USER GUIDE

Juno™ series

Juno SB handheld
Juno SC handheld

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This is the October 2008 release (Revision A) of the *Juno Series User Guide*. The Juno series handheld's operating system is based on the Microsoft Windows Mobile version 6.1 Classic operating system (5.2.20269).

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However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

– Reorient or relocate the receiving antenna.
– Increase the separation between the equipment and the receiver.
– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
– Consult the dealer or an experienced radio/TV technician for help.

Changes and modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission rules.

The radio devices used by this equipment are classified under 47 CFR §15.247 as spread spectrum transmitter equipment. In accordance with OET Bulletin 65 supplement C Edition 1-01, the device operates at low power levels where there is a high likelihood of compliance with the RF exposure standards, is categorically excluded from routine environmental evaluation as set forth in CFR 47 section 2.1093. The radiated output power of this equipment produces a calculated SAR that is significantly below the FCC radio frequency exposure limits.

Equipment that is additionally fitted with a wireless cellular modem is certified to satisfy US requirements as stipulated in 47 CFR Parts 22 and 24.

The external antenna connector provided in this device is for GPS antennas only.

Canada

This Class B digital apparatus complies with Canadian ICES-003.

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Cet appareil numérique de la classe B est conforme à la norme NNB-003 du Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

Europe

This product has been tested and found to comply with all requirements for CE Marking and sale within the European Economic Area (EEA). It is classified and marked as being Class 2 Radio Equipment under 2000/299/EC, as Bluetooth and wireless LAN approvals are country specific. Please consult your local distributor for more information.

The Juno series has Bluetooth and wireless LAN approval in most EU countries, and the Juno SC is also compliant with GSM and UMTS conformity assessment requirements specified by the Radio and Telecommunication Terminal Equipment specified by European Council Directive 1999/5/EC. These requirements provide reasonable protection against harmful interference when the equipment is operated appropriately in a residential or commercial environment.

Australia and New Zealand

This product conforms with the regulatory requirements of the Australian Communications Authority (ACA) EMC and Radiocommunications framework, thus satisfying the requirements for C-Tick and A-Tick Marking and sale within Australia and New Zealand.

Equipment that is additionally fitted with a wireless cellular modem satisfies the requirements for A-Tick Marking and sale in Australia and New Zealand. The A-Tick Marking is an indication to the user that the product is suitable for connection to a telecommunications network operated by a carrier or carriage service provider.

Taiwan – Battery Recycling Requirements

The product contains an internal Lithium-ion battery. Taiwanese regulations require that waste batteries are recycled.

廢電池請回收

Notice to Our European Union Customers

For product recycling instructions and more information, please go to www.trimble.com/ev.shtml.

Recycling in Europe: To recycle Trimble WEEE (Waste Electrical and Electronic Equipment, products that run on electrical power.), Call +31 497 53 24 30, and ask for the "WEEE Associate". Or, mail a request for recycling instructions to:
Trimble Europe BV
c/o Menlo Worldwide Logistics
Meerheide 45
5521 DZ Eersel, NL

Safety Information

Radio use

The Juno™ series handhelds contain a Bluetooth® radio and a wireless LAN radio. Depending on your version of Juno handheld, it may also contain a cellular modem. In some situations, you may be required to turn off the radios. For example, aviation authority regulations restrict the use of radios on board aircraft.

To prevent the handheld from emitting radio signals, do one of the following:

- To turn off the handheld, press and hold the **Power** button for five seconds.
- To turn off the Bluetooth and wireless LAN radios only:

  a. Tap the Wireless Connectivity icon (or) in the title bar of the *Today* screen and then tap *Wireless Manager*.

  b. Tap **All** to turn off both radios. The status fields below the Wi-Fi and Bluetooth buttons change to *Off*.

- To turn off the cellular modem, tap the *Modem Status* indicator on the *Today* screen and then tap *Modem Power Off*.

Exposure to radio frequency radiation from Bluetooth and WLAN transmitters

This device is approved as a portable device with respect to Radio Frequency (RF) exposure compliance. The radiated output power of the internal wireless radio transmitters is less than 10 milliWatt, which results in exposure levels far below the FCC radio frequency exposure limits, even when operated in close proximity to the body. The internal wireless radios operate within guidelines found in international radio frequency safety standards and recommendations, which reflect the consensus of the international scientific community. Trimble therefore believes the internal wireless radios are safe for use by users. The level of electromagnetic energy emitted is hundreds of times lower than the electromagnetic energy emitted by wireless devices such as mobile phones. However, the use of wireless radios may be restricted in some situations or environments, such as on aircraft. If you are unsure of restrictions, you are encouraged to ask for authorization before turning on the wireless radios.

Exposure to radio frequency radiation from Cellular wireless transmitters

Juno SC handheld equipment uses cellular wireless radios that have been designed and manufactured to meet safety requirements for limiting exposure to radio waves. When used in accordance with the instructions set forth in this manual, the equipment has

been independently verified to not exceed the emission limits for safe exposure to radio frequency (RF) energy as specified by the Federal Communications Commission of the U.S. Government in 47 CFR §2.1093.

These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organization through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.

The exposure standard for all wireless devices employs a unit of measurement known as the Specific Absorption Rate, or SAR; the SAR limit set by the FCC[1] is 1.6W/kg.

Tests for SAR on the Juno SC have been undertaken using the standard operating positions adopted by the FCC that test the device for SAR while it is transmitting at the highest certified power level in all tested frequency bands.

The FCC has granted an Equipment Authorization for this device on the basis that all reported SAR levels have been evaluated to be compliant with the FCC RF exposure guidelines.

SAR information on this device is on file with the FCC and can be found under the Display Grant section of http://www.fcc.gov/oet/fccid after searching on FCC ID: JUP66400.

For documentation relating to the SAR values of the Juno SC handheld, go to the Trimble Support website at www.trimble.com/support.shtml, then click Juno SC, and then click Compliance Information.

AC adaptor safety

To charge the handheld's battery, use the international adaptor kit provided with the Juno series handheld (see Powering the handheld, page 25).

⚠ **WARNING –** To use AC adaptors safely:
– Use only the AC adaptor intended for the Juno series handheld. Using any other AC adaptor can damage the handheld and may void your warranty. Do not use the AC adaptor with any other product.
– Make certain that the input voltage on the adaptor matches the voltage and frequency in your location.
– Make certain that the adaptor has prongs compatible with your outlets.
– Do not use the AC adaptor in wet outdoor areas; it is designed for indoor use only.
– Unplug the AC adaptor from power when not in use.
– Do not short the output connector.
– Be aware that there are no user-serviceable parts in this product.
– If the AC adaptor becomes damaged, replace it with a new Trimble AC adaptor.

[1.] In the United States and Canada, the SAR limit for mobile phones used by the public is 1.6 watts/kg (W/kg) averaged over one gram of tissue. The standard incorporates a substantial margin of safety .

Battery safety

The rechargeable Lithium-ion battery is supplied partially charged. Charge the battery completely before using it for the first time (see Powering the handheld, page 25). If the battery has been stored for longer than six months, charge it before use

⚠ **WARNING –** Do not damage the rechargeable Lithium-ion battery. A damaged battery can cause an explosion or fire, and can result in personal injury and/or property damage.
To prevent injury or damage:
– Do not use or charge the battery if it appears to be damaged. Signs of damage include, but are not limited to, discoloration, warping, and leaking battery fluid.
– Do not store or leave your device near a heat source such as near a fireplace or other heat-generating appliance, or otherwise expose it to temperatures in excess of 70 °C (158 °F) such as on a vehicle dashboard. When heated to excessive temperatures, battery cells could explode or vent, posing a risk of fire.
– Do not immerse the battery in water.
– Do not use or store the battery inside a vehicle during hot weather.
– Do not drop or puncture the battery.
– Do not open the battery or short-circuit its contacts.

⚠ **WARNING –** Avoid contact with the rechargeable Lithium-ion battery if it appears to be leaking. Battery fluid is corrosive, and contact with it can result in personal injury and/or property damage.
To prevent injury or damage:
– If the battery leaks, avoid contact with the battery fluid.
– If battery fluid gets into your eyes, immediately rinse your eyes with clean water and seek medical attention. Do not rub your eyes!
– If battery fluid gets onto your skin or clothing, immediately use clean water to wash off the battery fluid.

⚠ **WARNING –** Charge and use the rechargeable Lithium-ion battery only in strict accordance with the instructions. Charging or using the battery in unauthorized equipment can cause an explosion or fire, and can result in personal injury and/or equipment damage.
To prevent injury or damage:
– Do not charge or use the battery if it appears to be damaged or leaking.
– Charge the Lithium-ion battery only in a Trimble product that is specified to charge it. Be sure to follow all instructions that are provided with the battery charger.
– Discontinue charging a battery that gives off extreme heat or a burning odor.
– Use the battery only in Trimble equipment that is specified to use it.
– Use the battery only for its intended use and according to the instructions in the product documentation.

Note – Many administrations have regulations relating to the recycling or safe disposal of batteries. Please consult http://www.trimble.com/about_ev.shtml for more information.

Memory card use

The Juno series handheld provides a memory card slot, providing an alternative storage location to the storage memory in the handheld.

⚠️ **WARNING –** Static electricity can harm electronic components inside your handheld. To prevent static damage:
– Discharge static electricity from your body before you touch any of the electronic components inside your device, such as a memory module. You can do so by touching an unpainted metal surface.

⚠️ **WARNING –** The presence of any dust or moisture in the memory card slot may adversely affect the device and void your Trimble warranty. To prevent dust or moisture entering the memory card slot:
– Make certain that the memory card slot door is attached correctly when you are using the handheld outdoors.
– When inserting or removing a memory card, place the handheld on a dust-free indoor surface.

Contents

Contents

Introduction

In this chapter:

The *Juno Series User Guide* describes how to set up and use the Juno™ series handheld. The information in this guide supplements the information in the *Juno Series Quick Start Guide*, which you received with the handheld.

This guide describes how to:

• use the Windows Mobile® version 6.1 operating system.

• use the handheld's integrated GPS receiver.

• synchronize information between a computer and the handheld.

• exchange information between the handheld and other devices.

• connect to the Internet or to a computer network.

Even if you have used other Global Positioning System (GPS) products before, Trimble recommends that you spend some time reading this guide to learn about the special features of the product. If you are not familiar with GPS, go to the Trimble website (www.trimble.com) for an interactive look at Trimble and GPS.

About the Juno series handheld

The Juno series includes the Juno SC and Juno SB handhelds. These handhelds combine a high sensitivity GPS receiver with a field computer powered by the Windows Mobile version 6.1 operating system.

The Juno series handheld has built-in Bluetooth® wireless technology for cable-free connection to other devices, and wireless LAN (Local Area Network) connectivity for connections to networks. In addition, the Juno SC handheld contains a cellular modem for downloading and transmitting data.

The integrated GPS receiver provides accurate positioning information within 5 meters when using real-time or postprocessed differential correction. For more information, see Chapter 5, Using the GPS Receiver.

Supported GPS field software

To collect GPS data with the Juno series handheld, you must install GPS field software onto the handheld. You can use the Juno series handheld with the following GPS field software:

- Trimble TerraSync™ software, for configuring real-time differential correction options and for productive GIS data collection and maintenance.

- The Trimble GPScorrect™ extension for ESRI ArcPad software, for configuring real-time differential correction options and for productive GIS data collection and maintenance.

- The Trimble GPS Pathfinder® Tools Software Development Kit (SDK), for integrating GPS data and adding value to an existing mapping and GIS field software application.

- Trimble GPS Controller software, for configuring real-time differential correction options and NMEA output settings.

- Other GPS field software that accepts NMEA messages.

For more information, see Chapter 5, Using the GPS Receiver.

What's in the box?

When you unpack the Juno series handheld, check that you have received all the components, as shown below.
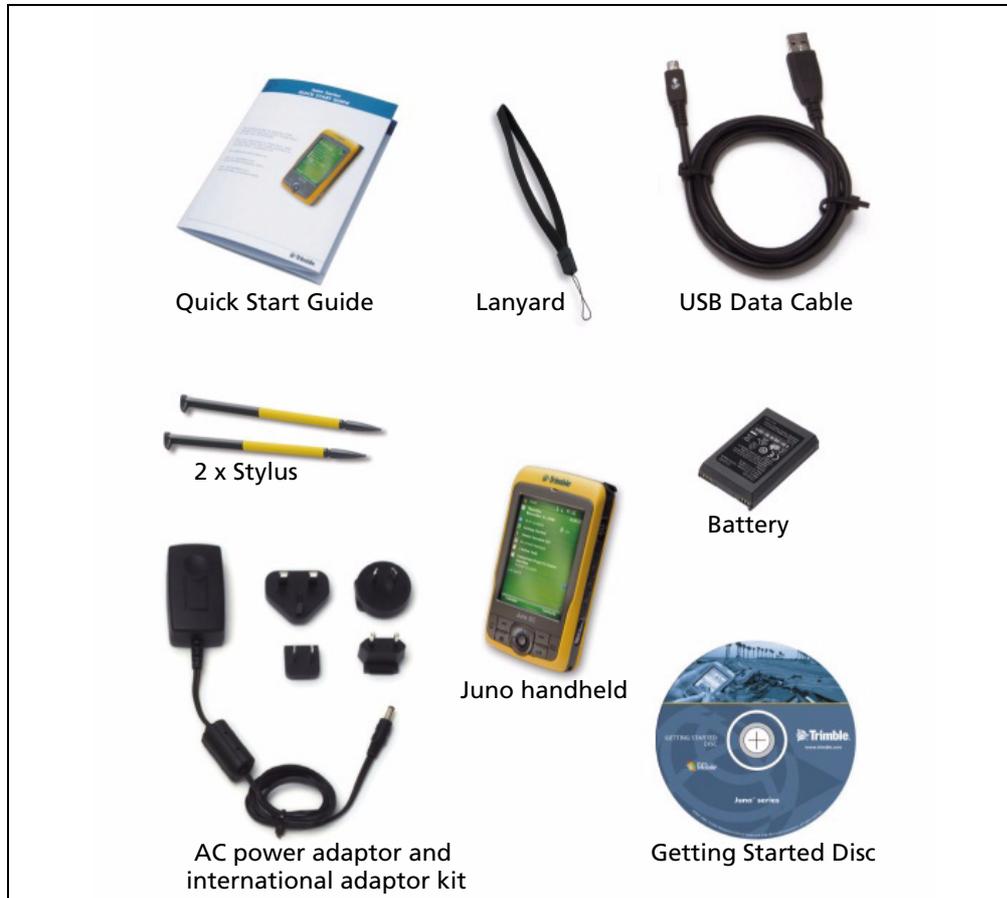

Figure 1.1   Items included with the Juno series handheld

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:

- Vehicle power adaptor
- Carry case
- External patch antennas
- Screen protectors (2 pack)

- Vehicle mount
- Replacement stylus (2 pack)
- Replacement International AC adaptor
- Replacement battery

For more information, go to www.trimble.com/junosb.shtml or www.trimble.com/junosc.shtml .

Use and care of the handheld

When using the handheld:

- Protect the touch screen by using the stylus provided, and avoid using excessive pressure and sharp or abrasive objects. To protect the touch screen from pressure and abrasive objects, Trimble recommends that you apply a screen protector.

- Keep the outer surface free of dirt and dust.

- Ensure that protective covers and doors are appropriately fitted to the external antenna port, headset jack, USB and power connectors, SIM and memory card areas, so that they are kept free from dirt, dust, fluid ingress, and electrostatic discharge (see Memory cards, page 32).

- Protect the handheld from extreme temperatures. For example, do not leave the handheld on the dashboard of a vehicle.

- The handheld is not waterproof. Do not expose the handheld to rain or moisture.

- Be careful not to drop the handheld or subject it to any strong impact.

To clean the 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 do not leave the handheld in Suspend mode (see page 29). Instead, partially charge the battery and then turn off the handheld.

To prepare the Juno series handheld for storage:

1. Transfer any data that you need to an office computer.

2. Charge the battery to approximately 30%.

3. Press and hold the **Power** key for five seconds.

4.   Store the handheld at room temperature.

To use the Juno series handheld after storage:

1.   Press the **Power** key to turn on the handheld.

2.   Recharge the battery (see Charging the battery, page 27).

Technical assistance

Technical support

Go to the Juno series handheld technical support page **(**www.trimble.com/junosc_ts/ or www.trimble.com/junosb_ts/) on the Trimble website for the latest support information about the software, including:

- • FAQs
- • support notes detailing support issues
- • documentation
- • the latest files available for download

Additional help

If you still cannot find the information that you need, ***contact your Trimble reseller***.

Windows error reporting

If for any reason a Microsoft Windows Error Reporting dialog appears, indicating that the handheld or Trimble GPS field software has encountered a problem and needs to close, you are prompted to send an error report to Microsoft.

Trimble recommends that you click **Send** and then click any subsequent links that are used to obtain additional information.

Trimble can access the report that is sent to Microsoft and use it to improve the Juno series handheld.

Your comments

Your feedback about the supporting documentation helps us to improve it with each revision. Email your comments to ReaderFeedback@trimble.com.

Getting Started

In this chapter:

- Parts of the Juno series handheld
- Keypad buttons
- Powering the handheld
- Turning on and turning off the handheld
- Resetting the handheld
- Storing data
- Installing and removing the SIM card

This chapter describes the main features of the Juno series handheld, and provides the information you need to get up and running with the handheld.

