



MT-900 for Mobile Phone

USER MANUAL

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MADE IN TAIWAN

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1. BEFORE GETTING STARTED

1.1 General information

1. The operation and positioning accuracy of the Global Positioning System, GPS, is maintained by the Defense Department of the United States of America. Based on its public policy and national security, the US government reserves the right to alter the GPS system and its accuracy without forewarning.
2. As with other GSM mobiles, the electric magnetic wave may affect the functioning of medical instruments. If you wear heart-rate monitor, do not position the tracker in front of the chest. It is best to keep a distance of at least 6 inches between the tracker and the monitor. When close to other medical instruments, turn the tracker off.
3. Although the mini tracker has undergone several safety tests and conforms to a number of national security standards, using the device could become risky in certain abnormal climatic or seismic conditions without correct operation. Please read the manual carefully before operating the device.
4. For your safety, when aboard on an aircraft, please turn off mini tracker.
5. In restricted areas such as gas stations or in the vicinity of explosives, please shut down the mini tracker. Under no conditions should you use the mini tracker near fuel or flammable materials.
6. As the mini tracker is not water-proof, make sure to take appropriate precautions in humid or rainy weather and keep it dry at all times.
7. Before connecting any other device to the tracker, please read detailed instructions in the user manual. To avoid any possible damage do not connect the mini tracker to any incompatible product.
8. It is normal for the mini tracker to become warm during operation.
9. A different network setup, various makes of SIM card, and different modes of operation could be the cause of varying rates of in the tracker's power consumption.
10. Mini tracker is GSM 850/900/1800/1900 and GPRS ready. Before using the device you should purchase an SIM card from a local telecommunication service provider. This service should include at least an internet connection, voice communication, and short message service.

1.2 Tracker Battery Safety Notices

Failing to use the battery correctly could be hazardous. Please pay attention to the following.

1. Your mini tracker is powered by a rechargeable battery that can be frequently charged and discharged. When the device's talk time and standby time becomes shorter than normal, it is time to replace the battery.
2. Do not apply any steel tools or any other hard objects to the tracker and avoid stepping on it. Any of the latter could cause battery leakage with adverse results.
3. Do not heat the tracker or place it close to the source of fire, a stove, or any heated environment over 80°C ; Short circuiting could result in smoke emission or a fire.
4. Do not place the tracker in a damp or humid place. This could also cause short circuiting, smoke and eventually fire.
5. Charge the battery in normal temperature conditions. Avoid direct exposure to the sun, stove, or any other environment where the temperature exceeds 80°C . Follow the manual for proper battery charging procedure and pay close attention while this takes place.
6. If the battery is charged in an abnormal environment the battery protection device will fail. An adverse chemical reaction will result as well as a potentially hazardous surge in electrical current.
7. Turn off device power before Charging. Charging the battery for longer than the recommended charging time will shorten battery life. If the battery does not fully charge in the set time, stop charging immediately to avoid fire.

1.3 Possible Additional Fee

1. Position request and position response sent by SMS will be charged.
2. View Tracker's position from Google map operation may be charged according to GPRS data quantity transferred.

1.4 About GPS

1. GPS signals are incapable of penetrating solid objects that are non-transparent. The signals will be also affected by surface cover such as tall buildings, tunnels, elevated expressways, forests etc., or weather conditions such as overcast and rain. If the vehicle is poorly insulated against heat and contains metal parts, GPS signals will not be able to penetrate.
2. All wireless communication devices such as cell phones, or traffic police speed detectors can interfere with the reception of GPS signals and results in unstable signals.

3. To get position fix successfully, please hold Strap Hole upside for better signal orientation.
4. There is no guaranty that SOS message will be successfully sent at distressed environment where GPS or GSM signals are weak.

1.5 ABOUT SIM Card PIN CODE & GPRS

Notice: SIM PIN should be unlocked before being inserted into the device. SIM PIN can be disabled through ordinary cell phone.

1. **GPRS function of SIM card in MT-900M is NOT Necessary enabled for normal operation;** but SMS function should be always enabled.
2. If SIM lock is enabled and password is incorrect, power on/off device three times will make the SIM card locked permanently. Only PUK code can unlock the SIM in such case. (The default PIN code in SIM Card may be "0000".)
3. If the SIM card is not inserted or SIM card is invalid, AGPS positioning function will be disabled.

2. Product Information

2.1 Introduction

The MT-900M is a portable compact tracking device for personal safety and asset monitoring. It combines high sensitivity GPS and quad band GSM/GPRS to perform the powerful security application.

The MT-900M can, based on quad band GSM/GPRS network and GPS satellite positioning system, track far-way objects conveniently by Short Message or internet. It can be used for child protection, anti-kidnapping, vehicle tracking; pets go out tracking, panic assistant for the aged people, and much more.

2.2 Features

- ❖ Available Quad band GSM/GPRS 850/900/1800/1900 MHz
- ❖ GPS 50 channels all-in-view tracking with AGPS supported.
- ❖ GPS high sensitivity -159 dBm.
- ❖ Real time dynamic reporting based on time interval.
- ❖ Remote command control by SMS or GPRS network (supporting TCP/UDP).
- ❖ Emergency call and notification, plus SMS sending location.
- ❖ Geo-fence capability with out of fencing notification.
- ❖ Over speed notification capability.
- ❖ Low battery notification capability.
- ❖ Power management for low power consumption.
- ❖ Mini USB for charging and data exchanging.
- ❖ Data logger capability built in with 4Mega bytes flash memory to record time stamp, position and event status.
- ❖ Surrounding audio monitoring capability.(option)
- ❖ 3D G-sensor to report motion sensing, accident from $\pm 4G$.(option)

2.3 Applications

- ❖ Personal safety
- ❖ Locate asset, vehicle tracking
- ❖ Asset unauthorized movement detection
- ❖ Child care – locate missing kids, track whereabouts of children
- ❖ Disables' safety – seniors' safety

- ❖ Outdoor recreation – tack data record for travel, hiking, bike riding
- ❖ Animal tracking – track pets' location

2.4 What's In the Package

Please unpack the product package with caution; inspect the items closely. If you find any damaged item, please contact your local distributor immediately. Also, please keep the box and packing material for future use in the event of future shipments.

