Bluetooth GPS receiver

CONCEPTRONIC®

The Concept of Global Communication

User's Manual

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Note and Warning

- CBTGPS uses Lithium battery. If CBTGPS is used in temperature lower than -10℃ or higher than 60℃, its battery charging capability will decrease. Please leave the CBTGPS far from heat or high temperature environment. In addition, do not expose your CBTGPS in temperature higher than 140℉/60℃. If you do not follow these rules, the battery inside CBTGPS may become heat, explode or burn itself, and this will lead to very serious damage. The Lithium battery inside the CBTGPS should be recycled.
- While in the hospital, turning off the CBTGPS 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 CBTGPS, take out the battery and store it in dry/cool places.
- For safety, keep the CBTGPS 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 CBTGPS, 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 CBTGPS yourself. Unauthorized hacking may damage the unit, and void your warranty.

Chapter 1 Before you begin

Thank you for purchasing the Bluetooth GPS Receiver, CBTGPS, a global positioning system receiver with Bluetooth wireless technology. CBTGPS 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(L) x 46(W) x 20(H) mm and weight only 62g (w/ battery), CBTGPS is an ideal solution to carry along everywhere.

CBTGPS'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 30 hours and brought you the most convenient and longest usage of its kind. With the lead-free production process (starting Jan. 1, 2006), CBTGPS is the most environmentally friendly wireless GPS receiver in the market.

CBTGPS has distinguished features others don't have. With our patent pending **Smart Power Save Mechanism** and **Fuzzy Auto On/Off** features, our CBTGPS consumes 65% less power than other wireless GPS receivers, and can extend the operating time for more than 30 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
7. External antenna port (MMCX)

1.2 Checking the package content

Congratulations on your purchase of the CBTGPS with built-in Lithium rechargeable battery. Before you start using CBTGPS, 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 - CBTGPS x 1
- Retractable USB Cable 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 CBTGPS, please charge battery until it is full (the LED turns off). 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 off, that means battery is fully charged. Besides, if the battery still has energy over 80% of the total capability, the LED is off, too. This is to make the battery life longer, CBTGPS won't charge itself.

Step 2 Turn on the power switch

Before

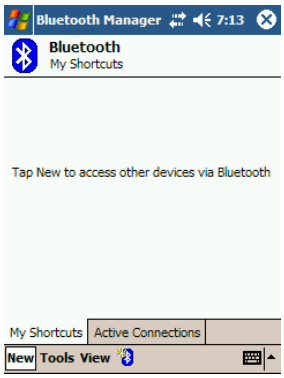
After

Step 3 Connecting your handheld device with CBTGPS

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

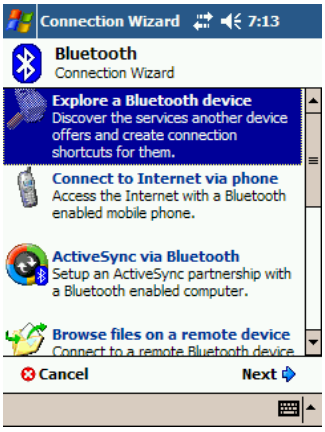
Below, we provide a common procedure of software installation to set up your PDA. (For other PDA, the steps may be a little bit different. Bluetooth Manager is one of popular program used for Bluetooth device.)

-->



Start -> Bluetooth Manager New

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



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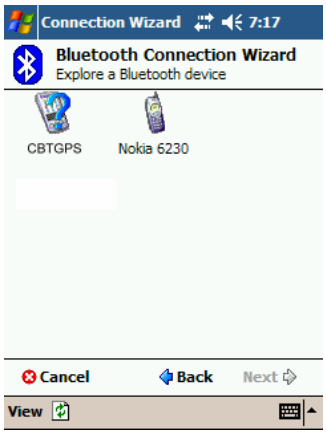


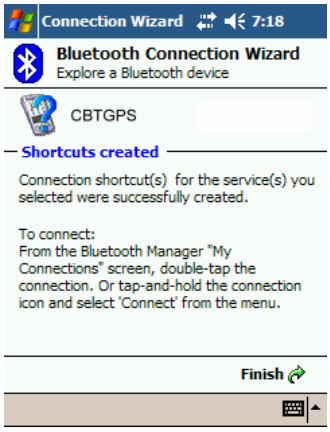
Explore A Bluetooth device Tap CBTGPS ->Next

2. Explore a Bluetooth device, and find the “CBTGPS”

Passkey 0000 (if your PDA ask for the passkey)

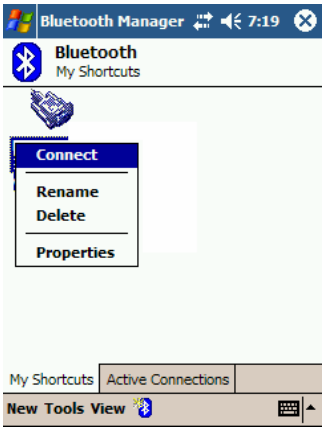
3. (Optional)

-->



Select SPP slave->Next Finish

4. Connect to Serial Port Profile (SPP) Slave



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Tap and Hold CBTGPS: 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.

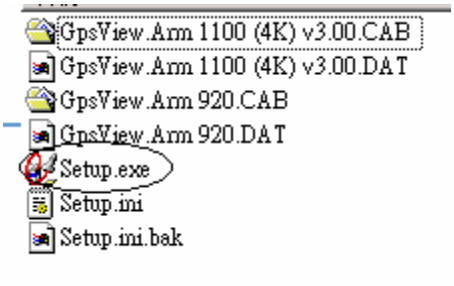
Chapter 3 How to test your Bluetooth GPS Receiver ?

