

RTK Base Station

Quick Manual



www.locosystech.com

Document version: v1.0

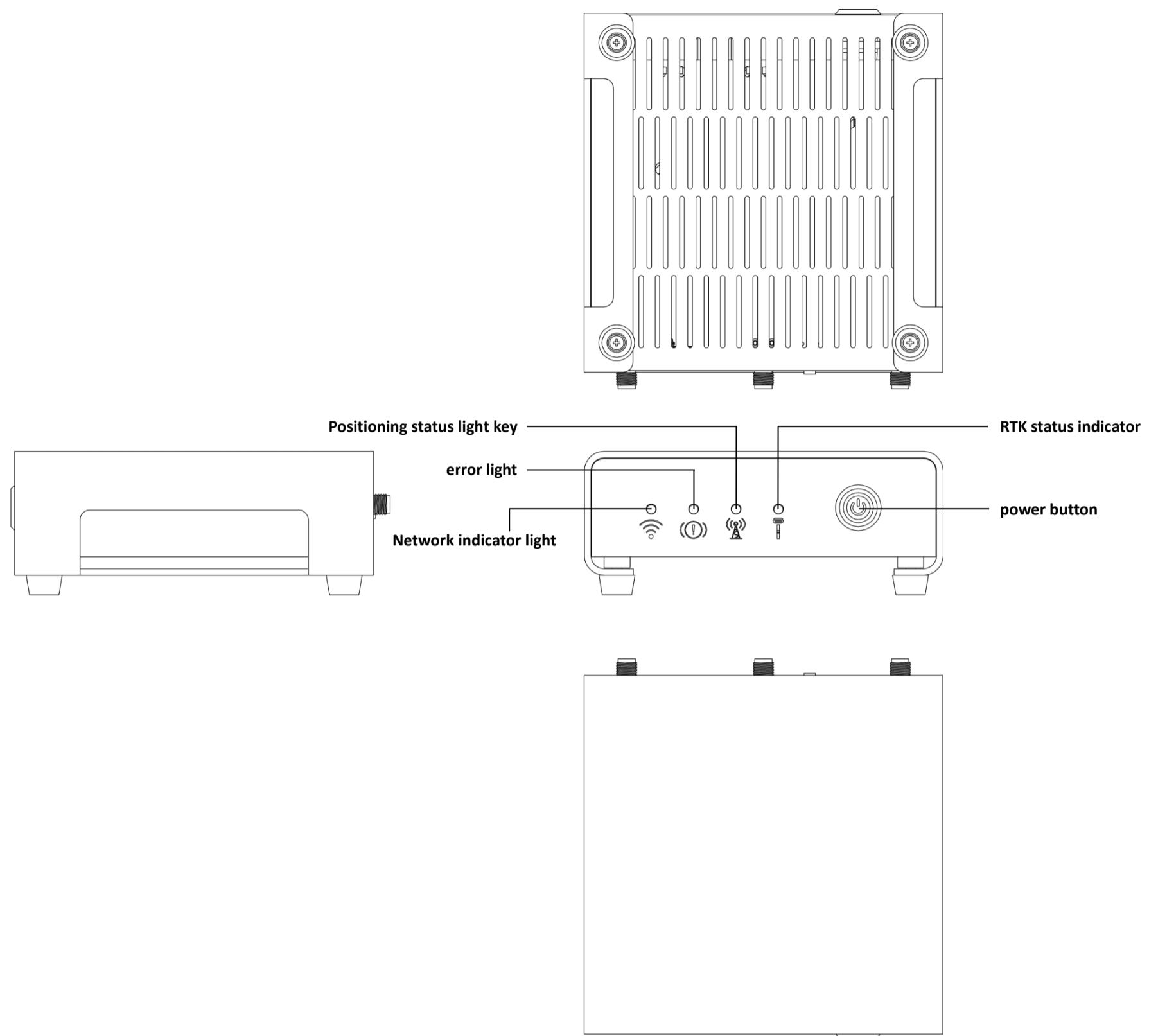
Publication date: August 30, 2024

User manual

Please read the help file first

Thank you for using our RTK base station. This base station is built base on multi-satellite and multi-frequency high-precision positioning.

- Please thoroughly read all safety precautions and the manual before using the device to ensure safe and correct operation.
- The descriptions in this manual are based on the device's default settings.
- The images used in this manual may differ from the appearance of the actual product.
- The content of this manual may be different from the product due to the difference from the service provider or software provided, subject to change without prior notice.
- Available features and additional services may vary depending on the device, software or service provider.
- Apps and their features may vary depending on country, region, or hardware specifications. We are not responsible for performance issues caused by third-party applications or incompatibility issues caused by customers editing registry settings.
- The sound sources, wallpapers and images provided on this device are licensed for limited use between us and their respective owners. Quoting and adapting these materials for commercial or other purposes is a violation of copyright law. We are not responsible for copyright infringement by users.
- To avoid additional charges, choose a suitable data plan for sending, receiving, uploading, downloading, automatic synchronization, or location services. For more information, contact your service provider.
- Please keep this manual for future reference.



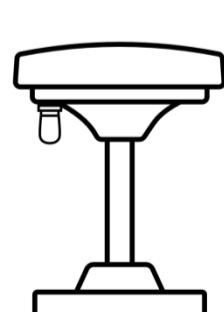
Notice:

- Due to different configurations selected by users, the results may not match the renderings;
- There are slight differences in the appearance of specific models.

Accessories



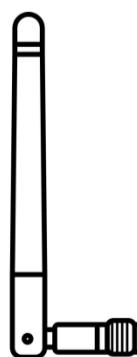
USB data cable



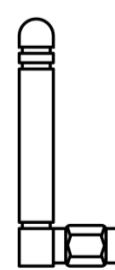
Multi-band
high-precision
external
measurement
antenna



