

Warranty

All products manufactured by ICP DAS are under warranty regarding defective materials for a period of one year from the date of delivery to the original purchaser.

Warning

ICP DAS assumes no liability for damages resulting from the use of this product. ICP DAS reserves the right to change this manual at any time without notice. The information furnished by ICP DAS is believed to be accurate and reliable. However, no responsibility is assumed by ICP DAS for its use, or for any infringements of patents or other right of third parties resulting from its use.

Copyright

Copy right 2011 by ICP DAS. All rights are reserved.

Trademark

The names used for identification only may be registered trademarks of their respective companies.

List of Revision

Date	Author	Version	Revision
2011/05/1	Bird	1.00	V1.00
2011/12/21	Bird	2.00	V2.00

Table of Contents

1.	Introd	luction	4
	1.1	Features	7
	1.2	Hardware Specifications	8
	1.3	Statement of connection mode	9
2.	Hardv	ware	10
	2.1	Appearance	10
	2.2	Wiring	11
	2	2.2.1 RS-232 connection	11
	2	2.2.2 RS-485 connection	12
	2	2.2.3 Ethernet mode connection	12
	2	2.2.4 AP mode connection	13
	2	2.2.5 Ad Hoc connection	13
	2.3	Init Switch and Init Pin	14
	2.4	5-Digit 7 Segment LED Display	15
3.	Confi	iguration and Operation with Web Browser	23
	3.1	Connection Setting	23
	3.2	Web Configuration – Function Menu	
	3.3	Sub Web Page	30
	3.3.1	Login	30
	3.3.2	User Account	30
	3.3.3	Standard Config	31
	3.3.4	Wireless Config	35
	3.3.5	DDNS Config	37
	3.3.6 Com Port Config (Pair-Connection mode)		42
	3.3.7 Operation Mode		43
	3.3.8	Information	44
4.	VxCo	omm Applications	45
	4.1	VxServer Introduction	45
	4.2	VxServer Installation	45
	4.3	VxComm Introduction	46
	4.4	VxComm Driver Installation	46
	4.5	VxServer Working	47

	4.6	VxServer Mode Communication Test	.50
5.	Troub	leshooting	.52
6.	FAQ.		.53
7.	Dime	nsions	.57
8.	Frame	e Ground	.59

1. Introduction

The M2M-711D 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.

The M2M-711D built-in Wi-Fi(802.11b/g) function can be applied to the already Wi-Fi system. It can connect to the remote equipment by Wi-Fi AP to reduce the wire cost.



M2M-711D user manual (Version 2.20, Mar/2012) PAGE: 4

Another feature, the M2M-711D has Ad Hoc mode that can extend RS-485 or RS-232 communication distance via wireless feature without any wireless AP.





In addition, the M2M-711D has a Powerful Function, Pair Connection, to upgrade the original serial application to network application

1.1 Features

In the communication architecture of PC and M2M modules, it needs include one PC and multi M2M modules. The PC must have public IP (**not applicable in Ad Hoc mode**) and set the firewall suitably to make sure the normal communication. In the stable network communication, the M2M series can provide remote maintenance for the remote equipments easily. The features of the M2M-711D are as follows:

- ✤ Quick start
- Support VxServer software
- Built-in self-tuner ASIC chip for RS-485 port
- Provide pair connection (RS-232,RS-485) on network
- Support Server and Client communication mode
- Be applied with other M2M products (M2M-420-A, M2M-720-A, M2M-710D...)
- ✤ Support RS-232 or RS-485 serial communication ports
- Supply static IP/DHCP (Ad Hoc mode don't support DHCP)
- Built-in self-tuner ASIC chip for RS-485 port
- ✤ Web-based administration
- Built-in MiniOS7 OS to keep off the computer virus
- Ethernet Protocol: TCP, UDP, IP, ICMP, ARP, RARP
- Supports IEEE 802.11 b/g for Wi-Fi mode
- Supports WEP-64, WEP-128, WPA-TKIP and WPA2-AES encryption for AP mode
- Supports WEP-64, WEP-128 encryption for Ad Hoc mode
- Provide dynamic DNS function
- 5-Digit 7 Segment LED Display
- ✤ EMI, RoHS compliance

1.2 Hardware Specifications

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
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	1,2: for COM1, COM2
Baud Rate	1200/2400/4800/9600/19200/38400/57600/115200 bps
LED Display	•
5-Digit 7 Segment	Yes
System LED Indicator	Yes
Wi-Fi 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 $V_{DC} \sim +30 V_{DC}$
Power Consumption	3.5 W for M2M-711D
Wireless Module	
RF channels	1~13; AP mode support auto control channel.
Receive sensitivity	-87 dBm(IEEE 802.11b) / -72 dBm (IEEE 802.11g)
Transmission range (LOS)	100M
Transmit Power	12 dBm(IEEE 802.11b) / 14 dBm(IEEE 802.11g)
Antenna	2.4GHz - 5dBi Omni-Directional antenna

1.3 Statement of connection mode

M2M-711D has two kinds of communication mode. They are VxServer and Pair-Connection and each of them has three kinds of transmission type, Ethernet, Wi-Fi and Ad Hoc modes, moreover, each type of them has three communication roles.

