iBT-GPS Bluetooth GPS Receiver

User's Manual

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Table of Contents

Note and Warning

- iBT-GPS uses Lithium battery. If iBT-GPS is used in temperature lower than -10℃ or higher than 60℃, its battery charging capability will decrease. Please leave the iBT-GPS far from heat or high temperature environment. In addition, do not expose your iBT-GPS in temperature higher than 140℉/60℃. If you do not follow these rules, the battery inside iBT-GPS may become heat, explode or burn itself, and this will lead to very serious damage. The Lithium battery inside the iBT-GPS should be recycled.
- While in the hospital, turning off the iBT-GPS is recommended. Like other common equipments do, wireless GPS receiver may also affect these medical equipments which use radio frequency and make these equipments malfunction.
- For a long period not using iBT-GPS, take out the battery and store it in dry/cool places.
- For safety, keep the iBT-GPS and all accessories out of small children's reach.
- We assume no responsibility for any damages and loss resulting from the use of this manual and also by deletion of data as a result of malfunction, dead battery, or misuse of the product in any way.
- Use only the supplied and approved accessories. Unauthorized accessories, antenna, modifications or attachments could damage the iBT-GPS, and may violate regulations governing radio devices.
- Use a dry, clean soft cloth to clean the unit. Do not use harsh cleaning solvents, chemicals, or strong detergents.
- Do not attempt to open the iBT-GPS yourself. Unauthorized hacking may damage the unit, and void your warranty.

Chapter 1 Before you begin

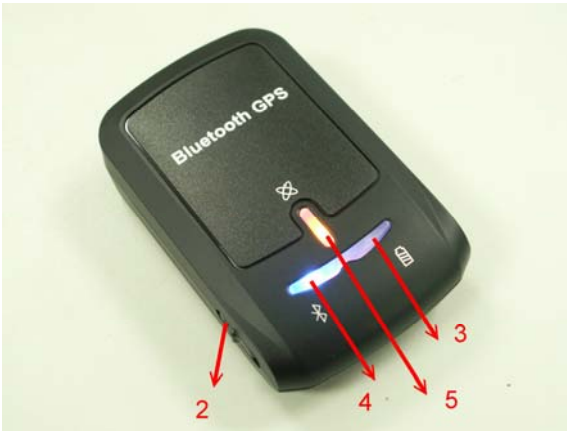
Thank you for purchasing the Bluetooth GPS Receiver, iBT-GPS, a global positioning system receiver with Bluetooth wireless technology. iBT-GPS is well suited to system integrations including PDA, smart phone, Tablet PC and Notebook PC with Bluetooth devices. It can satisfy a wide variety of applications such as PDA and smart phone navigation, automotive vehicle tracking, personal positioning and sporting. With the dimension of 72.2(L) x 46.5(W) x 20(H) mm and weight only 64.7g (w/ battery), iBT-GPS is an ideal solution to carry along everywhere.

iBT-GPS's rechargeable battery can save satellite information such as the status of the satellite signal, most recent location and the data and time of its last use. The low-power design has extended the operation time up to 25 hours and brought you the most convenient and longest usage of its kind. With the lead-free production process (starting Jan. 1, 2006), iBT-GPS is the most environmentally friendly wireless GPS receiver in the market.

iBT-GPS has distinguished features others don't have. With our patent pending **Smart Power Save Mechanism** and **Fuzzy Auto On/Off** features, our iBT-GPS consumes 65% less power than other wireless GPS receivers, and can extend the operating time up to 25 hours.

Patent Number:
94143224
94143221

1.1 Appearance



1. Power jack (mini USB type)
2. Power switch
3. Battery status LED (red/green)
4. Bluetooth status LED (blue)
5. GPS status LED (orange)
6. Internal antenna

1.2 Checking the package content

Congratulations on your purchase of the iBT-GPS with built-in Lithium rechargeable battery. Before you start using iBT-GPS, please make sure if your package includes the following items. If any item is damaged or missing, please contact your dealer at once.

- Bluetooth GPS Receiver - iBT-GPS x 1
- Traveler Power Adapter x 1
- DC cigarette lighter adapter x 1
- Lithium rechargeable battery x 1
- User’s manual with Warranty Card x 1

*Unit package contents may vary depending on countries without prior notice.

Chapter 2 Getting started

Please follow the procedure step by step.

Step 1 Charging Your Battery

For the 1st time you use the iBT-GPS, please charge battery until it is full (the LED blinks). Take the power cable and connect it to the power jack (mini USB type). This will begin to charge the battery. The LED that represents the battery is the right-most battery icon (shown in below).

- If the LED is red, that means battery power is critically low. Charge immediately.
- If the LED is green, that means battery is charging now.
- If the LED is blinking, that means battery is fully charged.
- When you plug into the mini USB cable to charge your unit, it will takes 5~10 seconds then you can see the green LED turning on.

