

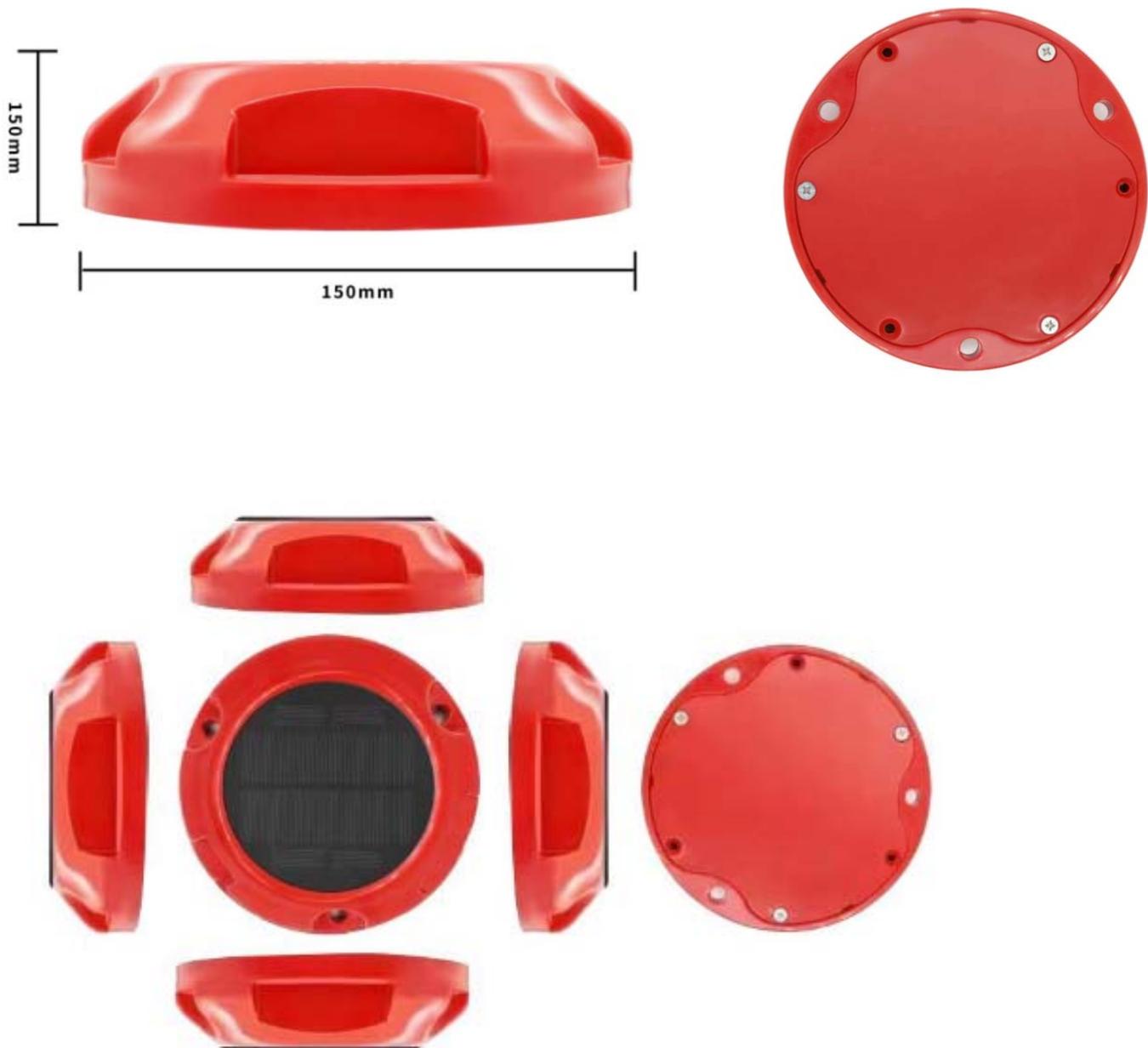
## Introduction

4G solar charging positioning terminal built for the Internet of Things , which integrates 4G LTE wireless communication technology and GPS /BDS satellite navigation and positioning technology . The terminal adopts an industrial-grade high-integration full-built-in antenna design , and the device has a built-in 3-axis sensor to wake up the work intelligently and save power. With vibration alarm, over-speed alarm and other functions . Three modes can be set to meet various application scenarios. 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 .

## Application fields

Fishing boats, cargo, etc.

## Product pictures



## Product operation

### SIM card installation method

The device uses a standard SIM card.

The card slot is a self-bounce card slot, and the notch of the card is inserted into the card slot.

### Indicator light description

#### Red light - charging indicator

light status	meaning
Bright on	charging
Off	Fully charged / shut down

#### Yellow light GSM indicator light

light status	meaning
Flash once within 2 seconds	GSM initialization
Bright on	GSM communication is normal
Off	GSM Sleep /Shutdown

#### Blue light GPS indicator

light status	meaning
Flash once within 2 seconds	satellite signals
Bright on	GPS/BDS has been located
Off	GPS /BDS sleep

## Working mode:

### Normal mode:

In **working state**, it transmits the position by default every 30 seconds, enters the **standby state** after being still for 5 minutes, and will send a heartbeat in 5 minutes to keep the server connected. Vibrating the device can wake it up to **working state**.

### Power-saving mode:

In **working state**, it transmits the location by default every 30 seconds, enters the **sleep state** after 2 minutes of inactivity, and the device in the **sleep state** does not transfer data, disconnect the server to save power, vibrating the device can wake up to the **working state**.

### Smart mode:

Set the data upload interval, the device works according to the set interval, 2 minutes each time, non-working time The device is in a **sleep state** and cannot be woken up by vibration.

