



# Hypermedia HG-7000 Product Manual



**3U and 6U SMS PRO Gateways**

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## Chapter 1

# HARDWARE and INSTALLATION

*Hardware and installation vary depending upon the features included with the Hypermedia Gateway system.* Skip the sections that do not apply to your system.

This section includes:

- “Contents of Package” on page 2
- “Safety Information” on page 3
- “System Components” on page 4
- “Pre-Installation Preparation” on page 6
- “Inserting the SIM Cards” on page 7
- “Inserting the SanDisk Card” on page 9
- “Powering Up and LEDs” on page 10

## Overview

Hypermedia's Messaging Solutions harness today's cutting-edge technology in order to provide instant communication product tools.

Corporate businesses and service providers can leverage their use of the SMS Pro Gateway (HG-7000) infrastructure via its advanced set of API interfaces.

The SMS Pro Gateway also supports seamless integration of market standards such as SMPP, SMTP, and HTTP.

The SMS Pro Gateway infrastructure enables development of, or use of, other 3rd party SMS applications and services. Alternately, it enables customers to utilize a wide range of Hypermedia's applications, such as:

- SMS Corporate (HG-7200)
- SMS Campaigner (HG-7300)

## Contents of Package

---

Depending upon configuration, the package should contain some or all of the following:

- The Hypermedia Gateway unit
- One SanDisk flash memory card
- Ethernet cables
- 1 or 2 power cords, depending upon the configuration
- 1 to 8 indoor antennas, depending upon the configuration
- 1 control cord
- The Hypermedia CD
- The warranty certificate

## Safety Information

Hypermedia Gateway works with a nominal mains supply voltage of 110–240V AC. Hazardous voltages are present inside of this equipment. Some of the parts can also have high operating temperatures.

To avoid injury and prevent equipment damage, observe the following safety precautions:

- Installation, service, and maintenance of the Hypermedia Gateway should be done by qualified technicians only.
- Do not connect the Hypermedia Gateway to any power source other than the indicated nominal source.
- The power supply cord must be connected to a socket with a valid ground. This equipment should only be used in buildings with proper safety ground.
- When connecting the equipment, first, ensure that the ground connection is connected to the rack ground or building ground.
- When disconnecting the equipment, disconnect the ground connection last.
- Opening the housing may be dangerous and invalidates the warranty. Only a qualified technician should open the housing. Before opening, disconnect the power cable from the equipment.
- The Hypermedia Gateway complies with all necessary safety standards. Equipment connected to the Hypermedia Gateway must also comply with the applicable safety standards.
- The packaging is designed to protect against mechanical damage and should be stored. Do not ship equipment unless it is properly packed in its original wrapping and shipping containers.
- Make sure that the equipment top and bottom are not blocked to air movement. Leave 1U under and on top of the equipment for proper ventilation.
- Do not operate the Hypermedia Gateway in close proximity to potentially hazardous areas. These includes areas such as, but not exclusively, fuel stations, fuel depots, chemical works or during blasting.
- The operation of radio transmitters, which includes cellular engines, can impair the function of medical devices that have not been properly shielded. Please ask the advice of your doctor or the manufacturer of the medical device.
- To avoid moisture condensation, allow time for the unit to adapt to the ambient temperature before switching it on.

## System Components

The Hypermedia Gateway system consists of the components described below:

- The Hypermedia Gateway **unit** is a 19" x 6U or 19" x 3U rack-mountable box that connects to the local PBX or network. The system enables any combination of connectivity between its PRI, BRI, VoIP, and cellular interfaces.
- The unit contains a **back-plan and slots** for the boards described in Table 1, "Hypermedia Gateway Boards," on page 5. Placement of the boards varies according to product.
- The unit contains a single **power supply** module. A dual power supply module is also available.

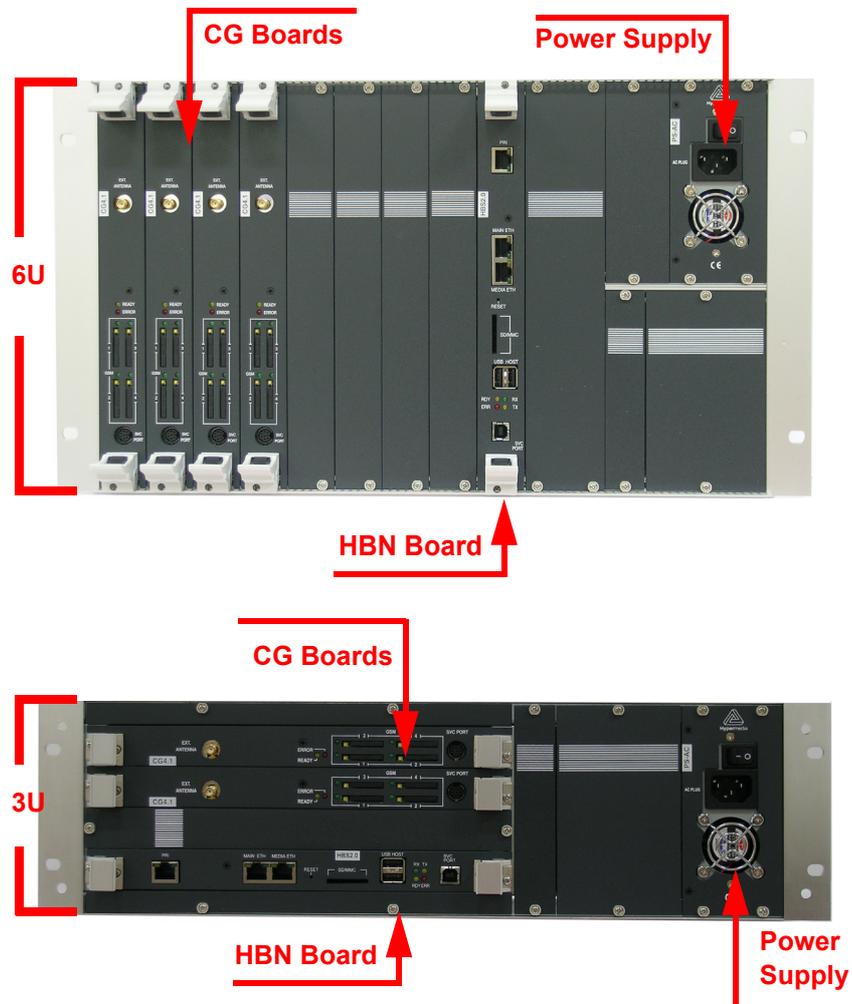


Figure 1: Boards within an SMS PRO Gateway

- The **Hypermedia Management Console (HMC)** is used by the system administrator for remote configuration and monitoring of the Hypermedia Gateway system. It runs over TCP/IP and is accessed via a standard WEB browser.

**Table 1: Hypermedia Gateway Boards**

<b>Board Name</b>	<b>Description</b>
<b>PC1/2</b> Control Board	The PC1/2 is a double-slot computer designed for use by alternative carriers. It enables TCP/IP access and supports the VoIP Gateway. The PC1/2 runs the Hypermedia PRI Server for direct remote access, and provides a SIP/H323 interface when VoIP is implemented.
<b>CG41/CC41</b> Cellular Gateway	CG41 for GSM and CC41 for CDMA is a single-slot card that enables inbound and outbound cellular voice calls for GSM and CDMA networks.
<b>HBN</b> Hybrid Card	The HBN card is a single-slot card that enables flexible, pre-defined, and dynamic allocation of channels. These cards can also support VoIP, PRI and dual PRI functionality depending upon the system ordered.

## Installation

*Installation varies depending upon the boards included with the Hypermedia Gateway system.* Skip the sections that do not apply to your system.

This section is subdivided into:

- “Pre-Installation Preparation” on page 6
- “Inserting the SIM Cards” on page 7
- “Powering Up and LEDs” on page 10

### Pre-Installation Preparation

---

1. Install the Hypermedia Gateway in a 19” rack. Depending upon the physical configuration, the unit requires a height of either 3U or 6U. In addition, we recommend:
  - Avoid installing the device near computer rooms, computer monitors, electrical cabinets, metal objects, and windows with fold aluminum sheet.
  - Perform a cellular signal check before mounting the system. This can be done by checking the Signal Strength and the Bit Error Rate ratio on another mobile phone's display from the same operator and system.
  - Ensure that the device is protected against direct sunlight and heat. This increases both the reliability of the operation as well as its service life.
  - The antennas are for indoor use only.
  - The cables to the devices should be installed so that they do not cause any physical risk. Power cables should be installed separate from the signal cables.
2. Depending upon the configuration of your system, verify that you have some or all of the following:
  - an Ethernet or WAN socket with a fixed IP address
  - a spare PRI card in your PBX
  - SIM cards from your GSM operator. One SIM card is required for each GSM channel
  - in case of CDMA network, a MIN or NAM from your local operator
3. To configure the Router, get the following information from your Internet Service Provider:

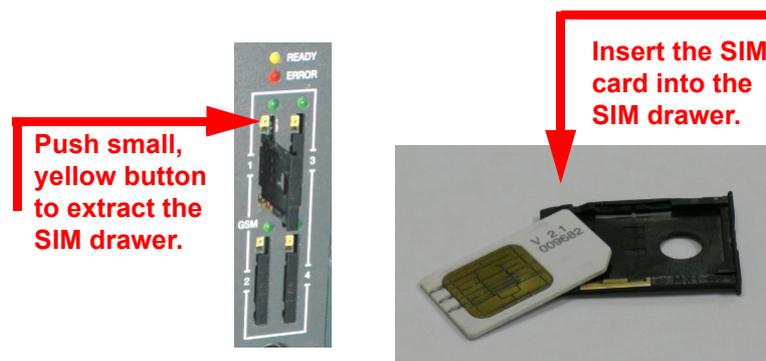
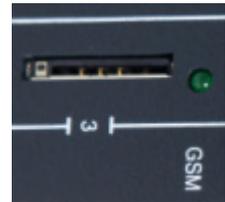
- WAN IP Address
- Subnet Mask, and WAN Gateway

## Inserting the SIM Cards

1. Insert the GSM SIM Cards. One SIM card should be used per each cellular channel.



*Version 4.1 of the CG board does not have SIM drawers. Instead, the SIM port (pictured to the right) is spring loaded. Slide the SIM card into the slot and it will latch in place. To remove a SIM card, press the SIM card and it will pop out.*



- a. Push the small yellow button. This pushes SIM drawer out of the slot.
- b. Remove the SIM drawer.
- c. Place the SIM card in the SIM drawer.
- d. Replace the SIM drawer.

- e. Optionally, to use the CG board's multi-SIM extender:
  - i. Pull out the CG board.



Figure 2: CG Card Multi-SIM Extender

- ii. Slide back and pull up the SIM socket.



*Do not use force on the SIM sockets.*

- iii. Slide in the SIM cards.
  - iv. Lock the SIM sockets.
2. Install the antennas. Each cellular card requires one antenna.
  - a. Locate the antenna socket (). The socket is above the SIM drawers.
  - b. Fasten the antenna using the SMA connector. Do not use excess force.
  - c. Tether all cables securely. Tethering helps prevent breakage of connectors and damage to cellular cards.



*The antennas are for indoor use only. The antennas will be irreversibly damaged if placed outdoors.*

- d. Place the antenna indoors, where the reception level is high.
  - e. Optionally, to improve reception, place the magnetic back of the antenna on a metal plate larger than 20 x 20 cm.

## Inserting the SanDisk Card

---

The Gateway saves Call Detail Records (CDRs) on a SanDisk (SD) flash memory card that is supplied by Hypermedia. Insert the SD card into the SD port in the HBD card.



Figure 3: SanDisk Card and Port

The SD port is spring-loaded. To remove the SD card, press it quickly. The spring will push it out.



*CDRs are displaced on a FIFO basis.*

## Powering Up and LEDs

1. Turn on the unit. The power panel is located at the top right corner of the system.



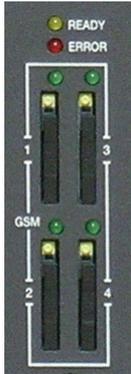
Figure 4: Power Panel



*Redundant power supplies are optional. When installed, if one fails, or if you power up the system with just one power supply, an alarm will sound. To stop the alarm, press the **Alarm Reset** button at the top left of the panel.*

2. Check the LEDs. LED behavior is explained in the following tables:

**Table 2: Cellular Card Green SIM LEDs**

	State	Explanation
	Flashing	No SIM card. The channel does not contain an installed SIM card.
	LED is off	No reception. The channel is not connected to a cellular network.
	Short blink	Stand by. The channel is connected but there is no call in progress.
	Long blink	Dialing out or receiving a call. User is either dialing out or receiving a call in this channel.
	Constantly on	In use. A call is in progress.

## Chapter 2

# HMC QUICK START

Use the Hypermedia Management Console (HMC) to configure and monitor a Hypermedia Gateway from a remote location. Access to the Gateway is over TCP/IP using a standard version of Internet Explorer.



*The Hypermedia Management Console is customized to match the specific order. Some branches of the HMC may or may not appear based upon the customization.*

This section includes:

- “Installation” on page 12
- “Setting the IP Address” on page 14
- “Start-up and Initial Connection” on page 16
- “Save/Load Configuration” on page 19

## Installation

To install the Hypermedia Management Console program:

1. Ensure that the computer matches the following minimum system requirements:
  - Windows 2000, XP, or Vista
  - Internet Explorer 6 or 7
2. Ensure that you have access to the installation file. It is included with the Hypermedia Gateway CD-ROM.

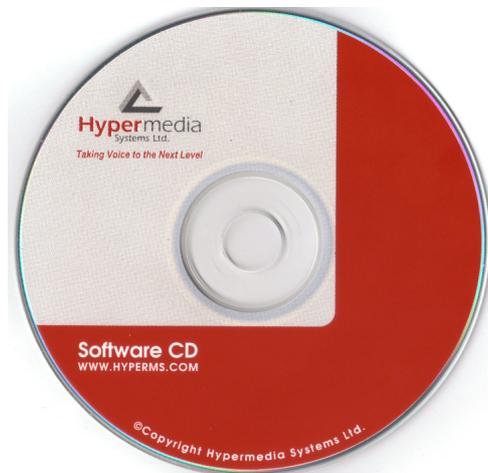


Figure 5: Hypermedia Gateway CD-ROM

The installation file name begins with the letter **HMC** and ends with the extension **.exe**. The specific name depends upon the type of installation.

3. Double-click the file **HMCxxx-xxx.exe** file. The Setup program starts.

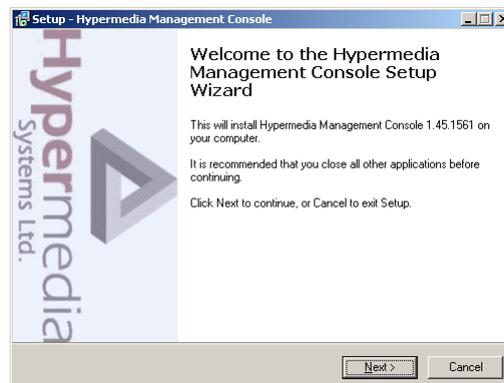


Figure 6: Setup Welcome Screen

4. Click **Next**. The License Agreement is displayed.

5. To continue, you must accept the terms of the agreement. Click **I accept the agreement** and click **Next**. The Select Destination Location window is displayed.
6. Define the location where the program files will be installed. The default location is "C:\Program Files\Hypermedia". Click **Next**. The Select Start Menu Folder is displayed.
7. Define the name of the program group that will be added to the Start Menu. The default name is Hypermedia. Click **Next**. The Additional Tasks window is displayed.
8. Optionally, select the checkbox to create a Desktop shortcut. Click **Next**. The Ready to Install window is displayed.

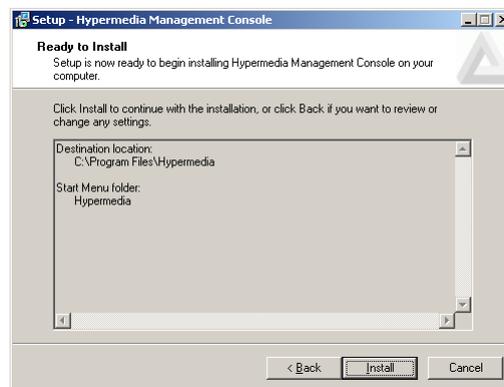


Figure 7: Setup Ready to Install Screen

9. Click **Install**. The installation process begins. A progress bar reports on the progress of the installation.
10. After the installation is complete, click **Finish**. The installation program creates a program group in the Start menu and, optionally, a Desktop shortcuts.

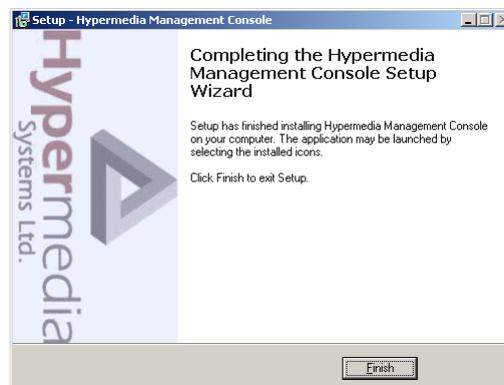


Figure 8: Setup Finish Screen

## Setting the IP Address

To change or set the IP address:

1. From the Hypermedia program group, select **Server List**. The HyperGateway Servers Address List screen opens in the default browser.
2. When required, click the warning bar at the top of the screen and, from the dropdown menu, click **Allow Blocked Content**. Confirm your choice by clicking **Yes** at the confirmation message.



ID	Server Name	Address	Port	Pass	Comments	
1	LCR_demo	2.2.2.2	8878	admin	from Moti	Edit [Icons]

Figure 9: Hypermedia Gateway Server List



*To avoid recurring displays of the warning bar, from the menu bar click **Tools > Internet Options > Advanced > Allow active content to run in files on My Computer**.*

Your Gateway appears in the Server List with its default address.

3. Click  (Change Server Settings). The Login screen is displayed.

Note! you must stop server in order to edit and submit HGS parameters!