Parts of the Juno series handheld
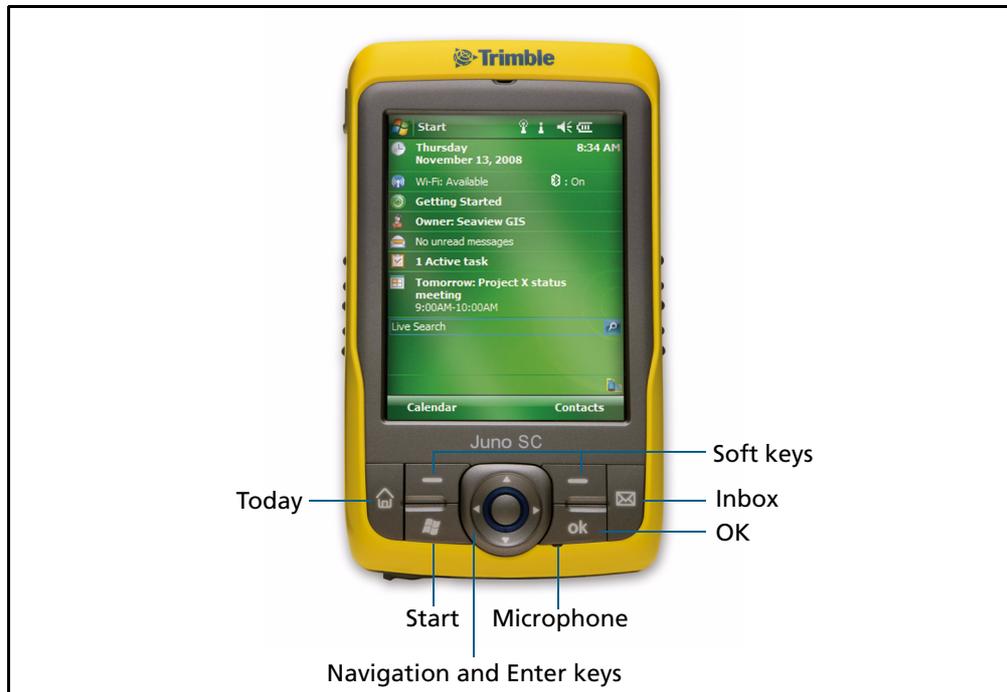
The following pages show the main parts of the handheld.

Figure 2.1 Juno series handheld – front view
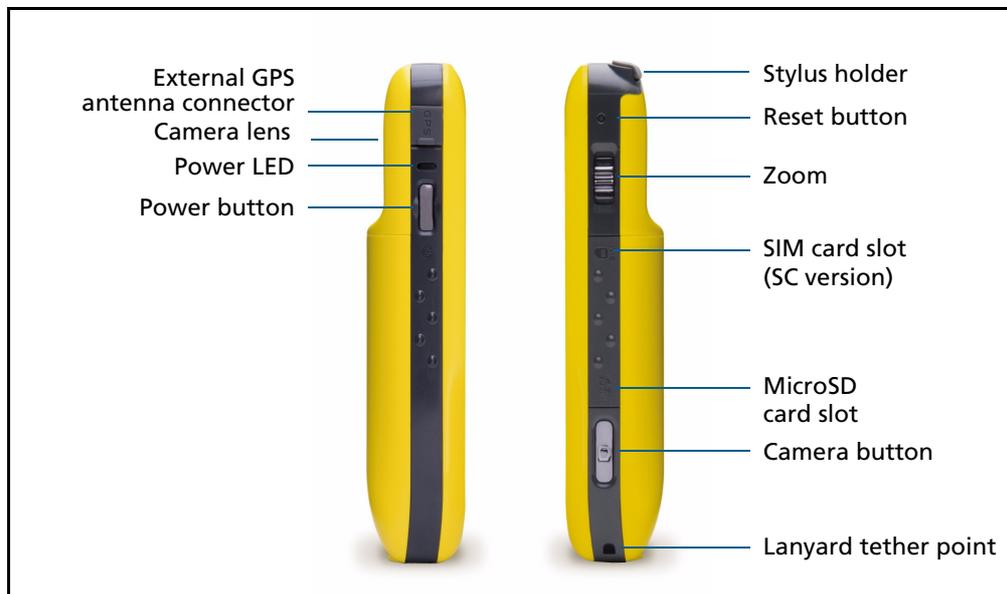
Figure 2.2 Juno series handheld – left and right views

Figure 2.3   Juno series handheld – bottom view

Keypad buttons

The Juno series handheld keypad provides fast, easy access to common actions.
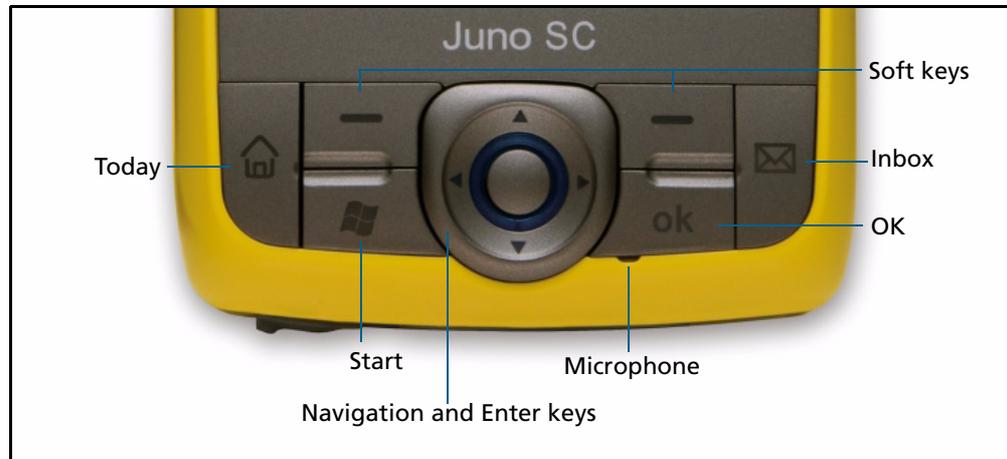
Figure 2.4   Juno series handheld keypad buttons

The function of each key is described below:

Key	Description
Start	Press to display the Windows Mobile *Start* menu.
OK	Press to select OK or to close an application.
Today	Press to display the Today screen.
Inbox	Press to access the email Inbox.
Navigation keys	Use these keys to navigate around the screen, scroll through menus, or to tab through options on windows and forms. Use the: • arrow keys to move up, down, left, and right. • action key (the center key) to perform an application-specific action, which is usually Enter.
Soft keys	By default these keys perform the same action as the left and right softkeys in the menu bar. Alternatively, program these keys to perform a selected action. To program the keys, use the *Buttons* control (see Buttons, page 42).

Tip – To lock the screen and handheld keys without turning off the handheld, use the device lock option (see Device lock, page 44).

Powering the handheld

The Juno series handheld contains a rechargeable Lithium-ion battery.

Note – Charge the battery completely before using the handheld for the first time. If the battery has been stored for longer than six months, charge it before use. Trimble recommends charging the battery for four hours to recharge it fully.

Note – Cold temperatures, or using Bluetooth wireless technology or wireless LAN connectivity, or using the cellular modem consumes additional battery power and so shortens battery life between charges.

AC adaptor safety

⚠ **WARNING –** To use AC adaptors safely:
– Use only the AC adaptor intended for the Juno series handheld. Using any other AC adaptor can damage the handheld and may void your warranty. Do not use the AC adaptor with any other product.
– Make certain that the input voltage on the adaptor matches the voltage and frequency in your location.
– Make certain that the adaptor has prongs compatible with your outlets.
– Do not use the AC adaptor in wet outdoor areas; it is designed for indoor use only.
– Unplug the AC adaptor from power when not in use.
– Do not short the output connector.
– Be aware that there are no user-serviceable parts in this product.
– If the AC adaptor becomes damaged, replace it with a new Trimble AC adaptor.

Battery safety

⚠ **WARNING –** Do not damage the rechargeable Lithium-ion battery. A damaged battery can cause an explosion or fire, and can result in personal injury and/or property damage. To prevent injury or damage:
– Do not use or charge the battery if it appears to be damaged. Signs of damage include, but are not limited to, discoloration, warping, and leaking battery fluid.
– Do not store or leave your device near a heat source such as near a fireplace or other heat-generating appliance, or otherwise expose it to temperatures in excess of 70 °C (158 °F) such as on a vehicle dashboard. When heated to excessive temperatures, battery cells could explode or vent, posing a risk of fire.
– Do not immerse the battery in water.
– Do not use or store the battery inside a vehicle during hot weather.
– Do not drop or puncture the battery.
– Do not open the battery or short-circuit its contacts.

⚠ **WARNING –** Avoid contact with the rechargeable Lithium-ion battery if it appears to be leaking. Battery fluid is corrosive, and contact with it can result in personal injury and/or property damage.
To prevent injury or damage:
– If the battery leaks, avoid contact with the battery fluid.
– If battery fluid gets into your eyes, immediately rinse your eyes with clean water and seek medical attention. Do not rub your eyes!
– If battery fluid gets onto your skin or clothing, immediately use clean water to wash off the battery fluid.

> ⚠️ **WARNING –** Charge and use the rechargeable Lithium-ion battery only in strict accordance with the instructions. Charging or using the battery in unauthorized equipment can cause an explosion or fire, and can result in personal injury and/or equipment damage.
> To prevent injury or damage:
> – Do not charge or use the battery if it appears to be damaged or leaking.
> – Charge the Lithium-ion battery only in a Trimble product that is specified to charge it. Be sure to follow all instructions that are provided with the battery charger.
> – Discontinue charging a battery that gives off extreme heat or a burning odor.
> – Use the battery only in Trimble equipment that is specified to use it.
> – Use the battery only for its intended use and according to the instructions in the product documentation.

Inserting the battery

To insert the battery into the handheld:

1. On the back of the handheld, use your thumb to press the gray button below the Windows logo and then slide the back cover down to remove it.

2. To insert the battery, angle the top of the battery into the handheld, with the label facing upwards (as shown in Figure 2.5). Press the battery flat until it clicks into place.

Figure 2.5   Inserting the battery

3. To replace the back cover, slide it upwards until it snaps closed.

> 💡 **Tip –** To remove the battery, remove the back cover of the handheld and then insert your finger or the stylus in the notch below the bottom left of the battery. Then pull the bottom of the battery towards you.

Charging the battery

Charge the battery in the handheld (see page 26). To charge the battery, do one of the following:

- Connect the AC power adaptor to the Power socket on the handheld and then connect the adaptor to mains power. An international adaptor kit is provided with the handheld.

- Connect the optional vehicle power adaptor to the Power socket on the handheld and then connect the adaptor to the vehicle power source.

When the handheld is connected to a power source, the battery icon in the *Today* screen changes to . Fully charging the battery from empty takes approximately four hours. You can use the handheld while it is charging.

Note – *You can only use the USB cable (connected to a computer) to provide a minimal charge to the battery; the battery must have enough power to turn on the Juno series handheld and form an active connection to the computer. To fully charge the battery, use the AC or vehicle power adaptor.*

The Power LED beside the Power key on the handheld indicates the battery power or charging status, as shown below:

Power source	LED state	Handheld/battery state
Battery power	Off	Off (in Suspend mode or turned off).
	Off	On and battery level is good.
	Flashing red	On and battery is low (less than 5%).
External power	Flashing green	Charging.
	Solid green	Charging is complete.

Avoid keeping the battery at full charge at high temperatures. For more information, see Storage, page 18.

Note – *The life of the battery can be significantly shortened if power is constantly supplied to the handheld. To avoid this issue, connect the handheld to an external power source only when the battery requries charging. Once fully charged, disconnect the external power source and allow the battery to discharge through normal use.*

## Checking the level of battery power

To check the level of battery power remaining at any time, tap the battery icon [icon] in the title bar of the *Today* screen. The Power control appears, displaying the *Battery* tab.

When the handheld battery is recharging from an external power source, the battery icon in the *Today* screen changes to [icon]. You can still tap the icon to view the level of battery power.

Low battery indicators

If the battery level becomes low during normal use of the handheld, the LED indicator flashes red and the battery icon in the title bar of the *Today* screen changes to [icon].

Back up your data and then recharge the battery.
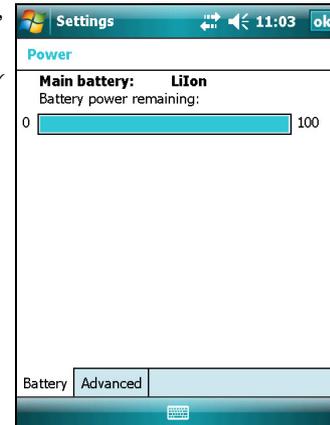
Conserving power

Although the handheld battery can operate for a full day without recharging, Trimble recommends that you do the following to reduce power consumption:

- Set the handheld to automatically turn off when idle. For more information, see Suspend mode, page 29.

- Set the backlight to automatically turn off when the handheld is idle for a specified time. For more information, see Backlight, page 47.

- Reduce the brightness setting for the backlight. For more information, see Backlight, page 47.

- Turn off the integrated Bluetooth or wireless LAN radios or cellular modem whenever you are not using them. For more information, see Turning on and turning off the integrated radios, page 76.

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

Note – 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.

Turning on and turning off the handheld

If the screen on the handheld is blank, the handheld is in Suspend mode (see) or has been shut down. To turn on the handheld from Suspend mode, press the **Power** key briefly (less than two seconds). To turn on the handheld from Shutdown, press and hold the **Power** key for five seconds.

To turn off the handheld and put the handheld into Suspend mode, press the **Power** key briefly (less than one second).

To completely shut down the handheld, press and hold the **Power** key for five seconds. All running applications are shut down, and the handheld is completely turned off.

Suspend mode

When you press the **Power** key to turn off the handheld, the handheld goes into Suspend mode. This is a low-power mode that maintains the main memory contents, stops applications running, and 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.

To turn on the handheld when it is in Suspend mode, press the **Power** key. The handheld is immediately 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 it is not used for two minutes.

To change the time before the handheld enters Suspend mode:

1. Tap the battery icon 🔋 in the title bar of the *Today* screen. The Power control appears.

2. Tap the *Advanced* tab.

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

4. Tap **OK**.
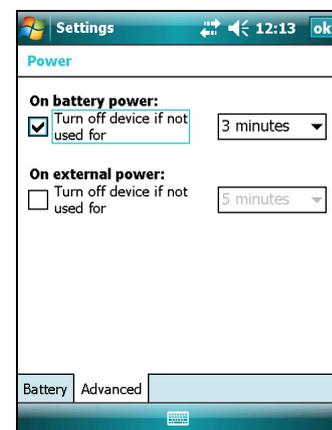
Resetting the handheld

If the screen on the handheld is blank, the handheld has turned off. Press the **Power** button to turn on the handheld.

If the handheld stops responding to the stylus, or if it does not respond when you press any of the keypad buttons, you may need to reset it. First, try a soft reset. If the handheld does not respond, perform a hard reset.

You can also reset the handheld to its factory default settings.

Performing a soft reset

A soft reset is similar to restarting a computer. A soft reset saves data and closes all open applications and then restarts the handheld. All data and settings are retained after a soft reset.

To perform a soft reset, use the tip of the stylus to lightly press the **Reset** button.

Performing a hard reset

A hard reset retains settings and data that you have previously saved on the handheld. However, any unsaved data may be lost.

Note – *Perform a hard reset only if a soft reset does not resolve the problem.*

To perform a hard reset, press and hold the **Power** button as you use the tip of the stylus to lightly press the **Reset** button.

Resetting to factory default settings

Reset the handheld to factory default settings to restore the handheld to its original state, or only if a soft reset and then a hard reset does not resolve the problem.

⚠ **CAUTION –** Resetting the handheld to factory default settings erases **all** data, installed applications, and settings stored in the handheld, except for any data or applications that were pre-installed on the handheld or are stored on a memory card. It does not change the language of the operating system used on the handheld.

⚠ **CAUTION –** If you have encrypted files on a memory card and you reset the handheld to factory default settings, the encryption key on the handheld is deleted. This means that any files you have encrypted on a memory card are permanently locked and unreadable by any device. For more information, see Encrypting files on memory cards, page 33.

☼ **Tip –** To quickly and easily restore data deleted by performing a factory reset, synchronize the handheld with a computer **before** you reset the handheld to the factory default settings. Once the handheld is reset, resynchronize the handheld with the computer.

To reset the handheld to the factory default settings:

1. Power off the device completely by pressing and holding the Power button for 5 seconds.

2. Press and hold the two soft key buttons on the handheld.

3. While holding the buttons, press the **Power** button.

Storing data

The handheld has two types of memory:

- Storage memory is similar to the hard disk in a computer, and is used for storing programs and data.

- Program memory is similar to the RAM in a computer, and is used for running programs. You cannot use it to save data.

To check the memory capacity on the handheld, tap ⊞ / *Settings* / *System* / *Memory.* The Storage and Program columns show the current memory available, and the memory that is already in use.

Pre-installed documents and program files are not affected by power loss or resetting. However, you can still lose data if you accidentally delete or overwrite it.

⚠ **CAUTION –** The Windows Mobile 6.1 operating system does not include a Recycle Bin. When you delete files from the handheld, they are deleted permanently.

Trimble recommends that you regularly copy important data to an office computer. For more information, see Connecting to an Office Computer, page 51.

Memory cards

As an alternative to storage memory, you can save data to a memory card. Use either a microSD or microSDHC (high capacity) memory card to securely transfer data to and from another device that supports microSD or microSDHC memory cards.

Note – The Juno series handheld does not support SDIO (SD input/output) cards.

⚠ **CAUTION –** The presence of any dust or moisture in the memory card slot may adversely affect the device and void your Trimble warranty. To prevent dust or moisture entering the memory card slot:
– Make certain that the memory card slot door is attached correctly when you are using the handheld outdoors.
– When inserting or removing a memory card, place the handheld on a dust-free indoor surface.

⚠ **CAUTION –** Static electricity can harm electronic components inside the handheld. To prevent static damage, discharge static electricity from your body before you touch any of the electronic components inside your device, such as a memory module. You can do so by touching an unpainted metal surface.

To insert a microSD or microSDHC memory card:

1. Remove the battery cover door

2. Place the handheld face up on a dust-free indoor surface.

3. Remove the memory card slot door.

4. Insert the memory card into the memory card slot with the swipes facing down. Gently press the card until you hear a click and the card is locked into place.

5. Reattach the memory card slot door to the handheld.

6. Replace the battery cover door.

   When you select the *Save As* option in an application, the memory card appears in the list of available storage locations.

Note – Do not store required data or applications to a memory card if the card will be removed. Data saved to a memory card is available only when the card is inserted in the handheld.

To remove the memory card from the memory card slot, gently press the card in and then let go. The card pops out.

Encrypting files on memory cards

To prevent sensitive data on a memory card from being used if the card is lost or stolen, files can be encrypted as they are placed on the card.

When encryption is enabled, an encryption key is stored on the handheld. Files are encrypted as they are copied or written to the memory card. Files already saved on memory cards before enabling encryption are not automatically encrypted.

Note – Because the encryption key is stored on the handheld, encrypted files are only readable on the handheld on which they are initially encrypted. It is not possible to read encrypted files on the storage card with any other device, including another Juno series handheld or an office computer.

