WM-700(M) TCP/IP转换器
操作说明书

【 目 录 】

1. WM-700(M)简介

1.1 介绍

WM-700(M) 为 RS-232/485 及 TCP/IP 间之通讯转换器，用于工业控制及网络管理上之局域网及广域网解决方案。

其内建之 RTOS (实时操作系统) 及完整之 TCP/IP 通讯协议可使 WM-700(M) 不只提供可靠稳定之操作平台，更可使原有系统简便且快速的经由 Internet 进行远程管理。

1.2 主要功能

下列为 WM-700(M) 支持之主要功能说明：

► TCP/UDP server/client

WM-700(M) 提供4种联机方式：TCP server、UDP server、TCP client and UDP client，使用者可任选一种方式以配合原有设备使用。

► DHCP (Dynamic Host Configuration Protocol) Client

此功能可使 WM-700(M) 经由 DHCP server(Gateway) 取得其 IP Address，透过内部网络 server 分配 IP 以避免IP冲突情形。

► PPP Over Ethernet

PPPoE 协议可使 WM-700(M) 直接连接 xDSL Modem 拨号后并连接到 Internet。

► Dynamic DNS 动态域名系统

透过 WM-700(M) 内建之 DDNS 功能，使用者可取得一固定之域名并将其对应到任一动态的 IP Address，如此监控端即可透过 Internet 直接进行控管而不需要任何固定之IP。

► 自动侦测 10/100Mbps

WM-700(M) 可自行侦测 **10/100Mbps 之网络环境，不需手动切换**。

► 内建网络管理系统

此功能可让使用者透过 IE、Netscape 或其它浏览器，进行系统管理设定或韧体升级而不需另外安装驱动程序或管理软件。

► 数据备份及还原设定

此功能可让使用者进行系统设定数据备份及还原、备份文件经过特殊加密处理、以确保数据安全性。

1.3 WM-700(M) 应用方案

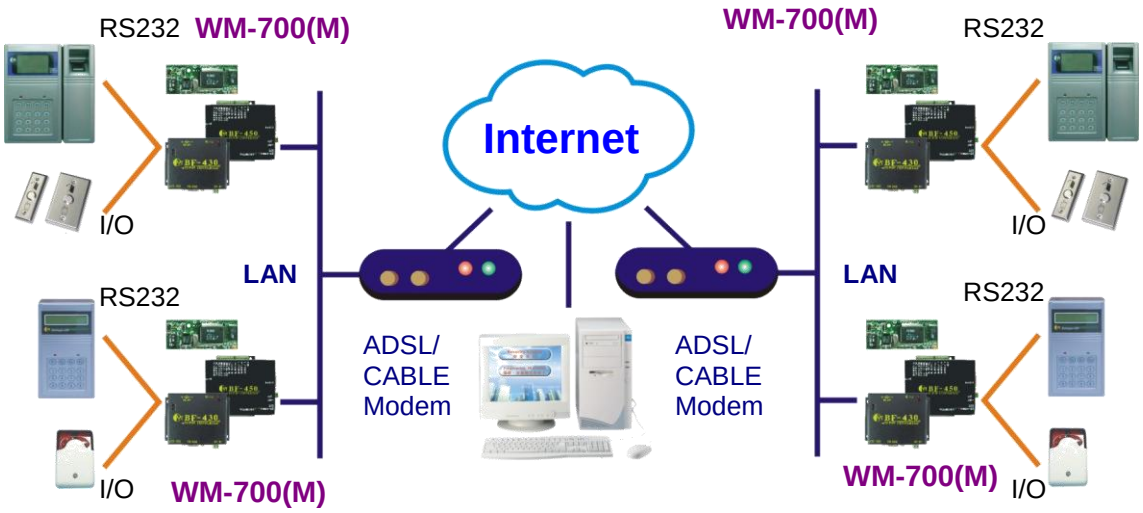


图1:应用方案1

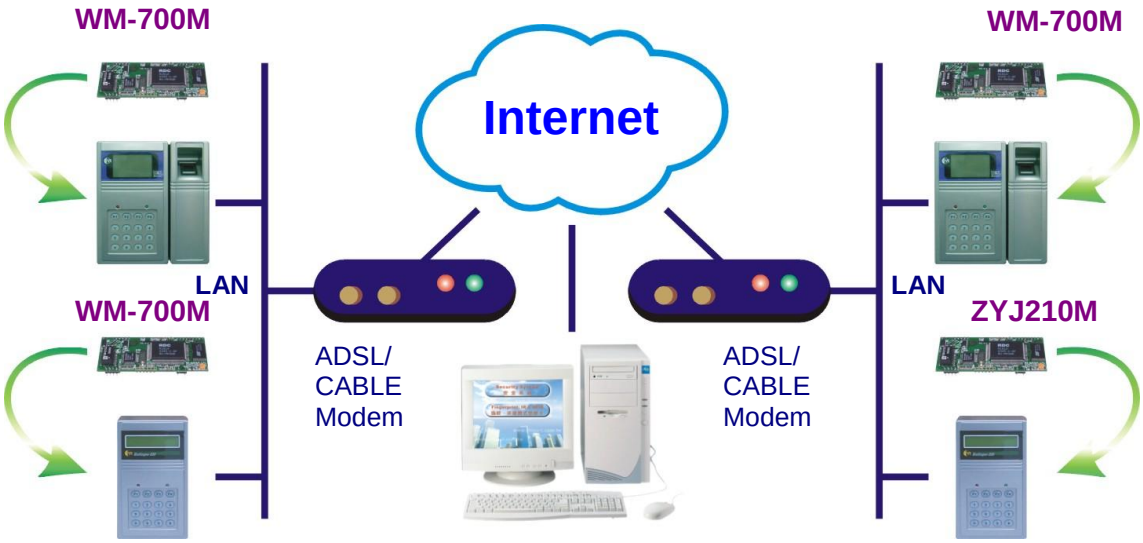
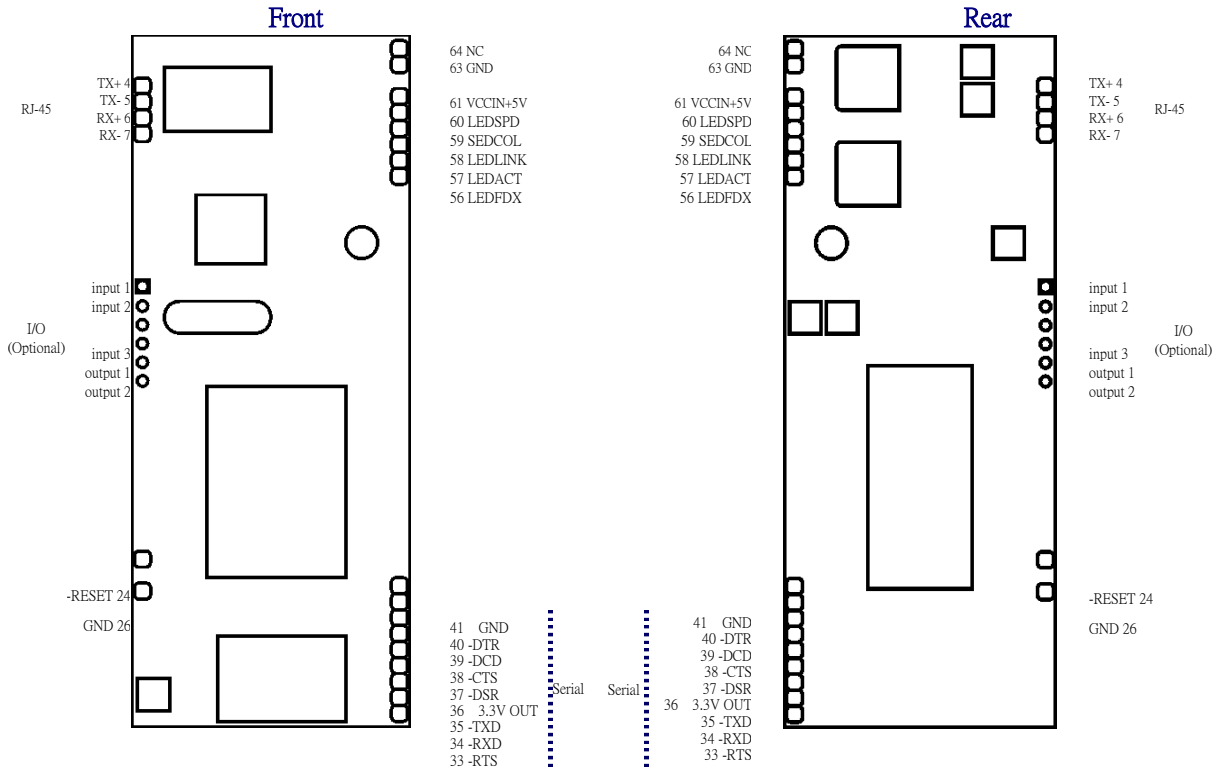


