

USER GUIDE

Trimble Juno Series Handhelds: Juno 3B and Juno 3D

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This is the February 2012 release (Revision A) of the *Juno Series Handhelds User Guide*, covering Models TNJ31 and TNJ32. The Juno series handheld's operating system is based on Microsoft Windows Embedded Handheld 6.5 Professional operating system.

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

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

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

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

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

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

aGPS and emergency calls (Juno 3D handheld only)

When you make an emergency call, your phone can use assisted Global Positioning System (aGPS) satellite signals to tell the emergency response center your approximate location.

The aGPS functionality may be limited, so:

- Always tell the emergency response center your best knowledge of your location.
- Remain on the phone for as long as the emergency response center instructs you.
- aGPS might not work for emergency calls if your local emergency response center does not process aGPS location information. For details, contact your local authorities.

aGPS performance

For best results:

- Go outside and away from underground locations, covered vehicles, structures with metal or concrete roofs, tall buildings, and tree cover. Indoor performance might improve if you move closer to unobstructed windows.
- Move away from electronic devices that might interfere with or block aGPS satellite signals, for example radios and entertainment equipment.

If your phone cannot find strong aGPS satellite signals, the location of the nearest cell tower in contact with your phone is automatically provided to the emergency response center.

aGPS technology

This mobile device incorporates aGPS technology in order to comply with emergency caller location requirements. aGPS technology also can be used in other applications to track and monitor a user's location for example, to provide location specific data. Users who do not want such tracking and monitoring should avoid using such applications. aGPS uses your wireless service provider's network and therefore airtime, data charges, and/or additional charges may apply in accordance with your service plan. Contact your wireless service provider for details.

Note - this service is not provided by all networks. Please contact your cellular service provider if you wish to confirm that this service is provided.

Canada

This Class B digital apparatus complies with Canadian ICES-003. This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

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

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

Europe

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

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



Australia and New Zealand

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



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



Taiwan – Battery Recycling Requirements

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



廢電池請回收

Notice to Our European Union Customers

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

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



Safety information

The Trimble® Juno® series handhelds contain a Bluetooth® radio and a Wi-Fi radio. The Juno 3D handheld also contains a cellular modem. In some situations, you may be required to turn off the radios. For example, aviation authority regulations restrict the use of radios on board aircraft.

Turning off the integrated radios

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

- To turn off the handheld, press and hold the **Power** button to display the Power menu, then tap *Shutdown*.
- To turn off the Bluetooth, Wi-Fi, and cellular modem radios:
 - a. Tap the title bar on the *Home* or *Start* screen, and then on the pull-down list, tap the  or  icon.
 - b. In the *Connectivity* or the *Phone* dialog, select *Wireless Manager*.
 - c. Tap **All** to turn off all radios. The status fields below the Wi-Fi, Bluetooth, and Phone buttons change to *Off*.

Deactivating the integrated radios

The Juno series handheld is shipped with Wi-Fi and Bluetooth wireless technology activated. You may need to deactivate the Wi-Fi and/or Bluetooth radio in the handheld if the country in which you are working does not approve the use of Wi-Fi and/or Bluetooth wireless technology. If you are unsure about whether the Juno series handheld's radios are approved for use in your country, check with your Trimble reseller.

Use the Radio Activation Manager software to deactivate the integrated Wi-Fi and/or Bluetooth radio, or to reactivate the radios if they have been deactivated. The Radio Activation Manager software runs on an office computer.

The latest copy of the software is available for download from the Trimble website. Go to www.trimble.com/support.shtml, click the link for your receiver type, (Juno 3B or Juno 3D), click Downloads, click Juno Series and then click Radio Activation Manager.

Exposure to radio frequency radiation from Bluetooth and Wi-Fi transmitters

This device is approved as a portable device with respect to Radio Frequency (RF) exposure compliance. The radiated output power of the internal wireless radio transmitters is less than 10 milliWatt, which results in exposure levels far below the FCC radio frequency exposure limits, even when operated in close proximity to the body. The internal wireless radios operate within guidelines found in international radio frequency safety standards and recommendations, which reflect the consensus of the international scientific community. Trimble therefore believes the internal

wireless radios are safe for use by users. The level of electromagnetic energy emitted is hundreds of times lower than the electromagnetic energy emitted by wireless devices such as mobile phones. However, the use of wireless radios may be restricted in some situations or environments, such as on aircraft. If you are unsure of restrictions, you are encouraged to ask for authorization before turning on the wireless radios.

Exposure to radio frequency radiation from cellular wireless transmitters

Juno series handheld equipment uses cellular wireless radios that have been designed and manufactured to meet safety requirements for limiting exposure to radio waves. When used in accordance with the instructions set forth in this manual, the equipment has been independently verified to not exceed the emission limits for safe exposure to radio frequency (RF) energy as specified by the Federal Communications Commission of the U.S. Government in 47 CFR §2.1093.

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

The exposure standard for all wireless devices employs a unit of measurement known as the Specific Absorption Rate, or SAR; the SAR limit set by the FCC¹ is 1.6W/kg.

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

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

SAR information on this device is on file with the FCC and can be found under the Display Grant section of <http://www.fcc.gov/oet/fccid> after searching on FCC ID: JUP96410 (model TNJ31) or JUP96420 (phone model TNJ32).

For documentation relating to the SAR values of the Juno series handhelds, go to the Trimble Support website at www.trimble.com/support.shtml, select the required Juno series handheld (Juno 3B or Juno 3D), select the Technical Support tab, and then click Compliance Information.

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

AC adaptor safety

To charge the handheld's battery, use the international adaptor kit provided with the Juno series handheld (see [Powering the handheld, page 16](#)).



WARNING – To use AC adaptors safely:

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

Battery safety

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 16](#)). If the battery has been stored for longer than six months, charge it before use.



WARNING – Use only the battery intended for the Juno series handheld. Using any other battery can damage the handheld and may void your warranty. If the battery becomes damaged or stops charging fully, replace it with a new battery.



WARNING – Do not damage the rechargeable Lithium-ion battery. A damaged battery can cause an explosion or fire, and can result in personal injury and/or property damage. To prevent injury or damage:

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



WARNING – Avoid contact with the rechargeable Lithium-ion battery if it appears to be leaking. Battery fluid is corrosive, and contact with it can result in personal injury and/or property damage.

To prevent injury or damage:

- If the battery leaks, avoid contact with the battery fluid.
- If battery fluid gets into your eyes, immediately rinse your eyes with clean water and seek medical attention. Do not rub your eyes!
- If battery fluid gets onto your skin or clothing, immediately use clean water to wash off the battery fluid.



WARNING – Charge and use the rechargeable Lithium-ion battery only in strict accordance with the instructions. Charging or using the battery in unauthorized equipment can cause an explosion or fire, and can result in personal injury and/or equipment damage.

To prevent injury or damage:

- Do not charge or use the battery if it appears to be damaged or leaking.
- Charge the Lithium-ion battery only in a Trimble product that is specified to charge it. Be sure to follow all instructions that are provided with the battery charger.
- Discontinue charging a battery that gives off extreme heat or a burning odor.
- Use the battery only in Trimble equipment that is specified to use it.
- Use the battery only for its intended use and according to the instructions in the product documentation.

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

Memory card use

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



WARNING – Static electricity can harm electronic components inside your handheld. To prevent static damage:

- Discharge static electricity from your body before you touch any of the electronic components inside your device, such as a memory module. You can do so by touching an unpainted metal surface.



WARNING – The presence of any dust or moisture in the memory card slot may adversely affect the device and void your Trimble warranty. To prevent dust or moisture entering the memory card slot:

- When inserting or removing a memory card, place the handheld on a dust-free indoor surface.

External GPS antenna use

The Juno series handheld provides an external GPS antenna port. This port is for GPS antennas only.



WARNING – The presence of any dust or moisture in the external antenna port may cause the external antenna to not work. To prevent dust or moisture entering the external antenna slot, take care when using the handheld with an external antenna in wet or dusty conditions.

About the Juno series handhelds

The Juno series handhelds includes the Juno 3B and 3D handhelds. These rugged handhelds are rated IP54, and combine a high sensitivity GNSS receiver with the Windows® Embedded Handheld 6.5 Professional operating system.

The Juno series handhelds have built-in Bluetooth® wireless technology for cable-free connection to other devices, Wi-Fi connectivity for connections to networks, and an integrated 5MP camera with autofocus and flash.

The Juno 3D handheld also has an integrated cellular modem for downloading and transmitting data, with support for voice calls and text messaging.

The integrated GNSS receiver provides accurate positioning information within 3 meters when using postprocessed or 5 meters with real-time differential corrections. For more information, see [Using the GNSS receiver, page 72](#).



About this user guide

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

This guide describes how to:

- get started with the Juno series handheld.
- use the Windows Embedded Handheld 6.5 Professional operating system.
- use the cellular modem in the Juno 3D handheld.
- 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.
- use the handheld's integrated GNSS receiver.
- use the handheld's integrated camera.

Even if you have used other Global Navigation Satellite System (GNSS) or 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.

Collecting GNSS data

To collect GNSS data with the Juno series handheld, you must install GNSS field software onto the handheld.

You can use the Juno series handheld with compatible Mapping and GIS field and office software. For version numbers and a complete list, see the [Product Compatibility List](#) on www.trimble.com.

For more information on using the integrated GNSS receiver, see [Using the GNSS receiver, page 72](#).

What's in the box?

When you unpack the Juno series handheld, check that you have received all the components:



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

Accessories

The following optional accessories are available:

- Vehicle power adaptor
- Carry case with belt clip
- External patch antenna
- Screen protectors (2 pack)
anti-glare or ultra-clear
- Vehicle mount
- Pole mount
- Replacement stylus (2 pack)
- Replacement International AC adaptor
- Replacement battery
- External battery charger
- Replacement wrist strap

For more information, go to:

- www.trimble.com/mappingGIS/juno3B.aspx
- www.trimble.com/mappingGIS/juno3D.aspx

Use and care of the handheld

When using the handheld:

- Protect the touch screen by using your finger or the stylus provided, and avoid using excessive pressure and sharp or abrasive objects. To protect the touch screen from pressure and abrasive objects, Trimble recommends that you apply a screen protector.
- Keep the outer surface free of dirt and dust.
- Ensure that protective covers are appropriately fitted to the external antenna port, USB and power connectors, so that they are kept free from dirt, dust, fluid ingress, and electrostatic discharge.
- Protect the handheld from extreme temperatures. For example, do not leave the handheld on the dashboard of a vehicle.
- The handheld is rated IP54, but is not waterproof. Do **not** immerse the handheld in water, and be careful not to drop the handheld or subject it to any strong impact.

To clean the handheld, wipe it with a clean dry cloth.

Storage

If you are not going to use the handheld for three months or more, Trimble recommends that you do not leave the handheld in Suspend mode (see [page 21](#)). Instead, partially charge the battery and then turn off the handheld.

To prepare the Juno series handheld for storage:

1. Transfer any data that you need to an office computer.
2. Charge the battery to approximately 30%.
3. Press and hold the **Power** button to display the Power menu, then tap *Shutdown*.
4. Store the handheld at room temperature.

To use the Juno series handheld after storage:

1. Press the **Power** key to turn on the handheld.
2. Recharge the battery (see [Charging the battery, page 18](#)).

Technical assistance

Go to the Juno series handheld technical support page on the Trimble website (www.trimble.com/mappingGIS/juno3d.aspx or www.trimble.com/mappingGIS/juno3b.aspx) for the latest support information, including:

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

Additional help

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

Windows error reporting

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

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

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

Getting started

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

Parts of the Juno series handheld

The following pages show the main parts of the handheld.



Figure 1.1 Juno series handheld – Juno 3B and Juno 3D - front view

The function of each key is described below:

Key	Description
Start	Press to display the Windows Embedded Handheld <i>Start</i> screen.
Camera	Press to start the Camera application (see Using the camera, page 78).
Soft keys	By default these keys perform the same action as the left and right softkeys in the menu bar. Alternatively, program these keys to perform a selected action. To program the keys, use the <i>Buttons</i> control (see Buttons, page 32).



Tip – To lock the screen and handheld keys without turning off the handheld, use the device lock option (see [Device lock, page 35](#)).

