- 1 -

MobileBridge Gateway Series

MB6800

Wireless Cellular Data Gateway

User Guide

Version 1.1.1

（Firmware v1.1.1）

2007-3-8

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.

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.

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.

IMPORTANT NOTE:
FCC 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 20cm between the radiator & your body.

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

Top Global declares that MB6800 (FCC ID: SUMMB6800) is limited in CH1~CH11 for 2.4GHz by specified firmware controlled in U.S.A.

CONTENT

FOREWORD

This section describes the objectives, audience and conventions of the Top Global MB6800 User Guide.

Objectives

This document explains the steps for initial setup and basic configuration of the MB6800.

This document also provides troubleshooting information and detailed specifications.

Audience

This document is for the person installing and configuring the MB6800 for the first time.

The installer should be familiar with network structures, terms and concepts.

Conventions

This document uses the following conventions to convey instructions and information:

■ Tools and keywords are in boldface type.

Note

Means reader take note. Notes contain helpful suggestions or references to materials not contained in this manual.

Warning

The warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

Obtaining Documentation

The following sections explain how to obtain documentation from Top Global.

World Wide Web

You can access the latest Top Global documentation on the World Wide Web at the following URL: http://www.topglobalusa.com/support1.asp

Special comment

This device is a general Wireless router, and it can act as a WWAN router only after inserting a WWAN pc card.

1 Introduction

MB6800 is the industrial first and the most integrated WLAN and 3rd generation cellular (3G) solution for Enterprise, Home, Small Office and Home Office (SOHO).The products are simple to use and easily scalable. MB6800 is a 3G router for SMB market based on our MobileBridge™ platform technology.

MB6800 combines the best of Wi-Fi and 3G mobile communications technologies including CDMA 1x, EV-DO, EDGE, UMTS and supports EV-DO Release A and HSDPA.

MB6800 bridges wireless networks of 802.11b/g standards and wired networks, allowing them to communicate with each other. MB6800 allows authorized users to share the Internet access.

Use the instructions in this guide to help you connect MB6800, set it up, and configure it to work.

2 Installing the MB6800

Installing the MB6800 is easy. Follow the quick steps below to power up your wireless network:

■ Verify kit content;

■ Write down product ID;

■ Power up the MB6800;

■ LED Indicators;

■ Initialize the MB6800 unit

2.1 Verify Kit Contents

MB6800 kit includes the following components, similar to those depicted in Figure 2-1.

*Figure 2-1 **MB6800 Kit Contents***

1. MB6800 router (Top View）

2. Power Adaptor

3. LAN Cable

4. CD

5. QIG (Quick Installation Guide)
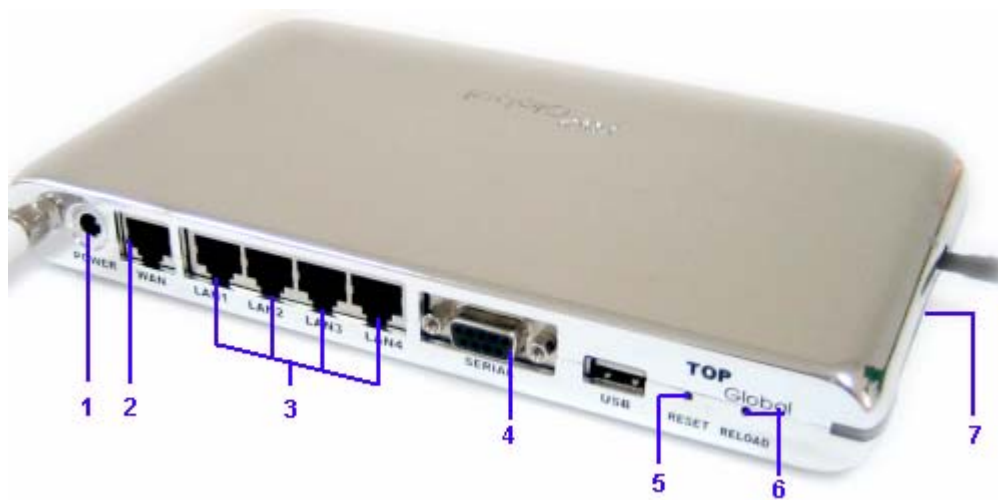
2.2　Write Product Identification

Before you proceed with your MB6800 installation, please write down and keep the following MB6800 information on the MB6800 label:

- Serial Number
- MAC address

2.3　Power up the MB6800

Connect the MB6800 power supply (refer to Figure 2-2) and press the power switch down.

*Figure 2-2 **Ports description***

1. Power jack

2. Ethernet WAN Interface (RJ45)

3. Ethernet LAN Interface (RJ45)

4. Console Port (RS232)

5. Reset Button

6. Reload Button

7. PC Card Slot

The MB6800 power supply accepts any input AC voltage in the range of 100-240 VAC.

2.4   LED Indicators

MB6800 has five two-color LEDs to indicate the working status. The following table shows

the status when the MB6800 is configured successfully and running properly.

Table 2-1 **Normal LED Indications**

	Power	**WLAN**	**WWAN**	**Ethernet LAN**	**Ethernet WAN**
Off	Power off	Disabled	Card inserted; No Internet connection	No cable	No cable
Green	Power on and normal	Enabled	Card inserted; Internet connected	100Mbps mode	100Mbps mode
Green Blink	N/A	Enabled and data transmission	Card inserted; Internet connecting	100Mbps mode, and data transmission	100Mbps mode, and data transmission
Red	N/A	N/A	No card	10Mbps mode	10Mbps mode
Red Blink	N/A	N/A	N/A	10Mbps mode, and data transmission	10Mbps mode, and data transmission
Amber	System error	N/A	N/A	N/A	N/A
Amber Blink	System booting or upgrading firmware	Enabled and data transmission error	N/A	N/A	N/A

2.5   Initialize the MB6800 Unit

1. Connect MB6800 with your computer, there are two ways to connect MB6800 with

your computer:

I.   Connect your computer to MB6800 using the attached Ethernet cable and

your computer is set to be "Obtain an IP address automatically".

II. Alternatively, you can connect your computer to MB6800 with wireless LAN.

a) Enable the WiFi interface in your laptop or PC. Make sure it works.

b) Configure the Wireless LAN card to match the network name and encryption key of Wireless LAN card installed in the MB6800. The default network name is the SN of this device, and "Automatic IP" configuration is also needed.

2. Validate that your computer has got IP address from the MB6800, then open the web browser and enter http://172.16.0.1. Press Enter then the MB6800 login screen appears (Figure 2-3 login window). Enter the username/password (default is public/public), and click OK, the home web page appears (Figure 2-4 home page).
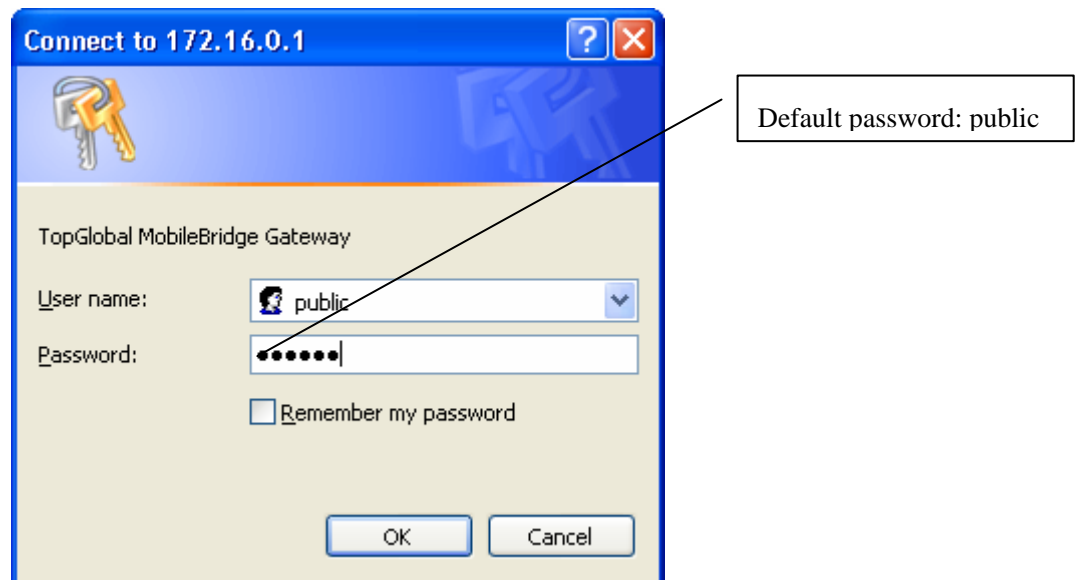
*Figure 2-3 **Login window***

Default password: public

*Figure 2-4 **Home page***

If you want to do a quick installation, you can continue to read the content in this chapter. Otherwise, if you want to make a custom installation, please go to Chapter 3 directly.

3. Click "**Wizard**" on the home page. And click "Enter". The "Step 1" page appears (Figure 2-5 Wizard - Basic Information).

*Figure 2-5 **Wizard - Basic Information***

You can change the IP of MB6800 or use the default values. Then click "Next". Go to "Step 2" page (Figure 2-6 Wizard – Wireless LAN).

*Figure 2-6 **Wizard—Wireless LAN***

You can set the "Network name", "Association Security" and related "Network Key" with the values you prefer. Then click "Next", go to "Step 3" page (Figure 2-7 Wizard - Internet Access).

*Figure 2-7 **Wizard - Internet access***

Select the checkbox in front of "Enable the interface", type correct "Phone Number", "User Name" and "Password" (If you are using a GPRS/UMTS/EDGE network, you will need to input "CID", "APN"), then click button "**Next**", the following configuration page appears (Figure 2-8 Wizard - Finish).