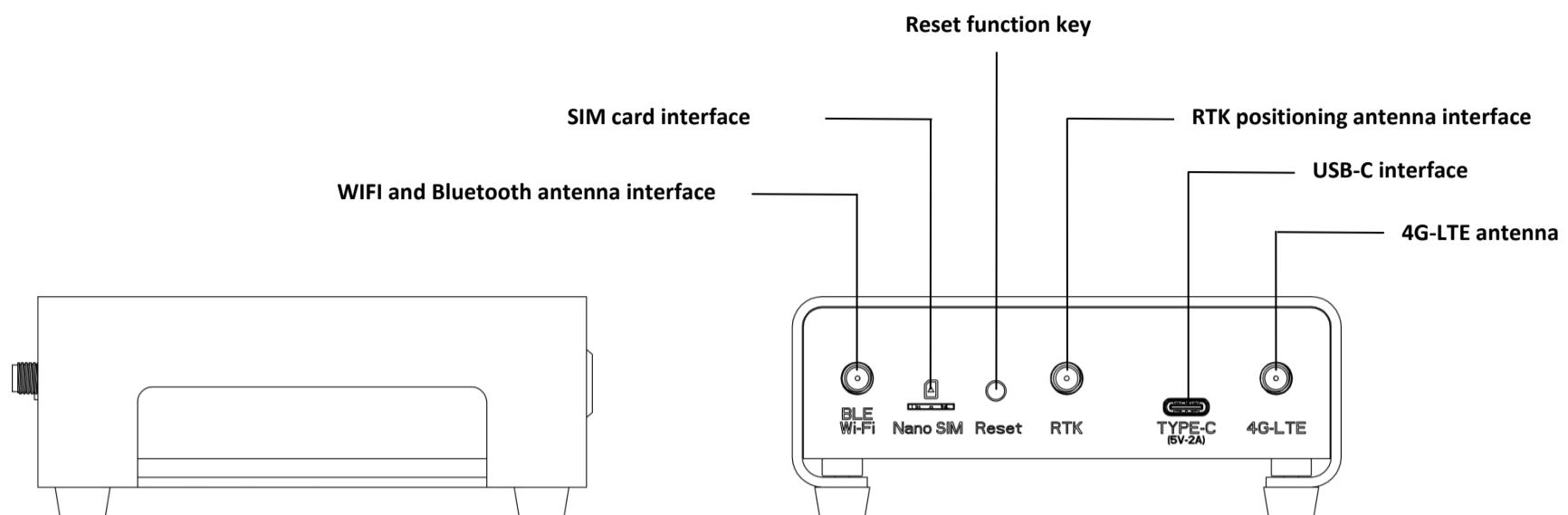
10m antenna adapter cable



4G-LTE antenna
(4G version)

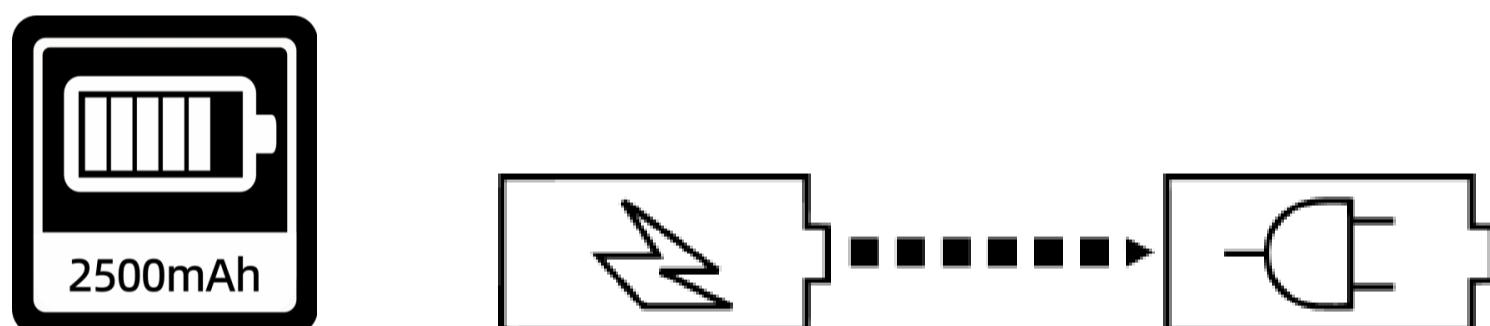


WIFI/Bluetooth antenna



Battery

The device has a built-in battery.



Lithium polymer battery

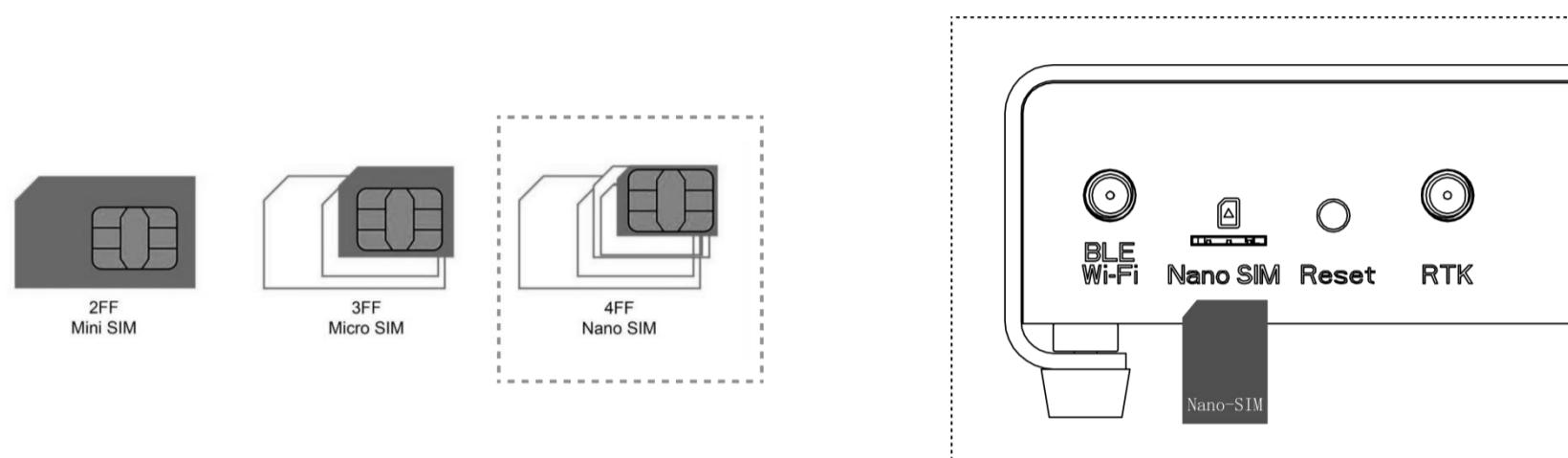
Caution

- Only use safety-certified batteries specifically designed for your device;
- Incompatible batteries may cause damage to the device;
- Never place batteries or devices on heating devices such as microwave ovens, stoves, or radiators. Batteries may explode when overheated.

1 How to insert SIM card

This product features a Push-push SIM card slot design. To avoid damaging the SIM card, always ensure the power is turned off before inserting or removing the card.

This machine uses a Nano SIM card. Please make sure the card is facing the correct direction before insertion to prevent system issues or damage to the card slot.



2 How to start

Plug in the power supply, press the power button to the locked state, the device will turn on, press the power button again to release the locked state and shut down.