Communication Mode:

> VxServer Mode:

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

> Pair-Connection Mode:

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

Transmission Type:

- Ethernet: This mode use RJ-45 Ethernet cable to connect to the Internet and transmit data with others M2M devices.
- AP: This mode use Wi-Fi AP to connect to the Internet and transmit data
- Ad Hoc: In this mode, if the PC has Wi-Fi Wireless LAN Card, users can make the PC and M2M-711D transmit data without Wi-Fi AP and the transmission distances up to 100 meters.

2. Hardware

2.1 Appearance



M2M-711D pin assignment

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 and RJ-45 socket pin assignment

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



2.2 Wiring

The connection interfaces of the M2M-711D include RS-232, RS-485 and Ethernet. The connection wiring is illustrated in section 2.2.1, 2.2.2 and 2.2.3.

(Warning: M2M-711D can't be connected to the RS232 and RS485 at the same time)

2.2.1 RS-232 connection

There are two types of RS-232 ports, one is DTE (Data Terminal Equipment, like PC, Serial Printers, PLC, and Video Cameras), the other is DCE (Data Circuit-Terminating Equipment, like modem).

The M2M-711D module is a DTE and users can use "3-wire" RS-232 or "5-wire" RS-232 to connect. When connecting the M2M-711D to a DCE device, the user just needs to match the signal names. When connecting the M2M-711D to a DTE device, the user needs to use a crossover cable (TX crosses to RX, GND to GND), as shown below.



✤ RS-232 Three-wire connection



✤ RS-232 Five-wire connection

2.2.2 RS-485 connection

The RS-485 wiring diagram as shown below.



- RS-485 connection
- 2.2.3 Ethernet mode connection

In the Ethernet mode connection way, users must adjust the firewall before application running to make sure clients can connect to the server. The default value of VxServer port is 11000. Users must also pay attention to two things, the firewall must open this port and the PC must have public IP, to ensure the normal connection.

2.2.4 AP mode connection

The M2M-711D must connect with Wi-Fi AP in this mode, and the Wi-Fi AP must be compatible with IEEE 802.11b / g wireless network protocol.



2.2.5 Ad Hoc connection

In Ad Hoc mode, users can establish Ad Hoc connection via SSID. In this connectivity, the Wi-Fi AP is NOT necessary, but the PC must have build-in Wi-Fi wireless network card.



2.3 Init Switch and Init Pin

There are an Init switch and Init Pin inside M2M-711D 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-711D will restore originally setting.

When the init pin is removed, the M2M-711D must to reset power to run in the normal mode.



▲ Recovery to the factory configuration by Init pin



▲ Recovery to the factory configuration by Init switch

2.4 5-Digit 7 Segment LED Display

The M2M-711D is built-in 5-Digit 7 segment LED Display. User can get the system information from the starting process. The messages are shown as VxServer, Pair-Connection Server and Pair-Connection Client types. Each type is shown as Ethernet, AP, Ad Hoc modes.

5-Digit 7 Segment LED Display of VxServer Mode

The following message will be shown in Boot Display:

Display Process	Information
8.8.8.8.	Initial setting
8.8.8.8.8.	Ethernet Mode
8.8.8.8.8.	AP Mode
8.8.8.8.8.	Ad Hoc Mode
	Shows the local IP or DHCP sequentially
8. 8. 8. 8. 8.	Shows the VxServer IP sequentially
8. 8. 8. 8. 8.	Shows the connection port
	Shows the setting of Com port
	C#:1/2 represents COM1/COM2
	Baud: 300~115200. 300, 600, 1200, 2400, 4800,
8. 8. 8. 8. 8.	9600, 19200, 38400, 57600, 115200 °
	Data: 7 or 8.
	Parity: 0(None), 1(Even) or 2(Odd) °
	Stop: 1 or 2
	In AP mode or Ad Hoc mode, it is shown the IP
<u>0</u> . 0. 0. <u>0</u> . 0.	message set by web server of M2M-711D.

Login Server:

When the Startup is successful, will begin the VxServer connection, and login the VxServer, the following is the LED connection display.

Server messages	Information
	If the VxServer isn't connected it will be shown
	with a flicker.
	In the AP/Ad Hoc mode, there is no Server's IP
	signal for Ping. Please check the setting of
	Server IP and Wireless Config.
	Shows the wireless signal strength in Wi-Fi AP
0. 0. ŭ. ŭ. ŭ .	mode. It is not connected by the client module.
	0 : No signal
	1 : Weak signal
	2 : Middling signal
	3 : Good signal
8.8.8.8.8.	It can't connect with AP in the AP mode, please
	check the setting of Wireless Config.
8. 8. 8. 8. 8.	It's the light for the setting of Web in AP/Ad
	Hoc mode.

Serial communication:

It will enter the serial communication mode, when the server connects to the M2M-711D, and the display will show the Comport information repeatedly. If the connection fails, the system will restart in 50 seconds.

Serial messages	Information
	Example
0. 0. 0 . 0. 0.	Com Port : 1(RS232)
	Date : 8
	Parity : none
	Stop: 1
8.8.8.8.8.	Baud rate : 9600

Example:

The setting of VxServer AP mode:

Wi-Fi IP	192.168.1.118(DHCP)
VxServer IP	192.168.1.113
Set IP	192.168.1.200
VxServer Connected port	11000
Baud rate	115200
Com Port	1(RS232)
Date	7
Parity	Even
Stop bit	2

The shown messages would display sequentially as follows. The interval time between every message is 50 ms.



