# SMSFinder™

## Turnkey SMS Server

### Model SF100-G

# User Guide for System Administrators

**MultiTech®**
Systems

**SMSFinder**

**User Guide for Administrators**

**Model:  SF100-G**

**Document S000451B, Revision B**

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| Revision | Date | Description |
|---|---|---|
| A | 02/08/08 | Initial release. |
| B | 07/07/08 | Updated for software 1.20 release. |
|  | 08/07/08 | Add the End User License Agreement. |
|  | 05/13/09 | Added website link for warranty information. |

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**Warranty**

To read the warranty statement for your product, please visit: http://www.multitech.com.

# Contents

# Chapter 1 – Introduction and Product Description

The Multi-Tech SMSFinder™ is a turnkey SMS (Short Message Services) 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 Telecommunication Network.

### 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.

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

## Ship Kit Contents

The SMSFinder ship kit contains the following items:

- One SMSFinder
- Power Supply
- RJ-45 Ethernet Cable
- Cellular Antenna (not included with all models)
- The Quick Start Guide
- One SMSFinder CD which contains SMSFinder documentation in Acrobat PDF format and a link to the Adobe Web site from which you can download Acrobat Reader

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

# SMSFinder Documentation

## *Quick Start Guide*

The Quick Start Guide is a shorter version of this User Guide. The Quick Start is included in printed form with your SMSFinder. The guide provides the necessary information for a qualified person to unpack, cable, and configure the device for proper operation.

## *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 SMSFinder 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 SMSFinder CD as well as being posted on the Multi-Tech web site. See the GPRS AT Commands Reference Guide.

# Front and Back Panels

## Front Panel
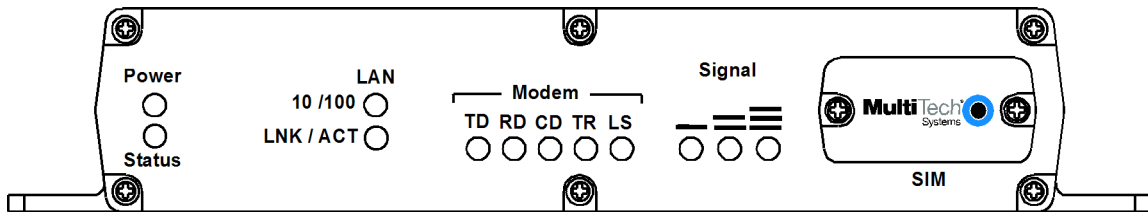


## Front Panel LEDs and Other Features

| LEDs | Description |
|------|-------------|
| **Power** | Lights when power is being supplied to the SMSFinder. |
| **Status** | When functioning normally, the LED blinks. The LED is a solid light when the SMSFinder is booting up, saving the configuration, restarting, or updating the firmware. |
| **LAN 10/100** | Lights when a successful connection to the 100BaseT LAN is established. Off when connected at 10BaseT. |
| **LAN LNK / ACT** | Lights when the LAN port has a valid Ethernet connection. Blinks when it is receiving or transmitting data. |
| **Modem** | **TD**    **TRANSMIT DATA.** This LED blinks when the modem is transmitting data to your wireless carrier. <br> **RD**    **RECEIVE DATA.** This LED blinks when the modem is receiving data from your wireless carrier. <br> **CD**    **CARRIER DETECT.** This LED lights when the modem detects a valid carrier signal from a wireless carrier. <br> **TR**    **(DATA) TERMINAL READY.** This LED lights when the modem is trying to establish a wireless connection. <br> **LS**    **LINK STATUS.** This LED flashes when the network registration is OK. If the network registration is invalid, the LED will be On/Off. |
| **Signal** | Indicates the wireless signal strength. See the Signal Strength Chart on the next page. |
| **SIM** | Location of the SIM card. |

## Install the SIM Card

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

1. Use a small screwdriver to remove the screw closest to the outside edge of the SMSFinder. Then swing the SIM slot cover up and over to the left.

2. Insert the SIM card into the SIM card slot. The following graphic shows a partial front panel illustrating the correct SIM card orientation.
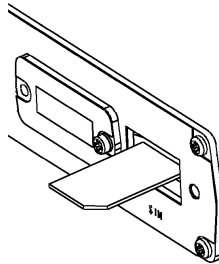
# Signal Strength LEDs

**Signal**

**1 Bar LED        2 Bar LED        3 Bar LED**
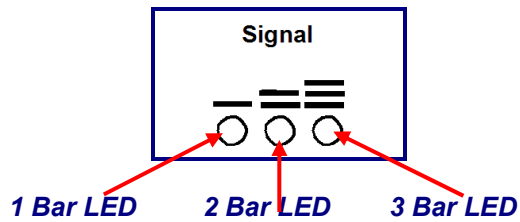
**Signal Strength LEDs on the Front Panel**

## Signal Strength

**To View Strength**
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.

**AT Command Response Example**
+CSQ: xx, 99   (For *xx*, see the values chart below)

## Signal Strength LEDs 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 | Signal Strength 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 |

# Back Panel
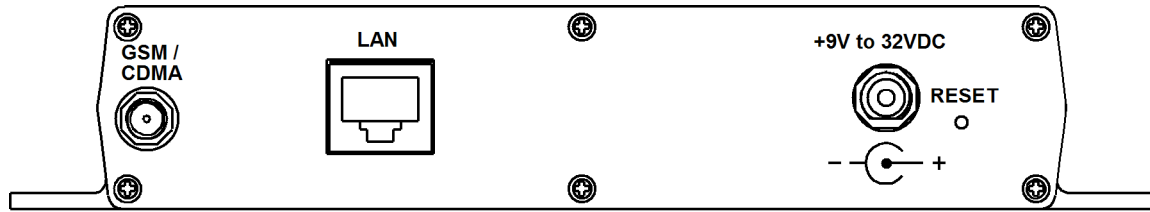


# Back Panel Connectors

| Connector | Description |
|---|---|
| GSM Antenna Connector | SMA (female) antenna connector for a quad-band cellular antenna. **Note:** The antenna must be attached in order for the SMSFinder to be operational. |
| LAN | The LAN port connects the SMSFinder to your Ethernet network-connected PC. |
| +9V to 32VDC | SMSFinder power source can range from 9 volts to 32VDC. |
| Reset | The Reset button resets the SMSFinder 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

The SMSFinder can be panel mounted with screws spaced according to the measurement shown.
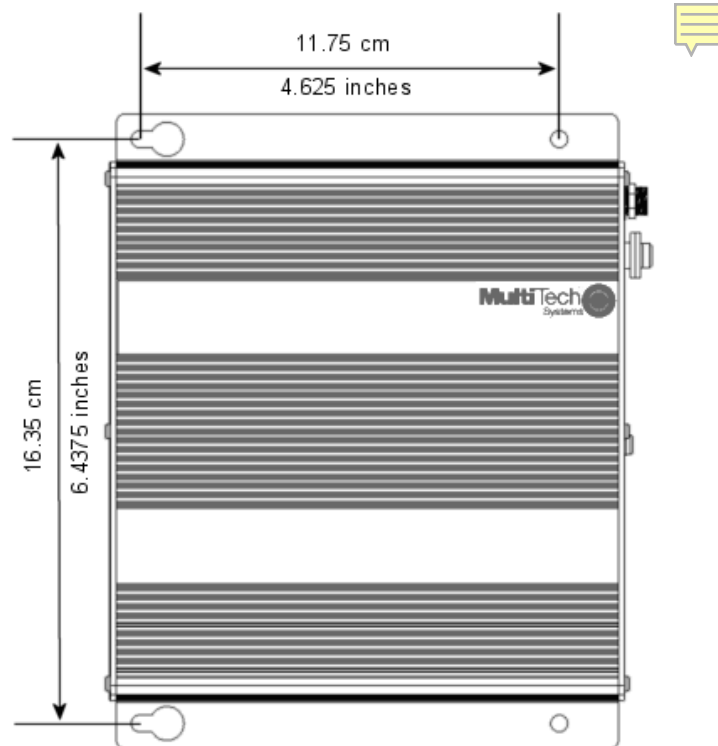


**Note:** Use either #6 or #8 pan head screws for all four mount locations.

# Technical Specifications

| Specifications | Description |
|---|---|
| Hardware Interface | **Network:** 10/100BaseT<br>**Connector:** RJ-45 Ethernet connection |
| Ports | **LAN:** 1 Port |
| Wireless Modem Frequencies | Quad-band GSM 850/900/1800/1900 MHz |
| Dimensions | 6.4" w x 1.2" h x 6" d<br>(16.3 cm x 3.0 cm x 15.2 cm) |
| Weight | 1.25 lbs.<br>(.56 kg) |
| Operating Temperature | +32$^o$ to +120$^o$ F (0$^o$ to +50$^o$ C)<br>Note: UL listed @ +40$^o$ C (limited by the power supply) |
| Humidity | 25–85% non-condensing |
| Hardware Connectors | **SIM connector:** Standard 3V<br>**Antenna:** RF antenna 50 ohm SMA (female)<br>　　　　　See Appendix B for antenna specifications |
| Power | **External Power Supply**<br>　**Input:** 100 ~240V, 0.5A 50-60- Hz<br>　**Output:** 9VDC, 1.7A<br>**Power Consumption**<br>　Maximum power consumption is 0.95A at 9V |
| Certifications and Approvals | **CE Mark & R&TTE**<br>**EMC:**<br>　FCC 2, 15, 22, 24<br>　EN 55022<br>　EN 55024<br>**Safety:**<br>　cUL<br>　UL 60950<br>　EN 60950<br><br>**Network:**<br>　PTCRB |
| Warranty | 2 years |
| Features | Sends SMS messages to one or multiple individuals, a group, or<br>　　multiple groups<br>Supports up to 20,000 entries in the address book<br>Supports sorting and searching the address book<br>Allows importing address books (standard CSV file format)<br>Allows setup of up to 50 pre-configured SMS messages<br>Broadcast pre-defined SMS  based on receipt of matching SMS and/or<br>　　phone number<br>Setup user accounts with different rights<br>Integrated quad-band GSM modem<br>Web-based configuration and management<br>Flash memory to update firmware with the latest enhancements<br>Desktop or panel mounting |

# Chapter 2 – Getting Started

# Cabling Your SMSFinder

To use your SMSFinder 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.

