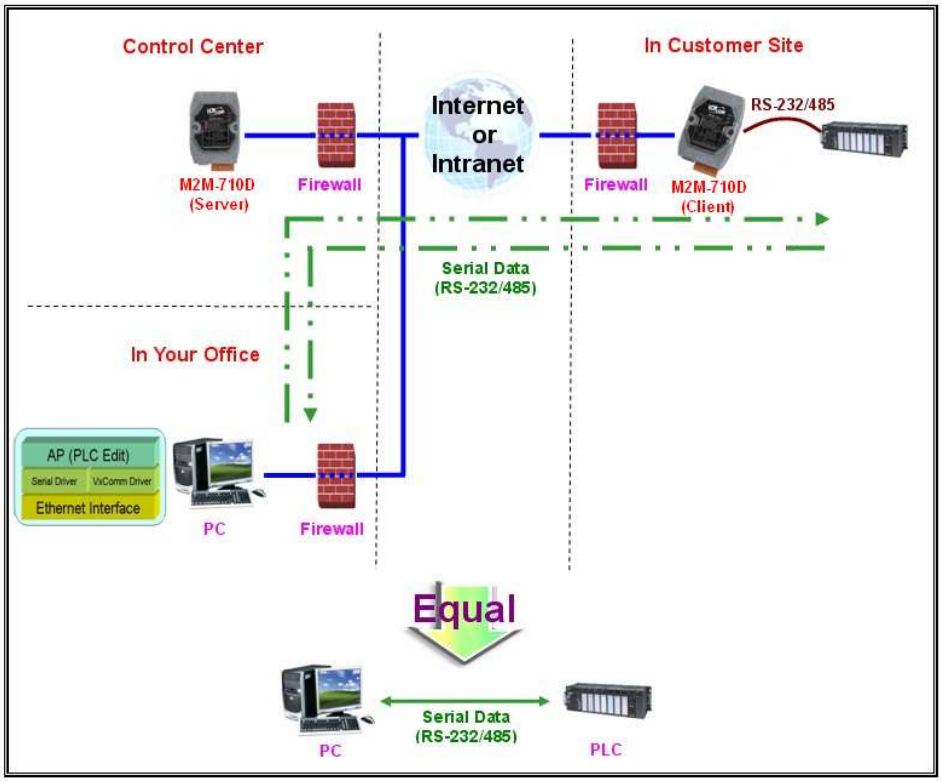


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❖ **Serial application revolution**: Upgrade the original serial application to network



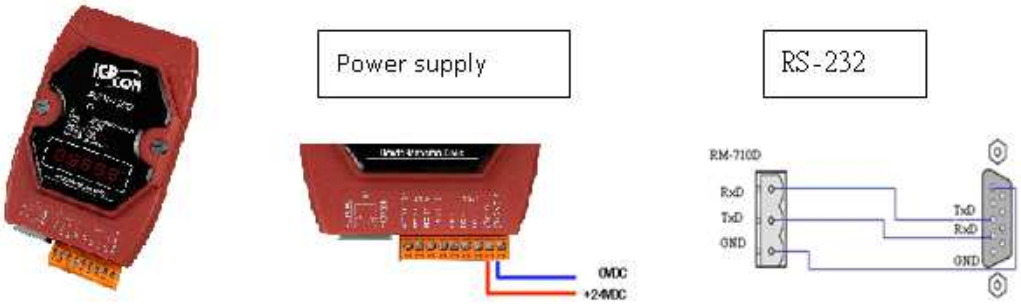
❖ **Virtual Com**: Remote maintenance by Virtual Com technology



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2. Hardware

2.1 M2M-710D Appearance

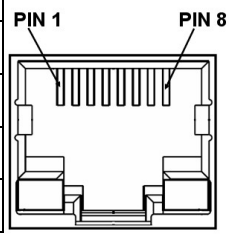


M2M-710D Pin definition

Pin	Name	Description
1	CTS1	Clear to Send
2	RTS1	Request to Send
3	RxD1	Receive Data
4	TxD1	Transmit Data
5	INIT	Init Pin
6	DATA+	Data+ of RS-485
7	DATA-	Data- of RS-485
8	Vs	Vs of Power Supply
9	GND	GND of Power Supply

8-PIN of RJ-45 definition

Pin	Name	Description
1	TX+	TX+ output
2	TX-	TX- output
3	RX+	RX+ input
4	-	N/A
5	-	N/A
6	RX-	RX- input
7	-	N/A
8	-	N/A



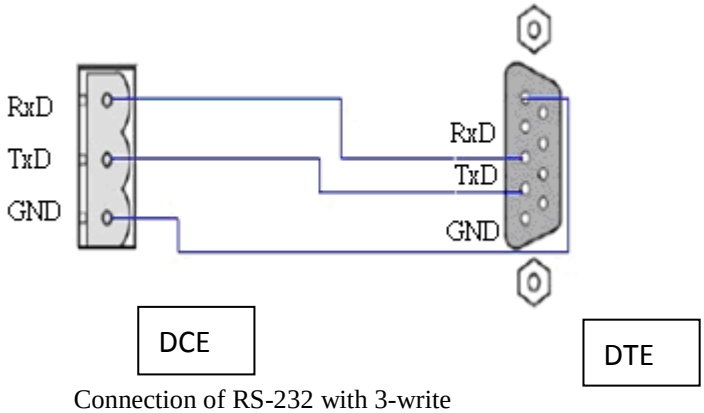
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2.2 Wiring Instructions

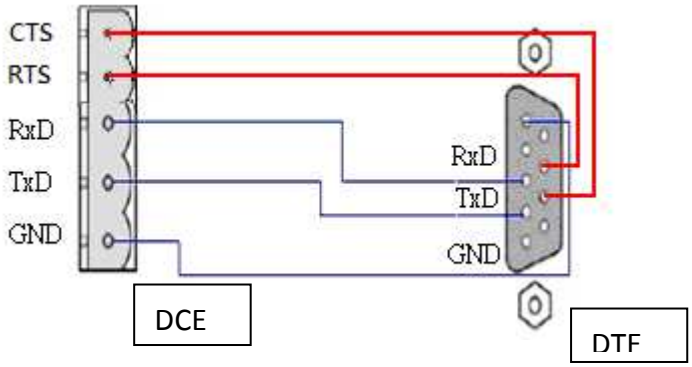
The communication interface includes RS-232, RS-485 and Ethernet. The wiring instructions are described in section 2.2.1, 2.2.2 and 2.2.3.

2.2.1 RS-232 connection

There are two types of RS-232 ports, DTE (Data Terminal Equipment, like PC, Serial Printers, PLC, and Video Cameras) and DCE (Data Circuit-Terminating Equipment, like modem) type. The M2M-710D module is a DTE and the user can uses “3-wire” RS-232 or “5-wire” RS-232 to connect. When connecting the M2M-710D to a DCE device, the user just needs to match the signal names. If users connect the M2M-710D to a DTE device, they must use a crossover cable (TX crosses to RX, GND to GND), as shown in the figure.



Connection of RS-232 with 3-write

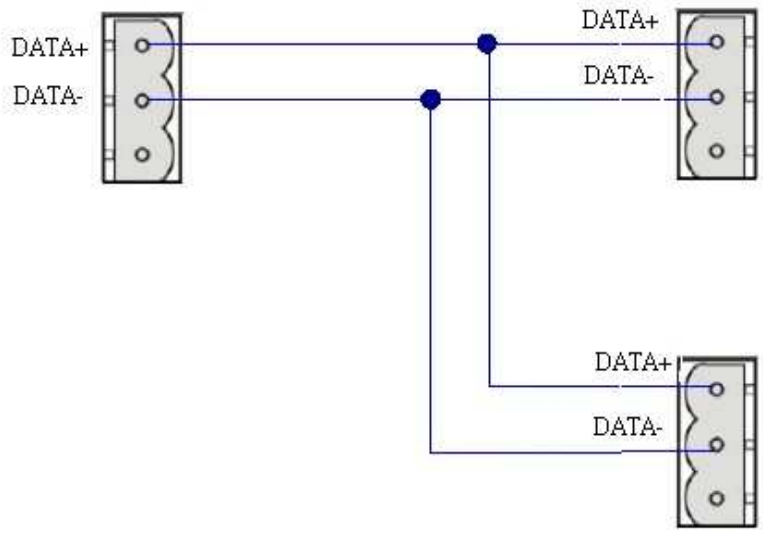


Connection of RS-232 with 5-write

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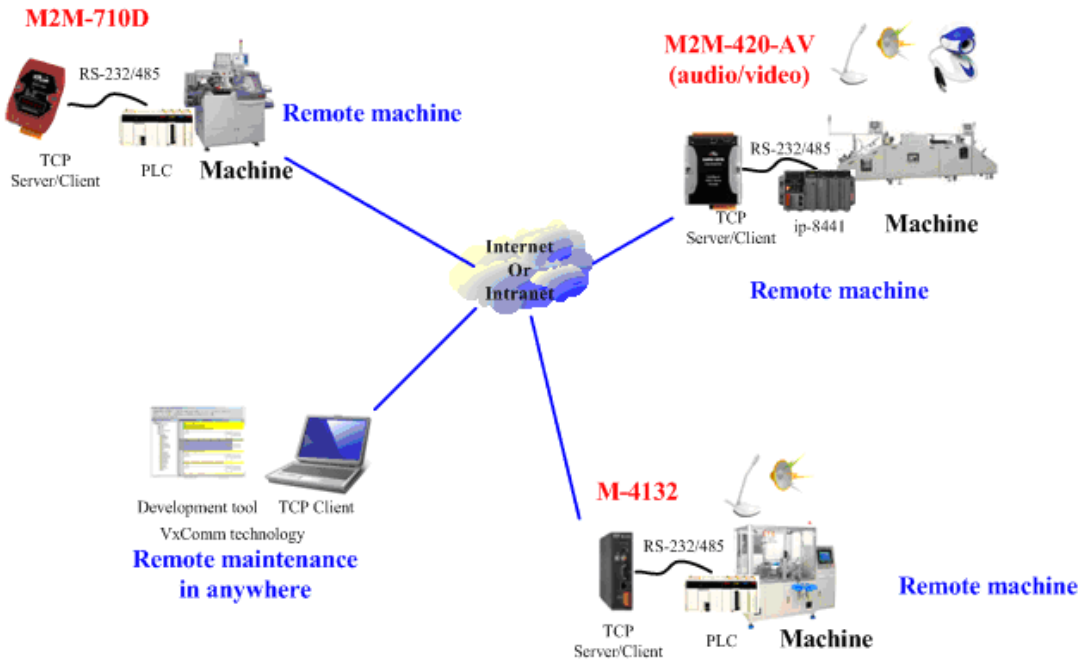
2.2.2 RS-485 connection

The RS-485 wiring diagram is shown below.



2.2.3 Ethernet connection

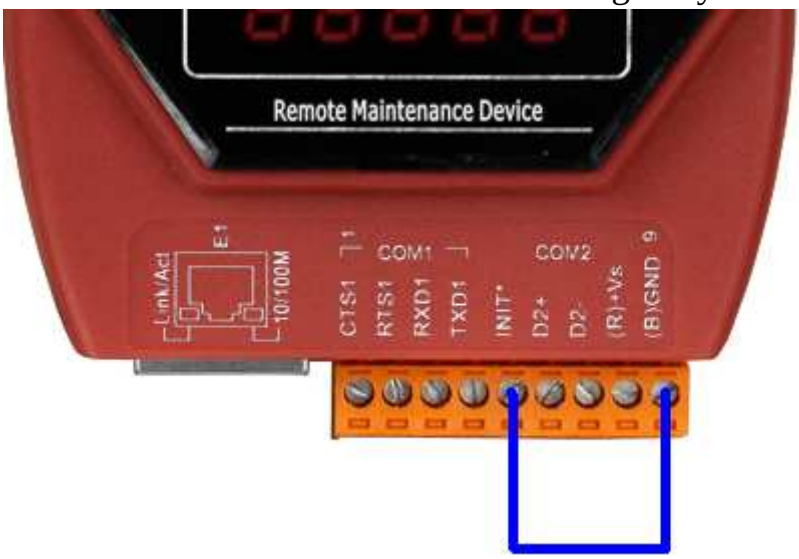
The Ethernet connection of M2M-710D has to take care of the firewall setting to make sure of the normal transmission when it connects to external network. The default open port is 11000 and the firewall must pass the port to keep good transmission.



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2.3 Init Switch and Init Pin

There are an Init switch and Init Pin inside M2M-710D to make it into initial mode. If Init Pin connects to GND or Init Switch is selected for init mode, system will clear all EEPROM information. The M2M-710D will restore originally setting.



▲ Init Pin



▲ Init Switch

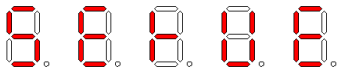
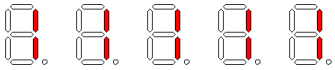
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2.4 5-Digit 7 Segment LED Display

M2M-710D provides 5-Digit 7 Segment LED Display. It has two display manners, Pair-Connection Server and Pair-Connection Client (VxServer).

❖ Pair-Connection Server

(1)Start Display:

Stat Display	Information
	In initial state
	Pair-Connection Server Mode
	Shows the local IP or DHCP sequentially
	Show listen port
	Shows the setting of Com port C#:1/2 represents COM1/COM2 Baud: 300~115200. Data: 7 or 8 Parity: 0(None), 1(Even) or 2(Odd) Stop: 1 or 2

(2)Listen:

Login Display	Information
	Listening
	The host name is wrong in Pair-Connection Client site. Check the names in server and client modules whether they are the same.

(3)Serial communication:

Serial communication messages	Information

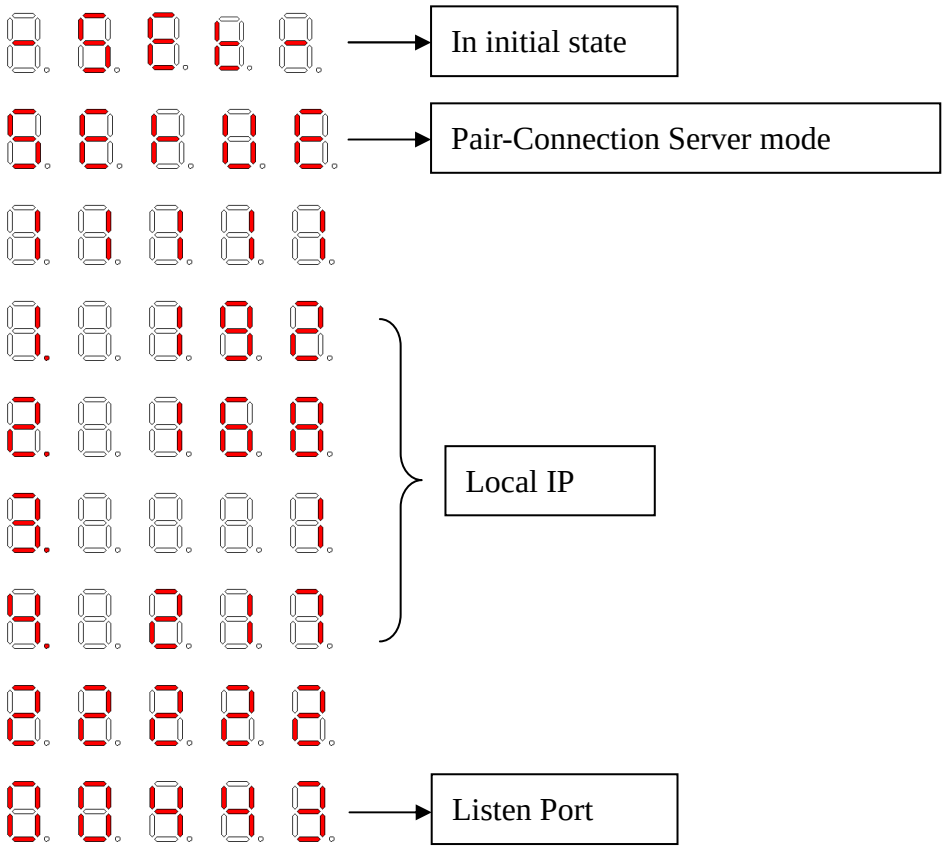
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	Port：1(RS232) Date：8 Parity：none Stop bit：1
	Baud rate：9600

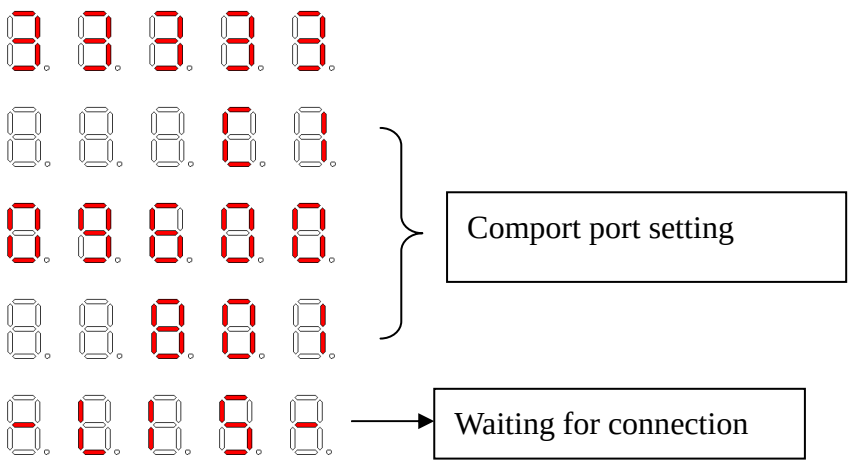
Example:

IP	192.168.1.217
Listen port	443
Com Port	1(RS232)
Baud rate	9600
Date	8
Parity	none
Stop bit	1

The shown messages would display sequentially as follows.
The interval time between every message is 500 ms.

