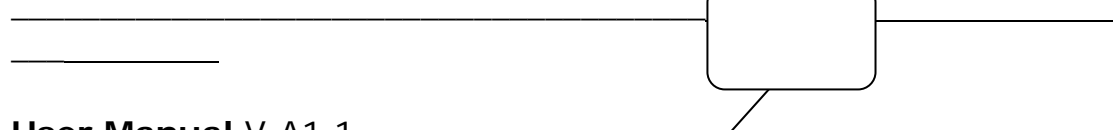


GPS

Personal location Tracker



User Manual V-A1.1

Contents

1.	Products Overview.....	3
2.	For Your Safety	4
3.	Characteristics	4
4.	Getting Started.....	5
4.1.	Hardware and Accessories.....	5
4.2.	View	5
4.3.	Function key and port.....	6
4.4.	First Use.....	7
5.	Change Password.....	7
6.	Authorized number.....	8
7.	Tracking by SMS	8
7.1.	Real time tracking.....	8
7.2.	Tracking by Calling.....	9
7.3.	Track by Preset Interval.....	9
8.	SOS Emergency Calling and HELP Alarm Setting.....	9
9.	Google Map Link	9
10.	GPRS.....	10
10.1.	Tracking by GPRS	10
10.2.	Device ID Setting	10
10.3.	APN setting.....	10
10.4.	Set IP and Port.....	11
10.5.	Set GPRS Interval.....	11
11.	Over speed Alarm	11
12.	Geo-fence Alarm	12
13.	Low-power-consumption Mode	12
14.	Tracker Setup Software.....	13
15.	Problems & Solutions.....	13

1. Products Overview

Thanks for purchasing our product !

Tracker has a low-power-consumption mode in which the tracker can work about 7 months.

Tracker has built-in terminals of GPS (global positioning system) module and GSM communication module, which are used for getting the location data and send it to authorized phone number via SMS, and tracking through free maps Google Earth or Google Map; If your mobile phone is smart phone and opened with GPRS service, it is more convenient to see location of the tracker on smart phone by setting the SMS location format to be Google Link. At the same time, the GPRS data can be sent to the internet server, which can realize the checking, monitoring and managing of the tracker on computer.

Tracker has the following features and functions:

- ◆Low-power-consumption mode (can work about 7 months)
- ◆Tracking via SMS/GPRS (TCP/UDP)
- ◆Tracking by Preset Interval
- ◆Low battery alarm
- ◆SOS emergency calling

2. For Your Safety

Read these simple guidelines. Not following them may damage to the tracker or not perform proper function of application.

Switch on safely	Do not switch on tracker when wireless phone use is prohibited or when it may cause interference or danger.
Switch off in hospitals	Follow any restrictions. Switch tracker off near medical equipment.
Switch off in aircraft	Follow any restrictions. Wireless devices can cause interference in aircraft.
Switch off when refueling	Do not use tracker when at a refueling point. Do not use near fuels or chemicals.
Switch off near blasting	Follow any restrictions. Do not use tracker when blasting is in progress.
Qualified service	Only qualified personnel can repair TRACKER.
Water resistance	Tracker is not fully water resistant. Keep it dry. Use waterproof-case if necessary.

3. Characteristics

Items	Specification
Charging Voltage	DC 4.5-5.5V/400mA (Mini USB)
Internal Battery	1200 mAh battery (3.7V)
Dimension	80mm X 54mm X 21mm
Weight	80g (with battery)
Operating Temperature	-20°C to +55°C
Humidity	5% to 95% Non-condensing
GSM Module	Quad Band GSM 850/900/1800/1900Mhz
GPS Chipset	Latest GPS SIRF-Star III chipset /ublox
GPS Sensitivity	-159 Db
GPS Frequency	L1, 1575.42 MHz
C/A Code	1.023 MHz chip rate
Channels	20 channel
Position Accuracy	< 15 M, 2D RMS
Velocity Accuracy	0.1 M/S
Time Accuracy	1 us synchronized to GPS time

Reacquisition	0.1s, average
Hot Start	1s, average
Warm Start	3s, average
Cold Start	37s, average
Altitude Limit	18,000 meters (60,000 feet) max
Velocity Limit	515 m/s (1000 knots) max
Acceleration Limit	Less than 4g
Work Time	12 hours in normal mode 7 months in low-power-consumption mode
LED	2 LED lights to show power, GPS, GSM and other status
Button	SOS button for sending location and warning with SMS

4. Getting Started

This section will describe how to set up your tracker.

