工業級 2G / 3G 模組 I-8212W/I-8213W I-8212W-3GWA / I-8213W-3GWA 使用手冊

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產品型號可能僅登記於公司內部。

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第一章 產品簡介

I-8212W和I-8213W為工業級四頻 GSM/GPRS 模組, 其支援 GSM 850/900/ 1800/1900 MHz 頻段(其中I-8213W 含有 GPS 功能)。I-8212W-3GWA 和 I-8213W-3GWA 為工業級 3G 模組, 其支援 WCDMA 2100/1900/850 MHz 及 GSM 850/900/1800/1900 MHz 頻段(其中I-8213W-3GWA 含有 GPS 功 能)。。這些模組皆可經由便利且廉價的 2G/3G 網路來收集遠端資料, 包含各種 流量計或者及時的遠端控制。這些模組也內建 TCP/IP stack 只需搭配簡單的控 制命令即可連線上網或簡訊收送, 無須安裝特定的驅動程式。並且可以搭配本公 司的 PAC 系列產品作 SMS、GPRS 和 3G 的應用,例如 iPAC-8000, WinPAC-8000, LinPAC-8000 or XP-8000 等。



第二章 硬體介紹

2.1.1 I-8212W / I-8213W 產品照片



2.1.2 I-8212W / I-8213W 規格

型號	I-8212W	I-8213W	
GSM/GPRS 系統			
四頻 GPRS/GSM	850/900/1800/1900 MHz		
GPRS Multi-slot	Class 10/8		
GPRS 行動配置	Class B		
提供 GSM Phase 2/2+	MT, MO, CB, Text and PDU mode		
編碼	CS 1, CS 2, CS 3, CS 4		
SMS	Text and PDU Mode		
GPS 系統			
支援 Channel 數	-	32	
靈敏度	-	Tracking = up to -159 dBm (with external LNA) Cold start = up to -146 dBm (with external LNA)	
定位時間	-	Hot start (Open Sky) = 2 sec.(typical) Cold start (Open Sky) = 36 sec.(typical)	
支援協議	-	NMEA 0183 version 3.01	
LED 指示燈	•		
電源	紅燈		
GSM/GPRS	黄燈		
GPS	-	綠燈	
電源			
保護	ESD, Surge, EFT, Hi-Pot		
功耗	閒置: 0.16 A@ 5 V _{DC} ; 運轉: 0.2 ~ 1.64 A (peak) @ 5 V _{DC}		
機體	-		
外殼	塑膠		
尺寸(W x L x H)	30 毫米 x 85 毫米 x 114 毫米		
環境			
工作温度	$-25 \text{ °C} \sim +75 \text{ °C}$		
存放温度	-30 °C ~ +80 °C		
濕度	$5 \sim 95\%$ RH, non-condensing		

備註 1: I-8212W/I-8213W 的 GSM/GPRS 原廠設定值

Parameters	Default value
Baud rate	115200 bps
Parity	None
Date bit	8
Stop bit	1

備註 2: I-8213W 的 GPS 原廠設定值

Parameters	Default value
Baud rate	9600 bps
Parity	None
Date bit	8
Stop bit	1

2.1.3 I-8212W / I-8213W 特色

- ▶ 內建四頻(850/900/1800/1900 MHz)GSM/GPRS 模組
- ▶ 4KV ESD 瞬間靜電保護
- ▶ 可用於 GPRS 和簡訊應用
- ▶ 提供 GPRS 的 TCP Server, TCP Client, UDP Client stack 連線
- ▶ 支援標準 AT Commands
- ▶ 擁有電原、GSM和GPS之LED指示燈
- ▶ 於惡劣環境下仍具高可信度
- ▶ I-8213W 支援 32-channels GPS 和 NMEA v0183 v3.01
- ▶ 脈衝數:I-8213W 支援每秒 100 ms 脈衝波以利精確計時與時間測量
- ▶ 支援 XP-8000, WinPAC-8000, LinPAC-8000, ViewPAC, iPAC-8000



2.2.1 I-8212W-3GWA / I-8213W-3GWA 產品照片

2.2.2 I-8212W-3GWA / I-8213W-3GWA 規格

型號	I-8212W-3GWA	I-8213W-3GWA	
3G 系統			
頻率	UMTS : 2100/1900/850 MHz		
GSM/GPRS 系統			
頻率	850/900/1800/1900 MHz		
GPRS connectivity	GPRS class 12/10; GPRS stati	on class B	
編碼	CS 1, CS 2, CS 3, CS 4		
SMS 系統			
SMS	Text and PDU Mode		
GPS 系統			
支援 Channel 數		32	
靈敏度	-	Tracking = up to -159 dBm (with external LNA) Cold start = up to -146 dBm (with external LNA)	
定位時間	-	Hot start (Open Sky) = 2 sec.(typical) Cold start (Open Sky) = 36 sec.(typical)	
支援協議		NMEA 0183 version 3.01	
LED 指示燈			
電源	紅燈		
GSM/GPRS	黄燈		
GPS	-	綠燈	
電源			
保護	ESD, Surge, EFT, Hi-Pot		
功耗	閒置: 0.16 A @ 5 V _{DC} ; 運轉: 0.2 ~ 1.64 A (peak) @ 5 V _{DC}		
機體			
外殼	塑膠		
尺寸(W x L x H)	30 毫米 x 85 毫米 x 114 毫米		
環境			
工作温度	$-25 \text{ °C} \sim +75 \text{ °C}$		
存放温度	$-30 \circ C \sim +80 \circ C$		
濕度	$5 \sim 95\%$ RH, non-condensing		

