



# USER GUIDE

## Juno™ ST handheld





**NORTH & SOUTH AMERICA**

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## **Juno™ ST handheld**

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Revision C  
May 2007



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### Release Notice

This is the May 2007 release (Revision C) of the *Juno ST Handheld User Guide*. The Juno ST handheld's operating system is based on the Microsoft Windows Mobile version 5.0 software (5.1.1702).

### Limited Warranty Terms and Conditions

#### Product Limited Warranty

Subject to the terms and conditions set forth herein, Trimble Navigation Limited ("Trimble") warrants that for a period of (1) year from date of purchase this Trimble product (the "Product") will substantially conform to Trimble's publicly available specifications for the Product and that the hardware and any storage media components of the Product will be substantially free from defects in materials and workmanship.

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Product software, whether built into hardware circuitry as firmware, provided as a standalone computer software product, embedded in flash memory, or stored on magnetic or other media, is licensed solely for use with or as an integral part of the Product and is not sold. If accompanied by a separate end user license agreement ("EULA"), use of any such software will be subject to the terms of such end user license agreement (including any differing limited warranty terms, exclusions and limitations), which shall control over the terms and conditions set forth in this limited warranty.

#### Software Fixes

During the limited warranty period you will be entitled to receive such Fixes to the Product software that Trimble releases and makes commercially available and for which it does not charge separately, subject to the procedures for delivery to purchasers of Trimble products generally. If you have purchased the Product from an authorized Trimble dealer rather than from Trimble directly, Trimble may, at its option, forward the software Fix to the Trimble dealer for final distribution to you. Minor Updates, Major Upgrades, new products, or substantially new software releases, as identified by Trimble, are expressly excluded from this update process and limited warranty. Receipt of software Fixes or other enhancements shall not serve to extend the limited warranty period.

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#### Warranty Remedies

If the Trimble Product fails during the warranty period for reasons covered by this limited warranty and you notify Trimble of such failure during the warranty period, Trimble will repair OR replace the nonconforming Product with new, equivalent to new, or reconditioned parts or Product, OR refund the Product purchase price paid by you, at Trimble's option, upon your return of the Product in accordance with Trimble's product return procedures then in effect.

## How to Obtain Warranty Service

To obtain warranty service for the Product, please contact your Trimble dealer. Alternatively, you may contact Trimble to request warranty service at +1-408-481-6940 (24 hours a day) or e-mail your request to [trimble\\_support@trimble.com](mailto:trimble_support@trimble.com). Please be prepared to provide:

- your name, address, and telephone numbers;
- proof of purchase;
- a copy of this Trimble warranty
- a description of the nonconforming Product including the model number; and
- an explanation of the problem.

The customer service representative may need additional information from you depending on the nature of the problem.

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## Notices

Class B Statement – Notice to Users. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. 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.

This device contains Bluetooth and wireless LAN radios and has been evaluated under FCC Bulletin OET 65C and found compliant with the requirements as set forth in CFR 47 Section 2.1093 addressing RF Exposure from radio frequency devices. The radiated output power of this device is far below the FCC radio frequency exposure limits.

The maximum SAR value measured from the device is: 802.11b wireless LAN: 0.553 mW/g.

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

## Canada

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.

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 the requirements for a Class B device pursuant to European Council Directive 1999/5/EC on R&TTE, thereby satisfying the requirements for CE Marking and sale within the European Economic Area (EEA). These requirements are designed to provide reasonable protection against harmful interference when the equipment is operated 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 Marking and sale within Australia and New Zealand.



## Taiwan – Battery Recycling Requirements

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



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## Notice to Our European Union Customers

For product recycling instructions and more information, please go to [www.trimble.com/ev.shtml](http://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

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**1.2 Companion CD.** A Companion CD is included with your Device and you may install and use the Microsoft® ActiveSync® component on one (1) or more computers to exchange information with one (1) or more computing devices that contain a compatible version of the Microsoft Windows Mobile® Version 5.0 operating system. For other software component(s) contained on the Companion CD, you may install and use such components only in accordance with the terms of the printed or online end user license agreement(s) provided with such component(s). In the absence of an end user license agreement for particular component(s) of the Companion CD, you may install and use only one (1) copy of such component(s) on the Device or a single computer with which you use the Device.

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- 3 - Microsoft Windows Mobile 2003 Software for Pocket PC, Professional Edition;
- 4 - Microsoft Windows Mobile 2003 Software for Pocket PC, Premium Edition;
- 5 - Microsoft Windows Mobile 2003 Software for Pocket PC, Premium with Phone Edition (GSM/GPRS) with Microsoft Outlook 2002;
- 6 - Microsoft Windows Mobile 2003 Software for Pocket PC, Premium with Phone Edition (GSM/GPRS);
- 7 - Microsoft Windows Mobile 2003 Software for Pocket PC, Premium with Phone Edition (CDMA/1xRTT) with Microsoft Outlook 2002;
- 8 - Microsoft Windows Mobile 2003 Software for Pocket PC, Premium with Phone Edition (CDMA/1xRTT).

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**3.2** Section 3.1 notwithstanding, if you acquired this product in Canada, this Agreement is governed by the laws of the Province of Ontario, Canada. In such case each of the parties to this Agreement irrevocably attorns to the jurisdiction of the courts of the Province of Ontario and further agrees to commence any litigation that may arise under this Agreement in the courts located in the Judicial District of York, Province of Ontario. If you acquired this product in the European Union, this Agreement is governed by the laws of The Netherlands, excluding its rules governing conflicts of laws and excluding the United Nations

Convention on the International Sale of Goods. In such case each of the parties to this Agreement irrevocably attorns to the jurisdiction of the courts of The Netherlands and further agrees to commence any litigation that may arise under this Agreement in the courts of The Hague, The Netherlands.

3.3 Trimble reserves all rights not expressly granted by this Agreement.

3.4 Official Language. The official language of this Agreement and of any documents relating thereto is English. For purposes of interpretation, or in the event of a conflict between English and versions of this Agreement or related documents in any other language, the English language version shall be controlling.

## DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2. 1077(a)



The following equipment:

Product Name : Juno ST  
Model Number : 69991-XX (X can be 0-9)  
Trade Name : Trimble

It's herewith confirmed to comply with the requirements of FCC Part 15 Rules.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

The result of electromagnetic emission has been evaluated by QuieTek EMC laboratory (NVLAP Lab. Code : 200533-0 ) and showed in the test report.


( Report No. : 072L108-ITUSP02V02 )

It is understood that each unit marketed is identical to the device as tested, and Any changes to the device that could adversely affect the emission characteristics will require retest.

The following importer / manufacturer is responsible for this declaration:

Company Name : Trimble Navigation Ltd  
Company Address : 935 Stewart Drive  
Sunnyvale, CA 94088-3642  
Telephone : +1 (408) 481 8000 Facsimile : +1 (408) 481 7372

Person is responsible for marking this declaration:

Alan R. Townsend	Vice President Field Solutions
_____ Name ( Full name )	_____ Position / Title
26 March 2007	
_____ Date	_____ Legal Signature



# Safety Information

## Radio use

The Juno ST handheld contains a Bluetooth radio and a WLAN (wireless LAN) radio. 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 the **Power** button.
- To turn off the Bluetooth and WLAN radios only, tap the Wireless Connectivity icon in the title bar of the *Today* screen and then tap *Wireless Manager*. Do one of the following:
  - To turn off both radios, tap **All**.
  - To turn off only one radio, tap either **Bluetooth** or **Wi-Fi**. The status of the radio changes to *Off*.

## Exposure to radio frequency radiation (radio wireless)

The radiated output power of the internal radio wireless is far below the FCC radio frequency exposure limits. The level of energy emitted is far less than the electromagnetic energy emitted by wireless devices such as mobile phones. However, the use of radio wireless 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 radio wireless.

## AC adaptor safety

To charge the handheld's battery, use the international adaptor kit provided with the Juno ST handheld (see [Powering the handheld, page 22](#)).



---

**WARNING** – To use AC adaptors safely:

- Use only the AC adaptor intended for the Juno ST handheld. Using any other AC adaptor can damage your product 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.
  - AC adaptors are designed for indoor use only. Avoid using the AC adaptor in wet outdoor areas.
  - Unplug the AC adaptor from power when not in use.
  - Do not short the output connector.
  - There are no user-serviceable parts in this product.
  - Should damage to the AC adaptor occur, replace it with a new Trimble AC adaptor.
-

## 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 22](#)). 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.
-

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# Introduction

## In this chapter:

- About the Juno ST handheld
- Use and care of the handheld
- What's in the box?
- Pre-installed programs
- Finding additional information
- Technical assistance
- Your comments

The *Juno ST Handheld User Guide* introduces the main features of the Trimble® Juno™ ST handheld and describes how to set up and use the handheld. The information provided in this guide supplements the information provided in the *Juno ST Handheld Quick Start Guide*, which you received with your handheld.

This guide describes how to:

- use Microsoft® Windows Mobile® version 5.0 software.
- 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](http://www.trimble.com)) for an interactive look at Trimble and GPS.

## About the Juno ST handheld

The Juno ST handheld is a small, lightweight field computer with an integrated GPS receiver.

The Juno ST 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. Powered by the Microsoft Windows Mobile version 5.0 software, the handheld provides mobility and flexibility between field and office.

The integrated GPS receiver provides accurate positioning information within 5 meters when using real-time or postprocessed differential correction. For more information, see [Using GPS, page 47](#).

### Supported GPS field software

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

- Trimble TerraSync™ software, for configuring real-time (SBAS) options and for productive GIS data collection and maintenance.
- The Trimble GPSCorrect™ extension for ESRI ArcPad software, for configuring real-time (SBAS) 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 (SBAS) options and NMEA output settings.
- Other GPS field software that accepts NMEA messages.

## Use and care of the handheld

The Juno ST handheld is a non-rugged device. To protect it when not in use, Trimble recommends storing the handheld in the carry case provided.

When using the handheld:

- Keep the outer surface free of dirt and dust.
- Keep the external antenna port and the SD memory card slot free of dirt and dust (see [Using an SD memory card, page 29](#)).
- Protect the touch screen by using the stylus provided and avoid using excessive pressure and sharp or abrasive objects.
- Be careful not to drop the handheld or subject it to any strong impact. Do not place the handheld in your back pocket.
- 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.

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:

1. Transfer any data that you need to a desktop computer (see [Connecting to an Office Computer, page 41](#)).
2. Press the **Power** button to turn off the handheld.
3. Store the handheld in a cool, dry place.

If the handheld has been stored for longer than six months, charge the battery before use (see [Powering the handheld, page 22](#)).