3 How to use

	silk screen (rear of fuselage)	icon icon (front of fuselage)	COLOR	interface	Detailed description of functions
power button			BLUE	With self-locking button	After the system is turned on, the blue indicator light is always on
Network indicator light			BLUE		Flashing slowly: Waiting to connect to the network; Flashing quickly: The network has been registered successfully; Flashing quickly: The server has
error light			RED		When the UM980 positioning module system fails the self-test, the red light is always on.
Positioning status light			YELLOW		The UM980 positioning module always lights up after effective positioning (base station application)
RTK status light			GREEN		UM980 positioning module RTK fixed solution always lights green, Other statuses are not lit (rover application)
WIFI and Bluetooth antenna interface	BLE/Wi-Fi			SMA	WIFI and Bluetooth antenna interface (4G version only has Bluetooth)
SIM card interface	Nano SIM			Nano SIM	Insert the SIM card (this interface is closed in the WIFI version)
Reset function key	Reset			physical buttons	Press to reset the system
RTK positioning antenna interface	RTK			SMA	Connect to multi-satellite and multi-frequency positioning antenna
USB-C interface	TYPE-C (5V-2A)			Standard TYPEC	Standard charging interface; 5V=2A
4G-LTE antenna interface	4G-LTE			SMA	4G-LTE antenna interface (this interface is closed in the WIFI version)

4 How to use the APP

Wi-Fi version

1. Install Android APP: RTK-GB10-WB

Copy RTK-GB10-WB.apk to your Android phone, use file manager (such as: ) to open the folder where the RTK-GB10-WB.apk file is located, click on the RTK-GB10-WB.apk file to install (Figure 1-1).

2. Open the APP: RTK-GB10-WB.app

2.1. Click the RTK-GB10-WB icon to open the APP (Figure 2-1-1). The main window of the APP provides 5 functional icon buttons (Figure 2-1-2), click the respective icon button to open the respective function window.

 : Bluetooth connection and disconnection function

 : Enable Onocoy website function

 : Set base station data function

 : Set up WI-FI data function

 : Version information function

 : Bluetooth not connected icon

 : Bluetooth connected icon

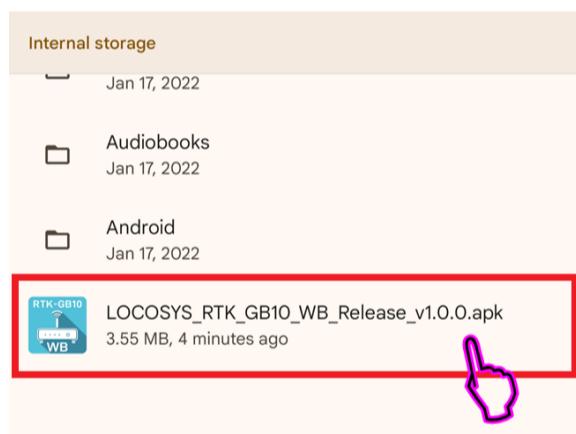


Figure 1-1



Figure 2-1-1



Figure 2-1-2

2.2. Click the Bluetooth icon button ()

Open the Bluetooth function window and click "RTK-GB10-WB Device" (Figure 2-2-1) to perform Bluetooth connection, it will automatically return to the main window after the Bluetooth connection is successful.

 : Search for Bluetooth devices again.

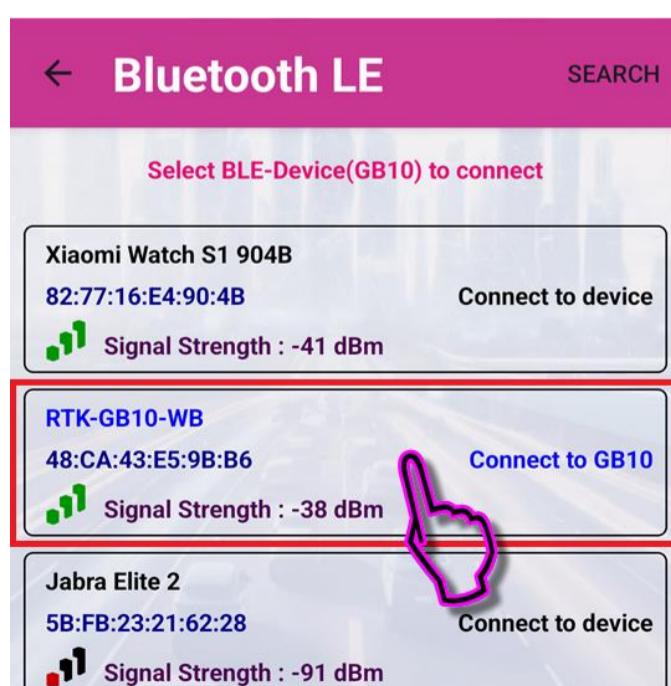


Figure 2-2-1

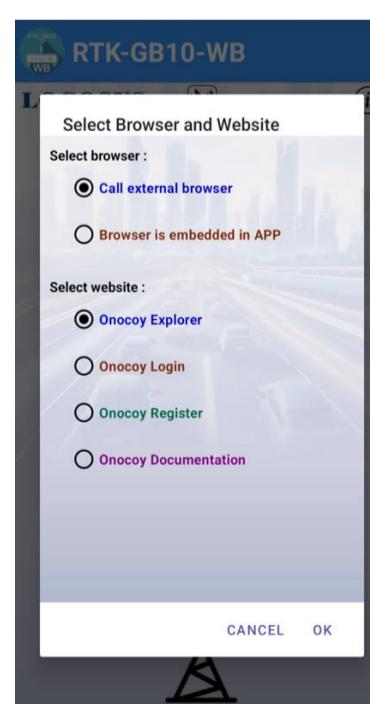


Figure 2-3-1

2.3. Click the browser icon button (🌐) Open the browser, you can choose to use an external browser or the built-in browser of the APP to open Onocoy's website, and can choose to open the "Explore (Base Station Service)", "Login", "Register" or "Documents" website (Figure 2-3-1).

2.4. Click the WI-FI wireless Internet icon button (📶) Open the WI-FI setting window (Figure 2-4-1) and manually enter the SSID to be used name, or click on the SSID in the list. After clicking on the SSID in the list, the SSID will be automatically filled in the field. Then, manually enter the password for the SSID. After the SSID and password are entered, the "Send" button "(Send Data to GB10 via BLE)" You can set the data to the RTK-GB10-WB device via Bluetooth.

⟳ : Refresh for wireless Internet WI-FI devices 📺 : Check connection status (figure 2-4-2)

👁️ : Hide/Show Password Button - Hide 🕔 : Hide/Show Password Button - Show

2.4.1 Press "Get Device Status Via BLE"("Get Device Status via BLE")to acquire RTK-GB10-WB current connection status of SSID Name from WI-FI (Figure 2-4-2)

