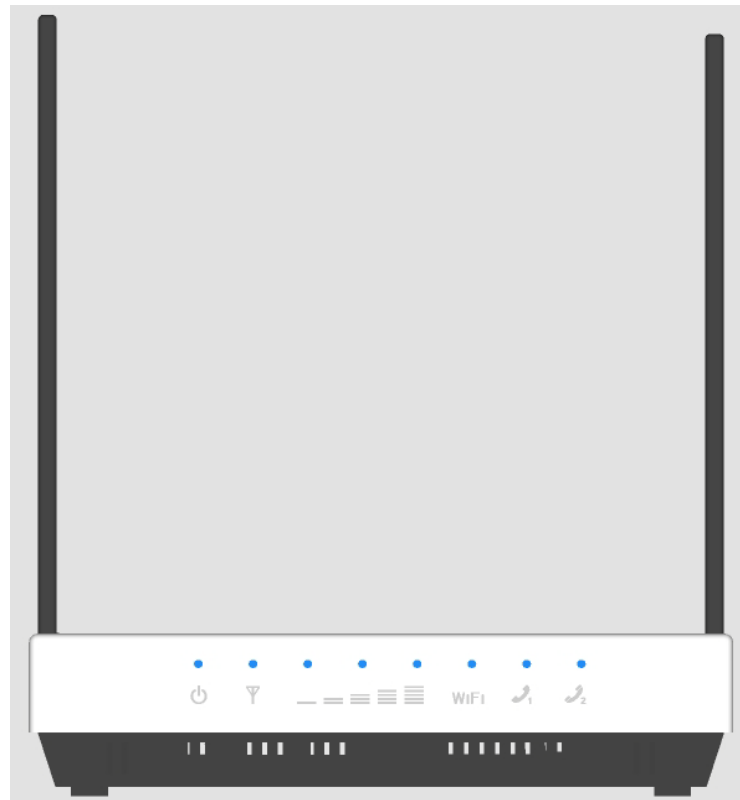# User Manual

Gemtek WiMAX Modem

(WIXFBR-103)

Manual Version: 0.1

Manual Date: Feb. 2010

Software Version: TBD

Software Date: TBD

Copyright

This DOCUMENT is copyrighted with all rights reserved. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form by any means without the written permission.

Notice

The information in this manual is subject to change without notice. Every effort has been made in the preparation of this manual to ensure accuracy of the contacts, but all statements, information and recommendations in this manual do not constitute the warranty of any kind, expressed or implied.

Contents

About this Guide

Purpose

This document provides information and procedures on installation, setup, and configuration of WiMAX 802.16e INDOOR CPE.

Prerequisite Skills and Knowledge

To use this document effectively, you should have a working knowledge of Local Area Networking (LAN) concepts and wireless Internet access infrastructures.

Conventions Used in this Document

The following typographic conventions and symbols are used throughout this document:

*!!	Very important information. Failure to observe this may result in personnel injury, damage to the device software and user PC software. It may also result in THE CPE device not being able to connect to the network.
*!	Important information that should be observed for proper functioning of the device
*	Additional information that may be helpful but which is not required.
bold	Menu commands, buttons and input fields are displayed in bold.
code	File names, directory names, form names, and system-generated output such as error messages are displayed in constant-width type.
<value>	Placeholder for certain values, e.g. user inputs.
[value]	Input field format, limitations, and/or restrictions.

Chapter 1 – Introduction

Product Overview

WiMAX 802.16e INDOOR CPE (Customer-Premises Equipment) is a comprehensive network equipment to combine 802.16e internet connectivity and VoIP service. It is also the best solution for media-centric applications like IPTV, gaming, and Voice over IP telephony

Product Package

	Item	Qty
1	802.16e WiMAX INDOOR CPE	1
2	Power Adapter	1
3	RJ-45 Ethernet cable	1

Package List (TBD)

*	If you don't receive any of the above mentioned items or if observe any of the items damaged, please contact customer support immediately.

Safety information

*!!	Failure to observe the following may result in personnel injury or may result in device damage.