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HGS Setup Parameters  
Server address: 212.143.46.14

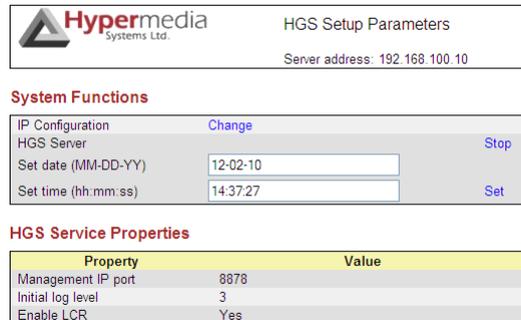
**Login**

Password

Figure 10: The Login Screen

- Enter the password and click **Submit**. The default password is **admin**. The HGS Setup Parameters screen is displayed.

Note! you must stop server in order to edit and submit HGS parameters!



**System Functions**

IP Configuration	Change	
HGS Server		Stop
Set date (MM-DD-YY)	<input type="text" value="12-02-10"/>	
Set time (hh:mm:ss)	<input type="text" value="14:37:27"/>	Set

**HGS Service Properties**

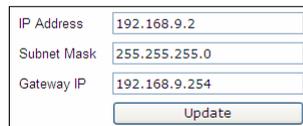
Property	Value
Management IP port	8878
Initial log level	3
Enable LCR	Yes

Note: Please stop HGS Server to change HGS settings.

Figure 11: HGS Setup Parameters Screen

- From the HGS Server system function line, click **Stop**. A confirmation message indicates that the service was stopped successfully.
- On the IP Configuration line, click **Change**. The IP Address screen is displayed.

Note! you must stop server in order to edit and submit HGS parameters!



IP Address:   
 Subnet Mask:   
 Gateway IP:

Figure 12: IP Address Screen

- Enter the new IP Address parameters.
- Click **Update**. Focus is returned to the HGS Setup Parameters Screen.
- From the HGS Server line, click **Start**. A confirmation message indicates that the service was started successfully.

## Start-up and Initial Connection

To run the Hypermedia Management Console:

1. Click the Windows **Start** button > **Programs** > **Hypermedia**. The Hypermedia program group expands.
2. Click **Hypermedia Management Console**. The program opens in the default browser.

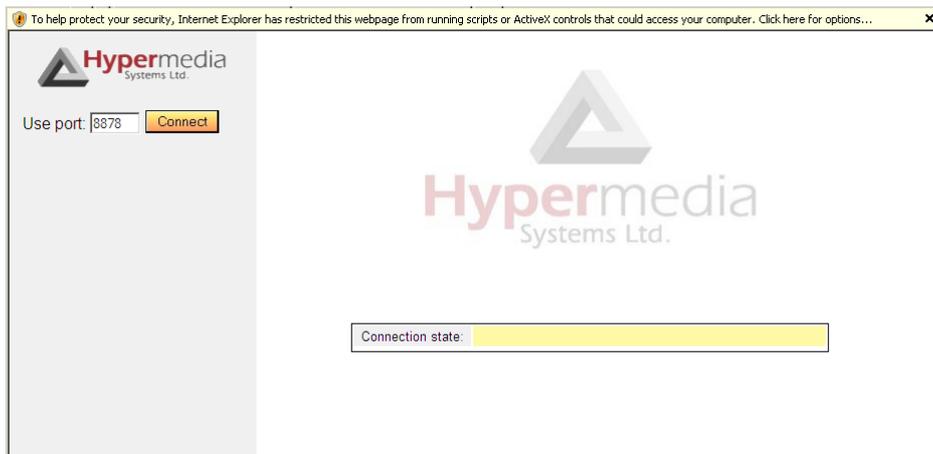


Figure 13: HMC Connection Screen

3. Click the warning bar at the top of the screen and, from the dropdown menu, click **Allow Blocked Content**. Confirm your choice by clicking **Yes** at the confirmation message.

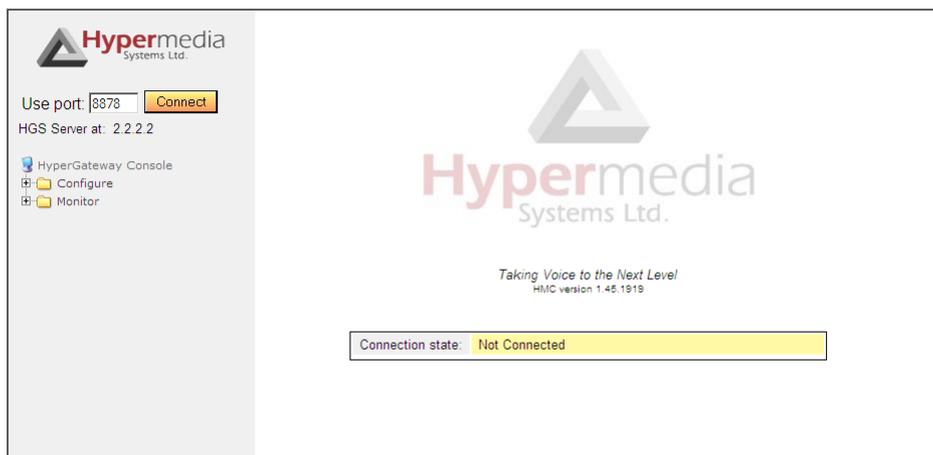


Figure 14: HMC Connection Screen



To avoid recurring displays of the warning bar, from the menu bar click **Tools > Internet Options > Advanced > Allow active content to run in files on My Computer**.

4. Enter the IP address:
  - a. Expand the **Configure** branch.
  - b. Expand the **Server Settings** branch.
  - c. Select **IP address**. The Server Address screen is displayed.

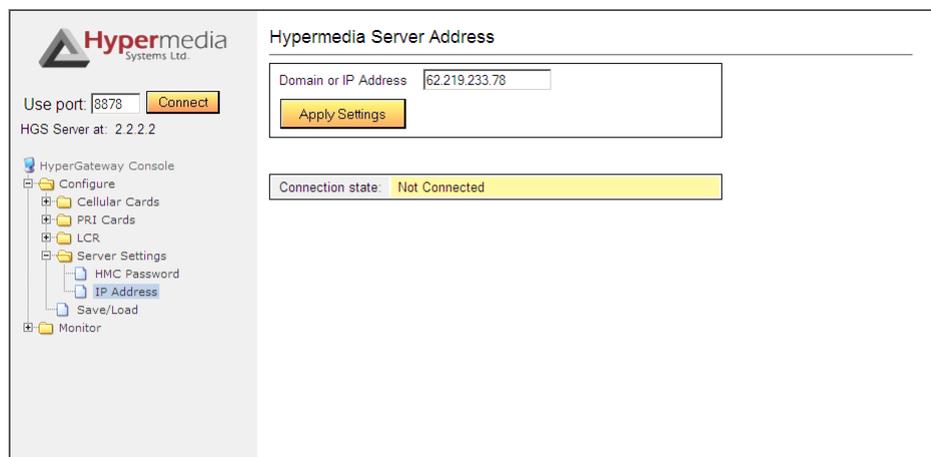


Figure 15: HMC Server Address Screen

- d. Enter the IP address and click **Apply Settings**.



If the Gateway is located behind a firewall, enable traffic on TCP port 8878. Contact the network administrator for details.

5. Either press **F5** or click the browser's **Refresh** button. The authorization screen is displayed.

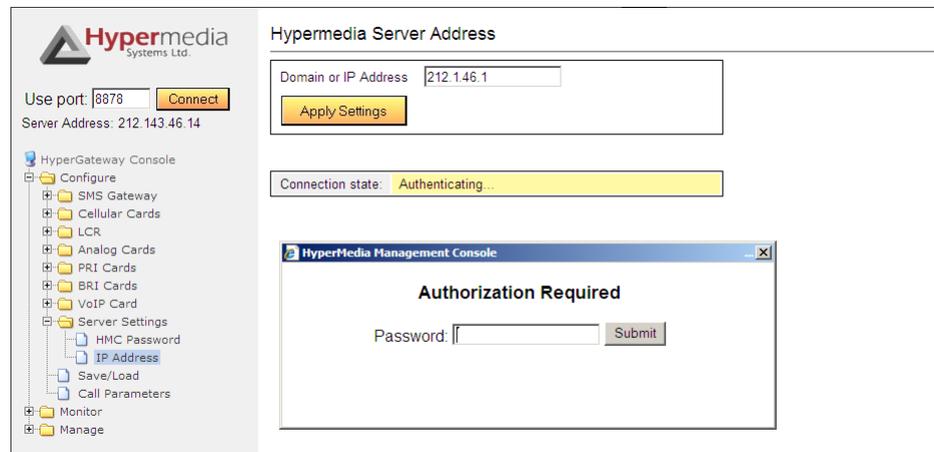


Figure 16: HMC Login Authorization Request



The default password is **admin**.

6. Enter the password and click **Submit**. A confirmation message is displayed which indicates that you have successfully connected to the Hypermedia Gateway. The Connection State screen is displayed.

Connection state:	HMC	1.48.3469	
	Model	SLA	
	HGS	1.79.release-1.79-3226	ok
	SGW	1.79.release-1.79-3226	ok
	HyperSaving	1.79.release-1.79-3226	ok
	SMSPro	2.00.sms_fi-77	
	WebSMS	1.0.websms-136	
	SNR		

Figure 17: HMC Connection State Display

The left column displays the service. The middle column displays the version numbers. The right column displays **OK** if the service is running and is blank if it is not. The HyperSaving service also has a state called **Demo** for temporary licenses.

## Save/Load Configuration

Use Save/Load Configuration branch to download and upload system settings via a configuration file.

Save / Load Configurations

<p><b>Store settings on cards</b> Permanently save all the configuration settings in the HyperGateway. This process might take up to 60 seconds.</p>	<input type="button" value="Save All Settings"/>
<p><b>Save existing configuration</b> Make a backup of the existing configuration. This includes media link settings and application resource assignments.</p>	<input type="text"/> <input type="button" value="Save Configuration"/>
<p><b>Restore saved configuration</b> Restore a previously saved configuration of media links and application resource assignments</p>	<input type="text"/> <input type="button" value="Load Configuration"/>
<p><b>Delete saved configuration</b> Delete a saved configuration from the existing configurations list.</p>	<input type="text"/> <input type="button" value="Delete Configuration"/>

[Status](#)

Figure 18: HMC Save and Load Options

There are four possibilities:

### **Store settings on cards**

Use this option to write the entire configuration onto the Flash Memory of the slot's module, that is, to permanently save all the configuration settings in the Hypermedia Gateway. This process might take up to 60 seconds.

### **Save existing configuration**

Use this option to make a backup of the existing configuration. This option backs-up media link settings and application resource assignments.

### **Restore saved configuration**

Use this option to restore a previously saved configuration of media links and application resource assignments.

### **Delete saved configuration**

Use this option to delete a saved configuration from the existing configurations list.

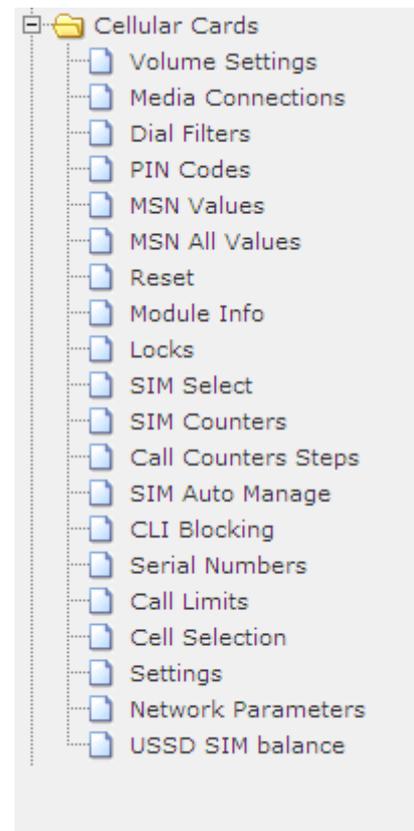
*This page is intentionally blank.*

## Chapter 3

# CONFIGURING a CELLULAR CARD

This section contains:

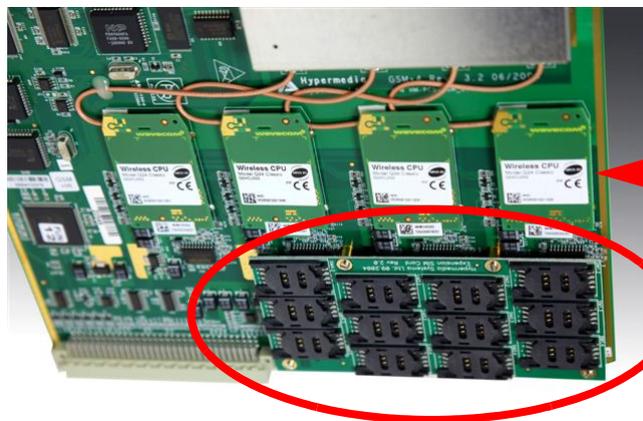
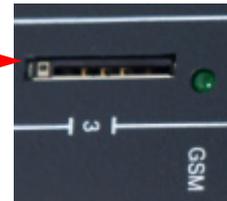
- “Cellular Card and System Terminology” on page 22
- “Volume Settings” on page 23
- “Media Connections” on page 24
- “PIN Codes” on page 27
- “MSN Values” on page 28
- “Reset” on page 29
- “Information Screens” on page 30
- “Locks” on page 31
- “SIM Select” on page 32
- “SIM Counters” on page 33
- “SIM Auto Manage” on page 34
- “Call Counter Steps” on page 36
- “CLI Blocking” on page 37
- “Call Limits” on page 38
- “Cell Selection” on page 39
- “Settings” on page 41
- “Network Parameters” on page 42
- “USSD SIM Balance” on page 43
- “Monitoring Cellular Cards” on page 44



## Cellular Card and System Terminology

A cellular card has 4 modules, each of which can have 1 to 4 SIM holders. Therefore, each card can hold up to 16 SIM cards. In addition, a Hypermedia Gateway can include several cards.

The first SIM cards of each module are loaded into the spring-loaded SIM port from the front of the Cellular Card.



Controllers for modules  
1 through 4

Additional SIM cards are  
loaded at the rear of the  
Cellular Card.

Some parameters can be applied either to specific SIM cards, or to specific modules, or to the entire cellular card, or to all the cards in the system.

## Volume Settings

Use Volume Settings to adjust a cellular module's audio level. This can be done for each of the cellular modules on a Hypermedia Gateway.

To adjust the audio level:

1. From the Cellular Cards branch of the HMC navigation pane, click the **Volume Settings** sub-branch. The Volume Settings screen is displayed.

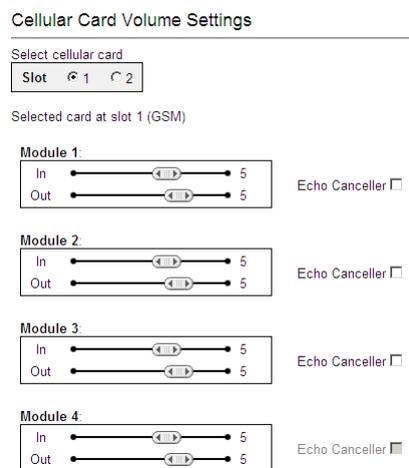


Figure 19: HMC Volume Settings Screen

2. If more than one slot is displayed, select a specific Cellular Card. The Volume Settings screen of that cellular card is displayed.
3. To increase the volume, move the slider to the right. Each module includes two sliders:

### In

“In” adjusts the volume heard by the party on the PBX (or local network) side of the conversation.

### Out

“Out” adjusts the volume heard by the remote party.



*Changes to volume are saved automatically. The message “New volumes set successfully” is displayed.*

4. Select or clear the Echo Canceller checkbox. There are several different causes of the echo effect. Selecting Echo Canceller minimizes or cancels the echo effect.
5. After enabling Echo Canceller, from the HMC navigation pane, click the **Save/Load** branch and then click **Save All Settings**.

## Media Connections

Use the Media Connection screen to configure the connections from the channels of a Cellular card to other cards and channels in the system, including the PRI cards (E.1) and the VoIP cards (MG). Connections can be either static or dynamic, as in the case of LCR.

For example, you can assign each cellular channel to a specific E1 channel. In this case, every time there is an incoming call from a specific E1 channel, it will be routed to the configured channel on the cellular card and vice versa.



*The matrix can be configured in any combination. Routing can be assigned between any cellular channel and any other channel in the system, including other cellular channels.*

### Associating/Linking Cellular Channels

---

To associate a cellular channel with another media channel:

1. From the Cellular Cards branch of the HMC navigation pane, click the **Media Connections** sub-branch. The Media Matrix is displayed.

Cellular Cards Media Matrix

Select cellular card

Slot  1  2

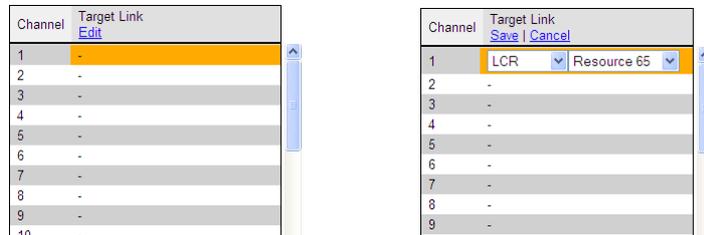
Selected card at slot 1 (GSM)

Channel	Target Link (Select to change)
1	CG4.0(1) Channel 1
2	CG4.0(1) Channel 3
3	CG4.0(1) Channel 2
4	-

Figure 20: Cellular Media Matrix screen

2. If more than one slot is displayed, select a specific cellular card. The Media Matrix of that cellular card is displayed.
3. Click within a channel row. The row turns yellow.

- Click **Edit**. The row becomes configurable.