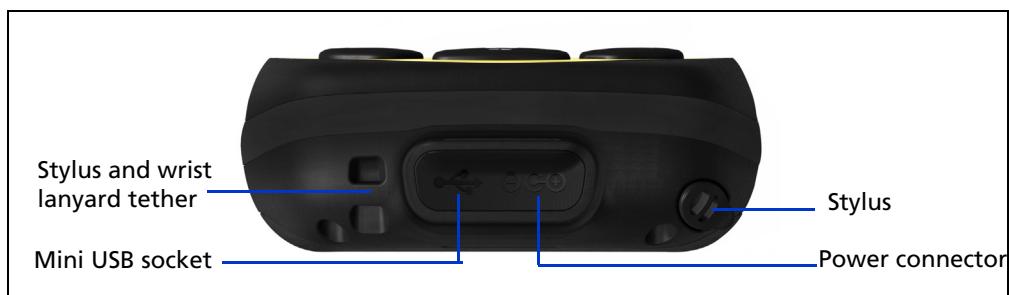


Figure 1.2 Juno series handheld – bottom view



Figure 1.3 Juno series handheld - back view

Powering the handheld

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

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

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

AC adaptor safety

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

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

Battery safety

**WARNING** – Do not damage the rechargeable Lithium-ion battery. A damaged battery can cause an explosion or fire, and can result in personal injury and/or property damage. To prevent injury or damage:

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

**WARNING** – Avoid contact with the rechargeable Lithium-ion battery if it appears to be leaking. Battery fluid is corrosive, and contact with it can result in personal injury and/or property damage.

To prevent injury or damage:

- If the battery leaks, avoid contact with the battery fluid.
 - If battery fluid gets into your eyes, immediately rinse your eyes with clean water and seek medical attention. Do not rub your eyes!
 - If battery fluid gets onto your skin or clothing, immediately use clean water to wash off the battery fluid.
-

**WARNING** – Charge and use the rechargeable Lithium-ion battery only in strict accordance with the instructions. Charging or using the battery in unauthorized equipment can cause an explosion or fire, and can result in personal injury and/or equipment damage.

To prevent injury or damage:

- Do not charge or use the battery if it appears to be damaged or leaking.
 - Charge the Lithium-ion battery only in a Trimble product that is specified to charge it. Be sure to follow all instructions that are provided with the battery charger.
 - Discontinue charging a battery that gives off extreme heat or a burning odor.
 - Use the battery only in Trimble equipment that is specified to use it.
 - Use the battery only for its intended use and according to the instructions in the product documentation.
-

Inserting and removing the battery

To insert the battery into the handheld:

1. On the back of the handheld, turn the back cover lock counter-clockwise to unlock it. Pull the back cover toward you to remove it.
2. To insert the battery, angle the left side of the battery into the handheld first, with the label facing upwards. Press the battery flat until it clicks into place.
3. To replace the back cover, insert the bottom edge of the cover first, and then push it flat until the top clicks into place. Turn the lock clockwise to secure the back cover.



To remove the battery:

4. Remove the back cover of the handheld and then pull the right side of the battery towards you.



CAUTION – The handheld is not sealed from water and dust when the battery is removed. Trimble recommends only removing the battery for short periods of time and only removing the battery indoors or from inside the protection of a vehicle.

Charging the battery

Charge the battery in the handheld (see [page 17](#)). To charge the battery, do one of the following:

- Connect the AC power adaptor to the Power socket on the handheld and then connect the adaptor to mains power. An international adaptor kit is provided with the handheld.
- Connect the optional vehicle power adaptor to the Power socket on the handheld and then connect the adaptor to the vehicle power source.
- Connect the mini USB cable to the handheld and then connect the cable to your computer.

Note – *USB may provide less power than mains or vehicle power. It may take longer to charge the handheld using the mini USB cable, and it will also take longer to turn on or operate the handheld if you are charging it from a completely flat battery.*

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

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

Power source	LED state	Handheld/battery state
Battery power	Off	Off (in Suspend mode or turned off).
	Off	On and battery level is good.
	Flashing red	On and battery is low (less than 10%).
External power	Flashing green	Charging.
	Solid green	Charging is complete.

Avoid keeping the battery at full charge at high temperatures. For more information, see [Storage, page 13](#).

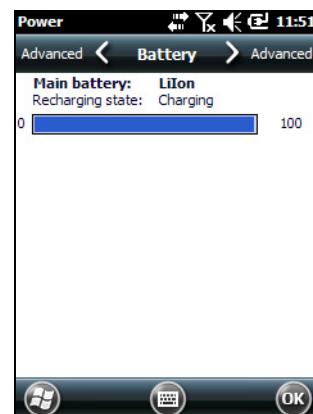
Note – The life of the battery can be significantly shortened if power is constantly supplied to the handheld. To avoid this issue, connect the handheld to an external power source only when the battery requires charging. Once fully charged, disconnect the external power source and allow the battery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

Checking the level of battery power

To check the level of battery power remaining at any time while the device is running, tap the title bar of the *Home* screen and then tap  in the pull-down list.

The Power control appears, displaying the *Battery* tab.

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



Low battery indicators

When the battery level reaches:

- 15%, the battery icon in the title bar of the *Home* screen changes to .
- 10%, the Power LED on the handheld flashes red and the **Main battery low** message appears on the handheld.
- 5%, the **Main battery very low** message appears on the handheld.

Trimble recommends that you recharge the battery when any of these indicators appear.

Conserving power

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

- Set the handheld to automatically turn off when idle. For more information, see [Suspend mode, page 21](#).
- Set the backlight to automatically turn off when the handheld is idle for a specified time. For more information, see [Backlight, page 37](#).
- Reduce the brightness setting for the backlight. For more information, see [Backlight, page 37](#).
- Turn off the integrated Bluetooth or Wi-Fi radios or cellular modem whenever you are not using them. For more information, see [Turning on and turning off the integrated radios, page 48](#).
- Disconnect from the integrated GNSS receiver when GNSS data is not required, using the application's Disconnect or Deactivate GNSS command. When you disconnect from GNSS, the integrated GNSS receiver switches off and stops drawing power.

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

Turning on and turning off the handheld

If the screen on the handheld is blank, the handheld is in Suspend mode or has been shut down. To turn on the handheld, press the **Power** key briefly (less than one second).

To turn off the handheld or put the handheld into Suspend mode, press the **Power** key briefly (less than one second). The handheld is placed in a very low power state, but the Bluetooth and wireless cellular modem radios may remain active (see [Suspend mode, page 21](#))

To completely shut down the handheld, press the **Power** button until the *Power* menu appears and then tap **Shutdown**. All running applications are shut down, and the handheld is completely turned off.

The options available from the *Power* menu are as follows:

Button	Used to...
Power Settings	quickly access the Power Settings menus.
Backlight Settings	quickly access the Backlight Settings menu.
Shutdown	put the handheld into Shutdown mode. Applications are shut down and the handheld is completely turned off.
Reset	restart the handheld. If the handheld stops responding to the stylus, or if it does not respond when you press any of the keypad buttons, try a soft reset. For more information, see Resetting the handheld, page 22 .
	access the Align Screen Sequence. You can also press the left application key to access the Align Screen Sequence. If at any time the touch screen does not respond correctly to stylus taps, start the screen alignment sequence and follow the on-screen instructions.

Suspend mode

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

If a wireless radio is turned on, the Wi-Fi radio will be turned off, and the Bluetooth and wireless cellular modem radios will remain turned on. The handheld is capable of receiving data via Bluetooth or the cellular modem radio while it is in Suspend mode. The handheld is able to automatically wake up to calendar alarms if it is in Suspend mode.



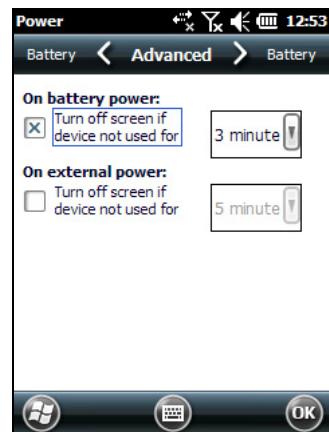
CAUTION – To save battery power, use the Wireless Manager to turn off the wireless radios before you place the handheld into Suspend mode.

To turn on the handheld when it is in Suspend mode, press the **Power** key. The handheld is immediately ready for operation. There may be a delay of up to 30 seconds while the integrated GNSS receiver and the Wi-Fi radio automatically reactivate.

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

To change the time before the handheld enters Suspend mode:

1. Tap the title bar of the *Home* or the *Start* screen and then tap . The Power control appears, displaying the *Battery* tab.
2. Tap the *Advanced* tab.
3. From the *On battery power* option, select the *Turn off screen if device not used for* check box and then select the idle time from the drop-down list.
4. Tap **OK**.



Resetting the handheld

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

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

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

Performing a soft reset

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

To perform a soft reset, use the tip of the stylus to lightly press the Reset button. Alternatively, press the **Power** button until the *Power* menu appears and then tap **Reset**.

Performing a hard reset

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

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

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

Resetting to factory default settings

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



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



CAUTION – If you have encrypted files on a memory card and you reset the handheld to factory default settings, the encryption key on the handheld is deleted. This means that any files you have encrypted on a memory card are permanently locked and unreadable by any device. For more information, see [Encrypting files on memory cards, page 25](#).



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

To reset the handheld to the factory default settings:

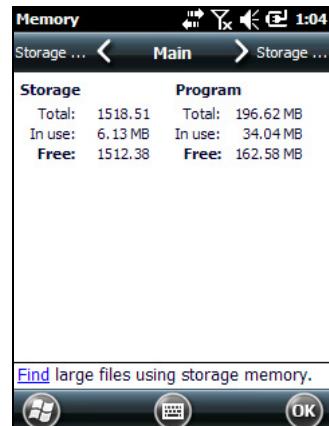
1. Press the **Power** button until the *Power* menu appears and then tap **Shutdown**.
2. Press and hold the two soft keys on the handheld.
3. While holding the soft keys, press and hold the **Power** key until the Hive Clean prompt appears.
4. Follow the on-screen instructions to continue the factory reset.

Storing data

The handheld has two types of memory:

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

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



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



CAUTION – The Windows Embedded Handheld 6.5 Professional operating system does not include a Recycle Bin. When you delete files from the handheld, they are deleted permanently.

Trimble recommends that you regularly copy important data to an office computer. For more information, see [Connecting to an office computer, page 43](#).

Memory cards

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

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



CAUTION – The presence of any dust or moisture in the memory card slot may adversely affect the device and void your Trimble warranty. To prevent dust or moisture entering the memory card slot:

- When inserting or removing a memory card, place the handheld on a dust-free indoor surface.



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

To insert a microSD or microSDHC memory card:

1. Turn off the handheld. See [Turning on and turning off the handheld, page 20](#).
2. Place the handheld face down on a dust-free indoor surface.
3. Remove the battery cover door, and then remove the battery. See [Inserting and removing the battery, page 18](#).
4. Slide the card slot cover to the left and it will hinge open.
5. Place the memory card in the slot with the swipes facing down.
6. Lower the cover and slide it back to the right. The card is locked into place.
7. Replace the battery and the battery cover door.

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

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

To remove the memory card from the memory card slot:

1. Turn off the handheld. See [Turning on and turning off the handheld, page 20](#).
2. Place the handheld face down on a dust-free indoor surface.
3. Remove the battery cover door, and then remove the battery. See [Inserting and removing the battery, page 18](#).
4. Slide the card slot cover to the left to open it, remove the card, then lower the card slot cover and slide it to the right to lock it.
5. Replace the battery and the battery cover door.

Encrypting files on memory cards

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

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

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



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

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

1. Tap  / Settings / System / Encryption.
2. Select the *Encrypt files when placed on a storage card* check box.

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

To disable encryption, clear the *Encrypt files when placed on a storage card* check box.

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

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

1. Copy the files to the handheld's internal memory or to an office computer.
2. Ensure encryption is enabled on the handheld.
3. Copy the files back to the memory card. The files are encrypted as they are written to the memory card.

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

1. Insert the memory card in the handheld and then connect the handheld to an office computer (see [Connecting to an office computer, page 43](#)).
2. Copy the encrypted files from the memory card to the office computer.
3. To use the decrypted files on the handheld, copy the files from the office computer to the handheld's main memory.
4. To store the decrypted files on a memory card, ensure that encryption is not enabled on the handheld and then copy the decrypted files from the office computer to the memory card.

Installing and removing the SIM card



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



CAUTION – The presence of any dust or moisture in the SIM card slot may adversely affect the device and void your Trimble warranty. To prevent dust or moisture entering the SIM card slot:

- When inserting or removing a SIM card, place the handheld on a dust-free indoor surface.



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

To insert or remove a SIM card:

1. Turn off the handheld. See [Turning on and turning off the handheld, page 20](#).
2. Place the handheld face down on a dust-free indoor surface.
3. Remove the battery cover door, and then remove the battery. See [Inserting and removing the battery, page 18](#).
4. Insert or remove the SIM card as shown, with the gold contacts face down.
5. Replace the battery and the battery cover door.



Using the Windows Embedded Handheld operating system

The Juno series handhelds are powered by the Windows Embedded Handheld 6.5 Professional operating system. The main parts of the *Home* screen and the *Start* screen are shown below.



