



# user manual

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 **SEOWON INTECH**

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## Introduction to the Product

This product receives external WiMAX signals to construct in-building infrastructure on a WiMAX network, and is covered by Ethernet network internally. The product serves as a relay as well as an internet router.

However, the purpose of the product is mostly to supply signals to users, with the emphasis being its relay rather than its modem functions.

It is also a wired and wireless internet router that enables several systems to share a single internet address supplied by a high-speed internet service provider.

## Functional Features

Function	Features
IEEE802.16e WiMAX Support	Wave1 = DL : 10Mbps / UL : 4Mbps Wave2 = DL : 30Mbps / UL : 6Mbps
IEEE802.3u Ethernet Support	10/100Mbps wired LAN connectable
RJ-11 VoIP Support	1 x RJ-11 for Analog Telephone Service
LAN Port	1 Port 10/100Mbps Ethernet Switch built-in
Cable Auto Sense	Straight (Direct) or Cross Cable auto sensing
NAT function	Supports up to 253 wired and wireless connections and internet router*
Firewall function	Manages basic firewall and IP/Port/based access

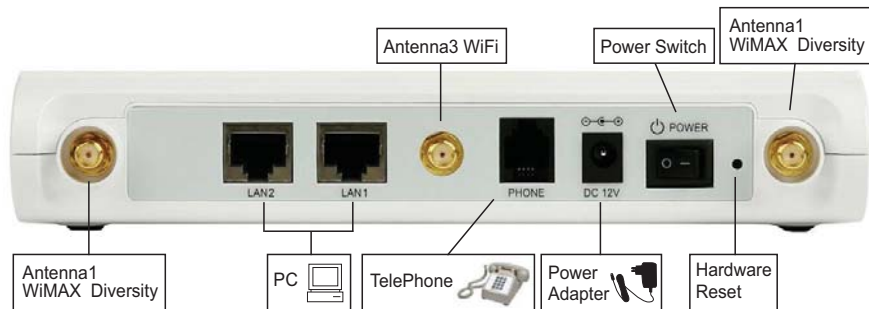
## LED Information



LED Indicator	Function
PWR	Power Supply status (On at Power ON)
LAN	ON when connected to PC, Flashing at communication
PHONE	ON when connected to Telephone, Flashing at communication
RSSI	Representation WiMAX received signal strength indication(RSSI), on when the mode was selected router.

## Introduction to the Product

### Rear Side Information

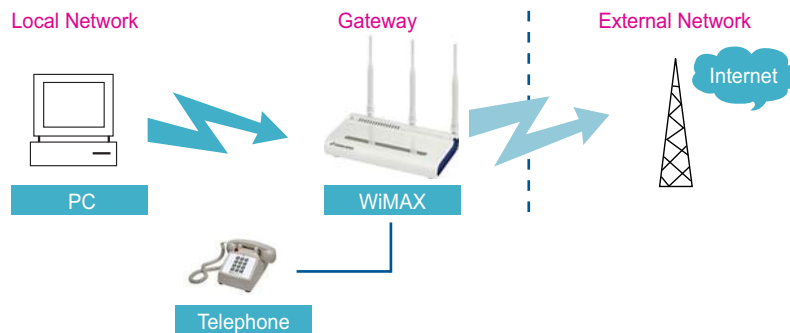


Item	Details
External Antenna	Antenna1 : WiMAX Diversity Antenna2 : WiMAX Main Separable external antenna User external type antenna attachable * Antenna Classification - 2.3G : M23 - 2.5G : M25 - 3.5G : M35 - WiFi : WiFi(Optional)
LAN	PC or Hub connection
PHONE	Telephone connection
DC 12V	Power Adapter connection (DC 12V --- 2.0A)
POWER	Power On/Off Switch (Switch between On/Off by pressing right or left)
RESET	Restore the VoIP CPE Factory Default

**Note** If you lost LOGIN password for router or IP address after change, use the Reset switch to restore its original Factory Default settings.