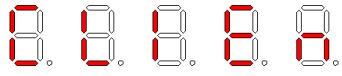
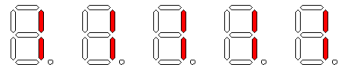
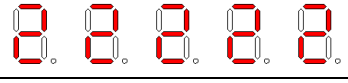
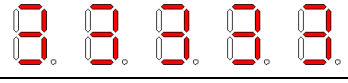
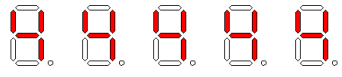


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❖ Pair-Connection Client (VxServer)

It will display the local IP (if setting is DHCP, it will display "DHCP" firstly), server IP, port of communication, and setting of comport at the start moment.

Stat Display Process	Information
	In initial state
	Pair-Connection Client or VxServer mode
	Shows the local IP or DHCP sequentially
	Show the Pair-Connection Server IP or VxServer IP sequentially.
	Show connected port
	Show Comport configuration C#:1/2 represents COM1/COM2 Baud: 300~115200. Data: 7 or 8 Parity: 0(None), 1(Even) or 2(Odd) Stop: 1 or 2

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Login Pair-Connection Server:

Login Display	Information
	Connecting: The word “Conn.” twinkled Login: Display the word “Conn.”

Serial communication:
When M2M-710D starts successfully, it will login the defined server automatically. If it cannot connect to the server, it will reset after 50 seconds.

Serial communication messages	Information
	Com Port：1(RS232) Date：8 Parity：none Stop：1
	Baud rate：9600

Example:

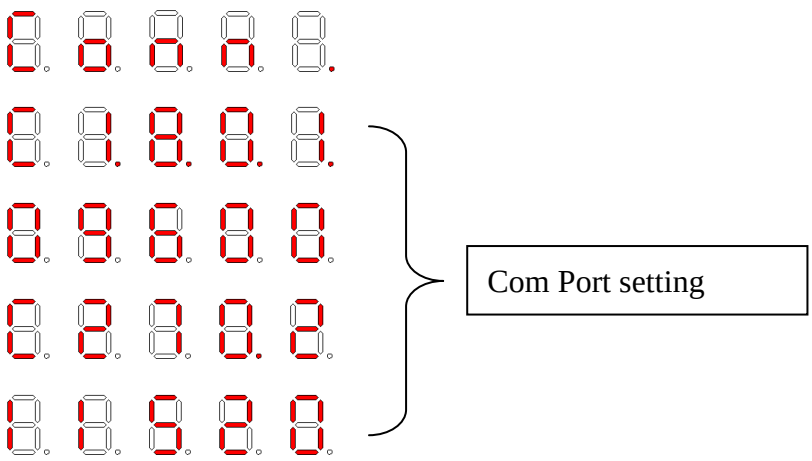
IP	192.168.1.217
Pair-Connection Server IP 或 VxServer IP	192.168.1.210
Connected port	11000
Com Port	1(RS 232)
Baud rate	9600
Date	8
Parity	none
Stop bit	1
Com Port	2(RS 485)
Baud rate	115200
Date	7
Parity	none
Stop bit	2

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The shown messages would display sequentially as follows. The interval time between every message is 500 ms.



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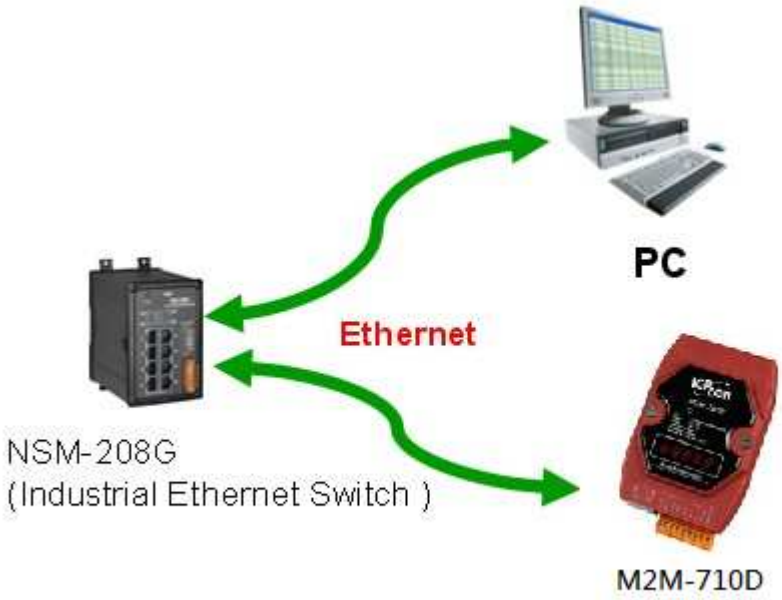
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3. Configuration and Operation with Web Browser

The M2M-710D module is built-in web server, the user can configure and operate the M2M-710D by web browser (ex: IE).

3.1 Connection Setting

Before you open the web browser to configure the module, it needs to connect the M2M-710D and your PC in the same sub network or the same Ethernet Switch (as shown in figure 7) and set network settings (such as IP/Mask/Gateway) of the PC. The example of connection setting will be described below and Microsoft Windows XP Professional SP2 is used.



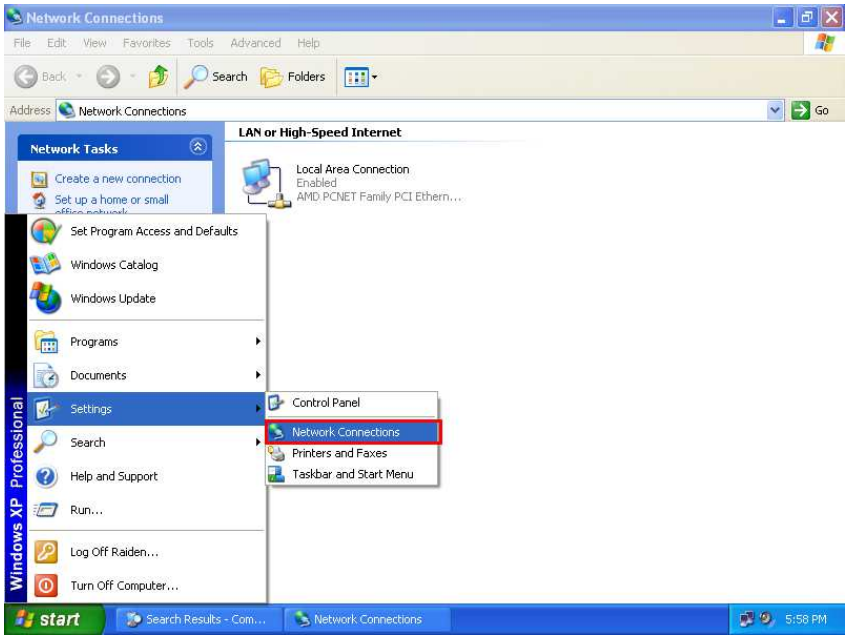
▲Connection Architecture of PC and M2M-710D

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Connection steps:

☛ Network Connection items

Step 1 Click “start→Settings→Network Connections”



▲Click “start→Settings→Network Connections”

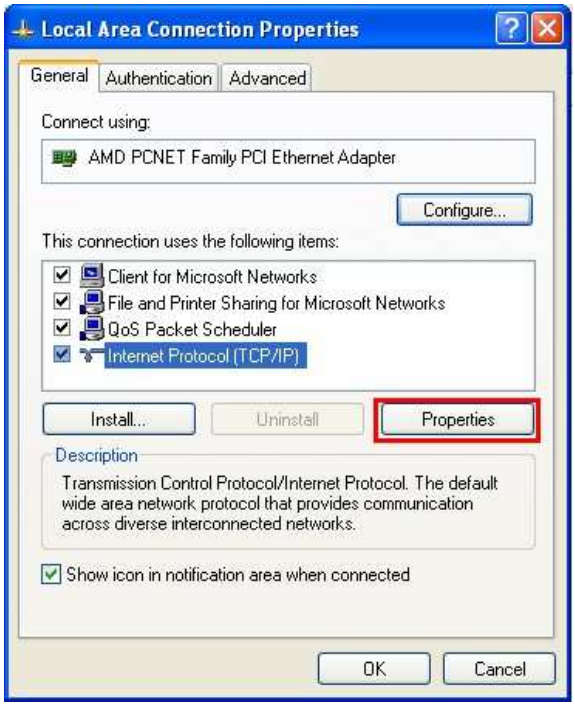
Step 2: Click “Properties” button



Step 3: Select “Internet Protocol (TCP/IP)” and click

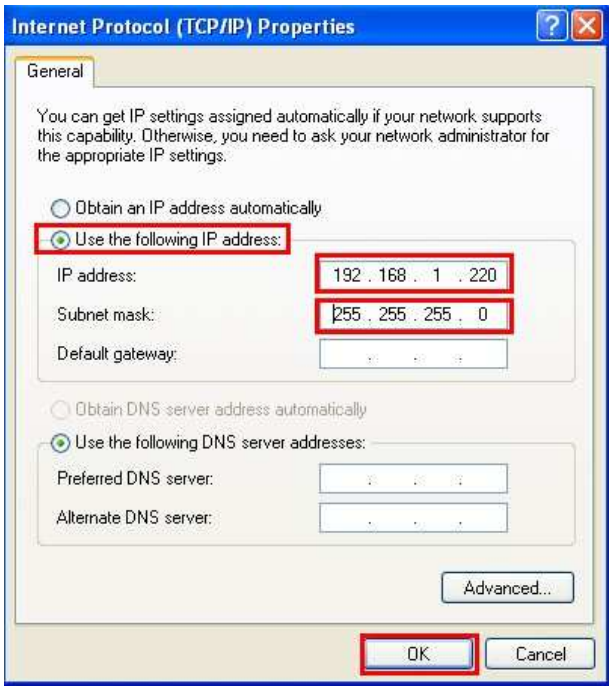
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Properties” button



☛ Network Connection Settings

The settings must have the same domain and different IP with the M2M-710D. (Ex: M2M-710D’s default IP = 192.168.1.217, PC’s IP = 192.168.1.210).



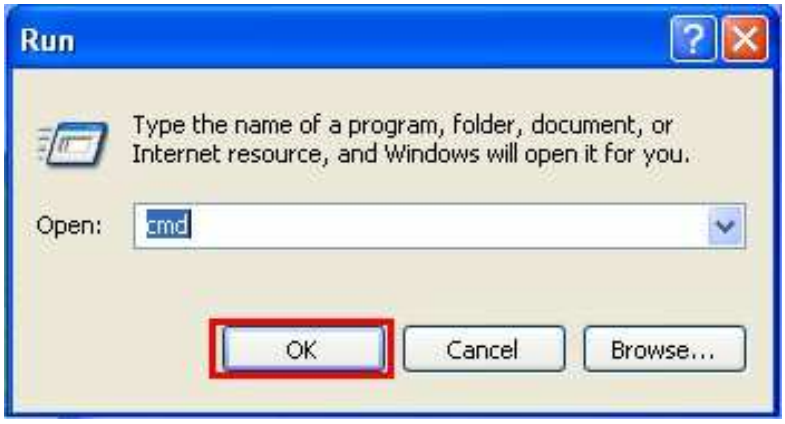
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☛ Test Connection Setting

Step 1: Click “start→Run...”

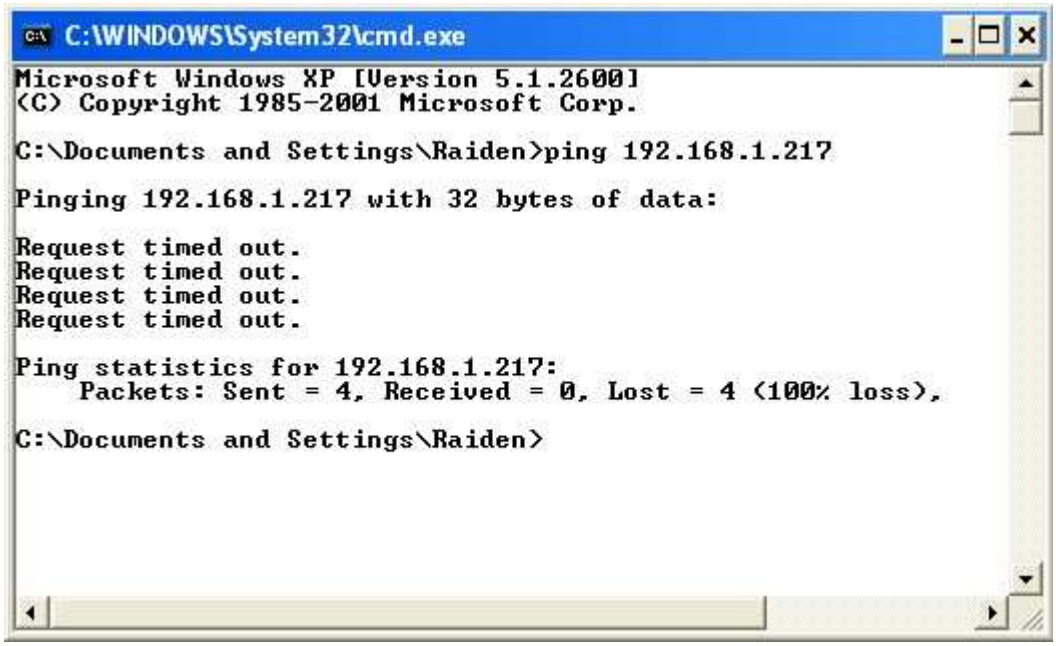


Step 2: Key in “cmd” and then click “OK” button



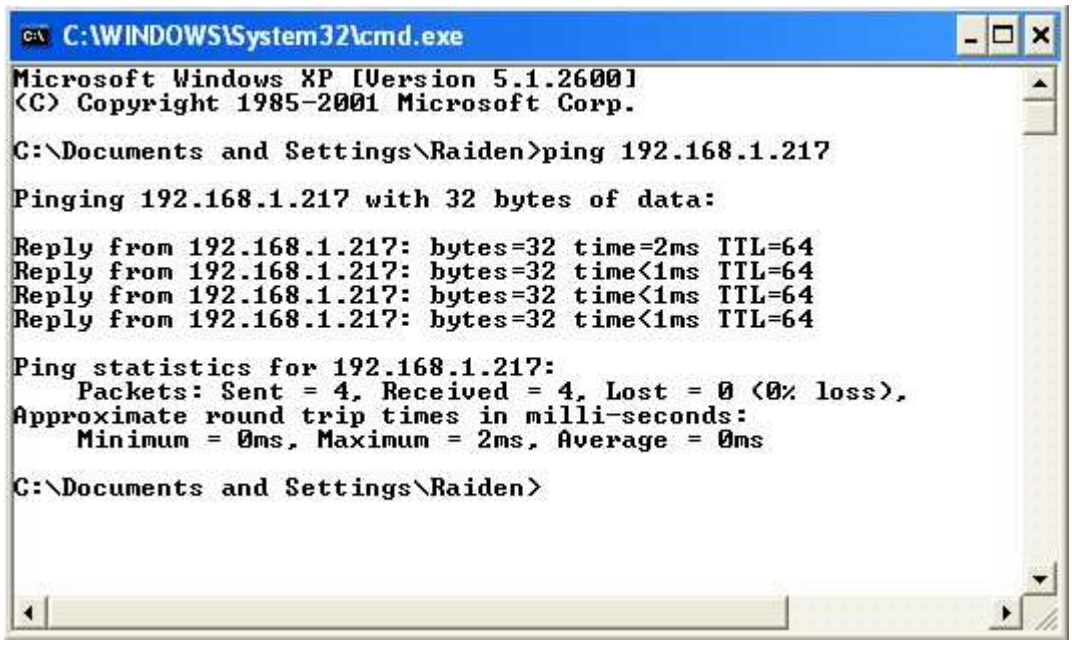
Step3: key in “ping 192.168.1.217” and click “Enter”. If the response message shows “Request timed out” (figure 14), it means the network settings between PC and the module are not correct. Please check the network is available and the settings are all correct.

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▲ wrong status

If the network settings are correct, it will show “Packets: Sent=4, Received=4, Lost=0“. As shown below:



▲right status

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3.2 Main Web Configuration—function menu

Now the PC is set completely and working well with the M2M-710D. Please open web browser (ex: IE, Mozilla, etc.) on PC and key in http://192.168.1.217/main.htm in the Address line and then press “Enter” key to link the M2M-710D, as shown below.



▲Web Configuration Page

In the figure above, the left side is the function menu and the other is the setup page in the first page. The content of function menu of Pair-Connection Server mode, Pair-Connection Client mode and VxServer mode is different, as shown in the below.

Function menu (Pair-Connection Server mode)

- ❖ Login
- ❖ User Account
- ❖ Standard Config
- ❖ DDNS Config
- ❖ Com Port Config
- ❖ Operation Mode
- ❖ Information

Reboot

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Function menu (Pair-Connection Client mode)

- ❖ Login
- ❖ User Account
- ❖ Standard Config
- ❖ Com Port Config
- ❖ Operation Mode
- ❖ Information

Reboot

Function menu (VxServer mode)

- ❖ Login
- ❖ User Account
- ❖ Standard Config
- ❖ Operation Mode
- ❖ Information

Reboot

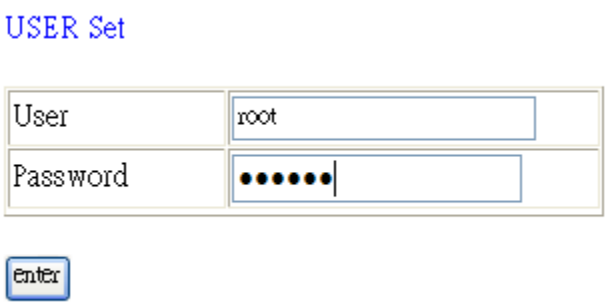
The “Reboot” button can provide the user to restart the M2M-710D.