- ❖ Avoid device expose to high temperature or humidity. Always keep the device dry.

- ❖ Do not spill food or liquids on the device. Do not clean the device with wet cloth or with any liquids like water, harsh chemicals, cleaning solvents or strong detergents. Never operate the device in a wet environment. If the unit gets wet turn off the AC Power and contact Customer support center.

- ❖ Do not push any objects into the openings of the device. Doing so can cause fire or electric shock by shorting out internal electronic circuit boards.

- ❖ Always use dry cloth to clean the device.

- ❖ Do not use or store the device in dusty or dirty environment.

- ❖ Do not attempt to open it. There are no user serviceable parts in the device. In case the device does not function properly please contact customer support center.

❖ Do not drop, knock or shake the device. Rough handling can break internal electronic boards.

❖ Do not use the device in areas where the local regulations prohibit its use.

❖ This device is a wireless RF device. RF Energy may affect operation of medical devices such as personal pace makers, patient monitoring systems etc. Do not use the devices in hospitals, health care centers etc.

❖ Do not keep the device close to sensitive electronic equipment like TV, Radio, Microwave ovens etc.

❖ Do not keep the device near strong magnetic field generators.

Tips for optimal device performance

❖ For best performance keep the Antenna free from obstructions and keep the Antenna straight up.

❖ Keeps the device away from electronic radiation emitting devices like TV, Microwave ovens etc.

Device care

❖ Whenever felt necessary clean the device with dry cloth.

Connector Details

Connector View
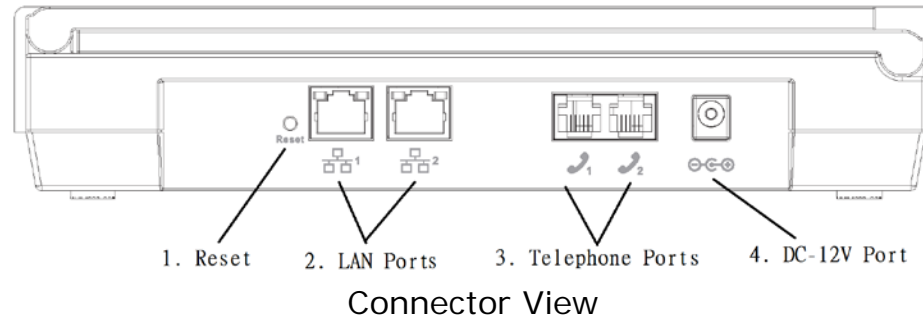
1 RESET Button (Reboot/ Reset)

Press and hold the **Reset** button for less than 5 seconds to reboot the device. Or press and hold the **Reset** button for more than 5 seconds to set settings of device to factory default.

2 LAN Ports (RJ-45)

This port is for connecting the CPE to your PC or other network equipments (such as hubs or switches) with a RJ-45 Ethernet cable.

3 Telephone Ports (RJ-11)

Connect your telephone to the CPE using RJ-11 telephone cable.

4 DC-12V Port (Power Adapter Socket)

Connect the power adapter provided with the CPE.

Visual Indications

1. Power LED   3.WiMAX Signal Strength   5.VoIP connection

2.WiMAX connection   4.WiFi Connection
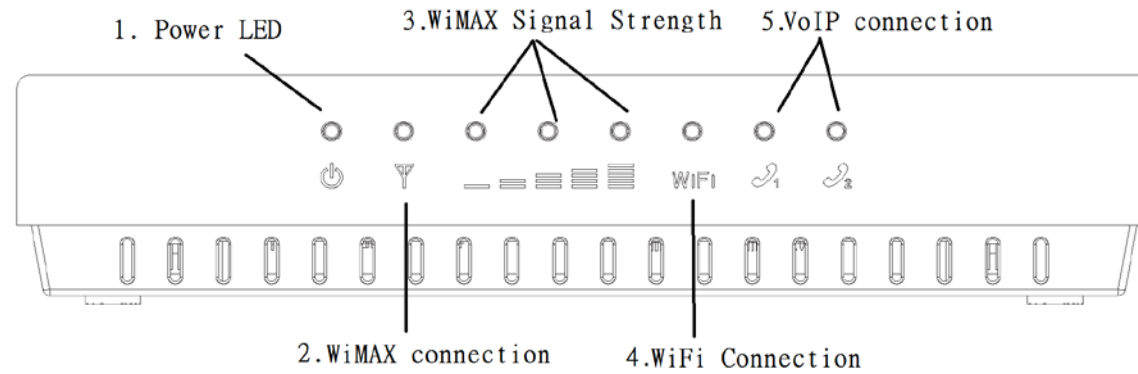
Visual Indications