*Figure 2-8 **Wizard - Finish***

Wizard: Finish

The Setup Wizard now has all the information necessary to complete your Gateway's network configuration.

If you need to change these settings in the future, you can either run the Setup Wizard again or use the sections of Setup to make individual changes.

Hostname:	MD16ST140004
Local IP Address:	172.16.0.1
Local Subnet Mask:	255.255.255.0
Enable LAN DHCP:	Enabled
SSID used in wireless:	topglobal140004
Wireless security:	Open
Key for wireless:	N/A
Internet access type:	Wireless Internet access card
Enable wan interface:	Yes
Connect mode:	AUTO

Please click Submit to complete setup, and Gateway will restart automatically.

[Back]   [Submit]

Check the settings and Click "Submit", MB6800 will reboot automatically.

3 Management

3.1   Overview

MB6800 embeds a web server for web-based management. This section will show you how to visit MB6800's web site.

1. Open your browser and enter the MB6800's IP address in the address bar.

2.   Press the **ENTER** key. The MB6800 *Login* dialog box appears.

*Figure 3-1 **Login Dialog Box***
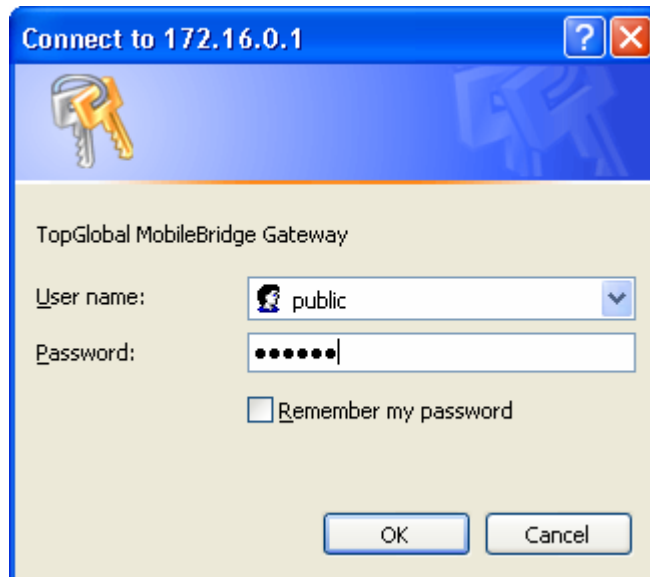
Note:

Default user name: public

Default password: public

3. After you input the right username and password, the home page of MB6800 web site will appear (Figure 3-2).

Figure 3-2 **MB6800's home page**

There are **nine** main categories on MB6800's web site:

➢ Wizard;

➢ System;

➢ Interfaces;

➢ Services;

➢ Firewall;

➢ Security Services;

➢ Tools;

➢ Status;

➢ Diagnostics.

The following sections will explain each of them in detail.

3.2   Page Structure

*Figure 3-3 **MB6800's home page***

The whole page consists of 3 main spaces:

➢   Upper title and shortcut space: display the most common used function page shortcuts;

➢   Left menu space: display main 9 categories of the function menu for MB6800;

➢   Right working space: display the detailed configuration pages for the function menu.

3.2.1 Shortcut

There are two main categories in this setting:

■   Home

■   Reboot

3.2.1.1 Home

*Figure 3-4 **MB6800's home page***

Basic information	
Product Model	MB6800-Standard
SN	MD15SG102342
Firmware Version	v1.1.25 Built on Jan 25 2007 15:51:35
Uptime	4 minutes, 13 seconds
WWAN Discription	Kyocera KPC650 Card
Wireless WAN Signal Strength	
Wireless WAN Status	connecting
LAN IP address	172.16.0.1

3.2.1.2 Reboot

*Figure 3-5 **Reboot system***

Reboot operation saves configuration changes (if any) before reboot the MB6800. Click

"Yes", the device will be rebooted. During the reboot process, the power LED will blink

with amber color.

Note:

After configured all the parameters you need, reboot the MB6800. Then the

new configurations will become effective.

Figure 3-6 **MB6800's restarting page**
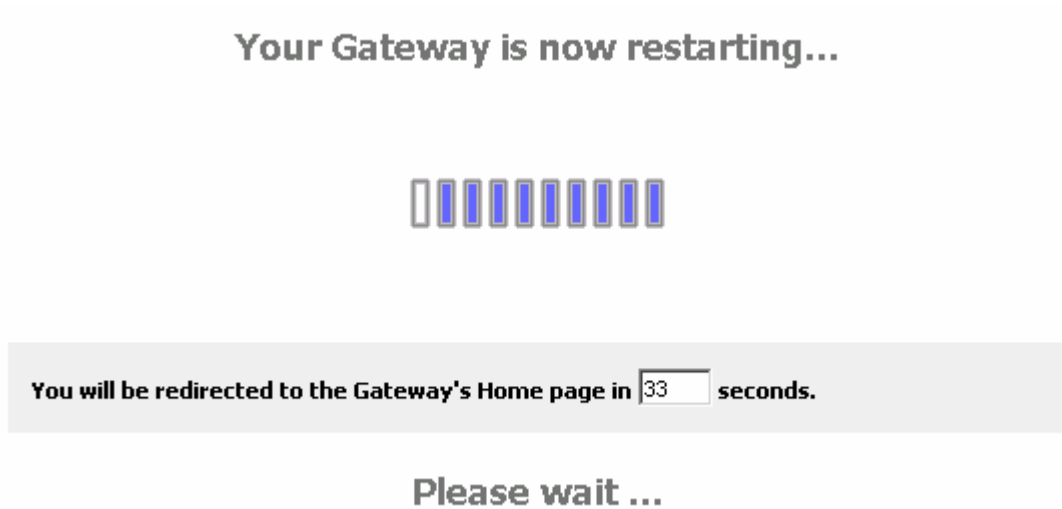
3.3   Page Operation

✓   All of the MB6800 functions can be configured and become effective by going through the following 3 steps: page content editing → submit → reboot;

✓   Once every page is submitted, the system will confirm the page content, then notify the user to reboot the MB6800 to make the configuration effective;

3.4　Configuration Pages Description

3.4.1 System

There are five main categories in this setting:

- Administration

- Time

- Firmware

- Backup/Restore

- Factory defaults

3.4.1.1 Administration

Figure 3-7 ***Administration***

- ● **Host Name:** Up to 64 characters name to represent MB6800. The device default

  name is topglobalXXXXXX("XXXXXX" means the last 6 digits of SN)

- ● **Serial Speed**：When you need a backup link (for example, the v.90 modem) for

  MB6800, you might need to configure the serial speed for the modem. There are

  totally 6 options for the serial speed (bps): 115200, 57600, 38400, 19200, 9600, and

4800. You may need to reference to the user guide of the modem to configure the right sp*eed.*

- **ALG plugin：** This technique relies on the installation of a new, enhanced Firewall/NAT - called an Application Layer Gateway. MB6800 provides two kinds of ALG plugin names SIP and H.323. When you choose either, you can plug the protocol.

- **Username:** Username for MB6800's web administration. The default username is public.

- **Password:** Password for MB6800's web administration. The default password is public.

- **WebGUI Protocol:** The protocol web configuration used. HTTP is the only Current choice.

- **WebGUI port:** The service port for HTTP. User normally need not modify this value. If you want to allow someone else to manage the MB6800 from WAN, you can check Enable management from WAN, and modify the port value according to your needs.

Note:

Submit doesn't mean saving the configuration information. User must reboot the system, and then the configuration will be saved. So if user saves the configuration, and doesn't reboot the device through web page, the configuration information will be lost.

Normally, MB6800 can't be configured through WAN interface because of security and other concerns. If user wishes to remotely configure the MB6800 through WAN interface, there is one box to select to enable this feature.

Note:

Each time when the user modifies the username and password, the system will request the user to re-authenticate the new user name and password.

- **Enable SNMP:** It let the administrator can manage the MB6800 through the SNMP protocol. At the same time, you must specify the **Read-Only communicate Name** and **Read-Write communicate Name,** which enable the SNMP Manager to access MB6800 safely. Also, MB6800 supports to send trap information to a remote trap server to report the status of devices. Enable this function, you must specify the IP address of **Trap server** and **Trap interval**, which indicates the frequency of the device for sending trap information to the server.

3.4.1.2 Time

*Figure 3-8 **Time***

- **Time zone:** Current country time zone. You should check **Enable Daylight Saving Time** if implement DST(Daylight Save Time) in your country.
- **Time setting**: You can enable/disable synchronize local time with Internet time server by checking **Automatically synchronize with Internet time server**. The default value of the NTP server's IP address is 207.46.130.100, and this value can be changed as your requirement.

3.4.1.3 Firmware

*Figure 3-9 **Firmware***

System: Firmware

Choose the firmware file to be uploaded.
Click "Upgrade firmware" to start the upgrade process.

Firmware file: [   ] [Browse...]

[Upgrade firmware   ]

Warning:
DO NOT abort the firmware upgrade once it has started. The gateway will reboot automatically after storing the new firmware. The configuration will be maintained.

MB6800's firmware is upgraded through this tab. Follow these instructions:

1. Download the firmware from Top Global website **www. topglobalusa.com** to your host

PC. User can also get technical support from Top Global USA, Inc. by email or phone.

2. Enter the location of the firmware file or click the **Browse** button to find the file. Click the

Upgrade Firmware button to upgrade the firmware then a pop up window for comparing

the current version of firmware and the new version of the firmware to be upgraded will

appear. Then you need to click on the OK button to confirm it.

Figure 3-10 **Updated successfully**

System: Firmware

(!) The firmware has been uploaded and verified successfully.

Choose the firmware file to be uploaded.
Click "Upgrade firmware" to start the upgrade process.