CAUTION – If you reset the handheld to the factory default settings, the encryption key is deleted and the handheld is no longer able to read any encrypted files on a memory card. This means that any files you have encrypted are permanently locked and unreadable by any device. To avoid being unable to read previously encrypted files, Trimble recommends that you use another device, such as an office computer, as the primary location for storing important data and to control the encryption of important files.

To enable encryption of files as they are written to a memory card:

1.   Tap 🪟 / *Settings* / *System* / *Encryption*.

2.   Select the *Encrypt files placed on storage cards* check box.

Note – Encrypted files appear as ordinary files on the handheld they were encrypted on. If the memory card is inserted in another device, the files appear with a .menc file extension and cannot be opened.

To disable encryption, clear the *Encrypt files placed on storage cards* check box.

Note – Disabling encryption does not remove encryption from any existing files on the memory card, but ensures that new files placed onto the memory card are not encrypted.

To encrypt files that are already stored on a memory card:

1.   Copy the files to the handheld's internal memory or to an office computer.

2.   Ensure encryption is enabled on the handheld.

3.   Copy the files back to the memory card. The files are encrypted as they are written to the memory card.

To remove encryption from files so they can be read by other devices:

1.   Insert the memory card in the handheld and then connect the handheld to an office computer using ActiveSync technology.

2.   Copy the encrypted files from the memory card to the office computer.

3.   To use the decrypted files on the handheld, copy the files from the office computer to the handheld's main memory.

4.   To store the decrypted files on a memory card, ensure that encryption is not enabled on the handheld and then copy the decrypted files from the office computer to the memory card.

Installing and removing the SIM card

⚠ **CAUTION –** The SIM card and its contents can be easily damaged by scratches or bending. Use caution when inserting or removing the card.

⚠ **CAUTION –** The presence of any dust or moisture in the SIM card slot may adversely affect the device and void your Trimble warranty. To prevent dust or moisture entering the SIM card slot:
– Make certain that the SIM card slot door is attached correctly when you are using the handheld outdoors.
– When inserting or removing a SIM card, place the handheld on a dust-free indoor surface.

⚠ **CAUTION –** Static electricity can harm electronic components inside the handheld. To prevent static damage, discharge static electricity from your body before you touch any of the electronic components inside your device, such as a memory module. You can do so by touching an unpainted metal surface.

To insert a SIM card:

1. Turn off the handheld.

2. Remove the battery cover door.

3. Place the handheld face up on a dust-free indoor surface.

4. Remove the SIM card slot door.

5. Insert the SIM card as shown, with the gold contacts face down.

6. Reattach the SIM card slot door and replace the battery door cover.

To remove the SIM card from the SIM card slot, gently press the card in and then let go. The card pops out.

3

Using the Windows Mobile Operating System

In this chapter:

- Parts of the screen
- Using the stylus
- Status indicators
- Pre-installed programs
- Accessing help
- Entering information
- Personalizing the handheld
- Messaging

The Juno series handheld is powered by the Windows Mobile 6.1 Classic operating system.

This chapter describes the main features of the Windows Mobile operating system.

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.

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

Title bar
Contains status icons for important system functions.

Wireless LAN and Bluetooth icons
Show status of integrated radios. Tap either icon to access the Wireless Manager.

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

Menu bar
Contains softkeys providing access to applications, menus, and notifications.

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. To view the main Help Contents page, tap the *Contents* softkey in the menu bar.

Help files installed on the handheld work 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 tap *View* / *All Installed Help* to return to the main Contents page.

Status indicators

The following Status indicators appear in the title bar at the top of the screen:

Icon		Tap icon to...
	Battery level	check battery level
	Low battery (10% or less remaining)	
	Battery charging/using external power	
	Speaker is on	change volume
	Speaker is off	
	Connected to ActiveSync technology or the Windows Mobile Device Center (WMDC) on a computer	configure the connection or access the Wireless Manager
	Connected to a Bluetooth-enabled phone	
	Connected to a cellular network	
	Disconnected from ActiveSync technology or WMDC	
	Disconnected from a Bluetooth-enabled phone	
	Disconnected from a cellular network	
	Wireless LAN radio is on	
	A wireless LAN is detected	
	Sending or receiving wireless signals	

The Wi-Fi and Bluetooth icons on the *Today* screen show the status of each radio. Tap the icon to access the Wireless Manager and turn on or turn off the radio.

Modem status indicators
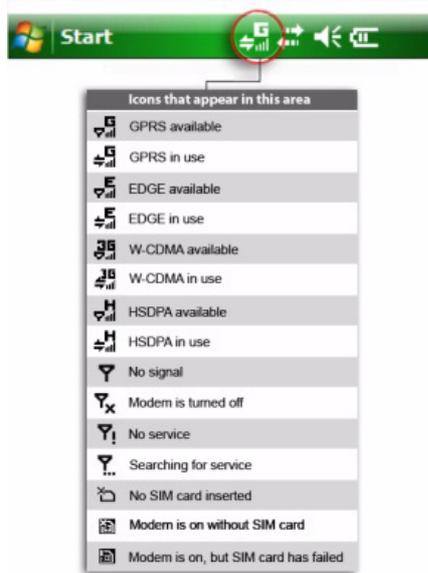
Note – Tap the Modem Status indicator to access the Modem Control application.

Pre-installed programs

Programs that are pre-installed on the Juno series handheld are as follows:

Program	Function
ActiveSync	Synchronize information between the handheld and a computer.
Adobe Reader LE	View PDF files.
Calculator	Perform basic arithmetic functions.
Calendar	Keep track of appointments and arrange meetings.
Contacts	Keep track of your friends and colleagues.
Excel Mobile	From the Start menu, tap *Office Mobile* and then tap *Excel Mobile*. Use Excel® Mobile to create and edit Excel spreadsheets.
File Explorer	View and manage files.
Help	View help. If there is an application running, context-sensitive help for the current screen appears. To view the main Help Contents page, tap the **Contents** softkey in the menu bar
Internet Explorer	Browse the World Wide Web.
Messaging	Write, send, and receive email messages.
Messenger	Send instant messages using Windows Live™ Messenger.
Notes	Create handwritten, typed, or recorded notes.
Office Mobile	Provides access to these Office Mobile applications: Excel Mobile, PowerPoint® Mobile, and Word Mobile.
Pictures and Videos	Take, view, and edit pictures.

Program	Function
PowerPoint Mobile	From the Start menu, tap *Office Mobile* and then tap *PowerPoint Mobile*. Use PowerPoint Mobile to view slide show presentations.
Search	Search for a file or item stored on the handheld.
Tasks	Keep track of your tasks.
Windows Live	Access Windows Live services, including email, instant messenger and Internet search.
Windows Media	Play Windows Media® or MP3 audio and video files.
Word Mobile	From the Start menu, tap *Office Mobile* and then tap *Word Mobile*. Use Word Mobile to create and edit Word documents.

For more information about using any of this software, refer to the Help for the software. See Accessing help, page 36.

Using the stylus

To interact with the handheld, use the stylus to tap on the touch screen.

You can perform the following actions 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.

If at any time the touch screen does not respond correctly to stylus taps, realign it. For more information, see Screen, page 46.

Entering information

Depending on the program you are using, you can enter information in several ways, as described below:

Input method	Description
Synchronizing	Use Microsoft connection management software to exchange information between the handheld and an office computer.
	For more information, see Chapter 4, Connecting to an Office Computer.
Typing	Use the keyboard input panel to enter typed text by tapping keys on the on-screen keyboard.
Writing	Use the stylus like a pen to write directly on the screen.
Recording	Create a stand-alone recording or embed a recording into a note.

Selecting an input panel

Use an input panel to type or to write on the screen.

The Input Panel button automatically appears in the menu bar of any application.

To display the currently selected input panel, tap a text box in the application, or tap the **Input Panel** button.

To select an input panel, tap the Input Selector arrow next to the Input Panel button and then tap the input panel you want to use:

Textbox

Keyboard input panel

Input Panel button

- To use the on-screen keyboard, tap *Keyboard*.

- To write directly onto the screen and have the handwritten words and symbols converted into typed characters, tap *Letter Recognizer* or another input panel that supports writing on the screen.

- To configure options for the selected input panel, tap *Options*.
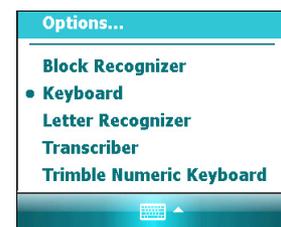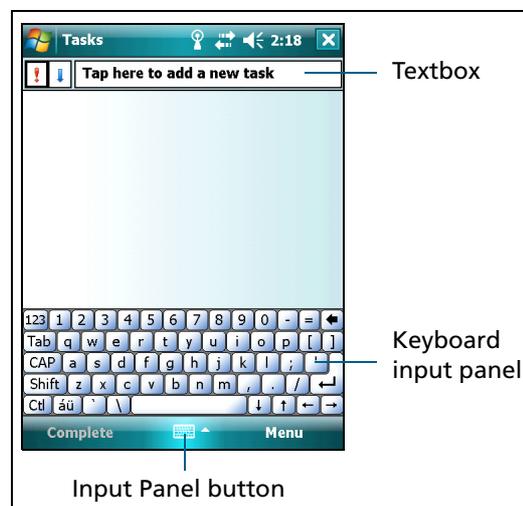
Using the on-screen keyboard

To enter characters, use the stylus to tap the keys on the keyboard. When you finish entering text in a field, tap [Tab] to accept the text you have entered and then move to the next field.

To enter special characters, tap [123] to display keyboards containing numbers and symbols. To switch back to the main keyboard, tap [123] again.

To hide the keyboard, tap the keyboard icon again.

Tip – To make the keys larger, tap the Input Selector arrow and then tap *Options*. In the *Input method* list, select Keyboard and then tap **Large Keys.**

Writing directly on screen

When you select Letter Recognizer, you can write individual letters, numbers, and punctuation in the Letter Recognizer input panel and have them converted into typed text.

Tip – For help with writing characters with Letter Recognizer, tap the question mark near the writing area.

When you select Transcriber, you can write anywhere on the screen using the stylus. The Microsoft Transcriber software converts your handwriting to text. You can use it to enter notes in a text editor such as Notes.

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 keyboard.

For more information, refer to the *Transcriber Help.*

Making a recording

You can create a stand-alone voice note or you can add a recording to a note. Then you can work with voice notes in the same way that you work with notes.

To make a recording:

1. Tap 🗔 / *Programs* / *Notes*.

2. Do one of the following:

   – To create a stand-alone recording, tap the Record button ⬤ in the screen displaying the list of notes to begin recording.

   – To add a recording to a note, create or open a note and then tap the Record button ⬤ to begin recording.

Tip – If you do not see the Recording toolbar, tap *Menu / View Recording Toolbar.*
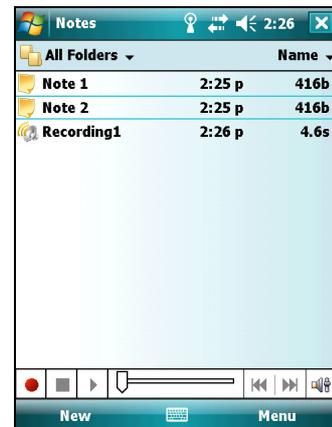
Note – The Juno series handheld's microphone is on the front of the handheld, in the keypad area. The microphone will capture voice notes when you are holding the handheld in front of you. In noisy environments, you may need to move the handheld closer to you or to the source of the sounds you want to record.

3. When you finish recording, tap the **Stop** button
   ■.

   If you are creating a stand-alone recording, an
   icon appears in the note list.

   If you are recording in an open note, an icon
   appears in the note. Tap **OK** to return to the note
   list.

To play a recording, tap the recording in the note list or
open the note and then tap the 🔊 icon in the note.

Personalizing the handheld

Use the controls in the *Settings* area to customize the handheld. The following
examples describe the available controls.

Buttons

Use the *Buttons* control to assign the action you want to be performed when you press
the left or right application key.

By default, these keys perform the same action as the left and right softkeys in the
menu bar. Alternatively, program these keys to perform a selected action.

Application buttons can be programmed to perform one of the following types of
actions:

- Run a selected application, for example Messaging or Calendar.

- Act as a software button, for example an **OK**/**Close** button or a scroll button.

- View a selected screen, or part of a screen, for example return to the *Today*
  screen or launch the Context menu or Input panel.

To open the *Buttons* control:

- Tap 🪟 / *Settings* / *Personal* / *Buttons*.

To specify an action for the button:

1. Tap the *Program Buttons* tab.

2. Tap a button in the list to select it.

3. From the *Assign a program* drop-down list, select the action you want to occur when you press the button or tap the softkey.

4. Tap **OK**.
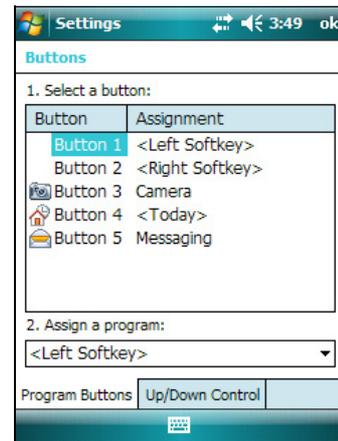
Today

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

Appearance

You can use a theme to customize the background picture on the *Today* screen, the color of the title and menu bars, 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**.
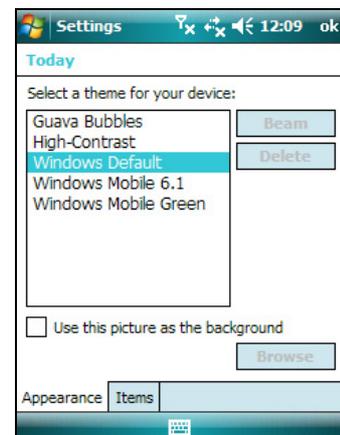
Items

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 [icon] / *Settings* / *Personal* / *Today*.

2. Tap the *Items* tab.

3. Select or clear the check boxes to show 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**.
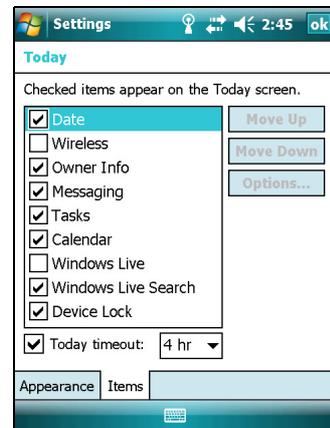
Set the time zone

In the *Today* screen, tap the clock icon [icon]. The *Clock Settings* screen appears. Tap the *Time* tab, select the *Home* option and then select the correct time zone.

Device lock

Use the *Device Lock* option on the *Today* screen to lock the screen and keypad while the handheld remains turned on.

To lock the device, tap *Device unlocked* in the *Today* screen. The *Today* screen shows *Device locked*, and *Unlock* appears in the left corner of the menu bar.

Once the handheld is locked, the screen and most of the keys do not respond until the handheld is unlocked. The exceptions are the **Power** key and the **Reset** button, which always respond when pressed.

Communication with external devices such as a GPS receiver, or external sensors used by GPS field software, is not interrupted by locking the handheld. This means that you can keep using the GPS field software when the handheld is locked. For example, you could lock the device so that you can safely transport it between features, while keeping the software connected to the GPS receiver so that you can continue recording GPS positions.

To unlock the device, tap the *Unlock* notification in the left corner of the *Today* screen menu bar and then tap **Unlock**.

You can help to keep your data secure by requiring a password each time the handheld is turned on. Tap [icon] / *Settings* / *Personal* / *Lock* to set a password or to change password settings.

Power

To open the *Power* control, do one of the following:

- Tap the battery icon 🔋 in the title bar of the *Today* screen.

- Tap 🪟 / *Settings* / *System* / *Power*.

Tap the *Battery* tab to check the battery level (see Checking the level of battery power, page 28).

Tap the *Advanced* tab to set the time before the handheld turns off when idle (see Suspend mode, page 29).

Sounds and notifications

Use the *Sounds & Notifications* control to set preferences for the speaker volume and system sounds. To open the *Sounds & Notifications* control:

- Tap 🪟 / *Settings* / *Personal* / *Sounds & Notifications*.

To turn on or turn off sounds:

1. Tap the *Sounds* tab.

2. Select or clear the check boxes to enable or disable categories of sounds.

3. If you select the *Screen taps* or *Hardware buttons* check boxes, select the *Soft* or *Loud* option to control the volume of the sounds.

4. Tap **OK**.

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 *Event* drop-down list, select an event.

3. Select the type of notification you want to receive for that event.

4. Tap **OK**.
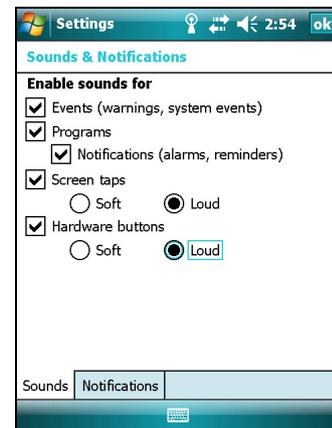
Screen

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

- Tap 🪟 / *Settings* / *System* / *Screen*.

To change the screen settings:

1. Tap the *General* tab.

2. To change the orientation of the screen, select an option in the *Orientation* group.

3. To start the alignment sequence for the touch screen, tap **Align Screen**.

4. Tap **OK**.
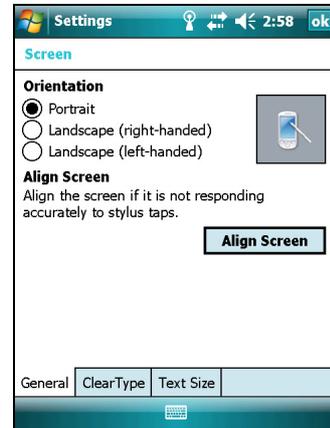
Using ClearType font smoothing can make text easier to read on the screen.

To enable ClearType:

1. Tap the *ClearType* tab and then select the *Enable ClearType* check box.

2. Tap **OK**.

To change the size of text on screen:

1. Tap the *Text Size* tab.

2. Tap and drag the slider control to the left to make text smaller, or to the right to make text larger.

   The example text below the slider shows how the text will appear on screen.