1	Power	ON	CPE is powered on and in working condition
		OFF	CPE is Powered OFF
		Flashing	CPE is booting or FW upgrading
2	WiMAX Connection	ON	CPE connected to base station
		OFF	CPE does not connected to base station

3	**WiMAX Signal Strength**	ON	Display Signal Strength
		OFF	No Signal
4	**WiFi Connection**	On	WiFi enabled
		OFF	WiFi disabled
5	**VoIP Connection**	ON	VoIP (voice) is configured and available after successful registration to the SIP server
		OFF	VoIP (voice) is not configured or CPE is not connected to the Network or SIP registration time expired or SIP registration period
		Flashing	Voicemail waiting

Sensor

openrange
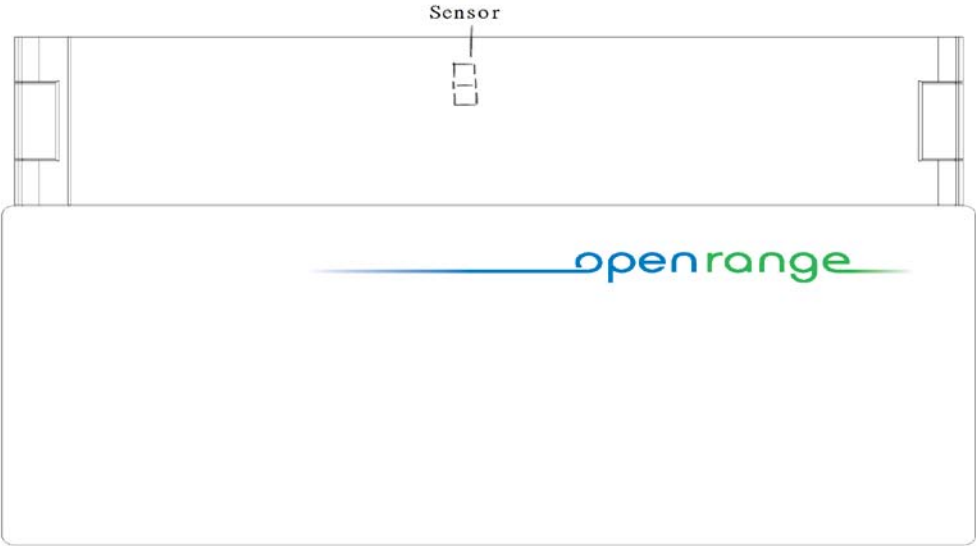
Sensor   CPE is Powered OFF when the sensor is covered

Chapter 2 – Reference Manual

Step1: Place your CPE on a flat work surface.

Step2: Connect the device **LAN** port to your PC with a RJ-45 Ethernet cable that is supplied.

Step3: Connect a standard telephone to the device **TELEPHONE** port using a standard phone cable.

Step4: Insert the power cord into the device's **DC-12V** power jack.

