



深圳市龙桥科技发展有限公司

SHENZHEN DRAGON BRIDGE TECHNOLOGY DEVELOPMENT COMPANY

Application : Rental cars, insurance cars, trucks, buses

Wireless Fleet management Solution Innovator

GSM/GPRS/GPS Tracker

User Manuel

LTS-5YS (4G) (WIFI)

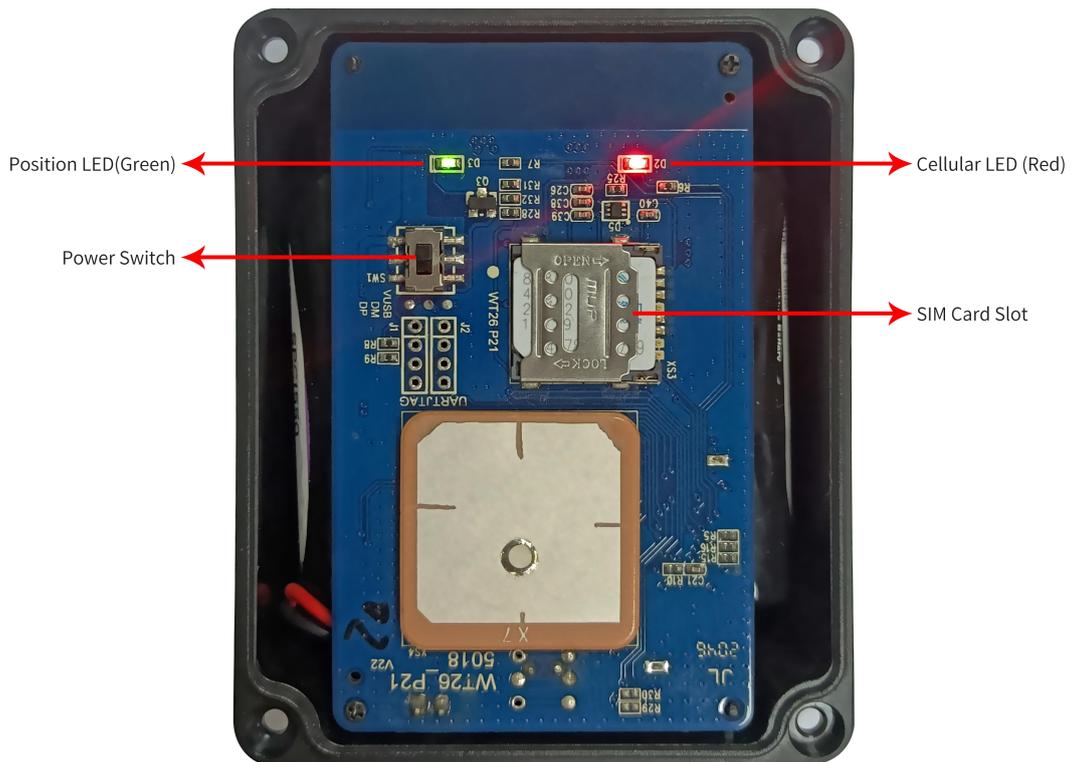


Contents

1 Product Overview	3
1.1 Appearance.....	3
1.2 LED status.....	4
1.3 Product features summary.....	4
1.4 Hardware parameters.....	5
2 Product functions	6
2.1 Work modes.....	6
2.2 AGPS.....	9
2.3 LBS.....	9
2.4 Wi-Fi.....	9
2.5 Blind data storage.....	9
2.6 Temperature detection.....	10
2.7 OTA commands from backend.....	10
2.8 Strong Magnetic and waterproof function.....	10
2.9 Tamper alarm.....	10
3 NT06E Setup	10
3.1 【Setup and debugging】	11
3.1.1 SIM card installation.....	11
3.1.2 Main unit power on.....	11
3.1.3 Major parameter setting by SMS or SSCOM tool.....	11

PART 01 Product Overview

1.1 Appearance



Enclosure	IP67 waterproof
Magnets	To stick the device to metal surface
Power button	Inside the enclosure for hidden installation purpose, to turn on or turn off device
Light sensor	To detect removal alarm ,remove the sticker on the light sensor, when the device expose to light, it will trigger a removal alarm

