GeoExplorer® Series

Getting Started Guide

Contact Information

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Release Notice

This is the February 2004 release (Revision B) of the *GeoExplorer Series Getting Started Guide*, part number 46506-30-ENG. It applies to version 3.00 of the GeoExplorer series operating system and firmware. The GeoExplorer series operating system is based on the Microsoft Windows Mobile 2003 software for Pocket PC.

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Contents

About this manual

Welcome to the *GeoExplorer Series Getting Started Guide*. This manual describes how to use a Trimble® GeoExplorer® series handheld.

The GeoExplorer series includes the GeoXT™ and GeoXM™ handhelds. These handhelds combine a Trimble GPS receiver with a field computer that is running the Microsoft® Windows Mobile™ 2003 for Pocket PCs.

Other references

For more information on software supplied with the handheld...	refer to...
ESRI® ArcPad™ software	www.esri.com/arcpad, or ArcPad documentation
GPS	www.trimble.com/gps
GPS Connector	GPS Connector help
GPS Controller	GPS Controller help
GPScorrect™ for ESRI ArcPad software	GPScorrect help, or www.trimble.com/gpscorrect.html
Inbox	Pocket PC help
Internet Explorer	Pocket PC help
Microsoft ActiveSync® technology	ActiveSync help
Specifications and accessories for GeoExplorer series handhelds	www.trimble.com/geoexplorer.html
TerraSync™ software	www.trimble.com/terrasync.html, or *TerraSync Operation Guide*

System components

This section lists the components of the GeoExplorer series system.

What's in the box?

When you receive the GeoExplorer series handheld, check that you have received all the components, as detailed on the packing list. The standard components are shown below. Depending on the system that you have purchased, you may have received additional components.

AC power adaptor

Companion CD

Getting Started Guide

USB data cable

Pouch

Support module

Stylus

GeoExplorer series handheld

Inspecting the system

Inspect all contents for visible damage (scratches, dents) and if any components appear damaged, notify the shipping carrier. Keep the shipping and packaging material for the carrier's inspection.

Accessories

The following optional accessories are available:

- Power/serial clip
- Vehicle power adaptor[1]
- Portable power kit[1]
- External antenna
- Pole-mountable ground plane
- Baseball cap with antenna sleeve
- Backpack kit
- Hard carry case
- Null modem cable[1]
- Beacon-on-a-Belt (BoB™) differential correction receiver[1]

[1]Requires power/serial clip (sold separately).

For more information, visit the Trimble website at www.trimble.com/geoexplorer.html.

Software supplied with the GeoExplorer series handheld

The following software is pre-installed on the GeoExplorer series handheld:

Software	Function
ActiveSync	Synchronize information between the handheld and a computer.
Bluetooth File Transfer	Transfer files between the handheld and other Bluetooth-enabled devices.
Calculator	Perform basic arithmetic functions.
Calendar	Keep track of appointments and arrange meetings.
Connect to Desktop	Use with the serial clip to connect to a computer.
Contacts	Keep track of your friends and colleagues.
Device Lock	Lock the touch screen and buttons.
File Explorer	View and manage files.
GPS Connector	Configure communications between the handheld's integrated GPS receiver and external devices.
GPS Controller	Configure and view status information for the integrated GPS receiver.
Inbox	Write, send, and receive e-mail messages.
Notes	Create handwritten, typed or recorded notes.
Pictures	View and edit graphics files.
Pocket Backup	Use Pocket Backup, Back up Now and Restore Now to back up and restore the main memory.
Pocket Internet Explorer	Browse the World Wide Web.
Pocket Excel	Create and edit Excel spreadsheets.
Pocket Word	Create and edit Word documents.
Tasks	Keep track of your tasks.
Windows Media Player 9	Play Windows Media or MP3 audio and video files.

Parts of the GeoExplorer series handheld

The main hardware features of the GeoExplorer series handheld are shown below.

Pocket PC
Field computer running Windows Mobile 2003.

Integrated GPS receiver
- High-performance
- Integrated WAAS/EGNOS receiver
- EVEREST™ multipath rejection technology (GeoXT only)

Advanced TFT color display
- 16-bit color (65,536 colors)
- Interactive touch screen
- ¼ VGA display
- Multi-stage backlight

Configurable touch buttons
Tap to open the assigned program.
Default programs:
F1 GPS Controller
F2 Power Settings
F3 Memory Manager
F4 Bluetooth® wireless technology settings

Backlight touch buttons
Tap Backlight Up ☼ to turn on the backlight, or to increase the backlight level. Tap Backlight Down ☼ to decrease the backlight level.

Integrated Bluetooth radio
Connect to external devices using Bluetooth wireless technology.

Power button
Press to turn on the handheld, or to put it into Suspend mode.

Press both the Power button and the Display button to align the touch screen.

Microphone
Run Notes and tap 🖾 in the menu bar to record.

Display button
Press to turn the backlight on or off. Hold down to adjust the backlight level.

External antenna connector
Connection to an optional
external antenna.

GPS COM ports
NMEA, TSIP, and real-time
communication with integrated
GPS receiver.

CPU
206 MHz Intel StrongARM 1110
processor.

Main memory
64 MB RAM.

Disk
- Internal flash memory
- Non-volatile
- 512 MB

Handstrap

Internal battery
All-day operation with GPS.

Communication swipes
Place handheld in support module to:
- charge the battery
- provide USB connection to a computer
Attach optional serial clip to:
- charge battery
- provide external power
- provide serial (COM) port connection to a
  computer
- connect to an external device such as a
  BoB receiver or mobile phone
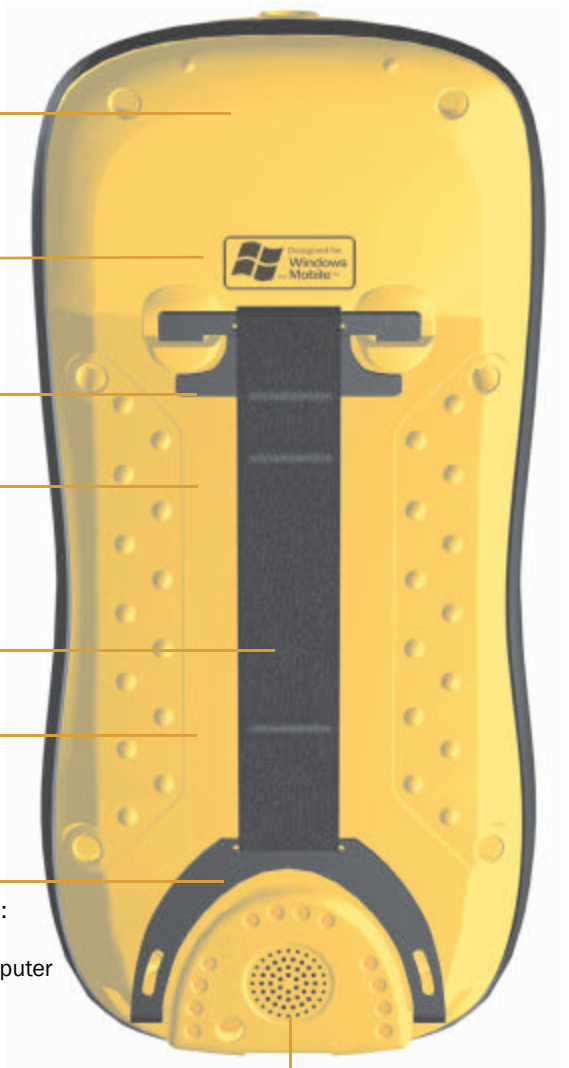
Speaker

Getting started

Follow the steps below to get started with the GeoExplorer series handheld. For information on using the handheld, see **Pocket PC basics, page 8**.

1   Charge the battery

Before using the handheld for the first time, you must charge the battery.
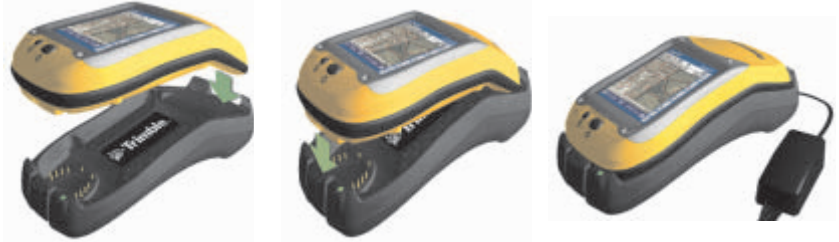
Connect one end of the AC adaptor cable to the support module and the other to an AC power outlet, and put the handheld in the support module as shown above. The handheld turns on. Leave to charge for up to five hours. Press F2 to view Power Settings and check the level of charge in the battery.

To remove the handheld from the support module, press the release button on the support module, then lift the bottom of the handheld upward.

2   Turn on and suspend

Press and release the Power button to turn on or to suspend the handheld.

For more information, see **Suspend mode, page 20**.

3 Align the touch screen

The first time you turn on your handheld, you are prompted to align the touch screen. Follow the on-screen instructions to align the touch screen.

If at any time the touch screen does not respond properly to stylus taps, realign it. To begin the alignment sequence, press the Display button and the Power button at the same time and follow the on-screen instructions.

4 Adjust the screen display

The touch screen is visible in all conditions, including bright sunlight. If necessary, adjust the screen display and calibration:

- To turn the backlight on or off, press the Display button.

- To adjust the backlight level, hold down the Display button until the required setting is reached. To fine-tune, tap the Backlight Up or Backlight Down touch button.

5 Set the time zone

To set the clock to your local time, the handheld uses the GPS time reported by the integrated GPS receiver and the time zone that you specify. In the *Today* screen, tap the clock icon ⊙. The *Clock Settings* screen appears. Select the *Home* option and then select the correct time zone.
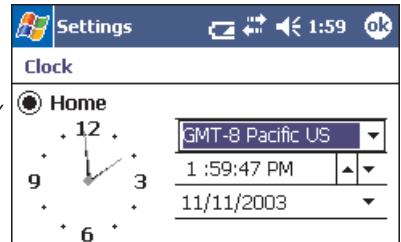
6 Install and activate software

Connect the handheld to a computer and use ActiveSync to install or activate any software you need. For more information, see **Installing software, page 13**.

7 Use GPS

The integrated GPS receiver is switched off until an application opens one of the GPS COM ports. To use GPS, take the handheld outside to a location with a clear view of the sky. Then tap the F1 GPS touch button. The skyplot of the default GPS software appears. Depending on the software you have installed, this will be either GPS Controller or TerraSync. For more information, see **Using GPS, page 14**.

