USER GUIDE

GPS TRACKING SYSTEM

Product Overview

Thank you for purchasing ET017S. This device is a waterproof IPX5, innovative miniature size personal remote positioning device with built-in U-blox GPS and GSM/GPRS technology. It's for monitoring and protecting people and property. It can be used in all walks of life from traveling lone workers and mobile nursing staff to children and the elderly, Dementia etc.

Getting to know your device

Speaker

ON/OFF

LED Indicator

SOS Button

Micro USB

MIC

Charging Contacts

SIM card Installation

The SIM card is not included in the package. A **Micro SIM card** is available from the user's local operator.

- Unscrew the back cover and remove the cover.
- Insert SIM card and make sure it's activated with credits
- Put the cover back and tighten the screws.

Note: Before installing the SIM card, check if the SIM card has PIN code or not, if yes, please use a cell-phone to unlock the card's PIN code.

Device Charging

For the first time use, please fully charge the battery for around 2~3 hours

Using the USB charger or using docking station to charge

- Place the device on the docking station.
- Connect the Micro USB side of the cable to the docking station port and connect the other end of the cable to the designated AC power source (USB/AC adaptor).
- When charging, the RED LED (on docking station) will be blinking (solid). After fully charging, the RED LED will solid.

Switching the device on and off

- **To turn on the device:**   press the side power button for 1 second, all the LEDs will flash rapidly. Device can be also turned on automatically by charging via USB or put it into the docking station.

  ※ To get an initial location, use outdoors or near a window so the device may fix onto the satellites.

- **To turn off the device:**   press and hold the side button and SOS button together for 1 second until the LEDs off.

What do the lights mean?

Power Status LED

LED	Blue ON(solid)	Blue Blinking Quickly	Blue Off or blinking slowly
State	The device is charging	Battery power is lower than 15%	Device has been fully charged or not charging

GSM LED--GREEN

LED	Light shows a single flash rapidly every 3 seconds	Light shows a double flash rapidly every 3 seconds	Light shows a slow flash every 3 seconds	Light Solid (not flashing)
State	The device is connected to the GSM network	The device is registered to the GPRS network	The device is connecting to the GSM network	No SIM Card is detected

GPS LED--BLUE

LED	Light shows a single flash rapidly every 3 seconds	Light shows a slow flash every 3 seconds (every 1 second on and 3 seconds off)	Blue Off(when device not charging)
State	The device has a GPS positioning fix	The device has no GPS fix	The GPS chip is sleeping

Activating an SOS Alarm

Press and hold the SOS button for 3 seconds until the device vibrates, and then green light will start to flash rapidly to confirm the request. After that, an SOS Alarm "Help me!" will be sent to all authorized phone numbers and to the platform. It will also the dial the 3 authorized numbers in sequence. If the tracker fails to connect to the first number, it will call the second one. In case the second number fails to be connected as well, the system will connect to the third number. if device fails to call all 3 numbers, it will start to dial the numbers again after 5 minutes. This will continue until one of the phones answer the call.

To end the call, press the SOS button.

Making a Phone Call

To make a call, press and hold the side button for 3 seconds and you will hear a beep. The green light will flash rapidly to confirm the request, and then it will dial the second number(by default). To end the call, press the SOS button.

Configuration and Operation by SMS

1. To Set the Authorized Number

※ It is not mandatory for all three of the authorized numbers to be set, however a minimum of one must always be set.

① **Command**: **A1 or A1,phone number**

   Note: With no spaces in the text, case-insensitive.
   Example: A1   or   a1,123456789

※ Using your mobile phone, send A1 to the phone number of the device, it will reply: **·Set mobile number 1 OK!**

※ To delete this number, you can send **A0** to the tracker.

② **Command**: **B1 or B1,phone number**
   Example: B1   or   b1,123456789

   The device will reply: **·Set mobile number 2 OK!**

※ To delete this number, you can send **B0**

③ **Command**: **C1 or C1,phone number**
   Example: C1   or   c1,123456789

The device will reply: **·Set mobile number 3 OK!**

※ To delete this number, you can send **C0**

2. Incoming call control

Command: Z0
After send above command, device only answer the call automatically from authorized numbers. (authorized numbers mean number A, number B, number C)

Command: Z1
After send above command, device can answer the call automatically from all numbers.