## SMSFinder Cabling

**Plug cellular antenna (standard SMA) into this antenna connector**

GSM / CDMA    LAN                                +9V to 32VDC    RESET

To a Network Connected PC                                Power Connection
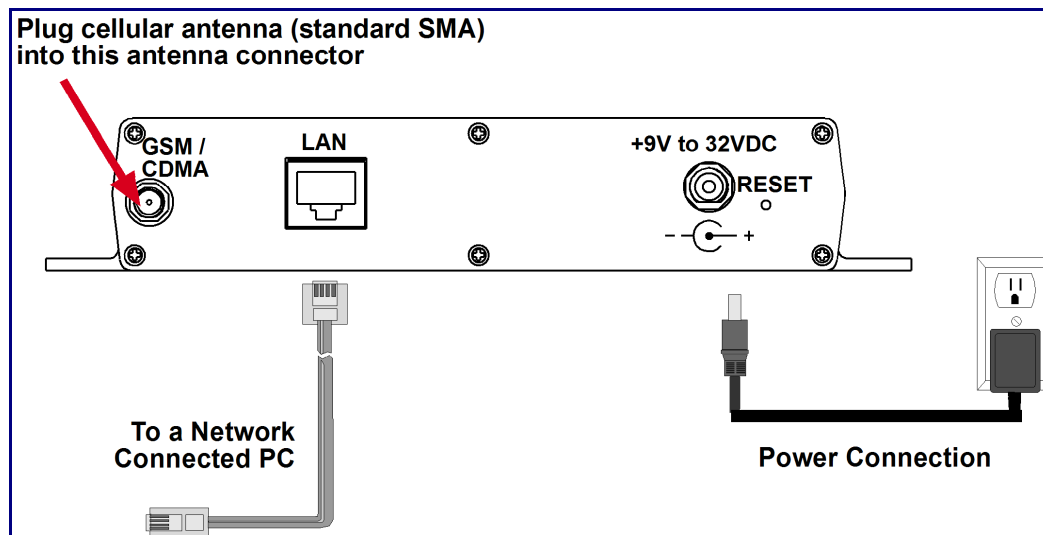
1. Turn the power off on the PCs and the SMSFinder.
2. Plug one end of a RJ-45 cable into the LAN port on the SMSFinder and the other end into the Ethernet port on a network connected PC.
3. Connect the provided power supply cable to the 9 volt power port on the back of the SMSFinder, and plug the other 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 SMSFinder to be operational.

# Establishing TCP/IP Communication

The following directions establish a TCP/IP connection at the workstation so the PC can communicate with the SMSFinder. The following directions were written using a Windows 2000+ / XP operating system.

## Setting a Fixed IP Address

1. Make the SMSFinder 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.
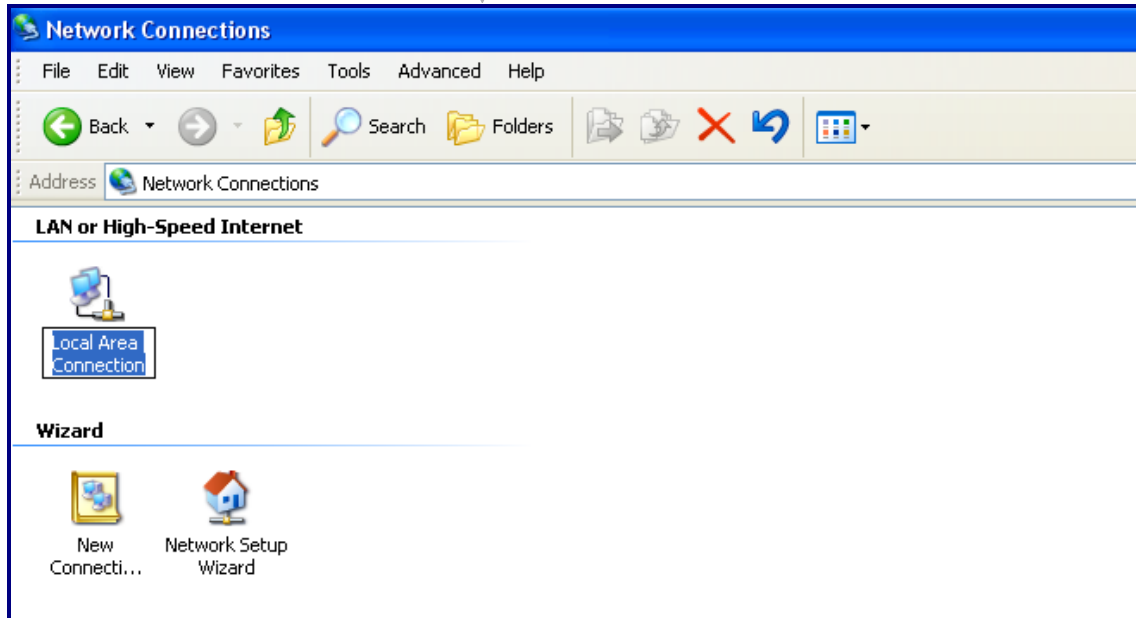
**4.** The **Local Area Connection Properties** dialog box displays.
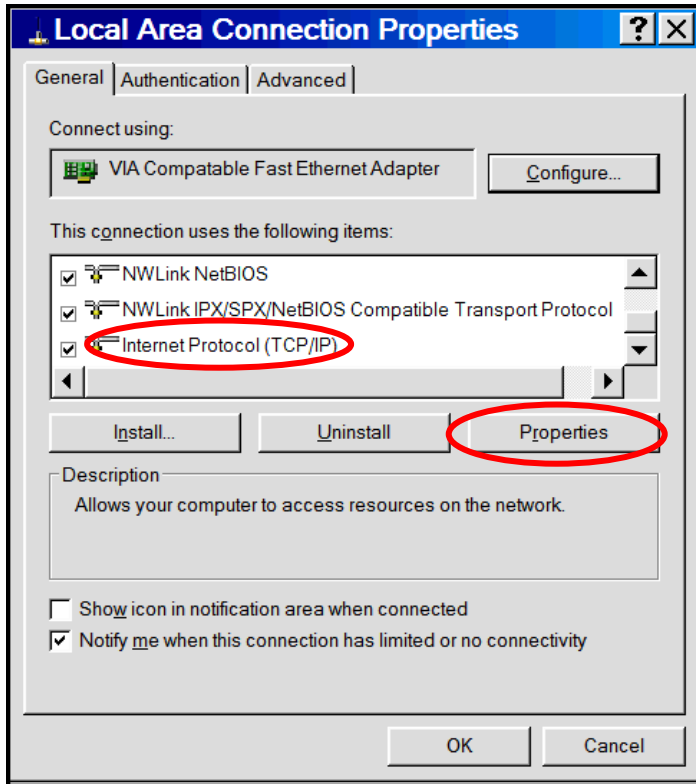


- Select **Internet Protocol [TCP/IP]**.
- Click the **Properties** button. The **Internet Protocol (TCP/IP) Properties** screen displays.

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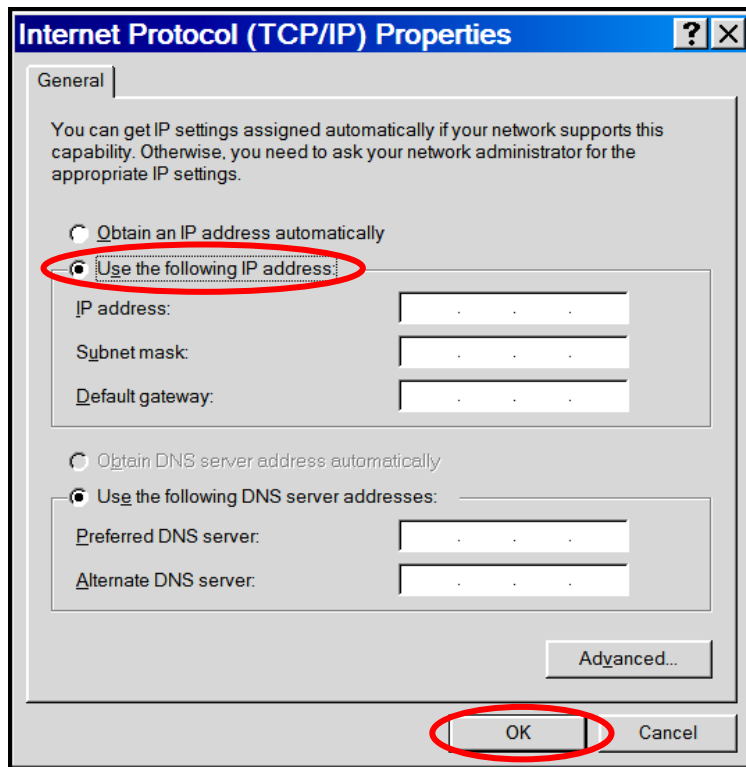


**Important Note:**

If this screen opens and displays your current IP configuration, we suggest you record this information for future reference (i.e., after the SMSFinder 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 SMSFinder.
    The factory default settings for the SMSFinder 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 SMSFinder. Please see the wireless account **Activation Notice** located on the SMSFinder 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 SMSFinder 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 – SMSFinder Basics and the Setup Wizard

## Starting the SMSFinder

### Open a Web Browser

1. Be sure that the SMSFinder 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

   http://198.168.2.1
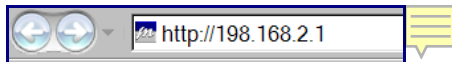
4. Press **Enter**.

