



# GPS Bluetooth Receiver User Manual

Model: GPSBT560



#### **Declaration:**

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**The company reserves rights to make any changes and improvements to the product described in this document without prior notice.**

## **Safety**

- Use the charger that comes with package.
- Caution, risk of explosion if battery is replaced by an incorrect type.
- Check the laws and regulations on the use of GPS Bluetooth Receiver equipment in the areas where you drive. Always give full attention to driving.
- Do not allow children to play with your GPS Bluetooth Receiver since it contains small parts that could become detached and create a choking hazard.
- This device contains a Li-polymer battery. Please keep it away from fire anytime (including discarding the device) or the battery may explode.
- The GPS Bluetooth Receiver, especially the embedded battery must be properly disposed or may be recycled, contacts your local recycling centers for disposal methods.

## **Certification and Safety Approvals**

**This product has been tested and found to comply with part 15 of FCC rules, R&TTE Directive (99/5/EC) or CE marked requirements.**

**Warning: Users should not make changes or modify the device in any way. Changes or modifications without expressly approved by the party responsible for compliance could void the user's authority to operate the device.**

**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.**

## **FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE 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.

**CAUTION:**

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

**RF exposure warning .**

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

**CE command:**

**Bluetooth: ETSI EN 300 328 V1.6.1(2004-11); ETSI EN 301 489-1 V1.6.1(2005-09); ETSI EN 301 489-7 V1.2.1(2002-08)**

**GPS: ETSI EN 301 489-1 V1.6.1(2005-09); ETSI EN 301 489-19 V1.2.2(2002-11); ETSI EN 300 400-1 V1.3.1(2001-09); ETSI EN 300 440-2 V1.1.2(2004-07)**

**Safety: EN 60950-1:2006**



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## 1. Introduction

Combining both GPS and Bluetooth technologies, Flaircomm's GPSBT560 receiver allows you to determine your current geographic location and direction anywhere. It communicates in real-time with Bluetooth-enabled devices such as PDAs, Smart Phones, Computers, and other devices to provide locations information for navigation applications. This battery-powered portable device can be easily placed on the car or carried by the user.

### 1.1 Global Position System (GPS) Technology

The Global Positioning System (GPS) is a worldwide radio-navigation system formed from a constellation of 24 satellites and their ground stations. A GPS receiver is a device that calculates its location based on received satellite information and could provide its geographic location information with accuracy up to few meters. The accuracy of the receiver depends on the number of satellites in view and signal strengths received.

### 1.2 Bluetooth Technology

Bluetooth is an internationally standardized technology supporting short distance wireless communications. Any two Bluetooth-compatible equipments, such as mobile phone, PDA, PC, headset, mouse, keyboards, printer, etc. can wirelessly communicate with each other via Bluetooth connection. To ensure worldwide compatibility, Bluetooth operates on the globally available ISM (Industrial Scientific and Medical) frequency band. Within 2.4 GHz and 2.48 GHz, Bluetooth transmits data up to either 10 meters (CLASS II mode) or 100 meters (CLASS I mode) using 79 frequency hopping channels.

Though line-of-sight is not required, Bluetooth connections could be subject to interferences from obstructions such as walls, human bodies, and other electronic devices. In addition, due to variations on product implementation, it is likely that Bluetooth equipments from different manufactures have interoperability issues. In that case, you may consult with manufactures to check product compatibility.

**Note** that, there could be some restrictions imposing on using Bluetooth devices in some countries. Please check with your local authorities.

### 1.3 Intelligent GPS Tracking and Bluetooth Connecting (ITC) manager

GPSBT560 is designed with advanced power management scheme, the intelligent GPS Tracking and Bluetooth Connecting (ITC) manager. The ITC manager automatically wakes up and goes to sleep depending on whether or not the Bluetooth connection is on. Once a paired Bluetooth device moves in the Bluetooth range and connects to the receiver, the ITC manager wakes up the GPS unit and commands it to start position tracking. Once a connected device moves out of the Bluetooth range or is disconnected by the user, the ITC manager shutdowns unused hardware components and commands the device entering into the sleeping mode. Thus minimizes GPSBT560's power consumption and extends working and standby time dramatically.



