
MultiModem® iSMS

Intelligent SMS Server

Models: SF 100-G

SF 400-G

SF 800-G

User Guide for System Administrators



MultiModem® iSMS**User Guide for Administrators****Models: SF 100, SF 400, SF 800****Document S000461B****Copyright © 2010**

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A	08/21/09	Initial release of SF 400 and 800.
B	09/02/10	Release of 1.44 version.

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Chapter 1 – Safety Information and Product Description

The Multi-Tech iSMS is an intelligent Short Message Services (SMS) server that empowers businesses with the ability to broadcast and receive SMS text messages with a click of a button. The ready-to-use solution simply plugs into the Ethernet network and connects to the wireless network via an integrated quad-band GSM modem. Now anyone on the network can broadcast messages allowing organizations to reach clients, subscribers, members and prospects in real-time via SMS.

Safety Warnings

Ethernet Port Caution

The Ethernet port is **not** designed to be connected to a Public Switched Telecommunication Network (PSTN).

Handling Precautions

All devices must be handled with certain precautions to avoid damage due to the accumulation of static charge. Although input protection circuitry has been incorporated into the devices to minimize the effect of this static build up, proper precautions should be taken to avoid exposure to electrostatic discharge during handling and mounting.

Before servicing any part of the MultiModem iSMS system, read the instructions and cautions in this section. This information explains how to work safely when servicing product. Observe the following safety precautions when setting up the equipment:

- Follow all cautions, warnings, and instructions.
- Ensure that the voltages and frequency rating of the power receptacle match the electrical rating label on the equipment.
- Never push or attach objects of any kind through openings inside the equipment. Object may touch dangerous voltage points or short components, resulting in fire or electric shock.

Caution: Maintain a separation distance of at least 20 cm (8 inches) between the transmitter's antenna and the body of the user or nearby persons. The modem is not designed for, nor intended to be, used in applications within 20 cm (8 inches) of the body of the user.

Ship Kit Contents

The MultiModem iSMS ship kit contains the following items:

- One MultiModem iSMS
- Power Supply (**SF 100**) -or- Power Cord (**SF 400/800**)
- RJ-45 Ethernet Cable
- Cellular Antenna (not included with all models)
- One MultiModem iSMS CD which contains MultiModem iSMS documentation in PDF format

If any of the items is missing or damaged, please contact Multi-Tech Systems, Inc.

MultiModem iSMS Documentation

User Guides

All product documentation is available on your product CD and also the Multi-Tech website:

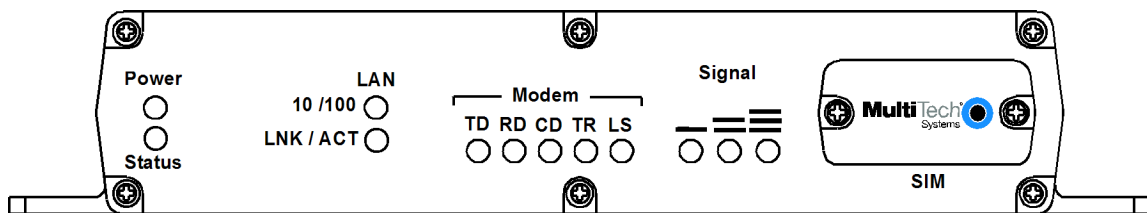
<http://www.multitech.com/man.go>

AT Commands

AT commands used to configure this product are published in a separate reference guide and included on the MultiModem iSMS CD as well as being posted on the Multi-Tech web site. See the GPRS AT Commands Reference Guide at either location.

Front and Back Panels

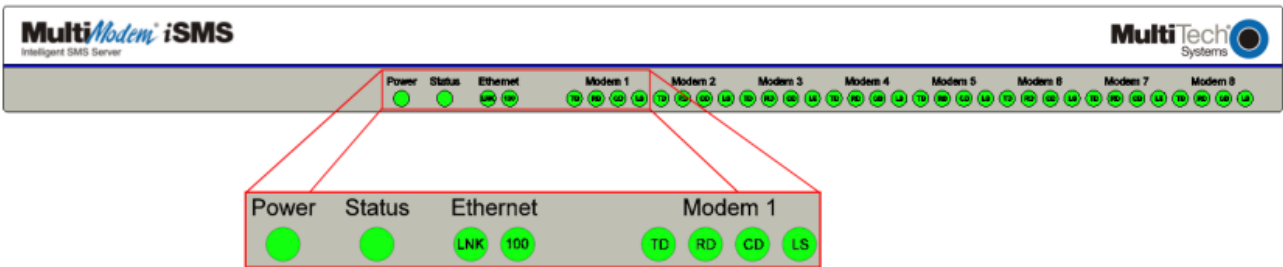
SF 100 Front Panel



SF 100 Front Panel LEDs

LEDs	Description
Power	Lights when power is being supplied to the MultiModem iSMS.
Status	When functioning normally, the LED blinks. The LED is a solid light when the unit is booting up, saving the configuration, restarting, or updating the firmware.
LAN 10/100	Lights when a successful connection to the 100BaseT LAN is established. Off when connected at 10BaseT.
LAN LNK / ACT	Lights when the LAN port has a valid Ethernet connection. Blinks when it is receiving or transmitting data.
Modem	TD TRANSMIT DATA. This LED blinks when the modem is transmitting data to your wireless carrier. RD RECEIVE DATA. This LED blinks when the modem is receiving data from your wireless carrier. CD CARRIER DETECT. This LED lights when the modem detects a valid carrier signal from a wireless carrier. TR (DATA) TERMINAL READY. This LED lights when the modem is trying to establish a wireless connection. LS LINK STATUS. This LED flashes once every 3 seconds when network registration is successful. This LED is on constant if the network registration is invalid, if a network signal is not detected or if a SIM card is not installed in the modem.
Signal	Indicates the wireless signal strength. See the Signal Strength section in this chapter.
SIM	Location of the SIM card.

SF 400/800 Front Panel



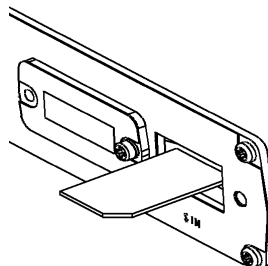
SF 400/800 Front Panel LEDs

LEDs	Description
Power	Lights when power is being supplied to the MultiModem iSMS.
Status	When functioning normally, the LED blinks. The LED is a solid light when the MultiModem iSMS is booting up, saving the configuration, restarting, or updating the firmware.
Ethernet 100	Lights when a successful connection to the 100BaseT LAN is established. Off when connected at 10BaseT.
Ethernet LNK	Lights when the LAN port has a valid Ethernet connection. Blinks when it is receiving or transmitting data.
Modem n	TD TRANSMIT DATA. This LED blinks when the modem is transmitting data to your wireless carrier. RD RECEIVE DATA. This LED blinks when the modem is receiving data from your wireless carrier. CD CARRIER DETECT. This LED lights when the modem detects a valid carrier signal from a wireless carrier. LS LINK STATUS. This LED flashes once every 3 seconds when network registration is successful. This LED is on constant if the network registration is invalid, if a network signal is not detected or if a SIM card is not installed in the modem.

SF 100 SIM Card Installation

A SIM (Subscriber Identity Module) card is required in order for the MultiModem iSMS to operate on a GPRS network. To install the SIM card:

1. Remove power from the unit before proceeding.
2. Use a small screwdriver to remove the screw closest to the outside edge of the MultiModem iSMS. Then swing the SIM slot cover up and over to the left.
3. Insert the SIM card into the SIM card slot. The following graphic shows a partial front panel illustrating the correct SIM card orientation.



4. Swing the cover back to its original placement and replace the screw. Reattach the power supply.

SF 400/800 SIM Card Installation

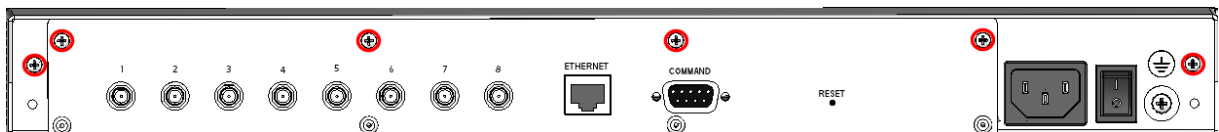
SIM (Subscriber Identity Module) cards are required for the MultiModem iSMS to operate on a GPRS network. To install the SIM cards:



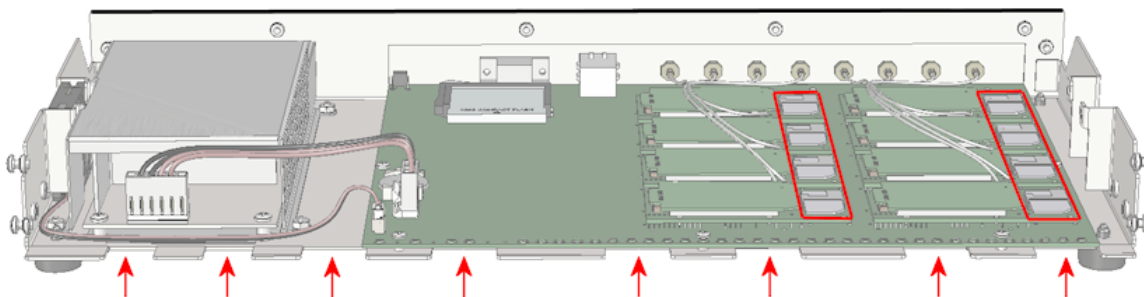
1. Power off the unit and unplug the power cord. Do not under any circumstances remove protective power supply cover. Harmful voltages may be exposed if cover is removed, and can lead to electrical shock and or death.



2. Electrostatic discharge (ESD) is the release of stored static electricity that can damage electrical circuitry or components. Static electricity is often stored in your body, and discharged when you come in contact with an object of a different potential.
Perform the procedure below (removal of chassis cover) described in this section only at an ESD workstation using an antistatic wrist strap. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal ground screw (lug) next to power switch of MultiModem iSMS chassis.
3. Use a small screwdriver to remove the six (6) screws on the back of the MultiModem iSMS as shown by the red circles below. Then lift the top cover from the back of the unit and then slide towards the front to remove.



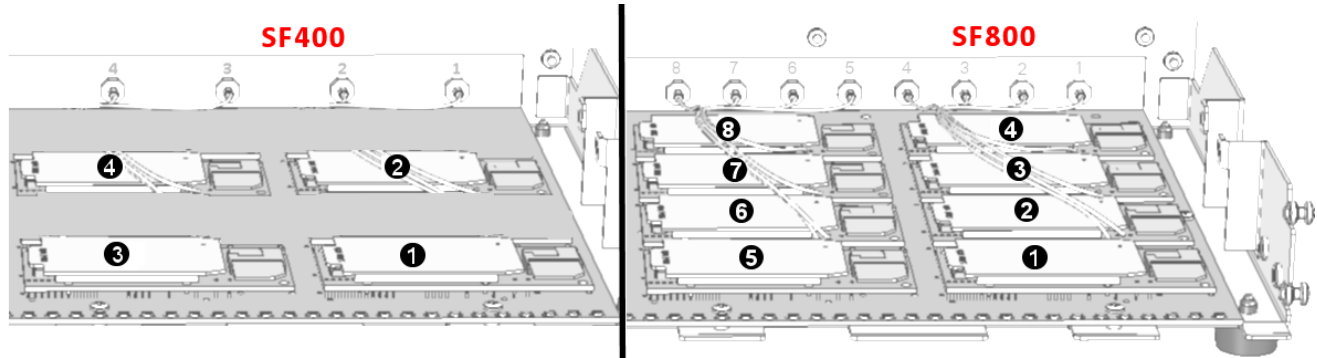
4. Insert the SIM cards into the SIM card slots on the internal wireless modems. Each modem has a graphic line depicting the correct SIM card orientation. These receptacles are highlighted by the two red boxes in the illustration below (SF 800 model shown).



5. To re-attach the cover, start with the cover tilted up and align the “teeth” with the gaps between those on the bottom of the chassis as shown by the red arrows in the illustration above.
6. Rotate the cover down and push towards the rear of the unit until it is flush.
7. Insert the six (6) screws back in to the unit and tighten.

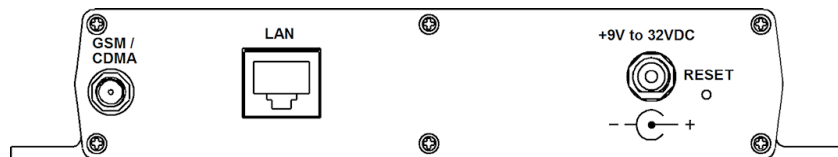
Modem Numbering

When using the Web interface, the modem tabs correspond to the internal modems with the numbering scheme shown below. The row of LEDs shows where the front of the unit is. Unpopulated modems should be disabled as described in Network Setup.

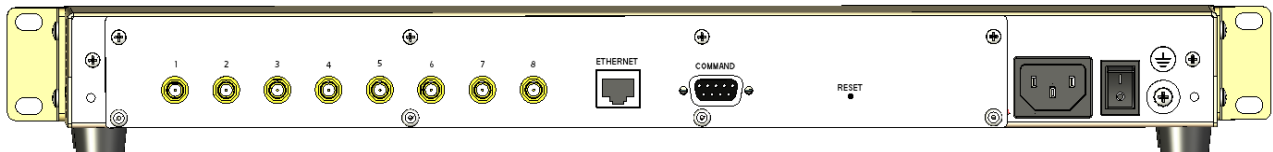


Back Panels

SF 100



SF 400/800

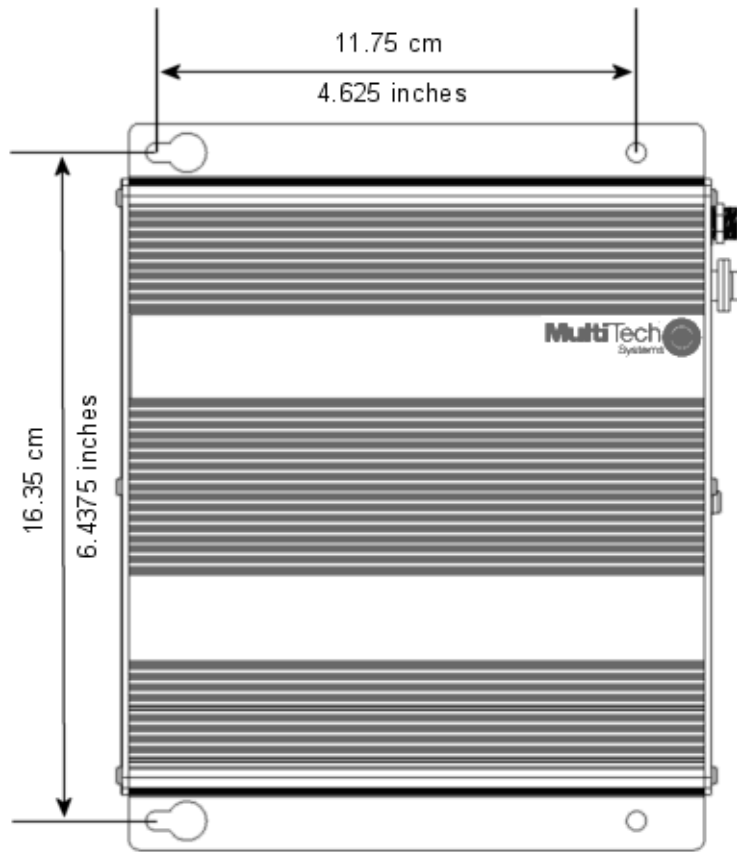


Back Panel Connectors

Connector	Description
GSM Antenna Connector (s): 1 for the SF 100; 1 – 4 for the SF 400; 1 – 8 for the SF 800	SMA (female) antenna connector for a cellular antenna. Note: One antenna must be attached for each internal modem in order for them to be operational.
Ethernet (LAN for the SF 100)	The LAN (SF 100) / Ethernet (SF 400/800) port connects the MultiModem iSMS to your Ethernet network-connected PC.
+9V to 32VDC	[SF 100 only] The SF 100 power source can range from 9 volts to 32VDC.
Power Receptacle	[SF 400/800 only] Connection for standard power cord (provided).
COMMAND	[SF 400/800 only] A DE9 port for direct command access to the SF 400/800.
Reset .	The Reset button resets the unit to factory settings, which includes deleting any existing Address Book entries, SMS User account entries and any sent or received SMS history. This Reset is the same as performing the "MultiModem iSMS Factory Defaults" option found in the Administration menu. Press and hold the Reset button until the Status LED turns off, and then release it. Do not press this button unless you want to restore all settings

Panel Mounting (SF 100)

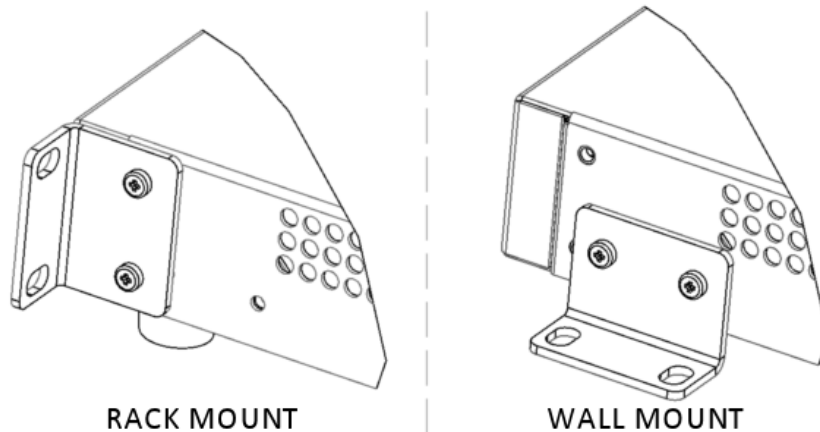
The SF 100 model can be panel mounted with screws spaced according to the measurement shown.



Note: Use either #6 or #8 pan head screws for all four mount locations.

Rack or Wall Mounting (SF 400/800)

The MultiModem SF 400/800 units can be rack (or wall) mounted with screws using the mounting brackets.



Rack Mounting

Ensure proper installation of the unit in a closed or multi-unit enclosure by following the recommended installation as defined by the enclosure manufacturer. Do not place the unit directly on top of other equipment or place other equipment directly on top of the unit. If installing the unit in a closed or multi-unit enclosure, ensure adequate airflow within the rack so that the maximum recommended ambient temperature (50° C) is not exceeded. Ensure that the unit is properly connected to earth ground by verifying that it is reliably grounded when mounted within a rack. If a power strip is used, ensure that the power strip provides adequate grounding of the attached apparatus.

When mounting the equipment in the rack, make sure mechanical loading is even to avoid a hazardous condition. The rack used should safely support the combined weight of all the equipment it supports.

Ensure that the mains supply circuit is capable of handling the load of the equipment. See the power label on the equipment for load requirements.

This equipment should only be installed by properly qualified service personnel. Only connect like circuits - connect SELV (Secondary Extra Low Voltage) circuits to SELV circuits and TN (Telecommunications Network) circuits to TN circuits.

Note: The ambient temperature of the rack interior must not exceed 50° Celsius.

19-Inch Rack Enclosure Mounting Procedure

Attaching the MultiModem iSMS to the rail of an EIA 19-inch rack enclosure will likely require two persons. Essentially, the technicians must attach the brackets to the MultiModem iSMS chassis with the screws provided, as shown in the figure above, and then secure unit to rack rails by the brackets. Because equipment racks vary, screws for rack-rail mounting are not provided. Follow the instructions of the rack manufacturer and use screws that fit.

1. Position the right rack-mounting bracket on the MultiModem iSMS using the two vertical mounting screw holes.
2. Secure the bracket to the MultiModem iSMS using the two screws provided.
3. Position the left rack-mounting bracket on the MultiModem iSMS using the two vertical mounting screw holes.
4. Secure the bracket to the MultiModem iSMS using the two screws provided.
5. Remove feet (4) from the MultiModem iSMS unit.
6. Mount the MultiModem iSMS in the rack enclosure per the rack manufacture's mounting procedure.

Technical Specifications

Specifications	SF 100	SF 400/800																																																						
Hardware Interfaces	Network: 1 Ethernet 10/100BaseT	Network: 1 Ethernet 10/100BaseT Console: 1 serial RS-232																																																						
Wireless Modems	1 Quad Band GSM 850/900/1800/1900 MHz	4 or 8 Quad Band GSM 850/900/1800/1900 MHz																																																						
Dimensions	6.4” w x 1.2” h x 6” d (16.3 cm x 3.0 cm x 15.2 cm)	17.4” w x 1.75” h x 8.5” d (44.2 cm x 4.5 cm x 21.6 cm)																																																						
Weight	1.25 lbs. (.56 kg)	SF 400: 7.75 lbs. (3.52 kg) SF 800: 8.00 lbs. (3.64 kg)																																																						
Operating Temperature	+32° to +120° F (0° to +50° C) Note: UL listed @ +40° C (limited by power supply)	+32° to +120° F (0° to +50° C)																																																						
Humidity	20–90% non-condensing	20–90% non-condensing																																																						
Hardware Connectors	SIM connector: Standard 3V Antenna: RF 50 ohm SMA (female) Network: RJ-45 (female)	SIM connector: Standard 3V Antenna: RF 50 ohm SMA (female) Network: RJ-45 (female) Console: DE9 (female)																																																						
Power*	External Power Supply Input: 100-240Vac, 0.5A 50-60 Hz Output: 9VDC, 1.7A Power Consumption Maximum consumption is 0.95A at 9V <table><tr><td>Input 9v</td><td>Typical</td><td>Maximum</td><td>Peak</td></tr><tr><td>Current (A)</td><td>0.564</td><td>0.712</td><td>1.600</td></tr><tr><td>Watts</td><td>5.0</td><td>6.2</td><td></td></tr><tr><td>Input 20v</td><td>Typical</td><td>Maximum</td><td>Peak</td></tr><tr><td>Current (A)</td><td>0.276</td><td>0.330</td><td>0.700</td></tr><tr><td>Watts</td><td>5.5</td><td>6.6</td><td></td></tr><tr><td>Input 32v</td><td>Typical</td><td>Maximum</td><td>Peak</td></tr><tr><td>Current (A)</td><td>0.191</td><td>0.225</td><td>0.625</td></tr><tr><td>Watts</td><td>6.1</td><td>7.2</td><td></td></tr></table>	Input 9v	Typical	Maximum	Peak	Current (A)	0.564	0.712	1.600	Watts	5.0	6.2		Input 20v	Typical	Maximum	Peak	Current (A)	0.276	0.330	0.700	Watts	5.5	6.6		Input 32v	Typical	Maximum	Peak	Current (A)	0.191	0.225	0.625	Watts	6.1	7.2		Power Supply – (Universal Input) Input: 100-240Vac, 1.8 – 1.0 A 50/60 Hz SF400 / SF800: <table><tr><td>Input 120Vac</td><td>Typical</td><td>Maximum</td></tr><tr><td>Current (Amps)</td><td>0.078/0.126</td><td>0.105/0.150</td></tr><tr><td>Watts</td><td>9.20/15.04</td><td>12.44/17.94</td></tr><tr><td>Input 220Vac</td><td>Typical</td><td>Maximum</td></tr><tr><td>Current (Amps)</td><td>0.068/0.124</td><td>0.085/0.140</td></tr><tr><td>Watts</td><td>14.96/27.30</td><td>18.73/30.84</td></tr></table>	Input 120Vac	Typical	Maximum	Current (Amps)	0.078/0.126	0.105/0.150	Watts	9.20/15.04	12.44/17.94	Input 220Vac	Typical	Maximum	Current (Amps)	0.068/0.124	0.085/0.140	Watts	14.96/27.30	18.73/30.84
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Certifications and Approvals	CE Mark; R&TTE EMC Compliance: FCC Part 15 Class A; EN 55022 Class A; EN 55024; ACIF S042.1; ACIF S042.3 Radio Compliance: FCC Part 22, 24 EN 301 489-1; EN 301489-7; EN 301 511 RSS 132, 133, 102 Safety: cUL 60950-1; UL 60950-1; IEC 60950-1; AS/NZS 60950 Network Compliance: PTCRB, GCF	CE Mark; R&TTE EMC Compliance: FCC Part 15 Class A; EN 55022 Class A; EN 55024; ACIF S042.1; ACIF S042.3 Radio Compliance: FCC Part 22, 24 EN 301 489-1; EN 301489-7; EN 301 511 RSS 132, 133, 102 Safety: cUL 60950-1; UL 60950-1; IEC 60950-1; AS/NZS 60950 Network Compliance: PTCRB, GCF																																																						
Warranty	2 years	2 years																																																						

* Multi-Tech Systems, Inc. recommends that the customer incorporate a 10% buffer into their power source when determining product load.

Chapter 2 – Getting Started

Setting Up Your MultiModem iSMS

New MultiModem iSMS units come preconfigured with an IP address of 192.168.2.1 and a 24 bit subnet mask (255.255.255.000).

Before connecting your new MultiModem iSMS to your network and powering it up, identify the existing IP network numbering scheme of the target network. If the target network already implements a 192.168.2.xxx class C network, the unit's host IP address of 192.168.2.1 may conflict with an existing computer or device on the network. Additionally, advanced network configurations may block IP packets not of the current scheme. For example, if the current network configuration is 10.1.x.x/16, any IP packets not of this subnet will be blocked.

