TS-GT07E 4G LTE/ 2G GSM/GPRS/GPS Product Manual

Product Name: Portable GPS Tracker
Product Model: TS-GT07E
File Version: V1.0
Version Date: 2025.03.28

Version	Updates	Revised by	Revision time
V1.0	Functional description, specifications	QI Zichao	2025.01.19
V1.1	Commands and others	QI Zichao	2025.03.28

www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621

Table of contents

www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621

1. Basic introduction of the product

1.1 Product Introduction

TS-GT07E is a solar-powered GPS tracker designed for the management of vehicles and vessels in need of special protection and long-term endurance. Featuring the **solar-powered**, **IP67 level waterproof**, and **ultra-low power consumption** design, this device is ideal for a variety of deployments that require long standby time and continued optimal performance.

It comes with 4G full-network, **all bands and frequency of 4G and 2G globally** which ensures a solid connection in almost all cases all over the globe. It integrates 4G full-network wireless communication technology and GPS/BDS/LBS satellite navigation positioning technology.

The terminal adopts industrial-grade high-integration fully built-in antenna design, built-in 3-axis sensor, and intelligent power-saving wake-up. It has functions such as **SOS emergency button**, **water fall detection**, and rollover detection. Three working modes can be set to meet various application scenarios while customers, and users can send commands to switch working modes.

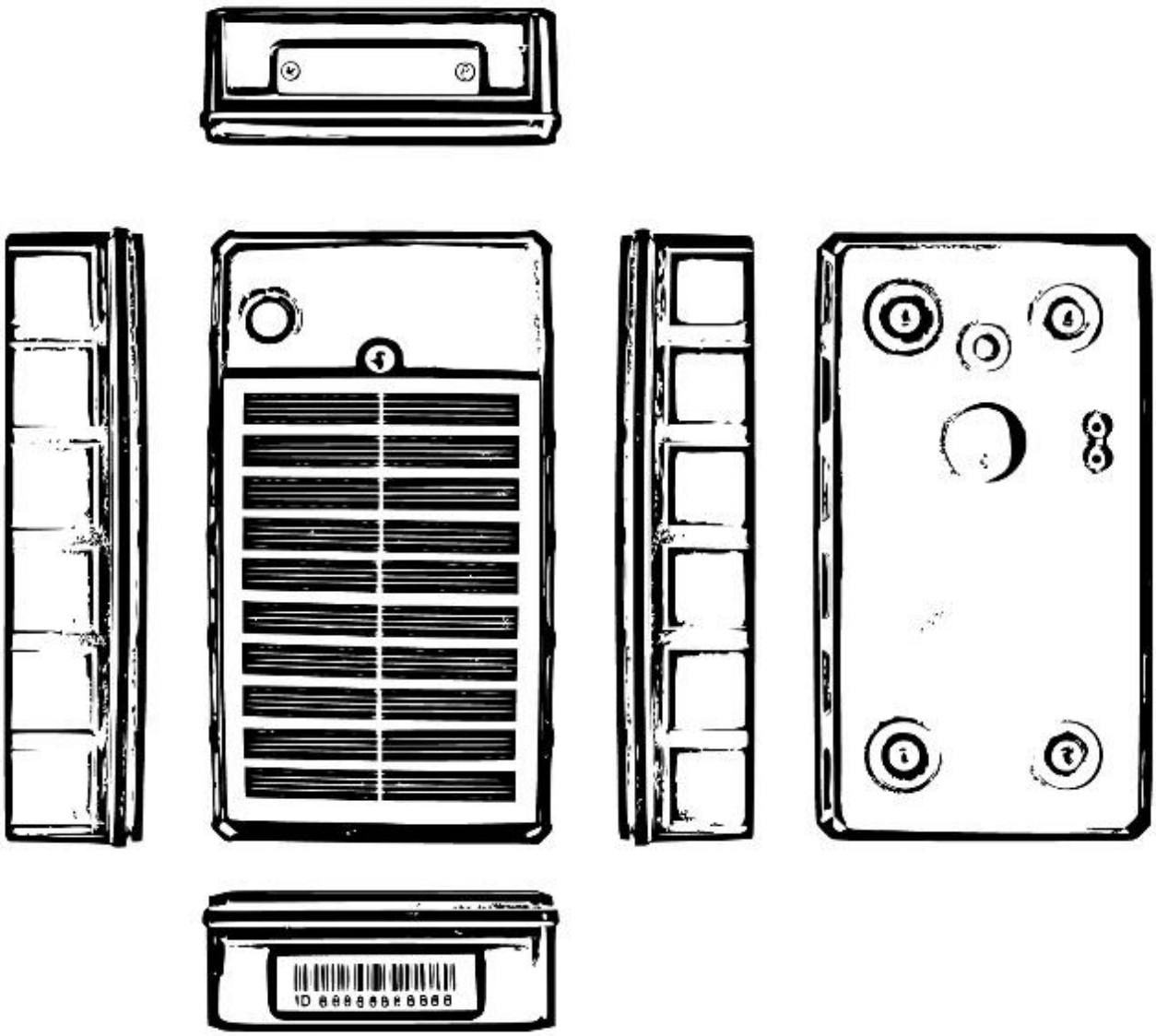
With the global positioning service platform, the location of the device can be queried anytime and anywhere. It’s a valuable and indispensable part of your fleet management business.