Status indicators

Status indicators that appear in the title bar at the top of the screen are as follows:

Battery status indicators

Icon	Description
	Battery has full charge (81-100%)
	Battery has high charge (61-80%)
	Battery has medium charge (41-60%)
	Battery has low charge (16-40%)
	Battery has very low charge (15% or less)
	Battery charging/using external power

The battery status icon on the title bar of the *Home* screen or the *Start* screen shows the status of the battery charge. Tap the title bar and then on the pull-down list tap the icon to access the Power control dialog. See [Checking the level of battery power, page 19](#).

Network and modem status indicators

Icon	Description
	Connected to ActiveSync or Windows Mobile® Device Center (WMDC) on a computer
	Connected to a Bluetooth-enabled phone
	Disconnected from ActiveSync or WMDC
	Disconnected from a Bluetooth-enabled phone
	Wi-Fi radio is on
	Wi-Fi is detected
	Connected to a wireless network
	Maximum cellular modem signal strength
	No cellular modem signal
	Cellular modem is turned off
	No cellular service
	Searching for cellular modem service
	Data is transferring using the cellular modem
	No SIM card
	UMTS network is available
	UMTS network is connecting
	UMTS connection is active
	3G+ network is available
	Analog network is available
	EDGE network is available
	EDGE network is connecting
	EDGE connection is active
	GPRS network is available

Icon
GPRS network is connecting
GPSR connection is active
HSDPA network is available
HSDPA network is connecting
HSDPA connection is active

The network and modem status icons on the title bar of the *Home* screen or the *Start* screen show the status of each radio. Tap the title bar and then on the pull-down list tap the or icon. In the Connectivity or Phone dialog, select Wireless Manager and turn on or turn off the radio.

Speaker status indicators

Icon	Description
	Speaker is on
	Speaker is off

The speaker status icon on the title bar of the *Home* screen or the *Start* screen shows the status of the speaker. Tap the title bar and then on the pull-down list tap the icon to adjust the volume and to turn the speaker on or off.

Pre-installed programs

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

Program	Function
	Synchronize information between the handheld and a computer.
	Read PDF documents.
	Set alarms.
	Perform basic arithmetic functions.
	Keep track of appointments and arrange meetings.
	Keep track of your friends and colleagues.
	View and manage files.
	Browse the World Wide Web.
	Send instant messages using Windows Live™ Messenger.
	Create handwritten, typed, or recorded notes.
	Take, view, and edit pictures, or record and launch video clips.
	Search for a file or item stored on the handheld.
	Keep track of your tasks.
	Access Windows Live services, including email, instant messenger and Internet search.
	Play Windows Media® or MP3 audio and video files.

Program	Function
 E-mail	Write, send, and receive email messages. On the Juno 3D handheld, you can also access text messaging functions.
 Office Mobile 2010 (Juno 3D handheld only)	Provides access to these Office Mobile applications: Excel® Mobile 2010, PowerPoint® Mobile 2010, OneNote® Mobile 2010, SharePoint WorkSpace Mobile 2010, and Word Mobile.
 Text (Juno 3D handheld only)	Send, receive, and organize text messages.
 Phone (Juno 3D handheld only)	Access the phone functions.
 Flashlight (Juno 3D handheld only)	Use the camera LED flash as a flashlight.

Interacting with the handheld

To interact with the handheld, use the stylus or your finger to tap items on the touch screen, or to scroll up or down.

Action	Definition
Tap	Touch the screen once 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.
Flick	Flick the stylus or your finger over the screen to scroll a page or a list up or down.

If at any time the touch screen does not respond correctly to stylus taps or your finger, realign it. For more information, see [Screen, page 36](#).

Entering information

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

Input method	Description
Synchronizing	Use Microsoft connection management software to exchange information between the handheld and an office computer. For more information, see Connecting to an office computer, page 43 .
Typing	Use the keyboard input panel to enter typed text by tapping keys on the on-screen keyboard.
Writing	Use the stylus like a pen to write directly on the screen.
Recording	Create a stand-alone recording or embed a recording into a note.

Using the on-screen keyboard

The keyboard button automatically appears in the tile bar of any application.

To display the keyboard, tap the keyboard button, or tap a text box in the application.

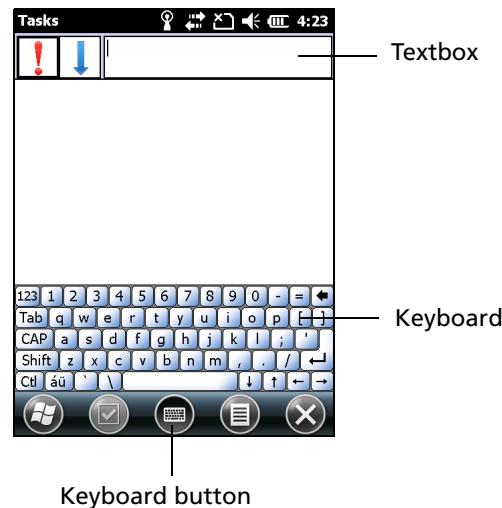
To enter characters, use your finger or the stylus to tap the keys on the keyboard. When you finish entering text in a field, tap **Tab** to accept the text you have entered and then move to the next field.

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

To hide the keyboard, tap the keyboard icon again.



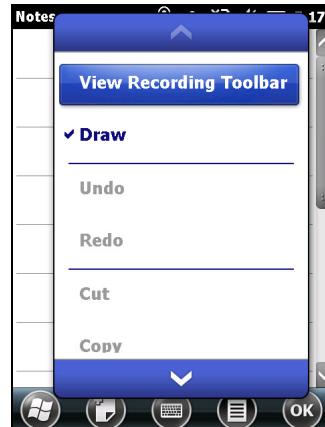
Tip – To make the keys larger, tap **Windows** / Settings / Personal / Input. In the *Input method* list, select Keyboard and then tap **Large Keys**.



Drawing and writing directly on screen

In some applications, for example Notes, you can draw (or write directly) on the screen using the stylus.

1. Tap **Windows** and then tap the Notes icon .
2. Tap the Menu  icon.
3. Select **Draw**.
4. Use the stylus to write or draw on the screen.



Making a recording

For handheld configurations equipped with an integrated microphone, you can create a stand-alone voice note or you can add a recording to a note. Then you can work with voice notes in the same way that you work with notes.

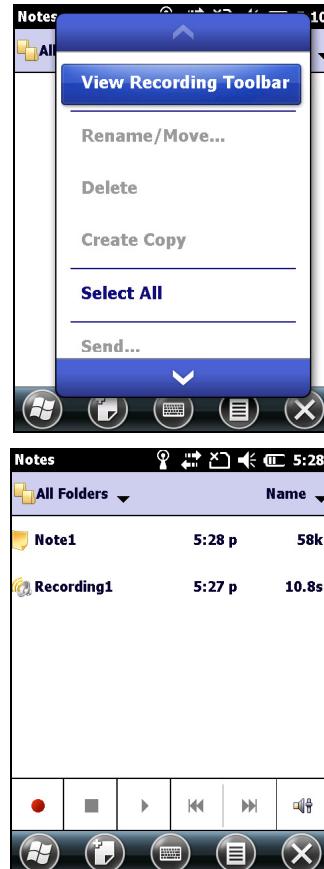
To make a recording:

1. Tap  and then tap the Notes icon.
2. Tap the Menu  icon.
3. Do one of the following:
 - To create a stand-alone recording, in the screen displaying the list of notes, tap the Record button  to begin recording.
 - To add a recording to a note, create or open a note and then tap the Record button  to begin recording.
4. When you finish recording, tap the Stop button .

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

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

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



Personalizing the handheld

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

Buttons

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

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

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

- Run a selected application, for example Messaging or Calendar.
- Act as a software button, for example an OK/Close button or a scroll button.

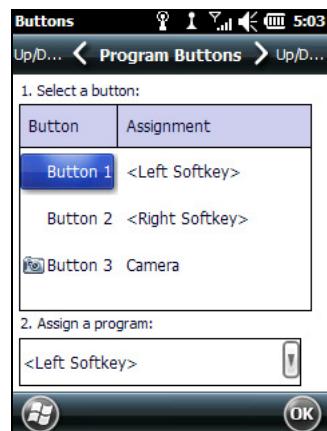
- View a selected screen, or part of a screen, for example return to the *Home* screen or launch the Context menu or Input panel.

To open the *Buttons* control:

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

To specify an action for the button:

1. Tap the *Program Buttons* tab.
2. Tap a button in the list to select it.
3. From the *Assign a program* drop-down list, select the action you want to occur when you press the button or tap the softkey.
4. Tap **OK**.



Home

Use the *Home* settings to change the display theme that controls the appearance of the *Home* screen, and to customize how items appear on the *Home* screen.

Appearance

You can use a theme to customize the background picture on the *Home* screen, the color of the title and tile bars, menus, and messages.

To change the display theme:

1. Tap  / *Settings* / *Home*.
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 *Home* 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 between:

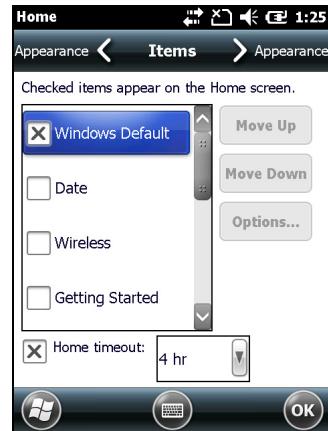
- the Windows default *Home* screen view, which allows you to flick through the list of entries, giving access to functions such as email, text messaging, current time, and Internet Explorer.
- customising which items appear on the *Home* screen and the order in which they appear.

To use the default *Home* screen view:

1. Tap  / *Settings* / *Home*.
2. Tap the *Items* tab.
3. Select the *Windows Default* check box.
4. Tap **OK**.

To customise the items which appear on the *Home* screen:

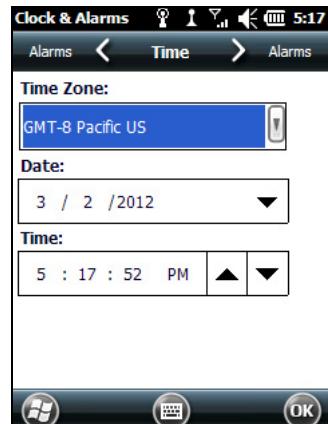
1. Tap  / *Settings* / *Home*.
2. Tap the *Items* tab.
3. Select or clear the check boxes to show or hide the *Home* screen items.
4. Use the **Move Up** and **Move Down** buttons to change where the selected item appears on the *Home* screen.
5. Tap **OK**.



Set the time and date

1. On the *Home* screen, tap the clock item, or tap the title bar and then on the pull-down list, tap the clock icon . The *Clock & Alarms* screen appears.
2. Tap the *Time* tab.
3. In the *Time Zone* field, select the required time zone from the drop-down list.
4. In the *Date* field, tap the down arrow and then select the correct date.

Tip – On the calendar which appears, tap on the month or year to select the required value.



5. In the *Time* field, tap in turn the hour, minute, and second values and then tap the up or down arrows to set the correct time.

Device lock

Tap the *Device Lock* icon  on the *Start* screen to lock the screen and keypad while the handheld remains turned on.

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

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

The lock screen provides multiple unlock sliders for different applications, when there are new notifications. For example, if a new email has arrived, an email unlock slider takes you straight to the email.

To unlock the device, slide the *Unlock* icon for the required application to take you straight to that application.



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

Power

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

- Tap the title bar of the *Home* screen or the *Start* screen, and then tap .
- Tap  / *Settings* / *Power*.

Tap the *Battery* tab to check the battery level (see [Checking the level of battery power, page 19](#)).

Tap the *Advanced* tab to set the time before the handheld turns off when idle (see [Suspend mode, page 21](#)).

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* / *Sounds & Notifications*.

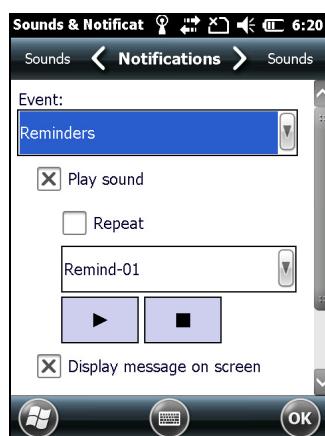
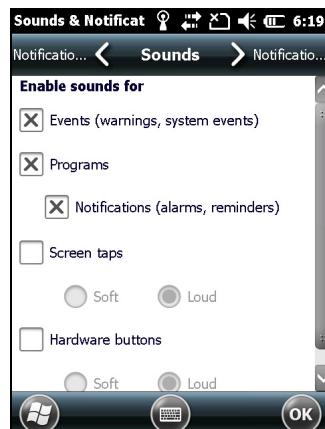
To turn on or turn off sounds:

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

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

To specify a sound scheme:

1. Tap the *Notifications* tab.
2. From the *Event* drop-down list, select an event.
3. Select the type of notification you want to receive for that event.
4. Tap **OK**.