## What's in the box?

When you unpack your Juno ST handheld, check that you have received all the components, as detailed on the packing list and shown below.

















Figure 1.1 Items included with the Juno ST 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.

## Pre-installed programs

The following programs are pre-installed on the Juno ST handheld:

Program	Function
 ActiveSync	Synchronize information between the handheld and a computer.
 Calculator	Perform basic arithmetic functions.
 Calendar	Keep track of appointments and arrange meetings.
 Contacts	Keep track of your friends and colleagues.
 File Explorer	View and manage files.
 Internet Explorer	Browse the World Wide Web.
 Messaging (Inbox)	Write, send, and receive e-mail messages.
 Notes	Create handwritten, typed, or recorded notes.
 Pictures and Videos	Take, view, and edit pictures, or record and launch video clips.
 PowerPoint Mobile	View slide show presentations.
 Excel Mobile	Create and edit Excel spreadsheets.
 Word Mobile	Create and edit Word documents.
 Tasks	Keep track of your tasks.
 Windows Media	Play Windows Media or MP3 audio and video files.

For more information about using any of this software, refer to the Help for the software. See [Accessing help, page 33](#).

## Finding additional information

Sources of information in addition to the information provided in this guide include:

For more information on...	refer to...
Specifications for the Juno ST handheld	<a href="http://www.trimble.com/junost.shtml">www.trimble.com/junost.shtml</a>
GPS	<a href="http://www.trimble.com/gps/">www.trimble.com/gps/</a>
TerraSync software	<a href="http://www.trimble.com/terrasync.shtml">www.trimble.com/terrasync.shtml</a> , or the software documentation
ESRI ArcPad software	<a href="http://www.esri.com/arcpad">www.esri.com/arcpad</a> , or the software documentation
Trimble GPSCorrect extension for ESRI ArcPad software	<a href="http://www.trimble.com/gpscorrect.shtml">www.trimble.com/gpscorrect.shtml</a> , or the software documentation
GPS Controller software	the software documentation
GPS Pathfinder Office software	<a href="http://www.trimble.com/pathfinderoffice.shtml">www.trimble.com/pathfinderoffice.shtml</a> , or the software documentation
Trimble GPS Analyst™ extension for ESRI ArcGIS software	<a href="http://www.trimble.com/gpsanalyst.shtml">www.trimble.com/gpsanalyst.shtml</a> , or the software documentation
Windows Mobile software	<a href="http://www.microsoft.com/windowsmobile/default.mspx">www.microsoft.com/windowsmobile/default.mspx</a>
Windows Mobile Device Center	<a href="http://www.microsoft.com/windowsmobile/devicecenter.mspx">www.microsoft.com/windowsmobile/devicecenter.mspx</a> , or the Windows Mobile Device Center help
Microsoft ActiveSync® technology	<a href="http://www.microsoft.com/windowsmobile/activesync/default.mspx">www.microsoft.com/windowsmobile/activesync/default.mspx</a> , or the ActiveSync help

## Technical assistance

### Technical support

Go to the Juno ST handheld technical support page ([www.trimble.com/junost\\_ts.asp](http://www.trimble.com/junost_ts.asp)) 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 a solution to the problem, *contact your Trimble reseller*.

### Windows error reporting

If for any reason a Microsoft Windows Error Reporting dialog appears, indicating that your Trimble GPS field software has encountered a problem and needs to close, you are asked whether you wish 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 ST handheld.

### Your comments

Your feedback about the supporting documentation helps us to improve it with each revision. E-mail your comments to [ReaderFeedback@trimble.com](mailto:ReaderFeedback@trimble.com).



# Getting Started

**In this chapter:**

- [Parts of the Juno ST handheld](#)
- [Powering the handheld](#)
- [Turning on the handheld](#)
- [Locking the handheld](#)
- [Handheld buttons](#)
- [Resetting the handheld](#)
- [Storing data](#)

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

## Parts of the Juno ST handheld

The following pages show the main parts of the handheld.



Figure 2.1 Juno ST handheld – Front view

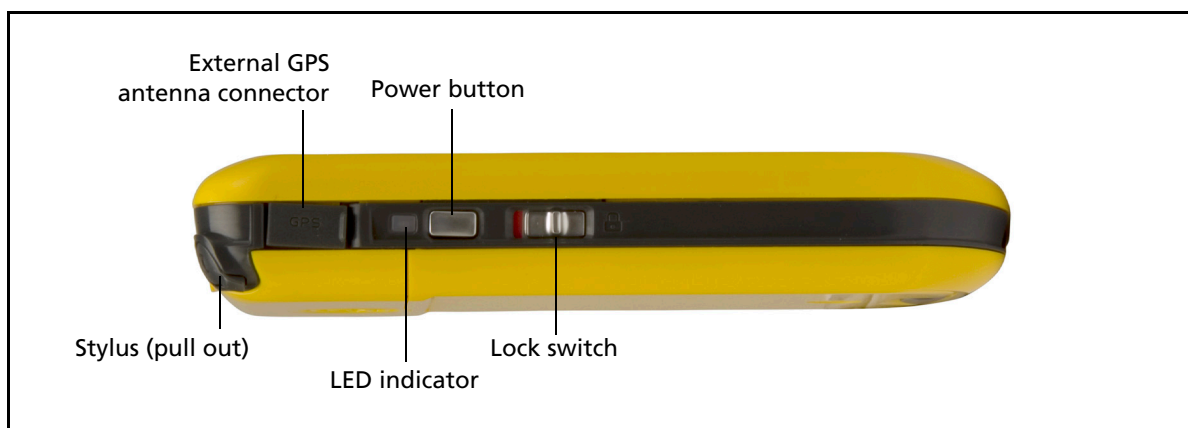


Figure 2.2 Juno ST handheld – Left view

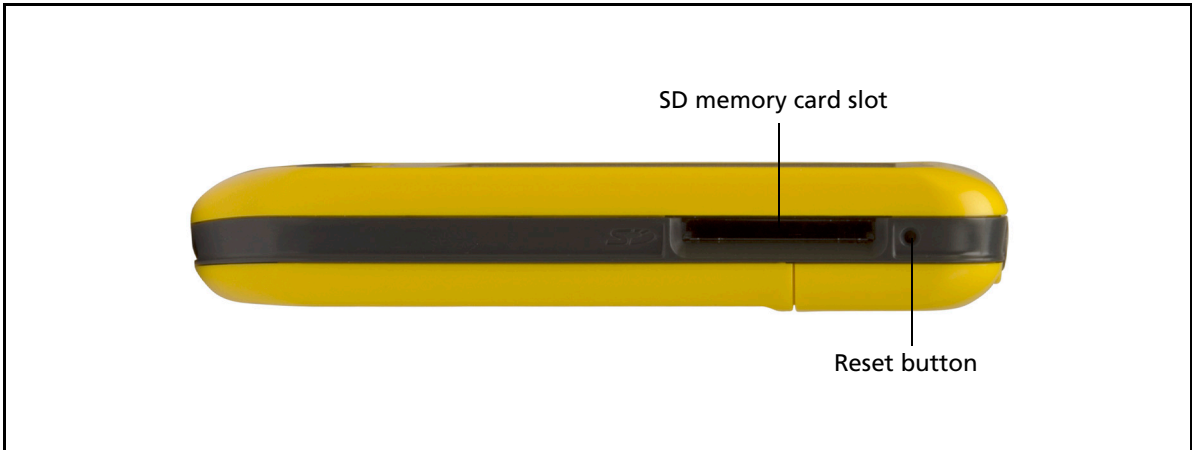


Figure 2.3 Juno ST handheld – Right view



Figure 2.4 Juno ST handheld – Back view

## Powering the handheld

A rechargeable Lithium-ion battery is provided with the Juno ST handheld.

**Note** – Insert the battery into the handheld and then 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.

### 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.
-

## AC adaptor safety



**WARNING** – To use AC adaptors safely:

- Use only the AC adaptor intended for the Juno ST handheld. Using any other AC adaptor can damage your product 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.
- AC adaptors are designed for indoor use only. Avoid using the AC adaptor in wet outdoor areas.
- Unplug the AC adaptor from power when not in use.
- Do not short the output connector.
- There are no user-serviceable parts in this product.
- Should damage to the AC adaptor occur, replace it with a new Trimble AC adaptor.

## 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 Microsoft Windows logo and then slide the back cover down to remove it.
2. To insert the battery, angle the bottom 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.

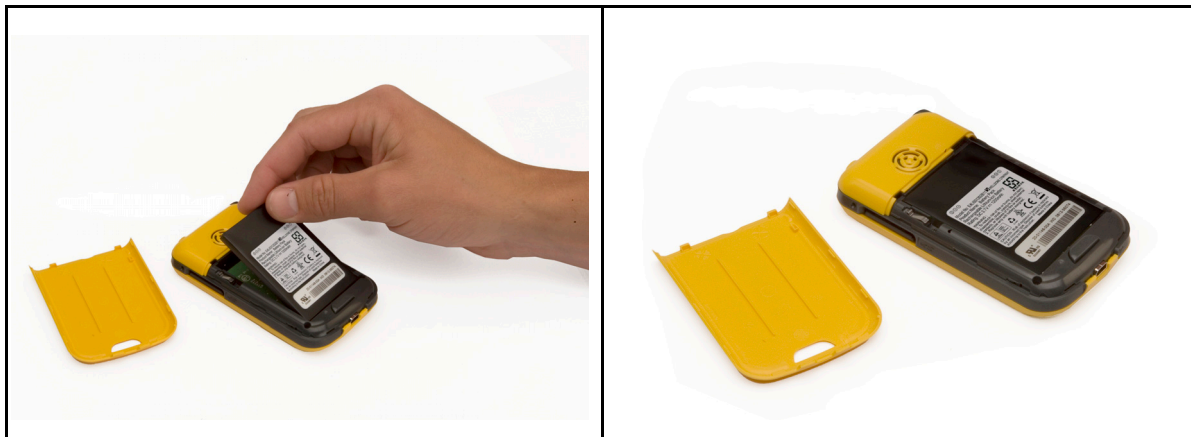


Figure 2.5 Inserting the battery

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 above the top right corner of the battery. Then pull the top of the battery towards you.

## Charging the battery

When fully charged, the handheld battery provides enough power for 6 hours using GPS and with the backlight on at the default settings. When not using GPS, but with the backlight on at the default settings, the battery provides enough power for up to 10 hours.


**Note** – *Using Bluetooth wireless technology or wireless LAN connectivity consumes additional battery power and so shortens battery life between charges.*

Charge the battery in the handheld (see [Inserting the battery, page 23](#)). To charge the battery, do one of the following:

- Connect the AC power adaptor to the Power/USB socket on the handheld and then connect the adaptor to mains power. An international adaptor kit is provided with the handheld.
- Connect the USB cable to the Power/USB socket on the handheld and then connect the USB cable to a USB socket on an office computer.