M2M-711D user manual (Version 2.20, Mar/2012) PAGE: 17



7 Segment LED Display of Pair-Connection Server Mode

Boot Display:

Display Process	Information
8.8.8.8.	Initial setting
8.8.8.8.8.	Ethernet Pair-Connection Server Mode
8.8.8.8.	AP Pair-Connection Server Mode
8.8.8.8.8.	Ad Hoc Pair-Connection Server Mode
	Shows the local IP or DHCP sequentially
8. 8. 8. 8. 8.	Monitor's port
8. 8. 8. 8. 8.	Shows the setting of Com port C#:1/2 represents COM1/COM2 Baud: 300~115200. 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 ° Data: 7 or 8. Parity: 0(None), 1(Even) or 2(Odd) ° Stop: 1 or 2
8.8.8.8.8.	In Wi-Fi or Ad Hoc mode, it is shown the IP message set by web server of M2M-711D.

Monitor:

The Login Display of Pair-Connection Server	Information
	Monitoring
8. 8. 8. 8.	The host name of the Pair-Connection Client is wrong. Please check the Client name of the
	Pair-Connection Server is the same as the
	Client's Host name.
	It is not connected by the Client module in Ad
	Hoc mode.

	In AP mode, When the Wi-Fi has not yet			
0. 0. 0. 0. 0.	connected, it shows the Wi-Fi signal strength			
	(0~3).			
	0 : No signal			
	1 : Weak signal			
	2 : Middling signal			
	3 : Good signal			
	The M2M-711D can't connect to the AP in AP			
<u>0</u> . 0. <u>0</u> . <u>0</u> . <u>0</u> . –	mode, please check the setting of Wireless			
	Config.			
	It shows when users enter the web setting			
	interface in the Ap/Ad Hoc mode.			

Serial communication messages:

When the M2M-711D is chosen to communicate by the server, the LED display shows comport messages repeatedly.

Serial communication	Information	
messages		
	Example	
ũ. ũ. ũ. ũ. ũ.	Com Port : 1(RS232)	
	Date: 8	
	Parity : none	
	Stop bit : 1	
8.8.8.8.8	Baud rate : 9600	

7 Segment LED Display of Pair-Connection Clint Mode

The following message will be shown in Boot Display:

Display Process	Information		
	Initial setting		
8. 8. 8. 8. 8.	Ethernet Client Mode		
	Wi-Fi Client Mode		
	Ad Hoc Client Mode		
	Shows the local IP or DHCP sequentially		
	Shows the Server sequentially.		
8.8.8.8.	Shows the connecting port.		
	Shows the setting of Com port.		
	C#:1/2 represents COM1/COM2		
	Baud: 300~115200. 300, 600, 1200, 2400, 4800,		
	9600, 19200, 38400, 57600, 115200 °		
	Data: 7 or 8.		
	Parity: 0(None), 1(Even) or 2(Odd) °		
	Stop: 1 or 2		
	If user is in the Wi-Fi mode or Ad Hoc mode, it		
Q. Q. Q. Q. Q.	shows the IP set by web server.		

Login Server:

When the Startup is successful, will begin the VxServer connection, and login the VxServer, the following is the LED connection display.

Server messages	Information		
	Flickery: Connection failed.		
	Stable: Connection successful.		
	In the AP/Ad Hoc mode, there is no Server's IP		
	signal for Ping. Please check the setting of		

	Server IP and Wireless Config.						
	Shows the wireless signal strength in AP mode.						
0. 0. 0. 0. 0.	It is not connected by the client module.						
	0: No signal						
	1: Weak signal						
	2: Middling signal						
	3: Good signal						
	It can't connect with AP in the AP mode, please						
<u>0. 0. ŭ. ŭ. ŭ.</u>	check the setting of Wireless Config.						
	It's the light for the setting of Web in AP/Ad						
	Hoc mode.						

3. Configuration and Operation with Web Browser

The M2M-711D module is built-in web server, the user can configure and operate the M2M-711D 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-711D and your PC in the same sub network or same Ethernet Switch (as shown in figure 11) 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.



▲The connection architecture of PC and M2M-711D

Connection steps:

Step1: Open Network Connections

1. Click "start→Settings→Network Connections"



Click "Properties" button

eneral Support	
Connection	
Status:	Connected
Duration:	00:23:43
Speed:	10.0 Mbps
Signal Strength:	
Activity Se	nt — 🧖 — Received
Packets:	10,709 8,894
Properties Disa	ble

2. Click Internet Protocol(TCP/IP) and then click the contents

Connect	Authentication using: ID PCNET Fan	Advanced		
Connect	using: ID PCNET Fan			
B) AN	ID PCNET Fan			
		hily PCI Ethernet	Adapter	
			Configure:	
This con	nection uses th	e following items	0	
	Client for Micro	soft Networks		
🛛 🖸 🦲	File and Printer	Sharing for Micr	osoft Networks	
2	QoS Packet So	cheduler		
	Internet Protoc	ol (TCP/IP)		
		- A.		
In	tall	Uninstall	Properties	
Descrip	tion			
Transr	nission Control I	Protocol/Internel	Protocol. The default	
wide a	rea network pro diverse interco	ptocol that provid innected network	tes communication	
			275)	
Show	icon in notifica	tion area when c	onnected	

Step2: "Internet Protocol Properties" and then click "OK"

button.

ernet Protocol (TCP/IP) Pr eneral	operties
You can get IP settings assigned a this capability. Otherwise, you nee the appropriate IP settings.	automatically if your network supports d to ask your network administrator for
 Ubtain an IP address automa Use the following IP address: 	atically
IP address:	192.168.1.220
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	20 60 08
O Obtain DNS server address a	automatically
 O Use the following DNS serve 	r addresses:
Preferred DNS server:	10 10 10
Alternate DNS server:	
	Advanced
	OK Cancel

Step3: test connection

1. Click "start→Run..."



2. Key in "cmd" and then click "OK"

Run	2 🔀
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	cmd 💌
	OK Cancel Browse

3. Key in "ping 192.168.1.217" and click "Enter". If the response message shows "Request timed out" (as the following figure), 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.



