深圳市龙桥科技发展有限公司

SHENZHEN DRAGON BRIDGE TECHNOLOGYLIDE COMPANY

Application :Rental cars, insurance cars, trucks, buses

Wireless Fleet management Solution Innovator

GSM/GPRS/GPS Tracker

User Manuel

LTS-3YSN(4G)

ROADRAGON®

路特龙

Contents

1 Introduction

1.1 product description

The LTS-3YSN-4G is a 4g intelligent Long standby GPS device for tracking, built for the car net work, support multiple position mode：GPS、AGPS、LBS. Track your assets with powerful Panas onic battery, When an emergency occurs, you can enter the continuous tracking and positioning m ode to find assets. Built in strong magnetic to ensure the product to stick firmly on the metal int erface, easy to install and conceal, support tamper proof alarm

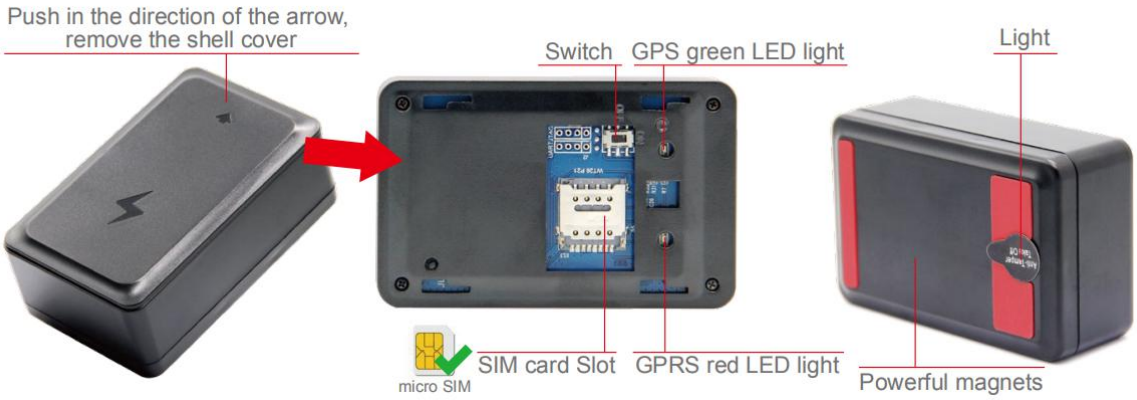
2 Product Overview

2.1 Product accessories

Items	description
Main device	

2.2 Interface Definition

Host interface



3 Specifications

Characteristic	Description
Built in battery specification	Disposable Lithium-ion battery and （3.6V，5400mAh） and ultra-low discharge rate：less than 1%, store one year below 25℃
Power consumption	Average working current <100mA; Power save current <15uA
Battery working time	3 years
Dimension	79mm*50mm*31mm（L*W*H）(Light sensor and strong magnetic standard)
Weight	163g(Light sensor and strong magnetic standard)
Working Temperature	-20℃～70℃
Frequency	GPRS: 850/900/1800/1900MHz Cat.M1/Cat.NB1: LTE FDD B1/B2/B3/B4/B5/B8/B28
GNSS	GPS L1:1575.42MHz,C/A Code BD B1: 1561.098MHz

4 Product Features

1、 No wired needed, easy for installation

2、 This product is with built-in large-capacity disposable lithium-ion battery ,with ultra-low self-discharge rate and extremely wide temperature adaptability.(The normal lithium battery could only work under temperature 0℃～70℃)

3、 Long working time: If upload one packet each 24 hours under GPS position priority condition, the working time can reach up to 1095 days above, no need to change battery frequently.

4、 Ultra low consumption: The working current can decrease to 15uA below when in sleep mode, to make sure the terminal could work longer.

5、 Comparing with the similar product available on the market, this terminal is with smallest size and easy for concealable installation

6、 Built in strong magnetic to ensure the product to stick firmly on the metal interface, easy to install and conceal, support tamper proof alarm

7、 Multiple position mode：GPS、AGPS、LBS

5 Functions

5.1【Basic function】

5.1.1 Position monitor

The default setting is the terminal would send one packet each 24 hours, the packet information includes: Position status, longitude and latitude, GSM Signal Strength, GPS numbers, battery voltage etc, the upload interval can be configured

5.1.2 AGPS

The terminal is with APGS function, when the terminal connects GPRS; AGPS is used for speeding up the position speed and improve the position accuracy

5.1.3 LBS

The default position mode is by GPS, when GPS enters into the blind zone and can not position accurately, the terminal will switch to LBS, LBS provides the reference location which is not very accurate

5.1.4 Blind zone compensation

When the terminal 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,

Remark: 3YSN(4G) upload 8-16 pack blind zone compensation data,

5.1.5 Intelligent tracking function

When found the vehicle is stolen or in other emergency cases and the real time location of the vehicle needs to be checked, a SMS can be sent or send a command from the backend, when the terminal starts work next time, it will receive this command and enter into track mode, and upload the location data according to the preconfigured interval by customer until a stop tracking command is received

5.1.6 Warehouse mode

The terminal can set the storage return interval, with a value range of 2880-43200 minutes.
The device will upload data according to the storage return interval after setting the storage return interval. It can wake up by disassembling the machine, set the return transmission interval, set the alarm clock, through exit warehousing mode command to exit warehousing mode.
Remark: remove the machine to wake up and exit the storage mode command to restore the original parameters, set the return interval and alarm clock by the set value of wake-up.