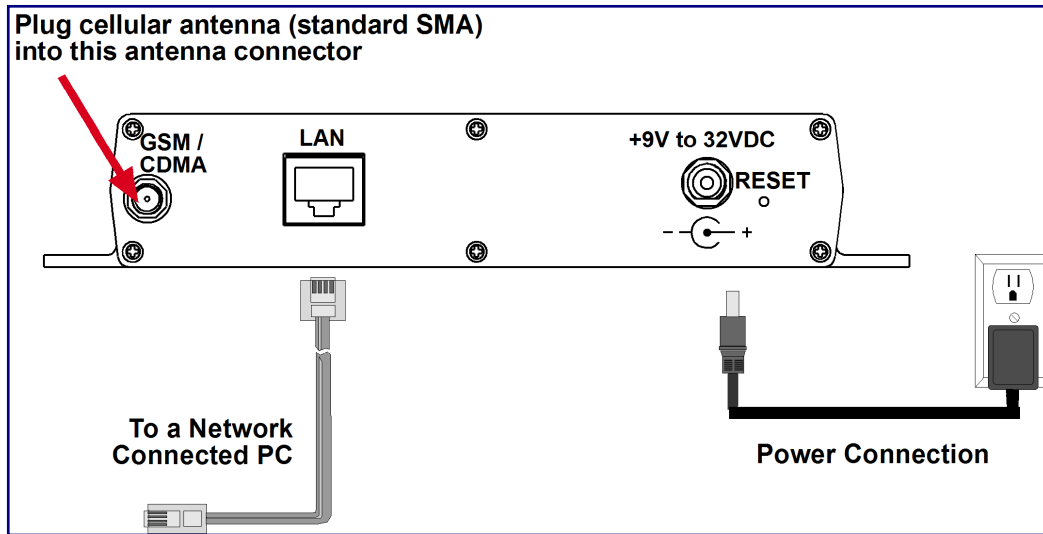
If either is the case, you will want to temporarily isolate a workstation (PC, Notebook, Mac, etc.) and the new MultiModem iSMS from the target network. Connect the Ethernet interface of the workstation directly to the Ethernet interface of the MultiModem iSMS. After configuring the MultiModem iSMS with appropriate IP network parameters (IP address, subnet mask, default gateway and DNS), it can then be connected to the target network.

Note: Be sure to perform a "Save to Flash" before powering off the unit, if you are physically moving the unit to a new location.

The MultiModem iSMS LAN connection is a full duplex, auto negotiating 10/100 MHz, auto polarity sensing Ethernet interface. You can use a traditional straight through RJ-45 Ethernet cable or a cross-over RJ-45 Ethernet cable when connecting to an Ethernet port on a hub or switch or when connecting directly to the Ethernet interface of a workstation. The LAN connection of the MultiModem iSMS does not support POE (Power over Ethernet) or 1GHz. These features may need to be disabled on the equipment/port that the MultiModem iSMS is connected to.

After your device is properly cabled, it must be configured. Basic cabling and TCP/IP directions are included below. See *Chapter 3* for basic configurations. See *Chapter 4* for advanced configurations.

SF 100 Cabling

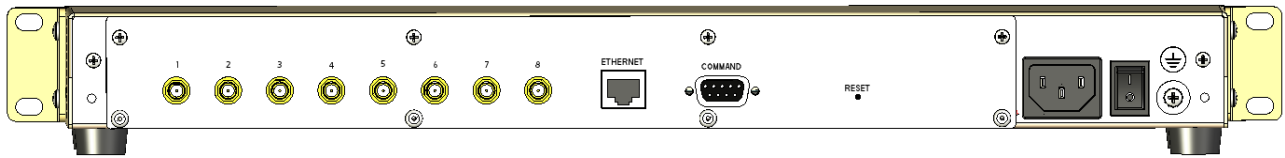


1. Plug one end of a RJ-45 cable into the LAN port on the MultiModem iSMS and the other end into your network or workstation interface.
2. Attach the cellular antenna.
3. Connect the provided power supply cable to the 9 volt power port on the back of the MultiModem iSMS, and plug the other end into an AC power outlet. The unit's front panel Status and LAN LEDs should report normally approximately 30 seconds after power is applied. Refer to Chapter 1, Front Panel LEDs.

Antenna Notes:

- Be sure to locate this appliance where there is wireless coverage.
- The antenna must be attached in order for the MultiModem iSMS to be operational.
- Maintain a separation distance of at least 20 cm (8 inches) between the transmitter's antennas and the body of the user or nearby persons. The product is not designed for, nor intended to be, used in applications within 20 cm (8 inches) of the body of the user.

SF 400/800 Cabling



1. Plug one end of a RJ-45 cable into the LAN port on the MultiModem iSMS and the other end into your network or workstation interface.
2. Attach the cellular antennas.
3. Connect the provided power supply cable to the 9 volt power port on the back of the MultiModem iSMS, and plug the other end into an AC power outlet. The unit's front panel Status and LAN LEDs should report normally approximately 30 seconds after power is applied. Refer to Chapter 1, Front Panel LEDs.

Antenna Notes:

- Be sure to locate this appliance where there is wireless coverage.
- The antenna must be attached in order for the MultiModem iSMS to be operational.
- Maintain a separation distance of at least 20 cm (8 inches) between the transmitter's antennas and the body of the user or nearby persons. The product is not designed for, nor intended to be, used in applications within 20 cm (8 inches) of the body of the user.

Establishing TCP/IP Communication

An IP enabled Workstation with an Internet WEB Browser is needed to setup and manage the MultiModem iSMS.

Your workstation needs to be configured with a *192.168.2.x* IP address and subnet mask of *255.255.255.000*, to be able to communicate with a new (or factory defaulted) MultiModem iSMS (where *x* is *not* the number 0, 1, or 255, nor any other host number that may already be in use by another computer or device on the *192.168.2.x* subnet).

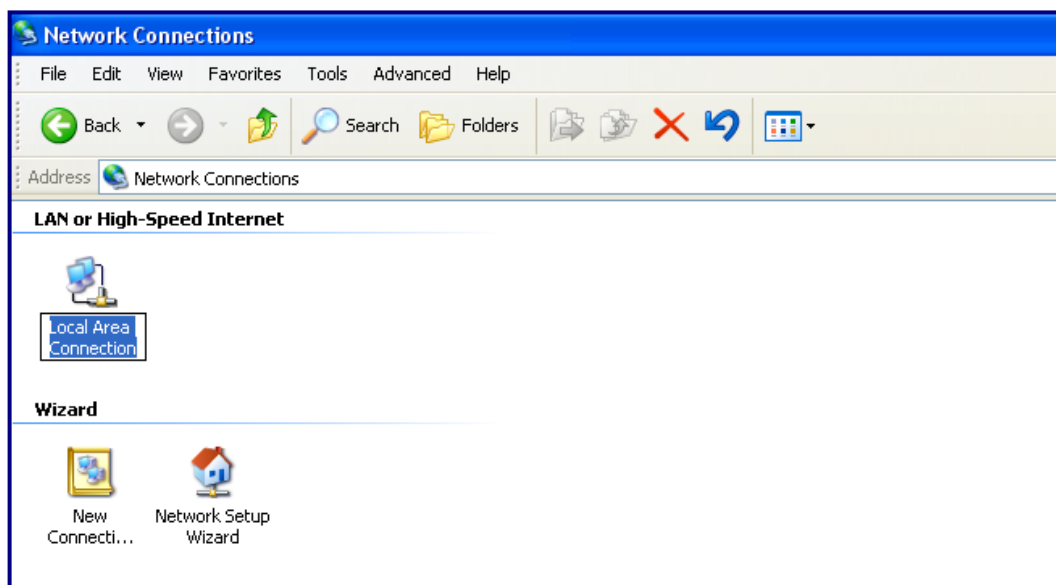
Note: When configuring your workstation with a 192.168.2.x IP address (either as an alias address or as the primary fixed address) and when the workstation is not separated by a router or firewall from the MultiModem iSMS (*i.e.* the units are on the same local network), the workstation does not need to be configured with a default gateway address (default route).

The following directions show how to setup a Windows XP workstation so the PC can communicate with the MultiModem iSMS.

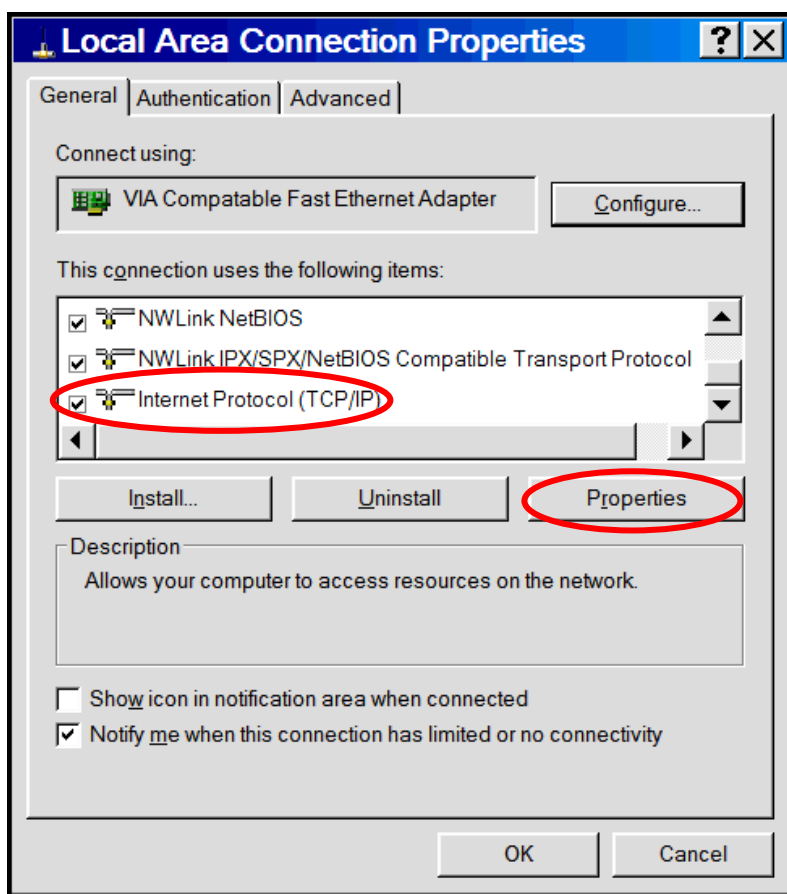
Setting a Fixed IP Address

1. Make the MultiModem iSMS connections as described previously in this chapter.
2. Click **Start | Settings | Control Panel**. Double-click the **Network Connections** icon.
3. The **Network Connections** screen displays. .

Right-click the **Local Area Connection** icon and choose **Properties** from the drop down list.

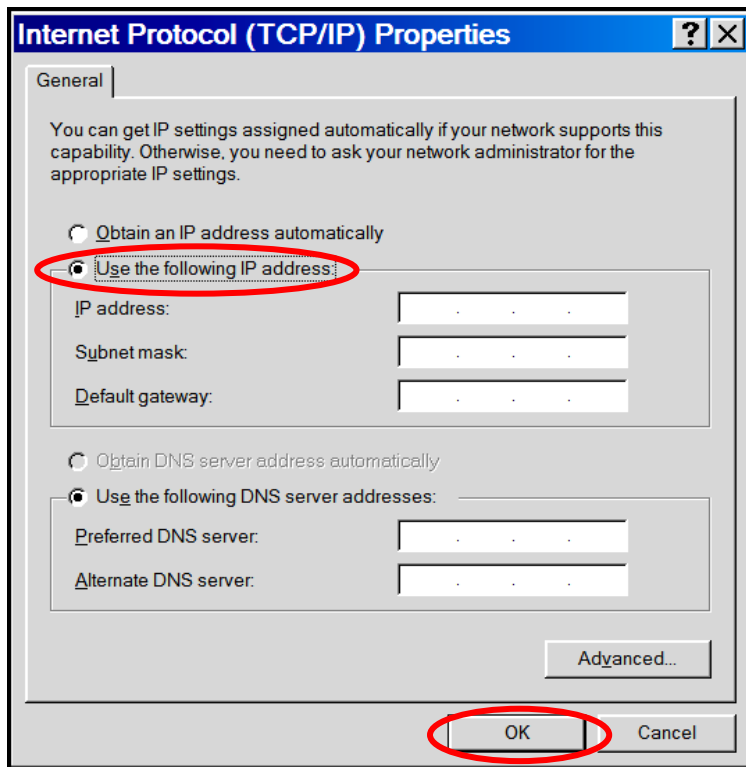


4. The **Local Area Connection Properties** dialog box displays.



- Select **Internet Protocol [TCP/IP]**.
- Click the **Properties** button. The **Internet Protocol (TCP/IP) Properties** screen displays.

5. The **Internet Protocol (TCP/IP) Properties** screen.



Important Note: If this screen opens and displays your current IP configuration, we suggest you record this information for future reference (*i.e.*, after the MultiModem iSMS is configured, you may wish to return this PC to its original settings).

- To set a Fixed IP Address for the workstation, select **Use the following IP address.**
 - * Enter the workstation **IP Address**. Example: 192.168.2.x.
Note: The **x** in the address cannot be the number 0, 1, 255 or any number already in use by a computer or device on this network.
 - * Enter the workstation **Subnet Mask** 255.255.255.0
 - * Enter the workstation **Default Gateway**. This can be left blank when the MultiModem iSMS is on the same network and subnet.
Note: The workstation settings must be in the same subnet range as the MultiModem iSMS.
 The factory default settings for the MultiModem iSMS are:
IP Address: 192.168.2.1
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.2.2
- **Use the following DNS server addresses.**
 - * For initial communication with the MultiModem iSMS, DNS information is not needed. These settings can be left as is.
 - * Click **OK**.
- Close the **Local Area Properties** screen by clicking **OK**.
- Close the **Control Panel**.

Obtaining and Activating a Wireless Account

Before you can use the cellular feature, you must obtain a GSM wireless account with an activated SIM card capable of sending SMS text messages through your service provider. Then activate the account by installing the SIM into the MultiModem iSMS. Please see the wireless account **Activation Notice** located on the MultiModem iSMS CD; follow the directions to complete the activation of your account.

Important Note About Service Provider Fees

Your service provider will charge you for your data usage. Please check with your provider to make sure you are aware of the charges.

Your MultiModem iSMS can be used to send a large number of SMS messages very quickly, and, as such, you should have a contract/plan that accounts for the numbers of messages you are likely to send. Multi-Tech is not responsible for any charges relating to your cellular bill.

Direct Communication to the Cellular Modem

You may want to communicate directly to the cellular modem verify network registration, and/or troubleshooting your connection. To do this, open a Telnet connection to the MultiModem iSMS, specifying port 5000. This will provide AT command line access to the first GPRS modem in the MultiModem iSMS. Use the AT commands* to determine cellular connection status.

*See the *GPRS AT Commands Reference Guide* for additional information.

Note: If your SIM card is locked, you cannot send SMS messages.

Signal Strength

Signal Strength Command

To View Strength

For the SF 400/800 models without signal LEDs, signal strength can be determined by using the following AT command: **AT+CSQ**. This command is the default setting on the *Network Setup > Cellular Modem* screen. This works for the SF 100 as well.

AT Command Response Example

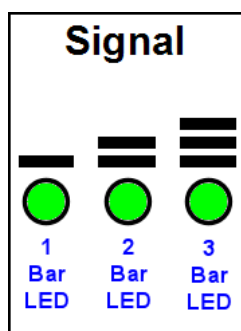
+CSQ: xx (For xx, see the values chart below)

Signal Strength Reference Table

The following table lists the meaning of the **xx** values in the signal strength response and explains how they correspond to the number of LEDs lit for signal strength.

AT+CSQ Values	Signal Strength	SF 100 Signal LED Bars
0 to 6	Very weak signal	No LEDs lit
7 to 14	Weak signal	1 Bar LED is lit
15 to 23	Stronger signal	1 Bar and 2 Bar LEDs are lit
24 to 31	Strongest signal	1 Bar, 2 Bar, 3 Bar LEDs are lit
99	Signal not detectable	No LEDs lit

SF 100 Signal Strength LEDs



Using AT Commands to Check Network Registration and Roaming Status

Use this command to verify that the cellular modem has been registered on a wireless network.

1. In the command window, type **AT+CREG?**
2. The modem will respond in one of the following ways:

Network Registration Verification	
Value	Network Registration Status
+CREG: 0,0	The modem is not registered on any network
+CREG: 0,1	The modem is registered on the home network
+CREG: 0,5	The modem is registered on a network and it is roaming

Note: If the modem indicates that it is not registered, verify the signal strength to determine if the problem is the strength of the received signal.

Chapter 3 – iSMS Basics and the Setup Wizard

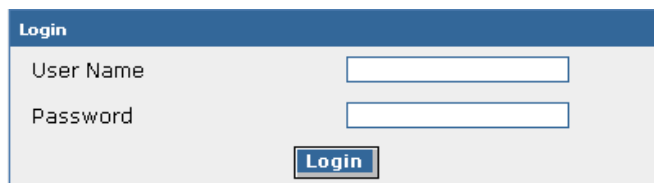
Starting the iSMS

Open a Web Browser

1. Be sure that the MultiModem iSMS is cabled and that the power is connected as shown in Chapter 2.
2. Then open a Web browser.
3. Type the IP address of your MultiModem iSMS in the address/location area of your browser:
http://192.168.2.1
4. Press **Enter**.

Login

The Login screen for the MultiModem iSMS Web Interface displays. The appearance of the Login screen proves that a TCP/IP communication path (network connection) has been established between your workstation's browser and the MultiModem iSMS SMS Server.



- Type **admin** (*admin* is the default user name) in the user name box.
- Type **admin** (*admin* is the default password) in the password box.
- Click **Login**.

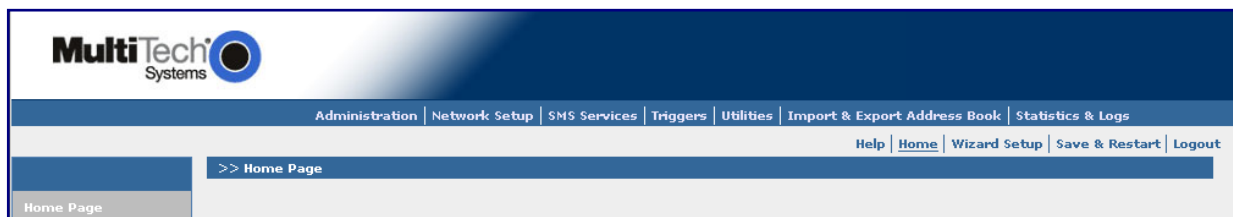
Note: The **User Name** and **Password** entries are case-sensitive (both must be typed in lower-case). The password can be up to 12 characters. Later, you will want to change the password from the default (**admin**) to something else. If Windows displays the **AutoComplete** screen, you may want to click **No** to tell the browser to **not** remember the password for security reasons.

Password Caution: Use a safe password! Your first name spelled backwards is not a sufficiently safe password; a password such as *xft35\$4* is better. It is recommended that you change the default password. Create your own password.

Web Interface Opens

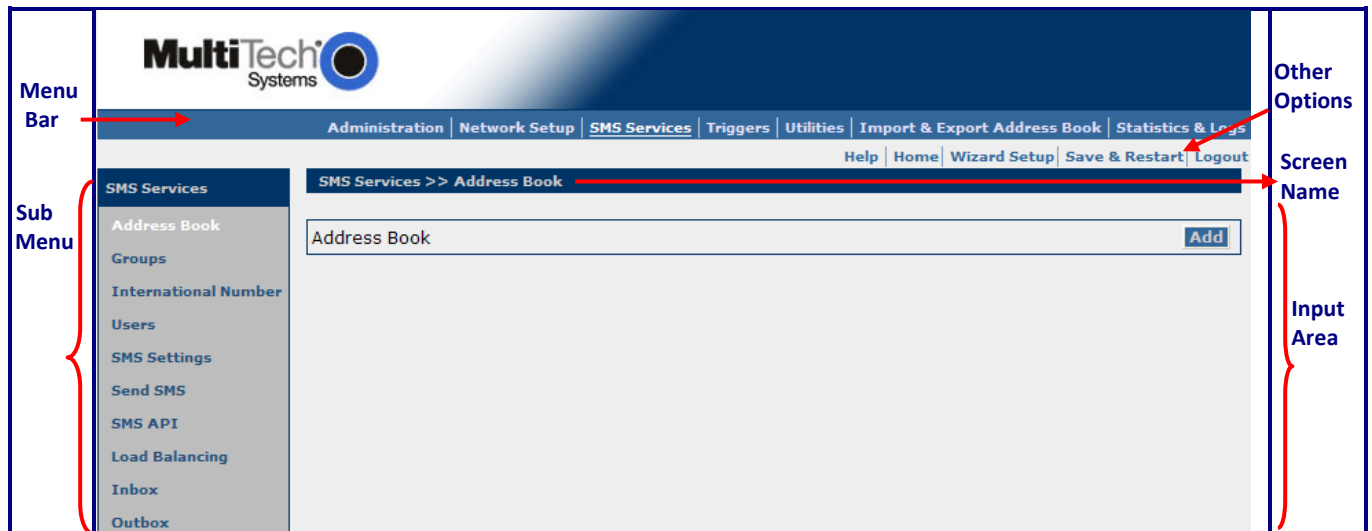
This is the Home screen of the Web management interface from which you can access all setup functions.

Note: Only the top portion of the Home screen is shown here.



Navigating the Screens

Before using the Web Interface, you may find the following information about navigating through the screens and the structuring of the menus helpful.



Menus

Each Menu bar selection has its own sub-menu, which displays on the left side of the screen. When you click one of the Main Menu choices, the first screen listed in the sub-menu displays. Choose other sub-menu options/screens by clicking on its name. The following is an example of the **Administration** sub-menu.

Administration
System Setup
SNTP Client
Admin Access
Allowed Networks
Remote Syslog
Tools
Factory Defaults

Table of Menus and Sub-Menus

Administration
System Setup – Set up the SMTP server for e-mail notifications, the names of individuals who will receive notifications, and the email ID for the notifications FROM line. SNTP Client – Set up the synchronization of the MultiModem iSMS clock to real time. Admin Access – Set up the administrator's password and set an automatic inactivity disconnection interval. Allowed Networks – Set the networks to be allowed access to the MultiModem iSMS unit. Remote Syslog – Configure the Remote Syslog status and server's IP. The default is <i>Disabled</i>. Tools – Reset the cellular modem, Cancel pending Send jobs. Factory Defaults – Reset all parameters to the original factory defaults.
Network Setup
IP Settings – Specify your LAN settings. Cellular Modem – Configure the cellular modem, and TCP access to the modem.
SMS Services
Address Book – Manually input names and phone numbers into the phone book. Groups – Create groups of names with their phone numbers. International Number – Enable or disable international numbers. Users – Set up users and their passwords. SMS Settings – Define default encoding type and periodic network re-registration. Send SMS – Send SMS messages by manually entering the message or using a message from the Preconfigured SMS list. SMS API – This page is divided into two sections: Send API and Receive API. Load Balancing – Configure multiple units to share traffic load. Inbox – View messages received. Outbox – View messages sent.
Triggers
Authentic List – A list of cellular phone numbers (mobile endpoints), derived from the address book, that are allowed to trigger a broadcast. Broadcast Triggers – Configure trigger (codes or words) and broadcast messages. Action Triggers – Create the triggers (codes or words) that dynamically configures (manages) certain databases via SMS. Pre-Configured SMS – Write and save pre-configured messages.
Utilities
Backup – Save MultiModem iSMS settings to a backup file. Firmware Upgrade – Get Web Management firmware upgrade files from Multi-Tech Systems, Inc.
Import & Export Address Book
Import Address Book – Import a CSV formatted address book that you want to use to set up your MultiModem iSMS. Export Address Book – Export the contents of the MultiModem iSMS Address Book into a CSV formatted file.
Statistics & Logs
System Information – View product model number, firmware version, MAC Address, number of Address Book entries and live system details. SMS Statistics – View SMS Statistics: Signal strength, number of messages in the inbox, number of message in the outbox, and number of messages sent. View Triggers Statistics: Number of broadcast triggers received, number of action triggers received, and number of broadcast triggers configured. Load Balancing Statistics – View statistics for the unit if load balancing is used. Log Traces – View SMS Logs: SMS Sent Log, SMS Received Log, SMS Failure Log, SMS Live Log. View Sent API Logs: Send API Status Log, Send API Failure Log, Send HTTP API Live Log, Send TCP API Live Log. View Receive API Logs: Receive API Live Log and Receive API Failure Log. View Load Balance Logs View System Logs: A log of all Web access attempts.

