User's Guide

hp iPAQ Navigation System

Document Part Number: 366337-001

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WARNING: Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.

CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

User's Guide
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First Edition (March 2004)
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Using the HP iPAQ GPS Bluetooth Receiver

The HP iPAQ Navigation System Bluetooth GPS receiver gets GPS signals from satellites orbiting the earth. It identifies your position to an accuracy of less than 10 meters.

✎ Note: The HP iPAQ Navigation System Bluetooth GPS receiver is referred to as the Bluetooth GPS receiver in this User's Guide.

Learning About Bluetooth GPS Features

An illustration of the Bluetooth GPS receiver with features follows.

Feature	Description
Power Switch	Power is On or Off.
Power Jack	The Power Jack connects a DC car power charger (included) or AC power charger to recharge the internal battery.
Bluetooth Status LED (Blue)	Blinking Slowly - There is not a Bluetooth connection. Blinking Quickly - There is a connection to another Bluetooth receiver.
GPS Status LED (Green)	Blinking - The GPS position is fixed. Steady Light - The GPS position is not fixed.
Battery Status LED (Red/Yellow)	Red - Battery power is extremely low. Charge immediately. Yellow - Battery is currently charging. LED Off - Battery is partially or fully charged.
External Antenna	Connects an external antenna. This is usually not required since the GPS has an internal antenna.

Setting Up the Bluetooth GPS Receiver

The Navigation System requires set up with the Bluetooth GPS receiver in order to operate. For the initial set up, do the following:

1. Charge the Bluetooth GPS receiver using the DC adapter (included) or the AC adapter for the HP iPAQ PocketPC.

✎ Note: The first time you charge the Bluetooth GPS receiver, it can take up to three hours.

2. Turn on the Bluetooth GPS receiver using the **Power** switch on the left side of the receiver.

✎ Note: The blue LED flashes when the receiver is turned on.

Manually Partnering for Windows® Mobile 2002 Operating System

✎ Note: Some devices require you manually partner the Bluetooth GPS receiver and the iPAQ PocketPC. This includes devices using Microsoft® Windows Pocket PC 2002 operating system. For more information, refer to the *Manually Partnering the Bluetooth GPS Receiver and the iPAQ PocketPC* section.

To partner the Bluetooth GPS receiver with the iPAQ PocketPC requires:

■ Navigation System software installed on your iPAQ PocketPC.

■ Bluetooth GPS receiver is charged.

■ iPAQ PocketPC is turned on.

■ Bluetooth GPS receiver is turned on.

■ Bluetooth GPS receiver and iPAQ PocketPC are between 5-10 meters apart.

Establishing a Connection

1. Tap **Start** at the top of the Today screen on the iPAQ PocketPC.

2. Tap **Bluetooth Manager** from the pop up menu.

   The Bluetooth Manager screen displays.

3. Tap the **Yes** tab to search for devices.

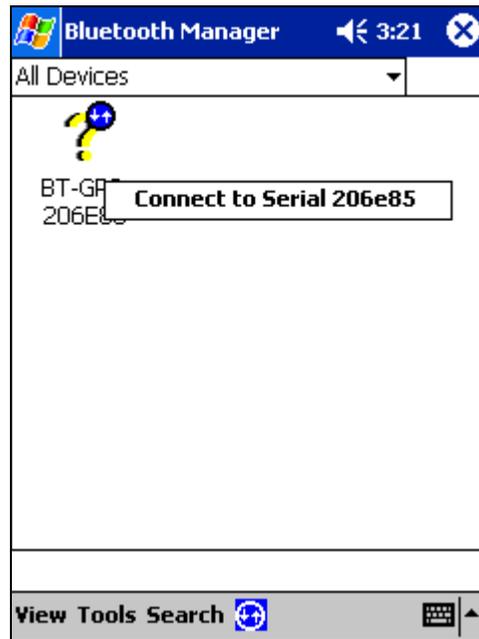✎ Note: iPAQ searches for and displays a list of Bluetooth devices.