Firmware file: [   ] Browse...

Upgrade firmware

| Current Version | v1.1.24 |
| New Version | v1.1.24 |

Are you sure to upgrade the firmware ? O K

Warning:
DO NOT abort the firmware upgrade once it has started. The gateway will reboot automatically after storing the new firmware. The configuration will be maintained.

Note:

During the upgrade process, the Power LED is blinking with amber color. The

device will be rebooted after the firmware updated successfully.

3.4.1.4 Backup/Restore

*Figure 3-11 **Backup/Restore***

Download Configurations: User can download current device configurations and save them in the local PC for later uploading and restoring.

Upload Configurations: User can use previous downloaded and saved device configurations to restore the device configuration to some previous configuration status. Note that this function erases the current configuration before restoring a previous backup configuration; please do not attempt to restore unless you have a backup configuration file stored in your local disk.

Note:

After upload configuration, the device will be rebooted.

3.4.1.5 Factory Defaults

*Figure 3-12 **Factory defaults***

System: Factory defaults

If you click "Yes", the gateway will be reset to factory defaults and will reboot immediately. The entire system configuration will be overwritten. The LAN IP address will be reset to 172.16.0.1, the system will be configured as a DHCP server, both the username and password will be set to 'public'.

Are you sure you want to proceed?

[Yes] [No]

Click the **Yes** button to reset all configurations to their factory default values.

3.4.2 Interfaces

There are three main categories in this setting:

- Local network

- Internet access

- Backup access

- Wireless LAN

3.4.2.1 Local Network

*Figure 3-13 **Local network***

Interfaces: Local network

Static IP configuration		
IP address	172.16.0.1	(e.g. 172.16.0.1)
Netmask	255.255.255.0	(e.g. 255.255.255.0)

[Submit]

◆ **Function Summary**

The LAN interface is used to connect internal LAN and PCs in the LAN. The LAN interface provides four Wired LAN RJ45 interfaces and a Wireless LAN interface. This configuration page is used to the LAN IP address and the network mask for the router.

◆ **Detailed Configurations**

✓ Static IP Configuration

- **IP Address:** The IP Address of the LAN & WLAN. The default IP address is 172.16.0.1.

- **Netmask:** The subnet mask of the LAN & WLAN. The default subnet mask is 255.255.255.0.

3.4.2.2 Internet Access

MB6800 supports two types of Internet connection: the cellular wireless Internet connection (Wireless WAN) and the wired Internet connection (Static IP/DHCP/PPPOE) using cable or DSL modem. Choose one type to use.

The cellular wireless Internet connection

Figure 3-14 **MB6800's Initiating page**

When a supported 3G data card inserted in, this page will appear and this page refreshes every 3 seconds. If the SIM card of your WWAN supports PIN function, it will redirect you to the **PIN:Authentication** page after the initiating process finished.

Figure 3-15 **PIN:Authentication**

PIN: Authenticate

Welcome to use MB6000	
PIN Code	

☐ Save PIN code

Enter

Hint:
Your PIN Code prevents unauthorized users from connecting to the Internet. If wrong PIN is inputted thrice(continually), the SIM will be locked, and you must use PUK to unlock it .

Input the correct PIN Code and click **Enter**, **Internet access** page will appear. Check the box **Save PIN Code** if you want MB6800 to save the PIN Code you enter.

Note:

Only after you pass the PIN authentication can you login the **Internet access** page or the PIN management pages. The process of how to configure PIN will be described in **3.4.6 Tools**.

Figure 3-16 **Internet access**

There are three sections on the same page for the wireless Internet configuration: the basic WWAN option, the PPP dialing parameters and the wireless Internet network mode.

Interfaces: Internet access

☑ **Enable this interface**

Hardware	
Name:	Kyocera KPC650 Card [Download PRL]
Manufactory:	Kyocera Wireless Corp.
Product:	Model Catalina
SW:	CG1.0.04 1 [Jan 05 2005 15:25:31]
Singal strength:	Good (31) **Hint:** Good:31-24,Normal:23-16,Poor:15-8,Bad:7-1,Invalid:0
PIN:	☑ Automatically authenticate with the saved pincode when device startup.
Modem:	Phone number [#777] Init string [ ]

PPP	
Compression	☑ Disable Van Jacobson style TCP/IP header compression. ☐ Disable Address/Control compression(ACCM) in both directions. ☐ Disable CCP (Compression Control Protocol) negotiation. ☐ Disable protocol field compression negotiation. ☐ Disable asyncmap(ACCM) negotiation.
MRU	[ ] Hint: Leaving it empty means not to special MRU of PPP.
MTU	[ ] Hint: Leaving it empty means not to special MTU of PPP.
DNS	☑ Obtain DNS server address automatically DNS Server: [ ]
Username	[card]
Password	[card]

◆ **Function Summary**

The WAN interface of MB6800 is used to connect Internet and wireless WAN. This configuration page is used to set some basic parameters of the wireless WAN card.

◆ **Detailed Configurations**

If **Enable this Interface** is not checked, no other parameters in this page are available.

● **Connect mode:** Indicate which wireless WAN connection policy is used.

■ **Auto:** This option enable MB6800 to automatically make the internet connection each time when it powers on. It keeps MB6800 always connected to the Internet, even when the connection is idle. To select this option, click the radio button next to Keep Alive. The default Redial Period is 30 seconds (In other words, the Device will check the Internet connection every 30 seconds).

■ **Dial-On-Demand:** When Connect mode is set to Dial-On-Demand, MB6800 will disable Keepalive automatically.

*Figure 3-17 **Dial-On-Demand***

MB6800 can be configured to disconnect from Internet connection after a specified period of inactivity (Max Idle Time). If the Internet connection has been

terminated due to inactivity, Dial on Demand enables MB6800 to automatically re-establish the Internet connection as soon as you attempt to access the Internet again. Enter a number in seconds you want your internet connection to last when there is no data transmission.

- **Manual:** If you choose the Manual mode, the MB6800 will not make the internet connection when you power up the MB6800.You must manually make the Cellular connection using the client software which can be found in the CD or through web configuration page.

- **Bridged with Serial:** When this type selected, the MB6800 acts as a modem between the cellular network and the serial port. You can attach a DTE device such as Cisco router or PC with the serial cable, and then initiate a PPP procedure on the client device.

Note: MB6800 can connect the 3G modem automatically when received a PPP connection request from a DTE device and disconnect it when received a PPP termination. This mode also support auto disconnect like dial on demand. Make sure the MB6800's serial speed is match with the one of DTE device. (refer to "3.4.4.1 administration" of this guide for the detail about how to set the serial speed)

Connect mode	Bridged with Serial
	• Auto: Automatically dial up when power up. • Dial on-demand: Dial up when LAN data request to access Internet. • Manual: Manually dial up by client software or from web page.(see the Status:Interface page) Disconnect if no data packets sent or received for 120 seconds

- **Keepalive:** This can detect whether the WWAN connection is in good status. When the WWAN connection is abnormal, it will be detected and the router will try to reconnect automatically. When the system is still abnormal, modem will be restart. After consecutively restart for several (configurable) times, if the system still could not turn well, the router will reboot automatically.

Figure 3-18 **Keepalive**

Keepalive	☑ Enable keepalive
	Interval with 15 seconds
	Reset Modem After redialing 3 times.
	Reboot System After reseting modem 3 times.

● **User Name:** Provide a username assigned to the subscriber by the cellular mobile operator. Please consult your mobile operator for that.

● **Password:** Provide a password for your wireless internet dialing. Also you need to consult your mobile operator for that.

Note：

If the wireless wan card type is GRPS, it is different from the type of the CDMA. The parameters to be configured are as shown as *Figure 3-19* and *Figure 3-20.*

Figure3-19

Username	ISP@CINGULARGPRS.COM
Password	CINGULAR1

This is the type of the CDMA wireless wan card to configure:

Figure3-20

Username	card
Password	card

There may be some operators do not require the username and password for the dialing, if so, please leave them empty (NULL).

● **Card model:** When a cellular PC Card is inserted into the MB6800 correctly, it will automatically detect the WAN card type. If the Cellular modem card is supported and recognized by the MB6800, the name and model of the wireless WAN card will appear. Contact Top Global for a list of all supported PC Cards.

● **Signal strength:** Indicate current wireless WAN signal strength. Value 31 is the best signal strength indication. The less value, the worse signal strength. If this value is 0, you do not have a signal, please check the wireless WAN card carefully to make sure

it is inserted correctly and you may need to call your mobile operator to make sure your area is covered within their network;

- **Modem:** If "**Enable custom parameters**" is checked, the parameters to be configured are as shown as *Figure 3-21.*

Figure 3-21

Modem: ☑ Customize

| Phone number | #777 |
| Init string | AT&F |

Phone Number: Provide a phone number for wireless WAN modem;

Init string: Provide an initializing string for wireless WAN modem.

If the wireless card type is GPRS, UMTS or EDGE, more parameters are to be configured. Shown as follows:

Figure 3-22

Modem: ☑ Customize

Phone number	*99***1#
CID	1
PDP Type	IP
APN	isp.cingular
PDP Address	0.0.0.0
Data Compress	0
Header Compress	0

- Phone Number: Provide a phone number for wireless WAN modem;
- CID: (PDP Context Identifier) A numeric parameter, which specifies a particular PDP context definition.
- APN: (Access Point Name) A string parameter, which is a logical name that is used to select the GGSN or the external packet data network.
- PDP Address: A string parameter that identifies the MB6800 in the address space applicable to the PDP.