Main unit x 1

CD (Driver and setting program and User's Manual soft-copy) x 1

AC Power Adapter x 1

USB cable x 1

3. INSTALLING SIM CARD AND CHARGING BATTERY



Picture 1

3.1 Device Description

- (1). Strap Hole (GPS antenna side)
- (2). Mini USB Slot and Power Switch Button
- (3). SIM card Slot
- (4). SOS Button
- (5). GPS Status Indicator
- (6). GSM Status Indicator
- (7). Power Indicator
- (8). Charging Indicator
- (9). Microphone Receiver (Option)

3.2 SIM Card installation

How to insert SIM Card:

1. Lift SIM Card cover and rotate it by the direction of the mark (See Picture 2), and the Status Indicator and MIC receiver should be on the upper side.
2. To face up the chip side of SIM card, and the notch should be on the upper-right side as Picture 3.
3. Insert the SIM card until the end of slot and put on the cover.

***NOTE:**

1. Before installing the SIM card, use a cell-phone to unlock the card's PIN code.
2. Please note that the folded corner of the SIM card should be on the Upper Right side when you install the card. (See Picture 3)
3. The SIM card must be enabled for 2G SMS. 3G SIM cards are not supported. You can use prepaid cards or normal subscription cards. If you use prepaid cards then make sure it can't be drained without automatic refill so you do not risk losing communication with the tracker.
4. The SIM card is not included in the package. An appropriate SIM card is available from the user's local operator.



Picture 2



Picture 3

3.3 LED Indication

1. Power On/Off status

LED mode	Operation status
OFF	POWER OFF
ON	POWER ON
FLASH	IDLE MODE

2. GPS Status

For the GPS status indicator through LED, detailed information is shown in the following table

LED mode	Operation status
OFF	un-fixed
FLASH	fixed

3. GSM/GPRS Status

For the GPRS/GSM status indicator through LED, detailed information is shown in the following table.

LED mode	Operation status
OFF	GSM/GPRS is not running
FLASH	Indicates GSM/GPRS data transfer:

4. Charging Status

LED mode	Operation status
ON	Charging
OFF	Finish

3.4 Recharge

***NOTE: Please turn off the power while mini tracker is on charging. If you keep the power on, the battery is not able to be fully charged.**

There are several ways to charge the mini tracker:

1. Charging by USB port:

Connect the supplied USB cable between the computer USB port and the mini USB connector of the MT-900M device.

2. Charging by a cigarette lighter power adapter (This type of Charger is not included in standard Package):

(1) Plug the USB connector of the supplied USB cable to the USB connector of the cigarette lighter power adapter.

(2) Connect the mini USB plug of the USB cable to the mini USB port of the MT-900M device.

3. Charging by AC adapter:

Connect the supplied AC adapter to the mini USB port of the MT-900M device.



4. Configuration and Operation by SMS

MT-900M provides several ways for control access or configuration. From the Short Message Service (SMS), and by PC Setting program (See Appendix B), users can use the defined number cell phone to control the tracker. After received the SMS, the tracker will perform as the request command and will response to the cell phone with SMS.

***Note:**

Users should define the report cell phone number first (Refer to Appendix B Step 5 "SMS & Phone Setting"), otherwise, Mini Tracker will not receive the SMS command from Cell phone)

4.1 Configuration and Inquiry by SMS

The first way to set the Mini Tracker is by SMS.

1. SMS General Rule

*: Start symbol.

#: End symbol.

No Space character is allowed, only "," between the * and #.

ID: Tracker Identification number, 4 ~ 16 alphanumeric characters.

RX: receive from cell phone.

TX: response to cell phone.

GPS location information: the format will be:

yy/mm/dd, hh:mm:ss, Elongitude, Nlatitude, Sxxx.x, Cxxx.xx: 0~9 digital number.

2. SMS Setting Commands Description

- Set Tracker ID : Set up the Device ID into the tracker.
- Set Cellular Number: Set up the phone number(s) into the tracker.
- Set Report Time Interval: Set up the location response time interval into the tracker, the unit is seconds.
- Enable /Disable and Setup Geofence: Enable or Disable, Set up the radius of the safe range into the tracker, the unit is meters.
- Enable /Disable Over Speed Detection: Enable or Disable, Set up the speed threshold for alarm detection into the tracker, the unit is kilometer (KM).
- Set Time Interval: Set up the location response time interval into the tracker, the unit is seconds.
- Enable and Set up Geofence :Set up the radius of the Geofence into the tracker, the unit is meters.
- Set Tracker Password: Set up the password into the tracker.

- Set Time Zone Set up the time zone for SMS content.
Hour: -12:00~13:00 Minute: 0、15、30、45
- Set sending SMS POS:Set up sending POS data to setting phone.
c (Switch): 1- Yes, 0 - No.
- Set Power Control: Set up the system power control for the tracker to get into the sleep mode.
Type: 0 - NONE, 1 - Time Interval IDLE,
2 - SMS/Phone IDLE, 3 - G-Sensor IDLE
Unit: s - second, m - minute, h - hour, d - day.

- Set Tracker ID

Function	Set up the ID into the tracker.	
Format	RX	*setid,new ID#
	Example	*setid,MT_001#
Response	TX	New ID Setup OK
or	TX	New ID Setup FAIL

- Set Cellular Number

Function	Set up the phone number(s) into the tracker.	
Format	RX	* fonsetup,phone - 1, phone - 2, phone - 3#
	Example	*fonsetup, 036578491,0987654321,0987123456#
Response	TX	"ID" fonsetup OK
or	TX	"ID" fonsetup FAIL

- Set Time Interval

Function	Set up the location response time interval into the tracker; unit: s - second, m - minute, h - hour, d - day..	
Format	RX	*tintsetup,xxxxx,unit#
	Example	* tintsetup,300,s#
Response	TX	"ID" tintsetup OK
or	TX	"ID" tintsetup FAIL

- Enable and Set up Geofence

Function	Set up the radius of the Geofence into the tracker, the unit is meters.	
Format	RX	*geofenceon,xxxxx#
	Example	* geofenceon,500#
Response	TX	"ID" geofence ON,xxxxx,GPS location information
or	TX	"ID" geofenceon FAIL

- Disable Geofence

Function	Disable the Geofence function of the tracker.	
Format	RX	*geofenceoff#
Response	TX	"ID" geofenceoff OK
or	TX	"ID" geofenceoff FAIL

- Inquire Current Location

Function	Inquire the location information from the tracker.	
Format	RX	*gpsinq#
Response	TX	*ID,pos,Date,Time,Speed,Course,Voltage,Device State,[http://..... {POS Cell Info}]#
or	TX	"ID" gpsinq FAIL