Channel	Target Link
1	-
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-
10	-

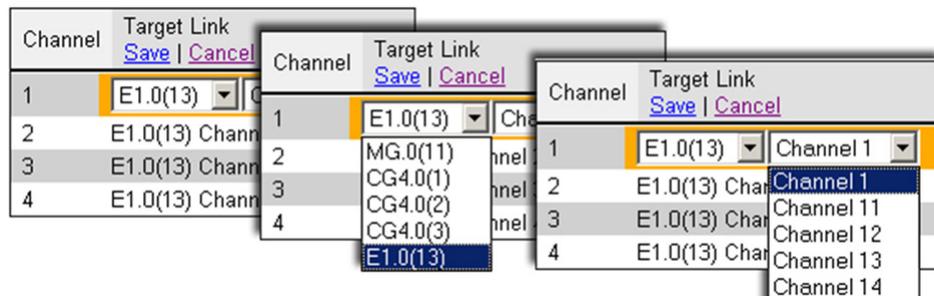
Figure 21: Media Matrix Row when Configurable

- From the first dropdown list, allocate this channel to a card by selecting the card.



*If all of the card's channels are already allocated, the message "Fully allocated" appears.*

- From the second dropdown list, assign this channel to a specific channel on the target card.



Channel	Target Link
1	E1.0(13)
2	E1.0(13) Chann
3	E1.0(13) Chann
4	E1.0(13) Chann

Figure 22: Assigning a Target Link

- Click **Save**. The configuration dropdown boxes are hidden.
- Optionally, repeat the process for additional channels and other media types.
- Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

## Unlinking Cellular Allocations

---

To break an allocation:

1. From the Cellular Card branch of the HMC navigation pane, click the **Media Connections** sub-branch. The Media Matrix is displayed.
2. Click within a channel row. The row turns yellow.

Channel	Target Link
	<a href="#">Edit</a>   <a href="#">Unlink</a>
1	CG4.0(1) Channel 1
2	CG4.0(1) Channel 2
3	CG4.0(1) Channel 3

Figure 23: Breaking a Target Link

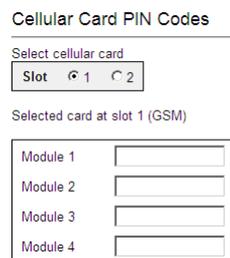
3. Click **Unlink**.
4. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

## PIN Codes

Use the PIN Codes screen to configure the PIN code that the gateway uses when a SIM card with an active PIN is inserted. Consult your cellular provider for more information regarding the PIN code.

To enter a SIM card's PIN code:

1. From the Cellular Cards branch of the HMC navigation pane, click the **PIN Codes** sub-branch. The PIN Codes screen is displayed.



Cellular Card PIN Codes

Select cellular card

Slot  1  2

Selected card at slot 1 (GSM)

Module 1	<input type="text"/>
Module 2	<input type="text"/>
Module 3	<input type="text"/>
Module 4	<input type="text"/>

Figure 24: HMC Cellular PIN Codes Screen

2. If more than one slot is displayed, select a specific Cellular Card. The PIN Codes screen of that cellular card is displayed.
3. Enter the PIN code into the associated Module's field.
4. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

## MSN Values

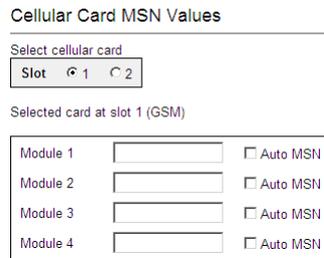
Use Multiple Subscriber Number (MSN) values to route incoming calls to a specific extension on the PBX. You can assign a different extension for each channel or route all channels to the same extension.



*Hypermedia's use of MSN differs from the traditional ISDN use. MSN is an incoming call routing method in which a group of phone numbers is assigned to a particular PRI ISDN line by the telephone company.*

To route incoming calls to a specific extension on the PBX:

1. From the Cellular Cards branch of the HMC navigation pane, click the **MSN Values** sub-branch. The MSN Values screen is displayed.



Cellular Card MSN Values

Select cellular card

Slot 1 2

Selected card at slot 1 (GSM)

Module 1	<input type="text"/>	<input type="checkbox"/> Auto MSN
Module 2	<input type="text"/>	<input type="checkbox"/> Auto MSN
Module 3	<input type="text"/>	<input type="checkbox"/> Auto MSN
Module 4	<input type="text"/>	<input type="checkbox"/> Auto MSN

Figure 25: Cellular MSN Values

2. If more than one slot is displayed, select a specific Cellular Card. The MSN Values screen of that cellular card is displayed.
3. Enter a PBX extension number.
4. Select or clear the **Auto MSN** checkbox. When selected, if a local user “A” called a remote user “B” through a cellular module and later “B” calls the cellular module’s number, the system will automatically route the incoming call to “A”. The system remembers that “A” was the last local user to call “B” through that cellular module.
5. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

## Reset

Use the Cellular Card Reset screen to reset either the entire cellular card or a specific cellular module.

To reset a cellular card or module:

1. From the Cellular Cards branch of the HMC navigation pane, click the **Reset** sub-branch. The Reset screen is displayed.

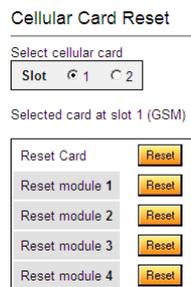


Figure 26: Cellular Card Reset screen

2. If more than one slot is displayed, select a specific Cellular Card. The Reset screen of that cellular card is displayed.



*There is no confirmation message. The Reset command is sent as soon as the reset button is clicked.*

3. Click **Reset**. The screen confirms that the Reset command has been sent.

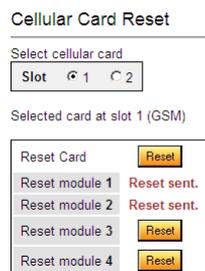


Figure 27: Reset Screen After Sending the Reset Command

## Information Screens

Several of the HMC screens display information.

### Module Info

---

Use the Module Info screen to review information about the modules of a cellular card.

1. From the Cellular Cards branch of the HMC navigation pane, click the **Module Info** sub-branch. The Module Info screen is displayed.

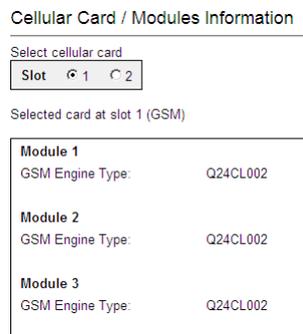


Figure 28: HMC Module Info Screen

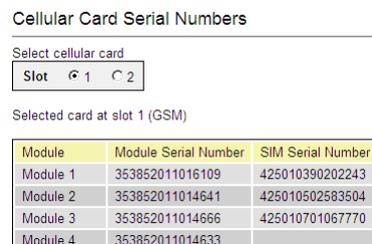
2. If more than one slot is displayed, select a specific Cellular Card. The Module Info screen of that cellular card is displayed.

### Serial Numbers

---

Use the Serial Numbers screen to view the GSM Modules IMEI (International Mobile Equipment Identity) and the SIMs IMSI (International Mobile Subscriber Identity).

1. From the Cellular Cards branch of the HMC navigation pane, click the **Serial Numbers** sub-branch. The Serial Numbers screen is displayed.



Cellular Card Serial Numbers		
Select cellular card		
Slot	1 2	
Selected card at slot 1 (GSM)		
Module	Module Serial Number	SIM Serial Number
Module 1	353852011016109	425010390202243
Module 2	353852011014641	425010502583504
Module 3	353852011014666	425010701067770
Module 4	353852011014633	

Figure 29: HMC Serial Numbers Screen

2. If more than one slot is displayed, select a specific Cellular Card.

## Locks

Use Locks to restrict access to specific GSM operators and/or a specific SIM card. When a lock is defined, the Gateway will only accept calls from an operator or a SIM card that matches the Lock number.

In addition, use Locks to prevent roaming handover in cases where the Gateway is located close to county or country borders.

To define a Lock number:

1. Ensure that:
  - you have obtained the codes from the cellular operator
  - the cellular modules support SIM locks
2. From the Cellular Cards branch of the HMC navigation pane, click the **Locks** sub-branch. The Locks screen is displayed.

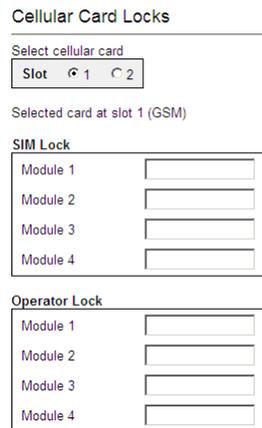


Figure 30: HMC Cellular Locks Screen

3. If more than one slot is displayed, select a specific Cellular Card. The Locks screen of that cellular card is displayed.
4. Enter:
 

**SIM Lock**

Use SIM Locks to avoid using SIM cards other than those whose Mobile Network Code (MNC) and Mobile Country Code (MCC) values have been entered.

**Operator Lock**

Use Operator Locks to avoid registration to any network other than the one whose MNC and MCC values have been entered.
5. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

## SIM Select

Use the SIM Select screen to manually select and activate a SIM card for current use. SIM Select should not be used when SIM Auto-Manage is active (see “SIM Auto Manage” on page 34). The definition can be applied just to the module, to all 4 modules on the card, or to all the cellular cards in the system (see “Cellular Card and System Terminology” on page 22).

To define which of a module’s SIM cards are associated with the SIM Auto Manage feature:

1. From the Cellular Cards branch of the HMC navigation pane, click the **SIM Select** sub-branch. The SIM Select screen is displayed.

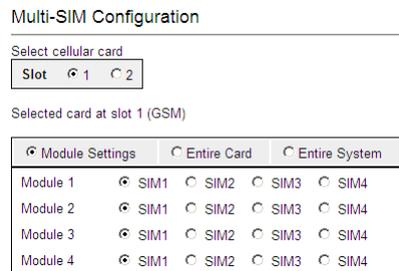


Figure 31: HMC SIM Select Screen

2. If more than one slot is displayed, select a specific Cellular Card. The SIM Select screen of that cellular card is displayed.
3. Select an application option.

### Module Settings

Applies the SIM configuration to the specific module.

### Entire Card

Applies the SIM configuration to all the modules on the card.



### Entire System

Applies the SIM configuration to all the cards in the system.



4. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

## SIM Counters

Use the SIM Counter screen to review the actual usage time of each SIM card and to set counter steps per module.

1. From the Cellular Cards branch of the HMC navigation pane, click the **SIM Counters** sub-branch. The SIM Counters screen is displayed.

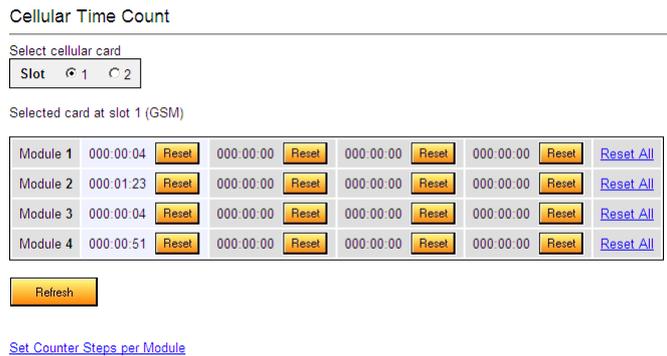


Figure 32: HMC SIM Counters Screen

2. If more than one slot is displayed, select a specific Cellular Card. The SIM Counters screen of that cellular card is displayed.
3. Optionally, select from the following controls:
  - Reset**  
Resets the counter for the specific step.
  - Reset All**  
Resets all the counters in that module.
  - Refresh**  
Updates the information.
4. Optionally, click **Set Counter Steps per Module** to set the exact period of time per counting step. The Cellular Card Call Counters Steps screen is displayed (see “Call Counter Steps” on page 36).



*Setting Counter Steps is important when using the SIM Auto Manage with pre-paid SIM cards.*

## SIM Auto Manage

Use the SIM Auto Manage screen to configure the Gateway to automatically alternate—and/or discontinue—use of SIM cards. This enables load-balancing between a GSM module’s SIM cards based on preconfigured switched time cycle.

To enable automatic management of SIM cards:

1. From the Cellular Cards branch of the HMC navigation pane, click the **SIM Auto Manage** sub-branch. The SIM Auto Manage screen is displayed.

Automatic SIM Management

Select cellular card

Slot  1  2

Selected card at slot 1 (GSM)

Enable Auto Switch	SIM1	SIM2	SIM3	SIM4	Minutes until SIM is switched	Minutes until SIM is blocked
<input checked="" type="checkbox"/> Module 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="1000"/>	<input type="text" value="4000"/>
<input checked="" type="checkbox"/> Module 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="1000"/>	<input type="text" value="4000"/>
<input checked="" type="checkbox"/> Module 3	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="text" value="1000"/>	<input type="text" value="4000"/>
<input checked="" type="checkbox"/> Module 4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="text" value="1000"/>	<input type="text" value="4000"/>

Figure 33: HMC SIM Auto Manage Screen

2. If more than one slot is displayed, select a specific Cellular Card. The SIM Auto Manage screen of that cellular card is displayed.
3. Select the checkbox beside a module number in the Enable Auto Switch column. The SIM column checkboxes and Minutes column fields are displayed.
4. To assign a SIM card to a module, select the checkboxes in the SIM column.



*In Figure # 33, each module has two SIM cards assigned to it. The Gateway will allow a SIM card to function for 1000 minutes and then switch to the second SIM card. Once a SIM card has functioned for 4000 minutes—that is, 4 cycles—it is blocked. It can only be unblocked manually.*

5. In the **Minutes until SIM is switched** field, enter an amount of time measured in minutes. This is the how long each SIM card will be used until the Gateway automatically switches to the next SIM card assigned to that module.

6. In the **Minutes until SIM is blocked field**, enter an amount of time measured in minutes. This is the total amount of time a SIM card is used before the Gateway discontinues use of it.
7. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

## Call Counter Steps

Steps, Time Periods, and Repetitions work as follows: If the Time Period = 60 seconds and Repetition = 3, and the caller speaks for 10 seconds, he will be charged for Time Period = 60 seconds. If the caller speaks for 110 seconds, he will be charged for Time Period = 120 seconds. This charging policy—that is, step—expires after 180 seconds that being the Time Period (= 60 seconds) times the Repetition (= 3). Then, the next step is applied. The final step will always be 1 x Unlimited.

Cellular Card Call Counters Steps

Select cellular card

Slot  1  2

Selected card at slot 1 (GSM)

Enabled <input checked="" type="checkbox"/>	Enabled <input checked="" type="checkbox"/>	Disabled <input type="checkbox"/>	Disabled <input type="checkbox"/>
Minutes	Seconds	Seconds	Seconds
Module1	Module2	Module3	Module4
Time Period Repetitions	Time Period Repetitions	Time Period Repetitions	Time Period Repetitions
3 7	30 0	1 Unlimited	1 Unlimited
4 7	60 0		
5 7	1 Unlimited		
10 7			
1 Unlimited			

Save Settings

Figure 34: HMC Cellular Call Counter Steps Screen

To configure Counters Steps:

1. If more than one slot is displayed, select a specific Cellular Card. The SIM Counters screen of that cellular card is displayed.
2. Select a checkbox to enable the step. When enabled, the area is displayed in the color green.
3. From the upper dropdown menu, select either Seconds or Minutes. This determines the duration of time indicated by the numbers in the Time Period column.
4. Increase the number of steps by clicking the plus sign beside the module number.
5. For each step, define the Time Period—that is, how long—the step is applied.
6. For each step, define the number of repetitions.
7. Repeat the procedure for additional modules.
8. Click **Save Settings** and wait for **Configuration Saved** to be displayed.

## CLI Blocking

Use the Calling Line Identification (CLI) Blocking screen to hide the caller's phone number from the person receiving the call.



*Some operators do not allow CLI Blocking. In some cases, if the CLI is blocked, the call does not go through. Check the operator's policy.*

To block CLI:

1. From the Cellular Cards branch of the HMC navigation pane, click the **CLI Blocking** sub-branch. The CLI Blocking screen is displayed.

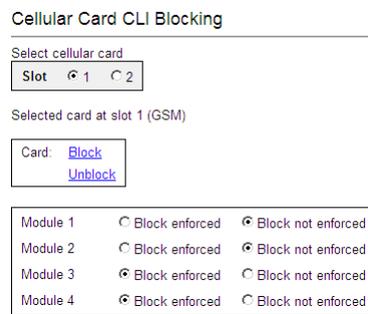


Figure 35: HMC Cellular CLI Blocking Screen

2. If more than one slot is displayed, select a specific Cellular Card. The CLI Blocking screen of that cellular card is displayed.
3. Use one of the two options:

### Card

- **Block**  
Click **Block** to block CLI for all 4 of a card's SIM modules.
- **Unblock**  
Click **Unblock** to allow CLI for all 4 of a card's SIM modules.

### Module

- **Block enforced**  
Select **Block enforced** to block CLI for a specific SIM card.
- **Block not enforced**  
Select **Block not enforced** to allow CLI for a specific SIM card.

4. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

## Call Limits

Use the Call Limits screen to set the amount of time the Gateway will wait for an outgoing call to be answered and to set the maximum length of outgoing call.

To set Call Limits:

1. From the Cellular Cards branch of the HMC navigation pane, click the **Call Limits** sub-branch. The Call Limits the screen is displayed.

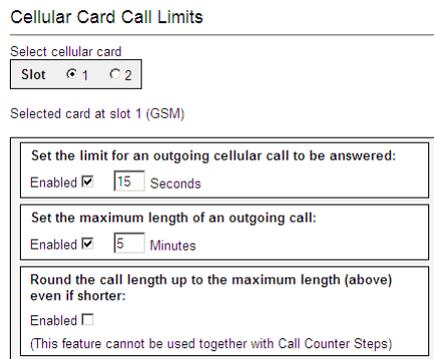


Figure 36: HMC Cellular Call Limits Screen

2. If more than one slot is displayed, select a specific Cellular Card. The Call Limits screen of that cellular card is displayed.
3. Select or clear the following limits:

**Set the limit for an outgoing cellular call to be answered**

When enabled, enter a duration of time measured in seconds that the gateway will wait for the call to be answered.

**Set the maximum length of an outgoing call**

When enabled, enter a duration of time measured in minutes that is the maximum permitted length of a phone call. Calls are disconnected at the beginning of the last minute, rather than its end.

**Round the call length up to the maximum length**

When enabled, callers are charged for the maximum length (defined above) even when the conversation is shorter than the maximum length.



*Round the call up to the maximum length cannot be used with SIM Counters steps (see “Call Counter Steps” on page 36).*

4. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

## Cell Selection

Use the Cell Selection screen to manually camp on a cellular site. Most often, a user selects the strongest cell site. However, if the Base Transceiver Station (BTS) or tower is locked, this service cannot be applied.