图2:应用方案2

2. 硬件安装及初始设定

2.1 硬件设定

Socket Type



L=65mm,D=26mm,H=7mm

RS232 Pin Form		
Pin	Acronym	Sense
Pin 1	CD	Carrier Detect
Pin 2	RXD	Receive
Pin 3	TXD	Transmit
Pin 4	DTR	Data Terminal Ready
Pin 5	GND	Ground
Pin 6	DSR	Data Set Ready
Pin 7	RTS	Request to Send
Pin 8	CTS	Clear to Send
Pin 9	RI	Ring Indicator

2.2 LED 状态说明

LED		指示	描述
电源		灭	未上电
		闪动	系统上电自检

		亮	上电成功,就绪
Ethernet网		灭	网络未连接
		亮	网络已连接
		灭	10 M网
		亮	100 M网
工作指示		灭	无TCP/IP连接
		亮	已建立TCP/IP连接
		闪动	网络中数据在传送中

2.3 初始设定值

依据此章节说明，使用者可将他的计算机 IP 设定为下面状态：

IP Address：172.16.1.XXX，Subnet mask 为 255.255.255.0，如此即可确定使用者计算机可与 WM-700(M) 建立联机 (使用者计算机必须具备网络接口及安装 TCP/IP 协议) 。

注：如果使用者使用 PC 直接与 WM-700(M) 对接必须使用跳接线；若经由 Hub/Switch 转接则使用一般标准Ethernet cable。

2.3.1 安装 TCP/IP 通讯协议

请详见 WM-700(M) 快速安装手册。

2.3.2 固定 IP 设定

请详见 WM-700(M) 快速安装手册。

2.3.3 设定 WM-700(M)

请详见 WM-700(M) 快速安装手册。

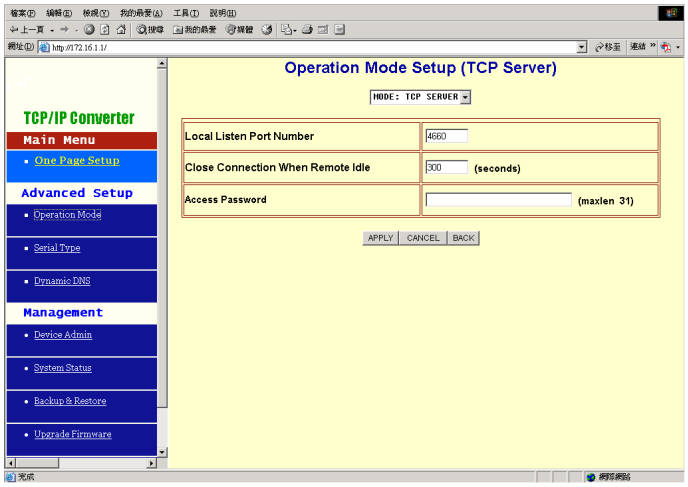
3. WM-700(M) 系统设定

此章节说明如何设定 WM-700(M) 功能，并如何透过使用者网络系统进行各项控管。

3.1 操作模式设定

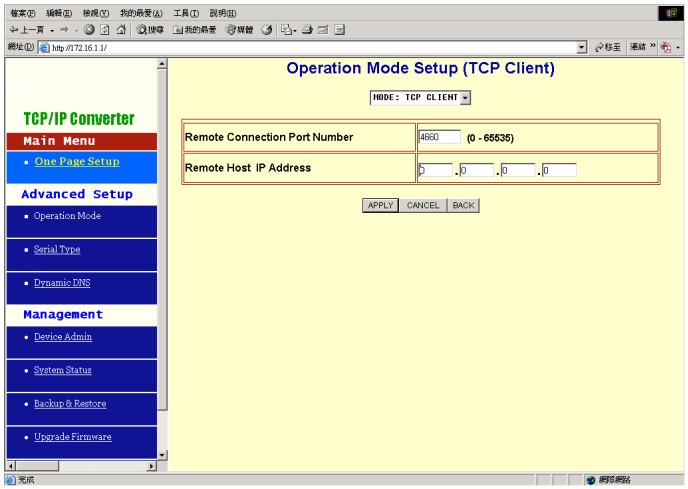
WM-700(M) 提供 4 种操作模式：TCP Server、TCP Client、UDP Server 及 UDP Client，在下拉选单中你可以依连接设备之类型，选定适合之操作模式 (默认值为 TCP Server)。

TCP Server



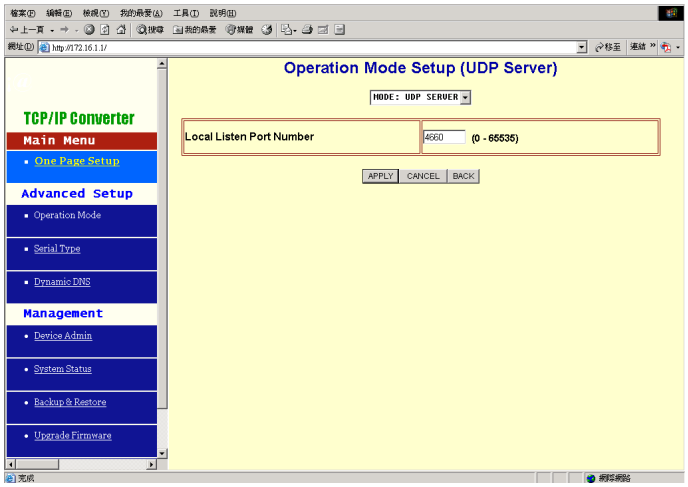
Listen Port Number：默认值 4660，范围 0 到 65535
如果您的设备是使用 TCP/IP 协议透过远程指令驱动再进行数据传输，那您必须将 WM-700(M) 设定为 TCP SERVER，并须将 LISTEN PORT NUMBER 设定跟监控端相同的数值。
呆滞断线时间(秒)：默认值 300，范围 0 到 32768
当你希望随时保值两端之联机时，您必须将此数值设为 0，否则当线路上无数据传送超过设定时间时，WM-700(M) 将自动切断联机。
为确保数据之安全性，使用者可设定密码进行控管，当数据传递之前必须输入正确之密码取得权限后才能进行后续步骤。

TCP Client



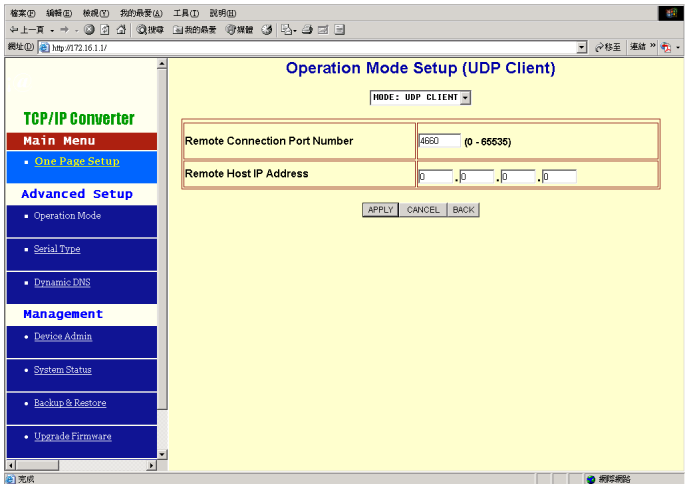
远程连接端口号：默认值 4660，范围 0 到 65535
远程主机 IP Address：默认值 0.0.0.0
如果您的设备是使用 TCP/IP 协议将实时状况回报至一主机中，则您必须将 WM-700(M) 设置为 TCP CLIENT 且必须确认两端设置之埠数值相同及必须正确输入远程主机之 IP ADDRESS。

UDP Server



Listen Port Number：默认值 4660，范围 0 到 65535
如果您的设备是使用 UDP 协议透过远程指令驱动再进行数据传输，那您必须将 WM-700(M) 设定为 UDP SERVER，并须将 LISTEN PORT NUMBER 设定跟监控端相同的数值。