1.2 LED status

	Event	Status
Cellular LED (Red)	Network connecting	Fast flash
	Network connected	Slow flash
	Module error	Solid on
Position LED(Green)	GPS position	Solid on
	LBS position	0.5 seconds on, 0.5 seconds off
	Wifi Position	2 seconds on, 2 seconds off
	No position	Off

1.3 Product features summary

- ◆ Built in 8100mah batteries, it can last 5 years if upload data once a day
- ◆ Track: To check the assets location once a day or several times a day, interval is configurable
- ◆ Alarms: Motion alarm, removal alarm
- ◆ Multiple position modes: GPS, WIFI, LBS, AGPS
- ◆ Temperature monitor
- ◆ Battery level upload
- ◆ Weatherproof for outdoors assets monitor
- ◆ No wires and magnets for easy installation
- ◆ Jamming detection

1.4 Hardware parameters

Physical	Dimension	81mm*66mm*33mm (L*W*H)
	Weight	193±5g
Cellular	Communication module	Quectel BG95
	Frequency	<p>Working frequency:</p> <p>Cat M1: LTE-FDD B1/B2/B3/B4/B5/B8/B12/B13/B14/B18/B19/B20/B25/B26*/B27/B28/B66/B85</p> <ul style="list-style-type: none"> Cat NB2: LTE-FDD B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26*/B28/B66/B71/B85 EGPRS: 850/900/1800/1900MHz <p>protocol: Embedded TCP/IP stack</p> <p>Sensitivity: -107dBm@850/900MHz -106dBm@1800/1900MHz</p> <p>Output power: Class 4 (2W)@850/900MHz Class 1 (1W)@1800/1900MHz</p> <p>GPRS data: GPRS Class 10, Mobile Station Class B</p>
GPS		<p>Channels: 50</p> <p>Sensitivity: -147dBm</p> <p>Position accuracy:5-10m</p> <p>Accuracy: 5m CEP</p> <p>Cold start: <27s</p> <p>Hot start: <1s</p>
Processor		STM32G070CB
Motion sensor		DA260
Wifi position		Wifi 4.0
Power	Battery	Disposable Lithium-ion battery and (3.6V, 8100mAh) and ultra-low discharge rate: less than 1%, store one year below 25°C
	Power consumption	Average working current <100mA; Power save current <15uA;
	GSM antenna	Internal High Gain
	GPS antenna	Internal High Gain
	SIM	Microsim
	Indicator	2 status LEDs, Green: GPS, Red: EMTC
Environmental Parameter	Working Temperature	-20°C ~ +70°C
	Humidity	5% ~ 95% (no fog)
	Ingress Protection Rating	IP67

PART 02 Product Functions

2.1 Work modes

The default upload interval is one-day one ping, the data packets information includes GPS status, longitude and latitude, cellular signal Strength, satellite numbers, battery level etc, there are multiple track modes available from the device, below is the explanation for work mode priorities:

- ◆ Track mode>Warehouse >Timely upload=Clock mode=Week mode= Motion and static mode;
- ◆ The work mode which is equal can be replaced by each other, as the last configuration will prevail

2.1.1 Track mode

Mode	SMS Command	
Set Track mode	ZZ,A,T1,T2# or MODE,1,T1,T2#; For example: ZZ,300,60# (MODE,300,60#) indicates enter into track mode, upload data each 300 seconds, track duration time is 60 mins ZZ,0# or MODE,0# indicates exit track mode	A: 1- Enter in track mode, 0- Exit track mode; T1: upload interval , unit : seconds ; value range 30-300 seconds; T2: Track duration time ,Unit: minutes, value range 5-57600 minutes ;
Exit track mode	ZZ,0# or MODE,0#	

Note:

Under track mode, GPS position is on priority, and acquire LBS and WIFI data each 30 seconds
 Device enters into power save mode if the device is in static status in 5 minutes, GPS is switched off, but it will keep communication with backend and upload data according to the preconfigured intervals

Under track mode, if the SIM card is loosen, or network register failure or server failure, device will switch off communication and position 30 minutes , however if the removal alarm triggered, it will resume to normal mode

