# TBC212

**LTE CAT.1 & GSM TRACKER**

TBC212 is a LTE Cat.1&GSM tracker that supports L1&L5 dual-band GNSS positioning for more accurate positioning information. With an U-type cable, virtually anyone can mount the device in 5 minutes or less directly on a car battery. It supports IP67 waterproof, which can be applied to a variety of complex environments. It supports Bluetooth Low Energy 5.3 and can realize various alarm and detection functions by wirelessly connecting external devices. It can be used in fleet management, vehicle tracking, vehicle rental, logistics tracking, and other industries.

### L1&L5 Dual-band GNSS

L1&L5 dual-band GNSS receivers ensures better track quality and quick time to first fix.

### Fast Installation

With U-type cable, virtually anyone can mount the device in 5 minutes or less directly on a car battery.

### IP67 Ingress Protection Rating

IP67-rated casing is designed to withstand poor weather conditions

### Bluetooth 5.3(BLE)

Bluetooth Low Energy 5.3, wirelessly connected to various sensors.

### Detection Functions

It can realize rollover warning, Jamming, Ignition, Motion, Crash, and other detection functions.

### Special Alarm

Special alarm based on Bluetooth LE 5.3 wireless connection

## Application

Vehicle Tracking

Vehicle Rental

Fleet Management

Logistics Tracking

# CONTENT

Product Information ..... 3

Know your device ..... 4

PIN out ..... 4

Wiring scheme ..... 5

Set up your device ..... 5

PC connection (Windows) ..... 5

How to install USB Driver (Windows) ..... 5

LED normal operating mode (LED ON) ..... 6

Configuration ..... 6

Mobile application ..... 6

Default configuration settings ..... 6

Mounting recommendations ..... 7

Safety information ..... 7

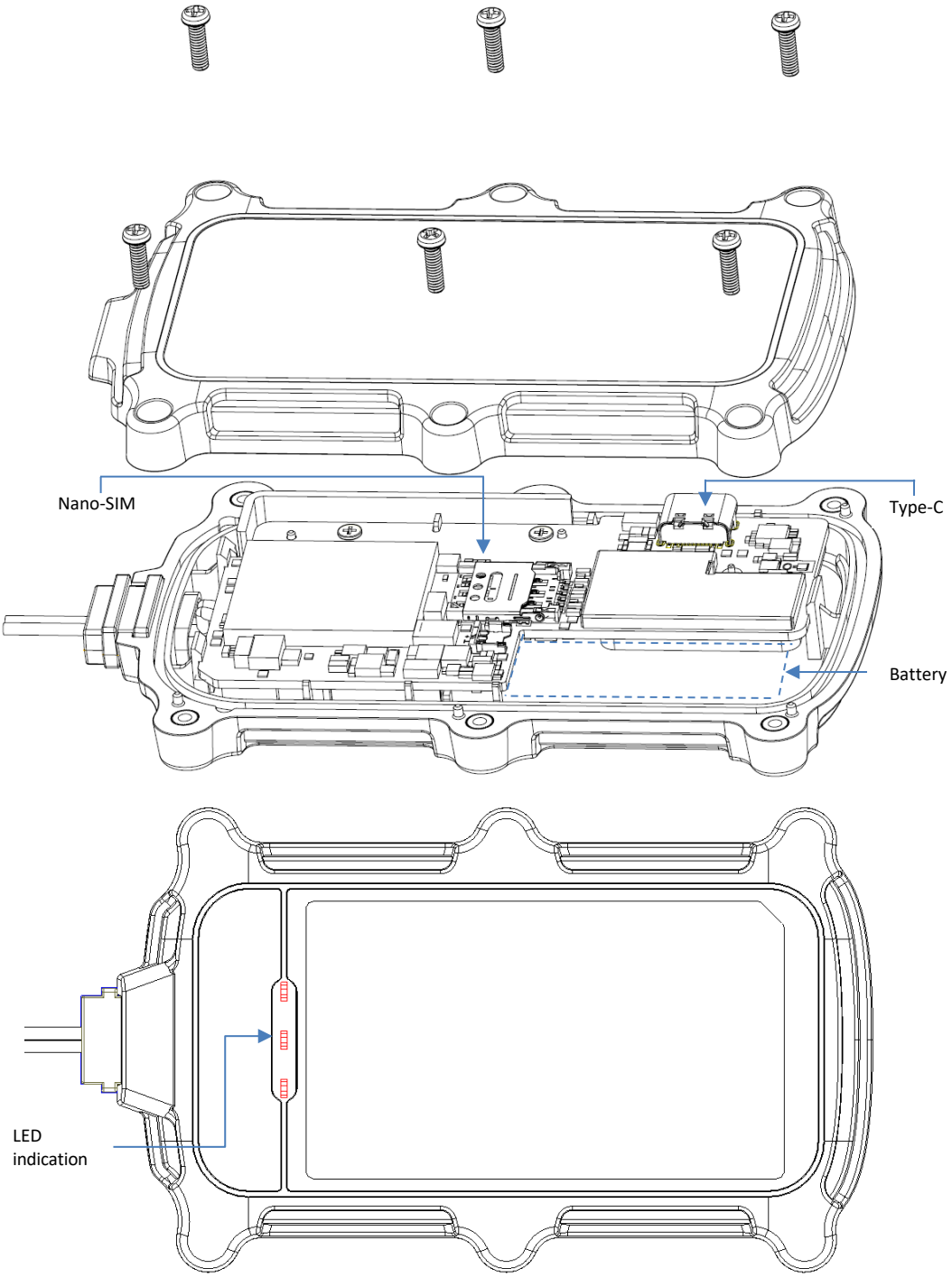
Warranty ..... 8

Warranty disclaimer ..... 8

## Product Information

| | | |
|---|---|---|
| Model name | | TBC212 |
| **GNSS Specifications** | | |