**Notes:** What is **Camp On**? After completing the cell selection process a MS (Mobile Station) or UE (User Equipment) will camp onto the cell that offers what seems to be the best radio connection within the network.

What is **BCCH**? BCCH stands for Broadcast Control Channel. This downlink channel contains specific parameters needed by a mobile in order that it can identify the network and gain access to it. Typical information includes the LAC (Location Area Code) and RAC (Routing Area Code), the MNC (Mobile Network Code) and BA (BCCH Allocation) list.

**dBm** is an abbreviation for the power ratio in decibels (dB) of the measured power referenced to one milliwatt (mW). It is used in radio and fiber optic networks as a measure of absolute power because of its capability to express values in a short form.

This feature functions only with Wavecom GSM modules.

To camp on a site:

1. From the Cellular Cards branch of the HMC navigation pane, click the **Cell Selection** sub-branch. The Cell Selection screen is displayed.

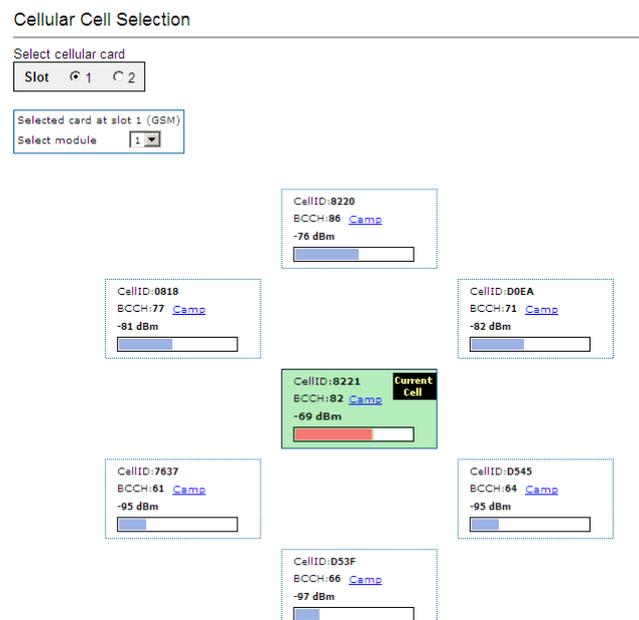
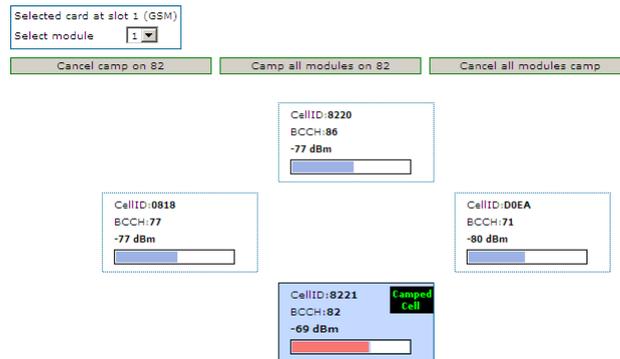


Figure 37: HMC Cellular Cell Selection Screen

2. If more than one slot is displayed, select a specific Cellular Card. The Cell Selection screen of that cellular card is displayed.
3. From the **Select module** dropdown box, select a module. This is the module that the Camp selection will be applied to.
4. In one of the CellID boxes, click **Camp**. The screen indicates Camp Cell and new controls are displayed at the top of the screen.



5. Optionally, to camp all the card's modules on the same cell, click **Camp all modules on**.

## Settings

Use the Settings screen to enable and disable advanced parameters. For assistance with these, contact Technical Support.

1. From the Cellular Cards branch of the HMC navigation pane, click the **Settings** sub-branch. The Cellular Card Settings screen is displayed.

Cellular Card Settings

---

Select cellular card

Slot  1  2

Selected card at slot 1 (GSM)

Send an immediate dummy ALERTING message upon establishment of an outgoing call through cellular: Enabled <input type="checkbox"/>
Wait before sending a dummy ALERTING message on an outgoing call through cellular (unless such a real message is indicated by the network before that time): Enabled <input type="checkbox"/> <input type="text" value="0"/> Seconds (Irrelevant if immediate dummy ALERTING above is enabled)
Send a fixed cause code upon termination of all outgoing calls through cellular (assuming these have at least led to alerting, if not answering, on the remote side): Enabled <input type="checkbox"/> <input type="text" value="0"/> (decimal)
Cause code sent by the cellular card on failed outgoing calls (with an unknown reason): <input type="text" value="31"/> (decimal)
Use GSM 03.38 Hexadecimal encoding on SMS sending and receiving: Enabled <input type="checkbox"/>

Figure 38: HMC Cellular Card Settings Screen

2. If more than one slot is displayed, select a specific Cellular Card. The Cellular Card Settings screen of that cellular card is displayed.
3. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

## Network Parameters

Use the Network Parameters screen to define the bandwidth used by a carrier.



*Do not change the Voice Rate Selection unless instructed to do so by Technical Support.*

1. From the Cellular Cards branch of the HMC navigation pane, click the **Network Parameters** sub-branch. The Cellular Card Network Parameters screen is displayed.

Cellular Card Network Parameters

---

Select cellular card

Slot  1

Selected card at slot 1 (GSM)

Band Selection

Module 1	900E / 1800 MHz
Module 2	900E / 1800 MHz
Module 3	900E / 1800 MHz
Module 4	900E / 1800 MHz

Voice Rate Selection

Module 1	AMR-FR -> EFR, AMR-HR, HR
Module 2	AMR-FR -> EFR, AMR-HR, HR
Module 3	AMR-FR -> EFR, AMR-HR, HR
Module 4	AMR-FR -> EFR, AMR-HR, HR

Figure 39: HMC Cellular Card Network Parameters Screen

2. If more than one slot is displayed, select a specific Cellular Card. The Network Parameters screen of that cellular card is displayed.
3. From the dropdown menu, select the matching bandwidth. For a table of bandwidths per country, see [http://en.wikipedia.org/wiki/Mobile\\_network\\_code](http://en.wikipedia.org/wiki/Mobile_network_code)
4. From the HMC navigation pane, click the **Save/Load** branch and then click **Save All Settings**.

## USSD SIM Balance

Use the USSD SIM Balance screen to check the balance remaining on a SIM card and to add value to (charge) a SIM card.



*Unstructured Supplementary Service Data is a standard for transmitting information over GSM signalling channels. It is mostly used as a method to query the available balance and similar information in pre-paid GSM services. The function triggered when sending USSD depends upon the specific services the operator is offering. (Wikipedia)*

1. Ensure that your Service Provider has given you a USSD string for checking balance and a second string for adding value (charging) the SIM card.
2. From the Cellular Cards branch of the HMC navigation pane, click the **USSD SIM Balance** sub-branch.

Balance checking USSD string:   

Recharging USSD string:

Slot	Ch.	Media Link	Check All	Check Balance	Recharge Balance	USSD Reply	Reply Date
1	1	-	<input type="checkbox"/>		<input type="text"/>		
1	2	-	<input type="checkbox"/>		<input type="text"/>		
1	3	-	<input type="checkbox"/>		<input type="text"/>		
			<input checked="" type="checkbox"/>				

Figure 40: HMC Cellular USSD SIM Balance Screen

3. Enter the **Balance checking USSD string**.
4. Enter the **Recharging USSD string**.
5. Select or clear the **Check All** checkbox. When selected, the Hypermedia Management Console will check the balance of all the SIM cards.
6. Click  (Check Balance). The balance is displayed in the USSD Reply column.
7. Optionally, recharge the SIM card:
  - a. Ensure that you have a recharge string. Often, the string is displayed on recharge cards after a removing a layer of ink that hides the string.
  - b. Enter the string into the Recharge Balance field.
  - c. Click the  (Recharge Balance) button.
8. Optionally, click the  (Excel) icon to save the results as an Excel file.

## Monitoring Cellular Cards

To monitor the cellular cards, open the Monitor > Cellular branch of the Hypermedia Management Console. There are three views.

### All Cells

To view information about all the SIM slots on all the cellular modules, expand the Monitor > Cellular Cards sub-branch and select **All Cells**. The Cellular Cards Reception screen is displayed.



*The status of a SIM slot is displayed here and on the Status screen, but not on the Reception screen.*

Cellular Card Receptions

Module	Type	Operator	RX Level	RX BER	Status
1 / 1	GSM	orange (8221)	-67 dBm	<0.2%	Idle
1 / 2	GSM	orange (8221)	-65 dBm	<0.2%	Idle
1 / 3	GSM	orange (8221)	-67 dBm	<0.2%	Idle
1 / 4	GSM		Unknown	Unavailable	Missing SIM card
2 / 1	GSM		Unknown	Unavailable	No Signal
2 / 2	GSM		Unknown	Unavailable	Missing SIM card
2 / 3	GSM		Unknown	Unavailable	Faulty/missing
2 / 4	GSM		Unknown	Unavailable	Faulty/missing

Figure 41: Cellular Cards Reception Screen

The screen displays the following information:

#### **Module**

This indicates the card and the SIM slot number.

#### **Type**

The module can support either GSM or CDMA.

#### **Operator**

This is the cellular network associated with the SIM card and the Cell ID.

#### **RX Level**

This indicates the received power level in dBm. This number can be between -51 dBm and -110 dBm (see “RX Level” on page 45).

#### **RX BER**

Bit Error Rate (BER) is a calculated figure for the quality of the signal received from the base (see “RX BER” on page 45).

#### **Status**

This displays the status of the specific SIM slot.

## Reception

To view information about the SIM slots on a specific cellular modules, especially the reception level and the BER level:

1. Expand the Monitor > Cellular Cards sub-branch and select **Reception**.
2. Select a specific slot. The Cellular Cards Reception screen for that card is displayed.

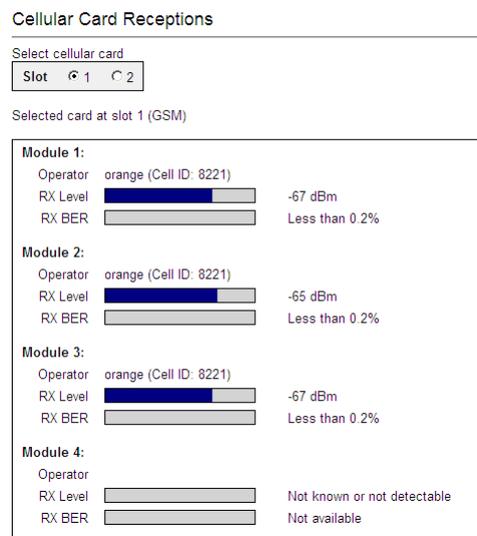


Figure 42: Specific Card's Cellular Reception Screen

The screen displays the following information:

### Type

This information is displayed between the Slot selection box and the reception information. A module can support either GSM or CDMA.

### Module 1 / 2 / 3 / 4

This indicates the card's SIM slot number.

### Operator

This is the cellular network associated with the SIM card and the Cell ID.

### RX Level

This indicates the received power level in dBm. This number can be between -51 dBm and -110 dBm.

### RX BER

Bit Error Rate (BER) is a calculated figure for the quality of the signal received from the base. It is an indication of the number of errors detected in the signal received by the cellular channel, graded into quality ratings

according to the percentage of errors in the data. Typical values for BER are between “Not Available” (which represents less than 0.2%) and 6.4%.

BER of more than 6.4 will result in calls being disconnected as well as “noisy” calls. If this occurs, find a better location for the antenna or check the connections to the antenna.

## Status

---

To view information about the status of SIM slots on a specific cellular module:

1. Expand the Monitor > Cellular Cards sub-branch and select **Status**.
2. Select a specific slot. The Cellular Cards Status screen for that card is displayed.

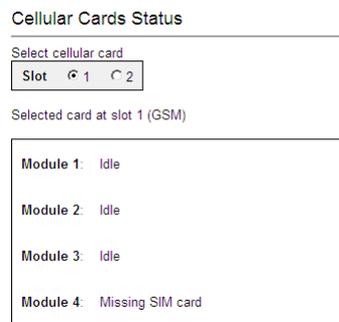


Figure 43: Cellular Cards Status Screen

3. Review the status. Common possibilities include:
  - Module doesn't exist or is faulty
  - Idle
  - Incoming call from cellular network
  - Remote side ringing
  - Call connected
  - Call cleared
  - Dialing out through cellular network
  - No Signal
  - Missing SIM card

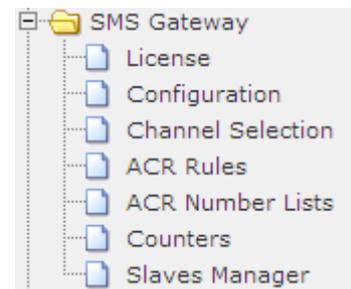
## Chapter 4

# SMS PRO GATEWAY

A Hypermedia system can include an SMS Gateway. The SMS Server is supplied with a developers API (see “Developer’s API” on page 77).

This section describes use of the SMS Gateway. It includes:

- “PCB and System Terminology” on page 48
- “Configuration” on page 49
- “License” on page 52
- “Channel Selection” on page 53
- “Advanced Call Routing (ACR)” on page 54
- “Counters” on page 59
- “Slave Managers” on page 61
- “SMS CDRs” on page 63



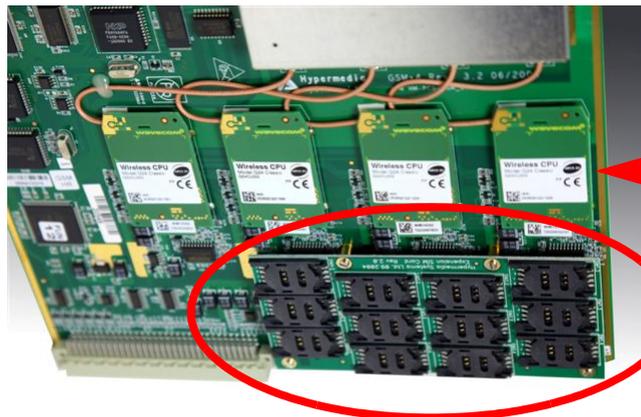
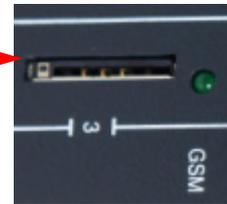
## PCB and System Terminology

An SMS PRO card has 4 modules, each of which can have 1 to 4 SIM holders. Therefore, each card can hold up to 16 SIM cards. In addition, an SMS PRO can include several cards.

Each module of 4 SIM cards has one port. If the module is SMS enabled (see “Channel Selection” on page 53), the group of 4 SIM cards might be identified by the Port Number. For an example of this, see “Counters” on page 59.

Some parameters can be applied either to specific SIM cards, or to specific modules, or to the entire card, or to all the cards in the system.

The first SIM cards of each module are loaded into the spring-loaded SIM port from the front of the Cellular Card.



Controllers for modules  
1 through 4

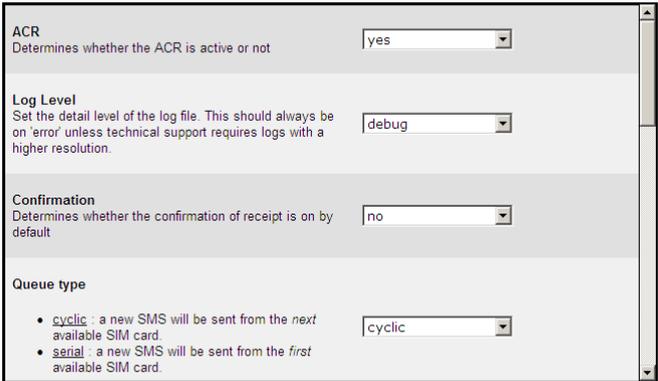
Additional SIM cards are  
loaded at the rear of the  
Cellular Card.

## Configuration

Use the Configuration screen to define parameters that affect the performance of the SMS PRO Gateway.

To define parameters:

1. From the SMS Server branch of the HMC navigation pane, click the **Configuration** sub-branch. The Configuration screen is displayed.



SMS Server Configuration License is

**ACR**  
Determines whether the ACR is active or not

**Log Level**  
Set the detail level of the log file. This should always be on 'error' unless technical support requires logs with a higher resolution.

**Confirmation**  
Determines whether the confirmation of receipt is on by default

**Queue type**

- **cyclic** : a new SMS will be sent from the *next* available SIM card.
- **serial** : a new SMS will be sent from the *first* available SIM card.

Figure 44: SMS Configuration Screen

2. Set the SMS server's status.
  - a. From the dropdown menu, select a state:
    - **Run**  
The Gateway processes and sends SMS requests.
    - **Pause**  
The Gateway does not send out SMS's. New send requests are queued and sent after the status is changed to Running.
    - **Scheduled**  
The state of the Gateway is determined by status commands set by the Scheduler or via the SMS Gateway PRO API.
  - b. Either click **Submit** or continue defining additional parameters.
3. Define these parameters:
 

**ACR**  
Select Yes to activate ACR.

**Log Level**  
The Log Level should be set to **error** unless Technical Support requires logs with a higher resolution.

**Confirmation**

When Yes is selected, by default, a confirmation of receipt is generated.

**GSM 03.38 Encoding**

Select whether Greek or Latin encoding is used with GSM 03.38.

**Queue Type**

When cyclic is selected, a new SMS is sent from the *next available* SIM card. When serial is selected, a new SMS is sent from the *first available* SIM card.

**MySQL Host**

This feature is available on Gateways with a PC card. Enter the IP address and port number of the computer running the MySQL service. Then, enter the authentication information, including User name, password, and database name.

**SMS Server Password**

Optionally, enter a security password for access to the SMS server.

**URLs for SMS Notification**

Enter the URLs that will be notified whenever an SMS is sent or received.

**E-mail Notifications from SMS Gateway**

The SMS Gateway supports two SMS via e-mail services.

Use **Incoming SMS to** to define the e-mail address to which the Gateway forwards an SMS response. In this case, if the Administrator uses the e-mail to SMS feature, when the recipient sends an SMS reply to the Gateway, the Gateway will forward the SMS as an e-mail to the e-mail address entered here.

