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## 1.Product Features

- ◆Tracking SMS/GPRS(TCP/UDP)
- ◆Tracking by Interval/Calling;Waterproof IP67
- ◆Displaying Time,Battery Lever,GPRS status,GSM strength
- ◆Contact **ECG Monitoring** for Heart Rate, Electrocardiogram,Heart Age/Heath Index
- ◆SOS/Belt off/Geo-fence/Low-battery alarm
- ◆GPS Hish-accuracy Positioning
- ◆E-ink Screen 1.28inch
- ◆Photoelectric Pulse Measurement
- ◆Gyroscopic + axis Acceleration Sensor
- ◆Step Counting,Sleeping Status
- ◆**Human Falling Down Detection**(developing)
- ◆Two Way Calling, Voice Monitoring
- ◆**Bluetooth Connection**(此功能还没加上去，备用)
- ◆Automatically Timing when no power or power off
- ◆At least One Week Standby Time
- ◆Built in 8 Memory, Built in 400mAh Lithium Battery

## 2.Safety instruction

Read these simple guidelines. Not following them may damage the tracker, put you in danger or break the law.

|                                |                                                                                                                 |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Switch on safely</b>        | Do not switch the tracker on when wireless phone use is prohibited or when it may cause interference or danger. |
| <b>Switch off in hospitals</b> | Follow any restrictions. Switch the tracker off near medical equipment                                          |
| <b>Switch off in aircraft</b>  | Follow any restrictions. Switch the tracker off on the plane.                                                   |

|                                  |                                                                               |
|----------------------------------|-------------------------------------------------------------------------------|
| <b>Switch off when refueling</b> | Do not use the tracker when at a refueling point.                             |
| <b>Switch off near blasting</b>  | Follow any restrictions. Do not use the tracker when blasting is in progress. |
| <b>Qualified service</b>         | Only qualified personnel can repair the tracker.                              |
| <b>Water resistance</b>          | IP67                                                                          |

### 3.Specification and parameters

| Items                        | Specification                                      |
|------------------------------|----------------------------------------------------|
| <b>Charging Voltage</b>      | DC 4.2V                                            |
| <b>Internal Battery</b>      | 420 mAh                                            |
| <b>Dimension</b>             | 56.49*52.50*16.95mm                                |
| <b>Weight</b>                | 70g                                                |
| <b>Operating Temperature</b> | -20 ~ +55 °C                                       |
| <b>GSM Module</b>            | Quad Band GSM 850/900/1800/1900 MHz                |
| <b>GPS Chipset</b>           | Newest Ublox chipset                               |
| <b>GPS Sensitivity</b>       | -160Db                                             |
| <b>GPS Frequency</b>         | L1, 1575.42 MHz                                    |
| <b>C/A Code</b>              | 1.023 MHz chip rate                                |
| <b>Channels</b>              | 50 Channels                                        |
| <b>Position Accuracy</b>     | <10 M, 2D RMS                                      |
| <b>Velocity Accuracy</b>     | 0.1 M/S                                            |
| <b>Time Accuracy</b>         | Satellite Time: 1 millisecond time synchronization |
| <b>Update Time</b>           | Average 0.1 second                                 |
| <b>Hot Start up</b>          | Average 1 second                                   |
| <b>Max. Altitude</b>         | 18,000m (Max. 60,000 ft)                           |
| <b>Max. Speed</b>            | 500 m/s (Max. 1000 knots)                          |
| <b>Max. Acceleration</b>     | less than 4g                                       |

4.Product view



## 5.First use

Please read this manual before using tracker.

### 5.1 Remove the back cover

-Use the mini screwdriver to remove the four screws to release the back cover

### 5.2 Insert the SIM card

-Tracker only supports Micro SIM card (Do not cut it to nano SIM card)



- Check the lock code of the SIM card is turned off
- Check the SIM card has not run out of credit money  
(Test the SIM card in a phone to make sure it can make phone call or send SMS)
- If you need the function of real time tracking or easy authorized phone number setup by calling, please make sure the SIM card installed supports displaying caller ID
- When fixed the battery cover, please make sure its gasket do not come out before you turn of the screw, then long press 5s to turn on/off device
- After setup or turn device on, please positioning in an open environment every time

### 5.3 Fixed the back cover

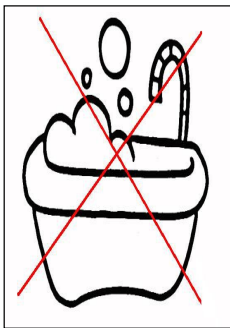
Please do not let the gasket come out when you turn of the screw.