| GNSS | | L1: BEIDOU, GPS, GLONASS, GALILEO, QZSS, SBAS |
| | | L5: GPS, QZSS |
| Tracking sensitivity | | -165 dBm |
| Position accuracy(CEP) | | < 1m |
| Velocity accuracy | | 0.1m/s |
| TTFF (Time To First Fix) | | Cold starts 24s |
| | | Hot starts 1s |
| | | Reacquisition 2s |
| **Network Specifications** | | |
| Frequency Bands | EU | GSM: B2/B3/B5/B8 |
| | | LTE FDD: B1/B3/B5/B7/B8/B20/B28 |
| | LA | GSM: B2/B3/B5/B8 |
| | | LTE FDD: B2/B3/B4/B5/B7/B8/B28/ B66 |
| Data Transfer (Max) | | LTE FDD (CAT 1): 10 Mbps (DL) / 5 Mbps (UL) |
| | | GSM (GPRS): 85.6 Kbps (DL) / 85.6 Kbps (UL) |
| | | GPRS: 85.6Kbps(DL),85.6Kbps(UL) (Option) |
| Data support | | SMS (TEXT, PDU), Network protocols (TCP, UDP, TLS, MQTT) |
| **General Specifications** | | |
| Dimensions | | 93.0*57.0*13.8mm |
| Weight | | TBD |
| Input voltage range | | 10-90V DC + |
| Operating temperature (without battery) | | -40 °C to +85 °C |
| Storage temperature (without battery) | | -40 °C to +85 °C |
| Ingress Protection Rating | | IP67 |
| Back-up battery | | 170mAh Li-Ion battery 3.7 V |
| **Interfaces** | | |
| GNSS/Cellular antenna | | Internal |
| Type-C Interface | | Support |
| SIM | | Nano-SIM (Compatible with ESIM) |
| Bluetooth | | 5.3 |
| LED indication | | *3 (GPS, Network, and Power) |
| **Features** | | |
| Scheduled Report | | Report position and status according to preset intervals. |
| Geo-fences | | Support |
| Sensors | | Accelerometer |
| FOTA | | Support |
| Configuration and firmware update | | FOTA WEB \USB\Bluetooth |
| Power mode | | Multiple power-saving modes can be configured |
| Turning point algorithm | | Support turning point algorithm compensation |
| **Certifications** | | |
| Certifications | | RoHS\CE\FCC |

## Know your device

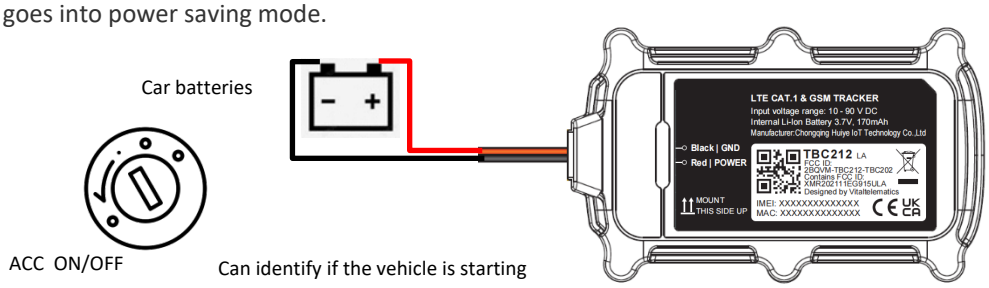



## PIN out

| PIN | DESCRIPTION |
|---|---|
| Red \| POWER | Positive terminal of the power supply(10V-90V) |
| Black \| GND | Ground wire terminals |