If the network settings are correct, it will show

"Packets: Sent=4, Received=4, Lost=0"



3.2 Web Configuration – Function Menu

Now the PC is set completely and working well with the M2M-711D. Please open web browser (ex: IE, Mozilla, etc) on PC and key in <u>http://192.168.1.217/main.htm</u> in the Address line and then press "Enter" key to link the M2M-711D, as shown below.

	P-DAS	
Login User Account Standard Config Com Port Config Operation Mode Information	USER Set User root Password •••••	
(1)	(2)	LCP
http://www.icp	udas.com	ONS.

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

The web function menu of VxServer mode

- Login
- User Account
- Standard Config
- Wireless mode
- Operation Mode
- Information

Reboot

The web function menu of Pair-Connection Server mode

- Login
- User Account
- Standard Config
- > Wireless mode
- > DDNS Config
- Operation Mode
- Information

Reboot

The web function menu of Pair-Connection Client mode

- Login
- User Account
- Standard Config
- > Wireless mode
- Com Port Config
- Operation Mode
- Information

Reboot

The "Reboot" button can provide the user to save these setting and restart the M2M-711D.

3.3 Sub Web Page

Note: As changing these settings, the M2M-711D need to reset to become effective.

3.3.1 Login

The user login interface: (Default setting – User: root, Password: icpdas)

USER Set

User	root
Password	•••••

3.3.2 User Account

enter

After login to the web server, the user name and password can be edited in this page.

		S			
User Account Standard Config Com Port Config	User	root			
Operation Mode Information	Password CheckPassword				
reboot	Change				
					100
http://www.icp	idas.com				DAS

3.3.3 Standard Config

The different operation modes have the different setting. The description is as follows.

Select Mode.						
	There are three operation modes in M2M-711D.					
	VxServer mode: M2M-711D connect with PC					
	directly. (The PC have to install VxServer software					
	and VxComm Driver beforehand.)					
System	Pair-Connection Server mode: This mode can					
	connect with the Pair-Connection Client of M2M					
	device.					
	Pair-Connection Client mode: This mode can					
	connect with the Pair-Connection Server of M2M					
	device.					

Select Mode:

VxServer mode

Host Name	It can set the name of the module. User can use the clearer and simpler name to recognize.				
Station ID	It can offer the identification to VxServer to recognize the different M2M devices, and the Station ID can't be repeated during multiple M2M devices.				
Connect to Server by : IP / DNS	This item set the connection with M2M-711D and VxServer according to VxServer's IP or Domain Name °				
Server IP	Set the VxServer's IP address.				
Communication Port	Set the port number of VxServer. Default Value: 11000				
Boot Protocol (Static IP /DHCP)	M2M-711D supports two kinds of IP modes; they are "Static IP" and "DHCP". Users can choose one of them to set the Ethernet IP address of M2M-711D.				
Ethernet IP	Set the static IP of Ethernet. It is also the IP for the				

(Web Server IP)	web server. Because when users are in the					
	Wireless mode, they must through the IP to					
	enter the setting interface of Web Server. We					
	recommend users to use the Static IP to					
	convenient the setting.					
Netmask	When Boot Protocol is "Static IP", the user can					
	set subnet mask of M2M-711D in this setting.					
Gateway	When Boot Protocol is "Static IP", the user can					
	set gateway of M2M-711D in this setting.					
DNS Server	When Boot Protocol is "Static IP", users can set					
	Domain Name Service Server of M2M-711D in					
	this setting.					

Pair-Connection Server mode

Host Nome	The module name. The maximum character length is				
Host Maine	15.				
	It can set the module name, and the Client Name				
Client Name	must be the same as the Host name of				
Chent Name	Pair-Connection that will be connected. The				
	maximum character length is 15.				
	Users can set the port number of the Pair-Connection				
Listen Port	server, and that must be the same with the				
	Communication Port of Pair-Connection Client.				
	Default Value: 11000.				
	Set whether the module transmit the heartbeat in the				
Heart Bit	Pair-Connection mode. We recommend users to set				
	Enable.				
Boot Protocol	M2M-711D supports two kinds of IP modes; they				
(Static ID /DUCD)	are "Static IP" and "DHCP". User can choose one of				
(Static IF /DITCF)	them to set the Ethernet IP address of M2M-711D.				
	Set the IP address of Ethernet. It is also the IP for the				
	web server.				
Ethernet IP	Because when users are in the Wireless mode,				
(Web Server IP)	they must through the IP to enter the setting				
	interface of Web Server. We recommend users to				
	use the Static IP to convenient the setting.				

Netmask	When Boot Protocol is "Static IP", the user can		
	set subnet mask of M2M-711D in this setting.		
Gateway	When Boot Protocol is "Static IP", the user can		
	set gateway of M2M-711D in this setting.		
DNS Server	When Boot Protocol is "Static IP", users can set		
	Domain Name Service Server of M2M-711D in this		
	setting.		