## Configuration

### Network Configuration



To verify the normal operation of the router, check the following LEDs after connecting the router, modem, and PC with a LAN cable, as follows:

LED	Normal Operation	Actions to take if not illuminated
PWR	ON when connecting adapter	Check for adapter power failure
LAN	ON when cable is connected normally	Check cable connection and PC power supply
PHONE	On when Phone cable is connected normally	Check cable connection and Telephone
WiMAX RSSI	Represents WiMAX received signal strength indication (RSSI), ON when in router mode	Check that router mode is selected

If one or more LED lights is not in "normal operation", take the actions specified in the table. Install a router after connecting to the network. If normal connection between router and PC is checked, you have to set up the PC and router. PC setup is to control network configuration for Windows 98, Windows 2000, or Windows XP to use the Internet while the PC is connected to a router. Router setup is to connect a router to the Internet. Please refer to the CPE Setup chapter.

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## Configuration

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### Package Contents



Main Unit



User Manual



CD



Antenna X 3



UTP Cable



Telephone Cable



Adapter

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## Configuration

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### PC Configuration (Windows XP)

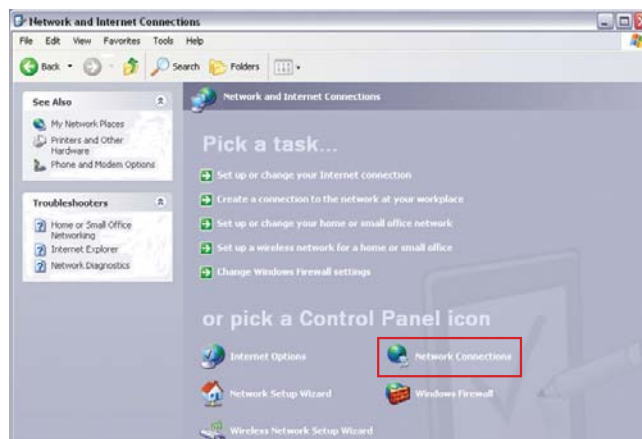
This procedure is used to restore Windows XP's TCP/IP setup to the default values. If Windows has just been installed for the first time on the PC, no changes should be required, but you should check to confirm that all values are normal according to the following.

After completing the TCP/IP setup of the PC, connect PC and CPE with a LAN cable and turn CPE on before Windows starts up to determine whether an IP address is obtained from CPE automatically.

- ▶ Click the Windows Start button, and select Settings >> Control Panel from the menu.
- ▶ Double-click the "Network Connection" icon in the Control Panel.



Double-click the Network and Internet Connections



Double-click the Network Connection

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## Configuration

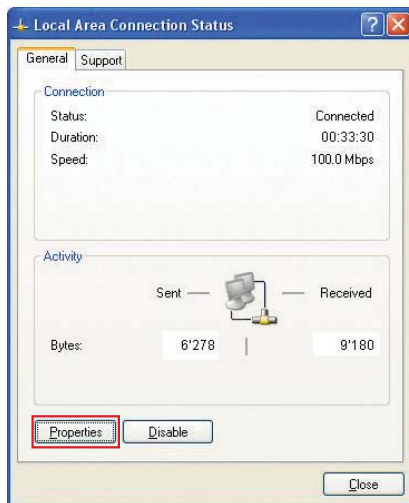
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- > Double-click the Local Area Connection from the Network Connection list to select it.



Double-click the Local Area Connection

- > Click "Properties" in the Local Area Connection Status window.