Step5: Insert the three pin plug of the power supply unit into AC power outlet.
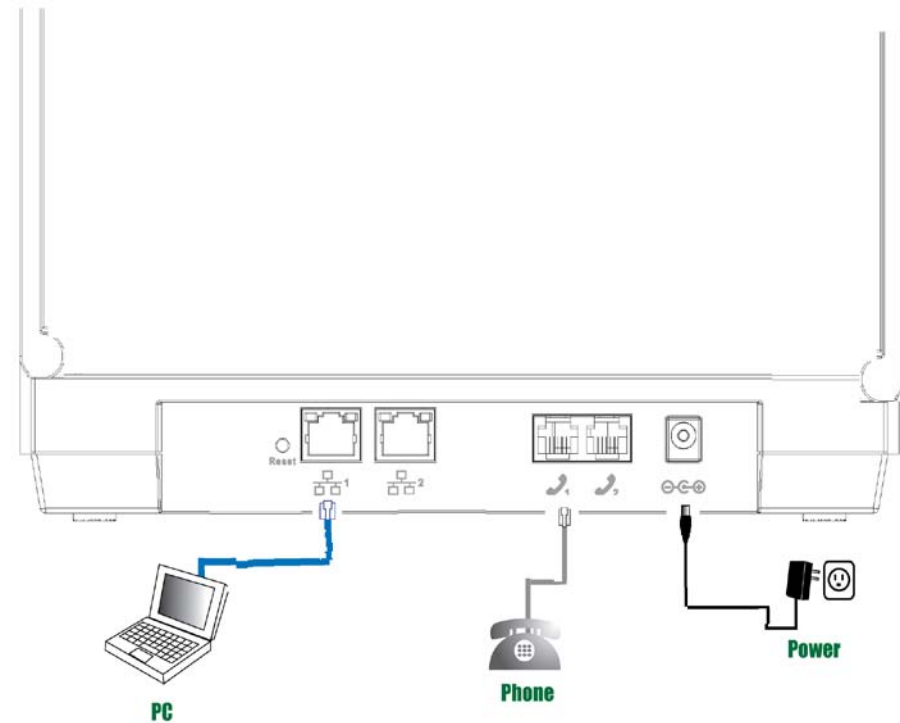
Hardware Installation

Step6: The device will be switched ON after PSU

attached with the CPE. Please wait for few

seconds to let the boot process complete.

Step7: Select **Local Area Connection Status** from

Windows task bar and click **Properties**.