Pocket PC basics

The GeoExplorer series handheld's operating system is based on the Windows Mobile 2003 software for Pocket PC.

Parts of the screen

The main parts of the screen are shown below:

Start button
Tap to open the Start menu, where you can access programs and system controls.

Navigation bar
Contains status icons for important system functions.

Today screen
Summarizes your appointments, tasks, notes, and e-mails for the day. Tap any item to open it.

Recently used programs list
Tap any icon to open the program.

Start menu
Tap any item on the menu to open it.

Command bar
Contains menu commands and buttons.

Input Panel button
Tap to view/hide the keyboard, or to select an input method.
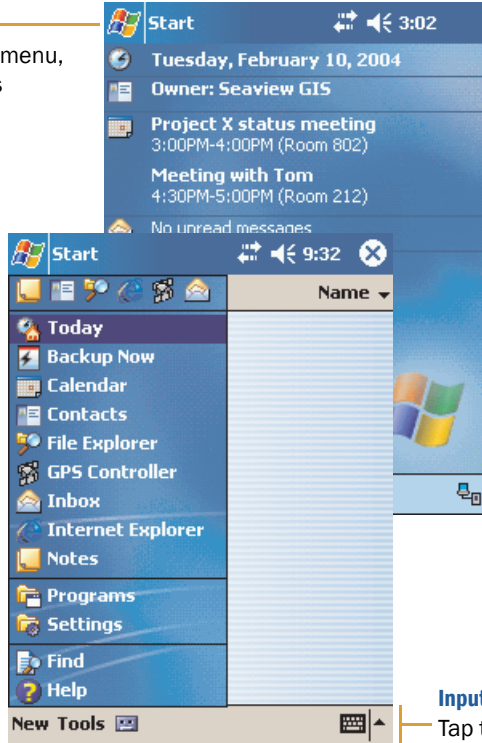
Accessing help

To access help, tap 🟦 / *Help* or, if available, tap 🔵 in the application window. If there is an application running, context-sensitive help for the current screen appears. Otherwise the main Help Contents page appears.

Online help on the handheld works in the same way as a Web page. Tap hyperlinks to navigate around the help and use ← → to retrace your steps. Tap *View / Contents* to return to the Contents page for the application, and *View / All Installed Help* to return to the main Contents page.

Interacting with the handheld

Like most Pocket PC devices, the GeoExplorer series handheld has no mouse or keyboard. To interact with the handheld, use the stylus to tap on the touch screen. There are three types of action you can perform with the stylus:

Action	Definition
Tap	Touch the screen once with the stylus to open items and select options.
Tap and hold	Tap and hold the stylus on an item to see a list of actions available for that item. On the pop-up menu that appears, tap the action you want to perform.
Drag	Hold the stylus on the screen and drag across the screen to select text and images. Drag in a list to select multiple items.

Entering text

The handheld does not have a physical keyboard. To enter text, use an on-screen keyboard. Alternatively, you can write directly onto the screen.

On-screen keyboards

To activate an on-screen keyboard, tap the arrow on the Input Panel button and tap *Keyboard*. The icon on the Input Panel button changes to a keyboard and the on-screen keyboard appears.

Input Panel button showing keyboard icon

To enter text, tap the appropriate keys on the on-screen keyboard. When you have finished entering text in a field, tap `Tab` to accept the text you have entered and move to the next field.

To hide the keyboard, tap the keyboard icon again.

To select a different keyboard:

1. In the command bar, tap the arrow on the Input Panel button. A list of installed keyboards pops up. The currently selected keyboard is indicated by a check mark.
2. Tap the name of a keyboard to select it.

Using Transcriber

The Microsoft Transcriber software converts your handwriting to text. You can use it to enter notes in a text editor such as Notes.

To select Transcriber:

1. Tap the arrow on the Input Panel button. A list of installed keyboards pops up.

2. Tap *Transcriber*. The *Transcriber Intro* dialog appears.

3. Tap **ok**. The Transcriber icon appears in the command bar.

Enabling Transcriber

By default, Transcriber is disabled. When Transcriber is disabled, the background of the Transcriber icon is transparent, and Transcriber does not convert your handwriting to text. To enable Transcriber, tap the Transcriber icon on the Input Panel button. When Transcriber is enabled, the background of the Transcriber icon is white, and Transcriber attempts to convert anything that you write on the touch screen to text. To disable Transcriber, tap the Transcriber icon on the Input Panel button.

Input Panel button showing Transcriber icon

Transcriber has a number of tools and modes that allow you to customize how it works. These tools and modes are controlled from the Transcriber iconbar.

For more information, refer to the Transcriber Help.

Connecting to a computer

To transfer files to or from a GeoExplorer series handheld, or to install software on the handheld, use Microsoft ActiveSync to connect the handheld to a computer. ActiveSync is a program that lets you exchange information between a computer and a Pocket PC device. It also enables you to synchronize applications such as Inbox software.

If you do not have ActiveSync installed on your computer, or you want to use a translated version of ActiveSync, you can download it from the Microsoft website at **www.microsoft.com/windowsmobile**.

To connect the handheld to a desktop computer:

1. If necessary, install ActiveSync on the computer.

2. Use the support module (see **page 12**), a wireless Bluetooth connection (see **page 25**), or the serial clip (see **page 34**) to connect the handheld to the computer. If using the serial clip, run ![Start icon] / *Programs / Connect to Desktop.*

3. If ActiveSync does not connect automatically, check that connection has been enabled in ActiveSync and on the handheld. For more information, see **Troubleshooting, page 45**.

4. Follow the instructions on the screen to connect to the computer. You can establish two types of connections with ActiveSync: a *partnership* or a *guest* relationship.

    Information about a *partnership* is stored permanently on the computer. You can use a partnership to synchronize files between the handheld and a computer. If you are going to connect to the same computer regularly, you should establish a partnership. A *guest* relationship lasts only as long as the handheld and the computer are connected.

5. If you selected a partnership, use ActiveSync to configure the synchronization settings for your selected applications (for example, Inbox or Calendar).
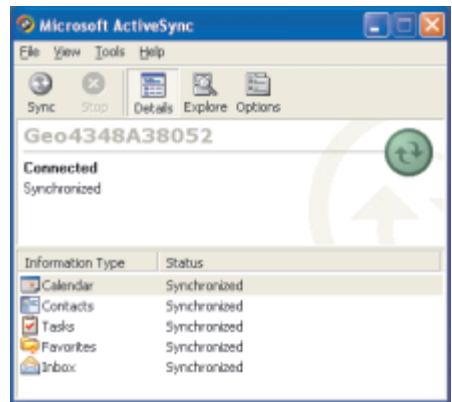
For more information, refer to the ActiveSync Help.

> **Tip —** You can configure the Connection Manager in the GPS Pathfinder Office software installed on your computer to automatically detect when you connect a GeoExplorer series handheld to the computer, enabling you to automatically transfer data from TerraSync, differentially correct the data, and then export it to a GIS. For more information, refer to the GPS Pathfinder Office Help.

Support Module connection (USB)

The support module provides a fast, simple USB connection between the GeoExplorer series handheld and a computer.

To connect using the support module:

1. Connect the USB data cable to the USB port on the support module.
2. Place the handheld in the support module. For more information, see Getting started, page 6.
3. Connect the other end of the USB data cable to a USB port on the computer.

Bluetooth connection

You can use the handheld's integrated Bluetooth radio to establish a wireless serial connection to a computer that is enabled with Bluetooth wireless technology. For more information, see Using Bluetooth, page 25.

Serial clip connection

If you have purchased the optional serial clip, you can use it instead of the support module to establish a serial connection to the computer. For more information, see Using the optional serial clip, page 34.

Installing software

To install software on the handheld, first establish an ActiveSync connection to a computer (see). Then follow the installation instructions that are provided with the software. If no instructions are provided, run the program file (.exe file) on a computer:

- If the file is an installer, the installation wizard will begin. Follow the instructions on the screen. Once the software is installed on the computer, the installer will automatically transfer it to the handheld.
- If the file is not an installer, an error message appears, stating that the program is valid but designed for a different type of computer. Use ActiveSync to copy the file to the Program Files folder on the handheld.

Note — The GeoExplorer series handheld supports software designed to run on Windows Mobile 2003 software for Pocket PCs. You may also be able to install and run some software designed for other operating systems.

Installing TerraSync

You can install version 2.40 or later of the TerraSync software on a GeoExplorer series handheld.

To install TerraSync, either insert the *TerraSync Software and Operation Guide CD* in the CD-ROM drive of a computer and use the menus provided, or run the downloaded setup file. To obtain a serial number for installation, you must register your copy of TerraSync online. Detailed installation instructions are provided in the *TerraSync Release Notes*.

Installing ArcPad

You can install version 6.0.2 or later of the ESRI ArcPad software on a GeoExplorer series handheld. Detailed installation instructions for ESRI ArcPad are provided in the ArcPad documentation. You can also download installation instructions from the ESRI website at www.esri.com/arcpad.

Installing GPScorrect

You can install version 1.01 or later of the GPScorrect software on a GeoExplorer series handheld. Before you install the GPScorrect software, install version 6.0.2 or later of ArcPad.

To install GPScorrect, either insert the *GPScorrect CD* in the CD-ROM drive of a computer and use the menus provided, or run the downloaded setup file. Detailed installation instructions are provided in the *GPScorrect Release Notes*.

Using GPS

To use GPS in an application, you need to:

- configure the application to connect to GPS (see **page 15**)
- get a clear view of the sky (see **page 16**)
- configure GPS quality control settings to suit your requirements and the current GPS conditions (see **page 16**)

You may also want to:

- use mission planning to identify the best times of the day for working with GPS (see **page 17**)
- use real-time differential corrections for better accuracy (see **page 19**)
- use GPS data collection and navigation features (refer to the documentation for the GPS application).