### 5.4 ON/OF

-Press the power switch for 5 seconds and tracker will switch on/off

### 5.5 Charing

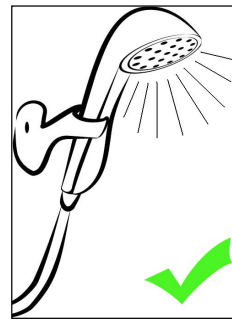
Use the special charger,and the charge time is about 2.5-3 hours



**Not with bathing**



**Not with swimming**



**Waterproof for showering**

### 5.6Parameters setup

-Tracker only supports APP steup software by smart phone or by sending command via SMS.

## 6.Parameter setting

Configure tracker by sending SMS commands or through PC platform, and the default password is 000000. This manual only introduce for how to setup parameters via SMS,

Practical application may vary when accessorizing differently, please kindly note.

## 7. Change the password

SMS command: `$SMS,*****;W001,#####;!`

For example: `$SMS,000000;W001,123456;!`

\*\*\*\*\*: user password, the range of 6 characters, default password is 000000  
#####: new password, the range of 6 characters

## 8. Low battery alarm

When the battery level is lower than 15%, it will send SMS to all authorized numbers and send data to server if GPRS connected. Tracker will be off automatically if the power level is 0%; during charging, tracker will automatically switch on when power level is higher than 15%, device will send a warning SMS to all authorized number and send data to server if GPRS connected.

## 9.Tracking regularly by GPRS

SMS command:

```
$SMS,000000;W002,APN,Username,Password;W003,IP,Port;W004,ID;W005,X;  
W009,Y;!
```

For example:

```
$SMS,000000;W002,cmnet,,;W003,192.168.1.1,8088;W005,1;W009,1;!
```

APN: Access point name of network

IP: server's IP address

Username: accesses port's user name

Port: server's port

Password: accesses port's password

ID: device ID

X: GPRS upload interval, range of: 0~65535, default is 0, unit is 30 seconds

Example: if X is 2,  $2 \times 30s = 60s$ , so it means the GPRS upload interval is 60 seconds.

Y: GPRS upload mode, range of: 0~2, default is 0

(0 means disable GPRS function, 1 means upload by TCP, 2 means upload by UDP)

## 10.GPRS data logger

Tracker has build in 8M memory for GPRS data save. When GPRS interval tracking can not upload to server, data will be automatically stored into the memory. After that, once the GPRS reconnected, tracker will send the data to server again.

**Note:** real time data will be sent first, the priority of the stored data is secondary.

## 11. Auto APN setting

The APN list can be configured before delivery (default is China APN). When insert SIM card, tracker will automatically acquire APN from the APN list. If user already set APN, then the tracker will not acquire APN automatically.

## 12. Time zone setting

SMS command: `$SMS,000000;W020,X;!`

For example: `$SMS,000000;W020,480;!`

X: time zone's value, range of: -720~780, default: 0, unit: minute  
1 hour is equal to 60 minutes, and Beijing is GMT+8,  $60*8=480$ (parameter),  
so this command means 480 is the time zone in Beijing

## 13. Authorized number

### 1) Set the authorized number by SMS

SMS command: `$SMS,000000;W010,NO.,Phone Number,ABC;!`

For example: `$SMS,000000;W010,1,13800000000,010;!`

Note:

NO.: authorized number's serial number, range of: 1~3

Phone Number: authorized number, range of: 0~19 characters

A: Geo-fence, range of 0~1; when the parameter 'A' is 0, it means disable Geo-fence alarm, otherwise it means enable Geo-fence alarm. Default is 0

B: monitoring function, range of 0~1; when the parameter 'B' is 0, it means disable monitoring function, otherwise it means enable monitoring function.

Default is 0

C: SOS emergency call, range of 0~1; when the parameter 'C' is 0, it means disable SOS emergency call, otherwise it means enable this function. Default is 0

Example above means set the 1st authorized number is 13800000000 and enable monitoring function.