3. Modify the Time zone

Command: **TZ+ +00/-00**
Note: the time must amounts be in 2 digits and at maximum 23 hours in value. "+" in the "time zone" portion of the text indicates east. The symbol "-" in the "time zone" indicates west.
Example: tz+02, the system will add 2 hours based on the UTC time.
　　　　tz-02, the system will minus 2 hours based on the UTC time.
※ UTC time has been set as default time.

4. User defined name in SMS content

Command: name1, user name
Example: name1,Emma, the tracker will reply "**Add name ok!**"

To delete name, send **name0**

5. Location request

5.1 Reply with coordinates and web link

Command: loc
The device will reply "GPS Info! Time: xxxxx; Lat: xxxx; Lon: xxxx; Spd: xxxxx, Altitude:xxxx Bt: xxx
maps.google.com/maps?q=loc:22.647379,114.030998

※Put coordinates to Google earth or Google maps. Click on search button, then you will find the position fixed.

※Click on the link then the location can be shown directly on Google Map on your mobile phone.

5.2 Reply with Address

Command: add
Notes: This function needs GPRS function support.
The device will reply "Add: Donghuan 1st road, Bao'an, UK;

6. Low battery alarm
When the unit's battery is less than 20%, it will send an SMS alarm "BAT: LOW!" to all authorized numbers. If battery is less than 20%, the blue light will flash

rapidly to warn the user to charge the device as soon as possible.

Command: Low1

To turn off this function, please send **Low0** the device.

7. Command password protection

Command: 123456lock
After send above command, then it will require a password in front of all commands (except reboot and RESET!). For example 123456LOC, 123456A1 etc. (default password is 123456)

Remove password protection, just simply send **123456unlock**

8. Change password

Command: **Old password + H + new password**
Example: 123456H666666
The password now is changed to 666666
※ The pre-set password won't be erased by changing a new sim card.
※ Be sure keep the new password in mind, otherwise you have to ask your distributor to restore the original setting in case of losing the new password.
※ Make sure the new password is in 6 digits, or else the tracker can not recognize the password.

9. Beep sound control

Command: beep1
After send this command, when user press SOS button, device will not make a sound beep, only vibrate.

Command: beep0

After send this command, when user press SOS button, device will make beep sound and also vibrate.

10. Geo-Fence Alarm

Command: G+X, Y, Z, xxxM/KM
Example: G1,1,1,100M

Notes: No spaces in between.
X=No. of Geo fence (1~3), user can set 3 Geo fences
Y=0 means to turn off the function
Y=1 means to turn on the function
Z=1 means to set alarm when the tracker enters the preset area
Z=0 means to set alarm when the tracker breaches the district
xxx is the preset distance to the tracker's original place, must be 3 digitals.   M means meters, KM means kilometers
The device will send the message to the authorized numbers as "Geo fence alarm!+GPS info" when it **enter** the area you set.
(User must set this function when the blue light is flashing rapidly.)
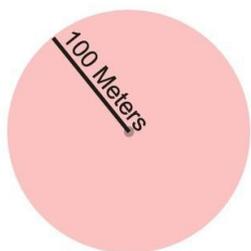
To turn off this function, please send **G1,0 or G2,0 or G3,0**

11. Over-Speed alert

Command: speed1,+ Speed
Notes: The speed must be in km/h in 2 or 3 digitals. (01~255km/h)

Example: speed1,100

Suppose the over-speed alert that we want to set is 100km/h, when the device exceeds 100km/h, it will send the message "Over-speed! +GPS Info" to all registered phone numbers.

To turn off this function, please send **speed0** to the device.

12. Movement Alert

Command: M1, xxxM/KM
Notes: xxx must be 3 digitals. M means meters, KM means kilometers
The tracker must be stationary when setting this function

Example: m1,100m
When the tracker moves beyond 100 meters, it will send an SMS alarm to all registered phone numbers.
To turn off this function, please send **M0** to the device.

(The settings must be at least 50 meters)

13. Listen-in (Voice wiretapping)

Command: L1
A1, B1, C1 can make a silence call to the tracker, the track answers the call automatically and allows the caller to hear what is happening around the tracker. There is no voice indication that the call is in progress.

To turn off this function, please send **L0** to the device.

14. No motion alarm

Command: V1, xx S/M/H
Note: No spaces in between, S means seconds, M means minutes, H means hours, xx means the time you set and must be two digitals.
Example: V1,05M

If device detect no motion more than 5 minutes and it will send an SMS warning alarm to all registered phone numbers.
To turn off this function, please send **V0**

15. Turn off 2 LEDs

Command: LED1
The device will reply "LED off" and later LEDs will stop flashing, but the device is on working.
To turn on LEDs, please send **LED0**

16. To set number for side button

Command: X1 / X2 / X3
Example: X1

Side button can be configured to call which number, if set X1 means it will call number A. default setting is X2, which means to call number B.