4.1. Hardware and Accessories



Tracker



AC-Charger



Special-USB-cable



CD-Rom

4.2. View



Front View



Back View

4.3. Function key and port

Tracker has one button, one switch and two lights with different colors to indicate status of the tracker.



Blue LED- GSM	
0.3s on and 0.3s off	GSM module initializing
Always on	GSM module can't register network or it is charging
Always off	Tracker is Sleeping or turned off
1s on and 3s off	GSM module is registered network
0.1s on and 3s off	GSM module is registered network and GPRS function works well
yellow LED- GPS	
0.3s on and 0.3s off	GPS module initializing
Always off	Tracking is Sleeping or turned off
1s on and 3s off	GPS module works well, but GPS position is not fixed
0.1s on and 3s off	GPS module works well and GPS position is fixed
Switch	
Power ON/OFF Switch	To turn on/off tracker
Buttons	
SOS Button	Press it for 3 seconds, tracker will send a SMS to authorized numbers (only when the tracker is working)
Other Connectors	
Mini USB Port	Used for charging, firmware update, configuration on PC

4.4. First Use

Please read this manual before using tracker.

4.4.1 Ensure that your tracker has a working SIM card.

- Check that the SIM card has not run out of credit (Test the SIM card in a phone to make sure it can send and receive SMS)



- Check that lock code of the SIM card is turned off.

- If you require the function of sending an SMS location report to the authorized phone number when it makes a call to tracker, please make sure the SIM card installed supports displaying caller ID.

4.4.2 Charge the battery for at least 3 hours in power-off status by AC charger or you can connect the tracker directly to computer by USB for charging. When charging completes the blue lights went out.

(Note: Please turn off the device when charging!)

4.4.3 Push the Power On/Off button to the ON side and wait for about 20 seconds. It is suggested that put the tracker in an outer place where it can receive better GPS signal and the front side faces sky when you turn on the device.

- Check that the Blue LED (GSM) is flashing 1s on and 3s off.
- Check that the Orange LED (GPS) is flashing 0.1s on and 3s off.

5. Change Password

Command: M***** ,00,#####

Description: Change user's password.

Note:

All commands are case-sensitive!

1. ***** is user's password and the default password is 000000. Tracker will only accept commands from a user with the correct password. Command will be ignored if with wrong password.
2. ##### is the new password. Password should be 6 digits.

Example:

M000000,00,123456

M123456,00,888888

6. Authorized number

Command: M000000,01,NO.,Phone Number,ABCDEFGH

Description: Authorize phone numbers for receive SMS alarms.

Note:

NO.: serial number should be 1 to 3

Phone Number: authorized phone number. Max. 16 digits

A: SOS emergency calling

B: Help alarm

C: Tracking by calling

D: Sending SMS regularly

E: Low battery alarm

F: GPS signal is weak warning

G: Geo-fence alarm

H: Over speed alarm

(1: enable alarm, 0: disable alarm)

Example:

Preset the authorized phone number 13800000000, and just enable SOS emergency calling.

M000000,01,1,13800000000,1000000

7. Tracking by SMS

Use a cell phone to receive the location message.

7.1. Real time tracking

Command: M000000,02

Description: Get the latest location data by SMS.

Note:

When sending this command, the tracker will reply a latest location data by SMS.

