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# 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 S000461A, Revision A****Copyright © 2009**

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<b>Revision</b>	<b>Date</b>	<b>Description</b>
A	08/21/09	Initial release of SF 400 and 800.

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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.

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**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.

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## 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 Guide

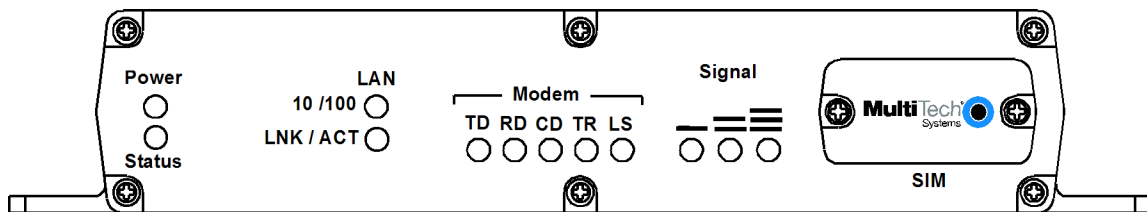
The User Guide contains more detail than the Quick Start Guide. If you want easy access to the User Guide, you can install it from the MultiModem iSMS CD onto your hard drive by clicking Install Manuals on the Installation screen or downloading the file from our Web site at: <http://www.multitech.com>

## 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.

# Front and Back Panels

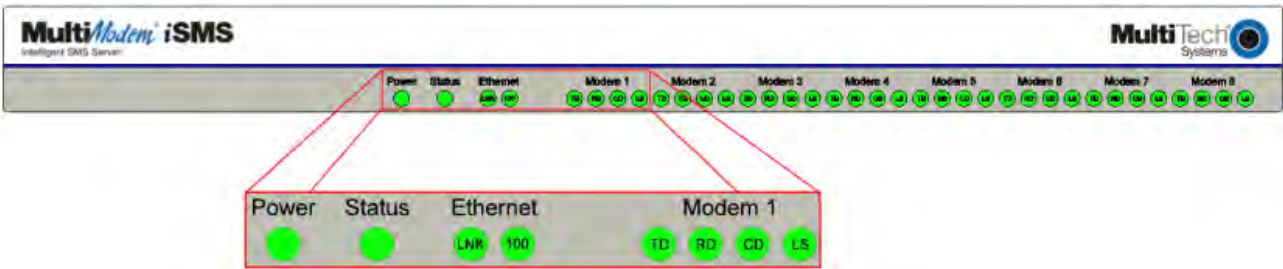
## SF 100 Front Panel



## SF 100 Front Panel LEDs

LEDs	Description
<b>Power</b>	Lights when power is being supplied to the MultiModem iSMS.
<b>Status</b>	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.
<b>LAN 10/100</b>	Lights when a successful connection to the 100BaseT LAN is established. Off when connected at 10BaseT.
<b>LAN LNK / ACT</b>	Lights when the LAN port has a valid Ethernet connection. Blinks when it is receiving or transmitting data.
<b>Modem</b>	<p><b>TD TRANSMIT DATA.</b> This LED blinks when the modem is transmitting data to your wireless carrier.</p> <p><b>RD RECEIVE DATA.</b> This LED blinks when the modem is receiving data from your wireless carrier.</p> <p><b>CD CARRIER DETECT.</b> This LED lights when the modem detects a valid carrier signal from a wireless carrier.</p> <p><b>TR (DATA) TERMINAL READY.</b> This LED lights when the modem is trying to establish a wireless connection.</p> <p><b>LS LINK STATUS.</b> This LED flashes when the network registration is OK. If the network registration is invalid, the LED will be On/Off.</p>
<b>Signal</b>	Indicates the wireless signal strength. See the Signal Strength section in this chapter.
<b>SIM</b>	Location of the SIM card.

## SF 400/800 Front Panel



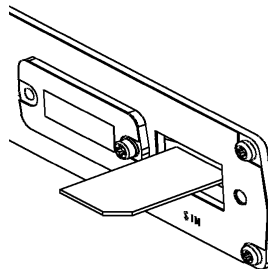
## SF 400/800 Front Panel LEDs

LEDs	Description
<b>Power</b>	Lights when power is being supplied to the MultiModem iSMS.
<b>Status</b>	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.
<b>Ethernet 100</b>	Lights when a successful connection to the 100BaseT LAN is established. Off when connected at 10BaseT.
<b>Ethernet LNK</b>	Lights when the LAN port has a valid Ethernet connection. Blinks when it is receiving or transmitting data.
<b>Modem <i>n</i></b>	<p><b>TD TRANSMIT DATA.</b> This LED blinks when the modem is transmitting data to your wireless carrier.</p> <p><b>RD RECEIVE DATA.</b> This LED blinks when the modem is receiving data from your wireless carrier.</p> <p><b>CD CARRIER DETECT.</b> This LED lights when the modem detects a valid carrier signal from a wireless carrier.</p> <p><b>LS LINK STATUS.</b> This LED flashes when the network registration is OK. If the network registration is invalid, the LED will be On/Off.</p>

## 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:



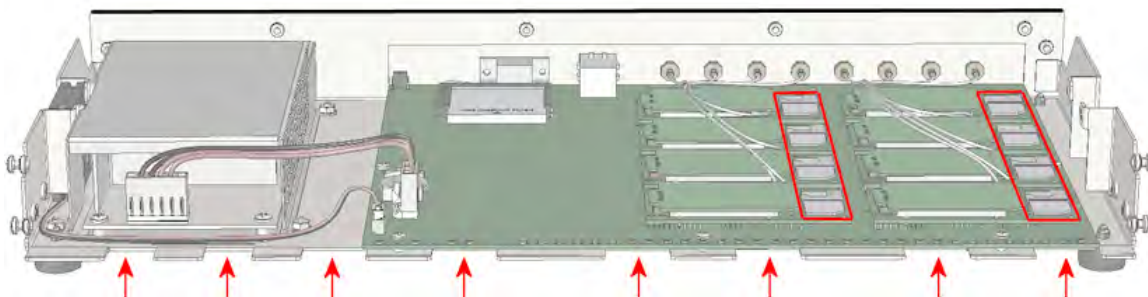
1. Power off the unit and unplug the power cord. Do not under any circumstances remove protective power supply cover. Harmful voltages may be exposed if cover is removed, and can lead to electrical shock and or death.



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.



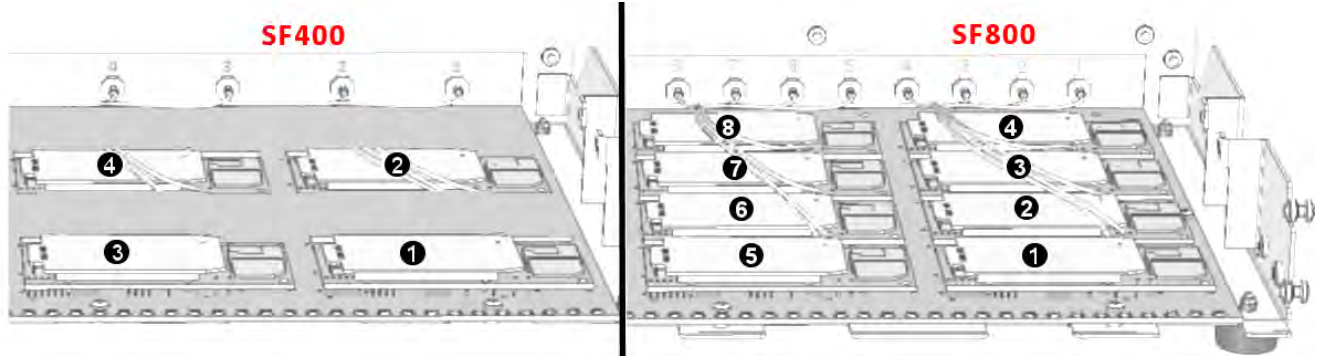
4. Insert the SIM cards into the SIM card slots on the internal wireless modems. Each modem has a graphic line depicting the correct SIM card orientation. These receptacles are highlighted by the two red boxes in the illustration below (SF 800 model shown).



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.



## Signal Strength

### Signal Strength Command

#### To View Strength

For the SF 400/800 models without signal LEDs, signal strength can be viewed 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

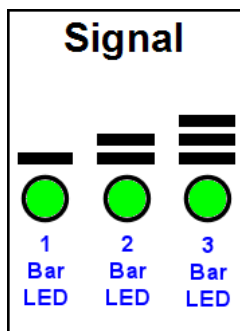
+CSQ: xx, 99 (For xx, see the values chart below)

### 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.

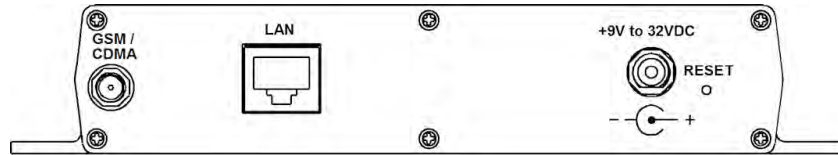
AT+CSQ xx Values	SF 100 Signal LED Bars	Signal Strength
0 to 6	No light	Very weak signal
7 to 14	1 Bar LED is lit	Weak signal
15 to 23	1 Bar and 2 Bar LEDs are lit	Stronger signal
24 to 31	1 Bar, 2 Bar, 3 Bar LEDs are lit	Strongest signal

### SF 100 Signal Strength LEDs

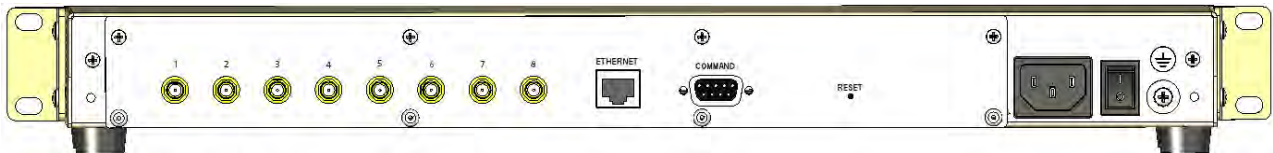


## Back Panels

### SF 100



### SF 400/800

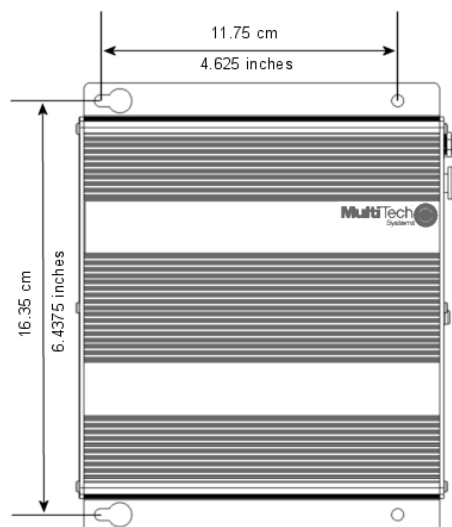


## Back Panel Connectors

Connector	Description
<b>GSM Antenna Connector (s):</b> 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. <b>Note:</b> One antenna must be attached for each internal modem in order for them to be operational.
<b>Ethernet (LAN for the SF 100)</b>	The LAN (SF 100) / Ethernet (SF 400/800) port connects the MultiModem iSMS to your Ethernet network-connected PC.
<b>+9V to 32VDC</b>	<b>[SF 100 only]</b> The SF 100 power source can range from 9 volts to 32VDC.
<b>Power Receptacle</b>	<b>[SF 400/800 only]</b> Connection for standard power cord (provided).
<b>COMMAND</b>	<b>[SF 400/800 only]</b> A DE9 port for direct command access to the SF 400/800.
<b>Reset</b>	The Reset button resets the unit to its factory defaults. 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 to the factory defaults.

## Panel Mounting (SF 100)

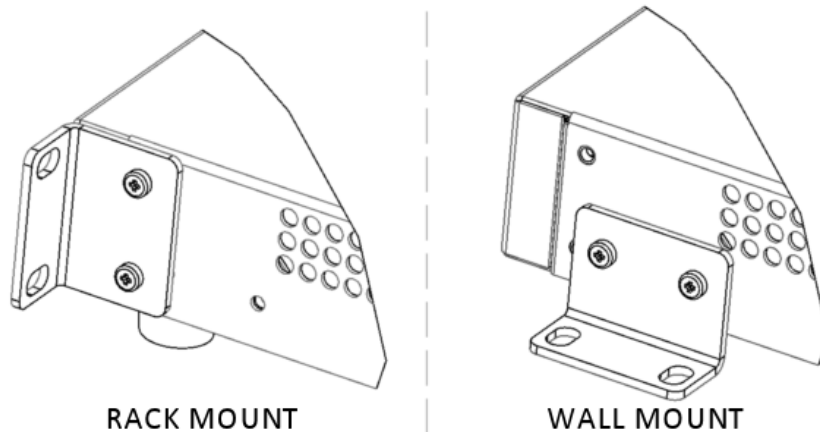
The SF 100 model can be panel mounted with screws spaced according to the measurement shown.