- Inquire IMEI code

Function	Inquire the GSM IMEI code from the tracker.	
Format	RX	*getimei#
Response	TX	"ID" [15 decimal] of IMEI
or	TX	"ID" getimei FAIL

- Inquire Battery Voltage

Function	Inquire the battery voltage from the tracker. Battery capacity full is around 4.20 mAh.	
Format	RX	*batteryinq#
Response	TX	ID battery x.xxx
or	TX	ID battery FAIL

- Set Current Location report type

Function	Select report type by address or location on Google Map	
Format	RX	*setrept,text# *setrept,map#
Response	TX	"ID" report type setup OK
or	TX	"ID" report type setup FAIL

- Enable and Set up Over Speed Detection

Function	Set up the speed threshold for alarm detection into the tracker, the unit is kilometer.	
Format	RX	*overspeedon,xxx #
	Example	*overspeedon,100#
Response	TX	"ID" overspeed on,xxx
or	TX	"ID" overspeedon FAIL

- Disable Over Speed Detection

Function	Disable the over speed detection function.	
Format	RX	*overspeedoff#
Response	TX	"ID" overspeedoff OK
or	TX	"ID" overspeedoff FAIL

- Enable Audio Monitoring

Function	Activate the audio monitoring function.	
Format	RX	*moniteron#
Response	TX	"ID" moniteron OK
or	TX	"ID" moniteron FAIL

- Disable Audio Monitoring

Function	Disable the audio monitoring function.	
Format	RX	*moniteroff#
Response	TX	"ID" moniteroff OK
or	TX	"ID" moniteroff FAIL

- Get Product ID (Serial Number)

Function	Get product ID (serial number).	
Format	RX	*getpid#
Response	TX	"ID" [17 Characters] of PID
or	TX	"ID" getpid FAIL

- Set Time Zone

Function	Set up the time zone for SMS content. Hour: -12:00~13:00 Minute: 0、15、30、45	
Format	RX	*settimezone,Hour,Minute#
Response	TX	"ID" settimezone OK
or	TX	"ID" settimezone FAIL

- Set sending SMS POS

Function	Set up sending SMS POS. c (Switch): 1- Yes, 0 - No.	
Format	RX	*setsendpos,c,phone1, phone 2, phone3 #
	Example	* setsendpos,1,1,2,3# or * setsendpos,1,3,2,1# * setsendpos,0,1,2,3# or * setsendpos,0,3,2,1#
Response	TX	"ID" setsendpos OK
or	TX	"ID" setsendpos FAIL

- Set Power Control

Function	Set up the system power control for the tracker to get into the sleep mode. Type: 0 - NONE, 1 - Time Interval IDLE, 2 - SMS/Phone IDLE, 3 - G-Sensor IDLE Unit: s - second, m - minute, h - hour, d - day.	
Format	RX	*setpwrctrl,type,xxxx,Unit#
	Example	*setpwrctrl,1,10,m#
Response	TX	ID setpwrctrl OK
or	TX	ID setpwrctrl FAIL

Note:

If your command or setting value contains some wrong or missing data, MT-900M will send back the other type of error messages:

“Err: format”: If your SMS command missed “*” or “#”.

“Err: <command you type>, No define”: If your SMS command has wrong typing.

4.2. Operation with Cell phone SMS

4.2.1 Turn the tracker On / Off



Picture 4

- Slide the power on/off key to turn on or turn off the mini tracker.
- If Power LED is flashing; it indicates the mini tracker is in idle mode.

4.2.2 Operating the tracker

- When the tracker is turned on, the unit will automatically search the GPS signal as well as link to the GSM network.
- The color of LED light will display the status of the GPS and GSM/GPRS. See page section 3.3 for details.
- When doing the POSITION report activity, the tracker is used to obtain a GPS signal to activate the positioning function; after report activity, the tracker automatically shuts down the GPS signal search function to save power (we called it get into sleep mode). If the

tracker is doing report activity and can not get fixed GPS Position, it will report a possible range estimated from nearest cell phone base station.

- The tracker's G-sensor senses movement of the device. When stationary the tracker retains the last recorded GPS information and then temporarily closes the GPS function. The GPS function is re-activated when the tracker moves again.

4.2.3 Calling for Help in an Emergency

- In an emergency situation, press and hold the SOS (Panic) button for 3 seconds to activate the device to perform the emergency notification and followed the pre-defined setting.
- The tracker will first send an SOS message with the location data to all listed names in the phonebook.

The tracker's SOS message format is as following:

SOS:MINI_T01,054038,090810,xxx-VV-x,017.0,297.4:<http://60.251.201.251/cellid.php?hl=en&net=1&address=0&ci=aa24&la=0dc0&mc=466&mn=92>

- You can select above underlined text-strings (<http://...>) and copy it to your Internet browser (IE, Chrome or FireFox) to get the coordinate, then paste the coordinate into Google map, you can locate the tracker on the map.
- The other way, users can select above underlined text-strings (<http://...>) and hyperlink it to Internet, with Internet browser (e.g. IE, Chrome or FireFox)you can see the tracker's location on Google map.(The operation method will vary depends on each cell phone's software design, please refer to your cell phone's user manual)

4.2.4 Position Report Types

Before you start to track your Mini Tracker, please make sure your Cell phone have internet connection capability (GPRS, 3G, 3.5G or Wi-Fi enabled). Basically mini tracker's SIM card support only SMS function is enough for all types of the current location report activities.

When we use SMS to inquiry mini tracker's location or mini tracker reports its location automatically , there are 3 types of report formats will be performed by GPS status and user application conditions.

(1).Report address

When you send Inquire Current Location SMS (*gpsinq#) to mini tracker, mini tracker will reply an URL to your cell phone; you can click this URL to get the address of current location (eg. No. 251, ChéngGōng 6th St, Jhubei City Hsinchu County, Taiwan 302) to show on your cell phone.