4. Tap the check box to the left of the **BT-GPS-xxxxxx** device in the list.
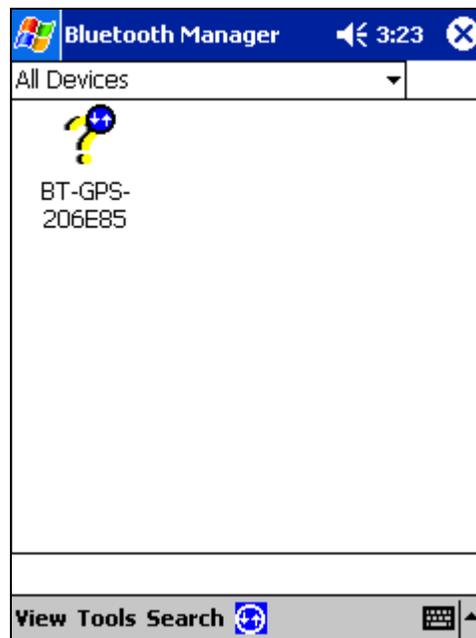
5. Tap the **OK** button on the upper right side of the screen.

6. Tap and hold the pointer on the **BT-GPSxxxxxx** icon.

7. Tap on **Connect to Serial xxxxxx** to establish a connection with the Bluetooth GPS receiver.

✎ Note: Two blue arrows display on the GPS Bluetooth receiver icon to indicate a connection.

Partnering between the Bluetooth GPS receiver and the iPAQ PocketPC immediately occurs.

Manually Partnering for Windows® Mobile 2003 Operating System

To partner the Bluetooth receiver with the iPAQ PocketPC requires:

■ Navigation System Software installed on your iPAQ PocketPC.

■ Bluetooth GPS Receiver is charged.

■ iPAQ PocketPC is turned on.

■ Bluetooth GPS Receiver is turned on.

■ Bluetooth GPS receiver and iPAQ PocketPC are between 5-10 meters of each other.

Establishing a Connection

1. Tap **Start** at the top of the Today screen on the iPAQ PocketPC.

2. Tap the **Settings** option on the pop up menu.

3. Tap the **System** tab at the bottom of the Settings menu.

4. Tap the **Bluetooth** icon on the System menu.

   The Bluetooth General screen displays.
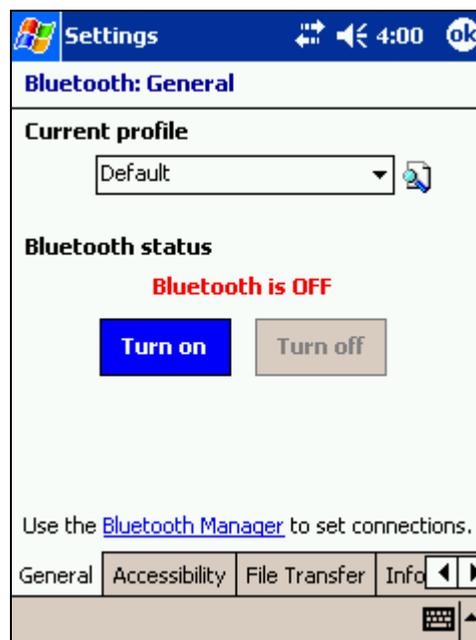
5. Tap the **Turn On** tab below the Bluetooth status.

6. Tap **Bluetooth Manager** to set the connections.

   The Bluetooth screen displays.

7. Tap the **New** tab at the bottom of the Bluetooth screen.
8. Tap **Connect!** to display the Connection Wizard.
9. Tap **Explore a Bluetooth Device** from the Connection Wizard options.
10. Tap the **Next** tab at the bottom of the Connection Wizard screen

11. Tap inside the Device box to display a list of available Bluetooth Devices.

✎ Note: The Bluetooth GPS receiver displays a list of available devices. This creates a shortcut for the GPS receiver

12. Tap the icon labeled **BT-GPS-XXXXXX**.

13. Tap **Serial XXXXXX** on the Service Selection screen to highlight it.

14. Tap the **Next** tab at the bottom of the Service Selection screen.

15. Tap the **Finish** tab at the bottom of the Connection Wizard screen.

✎ Note: A box with the connections displays.