備註 1: I-8212W-3GWA/I-8213W-3GWA 的原廠設定值

Parameters	Default value
Baud rate	115200 bps
Parity	None
Date bit	8
Stop bit	1

備註 2: I-8213W-3GWA 的 GPS 原廠設定值

Parameters	Default value
Baud rate	9600 bps
Parity	None
Date bit	8
Stop bit	1

2.1.3 I-8212W-3GWA / I-8213W-3GWA 特色

- > 支援三頻 UMTS 2100/1900/850 MHz,四頻 GSM850/900/1800/1900 MHz
- ▶ 4KV ESD 瞬間靜電保護
- ▶ 可作 3G、GPRS 和簡訊應用
- ▶ 提供 GPRS 的 TCP Server, TCP Client, UDP Client stack 連線
- ▶ 支援標準 AT Commands
- ▶ 擁有電源、GSM和GPS之LED指示燈
- ▶ 於惡劣環境下仍具高可信度
- ▶ I-8213W-3GWA 支援 32-channels GPS 和 NMEA v0183 v3.01
- 脈衝數:I-8213W-3GWA 支援每秒 100 ms 脈衝波以利精確計時與時間 測量
- ▶ 支援 XP-8000, WinPAC-8000, LinPAC-8000, ViewPAC, iPAC-8000

應用架構

● 產品應用示意圖 1

Industrial Quad-band GSM/GPRS Module



I-8212W



● 產品應用示意圖 2

第三章 硬體外觀

4.1 腳位圖

• I-8212W



• I-8213W



• I-8212W-3GWA



• I-8213W-3GWA



4.2 尺寸標示圖

• I-8212W / I-8212W-3GWA



• I-8213W / I-8213W-3GWA



4.3 LED 指示燈



模組上設有三個 LED 指示燈,其亮燈訊號表示如下:

● 電源 (紅燈): 此電源指示燈能顯示機組之電源狀況。

電源正常	電源錯誤
恆亮	恆滅

● GSM/GPRS (黃燈):此指示燈能顯示機組之 GSM/GPRS 狀況。

正常狀況	錯誤狀況
每3秒閃爍一次	恆滅 或 非每3秒閃爍一次

● 3G (黃燈):此指示燈能顯示機組之 GSM/GPRS 狀況。

正常狀況	錯誤狀況
每0.8秒閃爍一次	恆滅 或 恆亮

● GPS (綠燈):此指示燈能顯示機組 GPS 之狀況。(僅適用於 I-8213W / I-8213W-3GWA)

GPS 錯誤	搜尋 GPS	接收 GPS 資訊
恆滅	恆亮	每秒閃爍一次

第四章 硬體安裝

5.1 SIM 卡安裝



5.2 天線安裝



5.3 組件安裝

5.3.1 XP-8000 (Windows Embedded Standard 2009)

【<u>安裝模組</u>】

1.在 XP-8000 機體上裝上模組硬體。

2.將旋轉開關轉到"2",關閉 EWF。



- 3.重新啟動 XP-8000
- 4. 重新開機後,執行"Multi-Port IO module Register Wizard"。

4.1 開啟"Multi-Port IO module Register Wizard"

 $[\text{ Start }] \rightarrow [\text{ ICPDAS }] \rightarrow [\text{ Multi-Port IO Module Register Wizard }]$



4.2 登錄模組,登錄後離開。

🎕 Multi-Port IO Module Wizard 🛛 🛛 🔀	🎕 Mutti-Port IO Module Wizard 🛛 🔀
File Help	File Help
 Slot 1: 8213 Port1 - UnRegistered Port2 - UnRegistered Slot 2: Slot 3: Slot 4: Slot 5: Slot 6: Slot 7: 	 Slot 1: 8213 COM6 COM7 Slot 2: Slot 3: Slot 4: Slot 5: Slot 6: Slot 7:
Remove All Register All Exit	Remove All Register Al Exit

4.3 選擇"OK"並重新啟動。

	COM Port	Setting Changes 🛛 🛛
	Ú.	You must restart this computer for the changes to take effect.
~		ΟΚ
	Warning !	X
	?	Would you like to restart windows for taking effect this change?

4.4 重新啟動後, XP-8000 即完成安裝模組。



5. 完成安裝後,將旋轉開關轉到"0",開啟 EWF。



【解除安裝模組】

1.將旋轉開關轉到"2", 關閉 EWF。



2.重新啟動 XP-8000

3.重新開機後,確認 XP-8000 有安裝模組,執行"Multi-Port IO module Register Wizard"。

3.1 開啟 "Multi-Port IO module Register Wizard"

 $[\text{ Start }] \rightarrow [\text{ ICPDAS }] \rightarrow [\text{ Multi-Port IO Module Register Wizard }]$



3.2 移除模組後離開。

Mutti-Port IO Module Wizard 🛛 🛛 🔀	🎕 Multi-Port IO Module Wizard 🛛 🛛 🔀
File Help	File Help
COM6 COM7 Slot 2: Slot 3: Slot 4: Slot 5: Slot 6: Slot 7:	 Slot 1: 8213 Port1 - UnRegistered Port2 - UnRegistered Slot 2: Slot 3: Slot 4: Slot 5: Slot 5: Slot 6: Slot 7:
Remove All Register All Exit	Remove All Register All Exit

3.3 選擇"OK"並重新啟動。

	COM Port S	Setting Changes
	(i)	You must restart this computer for the changes to take effect.
		ΟΚ
L		
	Warning !	×
-	Warning !	Would you like to restart windows for taking effect this change