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3.3 Sub Web Configuration—function menu

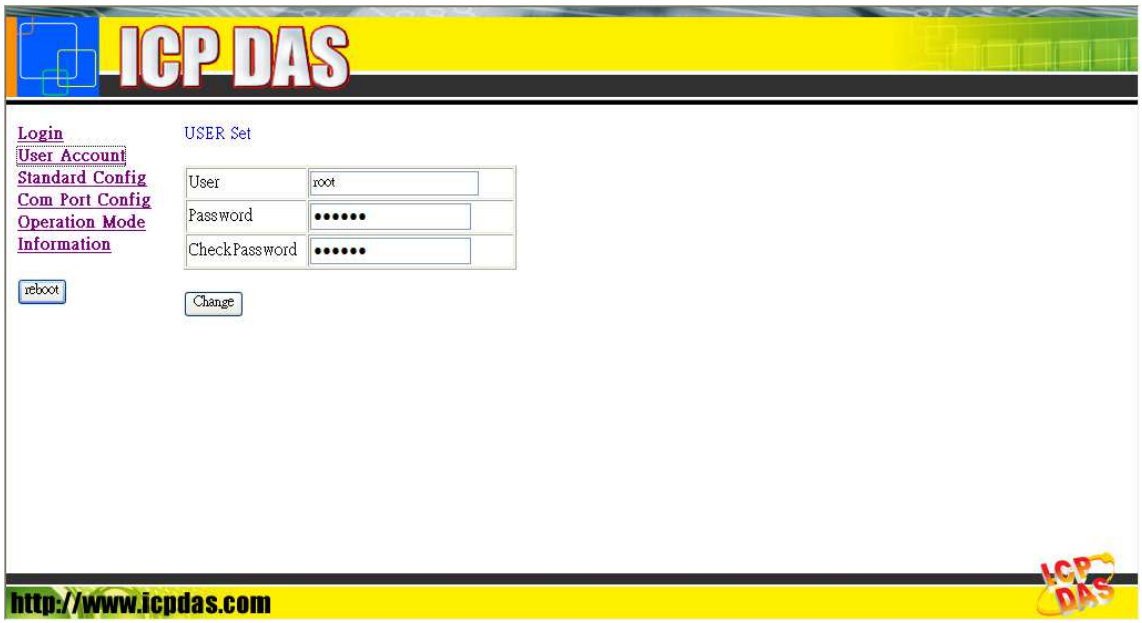
3.3.1 Login

Login interface:



3.3.2 User Account

When login is successful, user can change his (her) password and user name in this interface.



3.3.3 Standard Config

When users change the settings, they must restart the M2M-710D to have an effect. The system has three kinds of modes, and they have different contents:

(1) VxServer mode: M2M-710D connects with PC directly.

(2) Pair-Connection Server mode: Establish connection with Pair-Connection Client of M2M devices.

(3) Pair-Connection Client mode: Establish connection with Pair-Connection Server of M2M devices.

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❖ Pair-Connection Server mode

Host Name	For the module name. The maximum length is 15.
Client Name	The modules that can connect with Server. (Server's permission list.) The maximum length is 15.
Communication Port	The user can set the port number of the server that the client wants to link in this setting. The Communication Port numbers between Pair-Connection Client and Pair-Connection Server must be the same as each other.
Heart Bit	Whether to transmit Heartbeat packet automatically or not. Recommend setting: Enable.
Boot Protocol (Static IP /DHCP)	M2M-710D supports two kinds of IP modes; they are "Static IP" and "DHCP". The user can choose one of these modes to set the IP address of M2M-710D.
IP Address	When Boot Protocol is "Static IP", the user can set IP address of M2M-710D in this setting.
Net Mask	When Boot Protocol is "Static IP", the user can set subnet mask of M2M-710D in this setting.
Gateway	When Boot Protocol is "Static IP", the user can set gateway of M2M-710D in this setting.
DNS Server	When Boot Protocol is "Static IP", the user can set DNS server of M2M-710D in this setting.

❖ Pair-Connection Client mode

Host Name	For the module name. The maximum length is 15.
Connect to Server by：IP / DNS	The setting can provide the Pair-Connection Client to connect with the Pair-Connection Server by the IP or DNS of the server.
Server name	The user can set the DNS of the server that the client wants to connect to. The maximum length is 15.
Server IP	The user can set the IP address of the Pair-Connection Server that the Pair-Connection Client wants to connect to.
Communication Port	The user can set the port number of the server that the clients want to link in this setting.

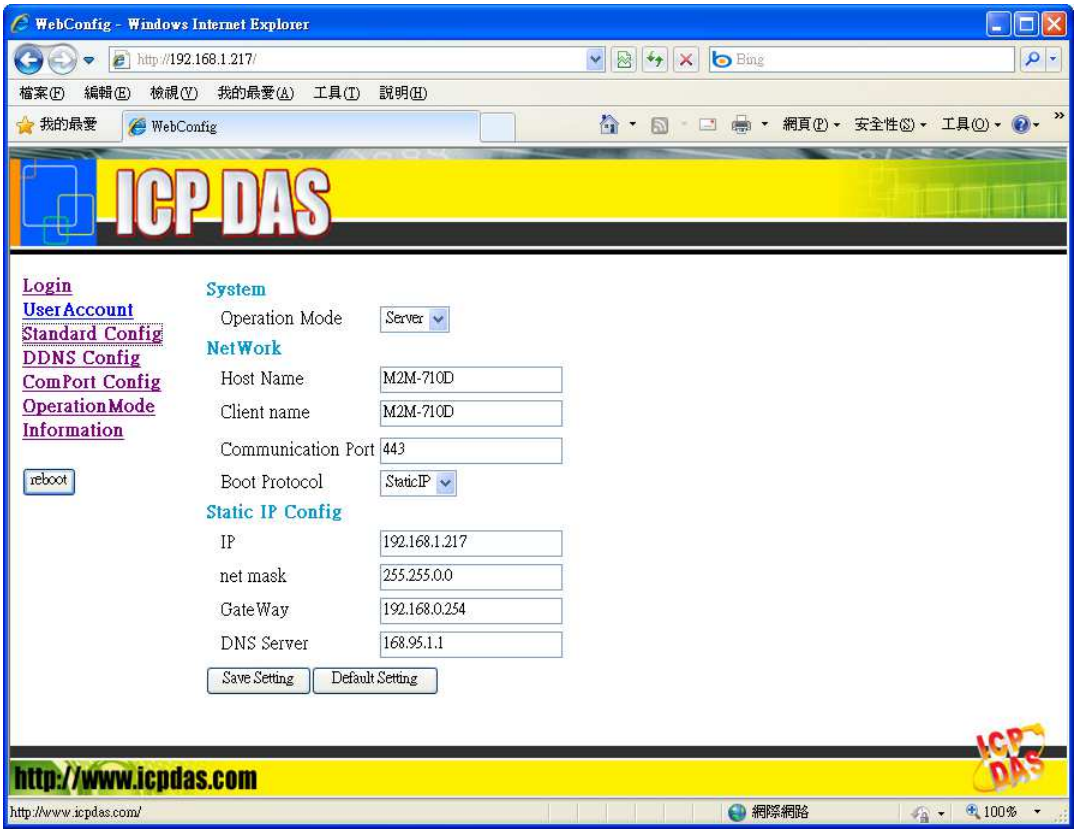
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Boot Protocol (Static IP /DHCP)	M2M-710D supports two kinds of IP modes; they are “Static IP” and “DHCP”. The user can choose one of these modes to set the IP address of M2M-710D.
IP Address	When Boot Protocol is “Static IP”, the user can set IP address of M2M-710D in this setting.
Net Mask	When Boot Protocol is “Static IP”, the user can set subnet mask of M2M-710D in this setting.
Gateway	When Boot Protocol is “Static IP”, the user can set gateway of M2M-710D in this setting.
DNS Server	When Boot Protocol is “Static IP”, the user can set DNS server of M2M-710D in this setting.

❖ VxServer mode

Host Name	For the module name. The maximum length is 15.
Station ID	Users can identify various M2M devices via Station ID. The Station ID of each M2M device doesn’t repeat.
Connect to Server by：IP / DNS	The setting can provide M2M-710D to connect with the VxServer by the IP or Domain Name of VxServer.
Server IP	Set the IP address of VxServer.
Communication Port	Set the Communication Port of VxServer, and the default value is 11000.
Boot Protocol (Static IP /DHCP)	M2M-710D supports two kinds of IP modes; they are “Static IP” and “DHCP”. The user can choose one of these modes to set the IP address of M2M-710D.
IP Address	When Boot Protocol is “Static IP”, the user can set IP address of M2M-710D in this setting.
Net Mask	When Boot Protocol is “Static IP”, the user can set subnet mask of M2M-710D in this setting.
Gateway	When Boot Protocol is “Static IP”, the user can set gateway of M2M-710D in this setting.
DNS Server	When Boot Protocol is “Static IP”, the user can set DNS server of M2M-710D in this setting.

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3.3.4 DDNS Config

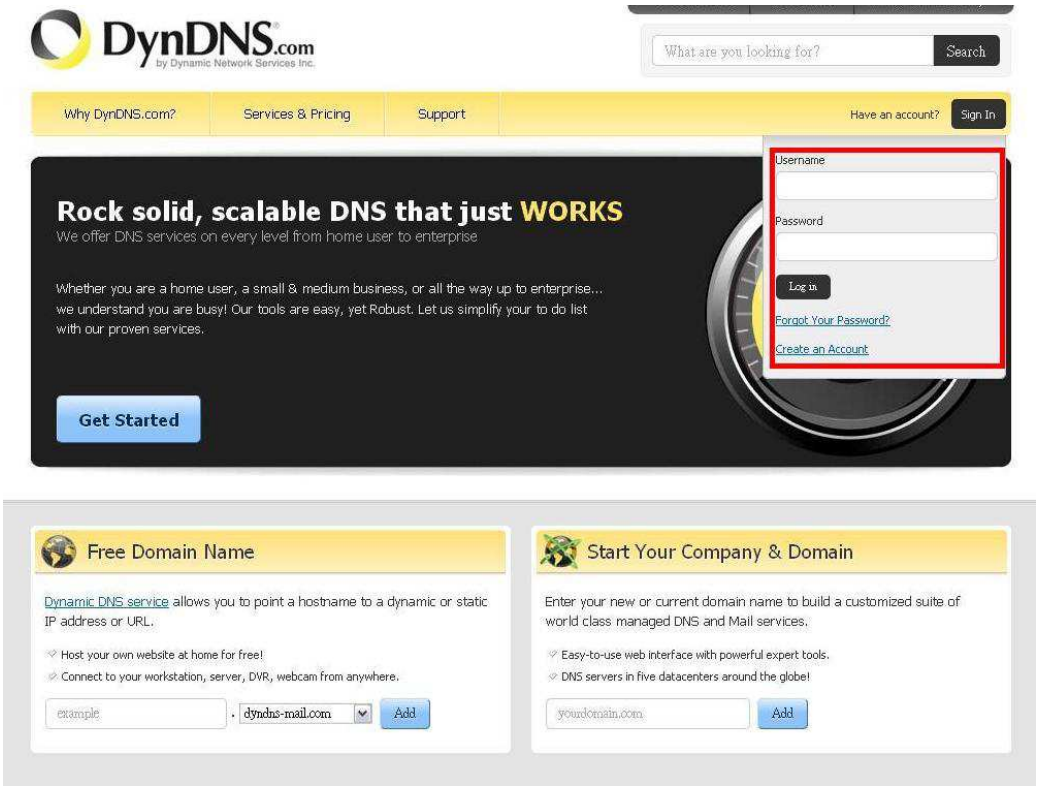
When the M2M-710D plays the role of server and Boot Protocol isn't "Static IP", the client may not connect with the server, because the IP address of the server is floating, not static. We provide a solution for this situation. That is DDNS service. When IP address of the server is changed, the server will register current IP to website that provides DDNS service. The client can connect with the server by domain name that the user registers.

☛ Note: Every company that provides DDNS service has different way to register. In order to make it correctly work, we recommend the user to use DDNS service that the DynDNS Company provide. DynDNS website: http://www.dyndns.com/

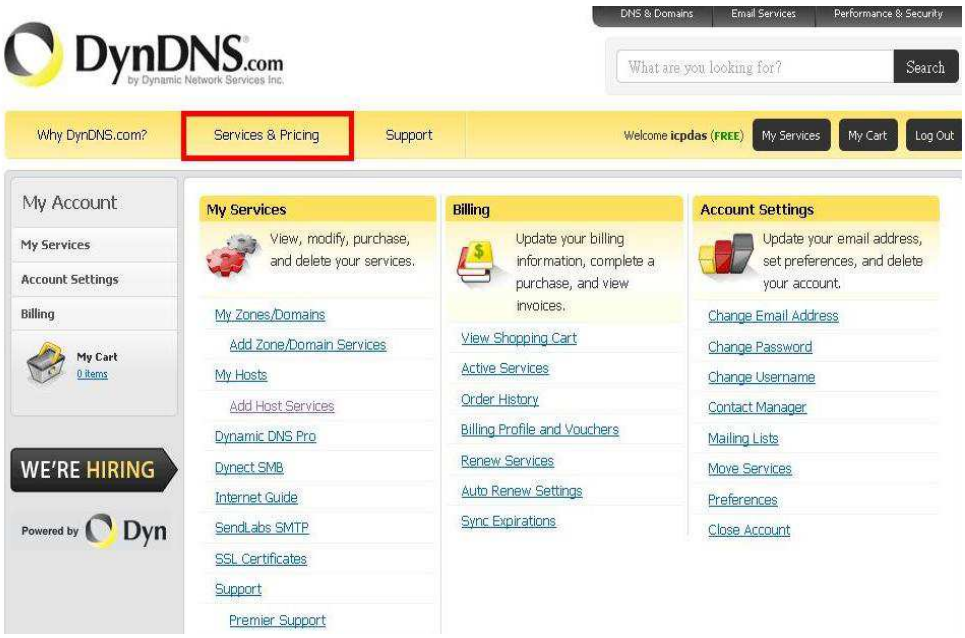
1. Create your Dynamic DNS account
   (1) Please open web browser (ex: IE, Mozilla, etc.) on PC and key in http://www.dyndns.com/ in the Address line and then press "Enter" key.

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(2) Key in “user name” and “password” and click “Login” button. If the user has not created user account, please click “Create Account” Hyperlink to create user account and then login user account.

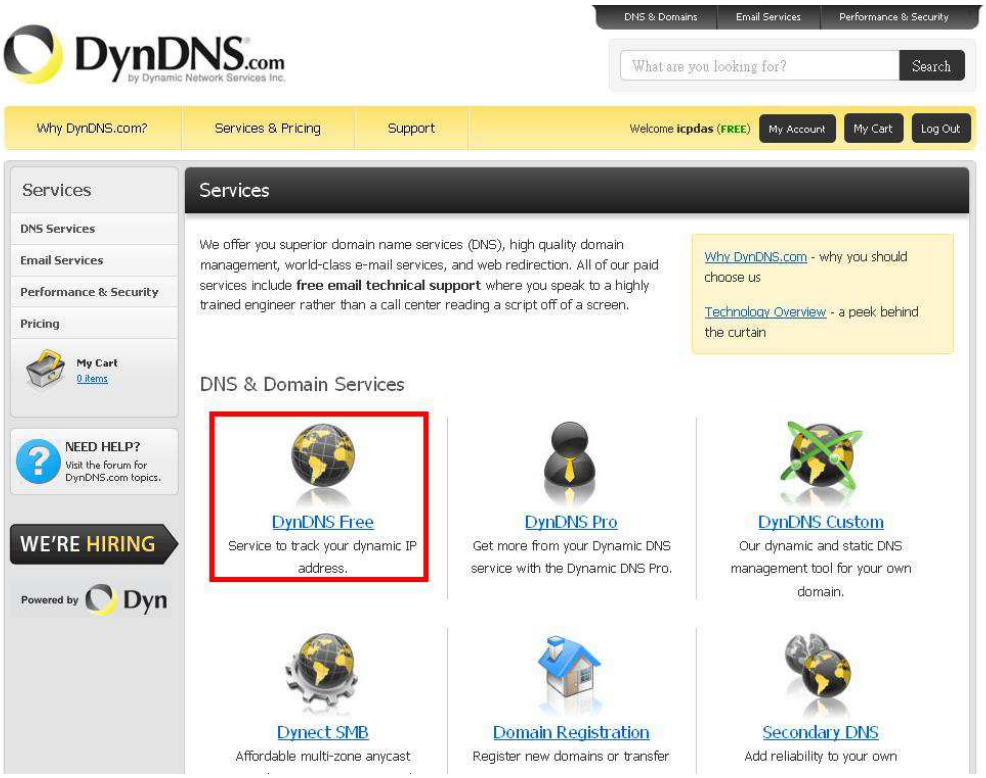


(3) Click “Services & Pricing” Hyperlink to enter Services page

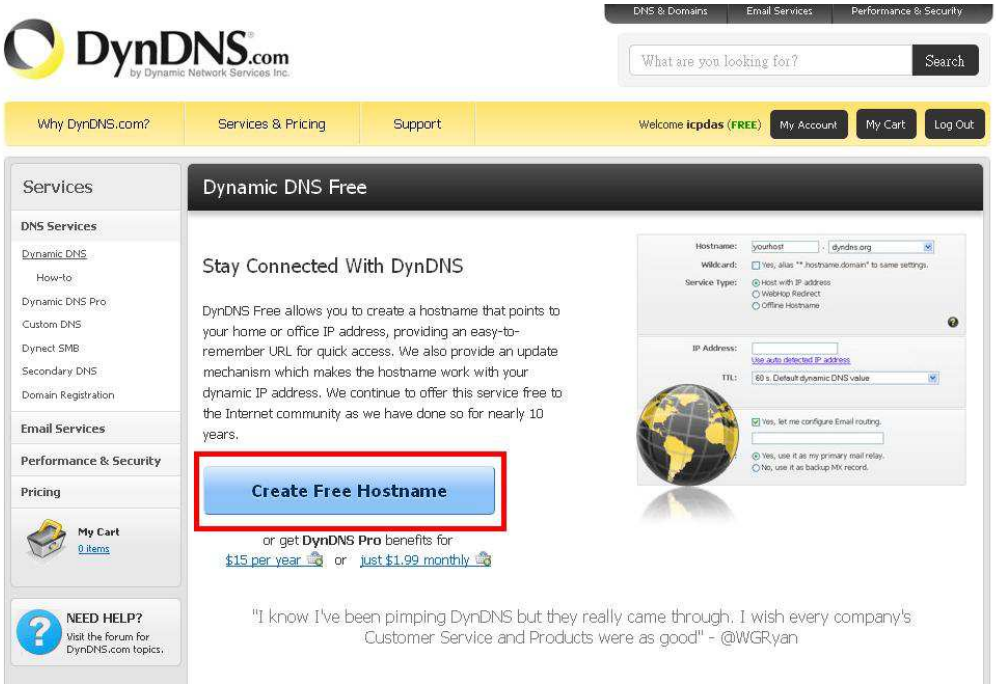


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(4) Click “DynDNS Free” Hyperlink to enter Dynamic DNS page