Step8: Double click on the **Internet Protocol**

(TCP/IP).
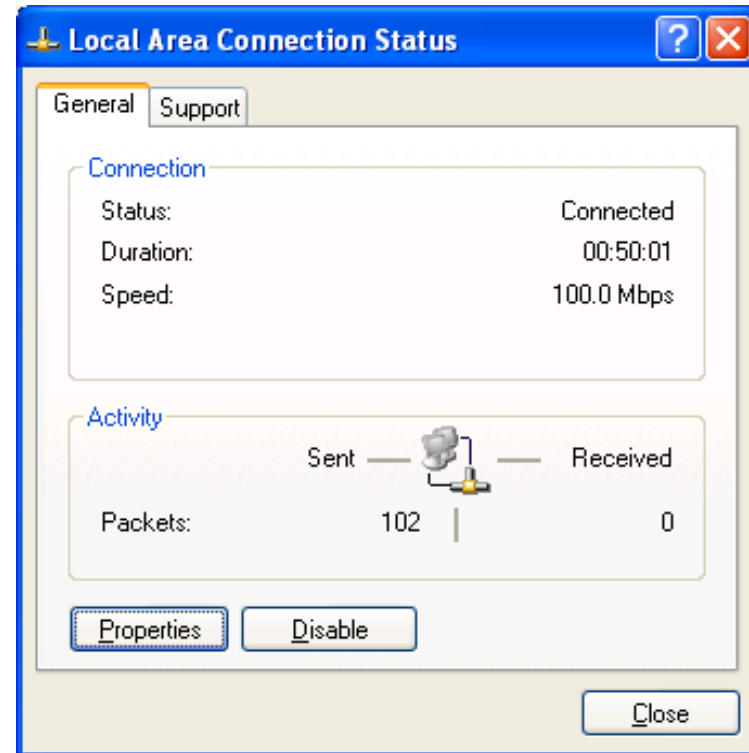
Local Area Connection Status

Step9: Select **Obtain IP address automatically** and click

      OK.
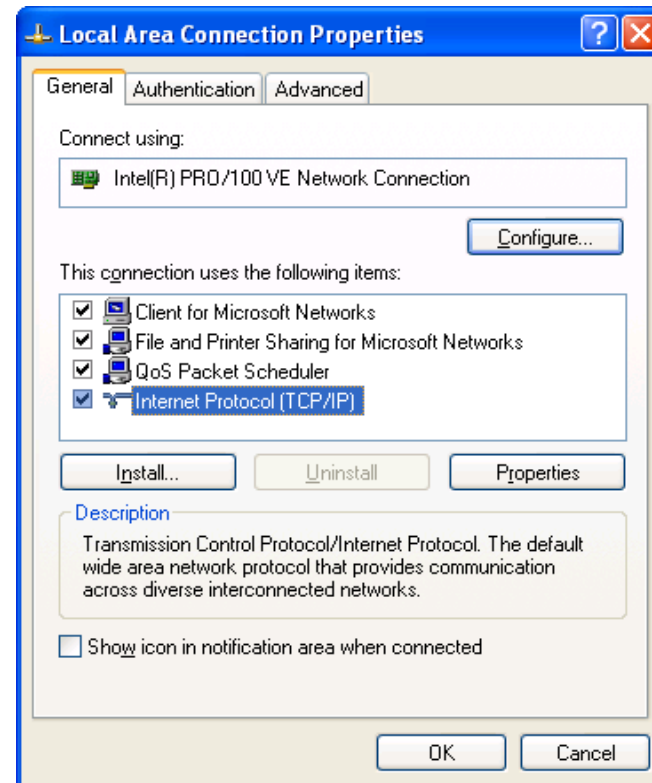
Local Area Connection Properties

Step10: By now the CPE should have got connected to the WiMAX Base station successfully. This can be verified by observing the five signal strength LEDs (Please refer **Visual Indications** section in **Chapter 1** of this manual to find the location of these LEDs on the device). At least one of these LEDs glowing continuously is an indication of successful connection to the Base Station. Now you can start browsing the Internet.
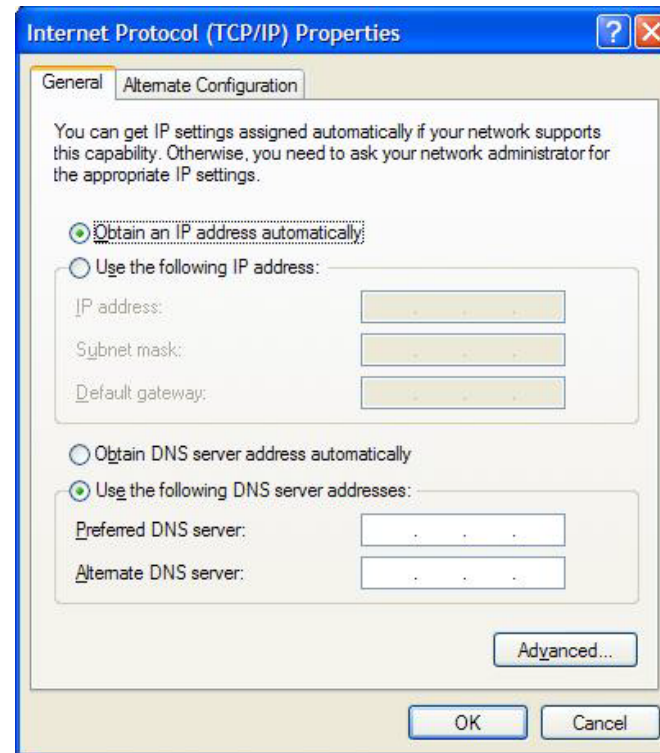
Internet Protocol (TCP/IP) Properties

Chapter 3 – Web Interface

The device has Web interface facility to allow the user to monitor/ configure the device. For accessing the device through web interface, follow the below steps. Open the Web browser in your PC (For example: Internet Explorer) and type the default IP address of the CPE i.e http://192.168.254.251.