3.4 重新開機後, XP-8000 即移除模組。



4. 完成解除安裝後,將旋轉開關轉到"0",開啟 EWF。



2 7 slot 1 3 4 5 6 I-8212W I-8212W I-8212W I-8212W I-8212W I-8212W I-8212W KAAC XP-8741 COM6 COM10 COM14 COM18 COM22 COM26 COM30 (GSM/GPRS) (GSM/GPRS) (GSM/GPRS) (GSM/GPRS) (GSM/GPRS) (GSM/GPRS) (GSM/GPRS)

▶ I-8212W / I-8212W-3GWA 的對應插槽

▶ I-8213W / I-8213W-3GWA 的對應插槽



5.3.2 WinPAC-8000 (WinCE 5.0 Based)

【<u>安裝模組</u>】

- 1.在 XP-8000 機體上裝上模組硬體。
- 2. 重新啟動 WinPAC-8000
- 3. 重新開機後,執行"WinPAC Utility"。
 - 3.1 勾選"USE COMx"後,擊點"Set"按鈕。

WinPAC Utility [2.0.1.5]					×
File Help Configuration					
Ethernet Setting FTP Setting Syst	em Information	Auto Execution	Multi-serial port \	wizard System 🔳	•
Slot 0: 8213 Mismatch				Driver enabled	
Slot 1:				🛱 Driver disabled	
Slot 2:				•	
Slot 3:					
Slot 4:					
Slot 5:	<u>.</u>				
Slot 6:	Install driv	Ver (Apply to I-8		series modules)	
Slot 7:	Step1:	Set	USE COMX		
Slot scan (Refresh)	Step2; Go o	llEile">"Care	and Repoor to en	able driver	
WinPAC Utility [2.0.1.5]					
File Help Configuration				و کا کا	-/ /
Ethernet Setting FTP Setting Syst	em Information	Auto Execution	Multi-serial port v	wizard System 🔳	
Slot 0: 8213	Slot0:82	n3 6		🕅 Driver enabled	
Slot 1:	COM	7		Driver disabled	
Slot 2:			1	w is a second se	
Slot 3:					
Slot 4:					
Slot 5:	_				
Slot 6:	Install driv	er (Apply to I-8	112/8114/8142/8144	series modules)	
Slot 7:	Step1:	Set		15BX	
Slot scan (Refresh)	Step2: Go to) "File">"Save	and Reboot" to en	able driver	

3.2 儲存並重新啟動。

	WinPAC Utility [2.0.1.5]
	File Help Configuration
	Save
	Save and Reboot
	Reboot <u>W</u> ithout Save
	Restore Default Settings ma
	Exit
	Slot 2:
	Slot 3:
Warning !	
Would yo	N u like to save the settings and reboot the device?
	Yes No

點選[file]→[Save and Reboot]

4. 重新開機後,執行"WinPAC Utility"確認安裝成功。

WinPAC Utility [2.0.1.5]			🛄 🛄 🔟
File Help Configuration			
Ethernet Setting FTP Setting Syste	m Information	Auto Execution	Multi-serial port wizard System 🚺 🕨
Slot 0: 8213	Slot0	6	Driver enabled
Slot 3:			
Slot 4: Slot 5:			
Slot 6:	Install driv	/er (Apply to I-8	8112/8114/8142/8144 series modules)
Slot scan (Refresh)	Step2: Go tr	Set "File">"Save	USE COMX and Reboot" to enable driver

【<u>解除安裝模組</u>】

- 1. 從 WinPAC-8000 機體上移除模組。
- 2. 重新啟動 WinPAC-8000
- 3. 重新開機後,執行"WinPAC Utility"。

3.1 點選"Set"按鈕進入設定後移除驅動程式。

WinPAC Utility [2.0.1.5]	
File Help Configuration	
Ethernet Setting FTP Setting System Information Auto Execution Multi-serial port wizard System 💶 🕨	
Slot 0: Mismatch Slot 1: COM6 Slot 2: COM7 Slot 3: COM7 Slot 4: Slot 5: Slot 5: Slot 6: Slot 7: Step1: Slot scan (Refresh) Install driver (Apply to I-8112/8114/8142/8144 series modules) Step2: Go to "File"> "Save and Reboot" to enable driver	
WinPAC Utility [2.0.1.5] File Help Configuration Ethernet Setting FTP Setting System Information Auto Execution Multi-serial port wizard System I +	
Slot 0: Slot 1: Slot 2: Slot 3: Slot 4: Slot 5: Slot 6: Install driver (Apply to 1-8112/8114/8142/8144 series modules) Slot 7: Step1: Set VUSE COMx Step2: Slot scan (Refresh)	

3.2 儲存並重新啟動。

點選[file]→[Save and Reboot]

	WinPAC Utility [2.0.1.5]
	File Help Configuration
	Save Save and Reboot Reboot Without Save Restore Default Settings
	Slot 2:
Warning !	
Vould yo	u like to save the settings and reboot the device?