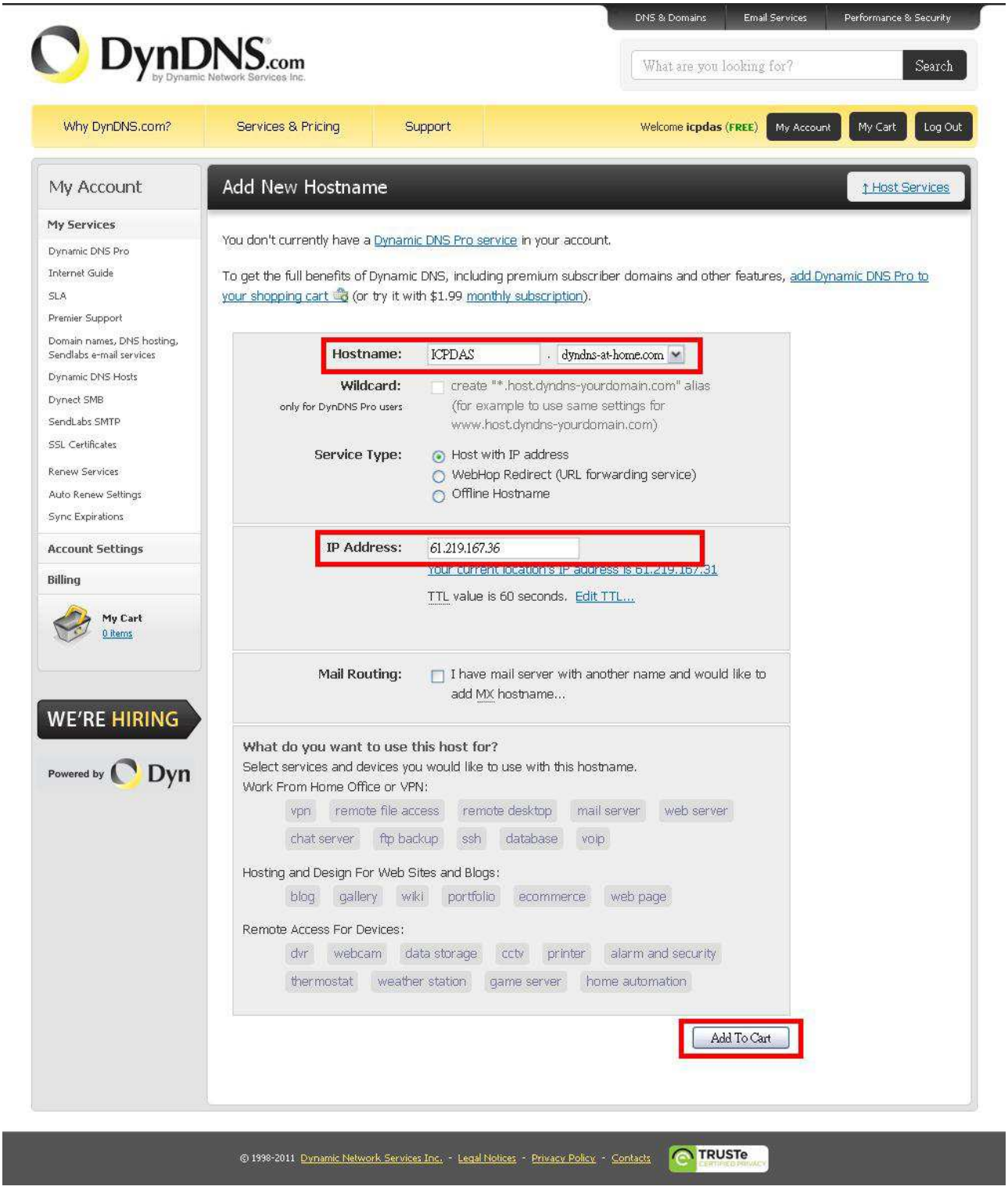
(5) Click “Create Free Hostname” button



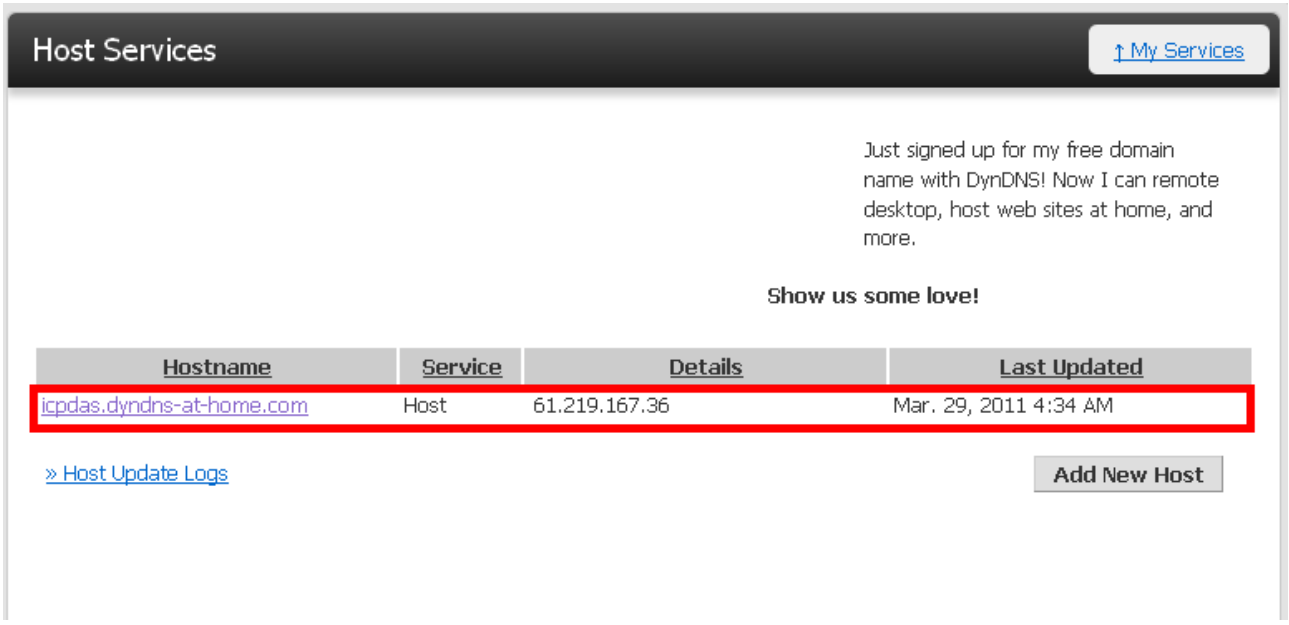
(6) Key in and select your hostname (ex:ICPDAS.dyndns-at-home.com), and key in IP address of the server. Don’t care the other settings and

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click “Create Host” button to complete the application.

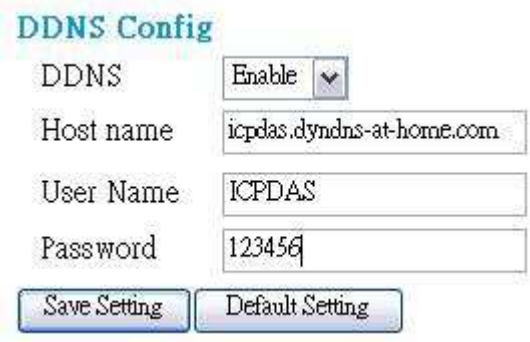


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2. DDNS Config (Set this item only in Pair-Connection Server mode)

DDNS	Disable / Enable The user can enable or Disable DDNS function by this setting.
Host Name	It is the hostname that user creates in DynDNS website (ex: icpdas.dyndns-athome.com)
User Name	It is the name of the user account in DynDNS website.
Password	It is the password of the user account in DynDNS website.



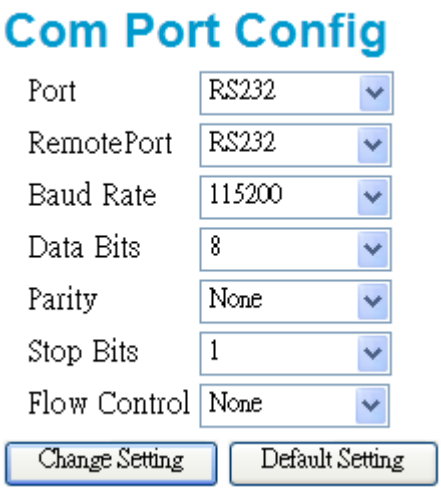
3.3.5 Com Port Config

The user can set com port setting of M2M-710D in this page. If com port setting of the server and client is different, Com port setting of the client will be covered by the server. When the user changes the setting in this page, the user must restart

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the M2M-710D to active the new setting.

Port	RS232 / RS485/Vxcomm Select com port connection from RS-232 or RS-485 or Vxcomm.
Remote Port	Correspond to client's port
Baud Rate	1200 / 2400 / 4800 / 9600 / 19200 / 38400 / 57600 / 115200 bps
Data Bits	7 / 8 data bits
Parity	None / Odd / Even
Stop Bits	Select stop bits of com port from 1 or 2 stop bits Data bit:7 的情況下，Stop Bits 才能設定成 2。 Usually users don't set the S
Flow Control	None / Hardware / XonXoff
Get Status	User can get current communication parameters from this button.



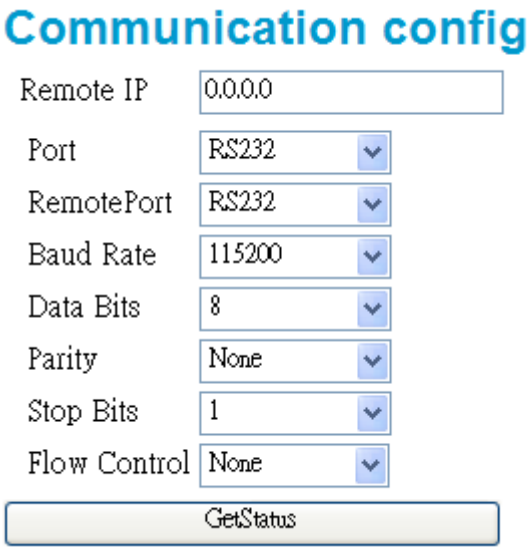
3.3.6 Operation Mode

Users can set the immediate communication settings in this interface, and it have no effect on system boot configuration.

Remote IP (Pair-Connection Server mode only)	Display the current connection's IP.
Port	Show the Comport that is going to be connected. (RS232/RS485/Vxcomm)
Remote Port	Remote client's IP.

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(Pair-Connection Server mode only)	
Baud Rate	Select baud rate of com port. (1200 / 2400 / 4800 / 9600 / 19200 / 38400 / 57600 / 115200 bps)
Data Bits	Select data bits of com port. (7 / 8 data bits)
Parity	Select parity of com port. (None / Odd / Even)
Stop Bits	Select stop bits of com port. (1 / 2 stop bits)
Flow Control	Select flow control of com port. (None / Hardware / XonXoff)
Get Status button	User can set current communication parameters from this button.



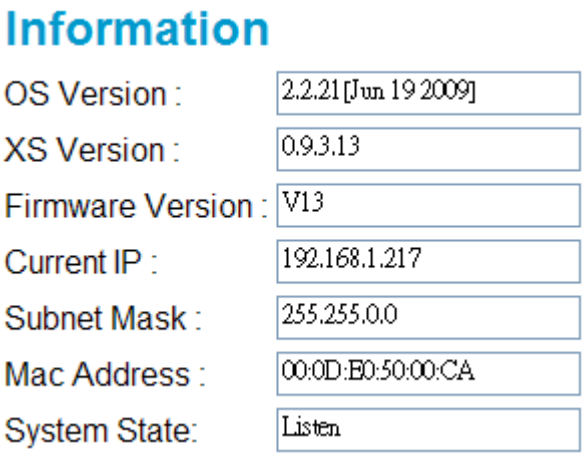
3.3.7 Information

1. OS Version: Show OS version.
2. XS Version: Show application program version.
3. Firmware Version: Show firmware version.
4. Current IP: Show current IP.
5. Subnet Mask: Show current subnet mask.
6. Mac Address: Show current Mac address.
7. System state:

Server	“Listen”: System is listening. “Communication”: Server is communicating with client
Client	“Initok ": Initialization is completed

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	“try to connect”: Client tries to connect with server “Communication”: Server communicates with client

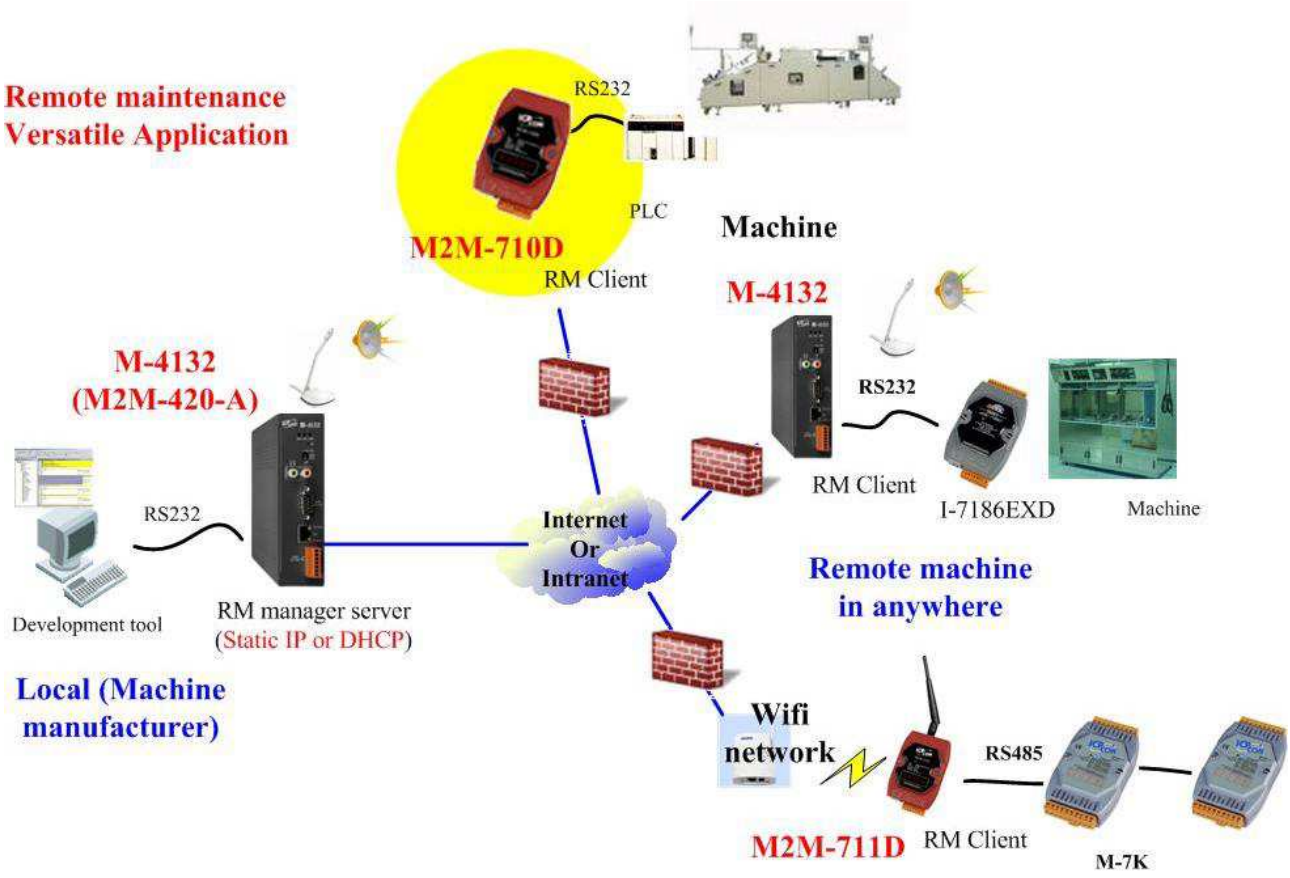


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4. Application

Application with M-4132

M2M-710D can be applied with M-4132. In this application, the M2M-710D is set as Client mode, and then M-4132 have RM Manager server function that can manage several RM client, and each of RM Client have different host name. This frame may apply in various applications more flexibly.