Screen

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

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

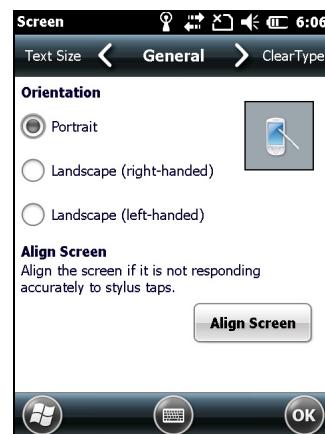
To change the screen settings:

1. Tap the *General* tab.
2. To change the orientation of the screen, select an option in the *Orientation* group.
3. To start the alignment sequence for the touch screen, tap **Align Screen**.
4. Tap **OK**.

Note – To align the screen at any time, press and hold the **Power** button for 1 second until the Power menu appears and then tap .

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

Note – ClearType is already on by default on the Juno series handheld.

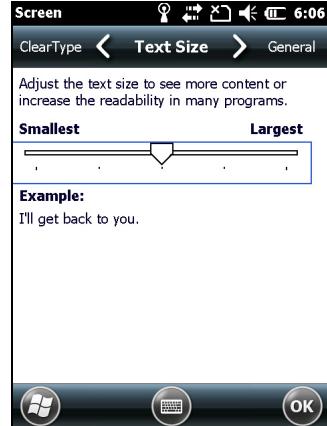


To enable ClearType:

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

To change the size of text on screen:

1. Tap the *Text Size* tab.
2. Tap and drag the slider control to the left to make text smaller, or to the right to make text larger.
The example text below the slider shows how the text will appear on screen.
3. Tap **OK**.



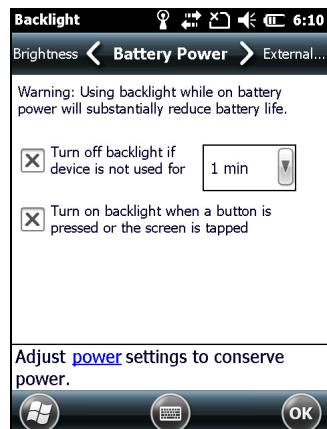
Backlight

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

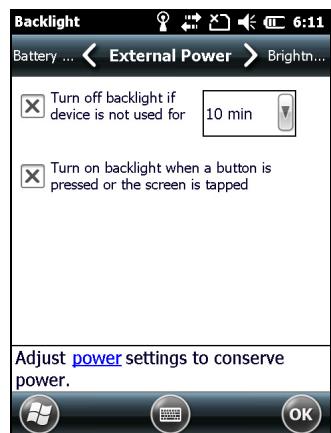
- Tap / *Settings* / *System* / *Backlight*.

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 *Brightness* tab.
2. Tap and drag the Brightness Level slider control to the left to make the backlight darker, or to the right to make the backlight brighter.
3. Tap **OK**.



Messaging

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

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

- Synchronize email messages with Microsoft Exchange or Microsoft Outlook® on an office computer.
- Send and receive email messages by connecting directly to an email server through an ISP or a network.

Synchronizing email messages

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



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

To synchronize email, you must enable Inbox synchronization in the Microsoft ActiveSync technology (for Windows XP) or the WMDC (for Windows Vista or Windows 7). For more information, refer to the *ActiveSync Help* or the *WMDC Help* on the office computer.

During synchronization:

- Messages are copied from the mail folders of Exchange or Outlook on the office computer to the Messaging folder on the handheld. By default, you will receive messages from the past 3 days only, the first 100 lines of each message, and file attachments of less than 100 KB in size.
- Email messages in the Outbox folder on the handheld are transferred to Exchange or Outlook, and then sent from those programs.
- Email messages in subfolders in other email folders in Outlook are synchronized only if they were selected for synchronization (using ActiveSync technology or the WMDC).

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

Connecting directly to an email server

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

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

Note – You must set up an Internet connection on the handheld before you can set up and use your email account. For more information, see [Connecting to a Wi-Fi access point, page 53](#), [Connecting to a Bluetooth-enabled device, page 54](#), or [Connecting to a Bluetooth-enabled phone for Internet access, page 60](#).

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  / E-mail.
2. Tap Setup E-mail.
3. Enter the email address for your account.
4. Enter a password. Select Save password if you want the device to remember your password.
5. Tap **Next**.
6. To automatically get connection settings for your email account from the Internet, select the check box.
7. Tap **Next**.



-
8. Follow the steps in the Setup wizard. If the connection settings are not automatically downloaded from the Internet, you must enter them using the connection details supplied by your ISP or network administrator.

Note – You cannot change the account name later.

9. Tap **Finish**.
10. Tap **OK** to download mail immediately.



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

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

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

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

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

Voice calls

Use the Juno 3D handheld to make and receive phone calls. You can enter a number to dial using the keypad, or select a number from your Contacts list.

To make a phone call:

1. Make sure that a SIM card is installed. See [Installing and removing the SIM card, page 26](#).
2. Make sure that the phone is turned on. See [Turning on and turning off the integrated radios, page 48](#).
1. On the *Home* screen, do one of the following:
 - Tap / *Phone*.
 - Tap the *Phone* item, and then tap the *Phone* item again.

2. On the Phone screen which appears, do one of the following:
 - Use the keypad to dial a phone number and then tap **Talk**.
 - Tap  to hide the keypad and select an option from the list of previously dialled numbers.

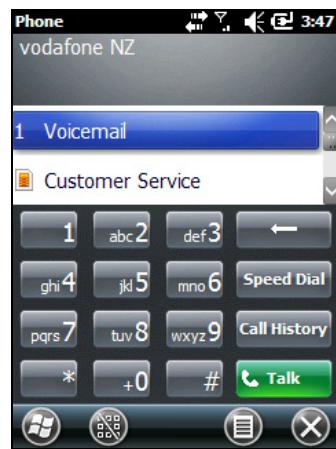
Alternatively, tap the left softkey, tap the required contact and then tap *Call*.

Note – When you make or receive a voice call, the screen automatically locks, and the touch screen cannot be used unless you use the Unlock (left) softkey or Call End (right) softkey.

To answer a phone call, press the **Start call** button or the left softkey.

Note – When you answer a voice call, the screen is blank.

To end a phone call, press the **End call** button or the right softkey.



Phone settings

Note – You must have a SIM card in the handheld to access and change the phone settings.

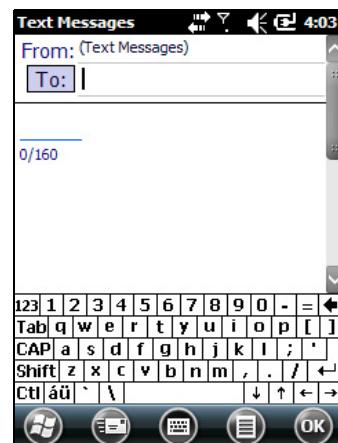
You can change the ring type, ring tone, and keypad sound. If required, you can also set a PIN for the SIM card, or change the type of network or the name of the network you want to connect to.

1. To access Phone Settings, do one of the following:
 - Tap the modem status icon on the title bar of the *Home* screen and then tap *Settings*.
 - Tap  / *Settings* / *Personal* / *Phone*.
2. Do any of the following:
 - Select the *Sounds* tab to set the required ring type, ring tone, and keypad sound.
 - Select the *Security* tab to set a PIN, change the PIN, or set the handheld to require a PIN to be entered every time the phone is used. For more information on setting a PIN, see [Setting a PIN on the Juno 3D handheld, page 49](#).
 - Select the *GSM/UMTS* tab to select a particular type of network to connect to. By default, GSM/UMTS is selected and the phone will connect to either that is available. Alternatively you can specifically select GSM or UMTS from the drop-down menu.
 - Select the *Network* tab to view which network you are connected to or manually select a desired network.

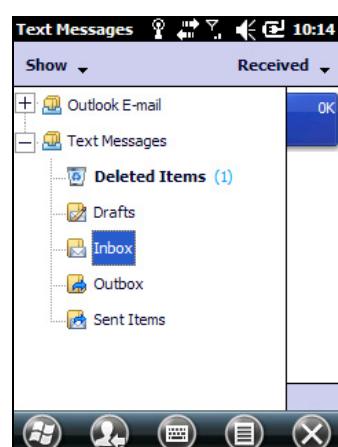
Text messaging

Use the phone functionality on the Juno 3D handheld to send and receive text messages.

1. Make sure that a SIM card is installed. See [Installing and removing the SIM card, page 26](#).
2. Make sure that the phone is turned on. See [Turning on and turning off the integrated radios, page 48](#).
3. Do one of the following:
 - To send a text message:
 - a. On the *Home screen*, select the Text item (this shows *Text Messages: x unread*, or *No New messages*). Alternatively, tap / *Text*.
 - b. Tap / *New*.
 - c. To enter a contact number, make sure that the cursor is flashing in the *To* field and then do one of the following:
 - Use the keyboard to enter a phone number.
 - Select *Menu / Add Recipient* to select a number from your Contacts.
 - d. Tap in the message area (the cursor will flash) and then enter the text using the keyboard.
 - e. Tap to send the message.



- To access your text message folders.
 - a. On the *Home screen*, select the Text item (this may show *Text Messages: x unread*, or *No New messages*) and then tap again.
 - b. Click the *Inbox* drop-down arrow.
 - c. Click the required folder to view messages in that folder.



Connecting to an office computer

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

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



CAUTION – When using the USB port at the bottom of the handheld, make sure that it is kept dry. Water damage may cause the USB connection to fail and the handheld will not connect to the office computer.

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

Connection management software

To install software onto a Windows embedded handheld, 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 7 or Windows Vista® operating system, use the Windows Mobile Device Center to manage the connection.
- the Windows® XP or 2000 operating system, use ActiveSync technology to manage the connection.

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

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



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



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

For more information see one of the following:

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

Installing the Windows Mobile Device Center

The Windows 7 and Windows Vista operating systems include a basic connectivity driver for Windows embedded handhelds. This driver allows you to transfer files from the handheld to an office computer.

To install software onto a Windows embedded handheld, you must install Windows Mobile Device Center onto an office computer.

To download the latest version from the Microsoft website, go to www.microsoft.com/windowsmobile/devicecenter.mspx.

Installing ActiveSync technology

To download the latest version from the Microsoft website, go to www.microsoft.com/windowsmobile/activesync/default.mspx.

Connecting the handheld to a computer

To connect the Juno series handheld to a computer:

1. Make sure that the handheld and the computer are switched on.
2. Make sure you have installed the appropriate connection management software onto the computer (see [Connection management software, page 43](#)).
3. To form a connection, do one of the following:
 - Use a USB connection:
 - a. Connect the USB data cable to the USB port on the handheld.
 - b. Connect the other end of the USB data cable to a USB port on the computer.
 - Use the handheld's integrated Bluetooth radio to establish a wireless serial link to a Bluetooth-enabled computer. For more information, see [Connecting to an office computer using Bluetooth wireless technology, page 66](#).

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

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

Managing the connection using the Windows Mobile Device Center

1. Connect the handheld to the computer (see [page 44](#)).
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 83](#).

4. Do one of the following:
 - To synchronize files and data between the handheld and a computer, click *Set up your device* and then follow the instructions on screen.
 - To transfer data between the handheld and the computer without synchronizing the devices, click *Connect without setting up your device*.
5. To transfer files between the computer and the handheld, click *File Management*. A Windows Explorer-type window appears, displaying files stored on the handheld. Copy and paste files to other locations on the computer, or from the computer to the handheld.
6. To install software onto the handheld, see [Installing software onto the handheld, page 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 the GPS Pathfinder Office software is installed on the office computer, you can configure the Connection Manager utility in the GPS Pathfinder Office software to automatically detect when you connect a Juno series handheld to the computer. This enables you to automatically transfer data from the TerraSync software, differentially correct the data, and then export it to a GIS. For more information, refer to the *GPS Pathfinder Office Software Help*.

Managing the connection using ActiveSync technology

1. Connect the handheld to the computer (see [page 44](#)). The *Synchronization Setup Wizard* appears:

Note – If the connection is not made automatically, check that the connection is enabled in the ActiveSync technology and on the handheld. For more information, see [Troubleshooting, page 83](#).

2. Do one of the following:
 - To synchronize files and data between the handheld and a computer, click **Next** and then follow the instructions in the *Synchronization Setup Wizard*.
 - To transfer data between the handheld and the computer without synchronizing the devices, click **Cancel** to close the wizard.
3. The *Microsoft ActiveSync* window displays the message **Connected**:

-
4. To transfer files between the computer and the handheld, click **Explore**. A Windows Explorer-type window appears, displaying files stored on the handheld. Copy and paste files to other locations on the computer, or from the computer to the handheld.
 5. To install software onto the handheld, see [Installing software onto the handheld, page 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 the GPS Pathfinder Office software is installed on the office computer, you can configure the Connection Manager utility in the GPS Pathfinder Office software to automatically detect when you connect a Juno series handheld to the computer. This enables you to automatically transfer data from the TerraSync software, differentially correct the data, and then export it to a GIS. For more information, refer to the *GPS Pathfinder Office Software Help*.