3. Tap **OK**.
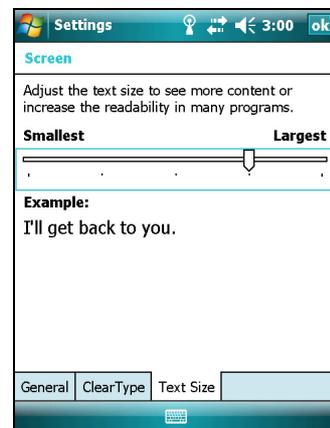
Backlight

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

- Tap 🟦 / *Settings* / *System* / *Backlight.*

1. To set the backlight to automatically turn off, do one of the following:

    – To automatically turn off the backlight when the handheld is idle and is using **battery power**, tap the *Battery Power* tab. Select the *Turn off backlight* check box and then select a time from the drop-down list.

    – To automatically turn off the backlight when the handheld is idle and is using **external power**, tap the *External Power* tab. Select the *Turn off backlight* check box and then select a time from the drop-down list.

2. Tap **OK**.
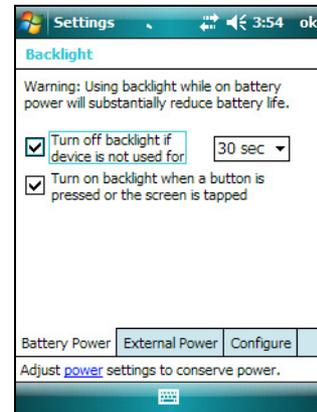
To change the brightness:

1. Tap the *Configure* tab.

    The brightness of the backlight can be configured independently for when the handheld is using battery or external power. Use the slider on the left for battery power, and the slider on the right for external power.

2. Tap and drag the slider control downwards to make the backlight darker, or upwards to make the backlight brighter.

3. Tap **OK**.
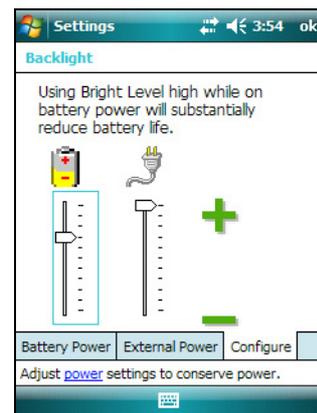
Messaging

Use Messaging to send and receive receive email messages using the Juno series handheld. Messaging is the equivalent of your email Inbox.

To use email, you can do one of the following:

- Synchronize email messages with Microsoft Exchange or Microsoft Outlook® on an office computer.

- Send and receive email messages by connecting directly to an email server through an ISP or a network.

Synchronizing email messages

You can synchronize email messages on the handheld and the computer.

⚠️ **CAUTION –** When you delete a message on the handheld, it is deleted from the office computer the next time you synchronize the devices.

To synchronize email, you must enable Inbox synchronization in ActiveSync technology. For more information, refer to the *ActiveSync Help* on the office computer.

During synchronization:

- Messages are copied from the mail folders of Exchange or Outlook on the office computer to the Messaging folder on the handheld. By default, you will receive messages from the past 3 days only, the first 100 lines of each message, and file attachments of less than 100 KB in size.

- Email messages in the Outbox folder on the handheld are transferred to Exchange or Outlook, and then sent from those programs.

- Email messages in subfolders in other email folders in Outlook are synchronized only if they were selected for synchronization in ActiveSync technology.

To send and receive email for a synchronized Exchange or Outlook account, connect the handheld to the office computer. Synchronization automatically begins, and the handheld sends and receives email.

Connecting directly to an email server

In addition to synchronizing email messages with an office computer, you can send and receive email messages by connecting to an email server.

Before you can send and receive email, you must create an email account in the Messaging software.

Note – You must set up an Internet connection on the handheld before you can set up and use your email account. For more information, see Connecting to a wireless LAN access point, page 82, Connecting to a cellular network from the modem, page 83, or Connecting to a Bluetooth-enabled phone for Internet access, page 88.

 If you need to connect to different mailboxes, set up and name a different service for each connection.

Note – *The Messaging software supports only the POP3 and IMAP4 protocols for incoming mail, and SMTP for outgoing mail.*

To set up a mail service:

1. Tap 🎴 / *Messaging*.

2. Tap *New Email Account.*

3. Enter the email address for your account.

4. To automatically get connection settings for your email account from the Internet, select the check box.

5. Tap **Next**.

6. Follow the steps in the Setup wizard. If the connection settings are not automatically downloaded from the Internet, you must enter them using the connection details supplied by your ISP or network administrator.
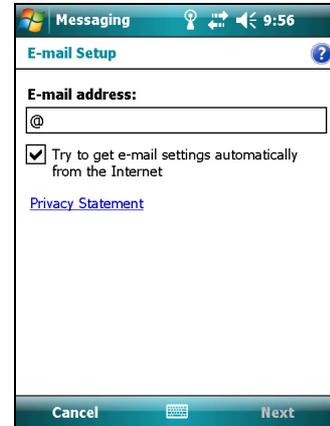
Note – *You cannot change the account name later.*

7. Tap **Finish**.

8. Tap **OK** to download mail immediately.

Tip – To receive TerraSync data files by email, edit the settings for the email account you have set up. To do this, tap **Menu** and then select *Options*. In the *Accounts* tab, tap the e-mail account you want to use to receive TerraSync files. The *Email Setup* wizard appears. Tap **Next** until you reach the last page of the wizard. From the *Message download limit* drop-down list, select ***Entire message***.

When you connect the handheld to the email server, new messages are downloaded to the Messaging folder, messages in the Outbox folder are sent, and messages that have been deleted on the email server are removed from the Messaging folder.

Messages received directly from an email server are linked to the email server rather than an office computer. When you delete a message on the handheld, it is also deleted from the email server the next time you connect the handheld to the email server.

You can work online or offline:

• When working online, you read and respond to messages while connected to the email server. Messages are sent as soon as you tap **Send**, which saves space on the handheld.

• When working offline, you can disconnect from the email server after you download new message headers or partial messages and then decide which messages to download completely. The next time you connect, Messaging downloads the complete messages you have marked for retrieval and sends any messages that you have written.

Connecting to an Office Computer

In this chapter:

- Connection management software
- Connecting the handheld to a computer
- Managing the connection using the Windows Mobile Device Center
- Managing the connection using ActiveSync technology
- Installing software onto the handheld

Connect the Juno series handheld to an office computer to transfer information, settings, and files from one device to the other, or to install software onto the handheld.

You can connect the handheld to a computer using the USB cable or a Bluetooth wireless link.

To protect your data, Trimble recommends that you regularly copy important data to an office computer.

Connection management software

To install software onto a device powered by a Windows Mobile operating system, or to copy files between the handheld and a computer, you must connect the device to an office computer. If the computer is running:

- the Windows Vista® operating system, use the Windows Mobile Device Center to manage the connection.

- the Windows® XP or 2000 operating system, use ActiveSync technology to manage the connection.

*Note – You must install the Windows Mobile Device Center or ActiveSync technology onto the computer **before** you connect the handheld.*

This connection management software also enables you to synchronize office applications on an office computer with the handheld.

⚠ **CAUTION –** The available space on the handheld is small compared to an office computer. To avoid accidentally synchronizing the handheld with a large amount of data on the office computer, Trimble recommends that you either connect to the handheld ***without forming a partnership***, or that you limit the information types and amount of data that is synchronized.

⚠ **CAUTION –** Synchronizing data is designed to keep the same data on both the office computer and the handheld. Exercise care when resynchronizing applications after deleting data from one computer, as resynchronizing will delete the same information from the other computer.

For more information see one of the following:

- Managing the connection using the Windows Mobile Device Center, page 54

- Managing the connection using ActiveSync technology, page 55.

Installing the Windows Mobile Device Center

The Windows Vista operating system includes a basic connectivity driver for devices powered by a Windows Mobile operating system. This driver allows you to transfer files from the handheld to an office computer.

To install software onto a device powered by a Windows Mobile operating system, you must install Windows Mobile Device Center 6 onto an office computer.

A copy of the Windows Mobile Device Center is provided on the *Juno Series Getting Started Disc*. Alternatively, go to www.microsoft.com/windowsmobile/devicecenter.mspx to download the latest version from the Microsoft website.

Installing ActiveSync technology

A copy of ActiveSync technology is provided on the *Juno Series Getting Started Disc*. Alternatively, go to www.microsoft.com/windowsmobile/activesync/default.mspx to download the latest version from the Microsoft website.

Connecting the handheld to a computer

To connect the Juno series handheld to a computer:

1. Make sure that the handheld and the computer are switched on.

2. Make sure you have installed the appropriate connection management software onto the computer (see Connection management software, page 52).

3. To form a connection, do one of the following:

   – Use the handheld's integrated Bluetooth radio to establish a wireless serial link to a Bluetooth-enabled computer. For more information, see Connecting to an office computer to use ActiveSync technology, page 94.

   – Use a USB connection:

      a. Connect the USB data cable to the USB port on the handheld.

      b. Connect the other end of the USB data cable to a USB port on the computer.

When the handheld and the computer are connected, you can manage the connection through a window that appears on the office computer. See one of the following:

Managing the connection using the Windows Mobile Device Center

1. Connect the handheld to the computer (see page 53).

2. If the Autoplay window appears, close the window.

3. The *Windows Mobile Device Center* window displays the message Connected:

Note – If the connection is not made automatically, check that the connection is enabled in the Windows Mobile Device Center software and on the handheld. For more information, see Troubleshooting, page 103.

4. Do one of the following:

– To synchronize files and data between the handheld and a computer, click *Set up your device* and then follow the instructions on screen.

– To transfer data between the handheld and the computer without synchronizing the devices, click *Connect without setting up your device*.

5. To transfer files between the computer and the handheld, click *File Management*. A Windows Explorer-type window appears, displaying files stored on the handheld. Copy and paste files to other locations on the computer, or from the computer to the handheld.

6. To install software onto the handheld, see Installing software onto the handheld, page 57.

7. To uninstall software from the handheld, click *Programs and Services* and then click *Add/Remove Programs*.

Tip – If the *Add/Remove Programs* option does not appear below *Programs and Services*, click *More*. The *Add/Remove Programs* option appears.

For more information, refer to the *Windows Mobile Device Center Help*.

Tip – If the GPS Pathfinder Office software is installed on the office computer, you can configure the Connection Manager utility in the GPS Pathfinder Office software to automatically detect when you connect a Juno series handheld to the computer. This enables you to automatically transfer data from the TerraSync software, differentially correct the data, and then export it to a GIS. For more information, refer to the *GPS Pathfinder Office Software Help*.

Managing the connection using ActiveSync technology

1. Connect the handheld to the computer (see page 53). The *Synchronization Setup Wizard* appears:
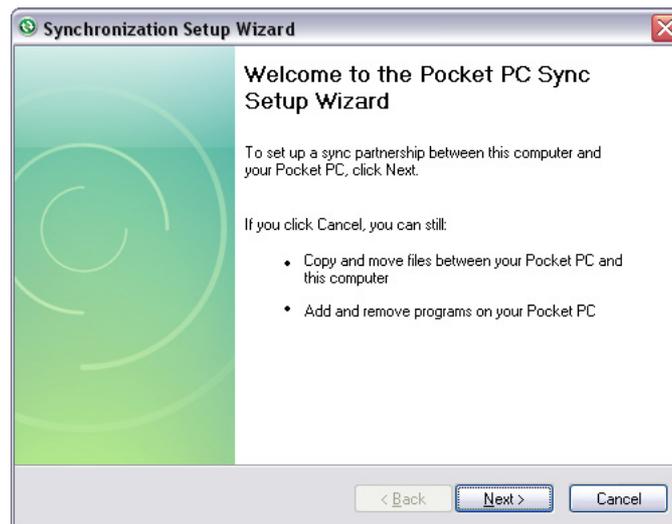
Note – *If the connection is not made automatically, check that the connection is enabled in the ActiveSync technology and on the handheld. For more information, see Troubleshooting, page 103.*

2. Do one of the following:

   – To synchronize files and data between the handheld and a computer, click **Next** and then follow the instructions in the *Synchronization Setup Wizard*.

   – To transfer data between the handheld and the computer without synchronizing the devices, click **Cancel** to close the wizard.

3. The *Microsoft ActiveSync* window displays the message **Connected**:
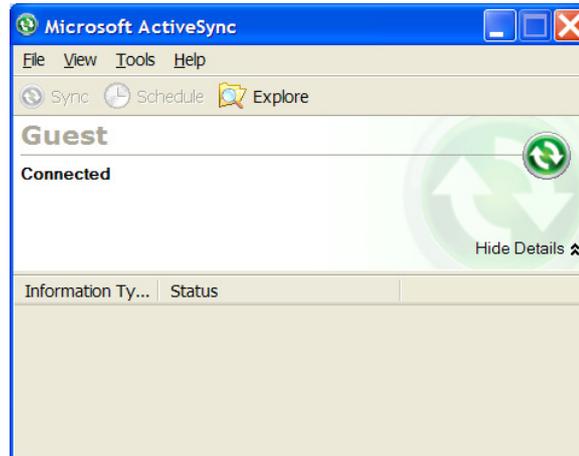
4. To transfer files between the computer and the handheld, click **Explore**. A Windows Explorer-type window appears, displaying files stored on the handheld. Copy and paste files to other locations on the computer, or from the computer to the handheld.

5. To install software onto the handheld, see Installing software onto the handheld, page 57.

6. To uninstall software from the handheld, select *Add/Remove Programs* from the *Tools* menu. Clear the check box beside the program you want to remove and then click **OK**.

For more information, refer to the *ActiveSync Help*.

☼ **Tip –** If the GPS Pathfinder Office software is installed on the office computer, you can configure the Connection Manager utility in the GPS Pathfinder Office software to automatically detect when you connect a Juno series handheld to the computer. This enables you to automatically transfer data from the TerraSync software, differentially correct the data, and then export it to a GIS. For more information, refer to the *GPS Pathfinder Office Software Help*.

Installing software onto the handheld

Before you begin, refer to the installation instructions provided with the software.

Some software installations are specifically designed to run on a Windows Mobile powered device. To install software that has a Windows Mobile installation setup:

1. Connect the handheld to a computer (see page 53).

2. Copy the installation files to a folder on the handheld.

3. Browse to the folder on the handheld. Tap and hold the installation setup file and then select Run.

4. If prompted after installation, perform a soft reset of the handheld (see page 30).

To install software that is provided on a CD, or as an installation setup that runs on an office computer:

1. Connect the handheld to a computer (see page 53).

2. If the software is provided on a CD, insert the software CD into the office computer.

3. Run the installation setup.

4. If prompted, select the install option for a Windows Mobile powered device. Once the software is installed on the computer, it is automatically transferred to the handheld.

Note – If a memory card is inserted in the handheld, the card appears as an installation location option. Trimble recommends that you install software to the handheld's storage memory, not to a memory card. If you install software to a card and then remove the card from the handheld, the software will not be available for use.

5. If prompted after installation, perform a soft reset of the handheld (see page 30).

Using the GPS Receiver

In this chapter:

The Juno series handheld includes an integrated GPS receiver that enables you to collect GPS data for incorporating into a GIS or for managing assets.

The Global Positioning System (GPS) is a satellite-based positioning system consisting of a constellation of operational NAVSTAR satellites that orbit the earth every 12 hours. This system provides worldwide, all-weather, 24-hour time and position information.

Note – To receive signals from GPS satellites, the handheld must have a clear view of the sky. GPS positions may not always be available, particularly in or near buildings, in vehicles, or under tree canopy.

Supported GPS field software

You can use the Juno series handheld with any of the software products described below.

TerraSync software

You can install version 3.30 or later of the TerraSync software on a Juno series handheld. Use the software to collect and maintain GIS and GPS data.

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

ESRI ArcPad software and the Trimble GPScorrect extension

You can install version 7.1.0 or later of the ESRI ArcPad software on a Juno series handheld. Use the software to collect and maintain GIS and GPS data. Detailed installation instructions for ESRI ArcPad software are provided in the ArcPad documentation.

To be able to differentially correct ArcPad GPS data, install version 2.42 or later of the Trimble GPScorrect extension for ESRI ArcPad software on a Juno series handheld.

You must install the ArcPad software *before* you install the GPScorrect extension.

Note – Make sure your version of the GPScorrect extension is compatible with the version of ArcPad software you are using. For more information, go to www.trimble.com/gpscorrect_ts.asp, click Support Notes and then search for the Mapping and GIS Product Compatibility List Support Note.

To install the GPScorrect extension, either insert the *Trimble GPScorrect Extension for ESRI ArcPad Software 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 *Trimble GPScorrect Extension Getting Started Guide*.

GPS Controller software

You can install version 2.21 or later of the GPS Controller software on a Juno series handheld. Use the software to configure and monitor the status of the internal GPS receiver.

To install the GPS Controller software, go to www.trimble.com/support.shtml. Click GPS Controller and then click Downloads. Click the link for the version you want to install and then follow the instructions in the Installation wizard.

Other GPS field applications

You can use the Juno series handheld with a custom application developed using version 2.32 or later of the Trimble GPS Pathfinder Tools Software Development Kit (SDK).

You can also use the Juno series handheld with any GPS field software that accepts NMEA messages.

Configuring the GPS field software to connect to the receiver

The first time you use GPS field software on the handheld, you may need to configure the software to connect to COM4, which is the GPS port on the handheld.

Connecting to the COM port

Details of how to configure different types of GPS field software to connect to the GPS COM port are as follows:

GPS field software	Configuration details
GPS Controller	Run GPS Controller. The software automatically activates the integrated GPS receiver on COM4.
TerraSync	Run Terrasync. The software automatically activates the integrated GPS receiver on COM4.
ArcPad with the GPScorrect extension	When the Trimble GPScorrect extension is installed, the extension automatically configures the ArcPad software to use the integrated GPS receiver on COM4 using the Trimble GPScorrect protocol. • To connect to GPS, tap the **GPS** button and then tap **Yes**. • To configure a real-time DGPS source, or to view status information, run the GPScorrect extension. To do this, tap the **GPScorrect** button in the Trimble toolbar.
ArcPad without the GPScorrect extension	1. In ArcPad, tap the **GPS** drop-down menu and then select *GPS Preferences* from the drop-down menu. Tap the *GPS* tab. 2. In the *Protocol* field, select NMEA 0183. 3. In the *Port* field, select COM4. 4. Tap **OK**. 5. Tap the **GPS** button and then tap **Yes**.
NMEA application	Configure the software to connect to GPS on COM4 and then use the Connect or Activate GPS command.