17. AGPS

Command: AGPS1, latitude, longitude
Example: AGPS1,22.647606,114.022583
Assisted GPS (abbreviated generally as A-GPS and less commonly as aGPS) is a system that is often able to significantly improve the startup performance or time-to-first-fix (TTFF) and improve the GPS location to be more precise, of a GPS satellite-based positioning system.
To turn off this function, please send **AGPS0**

Very important: to be able to use AGPS function, user also need to set APN, but GPRS can be off.

18. Fall down alarm

For the elderly who fall and are unable to get back up on their own and this may cause a devastating consequence.

How it works:

The device must sense height, impact and angle etc. The height must above 1 meter, and angle change over 45 degrees. The authorized numbers will be alerted without the user pushing SOS button when the fall sensor is activated.

Due to the daily life activities (like some sports, sit back on a coach, etc.), sometimes device may detect a fall incorrectly, this situation may cause false alarm. However, users can manually cancel the fall alert by pressing SOS button during its beeping.

Very Important: Because it still has few chances for the non-detected falling down, we still strongly recommend user to press SOS button when it has emergency situation.

Command: FL1,1 or FL1,2 or FL1,3 or FL1,4 or FL1,5 or FL1,6 or FL1,7 or FL1,8 or FL1,9

1 equals most sensitive, 9 equals least sensitive.

Example: FL1,1

After send FL1, device will send SMS alarm to all registered phone numbers once detect fall.

SMS alarm and call for fall down detection

Command: FL2

After send FL2, device will send SMS alarm to all registered phone numbers once detect fall. It will also dial the 3 authorized numbers in sequence.

To turn off this function, please send **FL0**

19. Outgoing Call control

Command: CALL1

With this command, all registered numbers can receive the call from device if has SOS alarm or fall alarm.

Command: CALL0

With this command, all registered numbers can't receive the call from device if has SOS alarm or fall alarm.

20. Disable SMS alarm

Command: SMS0

It only send alarms via GPRS to the platform and without text message to the authorized numbers.

Enable SMS and GPRS alarms, just simply send **SMS1** (default setting)

21. Check settings

Command: status

The device will reply **E.g.** A+8613812345678 B13912345678 C13712345678; Speed: 0,100km/h; GEO:0,0,0; VB:1,10S; MV:1,100; LED:0; TZ:2.0; LI: 1; PS:1; DS:0,3M; FL:1; Bat: 95%; SMS:0;LOCK:0

To recognize the meaning of "0"& "1"

The number "**0**" implies that the function is turned off; whilst "**1**" indicates that the function is turned on.

22. Reboot device

Command: reboot

The device will restart itself without changing any settings.

23. Initialization:

Command: RESET!
Note: This is to make all settings back to the factory default.

Device 5 working modes

1. Live Tracking Mode (1)

Command: PS0
In this mode, Both GSM and GPS chip are always working, Battery can last 18~24 hours.

2. Smart Power Saving Mode (2) (default working mode)

Command: PS1
In this mode, GPS chip is off when there is no movement or no phone usage/alarm/SMS. Battery life is not wasted when the device isn't moving. GSM/GPRS chip is always working to receives calls, SMS and transmits location. The GPS chip is activated by motion, incoming calls and SMS.

Under normal use, battery can last 3 ~ 7 days.

3. Deep Sleeping Mode (3)

Command: DS1 or DS1,xxM/H
Note: xx=00~99, M=Minute, H=Hour
Both GSM and GPS chip will be off to save power, the device is unable to receive calls or SMS. It can be only activated by movement. Once movement is

detected, it will run for the set time and sleep again if no movement is detected.

Battery can last 40 days if no movement at all.

To turn off this function, send **DS0**

4.   Working mode (4)

Command: Mode4
In this working mode, device can always receive SMS, calls. But GPS chip only wakes up and updates location to the tracking platform if user press button or receive phone call/text message. Without press button or phone call/text message, GPS chip will always sleep.

5.   Time interval working mode (5)

Command: Mode5,xxS/M/H
Note: xx=00~99, S=second, M=Minute, H=Hour
Example: Mode5,10M
Device will update location to the tracking platform every 10 minutes.
In this working mode, device can always receive SMS, calls. And it updates location to the tracking platform according to the time you set.