5.3.3 iPAC-8000 (miniOS7 Based)

- 1. 在 iPAC-8000 機組上裝上模組硬體後, 打開 iPAC-8000 的電源。
- 2. 相對應的插槽編號圖示如下:
 - I-8212W / I-8212W-3GWA



• I-8213W / I-8213W-3GWA

	slot	0	1	2	3	4	5	6	~
		I-8213W	I-8213W	I-8213W	I-8213W	I-8213W	I-8213W	I-8213W	I-8213W
	8841 • • • • • • • • • • • • • • • • • • •	COM5 (GSM/GPRS)	COM9 (GSM/GPRS)	COM13 (GSM/GPRS)	COM17 (GSM/GPRS)	COM21 (GSM/GPRS)	COM25 (GSM/GPRS)	COM29 (GSM/GPRS)	COM33 (GSM/GPRS)
		COM6 (GPS)	COM10 (GPS)	COM14 (GPS)	COM18 (GPS)	COM22 (GPS)	COM26 (GPS)	COM30 (GPS)	COM34 (GPS)
0	-							_	0

- 5.3.4 LinPAC -8000 (Linux Kernel 2.6 based)
 - 1. 在 LinPAC -8000 機組上裝上模組後,打開 LinPAC -8000 的電源。
 - 2. 相對應的插槽編號圖示如下:
 - I-8212W / I-8212W-3GWA



• I-8213W / I-8213W-3GWA



第五章 GPRS 連線方式

6.1 XP-8000 (Windows Embedded Standard 2009)

● 硬體設備需求:

- (1) I-8212W / I-8213W / I-8212W-3GWA / I-8213W-3GWA
- (2) XP-8000



XPAC-8000



I-8212W/I-8213W

● 新增新數據機連結

步驟一、控制台→點兩下"Phone and Modem Options",如下圖所示:



步驟二、設定區號→ 擊點"OK"



步驟三、控制台→點兩下"Phone and Modem Options"→選取"Modems" 標籤→點"Add"開始新增

Modem	Attach	ed To

步驟四、勾選 "Don't detect my modem; I will select it from a list."按 "Next"至下一步

Add Hardware Wizard Install New Modem Do you want Windov	vs to detect your modem?
	Windows will now try to detect your modem. Before continuing, you should: 1. If the modem is attached to your computer, make sure it is turned on. 2. Quit any programs that may be using the modem. Click Next when you are ready to continue.
	☑ Don't detect my modem; I will select it from a list.
	< Back Next > Cancel

步驟五、左窗格選取"Standard Modem Types"→ 右窗格選取

"Standard 19200 bps Modem"→按 "Next"至下一步



步驟六、選取數據機 COM Port → 按 "Next"至下一步,如下圖所示:

Add Hardware Wizar	d
Install New Modem Select the port(s) y	ou want to install the modem on.
	You have selected the following modem:
	Standard 19200 bps Modem
	On which ports do you want to install it?
ALL APPER	C All ports
	ociccion erts
	COM1
Ale and the second	
And the second second	
	\sim 2
	<pre> < Back Next > Cancel</pre>

步驟七、點選 "Finish"完成安裝新數據機



步驟八、控制台→ 點兩下"Phone and Modem Options"→ 選取

"Modems"標籤→ 選取"Standard 19200 bps Modem"→ 點

"Properties"至屬性面板



步驟九、進入屬性面板後選取"Modem"標籤 於"Maximum Port Speed"欄位處選取數值 115200

Standard 19200 bps Modem Properties	? 🗙
General Modem Dignostics Advanced Driver	
Port: COM1	
Speaker volume	
Low High	
Maximum Pert Opera	
115200	
2.	
Dial Control	
Wait for dial tone before dialing	
ОК	Cancel

步驟十、選取"Advanced"標籤→輸入額外的撥號指令,如下圖所示:

備註:GPRS 的 APN 由您當地的電信業者提供。

例如:

在台灣即輸入:AT+CGDCONT=1, "IP", "INTERNET"

在中國大陸輸入:AT+CGDCONT=1, "IP", "CMNET"

General N	lodem Dia	anos cs Advan	ced Driver	
- Evtra Se	ttinge			
Eutra in	itialization on	mmanda:	· · ·	
Exualin	iualization co	ininarius.		7
			5	
			۷.	
6				
		Change De	sfault Drafarances	1 L
		Change De	fault Preferences]
		Change De	sfault Preferences)

步驟十一、選取"Diagnostics"標籤,點選"Query Modem"→ 擊點"OK"

備註:如果搜尋後出現錯誤訊息請再試一次。

tandard	19200	bos Mode	em Proper	ties		? >
General	Motem	Diagnostics	Ad ance	d Driver		
Modem	Informatio	in	1			1
Field	1	/alue				
Hardwa	are ID m	dmgen192				
Comm	and Re	sponse				
						2.
Landa			(Que	ry Modern)
) ond to Lo	-		C M	iew log	
	ena to LC	9	_		iew iog	3.
					OV]	Connel

步驟十二、點擊"OK"

des.	
The following modems are installe	ed:
Modem	Attached To
Standard 19200 bps Modem	COM1

● 新增網路連結

步驟一、控制台→點選"Network Connections"→點選"Create a new connection"來新增網路連結

Network Connections	🔳 🗖 🔀
File Edit View Favorites Tools Advanced Help	<u></u>
🕞 Back 🝷 🍙 - 🎓 🖉 Search 🎼 Folders 📰 -	
Additions Network Connections	💌 🋃 Go
Network Tasks Image: Create a new connection Image: Create a new connection Image: Create a new connection Image: Sec ap a nome or small office network Image: Create a new connection Image: Sec ap a nome or small office network Image: Create a new connection Image: Sec ap a nome or small office network Image: Create a new connection Image: Sec ap a nome or small office network Image: Create a new connection Image: Sec ap a nome or small office network Image: Create a new connection Image: Sec ap a nome or small office network Image: Create a new connection Image: Sec ap a nome or small office network Image: Create a new connection Image: Sec ap a nome or small office network Image: Create a new connection Image: Sec ap a nome or small office network Image: Create a new connection Image: Sec ap a nome or small office network Image: Create a new connection Image: Sec ap a nome or small office network Image: Create a new connection Image: Sec ap a nome or small office network Image: Create a new connection Image: Sec ap a nome or small office network Image: Create a new connection Image: Sec ap a nome or small office network Image: Create a new connection Image: Sec ap a nome or small office network	
Other Places	
Control Panel My Network Places My Documents My Computer	
Details (*) Network Connections System Folder	