*Figure 3-23 **Advanced PPP settings***

- **Advanced Settings for PPP dialing**

MRU	
	Hint: Leaving it empty means not to special MRU of PPP.
MTU	
	Hint: Leaving it empty means not to special MTU of PPP.
DNS	☑ Obtain DNS server address automatically
	DNS Server:

There are some advanced settings for the PPP dial up: the MTU and MRU. Leave it empty unless you are aware of these, or follow the instructions from your operator.

You can ether specify the DNS server's IP address manually or let the router obtain that from the PPP negotiation.

● **PIN**: This function appears only when the SIM card of your WWAN card supports PIN function.

If **Automatically authenticate with the saved PIN code when device startup** is checked, MB6800 will save the PIN code automatically and you needn't to input the PIN again next time you startup MB6800.

Aware that this function can only be effective when you have already saved the PIN.

● **Download PRL:** The first time when you use a KPC650 data card, you may need to activate it and download the latest PRL (Preferred Roaming List) step by step. The PRL contains the latest addition of EVDO sites and can enable you to roam and use these new sites:

1. Change the **connect mode** to **Manual** on the Internet access page of MB6800, then reboot the system to make this change become effective. So that MB6800 will not start to dial-up when startup.

2. Click "**download PRL**" button on the Internet access page. The following page will pop-up.
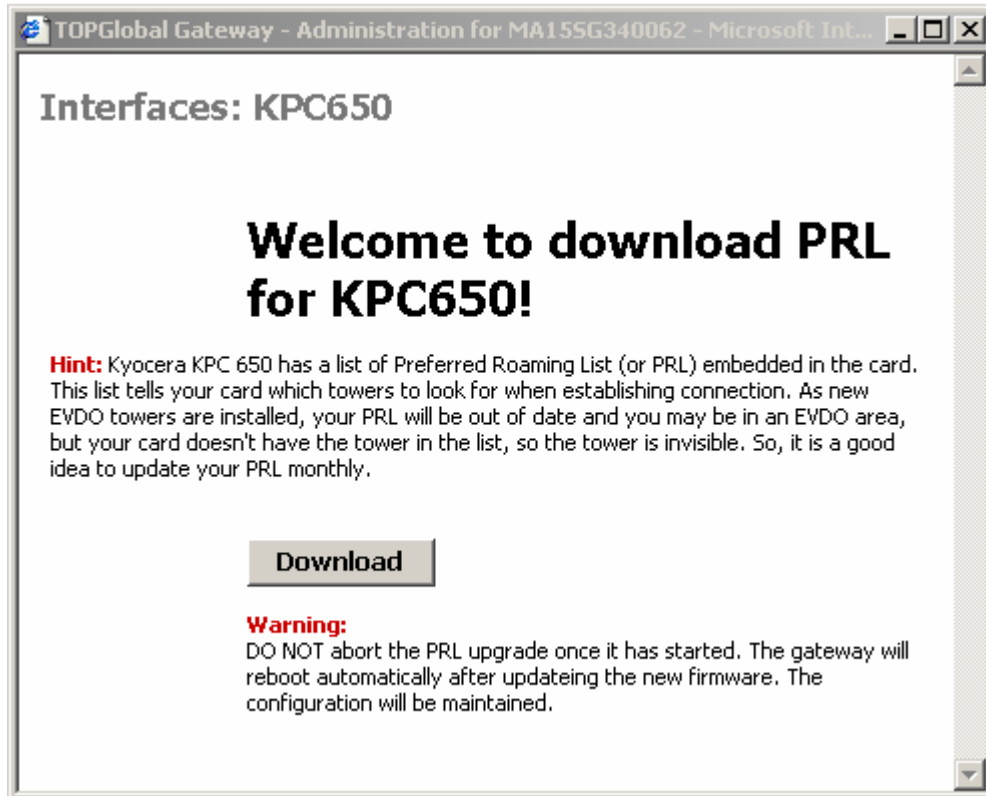
3. Click "**download**" button on the Internet access page. There will be a result page

   return to show whether this process is success or failure.

4. Reboot the MB6800 if it has download PRL successfully.

The wired Internet connection

Besides the cellular wireless Internet connection, the MB6800 supports wired Internet

connection through a cable or DSL modem. And the MB6800 supports 3 modes for the

wired Internet connection: **PPPoE**, **Static IP** and **DHCP**.

   ● **PPPoE**

Figure 3-24

Enable this interface	
Connect mode	Auto
Idle Time	300
Keepalive	☐ Enable keepalive
User Name	
User Password	
Service name	Hint: this field can usually be left empty

When you use PPPoE to establish to the Internet connection, you may firstly contact your ISP for the username and the password for the authentication during the PPPoE dialing-up.

✓ **Connect mode**: There are three options for the connection mode: *Auto, Dial-on-Demand and Manual*. When *Auto* is selected, the router will try to dial up automatically when it boots up. If Dial-on-Demand is selected, the router will not dial up when it boots up, instead, it will be listening to the Internet access request from the client devices which attached to it. When there's Internet access request from the client devices, it will start the PPPoE dialing procedure. If Manual mode is selected, you must manually make the Cellular connection through web configuration page.

✓ **Idle Time**: You can configure the router to shutdown the Internet connection after it has been idle (there is no data traffic through this interface) for a specified period of time, which is configured in the *Idle Time* field. The default value is 300, in second. The router will shutdown the Internet connection on this interface due to the idle status for max timeout. It will automatically re-dial to the Internet as soon as there is connection request from the client devices again.

✓ **Keepalive**: With this option box checked, the router will periodically check the Internet connection on this interface. Once the Internet connection goes down, the router can detect the status and will re-dial to the Internet automatically.

✓   **Username**: The username provided by your ISP.

✓   **Password**: The password provided by your ISP.

● **Static IP**

Figure 3-25

If you are using a permanent IP address to connect to the Internet, you may need to obtain the following information from your ISP and configure them into the correspond fields showed in the figure 3-25: the IP address for this interface, the subnet mask, the gateway's IP address and the IP address for the DNS server. The router will automatically connect to the internet with the parameters once the Internet connection is available.

● **DHCP**

Figure 3-26

If your ISP supports DHCP IP address assignment for the Internet connection, you can set the *Interface type* to *DHCP*. The *Hostname* filed is optional if the ISP require that to identify the users. The router will obtain the dynamic IP address as long as the subnet mask and the IP addresses for the default gateway and the DNS server from the ISP's DHCP server once the interface connection is available.

3.4.2.3 Backup access

Interfaces: Backup access

	☐ **Enable Backup interface**
ISP Dail Number	
Username	
Password	

Submit

The 3G Phoebus MB6800 supports v.90 modem for the WAN backup link. When the WWAN is unavailable or is down, the backup link will automatically dials up.

ISP Dial Number: The dialing number to dial up to the ISP's network. You may contact your ISP for that.

Username: The username for authentication during the PPP negotiation period.

Password: The password for authentication during the PPP negotiation period.

Note:

The backup link requires a special cable to connect MB6800 and the V.90 modem. You may contact the retails or Top Global sales to obtain that.

3.4.2.4 Wireless LAN

There are three main tabs in this setting:

■ Basic

■ Advanced

■ Access Control

3.4.2.4.1 Basic

*Figure 3-27 **Wireless - basic***

◆ **Function Summary**

This configuration page is used to set the wireless LAN basic parameters.

◆ **Detailed configurations**

Enable Wireless radio: If this box is not checked, no other parameters in this page are available;

Wireless Network Name (SSID): the wireless LAN network name shared among all access points in a wireless network. The SSID must be identical for all the access points in the wireless network. It is case-sensitive and must not exceed 32 characters (use any of the characters on the keyboard). For added security, you should change the default SSID to a unique name;

Enable SSID Broadcast: When wireless clients survey the local area for wireless networks, they will detect the SSID broadcast by the Router. To broadcast MB6800's SSID, keep the default setting checked. If you do not want to broadcast MB6800's SSID, then select Disable;

Wireless Channel: Select the appropriate channel from the list provided to correspond with your network settings. All client devices in your wireless network must be broadcast on the same channel in order to function correctly;

Network Mode: From this drop-down menu, you can select the wireless standards running on your network. If you have both Wireless-g and Wireless-b devices in your network, you can keep the default setting as **Mix**. If you have only Wireless-g devices, select **g-Only**. If you have only Wireless-b devices, select **b-Only**;

STAs isolation: If you don't want different client stations connected to the device to communicate with each other, **Enable** this option;

Max associations: The max client station number allowed to be connected to the MB6800.

3.4.2.4.2 Advanced

*Figure 3-28 **Wireless – advanced***

◆ **Function Summary**

This configuration page is used to set wireless LAN security parameters. MB6800 supports two different types of security settings for your wireless LAN network: Wi-Fi Protected Access (WPA) Pre-Shared key (PSK) and Wire Equivalence Protection (WEP).

◆ **Detailed configurations**

Shared: Select from the dropdown menu of **Network Authentication**, which will enable the WEP sections;

WEP: There are two levels of WEP encryption security, 64-bit and 128-bit. The bigger encryption bit number, the more secure your wireless network. However, the transmission speed is sacrificed for the higher bit level's WEP security;

Key Index (for transmit): Select WEP key (1-4) to decide which key will be used during the data transmission;

Enter the WEP Key into the appropriate Key field. All access points in your wireless network must use the same WEP key to utilize WEP encryption;

WPA Pre-Shared Key - There are two encryption options for WPA Pre-Shared Key, TKIP and AES. TKIP stands for Temporal Key Integrity Protocol. TKIP utilizes a stronger encryption method and incorporates Message Integrity Code (MIC) to provide protection against hackers. AES stands for Advanced Encryption System, which utilizes a symmetric 128-bit block data encryption. To use WPA Pre-Shared Key, enter a password in the **PSK(Only for WPA-PSK)** field between 8 and 63 characters in length.