Pair-Connection Client mode

Host Name	It can set the name of the module. User can use the clearer and simpler name to recognize. The name must be the same as the Client Name of Pair-Connection Server when the system is connecting with Pair-Connection Server. The maximum character length is 15.					
Connect to Server by : IP / DNS	This item set the connection with Pair-Connection Server according to the IP of Pair-Connection Server or Domain Name •					
Server Name	Users can set the Server Name of the server that the client wants to connect to. The maximum character length is 15.					
Server IP	Users can set the IP address of the server that the client wants to connect to.					
Communication Port	Set the port number of the server that will be linked by clients, and its default value is 11000.					
Boot Protocol (Static IP /DHCP)	M2M-711D supports two kinds of IP modes; they are "Static IP" and "DHCP". Users can choose one of them to set the Ethernet IP address of M2M-711D.					
	Set the IP address of Ethernet. It is also the IP for the web server.					
Ethernet IP	Because when users are in the Wireless mode,					
(Web Server IP)	they must through the IP to enter the setting					
	interface of Web Server. We recommend users					
	to use the Static IP to convenient the setting.					
Netmask	When Boot Protocol is "Static IP", users can set					

	subnet mask of M2M-711D in this setting.				
	When Boot Protocol is "Static IP", users can set				
Galeway	gateway of M2M-711D in this setting.				
DNS Server	When Boot Protocol is "Static IP", users can set				
	Domain Name Service Server of M2M-711D in				
	this setting.				



http://www.icpdas.com

3.3.4 Wireless Config

The different configurations are according to the different Wi-Fi modes. Specifications are shown below:

AP mode:				
	Disable: Transmit data by Ethernet NOT Wi-Fi.			
Wi Ei Modo	AP mode: Transmit data by 802.11b/g, and must			
	have Wi-Fi AP in the site.			
	Ad Hoc mode: Establish the Ad Hoc wireless			
	network to communicate. The M2M-711D connects			
	with another M2M-711D by Ad Hoc.			
	SSID means "Service Set Identifier". It must be the			
SSID	same with the SSID of Wi-Fi AP, and its maximum			
	length is 20.			
	It's the Wi-Fi channel, 2.4GHz. It must be the same			
Channel	with the Channel of Wi-Fi AP, and the AUTO mode			
	can set the Channel of Wi-Fi AP automatically.			
	The encryption of Wi-Fi. The Wi-Fi network must			
	have the same encryption cause that the encryptions			
	of Wi-Fi and Wi-Fi AP are must the same with each			
	other.			
	The security key setting.			
	WEP-64 : The length is 10.			
Passphrase	WEP-128 : The length is 26.			
	WPA-TKIP : The length is 8~31.			
	WPA2-AES : The length is $8 \sim 31$.			
	M2M-711D supports two kinds of IP modes for			
Boot Protocol	Wi-Fi; they are "Static IP" and "DHCP". Users			
(Static IP /DHCP)	can choose one of them to set the Wi-Fi IP address			
	of M2M-711D.			
Wi-Fi IP	Set the Wi-Fi IP.			
Wi Ei Mosk	When Boot Protocol is "Static IP", Users can set the			
	Wi-Fi subnet mask of Wi-Fi network in this setting.			
Gataway	When Boot Protocol is "Static IP", Users can set the			
Galeway	gateway of Wi-Fi network in this setting.			

AP mode:

DNS Server	When Boot Protocol is "Static IP", Users can set DNS server of M2M-711D in this setting.
Listen Port (只支援 Server mode)	The listen port of server for the client module connecting in the AP mode. Default Value is 11000.

Ad Hoc mode:

	Ethernet mode: Transmit data by Ethernet NOT					
	Wi-Fi.					
	AP mode: Transmit data by 802.11b/g, and must					
Wireless Mode	have Wi-Fi AP in the site.					
	Ad Hoc mode : Establish the Ad Hoc wireless					
	network to communicate. The M2M-711D connects					
	with another M2M-711D by Ad Hoc.					
SSID	SSID means "Service Set Identifier". It must be the					
	same with the SSID of Wi-Fi AP, and its maximum					
	length is 20.					
	It is the Ad Hoc channel, 2.4GHz. It must be the					
Channel	same with the Channel of another M2M-711D. This					
	mode doesn't support AUTO function.					
	The encryption of Ad Hoc must be the same with					
Enometica	the M2M-711D's.					
Encryption	This mode doesn't support WPA-TKIP, WAP2-AES					
	data encryption.					
	The passphrase of encryption must be the same with					
	the encryption setting of M2M-711D.					
Passphrase	WEP-64 : The length is 10.					
	WEP-128 : The length is 26.					
Ad Hoc IP	The IP address in Ad Hoc mode.					
Listen Port	The listen port of server for the client module					
(Server mode)	connectiong. The Default Value is 11000.					

3.3.5 DDNS Config

When the M2M-711D plays the role of server and the Boot Protocol isn't "Static IP", the client may not connect with the server. We provide a solution , DDNS, for solving this problem. When the IP address of server is changed, the server will register current IP to website thar provides DDNS service. The client can connect with the server by domain name that the user registers.

NOTE: Different companies provide different DDNS service register way. In order to make it correctly work, we recommend users to use the DDNS service that provided by DynDNS Company. DynDNS website: <u>http://www.dyndns.com/</u>.