### Login

The Login screen for the SMSFinder Web Interface displays.

**Login**

User Name

Password

**Login**

- 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 (see the User Guide). If Windows displays the **AutoComplete** screen, you may want to click **No** to tell Windows OS 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**.**

MultiTech Systems

Administration | Network Setup | SMS Services | Triggers | Utilities | Import & Export Address Book | Statistics & Logs

Help | Home | Wizard Setup | Save & Restart | Logout

>> Home Page

Home Page

**SMSFinder**
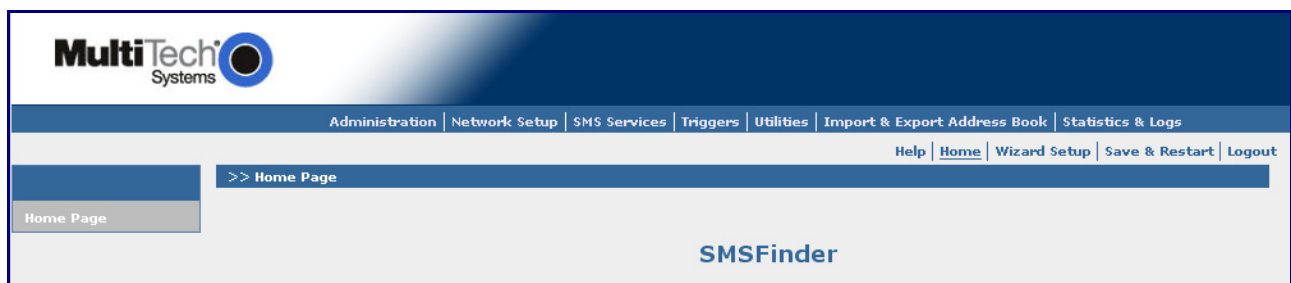
# Navigating the Screens

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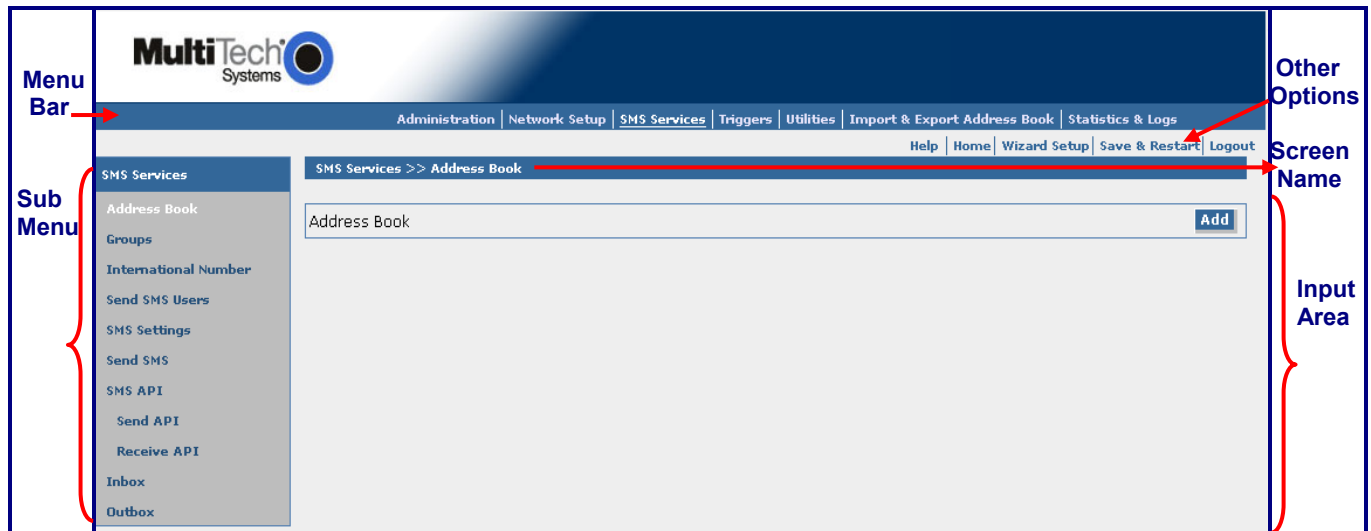


## Save & Restart Button Under Menu Bar

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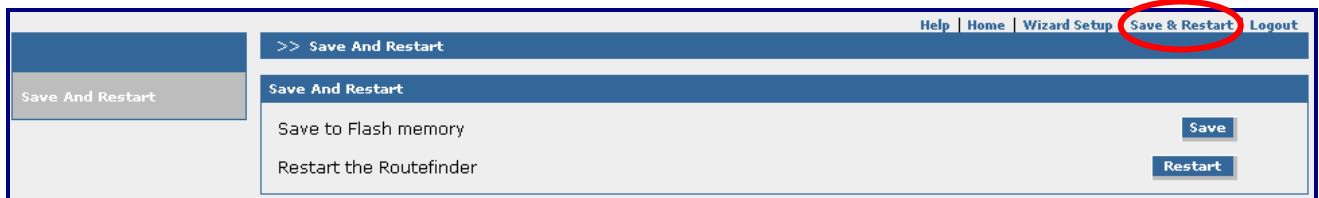


### Save to Flash Memory

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 setting**s 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 SMSFinder 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.

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

## Table of Menus and Sub-Menus

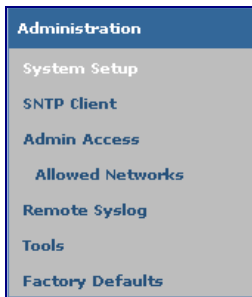| Administration |
| --- |
| **System Setup** – Set up the SMTP server for e-mail notifications, the names of individuals who will receive notifications, and the email ID for the notifications FROM line. |
| **SNTP Client** – Set up the synchronization of the SMSFinder clock to real time. |
| **Admin Access** – Set up the administrator's password and set an automatic inactivity disconnection interval. |
| **Allowed Networks** – Set the networks to be allowed access to the SMSFinder'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 SMSFinder. The administrator can configure the IP Address and Subnet Mask as 0.0.0.0 to allow access to any network. |
| **Remote Syslog** – Configure the Remote Syslog status and server's IP. The default is *Disabled*. |
| **Tools** – Reset the cellular modem. |
| **Factory Defaults** – Reset all parameters to the original factory defaults. |

| Network Setup |
| --- |
| **IP Settings** – Specify your LAN settings and your TCP connection. |
| **Cellular Modem** – Configure the cellular modem. |

| SMS Services |
| --- |
| **Address Book** – Manually input names and phone numbers into the phone book. |
| **Groups** – Create groups of names with their phone numbers. |
| **International Number** – Enable or disable international numbers. |
| **Send SMS Users** – Set up users and their passwords. |
| **SMS Settings** – Enable or disable extended ASCII character support. |
| **Send SMS** – Send SMS messages by manually entering the message or using a message from the Preconfigured SMS list. |
| **SMS API** – This page is divided into two sections: Send API and Receive API. |
| **Send API** – Configure the ports for *Send APIs* as well as enable/disable the service. API commands can be sent via HTTP or TCP. |
| **Receive API** – Configure the SMS to Receive APIs. |
| **Inbox** – View messages received. |
| **Outbox** – View messages sent. |

| Triggers |
| --- |
| **Authentic List** – From the address book set up a list of authentic users who are allowed to trigger broadcast messages and action triggers. |
| **Broadcast Triggers** – Configure trigger codes or words and broadcast messages. Set the destination group. Set authentication option if desired. |
| **Action Triggers** – Create the triggers (codes or words) that will cause certain actions. |
| **Pre-Configured SMS** – Write and save pre-configured messages. |

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

| Utilities |
|---|
| **Backup** – Save SMSFinder settings to a backup file.<br>**Firmware Upgrade** – Get firmware upgrade from Multi-Tech Systems, Inc. |
| **Import & Export Address Book** |
| **Import Address Book** – Import an address book that you want to use to set up your SMSFinder.<br>**Export Address Book** – Export an address book. |
| **Statistics & Logs** |
| **System Information** – View product model number, firmware version, MAC Address, signal strength and live system details.<br>**SMS Statistics** – View **SMS Statistics**: Number of messages in the inbox, number of message in the outbox, and number of messages sent.<br>View **Triggers Statistics**: Number of broadcast triggers received, number of action triggers received, and number of broadcast triggers configured.<br>View **Address Book Statistics**: Number of entries in the Address Book.<br>**Log Traces** – View **SMS Logs**: SMS Sent Log, SMS Received Log, SMS Failure Log, SMS Live Log.<br>View **Sent API Logs**: Send API Status Log, Send API Failure Log, Send HTTP API Live Log, Send TCP API Live Log.<br>View **Receive API Logs**: Receive API Live Log and Receive API Failure Log.<br>View **System Logs**: System Log |

# Using the SMSFinder Wizard Setup

## Use the Wizard Setup for Quick Configuration

A quick way to configure the SMSFinder 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.