Click Properties

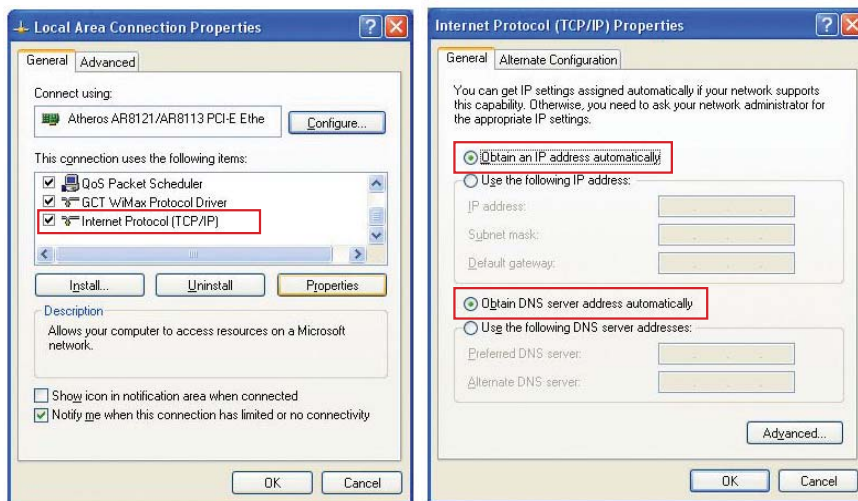


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## Configuration

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- ▶ Double-click Internet Protocol (TCP/IP) to open its Properties window, and then select “Obtain an IP address automatically” and “Obtain a DNS Server address automatically”.



Double-click TCP/IP

Select the 'Obtain an IP address automatically', 'Obtain a DNS Server address automatically' and click OK

- ▶ After completing setup, click OK and close all of the Local Area Connection Properties windows.
- ▶ When TCP/IP setup is completed, an IP address is automatically assigned by CPE. For automatic assignment, the PC and the CPE should be connected with a LAN cable. If they are not connected with a cable, connect them with a LAN cable and restart the PC.
- ▶ You can check the automatic IP address assignment by using the ipconfig command from the Command Prompt.

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## Configuration

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### How to check your IP address

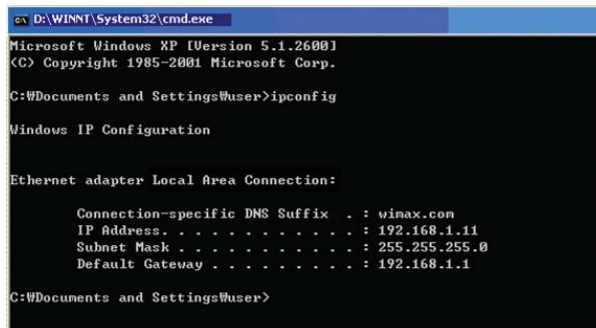
- ▶ To run the Command Prompt, click the Start button at the lower left corner of the Windows screen. Click Run, then enter “cmd” in the Open box, and click OK.



Run cmd

- ▶ When the Command Prompt window opens, enter the “ipconfig” command to verify the IP address, Subnet mask, and Gateway, which are automatically assigned to PC.

**Note** All PCs connected to CPE will receive their own assigned IP address.



Verify IP address

**Note** If an IP address is not assigned, check the following, and then restart the PC and check whether an IP address is assigned.

- ▶ LAN cable connection between PC and CPE
- ▶ Check TCP/IP setup details

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## CPE Built-in Web Server Access

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- ▶ The WEB GUI is used to manage a CPE and view its current status.
- ▶ You can access the web server that is built into the CPE, even when not connected to the Internet.
- ▶ To access the web server, open Internet Explorer or your Browser and type "192.168.1.1", which is the IP address of CPE, in the address bar, as shown below:

Address

**Note** If the PC is connected to the CPE but is not connected to the Internet, entering the IP address of 192.168.1.1 in the address box will connect the PC to the CPE web server. This function may not operate in some environments.

- ▶ Upon accessing the CPE, the following Login screen will be displayed.
- ▶ The default user ID and password are admin, which you can change on the web server.



ID / Password = admin / admin

**Note** If you have no input activity for 1 hour, your web connection is terminated. In this Case, please login again through the login page.

## CPE Setup on the web page

### LAN (LAN Configuration)

The screenshot shows the WIMAX V8P2.2.1.2 web interface. The top navigation bar includes icons for Wizard, WiMAX, WAN, LAN, Switch, WLAN, VoIP, Application, and Admin. The current page is titled "LAN Configuration" with sub-links for "MAC Address" and "Status".

