

**Bluetooth  
GPS+GLONASS (GNSS) Receiver  
BT-821G  
User Manual**  
Ver 1.0



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# **1. Product Information**

## **1.1 Product Description**

BT-821G is a high performance Bluetooth GNSS receiver. It uses MTK high performance chipset that supports 99 search channels and 33 simultaneous tracking channels. BT-821G build-in a high-performance antenna and ensures excellent signal reception.

BT-821G takes advantage of the Bluetooth technology to offer hassle free installation. It connects wirelessly to your Bluetooth enabled smart phone, laptop, tablet PC, or other devices.

BT-821G uses a high capacity rechargeable lithium ion battery which can last for up to 24 hours of continuous operation. BT-821G is the best companion of your tablet PC, smart phone, or other portable devices for navigation purposes.

## **1.2 Product Features**

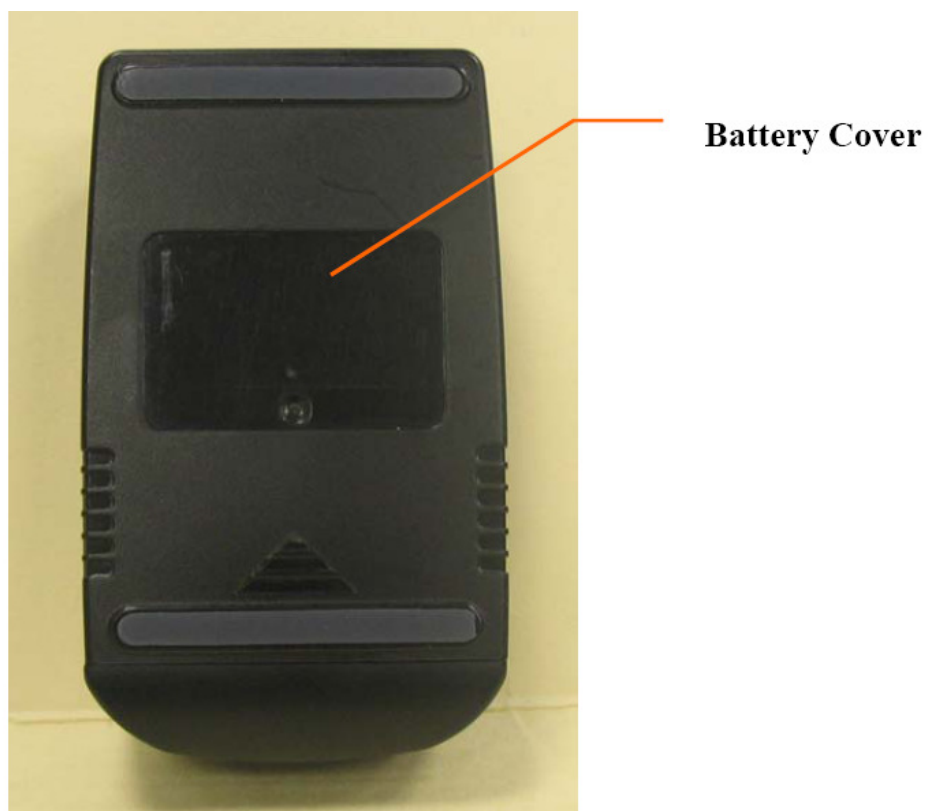
- ~ MTK high performance chipset
- ~ Extreme fast TTFF at low signal level
- ~ Bluetooth enabled
- ~ High capacity rechargeable battery
- ~ NMEA-0183 compliant protocol (GGA, GSA, GSV, RMC) RTCM
- ~ GPS, GLONASS, SBAS (WAAS, EGNOS, GAGAN, and MSAS), QZSS supported
- ~ Satellite positioning indication(Green LED)
- ~ Battery status indication(Red/Amber LED)
- ~ Bluetooth connecting indication(Blue LED)

## 1.3 Product Specifications

| GNSS chipset             |                                                             |
|--------------------------|-------------------------------------------------------------|
| Frequency                | GPS 1575.42 MHz & GLONASS 1608 MHz                          |
| Chipset                  | MTK high performance chipset                                |
| Code                     | C/A Code                                                    |
| Protocol                 | NMEA 0183<br>(Default: GGA, GSA, GSV, RMC) RTCM             |
| Available Baud Rate      | 38400                                                       |
| Channels                 | 99 search channels and 33 simultaneous tracking channels    |
| Antenna                  | Built-in Antenna                                            |
| Sensitivity              | Acquisition:-148dBm(cold)/-163dBm(hot)<br>Tracking:-165dBm  |
| Cold Start               | < 35 seconds                                                |
| Warm Start               | < 35 seconds                                                |
| Hot Start                | < 1 second                                                  |
| Reacquisition            | 0.1 second, average                                         |
| Accuracy                 | Position:3m (2D RMS) / 2.0m with DGPS<br>Velocity: < 0.1m/s |
| Maximum Altitude         | < 18,000 meter                                              |
| Maximum Velocity         | < 515 meter/second                                          |
| Maximum Acceleration     | < 4G                                                        |
| Update Rate              | 1 Hz                                                        |
| DGPS                     | WAAS, EGNOS, MSAS, GAGAN                                    |
| Bluetooth                |                                                             |
| Version                  | 2.0                                                         |
| Range                    | 10 Meter (Class 2)                                          |
| Support Profile          | SPP Profile                                                 |
| Physical Characteristics |                                                             |
| Dimensions               | 43mm X 24.5mm X 73.6mm                                      |
| Weight                   | 80 g (battery included)                                     |
| DC Characteristics       |                                                             |
| Power Supply             | 5.0Vdc                                                      |
| Battery                  | Rechargeable Li-ion, 1100mAH Or 1700mAH                     |
| Battery Life             | Up to 24 Hours                                              |
| Environmental Range      |                                                             |
| Humidity Range           | 5% to 95% non-condensing                                    |
| Operation Temperature    | -10°C to 60°C<br>0°C to 45°C while charging                 |
| Storage Temperature      | -20°C to 70°C                                               |