1.2 Application areas

Insurance industry, corporate fleet industry, automobile manufacturers/4S stores, electric new energy field, passenger vehicles, taxis, rental vehicles, fishing boats, passenger ships, etc.

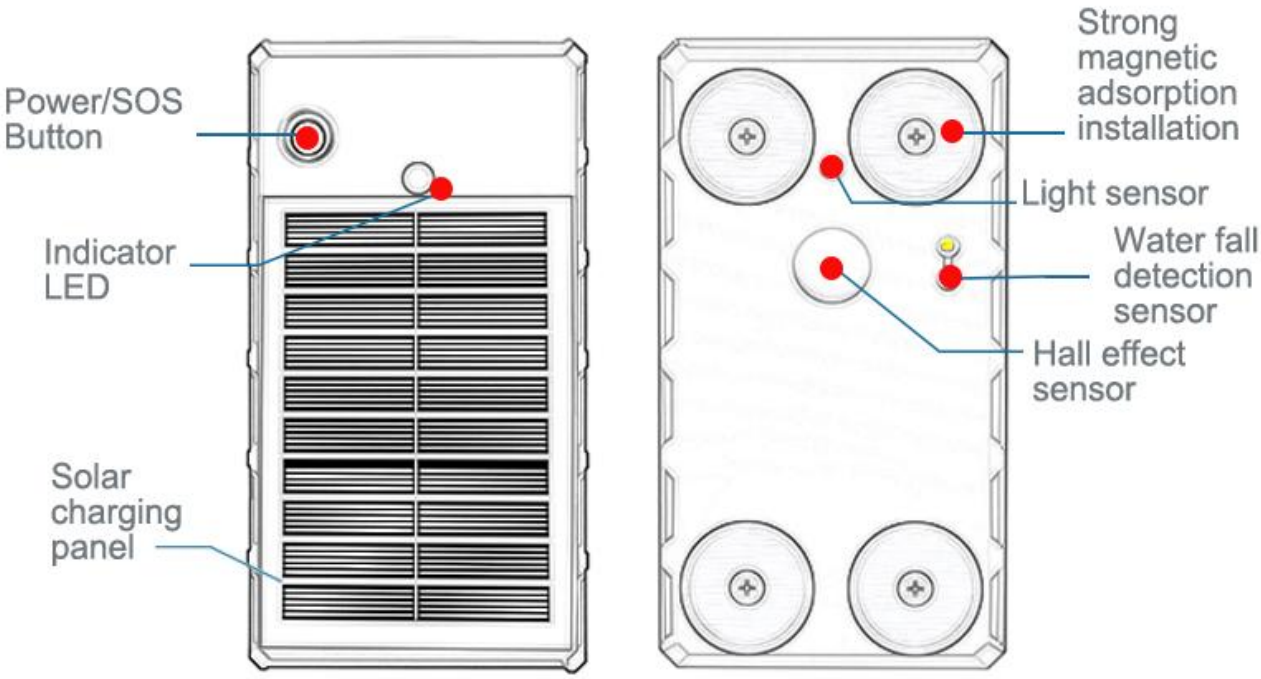
www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621