**Note** – *You can only use the USB cable to “top up” the battery. To charge the battery from a computer using the USB cable, the battery must have enough power to turn on the Juno ST handheld and form an active connection to the computer.*

- Connect the vehicle power adaptor to the Power/USB 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.

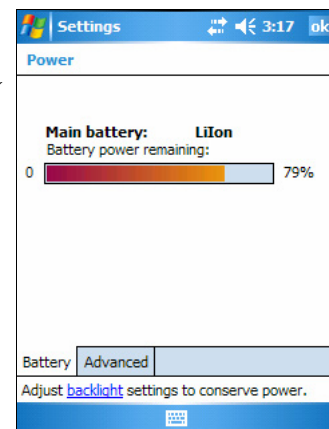
When the battery is:

- low, the LED indicator flashes red.
- charging, the LED indicator flashes green.
- charged completely, the LED indicator is steady green.

## Checking the level of battery power


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

When the handheld is connected to a power source, the battery icon in the *Today* screen changes to . 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 .

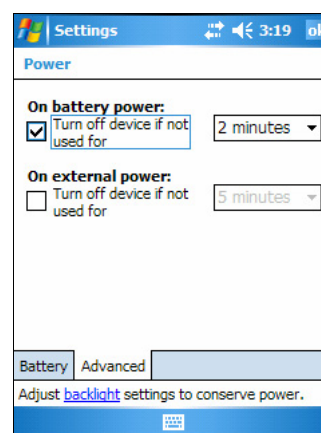
Back up your data and then recharge the battery.

## Automatic power off settings

By default, the handheld is set to turn off automatically if the handheld is not used for two minutes.

To change the time before the handheld automatically turns off:

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**.



## Conserving power

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

- Set the handheld to automatically turn off when idle. For more information, see [Automatic power off settings](#), above.
- Set the backlight to automatically turn off when the handheld is idle for a specified time. For more information, see [Backlight](#), page 39.

**Note** – Trimble GPS field applications override any automatic settings and keep the backlight and the handheld turned on while connected to the GPS receiver.

- Turn off the integrated Bluetooth or WLAN radios whenever you are not using them. For more information, see [Using the Bluetooth radio](#), page 61 and [Using the WLAN radio](#), page 57.
- Disconnect from the integrated GPS receiver when GPS data is not required, using the application's Disconnect or Deactivate GPS option. 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 the handheld

If the screen on the handheld is blank, the handheld is turned off. To turn on the handheld:

1. Make sure the handheld is not locked. The **Lock** switch should be in the up (Unlock) position. A red bar is visible on the Lock switch when it is in the locked position.
2. Press the **Power** button briefly.

To turn off the handheld, press the **Power** button briefly again.

To turn off the backlight while the handheld is turned on, press and hold the **Power** button for approximately two seconds.

## Locking the handheld

To lock the handheld screen and buttons, move the Lock switch *down* to the **Lock** position. A red bar is visible on the Lock switch when it is in the locked position. If the handheld is on when you lock it, the handheld turns off.

To unlock the handheld screen and buttons, move the Lock switch *up* to the **Unlock** position. The handheld is restored to the state it was in when locked. That is, if the handheld was:

- turned on when locked, unlocking the handheld turns it on.
- turned off when locked, unlocking the handheld unlocks the buttons only and leaves the handheld turned off.



**Tip** – To lock the handheld without turning it off, use the device lock option (see [Device lock](#), page 36).

## Handheld buttons

The Juno ST handheld provides four buttons for fast, easy access to commonly used Windows Mobile software applications. Use the Directional button to move around the screen easily or to perform the same action as an Enter key.

The table below provides information about each button.

Button	Icon	Function
Calendar		Displays the Calendar application.
Today		Displays the Today screen.
Contacts		Displays the Contacts application.
Messaging		Displays the Messaging application.
Directional button		Provides directional controls for moving around the screen and scrolling in various menus and applications. To perform the same action as an Enter key, press the center of the button.

## 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



Figure 2.6 Performing a soft reset

A soft reset is similar to rebooting 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 beside the SD card slot on the handheld.

### Performing a hard reset



Figure 2.7 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 performing 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 beside the SD card slot on the handheld.

## Resetting to factory default settings

**Note** – Reset the handheld to factory default settings only if performing 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 an SD memory card.



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

To reset the handheld to the factory default settings:




1. Press and hold the **Calendar** and **Contacts** buttons on the handheld.
2. While holding the buttons, use the tip of the stylus to lightly press the **Reset** button beside the SD card slot on the handheld.

Figure 2.8 Resetting the handheld to factory default settings

## Storing data

The handheld has two types of memory:

- **program** memory is similar to the RAM in a computer, and is used for running programs. You cannot use it to save data.
- **storage** memory is similar to the hard disk in a computer, and is used for storing programs and 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.

Settings			
Memory			
Storage		Program	
Total:	88.70 MB	Total:	54.00 MB
In use:	13.66 MB	In use:	19.70 MB
Free:	75.04 MB	Free:	34.30 MB
Main   Storage Card   Running Programs			
Find large files using storage memory.			

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** – Windows Mobile 5.0 software does not include a Recycle Bin. When you delete files from the flash disk, they are deleted permanently.

To protect your data, Trimble recommends that you save data to an SD memory card (see below) or regularly copy important data to your office computer. For more information about transferring files to an office computer, see [Connecting to an Office Computer](#), page 41.

## Using an SD memory card

To save data in an alternative location to the storage memory, the handheld has a **Secure Digital (SD) Memory Card** slot. You can use SD memory cards of up to 2 Gb to make copies of information and to securely transfer data to and from another device that has an SD memory card slot.

**Note** – The Juno ST handheld does not support SDIO (SD input/output) memory cards or SDHC (high capacity SD) memory cards.



**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 handheld's electronic components, such as a memory module. You can do so by touching an unpainted metal surface.



**CAUTION** – The presence of any dust or moisture in the SD slot may adversely affect the device and void your Trimble warranty. The handheld is shipped with a plastic dummy installed in the SD memory card slot. To help prevent dust or moisture entering the SD memory card slot:

- Retain the plastic dummy that is installed in the SD memory card slot, and reinsert the dummy when no SD memory card is installed in the slot.
- When inserting or removing an SD card, place the handheld on a dust-free indoor surface.

To insert an SD memory card:

1. Place the handheld on a dust-free indoor surface.
2. Remove the plastic dummy from the SD memory card slot and then insert the SD memory card into the slot.
3. Store the plastic dummy in a safe location for reuse after you remove the SD card.

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

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

To remove an SD memory card:

1. To eject the SD card from the SD card slot, push the card in.  
The card pops out.
2. Remove the card and, if you want to, insert a new SD memory card.  
Alternatively, reinsert the plastic dummy into the slot.





# Windows Mobile Software Basics

**In this chapter:**

- [Parts of the screen](#)
- [Using the stylus](#)
- [Accessing help](#)
- [Entering text](#)
- [Personalizing your handheld](#)

The Juno ST handheld's operating system is based on the Windows Mobile 5.0 software.

This chapter describes the main features of the Windows Mobile software.

## Parts of the screen

The main parts of the screen are shown below.

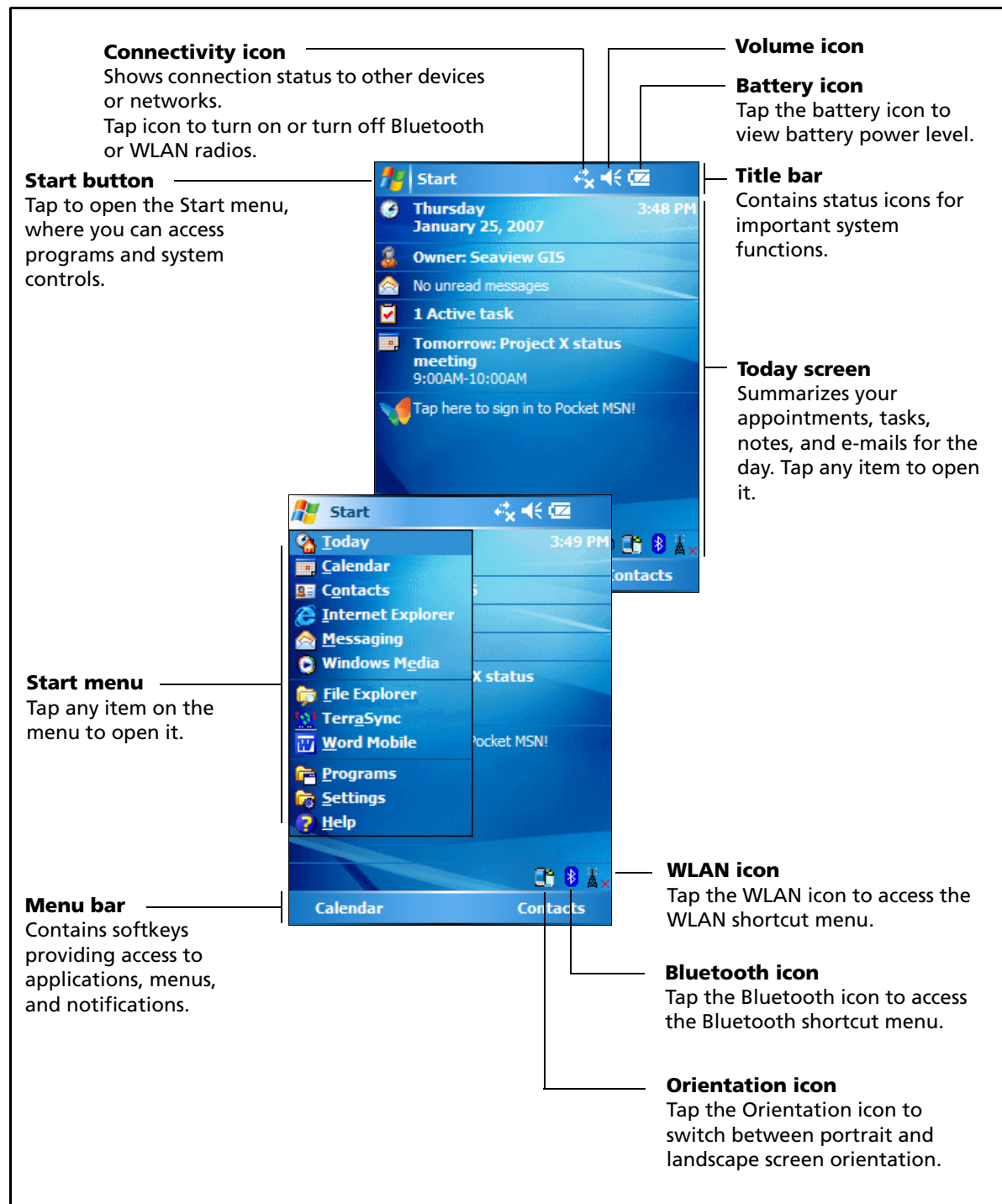


Figure 3.1 Parts of the screen

## Using the stylus



To interact with the handheld, use the stylus to tap on the touch screen. To use the stylus, remove it from its holder in the top left corner of the handheld, and hold the stylus as you would hold a pen or pencil.