Note : RTK-GB10-WB only support WI-FI frequency of 2.4G

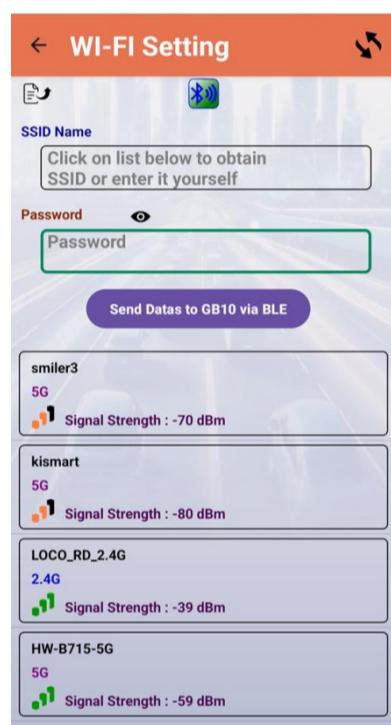


Figure 2-4-1-1

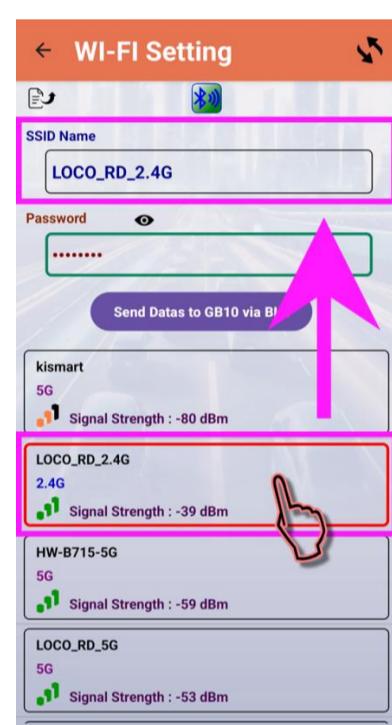


Figure 2-4-1-2

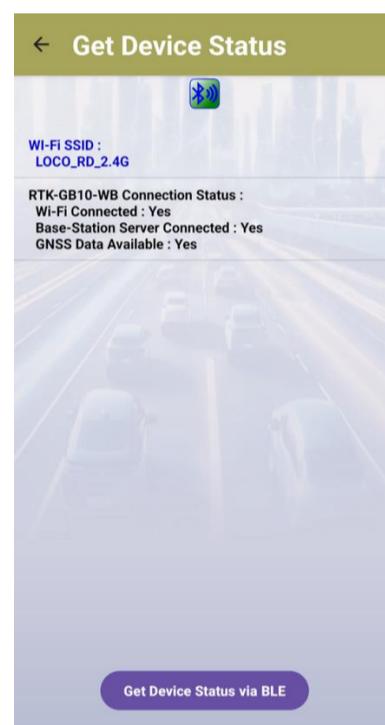


Figure 2-4-1-3

2.5. Click the base station icon button (⚠) Open the base station setting window (Figure 2-5-1), manually enter the mount point and password, or choose Whether to enable settings (Figure 2-5-2) base station number, longitude (unit: degrees), latitude (unit: degrees) and altitude (unit: meters), click the "Send" button " after input is completed ("Send Data to GB10 via BLE") You can set data to RTK-GB10-WB via Bluetooth equipment.

⚠ : Check connection status (figure 2-4-2)

👁️ : Hide/Show Password Button - Hide 🕔 : Hide/Show Password Button - Show

2.5.1 Press "Get Device Status Via BLE"("Get Device Status via BLE")to acquire RTK-GB10-WB current connection status of SSID Name from WI-FI (Figure 2-4-2)

Note 1 : Please reboot the RTK-GB10-WB device when done setting the base station information

Note 2 : The mount point is provided by Onocoy when creating the base station, and the password is filled in by the user when creating the base station.

Note 3 : Click the question mark icon button (❓) Open Onocoy's base station creation and other related instructions (Figure 2-5-3).