On the left sidebar, there are two menu items: "LAN Setup" and "LAN DHCP Server Setup".

The main content area contains the following text and form fields:

**Your CPE is equipped with a DHCP server that will automatically assign IP addresses to each computer on your network. The factory default settings for the DHCP server will work in most any application. If you need to make changes to the settings, you can do so.**

**IP Address:** 192 | 168 | 1 | 1

**Subnet Mask:** 255 | 255 | 255 | 0

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**DHCP Server:**  Enable  Disable

**Maximum Lease Time:** 864000 (sec)

**IP Starting Address:** 192 | 168 | 1 | 100

**Number of users:** 51

**WINS server:** 0 | 0 | 0 | 0

At the bottom right, there are two buttons: "Save" and "Cancel".

- > Select "LAN" → "LAN Configuration" menu.
- > Configure LAN IP address
  - > LAN IP address is used in the LAN that the CPE manages.
  - > Configure LAN IP address in "IP Address/Subnet Mask" text boxes.
  - > Initial Value is "192.168.1.1/255.255.255.0" and only the last byte in "Subnet Mask" box can be modified.
- > Configure DHCP server
  - > Enable DHCP server to lease IP address to the computer connecting to CPE with wired LAN.
  - > Set Maximum lease time (in seconds), IP Starting address, Number of users and WINS server address.
- > Finish setup by clicking the "Save" button. A pop-up window asking you to reboot the system will then appear.

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## CPE Setup on the web page

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- ▶ If you have finished CPE setup and want to reboot the CPE, click "Yes" to reboot the CPE.

### LAN (Status)

- ▶ Select "LAN" → "Status" from the menu.
- ▶ You can see the details of the LAN configuration.

### Switch (Status)

- ▶ Select "Switch" → "Status" from the menu.
- ▶ You can see the various configurations related to Switch configuration, such as Switch mode and several filters.

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## CPE Setup on the web page

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### VoIP (Status)

- > Select "VoIP" → "Status" from the menu.
- > You can see the various configuration related VoIP configuration.

The screenshot shows the Wimax VoIP Status configuration page. The top navigation bar includes icons for Wizard, WiMAX, WAN, LAN, Switch, WLAN, VoIP, Application, and Admin. The main content area is titled "VoIP Status" and contains two sections: "Network Information" and "SIP Information".

**Network Information**

Domain or IP	192.168.123.100
Local IP	192.168.155.27
Outbound Proxy Active	Disable
Outbound Proxy Server Addr	

**SIP Information**

User Name	10001
Status	NO Active

At the bottom right, there are "Apply" and "Cancel" buttons.

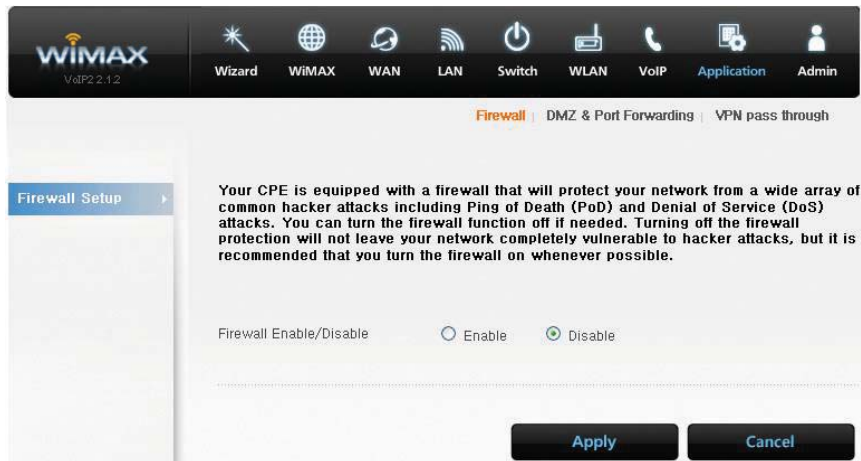
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## CPE Setup on the web page

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### Application (Firewall)

Firewall enables you to set the CPE so that it is not affected by external hacking attempts, including Ping Flooding or DoS. Internal LAN PCs are usually isolated/protected from external Internet attacks even when a firewall is not used, but it is still preferable to set the firewall to ON as much as possible. By default, the firewall is set to ON.