Use **Counter Event to** notification to configure the server to send an email when either a SIM card is blocked or an entire cellular module is blocked.

**No SMS Counter Increments for Codes**

Enter a comma separated list of error codes which will not advance the SMS counter.

**Error codes for Send Delay**

In the **Delay** field, enter the delay in seconds before the SIM is available for another send. In the **Codes** field, enter a comma separated list of error codes that can trigger this delay.

**Error codes for Send Retry**

In the **Retry** field, enter the number of retry attempts if send fails. In the **Codes** field, enter a comma separated list of error codes that can trigger a retry.

**SIM Reply Timeout**

Enter the number of seconds to wait for a reply from the SIM before ending the attempt.

**Card Ready Delay**

Enter the number of seconds to wait before sending another SMS through the same cellular card. For maximum throughput, this should be set to zero (0).

4. Click **Submit**.

## License

Use the License screen to upload and apply the SMS Server's license.

To license the SMS server:

1. Ensure that you have an authorized license. Licenses are delivered via email from Hypermedia Technical Support. Contact Technical Support for assistance.
2. From the SMS Server branch of the HMC navigation pane, click the **License** sub-branch. The SMS Server License screen is displayed.



SMS Server License

---

**License Info**

HGID	00:90:05:76:12:04
Status	License is unlimited

**Upload License**

Choose license:

Figure 45: SMS Server License Screen

3. Click **Browse** to locate the server license.
4. Click **Submit** to apply the license.

## Channel Selection

Use the Channel Selection screen to select which modules will process SMS messages and to route messages through specific channels.

1. From the SMS Server branch of the HMC navigation pane, click the **Configuration** sub-branch. The Configuration screen is displayed.

SMS Server Channel Selection

Select cellular card

Slot

Selected card at slot 3 (GSM)

Module	Enable / Disable	Route to Group
Module 1	<input checked="" type="checkbox"/> SMS Enabled	<a href="#">New</a>   <a href="#">Select</a>
Module 2	<input type="checkbox"/> SMS Enabled	
Module 3	<input type="checkbox"/> SMS Enabled	
Module 4	<input type="checkbox"/> SMS Enabled	

Figure 46: Channel Selection Screen

2. To enable a module, select the checkbox. The Apply Settings button is displayed.
3. Click **Apply Settings**. The Route to Group option is enabled.
4. Optionally, define the channels that SMS messages will be routed through.



*The Group's rules are defined in the ACR Rules, The Group names are also listed in the ACR parameter named Change Group explained on page 55.*

- a. Select a Group. There are two options:
  - To create a new Group, click **New** and enter the Group name in the field.
  - To select an existing Group, click **Select** and, from the dropdown menu, select a Group.

Selected card at slot 3 (GSM)

Module	Enable / Disable	Route to Group
Module 1	<input checked="" type="checkbox"/> SMS Enabled	<input type="text"/> <a href="#">Set</a>
Module 2	<input type="checkbox"/> SMS Enabled	
Module 3	<input type="checkbox"/> SMS Enabled	
Module 4	<input type="checkbox"/> SMS Enabled	

Selected card at slot 3 (GSM)

Module	Enable / Disable	Route to Group
Module 1	<input checked="" type="checkbox"/> SMS Enabled	<input type="text"/> <a href="#">Set</a>
Module 2	<input type="checkbox"/> SMS Enabled	<input type="text"/>
Module 3	<input type="checkbox"/> SMS Enabled	<input type="text"/>
Module 4	<input type="checkbox"/> SMS Enabled	<input type="text"/>

[Apply Settings](#)

Figure 47: New and Select Group Options

- b. Click **Set**.
5. Click **Apply Settings**.

## Advanced Call Routing (ACR)

Use ACR, for example, to Group channels to take advantage of SIM cards from a specific cellular service provider whose rates are preferable.

Enabling ACR requires the following three steps:

- a. Prepare and upload the Number List.
- b. Define the ACR rules.
- c. Enable a specific rule, or the default ACR rule, on the LCR Rules screen.

### ACR Rules

---

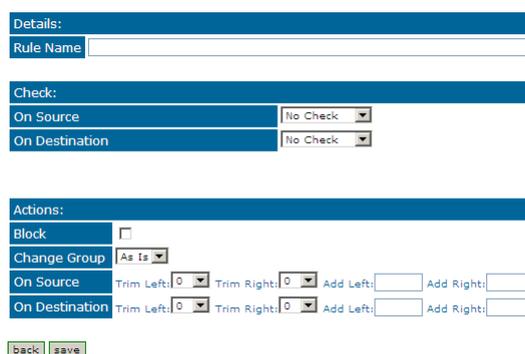
To create an ACR Rule:

1. Ensure that an up-to-date ACR Number Lists .csv file has been uploaded to the Gateway.
2. From the SMS Server branch of the HMC navigation pane, click the **ACR Rules** sub-branch. The ACR Rules screen is displayed.



Figure 48: ACR Rules Screen

3. Click **Add new rule**. The Add New Rule screen is displayed.



Details:

Rule Name

Check:

On Source  No Check

On Destination  No Check

Actions:

Block

Change Group  As Is

On Source Trim Left:  Trim Right:  Add Left:  Add Right:

On Destination Trim Left:  Trim Right:  Add Left:  Add Right:

back save

Figure 49: Add New Rule Screen

4. In the Rule Name field, enter the name of the rule.
5. In the Check area, define the indication the rule will evaluate.

If an indication is selected, a dialog box similar to the following is displayed:

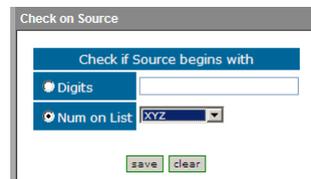


Figure 50: Sample Check Dialog Box

**No Check**

The rule does not check the Source number.

**Begins With**

The rule checks if the On Source begins with either specific digits or a tag that appears on the list.

**Ends With**

The rule checks if the On Source ends with either specific digits or a tag that appears on the list.

**In Range**

The rule checks if the On Source range is within a specific range.

**Identical to**

The rule checks if the On Source is exactly the specific digits or tag that appears on the list.

6. Complete the dialog box and click **Save**.
7. In the Actions area, define what ACR does when it identifies a number matching the indications defined in the Check area.

**No Actions are Defined**

If no actions are defined, the call are allowed as is.

**Block**

Calls matching the indications are not allowed.

**Change Group**

Calls matching the indications are routed through the Group defined here.

**On Source**

Phone numbers of calls matching the indications are altered as defined here.

**On Destination**

Phone numbers of calls matching the indications are altered as defined here.

8. Click **Save**. The new rule is added to the ACR Rules screen.

9. Prioritize the rule. Use the arrows in the Priority column to increase or decrease a rules prioritization.



Figure 51: Rule Prioritization Arrows

10. From the HMC navigation pane's LCR branch, click the **Rules** sub-branch. The Rules screen is displayed.
11. From the ACR column, select the checkbox in the Rule row that the ACR rules will be applied to and click **Save Settings**.

## Modifying the Existing ACR Number List

---

To modify the existing ACR Number List:

1. From the SMS Server branch of the HMC navigation pane, click the **ACR Numbers Lists** sub-branch. The ACR Number Lists screen is displayed.

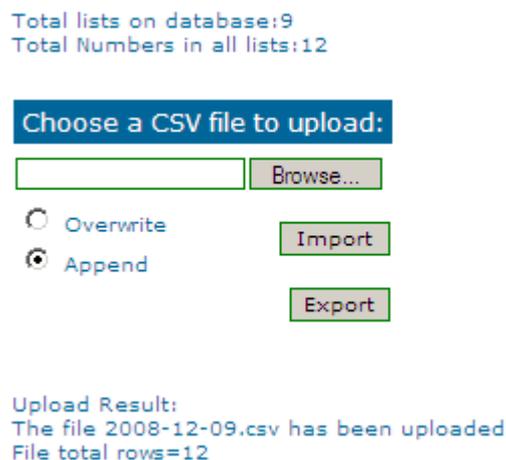


Figure 52: ACR Number Lists Screen

2. Click **Export**. The standard Windows browse dialog box is displayed.
3. Save the .csv file.
4. Open the file in a text-editor, such as Notepad.

5. Modify the file. Preserve the format, that is, the words **tag,number** must appear as the first row of the list.
6. Save and close the file.
7. On the ACR Number Lists Screen, click **Browse**. The standard Windows browse dialog box is displayed.
8. Locate the .csv file containing the lists. Select it and click **Open**. The path to the .csv file is displayed on the Number Lists Screen.
9. Select either:
  - Overwrite**  
When selected, the old .csv file is deleted and the new file replaces it.
  - Append**  
When selected, the entries on the new .csv file are added to the entries on the old .csv file.
10. Click **Import**. The report of total lists and total numbers is automatically updated.

## Creating a New ACR Number List File

---

To define a number list:

1. Create a new file whose file-name ends with the extension .csv.
2. Open the file in a text-editor, such as Notepad.
3. Enter the words **tag,number** as the first row of the list.



*In step 4, the term “list” indicates all entries that are share the same tag.*

4. Add the tag and number of each entry. Ensure that a comma separates the tag and number.

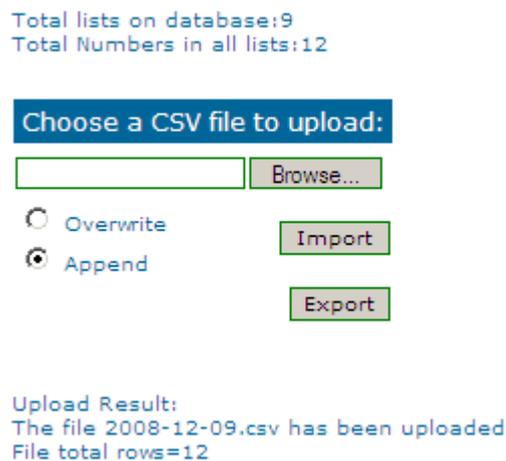
The following example includes 5 lists:

```
tag, number
XYZ,0774445004
XYZ,0509080704
XYZ,0523030303
ABC,0509380137
ABC,0509380136
CLCOM,052
PHONE,054
CELLC,050
```



*A comma must separate the tag and the number or the list will not register properly.*

5. Ensure that the .csv file uses the UTF-8 format. Save and close the file.
6. From the SMS Server branch of the HMC navigation pane, click the **ACR Numbers Lists** sub-branch. The ACR Number Lists screen is displayed.



Total lists on database:9  
Total Numbers in all lists:12

Choose a CSV file to upload:

Overwrite

Append

Upload Result:  
The file 2008-12-09.csv has been uploaded  
File total rows=12

Figure 53: ACR Number Lists Screen

7. Click **Browse**. The standard Windows browse dialog box is displayed.
8. Locate the .csv file containing the lists. Select it and click **Open**. The path to the .csv file is displayed on the Number Lists Screen.
9. Select either:
  - Overwrite**  
When selected, the old .csv file is deleted and the new file replaces it.
  - Append**  
When selected, the entries on the new .csv file are added to the entries on the old .csv file.
10. Click **Import**. The report of total lists and total numbers is automatically updated.

## Counters

Use SMS Counters to allocate the use of SIM cards.

### Enabling Counters

To enable Counters for a specific module:

1. Ensure that the module is SMS enabled on the Channel Selection screen (see “Channel Selection” on page 53).
2. From the SMS Server branch of the HMC navigation pane, click the **Counters** sub-branch. The SMS Counters screen is displayed.

Card	Port	Enable	Active	Delete	SIM-1	SIM-2	SIM-3	SIM-4	Switch Number	Blocked Number
Slot-4 (24)	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Enable <input type="checkbox"/> Reset	<input checked="" type="checkbox"/> Enable <input type="checkbox"/> Reset	<input checked="" type="checkbox"/> Enable <input type="checkbox"/> Reset	<input checked="" type="checkbox"/> Enable <input type="checkbox"/> Reset	<input type="checkbox"/> 1	<input type="checkbox"/> 1
Slot-4 (24)	3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> Enable <input type="checkbox"/> Reset	<input type="checkbox"/> Enable <input type="checkbox"/> Reset	<input type="checkbox"/> Enable <input type="checkbox"/> Reset	<input type="checkbox"/> Enable <input type="checkbox"/> Reset	<input type="checkbox"/> 0	<input type="checkbox"/> 0

Figure 54: SMS Counters Screen

3. Identify the port of the card that is to be enabled:

**Card**

Identifies the slot the card occupies.

**Port**

Corresponds with “module”. See “Channel Selection” on page 53.

4. Select the checkbox in the **Enable** column.



The Active column is Read only and indicates if Counting is, or has been, active on a port.

5. Select the **Enable** checkbox of the SIM cards that will participate in Counting.

6. Set the following parameters:

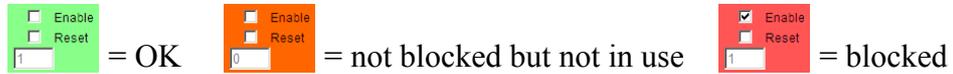
**Switch Number**

Enter the number of SMSs sent by a SIM card after which the module will switch sending to the next SIM card. This number has to be at least 1 (one).

**Blocked Number**

Enter the number of SMSs a SIM card can send before the Gateway blocks the SIM card. If set to 0 (zero), the cards are never blocked.

- Click **Update Configuration**. Status is updated and indicated by the color:



- Optionally, set **Counter Event To** (see “E-mail Notifications from SMS Gateway” on page 50).
- Optionally, set the Scheduler’s automatic **Reset SIM Counter** function (see “Reset SIM Counter” on page 119).



*To reset a SIM card’s counter, select the **Reset** checkbox and click **Update Configuration**.*

## Disabling Counters

---

To disable Counters for a specific module:

- Ensure that the module is SMS disabled on the Channel Selection screen (see “Channel Selection” on page 53).
- Select the **Delete** checkbox.
- Click **Update Configuration**. The row is deleted from the Counters screen.

## Slave Managers

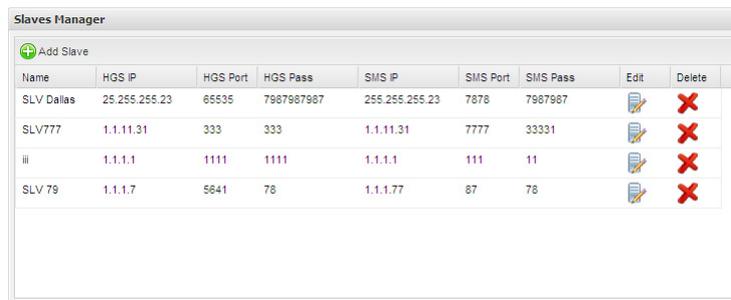
In a network of multiple SMS PRO Gateways, one Gateway can be designated the Master. Slave Gateways are entered on the Master Gateway's Slave Manager page. From the Slave Gateway it is not possible to designate the Master Gateway.

When a Master/Slave network is configured, the Slave Gateway's SIM cards are displayed on the Master Gateway. For example, from the Master Gateway it is possible to configure Counters (see p. 59) on the Slave Gateway.

### Adding a Slave Gateway to a Master Gateway

To add a Slave Gateway to the Master Gateway:

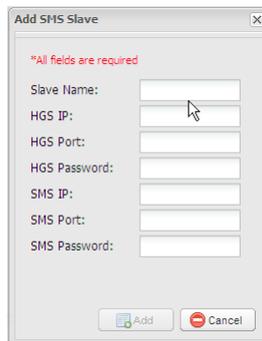
1. From the SMS Server branch of the *Master Gateway's* HMC navigation pane, click the **Slave Manager** sub-branch. The SMS Counters screen is displayed.



Name	HGS IP	HGS Port	HGS Pass	SMS IP	SMS Port	SMS Pass	Edit	Delete
SLV Dallas	25.255.255.23	65535	7987987987	255.255.255.23	7878	7987987		
SLV777	1.1.11.31	333	333	1.1.11.31	7777	33331		
iii	1.1.1.1	1111	1111	1.1.1.1	111	11		
SLV 79	1.1.1.7	5641	78	1.1.1.77	87	78		

Figure 55: Slave Manager Screen

2. Click **Add Slave**. The Add SMS Slave dialog box is displayed.



**Add SMS Slave**

\*All fields are required

Slave Name:

HGS IP:

HGS Port:

HGS Password:

SMS IP:

SMS Port:

SMS Password:

Figure 56: Add SMS Slave Dialog Box

3. Enter the parameters:

**Slave Name**

Enter a name that assures proper identification.

**HGS IP**

This is the IP address to access the HyperGateway System application. It is usually the same as the IP address used to access the SMS application.

**HGS Port**

The default port is 8878.

**HGS Password**

Enter a password that will enable access to the HyperGateway System application.

**SMS IP**

This is the IP address to access the SMS application. It is usually the same as the IP address used to access the HGS application.

**SMS Port**

The default port is 63333.

**SMS Password**

Enter a password that will enable access to the SMS application.

4. Click **Add**. Focus returns to the Slave Manager screen and the new Slave is displayed in the list.

## Configuring a Slave to Display its SIM Cards on the Master

---

To configure a Slave Gateway to display its SIM cards on the Master Gateway:

1. From the SMS Server branch of the *Slave Gateway's* HMC navigation pane, click the **Channel Selection** sub-branch. The Channel Selection screen is displayed.
2. Follow the procedure described in “Channel Selection” on page 53. Ensure the following:
  - the module is enabled
  - the module is assigned to a Group

## SMS CDRs

The SMS PRO Gateway writes SMS CDR in two files, one contains the records of incoming messages and the other stores records of outgoing messages.

To manage and download the daily SMS CDR files:

1. From the HMC navigation pane, expand the **Monitor** branch.
2. Select **SMS CDRs**. The list of CDR files is displayed.

SMS Log Files

File Name (click to download)	Last Modified	Size (bytes)	
Remaining space (disk): 66.72 gigabytes			
SMS_OUT_20100103.log	03/01/2010 19:50	106	delete

Figure 57: LCR CDR Files Screen

3. Click a file name. The standard Windows Open dialog box is displayed.
4. Define the location where the file will be saved and click **OK**. The file is downloaded to that location.