You can also configure the MB6800 as other security mode to be compatible for other station security settings. Such as:

Mode 1: no security, no authentication

Network Authentication: OPEN

Data Encryption: Disabled

Mode 2: enable security, no authentication

Network Authentication: OPEN

Data Encryption: WEP

Mode 3: no security, enable authentication

Network Authentication: Shared

Data Encryption: Disabled

3.4.2.4.3 Access Control

Figure 3-29 Wireless LAN – Access Control

◆ Function Summary

Besides assure the communication security in Wi-Fi network through encryption and authentication, allowing or denying some special stations connection in the Wi-Fi network is also an option to guarantee the security of the wireless network. This page configuration is used to set the station connection control to assure the wireless network security.

◆ Detailed configurations

Access Control Mode: MB6800 supports 3 types of access control modes:

Disable: Indicates no access control function, allow all of the stations connect to MB6800;

Allow: Indicates only allow the stations which have the MAC addresses listed in the table to access the MB6800;

Deny: Indicate only deny the stations which have the MAC addresses listed in the table to access the MB6800;

Stations connected: In order to add the ACL conveniently, the MAC addresses of stations which have been already connected to MB6800 appear in this domain. Click the *Refresh* button, this list will be updated.

Access Control List: The MAC addresses of stations which have been allowed or denied to connect to MB6800 are saved in this list box.

There are 2 methods to input the MAC address: one is to select the station item in the Station Connected list, then click *Add*; the other is to input the station MAC address through MAC address edit box on the page (below the ACL), the input MAC address format must be XX:XX:XX:XX:XX:XX.

Note:

Don't forget to click *Save* button to save the settings.

3.4.3 Service

There are two main categories in this setting:

- Dynamic DNS
- DHCP

3.4.3.1   Dynamic DNS

Figure 3-30 **DDNS configuration page**

MB6800 supports dynamic DNS (DDNS). The default status for DDNS is disabled. By far,

MB6800 only supports dyndns.org, which provided by www.dyndns.com. To use this

feature, you should obtain your own domain name from the provider (dyndns.com). Every

time the wireless WAN's IP changed, the router will register the new public IP address

obtained from the PPP negotiation to the provider.

3.4.3.2   DHCP service

*Figure 3-31 **DHCP service***

You can configure the parameters for the DHCP service on this page. You can enable or disable the DHCP service on the router by check or uncheck the box of "**Enable DHCP service**". The range of the IP address for the DHCP service to distribute can be defined in the "**Range**" field. These IP addresses should be in the same subnet with the route's LAN IP address. The "**Lease time**" field specifies the lease time for each dynamic IP address assignment, with default 86400, in second.

MB6800 also supports the permanent IP address assignment to a pre-defined client. Click ⊕ to add a permanent IP address assignment rule, and click ⓔ to edit, and click ⓧ to delete an entry.

*Figure 3-32 **Permanent IP address assignment***

If the box of "**Deny unknown clients**" is checked, Any client devices holds the MAC address other than this list will not be able to obtain IP address from the router by DHCP.

3.4.4 Firewall

There are four main categories in this setting:

- MAC Filter
- Access rules
- Port forwarding
- Services

3.4.4.1 MAC Filter

Figure 3-33 **MAC Filter**

◆ **Function Summary**

The MAC address is a unique value associated with a network adapter. MAC addresses are also known as hardware addresses or physical addresses. They uniquely identify an adapter on a LAN. MAC addresses are 12-digit hexadecimal numbers (48 bits in length). MAC Filter can control the hosts in LAN to allow or deny their Internet access based on their MAC addresses.

◆ **Detailed Configurations**

- **MAC Filter Mode:**
  - ◆ Disable means no MAC Filter is implemented
  - ◆ Allow means only the hosts with the MAC address in the list can access the Internet.
  - ◆ Deny means only the hosts with the MAC address in the list can't access the Internet.

- **ARP Cache:** MB6800 collects the MAC address information of all the hosts that communicated with MB6800 and displays the information here. You can easily add the MAC addresses you select to the MAC Filter List by click the *Add* button. You can refresh the ARP cache by click the *Refresh* button.

- **Access Control List:** This is the MAC address list of all the selected hosts. You can add items with two methods: Select from the ARP Cache or type the MAC address manually in the MAC address edit box on the lower right hand side.

Note:

Both MAC Filter and Wireless LAN MAC Access Control List can realize the access control based on MAC addresses, but they are different：MAC filter controls the access to the Internet however Wireless LAN Access Control List controls the access to the MB6800 via Wireless LAN.

3.4.4.2 Access rules

*Figure 3-34 **Access Rules***
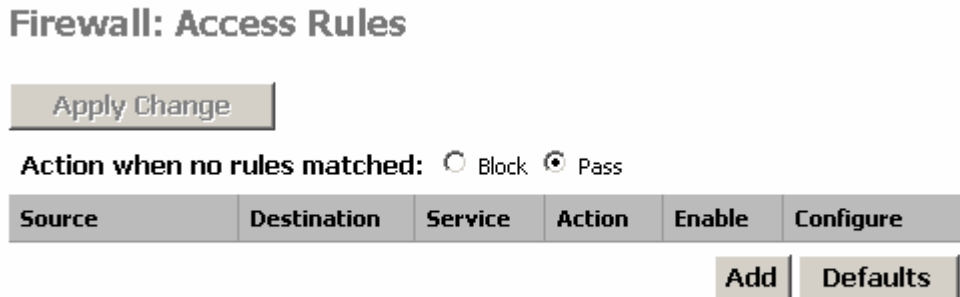
◆ Function Summary

Access Rules is one of the most important functions of MB6800's firewall. Access Rules utilize stateful package filter technology. All the access rules in firewall are set here.

◆ Detailed Configurations

The access rules of the firewall in MB6800 have many access rule items. You can maintain these rules with the operations of: Add, Delete, Move up, Move down, Apply.

- **Default Policy:** Factory default rules;

- **Enable Checkbox:** You can enable or disable a rule by checking or unchecking this checkbox;

- **Move up, Move down:** The sequence of the rules in the list is very important for the firewall. When the firewall deals with a data packet, it will check the rules from top to bottom sequentially and execute the first rule which matches the character of this packet. So please pay attention to the sequence when you are using multiple rules;

- **Apply Change:** Click the *Apply Change* button to validate the change immediately. No reboot is required here;

- **Add:** Click the *Add* button, a pop-up window for inputting an access rule will appear:

*Figure 3-35 **Access Rules***

Firewall: Access Rules

Action	Block
Service	Authentication
Source	Interface: LAN Address: Host /
Destination	Interface: WAN Address: Host /
Description	You may enter a description here for your reference (not parsed).

Submit

Each rule consists of the following parameters:

Action: You have two options here: Block or Pass. Block means the data packet which matches this rule will be blocked by firewall; Pass means the data packet which matches this rule will be passed by firewall;

Service: This parameter indicates the service type of this rule. The possible type includes the system default services and user defined services;

Source: This parameter indicates the IP address range of data source;

Destination: This parameter indicates the IP address range of destination;

Description (optional): Type your comments for this rule here.

3.4.4.3 Port forwarding

*Figure 3-36 **Port forwarding***

Firewall: Port Forwarding

Interface	Protocol	Ext. port	NAT ip	Int. port	Enable	Configure

Apply Change

Add   Defaults
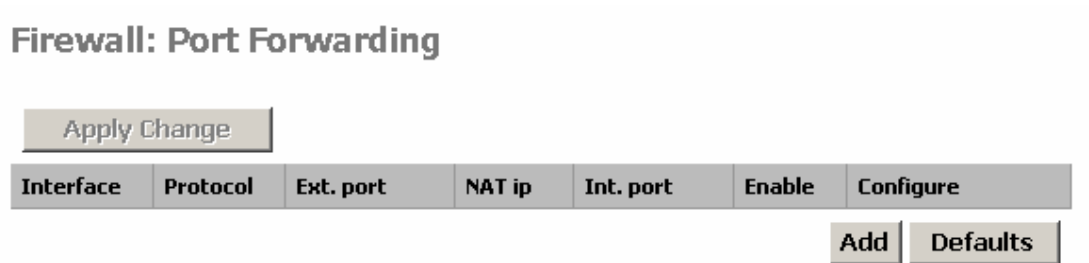
◆ **Function Summary**

This feature allows you to forward incoming traffic on certain ports in order to access servers behind the NAT. This feature can let you setup a web server, mail server, FTP server, DNS, etc on your LAN so it can be accessed from the Internet.

◆ **Detailed Configurations**

The port forwarding table in MB6800 consists of many port forwarding items.

■ **Enable Checkbox**：You can enable or disable a port forwarding item by checking or without checking this checkbox;

■ **Move up, Move down:** Re-arrange the order of each item in the list;

■ **Apply Change:** Click the *Apply Change* button to validate the change immediately. No reboot is needed here;

■ **Add:** Click the *Add* button, a pop-up window for inputting port forwarding item will appear:

*Figure 3-37 **Port forwarding***

Firewall: Port Forwarding

Interface	WAN ▾ Choose which interface this rule applies to. Hint: in most cases, you'll want to use WAN here.
Protocol	TCP/UDP ▾ Choose which IP protocol this rule should match. Hint: in most cases, you should specify *TCP* here.
External port	(other) ▾ [ ] Specify the port on the firewall's external address for this mapping.
NAT IP	[ ] Enter the internal IP address of the server on which you want to map the ports. e.g. *172.16.0.3*
Local port	(other) ▾ [ ] Specify the port on the machine with the IP address entered above.
Auto forward	Enable Hint: specify if auto add one access rule for allow this packet to forward .
Description	[ ] You may enter a description here for your reference (not parsed).