**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
<b>Hardware Interface</b>	<b>Network:</b> 10/100BaseT <b>Connector:</b> RJ-45 Ethernet connection	<b>Network:</b> 10/100BaseT <b>Connector:</b> RJ-45 Ethernet connection
<b>Ports</b>	<b>ETHERNET:</b> 1 Port	<b>ETHERNET:</b> 1 Port
<b>Wireless Modem Frequencies</b>	Quad-band GSM 850/900/1800/1900 MHz	Quad-band GSM 850/900/1800/1900 MHz
<b>Dimensions</b>	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)
<b>Weight</b>	1.25 lbs. (.56 kg)	<b>SF 400:</b> 7.75 lbs. (3.52 kg) <b>SF 800:</b> 8.00 lbs. (3.64 kg)
<b>Operating Temperature</b>	+32° to +120° F (0° to +50° C) Note: UL listed @ +40° C (limited by the power supply)	+32° to +120° F (0° to +50° C)
<b>Humidity</b>	20–90% non-condensing	20–90% non-condensing
<b>Hardware Connectors</b>	<b>SIM connector:</b> Standard 3V <b>Antenna:</b> RF antenna 50 ohm SMA (female)	<b>SIM connector:</b> Standard 3V <b>Antenna:</b> RF antenna 50 ohm SMA (female)
<b>Power*</b>	<b>External Power Supply</b> <b>Input:</b> 100-240Vac, 0.5A 50-60 Hz <b>Output:</b> 9VDC, 1.7A <b>Power Consumption</b> Maximum power consumption is 0.95A at 9V	<b>Power Supply – (Universal Input)</b> <b>Input:</b> 100-240Vac, 1.8 – 1.0 A 50/60 Hz
<b>Certifications and Approvals</b>	<b>CE Mark; R&amp;TTE</b> <b>EMC Compliance:</b> FCC Part 15 Class A; EN 55022 Class A; EN 55024; ACIF S042.1; ACIF S042.3 <b>Radio Compliance:</b> FCC Part 22, 24 EN 301 489-1; EN 301489-7; EN 301 511 RSS 132, 133, 102 <b>Safety:</b> cUL 60950-1; UL 60950-1; IEC 60950-1; AS/NZS 60950 <b>Network Compliance:</b> PTCRB, GCF	<b>CE Mark; R&amp;TTE</b> <b>EMC Compliance:</b> FCC Part 15 Class A; EN 55022 Class A; EN 55024; ACIF S042.1; ACIF S042.3 <b>Radio Compliance:</b> FCC Part 22, 24 EN 301 489-1; EN 301489-7; EN 301 511 RSS 132, 133, 102 <b>Safety:</b> cUL 60950-1; UL 60950-1; IEC 60950-1; AS/NZS 60950 <b>Network Compliance:</b> PTCRB, GCF
<b>Max Outgoing Queue</b>	4 MB	10 MB
<b>Warranty</b>	2 years	2 years

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

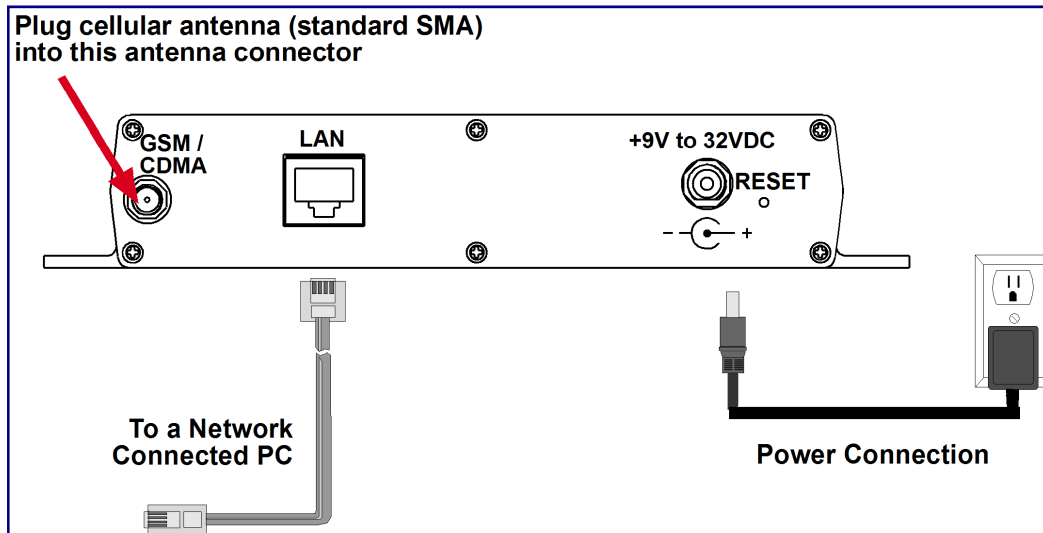
## Chapter 2 - Getting Started

### Cabling Your MultiModem iSMS

To use your MultiModem iSMS make the appropriate connections to PCs, a cable or xDSL modem, AC power, and the antenna.

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

#### SF 100 Cabling

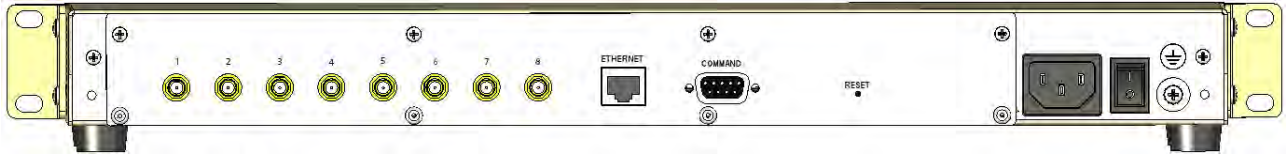


1. Turn the power off on the PCs and the MultiModem iSMS.
2. Plug one end of a RJ-45 cable into the LAN port on the MultiModem iSMS and the other end into the Ethernet port on a network connected PC.
3. Connect the provided power supply cable to the 9 volt power port on the back of the MultiModem iSMS, and plug the other end into an AC power outlet.
4. Attach the cellular antenna.

#### 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



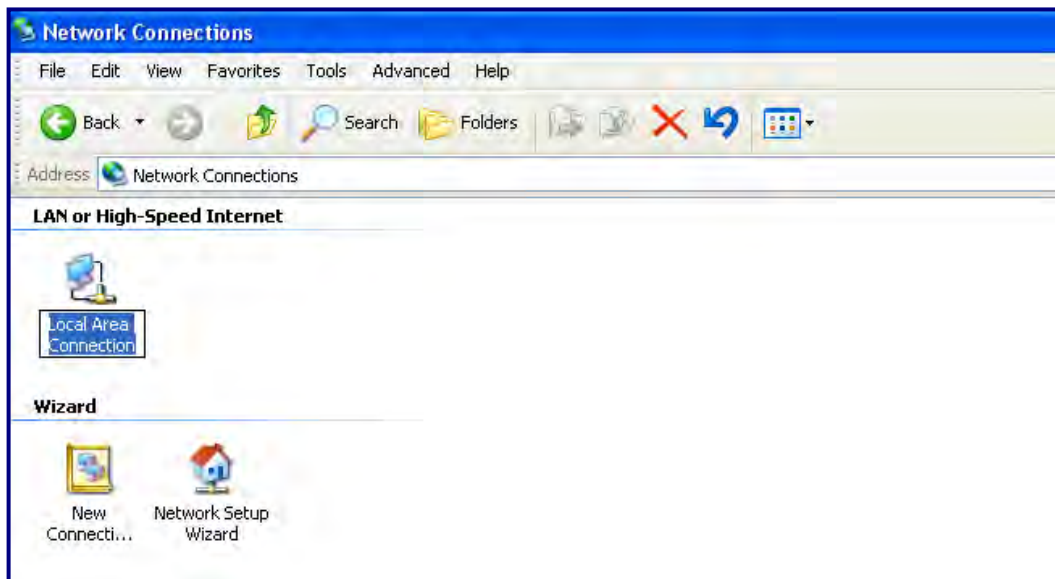
1. Turn the power off on the PCs and the MultiModem iSMS.
2. Plug one end of a RJ-45 cable into the ETHERNET port on the MultiModem iSMS and the other end into the Ethernet port on a network-connected PC.
3. Connect the provided power supply cable to the power port on the back of the MultiModem iSMS, and plug the other end into an AC power outlet.
4. Attach the cellular antennas.
  - 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

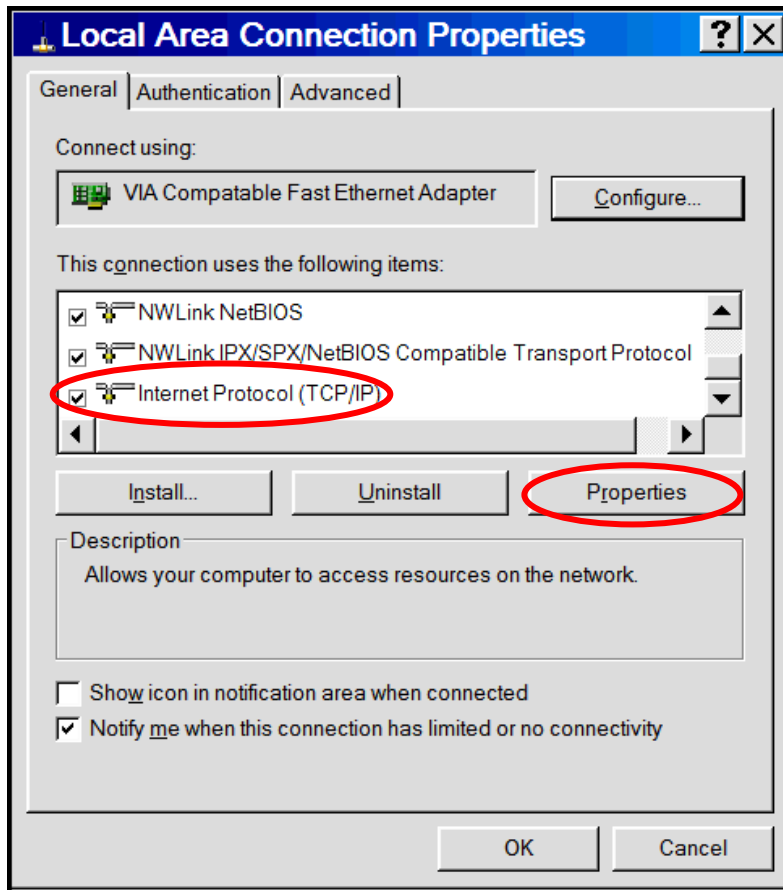
The following directions establish a TCP/IP connection at the workstation so the PC can communicate with the MultiModem iSMS. The following directions were written using Windows 2000 and XP operating systems.

### Setting a Fixed IP Address

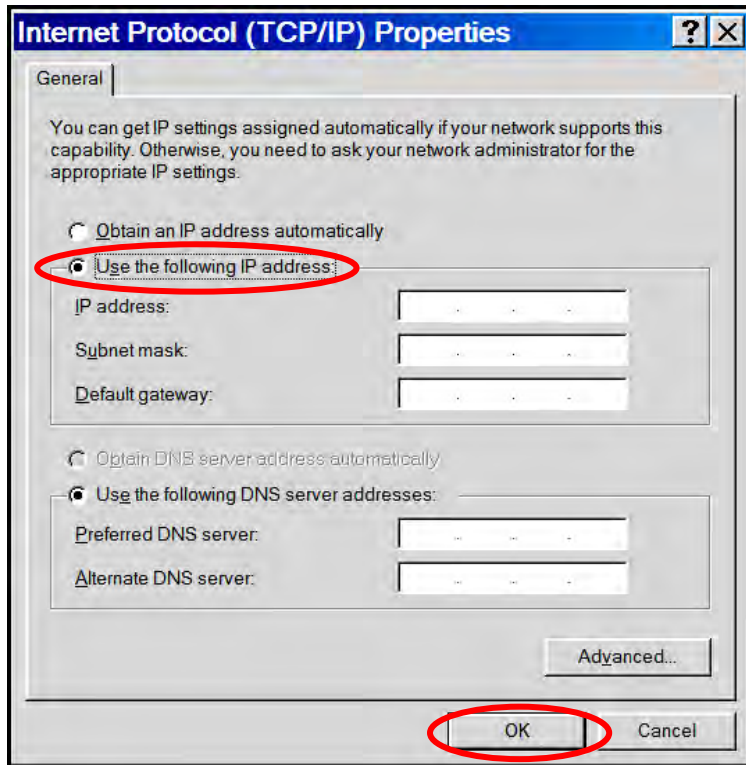
1. Make the MultiModem iSMS connections as described on the previous two pages
  2. Click **Start | Settings | Control Panel**. Double-click the **Network Connections** icon.
  3. The **Network Connections** screen displays. .
- Right-click the **Local Area Connection** icon and choose **Properties** 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 stands for numbers 101 and up.
  - \* Enter the workstation **Subnet Mask**. Example: 255.255.255.0
  - \* Enter the workstation **Default Gateway**. Example: 192.168.2.2  
**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
- Select **Use the following DNS server addresses**.
  - \* Enter the IP Address for the **Preferred DNS Server**. Example: 205.171.3.65
  - \* Click **OK**.
- Close the **Local Area Properties** screen by clicking **OK**.
- Close the **Control Panel**.
- Repeat these steps for each PC on your network.