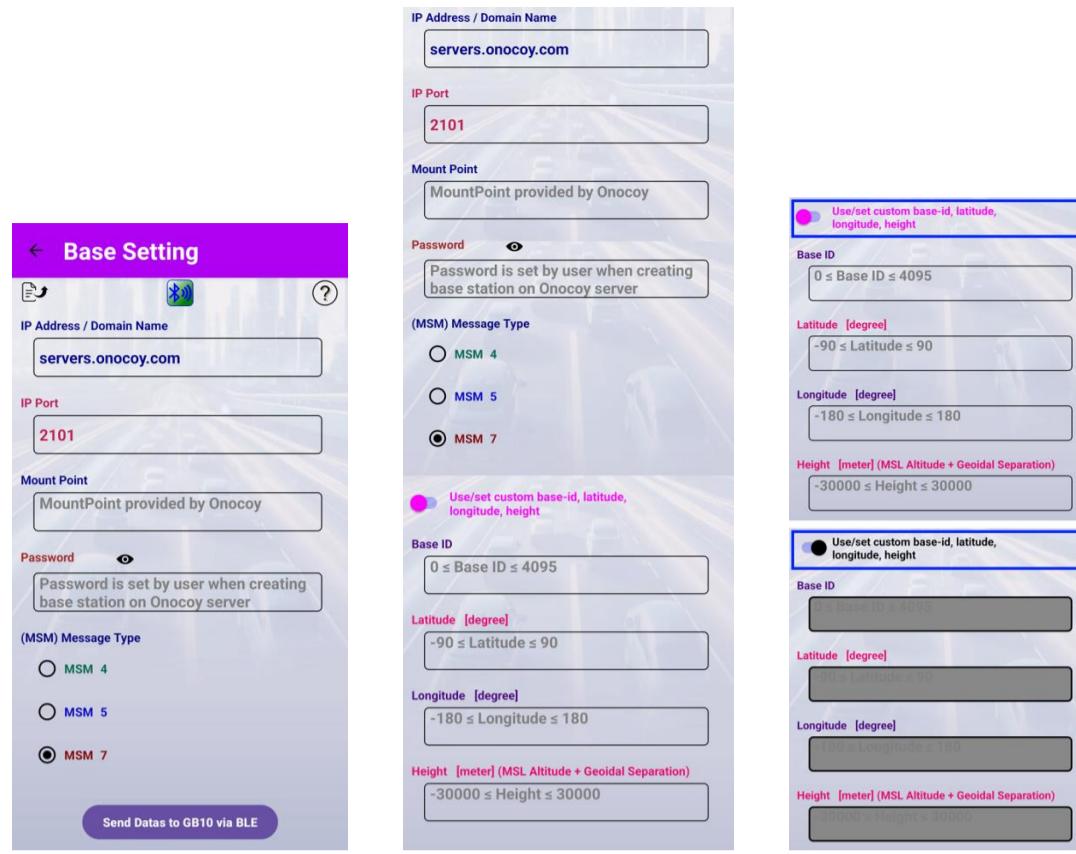


Figure 2-5-1-1

Figure 2-5-1-2

Figure 2-5-2

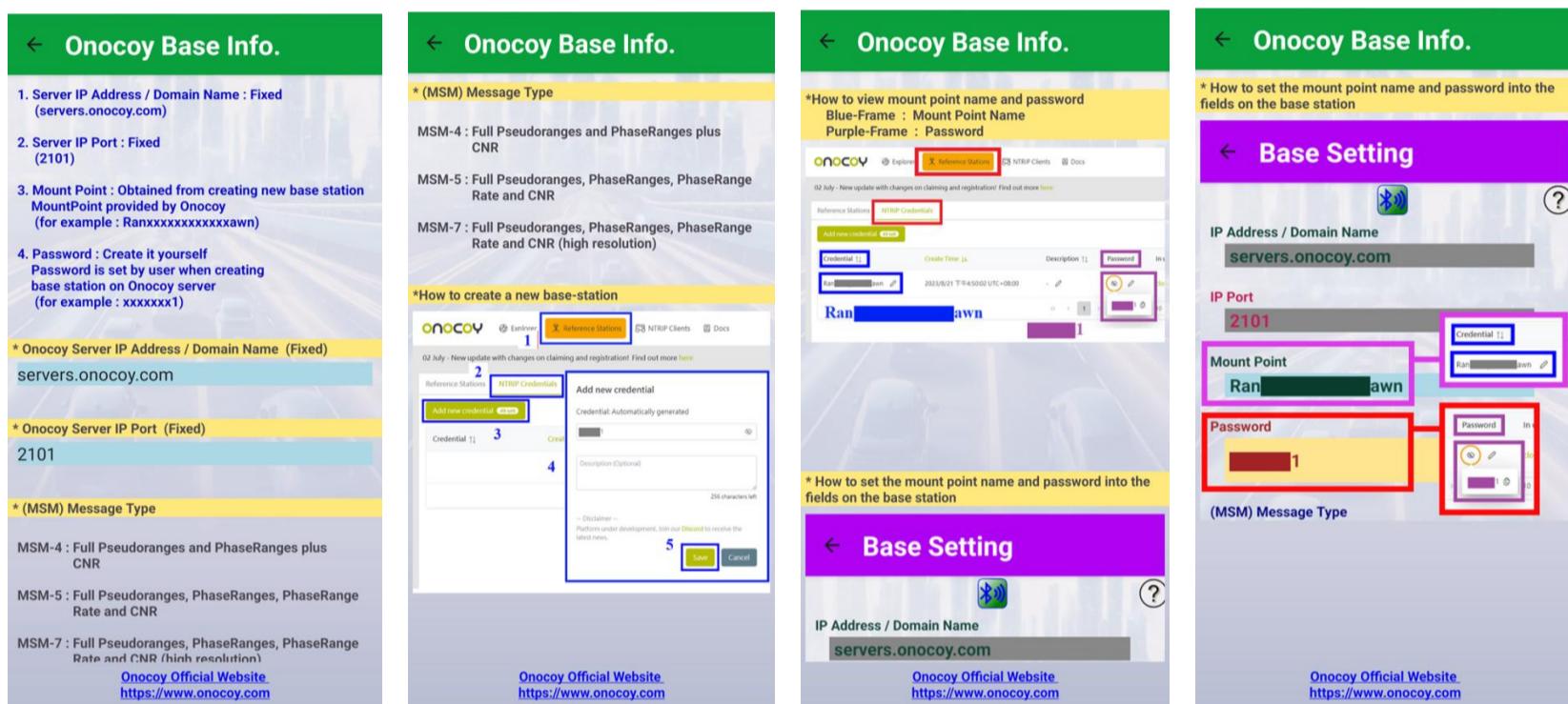


Figure 2-5-3-1

Figure 2-5-3-2

Figure 2-5-3-3

Figure 2-5-3-4

2.6. After the base station setting or WIFI wireless Internet setting is completed, you can go to the main window to open the Bluetooth link window and click Connected RTK-GB10-WB in the APP performs Bluetooth disconnection (Figure 2-6-1).

2.7. Click the version information icon button (i) Open the version function window (Figure 2-7-1).

► : Open the Youtube instructional video (link URL)

📝 : Open the user manual (link URL)

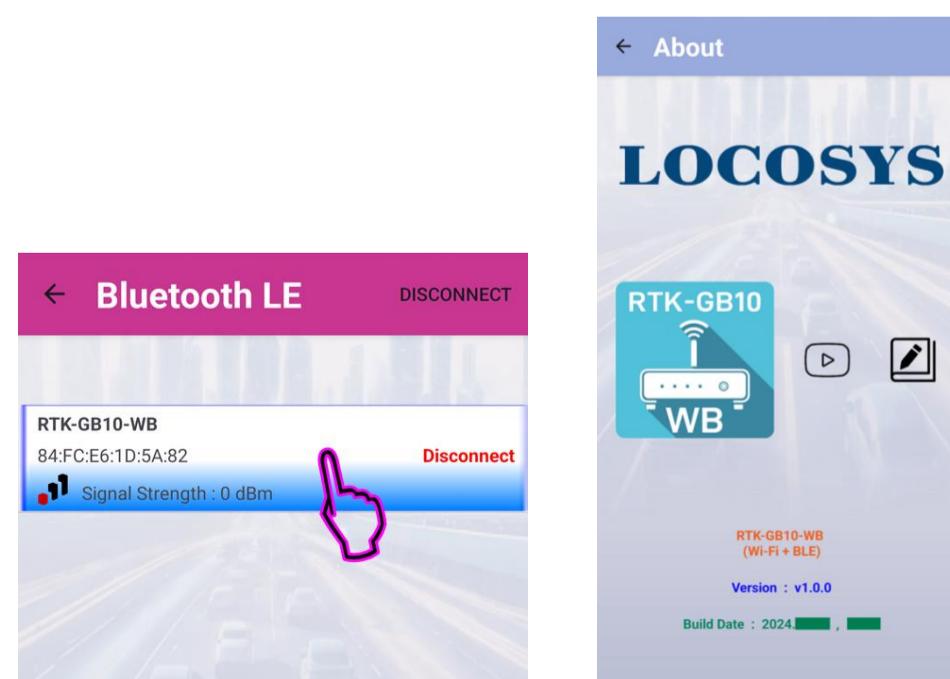


Figure 2-6-1

Figure 2-7-1

4G-LTE version

1. Install Android APP: RTK-GB10-4B

Copy RTK-GB10-4B.apk to your Android phone, use file manager (such as: ) to open the folder where the RTK-GB10-4B.apk file is located, click on the RTK-GB10-4B.apk file to install (Figure 1-1).

2. Open APP: RTK-GB10-4B.app

2.1 Click the RTK-GB10-4B icon to open the APP(Figure 2-1-1). The main window of the APP provides 4 functional icon buttons (Figure 2-1-), click the respective icon button to open the respective function window.

