



FLEET HOSTER



FLEETHOSTER
FUELING YOUR FLEET WITH INTELLIGENCE



FLEET HOSTER ATS01-96 Asset Tracker Solar

User Manual

Thank you for purchasing this high-quality GPS tracker from Fleet Hoster. Please read this user manual carefully before installation and operation. Information in this manual is the property of Fleet Hoster. Changes to the specifications and features in this manual may be made by Fleet Hoster without prior notice. No part of this manual can be reproduced, copied, translated, transmitted, or published in any form or by any means without Fleet Hoster's prior written permission.



ATSO1-96

The tracker is using GNSS & LTE technologies that collect device coordinates and transfer them via LTE network to the server. It provides the customer with cost-effective, efficient and safety management. It has been widely used in commercial transportation, company vehicle fleet management, intelligent transportation, logistics, car rental, engineering machinery, marine transportation, animal/pet tracking and other segments.

Remember

- ATSO1-96 obtains power through sunlight to extend the battery life.
- Please make sure that the device is exposed to direct sunlight every day. This will be very useful to extend the battery life. If the device is not charged for more than three months, it may cause permanent damage to the internal battery.
- Please make sure the device is fully charged before installation.
- Only when the solar panel output voltage value is 0.3V higher than device battery voltage value, the solar panel will start to charge the battery. Otherwise, the solar charging will stop.
- To ensure the battery life for a longer period, please be careful when setting the reporting intervals. Lower reporting rates will maintain the balance between the power consumption and gaining (from solar panel). We usually recommend to set the tracker reporting \geq every 5 mins when moving, and \geq every 1 hour when standstill. Customer may also contact Fleet Hoster for further advice.

Equipment power consumption and solar panel charging current

- The normal device power consumption is around 50mAh when the device is in working mode without sleep.
- The typical charging rate of the solar panel under direct sunlight at noon (in summer) is about 250mAh (different sunlight illumination, different charging current).

Disclaimer: Before using this device, customers should fully understand their usage scenarios and installation environment. Fleet Hoster will not be responsible for any loss caused by using the device in a wrong scenario or reporting rate. It is highly recommended that customers should contact Fleet Hoster before deployment. We are glad to give suggestions.

Intelligent Power Management

To extend the battery life, we designed an intelligent power management algorithm. This algorithm allows the tracker to work under a lower reporting rate when the battery is low. Once the battery is charged back, the tracker will report as normal. This function is enabled by default. Customer can disable it by command. The detail working logic is:

- When the battery voltage value is down to 3.5V, then the tracker will report at every 24 hours no matter moving or standstill.
- When the battery is charged back to 3.6V, the device will report as set by the customer.

FOTA (firmware over the air) Notification

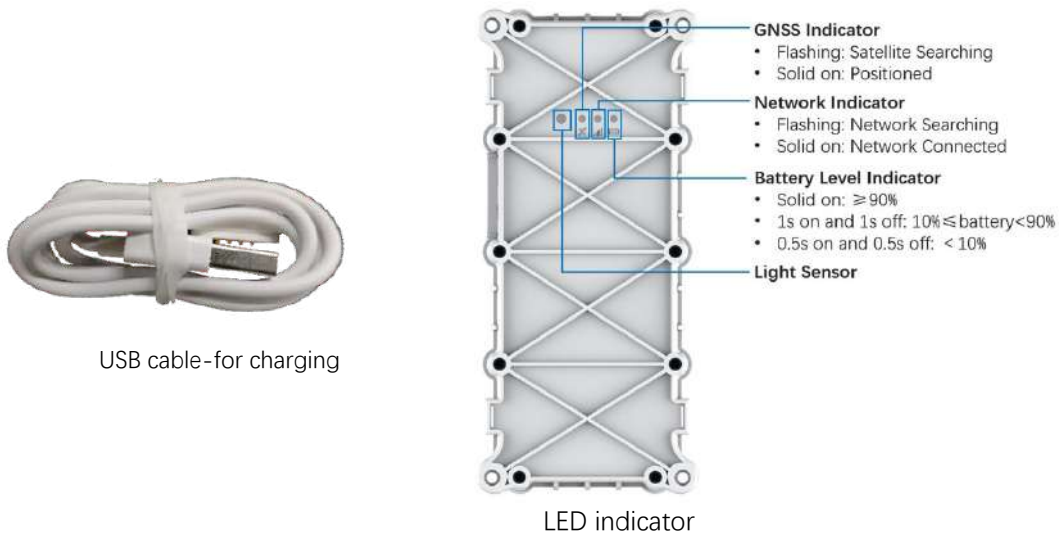
Fleet Hoster is committed to providing clients with the best user experience. We offer automatic firmware update features for devices. This feature allows devices always to always have the latest version firmware. It can save clients the time and effort of updating firmware manually. Please note that this feature is enabled by default. If you want to turn it off, please contact Fleet Hoster. If this feature is disabled, the fw update can only be done by sending the upgrade command manually.

