

User's Manual Version 1.00





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#### List of Revision

Date	Author	Version	Revision
2008/11/30	Raiden	1.00	Release

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# 1. Introduction

The M-4132 module is specially designed for the remote maintenance solution with voice streaming. This module provides 2 major technologies on networking: Voice streaming and Pair connection functions. The Pair connection means that the user can operate remote COM port device via Ethernet TCP/IP protocol just like a local COM port and the Voice streaming means the user can talk to remote operator while operate remote COM-linked devices. Refer to the following graph.

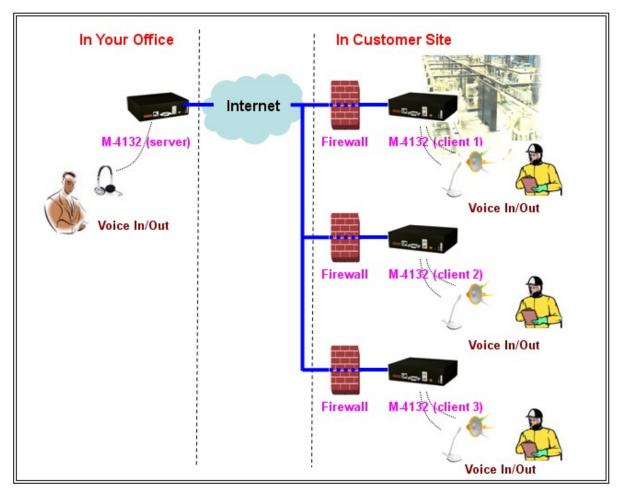


Figure 1: Voice streaming

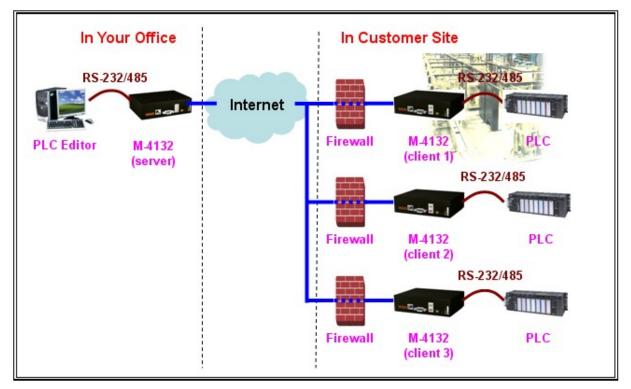


Figure 2: Pair connection

- 1.1 Features
- Support voice streaming on network
- Provide pair connection (RS-232,RS-485) on network
- Web-based administration
- Linux 2.6 platform
- Support TCP/IP protocols
- Provide dynamic DNS function
- Provide event record and e-mail function
- Built-in web server, FTP server
- Built-in RTC
- Built-in self-tuner ASIC chip for RS-485 port
- 2500V isolated on RS-485 port
- Provide LED indicators
- Robust, fan less design
- CE/FCC, EMI, RoHS compliance

1.2 Hardware Specification
----------------------------

	Description	
Item	Description	
CPU	xScale PXA-255 400 MHz processor	
Memory	SDRAM: 64 MB	
	Flash: 32 MB	
	SRAM:256 KB	
Ethernet	Ethernet IC: DM9000A.	
	Bit rate: 10/100 Mbps	
	Ethernet interface: RJ-45 connector	
	Internet connection type: DHCP, Static IP, PPPoE	
	Ethernet protocols & services: TCP/IP, Web server,	
	FTP server, Telnet & ssh	
Audio	Provide microphone input and stereo speaker output	
	Microphone and speaker interface: 3.5mm 3-pin	
	phone jack	
	Volume and tone quality adjustable	
Com port	Serial port - RS-232/RS-485	
-	COM1:RS-232 interface D-sub 9-pin male	
	RS-232: TXD, RXD, RTS, CTS, GND	
	COM2:RS-485 interface 2-pin screw terminal block	
	RS-485: D+, D-, self-tuner ASIC inside	
	Baud Rate :	
	1200/2400/4800/9600/19200/38400/57600/115200 bps	
	Data Format: 5/6/7/8 data bits, None/Odd/Even	
	parity bit, 1/2 stop bit	
Power	Unregulated $+10V \sim +30V DC$	
requirement	Power consumption 2.5W	
Environmental	<i>Operating temperature: -20 ~ 60 °C</i>	
	Storage temperature: -25 ~ 85 °C	
	ESD protection: 2500V	
	CE/FCC, EMI, RoHS compliance	
Dimensions	$160 \times 135 \times 44 \ (mm)$	

# 2. Hardware

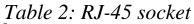
# 2.1 Pin Assignment



Figure 3: Pin assignment of M-4132

Pin	Name	Description
1	T.GND	GND of trigger input
2	Trig	Trigger input
3	D+	Data+ of RS-485
4	D-	Data- of RS-485
5	PWR	V+ of Power Supply (+10 to +30VDC)
6	GND	GND of Power Supply
7	F.G.	Frame Ground

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



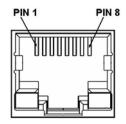


Table 3: RS-232 DB9 Female Connector

Pin	Name	Description
1	DCD(CD)	(Data) Carrier Detect
2	RXD	Received Data
3	TXD	Transmitted Data
4	DTR	Data Terminal Ready
5	GND	Signal Ground/Common
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CTS	Clear to Send
9	-	N/A

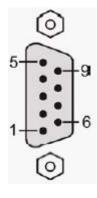
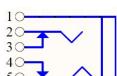


Table 4: 3.5mm Phone Jack (Speaker Out)

Pin	Name	Description	
1	GND	Ground	
2	Tip	Left channel	
3	-	N/A	10
4	-	N/A	2C 3C
5	Ring	Right channel	40



Pin	Name	Description	
1	GND	Ground	
2	Tip	Input Signal	
3	-	N/A	10
4	-	N/A	
5	Ring	Ground	

Table 5: 3.5mm Phone Jack (Microphone In)

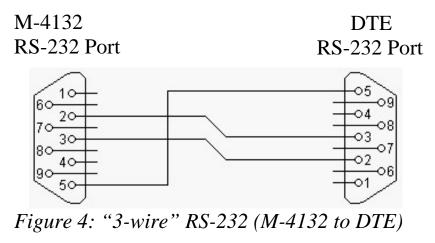
## 2.2 Wiring Instructions

The communication interface includes RS-232, RS-485 and Ethernet. The wiring instructions describe 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, Video Cameras) and DCE (Data Circuit-Terminating Equipment, like modem) type, and that the signal names and pin numbers are the same, but signal flow is opposite!

The M-4132 module is a DTE and the user can uses "3-wire" RS-232 or "5-wire" RS-232 to connect. When connecting the M-4132 to a DCE device, the user just needs to match the signal names. When connecting the M-4132 to a DTE device, the user needs to use a crossover cable (TX crosses to RX, GND to GND,), as shown in the figure 4, 5.