## 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 to activate the modem, verify network registration, and/or troubleshooting your connection. To do this:

1. Open a PC's command window by clicking the **Start** button and selecting **Run**.
2. Type **CMD** to open the command window. Click **OK**.
3. When the command window opens, type **IPCONFIG**.
4. Type **Telnet 192.168.2.1 5000** (Note: 5000 is the port number).

See the GPRS AT Commands Reference Guide.

### 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

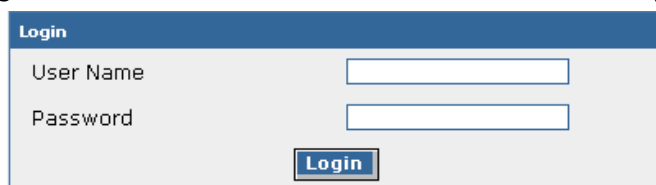
## Starting the iSMS

### 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 default gateway address line: *http://192.168.2.1*
4. Press **Enter**.

### Login

The Login screen for the MultiModem iSMS Web Interface displays.



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

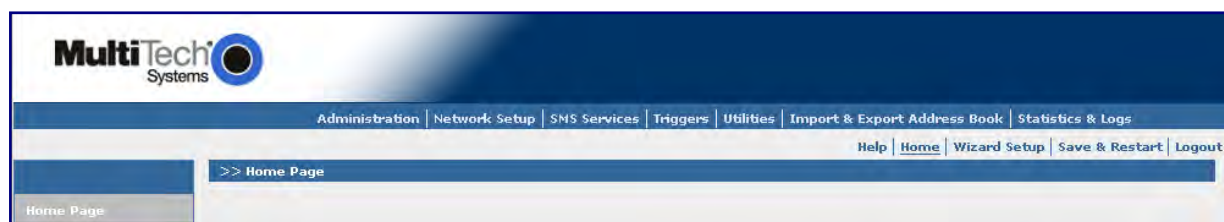
**Note:** The **User Name** and **Password** entries are case-sensitive (both must be typed in lower-case). The password can be up to 12 characters. Later, you will want to change the password from the default (**admin**) to something else. If Windows displays the **AutoComplete** screen, you may want 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

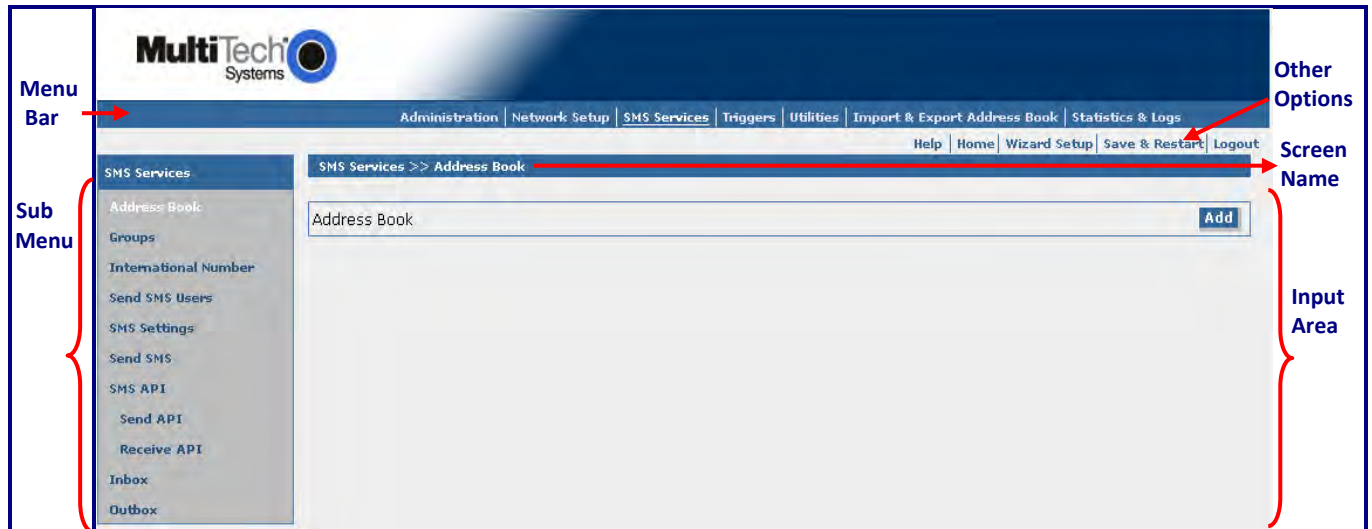
This is the Home screen from which you can access all setup functions.

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



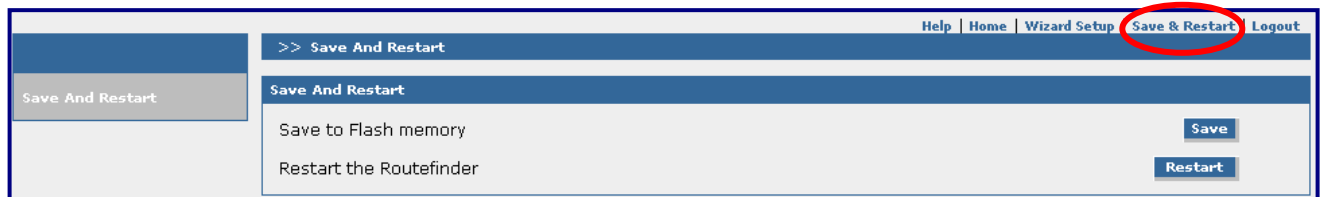
## Navigating the Screens

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



### Save & Restart Button under Menu Bar

Select the **Save and Restart** button located just under the menu bar. The *Save and Restart* screen displays.



#### Save to Flash Memory

If a connection is established, the settings have been entered correctly, and your basic configuration is complete; now, you must save your settings to the Flash Memory. Saving to the Flash Memory saves the current settings in the flash prom and prevents the settings from getting lost at the next power up.

**Note:** The system will save the **SMS settings** every 8 hours automatically; however, it will not save the **system settings** during this automatic save. The automatic saving of the SMS settings is helpful for those times when the administrator does not have direct access to the Ethernet port.

#### Save

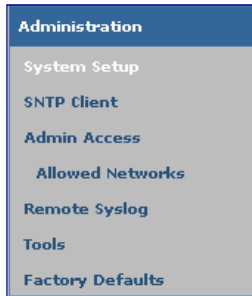
Click the Save button to save your **system settings** to the flash memory.

#### Restart

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

## Sub-Menus

Each Menu 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.



## Table of Menus and Sub-Menus

<b>Administration</b>
<p><b>System Setup</b> – 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.</p> <p><b>SMTP Client</b> – Set up the synchronization of the MultiModem iSMS clock to real time.</p> <p><b>Admin Access</b> – Set up the administrator's password and set an automatic inactivity disconnection interval.</p> <p><b>Allowed Networks</b> – Set the networks to be allowed access to the MultiModem iSMS's WEB GUI, Telnet Dialout, and Telnet. The administrator can then add, edit and delete any network. By default, the LAN network is always allowed access to the MultiModem iSMS. The administrator can configure the IP Address and Subnet Mask as 0.0.0.0 to allow access to any network.</p> <p><b>Remote Syslog</b> – Configure the Remote Syslog status and server's IP. The default is <i>Disabled</i>.</p> <p><b>Tools</b> – Reset the cellular modem.</p> <p><b>Factory Defaults</b> – Reset all parameters to the original factory defaults.</p>
<b>Network Setup</b>
<p><b>IP Settings</b> – Specify your LAN settings and your TCP connection.</p> <p><b>Cellular Modem</b> – Configure the cellular modem.</p>
<b>SMS Services</b>
<p><b>Address Book</b> – Manually input names and phone numbers into the phone book.</p> <p><b>Groups</b> – Create groups of names with their phone numbers.</p> <p><b>International Number</b> – Enable or disable international numbers.</p> <p><b>Send SMS Users</b> – Set up users and their passwords.</p> <p><b>SMS Settings</b> – Enable or disable extended ASCII character support.</p> <p><b>Send SMS</b> – Send SMS messages by manually entering the message or using a message from the Preconfigured SMS list.</p> <p><b>SMS API</b> – This page is divided into two sections: Send API and Receive API.</p> <p><b>Send API</b> – Configure the ports for <i>Send APIs</i> as well as enable/disable the service. API commands can be sent via HTTP or TCP.</p> <p><b>Receive API</b> – Configure the SMS to Receive APIs.</p> <p><b>Load Balancing (SF 100 only)</b> – Configure multiple units to share traffic load.</p> <p><b>Inbox</b> – View messages received.</p> <p><b>Outbox</b> – View messages sent.</p>

## Table of Menus and Sub-Menus (continued)

<b>Triggers</b>
<p><b>Authentic List</b> – From the address book set up a list of authentic users who are allowed to trigger broadcast messages and action triggers.</p> <p><b>Broadcast Triggers</b> – Configure trigger codes or words and broadcast messages. Set the destination group. Set authentication option if desired.</p> <p><b>Action Triggers</b> – Create the triggers (codes or words) that will cause certain actions.</p> <p><b>Pre-Configured SMS</b> – Write and save pre-configured messages.</p>
<b>Utilities</b>
<p><b>Backup</b> – Save MultiModem iSMS settings to a backup file.</p> <p><b>Firmware Upgrade</b> – Get firmware upgrade from Multi-Tech Systems, Inc.</p>
<b>Import &amp; Export Address Book</b>
<p><b>Import Address Book</b> – Import an address book that you want to use to set up your MultiModem iSMS.</p> <p><b>Export Address Book</b> – Export an address book.</p>
<b>Statistics &amp; Logs</b>
<p><b>System Information</b> – View product model number, firmware version, MAC Address, signal strength and live system details.</p> <p><b>SMS Statistics</b> – View <b>SMS Statistics</b>: Number of messages in the inbox, number of message in the outbox, and number of messages sent. View <b>Triggers Statistics</b>: Number of broadcast triggers received, number of action triggers received, and number of broadcast triggers configured. View <b>Address Book Statistics</b>: Number of entries in the Address Book.</p> <p><b>Load Balancing Statistics (SF 100 only)</b> – View statistics for the unit if load balancing is used.</p> <p><b>Log Traces</b> – View <b>SMS Logs</b>: SMS Sent Log, SMS Received Log, SMS Failure Log, SMS Live Log. View <b>Sent API Logs</b>: Send API Status Log, Send API Failure Log, Send HTTP API Live Log, Send TCP API Live Log. View <b>Receive API Logs</b>: Receive API Live Log and Receive API Failure Log. View <b>Load Balance Logs (SF 100 only)</b> View <b>System Logs</b>: System Log</p>

## Using the MultiModem iSMS Wizard Setup

### Use the Wizard Setup for Quick Configuration

A quick way to configure the MultiModem iSMS is to use the *Wizard Setup*. 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.

### Benefits of Using the Wizard Setup

- Saves time so that you are not entering the same information several times.
- Allows you to start using your device with a minimum configuration.
- Provides a short way to enter and save information needed to create a connection to the Internet.

**Note:** Additional features and functions can be set up using the complete Web 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 displays the MultiTech Systems Wizard Setup interface. At the top, there is a navigation menu with the following items: Administration, Network Setup, SMS Services, Triggers, Utilities, Import & Export Address Book, and Statistics & Logs. Below the navigation menu, there is a secondary menu with the following items: Help, Home, Wizard Setup, Save & Restart, and Logout. The main content area is titled "Wizard Setup" and contains three sections: "LAN", "Admin Password", and "Import Address Book". The "LAN" section has the following fields: IP Address (192.168.2.1), Subnet Mask (255.255.255.0), Default Gateway (192.168.2.2), Primary DNS, and Secondary DNS. The "Admin Password" section has the following fields: Old password, New password, and Confirm password. The "Import Address Book" section has the following field: Import Address Book. Each section has a "Save" button.

**Settings** – Enter the following information for your Ethernet network.

**LAN IP Address** – 192.168.2.1 defaults into this field.

**Subnet Mask** – 255.255.255.0 defaults into this field.

**Default Gateway** – Enter your gateway IP Address: example: 192.168.2.2.

**Primary DNS** – Enter your primary DNS (Domain Server Name) IP Address.

**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.

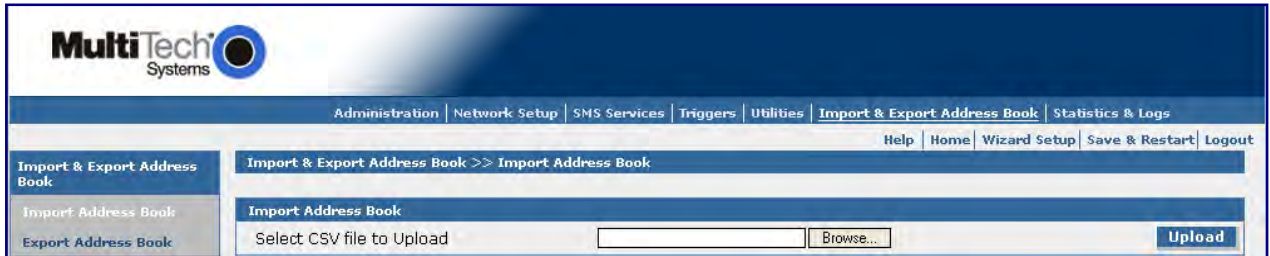
**Old Password** – Enter the existing password (factory default is **admin**).