## 2) Easy authorized phone no. setup by calling

Tracker only supports up to three authorized numbers; we can set the authorized number by phone call if there are not set authorized number fully (this function only supports to set the authorized number, not includes its related functions). Set as follows:

Any non-authorized number calls to the tracker over than 10 seconds, the tracker will hang up the line automatically and the yellow light will blink for 30 seconds. During these 30 seconds, press SOS button less than 3 seconds, and then successfully set this call-in number as a new authorized number and send an SMS to this number to inform the setting is OK.

## 14. Monitoring function

If enable monitoring function, when the authorized number call to the tracker, it will answer the call automatically and shut down the speaker and the background voice of the tracker will be listened.

**Note:** Please make sure the SIM card installed supports displaying caller ID when you want to enable this function.

## 15.SOS emergency call

Press SOS button for 3 seconds or longer, tracker will send SOS alarm SMS to all authorized numbers. If the authorized number is set with the SOS emergency calling function, tracker will call those authorized numbers one by

one in order. If one of those is answered, the tracker will not call the others.

## 16. Belt on/off alarm

-- After connected with the belt, tracker will send belt on alarm to all of the authorized phone numbers and send alarm data to service;

-- After unconnected with the belt or belt has been cut, tracker will send belt off alarm to all of the authorized phone numbers and send alarm data to service.

**Note:** after connected with the belt, tracker only can be turned on and can not be turned off

## 17. Geo-fence alarm

SMS command: `$SMS,000000;W018,NO.,name,lat,lng,radius;!`

Example 1: `$SMS,000000;W018,1,school,22.12345,114.12345,10.50;!`

Example 2: `$SMS,000000;W018,1,home,,,10.50;!`

Note:

NO.: serial number of geo-fence, range of: 1~5

name: name of geo-fence, range of: 0~9 characters

lat: center's latitude, range of: -90.00000000~90.00000000, unit: degrees

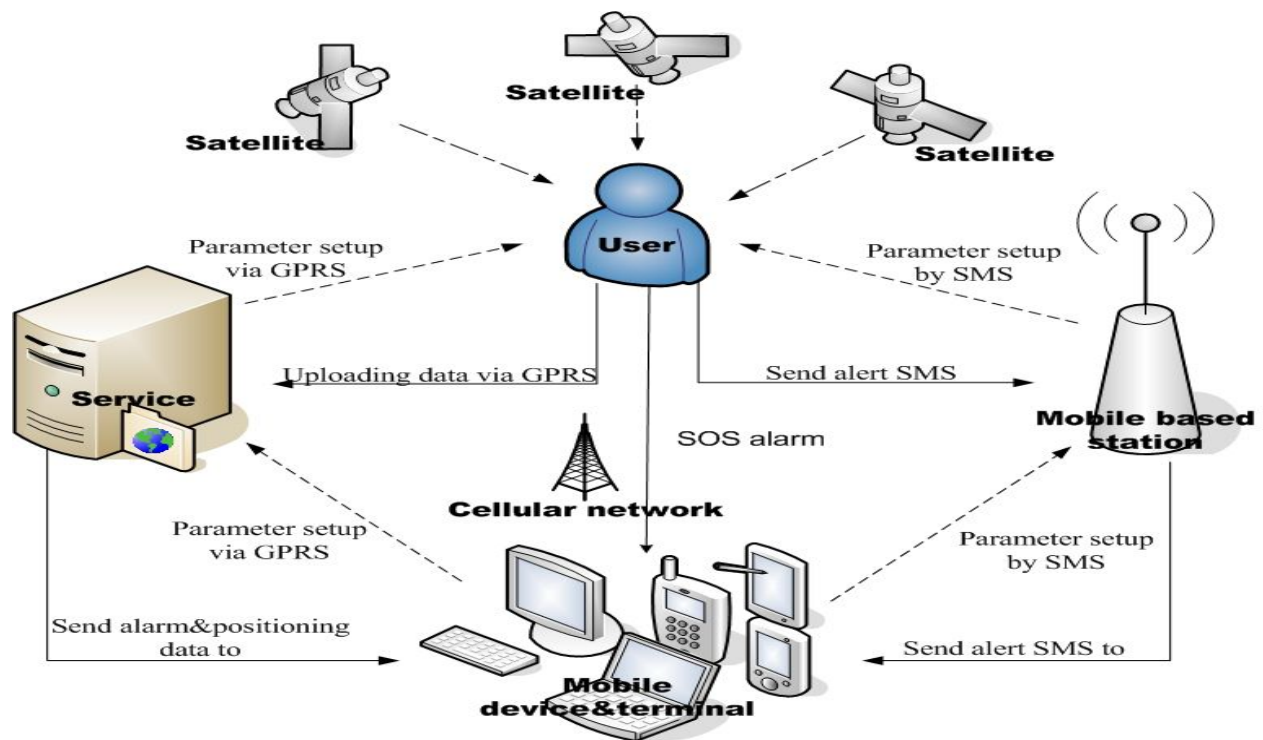
lng: center's longitude, range of: -180.00000000~180.00000000, unit: degrees