步驟二、點 "Next"至下一步

New Connection Wizard	
S)	Welcome to the New Connection Wizard
	This wizard helps you:
	Connect to the Internet.
P.A. A	 Connect to a private network, such as your workplace network.
87 / All 10-	 Set up a home or small office network.
	To continue, click Next.
	< Bac Next > Cancel

步驟三、選擇 "Connect to the Internet" 後按 "Next" 至下一步



步驟四、選擇"Connect using a dial-up modem",按 "Next"至下一步



步驟五、輸入 ISP 帳號,即您 GPRS 的帳號,按 "Next"至下一步

New Connection Wizard	
Connection Name What is the name of the service t	hat provides your Internet connection?
Type the name of your ISP in the fo	ollowing box.
The name you type here will be the	name of the connection you are creating.
	~

步驟六、輸入電話號碼,按 "Next"至下一步

New Connection Wizard	
Phone Number to Dial What is your ISP's phone numbe	er?
Type the phone number below Phone number:	1.
Yeu might need to include a you need the extra numbers.	or the area code, or both. If you are not sure , dial the phone number on your telephone. If you
hear a modem sound, the nu	imber dialed is correct.
	2.
	<pre></pre>

備註:該電話號碼由您當地的電信業者提供,例如台灣為*99#

步驟七、輸入 GPRS 的使用者帳號和密碼,按 "Next"至下一步

備註:GPRS 使用者帳號和密碼由您當地的電信業者提供。

Internet Account Info You will need an ac	ormation count name and password to sign in to your Internet account.	Ś
Type an ISP accour	nt name and password, then write down this information and store	it in a
sare place. (If you ha	ave forgotten an existing account name of password, contact you	1
liser name:		~
Bassword		
i asswoid.		
Confirm password:		/
Use this account	it name and password when anyone connects to the Internation	n
this computer		
Make this the de	efault Internet connection	
Make this the de	Security Security for this connection	
Make this the de	Connection Firewall for this connection 2.	

步驟八、按 "Finish"新增完成

New Connection Wizard	
	Completing the New Connection Wizard You have successfully completed the steps needed to create the following connection: Dial-up Connection • Make this the default connection • This connection is firewalled • Share with all users of this computer • Use the same user name & password for everyone
	The connection will be saved in the Network Connections folder. Add a shortcut to this connection to my desktop To create the connection and close this wizard, click Finish.
	< Back Finish Cancel

步驟九、控制台→ 點選"Network Connections" → 點 "Your GPRS's name"選到您的 GPRS 連線圖示→ 點 File → 點選 Properties 進入屬性 面板



步驟十、選取"General"標籤→ 選取"Standard 19200 bps Modem"→ 點

"Configure"確定變更此設定。如下圖所示:

neral Optons Security Networking Advanced onnect using: Modem - Standard 19200 bps Modem (COM1) Configure Phone number Area code: Phone number: Aternates Country/region code: Use dialing rules Dialing Rules	Dial-up Connection Properties	?
Modem - Standard 19200 bps Modem (COM1) Configure Phone number Area code: Phone number: Alternates Country/region code: Use dialing rules Dialing Rules	eneral Options Security Networking Advance	. 9
Modem - Standard 19200 bps Modem (COM1) Configure Phone number Area code: Phone number: Area code: Alternates Country/region code: Use dialing rules Dialing Rules	onnect using:	5.
Configure Phone number Area code: Phone number: Country/region code: Use dialing rules Dialing Rules	Modem - Standard 19200 bps Modem (COM1)	
Phone number Area code: Phone number: Alternates Country/region code: Use dialing rules Dialing Rules		Configure
Area code: Phone number: Alternates Country/region code: Use dialing rules Dialing Rules	Phone number	
Country/region code:	Area code: Phone number:	
Country/region code:		Alternates
Use dialing rules	Country/region code:	
Use dialing rules Dialing Rules		~
	Use dialing rules	Dialing Rules
	70	
	Show icon in notification area when connected	
Show icon in notification area when connected	04	Canad
Show icon in notification area when connected		

步驟十一、最快傳輸速度選取 115200,取消勾選"Enable hardware flow

control"按 OK。

Modem Configuration	? 🛛
Standard 19200 bps Modem (COM1)	
Maximum speed (bps): 115200 Modem protocol	V
Landware features	
C Enable modem compression Show terminal window 3.	
Enable modem speaker OK	Cancel

步驟十二、擊點"OK"

Unan-u	p com		
eneral	Uptions	Security Networki	ing Advanced
Connec	t using:		
🎒 Mo	dem - Sta	ndard 19200 bps Mo	dem (COM1)
0.5			
			Configure
Phon	e number		
Area	r code:	Phone number:	
	~		Alternates
		a state and the	
Cou	ntry/regior	r code;	
			×
	Jse dialing	rules	Dialing Rules
2			
Sho	w icon in I	notification area wher	n connected
		ſ	OK Canad

步驟十三、控制台→點"Network Connections"至檢視網路連線的頁面→

點兩下"Your GPRS's name",如下圖所示:



步驟十四、點	"Dial"開始i	連線
	Connect Dial	up Connection 🛛 ? 🔀
	User name:	guest
	Password:	•••••
	Save this u Me only Anyone	iser name and password for the following users: who uses this computer
	Dial:	*99***1#
	Dial	Cancel Properties Help