 : Bluetooth connection and disconnection function

 : Enable Onocoy website function

 : Set base station data function

 : Version information function

 : Bluetooth not connected icon

 : Bluetooth connected icon

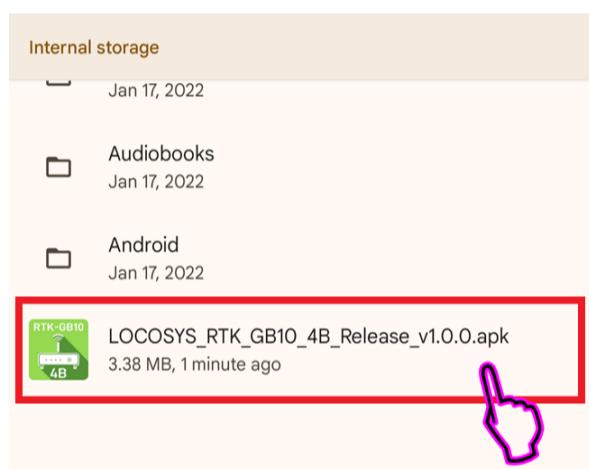


Figure 1 -1



Figure 2-1 -1

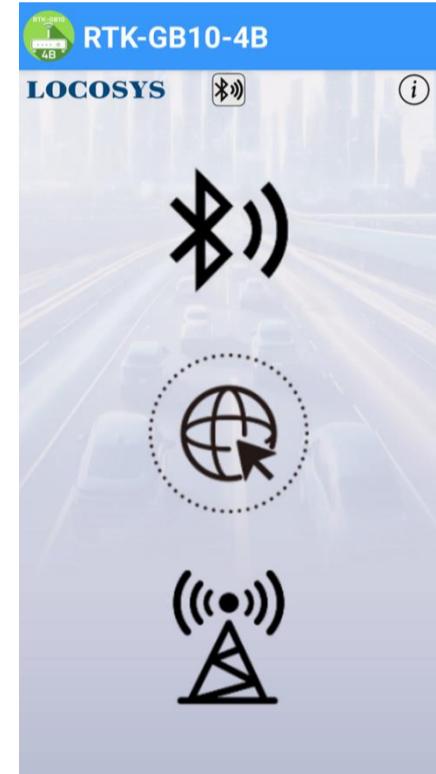


Figure 2-1-2

2.2. Click the Bluetooth icon button ()Open the Bluetooth function window and click "RTK-GB10-4B Device" (Figure 2-2-1) to perform Bluetooth, Bluetooth connection, it will automatically return to the main window after the Bluetooth connection is successful.

 : Search for Bluetooth devices again



Figure 2-2-1

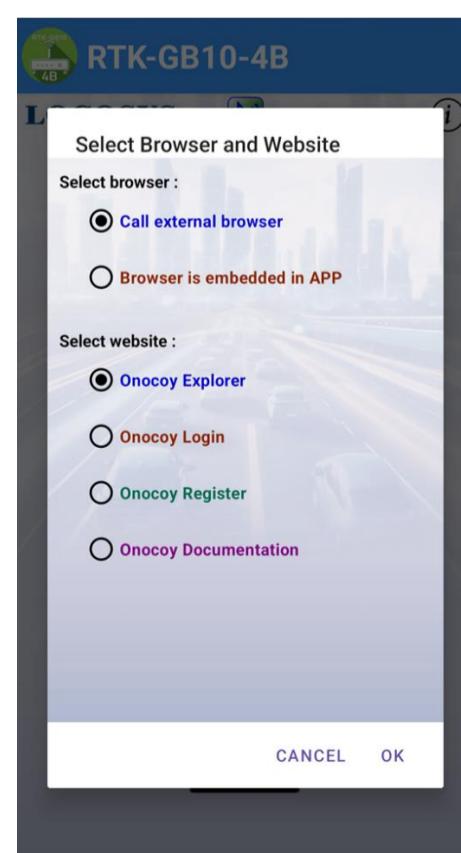


Figure 2-3-1

2.3. Click the browser icon button (🌐)Open the browser, you can choose to use an external browser or the built-in browser of the APP to open the Onocoy website, and you can choose to open the "Explore (Base Station Service)", "Login", "Register" or "Documents" website (Figure 2-3- 1).

2.4. Click the base station icon button (⚠)Open the base station setting window (Figure 2-4-1), manually enter the mount point and password, and also choose whether to enable the settings (Figure 2-4-2) base station number, longitude (unit: degrees), latitude (unit: degrees)) and height (unit: meters), click the "Send button" after completing the input ()You can set data to the RTK-GB10-4B device via Bluetooth.

👁️ : Hide/Show Password Button - Hide

👁️ : Hide/Show Password Button - Show

Note 1 : Please reboot the RTK-GB10-WB device when done setting the base station information

Note 2 : The mount point is provided by Onocoy when creating the base station, and the password is filled in by the user when creating the base station.

Note 3 : Click the question mark icon button (❓)Open Onocoy's base station creation and other related instructions (Figure 2-4-3).