Step 2 Turn on the power switch

Before After

Step 3 Connecting your handheld device with iBT-GPS

Please refer to the user manual of PDA to enable the Bluetooth connectivity. If the connection between your device and iBT-GPS is successful, the blue LED of iBT-GPS will be blinking.

Below, we provide a common procedure of software installation to set up your PDA. (For other PDA, the steps may be a little bit different. Bluetooth Manager is one of popular program used for Bluetooth device.)

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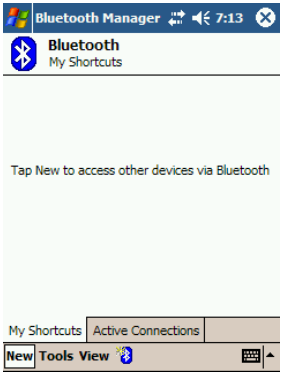
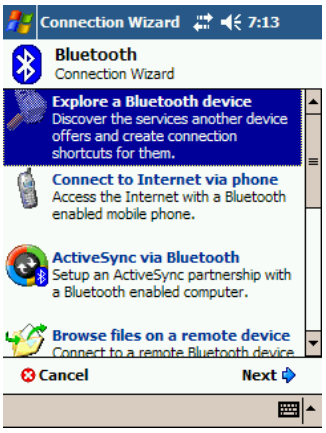


Start -> Bluetooth Manager

New

1. Open “Bluetooth Manager” on pocket pc, and establish new connection.



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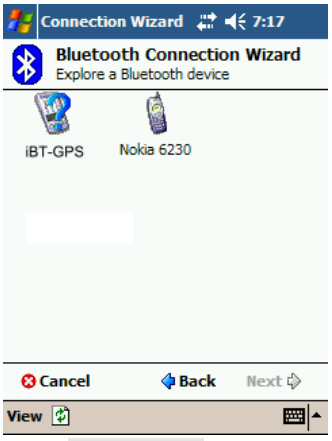

Explore A Bluetooth device ->Next

Tap iBT-GPS

2. Explore a Bluetooth device, and find the “iBT-GPS”

Passkey 0000 (if your PDA ask for the passkey)

3. (Optional)

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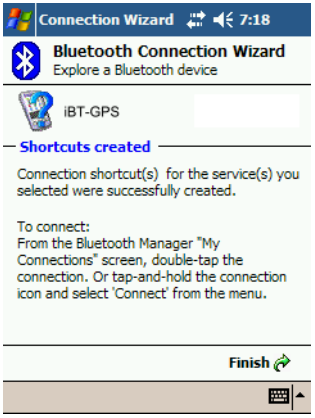

Select SPP slave->Next Finish

4. Connect to Serial Port Profile (SPP) Slave

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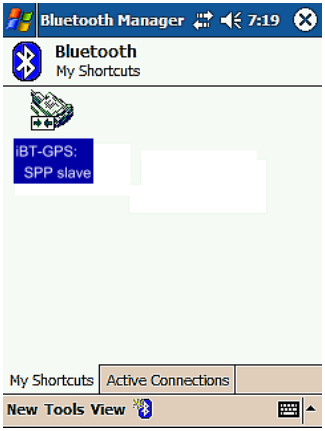


Tap and Hold iBT-GPS: SPP slave, Connect

Done

5. Finish Bluetooth Manager Setup

Step 4 Load your GPS mapping or routing software

, along with the corresponding maps of the areas that you plan to travel to.

Step 5 Start the application

and select the correct COM port & baud rate.

Note: The Bluetooth device in most of the applications has an “auto-detect” feature so that you do not need to select the Baud Rate.

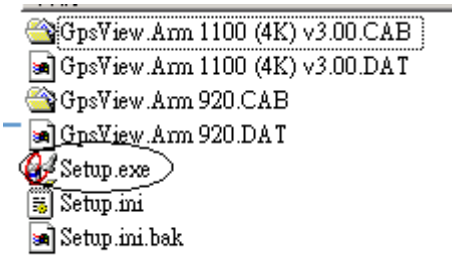
Chapter 3 How to test your Bluetooth GPS Receiver ?

The testing program only supports the Microsoft Windows CE & Pocket PC based PDA platform.

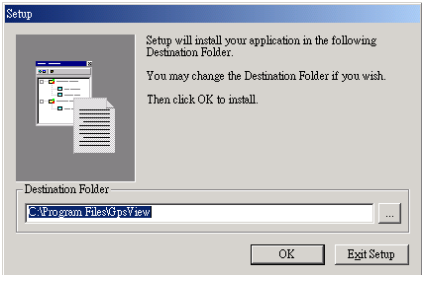
3.1 Software Installation

You have to first synchronize the PDA and your PC, and run the "Setup.exe" to execute the installation procedure of GpsView testing program (via PC and ActiveSync). To get this program, you can download it at your agent's website.