步驟十五、當您連線成功時,右下角工具列會顯示新的連線成功圖示

💽 🖉 🖗 3:49 PM

步驟十六、您能點兩下該圖示→選取"Details"標籤→取得您的 IP 位址

Property	Value
Device Type	modem
Server type	PPP
Transports	TCP/IP
Authentication	PAP
Compression	(none)
PPP multilink framing	Off
Server IP address	18.8.8.1
Client IP address	114.137.175.2

6.2 WinPAC-8000 (WinCE 5.0 Based)

● 硬體設備需求

- (1) I-8212W/I-8213W/I-8212W-3GWA/I-8213-3GWA
- (2) WinPAC-8000



WinPAC-8000



I-8212W/I-8213W

● 新增新數據機連結

步驟一、複製"icpdas_i-821xw_comx_v1.xx.cab" 到您的 WinPAC→ 點兩下" icpdas_i-821xw_comx_v1.xx.cab" 開始安裝→點選"OK"

步驟二、執行 "WinPAC_Utility" → 檔案→ 點 "Save and

Reboot"储存並重新啟動

WinPAC Utility [2.0.0.5]					×
File Help Configuration					
Save and Reboot	ng FTP Setting	System Information	Auto Execution	Multi-serial port wi	
Reboot <u>W</u> ithout Save Restore Default Settings E <u>x</u> it		Welcome to This tool will hel	use WinPac	: Utility e WinPac - 8000.	
Wi	nPAC	Display: Resolution :	800 * 600		
Data Acquisition Systems	i.		Sett	ing	
Battery1 : OK		Task Bar Setting	g:		
Battery2 : OK		📃 Auto Hide	e 🔽 Always	s On Top	
Change HTTP document root	directory \windo	ws\www\wwwsub to:			
\windows\www\wwwpub\				Setting	

● 新增網路連結

步驟一、控制台→點兩下"Network and Dial-up Connections"

<u>File V</u> iew	<i>i</i>						-			№? ×
Ö	P		8	9	2	1	C		22	
Certificates	Date/Time	Dialing	Display	Input Panel	Internet Options	Keyboard	Mouse	Network and Dial-up	Dwner	
P		4	->	2	0			Connections	2.	
Password	PC Connection	Power	Regional Settings	Remove Programs	Storage Manager	Stylus	System	Volume & Sounds		
	connocdon		ootta igo	riograms	i la lagoi			0001100		
		1.								
K Cont	rol Panel							.	11:27 A	м 🗭 🔁

步驟二、點兩下 "Make New Connection"以新增連結

File Edit	<u>V</u> iew A	iva <u>n</u> ced 🗙 🍙 💼 📰	 ×
	<u>7</u>	91	
Make New	LAN2	LAN1	
connection	2.		

\frown	
Network Connections	📦 🕹 🕨 🐙 🐺

步驟三、輸入連線名稱→ 選取"Dial-Up Connection"→點"Next"

至下一步



步驟四、選取"ICPDAS I-821xW COMx:" →點"Configure…",如

下圖所示:

Modem	
My Connection	
<u>S</u> elect a modem:	
ICPDAS I-821xW COM6	s: 💽
	Configure
TCP/IP Settings	Security Settings
	< <u>B</u> ack <u>N</u> ext >

步驟五、設定以下數值:Select Baud Rate "115200", Data Bits "8", Parity "None", Stop Bits "1" Note and FlowControl " None"→ 選取"Call Options"標籤

Device Properties	💽 🕅 🔀
Port Settings Call Options	1
	Connection Preferences
Manual Dial (user supplies dial strings)	Baud Rate 115200
Terminals	Data Bits 8
Use terminal window	Parity None 💽
before dialing	Stop Bits 1
Use terminal window after dialing	Elow Control None

步驟六、輸入額外的設定指令後→ 點"OK"

備註:GPRS 的 APN 由您的當地電信業者提供。

例如台灣須輸入:+CGDCONT=1,"IP","INTERNET"

中國大陸則輸入:+CGDCONT=1,"IP"," CMNET"

Port Settings	all Options		L
Call Setup ✓ Cancel th ✓ Wait for Wait f	ie call if not conne dial tone before dia or credit card <u>t</u> one	cted within 120 aling 9 0 seconds) <u>s</u> econds
-			

步驟七、點"TCP/IP Settings...",如下圖所示:



步驟八、TCP/IP 設定:每一個 ISP 的需求不同

TCP/IP Settings	ок 🔀
General Name Servers	
My Connection 2	
Use server-assigned IP address	
Use Slip Vse software compression Vse IP header compression	
TCP/IP Settings	ок 🔀
General Name Servers	
My Connection 2	
Use server-assigned addresses	
DNS:	
Alt D <u>N</u> S:	
WINS:	
Alt WINS:	

步驟九、點"Security Settings...",如下圖所示:



步驟十、防護設定:取決於各 ISP 的要求(下圖為 HINET 之設定)

Security Settings		ок 🗵
Advanced Security Settings		
Use Data encryption		
Logon security:		۱.
Use Extensible Authentication Protocol	(EAP)	
MD5-Challenge		~
	Properties	
Unencrypted password (PAP)		
☑ Challenge Handshake Authentication Pr	rotocol (CHAP)	
Microsoft CHAP (MS-CHAP)		
Microsoft CHAP Version 2 (MS-CHAP v2)	L
		L
Preview Liser name and nassword		1
Deview oper manie and password		/

步驟十一、點"Next"至下一步

Modem	
My Connection	
<u>S</u> elect a modem:	
ICPDAS I-821xW COM6	:
	Configure
ICP/IP Settings	Security Settings
	< Back

步驟十二、輸入撥接電話號碼→點"Finish"新增完成

備註:該撥接電話號碼由您的當地電信業者提供。

例如在台灣為輸入:*99#

Priore nomber	
My Connection	
Country/region code: 1 Area code: 425 Phone number: 5 Force long distance Force local	Einish