## 1.4 Product Features

- GPS
  - ◆ Compact GPS Bluetooth receiver with completed GPS functionality
  - ◆ Compatible with any GPS navigation software using NMEA-0183 (V3.1) standard format GPS data
  - ◆ 16 C/A-code tracking modules with 4 correlators each
  - ◆ Default (None) or Programmable WAAS/EGNOS DGPS Source
  - ◆ Cold/Warm/Hot Start Time: 46/34/5 Seconds
  - ◆ High signal acquisition sensitivity at -145dBm and tracking sensitivity at -150dBm
  - ◆ Superior geo-location accuracy: CEP50 for 1.2 m, CEP95 for 3.0 m
  - ◆ Ultra-low GPS power consumption: Full active mode at 25 mA, sleep mode at 4 uA
  - ◆ Maximum speed: 515 m/s
- Bluetooth
  - ◆ Bluetooth v 1.2 compliant, interference-tolerable with WLAN devices
  - ◆ Class II, operating range up to 10 meters
  - ◆ Support SPP profile
  - ◆ Data rate up to 723 Kbps
  - ◆ Compatible with most Bluetooth-enabled navigation devices such as cellular phones, PDAs, computers, etc.
  - ◆ Support up to storing 8 devices pairing information
- General
  - ◆ Better portability with internal rechargeable Lithium Polymer battery
  - ◆ Low power consumption, up to 16 hours working time (in full operation mode without ITC) and 200 hours standby time.
  - ◆ Intelligent GPS Tracking and Bluetooth Connecting (ITC) manager results in extended working/standby time dramatically, the actual time extended will depend on how you operate the GPS Bluetooth Receiver.
  - ◆ Robust performance, fast connection, accurate and sensible search of devices in range
  - ◆ Stylish, portable, lightweight, mini-sized, suitable for vehicle and open-sky environment

## 1.5 Package Contents

● GPSBT560	1
● Car Mounting Accessory	1
● Car Charger Set (or Traveling Charger, optional)	1
● External antenna (Optional)	1
● User Manual	1



## 1.6 Overview

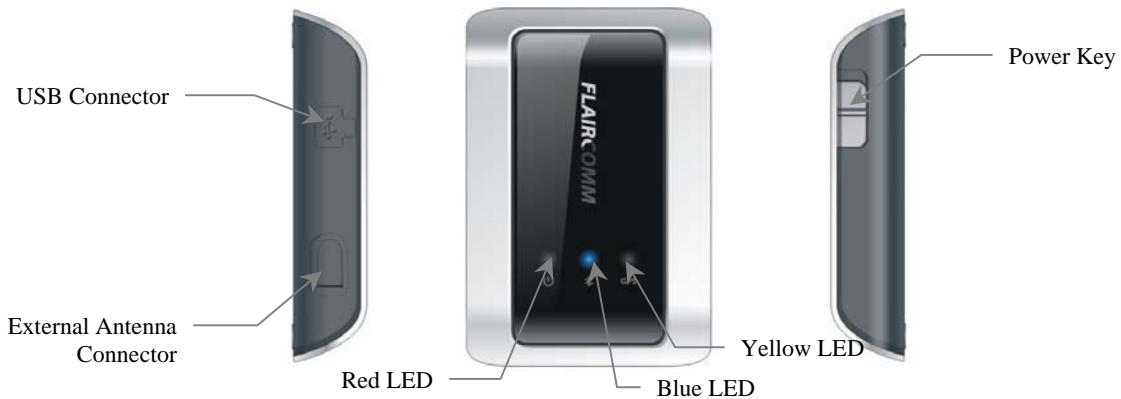


Figure 1 Overview

- Power Key - on/off switch
- Red LED - A battery status indicator
  - In charging mode: it is always on
  - In normal mode: it blinks once per minute
  - In low battery mode: it gives two quick blinks every minute
  - In all other modes: it is off
- Blue LED - A Bluetooth status indicator
  - In pairing mode: it blinks once per second
  - In connected mode: it blinks once every 4 seconds
  - In all other modes: it is off
- Yellow LED - A GPS status indicator
  - In GPS active mode: it blinks once every 4 seconds
  - In all other modes: it is off
- External Antenna Connector (MMCX/3V)
- USB Connector - Connect to the charger



## 2. Using Your GPSBT560 Receiver

GPSBT560 shall be designed mainly for outdoor applications to allow reception of GPS signals. Since the GPS antenna is placed under the front cover. For better signal reception, you shall always place the device facing up to the open sky. You shall also avoid any metal obstacles in the signal reception direction from the sky. Depending on the environment that you stay, the device could be used in an indoor environment such as at office or home for with the help of plugging an external antenna into the device. In that case, you must place the antenna outside or against the window and make it face up to the open sky.