There are three types of action you can perform with the stylus:

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

If at any time the touch screen does not respond properly to stylus taps, realign it. For more information, see [Screen](#), page 38.

## 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.

## Entering text


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

You can select how you want to enter text using the Input Panel. The Input Panel automatically appears in the menu bar of any application. The default selection is the on-screen keyboard.

To change the text input method:

1. In the menu bar, tap the arrow on the **Input Panel** button. (You may have to activate and then hide the keyboard for the arrow to appear.)  
A list of input methods pops up. The currently selected method is indicated by a check mark.
2. Tap the method you want to use to select it.

## Using the on-screen keyboard

To activate the on-screen keyboard, tap the keyboard icon  on the Input Panel displayed in the menu bar. The on-screen keyboard appears.

To enter text, tap the appropriate keys on the on-screen 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 hide the keyboard, tap the keyboard icon again.



Input panel showing keyboard icon

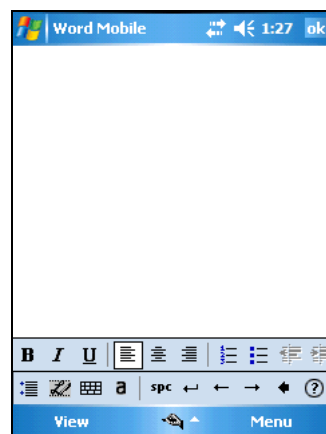
## Writing on screen

When you select Transcriber, you can write directly onto 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.

To select Transcriber:

1. Tap the arrow on the **Input Panel** button displayed in the menu bar. A list of input methods pops up.
2. Tap *Transcriber*. The *Transcriber Intro* dialog appears.
3. Tap **OK**.

The Transcriber icon  appears in the menu bar, and the Transcriber keyboard appears above the menu bar:



Transcriber keyboard

Input panel showing Transcriber icon

Transcriber has a number of tools and modes that allow you to customize how it works. These tools and modes are controlled from the Transcriber keyboard. For more information, refer to the Transcriber Help.

## Personalizing your handheld

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




### Today

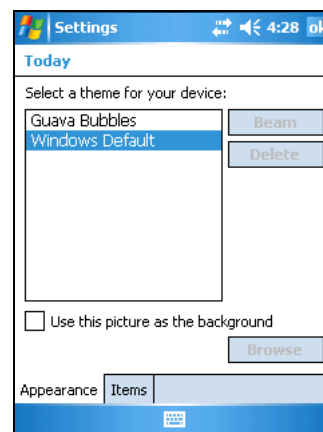
Use the Today control to change the display theme that controls the appearance of the *Today* screen, and to customize which items appear on the *Today* screen.

### 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**.

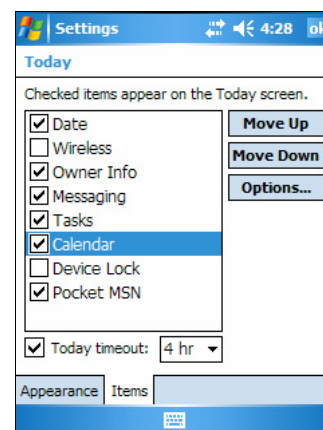


### Items


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

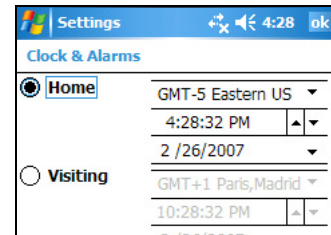
To change the items that appear on the *Today* screen:

1. Tap  / *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 . 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, from the *Today* screen tap *Device unlocked*. The *Today* screen shows *Device locked*, and the *Unlock* notification appears in the left corner of the menu bar.




**Tip** – If *Device unlocked* does not appear in the *Today* screen, you may need to add it to the items that appear in the *Today* screen. To do this, tap  / *Settings* / *Personal* / *Today*. Tap the *Items* tab and make sure that the check box next to *Device Lock* is selected.

Once the device is locked, the screen and keypad do not respond until the device is unlocked.

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

To unlock the device, in the *Today* screen tap the *Unlock* notification in the left corner of the 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  / *Settings* / *Personal* / *Lock* to set a password or to change password settings.

Alternatively, use the **Lock** button to turn off the handheld and lock the keypad (see [Handheld buttons, page 26](#)).



## Sounds and notifications

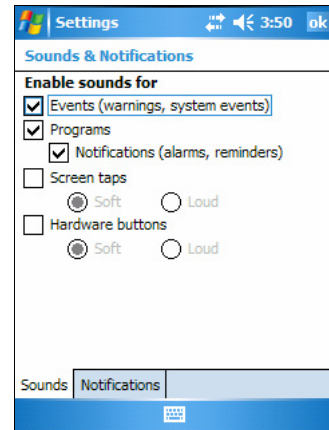
Use the *Sounds & Notifications* control to set preferences for the speaker volume and system sounds. To open the *Sounds & Notifications* control:

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

To turn sounds on or off:

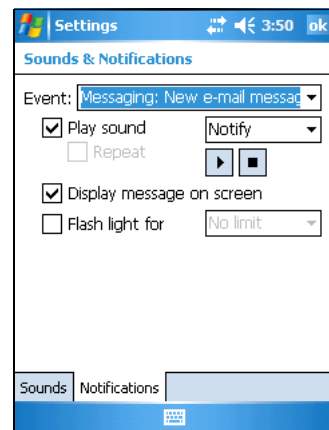
1. Tap the *Sounds* tab.
2. Select or clear the check boxes to enable or disable categories of sounds.
3. If you select the *Screen taps* or *Hardware buttons* check boxes, select the *Soft* or *Loud* option to control the volume of the sounds.
4. Tap **OK**.

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 from the available options the type of notification you want to receive for the selected 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**.

To enable ClearType:

Using ClearType font smoothing can make text easier to read on the screen.

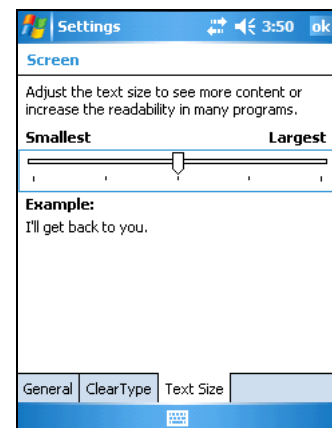
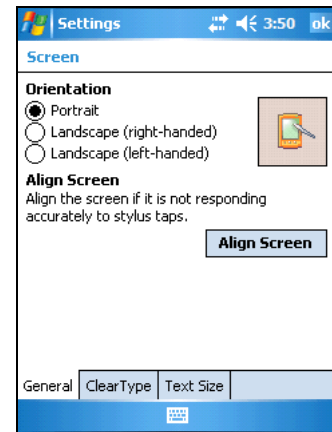
1. Tap the *ClearType* tab and then select the *Enable ClearType* check box.
2. Tap **OK**.

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**.



## 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*.

Use the *Battery* tab to check the battery level (see [Checking the level of battery power, page 24](#)).


Use the *Advanced* tab to set the time before the handheld turns off when idle (see [Automatic power off settings, page 25](#)).





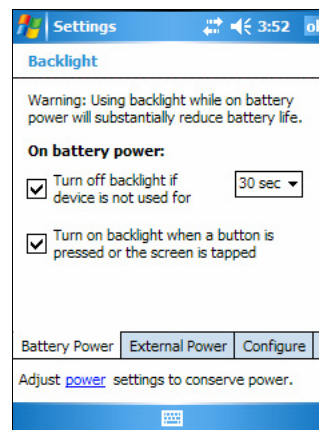
## Backlight

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*.

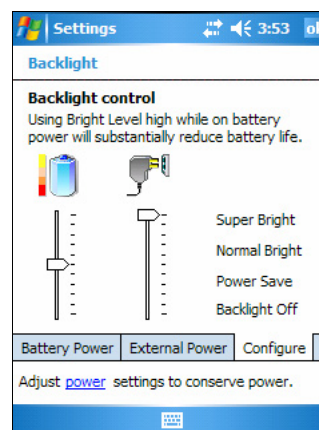
To set the backlight to automatically turn off:

1. 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.
2. 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.
3. 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**.





## 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](#)

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

To protect your data, Trimble recommends that you regularly copy important data to your office computer, or save data to an SD memory card. For more information about SD cards, see [Using an SD memory card, page 29](#).

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

## Connection management software

To install software onto a Windows Mobile powered device, 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 Microsoft 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 your computer with your handheld.



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**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 your 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.

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**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.

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For more information see one of the following:

- [Managing the connection using the Windows Mobile Device Center, page 44](#)
- [Managing the connection using ActiveSync technology, page 45.](#)

## Installing the Windows Mobile Device Center

The Windows Vista operating system includes a basic connectivity driver for Windows Mobile powered devices. This driver allows you to transfer files from the device to your PC.

To install software onto a Windows Mobile powered device, you must install Windows Mobile Device Center 6 onto your office computer.

Go to [www.microsoft.com/windowsmobile/devicecenter.mspx](http://www.microsoft.com/windowsmobile/devicecenter.mspx) to download the Windows Mobile Device Center from the Microsoft website.

## Installing ActiveSync technology

A copy of ActiveSync technology is provided on the *Juno ST Handheld Companion CD*. Alternatively, go to [www.microsoft.com/windowsmobile/activesync/default.mspx](http://www.microsoft.com/windowsmobile/activesync/default.mspx) to download the latest version of ActiveSync from the Microsoft website.

## Connecting the handheld to a computer

To connect the Juno ST 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 42](#)).
3. To form a connection, do one of the following:
  - Connect one end of the USB data cable to the Power/USB socket on the handheld, and connect the other end of the USB data cable to a USB port on the computer.



Figure 4.1 Connecting the handheld to a computer using the USB data cable

- Use the handheld's integrated Bluetooth radio to establish a wireless serial link to a Bluetooth-enabled computer. For more information, see [Using the Bluetooth radio, page 61](#).