**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 a default IP Address: example: 192.168.2.2.

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

**Secondary DNS** – Enter a secondary DNS IP Address.

**Save** – Click the **Save** button.

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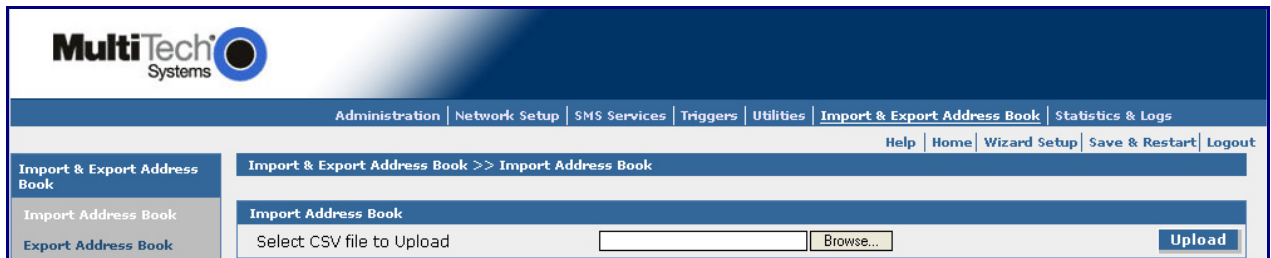
**Old Password** – Enter the existing password.

**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 SMSFinder 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 SMSFinder. 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 SMSFinder after saving to the flash memory.

# Chapter 4 – Using the SMSFinder's 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 SMSFinder to be operational.

> **IMPORTANT Note About Save & Restart**
> When you have completed your SMSFinder 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 SMSFinder. 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.



### 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. 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 SMSFinder clock to real time.

```
Administration >> SNTP Client

SNTP Configuration

  General Configuration
  SNTP Client                          ☑
  Server                               time.nist.gov
  Polling Time                         30      minute(s)
  Time Zone Configuration
  Time Zone                            UTC
  Time Zone offset                     -06:00   [+/- hh:mm]
  Daylight Configuration
  Daylight Saving                      ☑
  Daylight Saving offset               +60     minute(s)
  Daylight Saving Start time
  Start Ordinal                        second ▼
  Start Month                          march    ▼
  Start Day                            sunday   ▼
  Start Time                           02:00    [hh:mm]
  Daylight Saving End time
  End Ordinal                          first    ▼
  End Month                            november ▼
  End Day                              sunday   ▼
  End Time                             02:00    [hh:mm]      Save
```

## SNTP Configuration

### *General Configuration*

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

> **A Note About the Outbox**
> In order for messages in the outbox to have a valid date/time stamp, do one of the following options:
> - SNTP Client must be enabled and the Ethernet connection must be live to the Internet.
> **OR**
> - Enter the SMSFinder cellular 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).
See the following Web site for Time Zone information:
http://wwp.greenwichmeantime.com/info/timezone.htm

#### 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.



## 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 60 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 SMSFinder'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 SMSFinder. In addition, the administrator can configure the IP Address and Subnet Mask as 0.0.0.0 to allow access to any network.

**Administration >> Allowed Networks**

**Allowed Networks**

IP Address  Subnet Mask  Add

Note: "First entry corresponds to LAN 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 SMSFinder to be able to access.
 **Subnet Mask** – Enter the Subnet Mask of any network you want the SMSFinder 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.

# Administration › Remote Syslog

Use this screen to enable/disable Remote Syslog and to set the server's IP Address. The default is *Disabled*.

**Administration >> Remote Syslog**

**Remote Syslog Configuration**

Remote Syslog Status

Remote Syslog Host IP Address  Save

## 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

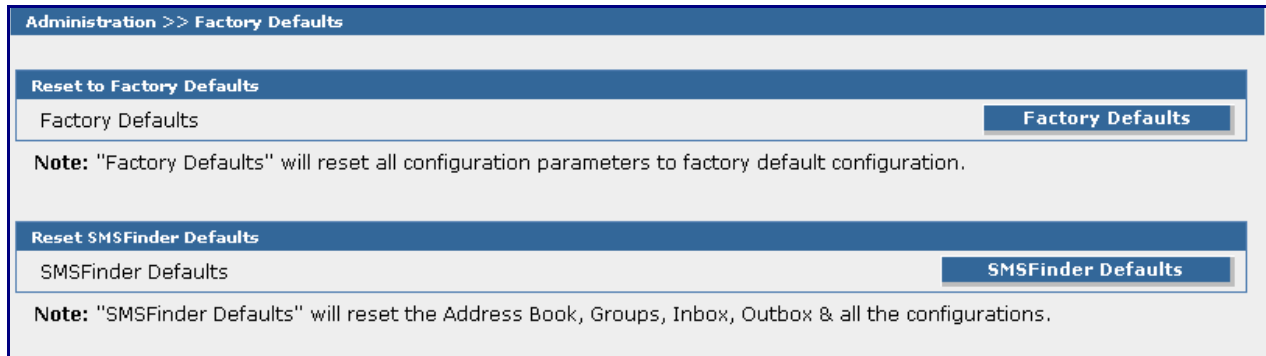This screen is used to reset the cellular modem.
You may want to use Reset if you have lost your connection or the modem is not functioning properly but you don't want to recycle power through the SMSFinder.

**Administration >> Tools**

**Reset Modem**

Reset the Modem  Reset

## Reset Modem

 Click the **Reset** button. The modem will reset.

# *Administration › Factory Defaults*



## 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 SMSFinder Defaults

Clicking the **SMSFinder 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 SMSFinder 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 SMSFinder. 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 SMSFinder after saving to the flash memory.

# Network Setup
## *Network Setup › IP Settings*

Use this screen to set up your network.



### 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

#### 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.

#### Save
Click the **Save** button.

# Network Setup › Cellular Modem

Use this screen to configure the cellular 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.

## Signal Strength (for GSM Cellular 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** on page 8.

### 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 sent SMS messages.

### Save

Click the **Save** button.

# Save & Restart

## IMPORTANT Note About Save & Restart

When you have completed your SMSFinder 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 SMSFinder. 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 SMSFinder 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.

## 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 SMSFinder 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.
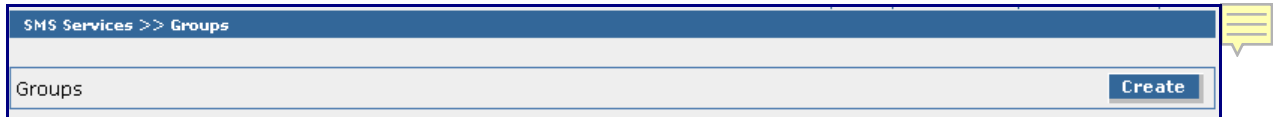


## Groups
Click the **Create** button to display the *Create a Group* screen.

### 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 | ☑ |
| Maximum Digits | 11 |
| | Save |

### Disable International Number

If **Disable International Number** is checked (this is the default), SMS messages can be sent to phone numbers limited by the maximum allowed digits (entered in the **Maximum Digits** field).
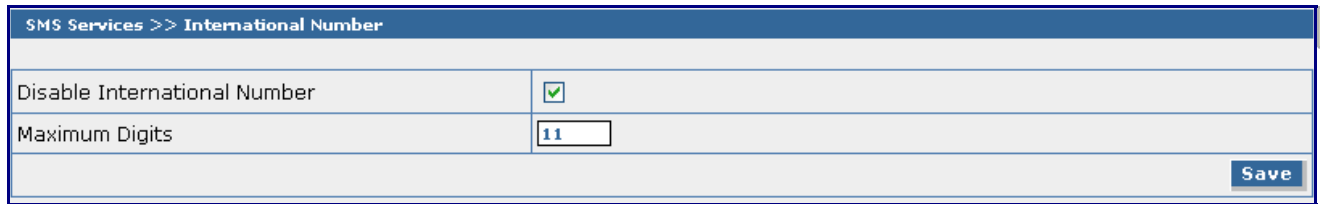
If **Disable International Number** is **NOT** checked, SMS messages can be sent to any phone number.

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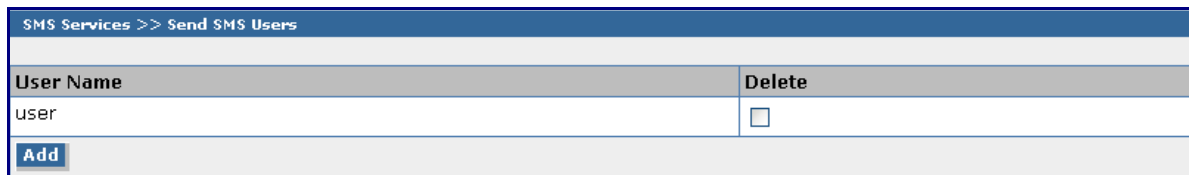
Enter the number of digits you want to be allowed when **Disable International Number** is checked. The default is 11 digits.

### Save

Click the **Save** button.