GPS will wake up if vibration happens

2.1.2 Warehouse mode

Configuration	SMS Command	
Set storage mode	STORAGE,T# For example: STORAGE,2880# indicates enter into storage mode, upload data each 2880 minutes	T: Upload interval Unit: Minutes Value range: 2880-43200minutes (2-30 days)
Exit storage mode	STORAGE,0#	
Note: Under warehouse mode, if light sensor triggered, device will exit warehouse mode Under warehouse mode, if other work mode has been set, device will exit warehouse mode Under warehouse mode, device can't be wake up by vibration		

2.1.3 Fixed upload mode (Recommended)

Configuration	SMS Command	
Set fixed upload mode	HX,T#或 MODE,0,T# For example HX,1440# or MODE,0,1440# indicates upload each 1440 minutes (24 hours)	T: Upload interval Unit: Minutes Value range: 5-43200minutes (2-30 days)
Exit storage mode	STORAGE,0#	
Note: Default setting is wake up each 1440 minutes Fixed upload mode can't be wake up by vibration		

2.1.4 Clock mode

Configuration	SMS Command	
Set clock mode	MODE, 4, N, T1, T2..TN# For example MODE,4,3,0800,1400,2100##	T1-TN is time point, format is HHMM, for example 0800 indicates 08:00
Delete clock mode and return to fix upload	WAKEUP,#	
Note: Time interval between each two clocks should be no less than 5 minutes Clock mode can't be wake up by vibration		

2.1.5 Week mode

Configuration	SMS Command	
Set week mode	MODE,3,T1,T2# For example MODE,3,246,09:00# indicates wake up at 9:00am at Tuesday, Thursday and Saturday	T1=1:Monday, T1=137 indicates Monday, Wednesday and Sunday T2 indicates wake up point , format is HH:MM
Note: Clock mode can't be wake up by vibration		

2.1.6 Motion and static mode

Configuration	SMS Command	
Set motion and static mode 1	MODE,6,T1,T2,A# or MS, T1,T2[,A]# For example: MODE,6,60,300,1# Indicates upload interval in motion status is 60 minutes, upload interval in static status is 300 minutes, motion alarm on	T1:Upload interval in motion status , value 5-43200 minutes T2: Upload interval in static status, value 5-43200 minutes or set clock mode, format (HH:MM) A:Motion Alarm on, 0:Motion Alarm off
Set motion and static mode 2 (Optional)	MODE,8,T1,T2,A,B# For example: MODE,8,2,1440,0,1# Indicates upload interval in motion status is 2 minutes, upload interval in static status is 1440 minutes, motion alarm on, after motion always keep tracking by interval 2 minutes,only exist command MODE,0# can stop the tracking	T1: The return interval for entering the tracking mode during exercise, the value range is 1-5 minutes T2: Return interval at rest (value range 5-43200 minutes) or alarm clock (format HH:MM) A: 1-Quit tracking at static, 0-continuous tracking B: 1- turn on the vibration alarm, 0- turn off the vibration alarm You can exit the tracking mode by command; B=1 and the device is awakened by vibration, and the vibration alarm will be reported after going online;
Note: Device can't be wake up by vibration while in motion mode Device can be wake up by vibration while in static mode After wake up, there should be 3 seconds vibration in 6 seconds, device will turn on cellular		

module and upload position data, otherwise it would enter into sleep mode again and maintain the previous configuration parameters

2.2 AGPS

When the device successfully registers on network, AGPS is available to speed up the position speed and improve the position accuracy

2.3 LBS

If device enters into the blind zone and GPS cannot be fixed, the device will switch to LBS position, LBS provides the reference location which might not be accurate

2.4 Wi-Fi

The device has built in Wi-Fi Chip, it automatically connects to the WIFI hotspot nearby and filter the hotspot info then select the WIFI hotspots with strongest signal, the device will pack those hotspots info and saved into the packet that will be uploaded, after the backend receives Wi-Fi information, it will interpret the WIFI info and acquire the current location from the Wi-Fi database, The default setting is WIFI priority, once it detects WIFI Hotspot, it will upload WIFI info only , and do not use GPS, if WIFI is not detected, it will use GPS to position.