- > Select "Application" → "Firewall" from the menu.
- > If you want to use the Firewall function, check the "Enable" checkbox.
- > Finish setup by clicking the "Apply" button. A pop-up window informing you of the result will appear.
- > Changed configuration is applied immediately.

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## CPE Setup on the web page

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### Application (DMZ & Port Forwarding)

The DMZ feature allows you to specify one computer on your network to be placed outside of the NAT firewall. This may be necessary if the NAT feature is causing problems with an application, such as a game or video conferencing application. Use this feature on a temporary basis, as the computer in the DMZ is not protected from attacks by hackers.

The Port Forwarding function is used to forward incoming packets of specific TCP/IP port from outside to the assigned PC. This function is useful if you have to use VoIP or P2P applications, or have to operate HTTP or FTP servers from a PC in the internal LAN.

The screenshot shows the WIMAX web interface for configuring DMZ and Port Forwarding. The top navigation bar includes: Wizard, WiMAX, WAN, LAN, Switch, WLAN, VoIP, Application, and Admin. The current page is titled "DMZ & Port Forwarding" under the "Application" menu. The left sidebar has "Demilitarized Zone Setup" and "Port Forwarding Setup" options. The main content area has the following settings:

- DMZ Enable/Disable:  Enable  Disable
- Private LAN IP: 192.168.1.1

Below these settings is a table for Port Forwarding:

Name	Start Port	End Port	Protocol	IP Address	Destination Port	Add

At the bottom right, there are "Apply" and "Cancel" buttons.



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## CPE Setup on the web page

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- > Select "Application" → "DMZ & Port Forwarding" from the menu.
- > Configure DMZ
  - > Select whether or not to enable the DMZ function.
  - > Set the IP address to have all ports opened in "Private LAN IP" content.
  - > Finish setup by clicking the "Apply" button. A pop-up window informing you of the result will appear.
- > Configure Port Forwarding
  - > The port forwarding function can be configured when DMZ is disabled.
  - > To add Port Forwarding, click "Add". You will then see the pop-up window for Port Forwarding.
  - > Enter the information for Port Forwarding.
  - > Click "Apply".
  - > The pop-up window will close, and added Port Forwarding is shown.
  - > To modify/delete the existing Port Forwarding list, use the "Edit"/"Delete" button.
  - > Changed configuration is applied immediately.



The screenshot shows a web browser window titled "Port Forwarding - Windows Intern...". The address bar contains the URL "http://192.168.1.1/cgi-bin/dmz\_port\_forwarding.cgi?". The main content area is titled "Port Forwarding" and includes a "Message" section. Below this is a form with the following fields:

- Name:
- Start Port:
- End Port:
- Protocol:
- Destination IP:
- Destination Port:

At the bottom of the form are two buttons: "Apply" and "Cancel".

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## CPE Setup on the web page

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### Application (VPN pass through)

The VPN (Virtual Private Network) function is used to obtain access to a security network installed in a company or an organization via the Internet network.

If there is a VPN Server outside, and one has access to the VPN Server via the Internet network by using CPE, this screen shows how to activate the security protocol supported by the appropriate VPN Server.



- ▶ Select "Application" → "VPN pass through" from the menu.
- ▶ SWC-5x00 supports 3 types of service: PPTP, L2TP and IPSEC.
- ▶ Select the type(s) of VPN pass-through to use with the checkboxes.
- ▶ Finish setup by clicking the "Apply" button. A pop-up window informing you of the result will appear.
- ▶ Changed configuration is applied immediately.