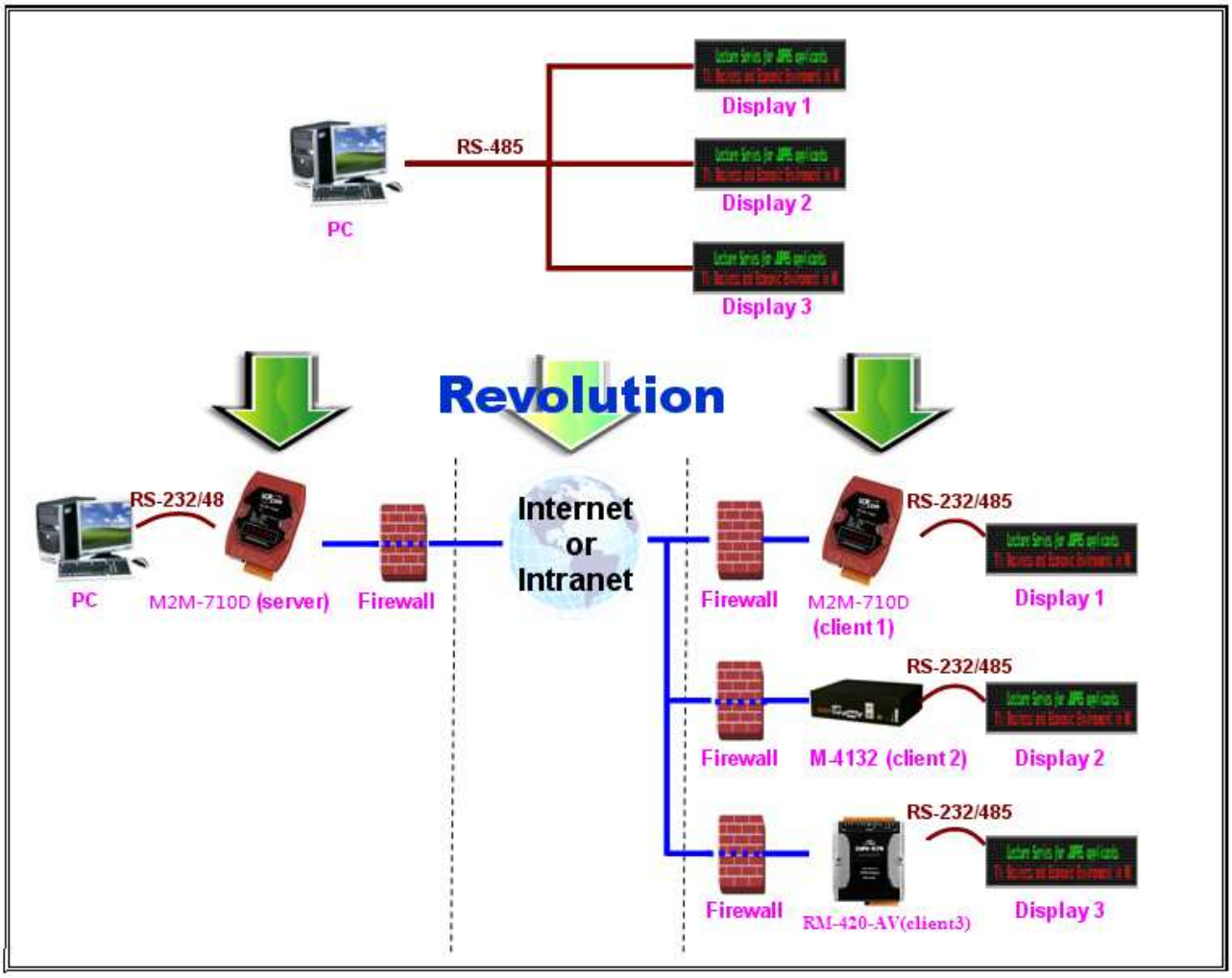


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Pair-Connection

This mode requires two M2M modules cooperate with each other, one is Pair-Connection Server the other is Pair-Connection Client.

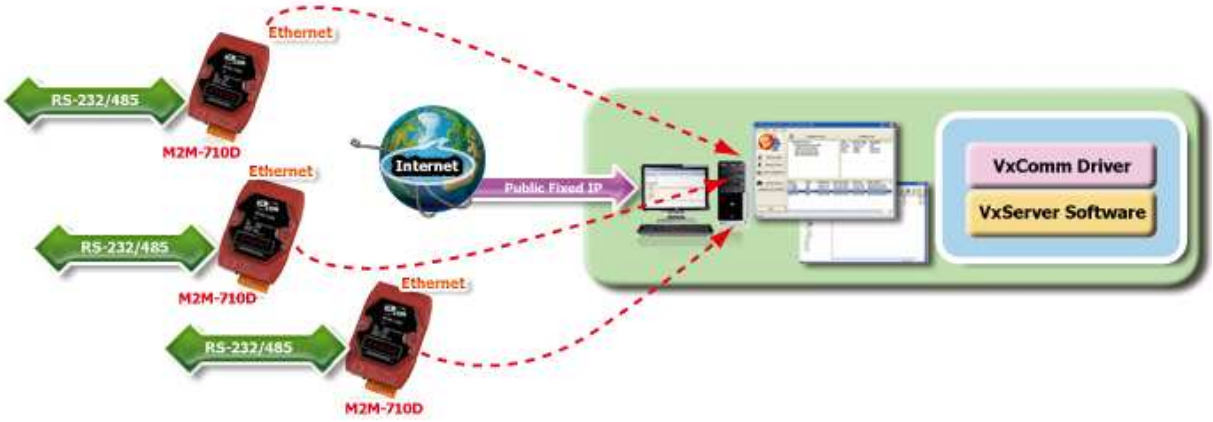
A server can accept one or more clients to login, but a server can only connect with the first client in pair connection mode. In this mode, two M2M-710Ds (one as Server, the other as Client) setup a virtual channel over Ethernet or Internet that allow serial (RS-232 or RS-485) data to pass through, as shown in figure.



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VxServer Software

The VxServer with VxComm Driver can create virtual COM ports in Windows and maps them to the serial ports of the M2M-710D devices through the Ethernet network. It's a good solution for remote serial device maintenance.



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5. VxServer Applications(Firmware ver:V25 or latter)

5.1 VxServer Introduction

The VxServer is a virtual com middleware software. The VxServer with VxComm Driver can create virtual COM ports in Windows and maps them to the serial ports of the GT-541/M2M-710D/M2M-711D devices through the Ethernet, GPRS, 3G and Wi-Fi network. The user's RS-232 client programs need only to change to the virtual COM port to access the serial devices connected to the device servers through the network



5.2 VxServer Installation

VxServer Software download link:
http://ftp.icpdas.com/pub/cd/usbcd/napdos/vxserver/software/
VxServer user manual:
http://ftp.icpdas.com/pub/cd/usbcd/napdos/vxserver/manual/



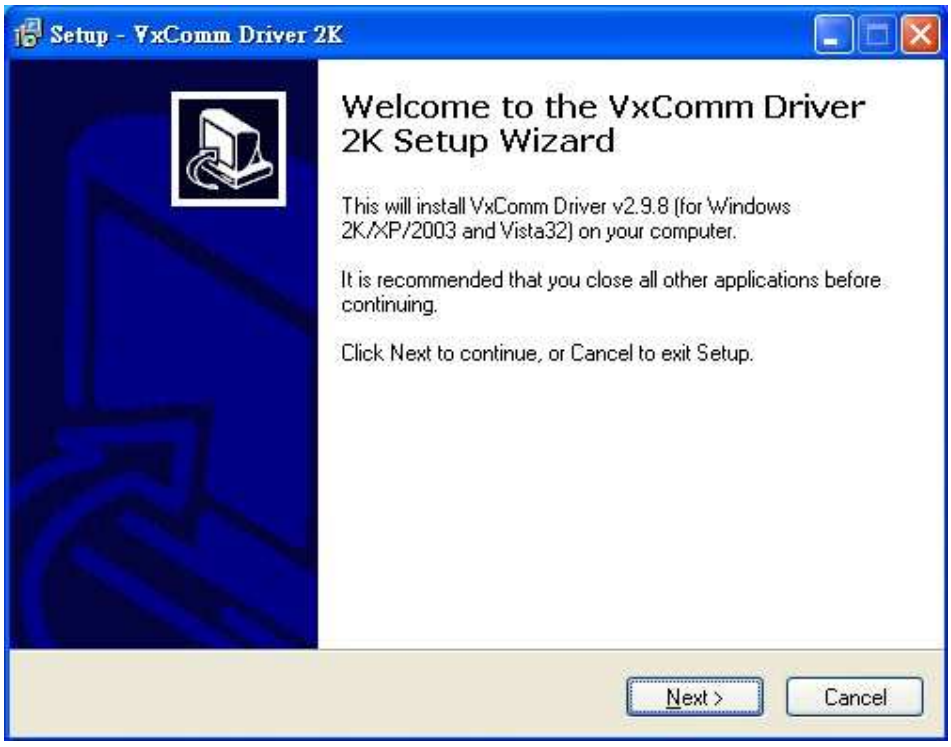
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5.3 VxComm Introduction

VxComm(Virtual Com) can create virtual COM ports in Windows and maps them to the serial ports of the M2M-710D devices through the Ethernet network. The user's RS-232 client programs need only to change to the virtual COM port to access the serial devices connected to the device servers through the network. Servicemen can maintain remote machines as real as he has been on the spot. That can not only reduce the business travel cost, but also save the time of waiting for maintaining equipments.

5.4 VxComm Driver Installation

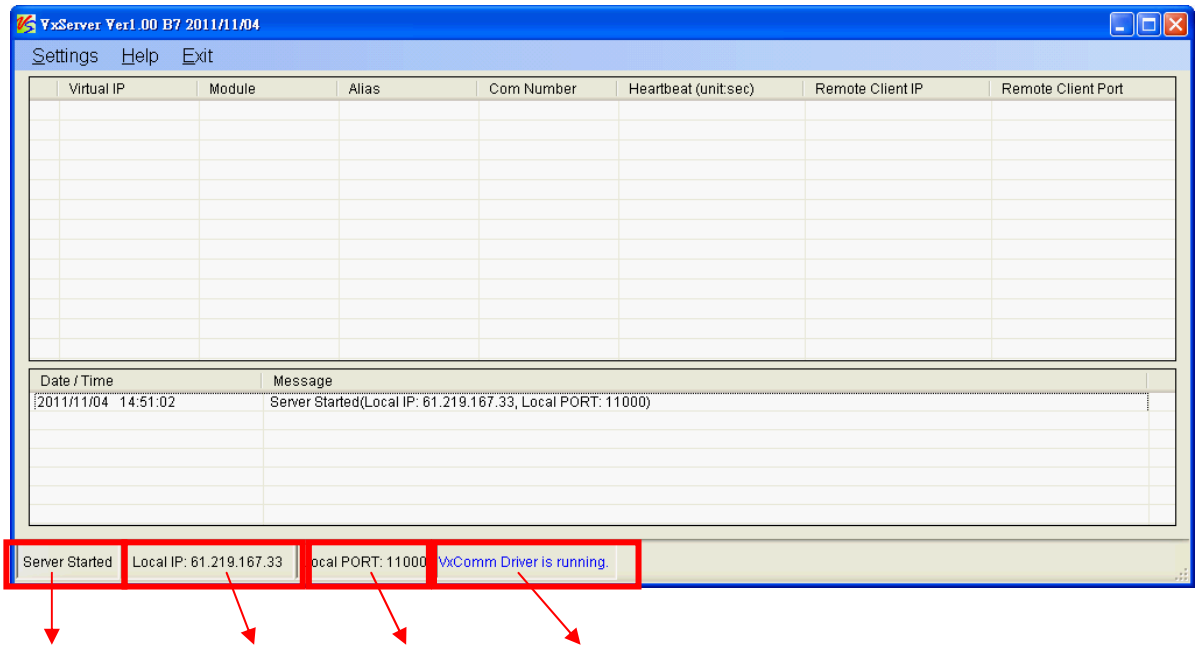
Download VxComm Driver:
http://ftp.icpdas.com/pub/cd/8000cd/napdos/driver/vxcomm_driver/
"VxComm2K_v2.11.05_setup.exe" for Windows NT4.0, 2000 /XP/2003 and Vista32 (32-bit)
"VxComm98.exe" for Windows 95/98/ME
Please select the most suitable for your Windows and download the latest version. And then, run the installer.



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5.5 VxServer Working

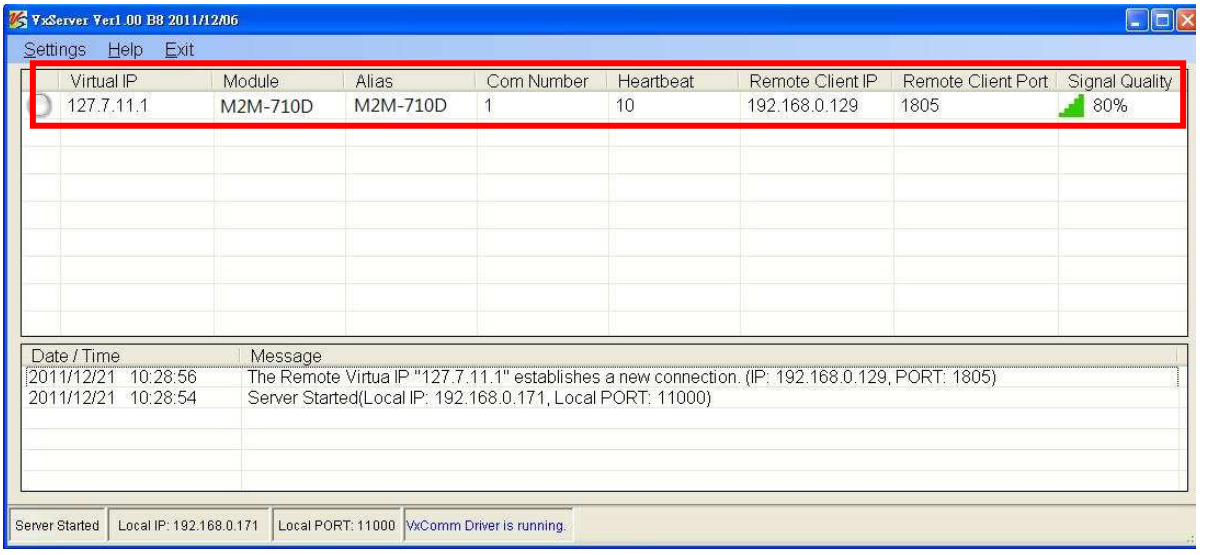
Step1: Open VxServer



Server States Local IP Local Port VxComm Driver States

Note: It means successful start if the Server States show “Server Started”.