1. Synchronize the PDA and your PC.



2. Run the "Setup.exe".



3. Execute the installation.

3.2 GPS Test

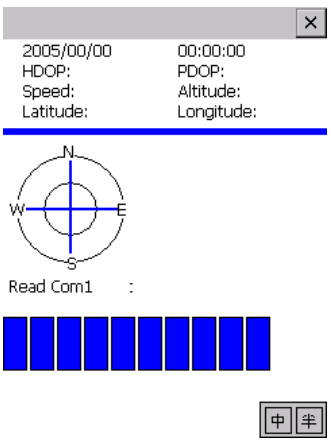
Once you have completed the setup of your Bluetooth device, you may check to see if your GpsView software is attempting to fix your position. You can do this by opening your GPS software. If it fails, you should select the correct COM port and Baud Rate (4800~115200) to start receiving GPS data. Shortly, you will see the GPS code running as in the picture below. This signifies that your Bluetooth device is functioning properly.

Note: The Bluetooth device in most of the applications has an "auto-detect" feature so that you do not need to select the Baud Rate.

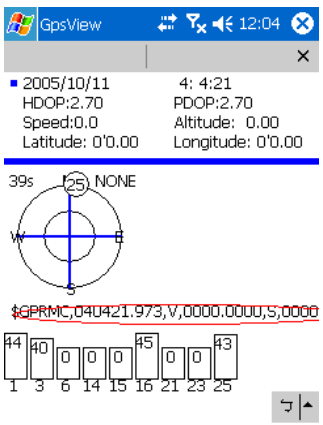
3.2.1 Executing GPS Demo Program

Execute the "GpsView" by double clicking GPS Demo icon in programs menu.

3.2.2 GPS Demo Screen



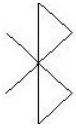
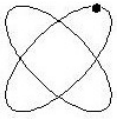
1. Initial



2. Doing auto scan

Appendix A. LED Display

The Bluetooth GPS Receiver has three LED lights, one is Bluetooth Status LED, the 2nd one is Battery Status LED, the 3rd one is GPS Status LED. The status table of LED shows as follows:

Category	SYMBOL	COLOR	STATUS	Function
Bluetooth Status LED		Blue	Always on:	Not connected to any Bluetooth devices yet
			Slowly blinking:	Sleeping mode (1 time / 5 seconds)
			Quickly blinking:	Bluetooth is connected and ready for data transmission (1 time / 2 seconds)
Battery Status LED		Red	Blinking:	The battery is too low
		Green	Light On:	The battery is charging
		Green	Blinking:	The battery is fully charged
GPS Status LED		Orange	Always on:	Acquiring satellites, GPS position not fix
			Blinking:	GPS position is fixed, Navigation

Appendix B. Fuzzy Auto On/Off

iBT-GPS supports fuzzy auto on/off. It can automatically enter the sleeping mode after your turning off the Bluetooth connectivity, thus you can always power it on with very low power consumption.

With fuzzy auto on/off, if the connection between your device and iBT-GPS is successful, iBT-GPS will wake up itself and the blue LED of iBT-GPS will be quickly blinking again (every 2 sec) and the orange LED of iBT-GPS will also be on.

Appendix C. Specification

General	
Chipset	MTK MT3318
Frequency	L1,1575.42MHZ
C/A Code	1.023MHZ
Channels	51
DGPS	WAAS,EGNOS,MSAS
Datum	WGS84
CPU	ARM7TDMI
Performance Characteristics	
Position Accuracy	Without aid: 3.0m 2D-RMS <3m CEP(50%) without SA(horizontal) DGPS (WAAS,EGNOS,MSAS):2.5m

Velocity Accuracy	Without aid: 0.1m/s DGPS (WAAS,EGNOS,MSAS):0.05m/s
Acceleration	Without aid:<4g DGPS (WAAS,EGNOS,MSAS):<4g
Timing Accuracy	50 ns RMS
Reacquisition Time	<1s
Hot start	1s
Warm start	33s
Cold start	36s
Sensitivity	Acquisition:-144dBm Tracking:-158dBm
Update	1Hz
Dynamic	
Altitude	Maximum 18,000m
Velocity	Maximum 515m/s
Acceleration	Maximum 4g
Power	
Input Voltage	Vin : DC 5.0V±5%
Power Consumption	35mA (Avg.)
Battery	Built-in rechargeable Lithium battery
Protocols	
GPS Output Data	Baud rate 115200 bps, Data bit: 8, Stop bit: 1 (Default)