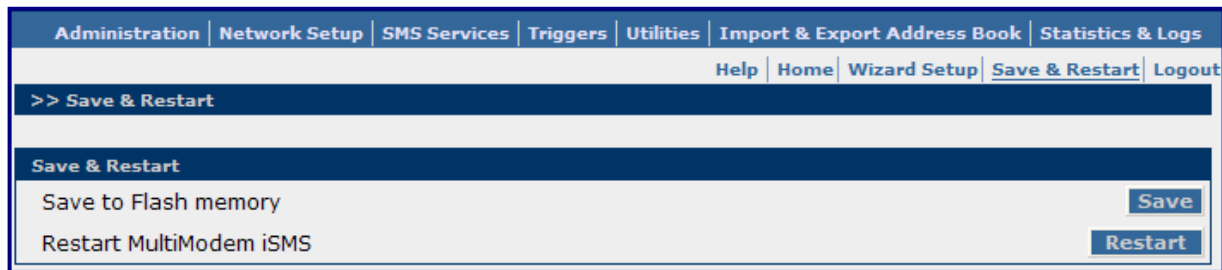
Saving System Configuration Changes

There are two types of save functions within the WEB Management menu system.

The first is a 'per feature' (per menu) save button. Most changes made per menu take effect immediately upon performing this save (but not all, some require a system restart). These are found individually in the Sub Menu input areas.

The second type is a system wide save function called "Save to Flash". Non default parameters (parameter changes you have made to suit your needs) will be lost upon restart if they have not been saved to the flash memory. After you have completed the setup of your MultiModem iSMS system, you will want to make sure your selections are permanently saved.

Save & Restart Button under Menu Bar



Save to Flash Memory

This is a system wide save function.

Upon system start up, system parameters are taken from what is stored in the unit's Flash Memory. After you have configured the unit for your needs, perform the "Save to Flash" function before the unit is to be restarted. Additionally, as changes are made to the Address Book, Groups, the User accounts, and Triggers (all living databases) the changes to them take effect immediately, but will be lost upon a restart if the Save to Flash is not performed before the restart.

Save

Click the Save button to save your **system settings** to the flash memory.

Restart

This is optional. You do not have to restart the MultiModem iSMS after saving to the flash memory.

Using the MultiModem iSMS Wizard Setup

Use the Wizard Setup for Quick Configuration

The Wizard Setup menu provides a convenient menu focused on the minimal setup requirements for a Users (web browser) based Send SMS environment. The Wizard Setup can be opened by clicking the words *Wizard Setup* located under the menu bar. The information entered here will default to other screens that require this information.

Note: For new units (units defaulted to factory settings), Received SMS is handled by our Receive API Polling feature. Additional features and functions can be set up using the complete Web Management interface.

Open the Wizard Setup Screen

After you have logged in, open the Wizard Setup screen by clicking on the words "Wizard Setup" located under the Menu Bar.

The screenshot shows the MultiTech Systems web interface. The top navigation bar includes links for Administration, Network Setup, SMS Services, Triggers, Utilities, Import & Export Address Book, and Statistics & Logs. The Wizard Setup screen is selected, showing a sidebar with 'Wizard Setup' and a main content area with three sections: LAN, Admin Password, and Import Address Book. The LAN section has input fields for IP Address (192.168.2.1), Subnet Mask (255.255.255.0), Default Gateway (192.168.2.2), Primary DNS, and Secondary DNS, with a Save button. The Admin Password section has input fields for Old password, New password, and Confirm password, with a Save button. The Import Address Book section has an Import button.

Settings – Enter the following network information to be used by your MultiModem iSMS. Currently saved LAN settings are displayed.

IP Address – Enter the new IP address the MultiModem iSMS needs to use.

Subnet Mask – Enter the subnet mask value to be used.

Default Gateway – Enter the IP address of your network's internet router / gateway.

Primary DNS – Enter the IP address of your network's primary DNS server.

Secondary DNS – Enter a secondary DNS IP Address (if any).

Save – Click the **Save** button.

Configuring the MultiModem iSMS Using the Wizard Setup

Admin Password – You should change the password immediately after initial installation and also change it regularly thereafter for security purposes.

Old Password – Enter the existing password (factory default is **admin**).

New Password – Enter new password of your choice.

Confirmation – Confirm your new password by re-entering it into this field.

Note: Please take the necessary steps to remember and keep a copy of the new admin password for future reference.

Import Address Book – Click the **Import** button. The *Import Address Book* screen displays.

Use this screen to upload a database of mobile endpoint contacts. Each contact entry in the CSV (comma separated values) formatted file is to have 4 values in this order: **firstname, lastname, description, phonenumber**.

Import Address Book

Select CSV file to Upload

Browse for the address file you want to use, and then click the **Upload** button once it is found.

Save & Restart

IMPORTANT Note About Saving System Settings

When you have completed entering your MultiModem iSMS settings and you are not going to enter any more configuration data, you must go to the Save & Restart menu and perform a Save to Flash. Saving to the Flash Memory saves the new settings in the flash prom and prevents the settings from getting lost at the next power up.

Save

Click the Save button to save your **system settings** to the flash memory.

Restart is Optional

This is optional. You do not have to restart the MultiModem iSMS after saving to the flash memory.

Chapter 4 – Using the MultiModem iSMS Web Interface

Now that you have completed the Wizard Setup, you can use the Web-based configuration and management interface to set up other SMS features and parameters. This chapter takes you screen-by-screen through the Web Interface.

Note: The antenna must be attached in order for the MultiModem iSMS to be operational.

IMPORTANT Note About Saving your Settings to Flash Memory

When you have completed your MultiModem iSMS settings, you must go to the **Save & Restart** menu located at the top of the window under the menu bar. Then click the Save to Flash save button. This will save all your system settings to flash memory and prevent them from being lost after a system restart.

Administration

Administration > System Setup

On the *System Setup* screen, you can set up the e-mail address of the administrator to whom e-mails are sent for event notification. The e-mail address must be entered in proper "user@domain" format.

The screenshot shows the MultiTech Systems MultiModem iSMS Web Interface. The top navigation bar includes links for Administration, Network Setup, SMS Services, Triggers, Utilities, Import & Export Address Book, and Statistics & Logs. The left sidebar lists various system setup options: System Setup, SMTP Client, Admin Access, Allowed Networks, Remote Syslog, Tools, and Factory Defaults. The main content area is titled "Administration >> System Setup" and contains the "E-Mail Notification" configuration section. This section includes fields for SMTP Server, Port (set to 25), SMTP Server Authentication (unchecked), Username, Password, and E-Mail Address. There are "Save" buttons for each of these sections. Below the E-Mail Address field is a "Configure E-Mail Notification" section with a table for events. The table has columns for "Don't Send E-Mail Notification for", "Action", and "Send E-Mail Notification for". The first row lists "Log File Full", "Invalid Telnet Login", and "Invalid Web Login" under the first column. The "Action" column has "Add >>" and "<< Delete" buttons. The "Send E-Mail Notification for" column has an empty text box. At the bottom, there is an "Admin Email Address" field with a "Save" button.

Don't Send E-Mail Notification for	Action	Send E-Mail Notification for
Log File Full Invalid Telnet Login Invalid Web Login	Add >> << Delete	

A Note About E-Mail Notification

E-Mail notification is delivered through the Ethernet network with an Internet connection, not through the wireless cellular connection.

E-Mail Notification

SMTP Server

Enter the IP address or the resolvable name (e.g. *smtp.yourdomain.com*) of your mail server.

Port

Enter the port number on which the mail server listens. Example: 25. Click the **Save** button.

SMTP Server Authentication

Some mail servers accept connection only after a user name and password are authenticated. If your server requires this, check the **SMTP Server Authentication** box. Then enter the User Name and Password in the next fields.

User Name

If your mail server accepts connection only after a user name and password are authenticated, enter the user name.

Password

If your mail server accepts connection only after a user name and password are authenticated, enter the password. Click the **Save** button.

E-Mail Address

Enter the e-mail addresses of the individuals to whom notifications regarding the log file being full, an invalid Telnet login, or an invalid Web login should be sent. In addition, the administrator may want use their office e-mail address, home e-mail address, etc. Enter the addresses in proper user@domain format. Click the **Save** button after each entry. An address can be deleted or changed at any time.

Note that at least one e-mail address must be entered in this field.

Configure E-Mail Notification

Select the types of notifications that you want sent to individuals listed above. Click the **Add** button. Each entry will then move to the **Send E-Mail Notification For** box. A notification can be removed by clicking the **Delete** button. The entry will then move back to the **Don't Send E-Mail Notification For** box.

The following are defaulted for **Don't Send E-Mail Notification**:

1. Log File Full
2. Invalid Telnet Login
3. Invalid Web Login

Administrator E-Mail ID

Enter the administrator's e-mail identification. This is the name/address that will display in the FROM line of the notification emails. This will allow the recipients of the notifications to direct questions or comments to the administrator. Enter the email ID in proper user@domain format. Click the **Save** button. The address can be deleted or changed at any time.

A Note about E-Mail Notification

E-Mail notification is delivered through the Ethernet network, not through the wireless cellular connection.

Administration > SNTP Client

Clicking the SNTP Client check box enables the SNTP client within the MultiModem iSMS. SNTP (Simple Network Time Protocol) is an internet protocol used to set up the synchronization of the unit's clock to real time.

Administration >> SNTP Client

SNTP Configuration

General Configuration

SNTP Client ☒

Server

Polling Time minute(s)

Time Zone Configuration

Time Zone

Time Zone offset [+/- hh:mm]

Daylight Configuration

Daylight Saving ☒

Daylight Saving offset minute(s)

Daylight Saving Start time

Start Ordinal

Start Month

Start Day

Start Time [hh:mm]

Daylight Saving End time

End Ordinal

End Month

End Day

End Time [hh:mm]

Save

SNTP Configuration

General Configuration

SNTP Client

Enable or disable the SNTP Client to contact the configured server on the UDP port 123 and set the local time. Default is **Enabled**.

A Note About the Outbox

In order for messages in the outbox to have a valid date/time stamp, do one of the following options:

- SNTP Client must be enabled and the Ethernet connection must be live to the Internet.

-or-

- Enter the MultiModem iSMS phone number on the **Network Setup > Cellular Modem** screen.

Server

Enter the SNTP server name or IP address to which the SNTP Client must contact in order to update the time. The default is **time.nist.gov**.

Polling Time

Enter the polling time at which the SNTP client requests the server to update the time. Default is 30 minutes. Time must be entered in minutes.

Time Zone Configuration**Time Zone**

Enter your time zone. Default = UTC (Universal Coordination).

The greenwichmeantime.com Web site has Time Zone information in detail or you can find a portion of the Time Zone abbreviations in Appendix E of this manual.

Time Zone Offset

Enter +/- hh:mm. Default = +06:00. Offset is the amount of time varying from the standard time of a Time Zone.

Daylight Configuration**Daylight Saving**

Enables/disables Daylight Saving mode. Default is Enable.

Daylight Saving Offset

Set the offset to use during Daylight Saving mode. Default is +60 minutes. Enter the time in + / - minutes. Offset is the amount of time varying from the standard time of a Time Zone.

Daylight Saving Start Time**Start Ordinal (Month, Day, Time)**

Set the start ordinal to use during Daylight Saving mode. Options are first/second/third/fourth/last. Default is second.

Daylight Saving time usually starts at the same time on the same day of the week in the same month every year. Each day of the week occurs four or five times a month. Therefore, you will be selecting the week in which daylight saving time starts: the first, second, third, fourth or the last of the month.

Start Month

Set the start month to use during Daylight Saving mode. The default is March.

Start Day

Set the start weekday to use during Daylight Saving mode. The default is Sunday.

Start Time

Set the start time to use during Daylight Saving mode. The default is 02:00 (hh:mm).

Daylight Saving End Time**End Ordinal (Month, Day, Time)**

Set the end ordinal to use during Daylight Saving mode. Select the week in which daylight saving time ends. Options are first/second/third/fourth/last. The default is first.

End Month

Set the end month to use during Daylight Saving mode. The default is November.

End Day

Set the end weekday to use during Daylight Saving mode. The default is Sunday.

End Time

Set the end time to use during Daylight Saving mode. The default is 02:00 (hh:mm).

Save Button

Click the **Save** button to save these settings.

Administration > Administrative Access

Use this screen to set up the password that will be used by the administrator and to set an automatic inactivity disconnection interval. Additionally, use this screen to define which TCP port the Web Management interface listens on.

Administration >> Admin Access

Change Password

Old password

New password

Confirm password **Save**

Web interface inactivity time out

Time Before Automatic Disconnect seconds **Save**

Administrative Access HTTP Port

Administrative Access HTTP Port **Save**

Change Password

Old Password, New Password, Confirm Password

To change the password, enter the existing password in the *Old Password* field, enter the new password into the *New Password* field, and confirm your new password by re-entering it into the *Confirm Password* entry field. Click the **Save** button.

Note: You should change the password immediately after initial installation and configuration, and also change it regularly thereafter.

Web Interface Inactivity Time Out

Time Before Automatic Disconnect

An automatic inactivity disconnection interval is part of this firmware for security purposes.

In the *Time Before Automatic Disconnect* entry field, enter the desired time span (in seconds) after which you will be automatically disconnected from the Web Interface if no operations take place.

- The default setting is 600 seconds (this should allow enough time to download the CSV file).
- The smallest possible setting is 30 seconds.
- The maximum setting is 3600 seconds.

Click the **Save** button.

Administrative Access HTTP Port

Specify the HTTP port for administrative access. Port 80 is the default used for HTTP sessions. If you choose to change the port number, it should be between 1 and 65535. Port numbers currently in use by the MultiModem iSMS are not allowed.

Click the **Save** button.

Administration > Admin Access > Allowed Networks

Use this screen to set the networks that will be allowed access to the MultiModem iSMS. The administrator can then add, edit and delete any network. By default, the LAN network is always allowed access to the MultiModem iSMS. In addition, the administrator can configure the IP Address and Subnet Mask as 0.0.0.0 to allow access to any network.

No.	IP Address	Subnet Mask	Command
1	192.168.2.0	255.255.255.0	Static

Allowed Networks

IP Address – Enter the IP address of any network you want to allow access to the MultiModem iSMS.

Subnet Mask – Enter the Subnet Mask of any network you want to allow access to the MultiModem iSMS.

Add – Then click the **Add** button.

The allowed network displays at the bottom of the screen.

Note: The first entry is the LAN Network, which defaults onto this screen. Subsequent entries will have [Edit](#) and [Delete](#) as Command options.

Administration > Remote Syslog

Use this screen to enable/disable the Syslog Client in the MultiModem iSMS and to define the IP address of the Syslog Server. The default is *Disabled*.

Remote Syslog Configuration

Remote Syslog Status – Check the Remote Syslog Status box to enable this remote syslog.

Remote Syslog Host IP Address – Enter the IP address or resolvable name of your Syslog server.

Save – Then click the **Save** button.

Note: When Remote Syslog is enabled, the Trace Log screens (found in the Statistics and Logs menu) no longer display data. The data is now being sent to your Syslog Server.

Administration > Tools

This screen is used to reset the cellular modem. You may want to use Reset if you have lost your connection or the modems are not functioning properly but you don't want to recycle power through the MultiModem iSMS.

The screenshot shows a web interface titled "Administration >> Tools". It contains two main sections. The first section, "Reset Modem", has four tabs labeled "Modem1", "Modem2", "Modem3", and "Modem4". Below the tabs is a text input field with the placeholder text "Reset the Modem" and a "Reset" button. The second section, "Cancel Jobs", contains four rows of options: "Cancel All Jobs", "Cancel Low Priority Jobs", "Cancel Normal Priority Jobs", and "Cancel High Priority Jobs". Each row has a "Cancel" button to its right.

Reset Modem

After clicking on the modem tab for the modem you want reset, click the **Reset** button. The modem corresponding to the number selected (1 – 4 for the SF 400, 1 – 8 for the SF 800) will be reset.

Cancel Jobs

From here you can cancel "Pending" SMS messages that have been submitted for sending via either Send API or the Send SMS menu. View the "Send API Status Log" screen found in *Statistics and Logs | Log Traces* menu to determine message status. Pending messages submitted by the Send SMS Web interface will also be cancelled.

Cancel All Jobs

Clicking this Cancel button will stop and clear all jobs queued.

Cancel Low Priority Jobs

Clicking this Cancel button will stop and clear all jobs flagged as Low Priority that are queued.

Cancel Normal Priority Jobs

Clicking this Cancel button will stop and clear all jobs flagged as Normal Priority that are queued.

Cancel High Priority Jobs

Clicking this Cancel button will stop and clear all jobs flagged as High Priority that are queued.

Administration > Factory Defaults

Administration >> Factory Defaults	
Reset to Factory Defaults	
Factory Defaults	Factory Defaults
Note: "Factory Defaults" will reset all configuration parameters to factory default configuration.	
Reset MultiModem iSMS Defaults	
MultiModem iSMS Defaults	MultiModem iSMS Defaults
Note: "MultiModem iSMS Defaults" will reset the Address Book, Groups, Inbox, Outbox & all the configurations.	

Reset to Factory Defaults

Click the **Factory Defaults** button to set all configuration parameters to the factory default settings. This includes setting the administrator account password back to "*admin*" and deleting all User accounts.

Performing this function does NOT delete entries out of the Address Book, Groups, Inbox or Outbox databases.

Invoke the Factory Defaults option when you want to set the default encoding type per the SMS Settings menu option.

Reset MultiModem iSMS Defaults

Clicking the **MultiModem iSMS Defaults** button will load all system configuration parameters to the original factory default settings, including default encoding type AND it will delete all entries that may be in the Address Book, Groups, Inbox and Outbox databases. Invoking the "MultiModem iSMS Defaults" is a full default.

Note: The back panel Reset button performs the same function as the "MultiModem iSMS Defaults" option.

Network Setup > IP Settings

Network Setup

Network Setup > IP Settings

Use this screen to set up your network.

The screenshot shows the MultiTech Systems web interface for Network Setup >> IP Settings. The interface includes a sidebar with 'Network Setup', 'IP Settings', and 'Cellular Modem'. The main content area is titled 'Network Setup >> IP Settings' and contains a 'LAN' section. This section has five input fields: 'IP Address' (192.168.2.1), 'Subnet Mask' (255.255.255.0), 'Default Gateway' (192.168.2.2), 'Primary DNS' (205.171.3.65), and 'Secondary DNS'. A 'Save' button is located at the bottom right of the form.

IP Settings – LAN

The MultiModem iSMS needs to be programmed with a static IP address. The MultiModem iSMS does not support DHCP assigned IP addresses.

IP Address

Enter the IP Address of the LAN Interface. The factory default is 192.168.2.1.

Subnet Mask

Enter the Subnet Mask for the IP address configured. The factory default is 255.255.255.0.

Default Gateway

Enter the Default Gateway. The factory default is 192.168.2.2.

Primary DNS and Secondary DNS

Enter the address of the primary and secondary DNS (domain name system) IP Address. The order in which domain names are entered is the order in which they are consulted.

IMPORTANT Note About Valid Gateway and DNS Addresses

For e-mail notifications and SNTP Time/Date accuracy, you must have a live Ethernet connection, and this requires a valid gateway address and at least one DNS address.

Save

Click the **Save** button.

Network Setup > Cellular Modem

Use this screen to configure the cellular modems. Click the Modem# tab at the top to work with that specific modem. Each modem is configured individually.

The screenshot displays the MultiTech Systems web interface for configuring cellular modems. The top navigation bar includes links for Administration, Network Setup, SMS Services, Triggers, Utilities, Import & Export Address Book, and Statistics & Logs. The left sidebar shows the current path: Network Setup > Cellular Modem. The main content area features tabs for four modems (Modem1, Modem2, Modem3, Modem4). The 'Modem1' tab is active, showing the following configuration sections:

- Status:** A 'Modem Status' checkbox is checked, with a 'Save' button.
- Modem Initialization String:** Three text input fields for 'Initialization String 1', 'Initialization String 2', and 'Initialization String 3', with a 'Save' button.
- Signal Strength:** A 'Command' dropdown menu set to 'AT+CSQ', with a 'Save' button.
- SIM Number:** A text input field for the 'SIM Number', with a 'Save' button.
- TCP Connection:** Radio buttons for 'Enable' (selected) and 'Disable', and a 'TCP Connection Port' input field set to '5000', with a 'Save' button.

Status

Modem Status (SF 400 and SF 800 models only)

This box will be checked by default, meaning that this modem will be considered for use. If you do not have or want a SIM card for a particular modem, uncheck the box so that the modem is not used. Repeat this process for any modems that will not have SIM cards. A graphic to show which internal modem is assigned to each number is in the SIM card installation section of Chapter 2.

Save

Click the **Save** button each time before selecting the next modem from the modem tabs above.

Modem Initialization Strings

Initialization Strings 1 – 3

Initialization strings are composed of AT commands sent to the modem to initialize and prepare it for connection. The contents of these 3 fields are sent in addition to and after the built in initialization commands are issued by the iSMS server. The modems are initialized upon power up, modem status enable, modem port reset and upon termination of TCP connections. See the GPRS AT Commands Reference Guide for additional information.

Save

Click the **Save** button each time before selecting the next modem from the modem tabs above.

Signal Strength**Command**

The string entered here is sent to the cellular modem so that the signal strength LEDs can display the current signal strength. Use the following command: **AT+CSQ**

See the **Signal Strength LEDs Reference Table** below.

The following table lists the meaning of the **xx** values in the signal strength response and explains how they correspond to the number of LEDs lit for signal strength.

AT+CSQ xx Values	SF 100 Signal LED Bars	Signal Strength
0 to 6	No light	Very weak signal
7 to 14	1 Bar LED is lit	Weak signal
15 to 23	1 Bar and 2 Bar LEDs are lit	Stronger signal
24 to 31	1 Bar, 2 Bar, 3 Bar LEDs are lit	Strongest signal

Save

Click the **Save** button.

SIM Number**SIM Number**

Specify the cellular phone number that the wireless provider assigned to your account. Do not enter dashes. **Example:** 6125551234.

The MultiModem iSMS uses as an alternate means of synchronizing the system clock. If you are using SNTP for your time stamp, you do not need to enter a SIM number. **Note:** If your SIM card is locked, you cannot send SMS messages.

When a number is entered in this field, upon system start up (after the port is done being initialized and has registered on the cellular network) the unit will send an SMS with the text "Time Setting Loopback Message" to the defined number. The Cellular Network will route the SMS back to this port (assuming the account associated to the SIM in this port is setup correctly, and the number you entered matches that of the SIM). The MultiModem iSMS will then use the time stamps found within the header of this specific SMS to set it's internal clock. This message (Time Setting Loopback) will be counted in the SMS Statistics, and Listed in the Trace Logs (Sent and Received categories). This message will be logged in the SMS Inbox, however it will not be logged in the SMS Outbox.

Save

Click the **Save** button each time before selecting the next modem from the modem tabs above.

TCP Connection

The TCP Connection feature is a per modem port feature that provides direct AT Command access to the modem's serial interface for troubleshooting purposes only. When you open a TCP socket on the defined TCP port number (*e.g.* 5000), the modem is no longer available to the unit's send and receive queues. Events that occur while the socket is open to the modem do not get logged by the system (*i.e.* SMS messages received by the modem will not be logged in the system nor delivered via the Receive API process). It is recommended that you disable this feature after you have setup and tested the system.

TCP Connection

Enable or **Disable** the TCP Connection by clicking the appropriate radio button. Default: **Enable**

TCP Connection Port

The TCP port number on which the MultiModem iSMS will be listening. Each cellular modem port in the MultiModem iSMS should be listening on a different TCP port number.

Default is 5000 for an **SF100**; 5000 thru 5003 for ports 1 through 4 of an **SF400** and 5000 through 5007 for ports 1 thru 8 of an **SF800**.

Save

Click the **Save** button.

Save & Restart

IMPORTANT Note About Saving System Settings

When you have completed entering your MultiModem iSMS settings and you are not going to enter any more configuration data, you must go to the Save & Restart menu and perform a Save to Flash. Saving to the Flash Memory saves the new settings in the flash prom and prevents the settings from getting lost at the next power up.

Save

Click the Save button to save your **system settings** to the flash memory.

Restart is Optional

This is optional. You do not have to restart the MultiModem iSMS after saving to the flash memory.

SMS Services

The sub menus within SMS Services are used to setup how the MultiModem iSMS SMS server handles incoming and outgoing SMS messages. Additionally, you can use the Send SMS menu to generate and send SMS (text) messages to other mobile devices (specific numbers or entries found in the Address Book).

SMS Services > Address Book

The Address Book contains a list of cellular recipients (mobile end points) that the MultiModem iSMS can send SMS messages to. Address Book entries are available to the Groups, Send SMS and Broadcast Triggers menus and the Send API feature.

Three Ways to Create Address Book Entries:

1. Enter names and phone numbers manually. Use the following screen to enter addresses in this way.
2. Import an Address Book. See the details in the: **Import & Export Address Book > Import** section of this chapter.
Note: You must perform a Save to Flash to permanently save Address Book entries (to prevent the entries from being lost upon a system restart).
3. Remotely enter a name and phone number. See how to do this in the: **Triggers > Action Triggers** section of this chapter.

Use This Screen to Manually Add Names and Phone Numbers to the Address Book:

Use this screen to manually add the names and phone numbers of any person(s) you want to include in your address book. If you imported an address book, you can use this screen to add names not included in the imported Address Book. All address book names display on this screen, and each entry can be edited, deleted, and/or added to a group list.