Submit

Each item consists of the following parameters:

Interface: This parameter indicates which interface of MB6800 will implement this port forwarding rule. In most cases the interface should be WAN;

Protocol: This parameter indicates which protocol will implement this port forwarding rule. Possible protocols are: TCP, UDP, TCP/UDP;

External port: This parameter indicates the port for public access;

NAP IP: This parameter indicates the IP address of the internal host which wants to provide service for the outside.

Local port: This parameter indicates the port of internal service;

Auto forward: This parameter will be Enable always, which means MB6800 will enable this forward automatically;

Description (optional): Type your comments for this rule here.

3.4.4.4 Services

*Figure 3-38 **Services***

Custom Services				
Name	**Port Start**	**Port End**	**Protocol**	**Configure**

Add

Default Services			
Name	**Port Start**	**Port End**	**Protocol**
Authentication	113	113	TCP
Chat (IRC)	194	194	TCP/UDP
Citrix	1494	1494	TCP/UDP
Echo	7	7	TCP/UDP
Enhanced TV	9000	9000	TCP
File Transfer (FTP)	21	21	TCP
Filemaker	5003	5003	TCP/UDP
Gatekeeper (H323)	1718	1719	UDP
Gopher	70	70	TCP
HTTP Management	80	80	TCP
HTTPS	443	443	TCP
HTTPS Management	443	443	TCP
Web (HTTP)	80	80	TCP
IMAP3	220	220	TCP

◆ **Function Summary**

You can define fire wall services here and select the defined services in the Access Rules to configure the fire wall.

◆ **Detailed Configurations**

The service set consists of many service items. You can manage the service set by create and delete service item. Service set can be divided into two parts, one is system default part, and you can't delete them; another one is user defined part, and you can delete them if you like.

■ **Add:** Click the *Add* button, a pop-up window for inputting a service item will appear:

Firewall: Services

Name	
Protocol	TCP(6)
Port range	‑

Submit

Name: The service name. Assign a meaningful name for a service so that you can remember it by the name.

Protocol: This parameter indicates which protocol will implement this service. Possible protocols are: TCP, UDP, TCP/UDP;

Port range: This parameter indicates which port or port range will implement this service. If only one port will implement this service, type this port in both boxes. If several ports will implement this service, type the start port in the left box and the end port in the right box.

3.4.5 Security Services

There are two main categories in this setting:

■ Content Filter

■ Anti-Attack

3.4.5.1 Content Filter

*Figure 3-39 **Content Filter***

Security Services: Content Filter

Apply filter and Restrict Web Features on: ☐ LAN

Content Filter

Configure

Restrict WEB Features

☑ ActiveX   ☑ Java   ☑ Cookies   ☑ Access to HTTP proxy Servers

☑ Don't block Java/ActiveX/Cookies to Trusted Domain sites

Trusted Domains

Edit

Delete   DeleteAll

Submit

◆ **Function Summary**

Content Filter is an advance security feature, it can filter the HTTP sessions according to the contents.

◆ **Detailed Configurations**

Content Filter includes URL filter list and WEB features restriction. The default configuration of content filter is off. You can enable it by check the check box "*Apply filter and Restrict Web Features on: ☐LAN* ", then click the button ***Save***.

■ **Configure:** Click the button ***Configure*** to define the URL filter list:

*Figure 3-40 **URL Filter***

Enable Allowed/Forbidden Domains : Indicates enable URL Filter or not;

Disable All web traffic expect Allowed Domains: Indicates URL Filter mode. URL Filter has two modes: Allow means to allow the URL in the Allowed Domains only; Forbidden means to forbid the URL in the Forbidden Domains only. Checking this checkbox means the "allow" mode is adopted.

3.4.5.2 Anti-Attack

*Figure 3-41 **Anti-Attack***

◆ **Function Summary**

Anti-Attack function can block the attack from LAN/WAN and the stateful packet inspect

(SPI). MB6800 can block the following attacks:

Dos: Ping of Death, Land, Smurf, SYN Flood, Fraggle;

IP Spoofing.

◆ **Detailed Configurations**

Enable Anti-Attack: Check this checkbox to enable the Anti-Attack function. Select

the attack you want to block after you enabled the Anti-Attack function.

3.4.6 Tools

There are three main categories in this setting:

■ PIN

■ PCMCIA

■ AT Command

Note:

Before you setup PIN, please make sure the Wireless WAN is disabled, or you may cause input errors. Aware that every time you change the configuration of PIN, you must reboot the devices to make it become effective.

3.4.6.1 PIN

There are three main tabs in this setting:

■ Enable/Disable

■ Change PIN

■ Renew PIN

3.4.6.1.1 Enable/Disable

*Figure 3-42 **Enable/Disable***

◆ **Function Summary**

This configuration page is set to Enable/Disable the function of PIN protection.

◆ **Detailed Configurations**

The PIN Code can prevent the unauthorized user from connecting to the internet.

Put the Pin Code in and click **Enable** button to enable this function. The default Pin

Code is 1234, and the PIN Code must be 4 characters long.

3.4.6.1.2 Change PIN

*Figure 3-43 **Change PIN***

◆ **Function Summary**

This configuration page is set to change the PIN Code.

◆ **Detailed Configurations**

Put in the former Pin Code and new one twice, then click the **Change** button. Aware

that if wrong PIN Code was put in thrice(continually),the SIM will be locked.

3.4.6.1.3 Renew PIN

*Figure 3-44 **Renew PIN***

◆ **Function Summary**

This configuration page is set to renew PIN Code when the SIM is locked.

◆ **Detailed Configurations**

Put in the PUK and new PIN Code, click **Renew** button, then the PIN Code will be

unlocked and the former PIN Code is changed to a new one.

Aware if you disable PIN, you can't change or renew PIN and error messages will

appear.

*Figure 3-45 **Change PIN***

Tools: PIN

Enable/Disable | **Change PIN** | **Renew PIN**

The following input errors were detected:

- Your SIM card has disabled PIN protection.

Change PIN

PIN Code	
New PIN Code	
	(confirmation)

Change

Hint:
Your PIN Code prevents unauthorized users from connecting to the Internet. If wrong PIN input thrice(continually), the SIM will be locked, and you must use PUK to unlock it .

3.4.6.2 PCMCIA

*Figure 3-46 **PCMCIA***

Tools: PCMCIA

Status	Socket 0: 5V 16-bit PC Card function 0: [ready]

CIS	Socket 0:
	 dev_info
	  no_info
	 attr_dev_info
	  EEPROM 250ns, 512b
	 manfid 0x0192, 0xa555
	 funcid serial_port
	 vers_1 7.0, "Sierra Wireless", "AirCard 555", "A555", "Rev 1"
	 config base 0x0700 mask 0x0073 last_index 0x03
	 cftable_entry 0x20 [default]
	  io 0x03f8-0x03ff [lines=3] [8bit] [range]
	  irq mask 0x3fbc [level]
	 cftable_entry 0x21
	  io 0x02f8-0x02ff [lines=3] [8bit] [range]
	 cftable_entry 0x22
	  io 0x03e8-0x03ef [lines=3] [8bit] [range]
	 cftable_entry 0x23
	  io 0x02e8

export

PCMCIA page displays the hardware information of the wireless WAN card. Click the **export** button, the File Download will appear (Figure 3-47).

Figure 3-47
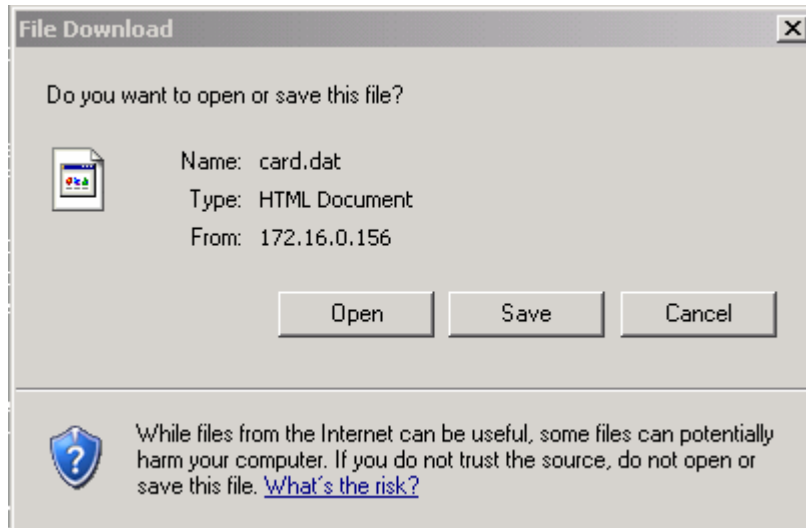
Then click the **Save** button, you can export the hardware information to local host.

3.4.6.3 AT Command

Figure 3-48 **AT Command**

AT Command function is provided to the advanced users to diagnostic the wireless WAN card or the V.90 modem connected by the serial cable. Select a target device from the drop-down menu in the *Port* field. Input the AT commands in the "*Command*" field. Click the *Execute* button to send the AT commands to the target and then the result will be seen in the *Output* filed.

Note：

1. The AT commands CANNOT be sent to the target device before you make it

   disconnected from the Internet.

2. You should be aware clearly about the AT commands before you do that.

3.4.7 Status

There is one category in this setting:

- Interfaces

3.4.7.1 Interfaces

This tab displays the current information of LAN interface, as well as the WAN interface.