1.3 Product Images & Installation Ways



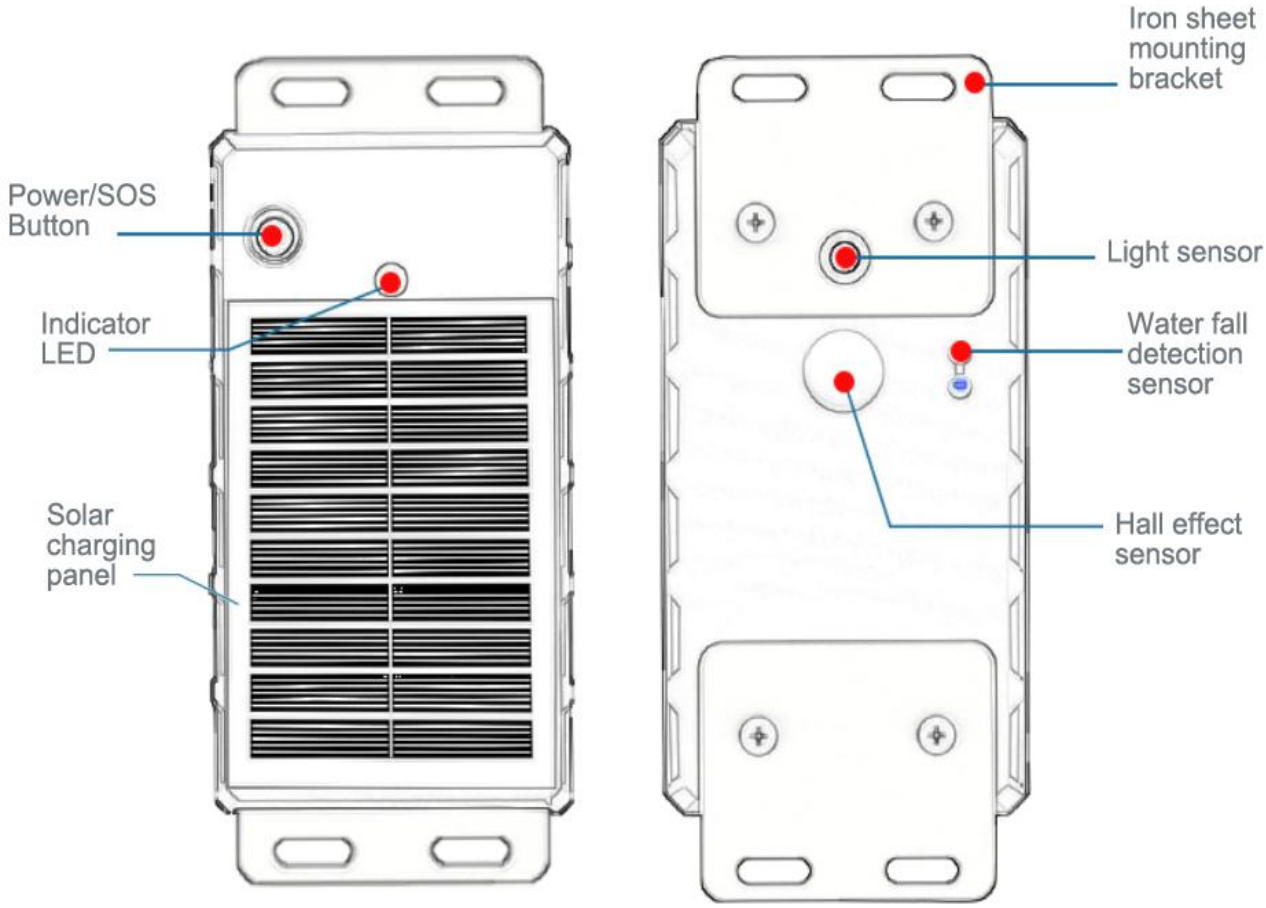
www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621