Kindly reminder: To use Wi-Fi feature, please make sure your software supports Wi-Fi database

2.5 Blind data storage

When the device enter into blind zone when in sleep mode, it will store the trace data according to the preconfigured time interval and it will upload the data in the blind zone to the backend when the cellular network recovers

2.6 Temperature detection

The device built-in temperature sensor, it detects the temperature once the device is turned on, then will read it every 16 seconds. The temperature accuracy 95%.

2.7 OTA commands from back end

Since the wake up of the device is normally short before enter into sleep mode, it is hardly to receive SMS , to ensure the command sending efficiently, we suggest an OTA commands to be sent from the platform, when the device is online, the backend will automatic send this command, to make sure the commands is properly received.

2.8 Strong Magnetic and waterproof function

NT06EC is with built-in with super strong magnet that can firmly stick the device to the metal surface, it is easy to install and conceal, and the device is with waterproof function, which can be installed on any assets that are outdoors

2.9 Tamper alarm

There is a high sensitive light sensor at the bottom, if the device is tampered, either the device is working or in sleep mode, it will be activated and enter into anti-removal status and switch on anti-removal alarm, and report the alarm info to the backend or preset phone number.

PART 03 Setup

3.1 【Setup and debugging 】

3.1.1 SIM card installation

Unscrew the top cover of the device, insert the prepared SIM card into the SIM card holder, and then confirm that the SIM card button is well placed . Please make sure that the SIM card has data service available in advance and write down the SIM card number.

3.1.2 Main unit power on

After installing the SIM card, turn the battery switch to the ON position. When the red light starts to blink, indicating that the device is powered on.

3.1.3 Major parameter setting by SMS or SSCOM tool

SMS list:

APN,apn,user,pwd#	Set APN, User name and password For example: APN,CMNET,internet,internet# APN:CMNET Username: internet Password: internet APN,CMNET# APN:CMNET User name: Null Password:Null
IP and port	Set IP, port and communication type of primary server , For example: IP,119.23.233.52,6000,1# Set the primary server IP:119.23.233.52 , port 6000 , communication type:TCP IP,www.365qczx.com,6000,0# Set the primary server domain:www.365qczx.com , Port 6000 , communication type UDP
HX,<T>#	Sleep mode return interval, default 1440 minutes, that is, 24 hours t: wake-up time, unit: minutes range: 5-43 200 minutes for example: hx,120#
ZZ,A,[,T1,T2]#	Track mode A: A=1,Enter track mode A=0 Exit track mode T1: upload interval in track mode, unit: seconds Range: 5-300 seconds T2:The continue track time in track mode, Unit: Minutes Range : 5-57600 minutes

WAKEUP,T1[,T2[,T3[,T4]]]#	Latency mode sets a multi-point return parameter, up to four points in time T1...T4: A point in time, such as 0830 for 08:30 in the morning
FALL,A#	A=3 Switch on removal alarm, do not track, default value A=2 Switch on removal alarm, track 15 mins, 300 seconds once A=1 Switch off removal alarm A=0 Switch on removal alarm, track 60 minutes, 60 seconds once
UTC,TTTT#	Set time zone, unit minute ,default UTC+8:00
STORAGE,T#	Storage mode return interval, default is 0, that is, turn off t: wake-up time, unit: minute value range: 2880-43200 minutes for example: storage,10080
MS,m,s#	Motion static detection mode, m: return interval during motion, default 60 minutes, value range 5-43 200 minutes s: static return interval, default 720 minutes, value range 5 43 200 minutes For example: ms,120,1440—return interval during motion is 120 minutes and static return interval is minutes.
*11*4#	Query communication status of the device
*22*1#	Device resume to factory setting
*22*4#	Restart the device
*77*0 number#	Set center number 1
*77*2 number#	2 Set number 2

SSCOM configuration:

Please contact Roadragon team for configuration tools and documents.

Mounting recommendations



It is better to put this side up not down when install the device

- ◆ The bottom of the tracker is fitted with a powerful magnet, you can put the tracker directly on a magnetic surface.

- ◆ Please do not put tracker in the metal environment which will affect the GPS signal.

Safety Information

- ◆ Don't disassemble the device by yourself
- ◆ Avoid strong humidity, direct sunlight, and high temperature
- ◆ Don't use on airplane