(2).Report location on Google Map

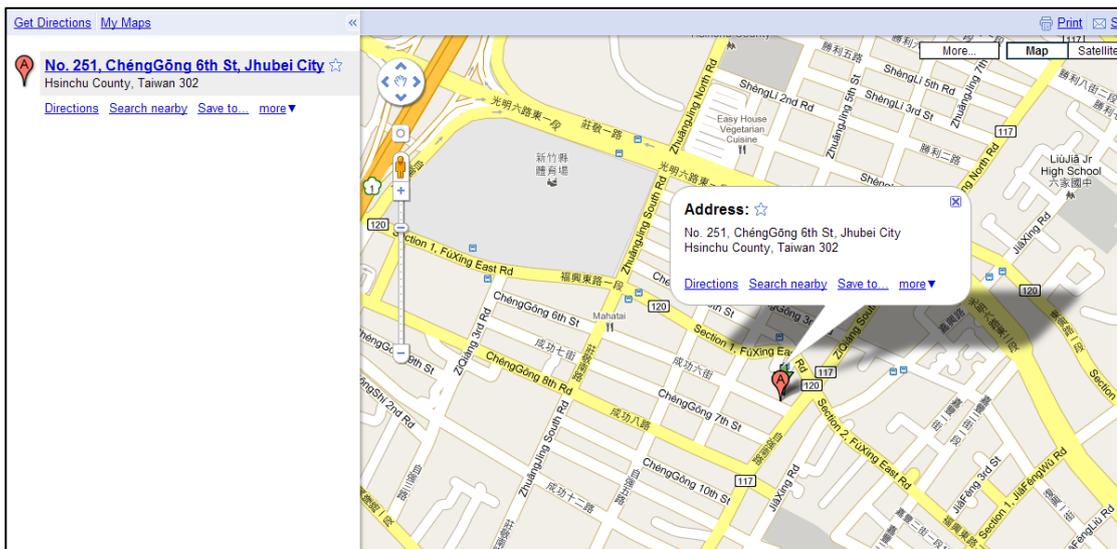
When you send Inquire Current Location SMS(*gpsinq#) to mini tracker, mini tracker will reply an URL to your cell phone, you can hyper link this URL to internet , then you will see the location and the address on the Google map from the internet browser.

(3). Report Cellular ID positioning

When you send Inquire Current Location SMS(*gpsinq#) to mini tracker, if mini tracker can not get fixed GPS Position, mini tracker will send back an URL to your cell phone , you can hyper link this URL and connect with internet, it will let you log on the server to get possible range related to nearest cell phone base station, then you will see the possible range on the Google map from the internet browser

Note:

- If your cell phone does not support JAVA, you may see a location mark only instead of a Graphical range, the range is shown by text format.
- The precision of Cellular ID positioning will depend on Operators' Cellular Base station distribution. If the Base Station is far from you, the range will not be so precise.



Picture 5 Example of Report location on Google Map

4.2.5 Start Tracking – Request Position

Step 1 Turn On the tracker

Step 2 Set Tracker ID

Commands from cell phone	Tracker response
*setid,new ID#	New ID Setup OK/
Ex: *setid,MT_001#	New ID Setup FAIL

Step 3 Set cell phone number

Commands from cell phone	Tracker response
*fonsetup,phone -1, phone -2, phone -3#	"ID" fonsetup OK/ "ID" fonsetup FAIL
Ex: *fonsetup,036578491,0987654321,0987123456#	

Step 4 Set Current Location report type

Commands from cell phone	Tracker response
*setrept,text#	"ID" report type setup OK/ "ID" report type setup FAIL
*setrept,map#	"ID" report type setup OK/ "ID" report type setup FAIL

According to the Current Location report type setting, you will get different information:

Report type	Current Location report
<text>	real address of current Location
<map>	get current Location shown on Google Map or a possible range estimated by Cellular ID positioning

Step 5 Inquire Current Location

Commands from cell phone	Tracker response
*gpsinq#	*ID,pos,Date,Time,Speed,Course,Voltage,Device State,[http://.....{POS Cell Info}]# "ID" gpsinq FAIL

4.2.6 SMS Commands for inquiry

MT-900M provides several inquiry commands by SMS:

- Inquire Current Location: Inquire the location information from the tracker.
- Inquire IMEI code: Inquire the GSM IMEI code from the tracker.
- Inquire Battery Voltage: Inquire the battery voltage from the tracker.
- Get product ID (serial number):

Command Name	Commands from cell phone	Tracker response
Inquire Current Location	*gpsinq#	*ID,pos,Date,Time,Speed,Course,Voltage,Device State,[http://.....{POS Cell Info}]# "ID" gpsinq FAIL
Get Product ID (Serial Number)	*getpid#	""ID" [17 Characters] of PID "ID" getpid FAIL
Inquire IMEI code	*getimei#	"ID" [15 decimal] of IMEI "ID" getimei FAIL
Inquire Battery Voltage	*batteryinq#	"ID" battery x.xxx (EX: battery 3.976) "ID" battery FAIL

5. Operation with Android APP "LocU"

Since Smart phone becomes more popular on the market, we provide an APP for Android called "LocU"; it is easy to use App which can integrate with Mini Tracker to do setting and Locating.

5.1 System Requirement

Android OS version: **2.2** above.

5.2 Installation of Android APP

- Copy the Program file to your Cell phone
- Select the Program file and install it into your Smart Phone.

5.3 Program Overview

There are 4 main functions in this program:

- (1) Setting: system and History setting.
- (2) Members: Management Trackers and setting
- (3) Tracking: Get current location and status of Members.
- (4) History: storage of SMS and POS records.



5.4 Setting

You should run "Setting" before you start to use Tracking function.



1. Setting

(1). System setting

- Cell phone Number: fill you Cell phone's number to this column, it will be written to Mini Tracker's cell phone number setting by SMS.
- On Top Service: enable the software always to be running behind and have an icon on Top of Cell phone screen.
- Software Language: specify the language of APP.
- Google Map Language) : Specify the language of Google Map.

(2). History Setting

- Max POS Log size: Storage capacity upper limit of POS Log, 10M (Default).
- Max SMS Records size: Storage capacity upper limit of SMS Records, 10M(Default)