GPS COM ports

The integrated GPS receiver has three COM ports for communicating with software on the handheld and with external devices. Using GPS is as simple as opening the appropriate GPS COM port. Each port is used for a particular type of communication:

Port	Function	Description
COM2	NMEA	Outputs NMEA-0183 messages. NMEA is a standard GPS communication protocol used by most GPS applications. The handheld outputs the following NMEA messages: GGA, GLL, GSA, GSV, RMC, VTG, ZDA. All messages are output at a 1-second interval.
COM3	TSIP	Outputs and receives TSIP messages. TSIP (Trimble Standard Interface Protocol) is used by Trimble GPS applications, and is also supported by some other GPS applications.
COM4	Real-time	Receives RTCM real-time correction messages. If you are using an external correction source connected to COM1 or a Bluetooth port, the corrections must be redirected to COM4. For more information, see **Using real-time corrections from other sources, page 18**.

Note — COM1 is a standard serial port that connects to external devices. For more information, see **Using the optional serial clip, page 34**.

Configuring a GPS application

The first time you use GPS software on the handheld, you may need to specify which GPS COM port to connect to. Specify COM2 if the software uses NMEA, or COM3 if the software uses TSIP. If you are not sure which protocol to use, check the documentation for the software.

If you are using ...	do this ...
GPS Controller	Tap the F1 GPS touch button to run GPS Controller. The software automatically activates the integrated GPS receiver on COM3.
TerraSync	Tap the F1 GPS touch button to run TerraSync. The software automatically activates the integrated GPS receiver on COM3.
ArcPad with the GPScorrect extension	1. Tap the GPS button. The software activates the integrated GPS receiver on COM3. 2. If you want to configure GPS and real-time, or view status information, run GPScorrect. In the Trimble toolbar, tap the GPScorrect button.
ArcPad	1. In ArcPad, tap the Tools button. 2. In the *Protocol* field select NMEA 0183. 3. Tap the *GPS* tab and from the *Port* field select COM2. 4. Tap **OK**. 5. Tap the GPS button. The software activates the integrated GPS receiver.
	Tip — ArcPad can also connect using the TSIP protocol. However, if you use the NMEA protocol, you can run GPS Controller at the same time for advanced GPS and real-time configuration and status information.
NMEA application	Configure the software to connect to GPS on COM2, then use the Connect or Activate GPS command.
TSIP application	Configure the software to connect to GPS on COM3, then use the Connect or Activate GPS command.

Tip — Only software that is running on the handheld can connect directly to a GPS COM port. To supply GPS data to an *external* device, use GPS Connector (see page 19) to redirect the output from the appropriate GPS COM port to a serial port or to a Bluetooth port. Then configure the external device to connect to that serial or Bluetooth port.

Getting a clear view of the sky

To receive signals from GPS satellites, you must be in a location with a clear view of the sky. *GPS does not work indoors*. Hold the handheld with the screen toward you. The internal antenna is located above the screen under the Trimble logo. You do not have to hold the handheld perfectly level, but keep the antenna facing upward, not downward or sideways.

Anything that blocks light also blocks signals. Satellite signals can be blocked by people, buildings, heavy tree cover, large vehicles, or powerful transmitters. GPS signals can go through leaves, plastic, and glass, but these all weaken the signal.

GPS quality control

By default, the handheld is configured to receive satellite signals in most conditions. To check the current GPS status, or to configure the integrated GPS receiver, tap the F1 GPS touch button. The Skyplot section of the GPS Controller software appears.

The GPS Controller software is pre-installed on all GeoExplorer series handhelds to give you access to advanced GPS settings and status details.

Use the graphical Skyplot section or the Satellite Info section to view detailed GPS information, and to adjust the quality and yield of the GPS positions you are receiving. Use the GPS slider to select predefined settings, or configure customized settings.

GPS Controller also includes a Plan section for mission planning (see) and a Real-time section for configuring and monitoring real-time correction sources (see). For more information on any GPS Controller section or function, refer to the GPS Controller Help.
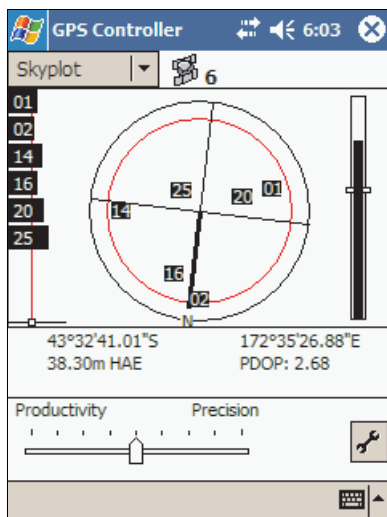
Note — GPS Controller duplicates the status and setup features of TerraSync and the GPScorrect extension for ArcPad. If one of these applications is installed, it runs instead of GPS Controller when you tap the F1 GPS touch button. For more information on TerraSync or GPScorrect, refer to the documentation for that application.

Planning a data collection session

To maximize productivity, plan GPS data collection around the times of the day when satellite geometry is best. The GPS Controller software includes a Plan section with an animated skyplot and DOP (satellite geometry) graph for your position for the next 12 hours.

In the Plan section, you can check the planning skyplot as you play a session, then use the timeline to zoom in on times when geometry is poor. As you adjust GPS settings, the Plan section is updated, so you can see the effect of different quality control settings.
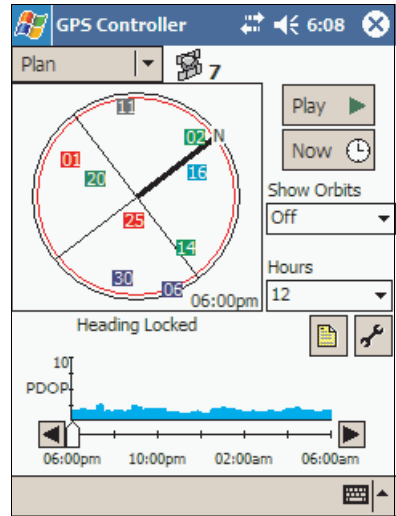
Note — If TerraSync or the GPScorrect extension for ArcPad is installed, use the planning feature in that application instead of in GPS Controller.

Using WAAS/EGNOS corrections

The GeoExplorer series handheld has an integrated receiver that uses WAAS (Wide Area Augmentation System) or EGNOS (European Geostationary Navigation Overlay System) correction messages to improve GPS accuracy. The receiver tracks WAAS satellites between 30° West and 180° West, and tracks EGNOS satellites between 30° West and 90° East.

To use WAAS/EGNOS corrections:

1. In GPS Controller, open the Real-time section and tap the Setup button 🔧.

2. In the *Choice 1* field, select Integrated WAAS. In the *Choice 2* field, specify whether to use uncorrected positions, or to stop using GPS positions, if corrections are not available.

3. Tap **OK**.

> **Note** — If TerraSync or the GPScorrect extension for ArcPad is installed, configure real-time settings in that application instead of in GPS Controller.
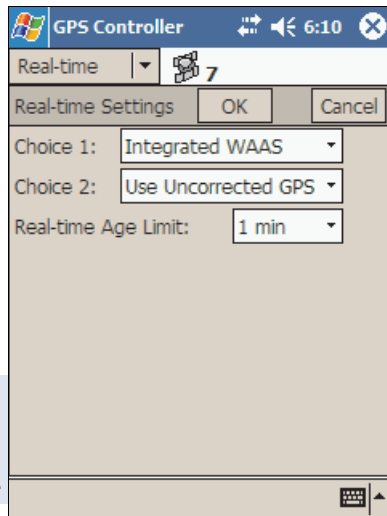
Using real-time corrections from other sources

You can use corrections from an external correction source, such as a Beacon-on-a-Belt (BoB) receiver, a DGPS radio, or a mobile phone. The external correction source can be connected to a Bluetooth port or to the optional serial clip (COM1). Use GPS Controller to set up and monitor the real-time input source that you want to use.

> **Note** — If TerraSync or the GPScorrect extension for ArcPad is installed, configure real-time settings in that application instead of in GPS Controller.

The integrated GPS receiver only communicates through its GPS COM ports (COM2, COM3, and COM4). Input from an external correction source connected to COM1 or a Bluetooth port must be redirected to the real-time GPS COM port (COM4). Trimble applications, such as GPS Controller, handle the redirection automatically. If you are using any other application to set up and monitor real-time sources, use GPS Connector to redirect the input to COM4. For more information, see GPS Connector, page 19.

GPS Connector

The GPS Connector software is pre-installed on all GeoExplorer series handhelds. To open GPS Connector, tap / *Settings* / *Connections* / *GPS Connector*.

GPS Connector lets you connect the GPS COM ports to COM1 or Bluetooth ports and configure port settings such as the baud rate. GPS Connector has a graphical display that shows all active connections, and a text display that shows connection messages.

Use GPS Connector to output NMEA or TSIP messages from the integrated GPS receiver to another device, such as an external data collector.

Note — If you are using a Bluetooth port, enable and configure the Bluetooth Serial Port service *before* you connect to the port.

The connections that you create in GPS Connector are only active while the software is running. Connections created by GPS Connector are labeled GPS Connector in the status screen and end when you exit the software.

For more information, refer to the GPS Connector Help.
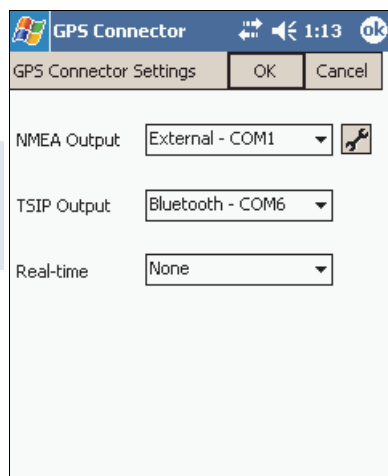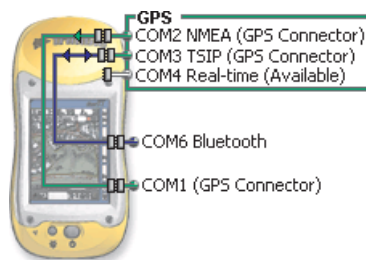
Power

When fully charged, the internal battery of the handheld provides enough power for a full working day using GPS. To extend the time between charges, use the optional vehicle power adaptor or the portable power kit.

Using the support module with the AC power adaptor recharges the internal battery. In the office, leave the GeoExplorer series handheld in the support module to conserve the battery.

Suspend mode

When you press the Power button to turn off the handheld, the handheld goes into Suspend mode. This is a low-power mode that maintains the main memory contents but does not allow you to operate any of the handheld's functions. The handheld appears to be turned off. The integrated GPS receiver is turned off and any application using GPS is disconnected.