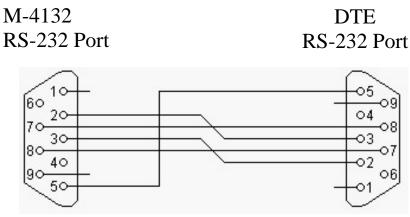


Figure5: "5-wire" RS-232 (M-4132 to DTE)

#### 2.2.2 RS-485 connection The RS-485 wiring diagram is shown in figure 6.

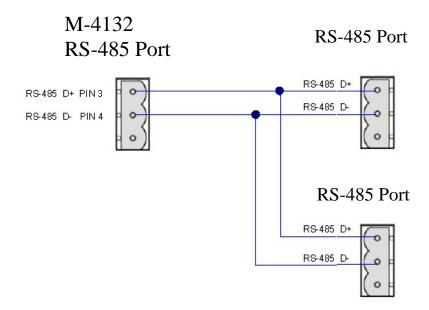


Figure 6: RS-485 connection

### 2.2.3 Ethernet connection

The M-4132 module is based on a client-server architecture model. When the M-4132 works as a server, it should adjust the firewall before the M-4132 module appropriately or else the client will not connect to the server.

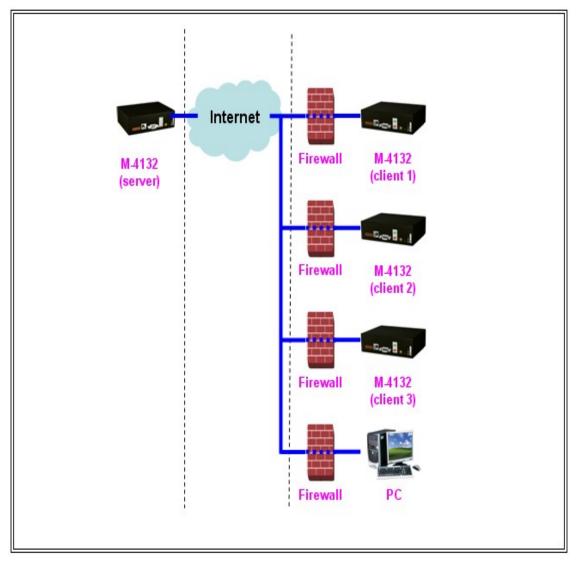


Figure 7: Ethernet connection

## 2.3 Dip Switch and Trigger button

The M-4132 provides two switches (SW1, SW2) and a trigger button (TB). These switches and button can decide initial function of the system after power on and enable/disable the request to connect. The descriptions are shown in table 6, 7.



Figure 8: Dip Switch and Trigger Button

Option	State	Description
Recover default setting forever	SW2=ON SW1=ON To press the TB about 40 second after power on	All system settings will be cleared and recover default settings. (Warning: it will not restore settings after clear)
IP recover default setting for this time	SW2= OFF SW1= ON To press the TB about 40 second after power on	After power on, it will set IP to default setting (192.168.1.217) for this time, but it will restore original IP at next time.
IP recover default setting forever	SW2= ON SW1= OFF To press the TB about 40 second after power on	After power on, it will set IP to default setting (192.168.1.217) and save to flash.
Display the current IP and version	SW2=OFF SW1=OFF To press the TB about 40 second after power on	After power on, it will display the message about current IP and version information from Com Port(RS-232).
Normal setting	The other states	Normal state; It will not change any setting and data.

Table 6: Dip switch and trigger button for initial function

Option	State	Description
Disable the request to connect	SW2=OFF SW1=OFF Press the TB	Client: Send the request to disconnect. The voice and com port connection will be disconnected, but the login connection will hold on.
Enable the request to connect	SW2=ON SW1=ON Press the TB	Client: request server to connect.

Table 7: Dip switch and trigger button for the request

# 2.4 LED Status Indicators

The M-4132 provides three LEDs to indicate the status, as shown below.



Figure 9: LED indicator

Table 8: LED	status	description
--------------	--------	-------------

Name	Status	Description
PWR	on	Power supply is ok.
1 99 IX	off	Power supply has failed.

Name	Status	Description
SA1	flash	It is receiving com port data via Ethernet.
SA2	flash slowly	Server: The Ethernet is initial ok and wait for the client to login. Client: The Ethernet is initialized ok and login completely. It has readied to enable voice and com port data connection by the server.
	flash fast	It is sending or receiving voice data via Ethernet.
	on	There are happening some errors. (Client: Please check settings about IP & DNS)
SA1 & SA2	flash slowly (SA1 & SA2 flash at the same time)	It is trying to establish the connection with the server/client. If it can't connect to the server/client for a long time, please check that the M-4132 has available network settings and is working well on Ethernet.
	flash (SA1 & SA2 alternate flash)	Server: Receive the request to connect from the client. Client: Request server to connect.

# 3. Configuration and Operation with Web Browser

The M-4132 module is built-in web server, the user can configure and operate the M-4132 by web browser (ex: IE).

## 3.1 Connection Setting

Before you open the web browser to configure the module, it needs to connect the M-4132 and your PC to the same sub network or same Ethernet Switch (as shown in figure 10) and set network settings (such as IP/Mask/Gateway) of the PC. The example of connection setting will describe below and Microsoft Windows XP Professional SP2 is used.

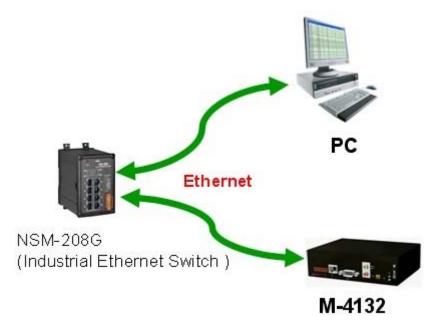


Figure 10: connection architecture

#### **Connection steps** :

Step 1: Open Network Connections

1.Click "start->Settings->Network Connections"

Network Connections	<b>_</b> 8 X
File Edit View Favorites Tools Advanced Help	<b>A</b> *
🕝 Back 🔹 🌍 🕤 🏂 Search 🎼 Folders 📰 -	
Address 🔕 Network Connections	💌 🄁 Go
Network Tasks       ELAN or High-Speed Internet         Image: Create a new connection       Image: Create a new connection         Image: Set Up a home or small       Image: Create a new connection         Image: Set Program Access and Defaults       Image: Create a new connection         Image: Set Program Access and Defaults       Image: Create a new connection         Image: Set Program Access and Defaults       Image: Create a new connection         Image: Set Program Access and Defaults       Image: Create a new connection         Image: Set Program Access and Defaults       Image: Create a new connection         Image: Set Program Access and Defaults       Image: Create a new connection         Image: Set Program Access and Defaults       Image: Create a new connection         Image: Set Program Access and Defaults       Image: Create a new connection         Image: Set Program Access and Defaults       Image: Create a new connection         Image: Set Program Access and Defaults       Image: Create a new connection         Image: Set Program Access and Defaults       Image: Create a new connection         Image: Set Program Access and Defaults       Image: Create a new connection         Image: Set Program Access and Defaults       Image: Create a new connection         Image: Set Program Access and Defaults       Image: Create a new connection         Image: Set Program Access and Default	
Image: Settings     Image: Control Panel       Image: Settings     Image: Settings       Image: Settings     Image: Settings   <	
📍 🕜 Help and Support 📃 Taskbar and Start Menu	
2 7 Run	
Run  Run  In Off Raiden  Turn Off Computer	
Turn Off Computer	
😝 start 👔 Search Results - Com 🐚 Network Connections	🛒 🧐, 5:58 PM