Step1: Open the Web browser and enter the default

IP address of the CPE, which is :

http://192.168.254.251/

Step2: Enter **admin** administrator login username
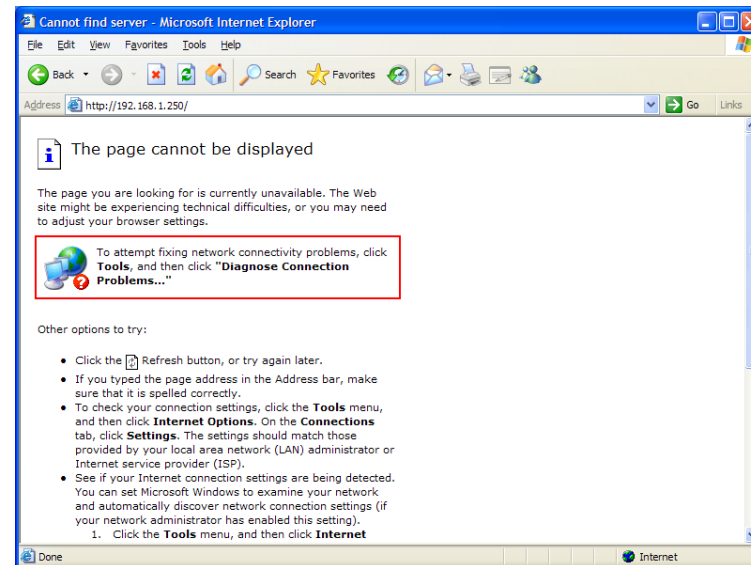
Web Browser

to access the web management interface.

The default Password is **Alvarion**.

Step3: The page shown here gets displayed in your

browser. You may access various parameters of

the device using the menus displayed in the page.

(Please refer to the excel file for the screenshot)

THE CPE Welcome Page

THE CPE User Interface

Chapter 4 – Menu Details

After login to WiMAX 802.16e INDOOR CPE, the following menus are accessable to user.   The main menu is located at the left side of the screen and each main menu item contains sub-items on the top right of the screen.   See the menu structure and the description is given below.

(Please refer to the excel file for the screenshot)

Setup

Setup | Password

Select *Setup > Password* to change the password for the CPE using this sub-menu.

⊕ **New Login Password:** if you wish to change password for the CPE, enter a new password (You may enter a Maximum of 20 ASCII Printable case sensitive characters).

⊕ **Confirm New Login Password:** Re-enter the new password for confirmation.

⊕ **Undo button:** Click this button to clear the input data on this window.

⊕ **Apply button:** The changes that you have made to this

System Information (Please refer to the excel file for the screenshot)

window can be saved in the device by pressing the **Apply**

button

| *! | Please ensure that the **Apply** button is pressed every time whenever the settings are changed. |

| *! | Forgot your password?
Press and hold the **Reset** button (please see "Connector details" section in CHAPTER 1 of this document to find the location of this button on the device) for more than 5 seconds to reset to factory default. |

| *! | Factory default password?
The factory default password is **Alvarion** |

| * | We strongly recommend you to change the login credential for better security. |

Setup | Device Time

Select **Setup > Device Time** to set the time zone.

- ✛ **Current Local Time:** Display current local time.

- ✛ **Time Zone:** Select the proper time zone for your location on the drop down menu.

- ✛ **Auto Adjust for Daylight Saving Time:** Please enable this option if your location observes Daylight Savings Time.

Device Time(please refer to the excel file for the screenshot)

- ✛ **Undo button:** Click this button to clear the changes that you made to this window.

- ✛ **Apply button:** The changes that you have made to this window can be saved in the device by pressing the Apply button.

Setup | Device Name

Select **Setup > Device Name** to define a specific name for your device, so that you can login to this device from any PC on your internal network by entering the device name on the address bar. The default device name is **WiMaxCPE**.

⊕ **Device Name:** Display the current device name.

⊕ **New Device Name:** Enter a new name for your device (Maximum 20 ASCII Printable Characters allowed).

⊕ **Undo button:** Click this button to clear the changes that you have made to this window.

⊕ **Apply button:** The changes that you have made to this window can be saved in the device by pressing the Apply button.