It is installed by magnetic attraction. It can be safely attached to any surface that can be acted upon by magnets. Four large permanent magnets can provide safe and stable adsorption strength.



www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621

It is also possible to use screws for fixed installation, and complete installation accessories are provided with the goods.



Power/SOS Button:

1. Power off: Press 3 times in a row

2. SOS: Press and hold for 5 seconds

3. Power on: Press and hold for 2 seconds

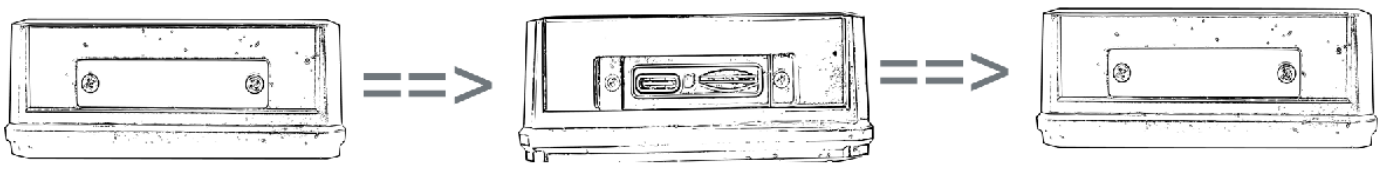
www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621

1.4 Product Usage Introduction

1.4.1 SIM card installation method

The device uses a Micro SIM card. The card slot is a self-opening card slot , the chip is placed towards the magnet , and the card is inserted into the card slot with the notch facing inward .

To ensure reliable and effective IP67 waterproof performance, be sure to tighten the screws.



1.4.2 Indicator Light Description

Red light - charging indicator

Light status	Meaning
Always on	Charging
Not bright	Charging/Power off

Yellow light-GSM indicator

Light status	Meaning
Flash once within 2 seconds	GSM Initialization
Always on	GSM communication is normal
Not bright	GSM sleep/shutdown

Blue light - GPS indicator

Light status	Meaning
Flash once within 2 seconds	Searching for satellite signals
Always on	GPS/BDS has been positioned
Not bright	GPS/BDS Sleep

White light-SOS indicator

www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621

Light status	Meaning
Flash	Triggering SOS
Not bright	SOS not activated

2. Features

- Support abundant alarms such as vibration alarm, overspeed alarm, demolition alarm, etc.
- Supports electronic fence function. Users can define virtual electronic fences through the platform/APP. When the device enters or leaves the fence, the platform can identify it and issue an alarm.
- Solar charging, ultra-long battery life, power saving mode can continue to work without charging;
- When an alarm occurs, an alarm SMS/call can be sent to the monitoring number, and the alarm will be uploaded to the platform at the same time;
- The terminal adopts industrial-grade high-stability GPRS module from well-known manufacturers, built-in GSM high-sensitivity antenna, supports TCP/IP data transmission, and supports domain name/IP address connection to the server;
- Built-in large-capacity storage chip, supports offline data storage and blind area data retransmission**;** when the vehicle is in a place with weak wireless signal or severe interference, the vehicle will temporarily store the vehicle operation data in FLASH, and when the wireless signal returns to normal, the data can be retransmitted to ensure that no data is missed;
- Built-in 3-axis acceleration sensor, integrated with precise acceleration algorithm, to obtain vehicle status judgment such as current posture in real time;
- High-sensitivity GPS/BDS dual-star positioning module and anti-interference ceramic antenna make the satellite search signal more stable and support AGPS fast positioning tracking and synchronous timing;
- Three working modes can adapt to various scenarios.