SMS Services >> Address Book				
Name	Phone Number	Description	Edit	Delete
bill	7864532111	View	☐	☐
don	7632214563	View	☐	☐

Select All ☐

Starting with:

Address Book

Click the **Add** button to display the *Add a Phone Number* screen.

Add a Phone Number

Note that fields marked with an asterisk are required.

Name

Enter the name of the person you want to add to the SMS Phonebook. The maximum number of characters is 50 including spaces and punctuation.

Phone Number

Enter the mobile phone number of person you are adding. The maximum number of characters is 50 including spaces and punctuation.

Note: If you plan to implement the Broadcast Trigger feature with the Authenticate option enabled, you will have to enter the phone number string exactly as the cellular network presents the sender's number on incoming SMS messages.

For example: +17632493555 instead of just 7632493555. To determine the exact format, use your cell phone and send a simple text message to the phone number/SIM card in port 1 of your MultiModem iSMS, then go to the SMS Live Log menu (in Trace Logs) for Port 1 and view the +CMT unsolicited response (SMS text message) received by the cellular modem in port 1. The following is an example of a received SMS as shown in the SMS Live Log: +CMT: "+17632346274",,"10/08/06,15:52:35-20",145,4,0,0,"+16363848827",145,26
simple message from your phone

Description

Enter any additional information about this phonebook entry that will aid in your contacting or identifying this person. The maximum number of characters is 120 including spaces and punctuation.

Groups

If you want this person to be a member of a phonebook group, select the group name from this box.

Note: Group names must be entered on the **SMS Services > Groups** screen before they will display here.

Save or Cancel

Click the **Save** button to save the entries, or click **Cancel** if you want to start over on this screen or want to end the entries from the last **Save**.

SMS Services > Groups

Use this screen to create groups of recipients (names and phone numbers of mobile end points). A group is made up of entries from the Address Book.

The MultiModem iSMS can hold up to 50 groups.

Groups allow you to send SMS messages to many individuals using only a group name.

For example, groups can be established based on a common functionality, a location, or an activity such as an Administrators group, an Engineers group, a Building 201 group, a Basketball Team group, etc. Once created, group names display on this screen where they can be edited and deleted.

Groups

Click the **Create** button to display the *Create a Group* screen.

Create a Group

Note that fields marked with an asterisk are required.

Group Name

Enter a name for the group you would like to create. Maximum number of characters is 10. Group names can be edited.

Group Members

Click **Address Book** to view the names of all individuals in your Address Book. A pop up window from your browser will appear, displaying the contents of the Address Book, "select" users and then click "Add", then close the pop up window. The selected address book entries will be listed as group members. You may also use the 'Select the entire Address Book' checkbox instead to all entries to this group.

Highlight a name and click **Delete** to remove the names of those you do not want in this group.

Create or Cancel

Once you have the group completed, click the **Create** button. After creation, you will be returned to the Group page.

If you want to start over or abandon the process, click the **Cancel** button.

SMS Services > International Number

Use this screen to allow or disallow SMS messaging to international numbers. International numbers are identified according to the number of digits.

SMS Services >> International Number	
Disable International Number	☒
Maximum Digits	11
Save	

Disable International Number

If **Disable International Number** is checked (this is the default), SMS messages can be sent to phone numbers limited by the maximum allowed digits (entered in the **Maximum Digits** field).

If **Disable International Number** is **NOT** checked, SMS messages can be sent to any phone number.

Maximum Digits

Enter the number of digits you want to be allowed when **Disable International Number** is checked. The default is 11 digits.

Save

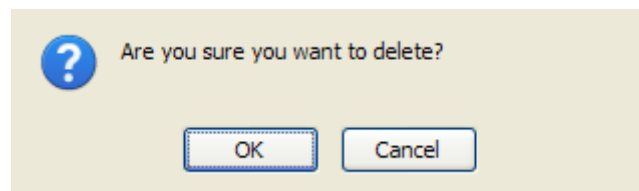
Click the **Save** button.

SMS Services > Users

Use this screen to create a list of users who can have limited access to the MultiModem iSMS to send SMS messages and monitor their associated outbox. The screen shown here includes an example of an entry entitled "JoeSmith". Once a user is entered, the **Delete** checkbox is available.

SMS Services >> Users	
User Name	Delete
JoeSmith	☐
Add	

When you click the Delete check box, you will be presented a pop-up window asking to confirm the deleting of this user – click OK to permanently remove the selected user.

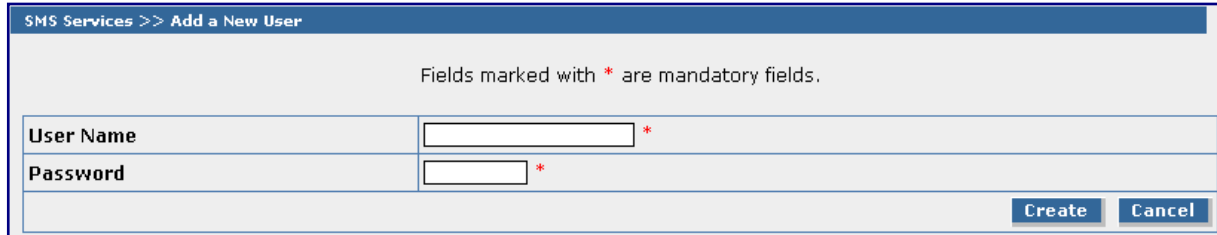


User Name

Click the **Add** button to display the *Add a New User* screen. After a user name is added using the **Add a New User** screen, it will display on the Users screen. You can delete any user from this screen, if desired.

Add a New User

Note that fields marked with an asterisk are required.



The screenshot shows a web form titled "SMS Services >> Add a New User". Below the title bar, a message states: "Fields marked with * are mandatory fields." The form contains two input fields: "User Name" and "Password". Both fields have a red asterisk (*) to their right, indicating they are mandatory. The "User Name" field is a single-line text box, and the "Password" field is a single-line text box. At the bottom right of the form, there are two buttons: "Create" and "Cancel".

User Name

Enter the user's name. No spaces are allowed in the User Name.

Password

Enter a password for this user. Each user should have a unique password. There is a minimum of 5 characters required for the password.

Create or Cancel

Once you have entered the users, click the **Create** button. If you want to start over, click the **Cancel** button.

SMS Services > SMS Settings

Use this screen to set general system settings related to SMS encoding format, time & date format and network registration.

[Help](#) | [Home](#) | [Wizard Setup](#) | [Save & Restart](#) | [Logout](#)

SMS Services >> SMS Settings

Extended ASCII 8-bit Configuration

Extended ASCII 8-bit (ISO-8859-1)
☐
Save

Set as Factory Default
☐
Save

Unicode Configuration

Unicode
☐
Save

Set as Factory Default
☐
Save

Date Configuration

Date Configuration

mm/dd/yyyy ▼

Save

Periodic Re-Registration

Periodic Re-Registration

Disabled ▼

Save

Extended ASCII 8-bit Configuration

Extended ASCII 8-bit (ISO-8859-1)

Enabling this mode allows the MultiModem iSMS to pass characters in the text message that are made up of 8 bits instead of 7 bits (1 byte characters 0x80 through 0xFF). When enabled, the Extended ASCII characters option will be linked to the following screens in order for you to select the characters: *Send SMS*, *Triggers*, *Preconfigured SMS*.

Set as Factory Default

Select this check box and click the Save button to set Extended ASCII 8-bit as the factory default. This option is used when performing a "Reset to Factory Defaults". This option is ignored and overwritten when invoking the "Reset MultiModem iSMS Defaults" option.

Save

Click the **Save** button to set each changed setting before navigating away from this page.

Unicode Configuration

Unicode

Enabling this mode allows the MultiModem iSMS to pass characters encoded via UTF16 (2 byte characters 0x0001 through 0xFFFF). Select this check box and click the Save button to allow Unicode text in the SMS messages.

Set as Factory Default

Select this check box and click the Save button to set Unicode as the factory default. This option is used when performing a "Reset to Factory Defaults". This option is ignored and overwritten when invoking the "Reset MultiModem iSMS Defaults" option.

Save

Click the **Save** button to set each changed setting before navigating away from this page.

Date Configuration

Select the format that you want the date to be presented as. Options are: **dd/mm/yyyy**; **mm/dd/yyyy**; and **yyyy-mm-dd** (where *dd* represents the day as 2 digits, *mm* represents the month as 2 digits and *yyyy* represents the year as 4 digits).

Save

Click the **Save** button.

Periodic Re-registration

Enabling this feature causes all modems in the unit to re-register (un-register and then reconnect) with the cellular network at the selected interval. Use of this feature can prevent the appearance of the MultiModem iSMS Server being 'camped' onto the network. The MultiModem iSMS is a stationary, 24/7 device and some cellular networks implement rules that limit the max duration a device can be continuously registered. You can select the status of re-registration to one of several times (in hours) or *Disabled*. This defaults to *Disabled*.

Save

Click the **Save** button.

SMS Services > Send SMS

Use this menu to generate a message and then send it to a specific phone number(s) or Address Book contact(s) or Group(s).

Notes about User Limitations

- This screen and their Outbox screen are the only screens available to non-administrative users.

To		Add	Delete	
Enter Phone Numbers				
To		Add	Delete	Select the entire Address Book ☐
Select Names from the Address Book	[Address book]			
To		Add	Delete	Select all the Groups ☐
Select Groups	[Groups]			
SMS Text	 [Pre-Configured Message] [Arabic]			
	Typed: 0 Left: 192 Spanned: 1			
Encoding Type	☒ Unicode ☐ Hexadecimal ☐ Decimal ☒ Language Arabic			
Modem	ANY			
Priority	Normal			
Send				

To

Enter Phone Numbers

Enter the mobile phone numbers to which a new message will be sent. Click the **Add** button after each entry. The phone number will display in the box. If you change your mind about a phone number, highlight the number and press the **Delete** button.

-and/or-

Select Names from the Address Book

Click **Address Book** to display all names. Select the names of the individuals to whom a new message will be sent. Click the **Add** button after each name. If you change your mind about a name, highlight the name and press the **Delete** button or check **Select the entire Address Book**, press the **Delete** button and all the names will be deleted.

-and/or-

Select Group

Click **Groups** to display all group names. Select the **Groups** to which a new message will be sent. Click the **Add** button after each selection. The group name will display in the box. If you change your mind about a group, highlight the group name and press the **Delete** button or check the **Select all the Groups**, and press the **Delete** button and all groups will be deleted.

SMS Text

Enter the text of the message you want to send.

-or-

You can choose a **Pre-Configured Message** that you set up on the *Triggers > Pre-Configured SMS* screen. Click the **Pre-Configured Message** text to access a list of pre-configured messages. After the pre-configured message appears in the SMS Text field, you may continue to edit the contents of the message/SMS Text field.

Unicode options are also available, please see Unicode Use below.

The message entered will automatically be tracked by the **Typed**, **Left** and **Spanned** boxes below the entry field. Depending on the Encoding Type, the maximum characters allowed will change.

Typed

This field will track the actual number of characters entered into the SMS Text field.

Left

This will count down the number of characters left available in the SMS Text field.

Spanned

This will show the number of SMS messages that will be needed to send the text as currently entered. Messages that need to be spanned will be sent concurrently. Each spanned message will be prefixed with 6 characters indicating it is part of a spanned SMS. The 6 characters are:

(#of3)

Where # is equal to 1, 2 or 3.

Maximum Number of Characters Allowed with Spanning:

ASCII	462
Extended ASCII	402
Unicode	192

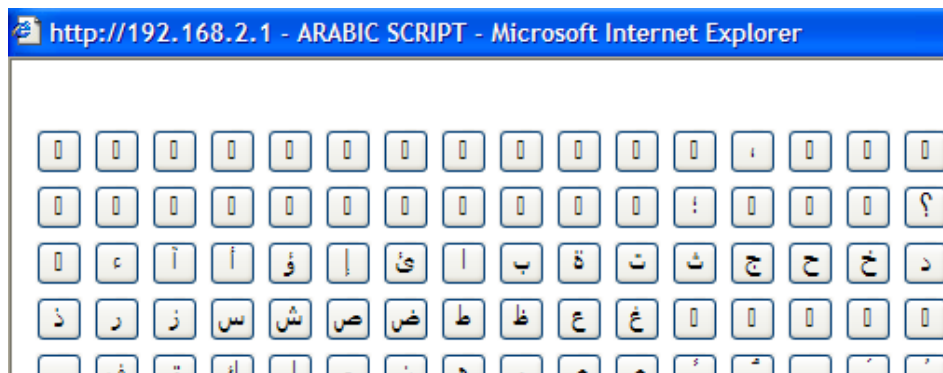
Encoding Type

Select the encoding type that you want the SMS message to be sent as.

Options: ASCII (default), Extended ASCII, Unicode.

- When **Extended ASCII** is selected, an "Extended ASCII" link is added under the SMS Text box, providing a keyboard of extended ASCII characters that can be added into the SMS Test message.
- When **Unicode** is selected, you need to choose from Hexadecimal, Decimal or Language for the Unicode type. If Language is selected, an additional drop-down box will appear with specific language selections.

When a language is selected, clicking on the link after the Pre-Configured Message link will bring up a virtual keyboard that will allow you to enter the specified text in the SMS Text message box.



Modem

Here you may select a specific modem from which to send the message, or you may leave it at the default of “Any”.

Priority

Here you can set the priority level for the message to be sent. When messages enter the queue to be sent, the priority levels will be compared and the messages flagged as High will be sent first, followed by Normal and Low.

Options: Low, Normal (default), High.

Send button

When you are ready, click the Send button to send your message – click OK when the pop-up “in process” message appears. The message will not be sent unless this pop-up is acknowledged.

SMS Services > SMS API

Basic setup of the MultiModem iSMS Application Program Interface is performed here.

HTTP API and TCP API are Send SMS APIs (for sending SMS messages to mobile endpoints on the cellular network). Both methods can be enabled and utilized simultaneously.

SMS Messages received from the cellular network are handled by our Receive API process.

Note: See the Appendix A for specific information on API command structure, options, responses and XML data structure.

The screenshot shows the 'SMS Services >> SMS API' configuration page. It has three main sections, each with a title bar and a light gray content area.

- HTTP API Configuration:** Contains 'HTTP API Status' with an unchecked checkbox, 'HTTP Port' with a text box containing '81', and a 'Save' button.
- TCP API Configuration:** Contains 'TCP API Status' with an unchecked checkbox, 'TCP Port' with a text box containing '2040', and a 'Save' button.
- Non Polling Receive API Configuration:** Contains 'Non Polling Receive API Status' with an unchecked checkbox, 'Protocol' with radio buttons for 'HTTP' (selected) and 'TCP', and a 'Save' button.

HTTP API Configuration

IP enabled applications external to the MultiModem iSMS can submit messages for sending by using HTTP protocol Get and POST commands.

HTTP API Status

Check the box to enable the *HTTP API* service.

HTTP Port

Enter the port number on which the HTTP API service is to listen on. It is recommended this port be different from what the WEB Management Interface uses. The default is 81.

Save

Click the **Save** button.

TCP API Configuration

IP enabled applications external to the MultiModem iSMS can submit messages for sending by using this product specific command protocol. See *Appendix A* for more details.

TCP API Status

Check the box to enable *TCP API* service. This is necessary for units participating in load balancing.

TCP Port

Enter the port number on which the TCP API service is to listen on. The default is 2040.

Save

Click the **Save** button.

Non Polling Receive API Configuration

This section/option dictates which method of Receive API is implemented by the MultiModem iSMS server (how SMS Messages received from the cellular network are handled). There are two methods:

- A) Polling:** the received SMS will be left in our Receive SMS queue until your application queries for it via an HTTP GET.
- B) Non Polling:** Upon reception, the MultiModem iSMS server will POST the message to your WEB server (or TCP Application).

When the "Non Polling Receive API Status" checkbox is NOT checked, polling is enabled (see previous screen shot). When polling is enabled, perform the query on the HTTP Port number defined in the HTTP API Configuration section/menu.

Non Polling Receive API Status

Check this box to enable non-polling API status when receiving messages. This will change the SMS API section as shown below. When this is not checked, Receive API Polling is enabled. Receive API Polling is the default.

Non Polling Receive API Configuration	
Non Polling Receive API Status	☒
Protocol	☒ HTTP ☐ TCP Save
Server	Save
Port	80 Save
Server Default Page	Save
Server Authentication	☐
Username	
Password	Save
Post Interval	0 seconds Save

Protocol

Select the protocol that you will use: HTTP or TCP.

Server

Enter the resolvable name or IP address of the server to be used.

Port

Enter the port number for accessing the server.

Server Default Page

Enter the default page for the server to use.

Server Authentication

Check this box if you want to authenticate to the server. Below you can enter the username and password that will allow access.

Username

Enter the username to be used for authentication.

Password

Enter the password associated with the above username.

Post Interval

Enter the number of seconds for the post interval.

Save Buttons

Click the **Save** button for each section after making changes. Navigating away from this page will not store any changes that have not been saved.

SMS Services > Load Balancing

This feature provides a single interface to your Send SMS application when multiple units are needed for increased throughput. When multiple iSMS units are available on a network, they can be set up to work together to share the outgoing message load. This is achieved by designating one unit to be the Master and subsequent units (up to 4) to be Slaves. Your Send SMS application does not need to make any changes when Load Balancing is enabled. The send SMS application will still use either of our send APIs (HTTP or TCP) to submit SMS messages for sending.

When the amount of "pending" messages within the Master reaches a system threshold, the Slave units are polled by the Master for availability, and if so available, pending messages will be distributed dynamically to the slave(s). Once initiated, the Master unit will utilize the slaves until the send queue is reduced sufficiently below the threshold. Your Send SMS Application can not specify which slave unit a particular message will be sent through.

The number of pending messages needed to surpass the threshold is a variable based on the length of each message (character count per message) and the MultiModem iSMS model number. The threshold is increased as the model number increases.

Load Balancing

Status

Check the Status box on every unit that is participating in Load Balancing and click Save.

Note: When using Load Balancing, each Slave unit must have the TCP API Status enabled. The Master unit communicates to the slaves via TCP API access.

Slave Configuration

Slave Configuration information is only to be defined in the Master unit.

Slave#

The slave# tabs are used to identify which units are slave units and login information.

Status

This box is checked *only* on the Master unit. This should be left *unchecked* for all Slave units.

Username

Enter the valid administrator username needed to access the Slave unit.

Password

Enter the valid administrator password needed to access the Slave unit.

IP Address

Enter the IP Address of the Slave unit.

TCP API Port

Enter the open port that will be used to access the Slave unit.

SMS Services > Inbox

This screen displays a list of all messages received by the cellular modem port. There is an Inbox per modem port. Each listing includes the sender's number, the message received, and a timestamp. Click on the individual modem number tabs for a list of messages received by that modem.

SF100 Note: SF100 models require a "Save to Flash" be performed for the Inbox and Outbox records to be retained upon system restart. SF400 and SF800 models do not have this requirement.

Clear Inbox		Clear	
From	SMS	Date	Time
	Test sms	09/10/22	16:33:39

Clear Inbox

Click the **Clear** button to delete all the inbox entries.

From

The 'From' box will show the phone number from which the SMS was received.

SMS

This will display the text message received.

Date

This will show the day the message was received by the MultiModem iSMS.

Time

This will display at what time the message was received by the MultiModem iSMS.

Note: The inbox gets a time stamp from the cellular service provider.

SMS Services > Outbox

The Outbox is for the unit as a whole. This screen chronologically lists sent messages and includes Message ID, Sending unit, who submitted the message, receiver's number, the message sent, and the timestamp.

To determine which specific modem port the SMS was transmitted on, note the exact time and date of the message and then review the Sent SMS Log found in the Trace Logs menu.

SF100 Note: SF100 models require a "Save to Flash" be performed for the Inbox and Outbox records to be retained upon system restart. SF400 and SF800 models do not have this requirement.

SMS Services >> Outbox						
Clear Outbox						Clear
Msg ID	Handled By	User	To	SMS	Date	Time
0	Local	admin	7635551234,Jane Doe,Everyone	Hello	01/01/08	04:34:59
0	Local	admin	7635551234	Test	01/01/08	04:05:12

Clear Outbox

Click the **Clear** button to delete all the outbox entries.

Msg ID

The message ID (Msg ID) is non-zero if the message has been sent using SEND API. A Msg ID of zero means it was submitted via the Web Management Send SMS menu.

Handled By

This will display which MultiModem iSMS unit was used to send the SMS. If the unit who's Outbox you are viewing is the unit that sent the SMS to the cellular network, it will display "Local" (regardless of Load Balancing configuration). If this Outbox is that of the Load Balancing Master and the message was distributed to a Slave unit, it will display "Slave#" (where # is 1 thru 4).

User

This column will display the user name of the account that sent the message.

To

This column will show the number(s) or group(s) that this message was sent to.

SMS

This will display the text sent in the message.

Date

This will show the day the message was sent.

Time

This will display at what time the message was sent.

Note: In order for messages in the Outbox to have a valid date/time stamp, be sure to set up one of the following options:

- SNTP Client must be enabled and the Ethernet connection must be live to the Internet.
- or-
- Enter the iSMS cellular phone number on the **Network Setup > Cellular Modem** screen.

Triggers

On the four Triggers screens, a system administrator can accomplish the following tasks:

- Establish a list of users who are authorized to trigger a broadcast.
- Set up broadcast triggers.
- Set up action triggers.
- Compose and save pre-configured messages.

Triggers > Authentic List

Use this screen to set up a list of users who are authorized to trigger a broadcast. This list is made up of entries found in the Address Book. This list is used by the Broadcast Trigger setup menu when the Broadcast Trigger option "Authenticate" is enabled.

Authentic List

Click the **Add** button to display the Address Book from which you can select those users who will be added to the Authentic List..

Note: Without a populated Address Book, no users can be added to the Authentic List.

Triggers > Broadcast Triggers

Use this screen to set up Broadcast Triggers. A Broadcast Trigger is a function of the MultiModem iSMS server, where upon receiving a Trigger message (code or word) from a cellular phone/mobile end point, the MultiModem iSMS server will respond by sending a predefined Broadcast message (SMS) to a predefined group of recipients (Address Book entries and/or Group). The Broadcast Message is also sent to the sender of the trigger, indicating the trigger was received and the broadcast invoked.

Broadcast Triggers

Click the **Add** button to display the *Add a Broadcast Trigger* screen.

Add a Broadcast Trigger

Note that the fields marked with an asterisk are required. This is a setup screen; no messages are sent from this screen.

Triggers >> Add a Broadcast Trigger

Fields marked with * are mandatory fields.

Trigger Message	*
	Typed: Left: Spanned:
Broadcast Message	* [Pre-Configured Message]
	Typed: Left: Spanned:
Encoding Type	ASCII
To	[Groups] [Delete]
Authenticate	☐
Authentic Users	
Priority	Normal

Save Cancel

Trigger Message

Type in a code or word that will be used to trigger the sending of the Broadcast Message.

Broadcast Message

Type in a message that will be broadcast when the trigger code or word is received, or click **Pre-Configured Message** if you want to use one of these messages as your broadcast message.

Encoding Type

Select the encoding type to be used from ASCII, Extended ASCII or Unicode. This applies to both the Trigger Message and the Broadcast Message. The received trigger message must be encoded in the same format as specified in the Broadcast Trigger, otherwise the trigger will not match and the broadcast message will not be sent. Default is ASCII.

To

Select the Groups who will receive this broadcast message. Click **Groups** to display your list of group choices. If you change your mind, you can highlight the name of a group and click **Delete** to remove a group from the list.

Authenticate

Check the **Authenticate** box if you want this trigger code or word and the broadcast message to be managed by the authentication function. If this option is not enabled (unchecked), upon receipt of the Trigger Message the broadcast is initiated.

When this option is enabled, the sender of the Trigger Message (phone number) is verified to be listed as an "Authentic User" before the broadcast is initiated. If the Sender is not Authentic, the broadcast is not performed.

Authentic Users

Select the Authentic Users who are allowed to trigger a broadcast message.

Priority

Select a priority level from Low, Normal or High. Default is Normal.

Save or Cancel

Click the **Save** button, or if you change your mind and do not want the information saved, click **Cancel**.

Triggers > Action Triggers

Action Triggers are the codes or words sent from a remote cell phone and received by the MultiModem iSMS – the trigger will execute the action associated with it. This is a setup screen; no messages are sent from this screen.

The trigger codes or words along with the authentication function may be configured for each trigger action. If authentication is enabled, only the trigger code or word received from an **authenticated** user can trigger the action.

Triggers >> Action Triggers			
Trigger Action	Trigger Message	Authenticate	View/Edit
Add Number to Address Book	ADD	Disabled	Edit
Create new Group or Add Number to Group	ADDG	Disabled	Edit
Add New Preconfigured SMS	ADDSMS	Disabled	Edit
Delete Number from Address Book	DEL	Disabled	Edit
Delete a Group	DELG	Disabled	Edit

Trigger Action – The action is executed when a properly formatted Trigger Message is received.