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## CPE Setup on the web page

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### Admin (Version)



The screenshot shows the WIMAX web interface. At the top, there is a navigation bar with icons for Wizard, WIMAX, WAN, LAN, Switch, WLAN, VoIP, Application, and Admin. Below the navigation bar, there is a breadcrumb trail: Version | Password | CPE Upgrade | Reboot/Default Setting. The main content area is titled "Version Information" and contains a table with the following data:

- Version Information -	
CPE Ver	2.1.2
GCT FW Ver	1.6.2.4
GCT WCM Ver	1.6.2
GCT Driver Ver	2.0.1

- > Select "Admin" → "Version" from the menu.
- > You can see the versions of the SWC-5x00 firmware and the Wimax firmware in use.

### Admin (Password)



The screenshot shows the WIMAX web interface. At the top, there is a navigation bar with icons for Wizard, WIMAX, WAN, LAN, Switch, WLAN, VoIP, Application, and Admin. Below the navigation bar, there is a breadcrumb trail: Version | Password | CPE Upgrade | Reboot/Default Setting. The main content area is titled "Password Setup" and contains two input fields for entering a new password and re-entering it for confirmation. Below the input fields, there are two buttons: "Apply" and "Cancel".

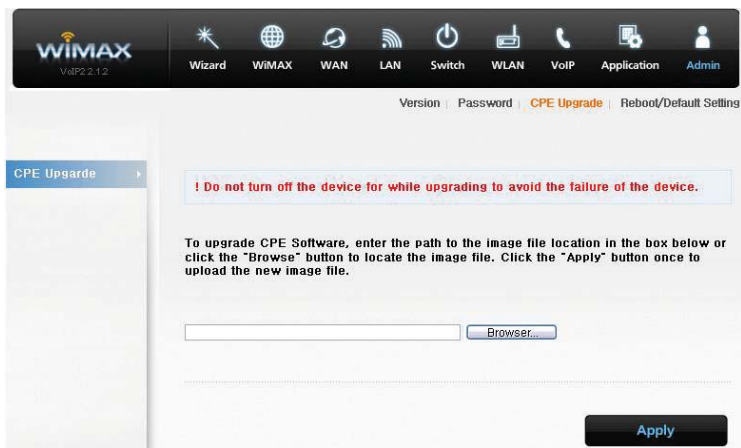
- > Select "Admin" → "Password" from the menu.
- > Set the Password to be given to the Administrator who manages the CPE.
- > Enter the new password, and re-type it to confirm.
- > Finish setup by clicking the "Apply" button. A pop-up window informing you of the result will appear.

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## CPE Setup on the web page

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### Admin (CPE Upgrade)



- > Select "Admin" → "CPE Upgrade" from the menu.
- > Input the CPE firmware path directly, or search for the firmware file by clicking the "Browse" button.
- > To start the firmware update, click "Apply".



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## CPE Setup on the web page

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- > This will take several minutes, and time will vary according to the environment.
- > In some case, a pop-up window asking to rebuild the system will be opened due to a version difference. If this occurs, click "Yes" to rebuild the system.
- > CPE is rebooted automatically after the upgrade process is complete.