**New Password** – Enter new password of your choice.

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

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

Use this screen to set up senders and receivers of messages, as well as authentic users. **Note:** CSV stands for *comma separated values*, a term that applies to the format of an address book.



### Import Address Book

#### Select the CSV Format

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

## Save & Restart

### IMPORTANT Note About Save & Restart

When you have completed your MultiModem iSMS settings and you are not going to enter any more data, you must click the **Save & Restart** button located under the menu bar. The system will save the new settings to the Flash Memory and give you the option to restart your MultiModem iSMS. 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.

**Note:** The system will save the SMS settings every 8 hours automatically; however, it will not save the system setting during this automatic save. The automatic saving of the SMS settings is helpful for those times when the administrator does not have direct access to the Ethernet port.

#### 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 Save & Restart

When you have completed your MultiModem iSMS settings, you must click the **Save & Restart** button located at the top of the window under the menu bar. The system will save all the settings and give you the option to restart your MultiModem iSMS. Restarting is not required.

## 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 Administration Web Interface. The top navigation bar includes: Administration | Network Setup | SMS Services | Triggers | Utilities | Import & Export Address Book | Statistics & Logs. Below this is a secondary bar with: Help | Home | Wizard Setup | Save & Restart | Logout. The main content area is titled "Administration >> System Setup". On the left is a sidebar menu with options: System Setup (selected), SMTP Client, Admin Access, Allowed Networks, Remote Syslog, Tools, and Factory Defaults. The main panel is titled "E-Mail Notification" and contains several sections: 1. SMTP Server configuration with fields for "SMTP Server" and "Port" (set to 25), and a "Save" button. 2. SMTP Server Authentication with a checkbox, "Username" and "Password" fields, and a "Save" button. 3. E-Mail Address configuration with a text field, a dropdown arrow, and "Save" and "Delete" buttons. 4. "Configure E-Mail Notification:" section with two columns: "Don't Send E-Mail Notification for" (containing a box with "Log File Full", "Invalid Telnet Login", "Invalid Web Login") and "Send E-Mail Notification for" (containing an empty box). Between these columns are "Add >>" and "<< Delete" buttons. 5. Admin Email Address configuration with a text field and a "Save" button.

### 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 domain name of the 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 his office e-mail address, his 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 with an Internet connection, not through the wireless cellular connection.

## Administration > SNTP Client

Clicking the SNTP Client check box enables the firewall to act as a SNTP client. Also, SNTP (Simple Network Time Protocol) is an internet protocol used to set up the synchronization of the unit clock to real time.

### 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](http://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.

The screenshot shows a web interface titled "Administration >> Admin Access". It contains three main sections:

- Change Password:** Includes three input fields labeled "Old password", "New password", and "Confirm password", followed by a "Save" button.
- Web interface inactivity time out:** Includes a label "Time Before Automatic Disconnect", an input field with the value "120", the text "seconds", and a "Save" button.
- Administrative Access HTTP Port:** Includes a label "Administrative Access HTTP Port", an input field with the value "80", and a "Save" button.

### 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 120 seconds.
- 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. Well known port numbers and port numbers used by the firewall 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 WEB GUI, Telnet Dialout, and Telnet. 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 the MultiModem iSMS to be able to access.

**Subnet Mask** – Enter the Subnet Mask of any network you want the MultiModem iSMS to be able to access.

**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 Remote Syslog and to set the logging server's IP Address. The default is *Disabled*.

### Remote Syslog Configuration

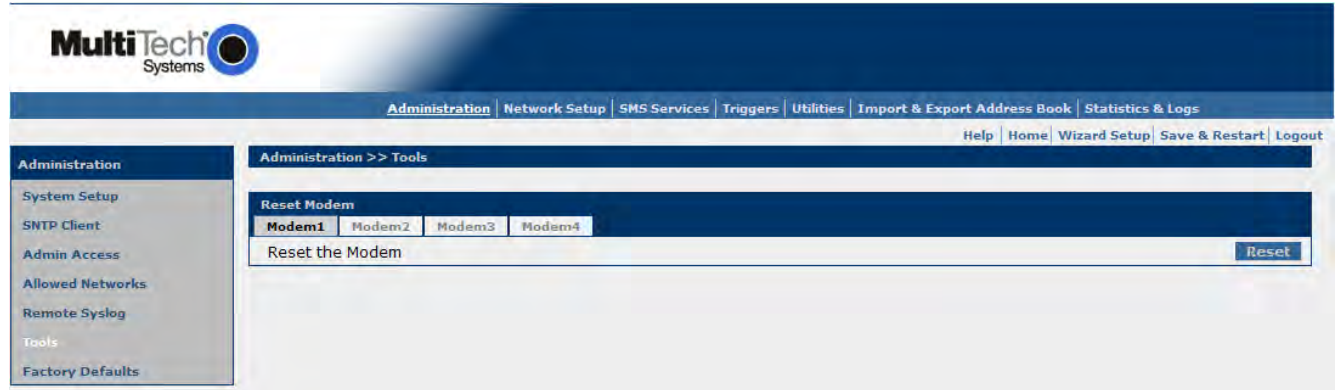
**Remote Syslog Status** – Check the Remote Syslog Status box to enable this remote syslog.

**Remote Syslog Host IP Address** – Enter the remote syslog host IP Address.

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

## 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.



### 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.

## 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 SMSFinder Defaults**

SMSFinder Defaults **SMSFinder Defaults**

**Note:** "SMSFinder Defaults" will reset the Address Book, Groups, Inbox, Outbox & all the configurations.

### Reset to Factory Defaults

Click the **Factory Defaults** button to load all configuration parameters to the original factory default settings.

All **Administration** and **Network Settings** will return to the factory defaults. Use this option only if it is necessary to wipe out your current Administration and Network Settings.

**Note:** SMS Settings (Address Book, Groups, Users, International Numbers, Triggers, Inbox, Outbox) will **not** be reset using this option.

### Reset MultiModem iSMS Defaults

Clicking the **MultiModem iSMS Defaults** button will delete the following:

- All SMS configurations and
- All Administrative and Network Settings.

This option is to be used only if really necessary to wipe out all current settings and completely start over.

## Save & Restart

### **IMPORTANT Note About Save & Restart**

When you have completed your MultiModem iSMS settings and you are not going to enter any more data, you must click the **Save & Restart** option located under the menu bar. The system will save the new settings to the Flash Memory and give you the option to restart your MultiModem iSMS. 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.

**Note:** The system will save the **SMS settings** every 8 hours automatically; however, it will not save the system setting during this automatic save. The automatic saving of the SMS settings is helpful for those times when the administrator does not have direct access to the Ethernet port.

#### **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.

# Network Setup

## Network Setup > IP Settings

Use this screen to set up your network.

The TCP Connection section is located in the IP Settings section for the SF 100 modes, and in the Cellular Modem section for the SF 400 and SF 800 models.

LAN	
IP Address	192.168.2.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.2.2
Primary DNS	205.171.3.65
Secondary DNS	

### IP Settings – LAN

#### 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.

### TCP Connection (SF 100 only)

#### TCP Connection

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

#### TCP Connection Port

Enter the Port number on which the TCP port will connect. Default is 5000.

#### 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 TCP Connection section is located in the IP Settings section for the SF 100 modes, and in the Cellular Modem section for the SF 400 and SF 800 models.

The screenshot shows the MultiTech Systems web interface for configuring cellular modems. The page title is "Network Setup >> Cellular Modem". There are tabs for "Modem1", "Modem2", "Modem3", and "Modem4", with "Modem1" selected. The interface includes several sections for configuration:

- 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" text input field containing "AT+CSQ", with a "Save" button.
- SIM Number:** A "SIM Number" text input field, with a "Save" button.
- TCP Connection:** Radio buttons for "Enable" (selected) and "Disable", and a "TCP Connection Port" text input field containing "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. These strings typically set options such as speed, error correction, compression, various timeout values, and various display parameters. See the GPRS AT Commands Reference Guide.

#### Save

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

**Signal Strength (SF 100 only)****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:** 6126361654.

**SIM Notes**

- The SIM card reads real time from the network and this provides the time stamp for SMS messages.
- If your SIM card is locked, you cannot send SMS messages.

**Save**

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

**TCP Connection (SF 400/800 only)****TCP Connection**

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

**TCP Connection Port**

Enter the Port number on which the TCP port will connect. Default is 5000.

**Save**

Click the **Save** button.

**Save & Restart****IMPORTANT Note About Save & Restart**

When you have completed your MultiModem iSMS settings and you are not going to enter any more data, you must click the **Save & Restart** button located under the menu bar. The system will save the new settings to the Flash Memory and give you the option to restart your MultiModem iSMS. 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.

**Note:** The system will save the SMS settings every 8 hours automatically; however, it will not save the system setting during this automatic save. The automatic saving of the SMS settings is helpful for those times when the administrator does not have direct access to the Ethernet port.

**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

What is SMS? Short Messages through SMS (Short Message Service) can be sent to

- Mobile numbers
- Any person(s) from the address book
- Any group(s) of persons created from the address book or individual entries.

A feature unique to the SF 100 models is that of load balancing between units on the same network. This allows one unit to hand over work that would be delayed to subsidiary units so that messages are sent in the fastest possible time. The SF 400/800 models do not need this as they have multiple SIMs able to balance the traffic by themselves and you will not see the Load Balancing screen on those units.

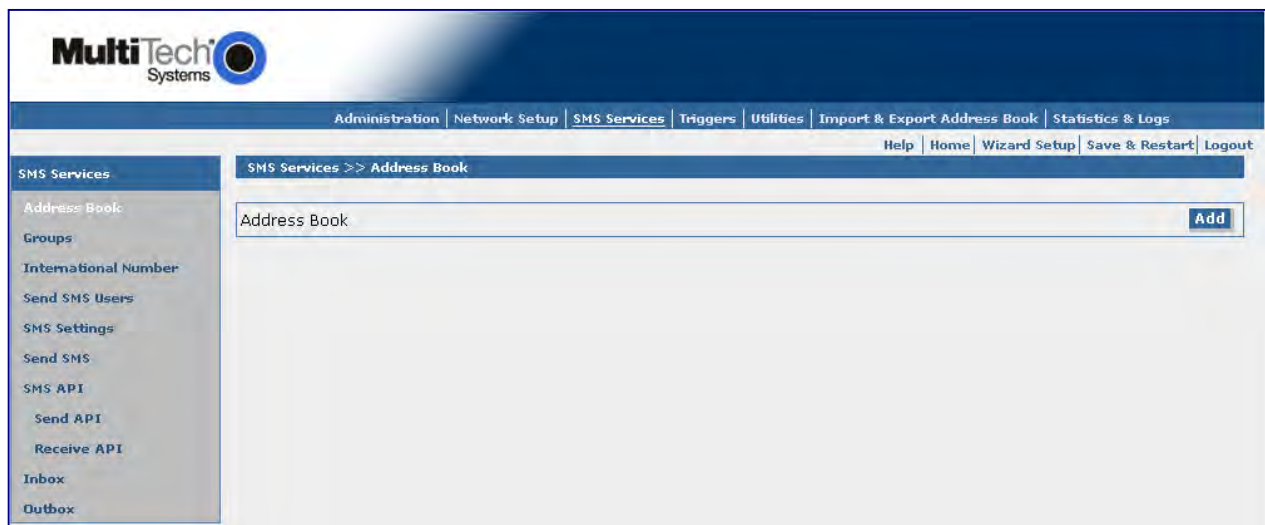
### SMS Services > Address Book

#### 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 following screen information: **Import & Export Address Book > Import**.
3. Remotely enter a name and phone number. See the following screen information: **Triggers > Action Triggers**.

#### 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.



## 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 use authentication on any entry in the address book, the phone numbers of these individuals should be preceded with the country code. For the U.S., enter "1".  
Example: 16124935555.

### 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**.

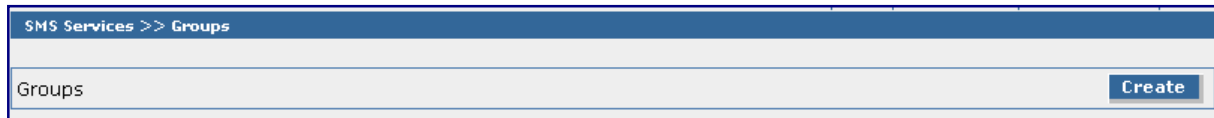
## SMS Services > Groups

Use this screen to create groups of customer/client names with their phone numbers.