16. Tap the **BT-GPS-XXXXXX** icon, twice, to establish a connection between the iPAQ PocketPC and the Bluetooth GPS receiver.

17. Green arrows on the icon indicate an active connection.

Checking the GPS Connection Status

1. To check the status for the Bluetooth GPS receiver and the iPAQ PocketPC, tap the Bluetooth icon on the Today screen.

✎ Note: The Bluetooth icon is located on the lower right side of the screen.

2. Tap **Bluetooth Manager**.
3. The Bluetooth Manager screen displays.
4. Tap the **Active Connections** tab at the bottom of the screen.

If a connection is established, an icon with the label "BT-GPS-XXXXXX" displays. The green line next to the icon indicates an active connection.

If the connection is not active, manually partner the Bluetooth GPS receiver with the iPAQ PocketPC. For more information, refer to *Manually Partnering the Bluetooth GPS Receiver with the iPaQ PocketPC* section.

Receiving Satellite Signals

The Bluetooth GPS Receiver gets satellite signals *only* when there is a clear view of the sky. Trees and tall buildings can block the view. Generally, you do not receive signals inside a building.

✎ Note: The Bluetooth GPS Receiver should be placed on the front or back dashboard of the vehicle. A wireless connection between the Bluetooth GPS Receiver and iPAQ PocketPC is established through the receiver radio. The Bluetooth GPS receiver and the iPAQ PocketPC should be no further than 5-10 meters apart.

Once a connection is established between the Bluetooth GPS Receiver and iPAQ PocketPC, satellite signals are received. When you first use the Bluetooth GPS Receiver, it can take from five to fifteen minutes to receive a satellite signal. Thereafter, it should take approximately 90 seconds to receive signals.

✎ Note: Some days, you receive a GPS signal quicker than on other days. Although GPS signals orbit the earth in set patterns, they are not always over the same position on earth. There is more extensive coverage over lower latitudes and less near the poles.

Based on satellite position, geographic location, and heading, you can experience the following:

■   Satellite signals are received quicker at specific times of the day. For example, at 10 A.M., you can receive signals under a minute since there are more satellites visible in the sky. At 3 P.M., you may not receive signals because only two satellites are visible in the sky.

■ Buildings can block satellite signals. Setting up the GPS receiver in a vertical window blocks at least 50% of the sky. Trees also can block satellite signals.

■ A window with a Southern view, rather than Northern view, should be used to receive signals.

The GPS Info screen displays.

✎ Note: The Bluetooth GPS receiver performs at its best when the battery is fully charged. If you are at a location receiving weak signals, verify the Bluetooth GPS receiver is connected to the DC power charger.

Technical Support

General Definition

For detailed support information, please review the warranty statement booklet included in the box.

Performing a Soft Reset

For many problems associated with the iPAQ Navigation System, the resolution will be to perform a **Soft Reset**. This is a standard procedure that will not harm the data or settings stored on your Navigation System or your iPAQ PocketPC.

Performing a soft reset will vary by device, and for full instructions please consult your relevant iPAQ User's Guide.

Troubleshooting

Problem	Solution
I cannot get a GPS signal	• Ensure your GPS receiver is switched on and fully charged up. • Take your GPS receiver outside so you have a clear view of the sky. • Allow 5-10 minutes to receive a GPS signal. If GPS receiver has a valid signal, the green LED flashes.
I cannot connect my GPS receiver to my PocketPC	• Check your GPS receiver and your iPAQ PocketPC are within 5-10 yards apart. • Check the Bluetooth Radio on your iPAQ PocketPC is switched on by tapping the Bluetooth icon at the bottom right side of the Start screen. • Check your GPS receiver is switched on and charged. • Switch on the power switch; if the GPS receiver is not charged up the power LED is red.
My GPS receiver has asked me for a passkey to connect	The GPS receiver has a default passkey of 2003. The Bluetooth Manager may be set to require a passkey. • Tap on the **Bluetooth** icon > **Bluetooth Settings**. • Tap the right arrow key at the bottom of the screen to the **Serial Port** tab. • Ensure the **Authentication (Passkey) required** check box is unchecked.
How do I know my GPS receiver is working	• Verify the GPS receiver has a flashing blue light.(Bluetooth radio is switched on.) • Verify the GPS receiver has a green light. A solid light indicates there is no valid GPS signal; a flashing light indicates there is a valid GPS signal.