## Deciphering the SMS CDR Files

A CDR line is created in the file each time a SMS message is sent or received. All CDR fields appear on a single line. Below is an example of an SMS In CDR entry:

2009-08-19 18:11:37 |24|1|+972111111111 | Thanks | OK

The entries are explained in Table 3.

**Table 3: SMS In CDR Line Entries Explained**

Entry	Explanation
Entry date and time	The moment the gateway received the SMS message (format = YYYY-MM-DD HH:MM:SS).
24	Address of the cellular card the message arrived to. In this case card 24, which means the fourth card from the left.
1	Module number on the cellular card which received the message. In this case, module 1, which is the module that holds the upper left SIM card.

**Table 3: SMS In CDR Line Entries Explained**

Entry	Explanation
+972111111111	The CLI of the sender of the SMS.
Thanks	Body of the SMS message
OK	Status code. Can be OK, Err, or confirmation.

Below is an example of an SMS Out CDR entry (distorted by text-wrapping). The entries are explained in Table 4.

```
2009-08-19
18:11:37|24|1|+972111111111|Thanks|OK|0|Unknown|192.168.123.82009-08-
19 18:11:32.050555|00:00:04
```

**Table 4: SMS Out CDR Line Entries Explained**

Entry	Explanation
Entry date and time	The moment the gateway received the SMS request (format = YYYY-MM-DD HH:MM:SS).
24	Address of the cellular card the message arrived to. In this case card 24, which means the fourth card from the left.
1	Module number on the cellular card which received the message. In this case, module 1, which is the module that holds the upper left SIM card.
+972111111111	CLI number presented to the gateway
Thanks	Body of the SMS message
OK	Status code. Can be OK, Err, or confirmation.
0	Number of retries
Unknown	Message ID
192.168.123.8	Client ID
2009-08-19 18:11:32.050555	Hour and date when the SMS arrived to the server.
00:00:04	Sending time for the Server

## CDR MySQL Support

---

The SMS PRO Gateway also supports use of an external MySQL database to store incoming and outgoing SMS events. Configuration of the MySQL connection is described in “MySQL Host” on page 50.

Note that the HBN version of the SMS PRO gateway does not support storing messages in an external MySQL database. To support storing messages of a HBN based SMS PRO gateway, an external application or script can register to receive SMS event notifications and write the event data to the MySQL database (see “SMS Event Notifications” on page 92).

### MySQL Tables Created

Two MySQL tables are created by the SMS PRO Gateway for the SMS records, one for incoming messages and another for outgoing messages. The schema of the tables is as follows:

```
CREATE TABLE outgoing_sms( date_ DATE , time_ TIME , number
TEXT(30) ,msg TEXT(200) , card_add INT , port_num INT , result
TEXT ,
retry_times INT , msg_id TEXT , client_id TEXT(50)
,sending_time TIME)
```

```
'CREATE TABLE incoming_sms( date_ DATE , time_ TIME , number
TEXT(30) ,msg TEXT(200) , card_add INT , port_num INT)
```

The `result` field contains the result of the outgoing SMS. If an error occurs, the field will contain the string "ERR-" followed by the error code (see Table 14, “Error Codes,” on page 100). If an SMS receipt is requested, the field will contain the string "Confirmation\_val-" followed by the SMS confirmation return code (see Table 15, “Confirmation Codes,” on page 105).

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## Chapter 5

# MANAGING via the HMC

This section contains information on tasks available from the Scheduler.

- “Switch SIM per Slot” on page 68
- “Switch SIM per System” on page 70
- “Reset SIM Counter” on page 71
- “Set Multi SIM” on page 73
- “Manual Command” on page 75



*HGS Logs, also available from the Manage branch, are for use by Technical Support.*

## Scheduler

Use the Task Scheduler to configure the Gateway to repeat commands at scheduled intervals. Five commands are preconfigured. In addition, it is possible to manually configure a command.

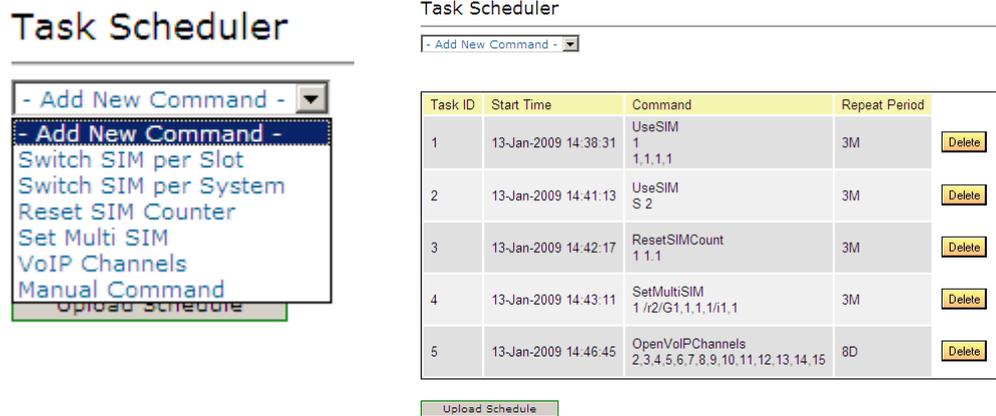


Figure 58: Dropdown Menu of Tasks and Table of Scheduled Tasks

## Switch SIM per Slot

Use the Switch SIM per Slot task to configure a GSM slot to use specific SIM cards for a defined period of time.

1. From the HMC navigation pane, expand the **Manage** branch.
2. Click the **Scheduler** sub-branch. The Task Scheduler screen is displayed.
3. From the **Add New Command** dropdown menu, select **Switch SIM per Slot**. The Task Scheduler automatically advances to the next screen.

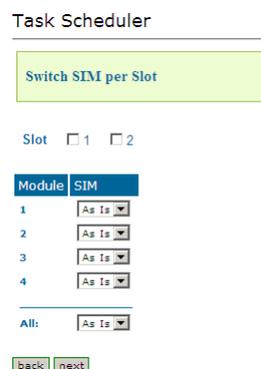


Figure 59: Task Scheduler Switch SIM per Slot Screen

4. Configure the task parameters:

### Slot

Select or clear the checkboxes. Each checkbox represents the GSM card located in the numbered slot counting from the left.

### SIM

From each module's dropdown menu, select the SIM card that that module will use. Select **As Is** if the Gateway does not change the SIM activity.



Use the **All** dropdown menu to assign the same SIM card to all four modules.

5. Click **Next**. The Set Command screen, with the command syntax, is displayed.

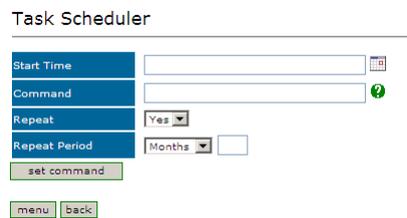


Figure 60: Task Scheduler Set Command Screen



Clicking **menu** deletes the new task. The table of schedules tasks is redisplayed.

6. Configure the task's schedule:
  - a. Click  (calendar icon). A calendar opens in a new browser tab.



First, set the time. As soon as you click the date, the browser tab closes and the date and time are entered into the Start Time field.

- b. Enter the time that the command will start.
  - c. Enter the date that the command will start. When you click the date, the browser tab closes and the date and time are entered into the Start Time field.
  - d. From the Repeat drop-down menu, select either Yes or No.
  - e. If the task is configured to repeat, select a **Repeat Period**. The Repeat Period can be either months, days, hours, or minutes.
7. Click **Set Command**. The new Task is displayed in the Task Scheduler screen.

- Click **Upload Schedule**. The Server activates the schedule according to the defined dates and times.

## Switch SIM per System

Use the Switch SIM per System task to configure a Gateway to use one specific SIM card for a defined period of time.

- From the HMC navigation pane, expand the **Manage** branch.
- Click the **Scheduler** sub-branch. The Task Scheduler screen is displayed.
- From the **Add New Command** dropdown menu, select **Switch SIM per System**. The Task Scheduler automatically advances to the next screen.



Figure 61: Task Scheduler Switch SIM per System Screen

- From the Set Active SIM per System dropdown menu, select the SIM card that the entire system will use.
- Click **Next**. The Set Command screen, with the command syntax, is displayed.

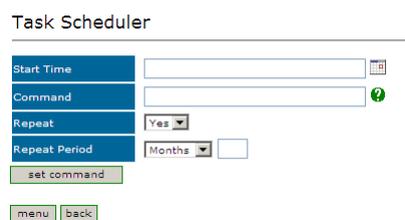


Figure 62: Task Scheduler Set Command Screen



Clicking **menu** deletes the new task. The table of schedules tasks is redisplayed.

6. Configure the task's schedule:
  - a. Click  (calendar icon). A calendar opens in a new browser tab.



*First, set the time. As soon as you click the date, the browser tab closes and the date and time are entered into the Start Time field.*

- b. Enter the time that the command will start.
  - c. Enter the date that the command will start. When you click the date, the browser tab closes and the date and time are entered into the Start Time field.
  - d. From the Repeat drop-down menu, select either Yes or No.
  - e. If the task is configured to repeat, select a **Repeat Period**. The Repeat Period can be either months, days, hours, or minutes.
7. Click **Set Command**. The new Task is displayed in the Task Scheduler screen.
8. Click **Upload Schedule**. The Server activates the schedule according to the defined dates and times.

## Reset SIM Counter

Use the Reset SIM Counter task to configure a GSM slot's module to restart the recording of time in use.

1. From the HMC navigation pane, expand the **Manage** branch.
2. Click the **Scheduler** sub-branch. The Task Scheduler screen is displayed.
3. From the **Add New Command** dropdown menu, select **Reset SIM Counter**. The Task Scheduler automatically advances to the next screen.

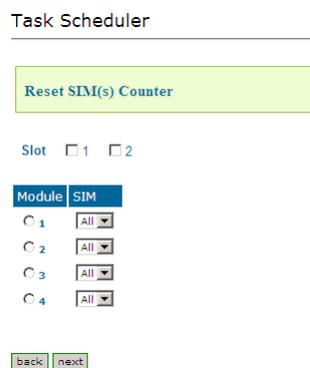


Figure 63: Task Scheduler Reset SIM Counter Screen

4. Configure the task parameters:

**Slot**

Select or clear the checkboxes. Each checkbox represents the GSM card located in the numbered slot counting from the left.

**Module**

From the Module column, select the module upon which the task will be performed. Only one Module can be selected.

**SIM**

From the module's SIM dropdown menu, select the SIM card for which the count will be reset.



Select **All** to reset the count on all of the module's SIM cards.

5. Click **Next**. The Set Command screen, with the command syntax, is displayed.

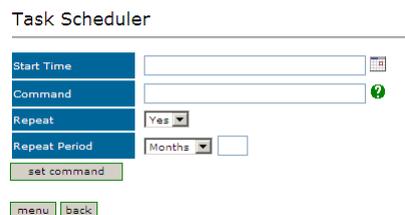


Figure 64: Task Scheduler Set Command Screen



Clicking **menu** deletes the new task. The table of schedules tasks is redisplayed.

6. Configure the task's schedule:

- a. Click  (calendar icon). A calendar opens in a new browser tab.



First, set the time. As soon as you click the date, the browser tab closes and the date and time are entered into the Start Time field.

- b. Enter the time that the command will start.
- c. Enter the date that the command will start. When you click the date, the browser tab closes and the date and time are entered into the Start Time field.
- d. From the Repeat drop-down menu, select either Yes or No.

- e. If the task is configured to repeat, select a **Repeat Period**. The Repeat Period can be either months, days, hours, or minutes.
7. Click **Set Command**. The new Task is displayed in the Task Scheduler screen.
8. Click **Upload Schedule**. The Server activates the schedule according to the defined dates and times.

## Set Multi SIM

---

Use the Set Multi SIM task to create cycles that define when each SIM card is used and after how much time a SIM card is removed from usage.

1. From the HMC navigation pane, expand the **Manage** branch.
2. Click the **Scheduler** sub-branch. The Task Scheduler screen is displayed.
3. From the **Add New Command** dropdown menu, select **Set Multi SIM**. The Task Scheduler automatically advances to the next screen.

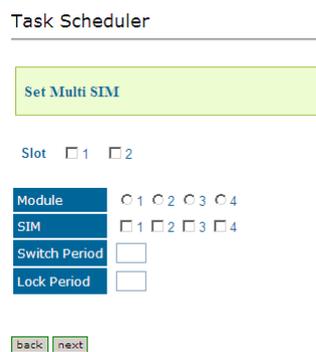


Figure 65: Task Scheduler Set Multi SIM Screen

4. Configure the task parameters:
  - Slot**  
Select or clear the checkboxes. Each checkbox represents the cellular card located in the numbered slot counting from the left.
  - Module**  
From the Module row, select the module number on the cellular card upon which the task will be performed. Only one Module can be selected.
  - SIM**  
From the SIM row, select the checkbox to include the SIM card in the cycle.

### Switch Period

Enter an amount of time measured in minutes that each SIM card is active. When the period of time expires, the next SIM card become active.

### Lock Period

Enter an amount of time measured in minutes after which the SIM cards can no longer be used to place calls.

5. Click **Next**. The Set Command screen, with the command syntax, is displayed.

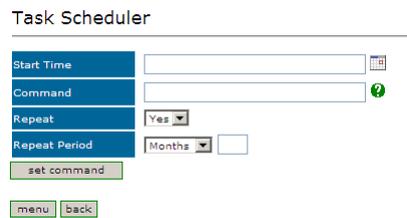


Figure 66: Task Scheduler Set Command Screen



Clicking **menu** deletes the new task. The table of schedules tasks is redisplayed.

6. Configure the task's schedule:
  - a. Click  (calendar icon). A calendar opens in a new browser tab.



First, set the time. As soon as you click the date, the browser tab closes and the date and time are entered into the Start Time field.

- b. Enter the time that the command will start.
  - c. Enter the date that the command will start. When you click the date, the browser tab closes and the date and time are entered into the Start Time field.
  - d. From the Repeat drop-down menu, select either Yes or No.
  - e. If the task is configured to repeat, select a **Repeat Period**. The Repeat Period can be either months, days, hours, or minutes.
7. Click **Set Command**. The new Task is displayed in the Task Scheduler screen.
8. Click **Upload Schedule**. The Server activates the schedule according to the defined dates and times.

## Manual Command

---

Use the Manual Command task to customize a task and its schedule.

1. From the HMC navigation pane, expand the **Manage** branch.
2. Click the **Scheduler** sub-branch. The Task Scheduler screen is displayed.
3. From the **Add New Command** dropdown menu, select **Manual Command**. The Task Scheduler automatically advances to the next screen.

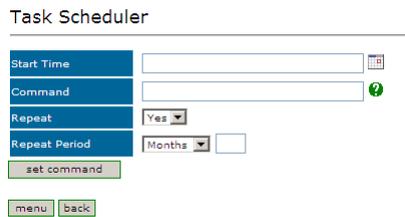


Figure 67: Task Scheduler Manual Command Screen



Clicking **menu** deletes the new task. The table of schedules tasks is redisplayed.

4. Configure the task and its schedule:
  - a. Click  (calendar icon). A calendar opens in a new browser tab.



First, set the time. As soon as you click the date, the browser tab closes and the date and time are entered into the Start Time field.

- b. Enter the time that the command will start.
  - c. Enter the date that the command will start. When you click the date, the browser tab closes and the date and time are entered into the Start Time field.
  - d. Enter the command. For help with command syntax, click .
  - e. From the Repeat drop-down menu, select either Yes or No.
  - f. If the task is configured to repeat, select a **Repeat Period**. The Repeat Period can be either months, days, hours, or minutes.
5. Click **Set Command**. The new Task is displayed in the Task Scheduler screen.
6. Click **Upload Schedule**. The Server activates the schedule according to the defined dates and times.

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## Chapter 6

# DEVELOPER'S API

This section defines the API for the Hypermedia SMS PRO Gateway. The API is designed to enable development of third party applications that wish to utilize the Hypermedia SMS PRO Gateway.

Use the developers API to control the SMS server and send SMS messages using commands over a TCP connection. Typically, this is used to send alarms, warnings, alerts, messages and any other system information that must be delivered quickly to specific individuals.

*The SMS Pro Gateway also supports seamless integration with SMPP (Short Message Peer-to-Peer protocol).*

## The SMS Server

The SMS Server is pre-installed on the SMS PRO Gateway. Some configuration is possible.

### Auto-open an Info Web Page

---

Upon receiving a message, the SMS Server can open a web page displaying information about the message.

To configure the SMS Server to open a web page:

1. Open the file named `c:\smmsgw.ini`.
2. Set the **OpenUrl= parameter** to **YES** (OpenUrl=yes).
3. On the `Url=` line, enter the URL to be opened.  
For example: `Url=http://127.0.0.1:8080/receivesms.php`
4. Save and close the `smmsgw.ini` file.

The HTTP displays the following parameters for each SMS message received:

**Table 5: Displayed SMS Parameters**

Parameter	Explanation
"number"	Caller ID of the sender
"message"	The received message
"sessionid"	Session ID of the SMS task
"res"	The SIM number
"i2cAddr"	The address of the SIM drawer

The web page uses the following format when it is opened:

`http://127.0.0.1:8080/receivesms.php?number=<phone_number>&message=<message>&sessionid=<sessionid>&i2cAddr=<i2cAddr>`

## Overview

Following are several points of general importance:

- **Development Platforms**  
The API is based on a text based protocol over a TCP connection. It is, therefore, platform independent and only requires that the application have access to TCP/IP sockets.
- **Configuration**  
See “Configuration” on page 49 for the SMS PRO Gateway configuration screens that are referred to in various parts of this document.
- **The Protocol**  
A TCP connection is used to send requests and receive events from the SMS PRO Gateway. The default TCP port that is used to connect to the SMS PRO Gateway is 63333.  
The requests, replies, and events are formatted using JSON notation. (More information on JSON can be found at <http://www.json.org>.) This simplifies use of the SMS PRO Gateway API from any programming language.
- **Termination of Lines**  
Every line sent to the server should be terminated with a CR LF. All replies and events received from the SMS PRO Gateway are also terminated by a CR LF pair.