When the handheld is in Suspend mode, press the Power button again to turn on the handheld. It is instantly ready for operation. There may be a delay of up to 30 seconds while the integrated GPS receiver automatically reactivates.

You can configure the handheld to automatically enter Suspend mode when it has been idle for a specified time. By default, the handheld is set to enter Suspend mode if the handheld is not used for three minutes.

To change the time to enter Suspend mode:

1. Tap ![Windows icon] / *Settings* / *System* / *Power*.

2. Tap the *Advanced* tab.

3. From the *On battery power* group, select the *Turn off device if not used for* check box and select the idle time from the drop-down list.

4. Tap **ok**.
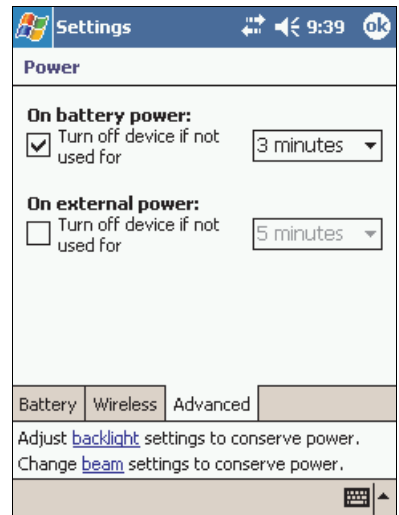
Charging the battery

Use the support module to charge the handheld's internal battery. The battery takes approximately five hours to recharge fully.

Tip — If you are not going to use the handheld for some time, either keep the handheld connected to mains power to continually charge it, or fully charge the handheld and switch it off. For more information, see Storage, page 50.

To charge the internal battery using the support module:

1. Use the AC power adaptor to connect the support module to mains power.
2. Place the handheld in the support module.
3. Leave for up to five hours to recharge.

You can also use the optional serial clip to recharge the internal battery. For more information, see Using the optional serial clip, page 34.

Note — The Power Settings screen always shows 100% power for the backup battery. The handheld does not have a backup battery installed because the main memory is automatically backed up if the main battery runs low. For more information, see Backing up data, page 22.

Conserving power

Although the handheld battery can operate for a full day without recharging, you should try to conserve battery power as much as possible. Follow these tips to reduce power consumption:

- Disconnect from the integrated GPS receiver when the receiver is not in use. When you disconnect from GPS, the integrated GPS receiver switches off and stops drawing power. Whenever GPS data is not required, use the application's Disconnect or Deactivate GPS option, or exit the application.

  Tip — Do not disconnect from GPS if you will be reconnecting within about five minutes. A GPS application can take up to 30 seconds to reactivate the integrated GPS receiver, so disconnecting to save power can cost time.

- Turn off the integrated Bluetooth radio whenever you are not using it. For more information, see Using Bluetooth, page 25.
- Do not use the backlight, unless required. To turn off the backlight, press the Display button. You can also set the backlight to automatically turn off if the handheld has been idle for a specified time. For more information, see Backlight, page 38.
- Set the handheld to automatically enter Suspend mode when idle. For more information, see Suspend mode, page 20.

Memory

The handheld has two types of memory.

The **main memory**, which is similar to the RAM in a computer, is used mainly for running programs, but it also stores essential files for the Windows Mobile software. As with other Pocket PCs, you can adjust how much of the main memory is allocated to running programs and how much is allocated to storing data. For more information, see **Memory management, page 24**.

The **Disk**, which is similar to the hard disk in a computer, is used for storing programs and data. The Disk is a non-volatile storage location, so files stored on the Disk are much safer than files stored in the main memory.

To check the memory capacity on the handheld, tap [icon] / *Settings* / *System* / *System Information*. The *RAM* field and the *Flash Disk* field show the total memory in each location, as well as the amount of memory in each location that is reserved by the operating system.

Some applications require program and data files to be stored in main memory (RAM). To allow such software to operate correctly, some folders on the Disk are duplicated in main memory. You can store files and install software in either location. However, unless using the Disk causes problems when you run applications, Trimble recommends that you store programs and data on the Disk.

Backing up data

To protect your data, back up the main memory and the Disk regularly.

The GeoExplorer series handheld features Pocket Backup, which enables you to back up and restore the main memory, or selected files, folders, registry settings and databases. With Pocket Backup you can schedule regular back ups, and it will automatically back up the main memory when the battery runs low.

To change Pocket Backup settings, tap [icon] / *Programs* / *Pocket Backup* and tap *Options*.

Backing up the memory

If the handheld loses power, or you perform a hard reset, the main memory is cleared. When the handheld restarts, you can restore the main memory from the last backup.

Note — Any unsaved data and any changes in the main memory since the last backup are lost.

To back up the main memory, do one of the following:

- Tap [icon] / *Backup Now*.
- Tap [icon] / *Programs* / *Pocket Backup*.

To restore the main memory:

1. Either:
   - Tap [icon] / *Programs* / *Restore Now.*
   - Hard reset the handheld.

2. When the *Restore from Backup* dialog box appears, tap **Yes**. The handheld will restore the main memory and automatically perform a soft reset. For more information, see **Resetting, page 24**.

Backing up the Disk

The Disk is non-volatile memory, so documents and program files that are stored on the Disk are not affected by power loss or resetting. However, you can still lose data if you accidentally delete or overwrite it.

Warning — When you delete files from the Disk, they are deleted permanently. The GeoExplorer series handheld does not have a Recycle Bin.

To protect your data, Trimble recommends that you use ActiveSync to regularly create a backup copy of the Disk on a computer.

Note — The Backup/Restore command in ActiveSync's Tools menu backs up only the main memory (RAM). It *does not* back up the Disk.

To back up files from the Disk:

1. Connect the handheld to the computer using ActiveSync.
2. In ActiveSync, click **Explore**. Windows Explorer opens, showing the contents of the handheld.
3. Browse to the location of the files that you want to back up.
4. Select the files that you want to back up, and then copy them to the computer.

To restore files to the Disk from a backup on a computer:

1. Connect the handheld to the computer using ActiveSync.
2. Copy files from the backup copy on the computer to the handheld, overwriting the existing files.

Resetting

If the handheld stops responding to the stylus, or the screen goes blank, you may need to reset it.

To reset the GeoExplorer series handheld:

1. If the screen is still responding to stylus taps, back up the main memory. For more information, see **Backing up data, page 22**.
2. Do one of the following:

   - *Soft reset*: If an application has stopped responding, hold down the Power button until the screen goes blank (about 5 seconds). The handheld restarts automatically.

   Note — Avoid pressing the Display button during a soft reset, as the handheld will not restart automatically.

   - *Hard reset*: If a soft reset does not work, hold down the Power button for 15 seconds to turn the handheld off, then press the Power button to turn it on again.

     The main memory is cleared and can be restored from the backup on the Disk. You will lose any unsaved data (for example, any unsaved changes to documents), and any data in the main memory that has changed since the last main memory backup.

   Note — Files stored on the Disk are *not* affected by a reset.

   Tip — To restore the handheld to the factory default settings, tap **No** when the *Restore from Backup* dialog box appears after a hard reset.

Memory management

To protect your data, Trimble recommends that you install all programs to the Disk, and store all documents on the Disk. This also improves performance, because more memory can be allocated to running programs.

Using Bluetooth

The GeoExplorer series handheld has an integrated Bluetooth radio that you can use to establish a wireless connection to other Bluetooth devices that are within range. Using a Bluetooth connection, you can communicate with devices such as mobile phones, desktop computers, handhelds, and digital cameras. You can also communicate with peripheral devices that use Bluetooth adaptors instead of serial or USB connections.

To communicate using a Bluetooth connection, a *client* device scans the Bluetooth radio frequency to "discover" other Bluetooth devices. Once it has discovered a *host*, the client selects the *service* that it will use. A service defines what type of information can be transferred to or from the host, and how.

The handheld can be used as a client or as a host, and can act as both at the same time.

This section provides information on:

Setting up Bluetooth

Use the Bluetooth settings window to turn on the integrated Bluetooth radio, scan for and bond with other Bluetooth devices, and configure host services on the GeoExplorer series handheld.

> Note — The handheld is shipped with the integrated Bluetooth radio deactivated. You may only activate the Bluetooth radio if GeoExplorer series handhelds have been granted Bluetooth type approval in the country where you will use the handheld. For more information, visit the Trimble website at www.trimble.com/geo_bluetooth.html.

To set up Bluetooth, do one of the following:

- Tap the F4 touch button.
- Tap / *Settings* / *Connections* / *Bluetooth*.

Turning on the Bluetooth radio

To use the GeoExplorer series handheld as a Bluetooth host or client, you must enable the Bluetooth radio.

To turn on the Bluetooth radio:

1. Tap / *Settings* / *Connections* / *Bluetooth*.

2. In the *Mode* tab, select the *On* option. This enables the integrated Bluetooth radio..

> Note — If the integrated Bluetooth radio is not activated, the message **No Bluetooth hardware** appears.

> Tip — To conserve power, turn off the Bluetooth radio when it is not in use.
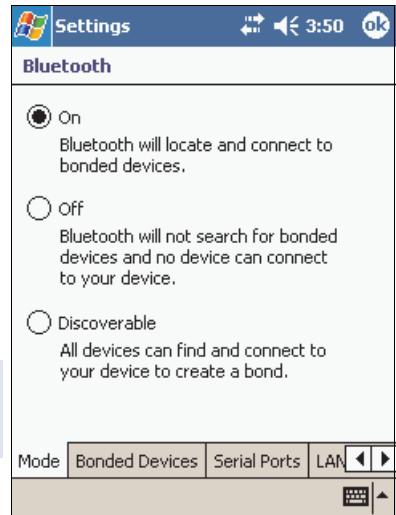
Enabling Flight mode

When Flight mode is enabled, the handheld cannot send or receive Bluetooth signals.

To enable Flight mode, do one of the following:

- Tap / *Settings* / *System* / *Power* / *Wireless* tab. Select *Wireless signals off (Flight mode)*.
- Tap in the navigation bar, and tap *Turn on flight mode*.

Making the handheld Discoverable

If you want to set up a bond with another Bluetooth device, or if you want to use the handheld as a host device, you need to make the handheld Discoverable. A discoverable device can be detected by other devices when they scan.