Trigger Message (Codes or Words) – The above screen shows the default Trigger Message for each Trigger Action. The code or word (Trigger Message) used to invoke the specific action can be changed by clicking on the Edit option for each Trigger Action. See the table on the next page for an explanation of how the trigger codes and their associated actions are used.

Authenticate – If the authenticate option is enabled, only the message received from the configured authenticated user can trigger the action. The authenticated users are set up on the **Triggers > Authentic List** screen.

Enable Authentication

To enable authentication click **Edit**. The **Authenticate** column then displays a check box, and the **View/Edit** column displays the words **Save** and **Cancel**.

Click the check box to enable Authentication for this action and then click **Save**. If you want to disable Authentication for this action, simply click **Cancel**.

Table of Trigger Codes and Trigger Actions

Trigger Code/Word	Objective	Configuring the Trigger Code and Its Associated Trigger Action	Action
ADD	To add an entry in the address book	Configuration format: <act_tri_configured>;name;number Example: ADD;joe smith;7635554174	Adds name with number to address book.
		Configuration format: <act_tri_configured>;name Example: ADD; joe smith	Adds name with sender's number to address book.
		Configuration format: <act_tri_configured> Example: ADD	Adds name and number of sender to address book.
ADDG	To add a group name and an entry. Note: The same action trigger message is used for creating a group name and adding an entry to a group. So, in the interface there will be one configuration for both	Configuration format: <act_tri_configured>;grp_name Example: ADDG;Building_201	Creates a group with a group name.
		Configuration format: <act_tri_configured>;grp_name;name;number Example: ADDG;Building_201;joe smith;7635554174	Adds name with number to a group. Group must already exist.
		Configuration format: <act_tri_configured>;grp_name;name; Example: ADDG;Building_201;joe smith	Adds name to a group. Group must already exist.
ADDSMS	To add a pre-configured SMS	Configuration format: <act_tri_configured>;SMS Example: ADDSMS;Building 201 is closed until further notice.	Adds SMS to preconfigured list.
DEL	To delete an entry from the address book	Configuration format: <act_tri_configured>;name;number Example: DEL;joe smith;7635554174	Deletes name with number from the address book.
		Configuration format: <act_tri_configured>;name Example: DEL;joe smith	Deletes all entries with this name from the address book.
DELG	To delete a group	Configuration format: <act_tri_configured>;grp_name Example: DELG;Building_201;joe smith	Deletes the group with the group name.

Triggers > Pre-Configured SMS

Use this screen to compose and save pre-configured messages.

Pre-Configured SMS

Click the **Add** button to open the *Add a Pre-Configured SMS* screen.

Add a Pre-Configured SMS

Note that fields marked with an asterisk are required.

Pre-Configured SMS

Enter the text for your Pre-Configured SMS Message.

Encoding Type

Select the encoding type to be used from ASCII, Extended ASCII or Unicode. Default is ASCII.

Pre-Configured Group

Select the groups to receive this pre-configured message. Click **Groups** and select the desired groups. If you change your mind about a group, highlight the group and click **Delete** to remove it from the list. Note that a message can contain only 160 characters including spaces and punctuation.

Save or Cancel

Click the **Save** button, or if you change your mind and do not want the information saved, click **Cancel**.

Save & Restart

IMPORTANT Note About Saving System Settings

When you have completed entering your MultiModem iSMS settings and you are not going to enter any more configuration data, you must go to the Save & Restart menu and perform a Save to Flash. Saving to the Flash Memory saves the new settings in the flash prom and prevents the settings from getting lost at the next power up.

Save

Click the Save button to save your **system settings** to the flash memory.

Restart is Optional

This is optional. You do not have to restart the MultiModem iSMS after saving to the flash memory.

Utilities

Utilities > Backup

The Backup screen has two functions. First, it lets you save all MultiModem iSMS configuration files into one file for storing externally (Export Backup). Second, it is used to import and apply a configuration backup file (Import Backup from Remote Client). You may want to import a configuration backup for ease of configuring new units, or to restore a previously known good configuration to a unit under test.

A backup file is a **.tar** file that includes the Address Book, Groups and `/var/config/` folder (which includes the unit's IP network settings).

Important Note: A backup file should only be applied (imported) to a MultiModem iSMS unit that is of the same model number and firmware version as the unit that created (exported) the backup file. Be careful not to create an IP address conflict on your LAN. Two or more units cannot be on the same LAN with the same configuration applied.

Backup

Import Backup from Remote Client

Use this section of the screen to import a previously exported configuration backup file. Click the **Browse** button to locate the file. Then click the **Import** button to restore the MultiModem iSMS configuration from this backup file. The configuration file is uploaded to the MultiModem iSMS and the saved configuration is restored.

Export Backup

Use this section of the screen to create a backup file of the unit's current configuration. Click the **Export** button to save the configuration file to a location of your choice. The file created will be a **.tar** file with its name based on the model type and the time and date of when the export was invoked.

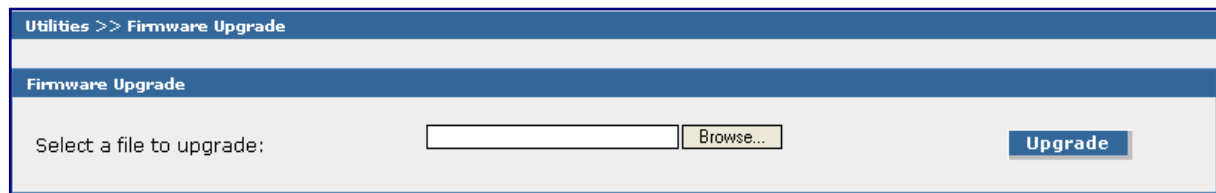
Utilities > Firmware Upgrade

The firmware on the MultiModem iSMS can be upgraded to the latest version using this feature. All Multi-Tech firmware upgrades are posted on the Multi-Tech Web site from which they can be downloaded.

Before upgrading the unit's firmware:

- Save to Flash and then reboot the iSMS Server.
- Back-up the unit's Configuration.
- Stop using the iSMS Server while it is to be upgraded. The upgrade process requires the Send API functions within the iSMS server be disabled.

CAUTION: It is recommended that the firmware upgrade be done locally, invoked from a workstation on the same subnet and LAN that the iSMS is on. It can be helpful to watch the unit's STATUS LED and Ethernet LEDs during the upgrade process.

The screenshot shows a web interface for the 'Firmware Upgrade' utility. At the top, there is a breadcrumb trail 'Utilities >> Firmware Upgrade'. Below this, the title 'Firmware Upgrade' is displayed. The main area contains a label 'Select a file to upgrade:' followed by a text input field and a 'Browse...' button. To the right of these elements is a blue 'Upgrade' button.

Firmware Upgrade

Select a File to Upgrade

Click the browse button to locate the latest firmware version.

Click the **Upgrade** button to start the download.

Note for 1-Port versions only: If the firmware upgrade *.bin* file you have downloaded begins with "SF100..." you will need to rename that portion of the file to "SMSFinder..." for the unit to recognize it as a viable upgrade file.

The MultiModem iSMS will reboot automatically after the firmware upgrade.

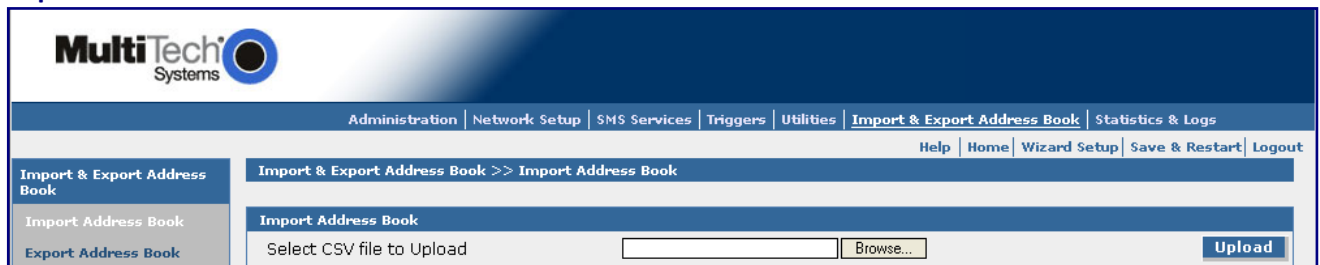
Import & Export Address Book

Import & Export Address Book > Import

Use this screen to import contact information from a CSV formatted file. The process allows you to select which fields (values) in the CSV file to import. Duplicate records (where all values of the record are identical to the existing record found in the unit's Address Book) will not be imported. After performing an Import, be sure to perform a "Save to Flash", otherwise the new Address Book entries will be lost after a system restart.

Note: CSV stands for *comma separated values*, a term that applies to the format of an address book. The CSV file to be imported cannot have more than 10 fields (values) per record (line).

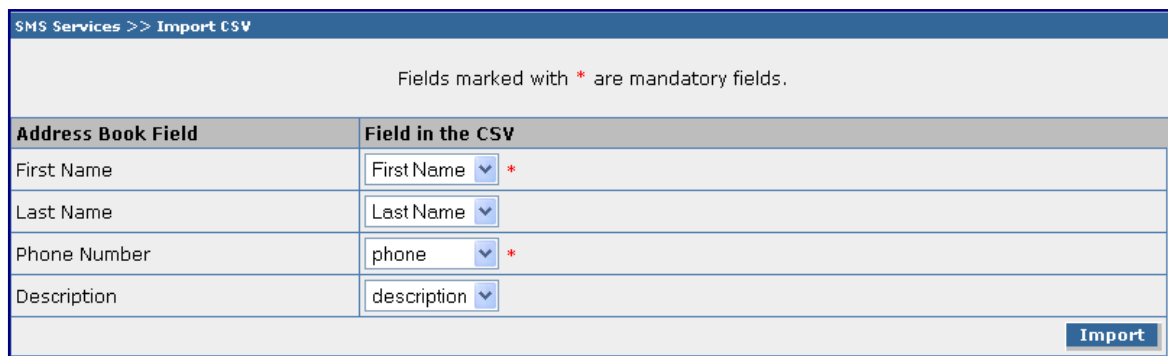
Import Address Book



Select the CSV File

Browse for the address file you want to use, and then click the **Upload** button once it is found. The screen will display say 'Please Wait while the CSV "File" is Uploaded'. This screen goes by rather quickly (this is the actual upload of the file to the MultiModem iSMS Server). When the transfer is complete the next screen will display 'Please Wait while "CSV" is Uploaded'. This is displayed while the structure and contents of the CSV file is analyzed. When the analysis is complete the following screen will be displayed. The following screen is used to select which Field/Values in the CSV file you want to use (import).

Choose Your Address Book Column Headings



Address Book Field	Field in the CSV
First Name	First Name *
Last Name	Last Name
Phone Number	phone *
Description	description

Address Book Field and Field in the CSV

The four items in the Address Book Field column make up one entry (record) in the unit's Address Book. The column on the right (Field in the CSV) is used to select which fields (values) in the CSV file you want to associate with the Address Book fields on the left. The options listed in the drop down boxes are derived from the column headings (1st row) in the CSV file.

For each drop down box, select a Value that matches closest to the Address Book Field on the left. Each drop down box must select a different value (column heading). Then click the **Import** button. In the example used below, the selected column headings are First Name, Last Name, Phone, and Description in this order.

Example: Excerpt from a .CSV File

```

First Name,Last Name,phone,description
first1,last1,17633604174,Parent
first2,last2,17633604174,Parent
first3,last3,17633604174,Student
first4,last4,17633604174,Teacher
first5,last5,17633604174,Supplier
first6,last6,17633604174,Newspaper
first7,last7,17633604174,Photographer

```

Important Note: If you plan to use authentication on any entry in the address book, the phone numbers of these individuals should be entered exactly as how the Cellular Network presents Sender Number information (usually that is with a + symbol followed by the country code and then area code). Please see NOTE in the Address Book section of this guide. This allows authentication to work properly by allowing the MultiModem iSMS box to successfully match the cell phone number of a received trigger message with the phone number in the Authentic List.

Example of an Imported Address Book

Exception: The first entry was entered remotely with a trigger message. Note that remotely sent numbers have a "+" in front of the number. The other entries were added by the import process. The Phone Number values in the CVS file did not include a + symbol with the numbers.

Address Book

SMS Services >> Address Book

Name	Phone Number	Description	Edit	Delete
SF100	+16126361654	View	☐	☐
SFinder1 first SFinder1 last	17633604174	View	☐	☐
SFinder10 first SFinder10 last	17633604174	View	☐	☐
SFinder11 first SFinder11 last	17633604174	View	☐	☐
SFinder12 first SFinder12 last	17633604174	View	☐	☐
SFinder13 first SFinder13 last	17633604174	View	☐	☐
SFinder14 first SFinder14 last	17633604174	View	☐	☐
SFinder15 first SFinder15 last	17633604174	View	☐	☐
SFinder16 first SFinder16 last	17633604174	View	☐	☐
SFinder17 first SFinder17 last	17633604174	View	☐	☐

Add

Select All ☐

Delete

Starting with:

Search

Pages: 1 2 3 4 5 6 7 8 9 10 >>

After the Address Book has been imported, you can **Add** a new entry, **Edit** an entry, **Delete** an entry, and **Search** for an entry.

Add

To add a new entry, click the **Add** button. The **SMS Services > Add a Phone Number** screen displays on which you can enter the new number.

Edit

To edit an entry, click the corresponding **Edit** button in line with the entry you want to edit. The screen turns to edit mode.

Delete

To delete an entry, place a check in the **Delete** box in line with the entry or entries you want to delete. Then click the **Delete** button. Note that you can select all entries to be deleted at one time instead of checking each entry; simply check **Select All** and then click **Delete**.

Search

To search for an entry, type in the beginning letters of a name. Then click the **Search** button. You can enter a new starting point at anytime, if your search does not yield the results you wanted.

Import & Export Address Book > Export

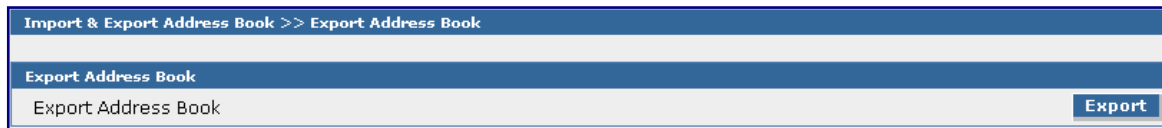
Use this screen to export the contents of the MultiModem iSMS Address Book. The export creates a CSV file with 4 fields (values) per record: *Firstname,Lastname,Description,Phone-Number*.

This **.csv** file is then ‘tarred’ and zipped.

The created **.csv** file is ideal for importing it into a different MultiModem iSMS server. It can also be imported by any other application that supports **.csv** formatted files (e-mail programs, business applications, etc.).

Note: Please ensure that the browser you are using to view the MultiModem iSMS has pop-ups enabled, or you will miss important information windows.

Export Address Book



Export Address Book

Click the **Export** button to save the address book of this MultiModem iSMS to the workstation that is accessing the MultiModem iSMS. The address list is saved in the following format (a zipped-up file):

.tar.gz

The CSV file is saved with four columns labeled First Name, Last Name, Description, and Phone.

Save & Restart

IMPORTANT Note About Saving System Settings

When you have completed entering your MultiModem iSMS settings and you are not going to enter any more configuration data, you must go to the Save & Restart menu and perform a Save to Flash. Saving to the Flash Memory saves the new settings in the flash prom and prevents the settings from getting lost at the next power up.

Save

Click the Save button to save your **system settings** to the flash memory.

Restart is Optional

This is optional. You do not have to restart the MultiModem iSMS after saving to the flash memory.

Statistics & Logs

Statistics & Logs > System Information

The System Information screen provides the following information:

System Information

- Product Model Number
- Firmware Version
- MAC Address
- Entries in the Address Book

Live Details

- Date and Time
- System Uptime
- Memory Utilization

Statistics & Logs >> System Information	
System Information	
Product Model Number	SF400-G
Firmware Version	1.40
MAC Address	00:08:00:50:aa:aa
Entries in the Address Book	0
Live Details	
Date and Time	Mon Jan 7 23:44:49 UTC 2008
System Uptime	6 Days, 23 Hours, 44 Minutes, 58 Seconds
Memory Utilization	MemTotal: 257608 kB MemFree: 208360 kB

Statistics & Logs > SMS Statistics

The SMS Statistics screen provides the following information by individual modem:

SMS Statistics (SF 400/800 can select modem number):

SIM Status - Indicates the presence of a SIM card and if the modem port is enabled or disabled.

Signal Strength - See Signal Strength section in Chapter 2.

Messages in Inbox - The number of messages received by the modem since the MultiModem iSMS server booted up.

Messages Sent - The number of messages sent by the modem since the MultiModem iSMS server booted up.

Rate of Sent Messages: This is the number of messages sent per minute. This counter reflects live activity. If the modem has not sent a message in over 60 seconds, the value will be zero. The average number of messages sent from the MultiModem iSMS is about 7 a minute. These rates are affected by the size of each message and the amount of network congestion.

Rate of Received Messages: This is the number of messages received per minute. This counter reflects live activity. If the modem has not received a message in over 60 seconds, the value will be zero. The average number of messages received by the MultiModem iSMS is about 5 a minute. These rates are affected by the size of each message and the amount of network congestion.

NOTE: The Triggers Statistics and Job Statistics screens provide system totals (not per port) for the listed events.

Trigger Statistics

Broadcast Triggers Configured

Broadcast Triggers Received

Action Triggers Received

Job Statistics

Entries in Outbox

Low Priority Jobs Queued

Normal Priority Jobs Queued

High Priority Jobs Queued

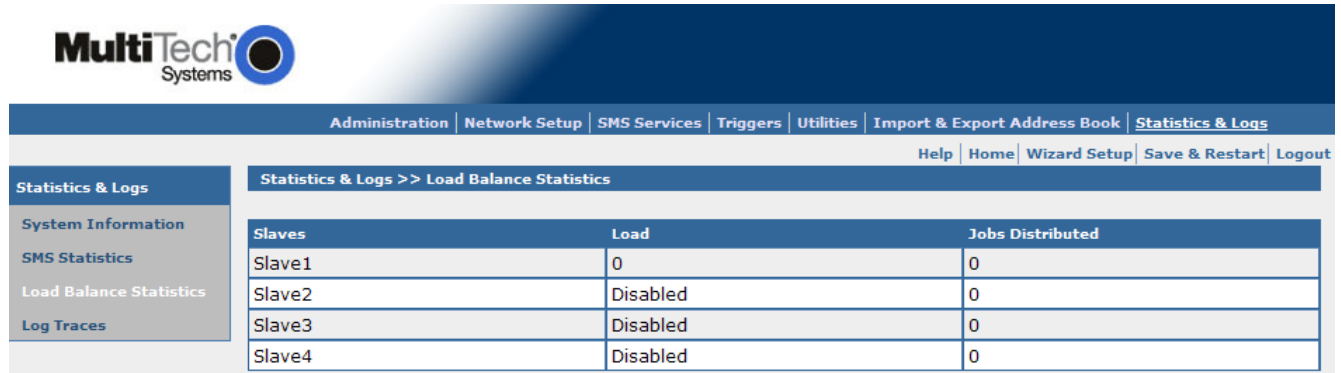
Jobs Distributed

Jobs Dispatched

Statistics & Logs >> SMS Statistics	
SMS Statistics	
Modem1	Modem2 Modem3 Modem4
SIM Status	Disabled - No SIM
Signal Strength	0 (weak signal)
Messages in Inbox	0
Messages Sent	0
Rate of Sent Messages	0
Rate of Received Messages	0
Triggers Statistics	
Broadcast Triggers Configured	0
Broadcast Triggers Received	0
Action Triggers Received	0
Job Statistics	
Entries in Outbox	0
Low Priority Jobs Queued	0
Normal Priority Jobs Queued	0
High Priority Jobs Queued	0
Jobs Distributed	0
Jobs Dispatched	0

Statistics & Logs > Load Balancing Statistics

When load balancing is set up with multiple units, this section will be populated with statistics corresponding to the workload shared.



The screenshot shows the MultiTech Systems web interface. The top navigation bar includes links for Administration, Network Setup, SMS Services, Triggers, Utilities, Import & Export Address Book, and Statistics & Logs. The Statistics & Logs section is active, showing a sidebar with links to System Information, SMS Statistics, Load Balance Statistics, and Log Traces. The main content area displays the 'Statistics & Logs >> Load Balance Statistics' page, which contains a table with three columns: Slaves, Load, and Jobs Distributed. The table lists four slave units: Slave1, Slave2, Slave3, and Slave4. Slave1 has a load of 0 and 0 jobs distributed. Slave2, Slave3, and Slave4 are all disabled and have 0 jobs distributed.

Slaves	Load	Jobs Distributed
Slave1	0	0
Slave2	Disabled	0
Slave3	Disabled	0
Slave4	Disabled	0

Load Balancing Statistics

Slaves

List of possible slave units.

Load

Load for specific slave unit, or 'Disabled' for units not participating in load balancing.

Jobs Distributed

The number of jobs that have been given to the specific unit.

Statistics & Logs > Log Traces

The Log Traces screen provides detailed information about SMS messages, API functions, and the SMS system per modem:

SMS Logs (Sent, Received, Failure, Live)

Send API Logs (Status, Failure, HTTP API Live, TCP API Live)

Receive API Logs (Live, Failure)

Load Balance Logs

System Logs

The number of logged messages is dependent upon the amount of memory. Typically, the log can store information for about 500+ messages.

The screenshot shows the MultiTech Systems web interface. The top navigation bar includes links for Administration, Network Setup, SMS Services, Triggers, Utilities, Import & Export Address Book, and Statistics & Logs. The main content area is titled "Statistics & Logs >> Log Traces". On the left, a sidebar menu lists "Statistics & Logs", "System Information", "SMS Statistics", and "Log Traces". The main panel displays four sections of logs, each with a "Show" button:

- SMS Logs**: Includes tabs for Modem1, Modem2, Modem3, and Modem4. Below the tabs are links for SMS Sent Log, SMS Received Log, SMS Failure Log, and SMS Live Log, each with a "Show" button.
- Send API Logs**: Includes links for Send API Status Log, Send API Failure Log, Send HTTP API Live Log, and Send TCP API Live Log, each with a "Show" button.
- Receive API Logs**: Includes links for Receive API Live Log and Receive API Failure Log, each with a "Show" button.
- System Logs**: Includes a link for System Log with a "Show" button.

To View Logs

Click the **Show** button to view the desired Log for the modem number selected from the tabs above.

Chapter 5 – The Non-Administrative User Interface

Introduction

This chapter covers the Web Interface available to non-administrative users. Non-administrative users have access to the Send SMS menu and an Outbox tied to their account. Users browse to the address of the MultiModem iSMS, login using the name and password created by the administrator and can then send messages from the SMS Services > Send SMS screen.

Note: Users are identified and setup by the Administrator on the **SMS > Send SMS Users** screen.

Web Interface Available to Non-Administrative Users

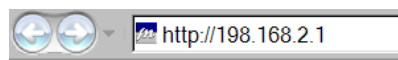
The only screens available to users are the following **SMS Services** screens:

- **Send SMS**
- **Outbox**

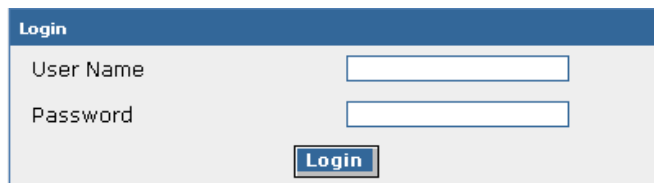
How Non-Administrative Users Login

Note: Be sure that the MultiModem iSMS is cabled and that the power is connected as shown in Chapter 2.

1. Open a Web browser on the PC.
2. Type in the address of the MultiModem iSMS (resolvable name or IP address):
`http://192.168.2.1`



3. The Login screen for the MultiModem iSMS displays.

A screenshot of a web-based login form. The form has a blue header bar with the word "Login" in white. Below the header, there are two text input fields. The first field is labeled "User Name" and the second is labeled "Password". Below these fields is a blue button with the word "Login" in white.

- Users must type their names the way the administrator entered them on the **SMS Services > Send SMS Users** screen.
- Users must type the passwords created for them by the administrator on the **SMS Services > Send SMS Users**.
- Click **Login**.
- The **SMS Services > Send SMS** screen displays.

SMS Services > Send SMS

MultiTech Systems

Help | Home | **SMS Services** | Logout

SMS Services

SMS Services >> Send SMS

To Enter Phone Numbers	Add Delete
To Select Names from the Address Book	Add Delete ☐ Select the entire Address Book
To Select Groups	Add Delete ☐ Select all the Groups
SMS Text	Send (Maximum 160 characters.) Pre-Configured Message

This is the screen from which general users will send SMS text messages (original text or pre-configured messages). The screen options here are the same options available to the administrator.

SMS Services > Outbox

This screen is also available to Users; it lists the SMS text messages sent. The list includes the receiver's number, the message sent, and a timestamp.

Chapter 6 – SMS Examples

Ensure the SIM Card Is Installed Correctly & Activated

This example will verify that the SIM is installed correctly and that it is activated.