UDP Client

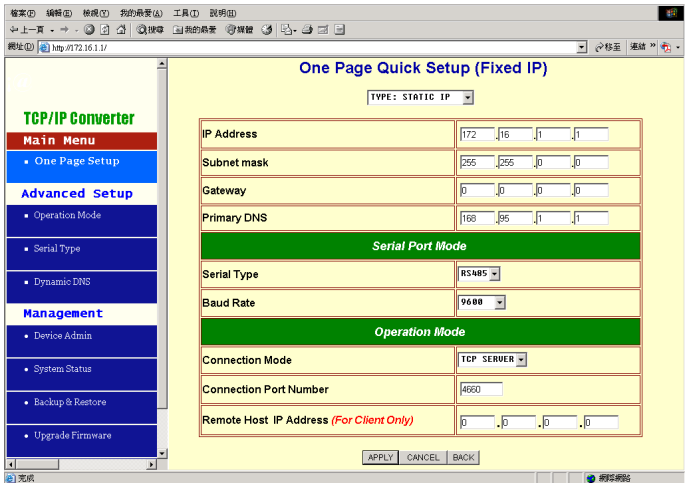


远程连接埠号：默认值 4660，范围 0 到 65535
远程主机 IP Address：默认值 0.0.0.0
如果您的设备是使用 UDP 协议将实时状况回报至一主机中，则您必须将 WM-700(M) 设置为 TCP CLIENT，且必须确认两端设置之埠数值相同及必须正确输入远程主机之 IP ADDRESS。

3.2 IP 设定

WM-700(M) 提供 3 种 IP 联机方式：固定 IP、DHCP 及 PPPoE 在下拉选单中你可以依您的使用方式选定适合之操作模式，选定后下方字段会自动出现需输入之数据（默认值为固定 IP）。

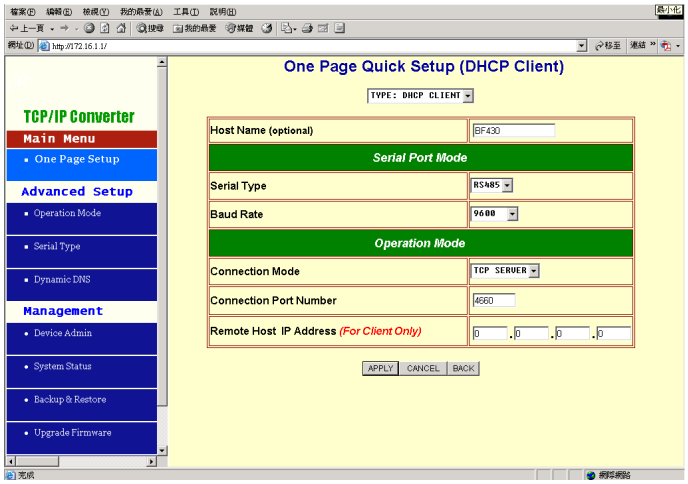
固定 (静态) IP



IP Address：默认值 192.168.168.55
Subnet mask：默认值 255.255.255.0
Gateway：默认值 0.0.0.0
Primary DNS：默认值 168.95.1.1

如果您使用固定 IP 来连接您的网络，请依下列步骤操作：
步骤 1：输入 IP address
步骤 2：输入 Subnet mask
步骤 3：输入 Gateway IP address
步骤 4：输入 Primary DNS IP address
步骤 5：按 ” Apply” 确认键完成设定

DHCP

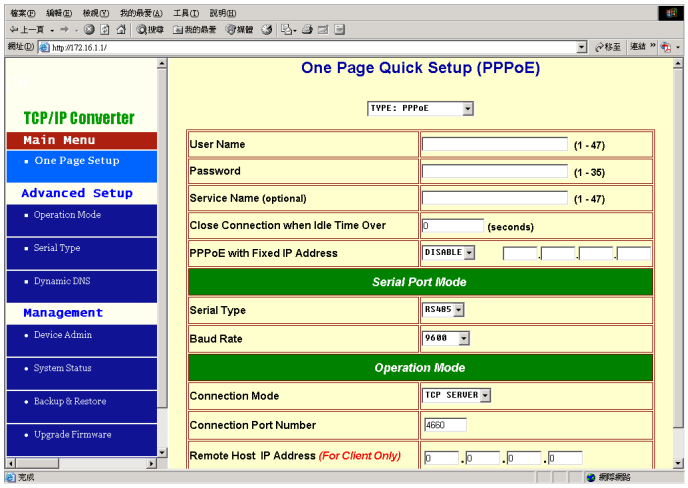


主机名 (Optional)：默认值为 WM-700，最大可输入 15 个字符。
如果在你的网络环境中存在 DHCP 主机或您使用 CABLE DSL 服务，您必须在此输入您的 DHCP 主机名并由其取得动态 IP ADDRESS。

Note 1: 如果您使用 CABLE DSL 服务，您亦必须改变 WM-700(M)之MAC ADDRESS，使其与系统业者注册值相同，

详情请参照第四章。

PPPoE



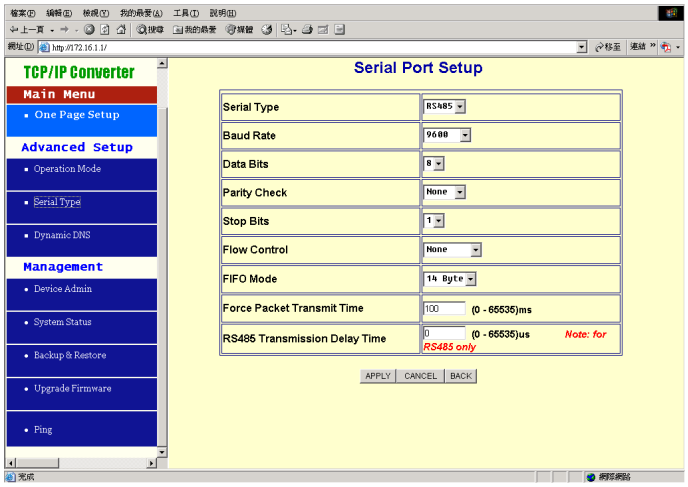
用户名称：最多可输入 47 个字符。
密码：最多可输入 35 个字符。
服务器名称 (optional)：最多可输入 47 个字符。
闲置断线时间(秒)：默认值 0，范围 0 到 4294967295
PPPoE (固定IP式)：默认值 DISABLE

如果您使用拨接式 ADSL 联机，您必须输入 ISP 系统业者提供之用户名称及密码 (有些系统业者须另外要求输入服务器名称)。
如果您希望随时保持拨号联机，必须将闲置断线时间设为 0，否则当线路上无数据传送时间超过您的设定值时 WM-700(M) 将自动停止拨号联机。
如果您申请的是固定 IP 式拨号服务，您必须将 PPPoE with Fix IP Address 设置为 ENABLE，并输入系统业者提供之 IP ADDRESS。

3.3 串行端口设定

WM-700(M) 支持 3 种串行传输格式：RS232、RS422(optional) 及 RS485，在下拉选单中你可以依您的使用方式选定适合之操作模式，选定后下方字段会自动出现需输入之数据 (默认值为固定 RS485)。

RS485



波特率 Baud Rate：默认值 **9600**，范围 1200bps 到 230.4Kbps
Data Bits：5, 6, 7, **8** (默认值)
Parity Check：**None** (默认值), even, odd, mark, space
Stop Bits：**1** (默认值), 2
流量控制 Flow Control：**None** (默认值), CTS/RTS (硬件设定), XON/XOFF (软件设定)
Force Packet Transmit Time (ms)：默认值**100**，范围 **20** 到 **65535**
The timing of transmitting an Ethernet packet, in order to get the whole data in on packet, you can tune this setting value to fit the data length of your device per transmission. The more small value be set will get more less data in one packet.
RS485 传输延迟时间 (ms)：认值 **0**，范围 **0** 到 **65535**
因为不同的设备有不同的串行端口处理容量，所以您必须设定此数值使 WM-700(M) 降低处理数度来搭配不同之设备。

RS232

设定内容与 RS485 相同。

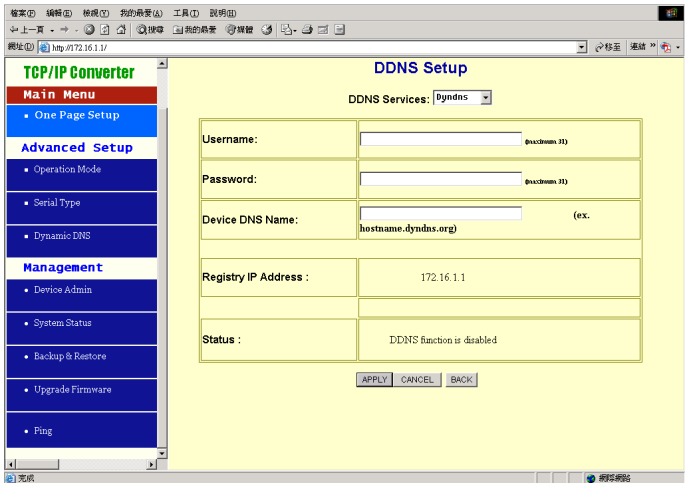
RS422(optional)