To turn on the Bluetooth radio:

1. Tap [icon] / *Settings* / *Connections* / *Bluetooth*.
2. In the *Mode* tab, tap the *Discoverable* option.

Bonding with a Bluetooth device

Creating a bond between the handheld and another Bluetooth device helps to exchange information securely between the devices. Once a bond is created, the handheld and the other Bluetooth device only need to have their Bluetooth radios turned on to exchange information; they do not need to be in discoverable mode.

To bond with a Bluetooth device:

1. Make sure that the handheld and the Bluetooth device you want to bond with are within 5 meters of each other, and that Bluetooth is in Discoverable mode on both devices.

2. Tap [icon] / *Settings* / *Connections* / *Bluetooth*, and tap the *Bonded Devices* tab.

3. In the Bonded Devices list, tap New. The handheld searches for other Bluetooth devices and displays them in the list.

4. Tap the name of the device you want to bond with, and tap **Next**.

5. In the *PIN* field, enter a PIN of between 1 and 16 characters and tap **Next**.

6. Enter the same PIN on the other device.

7. In the *Name* field, change the name of the device if required.

8. Tap **Finish**.

Tip — You only need to create a bond once between two devices.

Connecting to a Bluetooth service as a client

You can use the GeoExplorer series handheld as a Bluetooth client. A Bluetooth client uses services offered by Bluetooth host devices that are within range.

For example, you can connect the handheld to a mobile phone that has an internal modem, so that you can access the Internet. The mobile phone is the host (because it is providing the Dial-up Networking (DUN) service) and the handheld is a client using that service.

The GeoExplorer series handheld can connect to the following services:

Service	Description
ActiveSync	Enables an ActiveSync connection to a computer. To use an ActiveSync service, enable the Bluetooth port on the computer and then configure ActiveSync to use this port. Bond with an ActiveSync service (see **page 27**), and set up a client serial port for the device, making sure you select the *Default Bluetooth ActiveSync* check box. Then tap ⊞ / *Programs* / *ActiveSync* and tap *Tools* / *Connect via Bluetooth*.
Dial-Up Network	Connects the handheld to a mobile phone or modem for dial-up network or Internet access. Bond with a Bluetooth service (see **page 27**), tap ⊞ / *Settings* / *Connections* / *Connections*, and add a new dial-up connection. From the list of modems, select the Bluetooth mobile phone or modem that you have connected to.
File Transfer	Allows the handheld to view, copy, add, and delete folders and files on the host. Bond with a File Transfer service (see **page 27**), and tap ⊞ / *Programs* / *Bluetooth File Transfer*. From the *File* menu, select *Connect*, and then select the host device. The host's transfer folder and its contents appear in a Windows Explorer-style window.
Beam Objects	Allows the handheld and host to exchange data objects such as virtual calendars.
Lan Access Point	Allows the handheld to browse the Internet and network computers using a Local Area Network (LAN). Bond with a LAN (see **page 27**), then tap the *LAN Access* tab and set up the connection (see **page 29**).
Serial Port	Emulates an RS-232 serial (COM) port on the handheld.

Setting up a LAN Access Point

By bonding with a Local Area Network (LAN) access point, you can browse the Internet or network computers remotely using the handheld.

To set up a LAN Access Point connection:

1. Create a bond with the LAN access point you want to use (see **page 27**).

2. In the *Bluetooth* window, tap the *LAN Access* tab.

3. In the LAN Access Points list, tap New. The *Set up the LAN Access Point* dialog appears.

4. In the *LAP* field, select the LAN access point you want to use from the drop-down list.

5. Enter a user name and password for the field using the connection details supplied by your ISP or network administrator.

6. Tap **Finish**.

7. To connect to the LAN access point, tap and hold the name of the LAP in the LAN Access Points list, and tap Connect. The ⬤ next to the LAN access point in the list indicates it is connected.

Tip — Before you bond with another Bluetooth device, make sure you disconnect from the LAN access point so that the handheld is able to scan for other Bluetooth devices.

Setting up a Client Serial Port

A Serial Port service creates a virtual serial port on the GeoExplorer series handheld. You can use this port to connect to another Bluetooth device, just as you would use a physical COM port and a cable to connect to a physical serial port. Like a physical port, the virtual serial port sends and receives data using the RS-232 serial communication protocol.

Unlike other Bluetooth connections, you don't need to bond with the other device before you set up the client serial port connection. This means you can set up serial port connections with devices that otherwise you would not be able to bond with, such as the Trimble 5800 receiver, which does not have a keypad for entering a PIN.

For more information about serial port services, see page (see **page 32**).

To set up a client serial port connection:

1. Make sure that the *host* Bluetooth device is Discoverable.

2. Make the handheld Discoverable (see **page 27**), and tap the *Serial Ports* tab.

3. Add a new *client* serial port, or change the settings for an existing one.

   • To change the settings for an existing client serial port, tap and hold the name of the serial port in the *Client Serial Ports* list.

   • To add a new client serial port, tap *New* in the *Client Serial Ports* list. The list immediately shows any bonded devices that have a serial port profile exposed. The Searching icon appears, and the handheld scans for any other Bluetooth devices that are within range and that expose the serial port profile. Tap the name of the serial port you want to set up, and tap **Next**.
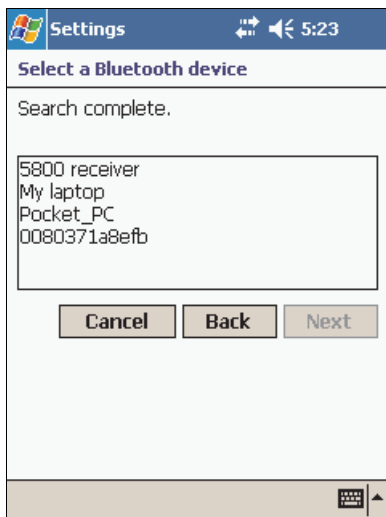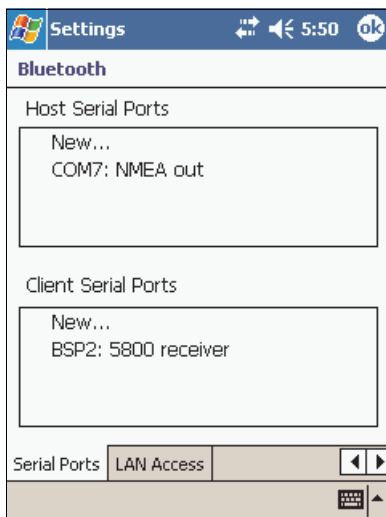
4. The *Setup the Bluetooth device* dialog appears. The name of the host device is in the *Name* field. Edit the *Name* field if required.

5. From the *Port* list, select an available COM or BSP port on the handheld. The next available port is selected as the default.

   > **Tip —** If the application that will use this service cannot recognize BSP ports, select a COM port.

6. Normally, the host device handles authentication and encryption. If you require these options, but the host cannot be configured, select the *Authentication* and *Encryption* check boxes.

7. To select this client as the default device for ActiveSync, select the *Default Bluetooth ActiveSync* check box.

8. Tap **Finish**. The client serial port you have just set up is listed under New... in the Client Serial Ports list, with the assigned port indicated. The ActiveSync icon appears to the left of the default Bluetooth ActiveSync device.

Applications on the handheld can now use the client serial port you have set up. If the host requires authentication, you must enter a PIN to connect.
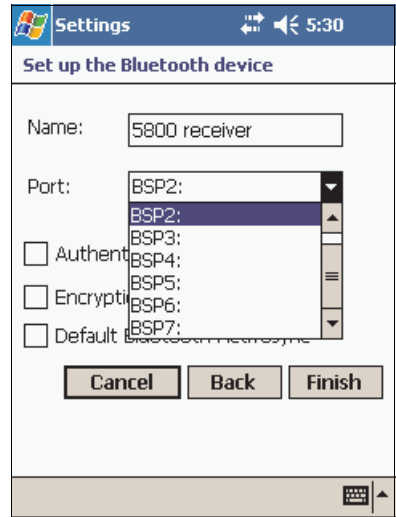
Providing Bluetooth services as a host

You can use the predefined Bluetooth host services on the GeoExplorer series handheld, or create additional Serial Port services.

To provide a host service, turn on the Bluetooth radio (see **page 26**) and make the device Discoverable (see **page 27**). If the service is a Serial Port service, you may need to add or configure the service (see **page 33**). The other host services do not require any configuration.

The GeoExplorer series handheld provides the following host services:

Service	Description
Basic Imaging	Allows the client to preview, browse, and copy JPEG image files, and to send JPEG files to the handheld.
File Transfer	Allows a client to browse, copy, paste, and delete files and folders on the handheld.
Beam Object	Allows the handheld and the client to exchange data objects, such as virtual business cards, or virtual calendars.
Serial Port	Emulates an RS-232 serial (COM) port on the handheld. For more information, see **Serial Port services, page 32**.

You can only configure Serial Port services. Other services use pre-assigned ports, use the \Disk\My Documents\File Transfer folder for file transfers, and have authentication and encryption enabled.

Serial Port services

A Serial Port service creates a virtual serial port on the GeoExplorer series handheld. You can use this port to connect to another Bluetooth device, just as you would use a physical COM port and a cable to connect to a physical serial port. Like a physical port, the virtual serial port sends and receives data using the RS-232 serial communication protocol.

Tip — Trimble applications, such as GPS Controller and TerraSync, can connect to BSP ports as well as to COM ports. However, some other applications do not recognize BSP ports. If a client device is unable to connect to a Serial Port service that uses a BSP port, configure the service to use a COM port instead.

A Serial Port service is already set up on the handheld. By default, this service uses COM6. You can change the COM port and the service name. You can also add new Serial Port services that use other COM ports or BSP ports.

To add or configure a Host Serial Port service:

1. Make sure that the *client* Bluetooth device is Discoverable.

2. Make the handheld Discoverable (see **page 27**), and tap the *Serial Ports* tab.

3. Add a new *host* serial port, or change the settings for an existing one.
   - To change the settings for an existing host serial port, tap and hold the name of the serial port in the *Host Serial Ports* list.
   - To add a new host serial port, tap *New* in the *Host Serial Ports* list.

4. The *Setup the Bluetooth Device* dialog appears.

5. In the *Name* field, enter a unique name, or for an existing host serial port, edit the name if required.

6. From the *Port* list, select an available COM or BSP port on the handheld. The next available port is selected as the default.