radius: geo-fence's radius, range of: 0.0~1.79E+308, unit: meters

**Note:**

The geo-fence is a perfect circle based on the preset radius and center.

When set the geo-fence, longitude and latitude can be filled in command directly; tracker will get the newest position automatically to be fence center if longitude and latitude are empty in command. After enable geo-fence function, when tracker moves in/out the preset geo-fence, it will send an SMS alarm to the authorized phone number (please also enable the Geo-fence function when you set the authorized number) and send this alarm to server via GPRS.



## 18.LCD display

Basic data show: GSM signal strength, battery power, charging signs, GPS positioning, Bluetooth state (此功能还没有加上，备用). Caller ID, phone call out display, talk show, phone hang up display.

LCD display includes the following functions:

### LCD display:

Shortly pressing the power button can switch the main interface (dial interface, basic data interface, ECG interface, pedometer interface, falls interface). when using the buttons to operate the interface , the LCD backlight light will automatically turn on; if there is no operation within 10 seconds, the backlight will automatically turns off.

**Initialization interface:**

Turn on the device and it will enter the initialization interface, 5 seconds later, the device directly go to the dial interface.

**Dial interface:**

Dial interface can display the time, date, week.

**Basic data interface:**

Basic data interface can display GSM signal strength, battery level, charging symbol, GPS positioning status, bluetooth status, date, week, time.

**ECG interface:**

After entering the ECG interface, ECG detection function will automatically be opened, if the device can't detect the user's operation within 30 seconds, the device will automatically shut down and return to the basic data interface.

The time can be accumulated when device detecting user's operation, while the time returns zero if any interruption.

When the time increasing to 30 seconds, device will send all the ECG data to server, and then the server will return health result data (HRV, mood) to device.

**Pedometer interface:**

Pedometer interface will displays the total number of steps in a day. And the device will automatically clear the total number of steps per day.

**Fall interface:**

After detected the fall, the device will remind user by vibration and display a countdown counter of 30 seconds. In the countdown process, the user can press the power button to cancel fall alarm, or the device will send it out.

**Sleep interface:**

When the device going sleeping, the device will show sleep interface.

**Automatic shutdown interface:**

When the power is too low the device will automatically shut down, and display automatic

shutdown interface.

#### Manual shutdown interface:

When the user manually shut down the device, device will display manual shutdown interface.

## 19.Alert event type table

| Type name           | Description                                                                                                                                         | Example        |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Restart             | Device restart by hardware.                                                                                                                         | Restart        |
| PowerOn             | Device power on by software.                                                                                                                        | PowerOn        |
| PowerOff            | Device power off by software.                                                                                                                       | PowerOff       |
| Sos                 | SOS emergency alert.                                                                                                                                | Sos            |
| Timer               | Sending GPRS data by interval.                                                                                                                      | Timer          |
| CallForSms          | Sending SMS by making a call<br>(only for SMS).                                                                                                     | CallForSms     |
| LowBattery          | Low battery alert.                                                                                                                                  | LowBattery     |
| GeoX(GeoName)<br>In | Going into the geo-fence, X is<br>the sequence of geo-fence, range:<br>1~5, GeoName is the name that user<br>set for geo-fence, range: 0~9 bytes.   | Geo1(home) In  |
| GeoX(GeoName)Out    | Going out of the geo-fence, X is<br>the sequence of geo-fence, range:<br>1~5, GeoName is the name that user<br>set for geo-fence, range: 0~9 bytes. | Geo1(home) Out |
| Error               | Alert type error.                                                                                                                                   | Error          |