Using the GPS field software

Depending on the GPS field software you have installed, you can use the software to view satellite reception, configure logging settings, and collect features. For more information, refer to the rest of this chapter and the documentation for the GPS field software.

Starting the GPS field software

- Tap / *Programs* and then select the GPS field software, for example *GPS Controller*.

When you first open any Trimble GPS field software, the Skyplot section is displayed.

Viewing available GPS satellites

Use the graphical Skyplot section or the Satellite Info section in the Trimble GPS field software to view detailed GPS information.

Note – *To receive signals from GPS satellites, the handheld must have a clear view of the sky. GPS positions may not always be available, particularly in or near buildings, in vehicles, or under tree canopy.*
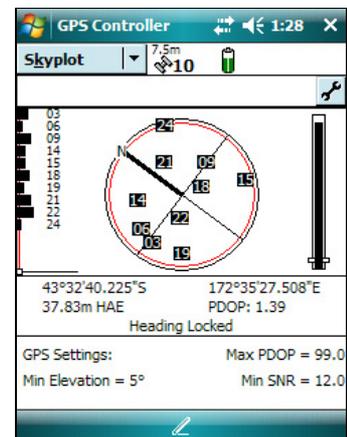
Resetting the GPS receiver

Trimble GPS field applications all have options to reset the receiver to:

- delete the almanac
- delete information stored on the last known position
- restart the receiver
- reset the GPS receiver to factory default settings

Performing a reset to factory defaults or a hard reset on the Juno series handheld will also reset the GPS receiver to factory default settings.

Ensuring the accuracy of your GPS data

The Juno series handheld has an integrated GPS receiver that provides accurate positioning with real-time or postprocessed differential correction of between two and five meters.

The accuracy that you obtain from your Juno series handheld is affected by a number of factors, including whether the data is differentially corrected in real-time or after data collection, and the availability of GPS satellites in the sky when you collect the data.

The list below identifies the most important settings and techniques that you can use in the field to improve the accuracy of your data:

1. If you are using TerraSync software to collect data, use accuracy-based logging. For more information, see page 63.

2. Use real-time differential SBAS corrections. For more information, see page 64.

3. Plan GPS data collection around the times of the day when satellite geometry is best. For more information, see page 65.

Using accuracy-based logging

If you are using the TerraSync software, use accuracy-based logging to ensure that only GPS positions that meet the specified estimated accuracy are logged. GPS positions that do not meet your accuracy requirements are not logged.

Note – *Accuracy estimates for streaming (dynamic) GPS positions may not be as good as those for static GPS positions.*

To configure accuracy-based logging in the TerraSync software:

1. In the Setup section of the TerraSync software, tap **Logging Settings**. The *Logging Settings* form appears.

2. Tap the **Setup** button 🔧 below the *Accuracy Settings* field. The *Accuracy Settings* form appears.

3. In the *Accuracy Value For Display/Logging* fields, select the parameters that will be used to determine the estimated accuracy:

    – Select whether to use the horizontal or vertical accuracy of the current GPS position.

    – Select *In the field* to use the current estimated accuracy (recommended if you are using a real-time correction source), or select *Postprocessed* to use the predicted estimated accuracy that will be achieved after the field data has been postprocessed.

4. If you selected *Postprocessed*, select the estimated distance to the base station that will be used for postprocessing from the *Postprocessing Base Distance* field. Set the *Use Accuracy-based Logging* field to *Yes*. The settings fields for accuracy-based logging appear.

5. In the *Apply Accuracy-based Logging To* field, select the feature types that you want to log only if the GPS positions meet your required accuracy.

6. In the *Required Accuracy* field, select the estimated accuracy that is required before GPS positions are logged.

7. Tap **OK**.
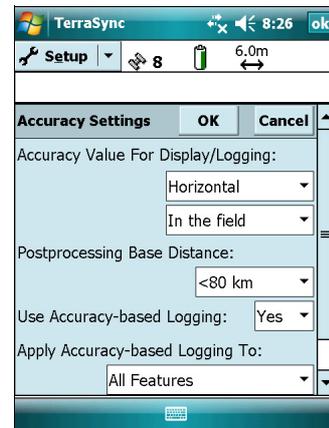
Note – *Accuracy settings do not affect GPS positions that are used for navigation. GPS positions are still calculated by the GPS receiver and are available for navigation.*

Connecting to a real-time differential correction source

Use a real-time differential GPS (DGPS) source to give you better accuracy as you collect data. For more information about how real-time differential GPS works, see Differential GPS explained, page 65.

Using SBAS corrections

The Juno series handheld has an integrated GPS receiver that uses Satellite Based Augmentation Systems (SBAS) correction messages to improve the accuracy and integrity of GPS data.

The SBAS tracking mode is Auto. In Auto mode, the receiver tracks or locks onto the most powerful satellite signal. The GPS receiver can track two SBAS satellites at the same time in Auto mode. It uses corrections from only one SBAS satellite at a time, but tracking two satellites can improve the availability of SBAS real-time corrections. For example, if you are working in environments where obstacles may block the direct line of sight to the SBAS satellite, there is less chance of signal loss if you are tracking more than one SBAS satellite.The receiver tracks SBAS satellites according to your geographical location:

- Wide Area Augmentation System (WAAS) satellites are tracked in the Continental United States including Alaska, and parts of Canada and Mexico.

- European Geostationary Navigation Overlay Service (EGNOS) satellites are tracked in Europe.

- MTSAT Satellite-based Augmentation System (MSAS) satellites are tracked in Japan.

Note – If you have other Trimble GPS field software installed, configure real-time correction settings in that application instead of the GPS Controller software.

To use SBAS corrections:

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

2. In the *Choice 1* field, select Integrated SBAS.

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

4. Tap **OK.**
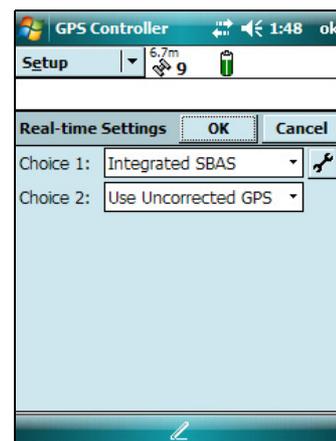
Planning a data collection session

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.

Note – If you have other Trimble GPS field software installed, use the planning feature in that application instead of the GPS Controller software.
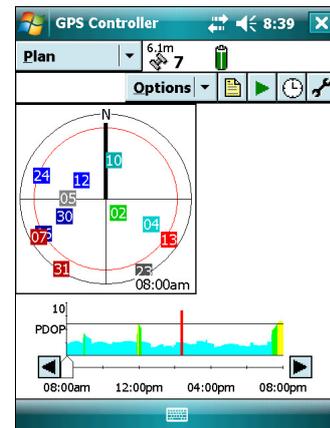
Differential GPS explained

Use differential GPS to correct errors in your collected data. Differential GPS (DGPS) requires one or more additional receivers, called ***base stations*** or reference stations, which are located at known points. Data collected at the base stations is used to determine GPS measurement errors and compute corrections to these errors. An unlimited number of mobile GPS receivers, called ***rovers***, collect GPS data at unknown locations within the vicinity of the base station. Errors common at both the base station and the rover receiver are corrected with DGPS either in real time or during postprocessing.

Real-time DGPS

In real-time DGPS, the base station calculates and broadcasts the error for each satellite as each measurement is received, enabling you to apply corrections while in the field and collect accurate GPS data. DGPS corrections are available from a variety of public and commercial sources. They can be generated and broadcast in real-time by privately or self-owned GPS base stations, or by a wide range of government agencies.

Real-time DGPS corrections can be used on the Juno Series handheld from Satellite Based Augmentation Systems (SBAS) such as WAAS in the US and EGNOS in Europe. SBAS uses multiple base stations to calculate the DGPS corrections that are then delivered to the user from a Geostationary satellite.

Factors that affect real-time DGPS accuracy include how often the corrections are updated, how far you are from the base station, and whether the coordinate system used by the correction source matches the coordinate system used by the GPS receiver.

Postprocessed DGPS

In postprocessed DGPS, the collected GPS data is transferred to an office computer, and measurements from the base station are downloaded. You can postprocess GPS data collected with Trimble GPS field software using:

- the GPS Pathfinder Office software version 4.10 (with the latest updates) or later.

- the Trimble GPS Analyst extension for ESRI ArcGIS software version 2.10 (with the latest updates) or later.

Factors that affect the accuracy of postprocessed DGPS include the type of receiver and antenna used at the base station, the distance between the base station and the location where the rover data was collected, the accuracy of the base station position, and the logging interval at the base station.

For more information, refer to the documentation provided with the postprocessing software.

Postprocessed real-time DGPS

The accuracy of positions using the Juno series handheld is within 2 to 5 meters, whether it is corrected in real-time or postprocessed. The accuracy cannot be improved beyond this by postprocessing real-time SBAS corrected positions.

However, if your data files contain autonomous (uncorrected) positions as well as real-time corrected positions, Trimble recommends that you postprocess the data. During postprocessing, you can choose whether to correct only autonomous positions, or all positions.

For more information about GPS and DGPS, go to www.trimble.com/gps and review the All About GPS tutorial.

Outputting NMEA data

You can use the Juno series handheld's integrated GPS receiver with any GPS field software that accepts NMEA messages.

If you connect to the GPS receiver using Trimble GPS field software, by default the NMEA output is switched off.

Note – You can only configure NMEA data output using the GPS Controller software. The software is provided free from the Trimble website. For more information, see GPS Controller software, page 60.

To enable NMEA data to be output:

1. In the *GPS Settings* form, set the *NMEA Output* field to **On**.

2. Tap the **Setup** button ![wrench icon] that appears next to the *NMEA Output* field. The *NMEA Output Settings* appears.

3. Configure the NMEA message output settings.

4. Tap **OK**.

For more information, refer to the *GPS Controller Help*.
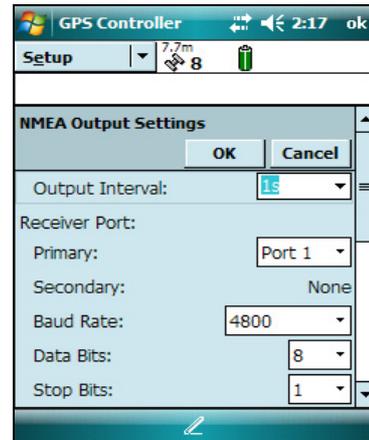
Note – NMEA data can only be used by applications installed on the handheld. There is no method to output NMEA data to an external device.

Using the Camera

In this chapter:

The Juno series handheld contains an integrated digital camera, which can be used to capture pictures or video.

Parts of the camera

Figure 6.1   Juno series handheld – camera controls

Starting the camera application

To start the camera, do one of the following:

1. Press the Camera button on the right side of the device.

2. Tap ⊞ / *Programs* / *Pictures & Videos* / *Camera*.

When the camera application is started, it is by default in Image Capture mode.

3. To capture a video or an image, press the Camera button.

Note – As the camera has autofocus, there will be a slight delay between pressing the camera button and the photo being taken. Continue to hold the camera still until you hear the 'click'.

4. To stop recording of a video, press the Camera button again.

Camera settings

To access the camera settings, tap the screen while in the camera application.

The camera's current settings are displayed as icons on the screen. Tap the required icon to change its setting.

The settings that are available will vary depending on whether you are in Image mode or Video mode.

To exit the camera settings and record an image or video tap the screen or press the **Camera** button.

Image settings

Video settings

Table 6.1   Camera settings

Camera mode	Setting	Icon	
Image and video	Exit Camera application		
Image and Video	Operating mode		Video capture
			Image capture
Image and Video	File storage location		MicroSD card
			Device memory
Image and Video *Video only allows 320×240 to be selected	Resolution ***Note –*** *The larger the resolution, the larger the file size. Taking a picture with a larger resolution may take longer to capture; continue to hold the camera button until you hear the 'click'.*		

Table 6.1   Camera settings (continued)

Camera mode	Setting	Icon	
Image and Video	White balance. Set according to user environment to ensure accurate image color.		Cloudy
			Indoor
			Outdoor
			Auto
Image and Video	Exposure		Night
			Day
Image and Video	Brightness adjustment. Select plus numbers to lighten the image; select minus numbers to darken the image.		-2.0
			-1.0
			±0
			+1.0
			+2.0
Image	Image review		On
			Off
Image	Quality adjustment		Low
			Medium
			High
Image	Focus		Macro
			Normal
Video	Mute		On
			Off

Using the Zoom function

The **Zoom** button can be used in both the Image and Video capture modes, as outlined in the table below. The current zoom level is indicated in the top left corner of the screen.

Resolution		1.0	1.2	1.4	1.6
Image	320×240	✓	✓	✓	✓
	800×600	✓	✓	✓	✓
	1280×960	✓	✓	✓	✗
	1600×1200	✓	✓	✗	✗
	2048×1536	✗	✗	✗	✗
Video	320×240	✓	✓	✓	✓

Managing images

To view and manage images, click on the Album [icon] icon to access Pictures & Videos.

To return to using the camera from Pictures &Videos, tap **Camera**.

Getting Connected

In this chapter:

- General wireless connection information
- Options for connecting wirelessly to other devices and networks
- Bluetooth wireless connections explained

The Juno series handheld includes an integrated wireless LAN radio and an integrated Bluetooth radio, and provides a number of options for connecting to networks and other devices. In addition, the Juno SC handheld includes an integrated cellular modem for sending and receiving data.

This chapter describes how to enable the radios, and the main connectivity options available.

Use the table on to identify the wireless connection type you want to make and then follow the steps provided to connect to that device.

You can use the handheld's integrated wireless LAN radio to connect to the Internet or a corporate network using a wireless LAN (Local Area Network) connection.

Alternatively, you can use Bluetooth wireless technology to connect to the Internet using a cellular phone, or to other Bluetooth-enabled devices such as a laser rangefinder, or a barcode scanner.

The cellular modem in the Juno SC handheld can be used to communicate between field and office and send email messages using a data connection from your local cellular provider.

General wireless connection information

The Juno series handheld has an integrated wireless LAN radio compliant with IEEE 802.11 b/g and an integrated Bluetooth radio. The Juno SC handheld also has a cellular modem. To use the wireless LAN, Bluetooth radio, or cellular modem, you need to turn it on (see Turning on and turning off the integrated radios below).

Turning on and turning off the integrated radios

You can use the Wireless Manager application to turn on and turn off the Juno series handheld's wireless LAN radio and/or Bluetooth radio (see page 76).

You can use the Modem Control application to turn on and turn off the Juno SC handheld's cellular modem (see page 77).

You can also turn on or turn off the Bluetooth radio from within the Bluetooth application (see Turning on and turning off the Bluetooth radio from within the Bluetooth application, page 79).

To make the Juno series handheld visible to other Bluetooth-enabled devices and enable them to connect, see page 80.

Using the Wireless Manager

You can use the Wireless Manager application to turn on and turn off the Juno series handheld's wireless LAN radio and/or Bluetooth radio. You can turn on and turn off both radios at the same time, or control each radio individually.

To open the Wireless Manager, do one of the following:

- Tap the Wi-Fi icon or the Bluetooth icon in the *Today* screen.
- Tap , , or in the title bar and then tap *Wireless Manager*.
- Tap / *Settings* / *Connections* / *Wireless Manager*.

Turn on the wireless LAN radio and/or Bluetooth radio to be able to connect to other devices or networks.

Turn off the wireless LAN radio and/or Bluetooth radio to prevent the handheld from sending or receiving wireless signals.

Tip – To conserve power, turn off the wireless LAN radio and/or the Bluetooth radio when not in use.

To turn on or turn off the radios using the Wireless Manager

1. Open the Wireless Manager (see above).

2. Do one of the following:

   – Tap **All** at the top of the screen to turn on both radios, or to turn off both radios if they are already on.

   – Tap **Wi-Fi** or **Bluetooth** to turn on the radio that you want to use, or to turn off the radio if it is already on.

   The status fields below the **Wi-Fi** button and the **Bluetooth** button change from *Off* when the radios are turned on and show the current state of the radio. The Wi-Fi status field shows *Connecting* or *Available*, and the Bluetooth status field shows *On* or *Visible*.
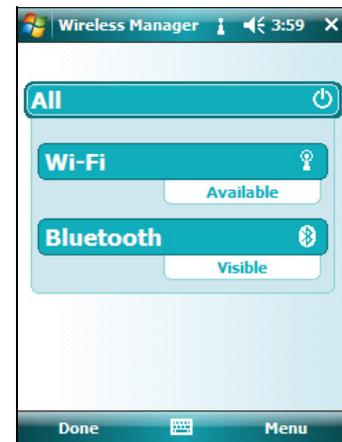
3. Tap **Done** to exit the Wireless Manager.

After you turn on the wireless LAN radio, the wireless LAN icon 📶 appears in the title bar to indicate that the wireless LAN radio is enabled. A second icon 📶 appears if a wireless LAN network is detected, and a Notification for the detected network may appear in the left softkey.

Using the Modem Control

You can use the Modem Control application to turn on and turn off the Juno SC handheld's cellular modem, enter a PIN for the SIM card, or change the dial string to connect with the cellular network.

To open the Modem Control:

• Tap the *Modem Status* indicator in the *Today* screen.

Turn on the cellular modem to be able to connect to a cellular network.

Turn off the cellular modem to prevent the handheld from sending or receiving wireless signals.

💡 **Tip –** To conserve power, turn off the cellular modem when not in use.

To turn on or turn off the modem using the Modem Control

1. Open the Modem Control (see above)

2. To change the status from *On* to *Off*, tap **Modem Power Off**.

After you turn on the cellular modem, the Modem Status icon will change from 📶 to indicate the type of network coverage. For more information, see Modem status indicators, page 38.

Setting a PIN

You can help to keep data secure by configuring your SIM card with a PIN (personal identification number). You will need to enter the PIN each time the modem is turned on.

Most SIM cards are preset with a PIN that is assigned by your wireless service provider. You will need to enter this PIN first.

To set a PIN, the modem must already be turned on.