7. The *Authentication* check box is selected by default. When the host connects to this service, the *Enter PIN* dialog appears. Enter a PIN in this dialog, and then enter the same PIN on the client.
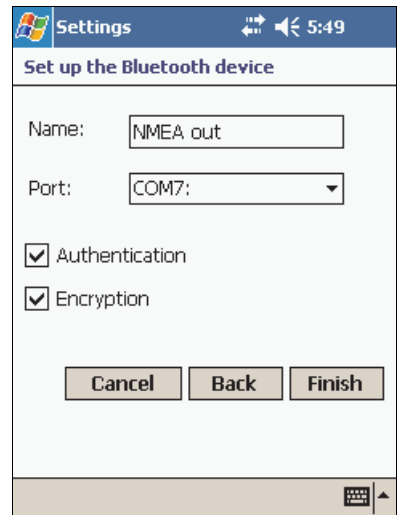
> **Note —** Authentication helps to ensure that your data remains secure. However, if you enable authentication, only client devices that support PIN entry will be able to connect to the service.

8. The *Encryption* check box is selected by default, so that data transferred using this service will be encrypted.

9. Tap **Finish** to return to the *Serial Ports* tab. The new host serial port is listed in the Host Serial Ports list, with the assigned port indicated.

Applications on the handheld can now use the COM or BSP port that you selected for this service. For example, to provide NMEA messages to a Bluetooth client, use GPS Connector to output NMEA from the integrated GPS receiver to the selected COM or BSP port.

Using the optional serial clip

The optional serial clip attaches to the communication swipes on the back of the handheld. When the serial clip is attached, it adds a serial port (COM1) to the GeoExplorer series handheld.

You can use the serial clip to:

- supply external power from a camcorder battery or a vehicle's battery (see page 36)
- recharge the internal battery from an external power source (see page 36)
- connect to a computer to transfer data, back up the Disk, or install software (see page 35)
- receive differential corrections from an external real-time correction source, such as a Beacon-on-a-Belt receiver or DGPS radio
- receive GPS data from a Trimble GPS Pathfinder receiver
- connect to an external modem or mobile phone for wireless Internet access
- connect to other external devices, such as a laser rangefinder

Attaching the serial clip

The serial clip must be screwed onto the handheld. When the serial clip is attached, you cannot place the handheld in the support module.

To attach the serial clip to the GeoExplorer series handheld:

1. Line up the communication swipes on the handheld with the pins on the serial clip.
2. Lower the handheld onto the serial clip.
3. Use the screws supplied with the serial clip to secure it to the handheld.

screw

Connecting to external devices

You can use the serial clip instead of the support module to connect to a computer. It also provides a serial port to connect to other devices.

To connect to an external device:

1. Attach the serial clip to the handheld.
2. Plug the null modem cable into the serial (COM) port on the serial clip.
3. Connect the other end of the cable to the serial port on the external device.
4. If you are connecting to a computer, tap / *Programs* / *Connect to Desktop*. When the handheld is connected to the computer, the connection icon appears in the navigation bar.

For more information about transferring data between a GeoExplorer series handheld and a desktop computer, see **Connecting to a computer, page 11**.

To connect to a device that does not have a serial port, such as an external modem or mobile phone, use a cable that has a DE9 connector on one end, and the appropriate connector for the other device on the other end. A suitable cable may be supplied with the external device.

For more information about using an external modem or mobile phone to access the Internet, see **Internet and network connection, page 41**.

Using external power

The serial clip lets you connect the GeoExplorer series handheld to an external power source. Depending on the optional accessories that you have purchased, you can use mains power, a camcorder battery, or a vehicle's battery to supply power to the handheld.

To connect to an external power source:

1. Attach the serial clip to the handheld.
2. Plug the appropriate cable into the power port on the serial clip.
3. Connect the other end of the cable to the external power source.
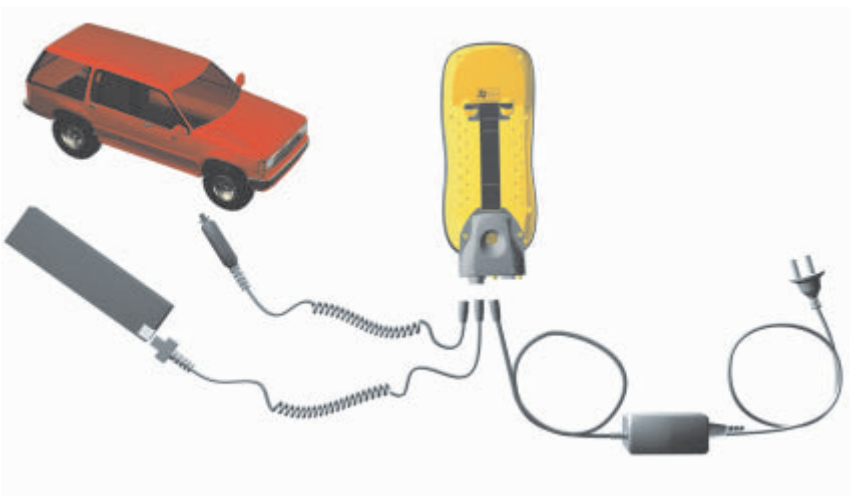
To use power from ...	connect this cable ...	to ...
AC power source (mains power)	AC power adaptor supplied with the handheld	AC power outlet
camcorder battery	camcorder power adaptor cable from optional portable power kit	camcorder battery from optional portable power kit
vehicle battery	optional vehicle power adaptor	vehicle's cigarette lighter socket

Recharging from an external power source

By default, the GeoExplorer series handheld recharges its internal battery from any external power source that is connected. Recharging the battery draws more power from the external source than is used to power the handheld.

Customizing the Handheld

Use the controls in the *Settings* screen to customize the handheld. The following are examples of the controls that are available.

Power

Use the *Battery* tab to check the battery level, the *Wireless* tab to turn off all wireless signals from the handheld, and the *Advanced* tab to set the idle time before Suspend mode is activated. For more information, see **Using the optional serial clip, page 34**, **Enabling Flight mode, page 26** and **Conserving power, page 21**.

Today

Use the Today control to change the display theme that controls the appearance of the *Today* screen, and to customize the items that appear on the *Today* screen.

Appearance

You can use a theme to customize the background picture on the *Today* screen, and the color of the navigation bar, command bar, menus, and messages.

To change the display theme:

1. Tap 🔳 / *Settings* / *Personal* / *Today*.
2. Tap the *Appearance* tab.
3. Do one of the following:
    - To use a predefined theme, select it from the list.
    - To select the picture that you want to display in the *Today* screen background, select the *Use this picture as the background* check box. Then tap **Browse** to search for a file on the handheld.
4. Tap **ok** to confirm the changes and close the dialog.
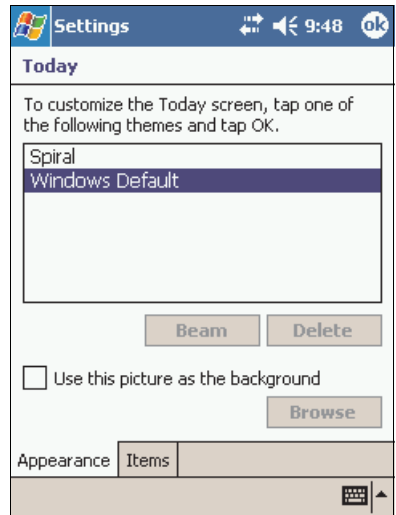
Items

You can choose the items that appear on the *Today* screen, and the order that they appear in.

To change the items that appear on the *Today* screen:

1. Tap ![Start] / *Settings* / *Today*.
2. Tap the *Items* tab.
3. Select or clear the check boxes to display or hide the *Today* screen items.
4. Use the **Move Up** and **Move Down** buttons to change where the selected item appears on the *Today* screen.
5. Tap **ok** to confirm the changes and close the dialog.

```
Settings            ⇄ ◄€ 9:49  ok
Today
Checked items appear on the Today screen.
☑ Date                    [ Move Up   ]
☑ Owner Info              [ Move Down ]
☑ Calendar
☑ Inbox                   [ Options...  ]
☑ Tasks


☑ Display Today screen if device is not used
   for [4 ▾] hours



Appearance | Items
                                    ⌨ ▲
```
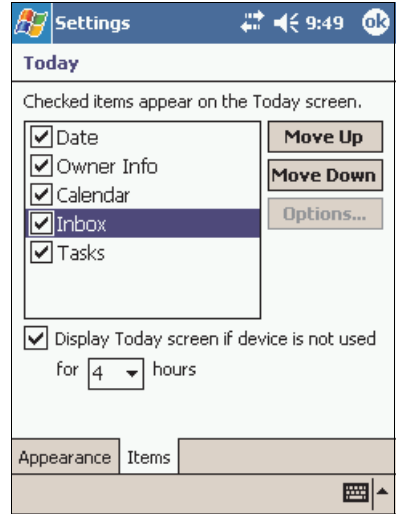
Backlight

Use the Backlight control to configure power-saving settings for the backlight. The backlight makes the screen easier to read in low light, but uses extra power.

To change the backlight settings:

1. Tap ![Start] / *Settings* / *System* / *Backlight*.
2. To automatically turn off the backlight when the handheld is idle and is using ***battery power***, select the *Battery Power* check box and select a time from the drop-down list.
3. To automatically turn off the backlight when the handheld is idle and is using ***external power***, select the *External Power* check box and select a time from the drop-down list.
4. Tap **ok** to confirm the changes and close the dialog.

```
Settings            ⇄ ◄€ 9:49  ok
Backlight
Warning: Using backlight while on battery
power will substantially reduce battery life.

On battery power:
☑ Turn off backlight if      [1 min  ▾]
  device is not used for

☑ Turn on backlight when a button is
  pressed or the screen is tapped




Battery Power | External Power
Adjust power settings to conserve power.
                                    ⌨ ▲
```
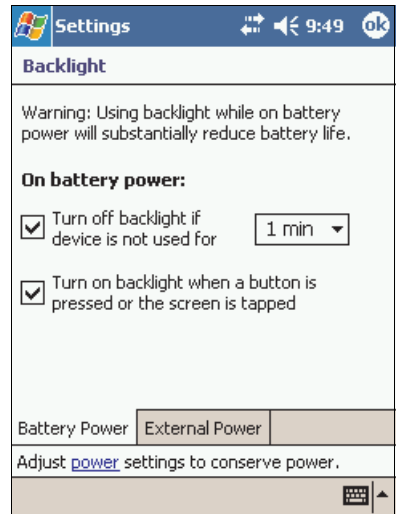
Screen

Use the *Screen* control to align the touch screen or to change the appearance of text on the screen.