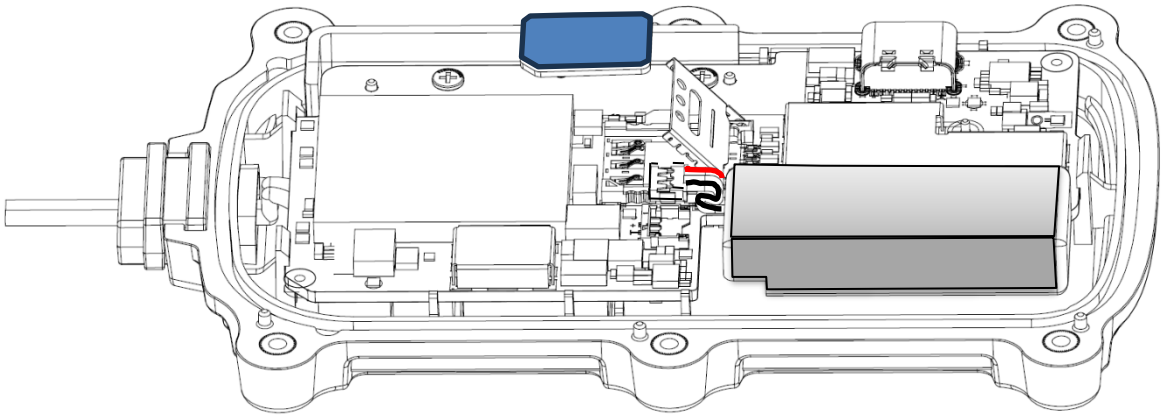
## Wiring scheme

Please use on-board battery power, when the engine starts the device can recognize the start signal, and mark the vehicle as engine started state to start sending information to the back-end server, when the ACC is turned off, the device goes into power saving mode.




## Set up your device

Unscrew the back cover screw, open the card holder according to the indicated mark and insert the Nano-SIM, lock the SIM card holder, insert the battery connector into the upper socket, place the waterproof seal in the appropriate position, and tighten the screw to ensure sealing.



## PC connection (Windows)

1.Power-up TBC212 with DC voltage (10 – 90 V) power supply using power wires. LED's should start blinking, see “LED normal operating mode (LED ON)”

2.Connect device to computer using TYPE-C cable connection:

- Using TYPE-C cable
- You will need to install USB drivers, see “How to install USB drivers (Windows)”

3.You are now ready to use the device on your computer.

## How to install USB Driver (Windows)

1. For the serial port driver, please refer to the instructions provided with the configuration tool.

2.Download and run CH341SER.EXE.

3.Click install in driver installation window.

4.Eventually the confirmation window will appear. Click Finish to complete the setup.

(In windows 10 or later, the CH340 serial port driver is automatically updated.)

## LED normal operating mode (LED ON)

LED Indicator Light Status Guide by Flashing Frequency

| Status | Blue Light (GPS) | Green Light (Network) | Red Light (Power) |
|---|---|---|---|
| **Quick**<br>(On for 100ms, Off for 200ms) | GPS chip abnormal operation | Device searching for network | Internal battery charging |
| **Medium**<br>(On for 200ms, Off for 2000ms) | GPS searching for signal | N/A | Powered by internal battery, voltage above 3.7V |
| **Slow**<br>(On for 1000ms, Off for 10000ms) | N/A | Device registered on network | Powered by internal battery, voltage below 3.7V |
| **Steady On** | Location acquired successfully | N/A | Internal battery fully charged |
| **Off** | GPS at rest or not operational | Deep sleep<br>(enter low-power state) | Powered by internal battery, voltage below 3.5V |

This table organizes the LED indicator light statuses based on their flashing frequencies: quick, medium, and slow. It also includes the steady on and off states for clarity. Each section of the table corresponds to the status of the GPS, network, and power indicators, providing a clear and concise reference for understanding the device's status based on the LED indicators.

## Configuration

TBC212 After connecting the PC with the TYPE-C serial cable, the shortcut key "win + x" enters the menu and selects Device Manager (M). Check for a "USB-SERIAL CH340" port in the Device Manager Ports menu.

•Open the online configuration tool "**Config tool**". （Please contact the salesperson for information about the tool account.）

•Click "Start" to connect the device, "select port" to select the serial port number, and click Connect.

•After the prompt is displayed, enter the default password TBC212 , and click Next.

•If the prompt is displayed indicating that the operation is successful and the verification is successful, the configuration interface will be displayed after confirming the connection

loads configuration from device.

saves configuration to device.

loads configuration from file.

saves configuration to file.

Disconnect the currently connected device (currently connected)

Reconnect the last device (currently the device is disconnected)

The Reload device selection page is displayed

Parameter Settings are based on the latest protocol. Update the document in time.