www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621

3. Product Parameters

	Function Name	Yes	No	Project Function Description	
Electrical Characteristics	Power supply	●		Battery powered	
	Charge	●		Solar charging & charging cable 5V/1A	
	Operating voltage range	●		DC 3.4V - 4.5V	
	Working current	●		4V/average 62 mA	
	Sleep current stand by	●		4V/less than 8.2 mA	
	Sleep and disconnect from platform			193.98uA	
	Built-in battery capacity	●		10000 mAh (3.7V polymer battery)	
Environmental characteristics	Operating temperature range	●		-20℃ - 75℃	
	Storage temperature range	●		-30℃ - 80℃	
	Operating humidity range	●		10%-85% RH non-condensing	
Communication characteristics	SIM card	●		Micro SIM card	
	Communication frequency band	●		LTE-FDD	B1/ 2/ 3/ 4/ 5/ 7/ 8/ 12/ 13/ 17/ 18/ 19/ 20/ 25/ 26/ 28/ 66
				LTE-TDD	B34/ 38/ 39/ 40/ 41
				GSM/2G	B2/ 3/ 5/ 8
	Communication Antenna	●		Internal antenna	
	Antenna Specifications	●		FPC Antenna	
GPS/BD positioning features	Positioning module brand /chip model	●		Zhongkewei AT6558R	
	Positioning method	●		Beidou+GPS	
	Cold start time	●		Average 32 seconds	
	Hot start time	●		Average 1 second	
	Tracking sensitivity	●		-162 dBm	
	Positioning antenna	●		Internal antenna	
	Antenna Specifications	●		25mm * 25mm * 4mm	
	GPS frequency band	●		L1: 1575.42±1.023MHz	
	Beidou frequency band	●		B1: 1561.098±2.046MHz	

www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621

	Number of satellite channels	•		32
	Positioning accuracy	•		<10m (1σ)
	Timing accuracy	•		<30ns (1σ)
	Speed measurement accuracy	•		<0.1m/s (1σ)
	Maximum acceleration	•		4g
	Maximum speed	•		515m/s
	Maximum height	•		18000m
External Interface	Tamper detection	•		Support magnetic Hall anti-tamper detection
	Water fall detection	•		Support water drop detection point
Form Factor	Host size (length, width and height)	•		138mm * 77mm * 30mm
	Installation	•		Magnetic suction/screw
	Shell material	•		ABS plastic
	IP protection rating	•		IP67
	Host weight	•		447 G

4. Configuration

All our GPS trackers can be configured by SMS, PC, online platform as well as on production line. Following are the introduction of SMS and PC way while please resort to your salesman/ saleswoman if you need them to be configured by platform or on production line.

4.1 PC configuration.

By using our PC software, you can easily configure the device. If you need this configuration method, please contact our sales staff, and our sales staff will provide the corresponding PC software before your order reaches you.

4.2 SMS configuration.

Grammar: English symbols must be used. When the command is not normal: no reply or the format of the reply command is incorrect
Channel: All commands support two communication methods: SMS and platform transparent transmission

www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621

Alarm: After triggering the alarm, when the alarm is configured with SMS and CALL functions

The number of SMS sending is determined by the number of set center numbers, and alarm messages are sent to the set center numbers in turn.
The number of CALL alarm calls is determined by the number of set center numbers. When any number is answered by the user, the call will not continue Otherwise, call all set center numbers in sequence
The number processed by SOS alarm SMS and CALL is the SOS number.