- 1. Create your Dynamic DNS account
 - (1) Please open web browser (ex: IE, Mozilla, etc.) on PC and key in <u>http://www.dyndns.com</u> in the Address line and then press Enter.
 - (2) Key in "User name" and "Password" and click "Login" button. If the user has not created user account, please click "Create Account" Hyper link to create user account and then login your account.



(3) Click "Service & Pricing" Hyperlink to enter Services page.



(4) Click "DynDNS Free" Hyperlink to enter the page of Dynamic DNS Free.



(5) Click "Create Free Hostname" to apply the DDNS.



(6) Key in the Domain Name and select host name (icpdas.homelinux.com), and key in IP address of the server. Never mind the other settings and click "Create Host" button.

Why DynDNS.com?	Services & Pricing Support Welcome icpdas (FREE) My Account My Cart Log Ou
My Account	Add New Hostname
My Services	
Dynamic DNS Pro Internet Guide SLA Premier Support	To get the full benefits of Dynamic DNS, including premium subscriber domains and other features, add Dynamic DNS Pro to your shopping cart a (or try it with \$1.99 monthly subscription).
Domain names, DNS hosting, Sendlabs e-mail services	Hostname: ICPDAS . dyndns-at-home.com
Dynamic DNS Hosts Dynect SMB SendLabs SMTP	Wildcard: create "*.host.dyndns-yourdomain.com" alias only for DynDNS Pro users (for example to use same settings for www.host.dyndns-yourdomain.com)
SSL Certificates Renew Services Auto Renew Settings Sync Expirations	Service Type: Host with IP address WebHop Redirect (URL forwarding service) Offline Hostname
Account Settings	IP Address: 61.219.167.36
My Cart <u>Qitems</u>	TTL value is 60 seconds. Edit TTL Mail Routing: I have mail server with another name and would like to
WE'RE HIRING	What do you want to use this host for? Select services and devices you would like to use with this hostname. Work From Home Office or VPN: vpn remote file access remote file access remote desktop mail server web server chat server ftp backup ssh database volp Hosting and Design For Web Sites and Blogs: blog gallery wiki portfolio ecommerce web page Remote Access For Devices: dvr dvr webcam data storage cctv blog cata storage core printer
	thermostat weather station game server nome automation

Host Services				<u>↑ My Services</u>
		Just signed up for my free domain name with DynDNS! Now I can remote desktop, host web sites at home, and more. Show us some love!		
<u>Hostname</u>	<u>Service</u>	<u>Details</u>		Last Updated
icpdas.dyndns-at-home.com	Host	61.219.167.36		Mar. 29, 2011 4:34 AM
<u>» Host Update Logs</u>				Add New Host

2. DDNS Config Specification

DDNS	Disable / Enable
DDING	Users can set the DDNS function enable or disable.
Liest Norma	Key in your Domain Name
Host Name	(ex: icpdas.dyndns-at-home.com)
User Name	Key in your User Name of registered.
Password	Key in your Password of registered.

DDNS Config

DDNS	Enable 😽
Host name	icpdas.dyndns-at-home.com
User Name	ICPDAS
Password	123456
Save Setting	Default Setting

3.3.6 Com Port Config (Pair-Connection mode)

The setting of Com Port is different between VxServer mode and Pair-Connection mode. In the VxServer mod, M2M-711D can set the Com Port in accordance with the opened Com Port in PC. In the Pair-Connection mode, users must set the Com Port Parameters on their own via web.

Com Port Config provides users set Com Port communication settings between Pair-Connection Server and Pair-Connection Client. For example, when the settings between Pair-Connection Server and Pair-Connection Client are different, the system will set based on server-side in the data transmission. The setting will take effect after reboot.

Port	RS232 / RS485
	Choose one of the M2M-711D Com Port communication
	ways from RS-232 or RS-485.
Remote Port	Set the corresponding com port of Client
Baud Rate	1200 / 2400 / 4800 / 9600 / 19200 / 38400 / 57600 / 115200
	bps
Data Bits	7 / 8 data bits
Parity	None / Odd / Even
Stop Bits	1 / 2 stop bits.
	If the value of Data bit is 7, the Stop Bits will be set 2.
Flow Control	None / Hardware / XonXoff

Com Port Config

Port	RS232 🗸
RemotePort	RS232 🗸
Baud Rate	115200 🖌
Data Bits	8 🗸
Parity	None 🗸
Stop Bits	1 💌
Flow Control	None 💌
Change Setting	Default Setting

3.3.7 Operation Mode

This mode offer the operation interface of serial communication, users can select the communication settings they want to do at once via this mode, and the setting isn't boot configuration. Thus it will be limited in current operation.

operation.	
Remote IP	
(Ethernet Pair-Connection	Show the current Pair-Connection Client IP.
Server only)	
Port	Show the communication port (RS232/RS485).
Remote Port	
(Ethernet Pair-Connection	Show the remote Port assignment.
Server only)	
	Communication rate of Comport
Baud Rate	(1200 / 2400 / 4800 / 9600 / 19200 / 38400 / 57600 /
	115200 bps)
Data Dita	The data length of Com Port communication.
Data Bits	(7 / 8 data bits)
Parity	Show the Parity of Com Port (None / Odd / Even).
Stop Bits	Show the Stop Bits of Com Port (1 / 2 stop bits).
Elere Cantral	Show the flow control of Com Port. (None /
Flow Control	Hardware / XonXoff)
Get Status 按鈕	
(Ethernet mode only)	Get the current status of communication assignment.

