

AN99

User Manual

Version 1.0

Basic

AN99 tracker is designed and optimized to implement the latest technologies in IoT tracker applications such as asset tracking as well as fleet management. The device is mainly implemented with temperature sensor, light tamper and barometric sensor that can be used to tracking goods or products in airplane cargo or ship. AN99 also can be used to track vehicles in real time, including GPS location, temperature, pressure and other environmental factors. It comes with comprehensive software, firmware libraries, tools, battery and plastic case.

Appearance



Specification

Cat.	
Main	GNSS (GPS, GLONASS, BDS, QZSS & Galileo) BLE 5.0 WIFI
SENSOR	Accelerometer Temperature Sensor Barometer Sensor
BATTERY	Non-Rechargeable, 6400mAh @ 4.5V More than total 1200 reports, up to 3+ years @ 1 report per day
CELLULAR	LTE Cat-1 bis EGPRS: 850/900/1800/1900 MHz
ENVIRONMENTAL	Operation Temperature: -20°C to +50°C Storage Temperature: -20°C to +55°C
PHYSICAL	IP67 Rating Dimensions: 107.5 x 69.0 x 24.0 mm Weight: ~230g
APPROVALS	FCC, IC, SRRC

1. Getting started

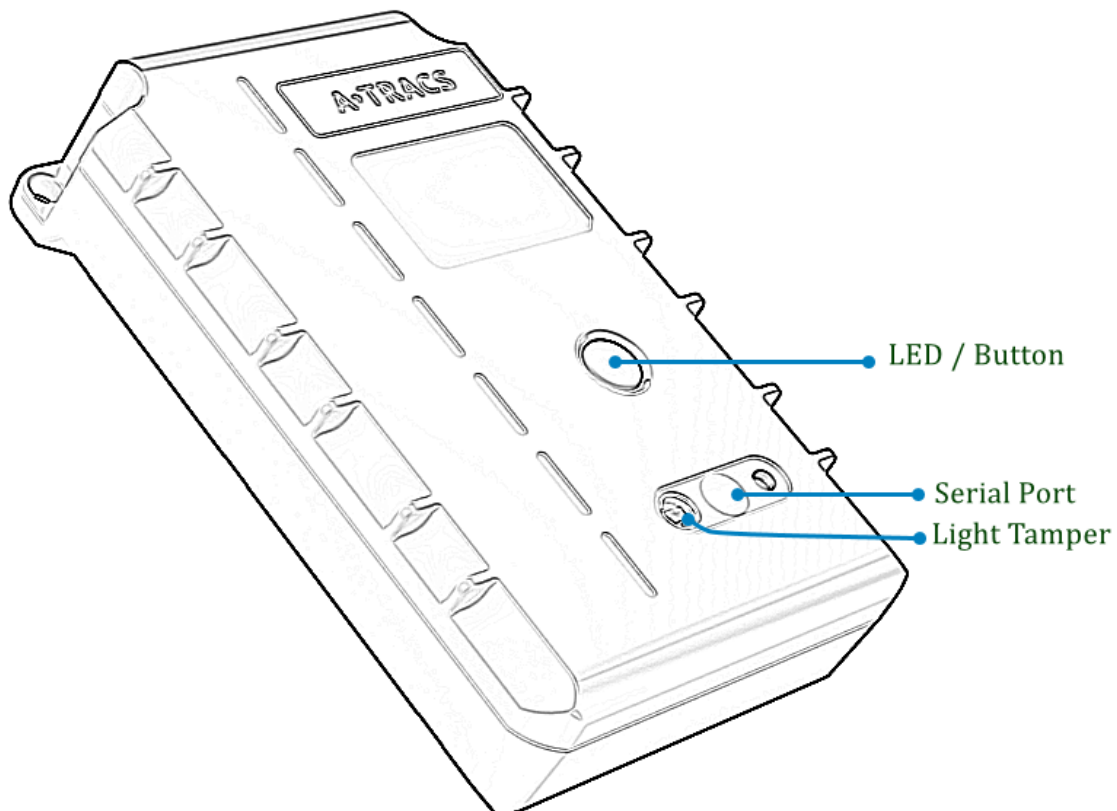
Device is in shipping mode by default, it needs to press button to power on when out of box.