步驟十三、點兩下您所新增的網路連結

<u>File Edit</u>	<u>V</u> iew Adv	va <u>n</u> ced >		№? ×
S		2	2.	
Make New Connection	My Connection	LAN2	LAN1	

Network Connections	📩 🔔 🖢 11:31 AM 🜌 🛱
Surface Connections	

步驟十四、點"Dial Properties...",如下圖所示:

al-Up Connection	
My Connection	
User Name:	- Phone: *99***1#
Password:	Work
Domain:	- <u>D</u> ial Properties
Save password	Connect Cancel

步驟十五、點"Dialing Patterns...",如下圖所示:

Dialing Properties				? ОК 🔽
When dialing from: Work			<u>N</u> ew	Remove
Local settings are: The local <u>a</u> rea code is:	425	Dial	ing Patte	erns
The local <u>c</u> ountry/region code is: Dial using:	1 <u> T</u> one	OB	ulse	
Disable call <u>w</u> aiting by dialing:	Ţ	~		

步驟十六、每個空格裡都輸入英文字母 "G",按 "OK"



步驟十七、輸入 GPRS 使用者帳號密碼→ 點 "Connect"進行連線

Dial-Up Connection	
My Connection	1
User Name	Phone: *99***1#
Password:	
D <u>o</u> main:	Dial Properties
Save password	Connect Cancel

備註:使用者的帳號密碼由您當地的電信業者提供。

步驟十八、當您連線成功時,會出現 "Connected"提示方塊。



步驟十九、執行 "WinPAC_Utility" \rightarrow File \rightarrow 點 "Save and

Reboot"储存並重新開啟

WinPAC Utility [2.0.0.5]				
File Help Configuration				
Save	FTP Setting	System Information	Auto Execution	Multi-serial port wiz 🔨 🕨
Reboot <u>Wi</u> thout Save Restore Default Settings E <u>x</u> it		Welcome to This tool will he	use WinPac Ip you easy to us	e WinPac - 8000.
Industrial Control Products	n PAC	Display: Resolution :	800 * 600	
Uses Acquisition Systems			Sett	ting
Battery1 : OK		Task Bar Settin	ig:	
Battery2 : OK		📃 Auto Hid	le 🛛 🔽 Always	s On Top
Change HTTP document root o	lirectory \windo	ws\www\wwwsub to:		
\windows\www\wwwpub\				Setting

6.3 LinPAC-8000 (Linux kernel 2.6 based)

● 硬體設備需求

(1) I-8212W/I-8213W/I-8212W-3GWA/I-8213W-3GWA (2) LinPAC-8000



LinPAC-8000

I-8212W/I-8213W

● 建立 GPRS 連結

首先,修改"/etc/ppp/peers/wavecom"以定義 COM port,依據下列步 驟進行:

(1) 翰入"vi/etc/ppp/peers/wavecom"

(2) 出現 "Serial device to which the GPRS phone is

connected:"字串, 輸入 COM port 裝置名稱

修改 "/etc/ppp/peers/wavecom"

•••••

```
# Serial device to which the GPRS phone is connected:
# /dev/ttyS0 for serial port (COM1 in Windows),
# /dev/ircomm0 for IrDA,
# /dev/ttyUB0 for Bluetooth (Bluez with rfcomm running) and
# /dev/ttyUSB0 #for USB
/dev/ttyS34 # serial port one
# /dev/ttyS0 # serial port one
# /dev/ttyS1 # serial port two
```

```
•••••
```

```
•••••
```

• I-8212W / I-8212W-3GWA



• I-8213W / I-8213W-3GWA

0	slot	1	2	3	4	5	6	7	8
KITPAC	22	I-8213W	I-8213W	I-8213W	I-8213W	I-8213W	I-8213W	I-8213W	I-8213W
2. LP-8841		ttyS2 (GSM/GPRS)	ttyS6 (GSM/GPRS)	ttyS10 (GSM/GPRS)	ttyS14 (GSM/GPRS)	ttyS18 (GSM/GPRS)	ttyS22 (GSM/GPRS)	ttyS26 (GSM/GPRS)	ttyS30 (GSM/GPRS)
		ttyS3 (GPS)	ttyS7 (GPS)	ttyS11 (GPS)	ttyS15 (GPS)	ttyS19 (GPS)	ttyS23 (GPS)	ttyS27 (GPS)	ttyS31 (GPS)
0	-	1				8		_	0

(3) 輸入":wq",儲存後離開。

GPRS 的鮑率 LinPAC 原廠設定值為 115200,所以使用者完成 GPRS 數據機的設定、使 LinPAC-8000 的 COM port 與 GPRS 數據 機連結後,只需要輸入 "pppd call wavecom" LinPAC-8000 就會自 動連結上網。記得 LinPAC 的乙太網路必須先停用,輸入 "ifdown eth0"來停用它。如欲看到 " ppp0 " 細項,使用者可輸入

" ifconfig " 。

第六章 GPS 快速測試(僅適用於 I-8213W)