Note that, the accuracy of GPS position is affected by many facts such as poor weather conditions and satellite signal in general, this device should not be used for precise location measurement. You should never rely solely on location data from the GPS receiver. In addition, GPS can only determine your direction on the basis of your movement. If you stand still, GPS cannot detect which way you are facing.

### 2.1 Battery Charging and Usage

#### 2.1.1 Battery Charging

This receiver contains a rechargeable Li-Polymer battery. First-time charging time is about 4 hours. Later-on recharging time is around 2-3 hours. Detailed charging procedures as follows:

1. Referring to Figure 2, plug the connector of the charger to the receiver's charging port.
2. Connect the car charger to the cigarette lighter to start charging. The Red LED will be on during charging. Once the battery is fully charged, the Red LED will turn off in power off mode, and in power on mode the Red LED will change to blink once per minute. You should disconnect the charger from the receiver and the power outlet.

You can also use the removable USB charging cable to charge the receiver from your PC.

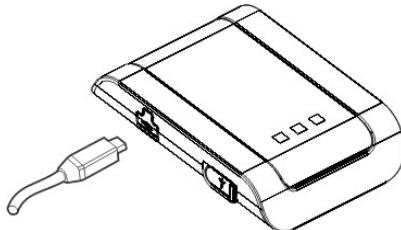


Figure 2 Battery Charging

#### 2.1.2 Battery Information

1. Once the battery is fully charged, the receiver supports continuous working time up to 16 hours and standby time about 200 hours.
2. When the battery is low, the red LED gives two quick blinks every minute. Once the battery gets too low, the receiver will shutdown itself. Then all LEDs are off.

*Note that, over-charging will reduce the battery life. If a fully charged battery is left unused, it will lose power over time. Extreme temperature (either too hot or too cold) will also affect its ability to charge, capacity, and lifetime.*



## 2.2 Connecting an external antenna

The receiver provides an external antenna connector. Please refer to Figure 3 for connecting an external antenna. The external antenna will provide better GPS performance than the internal antenna.

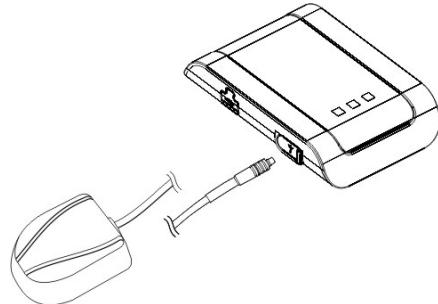


Figure 3 Connecting an External Antenna

## 2.3 Placing the receiver

There is a magic sticker in our package. The receiver can be placed at any smooth surface as indicated in Figure 4. Please make sure your GPS Bluetooth Receiver is facing the open sky.

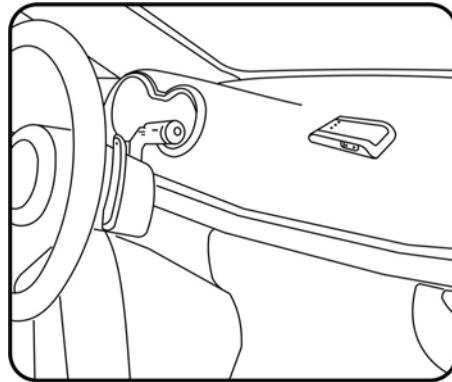


Figure 4 Mounting in the car

*Note that, some car windshields and windows may contain metal, which may block or weaken the satellite signals.*

## 2.4 Switching the receiver on and off

**Switching on:** Push the power key up, and then the Red LED will blink once (or twice while the battery is low). For about 4 seconds later the Blue LED will blink once per second. This indicates the receiver is power on.

**Switching off:** Push the power key down, and then all LEDs are off. This indicates the receiver is power off.

## 2.5 Pairing and Connecting the GPS Receiver with Bluetooth Devices

### 2.5.1 Pairing the receiver with a Bluetooth device

Before sending GPS data to a Bluetooth device, you must pair the receiver with the Bluetooth device. Paring sets up a unique relationship between them and allow the receiver to memorize the unique ID (or passkey) of the device. This ensures that a unique and encrypted wireless link between your receiver and the device will be used.