**Caution** To avoid failure of the CPE, do not power off the CPE during the upgrading process.

### Admin (Reboot/Default Setting)



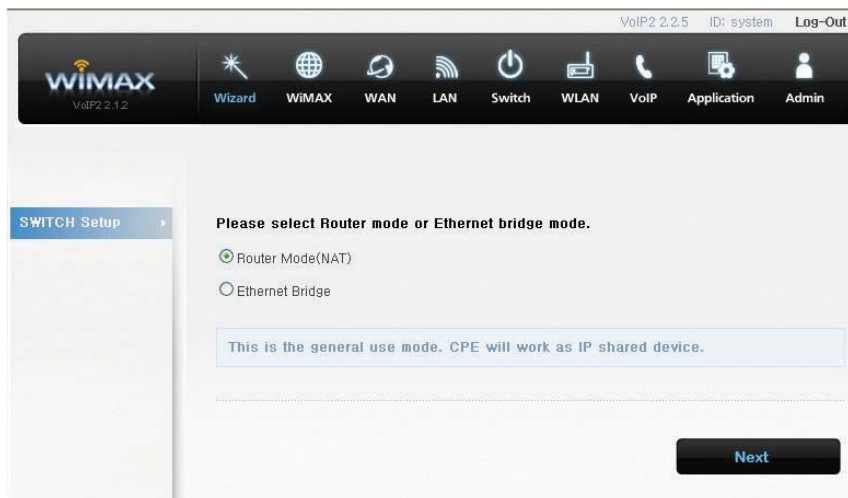
- > Select "Admin" → "Reboot/Default Setting" from the menu.
- > Select "Reboot" to reboot the CPE.
- > Select "Reset to all default settings" to reboot the CPE and initialize CPE configuration.
- > To reboot the CPE, click "Apply".
- > The CPE is rebooted automatically. This takes about 40 seconds.

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## CPE Setup on the web page

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### Wizard Setting



Wizard Setup is an easy tool to setup CPE. Wizard Setup take place in the following sequence:  
Wizard Start → Switch mode setup → Wimax IP setup → Wimax authentication setup → Wimax  
CA Certification setup → LAN IP setup → WiFi setup → Password setup → Wizard Finish.

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## Trouble Shooting

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### Actions to be taken when internet is disconnected

#### 1. Check the status of external type modem.

Check that the Link lamps of cable, modem are illuminated.

#### 2. Check the LED status of CPE.

- Check that the POWER LED is illuminated.
- Check if the LEDs of WiMAX are illuminated.
- For LAN port, check that the lamp of the port connected to the PC is illuminated.

#### 3. Check the IP address of PC.

- For Windows 98/ME  
Click [Start] -> [Run] and enter the [winipcfg] command to open the [IP Address] window, and then check the [IP Address].
- For Windows 2000/XP  
Run [Command Prompt] and enter the [ipconfig] command to check the [IP address].

#### 4. If IP Address is not normal – Set the IP Address of the PC manually.

- For Windows 98/ME
  - 1) Execute [Run -> Control Panel -> Network], and then click Properties of [TCP/IP] for LAN card.
  - 2) Check [Use the assigned IP address], enter [192.168.1.100] for [IP Address] and [255.255.255.0] for [Subnet Mask].
  - 3) Select [Gateway] and enter [192.168.1.1] for [New Gateway], and then click [Add].
  - 4) Select [DNS Configuration], check [Use DNS], enter any name for [Host], enter [DNS Server Address to search], and click [Add].
  - 5) Click [OK], click [OK] again in the [Network Properties] window, and then click [OK] from the [Change System Setup] window to reboot the PC.

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## Trouble Shooting

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- For Windows 2000
  - 1) Execute [Start >> Control Panel >> Network and Dial-UP Connections], double-click [Local Area Connection], and click [Properties].
  - 2) Click Properties of [Internet Protocol (TCP/IP)] among Components.
  - 3) Click [Use the following IP address].
  - 4) Enter [192.168.1.100] for [IP Address], [255.255.255.0] for [Subnet Mask], and [192.168.1.1] for [Default Gateway].
  - 5) Click [Use the following DNS Server Address].
  - 6) For [Basic Setup DNS Server], enter the communication company server of each country.
  - 7) Click [OK]. Click [OK] again in the [Local Area Connection Properties] window.
- For Windows XP
  - 1) [Start >> Control Panel >> Network and Internet Connection], double-click [Local Area Connection], and click [Properties]. Click Properties of [Internet Protocol (TCP/IP)] among Components.
  - 2) Click [Use the following IP address].
  - 3) Enter [192.168.10.100] for [IP Address], [255.255.255.0] for [Subnet Mask], and [192.168.1.1] for [Default Gateway].
  - 4) Click [Use the following DNS Server Address].
  - 5) For [Basic Setup DNS Server], enter the communication company server of each country.
  - 6) Click [OK]. Click [OK] again in the [Local Area Connection Properties] window.
- For MAC OS
  - 1) Execute [“apple” icon >> System setup >> Internet & Network >> Network >> Ethernet].
  - 2) Select “manual” for IP Configuration.
  - 3) Enter [192.168.1.100] for [IP Address], [255.255.255.0] for [Subnet Mask], and [192.168.1.1] for [Router].
  - 4) For [DNS Server], enter the communication company server of each country.
  - 5) Click [Apply].