# SMS Services › Send SMS Users

Use this screen to create a list of users who can have limited access to the SMSFinder to send SMS messages and monitor the inbox and outbox. The screen shown here includes an example of a entry entitled "user". Once a user is enter, the **Delete** checkbox is available.
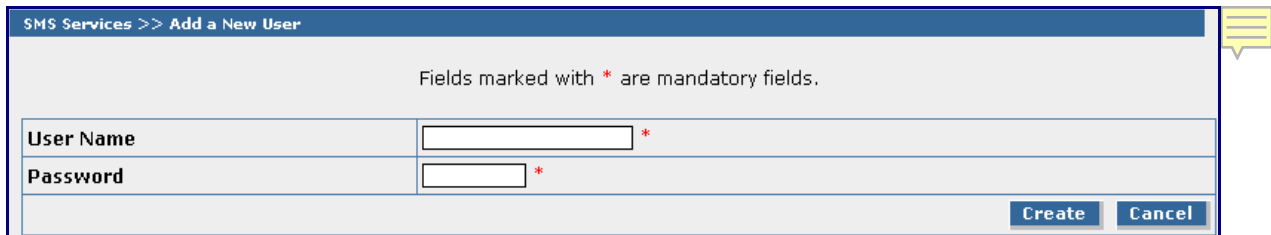
| SMS Services >> Send SMS Users | |
|---|---|
| User Name | Delete |
| user | ☐ |
| Add | |

### 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.

| SMS Services >> Add a New User | | |
|---|---|---|
| Fields marked with * are mandatory fields. | | |
| User Name | | * |
| Password | | * |
| | Create | Cancel |

##### User Name
Enter the user's name.

##### Password
Enter a password for this user. Each user should have his own 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.



## 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.

# 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 SMSFinder 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. See *Triggers > Pre-Configured Messages* for entering pre-configured messages.

# SMS Services › 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.



### 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.

**TCP Port**
Enter the port number on which TCP API service is available. The default is 2040.

**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 for receiving API, 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 SMSFinder are posted to the HTTP or TCP server. The default is 0, which causes received messages to post immediately. The minimum allowed post interval is 30 seconds.
#### Save
Click the **Save** button.

# SMS Services › Inbox

This screen displays a list of all messages received and includes the sender's number, the message received, and a timestamp.

**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.

| Msg ID | To | SMS | Date | Time |
|---|---|---|---|---|
| 0 | Ten Users | Ten messages sent as group at 10:23am | 08/03/06 | 10:23:43 |
| 0 | ,Alpha1,Alpha2,Alpha3,Alpha4,Alpha5 | Five messages sent at 10:18am on 3/6/08 with V1.00 firmware | 08/03/06 | 10:19:25 |
| 0 | Five Users | Five messages sent at 10:11am | 08/03/06 | 10:12:11 |
| 0 | Phone 10 first Phone 10 last | Sent at 9:58am | 08/03/06 | 09:59:09 |

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

**Msg ID**
The message ID (Msg ID) is non-zero if the message has been sent using SEND API.

---

**A Note About the Outbox**
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 SMSFinder cellular phone number on the **Network Setup > Cellular Modem** screen.

---

# Save & Restart

**IMPORTANT Note About Save & Restart**
When you have completed your SMSFinder 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 SMSFinder. 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 SMSFinder after saving to the flash memory.

# 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.
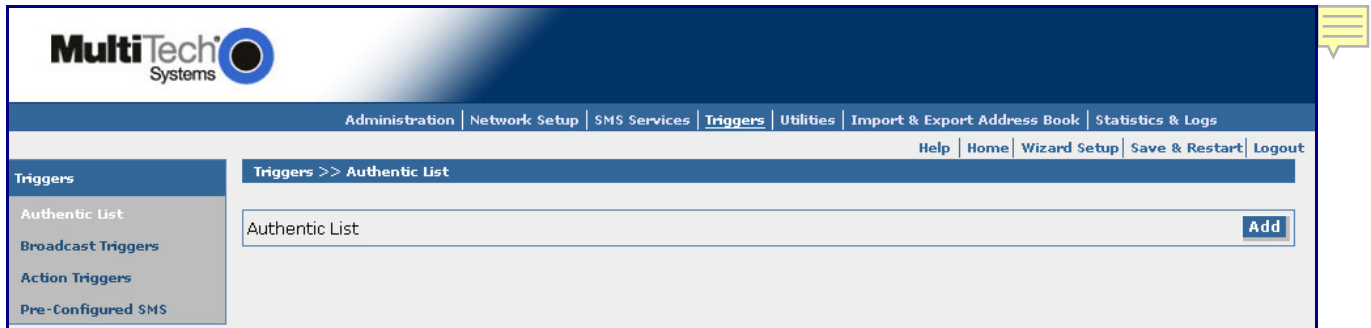


**Authentic List**
Click the **Add** button to display the Address Book from which you can select those users who will be "authentic users" – users who can send triggers (codes or words) from their cell phones that will allow them to send a broadcast message.

## Triggers › Broadcast Triggers

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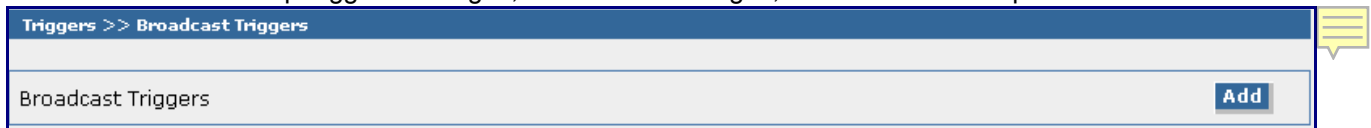


**Broadcast Triggers**
Click the **Add** button to display the *Add a Broadcast Trigger* screen.

### 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.



### 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 SMSFinder – the trigger will execute the action associated with it. This is a setup screen; no messages are sent from this screen.

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

Triggers >> Action Triggers

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

**Trigger Action** – The 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 |
|---|---|---|---|
| **ADD** | To add an entry in the address book | **Configuration format:** <act_tri_configured>;name;number **Example:** ADD;first last;7633604174 | Adds name with number to address book. |
| | | **Configuration format:** <act_tri_configured>;name **Example:** ADD;first last | Adds name with sender's number to address book. |
| | | **Configuration format:** <act_tri_configured> **Example:** ADD | Adds name and number of sender to address book. |
| **ADDG** | To add a group name and an entry. **Note:** The same action trigger message is used for creating a group name and adding an entry to a group. So, in the interface there will be one configuration for both | **Configuration format:** <act_tri_configured>;grp_name **Example:** ADDG;Building_201 | Creates a group with a group name. |
| | | **Configuration format:** <act_tri_configured>;grp_name;name; number **Example** ADDG;Building_201;first last; 7633604174 | Adds name with number to a group. Group must already exist. |
| | | **Configuration format:** <act_tri_configured>;grp_name;name; **Example:** ADDG;Building_201;first last | Adds name to a group. Group must already exist. |
| **ADDSMS** | To add a pre-configured SMS | **Configuration format:** <act_tri_configured>;SMS **Example:** ADDSMS;Building 201 is closed until further notice. | Adds SMS to preconfigured list. |
| **DEL** | To delete an entry from the address book | **Configuration format:** <act_tri_configured>;name;number **Example:** DEL;first last;7633604174 | Deletes name with number from the address book. |
| | | **Configuration format:** <act_tri_configured>;name **Example:** DEL;first last | Deletes all entries with this name from the address book. |
| **DELG** | To delete a group | **Configuration format:** <act_tri_configured>;grp_name **Example:** DELG;Building_201;first last | 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 SMSFinder 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 SMSFinder. 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 SMSFinder after saving to the flash memory.

# Utilities

## *Utilities › Backup*

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



### 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 SMSFinder configuration from this backup file. The configuration file is uploaded to the SMSFinder and the saved configuration is restored.

#### Export Backup
Use this section of the screen to store the SMSFinder configuration. Click the **Export** button to save the configuration file.

## *Utilities › Firmware Upgrade*

The firmware on the SMSFinder 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 SMSFinder will reboot automatically after the firmware upgrade.

## Save & Restart

**IMPORTANT Note About Save & Restart**
When you have completed your SMSFinder 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 SMSFinder. 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 SMSFinder after saving to the flash memory.

# 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 Format

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* 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 here, 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 SMSFinder 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 SMSFinder compares phone numbers of incoming messages to the authentication list.

### Address Book

| SMS Services >> Address Book | | | | |
|---|---|---|---|---|
| **Name** | **Phone Number** | **Description** | **Edit** | **Delete** |
| SF100 | +16126361654 | View | ○ | ☐ |
| SFinder1 first SFinder1 last | 17633604174 | View | ○ | ☐ |
| SFinder10 first SFinder10 last | 17633604174 | View | ○ | ☐ |
| SFinder11 first SFinder11 last | 17633604174 | View | ○ | ☐ |
| SFinder12 first SFinder12 last | 17633604174 | View | ○ | ☐ |
| SFinder13 first SFinder13 last | 17633604174 | View | ○ | ☐ |
| SFinder14 first SFinder14 last | 17633604174 | View | ○ | ☐ |
| SFinder15 first SFinder15 last | 17633604174 | View | ○ | ☐ |
| SFinder16 first SFinder16 last | 17633604174 | View | ○ | ☐ |
| SFinder17 first SFinder17 last | 17633604174 | View | ○ | ☐ |

Add    Select All ☐  Delete

Starting with: [          ]  Search

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

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

### Add

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

### Edit

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

### Delete

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

### Search

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

# *Import & Export Address Book › Export*

Use this screen to export an address book. You would use the export function to share the address list of this SMSFinder 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**

| Import & Export Address Book >> Export Address Book |  |
|---|---|
| **Export Address Book** | |
| Export Address Book | Export |

### Export Address Book

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

**.tar.gz Win RAR**

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 SMSFinder 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 SMSFinder. 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 SMSFinder 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

**Live Details**

- Date and Time
- System Uptime
- Memory Utilization
- Free Memory Blocks

# Statistics & Logs › SMS Statistics

The SMS Statistics screen provides the following information:

**SMS Statistics:**
- **Number of Messages in the Inbox**
- **Number of Message in the Outbox**
- **Number of Messages Sent**

**Trigger Statistics**
- **Number of Broadcast Triggers Received**
- **Number of Action Triggers Received**
- **Number of Broadcast Triggers Configured**

**Address Book Statistics**
- **Number of Entries in the Address Book**

**Rate of Messages**
- **Rate of Messages:** This is the number of messages sent or received per minute. The average number of messages sent from the SMSFinder is about 10 a minute. The average number of messages received by the SMSFinder is about 5 a minute. These rates are affected by the size of each message and the amount of network congestion.