设定内容与 RS485 相同。

3.4动态域名系统 (Dynamic DNS)

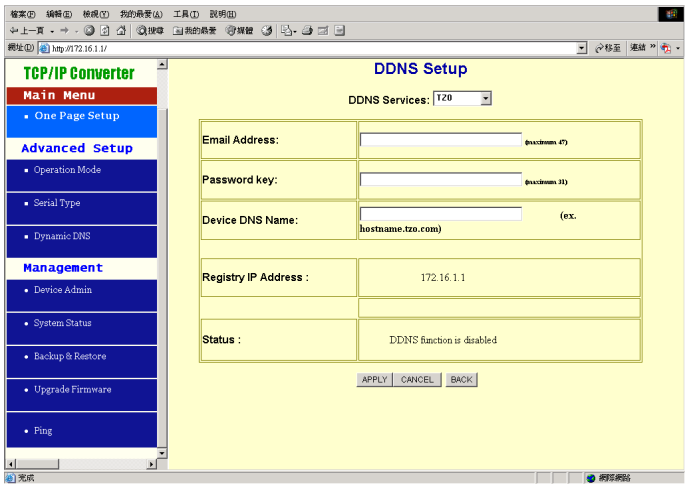
WM-700(M) 提供动态域名系统 (DDNS) 功能，DDNS 使您将一动态 IP ADRESS 对应到一固定的域名此强大之功能您能在没有固定 IP ADDRESS 的状况下能透过广域网进行远程控管。在您使用此功能前、您必须再下面两个系统服务业者网站中其中一个注册完成 www.dyndns.org 及 www.tzo.com。
如果你选择 DynDNS 那请您于下拉选单中选择 DynDNS，若为 TZO 则请选择 TZO，选择完成后下方字段将自动列出您需输入之内容 (详见附件 B)。
注：于大陆地区仅有 TZO 提供此服务，TZO 则无。

Dyndns.org



用户名称：最大可输入 31 个字符。
密码：最大可输入 31 个字符。
设备 DNS 账号：大可输入 47 个字符。
输入用户名称 **(User Name)**，密码 **(Password)**，及设备 DNS 账号 **(Device DNS Name)**
注册 IP Address：预设状态为 disable，若 DDNS 启动后即显示注册 IP。
状态：显示与 DNS Server 之联机状态。

Tzo.com

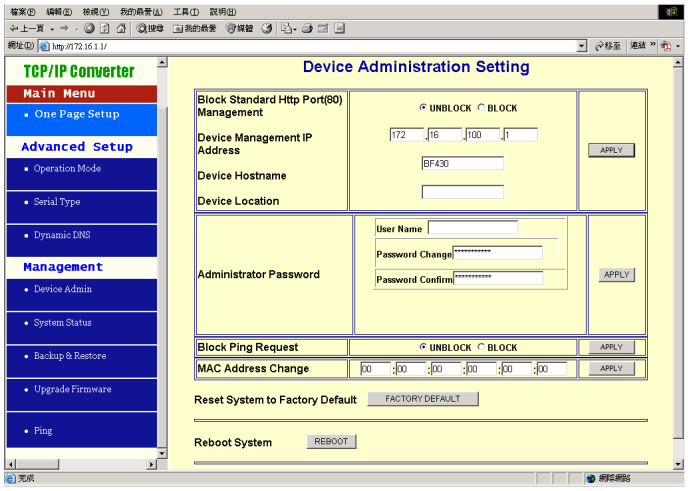


Email 账号：输入注册之e-mail，最大可输入 47 个字符。
密码：输入注册之密码，最大可输入 31 个字符。
设备 DNS 账号：输入注册后取得之账号，最大可输入 47 个字符。
输入 **Email Address**，**Password Key**，**Device DNS Name**
注册 IP Address：预设状态为 disable，若 DDNS 启动后即显示注册 IP。
状态：显示与 DNS Server 之联机状态。

4. WM-700(M) 系统管理设定

此章节详述系统设定及 E-mail 设置及韧体升级。

4.1 系统设定



阻绝标准 HTTP Port(80) 管理：默认值 **UNBLOCK**
若因为某些理由 HTTP (80) 服务被阻绝于您的网络环境中，并造成无法进行 WM-700(M) 之管理及设定， 此时您必须将此选项设定为 **BLOCK** 使得 port **8080** 取代标准 port 80，所以你必须于您的浏览器中输入：http://192.168.168.55 以进入管理画面。

系统管理 IP ADDRESS：默认值为 **192.168.168.1**
如果你忘记 WM-700(M) 的 IP address，利用此管理者 IP 您也能连接到 WM-700(M) 找出您原本设定之 IP Address。

如果您是使用 DHCP 或 PPPoE 取得动态 IP，利用此方法您亦可得知目前 WM-700(M) 所使用之 IP ADDRESS。

注: 如果您将所设定之 IP 及管理者 IP 以起遗失，请使用产品附赠之光盘中所提供之 IP Search 软件寻找正确之 IP。

设备名：默认值 **SZZYJ**，输入注册之密码，最大可输入 15 个字符。
此用来描述识别 WM-700(M)。
设备位置：最大可输入 15 个字符。
用来注记 WM-700(M) 所摆放之位置。

管理者密码：
用户名：默认值 **admin**
密码：默认值 **admin**
为确保 WM-700(M) 之安全性、在登入 WEB 管理系统时需输入正确之用户名及系统密码。
User Name：输入您选择之用户名。

Password：基于安全考量请输入新的管理密码以取代默认值。
Password Confirm：再输入一次新密码确认。
阻绝 Ping 要求：默认值 **UNBLOCK**

为避免骇客入侵您的网络系统，您可将此功能设置为 BLOCK 如此即可阻绝由网络上来的 PING 要求，使欲入侵者无法得知您的 IP Address。

MAC Address 变更

WM-700(M) 的 MAC address 在必要的特殊情况下可由此变更，如某些 ISP 业者当使用者变更上网设备时会要求使用者输入注册之 MAC ADDRESS，如此及可利用此功能达成（详见附件 D）。

回复出厂默认值

按 **“Apply” 键，**如果您希望回复 WM-700(M) 之出厂默认值。

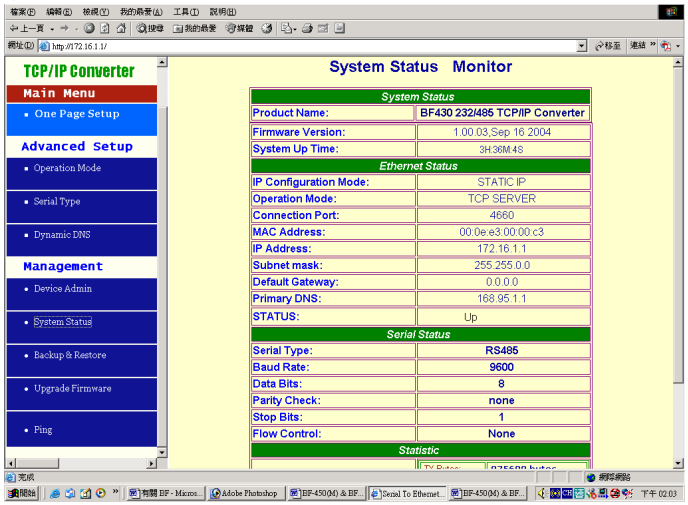
注：*如非必要请勿任意回复出厂默认值。*

系统重新启动

按 **“Apply” 键，如果你希望再不改动其它设定下进行系统重新启动，如此** WM-700(M) 将重新启动。

4.2 系统状态

此窗口提供 WM-700(M) 目前之状况。



产品名称：WM-700(M)产品型号。

韧体版本：目前系统使用之韧体版本号码。

系统启动时间：显示系统从启动到县再经过之时间。

管理者 IP Address：现在设定之管理者 IP。

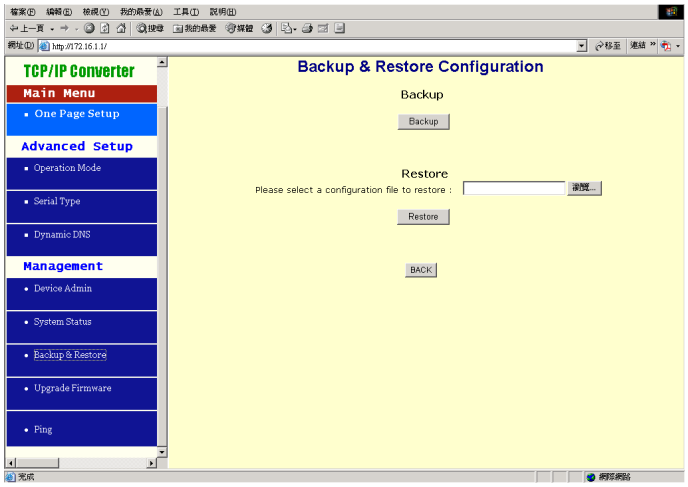
网络状况：WM-700(M) 目前之 IP 型态，MAC address, IP address, subnet mask, default gateway IP address, primary DNS IP address 及现在之联机状态。