**Note** – You cannot connect to the computer using Bluetooth wireless technology if you will use the Windows Mobile Device Center to manage the connection.

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

- [Managing the connection using the Windows Mobile Device Center, page 44](#)
- [Managing the connection using ActiveSync technology, page 45](#)

## Managing the connection using the Windows Mobile Device Center

To manage a connection between the handheld and a computer using the Windows Mobile Device Center:

1. Connect the handheld to the computer (see [page 43](#)).
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 67](#).

4. 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 your computer, or from your computer to the handheld.
6. To install software onto the handheld, see [Installing software, page 46](#).
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*.



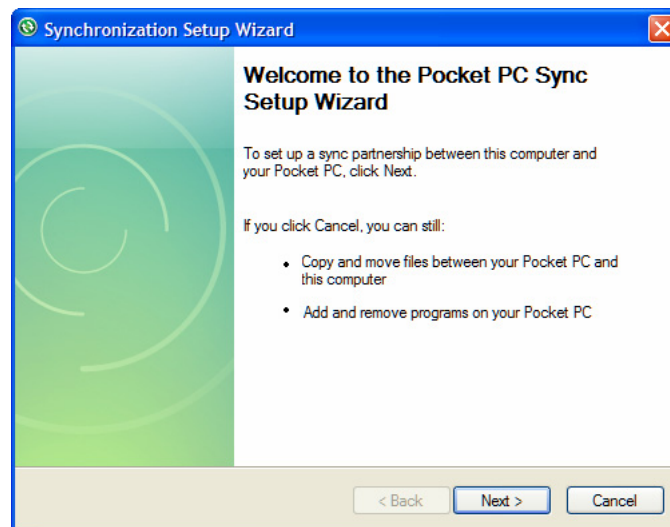
**Tip** – If you have the GPS Pathfinder Office software installed on your office computer, you can configure the Connection Manager utility in the GPS Pathfinder Office software to automatically detect when you connect a Juno ST handheld to the computer. This

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

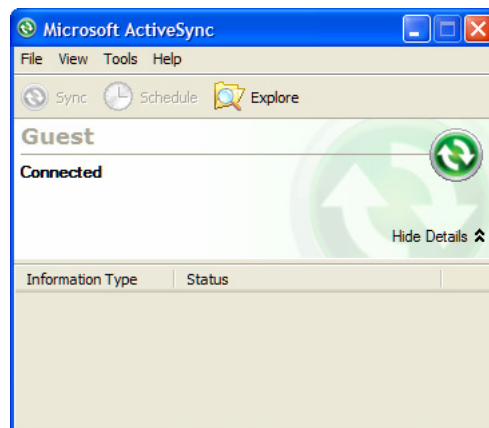
To manage a connection between the handheld and a computer using ActiveSync technology:

1. Connect the handheld to the computer (see [page 43](#)). The *Synchronization Setup Wizard* appears:



**Note** – If the connection is not made automatically, check that the connection is enabled in the ActiveSync software and on the handheld. For more information, see [Troubleshooting, page 67](#).

2. 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 your computer, or from your computer to the handheld.
5. To install software onto the handheld, see [Installing software, page 46](#).
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 you have GPS Pathfinder Office software installed on your office computer, you can configure the Connection Manager utility in the GPS Pathfinder Office software to automatically detect when you connect a Juno ST 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

The Juno ST handheld supports software designed to run on Windows Mobile powered devices. You may also be able to install and run some software designed for other operating systems.

To install software on the handheld:

1. Connect the handheld to a computer (see [page 43](#)).
2. Insert the software CD into the office computer and then run the installation setup. For more information, refer to the installation instructions for the software.
3. When 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 an SD (Secure Digital) 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 memory, not to an SD 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.*

4. If prompted after installation, perform a soft reset of the handheld (see [page 27](#)).



## Using GPS

### In this chapter:

- Factors that affect accuracy
- Supported GPS field software
- Configuring your GPS field software
- Using your GPS field software

The Juno ST 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.*

## Factors that affect accuracy

The Juno ST 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 ST 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.

## Differential GPS

Use differential GPS to correct errors in your collected data. Differential GPS (DGPS) requires two or more receivers. One receiver, called the **reference station**, is located at a known point to determine the 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 reference station. Errors common at both the reference and rover receivers are corrected with DGPS either in real time or during postprocessing.

### Real-time DGPS

Use a real-time differential GPS (DGPS) source to receive differential corrections in real-time and give you better accuracy as you collect data. In real-time DGPS, the reference 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.

Real-time DGPS sources include Satellite Based Augmentation Systems (SBAS). An SBAS system uses multiple reference stations in a network to calculate the DGPS corrections, which are then delivered to the user from a Geostationary satellite (SBAS). The Juno ST handheld supports the WAAS SBAS system, which provides real-time DGPS coverage for the United States of America.

Factors that affect real-time DGPS accuracy include how often the corrections are updated, how far you are from the reference 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 reference station are downloaded. Postprocessing software such as the GPS Pathfinder Office software or the Trimble GPS Analyst extension for ESRI ArcGIS software is used to differentially correct the collected data.

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

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

### Postprocessed real-time DGPS

Postprocessed DGPS positions are generally more accurate than DGPS positions obtained in real time. To improve the accuracy of your collected GPS data, you can postprocess your files using version 4.00 of the GPS Pathfinder Office software or version 2.10 of the Trimble GPS Analyst extension for ESRI ArcGIS software, if you collect GPS positions using any of the following:

- version 3.01 or later of the TerraSync software
- version 2.20 or later of the Trimble GPSCorrect extension for ESRI ArcPad software
- an application developed using version 2.20 or later of the GPS Pathfinder Tools SDK

**Note** – For more information about GPS and DGPS, go to [www.trimble.com/gps](http://www.trimble.com/gps) and review the *All About GPS* tutorial.

## Supported GPS field software

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

### TerraSync software

You can install version 3.01 or later of the TerraSync software on a Juno ST 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 7.0.1 or later of the ESRI ArcPad software on a Juno ST handheld. Use the software to collect and maintain GIS and GPS data. Detailed installation instructions for ESRI ArcPad are provided in the ArcPad documentation.

To be able to differentially correct your ArcPad GPS data, install version 2.20 or later of the Trimble GPSCorrect extension for ESRI ArcPad software on a Juno ST handheld. Make sure you install ArcPad **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](http://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 Release Notes*.

## GPS Controller software

You can install version 2.11 or later of the GPS Controller software on a Juno ST 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](http://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 ST handheld with a custom application developed using version 2.20 or later of the Trimble GPS Pathfinder Tools Software Development Kit (SDK).

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

## Configuring your GPS field software

The first time you use your GPS field software on the handheld, you may need to configure the software to connect to COM7, which is the GPS port on the handheld.

The table below outlines how to configure different types of GPS field software to connect to the GPS COM port.

If you are using ...	do this ...
TerraSync	Run Terrasync. The software automatically activates the integrated GPS receiver on COM7.
ArcPad with the GPSCorrect extension	<ol style="list-style-type: none"> <li>1. In ArcPad, tap the <b>GPS button</b>  and then select <i>GPS Preferences</i> from the drop-down menu. Tap the <i>GPS</i> tab.</li> <li>2. In the <i>Protocol</i> field, select Trimble GPSCorrect.</li> <li>3. In the <i>Port</i> field, select COM7.</li> <li>4. Tap <b>OK</b>.</li> <li>5. Tap the <b>GPS button</b> . The software activates the integrated GPS receiver.</li> <li>6. To configure a real-time DGPS source, or to view status information, run the GPSCorrect extension. To do this, tap the <b>GPSCorrect</b> button in the Trimble toolbar.</li> </ol>
ArcPad <b>without</b> the GPSCorrect extension	<ol style="list-style-type: none"> <li>1. In ArcPad, tap the <b>GPS button</b>  and then select <i>GPS Preferences</i> from the drop-down menu. Tap the <i>GPS</i> tab.</li> <li>2. In the <i>Protocol</i> field, select NMEA 0183.</li> <li>3. In the <i>Port</i> field, select COM7.</li> <li>4. Tap <b>OK</b>.</li> <li>5. Tap the <b>GPS button</b> . The software activates the integrated GPS receiver.</li> </ol>
GPS Controller	Run GPS Controller. The software automatically activates the integrated GPS receiver on COM7.
GPS Pathfinder Tools SDK application	Configure the software to connect to GPS on COM7 and then use the Connect or Activate GPS command.
NMEA application	

## Using your GPS field software


By default, the handheld is configured to receive satellite signals in most conditions. This section describes how to use your GPS field software to:

- view available GPS satellites
- plan the best time to collect data
- set up a connection to an SBAS real-time DGPS source
- output NMEA data

The steps and screens in this section describe the TerraSync software, the GPS user interface of which is similar to that of the GPS Controller software and the Trimble GPSCorrect extension for ESRI ArcPad software. The exact steps for your GPS field software may differ depending on the GPS field software you are using.

For more information, refer to the documentation for your GPS field software.

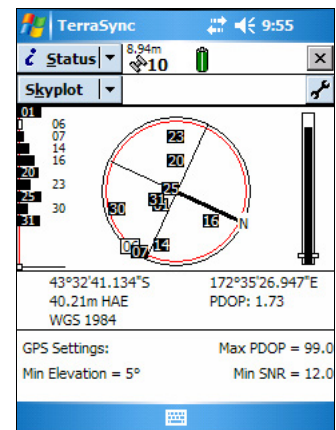
### Viewing available satellites

To run the TerraSync software, tap  / *Programs* / *Terrasync*.

The software opens, and by default displays the Skyplot screen.

Use the Skyplot screen or the Satellite Info section to view detailed GPS information about the GPS satellites currently being tracked.

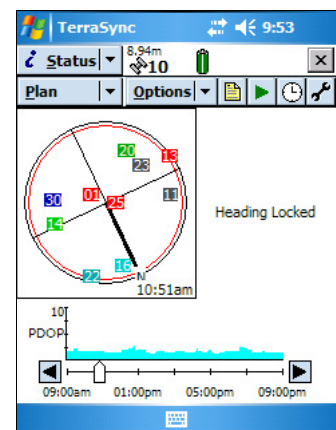
The area at the bottom of the screen shows the GPS settings for the handheld's GPS receiver.



### Planning a data collection session

To maximize productivity, plan GPS data collection around the times of the day when satellite geometry is best. The TerraSync 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 good, and you will be able to collect plenty of GPS data.