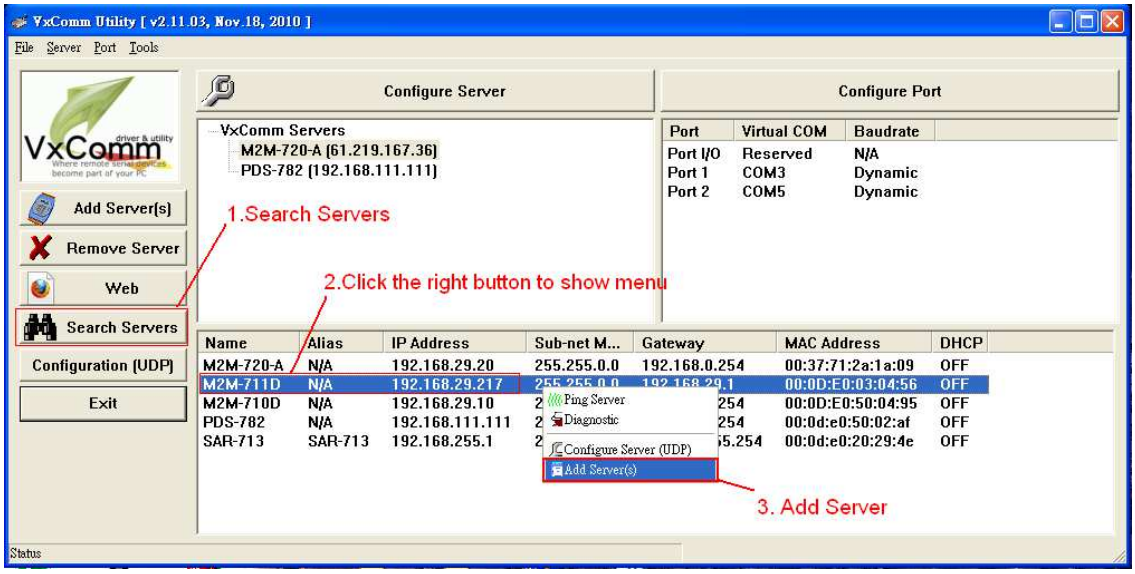
Step2: There are M2M-710D modules successful connect. As shown below:



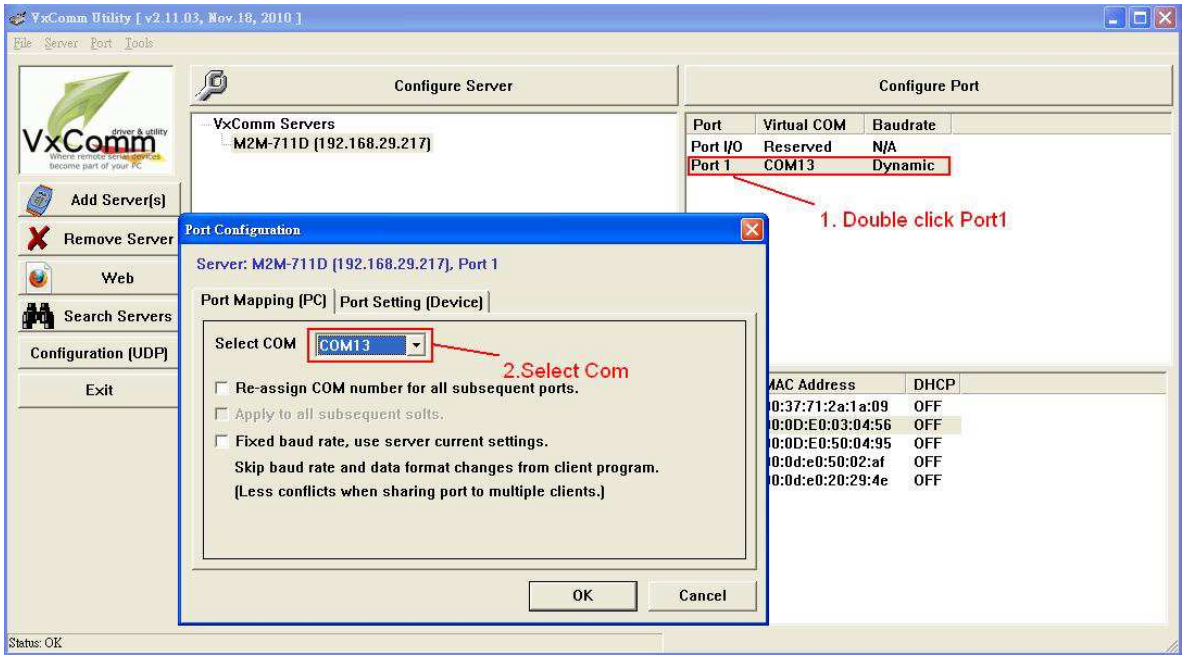
Step3: Open VxComm and add into M2M-710D VxComm

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Server

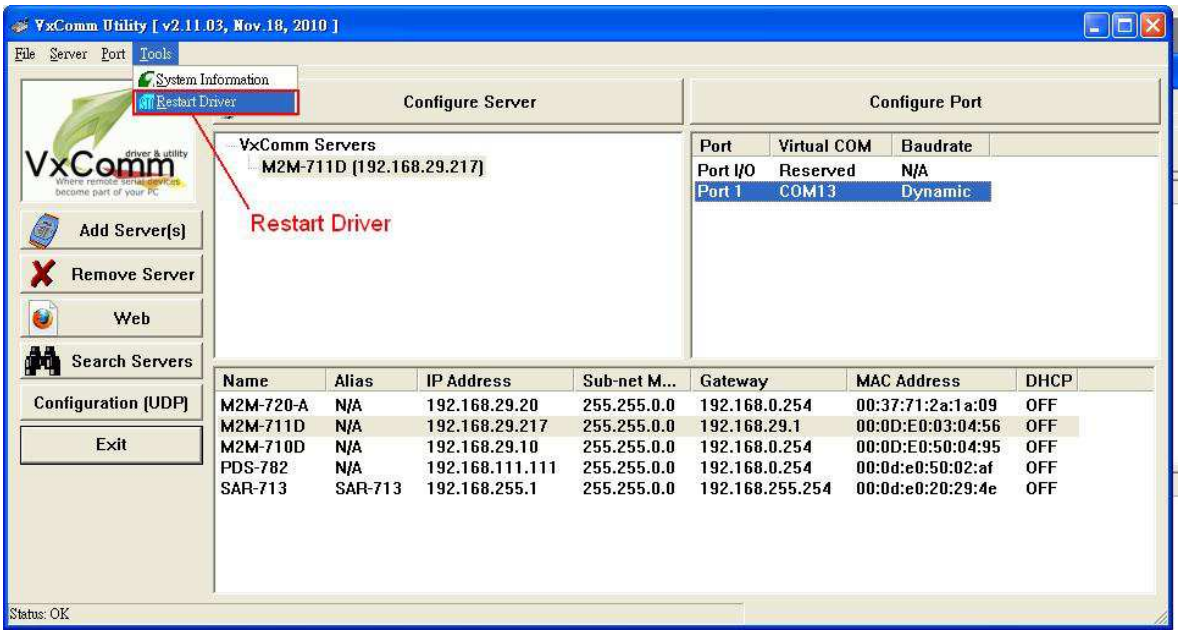


Step4: Double-Click “Port1” and open Port Configuration dialog window, and then select the suitable Com Port.



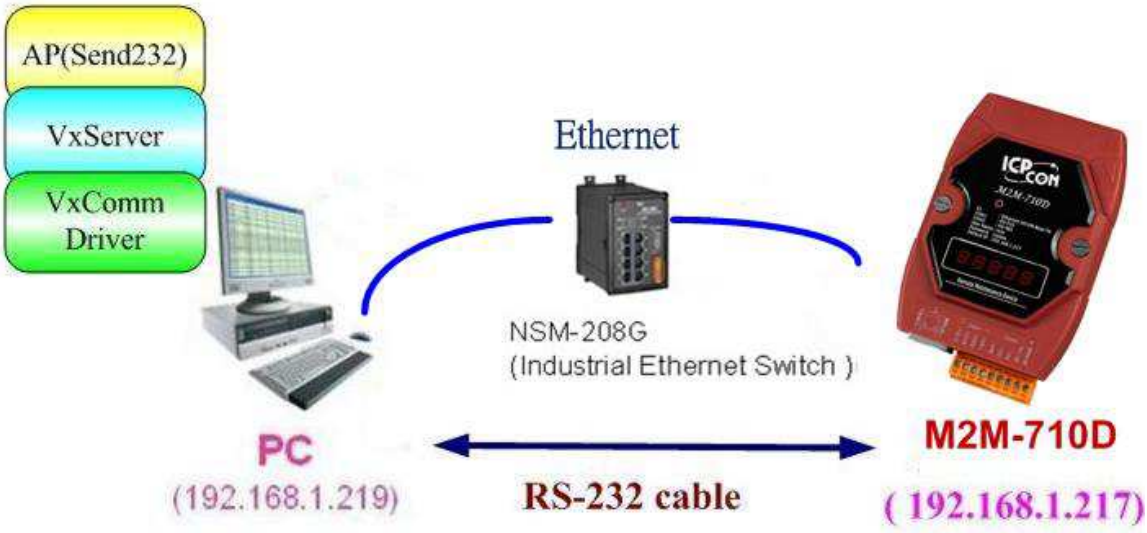
Step5: Reset VxComm Driver to make settings take effect.

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5.6 VxServer Mode Communication Test

Step1: Connect M2M-710D with PC as shown below:



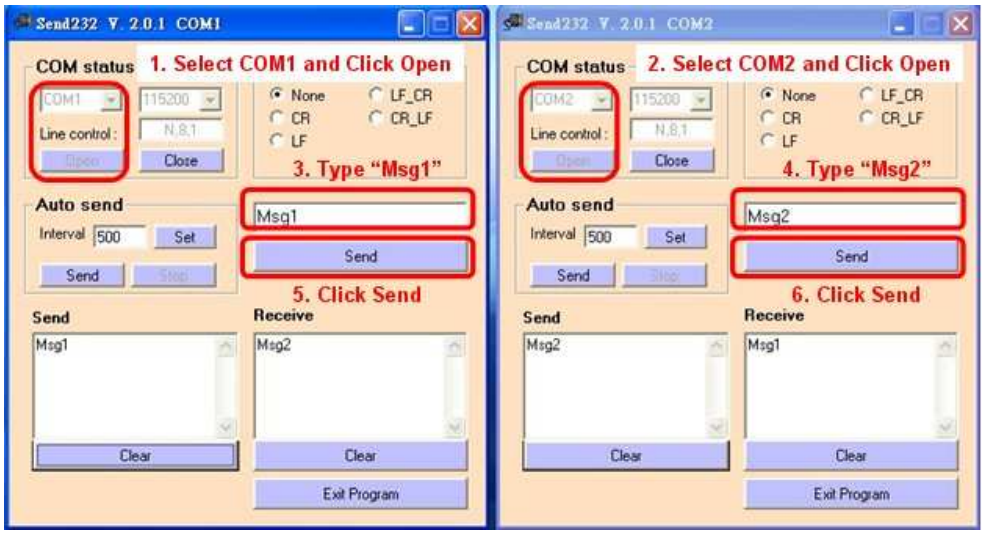
Step2: Assign the M2M-710D's Server Port1 to PC's virtual Com 13. Please refer to section 4.5.

Step3: Connect VxServer with M2M-710D: In the Standard

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Config setting web of M2M-710D, users have to set Server IP (For example, the IP in the above diagram is 192.168.1.219) and click “Save Setting” to finish connection.

Step4: Use Send232 Program to test communication. (Download link: http://ftp.icpdas.com/pub/cd/8000cd/napdos/7188e/tcp/pcdiag/source/send232.vb6_2.0.1) Open two Send232 programs, one use Com1 (connect with M2M-710D), the other use Com12 (produced by VxComm driver). Press the Send button respectively and you can see the two Send232 programs send the data with each other. As shown below:



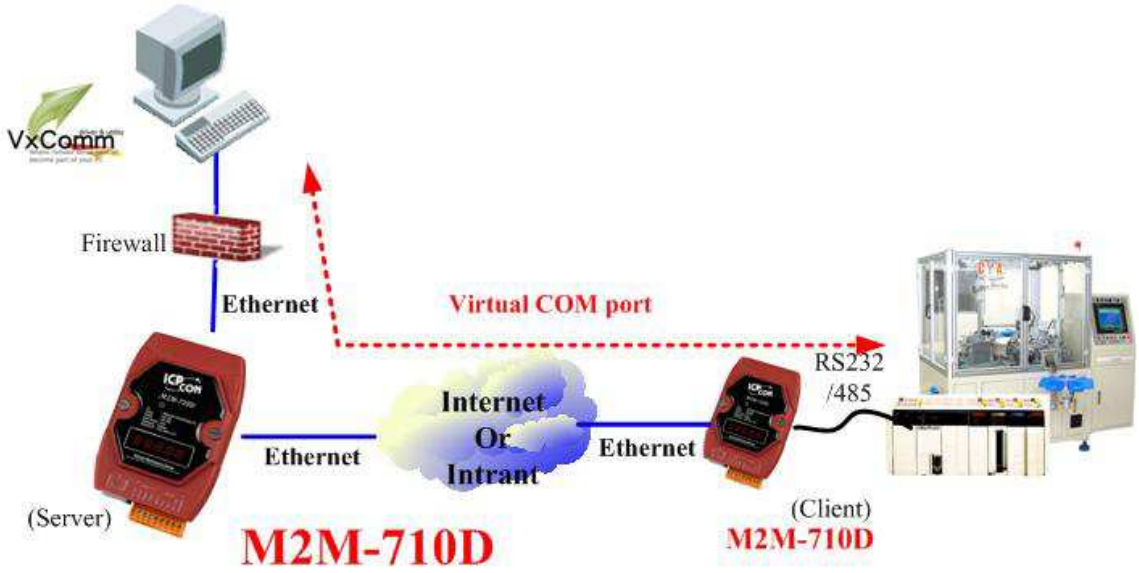
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6. VxComm Application (Firmware ver:V13 or latter)

6.1 VxComm Introduction

Using the VxComm (Virtual Com) technology, PC can create virtual Com Ports to map the Com Port of the M2M-710D. To use the VxComm application, users must install a VxComm Driver first. After installation, users can operate the virtual Com Port as a real Com Port in PC to access the serial devices connects to the M2M-710D. By doing this, you can operate the remote com port whatever and whenever you are.

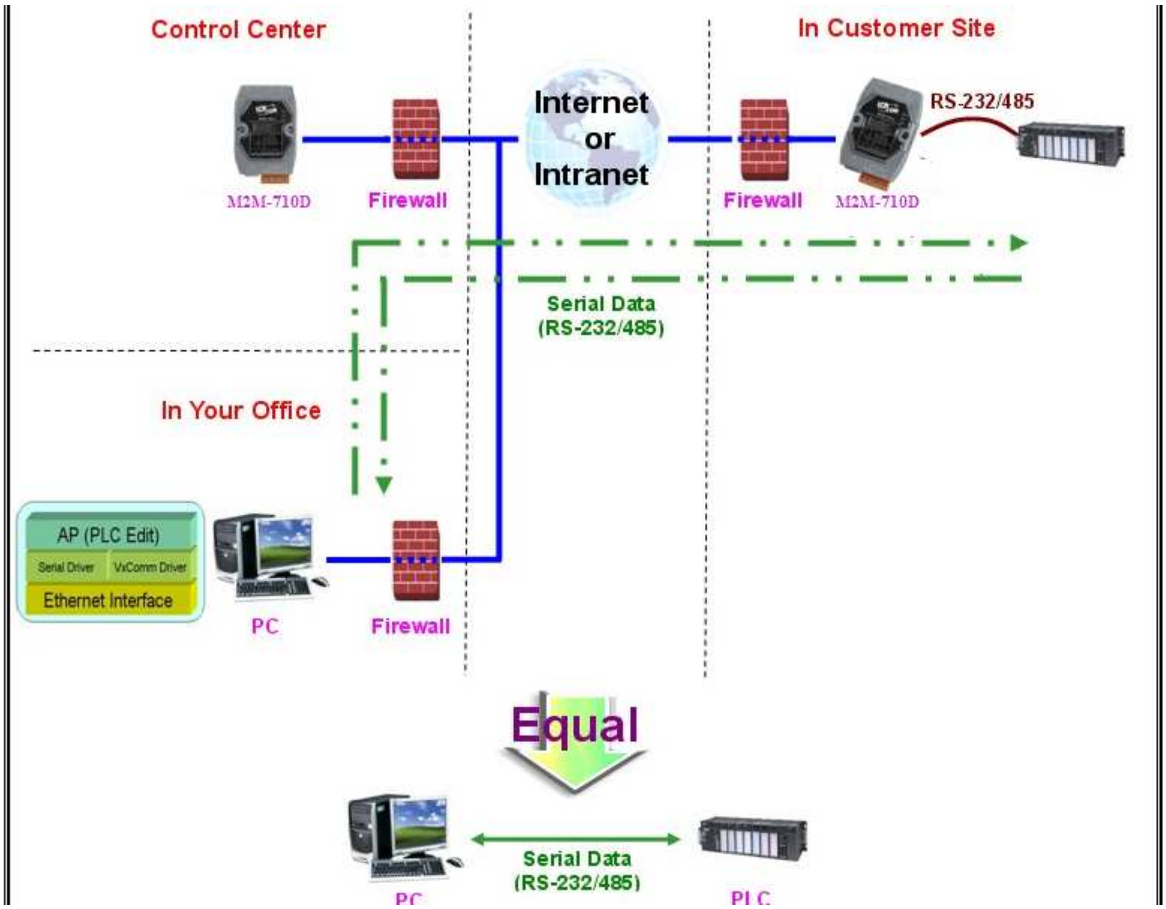
☛ Note: VxComm is just provided in server mdoe.



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6.2 Communication Architecture

In Pair connection mode the user can operate the virtual Com Port to access the serial device connects to the M2M-710D Client.