Device Name(please refer to the excel file for the screenshot)

Setup | Restore To Factory

Select **Setup > Restore To Factory** to clear all users'

configuration and restore to factory default settings.

✛ **Apply:** Click this button to reset the device settings to

factory default.

Restore TO Factory(please refer to the excel file for the screenshot)

Internet

Internet | Authentication

Select **_Internet > authentication_** to setup the authentication method.

⊕ **Authentication Method:** Select the authentication protocol, either EAP-TTLS-MACHAPV2 or None.

⊕ **User Name:** Enter the username provided by Alvarion.

⊕ **Password:** Enter the password provided by Alvarion.

⊕ **Password Confirmation:** Re-enter the password again for confirmation.

⊕ **Realm:** Enter the Realm provided by Alvarion.

Authentication (please refer to the excel file for the screenshot)

- **Undo:** Click this button to clear the changes that you have

  made to this window.

- **Apply button:** The changes that you have made to this

  window can be saved in the device by pressing the **Apply**

  button.

None Authentication(please refer to the excel file for the screenshot)

*!!	Do not make any changes to the settings in this page unless Alvarion instructs you to do so.

Internet | Security

Select **Internet > Security** to configure the firewall feature that is built-in to the device. The firewall feature can be used to block unauthorized access while allowing only the authorized communications from the Internet network. This feature also allows the device to be managed over the Internet by authorized personnel.

- **Enable Web Login from Internet:** Enabling this checkbox will allow you to access the device from other network.

Security(please refer to the excel file for the screenshot)

- **Web Login Port from Internet:** Define a specific port number for security access control (The default port number is 8080).

- **Enable ping from internet:** The device will respond to a

ping request from internet if this option is enabled.

✦ **Undo:** Click this button to clear the changes that you have

made to this window.

✦ **Apply:** The changes that you have made to this window

can be saved in the device by pressing the **Apply** button.

*!!	The option, **Enable ping from internet**, is for testing and we strongly recommend you to keep this option in **disable** mode unless Alvarion instructs you keep this option in **enable** mode.

Internet | Dynamic DNS

Select **Internet > Dynamic DNS** to configure the DDNS settings.

- ✦ **Enable DDNS:** Enable this checkbox to enable the Dynamic Domain Name Service of the device.

- ✦ **DDNS Service Provider:** Select the address of DDNS service provider on the drop-down menu.

- ✦ **Undo:** Click this button to clear the changes that you have made to this window.

- ✦ **Apply:** The changes that you have made to this window can be saved in the device by pressing the **Apply** button.

Dynamic DNS(please refer to the excel file for the screenshot)

Local Address

!!	**The changes to this shall only be carried by your Network administrator familiar with the functionality of these settings.**

Local Address | DHCP Server

The device has built-in DHCP server that can be used for managing the allotment of IP address for the devices connected to the **LAN** Port of the device. Select *Local Address > DHCP Server* to configure the internal DHCP server settings.

✦ **DHCP Server IP address:** Enter the IP address for device's DHCP server.

✦ **DHCP Starting IP address/ DHCP Ending IP address:** Define the IP address range shall be supported by the DHCP server.

DHCP Server(please refer to the excel file for the screenshot)

- **DHCP Lease Time:** Specify the IP address renewal time.

- **Undo:** Click this button to clear the changes that you have made to this window.

- **Apply:** The changes that you have made to this window can be saved in the device by pressing the **Apply** button.

Local Address | Lease Status

Select **Local Address > Lease Status** to view the current status of client host PC such as host name, host PC's MAC address, IP address, and remaining lease time.

- ⊕ **Refresh:** Click this button to display the updated information of the client host PC.

- ⊕ **Auto:** Click this button to refresh the information automatically.

Lease Status(please refer to the excel file for the screenshot)

Local Address | Lease Reservation

Select **Local Address > Lease Reservation** to assign the specific IP addresses to the specific client device connected to the **LAN** port.

◈ **Add button:** Click this to add lease reservation information.