Figure 11: click "start->Settings->Network Connections"

## 2. Double click "Local Area Connection" icon

Local Area Connection Enabled AMD PCNET Family PCI

### 3. click "Properties" button

Local Area Cor	nection Status	
General Support		
Connection		
Status:		Connected
Duration:		00:23:43
Speed:		10.0 Mbps
Signal Strength:		
Activity	Sent — 蒙	
Packets:	کے   10,709	8,894
Properties	Disable	
		Clos

Figure 12: click "Properties" button

4. Select "Internet Protocol(TCP/IP)" and click "Properties" button

🕹 Local Area Connection Properties 🛛 🔹 💽
General Authentication Advanced
Connect using:
MD PCNET Family PCI Ethernet Adapter
Configure
This connection uses the following items:
<ul> <li>Elient for Microsoft Networks</li> <li>Elie and Printer Sharing for Microsoft Networks</li> <li>Boos Packet Scheduler</li> <li>Thternet Protocol (TCP/IP)</li> </ul>
Install Uninstall Properties
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Show icon in notification area when connected
OK Cancel

Figure 13: click "Properties" button

Step 2: Set "Internet Protocol Properties" and then click "OK" button. The settings must have the same domain and different IP with the M-4132. (ex: M-4132's default IP = 192.168.1.217, PC's IP = 192.168.1.210).

eral	
	I automatically if your network supports ed to ask your network administrator for
🔵 Obtain an IP address autor	natically
Use the following IP addres	s:
IP address:	192.168.1.220
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	
) Obtain DNS server address	automatically
Use the following DNS serv	ver addresses:
Preferred DNS server:	
Alternate DNS server:	· · ·
	Advanced

Figure 14: set "Internet Protocol Properties"



Figure 15: click "start->Run..."

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

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

Figure 16: key in "cmd" and then click "OK" button

3. key in "ping 192.168.1.217" and click "Enter". If the response message shows "Request timed out" (figure 17), 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.

C:\WINDOWS\System32\cmd.exe	×
Microsoft Windows XP [Version 5.1.2600] (C) Copyright 1985-2001 Microsoft Corp.	
C:\Documents and Settings\Raiden>ping 192.168.1.217	
Pinging 192.168.1.217 with 32 bytes of data:	
Request timed out. Request timed out. Request timed out. Request timed out. Ping statistics for 192.168.1.217: Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), C:\Documents and Settings\Raiden>	
<u> </u>	•

Figure 17: Ping IP Error

If the network settings are correct, it will show "Packets: Sent=4, Received=4, Lost=0"(figure 18).

C: WINDOWSUSystem324cmd.exe Microsoft Windows XP [Uersion 5.1.2600] (C) Copyright 1985-2001 Microsoft Corp. C:\Documents and Settings\Raiden>ping 192.168.1.217 Pinging 192.168.1.217 with 32 bytes of data: Reply from 192.168.1.217: bytes=32 time<1ms TTL=64 Ping statistics for 192.168.1.217: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 2ms, Average = 0ms C:\Documents and Settings\Raiden>

Figure 18: Ping IP OK

## 3.2 Web Configuration—function menu

Now the PC is set completely and working well with the M-4132. 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 M-4132, as shown in figure 19.

WebConfig - Microsoft Internet Explorer	
檔案· [2] 编辑 [2] 檢視 [4] 我的最爱 [4] 工具 [1] 說明 [1]	
③ 上─頁 · ③ · ▲ ② ⑤ / 搜尋 ☆ 我的最爱 ∅ ∅ · ▲ ∅ · ■ ↓ 〔 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
網址 (1) 🗃 http://192.168.1.217/main.htm	🔽 🄁 移至 🏾 連結 🎽 🍖 🕶
ICP DAS	
Legin     You are not logged yet !       User Account     User Name :       Standard Config     Password :       DDNS Config     Password :       Queration Mode     Enter       Event Report     Information       Reboot     Reboot	
(1) (2)	
http://www.icpdas.com	185
e e e e e e e e e e e e e e e e e e e	● 網際網路

Figure 19: Web Configuration page

When the browser connects with the M-4132, Figure 19 is the first page. The left side is the function menu and the other is the setup page in the first page. Server and Client is different in the function menu, as shown in the below.

Function menu (Server)--

- Login
- User Account
- Date/Time Config
- Standard Config
- DDNS Config
- Com Port Config
- Audio Config
- Operation Mode
- Event Log

- Event Report
- Information Reboot

Function menu (Client)--

- Login
- User Account
- Date/Time Config
- Standard Config
- Com Port Config
- Audio Config
- Operation Mode
- Information Reboot

The "Reboot" button can provide the user to restart the M-4132.

### 3.3 Web Configuration—setup page

#### 1 • Login : The user login and logout interface

You are not l	ogged yet !	
User Name :	root	
Password :	•••••	
Enter		

Figure 20: user login page

User Name :	*******	
Password :		

Figure 21: user logout page

 $2 \cdot \text{User Account}$ : The user account setting limits which user can configure the module settings. The super user (Account 1, name="root", password="icpdas") is an only the user that can edit this page.

Account 1 (Su	nper User)			
User Name	root			
Password :	icpdas			
Account 2				
User Name	: user1			
Password :	puser1			
Account 3				
User Name :	: user2			
Password :	puser2			
Account 4				
User Name :	: user3			
Password :	puser3			
Account 5				
User Name	: user4			
Password :	puser4			
Save Setting	g Default Setting			

Figure 22: User Account page

**3 · Date/Time Config** : The Date and Time of M-4132 can be set via "Date/Time Config" page. The format of date is "Year(4 digits)/Month(2 digits)/Day(2 digits)" and the time is "Hour(2 digits):Minute(2 digits):Second(2 digits)". The user can get current date and time of M-4132 by click "Refresh" button and set date and time of M-4132 by click "Setting" button.

System Time	e
Date (Year/Mon/Day) :	2008/10/27
Time (Hour:Min:Sec) :	17:12:59
Refresh Setting	]

Figure 23: System Time page

4 • Standard Config : When the user changes the setting in this page, the user must restart the M-4132 for an active setting.

- 1. System
  - a. Operation Mode : VSoIP Server / VSoIP Client •

The M-4132 has 2 operation modes. They are "VSoIP Server" and "VSoIP Client". The user can set the M-4132 to be a server or client in this page. When the M-4132 plays the role of client, it will try to connect with the server. When the M-4132 plays the role of server, it will wait client to link.