Installing software onto the handheld

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

Some software installations are specifically designed to run on a Windows Embedded Handheld. To install software on a Windows Embedded Handheld:

1. Connect the handheld to a computer (see [page 44](#)).
2. Copy the installation files to a folder on the handheld.
3. Browse to the folder on the handheld. Tap and hold the installation setup file and then select Run.
4. If prompted after installation, perform a soft reset of the handheld (see [page 22](#)).

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

1. Connect the handheld to a computer (see [page 44](#)).
2. If the software is provided on a CD, insert the software CD into the office computer.
3. Run the installation setup.
4. If prompted, select the install option for a Windows embedded handheld. Once the software is installed on the computer, it is automatically transferred to the handheld.

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

5. If prompted after installation, perform a soft reset of the handheld (see [page 22](#)).

Using the integrated radios to connect to other devices

The Juno series handheld includes an integrated Wi-Fi radio and an integrated Bluetooth radio, and provides a number of options for connecting to networks and other devices. In addition, the Juno 3D handheld includes an integrated cellular modem for sending and receiving data, and supports voice calls and text messaging.

To use Wi-Fi, the Bluetooth radio, or the cellular modem, you need to turn it on (see [Turning on and turning off the integrated radios](#) below).

Using a data connection from your local cellular provider, the Juno 3D handheld's integrated cellular modem can be used to connect to the Internet to receive real-time corrections from a VRS™ network, send and receive messages (including email, SMS, or instant messages), or to send and receive files and other data to and from the office directly in the field.

You can also use the handheld's integrated Wi-Fi radio to connect to the Internet or a corporate network using a connection to a Wi-Fi access point (also known as "hotspots").

Alternatively, you can use Bluetooth wireless technology to connect to the Internet using a cellular phone. You can also connect directly to other Bluetooth-enabled devices such as a GeoBeacon receiver, a laser rangefinder, or a barcode scanner, that are within range (typically within 5 m to 10 m of the handheld).

This section describes how to enable the radios, and the main connectivity options available. Use the table below to identify the wireless connection type you want to make and then follow the steps provided.

Connection method	To...	See...
Juno 3D cellular modem	Connect to a cellular network	page 51
Wi-Fi	Connect to a Wi-Fi access point	page 53
Bluetooth wireless technology	Connect to another Bluetooth-enabled device (paired and non-paired connections)	page 54
	Connect to a Bluetooth-enabled phone for Internet access	page 60
	Connect to a Bluetooth-enabled serial device	page 65
	Connect to an office computer to use ActiveSync technology	page 66
	Beam files to or from another device	page 69
Wi-Fi or Bluetooth wireless technology, or Juno 3D cellular modem	Access a corporate network through your Internet connection	page 69

Deactivating the wireless radios

Note – If you are unsure about whether the Juno series handheld radios are approved for use in your country, check with your Trimble reseller.

Use the Radio Activation Manager software to deactivate the integrated Wi-Fi and/or Bluetooth radio, or to reactivate the radios if they have been deactivated. The Radio Activation Manager software runs on an office computer.

The latest copy of the software is available for download from the Trimble website. Go to www.trimble.com/support.shtml, click the link for your receiver type (*Juno 3B*, or *Juno 3D*), click *Downloads*, click *Juno series* and then click *Radio Activation Manager*.

Turning on and turning off the integrated radios

You can use the Wireless Manager application to turn on and turn off the Juno series handheld's Wi-Fi or Bluetooth radios, or the Juno 3D handheld's cellular modem (see [Using the Wireless Manager](#), below).

You can also turn on or turn off the Bluetooth radio from within the Bluetooth application (see [Turning on and turning off the Bluetooth radio from within the Bluetooth application, page 50](#)).

To make the Juno series handheld visible to other Bluetooth-enabled devices and enable them to connect, see [page 51](#).

Using the Wireless Manager

You can use the Wireless Manager application to turn on and turn off the Juno series handheld's Wi-Fi radio and/or Bluetooth radio, and the Juno 3D handheld's cellular modem. You can turn on and turn off any of the radios at the same time, or control each individually.

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

- Tap the title bar, tap any of the radio icons and then tap **Wireless Manager**.
- Tap  / *Settings* / *Connections* / *Wireless Manager*.

Turn on the Wi-Fi radio and/or Bluetooth radio to be able to connect to other devices or networks.

Turn on the Juno 3D handheld's phone functionality to be able to send and receive text messages, and make and receive voice calls.

Turn off the Wi-Fi radio, Bluetooth radio, and/or phone (Juno 3D handheld only) to prevent the handheld from sending or receiving wireless signals.



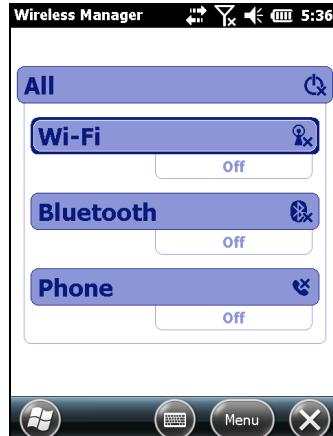
Tip – To conserve power, turn off the radios when not in use.

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

1. Open the Wireless Manager (see above).
2. Do one of the following:

Note – The Phone option applies only to the Juno 3D handheld.

- Tap **All** at the top of the screen to turn on the radios, or to turn off all the radios if they are already on.
- Tap **Wi-Fi**, **Bluetooth**, or **Phone** to turn on the radio that you want to use, or to turn off the radio if it is already on.



The status fields below the **Wi-Fi** button, the **Bluetooth** button, and the **Phone** button change from *Off* when the radios are turned on and show the current state of the radio. The Wi-Fi status field shows *Connecting* or *Available*, the Bluetooth status field shows *On* or *Visible*, and the **Phone** status field shows *On* or the name of the cellular network that you are connected to.

3. Tap  to exit the Wireless Manager.

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

Configuring phone settings (Juno 3D handheld only)

You can help to keep data secure by configuring your SIM card with a PIN (personal identification number). You will need to enter the PIN each time you want to use the phone.

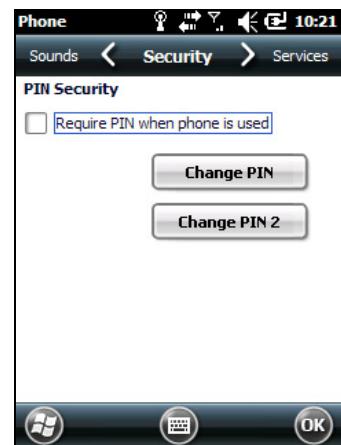
Most SIM cards are preset with a PIN that is assigned by your wireless service provider. You will need to enter this PIN first.

Setting a PIN on the Juno 3D handheld

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

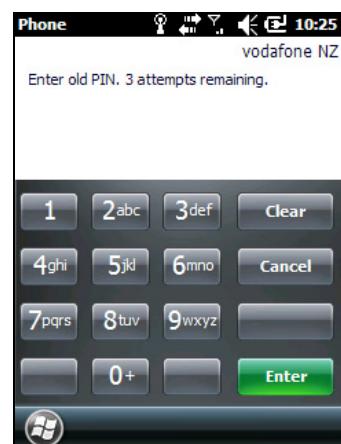
1. Open the Wireless Manager (see above).
2. Tap *Menu / Phone Settings / Security*.

3. To configure the phone to always require a PIN, select *Require PIN when phone is used*.
4. Enter the preset PIN assigned by your wireless service provider.
5. Tap **OK**.



To change a PIN:

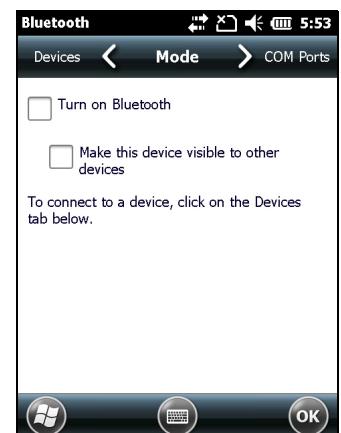
1. Tap **Change PIN**.
2. Enter the current PIN and then tap **Enter**.
3. Enter a new PIN and then tap **Enter**.



Turning on and turning off the Bluetooth radio from within the Bluetooth application

1. Tap / *Settings / Bluetooth*.
2. Tap the *Mode* tab.
3. Select the *Turn on Bluetooth* check box to turn on the radio, or clear this check box to turn off the radio.
4. Tap **OK**.

Note – If the integrated Bluetooth radio is deactivated, the message **Problem with Bluetooth hardware** may appear when you try to turn on the Bluetooth radio or discover devices.



Making the handheld visible (discoverable) to other Bluetooth devices

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

To make the handheld **visible** to other devices:

1. Tap  / *Settings* / *Bluetooth*.
2. Tap the *Mode* tab.
3. Select the *Turn on Bluetooth* check box, if it is not already selected. This enables the integrated Bluetooth radio.
4. Select the *Make this device visible to other devices* check box.
5. Tap **OK**.

Connecting to a cellular network from the modem (Juno 3D only)

Use the Juno 3D handheld’s cellular modem to connect to a cellular network and access the Internet or a company network. Use this type of connection to access a background map server, or for Internet and email access.

To connect to a cellular network, you must:

1. Configure the connection to the network.
2. Connect to the cellular network.

Before you begin the steps below, Trimble recommends that you:

- make sure that a SIM card is inserted in the handheld. See [Installing and removing the SIM card, page 26](#).
- confirm that the modem can access the Internet directly. If necessary, contact your service provider and confirm whether you must enter a user name, password, and domain details when connecting.
- make sure that you have the correct APN (Access Point Name) from your cellular provider.

Step 1: Configure the connection

To set up an automatic configuration:

1. Tap  / *Settings* / *Connections* / *Wireless Manager*. If the Phone is Off, tap Phone to turn it on. Close the Wireless Manager.
2. Tap  / *Settings* / *Connections* / *Connections*.
3. On the Connections screen, on the Tasks tab, tap *Automatically configure connection*.

The device holds a database of the most common cellular providers and the correct connection settings. The handheld will attempt to identify the SIM vendor.

4. If the SIM vendor is recognised correctly, tap **Next** to continue. The connection settings are set up automatically. The process takes about 30 seconds.

If the SIM is not automatically detected, or the vendor settings are not known you will need to set up the configuration manually. Go to [To set up a manual configuration](#): below.

To set up a manual configuration:

1. Tap  / *Settings* / *Connections* / *Wireless Manager*. If the Phone is Off, tap Phone to turn it on.
2. Tap  / *Settings* / *Connections* / *Connections*.
3. Under Tasks, tap *Add a new modem connection*.
4. Enter a name for the connection, for example **My Connection**.
5. In the *Select a modem* field, select **Cellular Line** and then tap **Next**.
6. Enter the APN provided by your cellular provider (check with your provider first for correct settings, some providers have multiple APN settings).
7. Tap **Next**.
8. Enter a username password and domain if required (check with your provider, these are often not required). If not required, leave these fields empty.
9. Tap **Finished**.

Step 2: Connect to the cellular network:

1. Tap  / *Settings* / *Connections* / *Wireless Manager*. If the Phone is Off, tap Phone to turn it on. Close the Wireless Manager.
2. Tap  / *Settings* / *Connections* / *Connections*.
3. Under Tasks, tap *Manage existing connections*. The configured connections are listed.
4. Tap and hold the connection that you want to use. Tap *Connect* from the pop-up menu.

The task bar shows the “connecting” icon, for example . When the connection is open/established, the task bar shows the “connected” icon, for example . The icons shown depend on the network—see [Network and modem status indicators, page 28](#) for full details.

Once connected, open an application, for example, Internet Explorer, to test the connection. Some applications automatically launch the connection when you start the application, if a current connection is not already established.

Connecting to a Wi-Fi access point

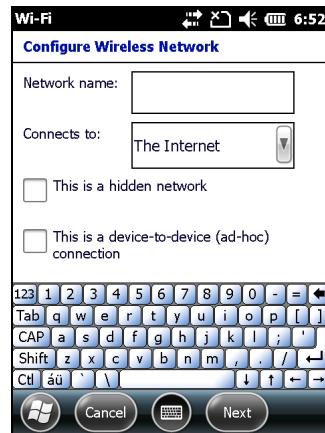
To connect to a Wi-Fi access point, you must:

1. Set up the Wi-Fi connection
2. Connect to the Wi-Fi network or access point.

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

Step 1: Setting up the Wi-Fi connection

1. Make sure that the Juno series handheld's Wi-Fi radio is enabled (see [page 48](#)).
2. Tap / *Settings* / *Connections* / *Wireless Manager*.
3. Tap **Menu** and then select *Wi-Fi Settings*.
Any networks that you have already configured are displayed in the list of preferred networks.
4. To add a new network, tap *Add New*. To change the settings for an existing network, tap the network.
5. Enter the name of the network and other connection details and then tap **Next**.
6. Do one of the following
 - To use authentication, select the authentication method from the *Authentication* list.
 - To use data encryption, select an encryption method from the *Data Encryption* list.
 - To automatically use a network key, select the check box for *The key is automatically provided*. Otherwise, enter the *Network key* and the *Key index*.
7. Tap **Next**.
8. For increased security, select the *Use IEEE 802.1x network access control* check box and then configure additional authentication information.
9. Tap **Finish**.