1. Power up the MultiModem iSMS. Wait until the Status LED and the LS LED are blinking before continuing. Make sure all setup procedures and connections have been made. See Chapter 2.
2. Open the Web browser, enter the IP address, and login to the MultiModem iSMS. See Chapter 3.
3. Go to the **Network Setup > Cellular Modem** screen.

Network Setup >> Cellular Modem

Modem Initialization String

Initialization String 1

Initialization String 2

Initialization String 3 **Save**

Signal Strength

Command **Save**

SIM Number

SIM Number **Save**

- Enter the phone number of your SIM card. Example: 6126361654.
 - Click the **Save** button.
 - Click **Save & Restart** under the Menu Bar. Select **Save**. **Note:** You do not have to restart the MultiModem iSMS.
4. Send a text message to yourself. Do this on the **SMS Services > Send SMS** screen.

To **Add** **Delete**

Enter Phone Numbers

To **Add** **Delete** Select the entire Address Book ☐

Select Names from the Address Book [Address book]

To **Add** **Delete** Select all the Groups ☐

Select Groups [Groups]

SMS Text **[Pre-Configured Message]**

Typed: 9 Left: 453 Spanned: 1

Encoding Type ASCII

Modem ANY

Priority Normal

Send

- **To – Enter Phone Numbers** – Enter the SIM phone and click **Add**. The phone number displays in the box to the right.
- **SMS Text** – Enter an SMS Text message. The format **add;SF 100** is a trigger message word that tells the MultiModem iSMS to add the phone number and name to the address book. Notice the use of the semicolon in this message.
- Click **Send**. The following message displays: **Your request is being processed**.
- Click **OK**.

5. Check the **Outbox** and you will see that the message was sent.

SMS Services >> Outbox		
To	SMS	Date&time
6126361654	add;SF100	Tue Jan 1 00:02:14 2008

6. Check the **Inbox** and you will see that the message was received. This verifies that the cellular modem is functioning.

SMS Services >> Inbox			
From	SMS	Date	Time
+16126361654	add;SF100	08/01/21	10:26:45-24

Note: Sometimes you may have to refresh this screen and wait several minutes for the cellular provider to deliver the message.

7. Go to the **SMS Services > Address Book**. You will see the trigger SMS text message was processed and the name and phone number were added to the address book.

SMS Services >> Address Book

Name	Phone Number	Description	Edit	Delete
SF100	+16126361654	View	☐	☐

Add

Delete

Starting with:

Search

Note: The phone number is entered with a "+1" in front of it. This indicates the address phone number was entered into the address book using a trigger message.

Creating a Broadcast Message for Future Use

In this example a school wants to be prepared to send a message that school is closed for the day. The Administrator creates a **Trigger Message** word **Snow** and the following **Broadcast Message: School is closed today**. This example assumes that a **Group** called **Parents** has been created and that **SF 100** stands for the Administrator's cell phone number.

1. Go to the **Triggers > Add a Broadcast Trigger** screen.

Triggers >> Edit a Broadcast Trigger

Fields marked with * are mandatory fields.

Trigger Message	Snow	Typed: 4 Left: 156 Spanned: 1
Broadcast Message	School is closed today.	Typed: 23 Left: 439 Spanned: 1 [Pre-Configured Message]
Encoding Type	ASCII	
To	Parents	[Groups] [Delete]
Authenticate	☒	
Authentic Users	SF100	[Authentic List] [Address book] [Delete]
Priority	High	

Save Cancel

- Enter **Snow** in the Trigger Message word box. Trigger message words or codes are not case-sensitive.
- Enter the Broadcast Message. In this case the message is **School is closed today**.
- Select the **Group** that will receive this message. In this case the group is **Parents**.
- Check the **Authenticate** box to indicate that this message can be sent by an authenticated user only.
- The **Authentic User** selected to trigger this message is **SF 100**, the Administrator's cell phone.

Important Note: If you plan to use authentication on any entry in the address book, the phone numbers of these individuals should be entered exactly as how the Cellular Network presents Sender Number information (usually that is with a + symbol followed by the country code and then area code). Please see NOTE in the Address Book section of this guide. This allows authentication to work properly by allowing the MultiModem iSMS box to successfully match the cell phone number of a received trigger message with the phone number in the Authentic List.

- Select a **Priority** level (in this case, High was selected).
- Click **Save**. The following screen displays the Broadcast Message saved for future use.

Triggers >> Broadcast Triggers

Trigger Message	Broadcast Message	Encoding Type	Priority	Authenticate	View/Edit	Delete
Snow	School is closed today.	ASCII	High	Enabled	☐	☐

Add

2. To trigger the broadcasting of this message to the **Parent** group, the administrator sends the SMS text message word **Snow** from his cell phone to the MultiModem iSMS. When the MultiModem iSMS receives this message, it compares the Administrator's cell phone number with the Authentication List and if they match, it broadcasts the message to everyone in the **Parent** group.

Appendix A – Application Programming Interface (API)

Introduction

Purpose

To provide descriptions and examples for customers who require an Application Programming Interface (API) to integrate the MultiModem iSMS **Send** and **Receive** SMS capability into their own custom application.

This document defines the API interface provided for sending SMS via the MultiModem iSMS and for receiving SMS via the MultiModem iSMS

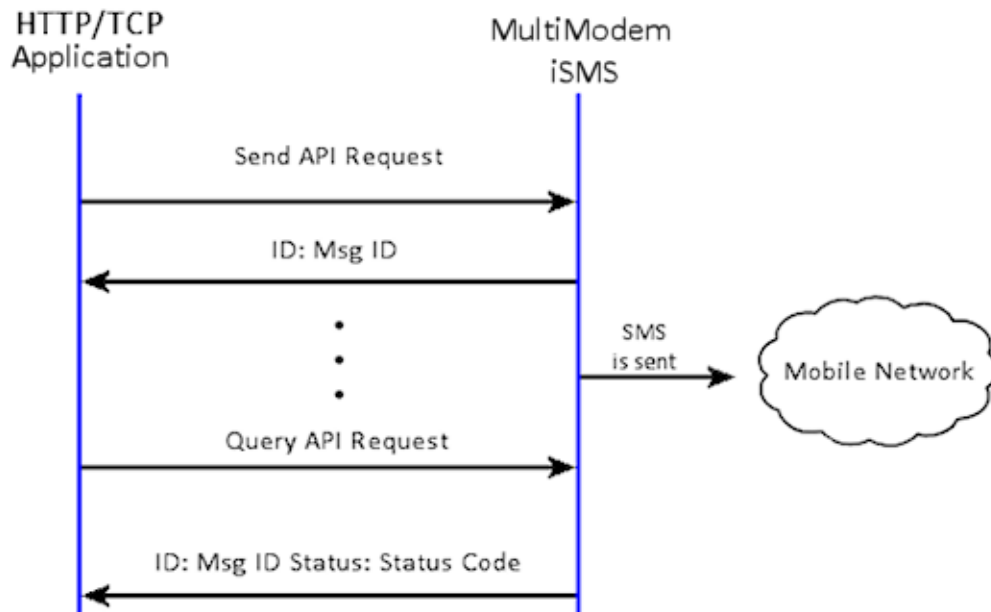
Scope

APIs are defined to send and receive SMS using HTTP or TCP protocols. The packet formats and handshakes are provided in the next section “Send SMS API”.

Acronyms and Definitions

Acronyms	Definitions
API	Application Program Interface
HTTP	Hypertext Transfer Protocol
SMS	Short Message Service
TCP	Transport Control Protocol

SMS API



HTTP API

Configuration of the "HTTP Send API" Using the MultiModem iSMS Web Admin Interface

SMS Services >> SMS API	
HTTP API Configuration	
HTTP API Status	☐
HTTP Port	81 Save
TCP API Configuration	
TCP API Status	☐
TCP Port	2040 Save
Non Polling Receive API Configuration	
Non Polling Receive API Status	☐
Protocol	☒ HTTP ☐ TCP Save

HTTP Send API Status:

Enable "HTTP Send API Status" to send SMS / query status using HTTP API.

By default, HTTP Send API is disabled.

HTTP Port:

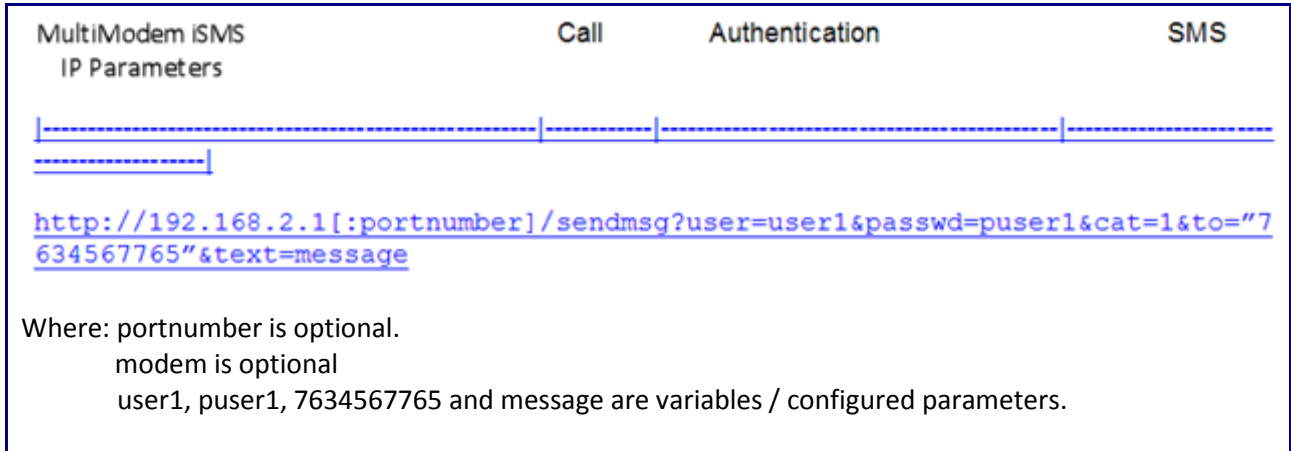
Configure the port to service the HTTP Send API.

Default is 81

HTTP Send API Format

Each "HTTP Send API Request" consists of four parts:

- The first part is the destination; i.e., the MultiModem iSMS IP and HTTP port number.
- The second part is the API call which is the query; therefore, it has a '?' post-fixed to the call.
- The third part is for authentication, which is in the form of a username and password.
- The fourth part is the message parameters.



Note: The MultiModem iSMS can be accessed ONLY from the preconfigured allowed networks.

Example: To access the MultiModem iSMS 204.26.122.125 from 125.63.78.44, you MUST add the network 125.63.78.0 to the following MultiModem iSMS screen: **Admin Access >> Allowed Networks**

When HTTP Send API is enabled, it is also possible to send SMS from a non-browser with a TCP connection to the configured HTTP Port by following the steps below:

- Initiate a raw TCP connection to the MultiModem iSMS IP address over the "HTTP Send API" port
Example : telnet 192.168.2.1 81
- Issue GET command to send SMS.
- Issue GET command to query the status of send SMS.

Send API Format

GET

```
/sendmsg?user=admin&passwd=admin&cat=1[&enc=0][&priority=1][&modem=2]&to=5645676543&ton=Graham&group=Engineering&text=This%20is%20a%20test%20message.^M^J
```

-or-

GET

```
/sendmsg?user=admin&passwd=admin&cat=1[&enc=1][&priority=2][&modem=0]&to=%225678976543%22&ton=%22Bob%22&group=%22Engineering%22&text=This%20is%20a%20test%20message.^M^J
```

Query API Format

```
GET /querymsg?user=admin&passwd=admin&apimsgid=message id.^M^J
```

Note: All special characters must be given in URL encoded format with hex value; e.g., space should be given as %20; double quotes should be given as %22.

Example: If a name is Graham Bell, it should be given as **Graham%20Bell**

Authentication

The system needs to authenticate any API request. We achieve this by having the authentication credentials as part of the "Send SMS URL" or "Send SMS TCP" command.

user - The username of the account, which has a maximum of 50 bytes.

passwd - The password of the account, which has a maximum of 50 bytes.

This user should be **Admin** or the configured **Send Users**.

Every "Send SMS URL" should have the username and password, and every request is authenticated by the MultiModem iSMS.

Sending to a Number

HTTP API format is:

```
http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=puser1&cat=1[  
&enc=0][&priority=1][&modem=1]&to="7657867765"&text=message
```

The parameters are:

- **cat** Category
 - 1** - Send SMS
 - 2** - Broadcast Trigger
 - 3** - Action Trigger
- **enc** Encoding type to send SMS(Optional field)
Range: 0 to 3
 - 0 - SMS text should be in ASCII form
 - 1 - SMS text should be in Extended ASCII form
 - 2 - SMS text should be in hexadecimal form (i.e. each hexadecimal value length should be maximum 4 and each hexadecimal value should be separated by a semi-colon. *Example:* 0645;41;646)
 - 3 - SMS text should be in decimal form (i.e. each decimal Value length should be maximum 5 and each decimal value should be separated by a semi-colon. *Example:* 1605;65;65300) Note: Maximum decimal value allowed is 65535

If **enc** is not specified in the send API request, default enc will be the configured settings in SMS settings page .

i.e. enc=2, if Unicode is enabled.

enc=1, if Extended ASCII is enabled.

enc=0, if both Extended ASCII and Unicode are disabled.
- **priority** Priority to send SMS (Optional field)
Range: 1 to 3
 - 1 - Low Priority
 - 2 - Normal Priority
 - 3 - High Priority

If priority is not specified in the request, default priority is *normal*.

- **modem** Modem index to send SMS (this is only for the SF 400/800 models)

Range : 1 to 4 for SF 400

1 to 8 for SF 800

0 for any modem (Send API job will be distributed via all the available modems)

If modem is not specified in the request, send API job will be distributed via all the available modems.

- **to** The mobile number where the SMS is to be delivered.
This number has to be given within double quotes. The maximum size of each recipient's number is 50 bytes.
- **text** The message text to be sent.
Enable *Extended ASCII* in the MultiModem iSMS to send both ASCII and extended ASCII characters. By default, *Extended ASCII* is disabled and the message could have only ASCII characters.

Notes: If *Extended ASCII* and *Unicode* are disabled and spanned SMS value is 1, a maximum of 160 characters can be sent.

If *Extended ASCII* is enabled and spanned SMS value is 1, a maximum of 140 characters can be sent.

If *Unicode* is enabled and spanned SMS value is 1, a maximum of 70 characters can be sent.

If the spanned SMS value is more than 1, the maximum number of characters allowed for each encoding scheme is defined as follows (where *n* represents the span value):

ASCII – $n * 154$ characters

Extended ASCII – $n * 134$ characters

Unicode – $n * 64$ characters

Any characters entered beyond the allowed limit will be chopped off.

In the HTTP API format example above: *user1*, *puser1*, *7657867765* and *message* are variables / configured parameters.

Sending to an Address Book Name

The API can be used to send the message to a name in the MultiModem iSMS address book. If the name does not exist in the address book, the message is dropped.

HTTP API format is:

```
http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=1
[&enc=0][priority=3][&modem=2]&ton="bob"&text=message
```

-or-

```
http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=1
[&enc=2][priority=3][&modem=2]&ton="bob"&text=41;42;645;0645(hexadecimal
form)
```

-or-

```
http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=1
[&enc=3][priority=3][&modem=2]&ton="bob"&text=65;66;67(decimal form)
```

The parameters are:

- **cat** 1
- **enc** Encoding type to send SMS(Optional field)

Range: 0 to 3

0 - SMS text should be in ASCII form

1 - SMS text should be in Extended ASCII form

2 - SMS text should be in hexadecimal form (i.e. each hexadecimal value length should be maximum 4, and each hexadecimal value should be separated by a semi-colon. Example: 0645;41;646)

3 - SMS text should be entered in decimal form (i.e. each decimal Value length should be maximum 5, and each decimal value should be separated by a semi-colon. Example: 1605;65;65300)

Note: Maximum decimal value allowed is 65535.

If enc is not specified in the send API request, default enc will be the configured settings in SMS settings page.

i.e. enc=2, if Unicode is enabled.

enc=1, if Extended ASCII is enabled.

enc=0, if both Extended ASCII and Unicode are disabled.

- **Priority** Priority to send SMS(Optional field)

Range: 1 to 3

1 - Low Priority

2 - Normal Priority

3 - High Priority

If priority is not specified in the request, the default priority is normal.

- **modem** Modem index to send SMS (this is only for the SF 400/800 models)
Range : 1 to 4 for SF 400
1 to 8 for SF 800
0 for any modem (Send API job will be distributed via all the available modems)
If modem is not specified in the request, send API job will be distributed via all the available modems
- **ton** The name in the address book where the SMS is to be delivered must be given within double quotes. The maximum size of each recipient's name is 50 bytes.
- **text** The message text to be sent.
Enable *Extended ASCII* in the MultiModem iSMS to send both ASCII and extended ASCII characters. By default, *Extended ASCII* is disabled and the message can have only ASCII characters.
If Unicode is enabled(if enc is not specified in request), SMS text should be only in Hexadecimal form.
If *Extended ASCII* and Unicode are disabled and spanned SMS value is 1, a maximum of 160 characters can be sent.
If *Extended ASCII* is enabled and spanned SMS value is 1, a maximum of 140 characters can be sent.
If Unicode is enabled and spanned SMS value is 1, a maximum of 70 characters can be sent

If the spanned SMS value is more than 1, the maximum number of characters allowed for each encoding scheme is defined as follows (where *n* represents the span value):

ASCII – $n * 154$ characters

Extended ASCII – $n * 134$ characters

Unicode – $n * 64$ characters

Any characters entered beyond the allowed limit will be chopped off.

Sending to a Group

The API can be used to send SMS to a pre-defined group. The group should exist in the MultiModem iSMS. If the group does not exist, the message is dropped.

HTTP API format is:

```
http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=1
[enc=1][priority=1]&modem=4&group="admin"&text=message
```

-or-

```
http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=1
[enc=2][priority=1]&modem=4&group="admin"&text=41;42;645;0645(hexad
ecimal form)
```

-or-

```
http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=1
[enc=3][priority=1]&modem=4&group="admin"&text=65;66;678(decimal
form)
```

The parameters are:

- **cat** 1
- **enc** Encoding type to send SMS(Optional field)
 Range: 0 to 3
 - 0 - SMS text should be in ASCII form
 - 1 - SMS text should be in Extended ASCII form
 - 2 - SMS text should be in hexadecimal form (i.e. each hexadecimal value length should be maximum 4, and each hexadecimal value should be separated by a semi-colon. Example: 0645;41;646)
 - 3 - SMS text should be in decimal form (i.e. each decimal Value length should be maximum 5, and each decimal value should be separated by a semi-colon. Example: 1605;65;65300)

Note: Maximum decimal value allowed is 65535.

If **enc** is not specified in the send API request, default enc will be the configured settings from the SMS settings page.

i.e. enc=2, if *Unicode* is enabled.

 enc=1, if *Extended ASCII* is enabled.

 enc=0, if both *Extended ASCII* and *Unicode* are disabled.
- **priority** Priority to send SMS(Optional field)
 Range: 1 to 3
 - 1 - Low Priority
 - 2 - Normal Priority
 - 3 - High Priority

If priority is not specified in the request, the default priority is normal.

- **modem** Modem index to send SMS (this is only for the SF 400/800 models)
Range : 1 to 4 for SF 400
1 to 8 for SF 800
0 for any modem (Send API job will be distributed via all the available modems)

If modem is not specified in the request, send API job will be distributed via all the available modems.
- **group** The pre-defined group name(s) must be given within double quotes.
The maximum size of group name is 50 bytes.
- **text** The message text to be sent.
Enable *Extended ASCII* in the MultiModem iSMS to send both ASCII and extended ASCII characters. By default, *Extended ASCII* is disabled, and the message can have only ASCII characters.

If *Unicode* is enabled (and if **enc** is not specified in request), SMS text should only be in Hexadecimal form.

If *Extended ASCII* and *Unicode* are disabled and spanned SMS value is 1, a maximum of 160 characters can be sent.

If *Extended ASCII* is enabled and spanned SMS value is 1, a maximum of 140 characters can be sent.

If *Unicode* is enabled and spanned SMS value is 1, a maximum of 70 characters can be sent.

If the spanned SMS value is more than 1, the maximum number of characters allowed for each encoding scheme is defined as follows (where *n* represents the span value):

ASCII – $n * 154$ characters

Extended ASCII – $n * 134$ characters

Unicode – $n * 64$ characters

Any characters entered beyond the allowed limit will be chopped off.

Sending a Broadcast Trigger Message

We can use the API to send a broadcast trigger message to the MultiModem iSMS.

HTTP API format is:

```
http://192.168.2.1[:portnumber]/sendmsg?user=user2&passwd=user2&cat=2
[&enc=0][&modem=5]&text=message
```

-or-

```
http://192.168.2.1[:portnumber]/sendmsg?user=user2&passwd=user2&cat=2
[&enc=2][&modem=5]&text=message should be hexadecimal form
```

-or-

```
http://192.168.2.1[:portnumber]/sendmsg?user=user2&passwd=user2&cat=2
[&enc=3][&modem=5]&text=message should be decimal form
```

The parameters are:

- **cat** 2
- **enc** Encoding type to send SMS(Optional field)
Range: 0 to 3
 - 0 - SMS text should be in ASCII form
 - 1 - SMS text should be in Extended ASCII form
 - 2 - SMS text should be in hexadecimal form (*i.e.* each hexadecimal value length should be maximum 4, and each hexadecimal value should be separated by a semi-colon. Example: 0645;41;646)
 - 3 - SMS text should be in decimal form (*i.e.* each decimal Value length should be maximum 5, and each decimal value should be separated by a semi-colon. Example: 1605;65;65300)

Note: Maximum decimal value allowed is 65535.

If **enc** is not specified in the send API request, default **enc** will be configured to the settings of the SMS settings page.

i.e. **enc**=2, if *Unicode* is enabled.

enc=1, if *Extended ASCII* is enabled.

enc=0, if both *Extended ASCII* and *Unicode* are disabled.

- **modem** Modem index to send broadcast message

Range : 1 to 4 for SF400

1 to 8 for SF800

0 for any modem (Broadcast API job will be distributed via all the available modems)

If modem is not specified in the request, broadcast API job will be distributed via all the available modems

If modem is specified, broadcast job will be sent via the specified modem.

- **text** The trigger message text to be sent.
Enable *Extended ASCII* in the MultiModem iSMS to send both ASCII and extended ASCII characters.
By default, *Extended ASCII* is disabled, and the message can have only ASCII characters.
If *Unicode* is enabled (and if **enc** is not specified in request), SMS text should be only in Hexadecimal form.

If *Extended ASCII* is disabled, a maximum of 160 characters can be sent.
If *Extended ASCII* is enabled, a maximum of 140 characters can be sent.
If *Unicode* is enabled, a maximum of 70 characters can be sent.

Irrespective of the spanned SMS value set, the maximum number of characters allowed in the text field is:
 - 160 for ASCII
 - 140 for Extended ASCII
 - 70 for Unicode
Any characters entered beyond the allowed limit will be chopped off.

The API can be used to send a trigger message to the MultiModem iSMS. If the MultiModem iSMS has a configured broadcast trigger, it will send the broadcast trigger message to the configured recipients.

Sending an Action Trigger Message

We could use this API to perform a predefined action.

HTTP API format is:

```
http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=3
[&enc=0]&text=message
```

-or-

```
http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=3
[&enc=2]&text=message should be hexadecimal form
```

Example: Configured action trigger for adding preconfigured SMS as 41;42;43 (with enc=2).

Preconfigured SMS to add is 645;646;647;648 (in hexadecimal form).

In an API request, the text field should be in the format:

Configured action trigger;Preconfigured SMS

text=41;42;43;;645;646;647;648 (not correct)

text=41;42;43;3a;645;646;647;648 (correct format)

Here **3a** is equivalent hexadecimal value for a semi-colon. We should use equivalent hexadecimal value for either semi-colon or colon.

-or-

```
http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&
cat=3[&enc=3]&text=message should be decimal form.
```

Example: Configured action trigger for adding preconfigured SMS as 41;42;43(with enc=3).

Preconfigured SMS to add is 645;646;647;648 (in decimal form).

In an API request, the text field should be in the format:

Configured action trigger;Preconfigured SMS

text=41;42;43;;645;646;647;648 (not correct)

text=41;42;43;58;645;646;647;648 (correct format)

Here **58** is decimal equivalent value for a semi-colon. We should use equivalent decimal value for either semi-colon or colon.

Irrespective of the spanned SMS value set, the maximum number of characters allowed in the text field is:

160 for ASCII

140 for Extended ASCII

70 for Unicode

Any characters entered beyond the allowed limit will be chopped off.

Examples for action trigger with **enc=2**:

To Add an entry in the Address book:

Configured trigger: 41;42;43 (with **enc=2**)

Name: 61;62;63;64 (abcd)

Phone number: 39;38;38;36;30;39;38;38;36;30 (9886098860)

`http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=3[&enc=2]&text=41;42;43;3a;61;62;63;64;3a;39;38;38;36;30;39;38;38;36;30`

Here **3a** is the equivalent hexadecimal for semi-colon. Instead of **3a**, we can use **3b** (equivalent hexadecimal value for colon) also.