串行埠状态：WM-700(M) 目前串行埠之设定状况。

纪录：网络端及串行端口端总共接收及传输之数据量。

4.3 备份及还原

此功能提供使用者进行 WM-700(M) 之系统设定状态之备份及还原。

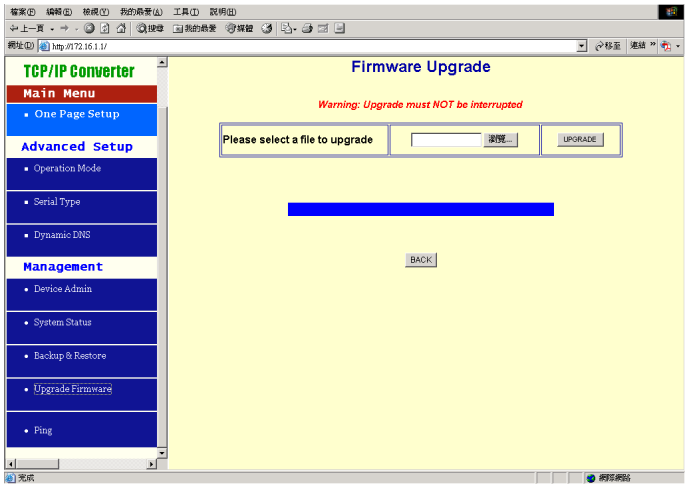


备份：按 “Backup” 键并储存现在系统设定为一备份文件并存于硬盘中。
还原：输入目前备份文件之路径或按浏览键寻找，完成后按 ”Restore” 键进行系统还原。

注: 备份档之扩展名必须为 “.cfg”

4.4 软件升级

此功能提供您将最新的韧体数据升级到您原有 WM-700(M)，在您进行此动作前，您必须治本公司网站下载最新版本并储存于您的 PC 中。

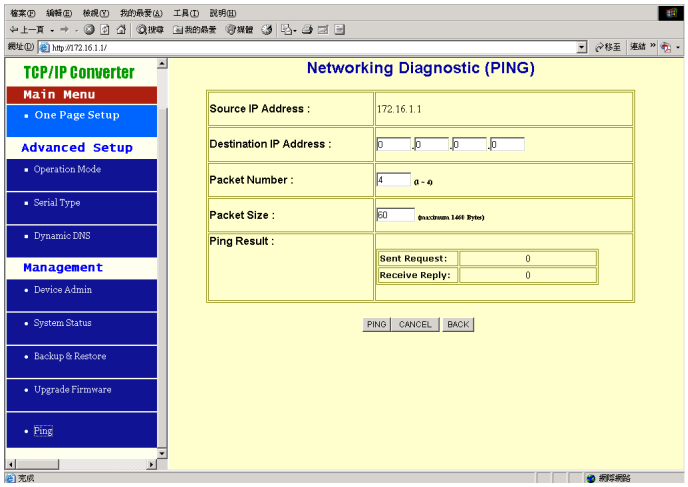


浏览: 输入升级档案于 PC 中之路径或按浏览键寻找。
升级: 完成上述步骤后按 ”UPGRADE” 键进行升级工作。

注：在升级的过程中必须确保电源供应之稳定，否则将造成无法弥补的错误，若将不同产品之软件升级到其它产品上亦会造成严重伤害。

4.5 Ping

此功能提供您测试 WM-700(M) 之间或与其它网络工作站之间的联机状况。



发送 IP Address： 目前 WM-700(M)之IP (Read Only)。
目标 IP Address： 输入您要 PING 之 IP ADDRESS。
封包数量： 输入您要传送之封包数量，最大值为 4。
封包大小： 输入您欲传送封包大小，最大值为 60。
Ping 结果： 显示您所 PING 之次数及对方收到之次数 (Read Only)。

5. 故障排除说明

Q：当你插上 WM-700(M) 电源时，LED 不亮？
A：确认你将 WM-700(M) 接到适当的电力來源，检查所有线路的連结；如果 LED 仍然不亮，你可能有硬件上的问题，你应该和你的供货商連络。

Q：无法从以太网路存取 WM-700(M)？
A：检查WM-700(M)和计算机或 HUB 之间的連接线，从计算机 Ping WM-700(M) 确认你计算机的网路卡是安装好且功能完整的。

Q：无法 Ping 到区域网路中的任何一台计算机？
A：如果 10/100M 的 LED 是不亮的，检查 WM-700(M)和计算机的連接线，确认WM-700(M)的子网路屏蔽和 IP 地址和计算机的是同一个范围。

Q：无法从串行端口中存取 WM-700(M)？
A：检查 WM-700(M)和你的设备间串行端口的连接线，确认 WM-700(M) 设定的串行端口的参数和你的设备相同，且硬件的 232/485 切换开关是在正确的位置。

附件 A：动态域名系统 DDNS

Internet actually runs on IP Addresses which are numerical order, for example “63.208.196.100”. These IP Address identify the

location of each device connected to Internet. However, the human brain does not easily remember this numbering system, so a system that allocate domain name such as "www.dyndns.org" provides an easier method. If you type "63.208.196.100" or "www.dyndns.org" in the web browser's address bar, the browser will show the same web page. This is because both methods relate to the same web server. The **"Domain Name Servers"** used to manage the Internet will translate "www.dyndns.org" into the IP Address "63.208.196.100" in order to allow your browser to find the web server and display the correct web page in your browser.

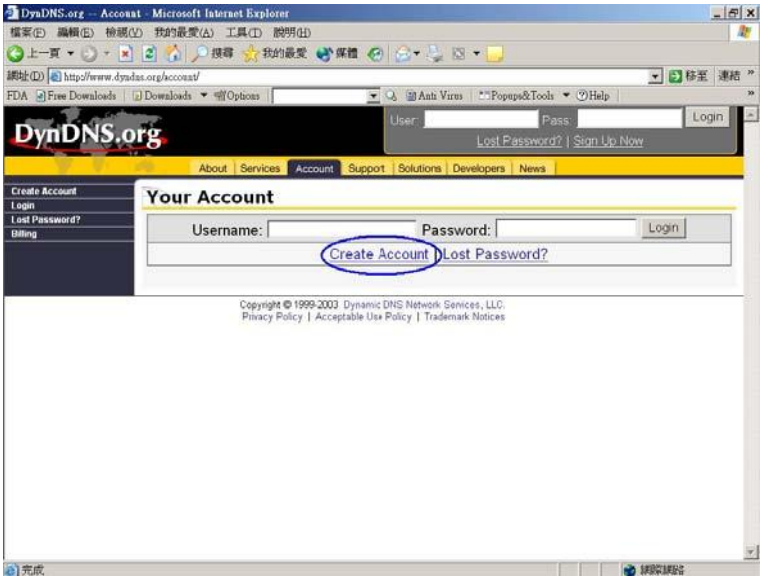
If your "IP Configuration", as shown in 3.2 section, is "PPPoE", or "DHCP" with dynamic IP address assigned by ISP, your IP address may change each time you initiate the connection to your ISP. The DDNS function will help to map your IP address to your domain name when your ISP assigns a new dynamic IP Address.

Note that this DDNS function acts as the client appliance of DDNS service and is only able to be use in conjunction with the service provided by DynDNS.org and TZO.com. Before you begin using this function, you will need to apply to DynDNS.org or TZO.com to be able to use the service. Please visit www.dyndns.org or www.tzo.com for further information.