- 2. NetWork
  - a. Host Name : For the module name.
  - b. Connect to Server by : IP / DNS The setting can provide the client to connect with the server by IP or DNS of the server
  - c. ServerIP : The user can set the IP address of the server that the client wants to connect.
  - d. ServerDNS : The user can set the DNS of the server that the client wants to connect.
  - e. Communication Port : The user can set the port number of the server that the client want to link in this setting. The factory setting is "443".
  - f. Boot Protocol : Static IP / DHCP / ADSL Connection M-4132 supports three kinds of IP modes, they are "Static IP", "DHCP" and "PPPoE (ADSL)". The user can choose one of these modes to set the IP address of M-4132.
- 3. Static IP Config
  - a. IP Address : When Boot Protocol is "Static IP", the user can set IP address of M-4132 in this setting.

- b. NetMask : When Boot Protocol is "Static IP", the user can set subnet mask of M-4132 in this setting.
- c. GateWay : When Boot Protocol is "Static IP", the user can set gateway of M-4132 in this setting.
- d. DNS Server : When Boot Protocol is "Static IP", the user can set DNS server of M-4132 in this setting

4. ADSL Config : When Boot Protocol is "ADSL", the user needs to set "user name" and "password" for ADSL connection. The user can get the "user name" and "password" from your ISP (Internet Service Provider).

System		
Operation Mode	VSoIP Server	*
NetWork		
Host Name	Server	
Connect to Server by (*)	IP	*
Server IP (*)	220.130.62.111	
Server DNS (*)	www.icpdas.com	
Communication Port	443	
Boot Protocol	Static IP	
Static IP Config		
IP Address	192.168.1.217	
Net Mask	255.255.255.0	
GateWay	192.168.1.254	
DNS Server	168.95.1.1	
ADSL Config		
User Name	icpdas	
Password	wincon8000	
Save Setting Defau	It Setting	

PS: (\*) means the parameters are used for VSoIP\_Client

Figure 24: Standard Config page

**5** • **DDNS Config** : When the M-4132 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: <u>http://www.dyndns.com/</u>.

- 1. Create your Dynamic DNS account
  - a. 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" key.
  - b. 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.

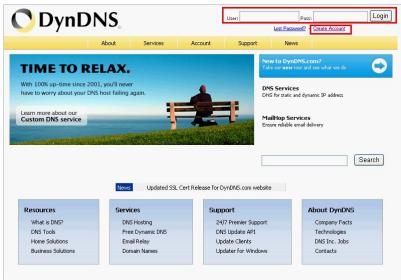


Figure 25: DynDNS home page

### c. Click "Services" Hyperlink to enter Services page

<b>O</b> Dyn	DNS.					Logged In User <u>My Services</u> - <u>My v</u>
	About	Services	Account	Support	News	
	Wa	nt 25 additional hostr	names? Purchase	e an <u>Account Upgrac</u>	le.	
My Account	Accou	nt Summai	y for lar	nchiafan		
My Services						
Account Settings	My Servic	es	Billing			int Settings
Billing My Cart <u>Oitems</u>	3	View, modify, purchase, and delet your services.	te 🝊	Update your biling information, complete a		Update you address, sel preferences delete your
Co	My Zones	/Domains	View Sh	opping Cart	Char	ige Email Address
	Add Zo	one/Domains Services	Active S	ervices	Char	ige Password
Search	My Hosts		Order H	listory	Char	ige Username
	Add H	ost Services	Billing Pr	rofile and Vouchers	Cont	act Manager
Search		rver™ VPS	Renew :	Services	Mailin	ng Lists

Figure 26: click "Services" Hyperlink

d. Click "Dynamic DNS" Hyperlink to enter Dynamic DNS page

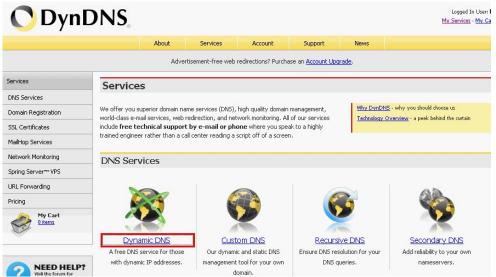


Figure 27: click " Dynamic DNS" Hyperlink

### e. Click "Get Started" button

🔿 Dyn	DNS	D				Logged In User: <u>My Services</u> - <u>My Cart</u> - <u>Log Out</u>
	About	Services	Account	Support	News	
	V	/ant 25 additional ho	stnames? Purchase	an <u>Account Upgra</u>	<u>de</u> .	
Services	Dyna	mic DNS				
DNS Services	, ,					
Custom DNS	Dynamic Df	NS (DDNS) allows you	uto create a hostna	me that points to y	your 🧧	Get Started
Secondary DNS	dynamic IP	or static IP address	or URL. We also pro	vide an update		Get Started
Recursive DNS	mechanism	which makes the ho	stname work with yo	our dynamic IP add	lress.	
Dynamic DNS Readme		nue to offer this s		Internet communit <sup>,</sup>	y as we	Manage Hosts
Readme How-To	have done	so for nearly 10 y	ears.			
Account Upgrades						
Standard Domains Premium Domains	Capabilit	ties and Feature	es			Screenshot
					New Dyn	Nike
Domain Registration	• Ge	t five (5) hostnames	in <u>88 available doma</u>	<u>ains</u> for free.		Annual Annua
SSL Certificates	• Cr	eate wildcard CNAME	*, yourhost, dyndns	<i>s.org</i> for	-	Anno Sanno Conserva de antesas Conserva dastas Conserva dastas Conserva dastas dast Estas dastas d Estas dastas d
	VO	urhost.dyndns.org.				Address over a statement of the statement

Figure 28: click "Get Started" button

f. Key in and select your hostname (ex: icpdas.home linux.com), and key in IP address of the server. Don't care the other settings and click "Create Host" button.

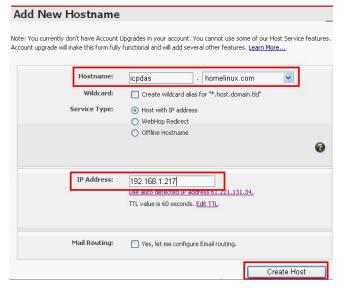


Figure 29: Add New Hostname

	Hostnam	e i <u>cpdas.homelinux.com</u> created.	
<u>Hostname</u>	<u>Service</u>	Details	Last Updated
das.homelinux.com	Host	192.168.1.217	Oct. 27, 2008 11:43 PM

Figure 30: Create New hostname success

- 2. DDNS Config :
  - a. DDNS: Disable / Enable

The user can Enable or Disable DDNS function by this setting.

- b. Host Name : It is the hostname that user creates in DynDNS website (ex:icpdas.homelinux.com).
- c. User Name : It is the name of the user account in DynDNS website.
- d. Password : It is the password of the user account in DynDNS website.

DDNS (	Conf	ig	
DDNS	Disab	le	*
Host Name	icpdas.homelinux.org		
User Name	icpdas		
Password	wincon8000		
Save Set	ting	Default Setti	ng

Figure 31: DDNS Config page

 $6 \cdot Com Port Config$ : The user can set com port setting of M-4132 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 the M-4132 to active the new setting.

