



Accurate
positioning

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A18

Asset Positioning Terminal



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Modification Record

Version Number	Modification Date	Author	Modification Content
V1.0	2022.12.16	ATA	Initial Version

1. Overview

The A18 Beidou Asset Positioning Terminal is a solar-powered positioning device specifically designed for outdoor use. It is equipped with a 20000mAh industrial-grade battery, paired with a monocrystalline silicon solar panel and an IP68 waterproof design. The product integrates 4G wireless communication and satellite positioning technology, and includes strong magnet and accelerometer, anti-tamper switch, SOS one-button alarm, and other features. It can achieve functions such as electronic fence alarm, SOS alarm, dismantling alarm, vibration alarm, capsizing alarm, etc., ensuring asset safety. Equipped with a global satellite monitoring platform, it can realize positioning tracking, monitoring scheduling, trajectory analysis, alarm processing, operation management, and statistical analysis for fishing boats, detachable trailers, containers, base station monitoring, and other application service systems, meeting the needs of various industries for positioning management in scenarios where main power cannot be accessed or in special industries.

Suitable for various outdoor situations where external power supply cannot be connected, such as fishery administration vessels, detachable trailers, containers, and fixed asset management.

- GPS + Beidou + LBS Triple Positioning
- Compatible with monocrystalline solar charging panel and magnetic suction auxiliary charging design
- Built-in 20000 mAh large capacity battery
- IP68 shell waterproof design, salt fog resistant
- Real-time positioning tracking, trajectory playback
- Multiple working modes: sports mode, timing mode
- No need for charging, never runs out of power

- Electronic fence alarm, illegal disassembly alarm, vibration alarm, capsizing alarm, etc.
- Built-in accelerometer, anti-disassembly magnet, SOS one-key alarm, and other functions

Customization Instructions: This product can be customized according to customer requirements for high-precision positioning (single-frequency RTK, dual-frequency RTK) and Beidou short message functions.

2. Technical Parameters

2.1 Product Overall Parameter Table

SN.	Item	Specification Parameters	Remarks
1	Dimensions	225*110*40mm	
2	Weight	700g (including battery)	
3	Built-in Battery	20000mAh	
4	Charging Voltage	DC4V ~ 6V	
5	Operating Current	<70mA	
6	Standby Current	<5mA	
7	Sleep Current	<0.05mA (can be awakened by vibration)	
8	Operating Temperature	-20°C to +75°C	
9	Storage Temperature	-40°C to +85°C	

10	Frequency Band	LTE FDD : B1/B3/B5/B8 LTE TDD : B34/B38/B39/B40/ B41	
11	Battery Operating Time	45 Days	
12	Solar Panel	166*82*2mm, Monocrystalline Silicon, 5.5V/450mA	
13	Waterproof Rating	IP68 Deep Waterproof	Deep Waterproof
14	Positioning Error	GPS Positioning Error < 10m	
15	Upload Interval	5 minutes/instance (factory default)	load time interval can be set

2.2 Positioning Module Parameters

Requirements for Solar Waterproof Positioning Terminal	Network Standard 4G-Cat.1
	Working Mode: Timed positioning tracking, returns longitude and latitude and other positioning information at set time intervals, and enters sleep mode during the remaining time
	Electrical Characteristics: Built-in battery $\geq$ 20000mAh capacity
	Charging Interface: Magnetic Charging
	Charging Voltage: DC4V to 6V
	Average Operating Current $\leq$ 70mA

	Standby Current 5mA
	Sleep Current: <0.05mA (Can be awakened by vibration)
	Standby Time: $\geq$ 30 days (Under conditions of no solar power, normal network, and fully charged battery, can continuously operate for 30 days with a 10-minute interval, 10 minutes/upload interval)
	Operating Temperature: -20°C to 75°C
	Storage Temperature: -40°C to 85°C
	Protection Level: IP68 Waterproof, Smoke-proof
	Buttons: Supports 2 buttons
	Remote Parameter Configuration: Supported
	Battery Level Detection: Supported
	Host Size: Specifications approximately 225*110*40mm
	Charging Mode: Solar Charging (Solar Panel Specifications approximately 166*82*2mm)
	Power Supply Voltage 5.5V, Power Supply Current 450mA)
	Communication Protocol: Supports JT808 Protocol
	Electrical Characteristics: Built-in battery $\geq$ 20000mAh capacity
	Charging Interface: Magnetic Charging

Technical Specification Requirements:

1. Position Tracking: Returns longitude and latitude and other positioning information at set intervals, entering sleep mode during other times.
2. Remote Configuration Terminal: Terminal parameters can be set via SMS, platform, or network APP.

3. Blind Spot Supplement Transmission: When the terminal is in a 4G signal blind spot, it will automatically save location data based on the scheduled return time. Once the terminal receives GPRS signal, it will automatically upload the stored data from the blind spot to the central storage, with no less than 3500 records.
4. Low Battery Voltage Alarm: When the battery level drops below 20%, the device reports a low voltage alarm.
5. Electronic Fence: If the terminal exceeds the designated area while in motion, it will send an alarm message to the platform.
6. Disassembly Alarm: When the terminal device is disassembled, the device immediately sends a disassembly alarm to the platform.
7. SOS Alarm: The device has an external SOS alarm button; when the button is pressed for more than 3 seconds, the device immediately sends an SOS emergency alarm to the platform.
8. Capsize Alarm: When the device's tilt angle exceeds 60 ° , the device sends a capsizing alarm.
- 9) Remote Software Over-the-Air Upgrade: Online remote upgrade of terminal firmware.