**Statistics & Logs >> SMS Statistics**

**SMS Statistics**

| | |
|---|---|
| Messages in Inbox | 0 |
| Messages in Outbox | 4 |
| Messages Sent | 0 |

**Triggers Statistics**

| | |
|---|---|
| Broadcast Triggers Received | 0 |
| Action Triggers Received | 0 |
| Broadcast Triggers Configured | 3 |

**Address Book Statistics**

| | |
|---|---|
| Entries in the Address Book | 2 |

**Rate of Messages**

| | |
|---|---|
| Rate of Messages | 0 |

# *Statistics & Logs › Log Traces*

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

**SMS Logs (Sent, Received, Failure, Live)**

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

**Receive API Logs (Live, Failure)**

**System Log**

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

| Statistics & Logs >> Log Traces | |
|---|---|
| **SMS Logs** | |
| SMS Sent Log | Show |
| SMS Received Log | Show |
| SMS Failure Log | Show |
| SMS Live Log | Show |
| **Send API Logs** | |
| Send API Status Log | Show |
| Send API Failure Log | Show |
| Send HTTP API Live Log | Show |
| Send TCP API Live Log | Show |
| **Receive API Logs** | |
| Receive API Live Log | Show |
| Receive API Failure Log | Show |
| **System Logs** | |
| System Log | Show |

**To View Logs**

Click the **Show** button to view the desired Log.

# 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 SMSFinder 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**
- **Inbox**
- **Outbox**

### How Non-Administrative Users Login

**Note:** Be sure that the SMSFinder 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

   http://198.168.2.1
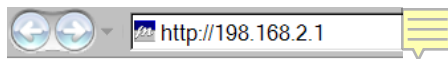
3. The Login screen for the SMSFinder displays.

   **Login**
   User Name
   Password
   **Login**

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

### SMS Services > Send SMS



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 > Inbox

This screen is also available to Users; it displays a list of all SMS text messages received. The list includes the sender's number, the message received, and a timestamp.

### 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 SMSFinder automatically saves the SMS settings and configuration every 8 hours.

# Chapter 6 – SMS Examples

# Check to See if the SIM Card Is Installed Correctly and Activated

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

1. Power up the SMSFinder. 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 SMSFinder. See Chapter 3.

3. Go to the **Network Setup > Cellular Modem** screen.



- 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 SMSFinder.

4. Send a text message to yourself. Do this on the **SMS Services > Send SMS** screen.



- **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;SF100** is a trigger message word that tells the SMSFinder to <u>add</u> the phone number and name to the address book. Notice the use of the semicolon in this message.
- Click **Send**. The following message displays: **Your request is being processed.**
- Click **OK**.

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

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

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

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

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

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

| SMS Services >> Address Book | | | | |
| --- | --- | --- | --- | --- |
| **Name** | **Phone Number** | **Description** | **Edit** | **Delete** |
| SF100 | +16126361654 | View | ○ | ☐ |

Add         Delete

Starting with: [　　　　] **Search**

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

# Creating a Broadcast Message for Future Use

In this example a school wants to be prepared to send a message that school is closed for the day. The Administrator creates a **Trigger Message** word *Snow* and the following **Broadcast Message:** *School is closed today*.

This example assumes that a **Group** called *Parents* has been created and that *SF100* stands for the Administrator's cell phone number.

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



- 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 *SF100*, 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 SMSFinder 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.



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 SMSFinder. When the SMSFinder 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 SMSFinder.

## SMSFinder 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 SMSFinder. TCP/IP dial-up adapter is not needed to access the SMSFinder.
  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 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.

- Ensure that the Web browser is properly configured to connect to the SMSFinder via the LAN.

**The SMSFinder is connected, but my workstation has problems accessing the SMSFinder.**

- Ensure the workstation has TCP/IP properly configured.
- Attempt to ping the IP address of the SMSFinder.
- 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 SMSFinder 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 SMSFinder 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 SMSFinder box to successfully match the cell phone number of a received trigger message with the phone number in the authentication list.
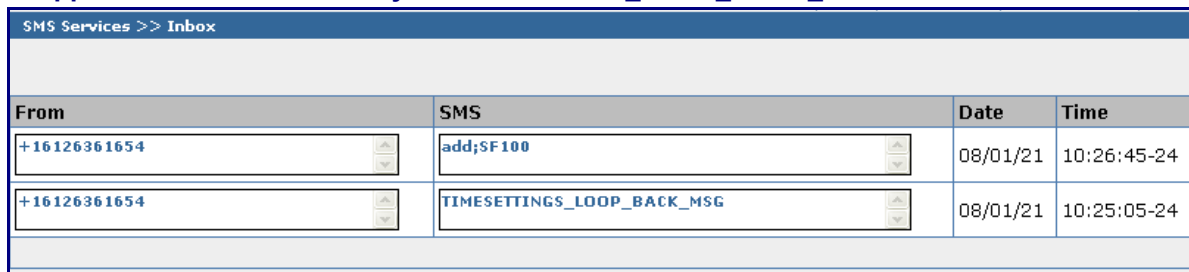
**The *Please set the Device IP* screen displays while configuring the SMSFinder.**

- Windows detects that the SMSFinder'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 SMSFinder you are configuring is in conflict with another device. Power off the conflicting device and configure the SMSFinder 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 SMSFinder's 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 SMSFinder's Ethernet connection. The Ethernet port needs to be connected to a live network.

# Appendix A – Application Programming Interface (API)

## 1.  Introduction

### 1.1  Purpose

Requirement: Customers require an Application Programming Interface (API) to integrate the SMSFinder's *Send* and *Receive* SMS capability into their custom application.

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

### 1.2  Scope

APIs are defined to send and receive SMS using HTTP or TCP protocols. The packet formats and handshakes are provided in Section 3.

## 2.  Acronyms and Definitions

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

## 3.  Overview of Send SMS API
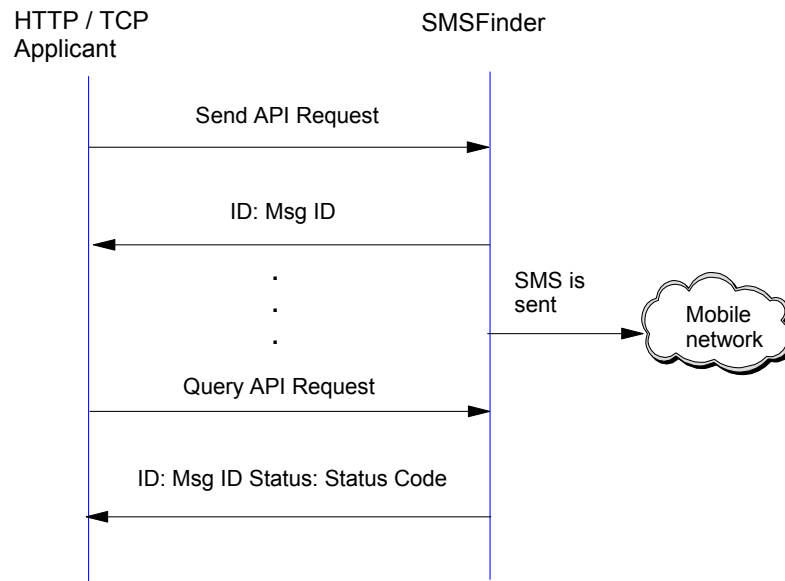
## 3.1   HTTP Send API

**Configuration of the "HTTP Send API" Using the SMSFinder Web Admin Interface**
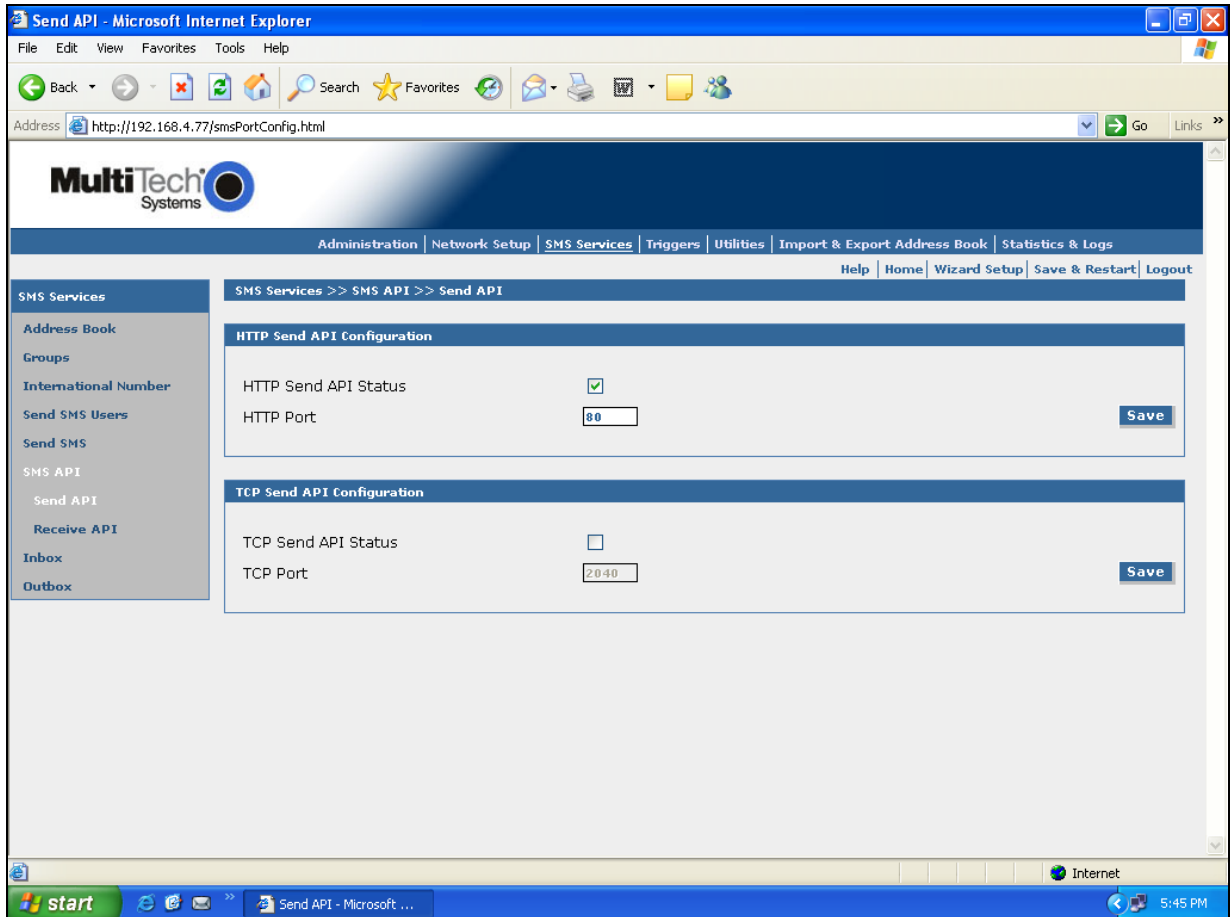