1. Open the Modem Control (see above).

2. Tap **PIN Settings**.

3. Enter the preset PIN assigned by your wireless service provider.

4. Tap **OK**.
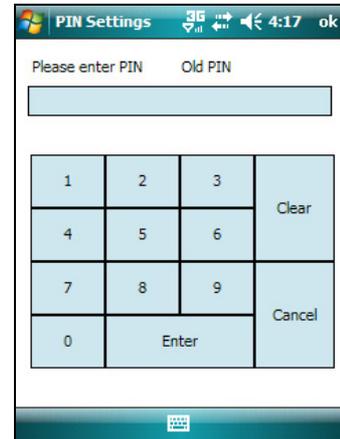
To configure the modem to always require a PIN:

• Select the *Require PIN when modem is used* check box.

To change a PIN:

1. Tap **Change PIN**.

2. Enter the current PIN before entering the new PIN.
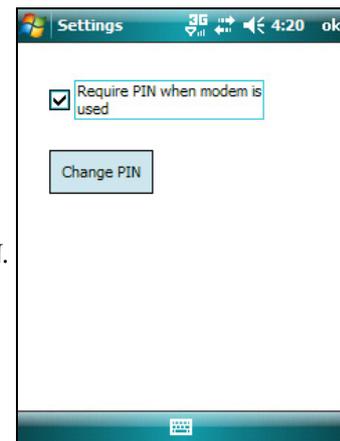
Dial string editor

Some carriers do not require a custom dial string to establish an Internet connection. Your service provider can provide you with specific connection details, which may include:

- A username and password.

- The carrier's access point name (APN).

- The "phone number" required to establish a connection.

- Any additional required dial string.
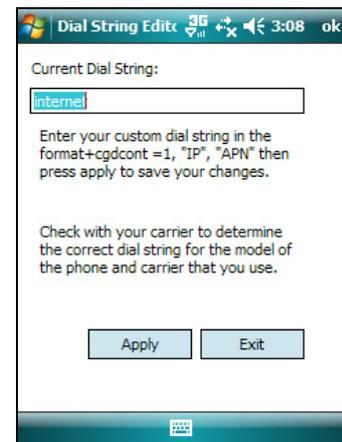
To configure the dial string settings:

1. Enter the custom dial string in the format AT+cgdcont=1,"IP","APN"<CR> where APN is the access point name of your carrier.

2. Tap **Apply** to save your changes.

3. Tap **OK** to close the Dial String Editor.

When you set up a new Internet connection, the custom dial string that you have just saved is sent to the modem when you attempt to connect to the Internet.
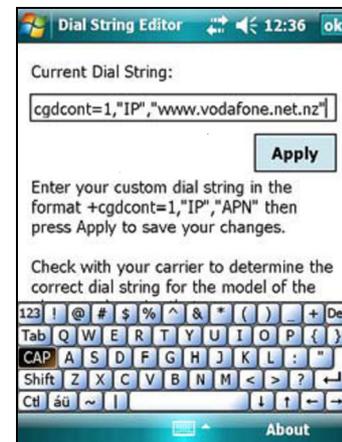
Turning on and turning off the Bluetooth radio from within the Bluetooth application

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

2. Tap the *Mode* tab.

3. Select the *Turn on Bluetooth* check box to turn on the radio, or clear this check box to turn off the radio.

4. Tap **OK**.
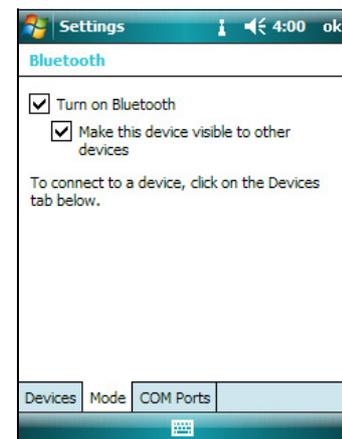
Making the handheld visible (discoverable) to other Bluetooth devices

To allow other Bluetooth-enabled devices to connect to the Juno series handheld, or if the handheld will not connect to or pair with another device you are attempting to connect to, you must make the handheld visible (this is sometimes referred to as "discoverable").

To make the handheld *visible* to other devices:

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

2. Tap the *Mode* tab.

3. Select the *Turn on Bluetooth* check box, if it is not already selected. This enables the integrated Bluetooth radio.

4. Select the *Make this device visible to other devices* check box.

5. Tap **OK**.

Options for connecting wirelessly to other devices and networks

The Juno series handheld has an integrated wireless LAN radio and an integrated Bluetooth radio that you can use to connect to other devices and networks. In addition, the Juno SC handheld includes an integrated cellular modem for data connections.

A wireless LAN access point or the Juno SC handheld's integrated cellular modem can be used to connect to the Internet (at broadband speeds) or a corporate network to:

- browse the Internet or an Intranet
- send and receive email and instant messages
- access files on the network

Wireless LAN Access points are also known as "hotspots". Wireless LAN is often referred to as *Wi-Fi*.

You can use Bluetooth wireless technology to connect to other Bluetooth-enabled devices that are within range (typically within 5 m to 10 m of the handheld). You can connect to:

- Bluetooth-enabled devices such as cellular phones to access the Internet and receive data
- computers and other handheld devices to exchange files
- other devices such as a GeoBeacon receiver, laser rangefinder or barcode scanner

The following table lists devices you can connect to using the handheld, and where to find detailed information on how to achieve these connections.

Connection method	To...	See...
Wireless LAN	Connect to a wireless LAN access point	page 82
Juno SC cellular modem	Connect to a cellular network	page 83
Bluetooth wireless technology	Connect to another Bluetooth-enabled device (paired and non-paired connections)	page 85
	Connect to a Bluetooth-enabled phone for Internet access	page 88
	Connect to a Bluetooth-enabled serial device	page 92
	Connect to an office computer to use ActiveSync technology	page 94
	Beam files to or from another device	page 96
Wireless LAN or Bluetooth wireless technology or Juno SC cellular modem	Access a corporate network through your Internet connection	page 97

Connecting to a wireless LAN access point

To connect to a wireless LAN access point, you must:

1. Set up the wireless LAN connection

2. Connect to the wireless LAN network or access point.

Note – If you have installed a personal certificate on the handheld, you do not need to set up the wireless connection manually as described in Step 1. To connect to the network or access point go to Step 2: Connecting to the network or access point.

Step 1: Setting up the wireless LAN connection

1. Make sure that the Juno series handheld's wireless LAN radio is enabled (see page 76).

2. Tap ⊞ / *Settings / Connections / Network Cards.*

3. Select the *Wireless* tab.

   Any networks that you have already configured are displayed in the list of preferred networks.

4. To add a new network, tap *Add New.* To change the settings for an existing network, tap the network.

5. Enter the name of the network and other connection details and then tap **Next**.

6. Do one of the following:

   – To use authentication, select the authentication method from the *Authentication* list.

   – To use data encryption, select an encryption method from the *Data encryption* list.

   – To automatically use a network key, select the check box for *The key is automatically provided*. Otherwise, enter the network key.

7. Tap **Next**.

8. For increased security, select the *Use IEEE 802.1x network access control* check box and then configure additional authentication information.

9. Tap **Finish**.
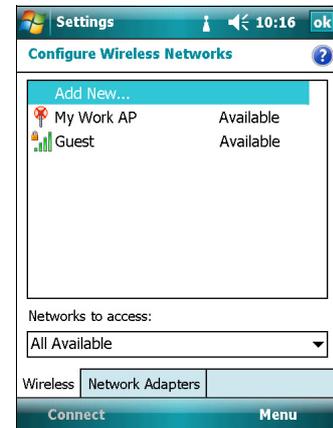
Step 2: Connecting to the network or access point

1. Disconnect the USB data cable as the handheld prioritizes a USB connection over a wireless LAN connection.

2. Bring the handheld within range of the network or access point.

When a wireless LAN is detected, the access point icon 📶 on the title bar is animated, and a notification message appears on the left softkey.

If the access point icon or the notification does not appear, use the Wireless Manager to turn off and then turn back on the wireless LAN radio. When the wireless LAN radio is turned on, any networks or access points within range are detected and the icon and notification appear.

3. Tap the access point icon on the title bar or tap **Notification** on the left softkey.

   A popup message shows the available networks.

4. Select the network you want to connect to and then tap **OK** on the left softkey.

5. Select *The Internet (or work via a VPN)* or *Work* and then tap **Connect** on the left softkey.

6. If a *Network Log On* screen appears, enter your user name, password, and domain information and then tap **OK** on the left softkey.

   When the handheld is connected to the network or access point, the wireless LAN connected icon 📶 appears in the title bar.

7. Start using the program you want to use, for example Windows Explorer Mobile or Internet Explorer.

*Note – To disconnect from the network or an access point at any time, turn off the handheld's wireless radio. To do this, tap the wireless LAN connected icon 📶 in the title bar, select **Wireless Manager** and then tap the **Wi-Fi** button.*

Tip – To delete a wireless LAN connection, tap and hold the connection in the *Wireless* tab of the *Network Cards* screen and then select *Delete*.

Connecting to a cellular network from the modem

Use the Juno SC handheld's cellular modem to connect to a cellular network and access the Internet or a company network. Use this type of connection to access a background map server, or for Internet and email access.

Note – The Juno SC handheld's cellular modem can only be used to transmit data, and does not have voice functionality or the ability to send SMS, MMS, or text messages (Multimedia Messaging Service). It is recommended to request the data-only plan from your service provider and have a "voice restriction" placed on your line.

To connect to a cellular network, you must:

1. Configure the connection to the network.

2. Connect to the cellular network.

Note – Before you begin the steps below, Trimble recommends that you confirm that the modem can access the Internet directly. If necessary, contact your service provider and confirm whether you must enter a user name, password, and domain details when connecting.

Step 1: Configuring the connection to the network

1. On the handheld, tap ⊞ / *Settings* / *Connections* / *Connections*.

2. Below **My ISP**, tap *Add a new modem connection*.

3. Enter the name for the connection.

4. From the *Select a Modem* dropdown list, select Internal Cellular Modem and then tap **Next** on the right softkey.

5. Enter the GPRS access number for the Internet.

    Two of the common GPRS access numbers for GSM networks are *99***1# and *99#. If these access numbers do not work, contact the cellular service provider to obtain the appropriate number to use.
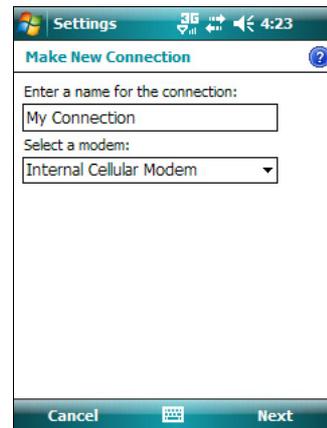
6. Tap **Next** on the right softkey.

7. Unless the phone provider confirmed that you must enter the user name, password, and domain settings to access the Internet, tap **Finish** on the right softkey without entering any information on this screen.

    Otherwise:

    a. Enter the required information.

    b. If the service provider has told you that you need to change the baud rate or other settings for the connection, tap **Advanced**, configure these settings and then tap **OK** in the top right corner of the screen.

    c. Tap **Finish** on the right softkey.

    You are returned to the *Connections* screen.

    You have now configured the connection.

Step 2: Connecting to the Internet using the cellular network

1. On the handheld, go to the *Connections* screen, if it is not already open (tap ⊞ / *Settings* / *Connections* / *Connections*).

2. Below **My ISP**, tap *Manage existing connections*.

3. Tap and hold the connection you want to use and then select *Connect*.

4. Unless the service provider already confirmed that you must enter the user name, password, and domain settings, to access the Internet, tap **OK** on the left softkey without entering any information on this screen. Otherwise, enter the required information and then tap **OK** on the left softkey.

5. The *Connectivity* icon 🔁 in the title bar appears as the connection is being made. Tap **OK** in the top right corner of the screen to close the *My ISP* screen.

6. Tap **OK** in the top right corner to close the *Connections* screen.

7.   Tap ⊠ in the top right corner to close the *Settings* screen.

To check the connection status at any time, tap the *Connectivity* icon ⊞ in the title bar.

To end the connection at any time, tap the *Connectivity* icon ⊞ in the title bar and then tap **Disconnect**.

The *Modem Status Indicator* in the *Today* screen indicates the signal strength and connectivity status within the cellular network. For more information, see page 38.

To connect to a corporate network or Intranet, see page 98.

To send and receive email messages, see Messaging, page 48.

To configure the GPS field software to use data received from an Internet source, see page 91.

Connecting to a Bluetooth-enabled device

To use another Bluetooth-enabled device with the Juno series handheld, you must form a Bluetooth connection between the two devices, during which you select the type of service to use for the connection. This defines how the devices will communicate with each other.

After forming the Bluetooth connection between the devices you may need to configure settings for the connection such as the COM port for the field software to use, or the number for the phone to dial. You must then connect to the other device using the appropriate software application.

To connect the Juno series handheld to another Bluetooth-enabled device, you can use either a paired connection or a non-paired connection.

Note – If you are connecting to a phone, skip this section and go to Connecting to a Bluetooth-enabled phone for Internet access on page 88, where the pairing step is described as part of the procedure for connecting to a phone.

Trimble recommends using a paired connection, if pairing is supported by the other device, as a paired connection creates a more secure connection and makes reconnecting to the device easier. For more information, see Pairing with a Bluetooth-enabled device below.

Some devices do not support paired connections. Use a non-paired connection if the device does not have a keyboard, and if you know that the device does not automatically exchange a pre-programmed passkey during pairing. For more information, see Setting up a connection to a non-paired device, page 87.

To connect the Juno series handheld to the other device, do one of the following:

•   Pair with a Bluetooth-enabled device (see below)

•   Set up a connection to a non-paired device (see page 87)

Pairing with a Bluetooth-enabled device

Pairing the handheld with another Bluetooth-enabled device creates a permanent security bond between the devices, which helps to exchange information securely between the devices. The paired relationship is established when two devices create and exchange a link key. Once the relationship is established, 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 visible to other devices.

To pair with a Bluetooth device:

1. Make sure that the handheld and the Bluetooth device you want to pair with are within five meters of each other, and that the Bluetooth radio in each device is turned on.

2. On the Juno series handheld, tap 🔲 / *Settings* / *Connections* / *Bluetooth*.

3. In the *Devices* tab, tap *Add new device*. The handheld searches for other Bluetooth devices and displays them in the list.

    If the device you are trying to connect is not displayed in the list, ensure that the device is on and within range and then tap **Refresh** to search for devices again.

4. Tap the name of the device you want to pair with and then tap **Next** on the right softkey.

5. In the *Passcode* field, enter a passcode of between 1 and 16 characters. If you are connecting to:

    –   a device with a keypad, enter a passcode of your choice.

    –   a device without a keypad, but you know that the device has a pre-programmed passcode that will be exchanged, enter that passcode on the Juno series handheld.

Note – Trimble recommends that you enter only numbers, as some devices do not support passcodes that include letters.

6. Tap **Next** on the right softkey.

7. When prompted, enter the same passcode on the other device.

Note – For more information on the types of devices that the Juno series handheld can connect to, and the supported Bluetooth services, see Connecting to a Bluetooth device as a client, page 99.

8. Tap **OK** in the top right corner of the screen to close the Bluetooth application.

9. Tap ❎ in the top right corner to close the *Settings* screen.

You have now created a partnership between the Juno series handheld and the other Bluetooth-enabled device so that they can communicate. To start using the connection, you must complete the configuration steps for that type of connection and then connect to the device. For more information, see:

- Connecting to a Bluetooth-enabled phone for Internet access, page 88

- Connecting to a Bluetooth-enabled serial device, page 92

- Connecting to an office computer to use ActiveSync technology, page 94

Tip – You only need to pair the handheld with a device before you connect to the device for the *first* time.

Setting up a connection to a non-paired device

Setting up a connection to a non-paired device enables you to connect to a device that does not allow you to enter a passcode on the device, or that does not automatically exchange a pre-programmed passkey during pairing.

To set up a non-paired connection to a Bluetooth-enabled device:

1. Make sure that the handheld and the Bluetooth device you want to connect to are within five meters of each other, and that the Bluetooth radio in each device is turned on.

2. Tap ![icon] / *Settings* / *Connections* / *Bluetooth*.

3. In the *Devices* tab, tap *Add new device*. The handheld searches for other Bluetooth devices and displays them in the list.

4. Tap the name of the device you want to connect to and then tap **Next** on the right softkey.

    The *Enter Passcode* screen appears.

5. Tap **Next** without entering a passcode.

6. If prompted to add the device to your device list, tap **No**.

Note – For more information on the types of devices that the Juno series handheld can connect to, and the supported Bluetooth services, see Connecting to a Bluetooth device as a client, page 99.
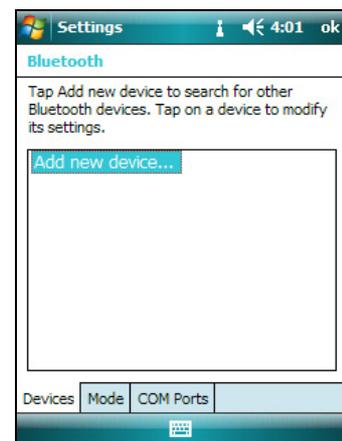
7. Tap **OK** in the top right corner of the screen to close the Bluetooth application.

8. Tap ![x icon] in the top right corner to close the *Settings* screen.

You have now created a partnership between the Juno series handheld and the other Bluetooth-enabled device so that they can communicate. To start using the connection, you must complete the configuration steps for that type of connection and then connect to the device. For more information, see:

- Connecting to a Bluetooth-enabled phone for Internet access, page 88

- Connecting to a Bluetooth-enabled serial device, page 92

- Connecting to an office computer to use ActiveSync technology, page 94

Connecting to a Bluetooth-enabled phone for Internet access

If your model of Juno series handheld does not contain an integrated cellular modem, you can use the handheld's Bluetooth radio to connect to a Bluetooth-enabled cellular phone and then connect to the Internet. Use this type of connection to access a background map server, or for Internet and email access.

Note – Some cellular phones support the Bluetooth PAN (Personal Area Networking) service as well as the Bluetooth DUN (Dialup Networking) service. Because DUN connections are more common, this section assumes you are making a dialup network connection with the Bluetooth-enabled phone.

To connect to a Bluetooth-enabled phone using a Bluetooth DUN (Dialup Networking) connection, you must:

1. Connect the Juno series handheld to a Bluetooth-enabled phone and then configure the connection to the dialup network.

2. Connect to the Internet using the dialup network.

3. Configure the software to use the connection. For example, you must configure the GPS field software to use map data received from the Internet source, or you must set up the Messaging application to send and receive email using the connection.