1. Port : RS232 / RS485

Select com port connection from RS-232 or RS-485.

- 2. Baud Rate : 1200 / 2400 / 4800 / 9600 / 19200 / 38400 / 57600 / 115200 / 230400 bps
- 3. Data Bits : 5 / 6 / 7 / 8 data bits
- 4. Parity : None / Odd / Even / Space
- 5. Stop Bits : 1 / 2 stop bits
- 6. Flow Control : None / Hardware / XonXoff

Com Po	rt Config	g
Port	RS232	~
Baud Rate	115200	*
Data Bits	8	~
Parity	None	~
Stop Bits	1	~
Flow Control	None	*
Save Settir	ig Defa	ult Settin

Figure 32: Com Port Config page

 $7 \cdot \text{Audio Config}$ : The user can set the Audio quality, output volume and input volume in this page. When the audio quality is bad, the user can turn audio quality, output volume and input volume between the server and client to improve.

1. Quality : 2~10

Select the audio quality, including sample rate and sample resolution. The best quality is 10.

2. Output Volume  $: 0 \sim 10$ 

The maximum output volume is 10.

3. Input Volume  $: 0 \sim 10$ 

The maximum input volume is 10.

Audio Co	nfig	J
Quality	10	~
Output Volume	10	~
Input Volume	10	~
Save Setting		Default Setting

Figure 33: Audio Config page

8 • Operation Mode : The user can use or test voice and com port transmission functions in this page.

- 1. Communication configure : The user can select communication parameters in this page. The parameters are effective in current connection, but it will not change the system settings.
  - a. Quality : 2~10

Select the audio quality.

- b. UART Port : RS232/RS485 Select com port connection from RS-232 or RS-485.
- c. Baud Rate : 1200 / 2400 / 4800 / 9600 / 19200 / 38400 / 57600 / 115200 / 230400 bps Select baud rate of com port.
- d. Data Bits : 5 / 6 / 7 / 8 data bits Select data bits of com port.
- e. Parity : None / Odd / Even / Space Select parity of com port.
- f. Stop Bits : 1 / 2 stop bits

Select stop bits of com port.

- g. Flow Control : None / Hardware / XonXoff Select flow control of com port.
- h. GetStatus : The user can get current communication parameters from this button.
- i. SetStatus : The user can set current communication parameters from this button.
- 2. Operation : The settings will only show in page of the server. If you want to refresh the status in this page, you can click "GetStatus" button.
  - a. Your Status : Show status of M-4132
    - Idle Mode :

The voice and com port connection have not established yet.

Broadcast Connection Mode :

All clients will hear the voice from microphone of the server via Ethernet.

• Broadcast & Pair Mode :

Server and client that the user selected will setup a virtual channel over Ethernet that allow bi-directional voice and serial (RS232 or RS485) data to pass through and the other client will also hear the voice from microphone of the server.

- Pair Connection Mode : Server and client that the user selected will setup a virtual channel over Ethernet that allow bi-directional voice and serial (RS232 or RS485) data to pass through.
- b. Request connection list : This item can show the name of client that send out the communication request.

c. Login list : This item can show the name of client that login completely.

d. "Pair Connection" button : The user can send "Pair Connection" command to M-4132 by this button. The user must select the name of the client from "Login list" before click this button.

e. "Broadcast Connection" button : The user can send "Broadcast Connection" command to M-4132 by this button.

f. "Broadcast & Pair" button : The user can send "Broadcast & Pair Connection" command to M-4132 by this button. The user must select name of the client from "Login list" before click this button.

g. "Drop Client" button : The user can cancel "Pair Connection" command and return to "Broadcast Connection" mode by this button.

h. "Request Break" button : The user can cancel all audio and com port connections by this button.

PS : Server can accept a maximum of 64 clients to login. When Server is at "Broadcast Connection" mode or "Broadcast & Pair" mode, we recommend that server must not login to exceed 32 clients, because it will make a intermittent audio transmission.

Communi	cation con	figure
Quality	10	*
UART Port	RS232	~
Baud Rate	115200	~
Data Bits	8	~
Parity	None	~
Stop Bits	1	~
Flow Control	None	*
GetStatus	SetStatus	
Operation		
Your Status:Id	lell	
Request conne	ction list :	
	💙	
Login list:		
	💙	
Pair C	onnection	
Broadcas	t Connection	

Figure 34: Operation Mode page

**9 · Event Log**: It will show the event log that clients login and connection break. To clear the event log can click "Clear Log" button.

**Event Log** 

Date:2008/12/12	Time:13:42:18	Hostname=Client1	IP:192.168.0.211	Event:Login in	^
Date:2008/12/12	Time:14:03:01	Hostname=Client1	IP:192.168.0.211	Event:Login in	
Date:2008/12/12	Time:14:14:32	Hostname=Server	IP:192.168.0.210	Event:Pair Connection by Web	
Date:2008/12/12	Time:14:18:05	Hostname=Client1	IP:192.168.0.211	Event:Login in	
Date:2008/12/12	Time:14:19:25	Hostname=Server	IP:192.168.0.210	Event:Stop All Service by Web	
Date:2008/12/12	Time:14:19:28	Hostname=Server	IP:192.168.0.210	Event:Pair Connection by Web	
Date:2008/12/12	Time:14:19:32	Hostname=Server	IP:192.168.0.210	Event:Stop All Service by Web	
Date:2008/12/12	Time:16:11:52	Hostname=Server	IP:192.168.0.210	Event:Pair Connection by Web	
Date:2008/12/12	Time:16:12:40	Hostname=Server	IP:192.168.0.210	Event:Pair Connection by Web	
Date:2008/12/12	Time:16:13:10	Hostname=Server	IP:192.168.0.210	Event:Pair Connection by Web	-
Date:2008/12/12	Time:16:13:12	Hostname=Server	IP:192.168.0.210	Event:Stop All Service by Web	
Date:2008/12/12	Time:16:15:58	Hostname=Server	IP:192.168.0.210	Event:Pair Connection by Web	
Date:2008/12/12	Time:16:21:42	Hostname=Client1	IP:192.168.0.211	Event:Login in	
Date:2008/12/12	Time:16:21:56	Hostname=Server	IP:192.168.0.210	Event:Pair Connection by Web	
Date:2008/12/12	Time:16:42:47	Hostname=Client1	IP:192.168.0.211	Event:Login in	
Date:2008/12/12	Time:16:42:54	Hostname=Server	IP:192.168.0.210	Event:Pair Connection by Web	
Date:2008/12/12	Time:16:43:06	Hostname=Client1	IP:192.168.0.211	Event:Ask break	
Date:2008/12/12	Time:17:05:15	Hostname=Client1	IP:192.168.0.211	Event:Login in	
Date:2008/12/12	Time:17:07:27	Hostname=Server	IP:192.168.0.210	Event:Pair Connection by Web	
Date:2008/12/12	Time:17:07:38	Hostname=Client1	IP:192.168.0.211	Event:Ask break	$\checkmark$
1					1

Clear Log

Figure 35: Event Log page

 $10 \cdot Event Report$ : The page provides the server sending "Event Log" to user by e-mail. It uses SMTP protocol to provide mail service.