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 bring in the names of all individuals in your Address Book. All names will display in this box.

Click **Delete** to remove the names of those you do not want in this group. If you want the entire Address Book of names included in this group, simply check the **Create** button.

#### Create or Cancel

Once you have the group completed, click the **Create** button. If you want to start over, 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	<input checked="" type="checkbox"/>
Maximum Digits	<input type="text" value="11"/>
<b>Save</b>	

### 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

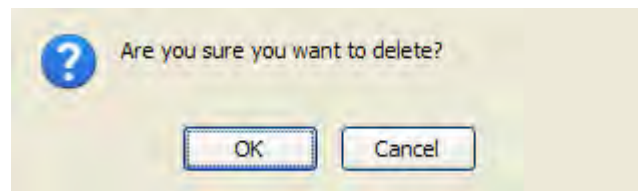
Click the **Save** button.

## SMS Services > Send SMS 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 the inbox and outbox. The screen shown here includes an example of an entry entitled "user". Once a user is entered, the **Delete** checkbox is available.

SMS Services >> Send SMS Users	
User Name	Delete
user	<input type="checkbox"/>
<b>Add</b>	

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.

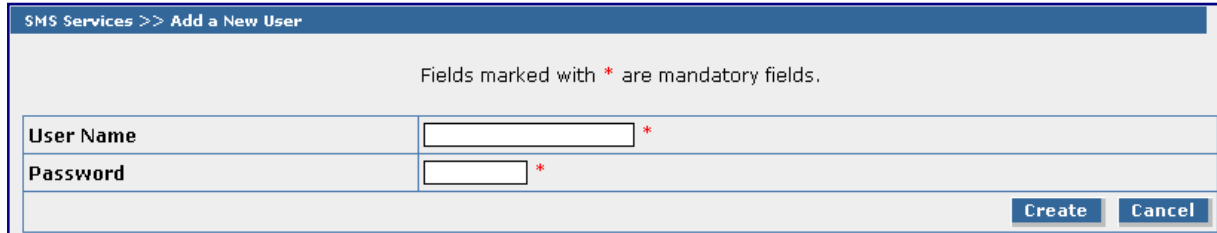


**User Name**

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 this 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". At the top, it states "Fields marked with \* are mandatory fields." Below this, there are two input fields: "User Name" and "Password". Both fields have a red asterisk to their right, indicating they are mandatory. 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 enable or disable extended ASCII character support.

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 left sidebar lists various SMS services and settings. The main content area is titled 'SMS Services >> SMS Settings' and contains two configuration sections:

- Extended ASCII 8-bit Configuration:** A checkbox for 'Extended ASCII 8-bit (ISO-8859-1)' is currently unchecked. A 'Save' button is located to the right of the checkbox.
- Date Configuration:** A dropdown menu for 'Date Configuration' is set to 'dd/mm/yyyy'. A 'Save' button is located to the right of the dropdown.

### Extended ASCII Configuration

#### Extended ASCII (ISO-8859-1)

Check the box to enable Extended ASCII characters in the SMS. 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*.

#### Save

Click the **Save** button.

#### Date Configuration (SF 400/800 only)

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.

## SMS Services > Send SMS

Messages can be sent to a contact phone number, any person(s) from the address book, or any group(s).

### Notes about User Limitations

- This screen along with the Inbox and Outbox screens are the only screens available to non-administrative users when they login with their names and passwords.
- **The Save & Restart option under the Menu Bar** is not available to non-administrative users. However, the MultiModem iSMS automatically saves the SMS settings and configuration every 8 hours.

### 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.

-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.

-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. The maximum number of characters is 160 including spaces and punctuation.

-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.

### Send button

When you are ready, click the Send button to send your message – click OK when the pop-up “in process” message appears.

## SMS Services > SMS API

SMS Services > API consists of two screens: *Send API* and *Receive API*.

**Note:** See the Appendix A for more information about the *Application Programming Interface (API)*.

### SMS Services > SMS API > Send API

On the *Send API* screen you can enable/disable Send API and configure the ports for sending API. This is particularly needed when an SF 100 is set as a *slave* for load balancing among SF 100 units on the same network.

SMS Services >> SMS API >> Send API	
<b>HTTP Send API Configuration</b>	
HTTP Send API Status	<input type="checkbox"/>
HTTP Port	<input type="text" value="80"/>
<b>Save</b>	
<b>TCP Send API Configuration</b>	
TCP Send API Status	<input type="checkbox"/>
TCP Port	<input type="text" value="2040"/>
<b>Save</b>	

#### HTTP Send API Configuration

##### HTTP Send API Status

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

##### HTTP Port

Enter the port number on which Send API service is available. This port can be the same as the Web port. The default is 80.

##### Save

Click the **Save** button.

#### TCP Send API Configuration

##### TCP Send API Status

Check the box to enable *TCP Send API* service. With the SF 100 models, this is necessary for slave units participating in load balancing.

##### TCP Port

Enter the port number on which TCP API service is available. The default is 2040. If you are using load balancing with SF 100 units, make sure that the port entered here matches what is set in **Load Balancing**.

##### Save

Click the **Save** button.

## SMS Services > SMS API > Receive API

On the *Receive API* screen you can enable/disable the Receive API service, configure the ports, set server authentication, and set the interval for posting messages to the configured server.

### Receive API Configuration

#### Receive API Status

Check the box to enable the SMS *Receive API* service.

#### Protocol

Select either the *HTTP* or *TCP* protocol.

#### Save

Click the **Save** button.

#### Server

Enter the IP Address or Domain Name of the HTTP or TCP server.

#### Port

Enter the Port Number on which the HTTP or TCP server listens.

#### Save

Click the **Save** button.

#### Server Default Page

Specify the page path to which the HTTP server is configured. This depends on how the HTTP server is setup.

#### Save

Click the **Save** button.

#### Server Authentication

If the HTTP or TCP server mandates authentication, then enter the user name and password.

#### Save

Click the **Save** button.

#### Post Interval

Enter the number of seconds that you want to elapse before SMS messages received by the MultiModem iSMS are posted to the HTTP or TCP server. The default is 0 (post immediately). The minimum allowed post interval is 30 seconds.

#### Save

Click the **Save** button.

## SMS Services > Load Balancing (SF 100 only)

When multiple SF 100 units are available on a network, they can be set up to work together to share the outgoing message load. This is utilized by setting one SF 100 unit as the Master unit and subsequent SF 100 units (up to 4) as Slaves.

As a general rule, load balancing will not be implemented until the Master unit has twenty or more maximum sized messages queued. Once initiated, the Master SF 100 will work to balance the message load among the available units using a round-robin method until the queue becomes small enough that the Master unit can once again handle the volume on its own.

### Load Balancing

#### Status

Check the Status box on every SF 100 unit that is participating in Load Balancing and click Save.

**Note:** When using Load Balancing, each Slave unit must also have the TCP Send API Status enabled (see the previous section).

### Slave Configuration

#### Slave#

Clicking on the numbered slave buttons will select the individual slave units. Each slave controlled by the master will have their own unique IP address and username/password – it might be helpful to write this information down before entering it into the master unit.

#### 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 modem number and 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.

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

### Clear Inbox

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

## SMS Services > Outbox

This screen lists the messages sent and includes Message ID, the receiver's number, the message sent, and the timestamp.

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 left sidebar lists various SMS Services options, with 'Outbox' selected. The main content area displays the 'SMS Services >> Outbox' page. At the top of this page is a 'Clear Outbox' button. Below it is a table with the following data:

Msg ID	User	To	SMS	Date	Time
0	admin	7635551234	Test	01/01/2008	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.

### 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 MultiModem iSMS cellular phone number on the **Network Setup > Cellular Modem** screen.

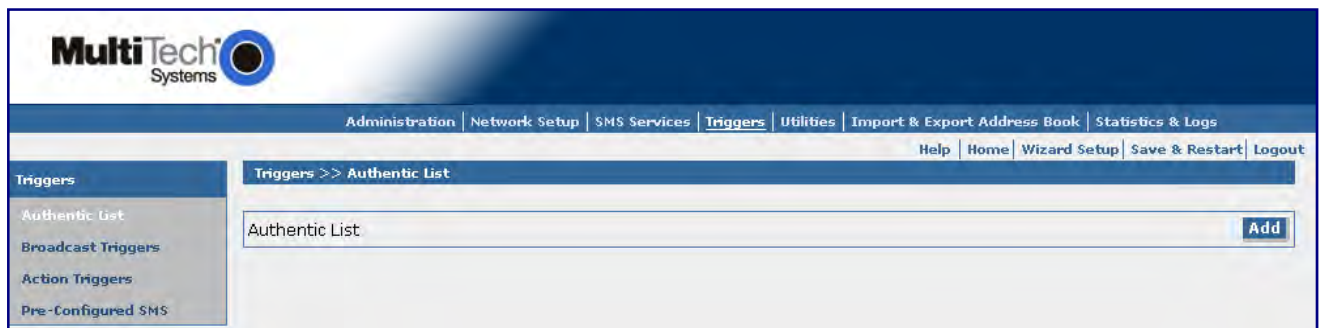
## Triggers

On the four Triggers screens, you can accomplish the following tasks:

- Establish a list of authentic users – those users who will be allowed to set the triggers (codes or words) that initiate broadcast messages from a user's remote cell phone.
- Set up broadcast triggers (codes or words) that will send broadcast messages.
- Set up action triggers that will cause phone book edits.
- Compose and save pre-configured messages.

### Triggers > Authentic List

Use this screen to set up a list of authentic users. Authentic users will be allowed to set the trigger (codes or words) that initiates the broadcasting of selected messages.



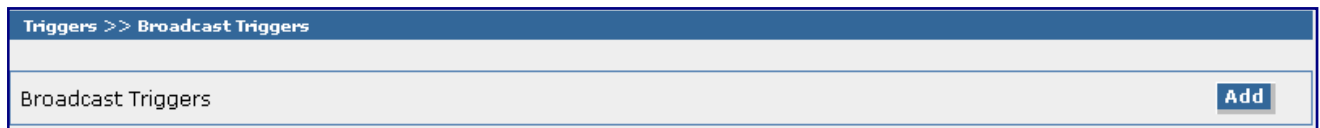
#### Authentic List

Click the **Add** button to display the Address Book from which you can select those users who will be "authentic users" – users who can send triggers (codes or words) from their cell phones that will allow them to send a broadcast message.

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

### Triggers > Broadcast Triggers

Use this screen to set up trigger messages, broadcast messages, and authentication parameters.



#### 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	<input type="text"/> *
	( Maximum 160 characters. )
Broadcast Message	<input type="text"/> * <a href="#">[Pre-Configured Message]</a>
	( Maximum 160 characters. )
To	<input type="text"/> <a href="#">[Groups]</a> <a href="#">[Delete]</a>
Authenticate	<input type="checkbox"/>
Authentic Users	<input type="text"/>

[Save](#) [Cancel](#)

#### Trigger Message

Type in a code or word that you want to trigger a broadcast message.

- **Some trigger words can be given to all users.**
- **Some trigger words can be created for authenticated users only.**
- **Some trigger words can be created for use by the administrator only.**

#### 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.

#### 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.

#### Authentic Users

Select the Authentic Users who are allowed to trigger and initiate a broadcast message on this screen.

#### 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

Use this screen to set up trigger codes or words. 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	<a href="#">Edit</a>
Create new Group or Add Number to Group	ADDG	Disabled	<a href="#">Edit</a>
Add New Preconfigured SMS	ADDSMS	Disabled	<a href="#">Edit</a>
Delete Number from Address Book	DEL	Disabled	<a href="#">Edit</a>
Delete a Group	DELG	Disabled	<a href="#">Edit</a>

**Trigger Action** – The following actions are executed when an initiating trigger code or word is detected from an incoming SMS text message.

**Trigger Message (Codes or Words)** – The trigger codes or words shown on this screen are built in to the Web Interface. These built-in codes can be changed. See the table on the next page for an explanation of how the trigger codes and their associated trigger actions are created.

**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
<b>ADD</b>	To add an entry in the address book	<b>Configuration format:</b> <act_tri_configured>;name;number <b>Example:</b> ADD;joe smith;7635554174	Adds name with number to address book.
		<b>Configuration format:</b> <act_tri_configured>;name <b>Example:</b> ADD; joe smith	Adds name with sender's number to address book.
		<b>Configuration format:</b> <act_tri_configured> <b>Example:</b> ADD	Adds name and number of sender to address book.
<b>ADDG</b>	To add a group name and an entry. <b>Note:</b> 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	<b>Configuration format:</b> <act_tri_configured>;grp_name <b>Example:</b> ADDG;Building_201	Creates a group with a group name.
		<b>Configuration format:</b> <act_tri_configured>;grp_name;name;number <b>Example:</b> ADDG;Building_201;joe smith;7635554174	Adds name with number to a group. Group must already exist.
		<b>Configuration format:</b> <act_tri_configured>;grp_name;name; <b>Example:</b> ADDG;Building_201;joe smith	Adds name to a group. Group must already exist.
<b>ADDSMS</b>	To add a pre-configured SMS	<b>Configuration format:</b> <act_tri_configured>;SMS <b>Example:</b> ADDSMS;Building 201 is closed until further notice.	Adds SMS to preconfigured list.
<b>DEL</b>	To delete an entry from the address book	<b>Configuration format:</b> <act_tri_configured>;name;number <b>Example:</b> DEL;joe smith;7635554174	Deletes name with number from the address book.
		<b>Configuration format:</b> <act_tri_configured>;name <b>Example:</b> DEL;joe smith	Deletes all entries with this name from the address book.
<b>DELG</b>	To delete a group	<b>Configuration format:</b> <act_tri_configured>;grp_name <b>Example:</b> 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.