The receiver can store up to 8 paired Bluetooth devices. Any one of them can be connected the receiver. However, for any give time, only one device can be connected.

Detailed operation procedures are as follows:

1. Place your receiver close to a Bluetooth device, and ensure that your receiver is power off, and the device is power on.
2. Switch the receiver on by pushing up the power key, the Red LED blinks once per minute and the Blue LED blinks once per second. This indicates that the receiver has been successfully turned on and entered the paring mode.
3. Following your Bluetooth device's user guide to active Bluetooth device search, on the Bluetooth device side you will see a list of Bluetooth equipments found at the end of the searching process.
4. Select this GPS Bluetooth receiver 'GPSBT560' from the list, and then follow the device's instructions to initiate pairing operation from the device side.
5. During the pairing process, the device will be prompted to enter a passkey. Please enter passkey "0000" to confirm the pairing operation between the receiver and your Bluetooth device. Once the pairing procedure is completed, GPS receiver will exit the pairing mode and enter the standby mode. The Blue LED will be off.

*Note:*

1. *The receiver will stay in the pairing mode for about 3 minutes. If no device has been paired or cannot be finished within 3 minutes, the receiver will exit the pairing mode and enter the standby mode. The Blue LED will be off and you need to go back to above steps to enter the paring process.*

### **2.5.2 Connecting/Disconnecting the receiver with a Bluetooth device**

Your receiver will only communicate with a paired Bluetooth device with a Bluetooth connection established in advance.

#### **Connecting your receiver with a Bluetooth device:**

Place the receiver close to the Bluetooth device, follow the device user guide to find the receiver, and then send a connection request to the receiver. Note that, since there can only be one Bluetooth connection at any time, the receiver must in the standby mode before establishing a connection to a paired device.

#### **Disconnecting your receiver from a Bluetooth device:**

To disconnect the receiver from a Bluetooth device, you can:

1. Power off the receiver
2. Refer to the device's manual to initiate the disconnection from the device side.

Once disconnected, the receiver will enter the standby mode and the Blue LED goes off.



### 3. Important Messages and Frequently Asked Questions

#### 1. Red LED gives two quick blinks every minute.

Low battery indicator; please recharge your battery as soon as possible.

#### 2. Can't power up the device after charging more than 20 minutes:

For the first time, the device should be charged at least 40 minute prior tuning on, it is recommended that the battery should be fully charged before using the device.

#### 3. Receiver can not be found when a device tries to pair with it:

Your receiver may not be in the pairing mode or within the operation range (i.e., 10 meters), please refer section 2.5.1 for details.

#### 4. Do the paired receiver or the paired Bluetooth device need to be re-paired power off:

No.

#### 5. Slow GPS position tracking and poor location accuracy

The GPS signal could be very weak. You need to ensure the receiver is placed with the top side facing up to the sky. However, this may not necessary lead to better signal strength due to other causes such as weather conditions.

#### 6. Slow cold start time

This is typically happens when you go to a new area and turn the device on or on the first-time use, of the receiver. In these cases, either the previous recorded geo-location data were too far away from the new location or no initial geo-location data can be used for cold start reference.



## 4. Maintenance

GPSBT560 is a well-designed communications device, careful maintenance and proper use will extend the product life. Following maintenance procedures may be helpful to you:

- Always turn off power and keep your device in a safe place when it is not in use
- Keep the device dry, away from water, precipitation, humidity, moisture, and various liquids that may corrode electronic circuits. If your device gets wet, turn it off immediately and wait until the device gets dry completely before using it
- Keep the device away from dusty and dirty places. Otherwise, the mechanic and electronic parts could be damaged
- Do not store the device in high temperatures or in direct sunlight. Extreme high temperature could degrade performance, reduce battery lifetime, and warp or melt the certain plastics.
- Do not store the device in too cold place. Moisture could form inside the device when you take it to a warm place. This could damage the internal electronic circuits.
- Avoid dropping, knocking, and shaking the device. The mechanical parts and the internal electronic circuits could be broken.
- Avoid using harsh chemicals, cleaning solvents, and any other strong detergent to clean the device. You may use a clean and slightly damp cloth to clean the device
- Always take the device to the nearest authorized service facility for repairing if it is malfunctioning. Disassembling, modifying, and replacing components yourself could degrade product performance, cause damages, and terminate warranty