*Figure 3-49 **Interfaces***

Status: Interfaces

WAN interface#0	Wireless WAN
Status	Up
UP Time	1 hours, 58 minutes, 11 seconds
IP Address	70.12.55.215
Network Mask	255.255.255.255
In/out packets	164344/164548(34.4MB/20.1MB)

WAN interface#1	Ethernet WAN
Status	Down
UP Time	0 seconds
IP Address	0.0.0.0
Network Mask	0.0.0.0
In/out packets	0/0(0/0)

WAN interface#2	Dialer on V.90 Modem
Status	Down
UP Time	0 seconds
IP Address	0.0.0.0
Network Mask	0.0.0.0
In/out packets	0/0(0/0)

LAN interface	
Status	Up
MAC address	00:0B:89:01:08:04
IP address	172.16.0.68
Subnet mask	255.255.255.0
In/out packets	202919/185862(30.0MB/55.6MB)
In/out errors	0/0
Collisions	0

◆ **Function Summary**

The interfaces' status displays all the network interfaces information of MB6800. You can

also do the dial up and hang off WAN connection here.

◆ **Detailed information:**

WAN Interface#0: This block shows the information of Wireless WAN data card inserted

in MB6800. The *Status* field shows whether the wireless WAN card has dialed up to the

Internet. Or if no data card exists, it will inform "*No data card was found.*". When a data

card is inserted and the "**Connect Mode**" on the "**Internet Access**" page is set to

"**Manual**", the information about this interface will be displayed as below:

WAN interface#0 Wireless WAN	
Status	Down Connect
UP Time	0 seconds
IP Address	0.0.0.0
Network Mask	0.0.0.0
In/out packets	0/0(0/0)

The status field shows the current status of the cellular wireless WAN card. Users can

click the button **Connect/Disconnect** to do dial up and hang off.

The **Up Time** field shows how long in second that this interface has been connected to the

Internet since last dialing up.

The **IP Address** field and the **Network Mask** field shows the IP address and the subnet

mask that the interface obtained from the PPP dialing negotiation.

The "**In/out packets**" field shows how many packets have been passed through this

interface since the last dialing up.

WAN interface#1: This block shows the information on the interface of the serial modem.

The meaning for each field is same as the former ones.

LAN interface: This block shows the information on the LAN interface.

3.4.8 Diagnostics

There are two main categories in this setting:

- System logs

- DHCP leases

3.4.8.1 System Logs

There are two main tabs in this setting:

- ■ System logs

- ■ Settings

3.4.8.1.1 System Logs

*Figure 3-50 **System logs***

Last 50 system log entries	
Jan 1 00:00:01	syslogd started: BusyBox v0.60.0 (2006.01.04-10:53+0000)
Jan 1 00:00:01	cardmgr[14]: watching 1 socket
Jan 1 00:00:01	cardmgr[16]: socket 0: Sierra Wireless AirCard 555
Jan 1 00:00:01	cardmgr[16]: executing: 'modprobe serial_cs 2>&1'
Jan 1 00:00:02	udhcpd: udhcp server (v0.9.8) started
Jan 1 00:00:02	dnsmasq[37]: started, version 1.10 cachesize 150
Jan 1 00:00:02	dnsmasq[37]: failed to drop root privs
Jan 1 00:00:02	dnsmasq[37]: cleared cache
Jan 1 00:00:02	dnsmasq[37]: reading /tmp/resolv.conf
Jan 1 00:02:30	pppd[97]: pppd 2.4.1 started by root, uid 0
Jan 1 00:02:30	pppd[97]: Serial connection established.
Jan 1 00:02:30	pppd[97]: Using interface ppp0
Jan 1 00:02:35	pppd[97]: Remote message: ^@
Jan 1 00:02:35	pppd[97]: local IP address 220.207.75.175
Jan 1 00:02:36	dnsmasq[37]: cleared cache
Jan 1 00:02:46	pppd[97]: Received bad configure-nak/rej: 12 06 00 00 00 01
Jan 1 00:02:50	pppd[97]: Hangup (SIGHUP)
Jan 1 00:02:50	pppd[97]: Connection terminated.
Jan 1 00:02:50	dnsmasq[37]: cleared cache
Jan 1 00:02:54	pppd[97]: Serial link disconnected.

◆ **Function Summary**

The System Log displays a list of the most recent activities that have taken place on MB6800.The **System** tab shows the latest 50 system log entries.

3.4.8.1.2 Settings

*Figure 3-51 **System log settings***

◆ **Function Summary**

You can configure the Log method here. MB6800 can display the Syslog entries in the Web GUI; it can also send the Syslog entries to a remote syslog server. To send the Syslog to the syslog server, you need to check the "*Enable sysloging to remote syslog server*" checkbox and assign the IP address of remote syslog server in the bottom box.

3.4.8.2 DHCP leases

*Figure 3-52 **DHCP leases***

Function Summary

This tab shows the information of MB6800's DHCP server.

4 Troubleshooting

4.1   Overview

- Introduction

- Reset to Factory Default procedure

- Force Reload Procedure

- Firmware Upgrade Procedure through Web

- Common Problems and solutions

- Frequently Asked Questions

- LED Indication status

4.2   Introduction

This section helps you to locate problems related to MB6800 setup. The most common installation problems are related to the IP address. For example, without the TFTP server IP address, you will not be able to download firmware to MB6800.

IP address management is critical and we suggest you to create a chart to document and validate the IP addresses of your system.

If the password is lost or forgotten, you will need to reset the MB6800 to default values. The **Reset to Factory Default** procedure resets the MB6800 configuration settings, but does not change the current firmware. The **Forced Reload** procedure will erase the current firmware and configurations, please use it with caution when you need to download new software.

Reset to Factory Default Procedure

Use this procedure to reset the network configuration values, including the MB6800 IP Address, Subnet Mask, and so on. The current MB6800 Software will not be erased. This

procedure may be required if the password is forgotten or the configurations are forgotten.

When MB6800 is working in normal status, press and holds the **RELOAD** button for about 20 seconds, until all the indicator lights change to amber. Then release **RELOAD** button, and press reset button to reboot MB6800, the factory default network values are restored. Please refer Table 6-1 for the factory default value.

Warning:

If you press and hold the **RELOAD** button for more than 10 seconds immediately after the MB6800 is power on or reset, the MB6800 will enter Force Reload Procedure. The software in the MB6800 will be erased. You will have to download software into MB6800 to make it work again.

Forced Reload Procedure

Use this procedure to force the MB6800 back to default network configuration values and download new MB6800 software. This procedure may be required when the current MB6800 software is missing, corrupted or needs to be upgraded.

Download procedure

1. Prepare you TFTP server. TFTP server is a computer with TFTP server software running. TFTP server can be freely downloaded from www.solarwinds.net. You can also search other TFTP servers from Internet if you like.

2. To download the MB6800 Software, you will need an Ethernet connected to the computer on which the TFTP server resides. This can be any computer on the LAN, or connected to the MB6800's "LAN" port with a "crossover" Ethernet cable.

3. After force reload, MB6800's IP will be set to 172.16.0.1 by default, and MB6800 will login the TFTP server with IP address "172.16.0.2" to download software named "firmware.bin" by default. So please change the IP address of TFTP server to 172.16.0.2, and change the MB6800 software name to **firmware.bin**, put it in the directory of TFTP server root.

4. After finishing this preparation, power on the MB6800.

5. Press the **RESET** button.

6. Press and hold the **RELOAD** button for about 10 seconds immediately after you press and release the **RESET** button until the POWER LED turns amber and the WWAN LED turns off. Result: The MB6800 deletes the current MB6800 software and Configuration files. Then MB6800 will download the software you have prepared in step 3. Observe what the TFTP displays and you should see downloading activity begins after a few seconds.

7. After finish this procedure, MB6800 will reboot automatically and you can see the POWER LED turns amber and blinks.

8. MB6800 will be configured to the factory default value. Please refer Table 6-1 for the factory default value.

Firmware Upgrade Procedure through Web

Use this procedure to upgrade the newest version firmware for MB6800 through Web interface on user client. This procedure may be necessary when a new version of firmware is released(Figure 4-1).

Figure 4-1 **Firmware upgrade**

MB6800's firmware is upgraded through **Firmware** tab. Follow these instructions:

1. Download the firmware from Top Global's website at **www.topglobalusa.com** to your host PC.

2. Enter the location of the firmware file or click the **Browse** button to find the file.

3. Then, click the **Upgrade Firmware** button to upgrade the firmware.

Common Problems and Solutions

1. How to set a static IP address on a PC ?

You can assign a static IP address to a PC by performing the following steps:

• *For Windows 98 and Me:*

    a. Click Start, Settings, and Control Panel. Double-click Network.

    b. In "The following network components are installed" box, select the TCP/IP-> associated with your Ethernet adapter. If you only have one Ethernet adapter installed, you will only see one TCP/IP line with no association to an Ethernet adapter. Highlight it then click the Properties button.

    c. In the TCP/IP properties window, select the IP address tab, and select Specify an IP address. Enter a unique IP address that is not used by any other computers on the network connected to MB6800. Make sure that each IP address is unique for each PC or network device.

    d. Click the Gateway tab, and in the New Gateway prompt, enter 172.16.0.1, which is the MB6800's default IP address. Click the Add button to accept the entry.

    e. Click the DNS tab, and make sure the DNS Enabled option is selected. Enter the DNS entry provided by your ISP. If your ISP has not provided the DNS IP address, contact your ISP to get that information or go to its website for the information.

    f. Click the OK button in the TCP/IP properties window, and click Close or the OK button for the Network window.

    g. Restart the computer when asked.

• *For Windows 2000:*

    a. Click Start, Settings, and Control Panel. Double-click Network and Dial-Up connections.

    b. Right-click the Local Area Connection that is associated with the Ethernet adapter you are using, and select the Properties option.

    c. In the Components checked are used by this connection box, highlight Internet Protocol (TCP/IP), and click the Properties button. Select Use the following IP address option.

    d. Enter a unique IP address that is not used by any other computer on the network connected to MB6800.

e. Enter the Subnet Mask, 255.255.0.0.

f. Enter the Default Gateway, 172.16.0.1 (MB6800's default IP address).

g. Toward the bottom of the window, select Use the following DNS server addresses, and enter the Preferred DNS server and Alternative DNS server (provided by your ISP). Contact your ISP or go on its website to find the information.

h. Click the OK button in the Internet Protocol (TCP/IP) Properties window, and click the OK button in the Local Area Connection Properties window.

i. Restart the computer if asked.