Example:

M000000,02

Reply:

Lat=22 23.61N Lng=114 22.56E,MMC: 460,02,CellID: 27B3,0E59,

Speed=0Km/hr,05/7/2011,03: 30,SMS

7.2. Tracking by Calling

Any authorized number makes a missed call to the tracker and the tracker will report its position by SMS.

7.3. Track by Preset Interval

Command: M000000,03,X

Description: Set an interval for the tracker to continuously send its location by SMS to authorized phone number.

Note:

1. X is the interval in minute. (max. 65535)
2. If X=0 to turn off tracking regularly

Example:

M000000,03,30

The tracker will send location back to authorized phone number every 30 minutes.

8. SOS Emergency Calling and HELP Alarm Setting

Command: M000000,06,X,Num

Description:

If press SOS button 3 seconds, tracker will dial the SOS phone number.

If press HELP button 3 seconds, tracker will dial the HELP phone number.

Note:

X=1 means setting SOS emergency call number

X=2 means setting HELP phone number

Num: phone number (max. 16 digits)

Example:

M000000,06,1,88888888

This command will set the SOS emergency call number as 88888888.

M000000,06,2,99999999

This command will set the HELP phone number as 99999999.

9. Google Map Link

Command: M000000,10,X

Description: set the format of the SMS contents.

Note:

X=1: reply SMS with Google map link, click on the link then the location can be

shown directly on your smart phone
X=0: reply SMS with latitude and longitude

The format of Google Map link:

CurLoc <http://map.google.com/maps?f=q&hl=en&q=22.545712,114.079500>

MMC: 460,01,CellID: 252A,07F4,Speed=0Km/h,06/23/2011,05: 42,Call

The format of latitude and longitude:

CurLoc Lat = 22 32 44.62N Lng = 114 04 45.70E,

MMC: 460,01,CellID: 252A,07F4,Speed=0Km/h,06/23/2011,05: 57,Call

Example:

M000000,10,1

10. GPRS

Receive the location data to the server via GPRS.

10.1. Tracking by GPRS

Command: M000000,21,X

Description: enable this function.

Note:

X=0, disable this function (default)

X=1, enable this function by TCP

X=2, enable this function by UDP

Example:

M000000,21,1

10.2. Device ID Setting

Command: M000000,22,ID

Description: Set device ID for each one tracker.

Note:

ID, max. 16 digits

Example:

M000000,22,123456789

10.3. APN Setting

Command: M000000,23,APN,Username>Password

Description: Set APN parameters for the tracker.

Note:

1. APN: Access Point Name for the service

2. APN username and password are optional. If no APN username and Password are required, just input APN only
3. APN + username + password should not over 64 characters

Example:

M000000,23,CMNET

10.4. Set IP and Port

Command: M000000,24,IP,PORT

Description: Set IP and Port for GPRS communication.

Note:

IP is your server's IP

Port: max. 65535

Example:

M000000,24,192.168.111.111,6000

10.5. Set GPRS Interval

Command: M000000,25,X

Description: Set the time interval for tracking GPRS.

Note:

X: 5~65535 (default is 30), unit is seconds

Example:

M000000,25,60

The tracker will send GPRS data to server in every 60 seconds.

11. Over speed Alarm

Command: M000000,05,X

Description: if you set this function, tracker will send an alarm to authorized number and server (if GPRS connected) when the moving speed is higher or lower than preset value.

Note:

X is the preset value of speed in Km/h (Max. 200)

X = 0, disable this function

In order to reduce false positives, make sure the preset value is higher than 50 Km/h.

Example:

M000000,05,80

When tracker's real time speed is higher than 80 Km/h, this alarm will be sent out by SMS.

12. Geo-fence Alarm

Command: M000000,32,NO.,name,lat,lng,radius

Description: enable this function. When the tracker moves in/out the preset fence, it will send a SMS alarm to the authorized phone number and send this alarm to server via GPRS (if GPRS is connected).