**HTTP Send API Status:**

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

### 3.1.1 HTTP Send API Format

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

- The first part is the destination; i.e., the SMSFinder's 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.

```
SMSFinder IP                          Call        Authentication              SMS
Parameters

|------------------------------------------------|-----------|------------------------------------------|-----------------------
-------------------|

http://192.168.2.1[:portnumber]/sendmsg?user=user1&passwd=puser1&cat=1&to="7
634567765"&text=message
```

Where: portnumber is optional.
user1, puser1, 7634567765 and message are variables / configured parameters.

**Note:** The SMSFinder can be accessed ONLY from the preconfigured allowed networks.

**Example:** To access the SMSFinder 204.26.122.125 from 125.63.78.44, you MUST add the network 125.63.78.0 to the following SMSFinder 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 SMSFinder's 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&to=5645676543&ton=Graham&
group=Engineering&text=This%20is%20a%20test%20message.^M^J
```
Or
```
GET
/sendmsg?user=admin&passwd=admin&cat=1&to=%225678976543%22&ton=%22Bob%2
2&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**

### 3.1.2  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 SMSFinder.

### 3.1.3  Sending to a Number

HTTP API format is:

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

The parameters are:

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

- **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 SMSFinder to send both ASCII and extended ASCII characters. By default, *Extended ASCII* is disabled and the message could have only ASCII characters.
  **Important Note: The message field should NOT contain %0D.**

**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.

### 3.1.4  Sending to an Address Book Name

The API can be used to send the message to a name in the SMSFinder'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&ton="bob"&text=message

The parameters are:

- **cat**  **1**
- **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 SMSFinder 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.
  **Important Note: The message field should NOT contain %0D.**

### 3.1.5  Sending to a Group

The API can be used to send SMS to a pre-defined group. The group should exist in the SMSFinder. 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&group="admin"&text=message

The parameters are:

- **cat**  1
- **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.

  **Important Note: The message field should NOT contain %0D.**

  Enable *Extended ASCII* in the SMSFinder 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.

### 3.1.6  Sending a Broadcast Trigger Message

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

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 size has a maximum of 160 characters. The trigger message text to be sent.

  Enable *Extended ASCII* in the SMSFinder 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 SMSFinder. If the SMSFinder has a configured broadcast trigger, it will send the broadcast trigger message to the configured recipients.

### 3.1.7 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 message text, which is a predefined action, has a maximum of 160 characters.~~ The trigger message text to be sent.

The API can be used to send an action trigger to the SMSFinder. If the SMSFinder has a configured action trigger, it will perform the configured action.

### 3.1.8 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&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 SMSFinder.

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

### 3.1.9 Response from the SMSFinder After Submitting the Send SMS API

The SMSFinder 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
```

## 3.1.10  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
```

## 3.1.11  Status Codes

| Status Code | Status Description | Description |
|---|---|---|
| 0 | Done | The SMSFinder has completed servicing the "Send" job, and a message is sent to all the recipients. |
| 1 | Done with error | The SMSFinder has completed servicing the "Send" job, but the message is not sent to all the recipients |
| 2 | In progress | The SMSFinder is processing the "Send" API. |
| 3 | Request Received | The SMSFinder has received the "Send" request. |
| 4 | Error | Error occurred while sending the SMS from the SMSFinder. |
| 5 | Message ID Not Found | An API Message ID does not exist. |

## 3.1.12  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 | SMSFinder 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 |

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

## *3.2  TCP Send API*

**Configuration of the "TCP Send API" Using the SMSFinder Web Admin Interface**
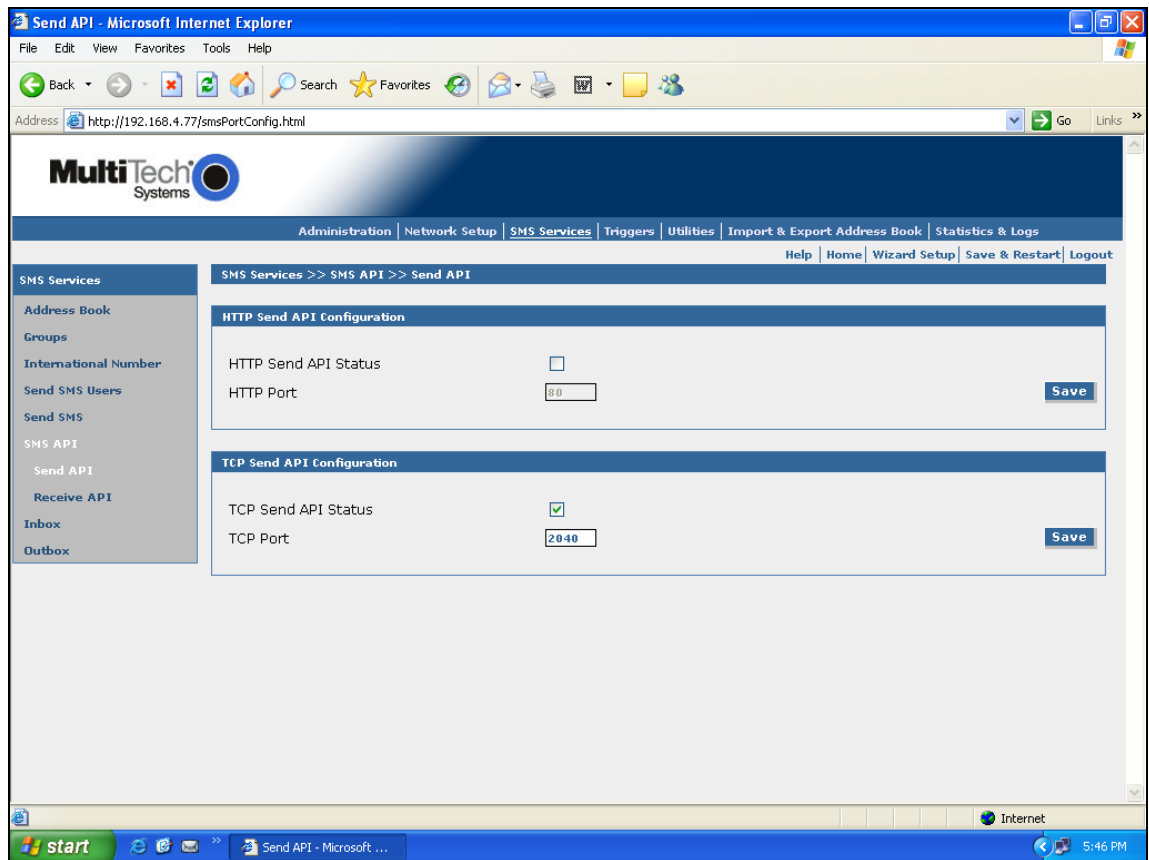


**TCP Send API Status:**
Enable "TCP Send API Status" to send SMS / query status using TCP API. By default, TCP Send API is disabled.

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

**Note:** SMSFinder can be accessed ONLY from the preconfigured allowed networks.

**Example:** To access the SMSFinder 204.26.122.125 from 125.63.78.44, you MUST add the network 125.63.78.0 to the following SMSFinder screen:

<div align="center">

**Admin Access >> Allowed Networks**

</div>

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

### 3.2.1 TCP Send API Format

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

### 3.2.2 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 SMSFinder 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.