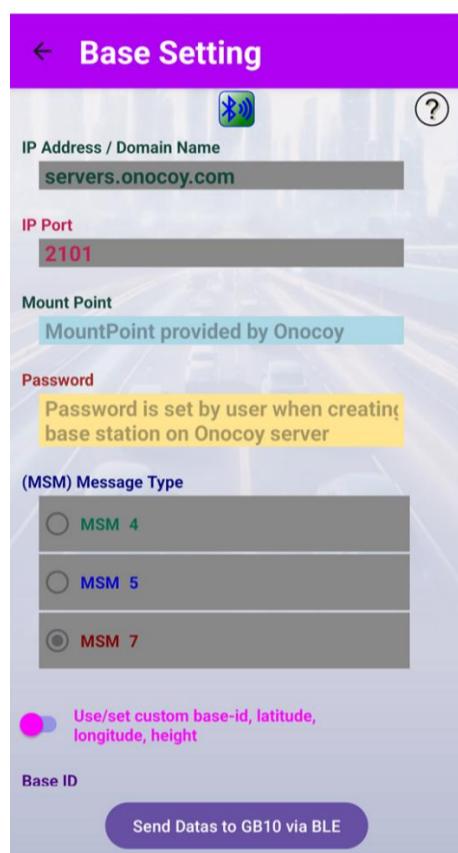


Figure 2-4-1-1

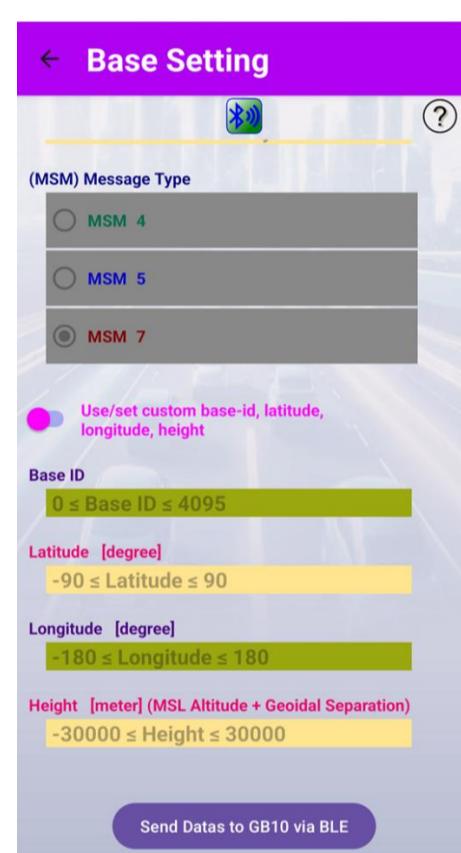


Figure 2-4-1-2

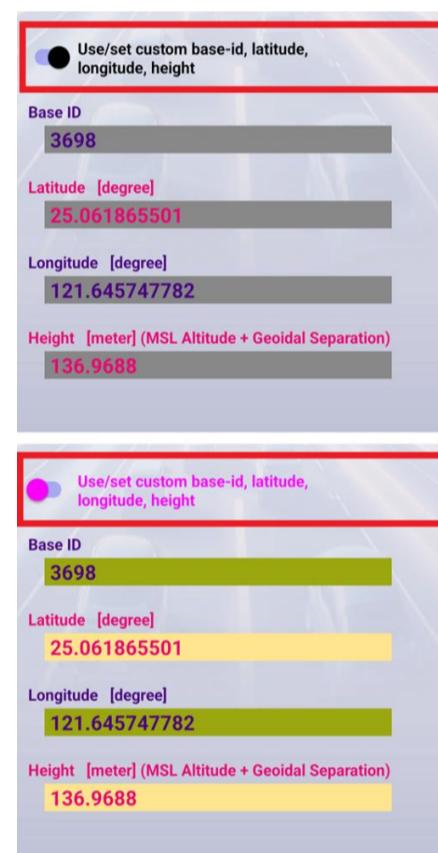


Figure 2-4-2

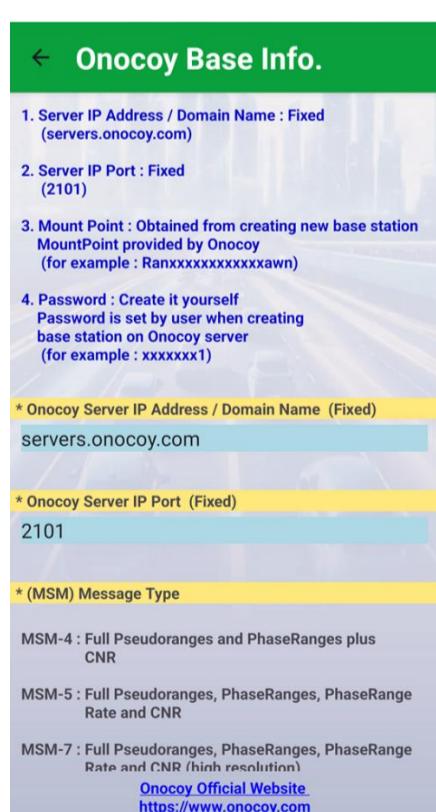


Figure 2-4-3-1

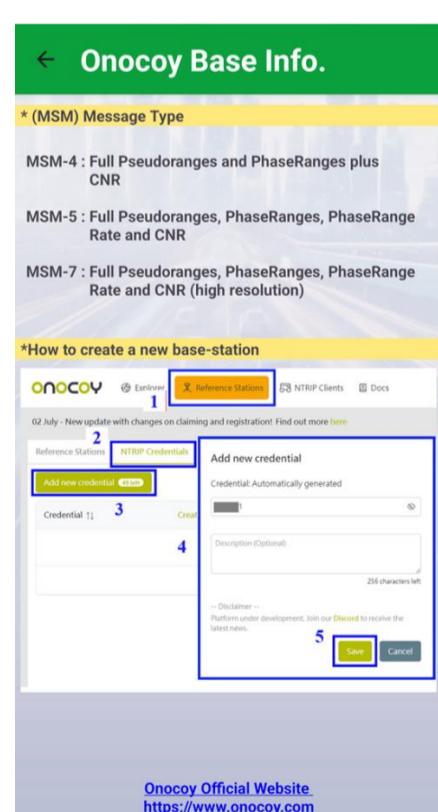


Figure 2-4-3-2

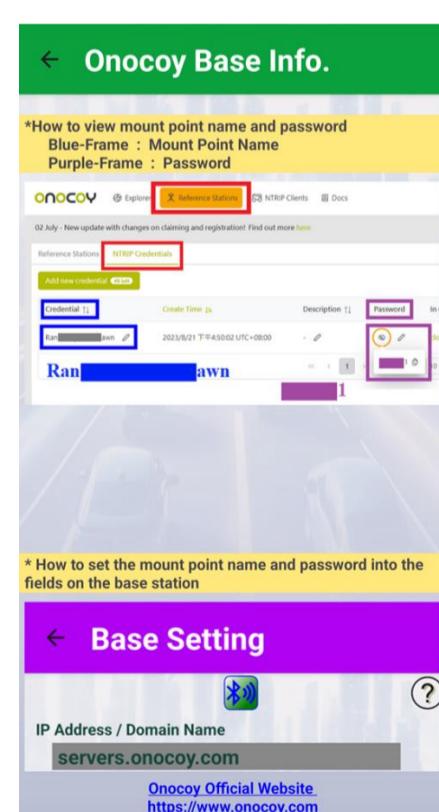


Figure 2-4-3-3

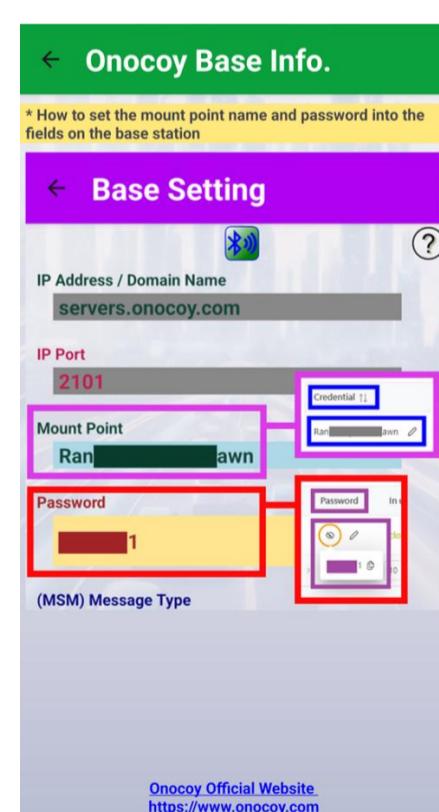


Figure 2-4-3-4

2.5. After the base station setting is completed, you can go to the main window to open the Bluetooth connection window, and click on the connected RTK-GB10-4B to disconnect the Bluetooth connection (Figure 2-5-1).

2.6. Click the version information icon button (i) Open the version function window (Figure 2-6-1).

▶ : Open the Youtube instructional video (link URL)

📝 : Open the user manual (link URL)

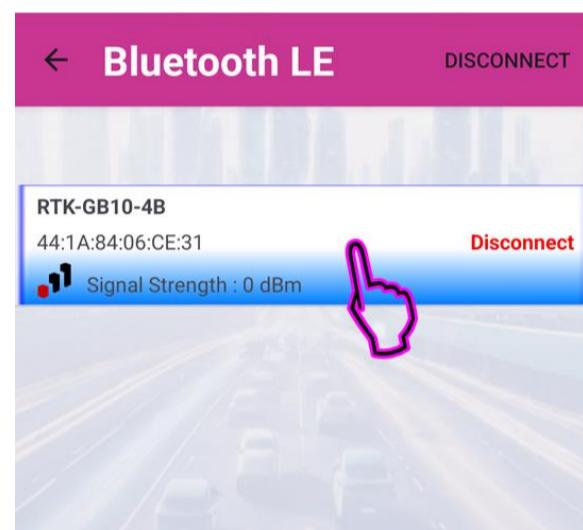


Figure 2-5-1



Figure 2-6-1

5 Electromagnetic properties

- Maximum electromagnetic radiation absorption ratio (SAR), this product is <2.0W/kg;
- Comply with national standard requirements:
EN 50360 : 2017; EN 50566 : 2017; EN 62209-1 : 2016;
EN 62209-2 : 2010; EN 62479 : 2010.