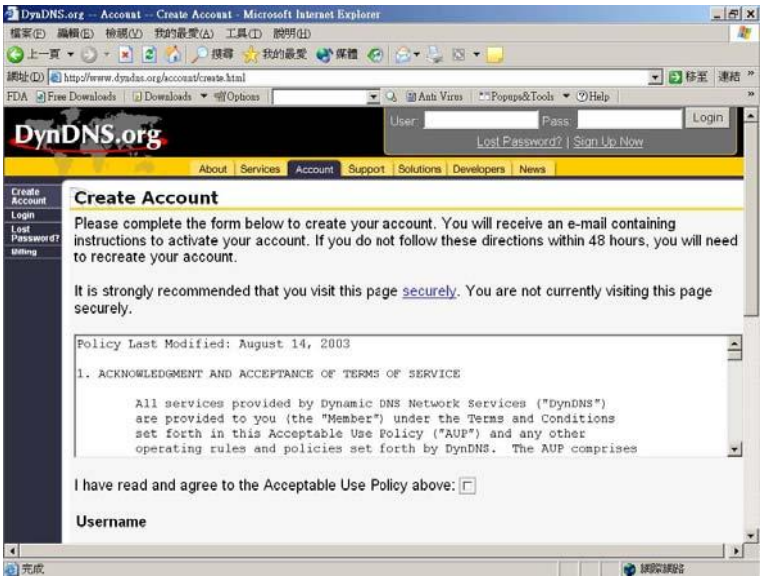
How to register from Dyndns.org

Step 1: Enter the web side www.dyndns.org in Browser, click the tab of **Account**.

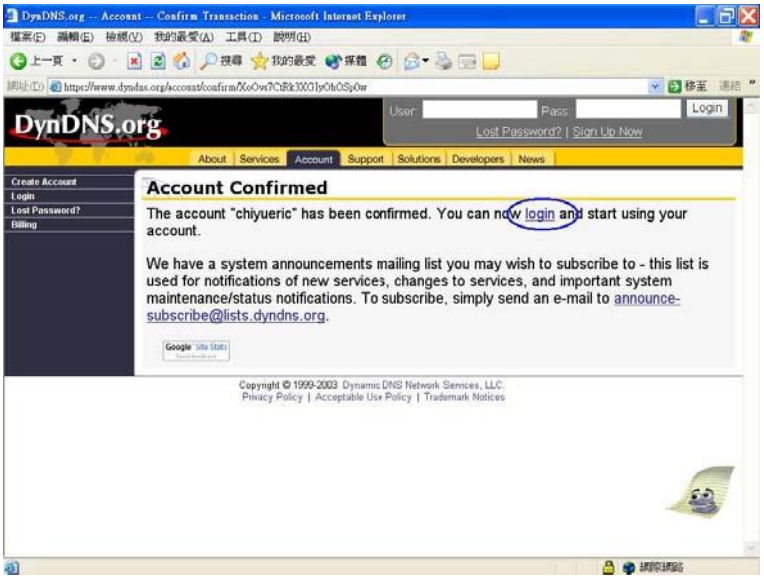
Step 2: click **Create Account**.



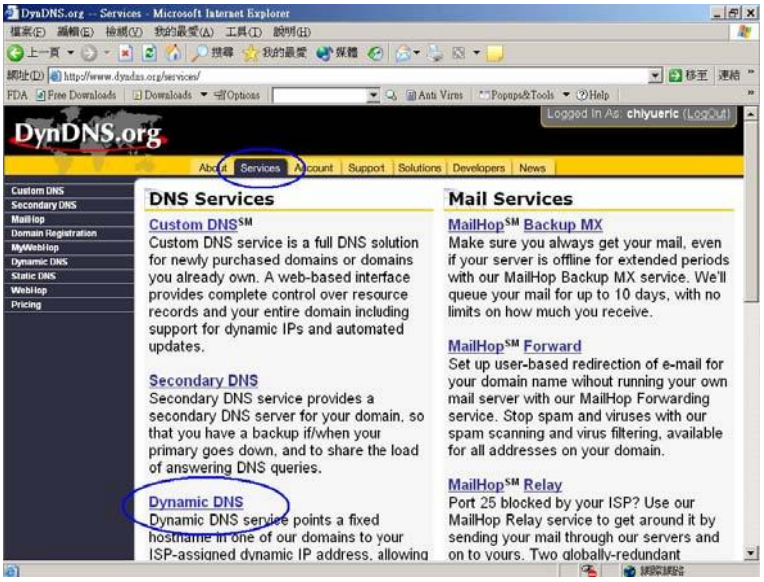
Step 3: Fill the field of Username , E-mail and Password. You will receive an e-mail containing instructions to activate your account.



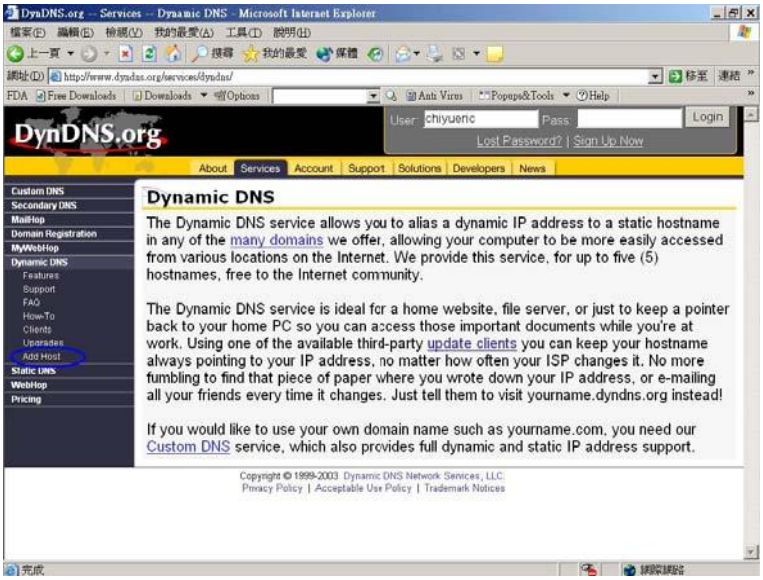
Step 4: Once you receive the confirmed e-mail, **login** with your Username and Password.



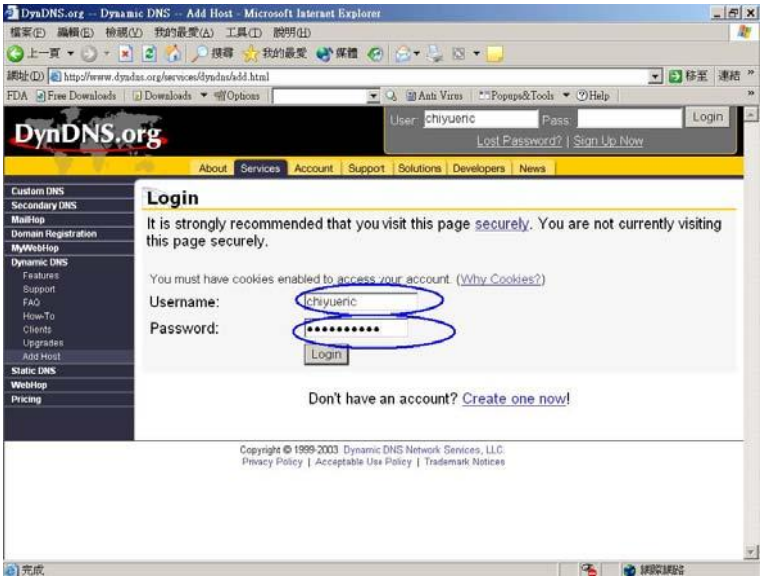
Step 5: Click the tab of **Services**, then click **Dynamic DNS**.



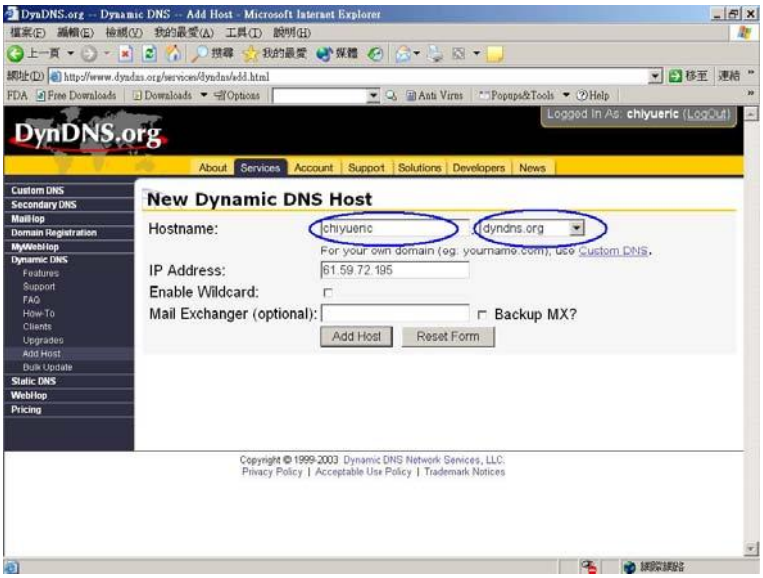
Step 6: select **Add Host** in the left side of screen.