## 2. Hardware Description

### 2.1 Top View and Bottom View



## 2.2 LED Behaviors

### Bluetooth LED (Blue)

| Status                       | Description |
|------------------------------|-------------|
| Blink once per three seconds | Not linked  |
| Blink once per second        | Linked      |

### GNSS LED (Green)

| Status                | Description        |
|-----------------------|--------------------|
| Blink once per second | Position fixed     |
| Steady on             | Position not fixed |

### Power LED (Red/Amber)

| Status                          | Description             |
|---------------------------------|-------------------------|
| Red light steady on             | Battery low             |
| Red light Off                   | Battery good            |
| Amber light steady on(charging) | Battery charging        |
| Amber light Off(charging)       | Battery charging finish |

## 2.3 Power Button

| Action                                           | Function         |
|--------------------------------------------------|------------------|
| Press and hold the button for 1 second while off | Power turned on  |
| Press and hold the button for 1 second while on  | Power turned off |

## 2.4 Power-saving function

When BT-821G doesn't connect to charger and turning on, if the Bluetooth is not connected to any devices within 10 minutes, BT-821G will turn off the power automatically, and all the LED will go off simultaneously.

### 3. Package Contents

- ~ BT-821G
- ~ Li-Ion Battery
- ~ Car Charger
- ~ Software Utility and User Manual CD

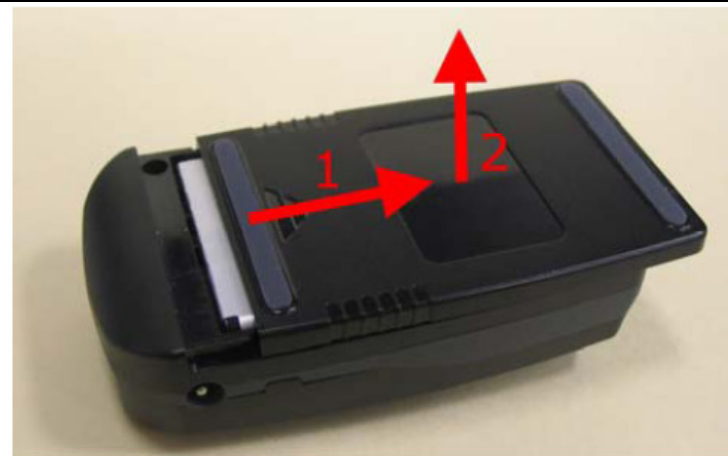


Car Charger

## 4. Getting Started

### Step 1: Charging Battery

Please place the included battery in your BT-821G and charge it by the included charger till the amber LED goes off before using BT-821G for the first time.



Push the battery cover toward the direction shown as arrow mark, and then lift it up.



Pull the plastic tab to remove the battery.



While installing the battery, make sure the metal contacts of BT-821G and battery are aligned.



Insert one end of the charging cable into BT-821G to charge the battery.

## **Step 2: Turn on the power**

Press and hold the power button for one second to turn on your BT-821G.

## **Step 3: Wait for GNSS fixed**

Put your BT-821G in a place where can directly see the sky and check the GNSS LED. If the GNSS LED starts blinking, your position is fixed.

## **Step 4: Connect to your Bluetooth-enabled devices**

Run the Bluetooth manager from your Bluetooth enabled device, search Bluetooth devices, select device BT-821G(BT-GPS-XXXXXX), and connect it to your BT-821G. Once the Bluetooth LED is blinking once per second, the link is established successfully. If a passkey is asked, please enter 0000.

## **Step 5: Start Navigation Software**

Start the navigation software on your Bluetooth enabled device.

## 5. Troubleshooting

### **Bluetooth is unable to connect**

A) Check if the GNSS Bluetooth indicator is flashing normally. That is, flash one per each three second means the product is under standby mode; flash once per second means Bluetooth has been online already.

B) Check if energy level is sufficient. If red LED is light up, then the battery level is insufficient, please recharge it until the red indicator is off (recharge is complete).

### **GNSS cannot be positioned**

A) Check if GNSS indicator operates normally or not. If the indicator is constantly lid up, it means that GNSS is in operation; if the indicator is flashing, it means GNSS is positioned already.

B) If GNSS cannot be positioned for long, apply GPS info software to make a Cold Start first, and then move to an open space performing the positioning task.

C) Check if power level is sufficient. If the red LED lights up, it means the power is insufficient, please recharge it until the amber LED is off (recharge is complete).

# FCC Notices

Caution: Any changes or modifications in construction of this device which are 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.