Communication configureg

Remote IP	0.0.0.0	
Port	RS232	*
RemotePort	RS232	~
Baud Rate	115200	*
Data Bits	8	~
Parity	None	*
Stop Bits	1	*
Flow Control	None	*
	GetStatus	

3.3.8 Information

- (1)OS version
- (2) XS Version
- (3) Firmware Version
- (4) Wi-Fi Firmware Version
- (5) IP : Show the current IP
- (6) Subnet Mask
- (7) Mac Address
- (8) Wi-Fi Mac Address
- (9) System state:

	"Listen": The system is monitoring.
Server	"Communication": Server is communicating with
	clients.
	"Initok": Finish system initial.
Client	"try to connect" : Clients try to connect with server.
Chem	"Login": Clients login successful.
	"Communication" : Server is

Information

OS Version :	2.2.15[Apr 29 2008]
XS Version :	0.9.3.14
Firmware Version :	V1
Wi-Fi Firmware Version :	ID807b06
System State:	Init ok
Ethernet Config	
IP :	192.168.1.217
SubnetMask :	255.255.0.0
Gateway :	192.168.0.254
MacAddress :	00:0D:E0:03:04:56
Wireless Config	
IP :	192.168.1.200
SubnetMask :	255.255.0.0
Gateway :	192.168.0.254
Wi-Fi Mac Address :	00:27:13:7F:68:F9

4. VxComm Applications

4.1 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.



4.2 VxServer Installation

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

http://ftp.icpdas.com/pub/cd/usbcd/napdos/vxserver/manual/



4.3 VxComm Introduction

VxComm(Virtual Com) can create virtual COM ports in Windows and maps them to the serial ports of the M2M-711D devices through the Ethernet / 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. 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.

4.4 VxComm Driver Installation

Download VxComm Driver:

http://ftp.icpdas.com/pub/cd/8000cd/napdos/driver/vxcomm_dri ver/

"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.



4.5 VxServer Working Step1: Open VxServer

	<u>E</u> xit					
/irtual IP	Module	Alias	Com Number	Heartbeat (unit:sec)	Remote Client IP	Remote Client Port
/ Time	Messaq	e				
	Server S	tarted(Local IP: 61.2	19.167.33, Local PORT:	11000)		
11/04 14:51:02						
11/04 14:51:02						
11/04 14:51:02						
11:04 14:51:02						
11/U4 14:51:02	7: 64 040 467 00					
tarted	P: 61.219.167.33	al PORT: 11000 V)	«Comm Driver is running	I.		

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

Step2: There are M2M-711D modules successful connect. As shown below:

Virtual IP	Module M2M 711D	Alias	Com Number	Heartbeat	Remote Client IP	Remote Client Port	Signal Qual
121.1.11.1		IVIZIVE7 11D		10	192.166.0.129	1805	<u>-</u> 80%
ate / Time	Message		7 44 48 actablishes			DODT 4905	
011/12/21 10.28.5 011/12/21 10:28:5	a The Remo 4 Server Sta	ited/Local IP: 127	7.11.1 establishes 2.168.0.171 Local	PORT: 11000	011. (IP. 192.106.0.129	, PURT. 1805)	
711712721 10.20.0			2.100.0.111,2000				

Step3: Open VxComm and add into M2M-711D VxComm Server

audrate /A ynamic
/A ynamic
vnamic
, name
DUCD
2-04-55 OFF
1:04:95 OFF
1:02:af OFF
1:29:4e OFF

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

	Configure Server	0.0	1	Configure Port
Add Server(s)	─ VxComm Servers	Port Port I/O Port 1	Virtual COM B Reserved N COM13 D	audrate /A ynamic
Remove Server	Port Configuration	E	3 1. Dou	ble click Port1
Web	Server: M2M-711D (192.168.29.217). Port 1			
Search Servers	Port Mapping (PC) Port Setting (Device)		Ĩ	
onfiguration (UDP)	Select COM 2.Select Com			2000
Exit	☐ Re-assign COM number for all subsequent ports.		MAC Address 10:37:71:2a:1a:0	9 OFF
	 Apply to all subsequent softs. Fixed baud rate, use server current settings. Skip baud rate and data format changes from client program. (Less conflicts when sharing port to multiple clients.) 		0:0D:E0:03:04:5 0:0D:E0:50:04:9 0:0d:e0:50:02:a1 0:0d:e0:20:29:4	6 OFF 5 OFF f OFF e OFF

	Driver Configure Server				Configure Port			
driver & utility V-VxComm Servers				Port	Virtual COM	M Baudrate		
Comm	M2M-711D (192.168.29.217)				Port I/O	Reserved	N/A	
te part of your PC					Port 1	COM13	Dynamic	
Remove Server Web Search Servers quration (UDP)	Name M2M-720-A	Alias	IP Address 192.168.29.20	Sub-net M 255.255.0.0	Gateway	/ N 0.254 0	MAC Address	DHCP
	M2M-711D	N/A	192.168.29.217	255.255.0.0	192.168	.29.1 0	10:0D:E0:03:04:56	OFF
Exit	M2M-710D	N/A	192.168.29.10	255.255.0.0	192.168	.0.254 0	10:0D:E0:50:04:95	OFF
	PDS-782	N/A	192.168.111.111	255.255.0.0	192.168	.0.254 0	10:0d:e0:50:02:af	OFF
	SAR-713	SAR-713	192.168.255.1	255.255.0.0	192.168	.255.254 0	10:0d:e0:20:29:4e	OFF

Step5: Reset VxComm Driver to make settings take effect.