Step 7: Login again with your **Username** and **Password**.



Step 8: Enter the **Hostname** you want to use and select **dyndns.org** from the drop-down menu, click the button of **Add Host** to finish register.

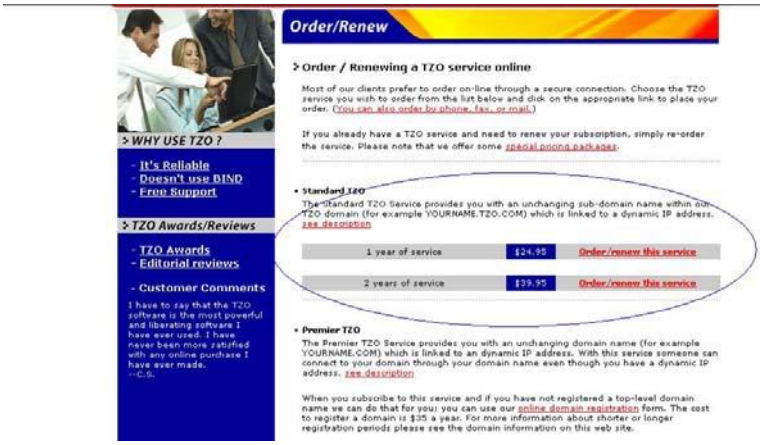


Step 9: now you should enter the Username, Password and Hostname (named Device DNS Name in WM-700(M)) into WM-700(M) to enable this function.

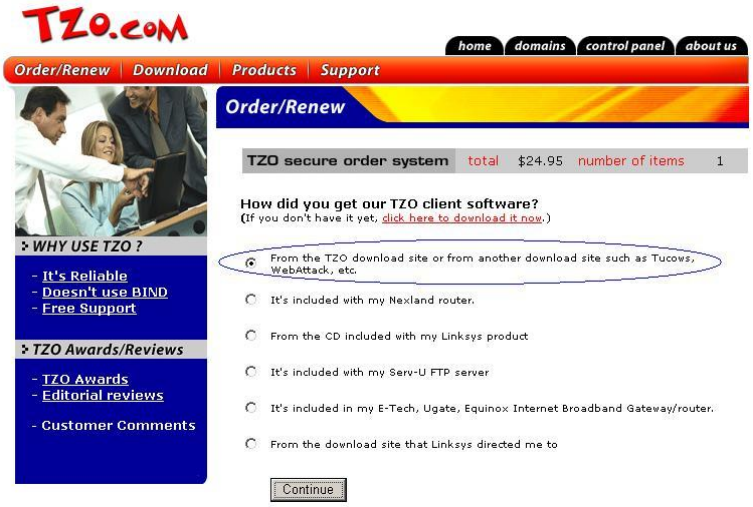
How to register from TZO.com

Step 1: Enter the web side www.tzo.com in Browser, select the **Order/Renew** from top screen.

Step 2: You can choice what’ s kind of service you need, here we suggest the **Standard TZO** with 1 year of service

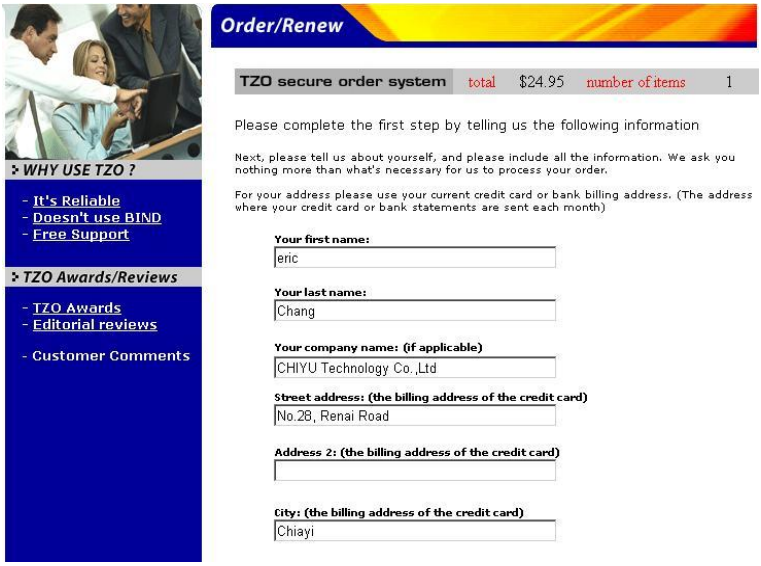


Step 3: Select the first radio button, click **Continue** button.



Step 4: Enter the TZO name you want to register, such as chiyu.tzo.com, and your E-mail address which can reach you. If you don't have a TZO name yet, please check the box under the field of E-mail address, click **Continue with order**

Step 5: complete the form with your information TZO want.



Step 6: TZO will send an e-mail letter to inform your TZO key, please enter these information including E-mail address, TZO key and TZO name (named Device DNS Name in WM-700(M)) into WM-700(M) to enable this service.

附件 B：专有名词 Glossary

10BaseT - An Ethernet standard that uses twisted wire pairs.

100BaseTX - IEEE physical layer specification for 100 Mbps over two pairs of Category 5 UTP or STP wire.

Adapter - Printed circuit board that plugs into a PC to add to capabilities or connectivity to a PC. In a networked environment, a network interface card (NIC) is the typical adapter that allows the PC or server to connect to the intranet and/or Internet.

Auto-MDI/MDIX - On a network hub or switch, an auto-MDI/MDIX port automatically senses if it needs to act as a MDI or MDIX port. The auto-MDI/MDIX capability eliminates the need for crossover cables.

Auto-negotiate - To automatically determine the correct settings. The term is often used with communications and networking. For example, Ethernet 10/100 cards, hubs, and switches can determine the highest speed of the node they are connected to and adjust their transmission rate accordingly.

Browser - A browser is an application program that provides a way to look at and interact with all the information on the World Wide Web or PC. The word "browser" seems to have originated prior to the Web as a generic term for user interfaces that let you browse text files online.

Cable Modem - A device that connects a computer to the cable television network, which in turn connects to the Internet. Once connected, cable modem users have a continuous connection to the Internet. Cable modems feature asymmetric transfer rates: around 36 Mbps downstream (from the Internet to the computer), and from 200 Kbps to 2 Mbps upstream (from the computer to the Internet).

CAT 5 - ANSI/EIA (American National Standards Institute/Electronic Industries Association) Standard 568 is one of several standards that specify "categories" (the singular is commonly referred to as "CAT") of twisted pair cabling systems (wires, junctions, and connectors) in terms of the data rates that they can sustain. CAT 5 cable has a maximum throughput of 100 Mbps and is usually utilized for 100BaseTX networks.

CTS (**C**lear **T**o **S**end) - An RS-232 signal sent from the receiving station to the transmitting station that indicates it is ready to accept data.

Data Packet - One frame in a packet-switched message. Most data communications is based on dividing the transmitted message into packets. For example, an Ethernet packet can be from 64 to 1518 bytes in length.

Default Gateway - The routing device used to forward all traffic that is not addressed to a station within the local subnet.

Download - To receive a file transmitted over a network. In a communications session, download means receive, and upload means transmit.

Dynamic IP Address - An IP address that is automatically assigned to a client station in a TCP/IP network, typically by a DHCP server. Network devices that serve multiple users, such as servers and printers, are usually assigned static IP addresses.

Ethernet - IEEE standard network protocol that specifies how data is placed on and retrieved from a common transmission medium. Has a transfer rate of 10 Mbps. Forms the underlying transport vehicle used by several upper-level protocols, including TCP/IP and XNS.

DDNS (**D**ynamic **D**omain **N**ame **S**ystem) - Allows a network device with a dynamic Internet IP address to have a fixed host and domain name, such as *myhostname.mydomainname.com*. It is useful when you are hosting your own website, FTP server, or other server behind a router, so people can find your site no matter how often the Internet IP address changes. Using DDNS requires

registering with a DDNS service provider on the Internet.