Phone number: The device uses the international number format to process SMS and CALL functions. When setting the number, you need to add the country code before the number.
For example, the China domestic code is "86", and the mobile phone number is:18666212621, When set as center number 1, send: CENTER,A,8613912345678#

I. Normal commands

I-1 Change password.
SMS command content:PASSWORD123456,666888
Reply:OK
Command interpretation: Change the owner password command, the password is 6 pure numbers (the default owner password is: 123456, for example, change it to 666888)
Remark: If the password is incorrect, the response is: PASSWORD ERROR
I-2 Configure the primary IP/Domain.
SMS command content: IP 47.254.174.70 8800
SMS command content: IP www.4g-gps.com 8800
Reply: SET IP OK
Command interpretation: SMS command: IP+space+IP address+space+port number to set the server IP and port
I-3 Set the APN.
SMS command content: APN,123456,cmnet
Reply: SET APN OK
Command interpretation: Set the APN command format
I-4 Set APN with username.
SMS command content: APNUSER,123456,USER

www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621

Reply: SET APNUSER OK
Command interpretation: Set the user name command format corresponding to the APN
I-5 Set APN with password.
SMS command content: APNPASSWD,123456,PASSWD
Reply: SET APNPASS OK
Command interpretation: Set the password instruction format corresponding to APN
I-6 Set the update interval when moving.
SMS command content:FREQ,123456,30
Reply: SET OK
Command interpretation: 30 means 30 seconds and cannot be zero
I-7 Set the update interval in sleep mode.
SMS command content: STATIC,123456,30
Reply: SET OK
Command interpretation: 30 means 30 seconds, 0 means No position data is transmitted in sleep mode.
I-8 Set the heartbeat packet update interval.
SMS command content: INTERVAL,123456,30
Reply: SET OK
Command interpretation: 30 means 30 seconds. The default value is 5 minutes. It cannot be zero.
I-9 Set up vibration wakeup from sleep mode.
SMS command content: VIBTIME,123456,8
Reply: SET OK
Command interpretation: When the number of vibrations within the vibration detection time exceeds the set wake-up threshold, the device wakes up.
I-10 Set the time interval to Sleep mode.
SMS command content: sleep,123456,10
Reply: OK
Command interpretation: 10 means 10 minutes (enter sleep mode after 10 minutes of inactivity) 0 means no sleep mode, range: 0-1440 minutes.
I-11 Setting angle compensation data/Turning degree data.
SMS command content: DIRREP,123456,0
Reply: SET OK
Command interpretation: 0 means no angle compensation data by default.
I-12 Configuring the Anti-Drift Distance.
SMS command content: HDOPGL,123456,100

www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621

Reply: SET OK
Command interpretation: unit by meters, off by default.
I-13 Set the time zone.
SMS command content: zone,123456,e08
Reply: OK
Command interpretation: E08 means the Eastern Time Zone which only the SMS time zone, and the data time zone remains unchanged.
I-14 Query Parameters.
SMS command content: CXZT
Reply: GT07E_V_1_1_20250423 ID:19171342401 IP:47.254.174.70 8800 BAT:97% APN:CMIOT-- MODE:S 60-1800 HEART:300 SLP:3 VIB:7 DIR:0 GPS:1-0,GSM:25-7 ICCID:89860818102381100951 GPSPY:0 ZONE:+8
Command interpretation: Version, ID, IP, port, battery, apn, mode, heartbeat interval, sleep time, vibration threshold, inflection point, GPS signal, GSM signal, ICCID, anti-drift, time zone.
I-15 Factory Reset.
SMS command content: FORMAT
Reply: FORMAT OK
Command interpretation: ip id and APN corresponding parameters remain unchanged.
I-16 Restart
SMS command content: CQ
Reply: CQ OK.
Command interpretation: The GPS will be restarted.
I-17 Start remote upgrade via OTA.
SMS command content: OTA,www.thingsys.net,8800,TRG80-1110
Reply: OTA OK
Command interpretation: TCP remote upgrade.
I-18 Stop remote upgrade.
SMS command content: OTASTOP
Reply: OTA STOP
Command interpretation: Stop remote upgrade