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

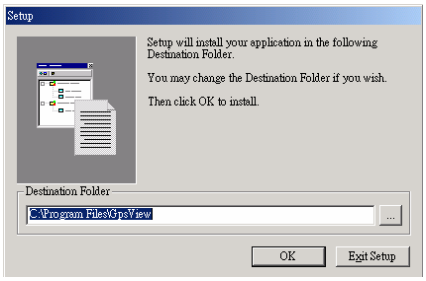
3.1 Software Installation

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

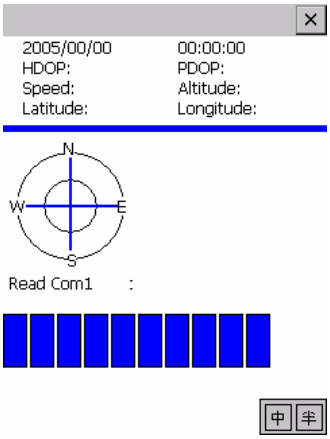
Once you have completed the setup of your Bluetooth device, you may check to see if your GpsView software is attempting to fix your position. You can do this by opening your GPS software. If it fails, you should select the correct COM port and Baud Rate (4800~115200) to start receiving GPS data. Shortly,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

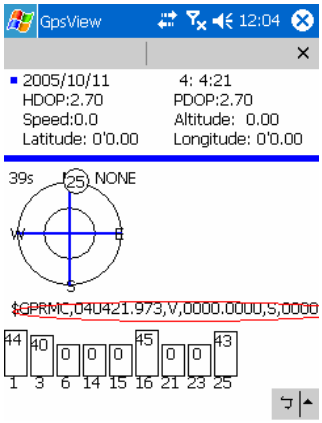
3.2.1 Executing GPS Demo Program

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

3.2.2 GPS Demo Screen



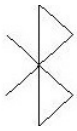
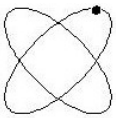
1. Initial



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 / 3 seconds)
			Quickly blinking:	Bluetooth is connected and ready for data transmission (1 time / second)
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

CBTGPS 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 CBTGPS is successful, CBTGPS will wake up itself and the blue LED of CBTGPS will be quickly blinking again (every 1 sec) and the orange LED of CBTGPS will also be on.

Appendix C. Specification

General	
GPS technology	NEMERIX GPS Module
Frequency	L1, 1575.42 MHz
C/A Code	1.023 MHz chip rate
Channels	16 channels all in view tracking
Sensitivity	Better than -152dBm
Receiver Accuracy	
Position	1.2 meters Static CEP 50, 3.0 meters Static CEP 95; 1.3 meters Static Altitude 50, 3.8 meters Static Altitude 95
Velocity	0.1 m/sec, without SA

Time	±100ns synchronized to GPS time
Datum	
Datum	WGS-84
Time to First Fix	
Hot start	5 sec, average
Warm start	34 sec, average
Cold start	46 sec, average
Reacquisition	<3sec
Protocol	
GPS Output Data	NMEA 0183 (V3.01) - GGA, GSA, GSV, RMC(default); VTG, GLL (optional), Data bit: 8, Stop bit: 1 (Default)
Limitations	
Acceleration Limit	<2G
Altitude Limit	<18,000 meters
Velocity Limit	<515 meters/sec.
Jerk Limit	20 m/sec.
Power	
Battery	Built-in rechargeable 1000mAh Lithium battery
Operation Current	25mA@3.7V(w/o Bluetooth) 32mA@3.7V(w/ Bluetooth)
Operation Time	Up to 30 hrs, after fully charged.
Charging Time	3hrs. (Typical)
Standby Time	More than 360 hrs, after fully charged.

	More than 1 hrs. (when low power LED starts blinking)
Charger Protection	Built-in Over Temperature / Over Voltage protection
DC Input Range	4.0 ~ 5.5V
Physical Characteristics	
Dimension	72mm x 46mm x 20mm
Weight	62g
Temperature	
Operating	-10℃ ~ 60℃
Storage	-20℃ ~ 60℃
Charging	0℃ ~ 45℃
Humidity	5% to 95% non-condensing
Bluetooth Specifications	
Standard	Fully compliant with Bluetooth V1.2
Output Power	0dBm (Typical), Class II
Range	Up to 15 meters
Bluetooth Profile	Serial Port Profile (SPP)
Frequency	2.4GHz~2.4835GHz ISM Band
Security	Yes

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 CBTGPS" 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 CBTGPS 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 "CBTGPS: 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 CBTGPS").

Appendix E. How to change battery

Step 1 Press the button to right side

Step 4 Fit new battery into CBTGPS

Step 2 Open the cover of battery

Step 5 From L to R close the cover

Step 3 Take out the battery

Step 6 Done

Appendix F. Helpful tips

Your CBTGPS 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 CBTGPS 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.
- CBTGPS 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 CBTGPS may not work indoors where it can not see the sky.
- For the 1st time you use the CBTGPS, 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, CBTGPS will do Cold Start again.
- If your CBTGPS 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

(Test Condition – Car charger's input voltage Vin: DC12.0V)

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

FCC statement in User's Manual (for class B)

"Federal Communications Commission (FCC) 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.

FCC Caution:

1.The 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.

2.This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

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