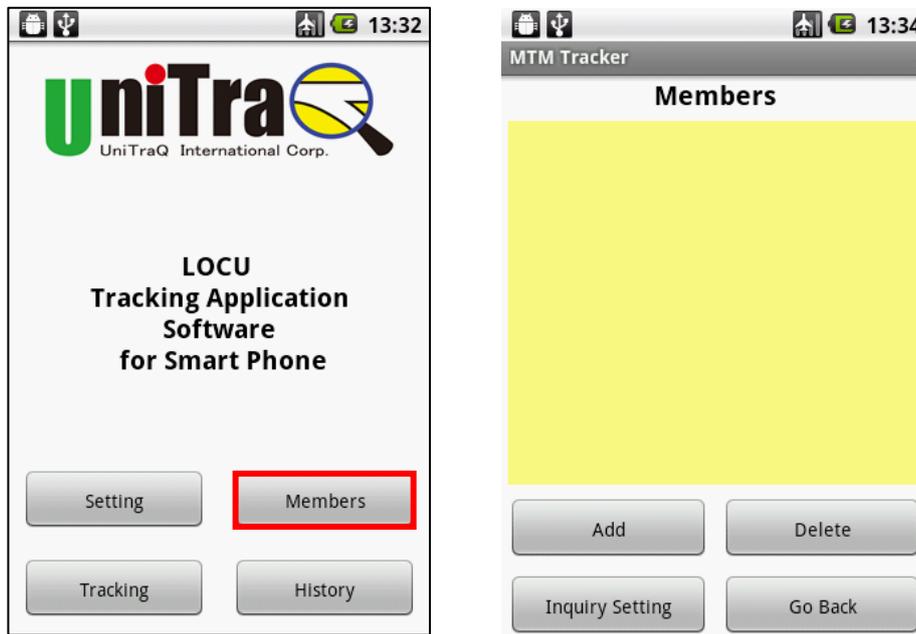
(3). SOS/Alarm Setting

- UI notice: Alarm by user interface.(enable/disable)
- Sound notice: Alarm by audio.(enable/disable)
- Vibration notice: Alarm by vibration.(enable/disable)



After setting, please press “save” and then “Go back” to Main Menu.

2. Members

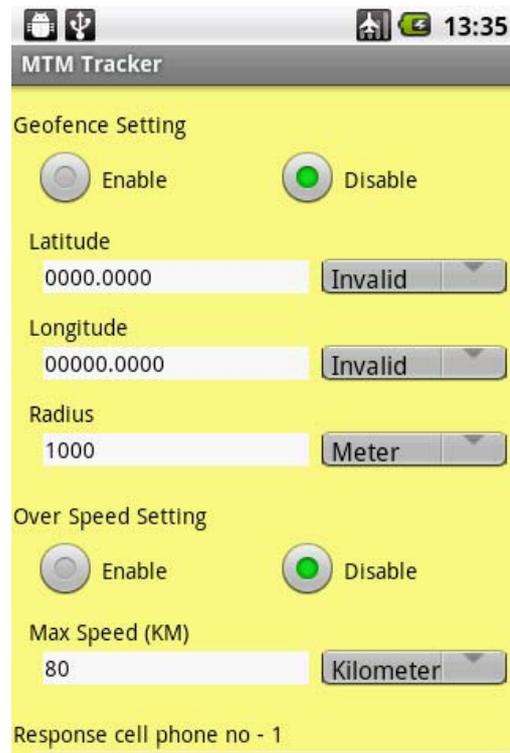
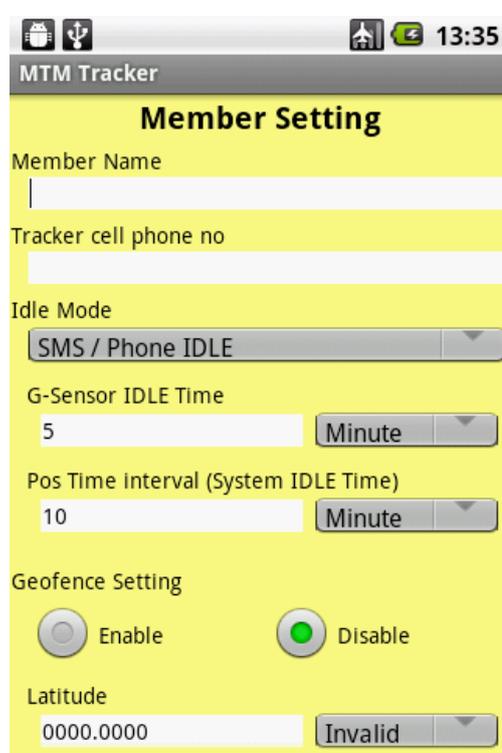


- Select “Member” function
- “Add” and “delete” members in members list.

After member account is created, you can set the parameters into each member’s

device.

- Select “Member account”
- Member Name: Assign a name that you can easily verify from the others.
- Tracker cell phone No: fill the Phone number of Mini Tracker into this column. Your cell phone will send commands or receive messages from this phone number.
- Idle Mode: for power saving.
 - ✓ G-Sensor idle time: How long the device is not in movement, and then it gets into idle mode to save power consumption.
 - ✓ Post Time interval: How long the device will be active and then it gets into idle mode to save power consumption.
 - ✓ Geofence: To set a safe activity arrange for Mini Tracker, to assign a radius from the coordinate you specified.



- ✓ Over Speed: Define the max speed which Mini Tracker can not go beyond.
- ✓ Response cell phone no. : Additional 3 phone numbers to report to.



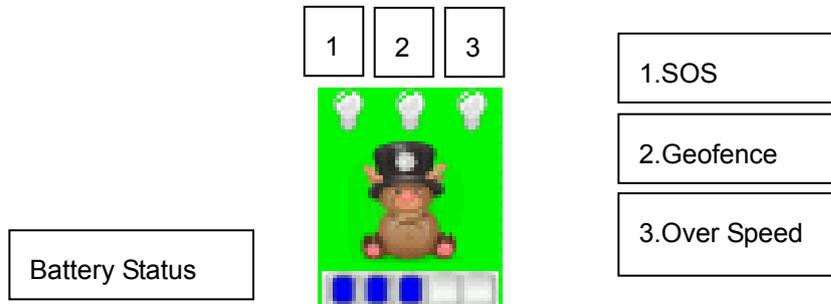
- After setting, please press “save” and then “Go back” to Member Menu.
- If the member account exists, please press “Inquiry Setting” to make sure the setting is synchronized with the setting from the other way(e.g.:by USB)

3. Tracking



- Select “Tracking” function
- The system will show all the members under the screen
- When you select the member, it will pop out the inquiry commands

- ✓ Pos: to locate the member
- ✓ BAT: to inquire Battery status
- ✓ Voice M.: to hear surround voice from Mini Tracker from Cell phone.
- ✓ Alarm Icon



- ◆ Geofence: light up when Mini Tracker is out of setting radius.
- ◆ Over Speed: light up when Mini Tracker is beyond setting speed.
- ◆ SOS: light up when Mini Tracker press SOS button.
- ◆ Battery Status: to indicate the current status of battery capacity.

4. History

There are two types of history can be retrieved, including POS and all SMS List, please find out the record and track the information inside.