## Logging In

To log-in to the SMS PRO Gateway:

1. Create a TCP connection to the gateway listening port (default is 63333).
2. Send the following line with the replacement values described in Table 6:

```
{"method":"authentication","server_password":"admin","client_id":"id1"}
```

**Table 6: Log-in Message Fields**

Field Name	Field Meaning
server_password	Replace the value for the server_password field with the password assigned to the gateway via the Hypermedia Management Console.
client_id	Set the client_id field value to an ID that will identify your session. This ID will enable to associate requests with your connection and will also appear in the CDR records for messages sent during your session.

3. Ensure that the line ends with CR LF.

### Results

If the supplied password was incorrect no reply will be returned (for security reasons) and—if no correct password is supplied—the connection will be disconnected after a few seconds.

If a correct password is supplied, the SMS PRO gateway will reply with:

```
{"server_password": "admin", "reply": "ok", "client_id": "id1",  
"method_reply": "authentication"}
```

At this point you can send valid JSON requests to the SMS PRO Gateway.

Note the following:

- If no password is set on the Gateway, no authorization is required and the Gateway is ready to receive requests as soon as the TCP connection is established.
- If another client logs-in with the same ID as an existing client, then the new client will cause the disconnection of the old client and a message will be sent to each indicating this. Therefore, we recommend that each new client be assigned a unique ID. Note that if no ID is given, a unique ID will be generated for the client by the Gateway.
- For each JSON line sent to the server, any unrecognized fields are returned in the reply with their values.

## SIM Configuration

This section describes available SIM configuration methods.

### Getting the Active SIM Configuration

---

The SIM configuration can indicate a single, local connection between one HGS system and the SMS PRO Gateway it is connected to. In addition, the SMS PRO Gateway can also connect to multiple HGS systems.

#### Local Connection

To check the configuration status of the SIM ports on all the GSM cards, issue the following command:

```
{"method": "get_sim_config"}
```

The SMS PRO gateway will respond with a JSON reply which contains all the active SIM ports and the routing groups they belong to. This is illustrated next:

```
{"sim_config": {  
  "21#1": {"group": "orange", "port": "1", "card": "21"},  
  "21#2": {"group": "mobile1", "port": "2", "card": "21"},  
  "21#3": {"group": "orange", "port": "3", "card": "21"},  
  "21#4": {"group": null, "port": "4", "card": "21"}  
},  
"method_reply": "get_sim_config"  
}
```

In the above example, four active SIM cards are returned (21#1, 21#2, 21#3, 21#4) where 21#1 means the first SIM port in GSM card at address 21 (hex). This is the far-left slot; the cellular card to its right is at address 22, etc. Also, “orange” is the name of the routing group associated with this SIM. Thus, the reply indicates that:

- there are four active SIM cards in the device
- all of them are in the same GSM card
- the first three SIM cards are associated with specific routing groups
- the fourth SIM is not associated with any group.

#### Sending an SMS to a System Defined as a Slave

Use the following syntax to send an SMS to a system that is defined as a slave:

```
{"number": "6453298", "msg": "6B656C6C6F", "unicode": "0", "send_to_sim": "Slave  
Boxip@21#1"}
```

## Master/Slave Multiple Connections

The SMS PRO Gateway can connect to multiple HGS systems. This is useful in situations where either a larger SMS capacity is required or where there is an advantage to geographically separating the SIM cards. In these cases, one SMS PRO gateway is the master and controls the other HGS systems. For more information on this, see “Slave Managers” on page 61.

In the case of a Master/Slave configuration, the Master SMS PRO Gateway’s reply to the `get_sim_config` method will return the following:

```
{ "sim_config": {  "slave_2@21#2": { "sys_name" : "slave_2",
                                   "group" : "4541",
                                   "port" : "2",
                                   "card" : "slave_2@21"
                                 },
  "slave_2@21#3": { "sys_name" : "slave_2",
                   "group" : "orange",
                   "port" : "3",
                   "card" : "slave_2@21"
                 },
  "21#1": { "sys_name" : "master_sys",
           "group" : null,
           "port" : "1",
           "card" : "21"
         }
    },
  "method_reply": "get_sim_config" }
```

In the above example, three active SIM cards are returned (`slave_2@21#2`, `slave_2@21#3` and `21#1`). `21#1` means the same as in the previous example, that is, the first SIM port in the GSM card at address 21. Note that in this case, it belongs to the Master SMS PRO Gateway.

The identification of SIM cards that are located on other HGS devices are preceded by “**name@**”. For example, `slave_2@21#2` means “the second SIM port in the GSM card at address 21 on a remote HGS device named `slave_2`”. The meaning of the group and port parameters remain the same as in the previous example.

The `sys_name` parameter is the unique name of the SMS PRO Gateway on which the SIM is located. On the master SMS PRO Gateway, this will always be `master_sys`. The name assignment of a slave system (`slave_2` in the above example) is done using the HMC user interface of the master SMS PRO gateway. This enables assigning an IP of a slave SMS PRO Gateway with a unique system name.

## Setting the Active SIM Configuration

---

Using the `set_sim_config` method it is possible to add or remove SIM cards to the pool of available SIMs and also assign groups to SIM ports. Following are several examples:

### Example 1:

Add the first SIM in the second GSM card (from the left) to the pool of SIM slots available for sending SMSs:

```
{"method":"set_sim_config",  
"groups":{"22#1": {"port": "1", "card": "22","activ":true} }}  
  
{"reply": "ok",  
"groups": {"22#1": {"activ": true, "port": "1", "card": "22"}},  
"method_reply": "set_sim_config"}
```

Similarly, sending the above command with the active property set to false would remove the SIM from the pool of SIM cards for sending SMSs

### Example 2:

Add 2 SIM ports from the far-left GSM card to the active SIM pool and associate these SIM slots with the groups “orange” and “TMobile” respectively.

```
{"method":"set_sim_config",  
"groups":{"21#2":  
{"group":"bbb", "port":"2", "card":"21","activ":true},  
"21#3":  
{"group":"ccc", "port":"3", "card":"21","activ":true} } }  
  
{"reply": "ok",  
"groups":  
{"21#2":  
{"activ": true, "group": "orange", "port": "2", "card": "21"},  
"21#3":  
{"activ": true, "group": "TMobile", "port": "3", "card": "21"}},  
"method_reply": "set_sim_config"}
```

The `set_sim_config` method should be used on both master and slave SMS PRO Gateways to set their active SIM cards and assign groups to these cards. On slave systems, the `get_sim_config` method will return the configuration that was set and on a master system it will return the configuration of the master system and all the slave systems, as seen in the Master SMS Gateway PRO's reply example in "Local Connection" on page 81.

## Changing the Routing Group of an Active SIM

---

It is possible to set or change the routing group an active SIM belongs to by issuing the `set_group` command. For example:

```
{"method": "set_group", "group": "Vodafone", "sim_add": "21#4"}
```

The above command will associate the fourth SIM channel in the far-left cellular card (address 21) with a routing group called "Vodafone".

### *A note regarding groups:*

If a SIM channel is not associated with a group, it *can* be used by the server to send an SMS that belongs to a group. This means that an SMS targeted for a certain group might also be sent via a SIM channel that is not associated with a group. If an SMS being sent has no group parameter, it will only be sent via SIM channels that are not associated with a group or SIM channels that are associated with a special group named `sms_gen`. Thus, if you wish that an SMS be sent only through SIM channels that are associated with the SMS group parameter (and not through SIM channels that have not been assigned a group name) the recommended method is to assign the group name `sms_gen` to all the SIM channels that have no group assigned to them.

## Receiving Notification of Configuration Changes

---

To receive notification each time the active SIM configuration changes, issue the following command:

```
{"method": "register_for_config_change"}  
{"reply": "ok", "method_reply": "register_for_config_change"}
```

Once this is done, each time a SIM is added or removed from the SIM pool, the SMS PRO Gateway will send the following notification:

```
{"notification": "config_change"}
```

at which point the SMS PRO Gateway should be queried again for the new status of active SIMs using the `get_sim_config` command.

## Sending an SMS

All the following examples send the SMS “hello” to the number 6453298. The reply message is described in “The Reply” on page 88.

```
{"number": "6453298", "msg": "hello"}
```

```
{"number": "6453298", "msg": "hello", "msg_id": 3432}
```

```
{"number": "6453298", "msg": "hello", "unicode": "2", "msg_id": 3432}
```

```
{"number": "6453298", "msg": "6B656C6C6F", "unicode": "0", "msg_id": 3432}
```

Both of the next examples send the Russian equivalent of “hello” to the same number:

```
{"number": "6453298", "msg": ".....", "unicode": "3", "msg_id": 3432}
```

```
{"number": "6453298", "msg": "043f04400438043204350442", "unicode": "1",  
"msg_id": 3432}
```

The following table specifies the fields in the above example, and their meaning:

**Table 7: Fields for Sending an SMS**

Field Name	Field Meaning
number	Mandatory. The destination number to which the SMS should be sent.
msg	Mandatory. The message itself, in ASCII characters, Unicode (UTF-16BE) characters or a hexadecimal representation of ASCII or Unicode (UTF-16BE). The encoding type is selected by setting the <b>unicode</b> parameter (below).
unicode	<p>Defines the message format. Can be one of the following values:</p> <ul style="list-style-type: none"> <li>0 msg is a hexadecimal representation of an ASCII string (can represent up to 160 ASCII characters).</li> <li>1 msg is a hexadecimal representation of a UCS-2 Unicode string (can represent up to 70 UCS-2 characters).</li> <li>2 msg is an ASCII string (can contain up to 160 characters).</li> <li>3 msg is a UCS-2 Unicode string (can contain up to 70 characters).</li> <li>4 msg is a UCS-2 Unicode string (can contain up to 160 characters). In this mode, the gateway will attempt to convert the given UCS-2 string to the more compact GSM 03.38 format thus enabling to send up to 160 characters. Upon failure to convert to GSM 03.38 (due to unsupported GSM 03.38 characters in the UCS-2 string), the gateway will return an error.</li> <li>5 msg is a UCS-2 Unicode string. As in the previous format, the gateway will attempt to convert the UCS-2 string to the more compact GSM 03.38 format however, upon failure to do so, the gateway will attempt to send it in UCS-2, provided there are no more than 70 characters in the message.</li> </ul>
msg_id	The ID of this request. Responses related to this message will contain this ID so that the context can be understood by the application. The ID will also appear in the SMS CDR. If this field is omitted the corresponding field in the CDR will have a value of “Unknown”.

Table 8 lists optional fields which can be added to a request.

**Table 8: Optional Fields when Sending an SMS**

Field Name	Field Meaning
group	A string that defines the SIM group that this message should be sent to. This in effect constrains the set of SIM ports that the SMS can be sent through.
priority	<p>The priority to be given to this message. The priority value is an integer that equals 1 or higher. The lower the number, the higher the priority, that is, messages whose priority value is lower will be sent before messages with a higher value.</p> <p><b><i>Important note regarding priorities and groups:</i></b></p> <p>The priority is designed to get an SMS out as fast as possible using any available resource. If an SMS is sent to a certain SIM group with a priority, it will go through SIM channels of that group unless there are messages already queued on that group and other free SIM channels exist in the system. This means that if there are free SIM channels that belong to another group (that might belong to a different carrier with different pricing), the SMS could be sent via those cards. Since the priority algorithm prefers time to deliver over economy, take great care when sending an SMS with a priority if there are multiple groups in the system.</p>
queue_type	There are two queue types used by the SMS PRO Gateway: the regular queue and the master queue. The master queue is meant for circumventing the regular queue if there are urgent SMS requests or bulks to be sent. The SMS PRO Gateway first handles messages in the master queue and only after that queue is emptied does the gateway handles messages in the regular queue. Note that both queues are identical in terms of their attributes (groups and priorities), only that the master queue is handled first if any messages exist in it. If this parameter does not exist in the message, it will be sent to the regular queue. If it does then its value must be “master”.

**Table 8: Optional Fields when Sending an SMS**

Field Name	Field Meaning
send_to_sim	<p>It is possible to bypass the group and priority logic of the SMS PRO Gateway by requesting an SMS to be sent to a specific SIM channel. Below is an example for the syntax of doing this:</p> <pre data-bbox="432 618 1086 685">{"number": "4333222", "msg": "6B656C6C6F", "unicode": "0", "send_to_sim": "22#2"}</pre> <p>In this example, 22#3 means the third SIM in the second cellular card. This is useful if an application requires its own business logic for using the SIM channels. Note that a separate queue with the highest priority is used when sending to a SIM directly so the message will be sent before any other messages that might have already been queued to the gateway using the gateway's queuing logic (group/priority)</p>
confirmation	<p>If “confirmation” is set to “yes”, then a notification will be sent when the remote party received the SMS. Usage example:</p> <pre data-bbox="432 1088 1262 1155">{ "number": "353634643", "msg": "6B656C6C6F", "unicode": "0", "confirmation": "yes" }</pre> <p>Note that setting the confirmation field overrides the default setting in the SMS configuration screen in the HMC.</p>

## The Reply

The reply for the above message (with only the mandatory fields) would be

```
{"client_id": "id1", "unicode": "0", "msg": "6B656C6C6F", "reply": "proceeding", "number": "6453298", "msg_id": 3432}
```

Table 9 on page 89 describes the reply fields and their meaning:

**Table 9: Reply Fields for Send SMS Request**

Field Name	Field Meaning
client_id	The ID of the client who issued the request
msg_id	The ID of the request
unicode	The encoding type that was requested
reply	<p>The status of the message. Possible values are:</p> <ul style="list-style-type: none"> <li>“<b>proceeding</b>”: The SMS has been queued for sending.</li> <li>“<b>error</b>”: There was an error sending the SMS. In this case another field named “error_code” will exist which will contain the error code for this reply. A detailed list of error codes is available in table Table 14, “Error Codes,” on page 100.</li> </ul> <p>Special attention should be given to the error code E8 (232). This indicates that the message queue of the SMS PRO gateway is full and no more messages can be accepted for delivery. In this case, the sending application should wait for a period of time until the queues are emptied by the server. The amount of time depends on the number of active SIM cards that can deliver the messages. It should be taken into account that the average throughput of 4 SIM cards (capacity of one cellular card) is about 1 outgoing SMS per second, though this can vary with different operators or network conditions.</p> <ul style="list-style-type: none"> <li>“<b>ok</b>”: The SMS was sent successfully.</li> <li>“<b>confirmation</b>”: A confirmation that the SMS has been received by the remote party. In this case another field will exist in the reply named “confirmation_val” and its value will be the confirmation code received from the network. A detailed list of confirmation codes is available in Table 15, “Confirmation Codes,” on page 105.</li> </ul> <p>In case the reply was “ok” or “error”, a field named “retry_num” will contain the number of attempts made until this result was achieved.</p>
number	The destination number that was requested
msg	The message that was requested to be sent

Note that the SIM channel through which the SMS will be sent depends on whether a linear or cyclic queue type was set in the SMS PRO Gateway configuration screen.

## Sending Bulk SMS

To send a large number of SMS with the same message to various destinations, use bulk mode. The following is a sample method for sending SMS in bulk mode:

```
{ "method": "start_bulk", "bulk_id": 453, "msg": "6B656C6C6F", "unicode": "0"
"queue_type": "master" }
```

**Table 10: Bulk SMS Message Fields**

Field Name	Field Meaning
"method": "start_bulk"	Indicates that a new SMS bulk session is requested.
"bulk_id": 453	Associates the ID 453 with this bulk. This ID can later be used for additional operations on this bulk.
"msg": "6B656C6C6F"	Associates the message "6B656C6C6F" (hello) with this bulk.
"msg_id"	See the sample bulk message below. This should be a unique ID. It is useful when a confirmation request is added since this message ID is returned in the confirmation and written to the CDR.

From this point on, when a message is sent to the SMS PRO Gateway with a bulk ID but without a message, the message associated with the bulk ID will be sent in the SMS to the destination number. A message that is part of a bulk will look like this:

```
{ "number": "6458965", "bulk_id": 453, "msg_id": 3212 }
```

The above will send the message "hello" to the number 6458965.

## Changing the Priority of Bulk Messages Already Sent

To change the priority of messages already sent to the server, use the method below. This sample will change the priority of bulk ID 453 to priority 4:

```
{ "method": "change_priority", "bulk_id": 453, "priority": 4 }
```

## Deleting an Entire Bulk

---

To remove all instances of a bulk message from the server, use the method below. This sample will remove bulk ID 453 from the server. Any existing messages belonging to this bulk that have not been already sent will be deleted.

```
{"method":"delete_bulk", "bulk_id":453}
```

## Moving a Bulk or SMS Queued to the Master Queue

---

The following will move all the messages queued on bulk ID 453 to the master queue (see Queue Type on page 87). If the master queue was empty, then all previous processing of the regular queue will pause and processing of this bulk will begin immediately.

```
{"method":"move_to_master" , "bulk_id":453}
```

## Removing a Bulk from the Master Queue

---

Use the following method to remove a bulk from the master queue and return it to the standard queue:

```
{"method":"remove_from_master", "type":"bulk", "id":4343}
```

## Closing a Bulk Session

---

Following this operation, no more messages can be sent with the ID of this bulk. There are two methods for closing a bulk:

- `"end_bulk"`, This will close a bulk session but will not delete the bulk until all the pending messages in the bulk have been sent by the gateway. Example:

```
{"method":"end_bulk", "bulk_id":453}
```

- `"stop_bulk"`, This will immediately delete a bulk session, including all pending messages for this bulk. Example:

```
{"method":"stop_bulk", "bulk_id":453}
```

## SMS Event Notifications

It is possible to receive notifications whenever an SMS is sent from the gateway or received by the gateway. When registering for incoming or outgoing SMS notifications, any such event will be sent to the client and will include the full details of the SMS.