To change the screen settings:

1. Tap 🔲 / *Settings* / *System* / *Screen*. The *Screen* dialog appears.

2. To start the alignment sequence for the touch screen, tap **Align Screen**. For more information, see **, page 6**.

3. To use ClearType font smoothing, select the *Enable ClearType* check box. Using ClearType can make text easier to read on the screen.

4. Tap **ok** to confirm the changes and close the dialog.
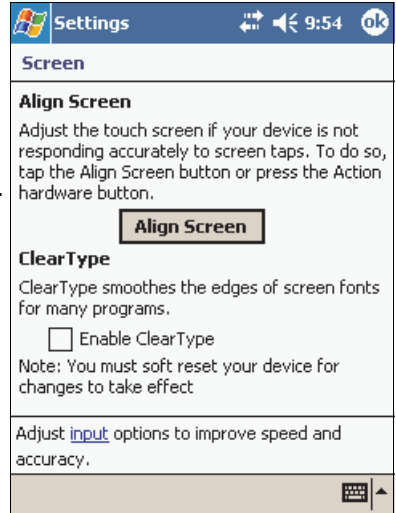
Buttons

The touch screen has a panel of six buttons on the right. The first four buttons are like shortcuts. Use the *Buttons* control to change the program or control that each of these four buttons is assigned to.

To configure a touch button:

1. Tap 🔲 / *Settings* / *Personal* / *Buttons*.

2. From the appropriate list (for example, the *F1* list for the F1 touch button), select the application or control that you want to assign to that button.

3. Tap **ok**.
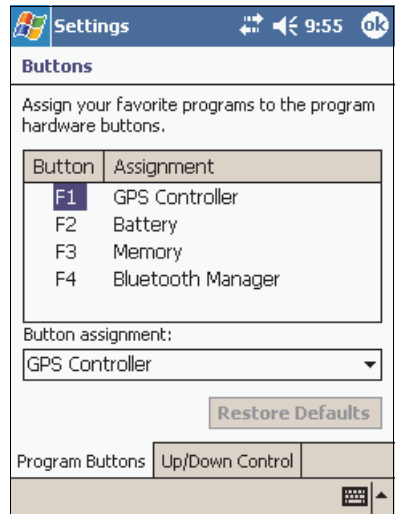
Note — The remaining two buttons on the touch screen adjust the backlight level. You cannot change the function of these buttons.

Sounds and Notifications

Use the Sounds and Notifications control to set preferences for the speaker volume and system sounds. To open the Sounds and Notifications control, do one of the following:

- Tap the F3 touch button on the handheld's screen.
- Tap 🪟 / *Settings* / *Personal* / *Sounds and Notifications*.

To adjust the volume:

1. Tap the *Volume* tab.
2. Drag the slider bar to the left to decrease the volume, or to the right to increase the volume.
3. Tap **ok**.

To turn sounds on or off:

1. Tap the *Volume* tab.
2. In the *Enable sounds for* group, select or clear the check boxes to enable or disable categories of sounds.
3. If you select the *Screen taps* check box, select the *Soft* or *Loud* option to control the volume of the sounds.
4. Tap **ok**.

Note — You cannot enable sounds for hardware buttons on the handheld.

You can use predefined schemes to customize sounds, or you can create your own sound schemes.

To specify a sound scheme:

1. Tap the *Notifications* tab.
2. From the *Select an event* drop-down list, select an event.
3. From the *Select how to be notified* group, select from the available options the type of notification you want to receive for the selected event.
4. Tap **ok**.
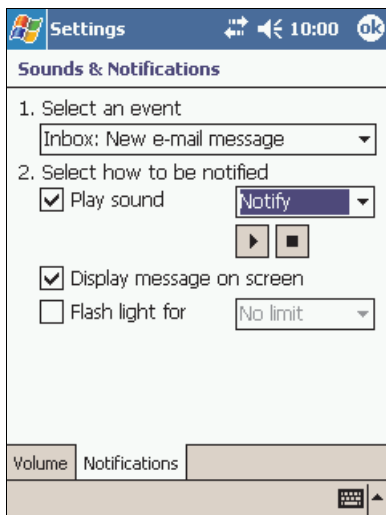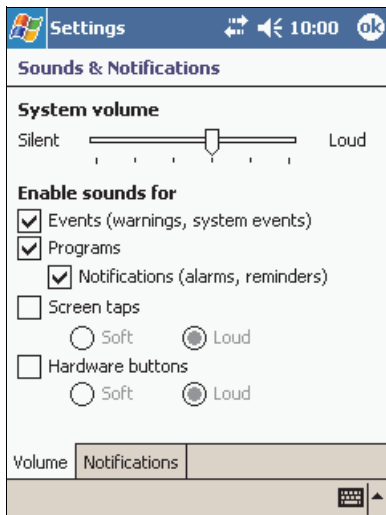
Internet and network connection

You can connect an external modem to the GeoExplorer series handheld to provide a dial-up connection to an Internet Service Provider (ISP) or network.

When you connect to an ISP, you can access the Internet, including e-mail and Web pages. When you connect to a network, you can access the Internet, files on the network, and that network's intranet.

To connect to the Internet or a network you need to:

- get all the connection information you need (see **page 41**)
- set up a remote connection (see **page 42**)
- set up a mail service if you want to use e-mail (see **page 43**)
- connect an external modem or mobile phone to the handheld (see **page 44**)
- connect to your ISP or network (see **page 44**)

Before you begin

Before you can create a connection, you need to set up a Point-to-Point Protocol (PPP) account with an ISP. Make sure you have the following information from the ISP:

- your username
- your password
- the dial-up phone number for the ISP or network

If you want to connect to a mail server, you will also need:

- the POP3 or IMAP4 server name
- the SMTP host name
- the domain name

If you cannot connect with the default TCP/IP settings, you may also need:

- the names or IP addresses of the primary and secondary Domain Name Servers (DNS) (for example, dns.seaview.gov, or 255.1.255.1)
- details of TCP/IP settings

Setting up a remote connection

A remote connection stores the configuration details for connecting to a particular computer or network, so that you do not have to enter these details each time you connect.

Set up a new connection for each computer or network that you want to access remotely.

To set up a dial-up connection to an ISP or network:

1. Tap ![icon] / *Settings* / *Connections* / *Connections*.

2. From either the *My ISP* list or the *My Work Network* list, tap *Add a new modem connection*.

3. Enter a name for the connection.

4. From the *Select a modem* list, select a modem and then tap **Next**.

5. Enter the dial-up phone number for the connection.

6. If required, enter the user name, password and domain provided by the ISP or network administrator.

7. Tap **Advanced**.

8. Tap the *TCP/IP* tab, and make sure that the *Use server-assigned IP address* option is selected.

9. Tap the *Servers* tab, and make sure that the *Use server-assigned addresses* option is selected. Tap **ok**.

> **Tip —** If you cannot connect with the default configuration or TCP/IP settings, contact your ISP or network administrator.

10. Tap **Finish**.
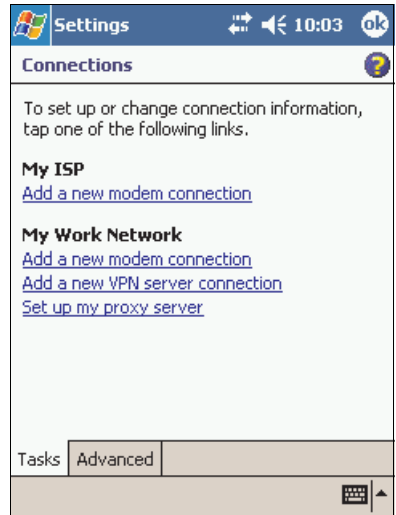
To set up a Virtual Private Network (VPN):

1. Tap / *Settings* / *Connections* / *Connections*.

2. From the *My Work Network* list, tap *Add a new VPN server connection*.

3. Enter a name for the connection.

4. Contact your network administrator for the host name, VPN type, and certificate information for the VPN server. Use this information to set up the VPN connection.

5. Follow steps 6 through 9 above to configure TCP/IP settings.

6. Tap **Finish**.

Settings	⇄ ◀€ 3:15
Make New Connection	❓
Name:	My VPN
Host name/ IP:	
VPN type:	● IPSec/L2TP
	○ PPTP
Cancel	Back	Next
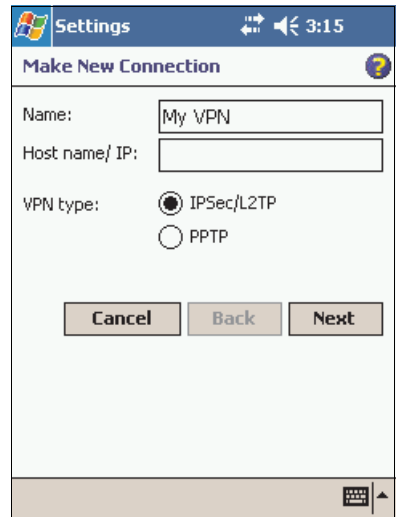
Setting up a mail service

To connect to a mail server for sending and receiving e-mail, you need to create a mail service in the Inbox software. If you need to connect to different mailboxes, set up and name a different service for each connection.

Note — The Inbox software supports only the POP3 and IMAP4 protocols for incoming mail, and SMTP for outgoing mail.

To set up a mail service:

1. Tap / *Inbox*.

2. Tap *Accounts* / *New Account*.

3. Follow the steps in the Setup wizard, using the connection details supplied by your ISP or network administrator.

4. Select either POP3 Mail or IMAP4 Mail from the *Account type* list.

5. In the *Name* field, enter a unique name for the account.

   Note — You cannot change the account name later.

.

> **Tip —** To receive TerraSync data files by e-mail, tap **Options** and select the *Get full copy of messages* option and the *Get attachments* check box in the last step.