NMEA	NMEA0183 v3.01 Default: GGA, GSA, GSV, RMC
Environment	
Operating Temperature	-10 ~ 60C
Storage Temperature	-20 ~ 60C
Charging	0 ~ 45C
Bluetooth	
Standard	Fully compliant with Bluetooth V1.2
Output Power	0dBm (Typical),ClassII
Range	10 ~ 15 meters
Bluetooth Profile	Serial Port Profile(SPP)
Frequency	2.4G ~ 2.4835GHz ISM Band
Security	Yes
Physical Characteristics	
Dimension	46.5 x72.2 x20 mm
Weight	64.7g

Appendix D. Frequently Asked Questions

Q: The GPS Demo software GpsView doesn't seem to be making any connections with my Bluetooth GPS receiver. How do I make it work?

A: You will need to make sure your PDA is paired with Bluetooth device. Follow the section "Chapter 2. Getting started > Step 3 Connecting your handheld device with the iBT-GPS" to make sure that your PDA is recognizing the Bluetooth GPS receiver properly. If so, you will need to connect with the device by going to the Bluetooth Manager and double-tapping on the iBT-GPS icon.

Q: My Bluetooth GPS Receiver seems to be receiving the satellite signals, but I am unable to establish a connection between the receiver and my PDA. How can I make a connection?

A: Go to the Bluetooth Manager on your PDA. Locate the "iBT-GPS: SPP Slave" icon and tap and hold. A pop-up menu will appear, select Delete.
Next, perform a soft reset on your PDA.
Once your PDA has finished resetting itself, go back to the Bluetooth Manager screen and perform the typical setup and connection procedures for your Bluetooth receiver (for help with connection please review the section "Chapter 2 Getting started > Step 3 Connecting your handheld device with the iBT-GPS").

Appendix E. How to change battery

Step 1 Press the button to right side

Step 4 Fit new battery into iBT-GPS

Step 2 Open the cover of battery

Step 5 From R to L close the cover

Step 3 Take out the battery

Step 6 Done

Appendix F. Helpful tips

Your iBT-GPS should be treated with care and properly maintained to ensure the best performance. Keep in mind these helpful tips when using your receiver:

- Some vehicles having heavy metallic sun protecting coating on windshields, which may affect signal receptions
- Driving in and around high buildings may affect signal receptions.
- Driving under tunnels or in buildings may affect signal receptions.
- Low battery of a PDA or of an iBT-GPS may affect signal receptions.
- Please check the correct “COM” and “Baudrate” of your PDA.
- In general, any GPS receiver performs best in open space where it can see clean sky. Also weather will affect GPS reception – rain & snow contribute to worse sensitivity.
- iBT-GPS output data updates every second, thus the actual position and the position in your map may have time delay. This may happen when you drive at higher speed or make a turn around a corner.
- Note that iBT-GPS may not work indoors where it can not see the sky.
- For the 1st time you use the iBT-GPS, it will take 1 to 3 minutes to get the satellite constellation and fix your position, this is called “Cold Start”. If you replace the battery, iBT-GPS will do Cold Start again.
- If your iBT-GPS can’t fix your position for more than 20 minutes, we suggest you change to another open space and then try again.

Appendix G. Certification

FCC Notices

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 interface, and
2. This device must accept any interference received, including interference that may cause undesired operation.

FCC RF Exposure requirements:
This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.
NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHOURIZED MODIFICATION TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

Industry Canada Caution

The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health

Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website.

"www.hc-sc.gc.ca/rab"

CE Notices

Is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility (89/336/EEC), Low-voltage Directive (73/23/EEC) and the Amendment Directive (93/68/EEC), the procedures given in European Council Directive 99/5/EC and 89/3360EEC.

The equipment was passed. The test was performed according to the following European standards:

- EN 300 328-2 V.1.2.1 (2001-08)
- EN 301 489-1 V.1.4.1 (2002-04) / EN 301 489-17 V.1.2.1 (2002-04)
- EN 50371: 2002
- EN 60950: 2000

Appendix H. Warranty Information

Thank you for your purchase of GPS product from the company.

The company warrants this product to be free from defects in materials and workmanship for one year from the date of purchase. The warranty for accessories is six months. The stamp of distributor or a copy of the original sales receipt is required as the proof of purchase for warranty repairs. The company will, as its sole option, repair or replace any components, which fail in normal use. Such repair or replacement will be made at no charge to the customer for parts or labor. The customer is, however, responsible for any transportation costs.

This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration of repairs. The company assumes no responsibility for special, incidental punitive or consequential damages, or loss of use.

Warranty

Model number: _____

Series number: _____

Data of purchase: _____

Name: _____

Address: _____

City, Zip code: _____

State, Country: _____

E-mail address: _____

Distributor Stamp Here