4.6 VxServer Mode Communication Test Step1: Connect M2M-711D with PC as shown below:



Step2: Assign the M2M-711D's Server Port1 to PC's virtual Com 13. Please refer to section 4.5.

Step3: Connect VxServer with M2M-711D: In the Standard Config setting web of M2M-711D, 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/so urce/send232.vb6_2.0.1) Open two Send232 programs, one use Com1 (connect with M2M-711D), 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:



5. Troubleshooting

Item	Trouble State	Solution				
1	LED stay on 8. 8. 8. 8. 8.	DNS Server error1. Please check the net configuration2. Please check the Server address3. Please try to use IP				
2	Client login, but it cannot Pair Connection	 Inspects the line Is M2M-711D online? 				
3	Continuously heavy starting	Reboot both of RM711Ds server and client				
4	LED Conn. twinkled	 Check Server IP Check net 				
5	8.8.8.8.8.	Check the Client Name of Server and the Host Name of Client are the same.				
6.	8.8.8.8.8.	The M2M-711D can't ping to the server in AP mode. Please check the Channel, SSID, Encryption and Passphrase of Wireless Config page are the same with Wi-Fi AP.				
7.	8. 8. 8. 8. 8.	The M2M-711D can't ping to the server IP in AP/Ad Hoc mode. Please check Server IP and Wireless Configuration.				
8.	LED:State Code	State Code : The code for rebooting. Ex : 01, Enable the initializing function.				

6. FAQ

Q1: If I forget the M2M-711D's IP, how can I set and operate the M2M-711D by web browser?

A1: Before the host PC connect to the M2M-711D, you must know the Ethernet IP of M2M-711D. There are two ways to set the IP:

Method1: Reboot the M2M-711D (Section 2.4)

If the M2M-711D is in AP mode or Ad Hoc mode, the Ethernet IP would be shown on LED after "SET IP" as the following figures. The Ethernet IP of the example is 192.168.1.217.



If the M2M-711D is in Ethernet mode, the Ethernet IP would be shown on LED after "11111". The Ethernet IP of the example is 192.168.1.217.



Method2: Restore the M2M-711D factory default setting. Please refer to section 2.3.

(Default setting – User: root, Password: icpdas, IP = 192.168.1.217)

Q2: The M2M-711D can't connect with VxServer in the AP mode or Ethernet mode.

A2: Please follow the following steps to check that the network configuration is correct.

Step1: Check the IP of VxServer and M2M-711D is no repeat with other computers.

Step2: 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.



Step3: Please confirm that the following settings are correct.

(1) "Server IP" of "Standard Config" web page is the same with VxServer's IP.

	ICP D	AS
Login UserAccount Standard Config	System Operation Mode	VxServer -
Wireless Config DDNS Config ComPort Config	Net Work Host Name	M2M-711D
Operation Mode Information	Sation ID Connect to Server by	
	Server Name Server IP	192.168.0.171
	Communication Port Boot Protocol	11000 StaticIP 👻
	Heart Bit Ethernet Static IP Conf	Enable - ig (Only Web Page Config)
	Ethernet IP Netmask	255,255,0,0
	Gateway	192.168.0.254

(2) The "Communication Port" of VxServer and M2M-711D are the same.

	Virtual IP	Module	Alias	Com Number	Heartbeat	Remote Client IP	Remote Client Port	Signal Qualit
9	127.7.11.1	M2M-711D	M2M-711D	1	10	192.168.0.129	1805	<u>/</u> 80%
Dat	e / Time	Message						
201	1/12/21 10:28:56	The Remo	te Virtua IP "127.7	7.11.1" establishes	a new connecti	on. (IP: 192.168.0.129	, PORT: 1805)	
201	1/12/21 10:28:54	Server Sta	inted(Local IP: 192	2.168.0.171, Local	PORT: 11000)			

(3) The "Operation Mode" is VxServer

Q3: Server and Client can't establish Com Port connection. A3: Please check following steps:

Setp1: Check M2M-711D has finished the registration of VxServer, and the signal is green

ettu	ngs <u>H</u> elp <u>E</u> xit							
1	Virtual IP	Module	Alias	Com Number	Heartbeat	Remote Client IP	Remote Client Port	Signal Quality
9	127.7.11.1	M2M-711D	M2M-711D	1	10	192.168.0.129	1278	 80%
Date	e / Time 1/12/21 - 11 32 40	Message The Remo	re Virtua IP "127.7	11.1" establishes	a new connectu	on /IP: 192 168 0 129	POPT 12781	
2011	1/12/21 11:32:23	Server Sta	rted(Local IP: 192	.168.0.171, Local	PORT: 11000)	om (in 102.100.0.120	12.0101.12.01	

Step2: Check the 5-Digit 7 Segment LED Display of M2M-711D shows correct Com Port setting.

	8.	8.	
B.		8.	8.

Step3: Check the connection wiring of M2M-711D and Com Port is correct. It has to take jumper connected method unless the Com Port connection is a DCE device. In other words, if the Com Port connection device is a DCE device it doesn't have to use jumper connected.

7. Dimensions





8. Frame Ground

Electronic circuits are constantly vulnerable to Electro Static Discharge (ESD), which becomes worse in a continental climate area. M2M-711D 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-711D 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-711D 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.



M2M-711D user manual (Version 2.20, Mar/2012) PAGE: 59