To Add a group name:

Configured trigger: 44;45;46 (with **enc=2**)

Group name: 65;66;67;68 (efgh)

`http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=3[&enc=2]&text=44;45;46;3b;65;66;67;68`

To Add a group name with a member and phone number:

Configured trigger: 44;45;46 (with **enc=2**)

Group name: 65;66;67;68 (efgh)

Name: 61;62;63;64 (abcd)

Phone number: 39;38;38;36;30;39;38;38;36;30 (9886098860)

`http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=3[&enc=2]&text=44;45;46;3b;65;66;67;68;3b;61;62;63;64;3b;39;38;38;36;30;39;38;38;36;30`

To Add a group name with a member (should exist in Address book):

Configured trigger: 44;45;46(with **enc=2**)

Group name: 65;66;67;68 (efgh)

Name: 61;62;63;64 (abcd)

`http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=3[&enc=2]&text=44;45;46;3b;65;66;67;68;3b;61;62;63;64`

To delete an entry in the Address Book:

Configured trigger: 47;48;49(with enc=2)

Name: 61;62;63;64 (abcd)

Phone number: 39;38;38;36;30;39;38;38;36;30 (9886098860)

With Name and Number:

`http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=3[&enc=2]&text=47;48;49;3a;61;62;63;64;3a;39;38;38;36;30;39;38;38;36;30`

With Name only:

`http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=3[&enc=2]&text=47;48;49;3a;61;62;63;64`

With Number only:

`http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=3[&enc=2]&text=47;48;49;3a;3a;39;38;38;36;30;39;38;38;36;30`

To Delete a Group:

Configured trigger: 4a;4b;4c (with enc=2)

Group name: 65;66;67;68 (efgh)

`http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=user1&cat=3[&enc=2]&text=4a;4b;4c;3a;65;66;67;68`

The parameters are:

- **cat** 3
- **enc** Encoding type to send SMS(Optional field)
 - Range:** 0 to 3
 - 0 - SMS text should be in ASCII form
 - 1 - SMS text should be in Extended ASCII form
 - 2 - SMS text should be in hexadecimal form (*i.e.* each hexadecimal value length should be maximum 4, and each hexadecimal value should be separated by a semi-colon. Example: 0645;41;646)
 - 3 - SMS text should be in decimal form (*i.e.* each decimal Value length should be maximum 5, and each decimal value should be separated by a semi-colon. Example: 1605;65;65300). Note: Maximum decimal value allowed is 65535.

If **enc** is not specified in the send API request, default enc will be the configured settings in SMS settings page .

i.e. enc=2, if Unicode is enabled.

enc=1, if Extended ASCII is enabled.

enc=0, if both Extended ASCII and Unicode are disabled.

- **Modem** Modem index to send SMS

Range : 1 to 4 for SF400

1 to 8 for SF800

0 for any modem

Specifying modem for a **cat=3** job is not applicable. Action trigger is executed even if modem is specified.

- **text** The trigger message text to be sent.
Enable *Extended ASCII* in the MultiModem iSMS to send both ASCII and extended ASCII chars.
By default, *Extended ASCII* is disabled, and the message can have only ASCII characters.
If Unicode is enabled(if enc is not specified in request), SMS text should be only in Hexadecimal form.
If *Extended ASCII* is disabled, a maximum of 160 characters can be sent.
If *Extended ASCII* is enabled, a maximum of 140 characters can be sent.
If Unicode is enabled, a maximum of 70 characters can be sent.
The API can be used to send an action trigger to the MultiModem iSMS. If the MultiModem iSMS has a configured action trigger, it will perform the configured action.

Sending to Multiple Numbers, Address Book Recipients or Groups

An SMS can be sent to multiple numbers, address book names and groups using a single API.

HTTP API format is:

```
http://192.168.2.1[:portnumber]/sendmsg?user=xxx&passwd=xxx&cat=1[&enc=0][&priority=1][&modem=8]&to="xxx1","xxx2","xxx3"&ton="name1","name2"&group="admin","rd","market"&text=message
```

xxx1, xxx2 and xxx3 are mobile numbers.

name1 and name2 are names in the Address Book.

admin, rd and market are groups present in the MultiModem iSMS.

Note: The **to**, **ton** and **group** parameters should be enclosed in quotes.

Response from the MultiModem iSMS after Submitting the Send SMS API

The MultiModem iSMS returns a unique identifier; *i.e.* an API message ID for each "Send API request".

This ID can be used to track and monitor any given message.

ID: apimsgid

-or-

Err: error code

e.g.,

ID: 1

Err: 601

HTTP Query API Format

Processing the "Send API" and sending the message takes some time. So, only an **apimsgid** is returned as a response to the "Send SMS API". Query API can be used to query the status of a Send. It returns the status of a message submitted earlier.

HTTP API format is:

`http://192.168.2.1[:portnumber]/querymsg?user=xxx&passwd=xxx&apimsgid=id`

Response values:

ID: apimsgid Status: status code

OR

ID: apimsgid Err: error code

OR

Err: error code

e.g.,

ID: 1 Status: Done

ID: 1 Err: 604

Err: 602

Note: The maximum supported size of the URL is 2048 bytes.

Status Codes

Status Code	Status Description	Description
0	Done	The MultiModem iSMS has completed servicing the "Send" job. The message has been successfully sent to the Cellular network for delivery to all intended recipients.
1	Done with error	The MultiModem iSMS has completed servicing the "Send" job, but the message is not sent to all the recipients
2	In progress	The MultiModem iSMS is processing the "Send" API.
3	Request Received	The MultiModem iSMS has received the "Send" request.
4	Error	Error occurred while sending the SMS from the MultiModem iSMS.
5	Message ID Not Found	An API Message ID does not exist.
6	<u>Distributed to Slave1</u> <u>[10.10.10.101]</u>	The Master MultiModem iSMS has distributed the Job to a given slave.
7	Distribution resulted in error	Master tried to send the job to the slaves and could not send the job to any of the slaves as the slaves are not available (loaded full or network unreachable)
8	Distributed among many Slaves	The Master MultiModem iSMS has distributed the Job Request among many Slaves.
9	API is canceled	Reflects that API job is dropped if the Send API job is canceled from the WEB GUI

Error Codes

Error Code	Error Description	Response to
601	Authentication Failed	Send API, Query API
602	Parse Error	Send API, Query API
603	Invalid Category	Send API
604	SMS message size is greater than 160 chars	Send API
605	Recipient Overflow	Send API
606	Invalid Recipient	Query API
607	No Recipient	Send API
608	MultiModem iSMS is busy, can't accept this request	Send API, Query API
609	Timeout waiting for a TCP API request	Send API
610	Unknown Action Trigger	Send API
611	Error in broadcast trigger	Send API
612	System Error – Memory Allocation Failure	Send API, Query API
613	Invalid Modem Index In SF 400, if modem index given is not within 0 to 4 In SF 800, if modem index given is not within 0 to 8	Send API
614	Invalid device model number (model number is not detected properly to validate the modem index)	Send API
615	Invalid Encoding type	Send API
616	Invalid Time/Date Input	Receive API
617	Invalid Count Input	Receive API
618	Service Not Available (Non-Polling Receive API is enabled so Polling Receive API service is not available)	Receive API
619	Invalid Addressee	Receive API
620	Invalid Priority value	Send API
621	Invalid SMS text This error code is given if the following is not true: If enc = 2 , SMS text should be in hexadecimal form (each hexadecimal value length is a maximum of 4 digits and semi-colon is used as a delimiter between two hexadecimal values). If enc = 3 , SMS text should be in decimal form (each decimal value length is maximum 5 digits and semi-colon is used as delimiter between two decimal values). Note: Decimal values allowed up to 65535 only.	Send API

TCP API

Configuration of the "TCP Send API" Using the MultiModem iSMS Web Admin Interface

SMS Services >> SMS API	
HTTP API Configuration	
HTTP API Status	☐
HTTP Port	81
Save	
TCP API Configuration	
TCP API Status	☐
TCP Port	2040
Save	
Non Polling Receive API Configuration	
Non Polling Receive API Status	☐
Protocol	☒ HTTP ☐ TCP
Save	

TCP Send API Status:

Enable "TCP Send API Status" to send SMS / query status using TCP API. By default, TCP Send API is disabled.

TCP Port:

Configure the port to service the TCP Send API. Default is 2040.

Note: MultiModem iSMS can be accessed ONLY from the preconfigured allowed networks.

Example: To access the MultiModem iSMS 204.26.122.125 from 125.63.78.44, you *must* add the network 125.63.78.0 to the following MultiModem iSMS screen: **Admin Access >> Allowed Networks**

- Initiate a raw TCP connection to the MultiModem iSMS IP address over the "TCP Send API" port.
- Issue send command to send SMS.
- Issue query command to query the status of send SMS.

TCP Send API Format

```
/sendmsg?user=admin&passwd=admin&cat=1&enc=0&priority=1&modem=1&to="+919844895691"&ton="Bob"&group="eng"&text=Here is the test message
```

Notes:

“enc” and “priority” parameters are optional.

enc Encoding type to send SMS(Optional field)

Range: 0 to 3

0 - SMS text should be in ASCII form

1 - SMS text should be in Extended ASCII form

2 - SMS text should be in hexadecimal form (*i.e.* each hexadecimal value length should be maximum 4, and each hexadecimal value should be separated by a semi-colon. Example: 0645;41;646)

3 - SMS text should be in decimal form (*i.e.* each decimal Value length should be maximum 5, and each decimal value should be separated by a semi-colon. Example: 1605;65;65300).

Note: Maximum decimal value allowed is 65535.

If **enc** is not specified in the send API request, default enc will be the configured settings in SMS settings page.

i.e. **enc**=2, if Unicode is enabled.

enc=1, if Extended ASCII is enabled.

enc=0, if both Extended ASCII and Unicode are disabled.

priority Priority to send SMS(Optional field)

Range: 1 to 3

1 - Low Priority

2 - Normal Priority

3 - High Priority

If priority is not specified in the request, default priority is set to normal.

“modem” parameter is optional.

modem Modem index to send SMS

Range : 1 to 4 for SF400

1 to 8 for SF800

0 for any modem (Send API job will be distributed via all the available modems)

If modem is not specified in the request, send API job will be distributed via all the available modems

TCP Query API Format

```
/querymsg?user=admin&passwd=admin&apimsgid=id
```

Notes:

- The TCP buffer should contain only this data in the given format to be parsed properly by the TCP Server in the MultiModem iSMS to send SMS / query status.
- SMS could be sent to different multiple recipients like name, number, group using the same format. Enumeration and examples given in HTTP Send API section hold good.
- Response to TCP Send API, response to TCP Query API, Status Codes and Error Codes are the same as given for HTTP Send API.

Sending a Job to a Slave MultiModem iSMS From Master MultiModem iSMS

TCP API is also used to distribute the Job Load from Master MultiModem iSMS unit to a Slave unit when load balancing is enabled in the master and with the slaves properly configured.

TCP API format is:

```
/sendmsg?user=admin&passwd=admin&cat=4&enc=0&priority=2&to="+919844895691",""+16675674532"&text=Here is the test message
```

The parameters are:

- **cat** **4**
- **enc** Encoding type of the SMS(Range 0 to 3)
 - 0 - SMS text is in ASCII form
 - 1 - SMS text is in Extended ASCII form
 - 2 - SMS text is in hexadecimal form (*i.e.* each hexadecimal value is of 4 digits and each hexadecimal value is separated by a semi-colon. Example: 0645;0041;0646).
 - 3 - SMS text is in hexadecimal form. However, enc type is given as 3 to indicate to the slave to display in decimal form as in the input send SMS job.
- **priority** Priority of the SMS Job(Range 1 to 3)
 - 1 - Low Priority
 - 2 - Normal Priority
 - 3 - High Priority

It indicates to the slave the priority of the job and to be handled accordingly.
- **to** The mobile numbers where the SMS is to be delivered.
This number has to be given within double quotes. The maximum size of each recipient's number is 50 bytes.
- **text** The message text to be sent.
If **enc** is 0, SMS text is in *ASCII*.
If **enc** is 1, SMS text is in *Extended ASCII*.
If **enc** is 2 / 3 / 4, SMS text is in hexadecimal form.
(*i.e.* each hexadecimal value is of 4 digits and each hexadecimal value is separated by a semi-colon. Example: 0645;0041;0646)

Spanned SMS would be sent as in the input Send SMS job.

Note: An API request from master to slave will contain only recipient's numbers. Recipient names and groups are not supported to make it independent of the Address Book in the slave.

Response from the Slave MultiModem iSMS After Receiving the Send SMS API from Master MultiModem iSMS

The Slave MultiModem iSMS returns a unique identifier *i.e.*, an API message ID for each "Send API request" and Load Indicator, which tells the Job load on the Slave.

This Load indicator is used to decide the least loaded Slave while distributing to many Slaves.

ID: apimsgid Load indicator

-or-

Err: error code Load indicator

e.g.,

ID: 1 1

Err 608 1000

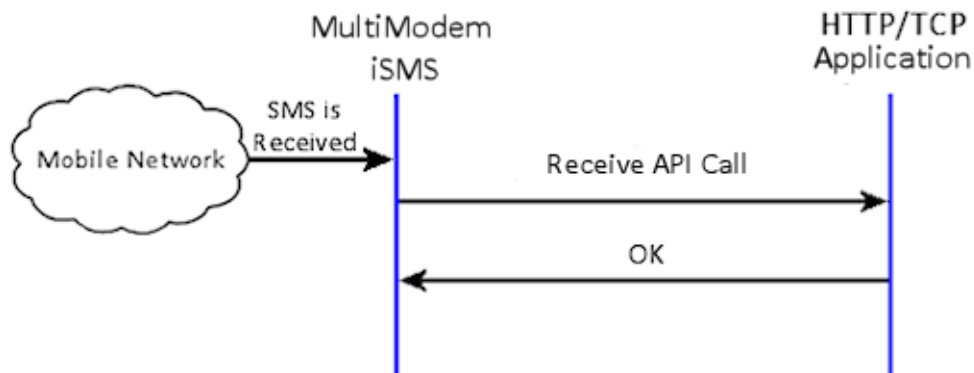
Receive SMS API

The Receive API feature is implemented in two modes:

1. **Non-Polling Mode**
2. **Polling Mode**

Note: By Default, Polling mode will be configured.

Non Polling Mode Receive SMS API



Process:

- Upon receipt of an SMS message and based on the configuration, the MultiModem iSMS sends the SMS to the HTTP or TCP server.
- If the post interval is zero seconds, the MultiModem iSMS uploads the message immediately upon receipt of it. If the post interval is non-zero, it waits for the configured post interval, queues up the messages, and then uploads the messages accumulated for the configured post interval.
- The MultiModem iSMS will wait for an OK response from the server after sending the SMS to the application via HTTP or TCP. The response timeout at the MultiModem iSMS is 30 seconds.

HTTP Receive API – Non-Polling Mode

Configuration of the "Non-Polling Mode HTTP Receive API" Using the MultiModem iSMS Web Admin Interface

Non Polling Receive API Configuration	
Non Polling Receive API Status	☒
Protocol	☒ HTTP ☐ TCP Save
Server	
Port	80 Save
Server Default Page	Save
Server Authentication	☒
Username	
Password	Save
Post Interval	0 seconds Save

POST Packet Format with Authentication

```
POST /cgi-bin/postquery.cgi HTTP/1.1
HOST: 192.168.2.2:80
User-Agent: MultiModem iSMS/1.40
Accept: text/xml, application/xml,
application/xhtml+xml,text/html;q=0.9,text/plain;q=0.8,
application/msword, application/vnd.ms-powerpoint, image/png, */*
Accept-Language: en-us; en;q=0.50
Accept-Encoding: gzip, deflate
Accept-Charset: ISO-8859-1, utf-8;q=0.7, *;q=0.7
Keep-Alive: 300
Connection: keep-alive
Content-Type: application/x-www-form-urlencoded
Content-Length: 395
```

```
username=SMSFINDER&password=SMSFINDER&XMLDATA=%3C%3Fxml%20version%3D%221.0%22%20
encoding%3D%22ISO-8859-
1%22%3F%3E%0D%0A%3CResponse%3E%0D%A0%3CMessageNotification%3E%0D%0A%3CModemNum
ber%3E%2B2%3A19525945092%3C%2FModemNumber%3E%0D%0A%3CSenderNumber%3E%2B9198448
95692%3C%2FSenderNumber%3E%0D%0A%3CDate%3E08%2F03%2F14%3C%2FDate%3E%0D%0A%3CTi
me%3E12%3A53%3A09%3C%2FTime%3E%0D%0A%3CMessage%3ETest%0D%0A%0D%3C%2FMessage%3
E%0D%0A%3C%2FMessageNotification%3E%0D%0A%A0%3C%2FResponse%3E%0D%0A
```

POST Packet Format without Authentication

POST /ismsResponse_1.4x.rb HTTP/1.1
 HOST: 172.17.20.1:80
 User-Agent: MultiModem iSMS/1.41
 Accept: text/xml, application/xml, application/xhtml+xml,text/html;q=0.9,text/plain;q=0.8,image/png,
 /
 Accept-Language: en-us; en;q=0.50
 Accept-Encoding: gzip, deflate
 Accept-Charset: ISO-8859-1, utf-8;q=0.7, *;q=0.7
 Keep-Alive: 300
 Connection: keep-alive
 Content-Type: application/x-www-form-urlencoded
 Content-Length: 439

XMLDATA=%3C%3Fxml%20version%3D%221.0%22%20encoding%3D%22ISO-8859-1%22%3F%3E%0D%0A%3CResponse%3E%0D%0A%3CMessageNotification%3E%0D%0A%3CModemNumber%3E1%3A7632346274%3C%2FModemNumber%3E%0D%0A%3CSenderNumber%3E%2B16512706431%3C%2FSenderNumber%3E%0D%0A%3CDate%3E10%2F08%2F24%3C%2FDate%3E%0D%0A%3CTime%3E14%3A15%3A52%3C%2FTime%3E%0D%0A%3CMessage%3ETest%20Message.%3C%2FMessage%3E%0D%0A%3C%2FMessageNotification%3E%0D%0A%3C%2FResponse%3E%0D%0A

Note:

If authentication is disabled, POST DATA contains XMLDATA=[urlencoded(XML)]

If authentication is enabled, POST DATA contains username=user&passwd=user&

XMLDATA=[urlencoded(XML)]

Posting of 1 message	Posting of 2 messages
<pre><?xml version="1.0" encoding="ISO-8859-1"?>\r\n <Response>\r\n <MessageNotification>\r\n <ModemNumber>2:19525945092</ModemNumber>\r\n <SenderNumber>6754535645</SenderNumber>\r\n <Date>08/03/10</Date>\r\n <Time>09:05:30</Time>\r\n <Message>Here is a test message</Message>\r\n </MessageNotification>\r\n </Response>\r\n</pre>	<pre><?xml version="1.0" encoding="ISO-8859-1"?>\r\n <Response>\r\n <MessageNotification>\r\n <ModemNumber>2:19525945092</ModemNumber>\r\n <SenderNumber>8767654534</SenderNumber>\r\n <Date>08/03/07</Date>\r\n <Time>08:07:20</Time>\r\n <Message>Test message 1</Message>\r\n </MessageNotification>\r\n <MessageNotification>\r\n <ModemNumber>3:</ModemNumber>\r\n <SenderNumber>9876754534</SenderNumber>\r\n <Date>08/03/13</Date>\r\n <Time>10:10:36</Time>\r\n <Message>Test message 2</Message>\r\n </MessageNotification>\r\n </Response>\r\n</pre>

Notes:

- The MultiModem iSMS accommodates a maximum of two messages in one POST message.
- The MultiModem iSMS waits for an OK response from the HTTP server; it will timeout in 30 seconds.
- If receiving modem's SIM number is configured then <ModemNumber> field has modem index:SIM number. If receiving modem's SIM number is not configured then <ModemNumber> field has modem index:

TCP Receive API – Non-Polling Mode

Configuration of the "Non Polling mode TCP Receive API" Using the MultiModem iSMS Web Admin Interface

Non Polling Receive API Configuration	
Non Polling Receive API Status	☒
Protocol	☐ HTTP ☒ TCP Save
Server	
Port	80 Save
Server Default Page	Save
Server Authentication	☒
Username	
Password	Save
Post Interval	0 seconds Save

TCP Receive API Request without Authentication

From: MultiModem iSMS/1.40

Authentication: OFF

Data-Length: 123

1:19525945092

+17635280856

08/10/15

07:29:32

26632HTTP Message text.

TCP Receive API Request with Authentication

From: MultiModem iSMS/1.40

Authentication: OFF

Data-Length: 123

smsuser1

smsuser1

1:19525945092

+17635280856

08/10/15

07:29:32

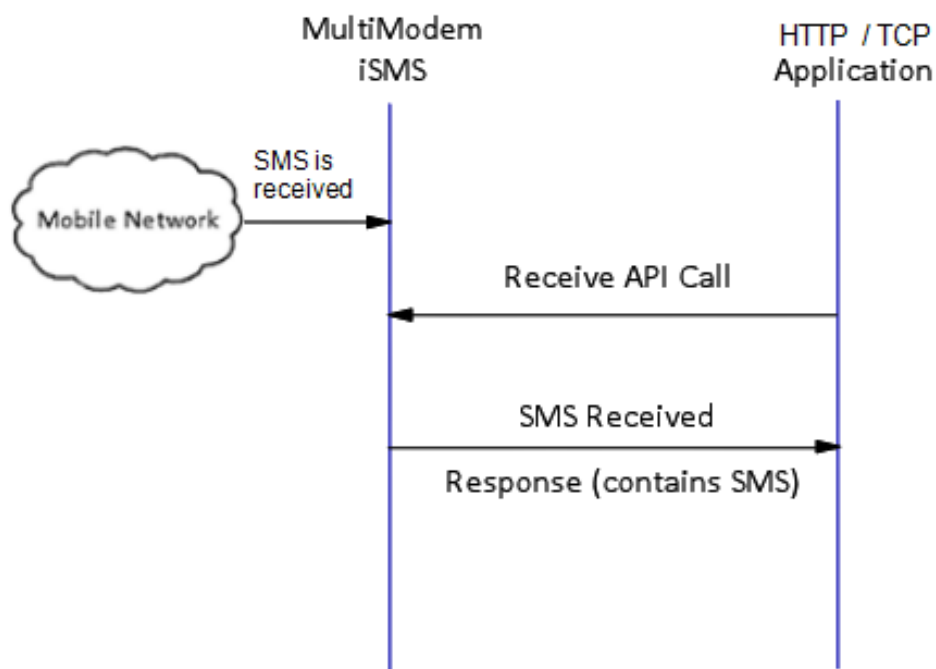
26632HTTP Message text.

Above payload comprised of:

- Username, Password if authentication is enabled and configured.
- Receiving modem number details: If receiving modem's SIM number is configured then <ModemNumber> field has modem index:SIM number. If receiving modem's SIM number is not configured then <ModemNumber> field has modem index:
- Sender's number
- Date
- Time
- SMS Message

The MultiModem iSMS waits for an OK response from the TCP application; it will timeout in 30 seconds.

Polling Mode Receive SMS API



Process:

- Upon the receipt of request from TCP/HTTP application, the MultiModem iSMS will respond with the SMS received based on the filter condition in the request and availability.

Notes:

- Enabling the Non-Polling Mode Receive API disables the Receive API in Polling Mode.
- Disabling the Non-Polling Mode Receive API enables the Receive API in Polling Mode provided the API Ports are configured.
- HTTP and TCP Clients can use the configured HTTP and TCP API ports respectively for Receive API Polling mode request.

Receive API – Polling Mode

Receive API polling mode has two commands. The ***querycount?*** command and the ***recvmsg?*** command.

querycount?

The query count command is used to determine the number of unread SMS messages in the MultiModem iSMS receive queue.

recvmsg?

The receive message command is used to retrieve the unread SMS messages from the receive queue.

Once a message is retrieved (read), it cannot be read again. A record of the SMS is kept in the SMS Services Inbox.

The screenshot displays the 'SMS Services >> SMS API' configuration interface. It is divided into three main sections:

- HTTP API Configuration:** Includes 'HTTP API Status' (checked), 'HTTP Port' (81), and a 'Save' button.
- TCP API Configuration:** Includes 'TCP API Status' (checked), 'TCP Port' (2040), and a 'Save' button.
- Non Polling Receive API Configuration:** Includes 'Non Polling Receive API Status' (unchecked), 'Protocol' (radio buttons for HTTP and TCP, with HTTP selected), and a 'Save' button.

Receive API Polling Mode Query Format

The format of the command can be as an *HTTP/1.1 Get* or in our product specific raw TCP protocol as shown below.

`/<command?><usercredentials><options><end-of-line>`

`GET /recvmsg?user=admin&passwd=admin[&count=][&from][&fdate=][&tdate=][&ftime=][&ttime=][&text=]`

Query options are only used with the ***recvmsg?*** Command:

- All options given within [] indicate that they are optional
- *count* – number of messages to be displayed
 - If filter is not given, it gives count of ALL unread messages
- *from* – SMS from this mobile number
- *fdate, tdate* – SMS received during this date period (*from fdate; to tdate*)
 - date format: yy/mm/dd
- *ftime, ttime* – SMS received during this time period (*from ftime; to ttime*)
 - time format: hh:mm:ss
- *text* – SMS received matching this text completely

HTTP Query Request using browser:

http://192.168.2.1:81/querycount?user=admin&passwd=admin

TCP Query Request:

/querycount?user=admin&passwd=admin

Successful responses for the query count will be in the following format:

Count: Value

'Value' gives the number of unread messages.