Step 2: Connecting to the network or access point

1. Disconnect the USB data cable, as the handheld prioritizes a USB connection over a Wi-Fi connection.
2. Bring the handheld within range of the network or access point.

When a Wi-Fi connection is detected, the access point icon appears on the title bar, and a notification message appears on the left softkey.

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

3. Tap the access point icon on the title bar, or tap **Notification**, or press the left softkey.
A popup message shows the available networks.
4. Select the network you want to connect to and then tap **OK** or press the left softkey.
5. Select *The Internet (or work via a VPN)* or *Work* and then tap **Connect** or press the left softkey.
6. If a *Network Log On* screen appears, enter your user name, password, and domain information and then tap **OK** on the left softkey.
When the handheld is connected to the network or access point, the Wi-Fi connected icon  appears in the title bar.
7. Start using the program you want to use, for example Windows Explorer Mobile or Internet Explorer.

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



To delete a Wi-Fi connection, tap and hold the connection in the Wireless tab of the Wi-Fi Settings screen and then select Remove Settings.

Connecting to a Bluetooth-enabled device

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

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

The Juno series handheld can act as a Bluetooth client device. The concept of client devices is explained in detail below.

Connecting to a Bluetooth device as a client

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

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

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

A client can connect to a number of different services provided by different hosts. The number of active connections at any one time affects the speed of the connections.

Figure 1.4 shows the handheld connected to different types of host devices using Bluetooth wireless technology.

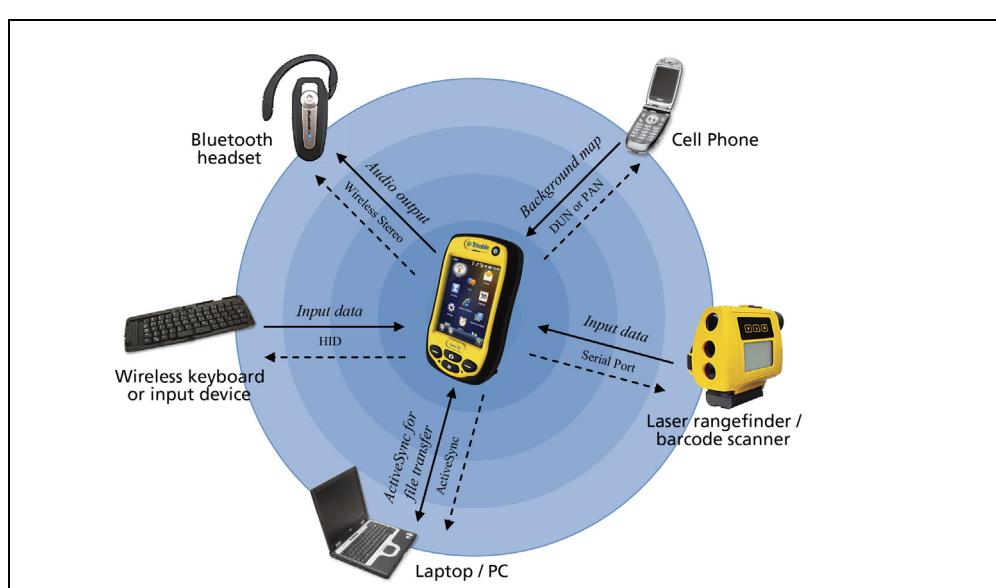


Figure 1.4 Juno series handheld Bluetooth client connections

In Figure 1.4, the dashed arrows indicate the client device—that is, the Juno series handheld—connecting to host devices. The Bluetooth profile (or service) used for the connection is shown between the arrows, for example, the **DUN** service is used for a connection to a cell phone, and the **Serial Port** service is used for a serial connection to a barcode scanner or laser rangefinder.

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

- a cellphone, the handheld uses the DUN or PAN host service provided by the phone to access the Internet and background map data.
- a laptop computer or office computer, the devices use the ActiveSync service to exchange information to and from either device.
- Bluetooth headphones, the handheld uses the Wireless Stereo host service provided by the headphones to play audio files and system sounds.

Setting up a Bluetooth connection

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

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

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

Note – If you are connecting to a phone, skip this section and go to [Connecting to a Bluetooth-enabled phone for Internet access on page 60](#), where the pairing step is described as part of the procedure for connecting to a phone.

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

Some devices do not support paired connections. Use a non-paired connection if the device does not have a keyboard, and if you know that the device does not automatically exchange a pre-programmed passkey during pairing. For more information, see [Setting up a connection to a non-paired device, page 58](#).

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

- Pair with a Bluetooth-enabled device (see below)
- Set up a connection to a non-paired device (see [page 58](#))

Pairing with a Bluetooth-enabled device

Pairing the handheld with another Bluetooth-enabled device creates a permanent security bond between the devices, which helps to exchange information securely between the devices. The paired relationship is established when two devices create and exchange a link key. Once the relationship is established, the handheld and the other Bluetooth device only need to have their Bluetooth radios turned on to exchange information; they do not need to be visible to other devices.

To pair with a Bluetooth device:

1. Make sure that the handheld and the Bluetooth device you want to pair with are within five meters of each other, and that the Bluetooth radio in each device is turned on.
2. On the Juno series handheld, tap  / *Settings* / *Bluetooth*.
3. In the *Devices* tab, tap *Add new device*. The handheld searches for other Bluetooth devices and displays them in the list.

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

4. Tap the name of the device you want to pair with and then tap **Next** on the right softkey.
5. In the *Passcode* field, enter a passcode of between 1 and 16 characters. If you are connecting to:
 - a device with a keypad, enter a passcode of your choice.
 - a device without a keypad, but you know that the device has a pre-programmed passcode that will be exchanged, enter that passcode on the Juno series handheld



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

6. Tap **Next**.
7. When prompted, enter the same passcode on the other device.
8. On the handheld, tap the name of other device. The *Partnership Settings* screen appears.
9. If required, change the name of the device in the *Display Name* field.
10. Select the service(s) you want to use with this device. For example, if you are connecting to:
 - a Bluetooth-enabled phone to connect to the Internet and receive real-time corrections or download background maps, select **Dialup Networking (DUN)**.

-
- a serial device, such as a GeoBeacon receiver or a laser rangefinder, select **Serial Port**.
 - a computer to access ActiveSync technology (or WMDC), select **ActiveSync**.

Note – Only **ActiveSync** shows on the Windows embedded handheld. Select **ActiveSync** even if you use the WMDC on the desktop computer.

Note – For more information on the types of devices that the Juno series handheld can connect to, and the supported Bluetooth services, see [Connecting to a Bluetooth device as a client, page 55](#).

11. Tap **Save**.
12. Tap **OK** to close the Bluetooth application.
13. Tap  to close the *Settings* screen.

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

- [Connecting to a Bluetooth-enabled phone for Internet access, page 60](#)
- [Connecting to a Bluetooth-enabled serial device, page 65](#)
- [Connecting to an office computer using Bluetooth wireless technology, page 66](#)



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

Setting up a connection to a non-paired device

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

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

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

3. In the *Devices* tab, tap *Add new device*. The handheld searches for other Bluetooth devices and displays them in the list.
4. Tap the name of the device you want to connect to and then tap **Next**.
The *Enter Passcode* screen appears.
5. Tap **Next** without entering a passcode.
6. If prompted to add the device to your device list, tap **No**.
7. On the handheld, tap the name of the other device. The *Partnership Settings* screen appears.
8. If required, change the name of the device in the *Display Name* field.
9. Select the service(s) you want to use with this device. For example, if you are connecting to:
 - a Bluetooth-enabled phone to connect to the Internet and receive real-time corrections or download background maps, select **Dialup Networking (DUN)**.
 - a serial device, such as a GeoBeacon receiver or a laser rangefinder, select **Serial Port**.
 - a computer to access ActiveSync (or WMDC), select **ActiveSync**.



Note – Only **ActiveSync** shows on the Windows embedded handheld. Select **ActiveSync** even if you use the WMDC on the desktop computer.

Note – For more information on the types of devices that the Juno series handheld can connect to, and the supported Bluetooth services, see [Connecting to a Bluetooth device as a client, page 55](#).

10. Tap **Finish**.
11. Tap **OK** to close the Bluetooth application.
12. Tap **[X]** to close the *Settings* screen.

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

- [Connecting to a Bluetooth-enabled phone for Internet access, page 60](#)
- [Connecting to a Bluetooth-enabled serial device, page 65](#)
- [Connecting to an office computer using Bluetooth wireless technology, page 66](#)

Connecting to a Bluetooth-enabled phone for Internet access

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

Note – Some cellular phones support the Bluetooth PAN (Personal Area Networking) service as well as the Bluetooth DUN (Dialup Networking) service. Because DUN connections are more common, this section assumes you are making a dialup network connection with the Bluetooth-enabled phone. For information on setting up a PAN service, see [Connecting to the Internet through a Bluetooth-enabled phone using the Bluetooth PAN profile, page 63](#).

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

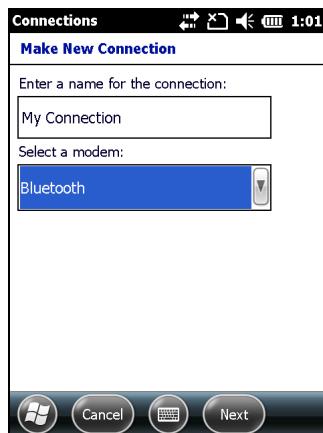
1. Connect the Juno series handheld to a Bluetooth-enabled phone and then configure the connection to the dialup network.
2. Connect to the Internet using the dialup network.
3. Configure the software to use the connection. For example, you must configure the GNSS field software to use map data received from the Internet source, or you must set up the Messaging application to send and receive email using the connection.

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

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

1. Make sure that the handheld and the Bluetooth device you want to connect to are within five meters of each other, and that the Bluetooth radio in each device is turned on. For more information, see [Turning on and turning off the integrated radios, page 48](#).
2. On the handheld, tap  / Settings / Connections / Connections.
3. Below *My ISP*, tap Add a new modem connection.

4. Enter the name for the connection. For example, enter the name of the phone or the VRS network that you will connect to.
5. From the *Select a Modem* drop-down list, select **Bluetooth** and then tap **Next**.
6. If the phone you want to connect to is:
 - listed, go to [Step 7](#) below.
 - not listed:
 - a. Tap *Add new device*. The handheld searches for other Bluetooth devices and displays them in the list.



If the handheld's integrated Bluetooth radio is turned off, it is now automatically turned on.

- b. From the list of available devices, select the device you want to connect to and then tap **Next**.
- c. To pair with the phone, enter a passcode of your choice that you will easily remember onto the handheld and then tap **Next**.
- d. When prompted by the phone, enter the same password and then accept the connection.
- e. On the Juno series handheld, tap *Advanced* to open the Partnership Settings screen. Make sure that **Dialup Networking (DUN)** is selected and then tap **Save**.

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

7. From the *My Connections* list, select the phone that you want to configure the connection to.
8. Enter the GPRS access number for the Internet.

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

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

9. Tap **Next**.

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

Otherwise:

- a. Enter the required information.
- b. If the phone provider has told you that you need to change the baud rate or other settings for the connection, tap **Advanced**, configure these settings and then tap **OK**.
- c. Tap **Finish**.

You are returned to the *Connections* screen.

You have now configured the dialup networking connection.

Step 2: Connecting to the Internet using the dialup network

1. On the handheld, go to the *Connections* screen, if it is not already open (tap  / *Settings* / *Connections* / *Connections*).
2. Below *My ISP*, tap *Manage existing connections*.
3. Tap and hold the connection you want to use and then select *Connect*.
4. Unless the phone provider confirmed that you must enter user name, password, and domain settings to access the Internet, tap **OK** without entering any information in this screen. Otherwise, enter the required information and then tap **OK**.
5. If the phone prompts for confirmation to connect to the Internet, accept the connection.

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

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

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

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

Note – If you have an active Wi-Fi connection, the connectivity icon appears as  instead.

6. Tap **OK** to close the *My ISP* screen.
7. Tap **OK** to close the *Connections* / *Tasks* screen.
8. Tap  to close the *Connections* screen.