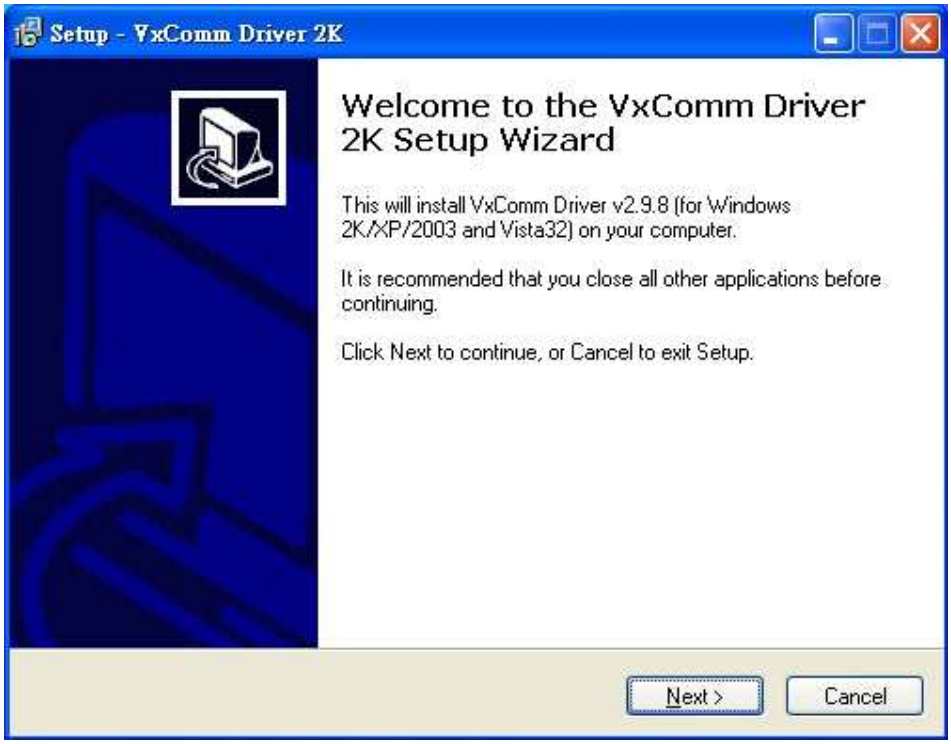


6.3 VxComm Driver Installation

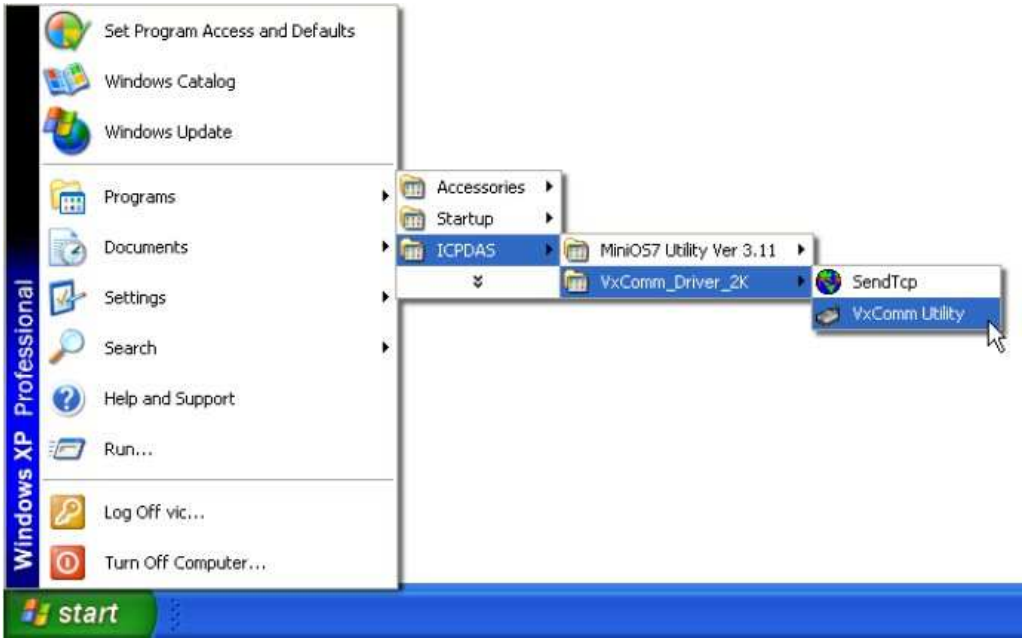
Step 1: The installation software can be obtained from the following location
http://ftp.icpdas.com/pub/cd/8000cd/napdos/driver/vxcomm_driver/
Please choose the latest version that suits your Windows operation system.
VxComm2K_v2.9.13_setup.exe for Windows NT4.0, 2000 /XP/2003 and Vista32 (32-bit)
VxComm98.exe for Windows 95/98/ME

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Step 2: Go the where you download the installation file, and then double-click the file in Windows to execute it.

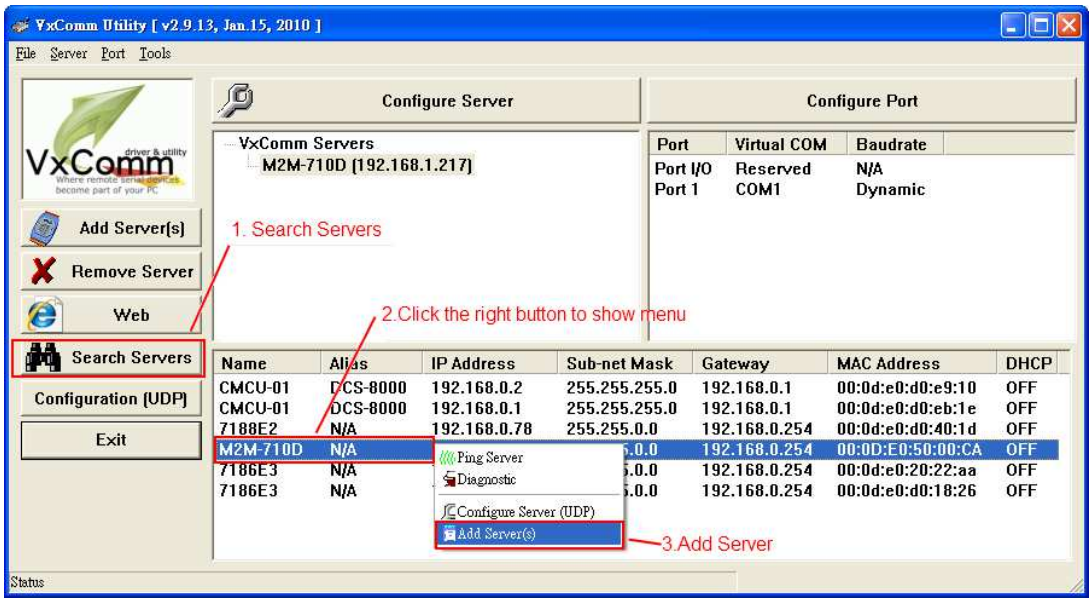


Step 3: From the Windows Start Menu, go to Program/ICPDAS /VxComm2K/ and click the VxComm Utility.

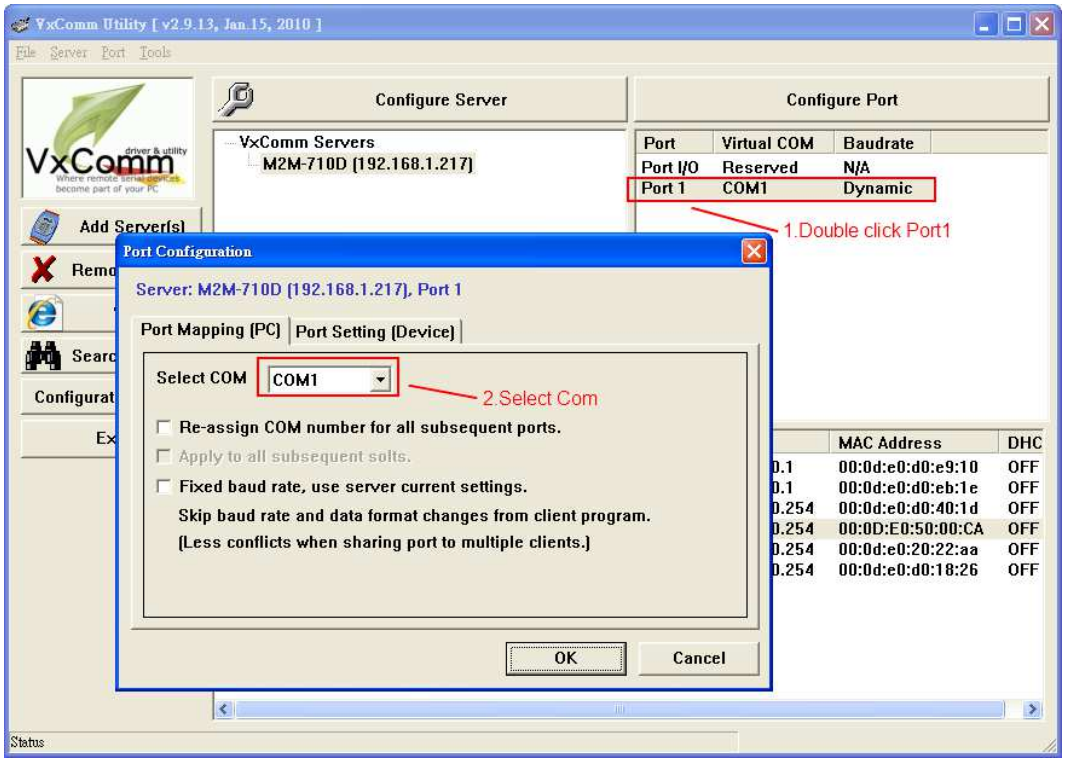


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Step 4: Search and add M2M-710D to VxComm Server.

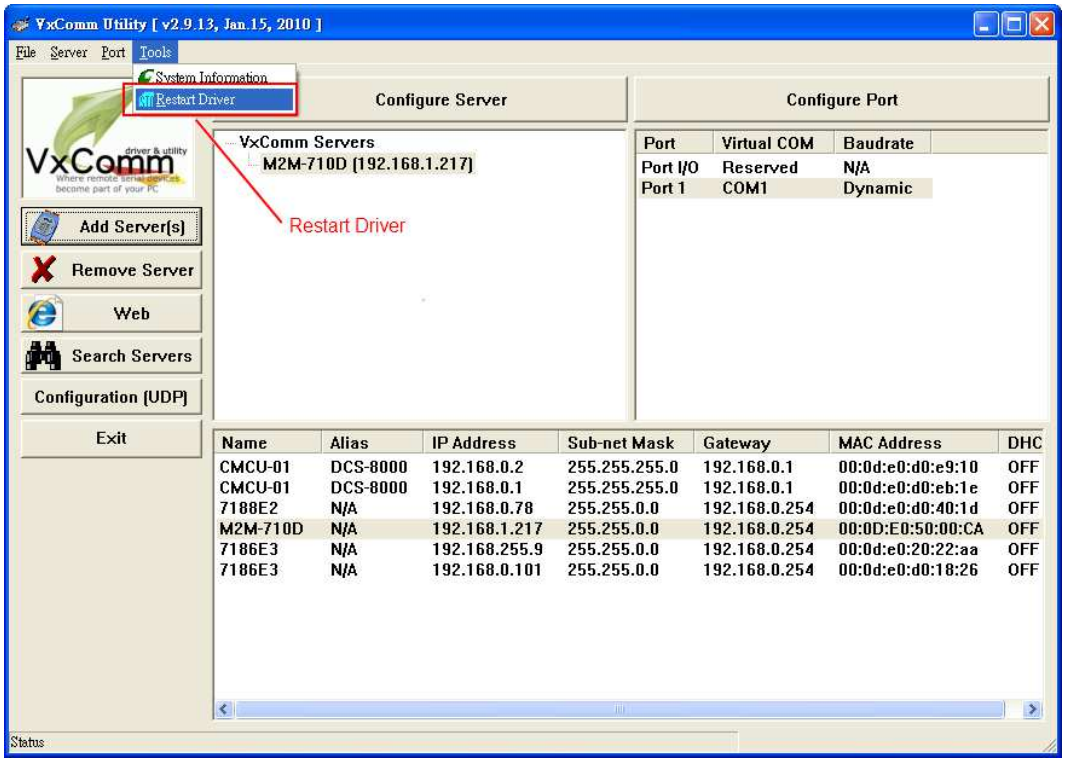


Step 5: Double click Port1 to open “Port Configuration” dialog and select an appropriate Com Port number.



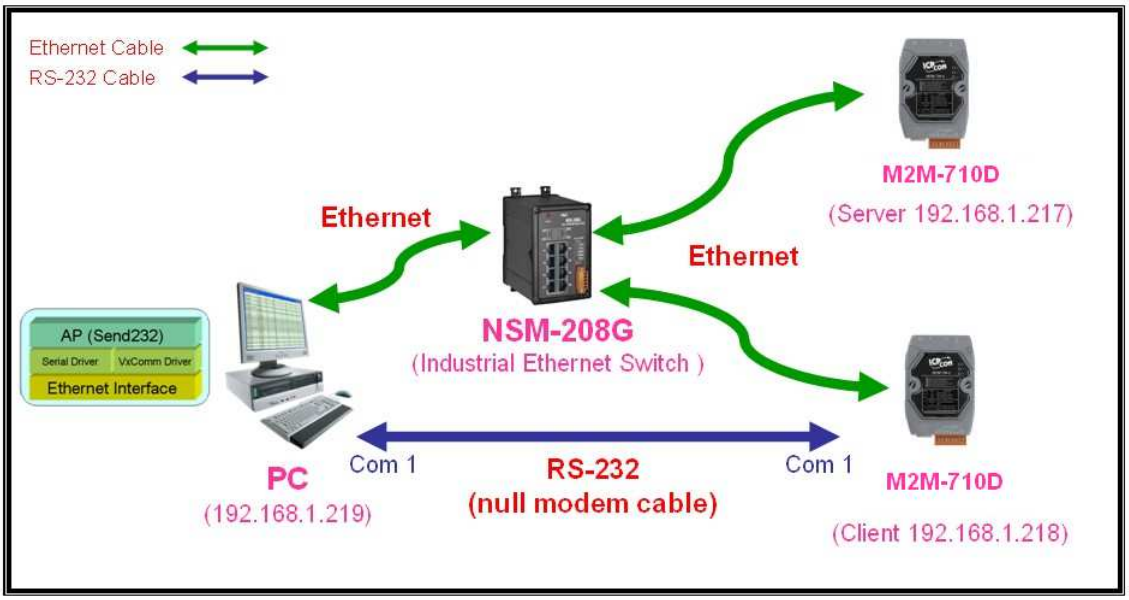
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Step 6: Reset VxComm Driver to make the settings effectively.



6.4 VxComm Communication Test

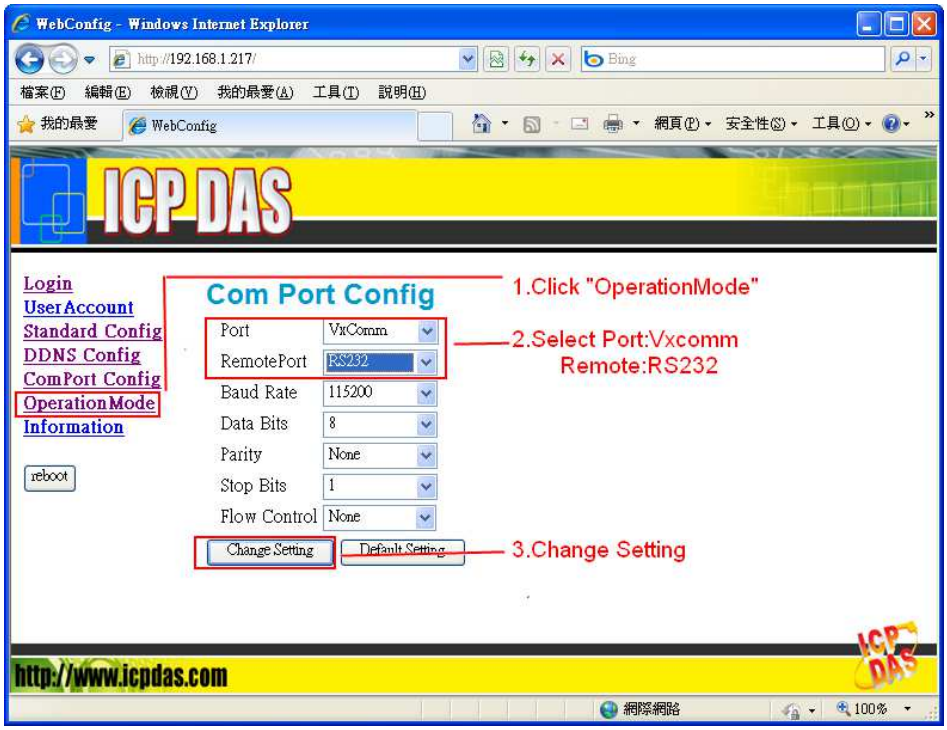
Step 1: Connect M2M-710D Server, Client and PC, as shown below.



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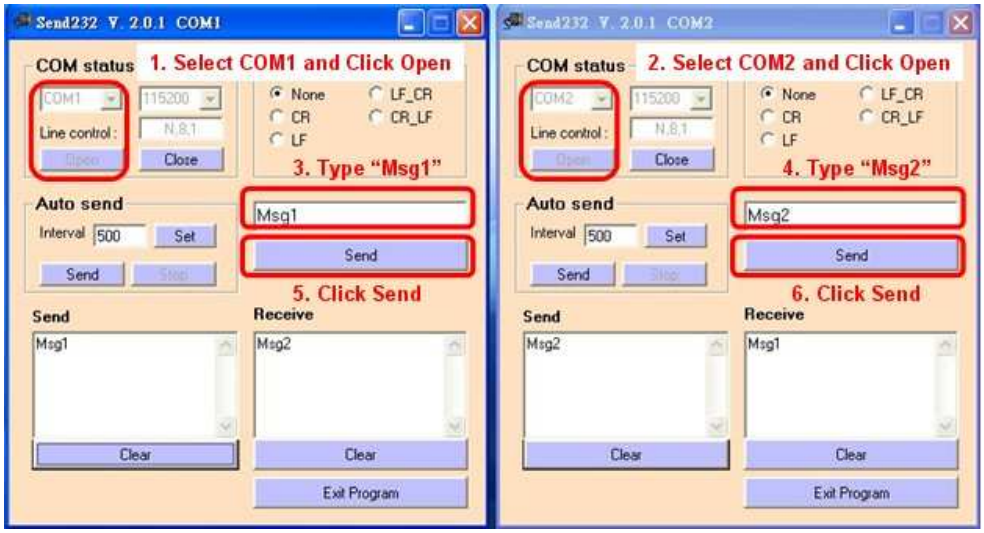
Step 2: Configure M2M-710D Server's Port1 to PC's Com2 by VxComm Utility, please refer to section 5.3 for detail.

Step 3: Set "Port" = VxComm, "Remote Port" = RS232, select M2M-710D Client and then click "Change setting".



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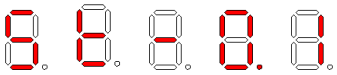
Step 4: Here we use Send232 Application (the user can download Send232 from http://ftp.icpdas.com/pub/cd/8000cd/napdos /7188e/tcp/pcdiag/source/send232.vb6_2.0.1) to test VxComm communication.
Please open 2 Send232 Applications. One uses Com1 (connect with M2M-710D Client), the other uses Com2 (provide by VxComm driver). When the user clicks “Send” button to send the message, the receive text box of the other will show the message.