• *For Windows XP:*

The following instructions assume you are running Windows XP with the default interface. If you are using the Classic interface (where the icons and menus look like previous Windows versions), please follow the instructions for Windows 2000.

a. Click Start and Control Panel.

b. Click the Network and Internet Connections icon and then the Network Connections icon.

c. Right-click the Local Area Connection that is associated with the Ethernet adapter you are using, and select the Properties option.

d. In the This connection uses the following items box, highlight Internet Protocol (TCP/IP). Click the Properties button.

e. Enter a unique IP address that is not used by any other computers on the network connected to MB6800.

f. Enter the Subnet Mask, 255.255.0.0.

g. Enter the Default Gateway, 172.16.0.1 (Router's default IP address).

h. Toward the bottom of the window, select Use the following DNS server addresses, and enter the Preferred DNS server and Alternative DNS server (provided by your ISP). Contact your ISP or go on its website to find the information.

i. Click the OK button in the Internet Protocol (TCP/IP) Properties window. Click the OK button in the Local Area Connection Properties window.

2. How to test my Internet connection ?

a. Check your TCP/IP settings.

For Windows 98, Me, 2000, and XP:

• Make sure Obtain IP address automatically is selected in the settings.

b. Open a command prompt.

For Windows 98 and Me:

• Click Start and Run. In the Open field, type "command". Press the Enter key or click the OK button.

For Windows 2000 and XP:

• Click **Start** and **Run**. In the Open field, type "cmd". Press the **Enter** key or click the **OK** button. In the command prompt, type "ping 172.16.0.1" and press the **Enter** key.

• If you get a reply, the computer is communicating with MB6800.

• If you do NOT get a reply, please check the cable, and make sure *Obtain an IP address automatically* is selected in the TCP/IP settings for your Ethernet adapter.

c. In the command prompt, type ping followed by your WWAN IP address and press the Enter key. The WAN IP Address can be found on the Status screen of MB6800's web-based utility. For example, if WWAN IP address is 1.2.3.4, you should enter ping 1.2.3.4 and press the Enter key.

• If you get a reply, the computer is connected to MB6800.

• If you do NOT get a reply, try the ping command from a different computer to verify that your original computer is not the cause of the problem.

d. In the command prompt, type ping www.yahoo.com and press the Enter key.

• If you get a reply, the computer is connected to the Internet. If you cannot open a webpage, try the ping command from a different computer to verify that your original computer is not the cause of the problem.

• If you do NOT get a reply, there may be a problem with the connection. Try the ping command from a different computer to verify that your original computer is not the cause of the problem.

3. When I enter a URL or IP address, I get a time-out error or I am prompted to retry.

• Check if other PCs work. If they do, ensure that your workstation's IP settings are correct (IP Address, Subnet Mask, Default Gateway, and DNS). Restart the computer that is having a problem.

• If the PCs are configured correctly, but still not working, check MB6800. Ensure that it is connected and powered on. Connect to it and check its settings. (If you cannot connect to it, check the LAN and power connections.)

• If MB6800 is configured correctly, check your Internet connection (WWAN card) to see if it is working correctly.

• Manually configure the TCP/IP settings with a DNS address provided by your ISP.

• Make sure that your browser is set to connect directly and that any dial-up is disabled. For Internet Explorer, click Tools, Internet Options, and then the Connection tab. Make sure that Internet Explorer is set to Never dial a connection. For Netscape Navigator, click Edit, Preferences, Advanced, and Proxy. Make sure that Netscape Navigator is set to Direct connection to the Internet.

Frequently Asked Questions

What is the maximum number of IP addresses that MB6800 will support?

MB6800 will support up to 253 IP addresses.

Is IPSec Pass-Through supported by MB6800?

Yes, it is a built-in feature that MB6800 automatically enables.

Does MB6800 support IPX or AppleTalk?

No. TCP/IP is the only protocol supported.

What is Network Address Translation and what is it used for?

Network Address Translation (NAT) translates multiple IP addresses on the private LAN to one public address that is sent out to the Internet. This adds a level of security since the address of a PC connected to the private LAN is never transmitted on the Internet.

Furthermore, NAT allows MB6800 to be used with low cost Internet accounts. The user may have many private addresses behind this single address provided by the ISP.

Does MB6800 support any operating system other than Windows 98, Windows Millennium, Windows 2000, or Windows XP?

Yes.

Does MB6800 support ICQ send file?

Yes, with the following fix: click ICQ menu -> preference -> connections tab->, and check I am behind a firewall or proxy. Then set the firewall time-out to 80 seconds in the firewall setting. The Internet user can then send a file to a user behind MB6800.

Can multiple gamers on the LAN get on one game server and play simultaneously with just one public IP address?

It depends on which network game or what kind of game server you are using. It will work if the game server supports multi-user with one public IP address.

Which browsers does MB6800 support?

MB6800 supports Internet Explorer 4.0, Netscape 4.0, Mozilla and Safari which mainly used in Macintosh.

I am not able to get the web configuration screen for MB6800. What can I do?

You may have to remove the proxy settings on your Internet browser, e.g., Netscape Navigator or Internet Explorer. Or remove the dial-up settings on your browser. Check with your browser documentation, and make sure that your browser is set to connect directly and that any dial-up is disabled. For Internet Explorer, click Tools, Internet Options, then the Connection tab. Make sure that Internet Explorer is set to Never dial a connection. For Netscape Navigator, click Edit, Preferences, Advanced, and Proxy. Make sure that Netscape Navigator is set to Direct connection to the Internet.

Does MB6800 pass PPTP packets or actively route PPTP sessions?

MB6800 allows PPTP packets to pass through.

Is MB6800 cross-platform compatible?

Any platform that supports Ethernet and TCP/IP is compatible with MB6800.

Can MB6800 act as my DHCP server?

Yes. MB6800 has DHCP server software built-in.

What is the IEEE 802.11g standard?

It is one of the IEEE standards for wireless networks. The 802.11g standards allow wireless networking hardware from different manufacturers to communicate, provided that the hardware complies with the 802.11g standards. The 802.11g standards state a maximum data transfer rate of 54Mbps and an operating frequency of 2.4GHz. The 802.11g is downward compatible with 802.11b.

What IEEE 802.11b features are supported?

The product supports the following IEEE 802.11b functions:

• CSMA/CA plus Acknowledge protocol

• Multi-Channel Roaming

• Automatic Rate Selection

• RTS/CTS feature

• Fragmentation

• Power Management

Will the information be intercepted while it is being transmitted through the air?

WLAN features two-fold protection in security. On the hardware side, as with Direct Sequence Spread Spectrum technology, it has the inherent security feature of scrambling. On the software side, WLAN offers the encryption function (WEP or WPA) to enhance security and access control.

What is WEP?

WEP is Wired Equivalent Privacy, a data privacy mechanism based on a 64-bit or 128-bit shared key algorithm, as described in the IEEE 802.11 standard.

What is WPA-PSK?

WPA-PSK means Wi-Fi Protected Access - Pre-Shared Key. It is an enhanced wireless encryption standards defined by the WiFi Alliances.

What is a MAC Address?

The Media Access Control (MAC) 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. For all practical purposes, this number is usually permanent. Unlike IP addresses, which can change every time a computer logs onto the network, the MAC address of a device stays the same making it a valuable identifier for the network.

How do I reset MB6800 to factory default?

When MB6800 is working in normal status, press and hold the **RELOAD** button for about 20 seconds, until all the indicator lights turn off. Then release **RELOAD** button, press the **RESET** button to set up the device again. This will reset MB6800 to its default settings.

How do I resolve issues with signal loss?

There is no way to know the exact range of your wireless network without testing. Every obstacle placed between MB6800 and a wireless PC will create signal loss. Lead glass, metal, concrete floors, water and walls will inhibit the signal and reduce range. Start with MB6800 and your wireless PC in the same room and move it away in small increments to determine the maximum range in your environment. You may also try using different channels, as this may eliminate interference affecting only one channel.

I have excellent signal strength, but I cannot see my network.

WEP or WPA-PSK is probably enabled on MB6800, but not on your wireless client. Verify

that the same keys are being used on all nodes of your wireless network.

How many channels/frequencies are available with MB6800?

There are eleven available channels, ranging from 1 to 11 (in North America).

5 Default MB6800 Settings

The following table lists the settings defined at the factory for all MB6800 units, and provides a place to enter the values for your system if you have changed them.

Table 5-1 *Default Setting*

Item	Default Value	My System Value
Local IP Address	172.16.0.1	
Local IP Mask	255.255.255.0	
Network Name(SSID)	topglobalXXXXXX("XXXXXX" means the last 6 digits of SN)	
Frequency Channel	6	
DHCP Server Status	Enabled	
DHCP Lease Range	172.16.0.2-172.16.0.100	
TFTP Server IP Address	172.16.0.2	
TFTP File Name	firmware.bin	
Http Username	public	
Http Password	public	

Wireless WAN default setting:	Dial mode	Auto
	Keepalive	Enable
	username	"**card**" for CDMA/EVDO network. "**ISP@CINGULARGPRS.COM**" for GPRS/EDGE/UMTS/HSDPA network.
	password	"**card**" FOR CDMA/EVDO network, "**CINGULAR1**" for GPRS/EDGE/UMTS/HSDPA network