Appendix A. Specifications

A.1 General Specification

Parameter	specification
Operating Voltage	3.4 V
Operating Temperature	-10 °C ~ +55 °C
Storage Temperature	-40 °C ~ +85 °C
Power Consumption	Normal 150 mA
	Idle mode < 6 mA
Battery	600mAh
USB Power Input	5V, 500mA
Battery Voltage	Min:3.4V, Typ:3.7V, Max:4.2V
SIM card type	1.8V, 3V
LED Status Indicator	Charge/Power/ GPRS/GPS
Dimension	53 x 37 x 20 mm
Weight	39g

A.2 GSM/GPRS Specification

Parameter	specification
Frequency	Quad band 850MHz/900MHz/1800MHz/1900MHz
Output power	Class 4(2W) for EGSM 850 and 900 Class 1(1W) for GSM 1800 and 1900
Protocol support	TCP/UDP
GPRS Multi-slot	Class 10
GPRS Mobile station	Class B
Coding scheme	CS1,CS2,CS3,CS4
Downlink/ Uplink max.	85.6Kbps/42.8 kbps
Current consumption	Idle mode: <1.6 mA GSM : < 300mA GPRS (2Tx,3Rx power level 10): < 410mA

A.3 GPS Specification

Parameter	specification
Frequency	L1, 1575.42MHz
Channels	50 channel all in view
Cold Start	-143dBm
Tracking sensitivity	-160dBm
Acquisition sensitivity	-160dBm
TTFB hot start	< 1 sec
warm start	< 29 sec
cold start	< 29 sec
Signal Reacquisition	<1s
Update Rate	2Hz (standard)
Tracking current	40mA
Datum	WGS-84(Default)
Protocol	NMEA-0183 V3.01
Dynamics	4G (39.2m/sec ²)

Appendix B Configuration by PC Setting program

Step 0: Install Driver File

You should install PC driver before you plugging Mini Tracker into USB Port to set up.

Note: Make sure the tracker is powered on prior to it is plugged into your computer for configuration. Then use the included USB cable to connect the tracker with your computer to configure the tracker.

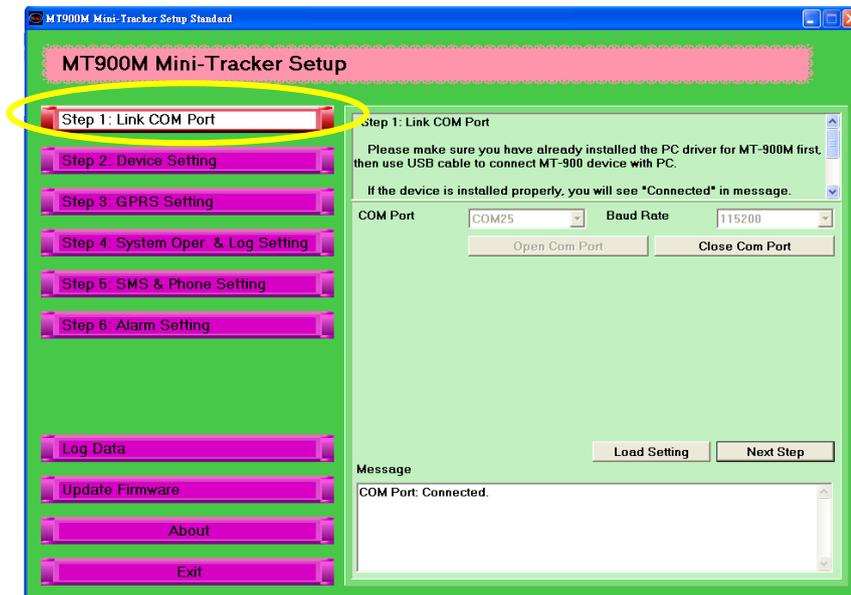
When connecting the device first time, OS will request to install the virtual COMM port driver.

Step 1: Link COM Port

Please make sure you have already installed the PC driver for MT-900M first, then use USB cable to connect MT-900 device with PC.

If the device is installed properly, you will see "Connected" in message.

Otherwise, if you see "Not connected", you can check the COM port information from your "device manager" in Windows OS; click "Open COM port" to verify the connection status.



Step 2: GPRS Setting

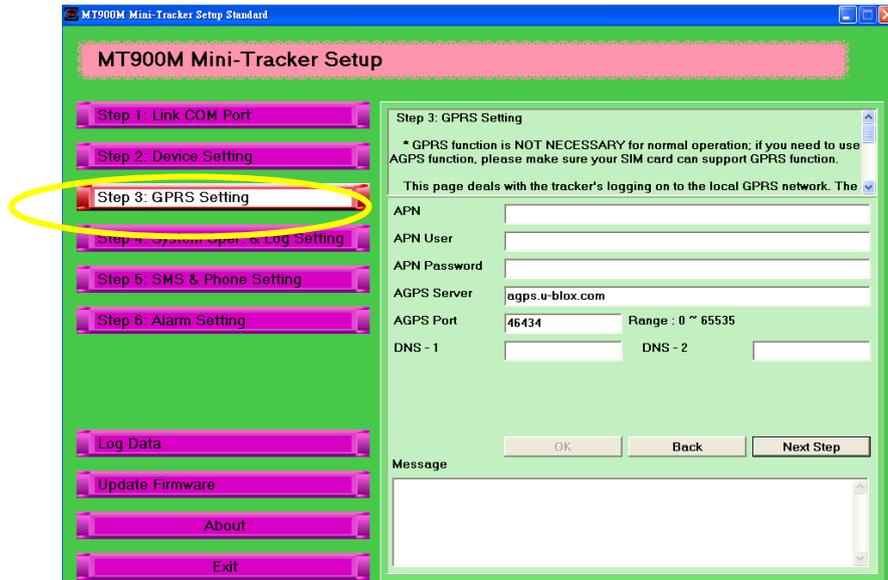
GPRS function is NOT NECESSARY for normal operation; if you need to use AGPS function, please make sure your SIM card can support GPRS function.

This page deals with the tracker's logging on to the local GPRS network. The APN is normally "internet" but it can vary. Check User Manual to find your local operator's APN, some local operators' GPRS networks need an account and password to log in, just call your

operator's help desk to get the right one.

Notice: PIN CODE of SIM card should be unlocked before being inserted into the mini tracker. SIM PIN CODE can be disabled through ordinary cell phone.