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7. Troubleshooting

The troubleshooting list can help users to resolve the problems when using the M2M-710D. If the problem still can't be solved, please contact with the technical staff of ICP DAS.

Item	Trouble State	Solution
1	**LED** stay on 	Server name error Check net configuration Check server name Try to use IP
2	Can't connect after logging in	1. 1. Inspect the line. 2. 2. Is M2M-710D online?
3	Continuously heavy starting	Reboot both of server and client
4	The word “Conn.” twinkled	Check Server IP Check net
5.	**LED: State Code** 	State Code: The code for rebooting. Ex：01 Enable the initializing function.

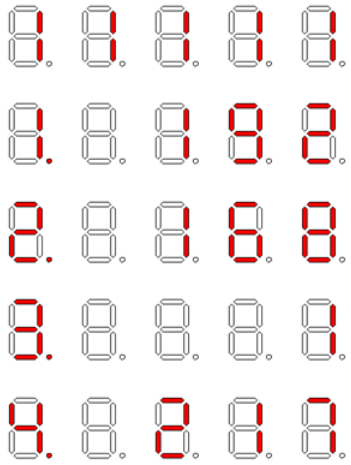
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8. FAQ

Q1: If I forget the M2M-710D's IP, how can I set and operate the M2M-710D by web browser?

A1:

(1): Please reset system, and IP address will show again.



(2): Init M2M-710D reference 2.3. Default value of IP address is 192.168.1.217.

Q2: Client cannot connect to Server.

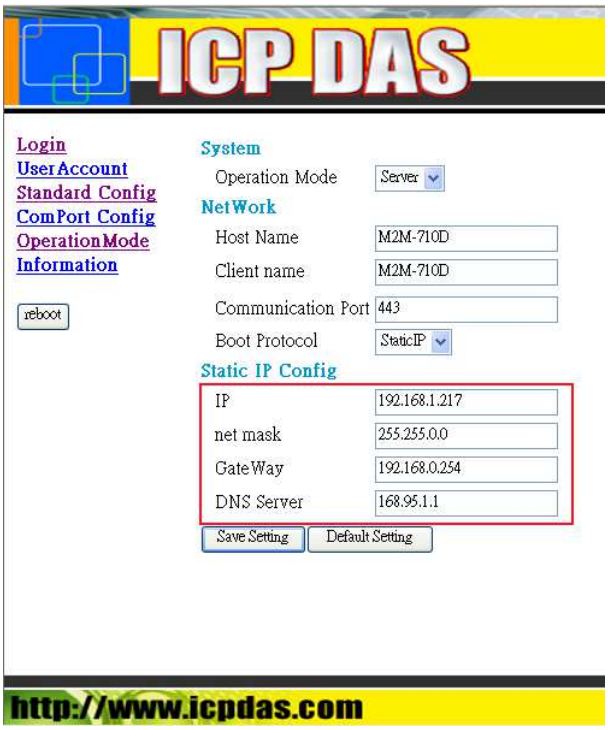
A2:

Please follow the following steps to check that the network configuration is correct.

Step 1: Check IP of Server and Client is the only. The IP is not the same with the other network device.

Step 2: Please confirm the network configurations are correct. The configurations include IP Address, Net Mask, Gateway and DNS Server. If the configurations are all correct, it should respond to the ping command from PC.

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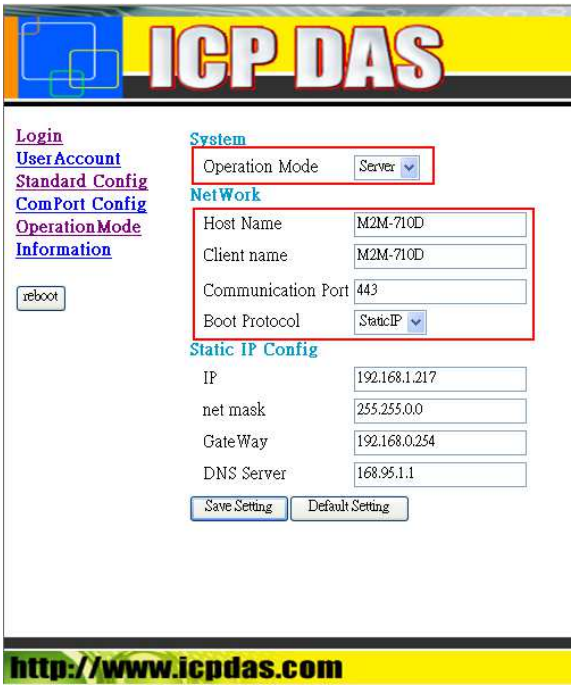


Step 3: Please confirm that the following settings are correct.
"Server IP" of Client is the same with "IP Address" of Server.
"Communication Port" of Server and Client are the same.
"Operation Mode" of Client is "Client".
"Operation Mode" of Server is "Server".



▲Client's "Standard Config" page

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▲Server's "Standard Config" page

Q3: Between Pair-Connection Server and Pair-Connection Client can't establish Com Port connection.

A3:

Please follow the steps to check below.

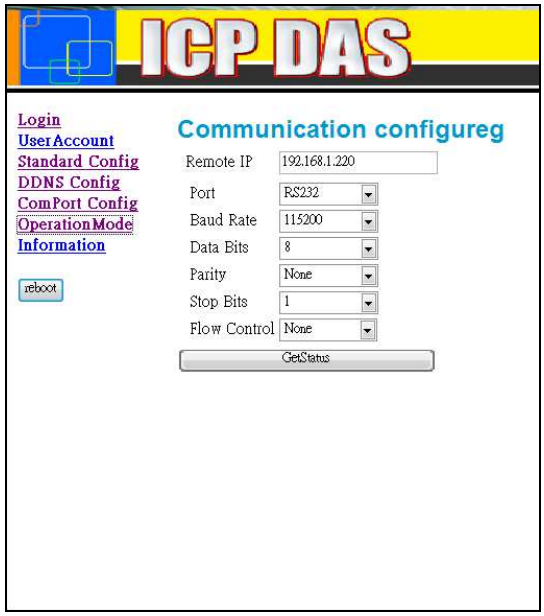
Step 1: Confirm Pair-Connection Client's name is in the Pair-Connection Server permission list.



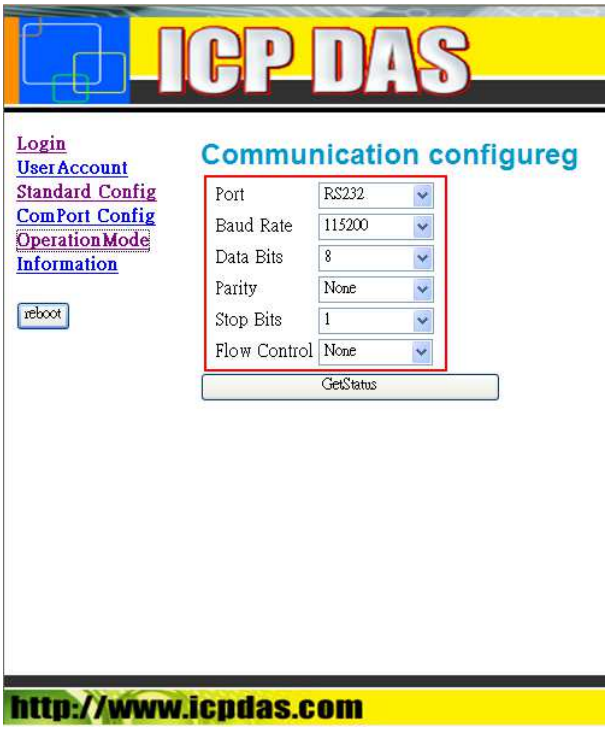
Step 2: Confirm comport setting of server and client. Server comport

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setting must the same setting as client.



▲Comport setting of server

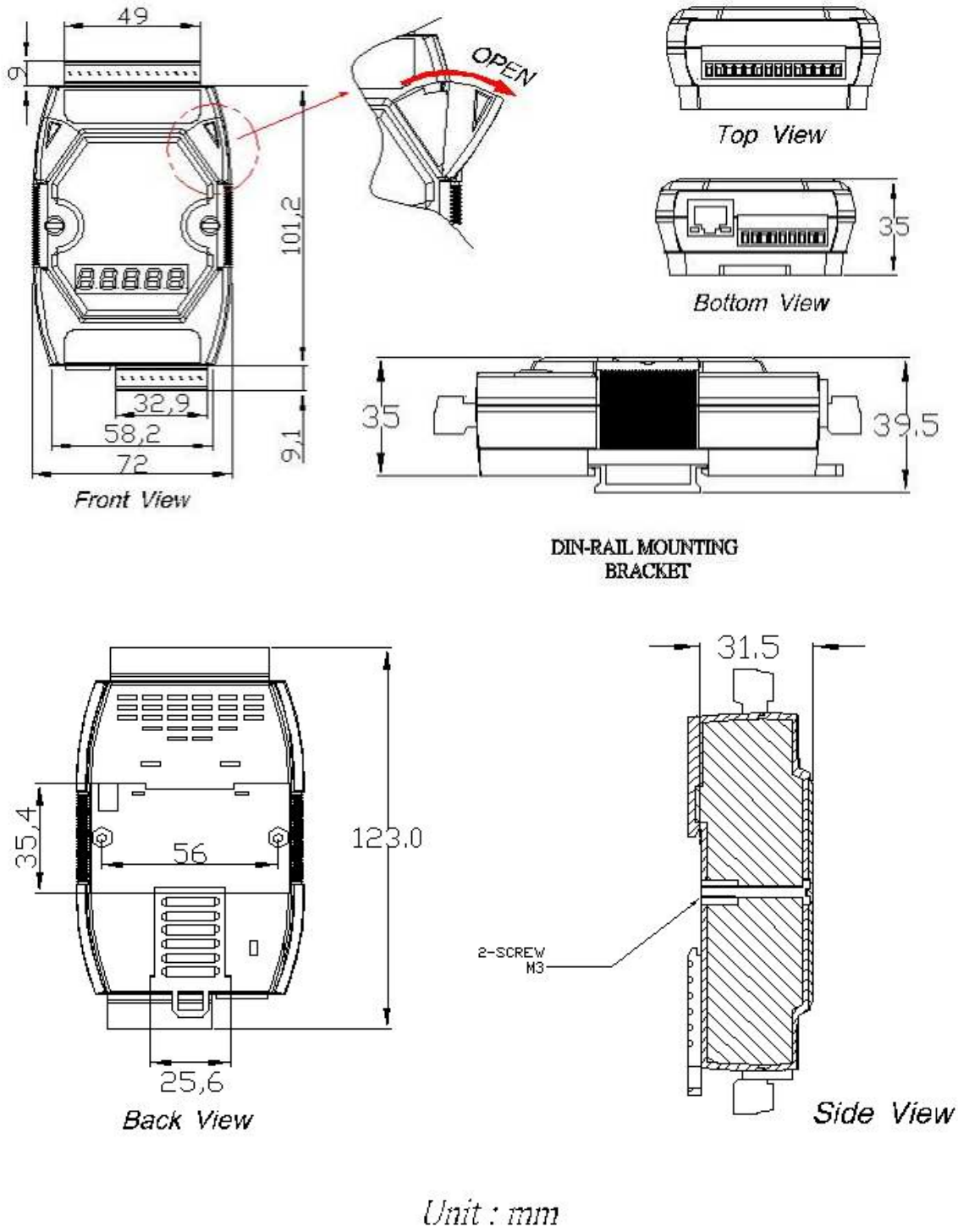


▲Comport setting of client

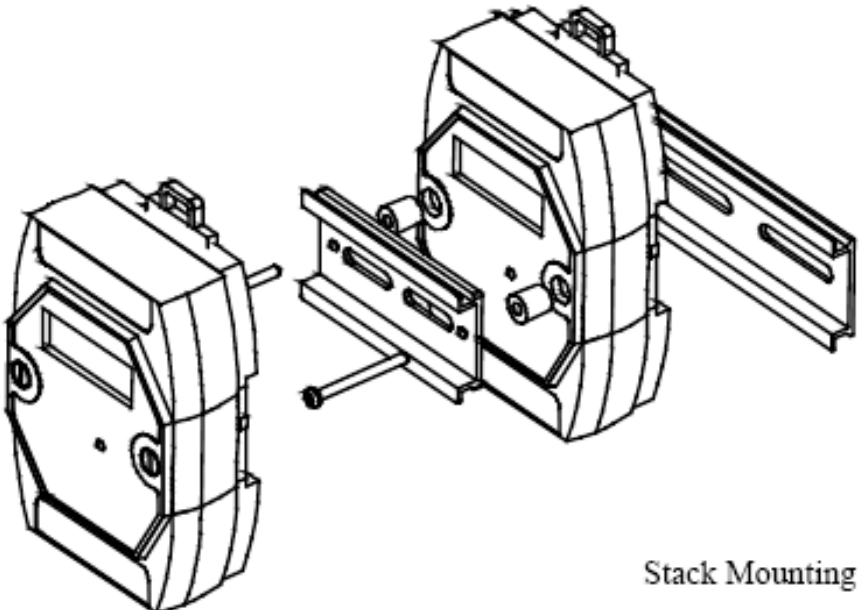
Step 3: Does the inspection wiring have the question? If users connect the M2M-710D to a DTE device, they must use a crossover cable (TX crosses to RX, GND to GND)

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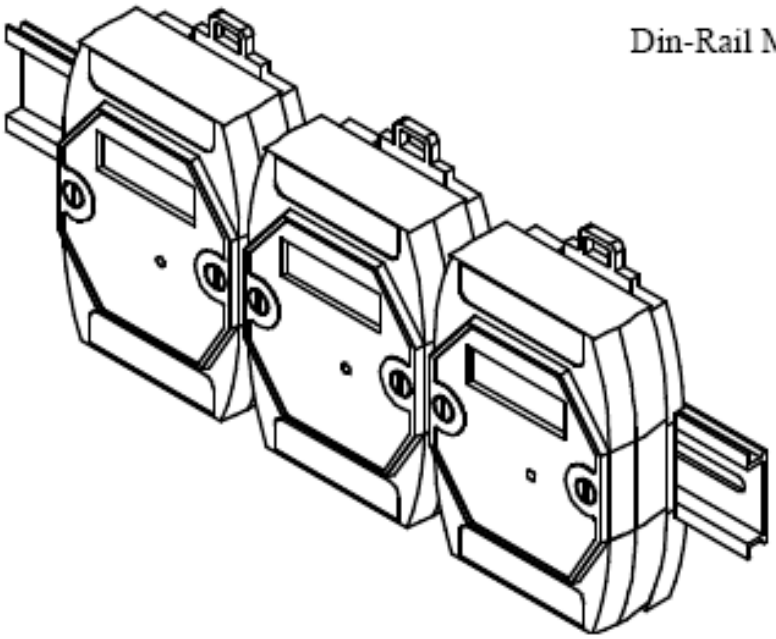
Dimensions



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Stack Mounting



Din-Rail Mounting

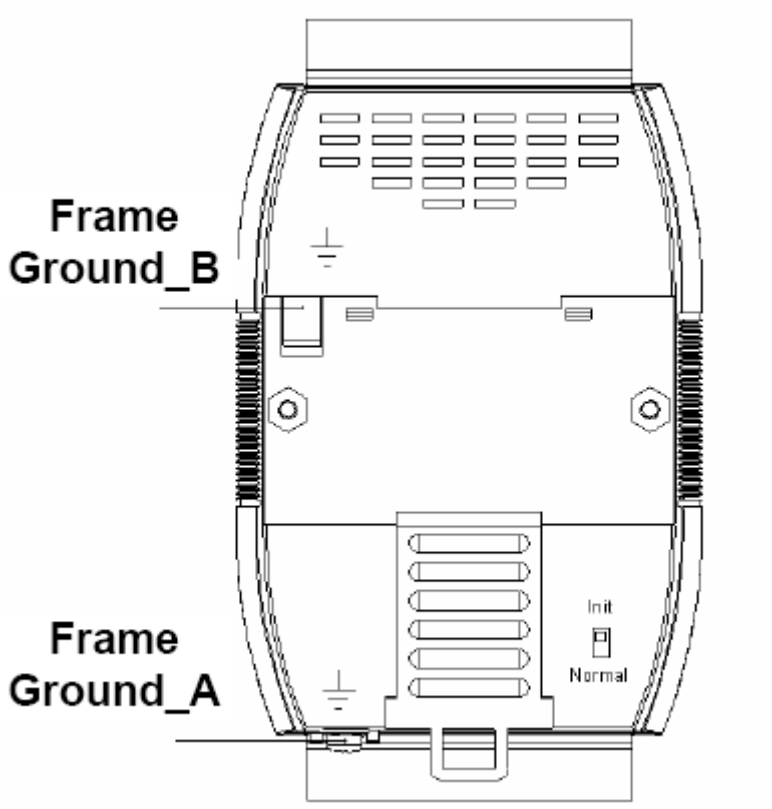
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9. Frame Ground

Electronic circuits are constantly vulnerable to Electro Static Discharge (ESD), which becomes worse in a continental climate area. M2M-710D module feature a new design for the frame ground, which provides a path for bypassing ESD, allowing enhanced static protection (ESD) capability and ensures that the module is more reliable.

It is recommended that the Frame Ground of the M2M-710D module is corrected to the earth ground, such as the ground of an AC power supply, to provide better ESD protection for the module.

The M2M-710D module is designed with two Frame Ground contact points, Frame-Ground-A and Frame-Ground-B, as shown in the figure below. When mounted to a DIN rail, Frame-Ground-B and the DIN rail are in contact. Thus, protection can be achieved by also connecting the DIN rail to earth ground.



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