Error responses for the above commands will be in the following format:

Err: error code

Error Codes

Error Code	Error Description	Response to
601	Authentication Failed	Send API, Query API, Receive API
602	Parse Error	Send API, Query API, Receive API
604	Filtering with SMS Text whose message size is greater than 280 chars (70 * 4 for Unicode is the maximum possible size of the SMS received by the MultiModem iSMS wireless modem)	Receive API
605	Recipient Overflow	Send API, Receive API
608	Server Busy	Send API, Receive API
616	Invalid Time/Date Input	Receive API
617	Invalid Count Input	Receive API
618	Service Not Available	Receive API
619	Invalid Addressee	Receive API

Query for number of unread messages (*querycount?*)**Examples:****HTTP:**

Get /querycount?user=admin&passwd=adminHTTP/1.1\r\n

HTTP Query Request using browser:

http://192.168.2.1:81/querycount?user=admin&passwd=admin

TCP:

/querycount?user=admin&passwd=admin\r\n

TCP Query Request:

/querycount?user=admin&passwd=admin

Query to receive unread messages (*recvmsg?*)

Examples:

HTTP:

Get /recvmsg?user=admin&passwd=admin[&options of your choice defining up to how many you want to receive at one time and received during what specific period]HTTP/1.1\r\n

HTTP request using the browser to read 10 unread messages for a specific set of dates:

http://192.168.2.1:81/recvmsg?user=admin&passwd=admin&count=10&fdate=09/08/22&tdate=09/08/24

TCP:

/recvmsg?user=admin&passwd=admin[&options of your choice defining up to how many you want to receive at one time and received during what specific period]\r\n

TCP request to read 10 unread messages for a specific set of dates:

/recvmsg?user=admin&passwd=admin&count=10&fdate=09/08/22&tdate=09/08/24

Command responses

Querycount?

Successful responses to the *querycount?* command will be in the following format:

HTTP:

HTTP/1.1 200 OK
Content-type: text/html
Count:value

TCP:

Count:value

'Value' gives the number of unread messages.

Command responses (continued)

Recvmsg?

Successful responses to the *recvmsg?* command will be in the following format:

Packet_end_flag
Unread_available
Msg_Count
Msg_index_1
Number
Date
Time
Encode type
Message

Msg_index_2
Number
Date
Time
Encode type
Message

Msg_index_N
Number

Notes:

- *Packet_end_flag*: 0 – More packets to continue; 1 – End of the packets.
- *Unread_available*: 1 – Unread Messages available; 0 – No Unread Messages available for the request.
- *Msg_Count* – Total number of messages sent in a packet.
- *N* – Maximum number of messages per packet.
- If the time is not specified in the query, default range of 24 hrs from 00:00:00 to 23:59:00 will be considered.
- If the date is not specified in the query, all unread messages will be retrieved, using the time filter.
- Encode type can be ASCII or Extended ASCII or Unicode
- If requested number of messages is not found, the available unread messages will be provided.

Error responses for the read queries will be in the following format:

Err: error code [**See Error Code tables in this chapter**]

HTTP

HTTP Receive API Response to *recvmsg?* command:

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
<Response>
<Response_End>1</Response_End>
<Unread_Available>1</Unread_Available>
<Msg_Count>03</Msg_Count>
<MessageNotification>
<Message_Index>1</Message_Index>
<SenderNumber>+919742204905</SenderNumber>
<Date>09/07/24</Date>
<Time>11:24:34</Time>
<EncodingFlag>Unicode</EncodingFlag>
<Message>00280031006F0066003300290041006C006C00200074006800650020006C006F0067007300200
0730068006F0075006C006400200062006500200064006900730070006C006100790065006400200070007
2006F007000650072006C007900200069006E00200074006</Message>
</MessageNotification>
<MessageNotification>
<Message_Index>2</Message_Index>
<SenderNumber>+919742204905</SenderNumber>
<Date>09/07/24</Date>
<Time>11:38:08</Time>
<EncodingFlag>ASCII</EncodingFlag>
<Message>Multimodem%20iSMS%20Easy%20way%20to%20send%20bulk%20SMS%20Go%20to%20MultiTech
%20site%20for%20more%20details</Message>
</MessageNotification>
<MessageNotification>
<Message_Index>3</Message_Index>
<SenderNumber>+919742204905</SenderNumber>
<Date>09/07/24</Date>
<Time>11:38:35</Time>
<EncodingFlag>Extended ASCII</EncodingFlag>
<Message>Multimodem%20iSMS%20supports%20Unicode%20ASCII%20and%20Extended%20ASCII%20Go%
20to%20MultiTech%20site%20for%20more%20details</Message>
</MessageNotification>
</Response>
```

TCP

TCP Receive API Response to *recvmsg?* command:

From: MultiModem iSMS/1.40

1

1

3

Msg_index_1

+919742204905

09/07/24

11:56:52

Unicode

0B880B870B890B900B920B930B930B930B930B940B930B930B940BB80BCA0BCB0BB90B9E0B9E0BA30BAF0B
AE0BAA0BA90BA40BAF0BB20BB50BB70BB80BB80BB90BB9

Msg_index_2

+919742204905

09/07/24

11:40:48

ASCII

MultiModem iSMS easy way to send bulk SMS. Go to MultiTech site for more details

Msg_index_3

+919742204905

09/07/24

11:57:29

Extended ASCII

MultiModem iSMS supports Unicode ASCII and Extended ASCII Go to MultiTech site for more details

Error responses for the above commands will be in the following format:

HTTP

HTTP/1.1 200 OK

Content-type: text/html

Err:value

TCP:

Err: value

Error Codes

Error Code	Error Description	Response to
601	Authentication Failed	Send API, Query API, Receive API
602	Parse Error	Send API, Query API, Receive API
604	Filtering with SMS Text whose message size is greater than 280 chars (70 * 4 for Unicode is the maximum possible size of the SMS received by the MultiModem iSMS wireless modem)	Receive API
605	Recipient Overflow	Send API, Receive API
608	Server Busy	Send API, Receive API
616	Invalid Time/Date Input	Receive API
617	Invalid Count Input	Receive API
618	Service Not Available	Receive API
619	Invalid Addressee	Receive API

Appendix B – Table of Commonly Supported Subnet Addresses

This table lists commonly supported Subnets organized by Address.

255.255.255.128 /25	Network Number	Hosts Available	Broadcast Address
	N.N.N.0	N.N.N.1-126	N.N.N.127
	N.N.N.128	N.N.N.129-254	N.N.N.255
255.255.255.192 /26	Network Number	Hosts Available	Broadcast Address
	N.N.N.0	N.N.N.1-62	N.N.N.63
	N.N.N.64	N.N.N.65-126	N.N.N.127
	N.N.N.128	N.N.N.129-190	N.N.N.191
	N.N.N.192	N.N.N.193-254	N.N.N.255
255.255.255.224 /27	Network Number	Hosts Available	Broadcast Address
	N.N.N.0	N.N.N.1-30	N.N.N.31
	N.N.N.32	N.N.N.33-62	N.N.N.63
	N.N.N.64	N.N.N.65-94	N.N.N.95
	N.N.N.96	N.N.N.97-126	N.N.N.127
	N.N.N.128	N.N.N.129-158	N.N.N.159
	N.N.N.160	N.N.N.161-190	N.N.N.191
	N.N.N.192	N.N.N.193-222	N.N.N.223
	N.N.N.224	N.N.N.225-254	N.N.N.255
255.255.255.240 /28	Network Number	Hosts Available	Broadcast Address
	N.N.N.0	N.N.N.1-14	N.N.N.15
	N.N.N.16	N.N.N.17-30	N.N.N.31
	N.N.N.32	N.N.N.33-46	N.N.N.47
	N.N.N.48	N.N.N.49-62	N.N.N.63
	N.N.N.64	N.N.N.65-78	N.N.N.79
	N.N.N.80	N.N.N.81-94	N.N.N.95
	N.N.N.96	N.N.N.97-110	N.N.N.111
	N.N.N.112	N.N.N.113-126	N.N.N.127
	N.N.N.128	N.N.N.129-142	N.N.N.143
	N.N.N.144	N.N.N.145-158	N.N.N.159
	N.N.N.160	N.N.N.161-174	N.N.N.175
	N.N.N.176	N.N.N.177-190	N.N.N.191
	N.N.N.192	N.N.N.193-206	N.N.N.207
	N.N.N.208	N.N.N.209-222	N.N.N.223
	N.N.N.224	N.N.N.225-238	N.N.N.239
	N.N.N.240	N.N.N.241-254	N.N.N.255
255.255.255.248 /29	Network Number	Hosts Available	Broadcast Address
	N.N.N.0	N.N.N.1-6	N.N.N.7
	N.N.N.8	N.N.N.9-14	N.N.N.15
	N.N.N.16	N.N.N.17-22	N.N.N.23
	N.N.N.24	N.N.N.25-30	N.N.N.31
	N.N.N.32	N.N.N.33-38	N.N.N.39
	N.N.N.40	N.N.N.41-46	N.N.N.47
	N.N.N.48	N.N.N.49-54	N.N.N.55
	N.N.N.56	N.N.N.57-62	N.N.N.63
	N.N.N.64	N.N.N.65-70	N.N.N.71
	N.N.N.72	N.N.N.73-78	N.N.N.79
	N.N.N.80	N.N.N.81-86	N.N.N.87
	N.N.N.88	N.N.N.89-94	N.N.N.95
	N.N.N.96	N.N.N.97-102	N.N.N.103
	N.N.N.104	N.N.N.105-110	N.N.N.111
	N.N.N.112	N.N.N.113-118	N.N.N.119
	N.N.N.120	N.N.N.121-126	N.N.N.127
	N.N.N.128	N.N.N.129-134	N.N.N.135
	N.N.N.136	N.N.N.137-142	N.N.N.143
	N.N.N.144	N.N.N.145-150	N.N.N.151
	N.N.N.152	N.N.N.153-158	N.N.N.159

Appendix B – Table of Commonly Supported Subnet Addresses

	N.N.N.160	N.N.N.161-166	N.N.N.167
	N.N.N.168	N.N.N.169-174	N.N.N.175
	N.N.N.176	N.N.N.177-182	N.N.N.183
	N.N.N.184	N.N.N.185-190	N.N.N.191
	N.N.N.192	N.N.N.193-198	N.N.N.199
	N.N.N.200	N.N.N.201-206	N.N.N.207
	N.N.N.208	N.N.N.209-214	N.N.N.215
	N.N.N.216	N.N.N.217-222	N.N.N.223
	N.N.N.224	N.N.N.225-230	N.N.N.231
	N.N.N.232	N.N.N.233-238	N.N.N.239
	N.N.N.240	N.N.N.241-246	N.N.N.247
	N.N.N.248	N.N.N.249-254	N.N.N.255
	Network Number	Hosts Available	Broadcast Address
255.255.255.252 /30	N.N.N.0	N.N.N.1-2	N.N.N.3
	N.N.N.4	N.N.N.5-6	N.N.N.7
	N.N.N.8	N.N.N.9-10	N.N.N.11
	N.N.N.12	N.N.N.13-14	N.N.N.15
	N.N.N.16	N.N.N.17-18	N.N.N.19
	N.N.N.20	N.N.N.21-22	N.N.N.23
	N.N.N.24	N.N.N.25-26	N.N.N.27
	N.N.N.28	N.N.N.29-30	N.N.N.31
	N.N.N.32	N.N.N.33-34	N.N.N.35
	N.N.N.36	N.N.N.37-38	N.N.N.39
	N.N.N.40	N.N.N.41-42	N.N.N.43
	N.N.N.44	N.N.N.45-46	N.N.N.47
	N.N.N.48	N.N.N.49-50	N.N.N.51
	N.N.N.52	N.N.N.53-54	N.N.N.55
	N.N.N.56	N.N.N.57-58	N.N.N.59
	N.N.N.60	N.N.N.61-62	N.N.N.63
	N.N.N.64	N.N.N.65-66	N.N.N.67
	N.N.N.68	N.N.N.69-70	N.N.N.71
	N.N.N.72	N.N.N.73-74	N.N.N.75
	N.N.N.76	N.N.N.77-78	N.N.N.79
	N.N.N.80	N.N.N.81-82	N.N.N.83
	N.N.N.84	N.N.N.85-86	N.N.N.87
	N.N.N.88	N.N.N.89-90	N.N.N.91
	N.N.N.92	N.N.N.93-94	N.N.N.95
	N.N.N.96	N.N.N.97-98	N.N.N.99
	N.N.N.100	N.N.N.101-102	N.N.N.103
	N.N.N.104	N.N.N.105-106	N.N.N.107
	N.N.N.108	N.N.N.109-110	N.N.N.111
	N.N.N.112	N.N.N.113-114	N.N.N.115
	N.N.N.116	N.N.N.117-118	N.N.N.119
	N.N.N.120	N.N.N.121-122	N.N.N.123
	N.N.N.124	N.N.N.125-126	N.N.N.127
	N.N.N.128	N.N.N.129-130	N.N.N.131
	N.N.N.132	N.N.N.133-134	N.N.N.135
	N.N.N.136	N.N.N.137-138	N.N.N.139
	N.N.N.140	N.N.N.141-142	N.N.N.143
	N.N.N.144	N.N.N.145-146	N.N.N.147
	N.N.N.148	N.N.N.149-150	N.N.N.151
	N.N.N.152	N.N.N.153-154	N.N.N.155
	N.N.N.156	N.N.N.157-158	N.N.N.159
	N.N.N.160	N.N.N.161-162	N.N.N.163
	N.N.N.164	N.N.N.165-166	N.N.N.167
	N.N.N.168	N.N.N.169-170	N.N.N.171
	N.N.N.172	N.N.N.173-174	N.N.N.175
	N.N.N.176	N.N.N.177-178	N.N.N.179
	N.N.N.180	N.N.N.181-182	N.N.N.183
	N.N.N.184	N.N.N.185-186	N.N.N.187
	N.N.N.188	N.N.N.189-190	N.N.N.191
	N.N.N.192	N.N.N.193-194	N.N.N.195
	N.N.N.196	N.N.N.197-198	N.N.N.199
	N.N.N.200	N.N.N.201-202	N.N.N.203
	N.N.N.204	N.N.N.205-206	N.N.N.207
	N.N.N.208	N.N.N.209-210	N.N.N.211
	N.N.N.212	N.N.N.213-214	N.N.N.215
	N.N.N.216	N.N.N.217-218	N.N.N.219
	N.N.N.220	N.N.N.221-222	N.N.N.223
	N.N.N.224	N.N.N.225-226	N.N.N.227

Appendix B – Table of Commonly Supported Subnet Addresses

N.N.N.228	N.N.N.229-230	N.N.N.231
N.N.N.232	N.N.N.233-234	N.N.N.235
N.N.N.236	N.N.N.237-238	N.N.N.239
N.N.N.240	N.N.N.241-242	N.N.N.243
N.N.N.244	N.N.N.245-246	N.N.N.247
N.N.N.248	N.N.N.249-250	N.N.N.251
N.N.N.252	N.N.N.253-254	N.N.N.255

Appendix C – Antenna for the MultiModem iSMS

RF Specifications

	GSM 850	EGSM 900	GSM 1800	GSM 1900
Frequency RX	869 to 894 MHz	925 to 960 MHz	1805 to 1800 MHz	1930 to 1990 MHz
Frequency TX	824 to 849 MHz	880 to 915 MHz	1710 to 1785 MHz	1850 to 1910 MHz
RF Power Stand	2W at 12.5% duty cycle	2W at 12.5% duty cycle	1W at 12.5% duty cycle	1W at 12.5% duty cycle

Antenna Specifications

GSM/EGSM Antenna Requirements/Specifications

Frequency Range:	824 – 960 MHz / 1710 – 1990 MHz
Impedance:	50 Ohms
VSWR:	<2.0:1
Typical Radiated Gain:	3 dBi on azimuth plane
Radiation:	Omni
Polarization:	Vertical
Wave:	Half Wave Dipole

Antennas Available from Multi-Tech Systems, Inc.

Description	Part Number
900/1800 MHz 1/2 Wave Antenna Mag Mount, 12.5", 1 Pack	ANF1-1MMHW
850/1900 MHz 1/2 Wave Antenna Mag Mount, 12.5", 1 Pack	ANF2-1MMHW

PTCRB Requirements Note

There cannot be any alteration to the authorized antenna system. The antenna system must be the same type with similar in-band and out-of-band radiation patterns and maintain the same specifications.

FCC Requirements Note

The antenna gain, including cable loss, must not exceed 3.0 dBi at 1900 MHz / 1.4 dBi at 850 MHz for mobile operating configurations and 7.0 dBi at 1900 MHz / 1.4 dBi at 850 MHz for fixed mounted operations, as defined in 2.1091 and 1.1307 of the rules for satisfying RF exposure compliance.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

Appendix D – Waste Electrical and Electronic Equipment Directive (WEEE)

Waste Electrical and Electronic Equipment (WEEE) Directive

The WEEE directive places an obligation on manufacturers, distributors and retailers to take-back electronic products at the end of their useful life. A sister Directive, ROHS (Restriction of Hazardous Substances), complements the WEEE Directive by banning the presence of specific hazardous substances in the products at the design phase. The WEEE Directive covers all Multi-Tech products being sold into the EU as of August 13, 2005. Manufacturers, distributors and retailers are obliged to finance the costs of recovery from municipal collection points, reuse, and recycling of specified percentages per the WEEE requirements.

Instructions for Disposal of WEEE by Users in the European Union

The symbol shown below is on the product or on its packaging which indicates that this product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of the user's waste equipment by handing it over to a designated collection point for the recycling of electrical and electronic waste equipment. The separate collection and recycling of waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the seller from whom you purchased the product.



06/27/2005

Appendix E – Time Zone Abbreviations

This list represents a portion of the abbreviations used for different Time Zones. All of those listed here are valid entries for the MultiModem iSMS products.

Code	Name	Region	UTC Variance
ACDT	Australian Central Daylight Time	Australia	+ 10:30 hours
ACST	Australian Central Standard Time	Australia	+ 9:30 hours
AEDT	Australian Eastern Daylight Time or Australian Eastern Summer Time	Australia	+ 11 hours
AEST	Australian Eastern Standard Time	Australia	+ 10 hours
AWDT	Australian Western Daylight Time	Australia	+ 9 hours
AWST	Australian Western Standard Time	Australia	+ 8 hours
CXT	Christmas Island Time	Australia	+ 7 hours
EDT	Eastern Daylight Time	Australia	+ 11 hours
NFT	Norfolk (Island) Time	Australia	+ 11:30 hours
WDT	Western Daylight Time	Australia	+ 9 hours
BST	British Summer Time	Europe	+ 1 hour
CEDT	Central European Daylight Time	Europe	+ 2 hours
CEST	Central European Summer Time	Europe	+ 2 hours
CET	Central European Time	Europe	+ 1 hour
EEDT	Eastern European Daylight Time	Europe	+ 3 hours
EEST	Eastern European Summer Time	Europe	+ 3 hours
EET	Eastern European Time	Europe	+ 2 hours
GMT	Greenwich Mean Time	Europe	
IST	Irish Summer Time	Europe	+ 1 hour
MESZ	Mitteleuroäische Sommerzeit	Europe	+ 2 hours
MEZ	Mitteleuropäische Zeit	Europe	+ 1 hour
MSD	Moscow Daylight Time	Europe	+ 4 hours
MSK	Moscow Standard Time	Europe	+ 3 hours
WEDT	Western European Daylight Time	Europe	+ 1 hour
WEST	Western European Summer Time	Europe	+ 1 hour
ADT	Atlantic Daylight Time	North America	- 3 hours
AKDT	Alaska Daylight Time	North America	- 8 hours
AKST	Alaska Standard Time	North America	- 9 hours
AST	Atlantic Standard Time	North America	- 4 hours
CDT	Central Daylight Time	North America	- 5 hours
CST	Central Standard Time	North America	- 6 hours
EDT	Eastern Daylight Time	North America	- 4 hours
EST	Eastern Standard Time	North America	- 5 hours
HAA	Heure Avancée de l'Atlantique	North America	- 3 hours
HAC	Heure Avancée du Centre	North America	- 5 hours
HADT	Hawaii-Aleutian Daylight Time	North America	- 9 hours
HAE	Heure Avancée de l'Est	North America	- 4 hours
HAP	Heure Avancée du Pacifique	North America	- 7 hours
HAR	Heure Avancée des Rocheuses	North America	- 6 hours
HAST	Hawaii-Aleutian Standard Time	North America	- 10 hours
HAT	Heure Avancée de Terre-Neuve	North America	- 2:30 hours
HAY	Heure Avancée du Yukon	North America	- 8 hours
HNA	Heure Normale de l'Atlantique	North America	- 4 hours
HNC	Heure Normale du Centre	North America	- 6 hours
HNE	Heure Normale de l'Est	North America	- 5 hours
HNP	Heure Normale du Pacifique	North America	- 8 hours
HNR	Heure Normale des Rocheuses	North America	- 7 hours
HNT	Heure Normale de Terre-Neuve	North America	- 3:30 hours
HNY	Heure Normale du Yukon	North America	- 9 hours
MDT	Mountain Daylight Time	North America	- 6 hours
MST	Mountain Standard Time	North America	- 7 hours
NDT	Newfoundland Daylight Time	North America	- 2:30 hours
NST	Newfoundland Standard Time	North America	- 3:30 hours
PDT	Pacific Daylight Time	North America	- 7 hours
PST	Pacific Standard Time	North America	- 8 hours

Appendix F – End User License Agreement (EULA)

Multi-Tech Systems, Inc.

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P/N 87000915 10/01

Appendix G – Regulatory Information

Restriction of the Use of Hazardous Substances (RoHS)



Multi-Tech Systems, Inc. Certificate of Compliance

2002/95/EC

Multi-Tech Systems, Inc. confirms that this product now complies with the chemical concentration limitations set forth in the directive **2002/95/EC** of the European Parliament (Restriction Of the use of certain Hazardous Substances in electrical and electronic equipment - **RoHS**)

These Multi-Tech Systems, Inc. products do not contain the following banned chemicals:

Lead, [Pb] < 1000 PPM

Mercury, [Hg] < 1000 PPM

Hexavalent Chromium, [Cr+6] < 1000 PPM

Cadmium, [Cd] < 100 PPM

Polybrominated Biphenyl, [PBB] < 1000 PPM

Polybrominated Diphenyl Ether, [PBDE] < 1000 PPM

Note:

1. Lead usage in some components is exempted by the following RoHS annex; therefore, higher lead concentration could be found.
 - a. Lead in high melting temperature type solders (i.e., tin-lead solder alloys containing more than 85% lead).
 - b. Lead in electronic ceramic parts (e.g., piezoelectronic devices).

Information on HS/TS Substances According to Chinese Standards

依照中国标准的有毒有害物质信息

根据中华人民共和国信息产业部 (MII) 制定的电子信息产品 (EIP)

标准—中华人民共和国《电子信息产品污染控制管理办法》（第 39 号），也称作中国

RoHS，下表列出了 Multi-Tech Systems Inc. 产品中可能含有的有毒物质 (TS) 或有害物质 (HS) 的名称及含量水平方面的信息。

成分名称	有害/有毒物质/元素					
	铅 (PB)	汞 (Hg)	镉 (CD)	六价铬 (CR6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板	O	O	O	O	O	O
电阻器	X	O	O	O	O	O
电容器	X	O	O	O	O	O
铁氧体磁环	O	O	O	O	O	O
继电器/光学部件	O	O	O	O	O	O
IC	O	O	O	O	O	O
二极管/晶体管	O	O	O	O	O	O
振荡器和晶振	X	O	O	O	O	O
调节器	O	O	O	O	O	O
电压传感器	O	O	O	O	O	O
变压器	O	O	O	O	O	O
扬声器	O	O	O	O	O	O
连接器	O	O	O	O	O	O
LED	O	O	O	O	O	O
螺丝、螺母以及其它五金件	X	O	O	O	O	O
交流-直流电源	O	O	O	O	O	O
软件/文档 CD	O	O	O	O	O	O
手册和纸页	O	O	O	O	O	O
底盘	O	O	O	O	O	O

X 表示所有使用类似材料的设备中有害/有毒物质的含量水平高于 SJ/Txxx-2006 限量要求。

O 表示不含该物质或者该物质的含量水平在上述限量要求之内。

47 CFR Part 15 Regulation

This equipment has been tested and found to comply with the limits for a **Class A** digital device, pursuant to 47 CFR Part 15 regulations. The stated limits in this regulation are designed to provide reasonable protection against harmful interference in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Plug the equipment into an outlet on a circuit different from that to which the receiver is connected.

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

This device complies with Part 15 of the CFR 47 rules. Operation of this device is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference that may cause undesired operation.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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