To check the connection status at any time, tap the title bar and then tap the required status icon on the pull-down list.

To end the connection at any time, tap the title bar, tap the required status icon on the pull-down list and then tap **Disconnect**.

To connect to a corporate network or Intranet, see [page 69](#).

To send and receive email messages, see [Messaging, page 38](#).

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

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

To use real-time corrections in Trimble field software, and background map data in the TerraSync software, refer to the Trimble field software documentation on www.trimble.com:

- For the TerraSync software, go to
http://www.trimble.com/mappingGIS/TerraSync.aspx?dtID=technical_support
- For the GPS Controller software, go to
http://www.trimble.com/support_trl.asp?Nav=Collection-32054

Reconnecting to the Internet

To reconnect to the Internet at any time after setting up the connection, repeat the steps listed under [Step 2: Connecting to the Internet using the dialup network on page 62](#).

Connecting to the Internet through a Bluetooth-enabled phone using the Bluetooth PAN profile

This section describes how to set up a Bluetooth Personal Area Network (PAN) connection for Internet access, using Bluetooth-enabled cellular phone.

The PAN service is not available on the Juno 3D handheld model which has an integrated modem.

Making a Bluetooth PAN connection with a Bluetooth-enabled cellular phone is similar to making a Bluetooth Dialup Networking (DUN) connection (see [Connecting to a Bluetooth-enabled phone for Internet access, page 60](#)), in that it enables the handheld to access the Internet. If PAN connections are supported by your cellular phone, the advantages of using a PAN connection rather than a DUN connection are:

- PAN connections are easier to set up.
- PAN connections automatically attempt to reconnect when the handheld is resumed from being suspended or shut down.

To access the Internet using a Bluetooth PAN connection to a Bluetooth-enabled cellular phone, you must:

-
1. Pair the Juno series handheld with a cellular phone that supports the Bluetooth PAN profile.
 2. Enable the PAN connection on the handheld.

Step 1: Pairing with the cellular phone

1. Make sure that the handheld and the Bluetooth device you want to pair with are within five meters of each other, and that the Bluetooth radio in each device is turned on.
2. On the Juno series handheld, tap  / *Settings* / *Bluetooth*.
3. In the *Devices* tab, tap *Add new device*. The handheld searches for other Bluetooth devices and displays them in the list.
If the device you are trying to connect is not displayed in the list, ensure that the device is on and within range and then tap *Refresh* to search for devices again.
4. Tap the name of the device you want to pair with and then tap **Next** on the right softkey.
5. In the *Passcode* field, enter a passcode of your choice (between 1 and 16 characters).

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

6. Tap **Next** on the right softkey.
7. When prompted, enter the same passcode on the other device.

On the handheld, the *Partnership Settings* screen appears.

8. If required, change the name of the device in the *Display Name* field.
9. Select the *Network Access Point* check box. The boxes for other services offered by the phone can be unchecked.
10. Tap **Finish** on the right softkey.

Step 2: Enabling the PAN connection

1. In the PAN tab of the Bluetooth application on the handheld, select the cellular phone you just connected to from the drop-down list and then select the *Enable PAN connection* check box.

The status field in the PAN tab shows the progress of the connection. Wait until the Status field shows Connected.

2. Check the cellular phone and if prompted, allow the connection.
The  or  icon in the title bar changes to .
3. Tap **OK** to close the Bluetooth application.
4. Tap  to close the *Settings* screen.

5. If the *Establishing Connection* popup message appears on the handheld, select *The Internet (or work via a VPN) or Work* and then tap **Connect**, or dismiss the message.
6. Start using the program you want to use, for example Windows Explorer Mobile or Internet Explorer.

To check the connection status at any time, tap the title bar and then on the pull-down list tap the required connection icon. The Bluetooth PAN connection appears as "Network Card".

To end the connection at any time, tap  / *Settings / Bluetooth*. In the PAN tab, clear the *Enable PAN connection* check box.

Connecting to a Bluetooth-enabled serial device

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

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

1. Connect to the Bluetooth-enabled serial device.
2. Configure the COM port on the handheld to use for the connection.
3. If necessary, configure the GNSS field software to use data received from the serial device.

Step 1: Connecting to the Bluetooth-enabled serial device

Connect the handheld to the Bluetooth-enabled device, selecting the *Serial Port* service if it is not already selected (see [Connecting to a Bluetooth-enabled device, page 54](#)).

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

1. On the Juno series handheld, tap  / *Settings / Bluetooth*.
2. Tap the *COM Ports* tab.
3. Tap *New Outgoing Port*.
4. Select the device you want to set up the connection to and then tap **Next**.
5. Select the COM port on the Juno series handheld to use for the connection.

The Juno series handheld has five COM ports (COM0, COM1, COM2, COM3, and COM8) available for connections out to Bluetooth-enabled serial devices.



-
6. Do one of the following:
 - To communicate with any device, for example if you have formed this connection without pairing to a device, clear the *Secure Connection* check box.
 - To communicate only with devices with which the handheld has a Bluetooth partnership, select the *Secure Connection* check box.
 7. Tap **Finish**.
 8. Tap **OK** to close the Bluetooth application.
 9. Tap  to close the *Settings* screen.

Step 3: Configuring the GNSS field software to use data from the serial device

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

To use a Bluetooth-enabled external sensor such as a laser rangefinder or a barcode scanner in TerraSync software, refer to the TerraSync software documentation on http://www.trimble.com/mappingGIS/TerraSync.aspx?dtID=technical_support

Connecting to an office computer using Bluetooth wireless technology

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

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

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

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

1. Set up the connection to the computer.
2. Connect to ActiveSync or WMDC using Bluetooth wireless technology.

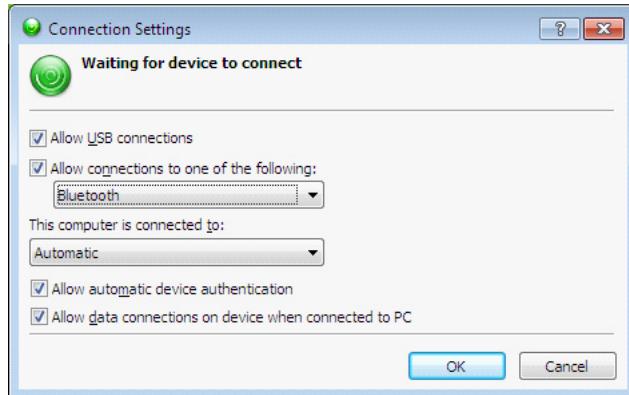
Step 1: Setting up the connection to the computer

1. From the Bluetooth user interface on the office computer, make sure that the computer allows itself to be discovered by other Bluetooth devices.
2. Configure ActiveSync technology or WMDC on the office computer to connect to the correct Bluetooth port. The steps required depend on the operating system installed on the office computer. If the office computer is using:
 - the Windows 7 or Windows Vista operating system:

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

If you have previously connected to a device (using USB or another connection method), the Windows Mobile Device Center screen for this device may show. In this case, select *Mobile Device Settings*.

The *Connection Settings* dialog appears:



- b. Select the *Allow connections to one of the following* check box.
c. From the list, select Bluetooth and then click **OK**.
• the Windows XP operating system:
a. From the Bluetooth user interface on the office computer, identify the virtual COM port of the host Bluetooth Serial Port or Local Service and ensure that this is enabled. In this example, the virtual COM port is COM5.
b. Start the ActiveSync technology on the office computer.
c. Select *File / Connection Settings*.

The *Connection Settings* dialog appears:



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

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

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

- 3. On the handheld, tap  / *Settings* / *Bluetooth*.
- 4. In the *Devices* tab, tap *Add new device*. The handheld searches for other Bluetooth devices and displays them in the list.
- 5. Tap the name of the computer you want to connect to and then tap **Next**.
- 6. When prompted, enter a passcode of your choice that you will easily remember on the handheld.
- 7. Enter the same passcode on the office computer.
- 8. On the handheld, select the **ActiveSync** check box in the list of services provided by the computer and then tap **Finish**.

Note – The checkbox on the handheld still shows **ActiveSync**, even if the office computer is running the Windows 7 or Windows Vista operating system and you are using the WMDC.

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

- 9. Tap **OK** to close the Bluetooth application.
- 10. Tap  to close the *Settings* screen.
- 11. To connect, go to **Step 2** below. Note that the check box on the handheld shows **ActiveSync** even if the office computer is running the Windows 7 or Windows Vista operating system and you are using the WMDC.

Step 2: Connecting to ActiveSync using Bluetooth wireless technology

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

Note – Only **ActiveSync** shows on the Windows embedded handheld. Select **ActiveSync** even if you use the WMDC on the desktop computer.

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

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

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

The connectivity icon in the status bar shows  , or  if Wi-Fi is connected.

To check the status of the connection, tap the title bar and then tap the connectivity icon on the pull-down list.

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

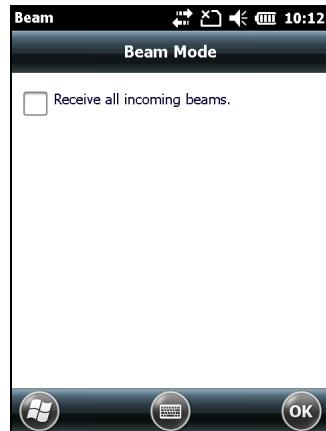
Beaming files to or from another device

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

To **receive** beamed files from another device:

1. Make sure that the Juno series handheld's integrated Bluetooth radio is turned on (see [page 50](#)).
2. Tap  / *Settings / Connections / Beam*.
3. Select the *Receive all incoming beams* check box and then tap **OK**.
4. When another device attempts to beam a file, you are prompted to accept the file. To receive the file, tap **Yes**.

Note – All incoming files are automatically saved in the *My Documents* folder on the handheld.



To **send** beamed files to another device:

1. Make sure that the Juno series handheld's integrated Bluetooth radio is turned on (see [page 50](#)).
2. On the Juno series handheld, open File Explorer and go to the file you want to send.
3. Tap and hold the file and then select *Beam File*. The handheld scans for nearby devices.
4. Tap the device you want to send the file to. The file is sent to the device.

A message reports **Done** or **Failed**, depending on the outcome of the file transfer.



Accessing a corporate network through your Internet connection

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

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

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

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

1. Set up an Internet connection on the handheld.
2. Set up a VPN connection.
3. Connect to the corporate network or Intranet.

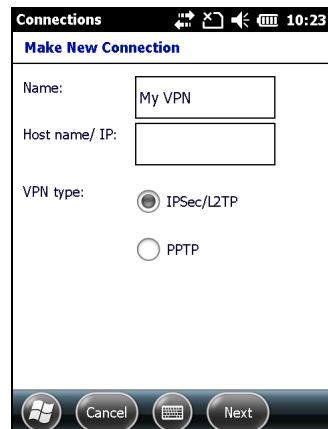
Step 1: Setting up an Internet connection on the handheld

Do one of the following:

- Set up a Wi-Fi connection to an access point. For more information, see [page 53](#).
- Connect to the Internet using the internal cellular modem (Juno 3D only). For more information, see [page 51](#).
- Connect to the Internet using a Bluetooth-enabled phone. For more information, see [page 60](#).

Step 2: Setting up a VPN connection

1. On the Juno series handheld, tap  / *Settings* / *Connections* / *Connections*.
2. From the *My Work Network* list, tap *Add a new VPN server connection*.
3. Follow the instructions in the *Make New Connection* wizard.
4. Tap **Finish**.



Step 3: Connecting to the corporate network or Intranet

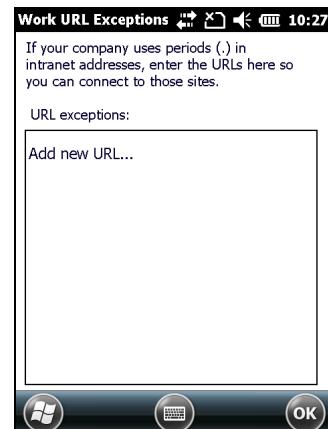
To connect to the corporate network or Intranet, simply start using Internet Explorer.

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

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

1. Tap  / *Settings* / *Connections* / *Connections*.
2. Tap the *Advanced* tab.

-
3. Tap **Exceptions**. The *Work URL Exceptions* screen appears.
 4. Tap *Add new URL*.
 5. Enter the URL and then tap **OK**.
 6. Repeat Step 4 and Step 5 as required.
 7. Tap **OK** to return to the *Advanced* tab of the *Connections* screen.
 8. Tap **OK** to close the *Connections* screen.
 9. Tap  to close the *Settings* screen.



Using the GNSS receiver

The Juno series handheld includes an integrated GNSS receiver that enables you to collect GNSS data for incorporating into a GIS or for managing assets. The integrated receiver tracks only Global Positioning System (GPS) satellites.