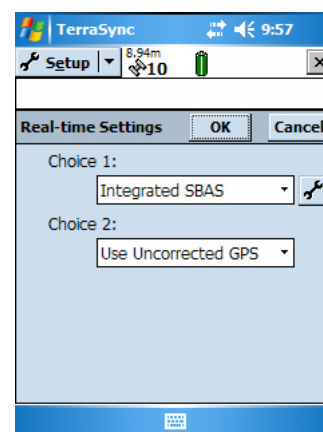
## Using SBAS differential corrections

The Juno ST handheld has an integrated receiver that uses Satellite Based Augmentation Systems (SBAS) correction messages to improve the accuracy and integrity of GPS data as you collect it. The Juno ST handheld supports the WAAS SBAS system, which provides real-time DGPS coverage for the United States of America. The receiver tracks SBAS satellites according to its geographical location.

For more information about how real-time differential GPS works, see [Differential GPS](#), page 48.

To use SBAS corrections:

1. In the TerraSync 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**.




## Outputting NMEA data

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

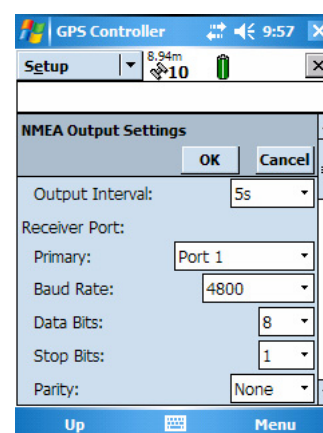
If you connect to the GPS receiver using Trimble GPS field software, NMEA output is switched off by default.

**Note** – You can only enable NMEA data output using the GPS Controller software. The software is available as a free download from the Trimble website. For more information, see [GPS Controller software](#), page 50.

To enable NMEA data output:

1. In the *GPS Settings* form, set the *NMEA Output* field to **On**.
2. Tap the **Setup** button  that appears next to the *NMEA Output* field to configure the NMEA message output settings.

For more information, refer to the *GPS Controller Help*.







# Getting Connected

## In this chapter:

- [Connecting to the Internet](#)
- [Connecting to work](#)
- [Using the WLAN radio](#)
- [Setting up Internet and network connections](#)
- [Using the Bluetooth radio](#)

The Juno ST handheld provides a number of options for connecting to networks and other devices.

Connect to the Internet and your corporate network to browse the Internet or intranet, send and receive e-mail and instant messages, and access files on the network.

Use the handheld's integrated WLAN radio to connect to the Internet or a network using a wireless LAN (Local Area Network) connection.

Alternatively, use the handheld's integrated Bluetooth radio to connect wirelessly to an external modem or mobile phone and connect to the Internet or a network using Bluetooth wireless technology.

You can also connect to a range of other Bluetooth-enabled devices to exchange information, or to create a personal network.

## Connecting to the Internet

Before you can connect to the Internet, you must set up a connection to the Internet by doing one of the following:

- Set up a wireless LAN connection to an access point or network (see [Configuring settings for a wireless LAN connection, page 58](#)).
- Set up a wireless connection to a mobile phone using Bluetooth wireless technology (see [Setting up a connection to the Internet or a work network using a Bluetooth-enabled device, page 66](#)).

To **automatically** connect to the Internet, connect to the access point or mobile phone and then start using the required program, for example Internet Explorer Mobile. The handheld connects to the Internet using the connection you have identified as the default for an Internet connection.

***Note** – If you have set up more than one wireless network connection, you may need to manually select the connection you want to use.*

## Connecting to work

Before you can connect to a work network or Intranet, you must set up a connection to a work network or Intranet by doing one of the following:

- Set up a wireless LAN connection to an access point or network (see [Configuring settings for a wireless LAN connection, page 58](#)).
- Set up a wireless connection to a mobile phone using Bluetooth wireless technology (see [Setting up a connection to the Internet or a work network using a Bluetooth-enabled device, page 66](#)).
- Set up a VPN server connection to the network (see [Setting up a VPN server connection, page 59](#)).

To **automatically** connect to the network, connect to the access point, mobile phone, or VPN server and then start using the required program, for example Windows Explorer Mobile. The handheld connects to the network using the connection you have identified as the default for an Internet connection.

***Note** – If you have set up more than one wireless network connection, you may need to manually select the connection you want to use.*

## Using the WLAN radio

The Juno ST handheld has an integrated Wireless Local Area Network (WLAN) radio that you can use to receive data anywhere within the range of a wireless LAN access point.


Access points are also known as “hotspots”. A wireless LAN connection can be used to connect to the Internet (at broadband speeds), and to connect to 802.11b/g standard Ethernet networks within range of an available wireless LAN access point.

Wireless LAN is sometimes referred to as *wireless Ethernet*.

### Turning on the WLAN radio

The Juno ST handheld is shipped with the integrated WLAN radio turned off.

To turn on the WLAN radio, tap the wireless LAN icon  in the bottom right corner of the *Today* screen and then tap *WLAN On/Off*.

The wireless LAN icon changes to  and a notification message appears if a wireless LAN is detected.



### Turning off the WLAN radio


In some situations, you may be required to turn off the WLAN radio. For example, aviation authority regulations restrict the use of radios on board aircraft.



**Tip** – To conserve power, turn off the WLAN radio when it is not in use.


To turn off the WLAN radio, do one of the following:

- Tap the wireless LAN icon  in the bottom right corner of the *Today* screen and then tap *WLAN On/Off*.
- Tap the Wireless Connectivity icon  in the title bar of the *Today* screen and then tap *Wireless Manager*. Tap **Wi-Fi** to turn off the WLAN radio.

The wireless LAN icon changes to  to indicate the handheld cannot send or receive WLAN signals.

### Connecting to a network using wireless LAN connectivity

To connect automatically to a network:

1. Bring the handheld within range of the network or access point.  
When a wireless LAN is detected, the access point icon  appears on the title bar, and a notification message appears.
2. If more than one network is detected, select the network to connect to and then tap **OK**.
3. Select whether to connect to the Internet or to a Work network and then tap *Connect*.


4. If required, enter a network key (otherwise known as a WEP key or a WPA key) and then tap *Connect*. If a network key is not required, just tap *Connect*.

Alternatively, when the handheld is within range of the network or access point, start using the required program, for example Internet Explorer Mobile.

If you are within range of more than one network or access point that you have set up wireless LAN connections to, you may need to select the connection you want to use.

## Configuring settings for a wireless LAN connection

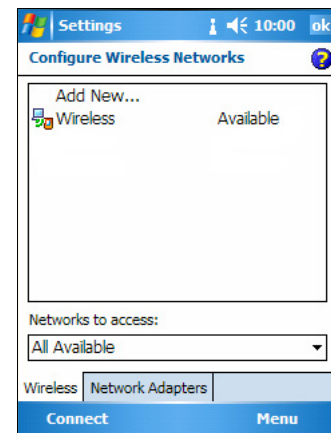
To configure settings for a wireless LAN connection to a network, first make sure the WLAN radio is turned on (see [Turning on the WLAN radio](#), page 57). Then do the following:

1. Tap  / *Settings* / *Connections* / *Network Cards*. The *Configure Wireless Networks* page appears, displaying the *Wireless* tab.

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

2. To add a new network, tap *Add New*. To change the settings for an existing network, tap the network.
3. Enter the name of the network and other connection details and tap **Next**. Then do the following:
  - a. To use authentication, select the authentication method from the *Authentication* list.
  - b. To use data encryption, select an encryption method from the *Data encryption* list.
  - c. To automatically use a network key, tap *The key is automatically provided*. Otherwise, enter the network key.
  - d. Tap **Next**.
  - e. For increased security, select the *Use IEEE 802.1x network access control* tab and then configure additional authentication information.
4. Tap **Finish** to return to the *Configure Wireless Networks* page.
5. From the *Networks to access* drop-down list, select the types of network you want to connect to. Options are *All Available*, *Only access points*, or *Only computer-to-computer*.
6. Tap **OK**.

To delete a wireless LAN connection, tap and hold the connection in the *Wireless* tab and then select *Remove settings*.



## Setting up Internet and network connections

The Juno ST handheld has two groups of connection settings: My ISP and My Work Network. My ISP settings are used to connect your device to the Internet, and My Work Network settings can be used to connect to any other private network, such as a corporate intranet you use at work.

You can set up a connection to store the configuration details for connecting to a particular computer or network, so that you do not have to enter these details each time you connect.


Set up a Virtual Private Network (VPN) for each computer or network that you want to access remotely.


### Setting up a VPN server connection

A Virtual Private Network (VPN) connection helps you to securely connect to servers, such as a corporate network, using the Internet. Before you begin, obtain the following information from your network administrator:

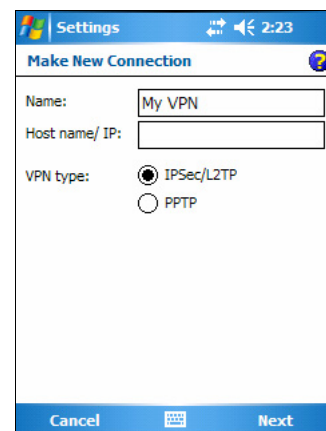
- user name and password
- domain name
- TCP/IP settings
- host name or IP address of the VPN server

To set up a VPN server connection to a network:

1. 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 .

4. Tap **Finish**.




### Setting up a mail service

Before you can send and receive e-mail, you need to create an e-mail account in the Messaging software. 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:

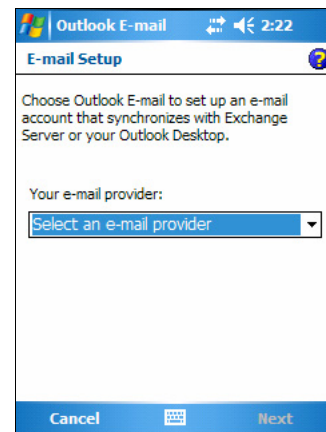
1. Tap  / *Messaging*.
2. Tap *Menu* / *Tools* / *New Account*.
3. Select an e-mail provider from the drop-down list and then tap **Next**.
4. Follow the steps in the Setup wizard, using the connection details supplied by your ISP or network administrator.

**Note** – You cannot change the account name later.



**Tip** – To receive TerraSync data files by e-mail, tap **Options** and in the last page select the *Get full copy of messages* option from the drop-down list, as well as the *Get attachments* option if it is displayed.

5. Tap **Finish**.
6. Tap **OK** to download mail immediately, using a previously configured connection.




## Managing connections

You can change connection settings or remove existing connections. You can also end a connection at any time.


### Ending a connection

To minimize mobile phone or Internet provider connection charges and to free resources on the handheld, end a connection when you have finished using it.

To end a modem or VPN server connection, tap  on the title bar and then tap **Disconnect**.