www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621

II. Extended commands

II-1 Normal mode.
SMS command content: NMODN,123456,30,300#
Reply: SET OK
Command interpretation:
30 indicates that the position data is reported once every 30 seconds during the movement interval. 300 indicates that the position data is reported once every 300 seconds during the sleep mode, and no position data is transmitted when the sleep interval is 0.
Working logic: Enter sleep mode according to the sleep command interval detection sleep condition (sleep, 123456, 0)
Working status: Network is always on; GPS: Always on if the interval is less than or equal to 3 minutes, and open if it is greater than 3 minutes according to demand. Positioning is turned on once before entering sleep mode; Positioning data is reported at intervals, and heartbeat is maintained.
Sleep mode: Network is always on; GPS is off; Positioning data is reported at intervals, heartbeat keeps blue light off, button can be turned on, vibration wakes up.

II-2 Power saving working mode.
SMS command content: SMODN,123456,60,1800#
Reply: SET OK
Command interpretation:
60 indicates that the position data is reported once every 60 seconds. 1800 indicates that the position data is reported once every 1800 seconds during sleep mode. When the sleep interval is 0, the position data is not transmitted. Vibration and SOS wake-up are available.
Working logic: Enter sleep mode according to the sleep command interval detection sleep condition (sleep, 123456, 0)
Working status: Network is always on; GPS: Always on if the interval is less than or equal to 3 minutes, and open if it is greater than 3 minutes according to demand, and open once before entering sleep;; Report positioning data at intervals, and maintain heartbeat.
Sleep mode:GPS off; Network: upload at intervals, turn off after uploading data; disconnect from the platform, SMS not received, phone calls not processed, light off, button to turn on, light & vibration wake up

www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621

II-3 Timing mode/Smart mode.
SMS command content: TMODN,123456,60,7200#
Reply: SET OK
Command interpretation:
60 indicates that the position data is reported once every 60 seconds during movement. 7200 indicates that the position data is reported once every 7200 seconds during sleep mode. The interval cannot be zero. Scheduled wake-up (if it is stationary, it will wake up according to the sleep interval. If vibration is detected during this period, it will wake up according to the movement interval).
Working logic: Report a location package at the set interval and then enter sleep mode; if GPS positioning exceeds 10 seconds or satellite search exceeds 180 seconds, turn off GPS and report data and enter sleep mode.
Working status: Upload at intervals, turn off the network and positioning after uploading data; disconnect the platform, do not receive SMS, do not process calls, light off, press button to turn on, light sensor & wake up at time.
Sleep mode:GPS off, upload at intervals, turn off the network after uploading data; disconnect the platform, do not receive SMS, do not process calls, light off, press button to turn on, light sensor & wake up at time

www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621

5. Note

Please comply with the instructions to extend the unit life:

1. Don’t put the unit in overheated or overcooled places.
2. Handle carefully. Don’t vibrate or shake it violently.
3. Clear the unit with a piece of dry cloth. Don’t clean in chemicals, detergent.
4. Don’t paint the unit, this may cause some foreign materials left in between the parts.
5. Don’t disassemble or refit the unit.
6. Please read the user manual carefully before installation and operation, learn something more about the voltage range. Otherwise, it won’t work properly or destroy the product.

6. Issues & the Solutions

Fail to turn it on: Please check if built-in battery is charged.
No GSM signal: Please check if SIM card installed correctly.
Please check if SIM card is GSM network.
No GPS: Installation location should be unshielded to ensure it can receive GPS signals effectively.
No reply to SMS command: Password wrong or the SMS format is wrong.
Call without SMS reply or cannot receive alarm SMS: Authorized number is wrong or without setting any authorized number.
.

www.thingsyss.com
Add.: 16/F, Kaihaoda Guangchang, Crossing of Huahui Rd., and Industrial Park Rd., Dalang, Longhua District, Shenzhen, China, 518109
Tel: +86 755 33073205 +8618666212621
sales@thingsys.com WhatsApp/ Telegram: +8618666212621