1. Function : Disable / Enable

The user can Enable or Disable "Event Report" function by this setting. It must finish setting mail server before enable this function, else event log will not be sent to the user's mailbox correctly.

- 2. Report Cycle : every month / every week / every day Select report cycle from every month, every week or every day.
- 3. Report Date for monthly : 1~31Set report date, when report cycle is every month.
- 4. Report Date for weekly : Monday ~ Sunday Set report date, when report cycle is every week.
- 5. Report Time : 00:00 ~ 23:59Set report time. The format is "Hour (2 digits):minute (2 digits)".
- 6. "Save Setting" button : For saving the settings.
- 7. "Default Setting" button : For getting the default settings.
- 8. "Mail Server Setting" button : The user can link "Mail Server Setting" page by this button. The description is shown below about "Mail Server Setting" page.

a. Mail Server : Set URL of mail server. Mail server is "smtp.gmail.com", if you use Gmail.

b. Mail Port : Set port number of mail server. Mail port is "587", if you use Gmail.

c. Mail To : Set mail address that receive event report (ex: \*\*\*\*@gmail.com).

d. Mail From : Set mail address that the user create at Gmail (ex: \*\*\*\*@gmail.com).

e. Authentication Method : None / AUTH LOGIN / AUTH PLAIN

Select Authentication method. Authentication method is "AUTH LOGIN", if you use Gmail.

f. User Name : Set the user name for sign in to mail server with your account.

g. Password : Set the password for sign in to mail server with your account.

h. TLS/SSL Certification : Enable / Disable Select enable or disable TLS/SSL certification. It is Enable, if you use Gmail.

i. "Save Setting" button : For saving the settings.

j. "Default Setting" button : For getting the default settings.

k. "SendMail test" button : For testing the mail server settings. If the settings are all correct, it will show "Send Mail success" message after the user click the button.

1. "Return" button : For returning the "Event Report" page.

Event Report		
Function :	Disable	~
Report Cycle :	every month	~
Report Date for monthly	1	
Report Date for weekly :	Monday	*
Report Time (hh:mm) :	10:00	
Save Setting D	efault Setting	Mail Server Setting

Figure 36: Event Report page

Mail Server Setting	
Mail Server :	smtp.gmail.com
Mail Port :	587
Mail To :	to_address@gmail.com
Mail From :	from_account@gmail.com
Authentication Method :	AUTH LOGIN
User Name :	user_name
Password :	password
TLS/SSL Certification :	Enable 💌
Save Setting Do	efault Setting SendMail test Return

Figure 37: Mail Server Setting page

### 11 • Information :

- 1. OS Version : Show OS version.
- 2. Firmware Version : Show application program version.
- 3. Current IP : Show current IP.
- 4. Subnet Mask : Show current subnet mask.
- 5. Mac Address : Show current Mac address.
- 6. Licence Verify : Show the result that the licence is verified. If it shows "OK", it means the licence is passed.

## Information

OS Version :	0.91
Firmware Version :	1.00
Current IP :	192.168.0.210
Subnet Mask :	255.255.0.0
Mac Address :	00:0d:e0:b1:00:08
Licence Verify :	ОК

Figure 38: Information page

## 4. Application

#### 4.1 Pair connection

A server can accept one or more clients to login, but a server can only connect with a client in pair connection mode. In this mode, two M-4132s (one as Server, the other as Client) setup a virtual channel over Ethernet or Internet that allow bi-directional voice and serial (RS-232 or RS-485) data to pass through, as shown in figure 39, 40.

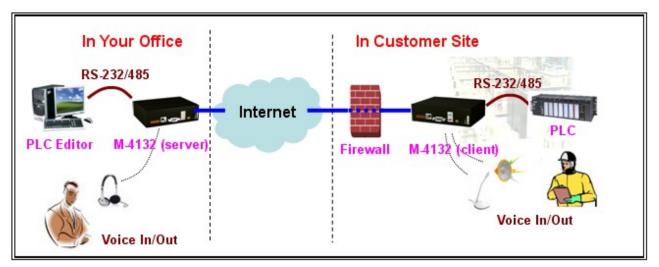


Figure 39: Pair connection (one server to one client)

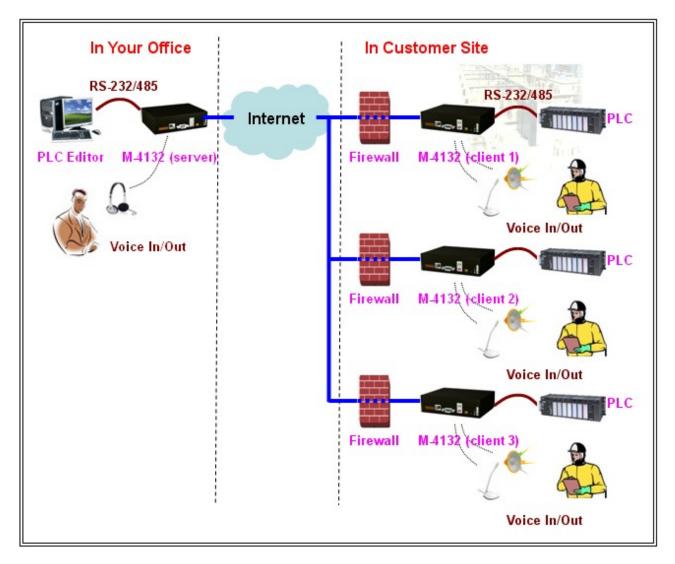


Figure 40: Pair connection (one server to more clients)

### 4.2 Broadcast connection

A server can connect with one or more clients in this mode. Voice collected from the server's MIC will transfer to all clients' speakers over Ethernet or Internet

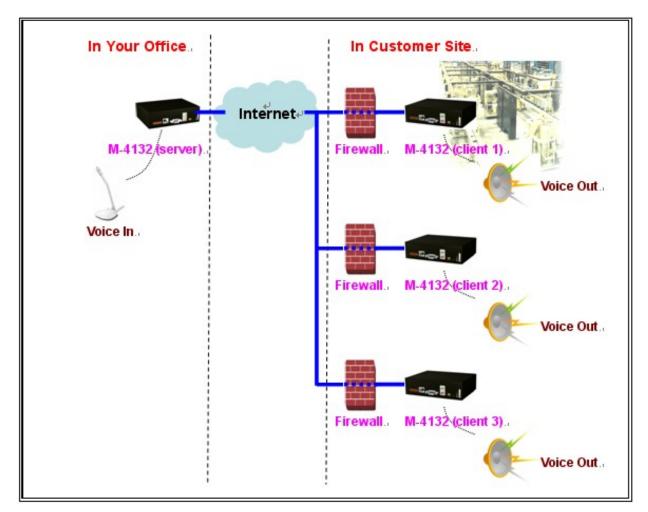


Figure 41: Broadcast connection

## 5. Troubleshooting

The troubleshooting list can help users to resolve the problems when using the M-4132. If the problem still can't be solved, please contact with the technical staff of ICP DAS.