6 Safety

To ensure safe use of the product, you must strictly abide by the following rules

- This device should be at least 15cm away from any medical implants or regulators, and never carry the device in your coat pocket.
- Do not expose this device and other batteries to high temperatures or heat-generating appliances, such as sunlight, heaters, microwave ovens, ovens, or water heaters. Batteries can explode if overheated.
- This device is equipped with a non-removable battery, please do not replace the battery yourself to avoid damage to the battery or device.
- Using unapproved or incompatible power supplies, chargers or batteries may cause fire, explosion or other hazards. The company is not responsible for accidents caused by non-standard related charging equipment.
- Do not drop, crush, scratch or puncture the battery to avoid excessive external pressure on the battery, which may cause internal short circuit and overheating of the battery.
- Do not disassemble or reset the battery, insert it into other objects, or immerse it in water or other liquids.

7 Other things to note

- Gain a comprehensive understanding of equipment maintenance to use equipment more safely and efficiently and to extend the life of the equipment as much as possible.
- Please follow the instructions in the manual to open the device and remove accessories, do not try other methods.
- Please avoid falling, knocking or shaking the device. Rough handling of the device can cause the screen to crack and damage internal circuit boards and delicate structures.
- Do not use chemical solvents or detergents to clean your device. Wipe the case with a soft cotton cloth dampened with water or mild soap.
- If you encounter a collision or other abnormal failure during use and cannot use it normally, the handling method is as follows: please press the reset button, the device will be forced to restart (unlocked during restart), which can solve general problems.
- The standard packaging of this machine (RTK sharing box, Type-C data cable, user manual, Multi-band high-precision external measurement antenna, 10-meter antenna adapter cable, 4G-LTE antenna (4G version only), WIFI/Bluetooth antenna).

FCC Statement

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

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. 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.

CE Statement

Herby,LOCOSYS Technology Inc. declares that this RTK Base Station, GB-104B is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. In accordance with Article 10(2) and Article 10(10), this product allowed to be used in all EU member states.

Use the RTK Base Station in the environment with the temperature between -10 °C and 45 °C

Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Operation Frequency:

For BLE: 2402MHz~2480MHz

For GNSS:

GPS: 1.57542GHz

Galileo: 1.561098 GHz

GLONASS: 1.602GHz

BDS: 1.561098GHz

For GPRS:

GPRS 900:

TX: 880MHz~915MHz; RX: 925MHz~960MHz

GPRS 1800:

TX: 1710MHz~1785MHz; RX: 1805MHz~1880MHz

For LTE:

LTE Band 1: (UL)1920MHz~1980MHz,

(DL)2110MHz~2170MHz

LTE Band 3: (UL)1710MHz~1785MHz,

(DL)1805MHz~1880MHz

LTE Band 7: (UL)2500MHz~2570MHz,

(DL)2620MHz~2690MHz

LTE Band 8: (UL)880MHz~915MHz,

(DL)925MHz~960MHz

LTE Band 20: (UL)832MHz~862MHz,

(DL)791MHz~821MHz

LTE Band 28: (UL)703MHz~748MHz,

(DL)758MHz~803MHz

LTE Band 38: (UL)2570MHz~2620MHz,

(DL)2570MHz~2620MHz

LTE Band 40: (UL)2300MHz~2400MHz,

(DL)2300MHz~2400MHz

Max output power:

BLE: 0.0004W

GPRS 900: 1.9055W

GPRS 1800: 1.0617W

LTE Band 1: 0.2089W

LTE Band 3: 0.2541W

LTE Band 7: 0.1866W

LTE Band 8: 0.3451W

LTE Band 20: 0.3698W

LTE Band 28: 0.3698W

LTE Band 38: 0.1592W

LTE Band 40: 0.1581W

Manufacturer: LOCOSYS Technology Inc.

Address: 20F.-13, No.79, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 22101,
Taiwan E-mail: nick@locosystech.com

DECLARATION OF CONFORMITY

I hereby declare that the product

Product:

Product Name: RTK Base Station

Model: GB-104B, GB-10WB, GB-30WB, GB-34WB

Brand Name: LOCOSYS

Hardware Version: GB10_MainBoard_P2

Software Version: EC600UEU_AB_APPIMAGE1015

Accessories:

Battery information:

Model: INR18650-29E

Specification: 3.7V, 2900mAh

Manufacturer: Hengdian Group DMEGC Magnetics Co., Ltd.

(Name of product, type or model, batch or serial number)

satisfies all the technical regulations applicable to the product within the scope of Council

Directives 2014/53/EU, 2014/35/EU and 2014/30/EU: and declare that the same application has not been lodged with any other notified body.

EN IEC 62368-1:2020+A11:2020
EN IEC 62311:2020
ETSI EN 301 489-52 V1.2.1 (2021-11)
ETSI EN 301 489-19 V2.2.1 (2022-09)
ETSI EN 301 489-17 V3.2.4 (2020-09)
ETSI EN 301 489-1 V2.2.3 (2019-11)
EN 55032:2015+A11:2020+A1:2020
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019+A1:2021
EN 61000-3-3:2013+A1:2019+A2:2021
ETSI EN 300 328 V2.2.2 (2019-07)
ETSI EN 301 511 V12.5.1 (2017-03)
ETSI EN 301 908-1 V15.2.1 (2023-01)
ETSI EN 301 908-13 V13.2.1 (2022-02)
ETSI EN 303 413 V1.2.1 (2021-04)

(Title(s) of regulations, standards, etc.)

All essential radio test suites have been carried out.

NOTIFIED BODY: MiCOM Labs Inc

- **Address:**

575 Boulder Court,
Pleasanton, California 94566
USA
Identification Number: 2280

MANUFACTURER or AUTHORISED REPRESENTATIVE:

- **Address:**

LOCOSYS Technology Inc.
20F.-13, No.79, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 22101, Taiwan

This declaration is issued under the sole responsibility of the manufacturer and, if applicable, his authorised representative.

Point of contact:

Nick Chen, +886-2-8698-3698/+886-2-8698-3699

(Name, telephone and fax number)

2024-11-05

(Place, date of issue)



(Signature)

Nick Chen, Vice President

(Name and title in block letters)

LOCOSYS

GNSS Wireless & Communication

LOCOSYS Technology Co., Ltd.

Address: No. 79, Section 1, Xintai 5th Road, Xizhi District, New Taipei City 221

Tel: +886 (02) 86983698

Fax: +886 (02) 86983698

Website: www.locosystech.com

Technical support: info@locosystech.com

Sales service: info@locosystech.com