Appendix

Regulatory Notices

Japanese Notice

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準
に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用すること
を目的としていますが、この装置がラジオやテレビジョン受信機に近接して
使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

Korean Notice

B급 기기 (가정용 정보통신기기)

이 기기는 가정용으로 전자파적합등록을 한 기기로서
주거지역에서는 물론 모든지역에서 사용할 수 있습니다.

Battery Warning

⚠ **WARNING:** This computer contains a lithium ion rechargeablebattery pack. To reduce the risk of fire
or burns, do not disassemble, crush, puncture, short externalcontacts, or dispose of in fire or water.

Equipment Warning

⚠ **WARNING:** To reduce the risk of personal injury, electrical shock, fire or damage to the equipment:

■ Plug the AC adapter into a grounded (earthed) electrical outlet that is easily accessible at all times.

■ Disconnect power from the equipment by unplugging the AC adapter from the electrical outlet or unplugging the Synchronization cable from the host computer.

■ Do not place anything on the AC adapter cord or any of the other cables. Arrange them so that no one may accidentally step on or trip over them.

■ Do not pull on a cord or cable. When unplugging from the electrical outlet, grasp the cord by the plug or, in the case of theAC adapter, grasp the AC adapter and pull out from the electrical outlet.

Airline Travel Notice

Use of electronic equipment aboard commercial aircraft is at the discretion of the airline.

Wireless Notices

In some situations or environments, the use of wireless devices may be restricted. Such restrictions may apply aboard airplanes, in hospitals, near explosives, in hazardous locations, etc. If you are uncertain of the policy that applies to the use of this device, please ask for authorization to use it prior to turning it on.

Specifications

System Specifications

Electrical Characteristics (Receiver)		
	Frequency	L1, 1575.42 MHz
	C/A Code	1.023 MHz chip rate
	Channels	12
	Sensitivity	170 dBW
Accuracy		
	Position Horizontal	15m 2D RMS (SA off)
	WAAS enabled	10m 2D RMS (SA off)
	Time	1 micro-second synchronized to GPS time
	Velocity	0.1m/sec 95% (SA off)
Datum		
	Datum	WGS-84
Acquisition Rate		
	Hot start	8 sec., average (with ephemeris and almanac valid)
	Warm start	38 sec., average (with almanac but not ephemeris)
	Cold start	45 sec., average (neither almanac nor ephemeris)
	Reacquisition	0.1 sec., average (interruption recovery time)
Protocol		
	GPS Output Data	NMEA 0183 protocol, and supports command: GGA, GSA, GSV, RMC, VTG, GLL (VTG and GLL are optional.
	GPS transfer rate	38400, N,8,1
Dynamic Condition		
	Acceleration Limit	Less than 4g
	Altitude Limit	18,000 meters (60,000 feet) max.
	Velocity Limit	515 meters/sec. (1,000 knots) max.
	Jerk Limit	20 m/sec**3

Electrical Characteristics (Receiver)

External antenna

Power	3.3V
Connector	MMCX

Power

Voltage	Built-in rechargeable battery (900 mAh) and 5V DC input charging circuit.
Operation Time	8 hr. After fully recharged, in continuous mode > 10 hr in trickle power mode

Physical Characteristics

Weight	85 mm x 47mm x 26mm
Dimension	98g

Temperature

Operating	-20° ~ 70°C
Storage	-30° ~ 80°C
Humidity	Up to 90% non-condensing

Bluetooth Specification

- Bluetooth V1.1 Compliant
- Supply Voltage: 2.8-3.3V
- Frequency Range: 2.402 2.480GHz
- Receiver Sensitivity: -80dBm
- transmit Power: Class 2
- Transmitting Range: 5~10m (typical)
- Power Consumption: 45 mA (typical)