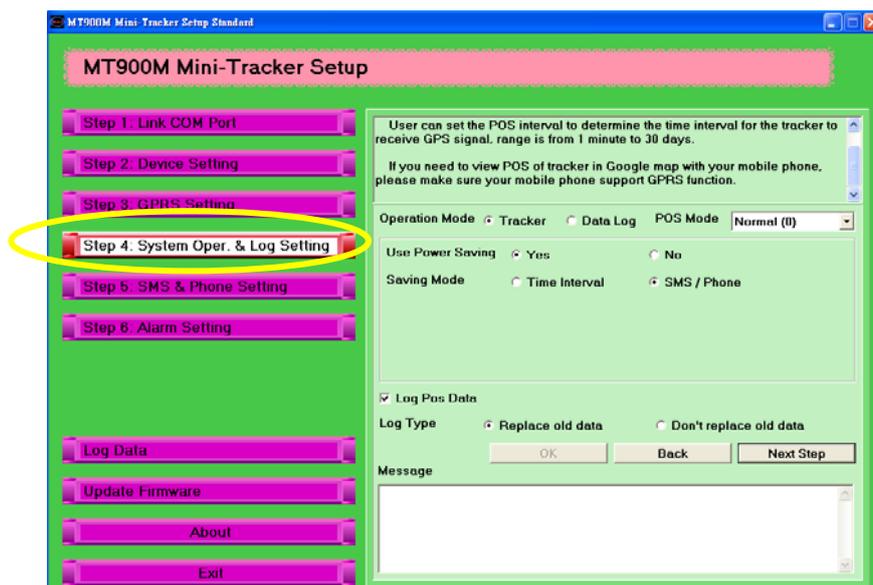
The default PIN code in device is "0000". If SIM lock is enabled and password is incorrect, power on/off device three times will make the SIM card locked permanently. Only PUK code can unlock the SIM in such case.



Step 3: System Oper. & Log Setting

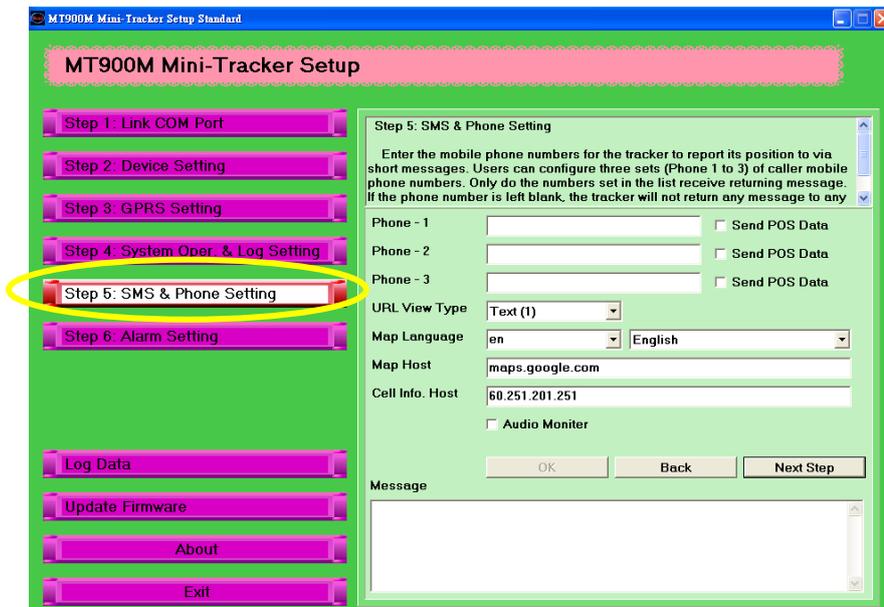
User can set the POS interval to determine the time interval for the tracker to receive GPS signal, range is from 1 minute to 30 days.

If you need to view POS of tracker in Google map with your cell phone, please make sure your cell phone support GPRS function.



Step 4: SMS & Phone Setting

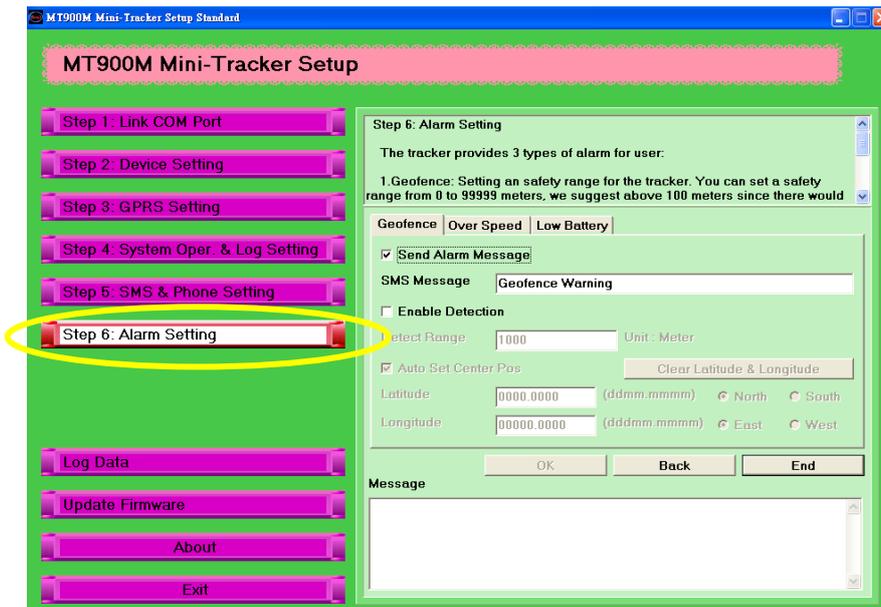
Enter the cell phone numbers for the tracker to report its position to via short messages. Users can configure three sets (Phone 1 to 3) of caller cell phone numbers. Only do the numbers set in the list receive returning message. If the phone number is left blank, the tracker will not return any message to any caller.



Step 5: Alarm Setting

The tracker provides 3 types of alarm for user:

1. Geofence: Setting a safety range for the tracker. You can set a safety range from 0 to 99999 meters, we suggest above 100 meters since there would be deviation coming from the GPS accuracy.
2. Over speed: Setting a limit speed for the tracking object to prevent dangerous driving behavior.
3. Low battery: when battery voltage of tracker is low, tracker will inform user to charge the battery.