Real time tracking on www.smart-tracking.com

Our web based tracking system incorporates the TCP/IP protocol and allows users to monitor it in real time over the internet or sends an e-mail to the predefined e-mail address.

How to connect device to the platform for real time tracking via GPRS

Open the link www.smart-tracking.com in your computer and login with your user ID and password.
For more information pls contact the seller.

GPRS Settings by SMS

1. APN setting

In order to use the GPRS function, the user needs to setup the APN by sending SMS command.
--What is APN? Access point name (APN) is the name used to identify a general packet radio service (GPRS) bearer service in the GSM mobile network. The APN defines the type of service that is provided in the packet data connection.
※ Make sure that the SIM card in the tracker supports the GPRS function.
※ The APN can be acquired from your local GSM operators.

Command: S1, APN, user name, password
Notes: Some access point name without user name and password, so please leave it blank.

Example: S1,internet

"internet" is the APN from the SIM card provider; therefore, the user must set their particular APN for their own country which the unit resides.
After sending the command, the device will reply "Set APN OK! GPRS connecting"

After send S1,APN, wait for a while then you will see device is online.

2. Set GPRS Time interval by SMS

Command: TIxxS/M/H
The meaning of "xx", The setting must be in 2 digitals and maximum 99 in value, which means 01~99.
xxS is the time interval in second with range (30~99)
xxM is the time interval in minute with range (01~99)
xxH is the time interval in hour with range (01~99)

Example: TI01M
The device will reply "Set updating time interval OK!" and then device will update the time by every 1 minute on the website.

3. Disable GPRS

Command: S0
The device will reply "GPRS OFF".

4. Reconnect GPRS
Reconnect the website via GPRS for real time tracking, please send S2

5. Setting a Heartbeat Packet Reporting Interval
The heartbeat packet function is used to keep the Transmission Control Protocol (TCP) connection open when the interval of scheduled GPRS reporting is long.

Command: HBxxM/H
Note: xx=00~99, M=Minute, H=Hour, The heartbeat packet function is only available for the PS1 and PS0 working mode.

Example: HB01H

After send the above command, the tracker will send the GPRS heartbeat packet to the platform every 1 hour in PS1 and PS0 mode. The heartbeat function is used to keep the platform connection smooth, but GPS positioning data is invalid.

Command: HB00M

When the interval is 00, the heartbeat packet function is disabled.

6. Setting reporting time interval when no movement

When device has no movement for 5 minutes, GPS chip go to sleep. the time to send data to platform can be configured by user. (Once device detect movement, the time to send data to the platform will back to normal reporting time interval(TIxxS/M/H))

Command: NMxxM/H

Note: xx=00~99, M=Minute, H=Hour

Example: NM90M

After send the above command, device will transmit data every 90 minutes to the platform when device no motion.

7.   Check APN & IP, Port

Command: G1

The device will reply "APN: internet; Name: xxx; Password: xxxx; Port: 5050; IP:www.smart-tracking.com"

8.   Change IP and Port

Command: IP1,IP/domain name,port

Example: IP1,103.21.211.11,5050   or   IP1,www.smart-tracking.com,5050

9. Built-in Memory

The device built in 8Mb flash memory inside. It will store the GPS information when do not have GSM network coverage (i.e., very low population density areas, some mountainous terrain, underground areas etc). The device will transmit GPS locations to the WEB server automatically once the GSM network is recovered.

10. Delete stored tracking history data

Command: flush

The device will stop sending the stored tracking history data to tracking platform.

Cautions:

Please comply with the instructions to extend the unit life:
1. Don't use & store the unit in dusty places.
2. Don't put the unit in overheated or over cooled places.
3. Clear the unit with a piece of dry cloth. Don't clean in chemicals, detergent.
4. Don't disassemble or refit the unit.
5. Using other batteries will cause unwanted situation

Hardware Specification:

Content	Specs.
Mainframe Dimension	61mm*43mm*16mm
Net Weight	35g
GSM Frequencies	900/1800/850/1900Mhz
GPS chip	U-blox G7020 (Support AGPS)
GPS sensitivity	Cold start: -148dBm Hot start: -162dBm
GPS accuracy	<2.5m
Time to First Fix	Cold start 32s, Warm start 11s, Hot start 1s
Charging Voltage	5V DC

GPS tracking system

Battery	Chargeable 3.7V 800mAh
Standby Current	≤2mAh
Storage Temperature	-40°C to +85°C
Operation Temperature	-20°C to +80°C
Humidity	5%-95% non-condensing