The above default state description:

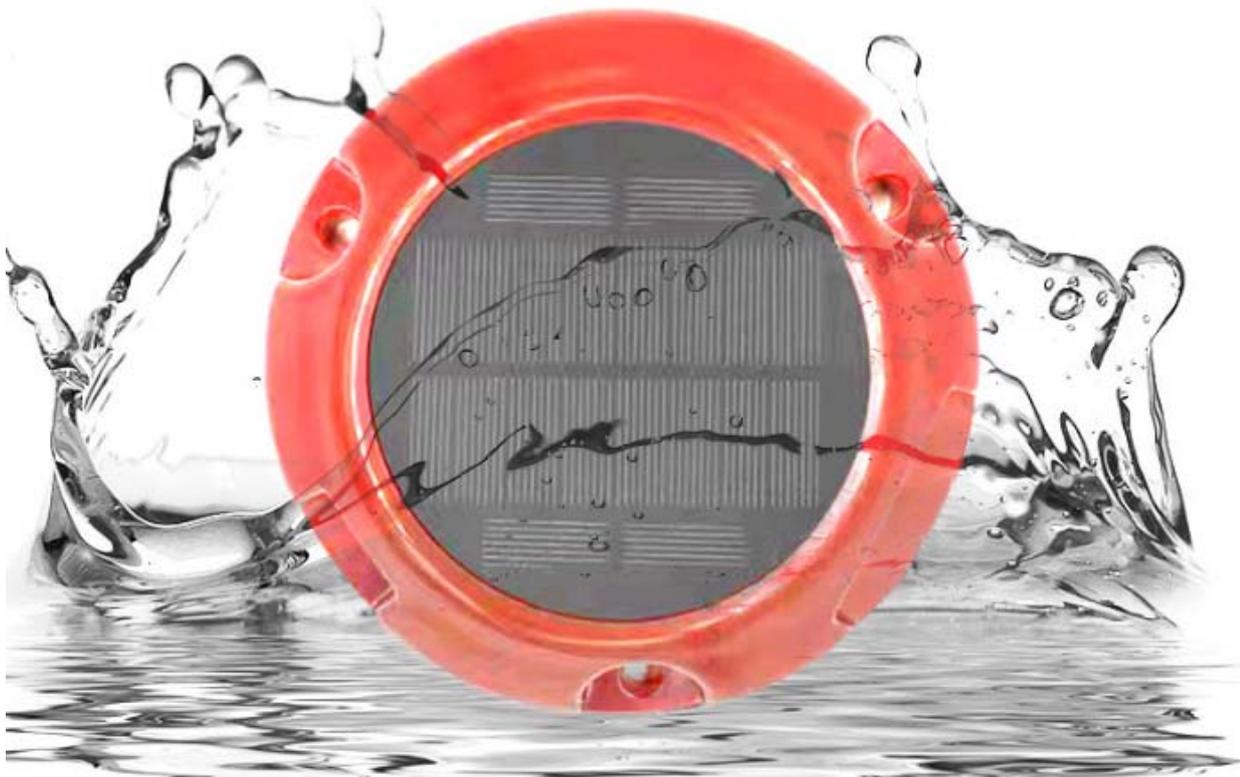
**Working status:** The working light of the device is on, and both GPRS and GPS are in working status.

**Standby state:** the device transmits heartbeat, GPRS works (heartbeat data upload), GPS does not work.

**Sleep state:** The device is in deep sleep state, and GPRS and GPS do not work.

## Features

1. STM advanced 32-bit high-performance MCU processor;
2. Support multiple functions such as vibration alarm and over-speed alarm ;
3. Solar charging system, automatic cycle charging and discharging;
4. Support the electronic fence function;
5. SMS/call alarm can be sent to SOS number, the alarm will be uploaded to the platform at the same time ;
6. The terminal adopts industrial-grade high-stability GPRS module, built-in GSM high-sensitivity antenna;
7. supports TCP/IP data transmission, and supports domain name/IP address to connect to the server;
8. Built-in memory chip supports offline data storage and supplementary transmission of blind area data ;
9. Built-in 3-axis acceleration sensor, integrated with precise acceleration algorithm;
10. High-sensitivity GPS/BDS positioning module, anti-jamming antenna, more stable satellite search signal;
11. Support AGPS fast positioning tracking, synchronous timing;
12. Support online remote upgrade and remote configuration of product parameters.
13. Three working modes for various scenarios.
14. Waterproof IP67



## Product parameters

Function	Description	
Power supply	Battery powered	
Charging method	Solar charging	
Working voltage range	DC3.4V - 4.5V	
Working current	4 V/ average 35 mA	
Sleep current	4 V/ average 6 mA	
Standby current	4 V / average 60uA	
Built-in battery capacity	5000 mAh (3.7V polymer battery )	
Range of working temperature	-20°C - 75°C	
Storage temperature range	-30°C - 80°C	
Working Humidity Range	10 %- 85 % RH non-condensing	
4G Chip model	SIMCOM 7670C/SIMCOM 7670SA	
Communication frequency	LTE/4G	B1/B3/B5/B7/B8/B20
		B1/B2/B3/B4/B5/B7/B8/B28/B66
SIM card	Micro SIM card	
Communication antenna	Built-in FPC antenna	
GPS Chip model	ZKW AT6558D	
Positioning method	BD +GPS	
Cold start time	Average 32 seconds	
Hot start time	Average 1 second	
Tracking Sensitivity	-162 dBm	
positioning antenna	Built-in antenna	
Antenna Specifications	18mm*18mm*4mm	
GPS frequency band	L1: 1575.42±1.023MHz	
Beidou frequency band	B1: 1561.098±2.046MHz	
Number of satellite channels	64	
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	
Host size	150mm*150mm*40mm	
Shell material	ABS plastic	
IP protection level	IP67	
Host weight	350 grams	