## 20.SMS uploading data analysis

| Name                        | Description                                                    |                                                              | Example                                                                                                                                                                     |
|-----------------------------|----------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <alert event type>          | Alert event type, see <a href="#">alert event type table</a> . |                                                              | SOS                                                                                                                                                                         |
| <device IMEI>               | IMEI of device. fixed 15 bytes.                                |                                                              | 860719020190918                                                                                                                                                             |
| <device name>               | Device name can be user set, range of: 0~15 bytes              |                                                              | DeviceName                                                                                                                                                                  |
| <SMS date&time>             | SMS sending date and time, format: YYYY-MM-DD<br>HH:MM:SS      |                                                              | 2014-08-12<br>01:20:30                                                                                                                                                      |
| <GPS fix date&time>         | GPS fix date and time, format: G:YYYY-MM-DD<br>HH:MM:SS        |                                                              | G:2014-08-<br>1201:10:00                                                                                                                                                    |
| <battery level>             | battery level, range of: 0%~100%                               |                                                              | 100%                                                                                                                                                                        |
| <speed>                     | Speed, unit: Km/h                                              |                                                              | 6.241Km/h                                                                                                                                                                   |
| <altitude>                  | Altitude, unit: m                                              |                                                              | 49.5m                                                                                                                                                                       |
| <mileage>                   | Mileage, unit: Km.                                             |                                                              | 12345.6Km                                                                                                                                                                   |
| <GSM signal strength>       | GSM signal strength, range of: 00~99.                          |                                                              | 19                                                                                                                                                                          |
| <GPS positioning>           | A means GPS positioning success, V means it is failure.        |                                                              | A                                                                                                                                                                           |
| <Link location information> | Link head                                                      | China:<br>http://www.megastek.net:81/gps/new/gps.jsp?latlng= | China:<br>http://www.megastek.net:81/gps/new/gps.jsp?latlng=22.63678367N,114.03283817E<br><br>Google:<br>http://maps.google.com/maps?f=q&hl=en&q=22.63678367N,114.03283817E |
|                             |                                                                | Google:<br>http://maps.google.com/maps?f=q&hl=en&q=          |                                                                                                                                                                             |
|                             | Latitude value                                                 | Format: DD.DDDDDDDD (degrees).                               |                                                                                                                                                                             |
|                             | N/S                                                            | N means north latitude, S means south latitude.              |                                                                                                                                                                             |
|                             | Longitude value                                                | Format: DD.DDDDDDDD (degrees).                               |                                                                                                                                                                             |
|                             | W/E                                                            | W means west longitude, E means east longitude.              |                                                                                                                                                                             |

## 21.SMS uploading data format and example

<Alert event type>,<device IMEI>,<device name>,<SMS date&time>,<GPS fix

date&time>,<battery level>,<speed>,<altitude>,<mileage>,<GSM signal strength>,<GPS positioning>,<Link location information>

**Example:**

SOS,860719020190918,DeviceName,2014-08-12 01:20:30,G:2014-08-12 01:10:00,100%,6.123Km/h,49.5m,12345.6Km,19,A,<http://www.megastek.net:81/gps/new/gps.jsp?latlng=22.63678367N,114.03283817E>

## 22.GPS tracking and monitoring platform



Site: <http://www.gpstotrack.com:81/gps/>

Experience Account: Guest

Password: 666666

## 23.Attention

- Please switch to the English input method when you editing command
- Tracker will only accept commands from a user with the correct password.  
Command will be ignored if with wrong password or wrong format
- The tracker will reply a location message by SMS if any authorized number makes a phone call to it

## 24. Fault and the corresponding actions may occur

### 1. locator can not boot?

- Be sure to press the power button for more than 5s or timely locator charged.

### 2. The locator does not reply to messages?

- Make sure that the correct password or SMS format;
- Check whether the positioner is running low and charge it in time;
- Make sure the locator location with good GSM signal;
- GSM network occurs when busy or equipment failure response time is slow, please be patient;
- Check the SIM card balance and recharge time;
- Check the SIM card installation, re-insert or replace the SIM card, if necessary.

### 3. The positioner can not connect to the server via GPRS

- SIM card does not support GPRS function, GPRS function and SIM card;
- GPRS function is turned off, please turn on GPRS function;
- Make sure that the IP address and port number settings are correct and restart;
- Store Locator moved to GSM signal reception place.