5.1.7 Motion still detection mode

Default to open, wake up once in 60 minutes when move, wake up once in 720 minutes when static; the return interval ranges from 5 to 43200 minutes;

When motion is detected, wake up after 1 hour (default), and turn off G-SENSOR during sleep, that is, the device cannot be woken up by vibration;

When the detection is still at rest, wake up 12 hours after the sleep (default value), G-sensor enters the low power mode during sleep, continue to detect the vibration, and wake up the device by vibration;

After waking up by vibration, if no continuous vibration is detected (more than 4 seconds), the device sleeps;

The motion still detection mode can be turned off by an instruction

5.1.8 Clock mode

The terminal could verify the timely wake up time points, maximum 4 points can be set for position that is more accurate and connection to the server, this function could use SMS command or backend command to set

5.1.9 Temperature and humidity detection

The device built-in temperature and humidity sensor, it read the temperature and humidity first once the initialization of the machine, then will read it every 16 seconds. The temperature precision is 0.1%., the humidity precision is 1%.

5.1.10 Backend Specific Commands

Since the working time of the terminal is short, it is rare to receive the SMS, to ensure the command sending efficiently, the backend uses a specific commands for MT06CW which can preset the command, when the terminal is online, the backend will automatic send this command, to make sure the commands is properly received.

5.1.11 Battery level detect

The terminal will upload the battery level status together with the location data pack, and display the battery level on the backend so the user could well know the balance battery , and meanwhile display the current transmission time and the balance battery level of the next uploading pack, so the user could have clear view on the terminal status

Remark:

Execution priority: tracking mode > warehousing mode > motion static detection mode > alarm clock mode > fixed interval mode

5.2【3YSN(4G) Extended functions】

5.2.1 Strong Magnetic function

3YSN(4G)C is with built-in with super strong magnet that can firmly stick the device to the metal surface, which is easy to install and conceal

5.2.2 Tamper alarm

3YSN(4G)C: There is a removal button at the bottom, if the terminal is tampered, it will enter into activate status, and report the current location information.

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

5.2.3【3YSN(4G) function list】

Model / Function list	3YSN(4G)(Light sensor)	3YSN(4G) (Light sensor and strong magnetic)

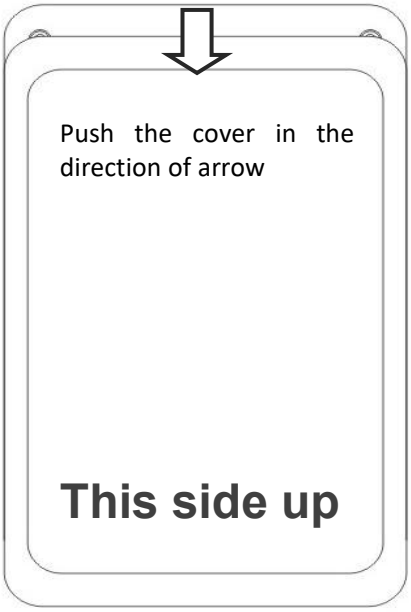
Position	℘	℘
GPS/BDS	℘	℘
AGPS	℘	℘
LBS	℘	℘
Light Sensor	℘	℘
Warehouse mode	℘	℘
Strong magnetic		℘
Motion still detection	℘	℘
Temperature and humidity detection	℘	℘
Intelligent tracking	℘	℘
Blind zone compensation	℘	℘
Clock mode	℘	℘
Backend commands	℘	℘
Upload ICCID	℘	℘
Battery level	℘	℘

Remark:

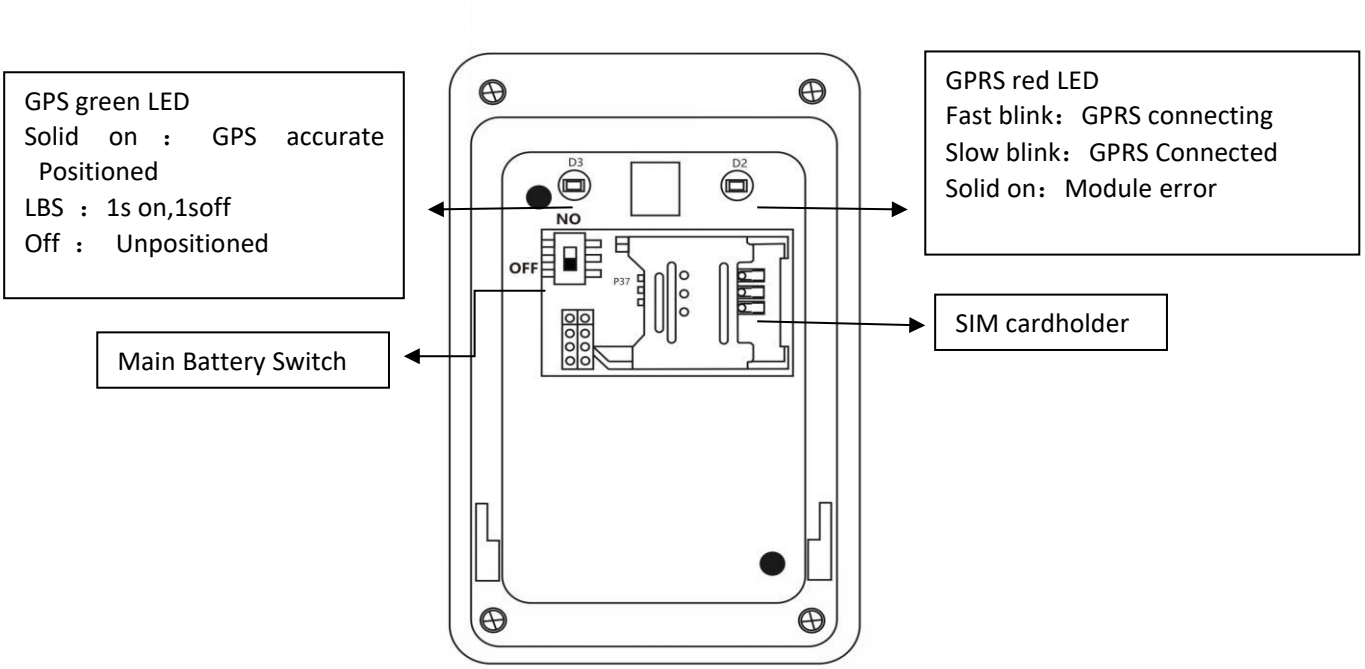
℘ Represents an optional feature option, indicating that the device has this function. Blank does not have optional information

6 3YSN(4G) installation

6.1【Installation diagram 】



Picture 6.1 Description of Top Cover Opening Method



Picture 6.2 Main unit function diagram

6.2【Installation and debugging 】

6.2.1 SIM card installation

Open the top cover of the terminal, 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 the GPRS function available in advance and write down the SIM card number.

6.2.2 Main unit power on

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

6.2.3 Parameter setting

TCP/UDP connection mode setting

For example, the client's server IP is: 119.145.40.64, port number: 8881. If it is connected by TCP, use SMS to edit: *88*1119145040064*8881*1#; if it is UDP connection, edit: *88*1119145040064*8881*0#. The terminal will reply: set ok, the setting is successful.

6.3【Key parameter setting】

6.3.1 Clock mode

Command format：HX,T#

Command description：T:wake up time，unit： minutes，defaut T：1440，value range :10-43200f minutes；for example，HX,1440#,set the wake up time is 1440 minutes (24 hours)。

Remark: Normally we use the default setting 1440, if set shorter wakeup time, the working time of the terminal will be reduced.

6.3.2 Track mode

Command format：ZZ,<A>[,T1,T2]#

Description： track mode

A: A=1, Enter track mode A=0 Exit track mode

T1: Set upload interval in track mode， Unit： Seconds

T2: Set the continue tracking upload interval， unit：分钟 minutes

ZZ,1,30,60＃ enter track model， upload interval is 30 seconds, enter sleep mode after 60 minutes

ZZ,0＃ Exit track mode

Remark: this setting generally uses the default 1440, no need set, and if like set a shorter wakeup time, will result in a significant reduction in device working time.

6.3.3 Position mode

Command format：LBS,A#

Description

A=2 Close the position function；A=1 LBS；A=0 LBS、GPS、AGPS；Default, A=0

For example：LBS,1# Enter LBS Position mode, close gps module

6.3.4 Clock mode

Command Format：WAKEUP,[T1[,T2[,T3[,T4]]]]#

Description: Set a multiple points upload parameter, maximum 4 points T1…T4, it is allowed to set 1 clocks or more clocks, maximum supports 4

Example：WAKEUP,0800,1200,1600,2000#；

They are all clock points which will wake up at 8:00、 12:00、 16:00、 20:00 and upload terminal parameter info

Remark: After entering into tracking mode, please remember to send command to make the device exit track mode, otherwise the power will be consumed fast if upload data frequently.

6.4 Common message command list

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 multipoint 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, defalut value A=2 Switch on removal alarm, track 15 mins, 300 seconds once A=1 Switch off removal alarm A=0 Swtich 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 terminal
*22*1#	Terminal resume to factory setting
*22*4#	Restart the terminal
*77*0 number#	Set center number 1
*77*2 number#	2 Set number 2

*88*2APN#	special for GPRS device，Set APN node
*88*1IP*port*A#	Settle primary server domain name, port A is communication mode 1:TCP 0: UDP
*88*3IP*port*A#	Set the IP address, remote port number, communication mode of the backup server A is the communication mode 1:TCP 0: UDP

6.5 3YSN(4G) usage requirements

1、 The users are required to strict using the terminal according to the operating instructions ,any disassemble, collide, charge, soak, over 80 °C, human failure, force majeure damage, etc. may cause short circuit, insufficient working time, battery deformation, liquid leakage, explosion, no warranty and compensation will be provided by Roadragon.