Note – Before you begin the steps below, Trimble recommends that you confirm that the phone can access the Internet directly. If necessary, contact the cellular phone provider and confirm whether you must enter a user name, password, and domain details when connecting an external device to the phone using Bluetooth dialup networking.

Step 1: Connecting the handheld to the phone and configuring the connection to the dialup network

1. Make sure that the handheld and the Bluetooth device you want to connect to are within five meters of each other, and that the Bluetooth radio in each device is turned on. For more information, see Turning on and turning off the integrated radios, page 76.

2. On the handheld, tap ⊞ / *Settings* / *Connections* / *Connections*.

3. Below **My ISP**, tap *Add a new modem connection*.

4. Enter the name for the connection.

5. From the *Select a Modem* dropdown list, select **Bluetooth** and then tap **Next** on the right softkey.

6. If the phone you want to connect to is:

    –   listed, go to Step 7 below.

    –   not listed:

        a. Tap *Add new device*. The handheld searches for other Bluetooth devices and displays them in the list.
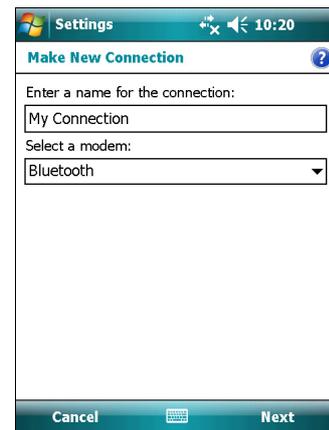
            If the handheld's integrated Bluetooth radio is turned off, it is now automatically turned on.

        b. From the list of available devices, select the device you want to connect to and then tap **Next** on the right softkey.

        c. To pair with the phone, enter a passcode of your choice that you will easily remember onto the handheld and then tap **Next** on the right softkey.

        d. When prompted by the phone, enter the same password and then accept the connection.

            You have now created a partnership between the Juno series handheld and the phone so that they can communicate.

7. From the *My Connections* list, select the phone that you want to configure the connection to.

8. Enter the GPRS access number for the Internet.

    Two of the common GPRS access numbers for cellular phones on GSM networks are *99***1# and *99#. If these access numbers do not work, contact the cellular phone provider to obtain the appropriate number to use.

Note – You do not need to set up dialling rules or change the Internet connection settings on the phone. The connection settings you enter on the handheld are passed to the phone to use for this connection.

9. Tap **Next** on the right softkey.

10. Unless the phone provider confirmed that you must enter user name, password, and domain settings to access the Internet, tap **Finish** on the right softkey without entering any information in this screen.

    Otherwise:

    a. Enter the required information.

    b. If the phone provider has told you that you need to change the baud rate or other settings for the connection, tap **Advanced**, configure these settings and then tap **OK** in the top right corner of the screen.

    c.   Tap **Finish** on the right softkey.

You are returned to the *Connections* screen.

You have now configured the dialup networking connection.

Step 2: Connecting to the Internet using the dialup network

1. On the handheld, go to the *Connections* screen, if it is not already open (tap 🪟 / *Settings* / *Connections* / *Connections).*

2. Below **My ISP**, tap *Manage existing connections.*

3. Tap and hold the connection you want to use and then select *Connect.*

4. Unless the phone provider confirmed that you must enter user name, password, and domain settings to access the Internet, tap **OK** on the left softkey without entering any information in this screen. Otherwise, enter the required information and then tap **OK** on the left softkey.

5. If the phone prompts for confirmation to connect to the Internet, accept the connection.

   The phone dials the configured GPRS access number and then connects to the Internet.

   A Connectivity notification appears on the handheld as the connection is being made.

   After the connection is made you are returned to the *My ISP* screen.

   To confirm that the Juno series handheld is connected to the phone, or to check the status of the connection at any time, tap the Connectivity icon 🔗 in the title bar. The notification shows the name of the current connection, and the time elapsed since the connection was made. To hide the notification, tap **Hide**.

Note – If you have an active wireless LAN connection, the connectivity icon appears as 📶 instead.

6. Tap **OK** in the top right corner of the screen to close the *My ISP* screen.

7. Tap **OK** in the top right corner to close the *Connections* screen.

8. Tap ✖ in the top right corner to close the *Settings* screen.

To check the connection status at any time, tap the 🔗 or 📶 icon in the title bar.

To end the connection at any time, tap the 🔗 or 📶 icon in the title bar and then tap **Disconnect**.

To connect to a corporate network or Intranet, see page 97.

To send and receive email messages, see Messaging, page 48.

Step 3: Configuring the GPS field software to use data received from the Internet source

Now that you have connected the Juno series handheld to the Internet, you must configure the software to use the connection to receive data.

Downloading background map files from an Internet map server

1. Make sure that the coordinate system selected in the TerraSync software matches the coordinate system of the map server.

2. In the Map section of the TerraSync software, pan or zoom to make sure that the area for which you want a background image is displayed on the map.

    If the map server covers the area you are in, it will provide a background image that matches the current map extents.

3. Tap **Layers** and then select *Background files*. The *Background Files* form appears.

4. In the *Location* field select Internet and then use the fields that appear to specify the Map Server type, the URL of the server, the service, and the layers from that service that you want to download.

5. Tap **OK** to close the *Background File* form and download the selected background map.

    This may take some time. When a download is in progress, an icon ⟳ appears in the top left corner of the map. Once the background file is downloaded, the hourglass icon appears until the downloaded image is rendered and becomes visible.
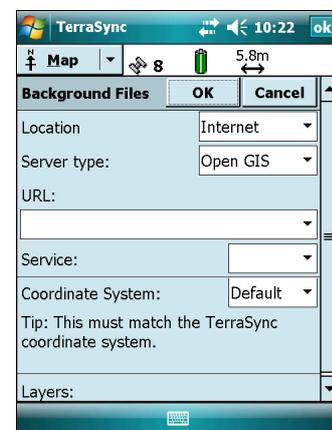
If you pan or zoom beyond the extents of the downloaded image, new images are downloaded automatically and displayed in the background of the map.

To stop automatic downloading of background files, either clear the address of the map server from the *URL* field, or set the *Location* field to Default and then clear the check box next to any files.

Reconnecting to the Internet

To reconnect to the Internet at any time after setting up the connection, repeat the steps listed under

Connecting to a Bluetooth-enabled serial device

Use Bluetooth wireless technology to receive data from a Bluetooth-enabled serial device, such as a laser rangefinder.

To connect to a Bluetooth-enabled serial device, you must:

1. Connect to the Bluetooth-enabled serial device.

2. Configure the COM port on the handheld to use for the connection.

3. If necessary, configure the GPS field software to use data received from the serial device.

Step 1: Connecting to the Bluetooth-enabled serial device

Connect the handheld to the Bluetooth-enabled device, selecting the *Serial Port* service if it is not already selected (see Connecting to a Bluetooth-enabled device, page 85).

Step 2: Configuring the COM port to use on the handheld

1. On the Juno series handheld, tap ⊞ / *Settings* / *Connections* / *Bluetooth*.

2. Tap the *COM Ports* tab.

3. Tap *New Outgoing Port*.

4. Select the device you want to set up the connection to and then tap **Next** on the right softkey.

5. Select the COM port on the Juno series handheld to use for the connection.

   The Juno series handheld has four COM ports (COM6, COM7, COM8 and COM9) available for connections out to Bluetooth-enabled serial devices.

6. Do one of the following:

   – To communicate with any device, for example if you have formed this connection without pairing to a device, clear the *Secure Connection* check box.

   – To communicate only with devices with which the handheld has a Bluetooth partnership, select the *Secure Connection* check box.

7. Tap **Finish** on the right softkey.

8. Tap **OK** in the top right corner to close the Bluetooth application.

9. Tap ⊠ in the top right corner to close the *Settings* screen.
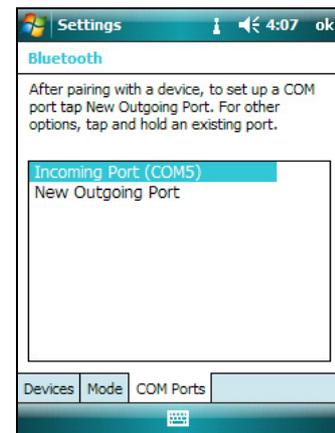
Step 3: Configuring the GPS field software to use data from the serial device

Once you configure the connection between the Juno series handheld and the Bluetooth-enabled serial device, you must configure the software to use the connection to receive data.

To use a Bluetooth-enabled external sensor such as a laser rangefinder or a barcode scanner in TerraSync software, see Using data from an external source in the TerraSync software, page 93.

Using data from an external source in the TerraSync software

To configure the TerraSync software to use data from an external source, for example, a laser rangefinder or barcode scanner:

1. Start the TerraSync software and then open a data file.

2. In the *Setup* section, tap **External Sensors**. The *External Sensors* form appears.

3. If you are connecting to:

   – a laser rangefinder, select the *Laser* check box and then tap the **Properties** button beside the *Laser* check box. The *Laser Properties* form appears.

   – a barcode scanner or other external sensor, select the *Sensor 1* or *Sensor 2* check box and then tap the **Properties** button beside the appropriate check box. The *Sensor Properties* form appears.

4. If you are connecting to a barcode scanner or other external sensor, enter a name for the connection in the *Name* field.

5. From the *Port* drop-down list, select the name of the COM port that you selected in the Bluetooth application when you set up the connection to the device.

6. Tap **OK** to confirm the sensor settings and return to the *External Sensors* form.

7. Tap **OK** to confirm the settings and return to the main screen of the Setup section.

8. The external sensor is now setup for use and can be used to add data as attributes into an open file in TerraSync. The device is automatically connected and disconnected when data files in TerraSync are opened and closed.
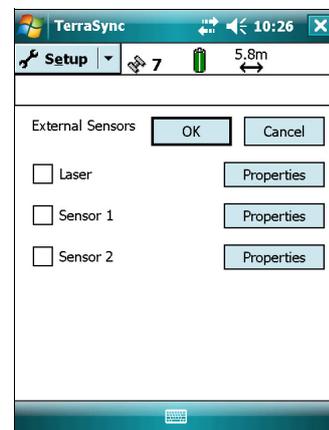
   To check the status of the connection, select the Comms subsection in the Status section of the GPS field software.

Connecting to an office computer to use ActiveSync technology

Instead of using a USB or serial cable to physically connect to an office computer, you can use Bluetooth wireless technology to connect to ActiveSync technology or the Windows Mobile Device Center on a Bluetooth-enabled office computer.

Note – Not all Bluetooth devices and Bluetooth management software support ActiveSync connections. Check with the manufacturer of the office computer for compatibility.

Note – The exact steps required may vary depending on the office computer.

To connect to a office computer to use ActiveSync with a Bluetooth connection, you must:

1. Set up the connection to the computer.

2. Connect to ActiveSync using Bluetooth wireless technology.

Step 1: Setting up the connection to the computer

1. From the Bluetooth user interface on the office computer, make sure that the computer allows itself to be discovered by other Bluetooth devices.

2. Configure the ActiveSync technology on the office computer to connect to the correct Bluetooth port. The steps required depend on the operating system installed on the office computer. If the office computer is using:

- the Windows Vista operating system:

   a. From the *Start* menu on the office computer, select *Control Panel / Hardware and Sound / Windows Mobile Device Center*.

   The *Connection Settings* dialog appears:

   b. Select the *Allow connections to one of the following* check box.

   c. From the list, select Bluetooth and then click **OK**.

- the Windows XP or 2000 operating system:

   a. From the Bluetooth user interface on the office computer, identify the virtual COM port of the host Bluetooth Serial Port or Local Service and ensure that this is enabled. In this example, the virtual COM port is COM5.

   b. Start the ActiveSync technology on the office computer.

   c. Select *File / Connection Settings*.

The *Connection Settings* dialog appears:
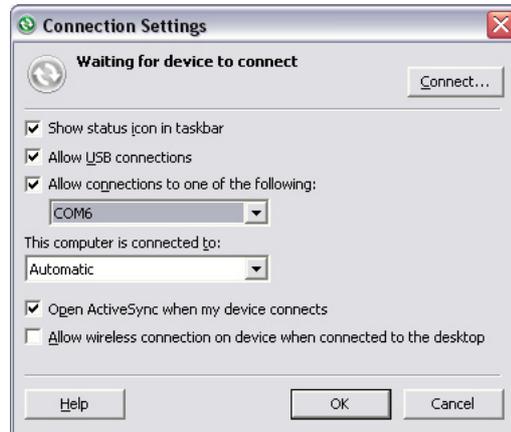
    d. Select the *Allow connections to one of the following* check box.

    e. From the list, select the COM port that you selected in Step a and then click **OK**.

Note – Before you try to form a Bluetooth connection from the Juno series handheld to the office computer, you must correctly configure the Bluetooth host serial port and ActiveSync technology on the office computer.

3. On the handheld, tap ⊞ / *Settings* / *Connections* / *Bluetooth*.

4. In the *Devices* tab, tap *Add new device*. The handheld searches for other Bluetooth devices and displays them in the list.

5. Tap the name of the computer you want to connect to and then tap **Next** on the right softkey.

6. When prompted, enter a passcode of your choice that you will easily remember on the handheld.

7. Enter the same passcode on the office computer.

8. On the handheld, select the *ActiveSync* check box in the list of services provided by the computer and then tap **Finish** on the right softkey.

    You have now created a partnership between the Juno series handheld and the office computer so that they can communicate.

9. Tap **OK** in the top right corner to close the Bluetooth application.

10. Tap ☒ in the top right corner to close the *Settings* screen.

    To connect to ActiveSync, see Step 2 on the following page.

Step 2: Connecting to ActiveSync using Bluetooth wireless technology

1.   On the Juno series handheld, tap 🎴 / *Programs* / *ActiveSync*.

2.   Tap **Menu** and then select *Connect via Bluetooth*.

     On the Juno series handheld, a message box shows the status of the connection as it is made.

3.   When the connection to the office computer is successful, you are returned to the ActiveSync application on the handheld.

4.   Tap ❌ to close.

     The connectivity icon in the status bar shows 🔁, or 🔁 if WLAN is connected.

     To check the status of the ActiveSync connection, tap the connectivity icon in the title bar.

     To disconnect, tap 🎴 / *Programs* / *ActiveSync* on the handheld and then select *Menu* / *Disconnect*.

Beaming files to or from another device

You can beam files, contacts, tasks, and appointments between the handheld and another device.

To *receive* beamed files from another device:

1.   Make sure that the Juno series handheld's integrated Bluetooth radio is turned on (see page 79).

2.   Tap 🎴 / *Settings* / *Connections*/ *Beam*.

3.   Select the *Receive all incoming beams* check box and then tap **OK**.

4.   When another device attempts to beam a file, you are prompted to accept the file. To receive the file, tap **Yes**.

Note – All incoming files are automatically saved in the My Documents folder on the handheld.
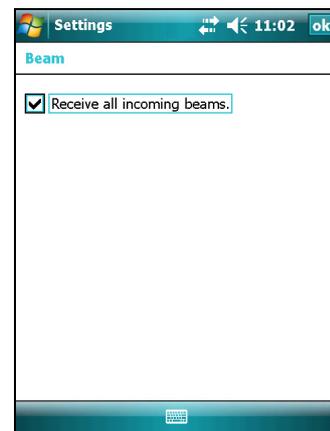
To *send* beamed files to another device:

1. Make sure that the Juno series handheld's integrated Bluetooth radio is turned on (see page 79).

2. On the Juno series handheld, open File Explorer and go to the file you want to send.

3. Tap and hold the file and then select *Beam File*. The handheld scans for nearby devices.

4. Tap the device you want to send the file to. The file is sent to the device.

    A message reports Done or Failed, depending on the outcome of the file transfer.
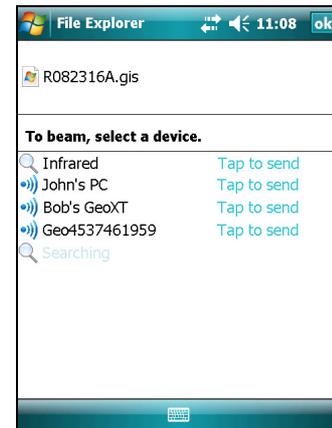
Accessing a corporate network through your Internet connection

Use a Virtual Private Network (VPN) connection to access a corporate network or Intranet.

Before you begin, obtain the following information from your network administrator:

*   user name and password

*   domain name

*   host name or IP address of the VPN server

To access a corporate network through your Internet connection, you must:

1. Set up an Internet connection on the handheld.

2. Set up a VPN connection.

3. Connect to the corporate network or Intranet.

Step 1: Setting up an Internet connection on the handheld

Do one of the following:

*   Set up a wireless LAN connection to an access point. For more information, see page 82.

*   Connect to the Internet using the internal cellular modem (Juno SC version only). For more information, see page 83.

*   Connect to the Internet using a Bluetooth-enabled phone. For more information, see page 88.

Step 2: Setting up a VPN connection

1. On the Juno series handheld, tap ▦ / *Settings* / *Connections* / *Connections*.

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

3. Follow the instructions in the *Make New Connection* wizard.

   To view additional information for any screen in the wizard, tap ❷.

4. Tap **Finish**.
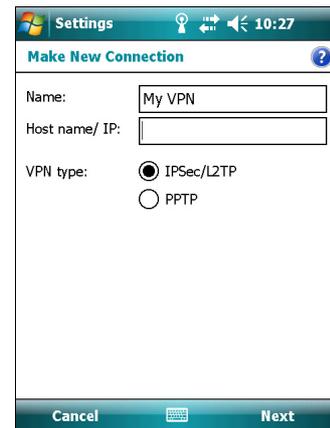
Step 3: Connecting to the corporate network or Intranet

To connect to the corporate network or Intranet, simply start using Internet Explorer.

The Windows Mobile operating system automatically controls whether the VPN connection is used, depending on whether the URL contains a period. For example, the URL www.trimble.com contains periods, and so the connection to this web site is made without using the VPN connection. However, an address to a network computer or file server that does not contain periods automatically starts the VPN connection.