### Changing connection settings

To change settings for a modem or VPN server connection:

1. Tap  / *Settings* / *Connections* / *Connections*.
2. From the *My Work Network* list, tap *Manage existing connections*.
3. Depending on the type of connection, tap either the *Modem* or *VPN* tab.
4. Select the connection and then tap **Edit**.

### Deleting a connection

To delete a modem or VPN server connection:

1. Tap  / *Settings* / *Connections* / *Connections*.
2. From either the *My ISP* or *My Work Network* list, tap *Manage existing connections*.

3. Depending on the type of connection, tap either the *Modem* or *VPN* tab.
4. Tap and hold the connection you want to remove and then tap *Delete*.

## Using the Bluetooth radio

The Juno ST handheld has an integrated Bluetooth radio that you can use to establish a wireless connection to other Bluetooth devices that are within range.

Using a Bluetooth connection, you can communicate with devices such as mobile phones, desktop computers, other handhelds, and digital cameras. You can also communicate with peripheral devices that use Bluetooth adaptors instead of serial or USB connections.

### Bluetooth hosts and clients

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

The following diagram shows the handheld connected to different types of devices using Bluetooth wireless technology. The arrows indicate the direction of the flow of data from the host to the client device.

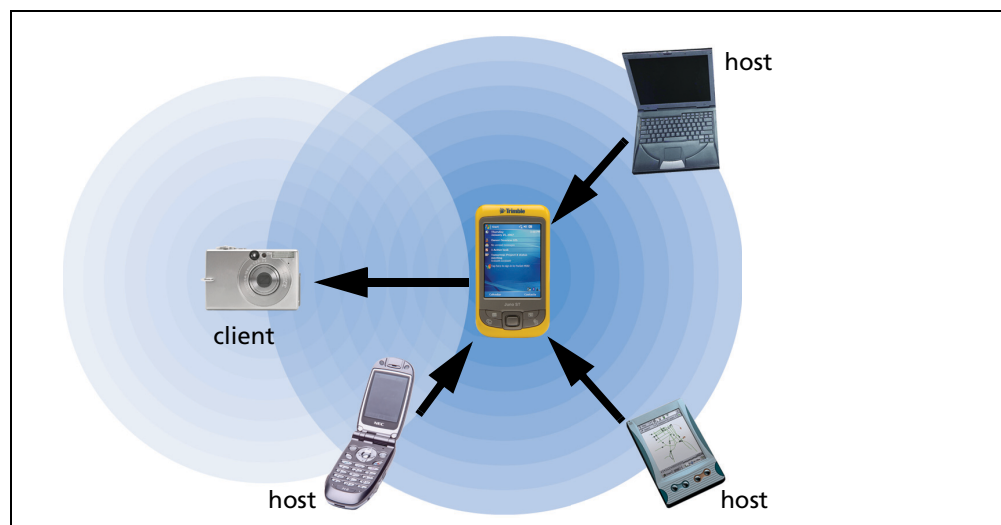


Figure 6.1 Data flow between devices connected using Bluetooth wireless technology

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

## Enabling Bluetooth wireless connections

The Juno ST handheld is shipped with Bluetooth wireless technology activated.




Use the Bluetooth control to turn on the integrated Bluetooth radio, enable the handheld to discover other Bluetooth devices, and configure host services on the Juno ST handheld.

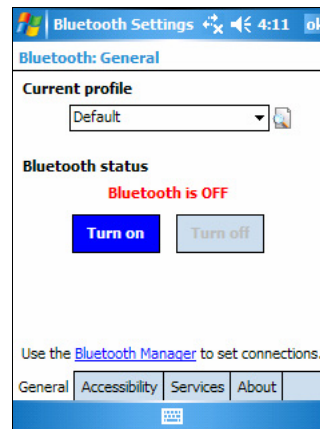
To open the Bluetooth control, tap  / *Settings* / *Connections* / *Bluetooth*.

### Turning on the Bluetooth radio

To use the Juno ST handheld as a Bluetooth host or client, you must turn on the Bluetooth radio.

To turn on the Bluetooth radio, do one of the following:


- Tap the Bluetooth icon  in the *Today* screen and then tap *Turn Bluetooth On*.
- Tap  / *Settings* / *Connections* / *Bluetooth*. In the *General* tab, tap **Turn on**.
- Tap the Wireless Connectivity icon  in the title bar of the *Today* screen and then tap *Wireless Manager*. Tap **Bluetooth** to turn on the Bluetooth radio.



If the integrated Bluetooth radio is deactivated, the message **No Bluetooth hardware** appears.



**Tip** – To conserve power, turn off the Bluetooth radio when it is not in use.

The Bluetooth icon  appears in the bottom right corner of the *Today* screen, to indicate that the handheld can send and receive Bluetooth wireless signals.




### Turning off the Bluetooth radio

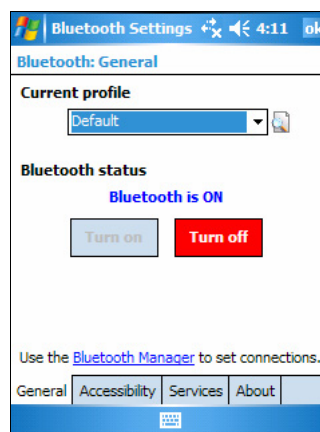
In some situations you may be required to turn off the Bluetooth radio. For example, aviation authority regulations restrict the use of radios on board aircraft.




**Tip** – To conserve power, turn off the Bluetooth radio when it is not in use.

To turn off the Bluetooth radio, do one of the following:

- Tap the Bluetooth icon  in the *Today* screen and then tap *Turn Bluetooth OFF*.
- Tap  / *Settings* / *Connections* / *Bluetooth*. In the *General* tab, tap **Turn off**.
- Tap the Wireless Connectivity icon  in the title bar of the *Today* screen and then tap *Wireless Manager*. Tap **Bluetooth** to turn off the Bluetooth radio.






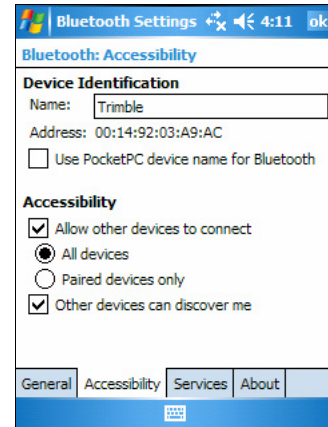
In the *Today* screen, the Bluetooth icon changes to  to indicate the handheld cannot send or receive Bluetooth wireless signals.

### Making the handheld discoverable


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

To make the handheld discoverable:

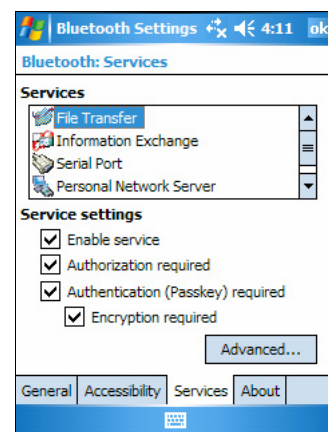
1. Tap  / *Settings* / *Connections* / *Bluetooth*.
2. Tap the *Accessibility* tab.
3. To enable other devices to connect to the handheld, select the *Allow other devices to connect* check box and then select the *All devices* option or the *Paired devices only* option.
4. To enable other devices to see the handheld when they scan for other Bluetooth devices, select the *Other devices can discover me* check box.



### Configuring host services

To provide a host service, turn on the Bluetooth radio (see [page 62](#)) and then make the device Discoverable (see [page 63](#)). If the service is a serial port service, you may need to add or configure the service. Tap  / *Settings* / *Connections* / *Bluetooth* and then tap the *Services* tab.


Other host services such as File Transfer and Information Exchange do not require any configuration because they use either pre-assigned ports, or use the My Documents folder for file transfers. Other services already have authentication and encryption enabled.

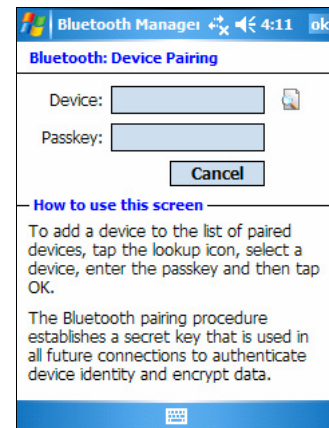


### Pairing with a Bluetooth-enabled device

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 in discoverable mode.

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 Bluetooth is in Discoverable mode on both devices.
2. Tap the Bluetooth icon  in the *Today* screen and then tap *Bluetooth Manager*.
3. The *Bluetooth Manager* appears. Tap **Menu** and then select *Paired Devices*.
4. Tap **Add**.
5. To create a new pairing, tap the Lookup icon beside the Device field. The handheld searches for other Bluetooth devices and displays them in the Bluetooth Browser.
6. Tap the name of the device you want to pair with.
7. In the *Passkey* field, enter a passkey of between 1 and 16 characters and then tap the Enter key on the keyboard.
8. Enter the same PIN on the other device.
9. In the *Bluetooth Manager*, tap **OK**.




## Setting up a connection to a Bluetooth-enabled device

To connect the handheld as a client device to another Bluetooth-enabled device, set up a connection to the device in the Bluetooth manager.

**Note** – Trimble recommends that you pair with a Bluetooth-enabled device before connecting to the device. For more information, see [Pairing with a Bluetooth-enabled device, page 63](#).

To set up the connection:


1. Tap the Bluetooth icon  in the *Today* screen and then tap *Bluetooth Manager*.
2. Tap **New**.
3. The *Bluetooth Connection* wizard displays a list of tasks that you may want to achieve using the host device. Tap the task you want to complete.
4. Complete the steps in the wizard to configure the connection to the host device.



## Setting up a connection to a Bluetooth-enabled device without a passkey

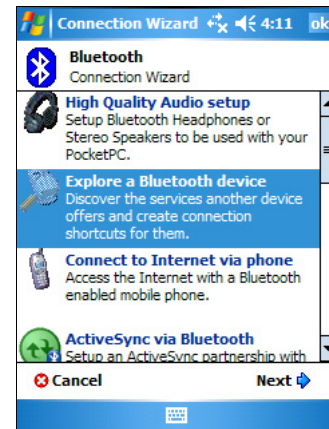
Some Bluetooth devices do not enable you to enter a passkey, for example, a headset.

To connect the handheld as a client device to another Bluetooth-enabled device, without using a passkey:

1. Tap the Bluetooth icon  in the *Today* screen and then tap *Bluetooth Manager*.
2. Tap **New**.
3. In the *Bluetooth Connection* wizard, tap *Explore a Bluetooth device*.