6. To connect to this service, tap ![icon] in the navigation bar and select the remote connection that you have set up (see).
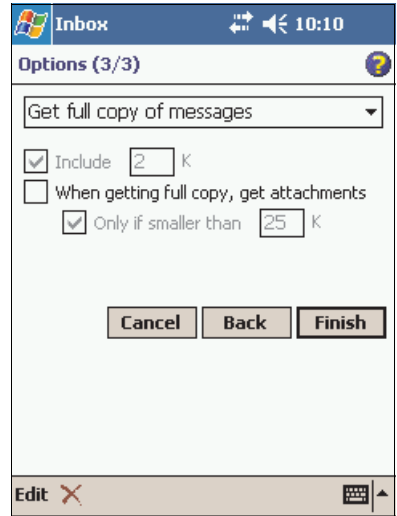
Connecting to an external modem or mobile phone

To connect an external modem or mobile phone to the GeoExplorer series handheld, use a Bluetooth connection (see), or the optional serial clip (see).

Connecting to an ISP or network

Once you have set up a remote connection and physically connected to an external modem or mobile phone, you can connect to your ISP or network.

To connect to an ISP or network:

1. Tap ![icon] in the navigation bar.
2. Tap the icon for the remote connection that you have created.
3. If required, enter your user name, password, and domain, and then tap **Connect**.
4. Use Internet Explorer to browse the Web or an intranet. Use Inbox to send and receive e-mail. For more information, refer to the Help.
5. When you have finished using the connection, tap ![icon], and then tap **Disconnect**.

Troubleshooting

ActiveSync

Problem	Cause and Solution
Cannot connect to computer using ActiveSync	**No physical connection** Use the support module, a wireless Bluetooth connection, or the serial clip to connect the handheld to the computer. If using the serial clip, tap 🎛 / *Programs* / *Connect to Desktop*. For more information, see **Connecting to a computer, page 11**.
	Connection not initiated automatically Remove the handheld from the support module, and then place it in the support module again. If the handheld still does not connect automatically, on the handheld tap 🎛 / *Programs* / *Connect to Desktop*. Alternatively, in ActiveSync, tap *File* / *Get Connected*.
	Connection not enabled in ActiveSync on computer In ActiveSync, tap *File* / *Connection Settings*. If you are using the support module, make sure that the *Allow USB connection* check box is selected. If you are using a Bluetooth connection, make sure that the *Default Bluetooth ActiveSync* check box is selected and that the correct port is selected in the list.
	Connection not enabled in ActiveSync on handheld On the handheld, tap 🎛 / *Programs* / *ActiveSync* / *Tools* / *Options* / *PC*. Check that the *Enable PC sync using this connection* check box is selected, and that the correct options are selected.
	ActiveSync does not recognize the GeoExplorer series handheld Restart the desktop computer. Remove the handheld from the support module, reset it (see **page 24**), and then replace it in the support module.
	Cannot reconnect after disconnecting If the handheld is connected to a computer using the serial clip, the handheld may take up to 1 minute to detect it has been disconnected from a computer. If you need to reconnect within this time, first force the handheld to disconnect by tapping 🎛 / *Programs* / *ActiveSync* / *Stop*. Then reconnect by tapping tap 🎛 / *Programs* / *Connect to Desktop*.
For more information	**For more troubleshooting information when using ActiveSync** Visit the Trimble website at www.trimble.com/geoxt_ts.asp

Battery

Problem	Cause and Solution
GeoExplorer series handheld does not turn on	**Battery is flat** Recharge the internal battery (see **page 21**).

Bluetooth

Problem	Cause and Solution
Cannot discover a nearby Bluetooth device	**The integrated Bluetooth radio is not activated** The handheld is shipped with the integrated Bluetooth radio deactivated. For more information, visit the Trimble website at www.trimble.com/geo_bluetooth.html.
	The device is out of range Move the devices closer to each other and then scan again.
	Bluetooth is not enabled on one or both devices Make sure that the Bluetooth radio is turned on, on both the handheld (see **page 26**) and the other Bluetooth device.
	The device has not been made Discoverable Make sure that the Bluetooth device has been made Discoverable.
	Bluetooth radio has lost the connection Turn off the Bluetooth radio on the handheld, and then turn on the Bluetooth radio (see **page 26**).
Cannot detect a host Serial Port service	**GeoExplorer series handheld can only discover one host Serial Port service** Although multiple host Serial Port services can be configured on a handheld, when another handheld is connected as a client, the client handheld can only detect the first Serial Port service configured on the host. To avoid this, make sure the host Serial Port service you want to use is the first host Serial Port service listed on the host.
Bluetooth connection fails while in use	**The Bluetooth device has moved out of range** Move the devices closer to each other. The devices should reconnect automatically. If they do not, select the Bluetooth device in the *Bonded Devices* tab. Tap and hold the device name and select *Delete*. Tap *New* to discover the device again.
	Bluetooth radio has lost the connection Turn off the Bluetooth radio on the handheld, and then turn on the Bluetooth radio (see **page 26**).

Problem	Cause and Solution
Bluetooth connection fails while in use (continued)	**Bluetooth file transfer interrupts connection** When you transfer large image or data files, other Bluetooth connections may stop responding. To avoid problems, close other Bluetooth connections before transferring large files.
The COM or BSP that you assigned to a Serial Port service is not available in your application	**The application cannot recognize ports if they are added after the application opens** Exit from the application, add the port, and then run the application again.
	The application cannot recognize BSP ports Use a COM port instead of a BSP port for this service.

GPS/Real-time corrections

Problem	Cause and Solution
No GPS position	**The integrated GPS receiver is not activated** Use the application's Connect or Activate GPS command to open the GPS COM port and activate the integrated GPS receiver. For more information, see Using GPS, page 14.
	GPS COM port is already in use Only one application at a time can have the port open. Exit the program that is using the GPS COM port, and retry in your program.
	Using wrong GPS COM port Connect to COM2 if the application uses NMEA messages, and COM3 for TSIP messages. For information on which protocol to use, check the documentation for the application.
	Not enough satellites are visible Move to a location where you have a clear view of the sky and ensure the antenna is not obstructed. Alternatively, adjust the GPS settings to increase productivity. For more information, refer to the GPS Controller help, or the TerraSync or GPScorrect help if it is installed.
	External antenna connected but not receiving data The handheld can take up to two seconds to detect that an optional external antenna has been connected or disconnected
Not receiving WAAS/EGNOS real-time corrections	**WAAS/EGNOS satellite is obstructed from view** Check the location of the WAAS/EGNOS satellite in the GPS Controller, TerraSync, or GPScorrect Skyplot section, and move to a different location if possible.

Problem	Cause and Solution
Not receiving WAAS/EGNOS real-time corrections (continued)	**You are outside the WAAS and EGNOS coverage areas** WAAS corrections are available in the Northern hemisphere between 30° West and 180° West. EGNOS corrections are available in the Northern hemisphere between 30° West and 90° East. If you are outside these areas, you cannot use WAAS or EGNOS corrections.
Not receiving real-time corrections from external source	**No physical connection** Connect the external real-time source to COM1 or a Bluetooth port on the handheld.
	Not connected to GPS COM port correctly In the Real-time section in GPS Controller, TerraSync, or GPScorrect, select the serial (COM) or Bluetooth (BSP) port that the real-time source is connected to. If you are using a non-Trimble application, use GPS Connector to create a connection between the COM or BSP port and the integrated GPS receiver's real-time GPS COM port (COM4).
	Incorrect port settings Change the port settings to match those used by the external source.
	No GPS positions You cannot use real-time corrections until the GPS receiver is computing positions. In the application, make sure that the integrated GPS receiver is activated, enough satellites are available, and the satellite geometry (PDOP) is good enough to compute positions.
	No Bluetooth connection to external correction source The Bluetooth external correction source is more than ten meters from the handheld, or is obstructed. Move the devices closer together, in a direct line of sight, to re-connect.
	Integrated WAAS selected as second real-time choice If the WAAS/EGNOS status is Waiting, the integrated GPS receiver may incorrectly change the status of the preferred real-time choice to Waiting as well. To avoid this, select Wait for real-time or Use uncorrected GPS as your second choice.
NMEA data includes autonomous positions	**Integrated GPS receiver outputs autonomous positions when real-time corrections are unavailable.** Configure your NMEA application to filter out non-DGPS positions.

Operating System

Problem	Cause and Solution
Cannot delete files	**The file is locked** Check the file is not in use. If the file is not being used, it may be a locked file. A file is locked if it is not installed successfully in the main memory, and cannot be opened, deleted, or backed up. To remove a file that has not been installed correctly, tap [icon] / *Settings* / *System ./* *Remove Programs* to uninstall the program it belongs to. If this does not delete the file, hold down the Power button for 15 seconds to perform a hard reset.
F1 touch button not assigned to TerraSync	**The latest version of TerraSync installer is required** Visit the Trimble website at www.trimble.com/geoxt_ts.asp to download the latest version of the TerraSync installer.
GPS Controller shortcuts not restored	**GPS Controller shortcuts not automatically installed after uninstalling TerraSync** Manually restore the shortcuts to GPS Controller. Browse to the My Device\Windows folder, and tap the file RestoreGPSControllerShortcuts.exe.

Touch Screen

Problem	Cause and Solution
Touch screen does not respond to stylus taps	**Touch screen is incorrectly aligned** Hold down both the Display button and the Power button for two seconds to start the alignment sequence.
	GeoExplorer series handheld has locked up Reset the handheld (see page 24).
Screen is blank or hard to see	**GeoExplorer series handheld is turned off or is in Suspend mode** Press the Power button to turn on the handheld.
	Backlight level needs to be adjusted Tap the Backlight Up touch button to increase the backlight level, or the Backlight Down touch button to decrease the backlight level. Alternatively, hold down the Display button until the backlight level is suitable.
	GeoExplorer series handheld has locked up Reset the handheld (see page 24).

Use and care

Maintenance and care

To maintain and care for the GeoExplorer series handheld:

- Keep the outer surface free of dirt and dust.
- Keep the communication swipes and the external antenna port free of dirt and dust.
- Protect the touch screen from pressure and sharp or abrasive objects.

If the handheld requires servicing, contact your support provider.

Cleaning

To clean the GeoExplorer series handheld, wipe it with a clean dry cloth. Do *not* immerse the handheld in water.

Storage

If you are not going to use the handheld for three months or more, Trimble recommends that you turn the handheld off instead of leaving it in Suspend mode.

To prepare the GeoExplorer series handheld for storage:

1. Transfer any data that you need to a desktop computer.
2. Back up the main memory (see page 22).
3. Hold down the Power button until the handheld turns off (about 15 seconds).

To use the GeoExplorer series handheld after storage:

1. Press the Power button to turn on the handheld.
2. Recharge the internal battery using the support module (see page 21).

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