# 4. Receive SMS API
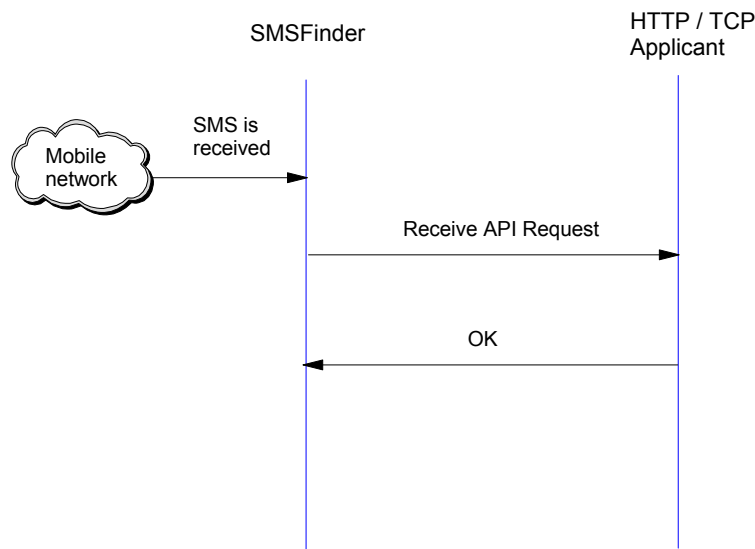


- Upon receipt of an SMS message and based on the configuration, the SMSFinder uploads the SMS to the HTTP or TCP server configured.
- If the post interval is more than zero seconds, the SMSFinder uploads the message immediately upon receipt of it. If the post interval is non-zero, it waits for the configured post interval, queues up the messages, and then uploads the messages accumulated for the configured post interval.
- The SMSFinder 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 SMSFinder is 30 secs.

## 4.1 HTTP Receive API

**Configuration of the "Receive API" Using the SMSFinder Web Admin Interface**
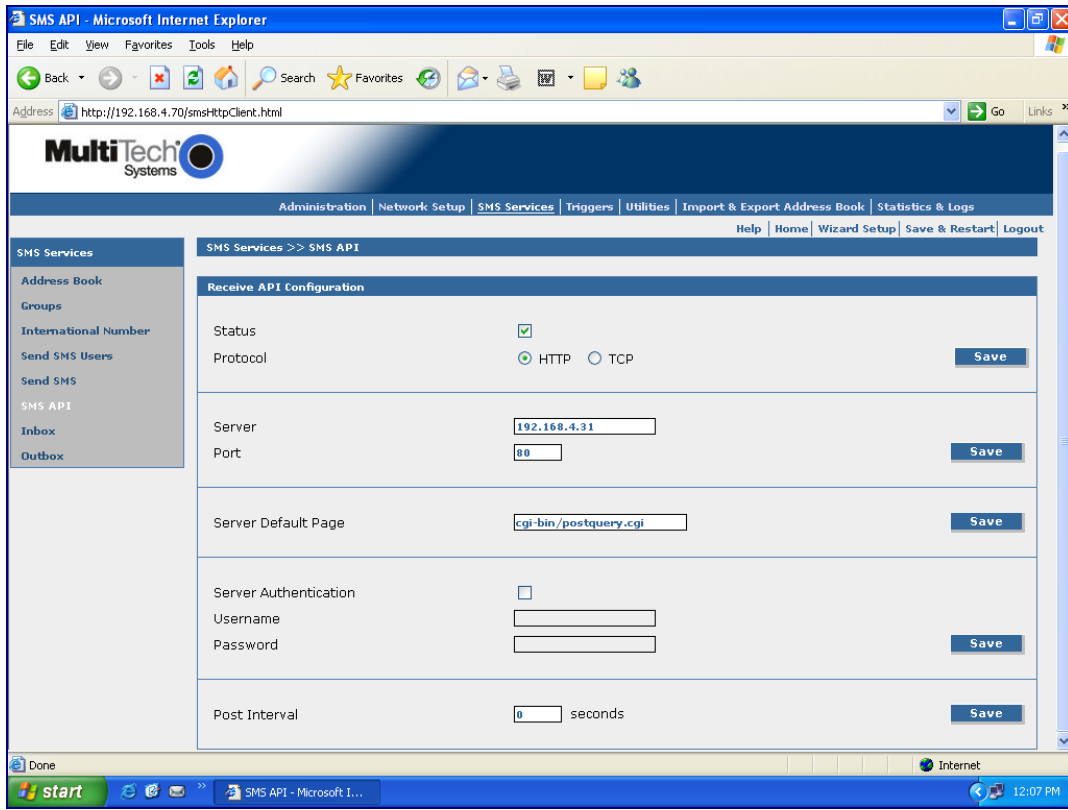


When the protocol is HTTP, the "Receive API request" is an HTTP POST packet.

### 4.1.1 POST Packet Format With Authentication

POST /cgi-bin/postquery.cgi HTTP/1.1
HOST: 192.168.2.2:80
User-Agent: SMSFinder/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%3
D%221.0%22%20encoding%3D%22ISO-8859-
1%22%3F%3E%0D%0A%3CMessage%20Notification%3E%0D%0A%3CSenderNumber%3
E%2B919844895692%3C%2FSenderNumber%3E%0D%0A%3CDate%3E08%2F03%2F14
%3C%2FDate%3E%0D%0A%3CTime%3E12%3A53%3A09%3C%2FTime%3E%0D%0A%3
CMessage%3ETest%0D%0A%0D%3C%2FMessage%3E%0D%0A%3C%2FMessage%20N
otification%3E%0D%0A

## *4.1.2 POST Packet Format Without Authentication*

POST /cgi-bin/postquery.cgi HTTP/1.1
HOST: 192.168.2.2:80
User-Agent: SMSFinder/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%3CMessage%20Notification%3E%0D%0A%3CSenderNumber%3E%2B919844895692%3C%2FSenderNumber%3E%0D%0A%3CDate%3E08%2F03%2F14%3C%2FDate%3E%0D%0A%3CTime%3E12%3A55%3A54%3C%2FTime%3E%0D%0A%3CMessage%3ETest%0D%0A%0D%3C%2FMessage%3E%0D%0A%3C%2FMessage%20Notification%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 SMSFinder using the username/password XML data

```
<?xml version="1.0" encoding="ISO-8859-1"?>\r\n
<Message Notification>\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
</Message Notification>\r\n
```
**OR**
```
<?xml version="1.0" encoding="ISO-8859-1"?>\r\n
<Message Notification>\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
</Message Notification>\r\n
<Message Notification>\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
</Message Notification>\r\n
```

The SMSFinder accommodates two messages at the maximum in one POST message. The SMSFinder waits for an OK response from the HTTP server; it will timeout in 30 seconds.

## 4.2 TCP Receive API

**Configuration at the SMSFinder**



### 4.2.1 TCP Receive API Request Without Authentication

From: SMSFinder/1.20
Authentication: OFF
Data-Length: 72

+7632671249
08/03/27
21:45:49
We are testing the demo version!

### 4.2.2 TCP Receive API Request With Authentication

From: SMSFinder/1.20
Authentication: ON
Data-Length: 72

smsuser1
smsuser1
+7632671249
08/03/27
21:45:49
We are testing the demo version!

The SMSFinder 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.

|  | Network Number | Hosts Available | Broadcast Address |
|---|---|---|---|
| 255.255.255.128 | N.N.N.0 | N.N.N.1-126 | N.N.N.127 |
| /25 | N.N.N.128 | N.N.N.129-254 | N.N.N.255 |

|  | Network Number | Hosts Available | Broadcast Address |
|---|---|---|---|
| 255.255.255.192 | N.N.N.0 | N.N.N.1-62 | N.N.N.63 |
| /26 | 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 |

|  | Network Number | Hosts Available | Broadcast Address |
|---|---|---|---|
| 255.255.255.224 | N.N.N.0 | N.N.N.1-30 | N.N.N.31 |
| /27 | 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 |

|  | Network Number | Hosts Available | Broadcast Address |
|---|---|---|---|
| 255.255.255.240 | N.N.N.0 | N.N.N.1-14 | N.N.N.15 |
| /28 | 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 |

|  | Network Number | Hosts Available | Broadcast Address |
|---|---|---|---|
| 255.255.255.248 | N.N.N.0 | N.N.N.1-6 | N.N.N.7 |
| /29 | 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 |
|  | N.N.N.160 | N.N.N.161-166 | N.N.N.167 |
|  | N.N.N.168 | N.N.N.169-174 | N.N.N.175 |

| | | |
|---|---|---|
| N.N.N.176 | N.N.N.177-182 | N.N.N.183 |
| N.N.N.184 | N.N.N.185-190 | N.N.N.191 |
| N.N.N.192 | N.N.N.193-198 | N.N.N.199 |
| N.N.N.200 | N.N.N.201-206 | N.N.N.207 |
| N.N.N.208 | N.N.N.209-214 | N.N.N.215 |
| N.N.N.216 | N.N.N.217-222 | N.N.N.223 |
| N.N.N.224 | N.N.N.225-230 | N.N.N.231 |
| N.N.N.232 | N.N.N.233-238 | N.N.N.239 |
| N.N.N.240 | N.N.N.241-246 | N.N.N.247 |
| N.N.N.248 | N.N.N.249-254 | N.N.N.255 |

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

## RF Specifications

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

## Antenna Specifications

### GSM/EGSM Antenna Requirements/Specifications

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

### Antennas Available from Multi-Tech Systems, Inc.

| Description | Part Number |
|---|---|
| Hinged Right Angle 900/1800 MHz Cellular Modem Antenna | ANF1-1HRA |
| Hinged Right Angle 800/1900 MHz Cellular Modem Antenna | ANF21HRA |
| Hinged Right Angle 850/900/1800/1900 MHz Cellular Modem Antenna | ANQB-1HRA |

### 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 / 1.6 dBi at 850 MHz for mobile operating configurations and 7.0 dBi at 1900 MHz / 2.3 dBi at 850 MHz for fixed mounted operations, as defined in 2.1091 and 1.1307 of the rules for satisfying RF exposure compliance.

# 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 – End User License Agreement (EULA)

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