Item	Trouble state	Solution
1	PWR LED indication of M- 4132 is always turned off	The power supply of M-4132 has some problems. Please check the wire connection of the power and the voltage is between 10~30VDC.
2	SA1 and SA2 of M-4132 is always turned on	Application program has some errors. Please reset the M-4132 and then check licence is OK in "information" page. Client: Please check server's DNS and network settings are all correct in "Standard Config" page.
3	SA1 and SA2 LED of M-4132 flash slowly at the same time and keep the state long	It means M-4132 can't establish the connection with the other M-4132. Please check the network settings and M-4132 is working well on Ethernet. Client: Please check server's IP/DNS and network settings are all correct in "Standard Config" page.
4	The audio quality of M-4132 is bad.	Please turn audio quality, output volume and input volume of server and client in "Audio Config" page.
5	M-4132 can't send event report.	Please check the settings are all correct in "Event Report" and "Mail Server Setting" page.

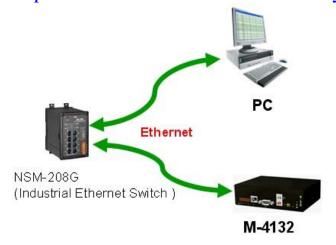
Table 9Errors and solutions

## 6. FAQ

Q1: If I forget the M-4132's IP, how can I set and operate the M-4132 by web browser?

A1: You should get M-4132's IP first. It has two ways to get the IP, as shown below.

**I. Recover default IP provisionally.** Step 1: Connect PC and the M-4132 by Ethernet Switch.



Step 2: Set SW1=ON, SW2=OFF. Step 3: Press the Trigger Button about 40 second after power on.



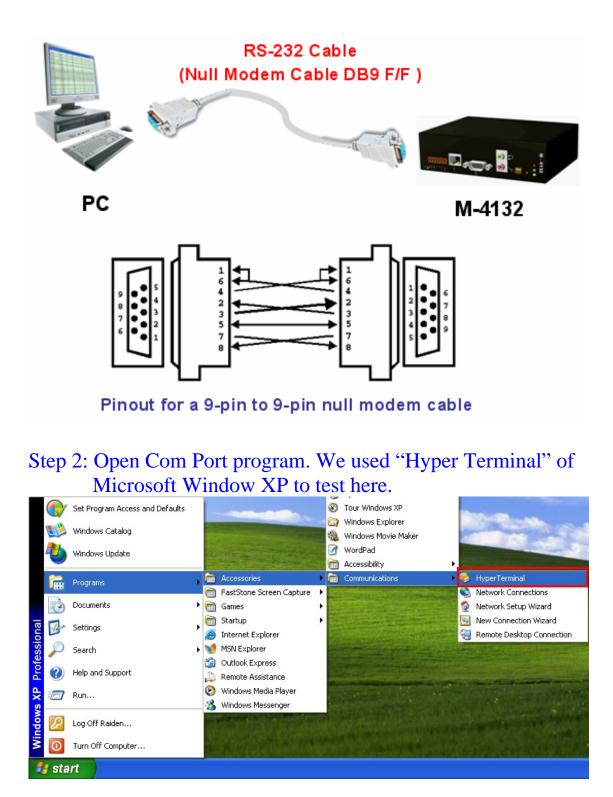
Step 4: M-4132's IP should be returned to "192.168.1.217". Please set PC's Network settings. The settings must have the same domain and different IP with the M-4132 (ex: IP=192.168.1.210, mask=255.255.255.0).

Internet Protocol (TCP/IP) Pro	perties 🤶	$\mathbf{X}$
General		
You can get IP settings assigned au this capability. Otherwise, you need the appropriate IP settings.	utomatically if your network supports to ask your network administrator for	
🔘 Obtain an IP address automati	cally	
• Use the following IP address:		
IP address:	192.168.1.210	
Subnet mask:	255 . 255 . 255 . 0	
Default gateway:		
Obtain DNS server address au	itomatically	
→ Use the following DNS server	addresses:	
Preferred DNS server:		
Alternate DNS server:		
	Advanced	ו
	OK Cancel	

- Step 5: Open web browser on PC and key in <u>http://192.168.1.217/main.htm</u> in the Address line.
- Step 6: If the connection is ok, it will show "login" page at web browser. Current IP is provisional, the user can refer to the user manual section 3.3 to login and then set network setting of M-4132 at "Standard Config" page.

WebConfig - Microsoft Internet Explorer	
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総址 ① 🚳 http://192.168.1.217/main.htm	🔽 🄁 移至  速結 🎽 🃆 •
-ICP DAS	- Chapter
Login You had logined already.	
User Name :	
Standard Config Com Port Config Password :	
Audio Config Exit	
Operation Mode Information	
Reboon	
	1023
http://www.icpdas.com	OV2
a	<b>*</b> #####

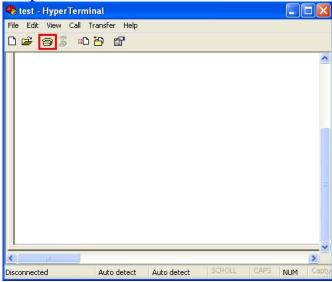
**II. Print current IP from Com Port (RS-232).** Step 1: Connect PC and the M-4132 by RS-232 cable.



Step 3: Set communication setting of Com Port. (baud rate = 115200, data bits=8, parity=none, stop bits=1, flow control=none).

Bits per second:	115200	*
Data bits:	8	~
Parity:	None	~
Stop bits:	1	~
Flow control:	None	~

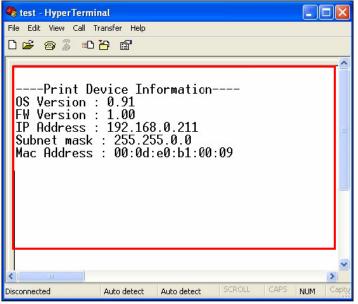
#### Step 4: Press Call icon.



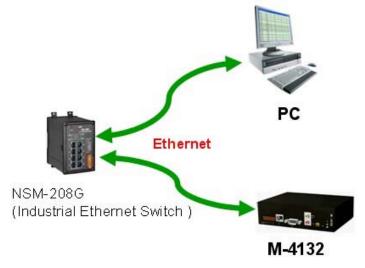
#### Step 5: Set SW1=OFF, SW2=OFF. Step 6: Press the Trigger Button about 40 second after power on.



#### Step 7: It will show M-4132's IP in "Hyper Terminal"(ex: IP Address = 192.168.0.211).



Step 8: Connect PC and the M-4132 by Ethernet Switch.



Step 9: Please set PC's Network settings. The settings must have the same domain and different IP with the M-4132 (ex: IP=192.168.0.210, mask=255.255.255.0).