◈ **Del button:** Click this to delete the selected lease reservation information. Before clicking **Del**, one or more of information items must be selected by enabling the checkbox on **Select** column of the table.

◈ **Undo**: Click this button to clear the changes that you have made to this window.

◈ **Apply:** The changes that you have made to this window can be saved in the device by pressing the **Apply** button.

Lease Reservation(please refer to the excel file for the screenshot)

Advance

Advance | DMZ

Select **Advance > DMZ** to forward the network traffic to specific hosts based on the protocol and port number. It is used to play Internet games or provide local services (such as web hosting) for a LAN group

- **Enable UPnP IGD:** When this option is enabled, certain Windows applications would setup the port forwarding rule dynamically.

- **DMZ IP Address:** The IP address of DMZ should be entered here.

- **Undo:** Click this button to clear the changes that you have made to this window.

Basic(please refer to the excel file for the screenshot)

- **Apply:** The changes that you have made to this window

  can be saved in the device by pressing the **Apply** button.

Port Forwarding | Forwarding

Select **Port Forwarding > Forwarding** to manage the additional port forwarding rules.

- **Add:** Use this button to add new port forwarding rule. When adding a new port forwarding rule, please select TCP or UDP, and then enter port and IP information such as WAN port range, LAN IP address, and LAN port range.

- **Del:** Click this button to delete the selected port forwarding rule.

- **Undo:** Click this button to clear the changes that you have made to this window.

- **Apply:** The changes that you have made to this window can be saved in the device by pressing the **Apply** button.

Forwarding(please refer to the excel file for the screenshot)

Control Panel

*!!	Do not use this option unless Alvarion instructs you to do so.

Control Panel | Software

Select **Control Panel > Software** to manage the software of

THE CPE. Click **Browse** to select IPKG file, then click **Upgrade**

to install the selected IPKG.

Software(please refer to the excel file for the screenshot)

Control Panel | About

Select **Control Panel > About** to display the basic

information of the CPE such as: Service Provider, Product

Name, WAN port MAC address, LAN Port MAC address, device

Model ID, device hardware version and Serial Number.

About(please refer to the excel file for the screenshot)

Status

Status | WiMAX Status

Select **Status > WiMAX Status** to display the WiMAX
connection status of THE CPE to the WiMAX Network.

- **Refresh:** Click this button to display the current
  WiMAX connection status.

- **Auto:** Clicking this button will update the status
  information periodically

*WiMAX Status(please refer to the excel file for the
screenshot)*

Status | Device Status

Select **Status > Device Status** to display the status of

the CPE such as system uptime and WAN information.

 ◈ **Refresh:** Click this button to update the current

   device status.

 ◈ **Auto:** Clicking this button will update the status

   information periodically.

Device Status(please refer to the excel file for the screenshot)

Reboot / Reconnect

There are 2 buttons on the lower left corner.

Clicking **Reboot** will restart your CPE. When the

Reconnect button is pressed the device will

attempt reconnection to the Base Station.

Reboot/Reconnect*(please refer to the excel file for the screenshot)*

Federal Communication Commission Interference Statement

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 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.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the 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.

IMPORTANT NOTE:
Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

Due to the essential high output power natural of WiMAX device, use of this device with other transmitter at the same time may exceed the FCC RF exposure limit and such usage must be prohibited (unless such co-transmission has been approved by FCC in the future).

This device is designed specifically for Globalstar / Open Range ATC related application.
Use this device in other application is prohibited.

UL warning statement

"IMPORTANT SAFETY INSTRUCTIONS - When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

-Do not use this product near water for example, near a bathtub, washbowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.

-Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.

-Do not use the telephone to report a gas leak in the vicinity of the leak.

-Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.

-To reduce the risk of fire, use only No. 26 AWG or larger (e.g., 24 AWG) UL Listed or CSA Certified Telecommunication Line Cord"

-If units are to be shipped to original equipment manufacturers (OEM) for repackaging with end-use product, only one operation/safety instruction manual may be provided per shipment box with instructions to reproduce the operation/safety instructions in the end-use user's manual.