#### 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

Click the **Save** button

#### Cancel

If you want to start over on this screen or do not want to continue creating this pre-configured message, click **Cancel**.

## Save & Restart

### IMPORTANT Note About Save & Restart

When you have completed your MultiModem iSMS settings and you are not going to enter any more data, you must click the **Save & Restart** button located under the menu bar. The system will save the new settings to the Flash Memory and give you the option to restart your MultiModem iSMS. 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.

**Note:** The system will save the SMS settings every 8 hours automatically; however, it will not save the system setting during this automatic save. The automatic saving of the SMS settings is helpful for those times when the administrator does not have direct access to the Ethernet port.

#### Save

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

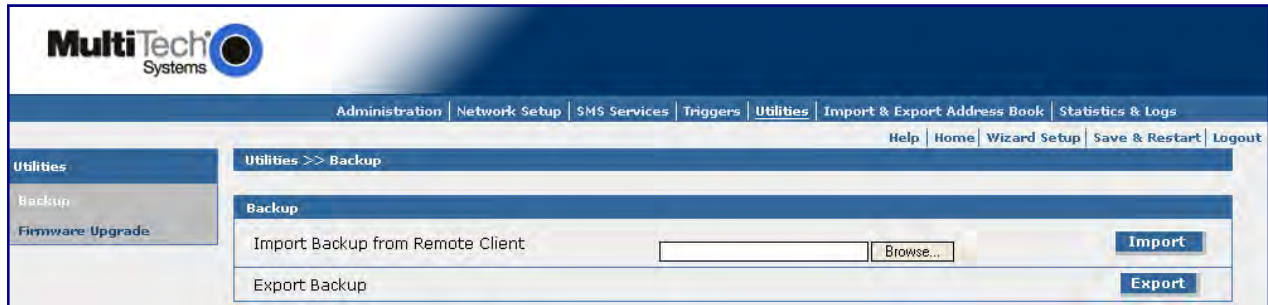
#### Restart is Optional

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

## Utilities

### Utilities > Backup

The Backup function lets you save the MultiModem iSMS settings to a local hard disk or to be exported to a remote client. With a backup file, you can set a recently installed MultiModem iSMS to the identical configuration level as an existing MultiModem iSMS. This is useful in case there is a problem with your new settings. **Important Note:** A backup file should only be restored to MultiModem iSMSs that have the same firmware as the backup and are the same model.



#### Backup

##### Import Backup from Remote Client

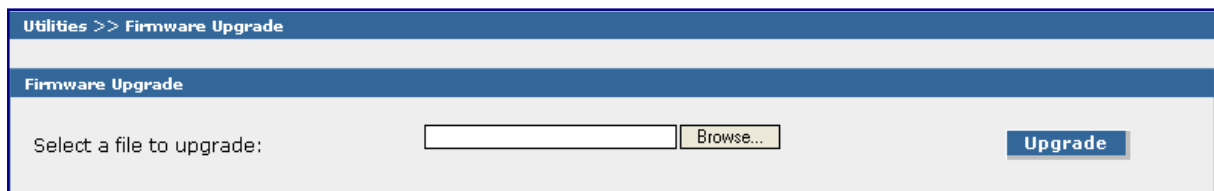
Use this section of the screen to import a saved configured. Click the **Browse** button to locate the file. Then click the **Import** button to restore the MultiModem iSMS configuration from this backup file. The configuration file is uploaded to the MultiModem iSMS and the saved configuration is restored.

##### Export Backup

Use this section of the screen to store the MultiModem iSMS configuration. Click the **Export** button to save the configuration file. This file will be a compressed **.tar** file.

### 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.



#### 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.

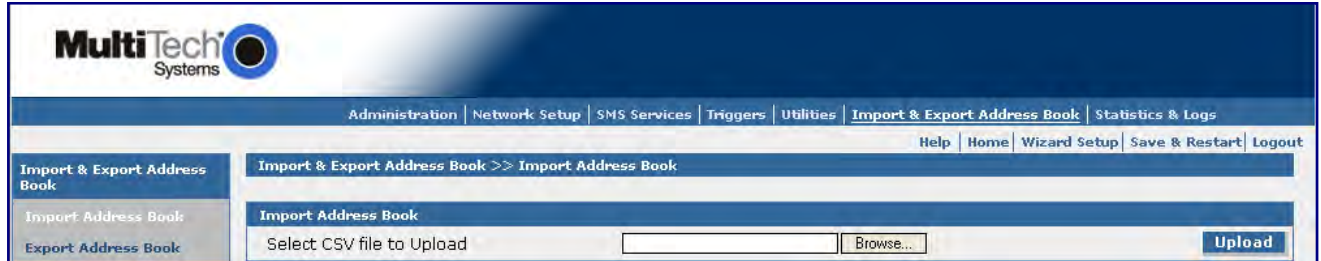
**Note:** The MultiModem iSMS will reboot automatically after the firmware upgrade.

## Import & Export Address Book

### Import & Export Address Book > Import

Use this screen to import an address book that you want to use to set up senders and receivers of messages, as well as authentic users. **Note:** CSV stands for *comma separated values*, a term that applies to the format of an address book.

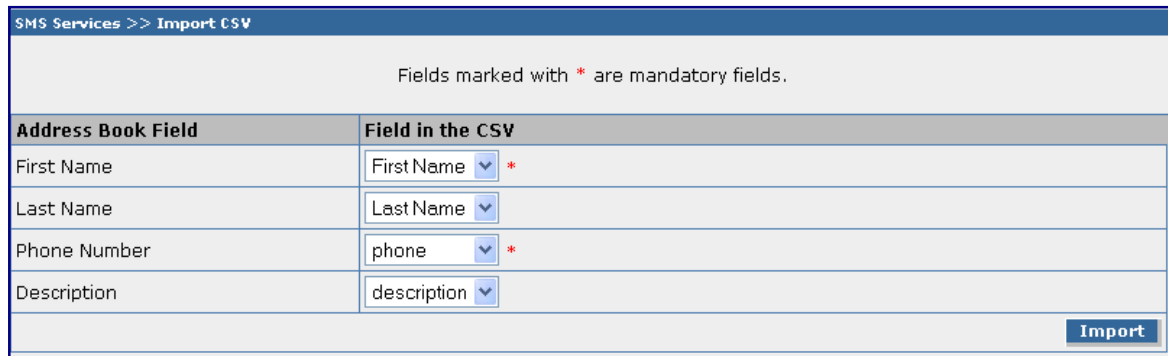
#### Import Address Book



#### Select the CSV File

Browse for the address file you want to use, and then click the **Upload** button once it is found. A screen to select the columns that you want shown in your address book displays.

#### 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 options that default into **Field in the CSV** come from the address book file that you import; therefore, the number of drop boxes is determined by your address book file. You can have up to 10 columns in the .CSV file. From the drop down boxes, select the order in which the columns will be displayed in your address book. Then click the **Import** button.

In the example used below, the columns selected 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 preceded with the country code. For the U.S., enter "1". 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 authentication 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. This is how the MultiModem iSMS compares phone numbers of incoming messages to the authentication list.

**Address Book**

SMS Services >> Address Book				
Name	Phone Number	Description	Edit	Delete
SF100	+16126361654	<a href="#">View</a>	<input type="radio"/>	<input type="checkbox"/>
SFinder1 first SFinder1 last	17633604174	<a href="#">View</a>	<input type="radio"/>	<input type="checkbox"/>
SFinder10 first SFinder10 last	17633604174	<a href="#">View</a>	<input type="radio"/>	<input type="checkbox"/>
SFinder11 first SFinder11 last	17633604174	<a href="#">View</a>	<input type="radio"/>	<input type="checkbox"/>
SFinder12 first SFinder12 last	17633604174	<a href="#">View</a>	<input type="radio"/>	<input type="checkbox"/>
SFinder13 first SFinder13 last	17633604174	<a href="#">View</a>	<input type="radio"/>	<input type="checkbox"/>
SFinder14 first SFinder14 last	17633604174	<a href="#">View</a>	<input type="radio"/>	<input type="checkbox"/>
SFinder15 first SFinder15 last	17633604174	<a href="#">View</a>	<input type="radio"/>	<input type="checkbox"/>
SFinder16 first SFinder16 last	17633604174	<a href="#">View</a>	<input type="radio"/>	<input type="checkbox"/>
SFinder17 first SFinder17 last	17633604174	<a href="#">View</a>	<input type="radio"/>	<input type="checkbox"/>

Select All

Starting with:

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 an address book. You would use the export function to share the address list of this MultiModem iSMS by sending the list to a laptop, to a remote location, to another company, to your current e-mail program such as Outlook.

### 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 Save & Restart

When you have completed your MultiModem iSMS settings and you are not going to enter any more data, you must click the **Save & Restart** button located under the menu bar. The system will save the new settings to the Flash Memory and give you the option to restart your MultiModem iSMS. 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.

**Note:** The system will save the SMS settings every 8 hours automatically; however, it will not save the system setting during this automatic save. The automatic saving of the SMS settings is helpful for those times when the administrator does not have direct access to the Ethernet port.

### 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
- Signal Strength (**SF 100 only**) - or - Entries in the Address Book (**SF 400/800 only**)

### Live Details

- Date and Time
- System Uptime
- Memory Utilization
- Free Memory Blocks (**SF 100 only**)

### SF 100

The screenshot shows the MultiTech Systems web interface for SF 100. The navigation bar includes Administration, Network Setup, SMS Services, Triggers, Utilities, Import & Export Address Book, and Statistics & Logs. The left sidebar has Statistics & Logs, System Information, SMS Statistics, and Log Traces. The main content area is titled 'Statistics & Logs >> System Information' and contains two sections: 'System Information' and 'Live Details'.

System Information	
Product Model Number	SF100-G
Firmware Version	1.20
MAC Address	00:08:00:85:01:ff
Signal Strength	0

Live Details	
Date and Time	Tue Jan 1 01:54:18 UTC 2008
System Uptime	0 Days, 1 Hours, 54 Minutes, 24 Seconds
Memory Utilization	MemTotal: 62868 kB MemFree: 41820 kB
Free Memory Blocks	0*4kB 0*8kB 0*16kB 0*32kB 1*64kB 0*128kB 1*256kB 1*512kB 0*1024kB 20*2048kB

### SF 400/800

The screenshot shows the MultiTech Systems web interface for SF 400/800. The navigation bar includes Administration, Network Setup, SMS Services, Triggers, Utilities, Import & Export Address Book, and Statistics & Logs. The left sidebar has Statistics & Logs, System Information, SMS Statistics, and Log Traces. The main content area is titled 'Statistics & Logs >> System Information' and contains two sections: 'System Information' and 'Live Details'.

System Information	
Product Model Number	SF400-G
Firmware Version	1.00
MAC Address	00:08:00:50:aa:aa
Entries in the Address Book	3

Live Details	
Date and Time	Tue Jan 1 06:17:56 UTC 2008
System Uptime	0 Days, 6 Hours, 18 Minutes, 10 Seconds
Memory Utilization	MemTotal: 257608 kB MemFree: 225228 kB

## Statistics & Logs > SMS Statistics

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

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

**Signal Strength (SF 400/800 only)**

**Messages in Inbox**

**Messages in Outbox (SF 100 only)**

**Messages Sent**

**Rate of Sent Messages (SF 400/800):** This is the number of messages sent per minute. The average number of messages sent from the MultiModem iSMS is about 10 a minute. These rates are affected by the size of each message and the amount of network congestion.

**Rate of Received Messages (SF 400/800):** This is the number of messages received per minute. 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.

**Rate of Messages (SF 100 only):** This is the number of messages sent per minute. The average number of messages sent from the MultiModem iSMS is about 10 a minute. These rates are affected by the size of each message and the amount of network congestion.

### Trigger Statistics

**Broadcast Triggers Configured**

**Broadcast Triggers Received**

**Action Triggers Received**

### Address Book Statistics (SF 100 only)

**Entries in the Address Book**

### Job Statistics

#### SF 100

**Jobs Queued**

**Jobs Distributed**

**Jobs Dispatched**

#### SF 400 and SF 800

**Entries in Outbox**



## Statistics & Logs > Load Balancing Statistics (SF 100 only)

When load balancing is set up with multiple SF 100 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 sub-menu with options like Help, Home, Wizard Setup, Save & Restart, and Logout. The main content area displays the 'Statistics & Logs >> Load Balance Statistics' page. A table with three columns: Slaves, Load, and Jobs Distributed, is shown. The table contains four rows of data for Slave1 through Slave4.