Note:

NO.: serial number, must be 1 or 2

Name: max characters: 10

lat: latitude, format is dd.dddddd, the unit is latitude, if it belong to northern latitude, minus is needed. Otherwise, omit it

lng: longitude, formats is ddd.dddddd, the unit is longitude, if it belong to east longitude, minus is needed. Otherwise, omit it

radius: Max. 99999.00, the unit is Km

According to Preset longitude and latitude as the center of the circle, with the preset radius, we can define a circle.

Example:

M000000,32,1,school,22.12345,114.12345,10.50

M000000,32,2,office,12.12345,-45.12354,10.75

13. Low-power-consumption Mode

Command: M000000,13,X

Description: Enable/Disable this function.

If you enable the low-power-consumption mode, tracker will wake up to work normally about 10 minutes, and in other time, tracker always in sleep. (GSM and GPS model are not work).

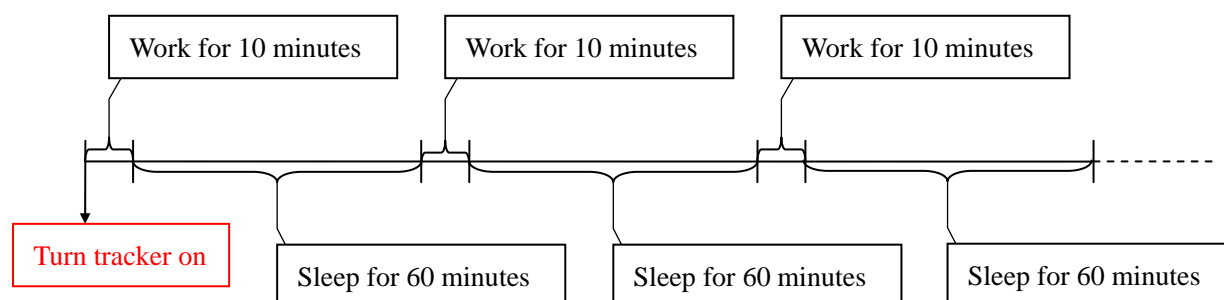
Note:

1. X=0 to disable low-power-consumption mode
2. X>0 to enable low-power-consumption mode, should be 1 to 65535 in hour (default is 24 hours).
3. X must be integer

Example:

M000000,13,1

The tracker will wake up for 10 minutes every 1 hour (60 minutes), the following picture shows the principle:



14. Tracker Setup Software

The tracker also can be configured by the Tracker Setup Software on computer.

Please refer to < Tracker Setup Software V-A 1.0.pdf > for more information.

15. Problems & Solutions

Problem: Tracker will not turn on when pushing the power switch to On side	
Possible cause	Resolution
Power switch was not pushed properly	Check and make sure the power button is pushed to ON side.
Battery needs charging	Recharge battery for 3 hours
Problem: Tracker will not reply with SMS	
Possible cause	Resolution

Blue LED flash is always on	<p>Make sure the tracker located in a place with GSM network</p> <p>Check the SIM card, reinsert it correctly and firmly</p> <p>Replace the SIM card if necessary</p>
GSM network is busy	Some GSM networks slow down during peak time or when they have equipment problems.
Wrong password in your SMS or wrong SMS format	Write correct password or SMS format
The SIM card has run out of credit	Replace or top up the SIM card
Battery is low	Recharge the tracker
Problem: yellow LED flash 1 second on and 1 second off	
Possible cause	Resolution
Tracker does not have clear view of the sky	Move the tracker to a place where the sky is visible. Tall buildings, trees, heavy rain, can cause problems with the GPS reception.
GPS signal is weak	The front side of tracker faces to sky
Battery is low	Recharge the tracker
Problem: Fails to Connect to Server via GPRS	
Possible cause	Resolution
SIM card does not support GPRS function	Enable SIM card GPRS function
GPRS function of tracker is turned off	Turn on GPRS function of tracker
Incorrect IP address or port	Get the right IP address and port, and then reset the tracker
GSM signal is weak	Move the tracker to a location with good GSM reception