Product Specifications

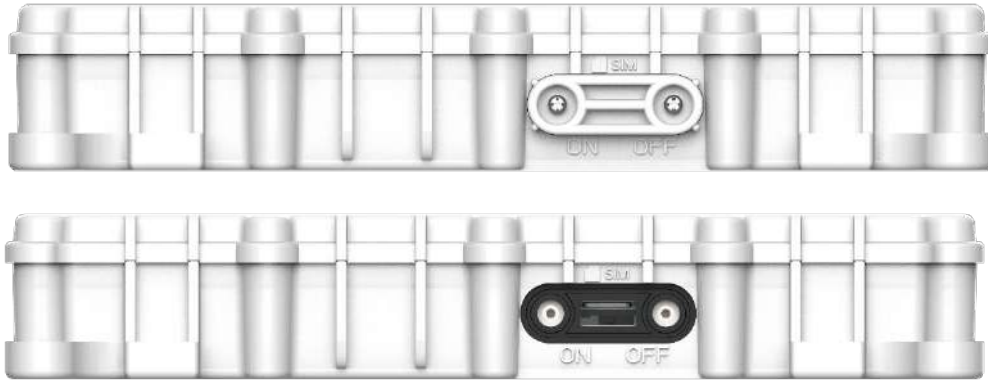
Network Specifications	
Operating Band	FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/ B20/B25/B26/B28 TDD: B39 (Cat M1 only) EGPRS: 850/900/1800/1900MHz
Data Transmission	eMTC: Max. 300Kbps (DL), Max. 375Kbps (UL) NB1: Max. 32Kbps (DL), Max. 70Kbps (UL) EDGE: Max. 296Kbps (DL), Max. 236.8Kbps (UL) GPRS: Max. 107Kbps (DL), Max. 85.6Kbps (UL)
GNSS Specifications	
GNSS Chipset	Qualcomm Gen 8C GNSS receiver
GNSS System	GPS+Glonass+Galileo+Beidou
Receiver type:	33 tracking / 99 acquisitions- channel GNSS receiver
Sensitivity	Cold start: -149 dBm Tracking: -163 dBm
Position Accuracy in open sky (CEP-50)	< 2m
Standalone TTFF	Cold start: < 29s Warm start: < 27s Hot start: < 1s
Interfaces	
Charging and Data Transmission	4 Pin port with magnet
Network, GNSS Antenna	Internal only
Indicator LED	Network, GNSS and Battery
FOTA	Yes
Physical Power Switch	1
Light Sensor	1 back light sensor
Temperature Sensor	1 temperature sensor
BLE 5.0	Yes
General Specifications	
Waterproof	IP67
Dimensions	85mm*185mm*31 mm (3.35" *7.28" *1.22")
Weight	370g (13oz)
Battery	Rechargeable Li-Polymer 9600 mAh/ 3.6V

Standby Time (without solar charging, 2 hours active tracking per day)	10 minutes reporting: 320 Days 5 minutes reporting: 170 Days 1 minute reporting: 68 Days
Charging & Data Communication	Magnetic USB cable (recommend using 5V 1A adaptor, 20 hours charging)
Operating Temperature	-25C° ~ +70C° (-13°F ~ 158°F)
Mounting	Magnet/Screw
Air Interface Protocol	
Transmit Protocol	TCP, UDP, MQTT, SMS
Data Security & Encryption Option	MD5/ AES256
BLE Accessory Support	Yes
Scheduled Timing/angle/distance Report	Report position and status at preset intervals
Geo-fence	Support up to 64 internal geo-fence regions
Alarms	Support up to 31 types of alarm (refer 7. Alarm Configuration)

Standard Accessories Introduction



Note: Indicator lights will go out automatically after the tracker turns on for 70 seconds without connecting to the external power via USB cable.



- **Installation**
 - Mount away from emission source such as all kinds of sensors, burglar alarm and other communication devices.
 - Mount so solar panel is in view of sunlight.
 - Ensure the device has been taken out of shipment mode using the white USB power cable shipped with the device. Red lights will show up on the device to confirm this step has been completed.
- **Tracker Operation**
 - Physical power on or off.
 - Turn the power switch to on or off position.
 - Physical power off is recommended when the tracker is stored in the warehouse.
- **Motion Operations**

Hold the tracker and keep the indicator LED side towards the sky. Use normal speed to turn it over 180°(the solar panel side towards the sky) then recover. This is called onetime standard turning. By repeating the standard turning 3 times, the tracker will show GNSS, network and battery status through indicator LED. It only works when physical power switch is at on position.
- **The Battery**
 - Place the tracker solar panel side on the desk.
 - Recommend connecting the device to a 5V 1A (cellphone) adaptor through magnet USB cable for 20 hours charging to make sure the battery is fully charged.
 - Customer also can connect the tracker to other USB connectors, but lower current output will cause longer charging time.
 - When the battery voltage value drops to 3.5V, usually a battery charging is needed to avoid unexpected shutdown due to low power. If the battery runs out completely, only when the battery is charged to 3.5V, the device will power on again.

FCC Caution:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.