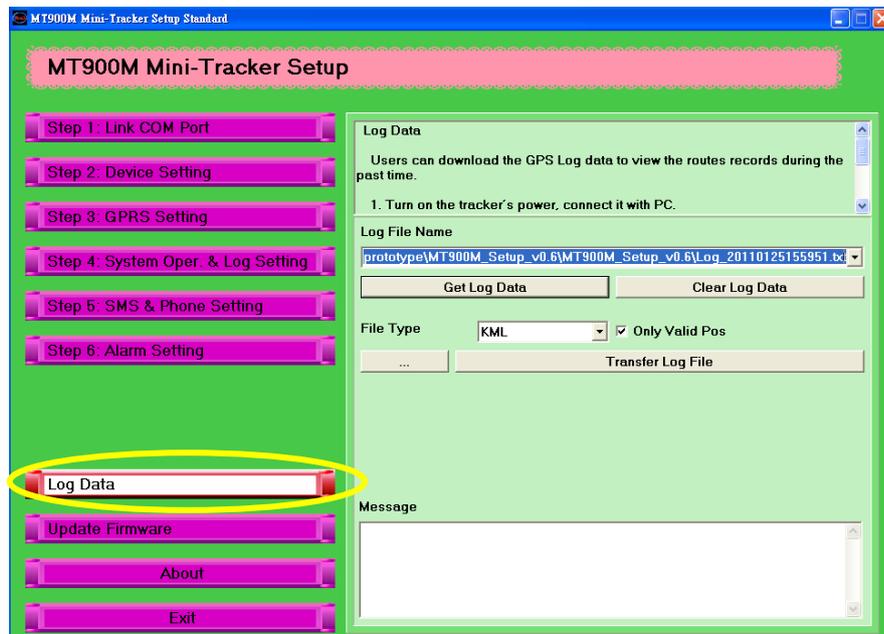


Step 6: Log Data

Users can download the GPS Log data to view the routes records during the past time.

1. Turn on the tracker's power, connect it with PC.
2. Click "Get Log Data" button, and specify the path in PC to store the log data.

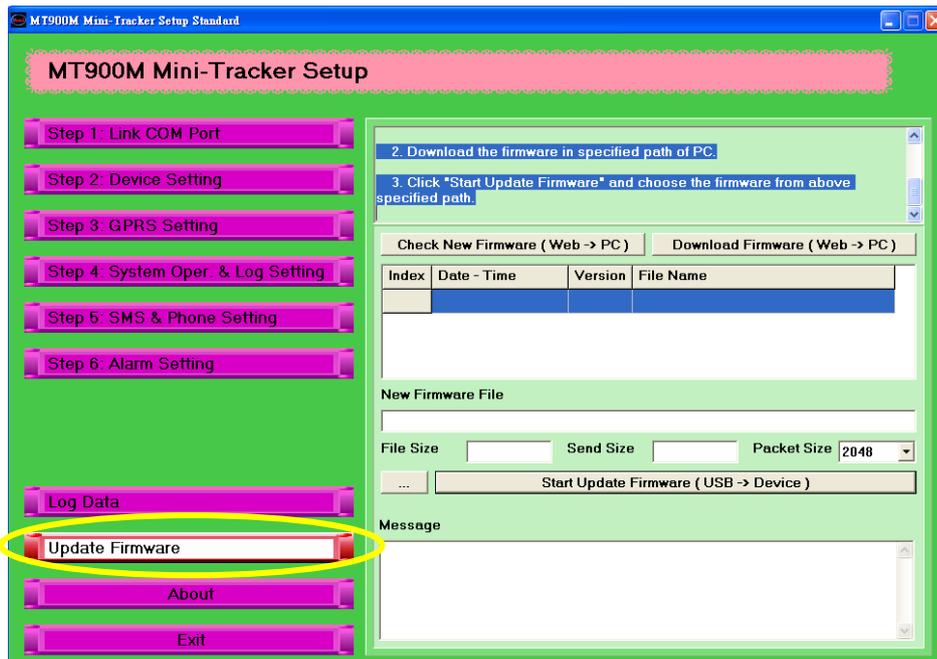
You can also transfer the log data into other format (eg.KML) for further application (eg.Google earth).



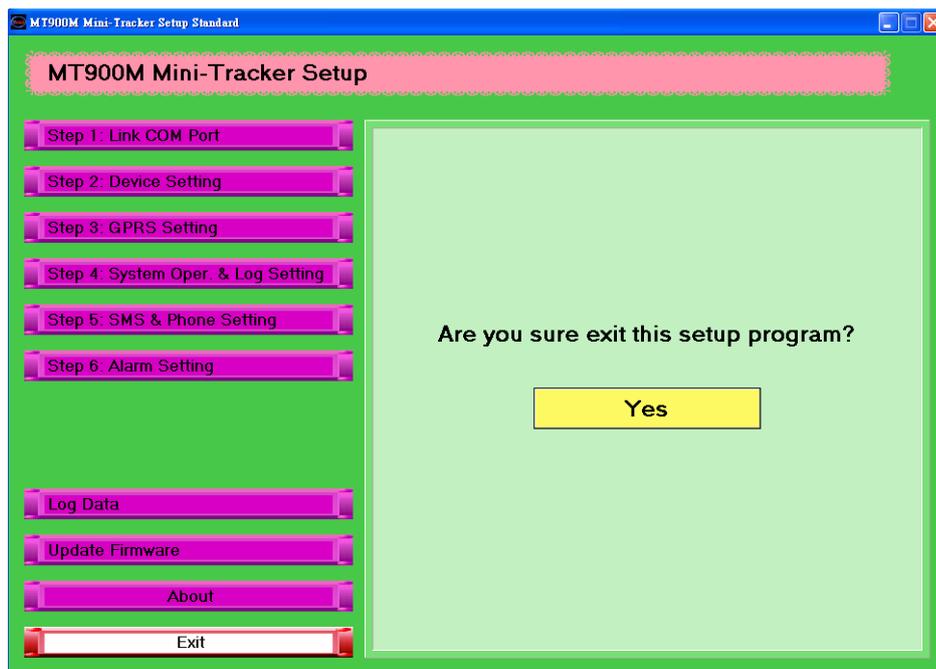
Step7: Update Firmware

The firmware of tracker will be updated to modify some errors. Please download the latest version and update the firmware.

1. Please click "Check New Firmware" to verify the latest version from website.
2. Download the firmware in specified path of PC.
3. Click "Start Update Firmware" and choose the firmware from above specified path.



After all the setting, press "Exit" button and click yes to save all the setting to Mini Tracker.



Appendix C Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant

to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

The product comply with the US/Canada portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or reduce output power if it doesn't affect the transmission/receiving quality. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

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