2.3 Product Physical Diagram



(Unit: mm Error: $\pm 0.5\text{mm}$)

2.4 LED Light Operation Description

2.4.1 GPS Positioning Signal Status

Blue Light	Meaning
Quick Flash (200mS/Time)	Terminal Searching for Satellites
Steady On	Terminal Positioning
Off	Entering Sleep Mode or Shutdown State

2.4.2 GSM Signal Status

Green Light	Meaning
Quick Flash	Terminal Searching for Signal
Slow Flash	Network Connected, Device Online
Steady On	Indicates that the terminal connection platform failed to connect successfully, resulting in repeated reconnections causing lag.
Off	Sleep mode, communication abnormality, light damage, power switch OFF, or entering sleep mode.

2.4.3 Charging Light Status

Red Light	Meaning
Steady On	Terminal is charging
Off	Not charging or charging completed

3. Function

3.1 Timed Positioning Function

Timed positioning tracking, transmitting latitude, longitude, and other positioning information at set time intervals, while entering sleep mode during the remaining time.

3.2 Remote Configuration Terminal

Terminal parameters can be set via SMS, platform, or client APP.

3.3 Blind Spot Compensation

When the vehicle is in a 4G signal blind spot, the terminal will automatically save location data based on the scheduled transmission time. Once the terminal receives GPRS signal, it will automatically upload the stored data from the blind spot to the center. A maximum of 3500 data entries can be stored.

3.4 Disassembly Alarm

The device is equipped with a built-in magnetic suction sensor and anti-disassembly pin. When the terminal device is disassembled, it immediately sends an alarm message to the platform.

3.5 SOS Alarm

The device has an external SOS one-button alarm button. When the device button is pressed for more than 3 seconds, it immediately sends an SOS emergency alarm to the platform.

3.6 Low Battery Voltage Alarm

When the battery level is below 20%, the device reports a low voltage alarm.

3.7 Capsize Alarm

When the device's tilt angle exceeds 60 degrees, the device sends a capsizing alarm.

3.8 Historical Trajectory

Can replay 365 days of action trajectory, including speed, direction, and duration of stay at that time.

3.9 Electronic Fence Function

The terminal supports a maximum of 50 electronic fences, which are defined as rectangular areas. The terminal will upload a notification whenever it enters or exits the fence.

Restrict vehicles to operate only within the allowed range of the specified route node; currently, only one route node is supported.

3.10 Remote Software Over-the-Air Upgrade

Online remote upgrade of terminal firmware.

3.11 Featured Functions

1. Separate solar power supply of 3W, built-in polymer lithium battery with a capacity of 20,000 mAh.
2. Under conditions of no solar power, normal network, and fully charged battery, it can continuously operate for 30 days with a 10-minute interval, and for 180 days without heartbeat packets in a 24-hour interval. When the device voltage drops below 3.45V, the device will enter a shutdown state. It can be charged through solar light, and when the battery voltage reaches above 3.7V, the device will restart.
3. IP68 waterproof function
4. Customizable RTK centimeter-level positioning or Beidou short message function

4. Common problem analysis and troubleshooting

The product displays a steady blue light and a slow flashing green light as normal online positioning. If other flashing conditions occur, please follow the steps below to analyze and troubleshoot the fault.

4.1 Indicator light status:

Fault phenomenon	Fault analysis	Handling method
Steady green light	Indicates that the terminal connection platform failed to connect successfully, resulting in repeated re-connections causing lag.	Check whether the platform has recorded the terminal ID number, or use SMS to query whether the terminal ID number matches the shell.
Green light is off	Communication error, light damaged, power switch OFF, or entering sleep mode	Consult technical personnel
Blue light is off	Positioning module damaged, power switch OFF, or entering sleep mode	Consult technical personnel
Blue light is flashing quickly	Terminal is searching for satellite signals	Please place the device in an open area

5. Precautions

1. Please pay attention to waterproofing for electronic products.
2. The USB port on the terminal device is for factory testing only and is not a charging port. Please do not use it for charging or other purposes.
3. The installation location must be free from materials that absorb electromagnetic waves (such as metal or explosion-proof thermal insulation film) above it.
4. Do not disassemble the device, touch liquids, or operate with wet hands.
5. Do not throw the device into fire.
6. When the terminal is in areas such as underground parking lots, tunnels, or garages, it will affect the positioning signal and may result in communication network signal blind spots, causing the device to be unable to monitor; once the terminal exits these areas, the device will automatically resume normal operation.

7. In case of abnormal situations, please do not attempt to repair it yourself. The manufacturer is not responsible for damages caused by connecting non-original accessories or disconnecting components.
8. This product is a safe driving assistance product; any losses caused by malfunctions or information loss are not related to our company.
9. This product has passed international CE certification; however, due to the complex electromagnetic environment inside vehicles, this product may experience electromagnetic interference with electrical devices in certain vehicle models.
10. Do not install or operate this product while the terminal is in motion.
11. Do not connect an uninterruptible power supply without authorization, as this may cause terminal or product failure. For installation matters, please be sure to consult a professional.
12. Do not subject this product to strong impacts or vibrations to avoid damaging the product, which could lead to malfunction or inability to use.
13. The normal operating temperature range for this product is -20 degrees Celsius to 75 degrees Celsius; exceeding this temperature range may cause product failure or abnormalities.

6.After-sales service

1. This product enjoys a three-month exchange and one-year warranty service from the date of shipment. If the equipment damage is caused by non-human factors or product quality issues during the warranty period, please contact the dealer for assistance.
2. Damage caused by unauthorized disassembly by the customer or force majeure (such as floods, traffic accidents) will not be repaired.
3. After the warranty period, any damage or failure due to usage will incur a charge for repair material costs.
4. Free consultation and technical services for customers regarding product purchase, usage, installation of APP, etc.