The following table shows the commands for registering and unregistering for SMS events:

**Table 11: Registering and Unregistering SMS Event Notifications**

Command (gateway reply for success in green)	Effect
<pre>{"method": "register_for_incoming_sms"} {"reply": "ok", "method_reply": "register_for_incoming_sms"}</pre>	Start receiving CDR notifications for incoming SMS
<pre>{"method": "register_for_outgoing_sms"} {"reply": "ok", "method_reply": "register_for_outgoing_sms"}</pre>	Start receiving CDR notifications for outgoing SMS
<pre>{"method": "unregister_for_incoming_sms"} {"reply": "ok", "method_reply": "unregister_for_incoming_sms"}</pre>	Incoming SMS CDR notifications will no longer be received
<pre>{"method": "unregister_for_outgoing_sms"} {"reply": "ok", "method_reply": "unregister_for_outgoing_sms"}</pre>	Outgoing SMS CDR notifications will no longer be received

Below is an example of an incoming SMS event notification

```
{"direction": "in", "notification": "cdr", "port_num": "2", "number":
"+972547893166", "datetime": "2009-09-21 15:07:04", "card_add": "21",
"message": "GOOD"}
```

The incoming SMS in the next example contains also Unicode characters

```
{"direction": "in", "notification": "cdr", "port_num": "2", "number":
"+972547893166", "datetime": "2009-09-21 15:23:29", "card_add": "21",
"message": "Hypermedia \u05d9\u05d5\u05e4\u05d9"}
```

The following is an example of a notification of an outgoing SMS event (as a result of registering for outgoing SMS notifications):

```
{"direction": "out", "notification": "cdr", "msg_id": "Unknown", "port_num":
```

```
"2", "number": "0521111111", "retry_num": 0, "datetime": "2009-09-17
17:40:21", "result": "Err-0015", "client_id": "232", "card_add": "21",
"message": "GOOD", "sending_time": "00:00:03"}
```

The following table shows the fields that exist in SMS notification messages and their meaning:

**Table 12: SMS Event Notification Fields**

Field	Applies to	Meaning
direction	Both incoming and outgoing	Direction of traffic: "in" for notification of an incoming SMS, "out" for a notification of an outgoing SMS
notification	Both incoming and outgoing	Notification type. For SMS CDR, event notifications will always be of type "cdr".
msg_id	Outgoing only	The message ID that was set for the SMS send request. If no ID was set, the value will be Unknown.
port_num	Both incoming and outgoing	Which SIM channel number (1 to 4) was used to receive or send the message.
number	Both incoming and outgoing	For incoming messages: -the CLI of the sender of the SMS (number from which the SMS was sent). For outgoing messages -the DDI of the SMS (the number to which the SMS was sent).
datetime	Both incoming and outgoing	For incoming messages: the date and time when the SMS was received by the gateway. For outgoing messages: the date and time the message was sent

**Table 12: SMS Event Notification Fields**

Field	Applies to	Meaning
result	Outgoing only	<ul style="list-style-type: none"> <li>• "ok" if no errors</li> <li>• The string "Err-" followed by the zero padded error code (a detailed list of error codes is available in table 4.1)</li> <li>• The string "Confirmation_val-" followed by the confirmation code (see Table 15, "Confirmation Codes," on page 105)</li> </ul>
client_id	Outgoing only	The ID of the client who initiated the SMS send.
card_add	Both incoming and outgoing	<p>The internal address of the slot (in hex). 21 represents the first slot from the left, 22 the second, etc.</p> <p>In a cascaded configuration (two connected devices), the first slot from the left of the first device is at address 21 and the first slot from the left of the second device is at address 31.</p>
message	Both incoming and outgoing	The SMS content. If it contains Unicode characters then each of those characters will be represented by the prefix "\u" followed by four hexadecimal digits.
retry_num	Outgoing only	The number of attempts that were required to send the message.

## HTTP Notifications

It is possible to receive incoming or outgoing SMS notifications via HTTP. The following two PHP scripts show the HTTP GET parameters that are sent to the URLs for incoming and outgoing SMS respectively (see “URLs for SMS Notification” on page 50).

Note that the variable names are identical in syntax and meaning to the field names in the SMS event notifications (see “SMS Event Notifications” on page 92).

### 2.7.1 HTTP GET variables for Incoming SMS

```
<?php
print "datetime-" . $_GET["datetime" ] . " | ";
print "number-" . $_GET["number" ] . " | ";
print "message-" . $_GET["message" ] . " | ";
print "card_add-" . $_GET["card_add" ] . " | ";
print "port_num-" . $_GET["port_num" ] . " | ";
?>
```

### 2.7.2 HTTP GET variables for Outgoing SMS

```
<?php
print "datetime-" . $_GET["datetime" ] . " | ";
print "number-" . $_GET["number" ] . " | ";
print "message-" . $_GET["message" ] . " | ";
print "card_add-" . $_GET["card_add" ] . " | ";
print "port_num-" . $_GET["port_num" ] . " | ";
print "result-" . $_GET["result" ] . " | ";
print "retry_num-" . $_GET["retry_num" ] . " | ";
print "msg_id-" . $_GET["msg_id" ] . " | ";
print "client_id-" . $_GET["client_id" ] . " | ";
print "sending_time-" . $_GET["sending_time" ];
?>
```

## Queue Related Operations

The following methods address aspects of the queue.

### Retrieve Queue Status and Size

---

To get the status of the queues in the gateway, issue the following method:

```
{"method":"get_q_size"}
```

The following is an example of a queue status reply. Note that the reply is a single line – it has been indented here for clarity.

```
{"que_size":  
  { "priority_3": 1,  
    "priority_no":  
      { "Orange": 2, "Verizon": 0, "Cellcom": 2, "total_len": 4},  
    "priority_1": 1 },  
  "method_reply": "get_q_size"}
```

The reply shows the number of queued messages per each priority. Messages that were sent with no priority (the default) appear under the "priority\_no" field. Note that only "priority\_no" elaborates how many messages are queued for each group as well as the "total\_len" field which holds the sum of messages queued without priority.

The group details do not exist for other priorities since, as explained (see the priority field on page 87), there is no guarantee that a prioritized message will use the group that it was sent to. The priority is a best effort mechanism that uses the specified group only if it has free SIM channels or if no other SIMs are available.

If the current queue is the master queue then the following additional pair

```
"queue_type": "master"
```

 will also appear in the JSON reply.

### Deleting Queues

---

To remove all pending messages from the master queue, use the following method:

```
{ "method":"delete_queue", "queue_type":"master" }
```

To remove all pending messages from the regular queue, use the following method:

```
{"method":"delete_queue"}
```

**WARNING:** All messages that were kept in the queue will be lost.

## Pausing and Continuing the Gateway Operation

To cause the Gateway to stop sending messages, regardless of which queue they were added to, use the following method:

```
{ "method": "pause_server" }
```

The gateway will continue to accept requests to send out messages, but the messages will just accumulate on the queue.

To cause a Gateway that was paused using the `pause_server` method to resume sending messages pending in its queue, use the following method.

```
{ "method": "run_server" }
```

***Important Note:*** Both the `pause_server` and the `run_server` commands will work only if the SMS Gateway PRO's status is set to scheduled in the configuration page (see step 2 on 49).

## HTTP API

From version 2.0, the SMS PRO Gateway supports an HTTP API. This API is based on the JSON API described in previous sections. The parameters used are the same parameters as the JSON API, but instead of being encoded in JSON syntax, they are encoded as an HTTP GET or POST request.

The set of available HTTP commands is the same as the set of flat JSON commands, that is, all the JSON requests that do not have an inner hierarchy.

Unlike the JSON API, The HTTP API is not session based and therefore does not require registration and/or logging in. Instead, each command sent requires an additional parameter **server\_password** which specifies the password of the SMS PRO Gateway. This password is the same as the password needed for the JSON authentication command described in “Logging In” on page 80.

### Sending an SMS Using HTTP

---

The following example shows how to send an SMS.

*When using the HTTP API, the URL must be sent in Unicode UTF-8. The SMS PRO Gateway expects this format and converts it to the format in which the SMS will be sent (either UCS-2 or GSM 03.38).*

The example sends a “Hello” message to a mobile phone whose number is 6453298 using HTTP via an SMS PRO Gateway located at IP address 192.168.0.2:

```
http://192.168.0.2/cb/sms_http.php?
```

```
server_password=admin&msg=Hello&number=6453298
```

Notes:

- To send the message via a specific SIM card, add `&send_to_sim=21#1` after the number. The numbers indicate the model number and the card number.
- The HTTP parameters above correspond to the JSON command to send an SMS as shown in the first example in “Sending an SMS” on page 85, that is:  
`{"number":"6453298", "msg":"hello"}`
- If the unicode field (see Table 7, “Fields for Sending an SMS,” on page 86) is omitted—as in the above example—the SMS Gateway PRO will use a default code of 5, i.e. attempt to convert the message to GSM 03.38, and upon failure to do so will send the message using UCS-2.
- The **server\_password** value is the same as that of the `server_password` value that would have been set to log-in via the JSON authentication command (see “Logging In” on page 80).

## HTTP API Responses

---

Table 13 lists the possible responses to an HTTP SMS request:

**Table 13: Replies for an HTTP SMS Request**

<b>Reply</b>	<b>Explanation</b>
ERROR: <description>	Returned if an error is encountered, where <description> is a textual description of the nature of the error.
PROCEEDING	Returned when the command was successfully delivered to the SMS PRO Gateway and is in the process of being handled. For example, this is returned upon a successful submission of a send SMS request.
METHOD_REPLY <JSON content>	Returned when the command requests information that has a hierarchal structure, for example, the get_sim_config command. In this case, <JSON content> would contain the same reply which would have been returned had the command been issued using the JSON API.

## Error and Confirmation Codes

The following two tables list the error and confirmation codes that can be returned within SMS replies or notifications.

**Table 14: Error Codes**

<b>Code (Dec)</b>	<b>Code (Hex)</b>	<b>Meaning</b>
8	008	Operator determined barring. This cause indicates that the MS has tried to send a mobile originating short message when the MS's network operator or service provider has forbidden such transactions.
10	00A	Call barred. This cause indicates that the outgoing call barred service applies to the short message service for the called destination.
21	015	Short message transfer rejected. This cause indicates that the equipment sending this cause does not wish to accept this short message, although it could have accepted the short message since the equipment sending this cause is neither busy nor incompatible.
27	01B	Destination out of service. This cause indicates that the destination indicated by the Mobile Station cannot be reached because the interface to the destination is not functioning correctly. The term "not functioning correctly" indicates that a signaling message was unable to be delivered to the remote user; e.g., a physical layer or data link layer failure at the remote user, user equipment off-line, etc.
28	01C	Unidentified subscriber. This cause indicates that the subscriber is not registered in the PLMN (i.e. IMSI not known).
29	01D	Facility rejected. This cause indicates that the facility requested by the Mobile Station is not supported by the PLMN.
30	01E	Unknown subscriber. This cause indicates that the subscriber is not registered in the HLR (i.e. IMSI or directory number is not allocated to a subscriber).
31	01F	Normal unspecified. The GSM engine refused to send the message but no reason was stated. Note that this can also be the result of a message that was recently sent to the card, before a reply was received for the previous message.
34	022	Module Error. Module either has no SIM, no reception, is faulty or is still handling the sending of a previous message

**Table 14: Error Codes**

<b>Code (Dec)</b>	<b>Code (Hex)</b>	<b>Meaning</b>
38	026	Network out of order. This cause indicates that the network is not functioning correctly and that the condition is likely to last a relatively long period of time; e.g., immediately reattempting the short message transfer is not likely to be successful.
41	029	Temporary failure. This cause indicates that the network is not functioning correctly and that the condition is not likely to last a long period of time; e.g., the Mobile Station may wish to try another short message transfer attempt almost immediately.
42	02A	Congestion. This cause indicates that the short message service cannot be serviced because of high traffic.
47	02F	Resources unavailable, unspecified. This cause is used to report a resource unavailable event only when no other cause applies.
50	032	Requested facility not subscribed. This cause indicates that the requested short message service could not be provided by the network because the user has not completed the necessary administrative arrangements with its supporting networks.
69	045	Requested facility not implemented. This cause indicates that the network is unable to provide the requested short message service.
81	051	Invalid short message transfer reference value. This cause indicates that the equipment sending this cause has received a message with a short message reference which is not currently in use on the MS-network interface.
95	05F	Invalid message, unspecified. This cause is used to report an invalid message event only when no other cause in the invalid message class applies.
96	060	Invalid mandatory information. This cause indicates that the equipment sending this cause has received a message where a mandatory information element is missing and/or has a content error (the two cases are indistinguishable).

**Table 14: Error Codes**

<b>Code (Dec)</b>	<b>Code (Hex)</b>	<b>Meaning</b>
97	061	Message type non-existent or not implemented. This cause indicates that the equipment sending this cause has received a message with a message type it does not recognize either because this is a message not defined or defined but not implemented by the equipment sending this cause.
98	062	Message not compatible with short message protocol state. This cause indicates that the equipment sending this cause has received a message such that the procedures do not indicate that this is a permissible message to receive while in the short message transfer state.
99	063	Information element non-existent or not implemented. This cause indicates that the equipment sending this cause has received a message which includes information elements not recognized because the information element identifier is not defined or it is defined but not implemented by the equipment sending the cause. However, the information element is not required to be present in the message in order for the equipment sending the cause to process the message.
102	066	Timer expired. Sending failed due to a timeout, and during this time the GSM network didn't return any specific error code.
111	06F	Protocol error, unspecified. This cause is used to report a protocol error event only when no other cause applies.
127	07F	Interworking, unspecified. This cause indicates that there has been interworking with a network which does not provide causes for actions it takes; thus, the precise cause for a message which is being sent cannot be ascertained.
128	080	Telematic interworking not supported
129	081	Short message Type 0 not supported
130	082	Cannot replace short message
143	08F	Unspecified TP-PID error
144	090	Data coding scheme (alphabet) not supported
145	091	Message class not supported
159	09F	Unspecified TP-DCS error

**Table 14: Error Codes**

<b>Code (Dec)</b>	<b>Code (Hex)</b>	<b>Meaning</b>
160	0A0	Command cannot be auctioned
161	0A1	Command unsupported
175	0AF	Unspecified TP-Command error
176	0B0	TPDU not supported
192	0C0	SC busy
193	0C1	No SC subscription
194	0C2	SC system failure
195	0C3	Invalid SME address
196	0C4	Destination SME barred
197	0C5	SM Rejected-Duplicate SM
198	0C6	TP-VPF not supported
199	0C7	TP-VP not supported
208	0D0	D0 SIM SMS storage full
209	0D1	No SMS storage capability in SIM
210	0D2	Error in MS
211	0D3	Memory Capacity Exceeded
212	0D4	SIM Application Toolkit Busy
213	0D5	SIM data download error
224	0E0	Card reply timeout error
225	0E1	SIM reply timeout error (SMS PRO proprietary code)
226	0E2	Missing SIM (SMS PRO proprietary code)
227	0E3	The number was blocked by the ACR rules (SMS PRO proprietary code)
228	0E4	Timeout receiving a reply from the ACR (SMS PRO proprietary code)

**Table 14: Error Codes**

<b>Code (Dec)</b>	<b>Code (Hex)</b>	<b>Meaning</b>
229	0E5	Timeout attempting to connect to ACR (SMS PRO proprietary code)
230	0E6	An invalid format was given as the destination number (SMS PRO proprietary code)
231	0E7	No route was found by the ACR for the destination number (SMS PRO proprietary code)
232	0E8	Gateway message queue is full (SMS PRO proprietary code)
232	0E9	No matching group found for message (SMS PRO proprietary code)
240	0F0	SMPP: Invalid ESME Password (SMS PRO proprietary code)
241	0F1	SMPP: Bind Failed (SMS PRO proprietary code)
242	0F2	Message is too long (SMS PRO proprietary code)
243	0F3	Invalid message format, for example: content does not match encoding type (SMS PRO proprietary code)
255	0FF	Unspecified error cause
300	12C	ME failure
301	12D	SMS service of ME reserved
302	12E	Operation not allowed
303	12F	Operation not supported
304	130	Invalid PDU mode parameter
305	131	Invalid text mode parameter
310	136	SIM not inserted
311	137	SIM PIN required
312	138	PH-SIM PIN required
313	139	SIM failure
314	13A	SIM busy
315	13B	SIM wrong
316	13C	SIM PUK required

**Table 14: Error Codes**

<b>Code (Dec)</b>	<b>Code (Hex)</b>	<b>Meaning</b>
317	13D	SIM PIN2 required
318	13E	SIM PUK2 required
320	140	Memory failure
321	141	Invalid memory index
322	142	Memory full
330	14A	SMSC address unknown
331	14B	No network service
332	14C	Network timeout
340	154	NO +CNMA ACK EXPECTED
500	1F4	Unknown error
512	200	MM establishment failure
513	201	Lower layer failure
514	202	CP error

**Table 15: Confirmation Codes**

<b>Code (Dec)</b>	<b>Code (Hex)</b>	<b>Meaning</b>
0	00	Short message received by the SME
1	01	Short message forwarded by the SC to the SME but the SC is unable to confirm delivery
2	02	Short message replaced by the SC
3-15	03-0F	Reserved
16-31	10-1F	Values specific to each SC
Temporary errors, SC still trying to transfer SM		
32	20	Congestion

**Table 15: Confirmation Codes**

<b>Code (Dec)</b>	<b>Code (Hex)</b>	<b>Meaning</b>
33	21	SME busy
34	22	No response from SME
35	23	Service rejected
36	24	Quality of service not available
37	25	Error in SME
38-47	26-2F	Reserved
48-63	30-3F	Values specific to each SC
Permanent errors, SC is not making any more transfer attempts		
64	40	Remote procedure error
65	41	Incompatible destination
66	42	Connection rejected by SME
67	43	Not obtainable
68	44	Quality of service not available
69	45	No interworking available
70	46	SM Validity Period Expired
71	47	SM Deleted by originating SME
72	48	SM Deleted by SC Administration
73	49	SM does not exist. The SM may have previously existed in the SC but the SC no longer has knowledge of it or the SM may never have previously existed in the SC.
74-79	4A-4F	Reserved
80-95	50-5F	Values specific to each SC
Temporary errors, SC is not making any more transfer attempts		
96	60	Congestion
97	61	SME busy

**Table 15: Confirmation Codes**

<b>Code (Dec)</b>	<b>Code (Hex)</b>	<b>Meaning</b>
98	62	No response from SME
99	63	Service rejected
100	64	Quality of service not available
101	65	Error in SME
102-105	66-69	Reserved
106-111	6A-6F	Reserved
112-127	70-7F	Values specific to each SC



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