■ LED Indicators

- o Blue LED–Blinking when power on.
- o Red LED– Flashing when enter ship mode.

Cat.	Status	Meaning
Blue	Flash for more 5 seconds	Device power on
Red	Flash for 5 seconds	Device enter ship mode

(Tabel 2 LED Indicators)



Note: LED will not flash or show on when in work mode, it will not impact on transporting goods and products via aircraft or ship.

■ Button

It is used to power on or wake up.

■ Serial Port

It is used to configure device, FW upgrade and capture debug logs.

■ Light Tamper

It is used to detect the brightness changed then trigger Tamper alert

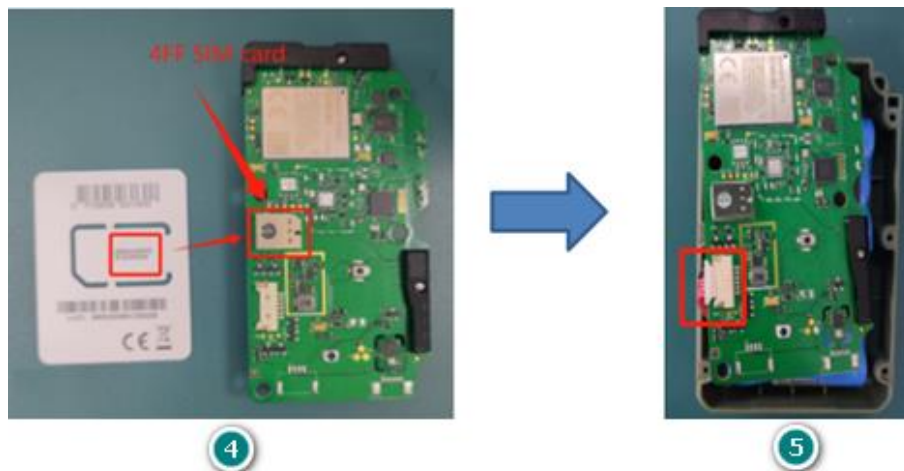
2. SIM Card

SIM cards should have access to LTE Cat-1 bis internet.

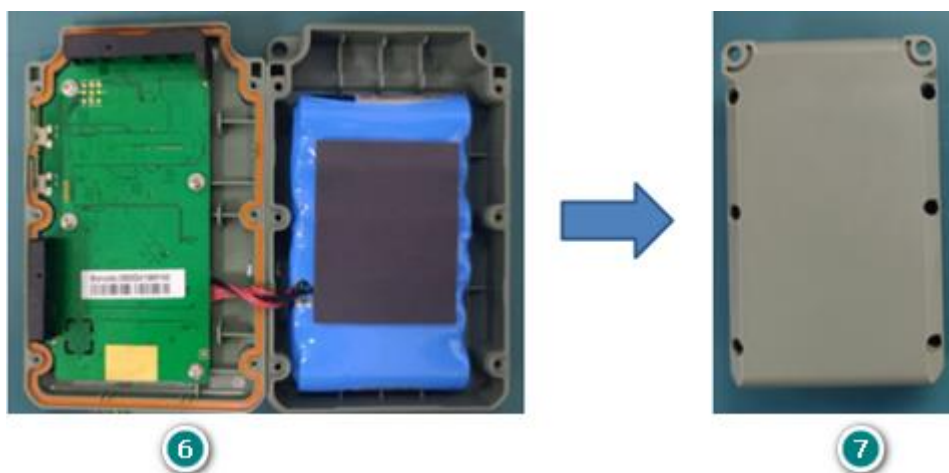
In general terms, device has implemented SIM card, please make sure the device needs to change SIM cards.



- 1) To insert the SIM card into the slot, please open the housing with screwdriver to remove 6 fixed screws.
- 2) After removing the 6 screws, open the upper and lower shells, then remove the 4 screws from the motherboard.
- 3) Remove the battery port and remove the motherboard.



- 4) Insert a new SIM card. if there is a SIM card, remove it and insert the new SIM card.
- 5) Plug the battery port into the power port on the motherboard.