Internet Protocol (TCP/IP) Pro	operties 🛛 🖓 🔀
General	
	utomatically if your network supports d to ask your network administrator for
🔘 Obtain an IP address automa	tically
→ O Use the following IP address:	
IP address:	192.168.0.210
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	· · ·
Obtain DNS server address a	utomatically
• OS Use the following DNS server	r addresses:
Preferred DNS server:	
Alternate DNS server:	
	Advanced
	OK Cancel

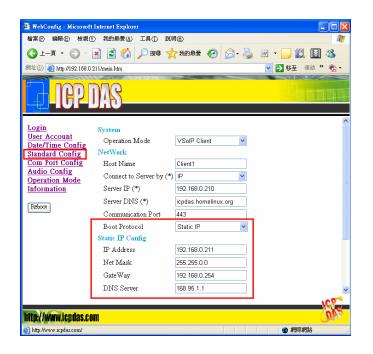
Step 10: Open web browser on PC and key in http://ip/main.htm (ex: <u>http://192.168.0.211/main.htm</u>) in the Address line.

Step 11: If the connection is ok, it will show "login" page at web browser.

_		
🗿 WebConfig - Microsoft	t Internet Explorer	
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網址D) 🍓 http://192.168.0.1	.211/main.htm 🔽 🄁 建結 🎽	
-ICP-D	AS	
Login User Account Date/Time Config Standard Config Com Port Config Audio Config Operation Mode Information	You are not logged yet   User Name : Password : Enter	
http://www.icpdas.com	0	Mac.
ê	#際網路	

- Q2: Client can not 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.

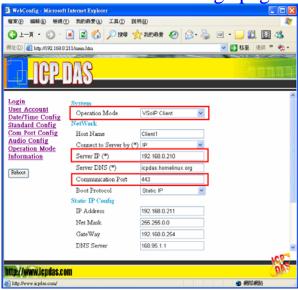
Step 2: Please confirm the network configurations are correct. The configurations include IP Address, Net Mask, Gateway and DNS Server. If the configurations are all correct, it should respond to the ping command from PC (PC's network setting must have the same domain with the Server and Client, the user can refer to user manual section 3.1 about ping IP).



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 "VSoIP Client".
- "Operation Mode" of Server is "VSoIP Server".

## Client's "Standard Config" page

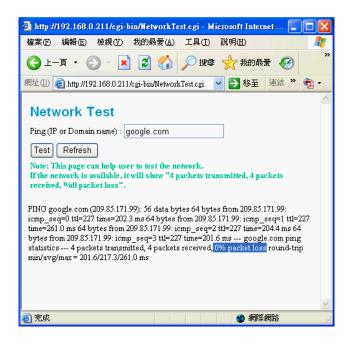


#### Server's "Standard Config" page

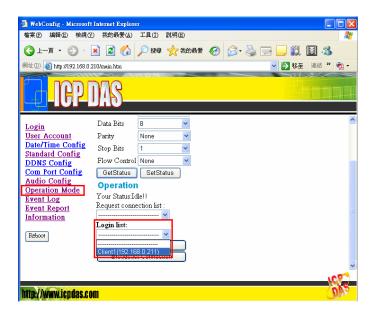
				_	<u> </u>
🗿 WebConfig - Microsoft I	nlernet Explorer				
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網址回 👸 http://192.168.0.2	10/main.htm		~	→ 移至 刻	985 🗶 🐔 🕫
CP-D	AS			1	
Login	System				<u>^</u>
User Account Date/Time Config	Operation Mode	VSoIP Server	*		
Standard Config	NetWork				
DDNS Config	Host Name	Server			
Com Port Config Audio Config	Connect to Server by (*)	IP	~		
Operation Mode	Server IP (*)	220.130.62.111			1
Event Log Event Report	Server DNS (*)	icpdas.homelinux.org			
Information	Communication Port	443			
	Boot Protocol	Static IP	*		
Reboot	Static IP Config				_
	IP Address	192.168.0.210			
	Net Mask	255.255.0.0			
	GateWay	192.168.0.254			
	DNS Server	168.95.1.1			~
					1021
http://www.icpdas.com	1				OAS
antha virm strop addate of	•			# 100 000 000 000 000 000 000 000 000 00	4
					111

Step 4: If Client connects to Server via internet, please confirm there is not any firewall before the Server and check network of Server and Client are available.

> The user can open web browser and key in http://ip/cgibin/NetworkTest.cgi (ex: http://192.168.0.211/cgi-bin/ NetworkTest.cgi ) in the Address line and press "Test" button to test the network. If the network is available, it will show "0% packet loss".



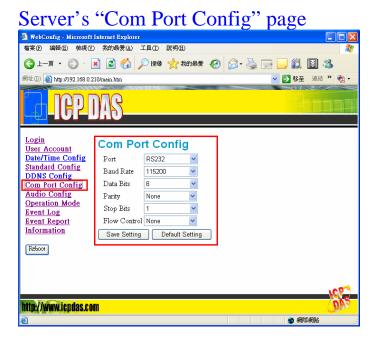
- Q3: Server and Client can't establish Com Port connection.
- A3: Please follow the steps to check below.
  - Step 1: Confirm Client has already login the Server and the user can find the host name of Client in the "Login list" at Server's "Operation Mode" page..



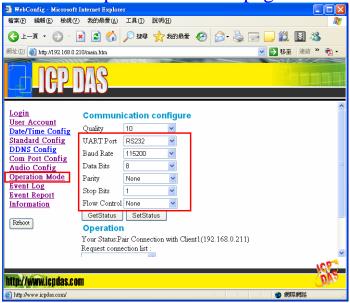
Step 2: Confirm Server and Client are in "Pair Connection" mode and it shows "Your Status: Pair Connection with Client (IP)" at Server's "Operation Mode" page.

🗿 WebConfig - Microsoft	Internet Explorer
檔案(E) 編輯(E) 檢視(V	) 我的最爱(A) 工具(I) 說明(H) 🦧
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網址① 🍯 http://192.168.0.2	210/main.htm 💿 🔁 移至 連結 🍟 🔁 🕶
ICP I	DAS
<u>Login</u> User Account	Baud Rate 115200 · Data Bits 8 ·
Date/Time Config	Parity None 🗸
Standard Config DDNS Config	Stop Bits 1 🗸
Com Port Config	Flow Control None
Audio Config	GetStatus SetStatus
Operation Mode Event Log	Operation
Event Report	Your Status:Pair Connection with Client1(192.168.0.211)
Information	Request connection list :
Reboot	Login list:
	Request Break !
	×
http://www.icpdas.co	
실 完成	御際網路     御祭網路

Step 3: Confirm that the Com Port devices connected with Server have the same communication settings with Server's "Com Port Config" page. Confirm that the Com Port devices connected with Client have the same communication settings with Server's "Operation Mode" page.



#### Server's "Operation Mode" page



Step 4: Confirm the Cable connected Server/Client to Com Port device is wired correctly. If the Com Port device is a data circuit-terminating equipment(DCE), the user just needs to match the signal names to connect Server/Client to Com Port device, else the user needs to use a crossover cable to connect(please refer to user manual section 2.2.1).

# 7. Dimensions