7.1 XP-8000 (Windows Embedded Standard 2009)

1. 從 CD 中拷貝 "Send232.exe"到 XP-8000

路徑:CD:\I-8212W_I-8213W\Software\XP-8000\GPSTest

2. 執行軟體並選取您 XP-8000 的 port number 即可取得 GPS 資料。

Parameters	Default value
Baud rate	9600 bps
Parity	None
Date bit	8
Stop bit	1

u1.4.8 (ICPDAS) کي Send232_Binary ي	🛛
COM Port Baud Line Control	Connect State : Opposite Breaking Close COM
Flow Control : None HW SW	Auto Connect Detection
CTS: True DSR: True DCD: False	
End char of String	Auto-Send 7188
O None O LF_CR(0x0a 0x0d)	Period : 500 Setting Set_Net
CR(0x0d) CR_LF(0x0d 0x0a)	
O LF(0x0a) O Def 1A (HEX)	Send Stop END
Send232_SEND (ASCII Mode)	- Send232_RECV (Auto-Recv)(ASCII Mode)
ASCII Clear Text	Manual Recv Clear Input Buffer
Binary	Auto Recv Clear Text Binary
Send_Len: 0 0	Recv_Len: 406 406
ICPDAS	\$GPGSA,A,1,*1E \$GPGSV,1,1,00*79 \$GPRMC,000314.037,V,,0.00,0.00,06 0180,.,N*40 \$GPVTG,0.00,T,,M,0.00,N,0.00,K,N*32
	M ShowData

7.2 WinPAC-8000 (WinCE 5.0 Based)

- 1. 從 CD 中拷貝 "SendToCOM.exe"到 WinPAC-8000
- 2. 執行軟體並選取您 WinPAC-8000 的 port number 即可取得 GPS 資料

Parameters	Default value		
Baud rate	9600 bps		
Parity	None		
Date bit	8		
Stop bit	1		

ICPDAS Send to COM V1.0.3 2010/3	/8 🗾
Connection Status COM Port Baudrate Data Bit Parity COM7 S 9600 S 8 S 0-None Parity	Stop Bit Slot Close
End string with None LF_CR CR O Commands Responses Current Packet Size (bytes) O Current Packet Size (b Total Packet Bytes O Total Packet Bytes Packet Quantity send O Packet Quantity receive	CR_LF LF string +CRC ytes) 14 Binary () String Send Polling 2436 Start Stop Set 21 Start Time Start Time Stop Time
	\$GPGGA,000339.037,,,,,0,0,,,,M,,M,,*45 \$GPGLL,,,,,000339.037,V,N*77 \$GPGSA,A,1,,,,,,*1E \$GPGSV,1,1,00*79 \$GPRMC,000339.037,V,,,,0.00,0.00,060180,,,N*4F \$GPVTG,0.00,T,,M,0.00,N,0.00,K,N*32 \$GPGGA,000340.037,V,,0,0,,,M,,M,,*4B \$GPGLL,,,,,000340.037,V,N*79 \$GPGSA,A,1,,,,,,,*1E \$GPGSV,1,1,00*79 \$GPRMC,000340.037,V,,,0.00,0.00,060180,,,N*41 \$GPVTG,0.00,T,,M,0.00,N,0.00,K,N*32 \$GPGGA,000341.037,,,,0,0,,,M,,M,,*4A

7.3 iPAC-8000 (miniOS7 Based)

- 1. 從 CD 中拷貝 "GPS.exe"到 iPAC-8000
- 2. 執行軟體並輸入您 iPAC-8000 的 port number 即可取得 GPS 資料。

Parameters	Default value		
Baud rate	9600 bps		
Parity	None		
Date bit	8		
Stop bit	1		

C837_U2_UDP>run	*
8000a.Lib vesion 2.0C, Date:Jan 14 2011	

CPS Demo for I-8213U	

Type your GPS prot and press [Enter]: 6	
\$GPGGA.000040.0360.0	
\$GPGLL,,000040.036.U,N*7B	
\$GPGSA,A,1,,,,,,,,,,,*1E	
\$GPGSU,1,1,00*79	
\$GPRMC,000040.036,U,,,,,0.00,0.00,060180,,,N×43	
\$GPVTG,0.00,T,,M,0.00,N,0.00,K,N*32	
\$GPGGA,000041.036,,,,,0,0,,,M,,M,,*48	
\$GPGLL,,,,,000041.036,V,N*7A	
\$GPGSA,A,1,,,,,,,,,,,,*1E	
\$GPGSU,1,1,00*79	
\$GPRMC,000041.036,V,,,,,0.00,0.00,060180,,,N×42	
\$GPVTG,0.00,T,,M,0.00,N,0.00,K,N*32	
\$GPGGA,000042.036,,,,,0,0,,,M,,M,,*4B	
\$GPGLL,,,,,000042.036,V,N*79	
\$GPGSA,A,1,,,,,,,,,,,*1E	
\$GPGSU,1,1,00*79	

7.4 LinPAC-8000 (Linux kernel 2.6 based)

輸入"cat /dev/ttySn"即顯示 I-8213W 的 GPS port number

Parameters	Default value	
Baud rate	9600 bps	
Parity	None	
Date bit	8	
Stop bit	1	

cat /dev/ttyS3
\$GPGGA,000037.036,,,,,0,0,,,M,,M,,*49
\$GPGLL,,,,,000037.036,V,N*7B
\$GPGSA, A, 1, , , , , , , , , , , , *1E
\$GPGSV,1,1,00*79
\$GPRMC,000037.036,V,,,,0.00,0.00,060180,,,N*43
\$GPVTG,0.00,T,,M,0.00,N,0.00,K,N*32
\$GPGGA,000038.036,,,,0,0,,,M,,,M,,*46
\$GPGLL,,,,,000038.036,V,N*74
\$GPGSA, A, 1, , , , , , , , , , , , *1E
\$GPGSV,1,1,00*79
\$GPRMC.000038.036.V0.00.0.00.060180N*4C

修訂說明:

Version	Ву	Date	Description
1.00	Yide	2011/03/07	Release
1.01	Malo	2011/08/16	Add 3G module
1.02	Kane	2013/08/01	