- 6) After reconnect the battery, install the PCBA board on the upper shell, use a Phillips screwdriver to lock the previous screw back
 - 7) Close the upper and lower shell to lock the screw.
- Now, the SIM card installation or replacement process is complete.

3. Installation

With two holes, the device has easy installation and can be hung on items. Attached 3M foam tape to help fix the device on planes items.

The products are mainly used in the interior of containers, attach device near the box cover that it is easier to get light sensitive

Note:

To get better signal, the device should face up to the sky when used to monitor vehicle as GPS tracker.

4. Operation

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.

4.1 Power ON/OFF

Power on: press power button for 3 seconds

Power off: it should remove the battery; it is recommended to enter ship mode.

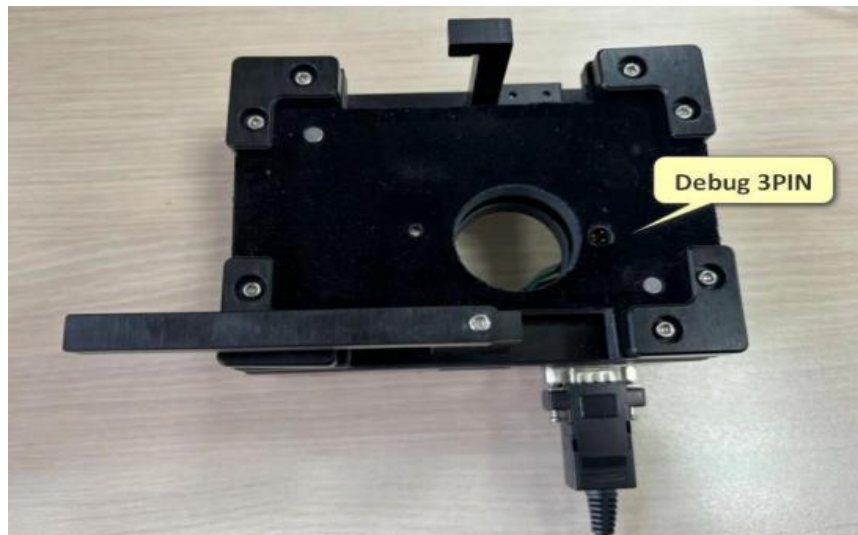
4.2 Upgrade

To upgrade software or configuration file when devices are in hand, it should exposure serial port and use the debug cable connect device with PC.

- 1) Remove the rubber stopper to expose the Debug PIN on device.



- 2) Put device on the fixture (AN99 JIG) to fit the Debug 3 PIN direction.
- 3) Run the Xmodem tool and please refer to the document that using Xmodem tool to upgrade software.



Note: it also can send AT command via SMS to devices when in field.

5. Troubleshooting

5.1 LED is not flash

- a) Please check whether the device is well connected to the battery after changing SIM cards.
- b) LED will not flash in work mode after power up, please check whether there any report on AGS server.

5.2 GPS is not fixed

- a) Please move the device to outside to get better GPS signal.
- b) Please try to keep “back side” up
- c) Please check and configure a reasonable GPS timer value via AT+XGPLT.

5.3 Fail to connect to AGS Platform

- a) Please check APN and IP settings.
- b) Please check the SIM cards are available.
- c) Metal thermal barrier or heating layer of the windshield affects the signal, please change installation places to receive better signal.

5.4 How to test Light Tamper

- a) Please try to cover device’s Light tamper slot then expose.
- b) check the reports on server from the device that should be Tamper detection and Tamper Removed.

5.5 Fail to detect door sensor status

- a) Please check the pairing with door sensors
- b) Please keep the distance with door sensors in 20 meters, device will get better BLE performance.

FCC Statement

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.

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.

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

RF Exposure Warning Statements:

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons during the normal operations.

IC STATEMENT

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

In order to avoid the possibility of exceeding the IC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.

Afin d'éviter la possibilité de dépasser les limites d'exposition aux fréquences radio de la IC CNR102, la proximité humaine à l'antenne ne doit pas être inférieure à 20 cm (8 pouces) pendant le fonctionnement normal.