### 5. Run [MS-DOS] or [Command Prompt] and then perform PING Test with [192.168.1.1]

A message [Reply from 192.168.1.1: bytes=32 time=1ms TTL=64] should appear when running [ping 192.168.1.1] command. If the result of the Ping test does not arrive properly, please contact the Customer Support Center.



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## Operating Information

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### Temperature Range and power rating for the SWC-5x00W

▸ Operating temperature for the units is 0°C ~ 40°C

### Power Rating AC for the SWC-5x00W

▸ 110-240V ~ 50/60Hz 0.6A Max

This device complies with part 15 of FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received. Including interference that may cause undesired operation.

Modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, Pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio Frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected

During transmitter operation, in order to meet RF Maximum permissible Exposure Safety Guidelines, a minimum distance of 20cm shall be maintained between antenna and personnel.

CE

Hereby, SEOWON INTECH., LTD. declares that this models is in compliance with the essential requirements and other relevant provisions of directive 199/5/EC.

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## Product Warranty and Customer Support

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### Product Warranty

Product Name: Gateway Modem Model Name: SWC-5x00W

This product comes with a one-year warranty, which is described in the following:

### Contents of Warranty Rules

1. Equipment for Warranty: SWC-5x00W
2. Warranty Period : 1 year
3. Free Repair Service or Replacement  
If a defect or failure of the product occurs within the warranty period.
4. Warranty does not cover the following.
  - If a defect or failure of the product occurs after the expiration of the warranty period.
  - If a defect or failure of the product occurs due to a natural disaster, such as fire, flood, and lightning.
  - If a defect or failure of the product occurs due to any unauthorized alteration or repair to the product.
  - If a defect or failure of the product occurs due to other actions of the consumer.

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## Warranty Information

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### Safety Precaution



Caution

When minor injury or product damage can occur from violation of the following directions.

- Do not put any object on the product.
- Avoid heating devices.
- Never disassemble, repair or redesign the product.
- Be careful not to let any alien particle get inside the product.
- Do not leave the Product near a magnet or direct magnetic field.
- If you use the product at a location where static electricity is severe, it can cause malfunction to the product.
- Do not put any metallic object (coin, hair pin) or flammable object inside the product or drop the product.

### WEEE Notice

The purpose of this Directive is, as a first priority, the prevention of WEEE, and in addition, to promote the reuse, recycling and other forms of recovery of such wastes so as to reduce disposal.



The WEEE logo on the product or on its box indicates that this product must not be disposed of or dumped with your other household waste. You are liable to dispose of all your electronic or electrical waste equipment by relocating over to the specified collection point for recycling of such hazardous waste.

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## Warranty Information

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### Quality Warranty

1. This product is manufactured through strict quality control and inspection process.
2. In case of a problem in normal condition, the product will be repaired free of charge during the warranty period.
3. If the service applies to "charged After-sale Service type" during the warranty period, service fee will be charged.
4. When requesting for repair, you must provide the warranty.
5. Keep the warranty in a safe location because it is not reissued.

Purchase date		
Quality warranty period	1(one) year	
Seller		
Telephone number		
Consumer	Name	
	Address	
	Telephone number	
	E-mail	

In the following cases, service fee can be charged as charged After-sale Service type.

- In case of issue due to inappropriate use.
- In case of issue after repair by uncertified service center.
- In case of issue after disassembling Product by consumer.
- In case of problem by natural disaster such as fire, earthquake etc.