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

### Load Balancing Statistics

#### Slaves

List of possible slave SF 100 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)**

**(SF 100 only) Load Balance Logs**

**System Log**

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

The screenshot displays the MultiTech Systems web interface. At the top, the MultiTech Systems logo is visible. Below it, a navigation bar contains links for Administration, Network Setup, SMS Services, Triggers, Utilities, Import & Export Address Book, and Statistics & Logs. A secondary navigation bar includes Help, Home, Wizard Setup, Save & Restart, and Logout. The left sidebar shows a menu with 'Statistics & Logs' selected, and sub-items for System Information, SMS Statistics, and Log Traces. The main content area is titled 'Statistics & Logs >> Log Traces'. It features a 'SMS Logs' section with tabs for Modem1, Modem2, Modem3, and Modem4. Under 'SMS Logs', there are four log types: SMS Sent Log, SMS Received Log, SMS Failure Log, and SMS Live Log, each with a 'Show' button. Below this is the 'Send API Logs' section with four log types: Send API Status Log, Send API Failure Log, Send HTTP API Live Log, and Send TCP API Live Log, each with a 'Show' button. The 'Receive API Logs' section has two log types: Receive API Live Log and Receive API Failure Log, each with a 'Show' button. Finally, the 'System Logs' section has one log type: 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 may be photocopied or printed separately and given to non-administrative users who have limited access to the MultiModem iSMS for sending SMS text messages and for monitoring SMS messages in the Inbox and Outbox.

Users send SMS text messages from a networked PC. They login using the name and password created by the administrator for each user and can send messages from the **SMS Services > Send SMS** screen.

This chapter covers the Web Interface available to non-administrative users

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

## Web Interface Available to Non-Administrative Users

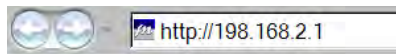
The only screens available to users are the following **SMS Services** screens:

- **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 the default gateway address line:  
http://192.168.2.1



3. The Login screen for the MultiModem iSMS displays.

A screenshot of the MultiModem iSMS Login screen. The screen has a blue header with the word "Login" in white. Below the header, there are two input fields: "User Name" and "Password". Each field has a corresponding text box. Below the input fields, there 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 &gt; Send SMS

SMS Services >> Send SMS	
<b>To</b> Enter Phone Numbers	<input type="text"/> <b>Add</b> <b>Delete</b>
<b>To</b> Select Names from the Address Book	<input type="text"/> <b>Add</b> <b>Delete</b> <input type="checkbox"/> Select the entire Address Book
<b>To</b> Select Groups	<input type="text"/> <b>Add</b> <b>Delete</b> <input type="checkbox"/> Select all the Groups
<b>SMS Text</b>	<input type="text"/> <b>[Pre-Configured Message]</b>
(Maximum 160 characters.)	
<b>Send</b>	

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.

**Note**

**Save & Restart** are not available to users. However, the MultiModem iSMS automatically saves the SMS settings and configuration every 8 hours.

## 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.

The screenshot shows the 'Network Setup >> Cellular Modem' configuration page. It has three main sections: 'Modem Initialization String' with three input fields and a 'Save' button; 'Signal Strength' with a 'Command' field containing 'AT+CSQ' and a 'Save' button; and 'SIM Number' with a 'SIM Number' field containing '6126361654' (circled in red) and a 'Save' button.

- 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.

The screenshot shows the 'SMS Services >> Send SMS' configuration page. It has four main sections: 'To' with an input field containing '6126361654' (circled in red) and 'Add'/'Delete' buttons; 'To' with an 'Address book' dropdown and 'Add'/'Delete' buttons; 'To' with a 'Groups' dropdown and 'Add'/'Delete' buttons; and 'SMS Text' with an input field containing 'add;SF100' (circled in red) and a 'Send' button. A note below the text field says '(Maximum 160 characters.)'.

- **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	<a href="#">View</a>	<input type="radio"/>	<input type="checkbox"/>

Starting with:

**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 >> Add a Broadcast Trigger

Fields marked with \* are mandatory fields.

Trigger Message	Snow *
Broadcast Message	School is closed today. * [Pre-Configured Message]
To	Parents [Groups] [Delete]
Authenticate	<input checked="" type="checkbox"/>
Authentic Users	SF100 [Address book] [Delete]

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.
- Note:** All phone numbers for Authenticated Users must be preceded by the country code ("1" for U.S.) in the address book so the MultiModem iSMS can match the phone number of the received SMS trigger message with the phone number in the Authenticated User list.
- Click **Save**. The following screen displays the Broadcast Message saved for future use.

Triggers >> Broadcast Triggers

Trigger Message	Broadcast Message	Authenticate	View/Edit	Delete
Snow	School is closed today.	Enabled	<input type="radio"/>	<input type="checkbox"/>

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.

---

## Chapter 7 – Troubleshooting

This chapter provides a list of common problems encountered while installing, configuring, or administering the MultiModem iSMS.

### MultiModem iSMS Troubleshooting

#### Other computers can connect to the network device, but my computer can't.

- Whenever I click on Internet Explorer or Netscape, I see the Windows Dial-up utility popping up on my screen asking my phone number and password to dial-up my ISP. To correct this, remove the TCP/IP dial-up adapter from all computers that will be using your MultiModem iSMS. TCP/IP dial-up adapter is not needed to access the MultiModem iSMS.
  1. To remove the Dial-up Adapter, click **Start | Settings | Control Panel**.
  2. Double-click the **Network** icon.
  3. Click the **Dial-up Adapter** and click **Remove**. Restart the computer and try again.
- Ensure your PC has a correct IP address. From a DOS window in Windows 95/98, type **WINIPCFG** or from newer Windows operating systems, type **IPCONFIG**. If the address field is listed as 0.0.0.0, the computer does not have an IP address. Enter a statically assigned IP address.
- Ensure that the Web browser is properly configured to connect to the MultiModem iSMS via the LAN.

#### The MultiModem iSMS is connected, but my workstation has problems accessing the MultiModem iSMS.

- Ensure the workstation has TCP/IP properly configured.
- Attempt to ping the IP address of the MultiModem iSMS.
- Use WINIPCFG (Windows 95/98) or IPCONFIG (Windows NT/ 2000) to check to see if the computer's IP settings are correct.
- Ensure the DNS settings are correct.
- Ensure the Gateway IP address is the device's LAN Ethernet IP address (Server IP address).
- Ensure the IP address netmask is correct.

#### It appears that the MultiModem iSMS cannot communicate with the cellular modem.

- Check your initialization string.
- The Status LED and LS LED should be blinking.
- Review the wireless modem account activation instructions to make sure they were properly executed.

#### Authenticated triggers are not being executed.

- Is the SMS trigger text message sent to the MultiModem iSMS worded as configured?
- The phone number of the device sending the SMS trigger message (word or code) must be included in the list of authenticated users and the phone number must be preceded with the country code. For the U.S., enter "1". 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 authentication list.

### The *Please set the Device IP* screen displays while configuring the MultiModem iSMS.

- Windows detects that the MultiModem iSMS's LAN Ethernet IP address is not in the same subnet as the PC's. Ensure your PC has a correct IP address. From a DOS window in Windows 95/98, type **WINIPCFG** or from other Windows operating systems, type **IPCONFIG**. If the address field is listed as 0.0.0.0, the computer does not have an IP address. Enter a statically assigned IP address.

### A message appears indicating the input IP address is either not valid on your network or is in conflict with another IP address.

- The system has detected the IP address of the MultiModem iSMS you are configuring is in conflict with another device. Power off the conflicting device and configure the MultiModem iSMS with a different Ethernet LAN IP address.

### A line appears in the Inbox that says **TIMESETTINGS\_LOOP\_BACK\_MSG**. What does this mean?

SMS Services >> Inbox			
From	SMS	Date	Time
+16126361654	add;SF100	08/01/21	10:26:45-24
+16126361654	TIMESETTINGS_LOOP_BACK_MSG	08/01/21	10:25:05-24

- This is simply a time setting verification. You can ignore this line.

### E-mail alerts sent to the Administrator are not being received.

- Is the SMTP Server configured properly for e-mail notification? See the **Administration > System Setup** screen.
- The MultiModem iSMS Ethernet port must be connected to a live network. SMTP e-mail alerts are sent through the Ethernet connection.

### The SNTP Time/Date stamp are not correct in the outbox.

- Is the SNTP Client configured properly? See the **Administration > SNTP** screen.
- The SNTP Time/Date function works through the MultiModem iSMS's Ethernet connection. The Ethernet port needs to be connected to a live network.

---

# 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

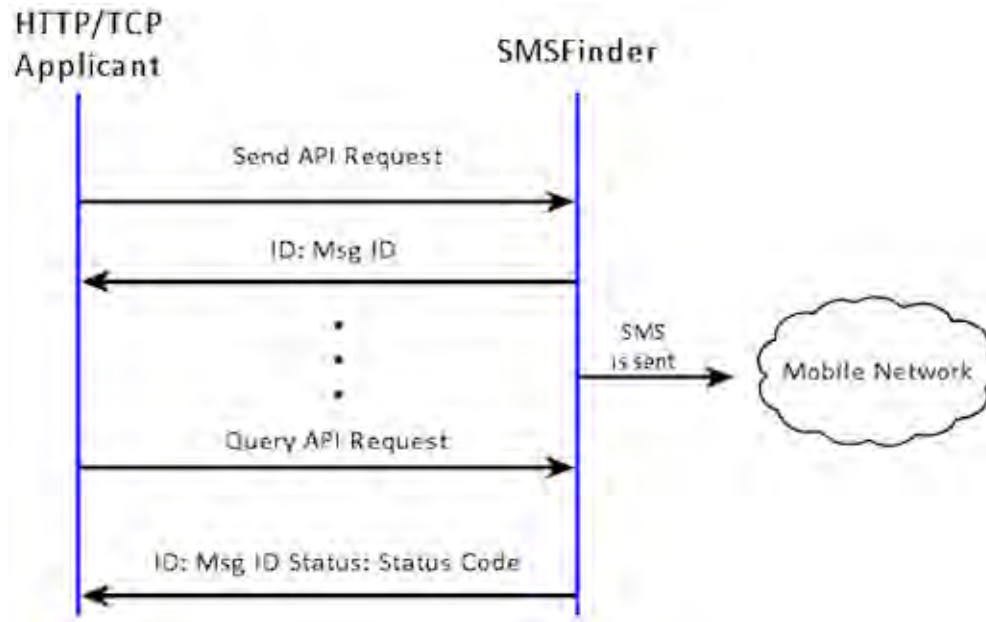
### Scope

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

## Send SMS API



## HTTP Send API

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

#### 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:

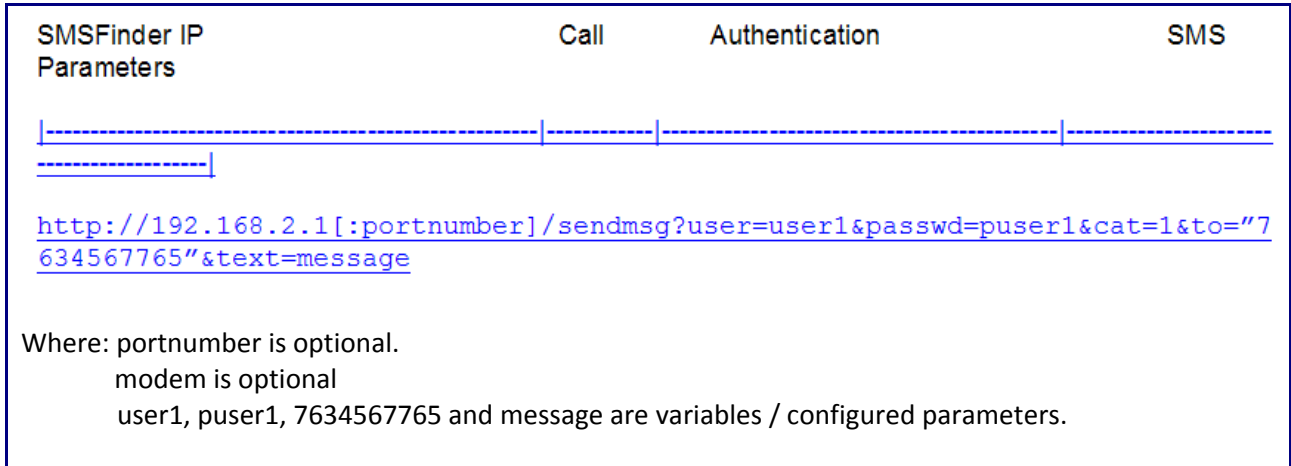
Configure the port to service the HTTP Send API.

Default is 80

## 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 80
- 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 [&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 [&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 [
&modem=1]&to="7657867765"&text=message
```

The parameters are:

- **cat** Category
  - 1 - Send SMS
  - 2 - Broadcast Trigger
  - 3 - Action Trigger
- **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.

**Note:** 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.

In the 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's 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
[&modem=2]&ton="bob"&text=message
```

The parameters are:

- **cat** 1
- **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 *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.