DHCP (**D**ynamic **H**ost **C**onfiguration **P**rotocol) - A protocol that lets network administrators centrally manage and automate the assignment of Internet Protocol (IP) addresses in an organization's network. Using the Internet's set of protocol (TCP/IP), each machine that can connect to the Internet needs a unique IP address. When an organization sets up its computer users with a connection to the Internet, an IP address must be assigned to each machine. Without DHCP, the IP address must be entered manually at each computer and, if computers move to another location in another part of the network, a new IP address must be entered. DHCP lets a network administrator supervise and distribute IP addresses from a central point and automatically sends a new IP address when a computer is plugged into a different place in the network. DHCP uses the concept of a "lease" or amount of time that a given IP address
will be valid for a computer. The lease time can vary depending on how long a user is likely to require the Internet connection at a particular location. It's especially useful in education and other environments where users change frequently. Using very short leases, DHCP can dynamically reconfigure networks in which there are more computers than there are available IP addresses. DHCP supports static addresses for computers containing Web servers that
need a permanent IP address.

DNS - The Domain Name System (DNS) is the way that Internet domain names are located and translated into Internet Protocol (IP) addresses. A domain name is a meaningful and easy-to-remember "handle" for an Internet address.

Domain - A sub network comprised of a group of clients and servers under the control of one security database. Dividing LANs into domains improves performance and security.

Firmware - Code that is written onto read-only memory (ROM) or programmable read-only memory (PROM). Once firmware has been written onto the ROM or PROM, it is retained even when the device is turned off.

Full Duplex - The ability of a device or line to transmit data simultaneously in both directions.

Gateway – A device that interconnects networks with different, incompatible communications protocols.

Half Duplex - Data transmission that can occur in two directions over a single line, but only one direction at a time.

Hardware - Hardware is the physical aspect of computers, telecommunications, and other information technology devices. The term arose as a way to distinguish the "box" and the electronic circuitry and components of a computer from the program you put in it to make it do things. The program came to be known as the software.

Hub - The device that serves as the central location for attaching wires from workstations. Can be passive, where there is no amplification of the signals; or active, where the hubs are used like repeaters to provide an extension of the cable that connects to a workstation.

HTTP (**H**yper**T**ext **T**ransport **P**rotocol) - The communications protocol used to connect to servers on the World Wide Web. Its primary function is to establish a connection with a Web server and transmit HTML pages to the client browser.

MAC Address - The MAC (Media Access Control) address is a unique number assigned by the manufacturer to any Ethernet networking device, such as a network adapter, that allows the network to identify it at the hardware level.

Mbps (**M**ega**B**its **P**er **S**econd) - One million bits per second; unit of measurement for data transmission.

IP Address - In the most widely installed level of the Internet Protocol (IP) today, an IP address is a 32-binary digit number that

identifies each sender or receiver of information that is sent in packets across the Internet. When you request an HTML page or send e-mail, the Internet Protocol part of TCP/IP includes your IP address in the message (actually, in each of the packets if more than one is required) and sends it to the IP address that is obtained by looking up the domain name in the Uniform Resource Locator you requested or in the e-mail address you're sending a note to. At the other end, the recipient can see the IP address of the Web page requestor or the e-mail sender and can respond by sending another message using the IP address it received.

IPCONFIG - A utility that provides for querying, defining and managing IP addresses within a network. A commonly used utility, under Windows NT and 2000, for configuring networks with static IP addresses.

ISP - An ISP (Internet service provider) is a company that provides individuals and companies access to the Internet and other related services such as website building and virtual hosting.

Packet - A unit of data routed between an origin and a destination in a network.

Network Mask - Also known as the "Subnet Mask."

NIC (**N**etwork **I**nterface **C**ard) - A board installed in a computer system, usually a PC, to provide network communication capabilities to and from that computer system. Also called an adapter.

RJ-45 - A connector similar to a telephone connector that holds up to eight wires, used for connecting Ethernet devices.

Server - Any computer whose function in a network is to provide user access to files, printing, communications, and other services.

SMTP (**S**imple **M**ail **T**ransfer **P**rotocol) - The standard e-mail protocol on the Internet. It is a TCP/IP protocol that defines the message format and the message transfer agent (MTA), which stores and forwards the mail.

Ping (**P**acket **IN**ternet **G**roper) - An Internet utility used to determine whether a particular IP address is online. It is used to test and debug a network by sending out a packet and waiting for a response.

Port - A pathway into and out of the computer or a network device such as a switch or router. For example, the serial and parallel ports on a personal computer are external sockets for plugging in communications lines, modems, and printers.

PPPoE (**P**oint to **P**oint **P**rotocol **o**ver **E**thernet) - PPPoE is a method for the encapsulation of PPP packets over Ethernet frames from the user to the ISP over the Internet. One reason PPPoE is preferred by ISPs is because it provides authentication (username and password) in addition to data transport. A PPPoE session can be initiated by either a client application residing on a PC, or by client firmware residing on a modem or router.

Subnet Mask - The method used for splitting IP networks into a series of subgroups, or subnets. The mask is a binary pattern that is matched up with the IP address to turn part of the host ID address field into a field for subnets.

TCP (**T**ransmission **C**ontrol **P**rotocol) - A method (protocol) used along with the IP (Internet Protocol) to send data in the form of message units (datagram) between network devices over a LAN or WAN. While IP takes care of handling the actual delivery of the data (routing), TCP takes care of keeping track of the individual units of data (called packets) that a message is divided into for efficient delivery over the network. TCP is known as a "connection oriented" protocol due to requiring the receiver of a packet to return an acknowledgment of receipt to the sender of the packet resulting in transmission control.

TCP/IP (**T**ransmission **C**ontrol **P**rotocol/**I**nternet **P**rotocol) - The basic communication language or set of protocols for communications over a network (developed specifically for the Internet). TCP/IP defines a suite or group of protocols and not only TCP and IP.

Telnet - A terminal emulation protocol commonly used on the Internet and TCP/IP-based networks. It allows a user at a terminal or computer to log onto a remote device and run a program.

TFTP (**T**rivial **F**ile **T**ransfer **P**rotocol) - A version of the TCP/IP FTP protocol that has no directory or password capability.

Static IP Address - A permanent IP address that is assigned to a node in a TCP/IP network.

附件 C：如何取得 PC 之 MAC ADDRESS 及 IP ADDRESS

This section describes how to find the MAC address for your computer's Ethernet adapter so you can use the MAC address change feature of the WM-700(M). You can also find the IP address of your computer's Ethernet adapter. This IP address is used for the WM-700(M)'s configuration. Follow the steps in this appendix to find the adapter's MAC or IP address in Windows 98, Me, 2000, or XP.

1. Click **Start** and **Run**. In the *Open* field, enter **cmd**. Press the **Enter** key or click the **OK** button.
2. At the command prompt, enter **ipconfig /all**. Then press the **Enter** key.
3. Write down the Physical Address as shown on your computer screen (Figure D-1); it is the MAC address for your Ethernet adapter. This appears as a series of numbers and letters.
The MAC address/Physical Address is what you will use for MAC address changing.

The example in Figure D-1 shows the Ethernet adapter's IP address as 192.168.168.100. Your computer may show something different.

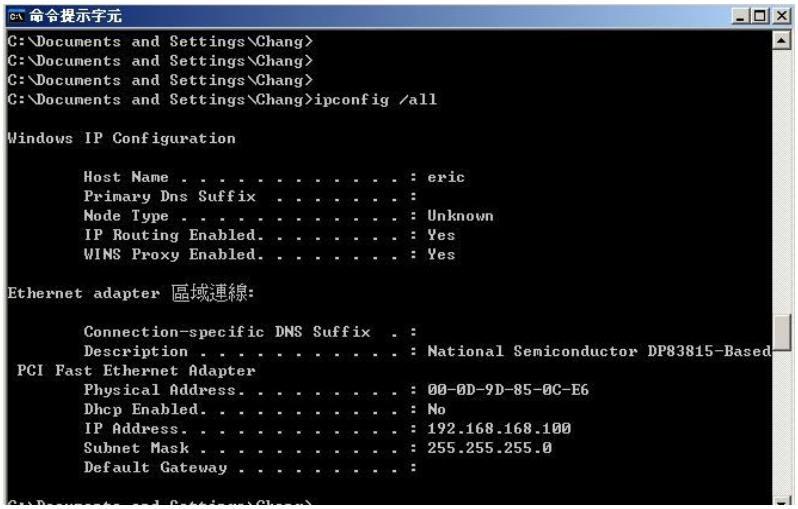


Figure E-1 MAC Address/Physical Address