If you need to use the VPN connection to access URL addresses that contain periods, specify exceptions for the addresses that are within the corporate network. To do this:

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

2. Tap the *Advanced* tab.

3. Tap **Exceptions**. The *Work URL Exceptions* screen appears.

4. Tap *Add new URL*.

5. Enter the URL and then tap **OK** in the top right corner of the screen.

6. Repeat Step 4 and Step 5 as required.

7. Tap **OK** in the top right corner of the screen to return to the *Advanced* tab of the *Connections* screen.

8. Tap **OK** in the top right corner of the screen to close the *Connections* screen.

9. Tap ✖ to close the *Settings* screen.
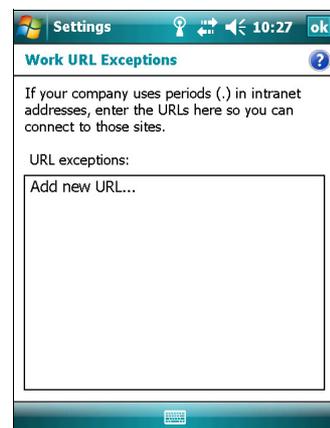
Bluetooth wireless connections explained

The Juno 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 cellular phones, office computers, other handhelds, and Bluetooth-enabled laser rangefinders and barcode scanners. You can also communicate with peripheral devices that use Bluetooth adaptors instead of serial or USB connections.

The Juno series handheld can act as a Bluetooth client device or a Bluetooth host device, and can act as both at the same time. The concepts of client and host devices are explained in detail below.

Connecting to a Bluetooth device as a client

You can use the Juno series handheld as a *client* device, which uses *services* offered by Bluetooth host devices that are within range. In general the *host* device provides information to the client device, but in some cases the client initiates the connection and also provides information to the host device.

The services used by a Juno series handheld when connecting as a Bluetooth client are:

Service	Description
Dialup Networking (DUN)	Connects the handheld to a cellular phone or modem for dial-up network or Internet access.
Personal Area Networking (PAN)	Connects to Bluetooth network access points or phones that support the Personal Area Network/Network Access (PAN) profile.
Serial Port	Emulates an RS-232 serial (COM) port on the handheld.
ActiveSync	Enables an ActiveSync connection to a computer.
Input Device (HID)	Connects the handheld to a physical input device, such as a keyboard.
Wireless Stereo	Connects to Bluetooth A2DP (Advanced Audio Distribution Profile) headphones.

A client can connect to a number of different services provided by different hosts. The number of active connections at any one time affects the speed of the connections. Figure 7.1 shows the handheld connected to different types of host devices using Bluetooth wireless technology.
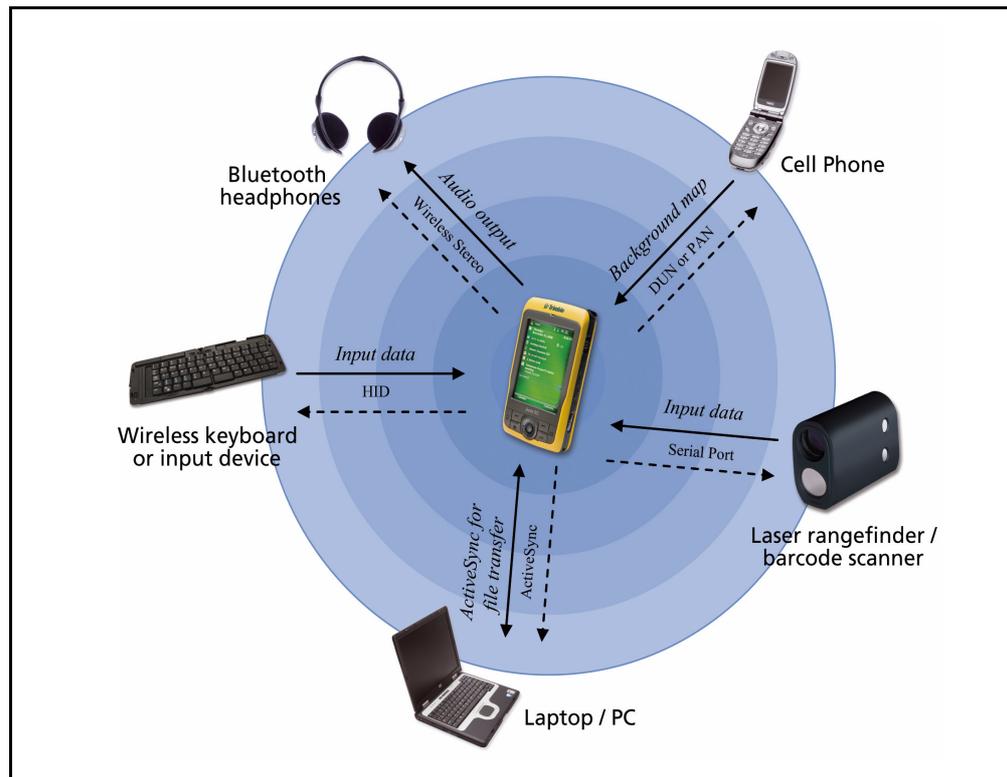
Figure 7.1 Juno series handheld Bluetooth client connections

In Figure 6.1, the dashed arrows indicate the client device—that is, the Juno series handheld—connecting to host devices. The Bluetooth profile (or service) used for the connection is shown between the arrows, for example, the **DUN** service is used for a connection to a cell phone, and the **Serial Port** service is used for a serial connection to a barcode scanner or laser rangefinder.

The solid arrows indicate the flow of information between devices. For example, when the Juno series handheld connects as a client to:

- a cellphone, the handheld uses the DUN or PAN host service provided by the phone to access the Internet and background map data.

- a laptop computer or office computer, the devices use the ActiveSync service to exchange information to and from either device.

- Bluetooth headphones, the handheld uses the Wireless Stereo host service provided by the headphones to play audio files and system sounds.

Providing Bluetooth services as a host

You can use the Juno series handheld as a Bluetooth host device, which provides services to Bluetooth client devices that are within range.

Host services provided by the Juno series handheld are:

Service	Description
Serial Port	Emulates an RS-232 serial (COM) port on the handheld.

To provide a host service, you must turn on the Bluetooth radio and make both devices visible to other devices (see page 76 and page 80).

When a client device connects to the Serial Port service provided by the Juno series handheld, applications on the handheld can use the pre-defined host serial port on COM5 to provide host services to the client device.

Troubleshooting

In this chapter:

- Power issues
- Backlight issues
- Touch screen issues
- Keypad issues
- Memory card issues
- Connection issues
- GPS receiver issues
- Real-time DGPS issues

Use this section to identify and solve common problems that may occur when using the Juno series handheld. Please read this section before you contact technical support.

Power issues

Problem	Cause	Solution
The handheld does not turn on.	The battery is flat.	Recharge the battery (see page 25).
The screen is blank.	The handheld is turned off.	Press the **Power** button to turn on the handheld.
	The handheld has locked up.	Reset the handheld (see Resetting the handheld, page 30).
The handheld is not charging.	The internal temperature has risen above the allowed maximum for charging the battery.	Do one or all of the following: • Turn off the integrated radios before charging the handheld. • Suspend the handheld before charging. • Remove the handheld from any external heat sources (for example, sunlight). The handheld will automatically start charging again when the internal temperature has dropped below the range for charging the battery.
	The USB cable provides only a minimal charge when an active connection to the computer is formed.	Recharge the battery using the AC adaptor or the vehicle adaptor.
The battery power percentage bar does not appear in the Power control.	The battery has 0% power.	Recharge the battery (see page 25). Once the battery level is above 0%, the battery power percentage bar reappears. Tap 🟦 / *Settings* / *System* / *Power* / *Battery* to view the level of power remaining in the battery.
The charge level of the battery drops when the handheld is turned off.	The handheld was left in Suspend mode or was left fully charged for a long duration.	Before storing the handheld, completely shut down the handheld (see Turning on and turning off the handheld, page 29). Then store the handheld as recommended (see Storage, page 18).

Backlight issues

Problem	Cause	Solution
The backlight does not come on when you tap the screen or press a button.	The backlight is not set to turn on in the Backlight control.	Tap 🟦 / *Settings* / *System* / *Backlight* to view the Backlight control, and make sure that: • the *Turn on backlight when a button is pressed or the screen is tapped* check box is selected. • the brightness is not set to *Dark* in the *Configure* tab.
The screen is blank or hard to see.	The backlight is off.	Tap the screen or press a button.
	The backlight level needs to be adjusted.	Tap 🟦 / *Settings* / *System* / *Backlight* to view the Backlight control and then adjust the slider in the *Configure* tab.

Touch screen issues

Problem	Cause	Solution
The touch screen does not respond to stylus taps.	The touch screen is incorrectly aligned.	Realign the screen (see page 46).
	The touch screen is locked.	To unlock the touch screen, tap **Unlock** in the menu bar of the *Today* screen.
	The handheld has locked up.	Reset the handheld (see Resetting the handheld, page 30).
The screen is blank.	The handheld is turned off.	Press the **Power** button to turn on the handheld.
	The battery is flat.	Recharge the battery (see page 26).
	The handheld has locked up.	Reset the handheld (see Resetting the handheld, page 30).
The screen is hard to see.	The backlight level needs to be adjusted.	Open the Backlight control and then adjust the backlight level (see Backlight, page 47).
	The backlight is off.	Tap the screen to turn on the backlight.
	You are unable to see parts of an application windows when the screen is in landscape orientation.	Some applications are designed for portrait orientation only. To view the entire application window, change the screen display to portrait.
	The selected display theme does not have enough contrast.	Select the High-Contrast display theme. Tap 🏁 / *Settings* / *Personal* / *Today*, select the High-Contrast theme and then tap **OK**.

Keypad issues

Problem	Cause	Solution
Pressing the application key does not activate the function shown on the softkey above it.	The hardware application key has been programmed to run another program or to perform another action.	Do one of the following: • Tap the touchscreen softkey to activate the function shown on the softkey. • Re-program the application key to perform the same action as the touchscreen softkey. To do this, tap 🏁 / *Settings* / *Personal* / *Buttons*, select the button to reprogram and then select <Left Softkey> or <Right Softkey>.

Memory card issues

Problem	Cause	Solution
The handheld does not recognize a memory card.	The handheld does not support SDIO (SD input/output) cards.	Use a microSD or microSDHC memory card.
Files on the memory card are not visible or are not able to be opened.	Files have been encrypted on another device and have a .menc file extension.	Remove encryption from the files (see Encrypting files on memory cards, page 33).

Connection issues

ActiveSync technology

Problem	Cause	Solution
ActiveSync technology will not connect to the handheld.	The connection is not initiated automatically.	Disconnect the USB cable from the computer and then reconnect the handheld to the computer. Alternatively, in the ActiveSync technology on the office computer, select *File* / *Connection Settings* and then tap **Connect**.
	ActiveSync does not recognize the Juno series handheld.	Restart the office computer.Disconnect the USB cable from the handheld, reset it (see Resetting the handheld, page 30) and then reconnect the handheld to the computer.
	An incompatible version of ActiveSync technology is installed.	ActiveSync version 4.5 and later is compatible with the Juno series handheld. If version 4.5 or later of the ActiveSync technology is not installed on the office computer, you can install it from the *Juno Series Getting Started Disc*.You can also download the latest version from the Microsoft website at www.microsoft.com/windowsmobile/activesync/default.mspx.
	The connection is not enabled in ActiveSync on the computer.	In the ActiveSync technology on the office computer, click *File* / *Connection Settings*. If you are using: • the support module, make sure that the *Allow USB connections* check box is selected from the drop-down list. • a Bluetooth connection, make sure that the correct port for Bluetooth is selected. Then open the Bluetooth control on the handheld. In the *Devices* tab, tap the partnership and in the services list make sure that the *ActiveSync* check box is selected.
	The connection is not enabled in ActiveSync on the handheld.	On the handheld, tap 🔲 / *Programs* / *ActiveSync* / *Menu* / *Connections*. Make sure that the *Synchronize all PCs using this connection* check box is selected, and that the correct option is selected.
	The handheld connection settings conflict with network settings or VPN client software.	If you are using the USB data cable, use the USB to PC utility to change the connection method the handheld uses to connect to ActiveSync on the computer. Tap 🔲 / *Settings* / *Connections* / *USB to PC Utility*. Clear the *Enable advanced network functionality* check box. The handheld stops using the default RNDIS method to connect to the ActiveSync technology.

Windows Mobile Device Center

Problem	Cause	Solution
Windows Mobile Device Center will not connect to the handheld.	The connection is not initiated automatically.	Disconnect the USB cable from the computer and then reconnect the handheld to the computer.. Alternatively, in the Windows Mobile Device Center software on the office computer, select *Mobile Device Settings* / *Connection Settings*.
	The Windows Mobile Device Center software does not recognize the Juno series handheld.	Restart the office computer. Disconnect the USB cable from the handheld, reset it (see Resetting the handheld, page 30) and then reconnect the cable to the handheld.
	The connection is not enabled in Windows Mobile Device Center on the computer.	In the Windows Mobile Device Center software on the office computer, click *Mobile Device Settings* / *Connection Settings*. If you are using: • the USB data cable, make sure that the *Allow USB connection* check box is selected from the drop-down list. • a Bluetooth connection, make sure that the correct port for Bluetooth is selected. Then open the Bluetooth control on the handheld. In the *Devices* tab, tap the partnership and in the services list make sure that the *ActiveSync* check box is selected.
	The connection is not enabled on the handheld.	On the handheld, tap 🔲 / *Programs* / *ActiveSync* / *Menu* / *Connections*. Make sure that the *Synchronize all PCs using this connection* check box is selected, and that the correct option is selected.
	The handheld connection settings conflict with network settings or VPN client software.	If you are using the USB data cable, use the USB to PC utility to change the connection method the handheld uses to connect to the Windows Mobile Device Center on the computer. Tap 🔲 / *Settings* / *Connections* / *USB to PC Utility*. Clear the *Enable advanced network functionality* check box. The handheld stops using the default RNDIS method to connect to the Windows Mobile Device Center.

Network connections

Problem	Cause	Solution
The Bluetooth connection with the cellular phone suddenly ends.	If you change the proxy settings of the handheld while connected to a cellular phone, the cellular phone ends the connection.	Make any changes to proxy settings before connecting to a mobile device.
Unable to connect to another Juno series handheld.	Data encryption settings are set incorrectly.	When setting up a peer-to-peer ad-hoc network with a WEP encryption, set a Network Key, rather than leaving the key blank to be provided automatically.

Bluetooth wireless technology

Problem	Cause	Solution
The handheld cannot discover a nearby Bluetooth device.	The device is out of range.	Move the devices closer to each other and then scan again.
	Bluetooth wireless technology is not enabled on one or both devices.	Make sure that the Bluetooth radio is turned on, on both the handheld (see page 79) and the other Bluetooth device.
	The device has not been made Discoverable.	Make sure that the Bluetooth device has been made Discoverable.
The COM port 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 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 *Devices* tab. Tap and hold the device name and then select *Delete*. Tap *New* to discover the device again.
	The Bluetooth radio has lost the connection.	Turn off the Bluetooth radio on the handheld and then turn on the Bluetooth radio (see page 79).
	Bluetooth file transfer interrupts the 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.

Wireless LAN connections

Problem	Cause	Solution
The "New Network Detected" notification does not appear automatically.	The wireless LAN radio is off.	Tap the wireless icon in the Today screen or go to the Wireless Manager and make sure wireless LAN is on.
	The handheld is out of range of the network.	Move to within range of the network, then tap ⊞ / *Settings* /*Connections* /*Network Cards* and then setup the connection.
The handheld cannot connect to a secure site.	The date on the handheld is incorrect.	Check that the handheld has the date set correctly on the *Today* screen. If the date is incorrect, tap the clock icon on the *Today* screen and then adjust the date and time.
You cannot configure an Internet connection.		
Within range of more than one network, you are not connecting to the network you would prefer to use.	The radio is connecting to the first network signal it has received.	Tap ⊞ / *Settings* /*Connections* /*Network Cards*. Tap and hold the network you would prefer to use and then select *Connect*.
The "New Network Detected" notification appears but the menu bar and soft key options are not displayed.	Some applications are not fully compatible with all features of the Windows Mobile 6 operating system.	Use the application buttons on the keypad, as they map to the soft keys in the menu bar: • To dismiss the notification, press the right application button on the keypad. • To connect to the network, press the left application button. Alternatively, select a Windows Mobile application from the *Start* menu, such as the *Today* screen or File Explorer, and the menu bar and soft keys will be displayed correctly.

GPS receiver issues

Problem	Cause	Solution
The handheld is not receiving GPS positions.	The integrated GPS receiver is not activated.	Use the Connect or Activate GPS command in the GPS field software to open the GPS COM port and activate the integrated GPS receiver. For more information, see Using the GPS Receiver, page 59.
	The GPS COM port is already in use. Only one application at a time can have the port open.	Do the following: • Exit the software that is using the GPS COM port and then retry in your application. • Check that a GPS application is not running in the background. Tap ⊞ / *Settings* / *Memory*, select Running Programs, and then select and close any GPS applications you are not using.
	The GPS field software is using the wrong GPS COM port.	Connect to COM4.
	Not enough satellites are visible.	Move to a location where the receiver has a clear view of the sky and ensure the antenna is not obstructed.
	Wait for real-time is selected in the GPS field software and the integrated receiver is waiting to receive real-time corrections.	If you are collecting data for postprocessing, clear the wait for real-time selection. Check that the real-time correction source is setup correctly (see Connecting to a real-time differential correction source, page 64).
	Handheld is lying on a metal surface.	The design and location of the GPS antenna have been maximized for GPS reception in a typical user environment. Locating the handheld on a metal surface without being in contact with the user may cause a decrease or loss of satellite reception. Hold the handheld for optimum reception.
NMEA data includes autonomous positions.	The integrated GPS receiver outputs autonomous positions when real-time corrections are unavailable.	Configure the NMEA application to filter out non-DGPS positions.

Real-time DGPS issues

Problem	Cause	Solution
The handheld is not receiving SBAS real-time corrections	The SBAS satellite is obstructed from view.	Check the location of the SBAS satellite in the Skyplot section of the GPS field software, and if possible move to a different location.
	You are outside the WAAS, EGNOS, or MSAS coverage area.	Wide Area Augmentation System (WAAS) satellites are tracked in the Continental United States including Alaska, and in southern parts of Canada. European Geostationary Navigation Overlay Service (EGNOS) satellites are tracked in Europe. MTSAT Satellite-based Augmentation System (MSAS) satellites are tracked in Japan.

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