The handheld searches for other Bluetooth devices and displays them.

4. Tap the device you want to connect to.
5. Complete the steps in the wizard to configure the connection to the device.
6. In the *My Shortcuts* tab of the *Bluetooth Manager*, tap and hold the connection you have set up and then select *Properties*.
7. Clear the *Authentication* check box and then tap **OK**.

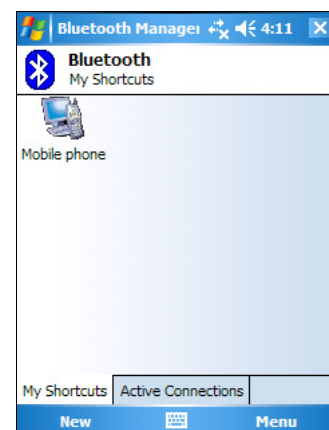


## Connecting to a Bluetooth-enabled device

To connect to a Bluetooth-enabled device that you have already set up a connection to:

1. On both devices, make sure the Bluetooth radio is turned on.
2. Tap the Bluetooth icon  in the *Today* screen and then tap *Bluetooth Manager*.
3. Tap the *My Shortcuts* tab.
4. Do one of the following:
  - Double-tap the icon for the connection you have set up.
  - Tap and hold the connection icon for the connection you have set up and then tap *Connect*.

Alternatively, when the handheld is within range of the Bluetooth-enabled device, start using the program that you usually use with the device, for example Internet Explorer Mobile.




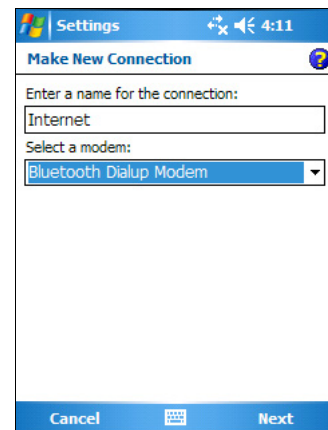
## Setting up a connection to the Internet or a work network using a Bluetooth-enabled device

To connect to the Internet using a Bluetooth-enabled device, first set up a Bluetooth connection to the device and then connect the handheld to the device. See:

- [Setting up a connection to a Bluetooth-enabled device, page 64](#)
- [Connecting to a Bluetooth-enabled device, page 65](#)

To set up the connection to the Internet:

1. Tap  / *Settings* / *Connections* / *Connections*.
2. From either the *My ISP* or *My Work Network* list, tap *Add a new modem connection*.
3. Enter a name for the connection.
4. From the select a modem list, select *Bluetooth Dialup Modem* and then tap **Next**.
5. Enter the dial-up phone number for the connection. The number depends on your service provider. Then tap **Next**.
6. Some service providers require user name, password, and domain fields to be completed. Enter the information, if required.
7. Tap **Finish**.



**Tip** – If you cannot connect with the default settings, please contact your ISP.

# Troubleshooting

## In this chapter:

- [Backlight issues](#)
- [Connection issues](#)
- [GPS / real-time correction issues](#)
- [Power issues](#)
- [SD card issues](#)
- [Touch screen issues](#)

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

The following categories of problems are covered:



- Backlight issues
- Connection issues
  - ActiveSync technology (see [page 68](#))
  - Windows Mobile Device Center (see [page 69](#))
  - Network connections (see [page 69](#))
  - Bluetooth wireless technology (see [page 70](#))
  - Wireless LAN connections (see [page 71](#))
- GPS/real-time correction issues (see [page 71](#))
- Power issues (see [page 72](#))
- SD card issues (see [page 72](#))
- Touch screen issues (see [page 73](#))

## Backlight issues



Problem	Cause	Solution
The backlight stays on, even though the handheld has been idle for some time.	Trimble GPS field applications keep the backlight on while connected to the GPS receiver.	Disconnect from GPS when you have finished using it.

## 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 software on your computer, select <i>File / Connection Settings / Connect</i> .
	The connection is not enabled in ActiveSync on the computer.	If you are using the USB data cable, select <i>File / Connection Settings</i> in the ActiveSync software on your computer and make sure that the <i>Allow USB connection</i> check box is selected. If you are using a Bluetooth connection, select <i>File / Connection Settings</i> in the ActiveSync software on your computer and make sure that the correct port for Bluetooth is selected. Open the Bluetooth control on the handheld, view the Bluetooth Manager and make sure that an ActiveSync connection is present in the connections list with a correct outgoing port.
	The connection is not enabled in ActiveSync on the computer.	On the handheld, tap  / <i>Programs / ActiveSync / Menu / Connections</i> . Make sure that the <i>Enable PC sync using this connection</i> check box is selected, and that the correct options are selected.
	Your 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  / <i>Settings / Connections / USB to PC Utility</i> . Clear the <i>Enable advanced network functionality</i> check box. The handheld stops using the default RNDIS method to connect to ActiveSync.


## 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 your computer, select <i>Mobile Device Settings / Connection Settings</i> .
	Currently connections to the handheld with Windows Mobile Device Center using Bluetooth wireless technology are not supported.	Connect to the handheld using the USB cable.
	The connection is not enabled in Windows Mobile Device Center on the computer.	If you are using the USB data cable, select <i>Mobile Device Settings / Connection Settings</i> in the Windows Mobile Device Center software on your computer and make sure that the <i>Allow USB connection</i> check box is selected.
	The connection is not enabled on the handheld.	On the handheld, tap  / <i>Programs / ActiveSync / Menu / Connections</i> . Make sure that the <i>Enable PC sync using this connection</i> check box is selected, and that the correct options are selected.
	Your 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 Windows Mobile Device Center on the computer. Tap  / <i>Settings / Connections / USB to PC Utility</i> . Clear the <i>Enable advanced network functionality</i> check box. The handheld stops using the default RNDIS method to connect to Windows Mobile Device Center.

## Network connections


Problem	Cause	Solution
The connection with the mobile phone suddenly ends.	If you change the proxy settings of the handheld while connected to a mobile phone, the mobile phone ends the connection.	Make any changes to proxy settings before connecting to a mobile device.
Unable to connect to another Juno 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 Bluetooth icon  does not appear in the Today screen	An error has occurred.	Perform a soft reset of the handheld (see <a href="#">Performing a soft reset, page 27</a> ).
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 <a href="#">Enabling Bluetooth wireless connections, page 62</a> ) and the other Bluetooth device.
	The device has not been made Discoverable.	Make sure that the Bluetooth device has been made Discoverable.
The handheld cannot connect to the host serial port service you want to use.	Although multiple host serial port service connections can be configured on a handheld, there is only one outgoing port available to Bluetooth. Therefore only one connection to one of the configured services can be active at any one time.	End any other active connection to a host serial port service and then try 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 <i>Bonded Devices</i> tab. Tap and hold the device name and select <i>Delete</i> . Tap <i>New</i> 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 <a href="#">Enabling Bluetooth wireless connections, page 62</a> ).
	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.
The Bluetooth radio turns off unexpectedly.	The handheld's Bluetooth radio has crashed and turned itself off.	Use the handheld's Bluetooth control to turn on the radio again and, if required, reinitiate the connection. If this does not resolve the issue, turn off the Bluetooth radio and then restart both the handheld and the connected Bluetooth device to reinitiate the connection with both radios in a fresh state.




## Wireless LAN connections

Problem	Cause	Solution
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 <i>Today</i> screen. If the date is incorrect, tap the clock icon on the <i>Today</i> 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  / <i>Settings / Connections / Network Cards</i> . Tap and hold the network you would prefer to use and then select <i>Connect</i> .
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 5.0 software.	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 software application from the <i>Start</i> menu, such as the <i>Today</i> screen or File Explorer, and the menu bar and soft keys will be displayed correctly.

## GPS / real-time correction 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 your GPS field software to activate the integrated GPS receiver. For more information, see <a href="#">Using GPS, page 47</a> .
	The GPS COM port is already in use.	Only one application at a time can have the port open. Exit the software that is using the GPS COM port and then retry in your application.
	The GPS field software is using the wrong GPS COM port.	Connect to COM7.
	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.
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 your GPS field software, and if possible move to a different location.
	You are outside the SBAS satellite coverage area.	If you have selected satellites that are not available at your location, you cannot use SBAS corrections.
NMEA data includes autonomous positions.	The integrated GPS receiver outputs autonomous positions when real-time corrections are unavailable.	Configure your NMEA application to filter out non-DGPS positions.

## Power issues

Problem	Cause	Solution
The handheld does not turn on.	The battery is flat.	Recharge the battery (see <a href="#">page 22</a> ).
The handheld does not charge when connected to a computer using the USB cable.	The battery is completely flat. To charge the battery from a computer using the USB cable, the battery must have enough power to turn on the handheld and form an active connection to the computer.	Recharge the battery using the AC adaptor or the vehicle adaptor (see <a href="#">page 22</a> ).
The handheld charge state is incorrectly reported.	The internal temperature has risen above the allowed range for charging the battery.	Remove the handheld from any external heat sources (for example, sunlight), and allow an hour for the internal temperature of the handheld to cool again before placing the handheld in the support module.
The battery power percentage bar does not appear in the Power control.	The battery has 0% power.	Recharge the battery (see <a href="#">page 22</a> ). 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.

## SD card issues

Problem	Cause	Solution
The handheld does not recognize an SD memory card.	Occasionally, the handheld does not recognize a Secure Digital (SD) memory card when the card is inserted into the SD card slot, or it fails to recognize the SD card currently inserted.	Close the application and then perform a soft reset (see <a href="#">Resetting the handheld, page 27</a> ). Then try again.
	The handheld does not support SDIO (SD input/output) memory cards or SDHC (high capacity SD) memory cards.	Use an SD memory card of up to 2Gb.
The TerraSync software locks up when you try to log GPS data to an SD memory card.	You are using an unsupported version of the TerraSync software.	Go to <a href="http://www.trimble.com/terrasync_ts.asp">www.trimble.com/terrasync_ts.asp</a> and then download the v3.01 update of the TerraSync software.

## 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 <a href="#">page 38</a> ).
	The handheld has locked up.	Reset the handheld (see <a href="#">Resetting the handheld, page 27</a> ).
The screen is blank.	The handheld is turned off.	Press the <b>Power</b> button to turn on the handheld.
	The handheld has locked up.	Reset the handheld (see <a href="#">Resetting the handheld, page 27</a> ).
The screen is hard to see.	The backlight level needs to be adjusted.	Open the Backlight control and adjust the backlight level (see <a href="#">Backlight, page 39</a> ).
	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 have been designed for portrait orientation only. To view the entire application window, change the screen display to portrait.



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