## 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
[&modem=4]&group="admin"&text=message
```

The parameters are:

- **cat** 1
- **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 *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.

## 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&text=message
```

The parameters are:

- **cat** 2
- **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 *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.

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&text=message
```

The parameters are:

- **cat** 3
- **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 *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.

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[&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
```

**Status Codes**

Status Code	Status Description	Description
0	Done	The MultiModem iSMS has completed servicing the "Send" job, and a message is sent to all the 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.

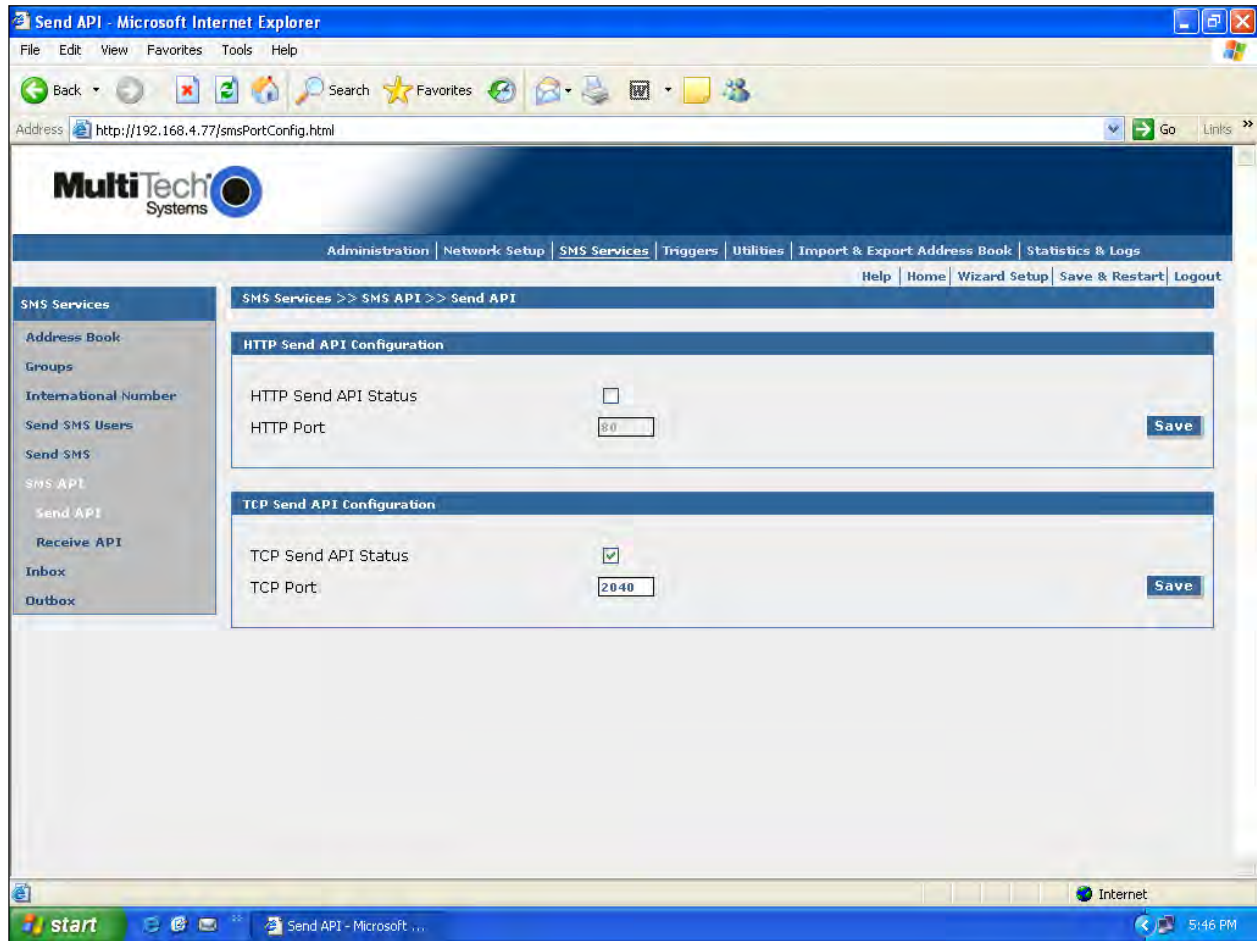
**Error Codes**

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

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

## TCP Send API

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



#### 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&modem=1&to="+919844895691"&ton="Bob"&group="eng"&text=Here is the test message
```

**Notes:**

“modem” parameter is optional.

**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.

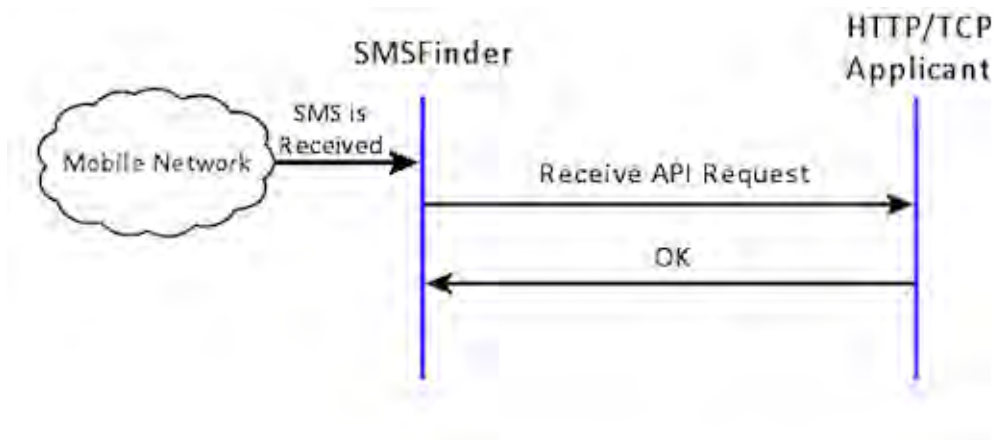
### TCP Query API Format

```
/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.

## Receive SMS API



### Process:

- Upon receipt of an SMS message and based on the configuration, the MultiModem iSMS uploads the SMS to the HTTP or TCP server configured.
- If the post interval is more than 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

### Configuration of the "Receive API" Using the MultiModem iSMS Web Admin Interface

The screenshot shows the MultiTech Systems web admin interface. The main content area is titled "Receive API Configuration" and contains the following fields:

- Receive API Status:** A checkbox that is currently unchecked.
- Protocol:** Radio buttons for "HTTP" (selected) and "TCP".
- Server:** A text input field.
- Port:** A text input field with the value "80".
- Server Default Page:** A text input field.
- Server Authentication:** A checkbox that is currently unchecked.
- Username:** A text input field.
- Password:** A text input field.
- Post Interval:** A text input field with the value "0" and the unit "seconds".

Each field has a "Save" button to its right. The interface also includes a navigation menu on the left and a top navigation bar with links like "Administration", "Network Setup", "SMS Services", etc.

When the protocol is HTTP, the "Receive API request" is an HTTP POST packet.

### POST Packet Format with Authentication

```
POST /cgi-bin/postquery.cgi HTTP/1.1
HOST: 192.168.2.2:80
User-Agent: MultiModem iSMS/1.20
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%2
0encoding%3D%22ISO-8859-
1%22%3F%3E%0D%0A%3CMessageNotification%3E%0D%0A%3CModemNumber%3E%2B2%3A195259
45092%3C%2FModemNumber%3E%0D%0A%3CSenderNumber%3E%2B919844895692%3C%2FSender
Number%3E%0D%0A%3CDate%3E08%2F03%2F14%3C%2FDate%3E%0D%0A%3CTime%3E12%3A53%3
A09%3C%2FTime%3E%0D%0A%3CMessage%3ETest%0D%0A%0D%3C%2FMessage%3E%0D%0A%3C
%2FMessageNotification%3E%0D%0A
```

**POST Packet Format without Authentication**

```
POST /cgi-bin/postquery.cgi HTTP/1.1
HOST: 192.168.2.2:80
User-Agent: MultiModem iSMS/1.20
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: 346
```

```
XMLDATA=%3C%3Fxml%20version%3D%221.0%22%20encoding%3D%22ISO-8859-
1%22%3F%3E%0D%0A%3CMessageNotification%3E%0D%0A%3CModemNumber%3E%2B2%3A195259
45092%3C%2FModemNumber%3E%0D%0A%3CSenderNumber%3E%2B919844895692%3C%2FSender
Number%3E%0D%0A%3CDate%3E%08%2F03%2F14%3C%2FDate%3E%0D%0A%3CTime%3E%12%3A55%3
A54%3C%2FTime%3E%0D%0A%3CMessage%3E%0D%0A%3C%2FMessage%3E%0D%0A%3C%
2FMessageNotification%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)]

The server authenticates the message from MultiModem iSMS using the username/password XML data

```
<?xml version="1.0" encoding="ISO-8859-1"?>\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
```

**OR**

```
<?xml version="1.0" encoding="ISO-8859-1"?>\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
```

Notes:

- The MultiModem iSMS accommodates two messages at the maximum 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

### Configuration at the MultiModem iSMS

The screenshot displays the MultiTech Systems web interface for configuring the TCP Receive API. The interface includes a navigation menu on the left and a main configuration area with the following fields and options:

- Receive API Status:**
- Protocol:**  HTTP  TCP
- Server:**
- Port:**
- Server Default Page:**
- Server Authentication:**
- Username:**
- Password:**
- Post Interval:**  seconds

Each field has a "Save" button next to it. The interface also includes a navigation menu on the left with options like "Address Book", "Groups", "International Number", "Send SMS Users", "SMS Settings", "Send SMS", "SMS API", "Send API", "Receive API", "Inbox", and "Outbox".

### TCP Receive API Request without Authentication

From: MultiModem iSMS/1.20

Authentication: OFF

Data-Length: 123

1:19525945092

+17635280856

08/10/15

07:29:32

26632HTTP Broadcasting SMS messages could. <http://www.multitech.com/sm>

## TCP Receive API Request with Authentication

From: MultiModem iSMS/1.20

Authentication: OFF

Data-Length: 123

smsuser1

smsuser1

1:19525945092

+17635280856

08/10/15

07:29:32

26632HTTP Broadcasting SMS messages could. <http://www.multitech.com/sm>

### Notes:

Payload comprises 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.

## Appendix B – Table of Commonly Supported Subnet Addresses

This table lists commonly supported Subnets organized by Address.

	<b>Network Number</b>	<b>Hosts Available</b>	<b>Broadcast Address</b>
255.255.255.128 /25	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

	<b>Network Number</b>	<b>Hosts Available</b>	<b>Broadcast Address</b>
255.255.255.192 /26	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

	<b>Network Number</b>	<b>Hosts Available</b>	<b>Broadcast Address</b>
255.255.255.224 /27	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

	<b>Network Number</b>	<b>Hosts Available</b>	<b>Broadcast Address</b>
255.255.255.240 /28	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

	<b>Network Number</b>	<b>Hosts Available</b>	<b>Broadcast Address</b>
255.255.255.248 /29	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
	<b>Network Number</b>	<b>Hosts Available</b>	<b>Broadcast Address</b>
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

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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
<b>Frequency RX</b>	869 to 894 MHz	925 to 960 MHz	1805 to 1800 MHz	1930 to 1990 MHz
<b>Frequency TX</b>	824 to 849 MHz	880 to 915 MHz	1710 to 1785 MHz	1850 to 1910 MHz
<b>RF Power Stand</b>	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-ban 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.

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## 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

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# Appendix F – End User License Agreement (EULA)

Multi-Tech Systems, Inc.

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# 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

Moisture Sensitivity Level (MSL) =1

Tin Whisker Growth = None detected

Maximum Soldering temperature = 260C (wave only)

#### Notes:

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).
2. Moisture Sensitivity Level (MSL) – Analysis is based on the components/material used on the board.
3. Tin Whisker Study was done per NEMI guidelines (Elevated temperature cycle of 60°C and non-condensing relative humidity of 87% exposed to this environment for 1000 hours).

## 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 (MIIT) 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 / 元素					
	铅 (PB)	汞 (Hg)	镉 (CD)	六价铬 (CR6+)	多溴苯 (PBB)	多溴二苯 (PBDE)
印刷电路板	○	○	○	○	○	○
电阻器	X	○	○	○	○	○
电容器	X	○	○	○	○	○
磁性氧化物	○	○	○	○	○	○
器/光学部件	○	○	○	○	○	○
IC	○	○	○	○	○	○
二极管/晶体管	○	○	○	○	○	○
振荡器和晶振	X	○	○	○	○	○
器	○	○	○	○	○	○
传感器	○	○	○	○	○	○
器	○	○	○	○	○	○
声器	○	○	○	○	○	○
连接器	○	○	○	○	○	○
LED	○	○	○	○	○	○
螺、螺母以及其它五金件	X	○	○	○	○	○
交流-直流源	○	○	○	○	○	○
件/文档 CD	○	○	○	○	○	○
手册和纸页	○	○	○	○	○	○
底	○	○	○	○	○	○

**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。

**○** 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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