## Mobile application

At present, the mobile application can send AT configuration instructions, support the import of configuration files, local upload upgrade package automatic upgrade, still in the research and development stage, early access can download the test version HYIot Link.

**Stay tuned...**

## Default configuration settings

MOVEMENT AND IGNITION DETECTION:

VEHICLE MOVEMENT
will be detected by accelerometer

IGNITION WILL BE DETECTED
by ACC state is ON

DEVICE MAKES A RECORD ON MOVING IF ONE OF THESE EVENTS HAPPEN:

30
seconds passes

VEHICLE TURNS
30 degrees

THE PERIODIC REPORT WILL BE EXTENDED IF:

1 HOUR REPORT
while vehicle is stationary and ignition is off

THE REPORT WILL NOT BE REPORTED IF:

DEVICE LOCATION FAILURE
The generated periodic report is discarded and not reported

At present, TBC212 has been connected to the wialon platform, and can be configured and used at any Select the product name TBC212 during configuration.

## Mounting recommendations

CONNECTING WIRES

•Wires should be fastened to the other wires or non-moving parts. Try to avoid heat emitting and moving objects near the wires.
•The connections should not be seen very clearly. If factory isolation was removed while connecting wires, it should be applied again.
•If the wires are placed in the exterior or in places where they can be damaged or exposed to heat, humidity, dirt, etc., additional isolation should be applied.
•Wires cannot be connected to the board computers or control units.

CONNECTING POWER SOURCE

•Be sure that after the car computer falls asleep, power is still available on chosen wire. Depending on car, this may happen in5 to 30 minutes period.
•When module is connected, measure voltage again to make sure it did not decrease.
•It is recommended to connect to the main power cable in the fuse box.
•Use 3A, 125V external fuse.

CONNECTING IGNITION WIRE

•Be sure to check if it is a real ignition wire i. e. power does not disappear after starting the engine.
•Check if this is not an ACC wire (when key is in the first position, most of the vehicle electronics are available).
•Check if power is still available when you turn off any of vehicles devices.
•Ignition is connected to the ignition relay output. As alternative, any other relay, which has power output when ignition is on, may be chosen.

CONNECTING GROUND WIRE

•Ground wire is connected to the vehicle frame or metal parts that are fixed to the frame.
•If the wire is fixed with the bolt, the loop must be connected to the end of the wire.
•For better contact scrub paint from the spot where loop is going to be connected.

## Safety information

This message contains information on how to operate TBC212 safely. By following these requirements and recommendations, you will avoid dangerous situations. You must read these instructions carefully and follow them strictly before operating the device!

•The device uses SELV limited power source. The nominal voltage is +12 V DC. The allowed voltage range is +10...+90V DC.
•To avoid mechanical damage, it is advised to transport the device in an impact-proof package. Before usage, the device should be placed so that its LED indicators are visible. They show the status of device operation.
•When connecting the connection (1x5) cables to the vehicle, the appropriate jumpers of the power supply of the vehicle should be disconnected.
•Before dismounting the device from the vehicle, the 1x5connection must be disconnected.
•The device is designed to be mounted in a zone of limited access, which is inaccessible to the operator. All related devices must meet the requirements of EN 62368-1standard.

•The device TBC212  is not designed as a navigational device for boats.

Do not disassemble the device. If the device is damaged, the power supply cables are not isolated or the isolation is damaged, DO NOT touch the device before unplugging the power supply.

All wireless data transferring devices produce interference that may affect other devices which are placed nearby.

The device must be connected only by qualified personnel.

The device must be firmly fastened in a predefined location.

The programming must be performed using a PC with autonomic power supply.

Installation and/or handling during a lightning storm is prohibited.

The device is susceptible to water and humidity.

## Warranty

We guarantee our products 12-month warranty

All batteries carry a 12-month warranty period.

Post-warranty repair service for products is not provided.

If a product stops operating within this specific warranty time, the product can be:

- Repaired
- Replaced with a new product
- Replaced with an equivalent repaired product fulfilling the same functionality
- Replaced with a different product fulfilling the same functionality in case of EOL for the original product

Additional agreement for an extended warranty period can be agreed upon separately.

## Warranty disclaimer

•Customers are only allowed to return products as a result of the product being defective, due to order assembly or manufacturing fault.
•Products are intended to be used by personnel with training and experience.
•Warranty does not cover defects or malfunctions caused by accidents, misuse, abuse, catastrophes, improper maintenance or inadequate installation – not following operating instructions (including failure to heed warnings) or use with equipment with which it is not intended to be used.
•Warranty does not apply to any consequential damages.
•Warranty is not applicable for supplementary product equipment (i. e. PSU, power cables, antennas) unless the accessory is defective on arrival.

## FCC Caution:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this 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.
This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

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.
To maintain compliance with FCC’s RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.