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. GNSS positions may not always be available, particularly in or near buildings, in vehicles, or under tree canopy.

Supported GNSS field software

Depending on the GNSS field software you have installed, the default GNSS field software will be GPS Controller, TerraSync, or the Trimble GPScorrect extension for Esri ArcPad software.

The GPS Controller software enables you to check the current GNSS status, or to configure the integrated GNSS receiver, and to configure GNSS output settings for third party GNSS applications.

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

Depending on the GNSS field software you have installed, you can use the software to configure settings such as GNSS, real-time correction, and antenna settings. You may also be able to use the software to connect to a real-time correction source, configure logging settings, and collect features. For more information, refer to the rest of this chapter and the documentation for the GNSS field software.

Starting the GNSS field software

Tap  / *Programs* and then select the GNSS field software, for example *TerraSync*.

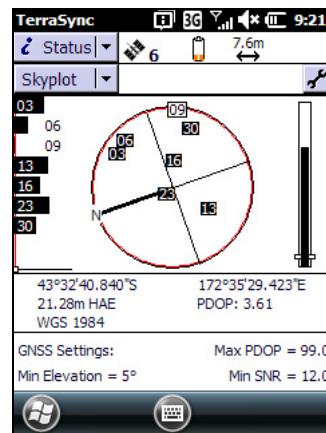
When you first open any Trimble GNSS field software, the Skyplot section is displayed.

Viewing available GPS satellites

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

Filled (black) boxes represent satellites that the receiver is using to compute its current GPS position. Unfilled (white) boxes represent satellites that the receiver is getting signals from but is not using because the signals are too weak. In the example shown here, eight satellites are being tracked and seven of these satellites are being used to compute GPS positions.



Note – Numbers with no box represent satellites that are available, but that the software is not receiving signals from.

Your current GPS position is displayed at the bottom of the screen.



Tip – For detailed information on satellite positions and signal strengths, use the Satellite information screen in the Status section.

Resetting the GNSS receiver

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

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

Configuring the GNSS field software to connect to the receiver

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

Connecting to the COM port

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

GNSS field software Configuration details	
GPS Controller	Run GPS Controller. The software automatically activates the integrated GNSS receiver on COM4.
TerraSync	Run Terrasync. The software automatically activates the integrated GNSS receiver on COM4.

GNSS field software Configuration details	
ArcPad with the GPScorrect extension	When the Trimble GPScorrect extension is installed, the extension automatically configures the ArcPad software to use the integrated GNSS receiver on COM4 using the Trimble GPScorrect protocol. <ul style="list-style-type: none"> • To connect to GNSS, tap the GPS button  and then tap Yes. • To configure a real-time DGNSS source, or to view status information, run the GPScorrect extension. To do this, tap the GPScorrect button in the Trimble toolbar.
ArcPad without the GPScorrect extension	10. In ArcPad, tap the GPS drop-down menu  and then select <i>GPS Preferences</i> from the drop-down menu. Tap the <i>GPS</i> tab. 11. In the <i>Protocol</i> field, select NMEA 0183. 12. In the <i>Port</i> field, select COM4. 13. Tap OK . 14. Tap the GPS button  and then tap Yes .
NMEA application	Configure the software to connect to GNSS on COM4 and then use the Connect or Activate GPS command.

Ensuring the accuracy of your GNSS data

The Juno series handheld has an integrated GNSS receiver that provides accurate positioning with real-time differential correction between two and five meters, or postprocessed accuracy between one and three meters.

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

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

1. If you are using TerraSync software to collect data, use accuracy-based logging.
2. Use real-time differential SBAS corrections. For more information, see [page 74](#).
3. Plan GNSS data collection around the times of the day when satellite geometry is best.

For more information, refer to the *TerraSync software Getting Started Guide* on http://www.trimble.com/mappingGIS/TerraSync.aspx?dtID=technical_support

Connecting to a real-time differential correction source

Use a real-time differential GNSS (DGNSS) source to give you better accuracy as you collect data. For more information about how real-time differential GNSS works, see [Differential GNSS explained, page 75](#).

Using SBAS corrections

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

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

- Wide Area Augmentation System (WAAS) satellites are tracked in the Continental United States including Alaska, and parts of Canada and Mexico.
- European Geostationary Navigation Overlay Service (EGNOS) satellites are tracked in Europe.
- MTSAT Satellite-based Augmentation System (MSAS) satellites are tracked in Japan.

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

For further information, refer to the Trimble field software documentation on www.trimble.com:

- For the TerraSync software, go to
http://www.trimble.com/mappingGIS/TerraSync.aspx?dtID=technical_support
- For the GPS Controller software, go to
http://www.trimble.com/support_trl.asp?Nav=Collection-32054

Differential GNSS explained

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

Real-time DGNSS

In real-time DGNSS, the base station calculates and broadcasts the error for each satellite as each measurement is received, enabling you to apply corrections while in the field and collect accurate GNSS data. DGNSS corrections are available from a

variety of public and commercial sources. They can be generated and broadcast in real-time by privately or self-owned GNSS base stations, or by a wide range of government agencies.

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

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

Postprocessed DGNSS

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

- the GPS Pathfinder Office software
- the Trimble GPS Analyst extension for Esri ArcGIS Desktop software

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

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

Postprocessed real-time DGNSS

The accuracy of positions using the Juno series handheld is within one to three meters postprocessed, or two to five meters with real-time differential correction. The accuracy of real-time SBAS corrected positions can be improved to one to three meters with postprocessing.

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

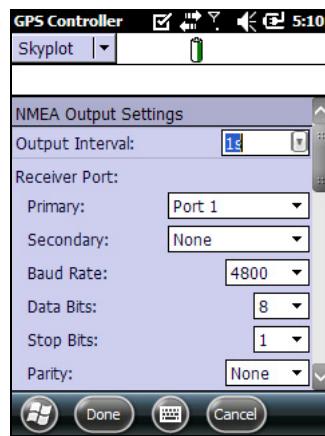
Configuring NMEA output

You can use the Juno series handhelds integrated GNSS receiver with any GNSS field software that accepts NMEA messages.

To configure the NMEA data output settings, use the GPS Controller software. The software is provided free from the Trimble website. For more information, see [Supported GNSS field software, page 72](#).

To configure NMEA data output:

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



CAUTION – NMEA standard dictates that a baud rate of 4800bps should be used for NMEA messages. Depending on the number of satellites being tracked the amount of data being captured at once may often cause the 4800 bit limit to be exceeded. Buffers have been added which allow the data to be stored and then sent when it is able to. This avoids data corruption, but may delay delivery of data, and positions may take as long as 8 seconds to be sent from the time at which they were originally recorded. If you need 4800bps output, Trimble suggests that you try to minimise the effect by reducing the amount of NMEA data being sent, for example, by dropping out NMEA sentences from the NMEA stream.

-
4. Tap **Done**.

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

Using the camera

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

Parts of the camera



Figure 1.5 Juno series handheld – camera controls

Starting the camera application

To start the camera, do one of the following:

1. Press the **Camera** button on the front of the handheld.
2. Tap / **Pictures & Videos** / **Camera** .

The camera application is started in Camera mode or Video mode, depending on what mode was last used.

If in Camera mode, tap the Video mode icon to switch to video mode. If in Video mode, tap the Camera mode icon to switch to camera mode.

Camera settings

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

The available settings vary depending on whether you are in Camera mode or Video mode.

Icon	Setting	Camera mode / Video mode
	Exit camera application	Both
	Access Pictures & Videos	Both
	Settings.	Both
	Operating mode: <ul style="list-style-type: none">Image captureVideo capture	Both
	File storage location: <ul style="list-style-type: none">Device memoryMemory card	Both
	Brightness adjustment. Tap the + numbers to lighten the image; tap the - numbers to darken the image.	Both
	Replay time. Tap the time you would like for the image or video replay to remain on screen: <ul style="list-style-type: none">5 seconds2 secondsuntil you prompt the image or video to closeno replay	Both

Icon	Setting	Camera mode / Video mode
	<p>Resolution</p> <ul style="list-style-type: none"> VGA = video graphics array 640 x 480 5MP (2592 x 1944) 3MP (2048 x 1536) 1MP (1280 x 960) <p>Note – The larger the resolution, the larger the file size. The selected resolutions displays at the top of the screen.</p>	Camera mode only
	<p>Show date stamp. Tap to select:</p> <ul style="list-style-type: none"> Date stamp on the image and in the file EXIF header Date stamp in the file EXIF header Date stamp on the image No date stamp 	Camera mode only
	<p>Show GPS stamp (decimal degrees). Tap to select:</p> <ul style="list-style-type: none"> GPS stamp on the image and in the file EXIF header GPS stamp in the file EXIF header GPS stamp on the image No GPS stamp 	Camera mode only
	<p>Flash</p> <ul style="list-style-type: none"> On Off 	Camera mode only
	<p>Resolution</p> <ul style="list-style-type: none"> VGA: video graphics array 640 x 480 QVGA: quarter video graphics array 320 x 240 	Video mode only
	<p>Mute</p> <ul style="list-style-type: none"> On Off 	Video mode only

Using the camera in Camera mode

To take a picture, press the **Camera** button. As the camera has autofocus, there is a slight delay between pressing the **Camera** button and the photo being taken. You know that you have successfully taken the picture when you hear the 'click'.

Half-press the **Camera** button to focus, and then fully press the **Camera** button to take the photo.

When focussing, the focus square on the preview screen (see below) will change color:

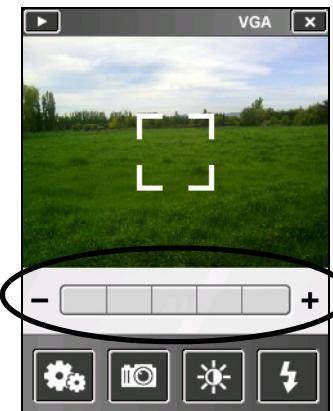
- White - attempting to focus
- Red - cannot focus
- Green - focus locked

Using the Zoom function

The Zoom function can only be used in Camera mode. To adjust the current zoom level, do one of the following:

- tap - to zoom out, or + to zoom in.
- tap the desired zoom level on the bar.
- press the left softkey to zoom out, or the right softkey to zoom in.

As you zoom in, each segment of the bar turns yellow, to indicate the level of zoom. The level of total zoom available depends on the resolution that you use; the greater the current camera resolution the less you will be able to zoom in:



Resolution	Zoom capability
VGA	1 - 2x
1MP	1 - 2x
3MP	1 - 1.2x
5MP	-

Using the camera in Video mode

To start recording a video, do one of the following:

- tap the Record icon
- press the **Camera** button

To pause recording, tap the pause icon



To stop recording a video, do one of the following:

- tap the Stop icon
- press the **Camera** button
- tap the Delete icon

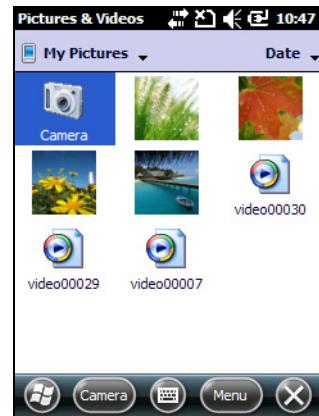
Note – Only use the Delete icon if you are certain that you want to discard the recording.

Managing images

To view and manage images, do one of the following:

- tap  /Pictures & Videos .
- tap the Pictures & Videos icon  in the top left of the camera application screen.

The Pictures & Videos screen appears.



Troubleshooting

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

Power issues

Problem	Cause	Solution
The handheld does not turn on.	The battery is flat. The battery cover is off. The handheld is connected to USB. Charging the battery may take longer using USB, and the handheld may take longer to turn on and operate.	Recharge the battery (see page 16). Replace the battery cover. Connect the handheld to mains power (see page 16).
The screen is blank.	The handheld is turned off. The handheld has locked up.	Press the Power button to turn on the handheld. Reset the handheld (see Resetting the handheld, page 22).
The handheld is not charging.	The internal temperature has risen above the allowed maximum for charging the battery.	Do one or all of the following: <ul style="list-style-type: none">Turn off the integrated radios before charging the handheld.Suspend the handheld before charging.Remove the handheld from any external heat sources (for example, sunlight). The handheld will automatically start charging again when the internal temperature has dropped below the range for charging the battery.
The battery power percentage bar does not appear in the Power control.	The battery has 0% power.	Recharge the battery (see page 16). Once the battery level is above 0%, the battery power percentage bar reappears. Tap  / Settings / System / Power / Battery to view the level of power remaining in the battery.
The charge level of the battery drops when the handheld is turned off.	The handheld was left in Suspend mode or was left fully charged for a long duration.	Before storing the handheld, completely shut down the handheld (see Turning on and turning off the handheld, page 20). Then store the handheld as recommended (see Storage, page 13).

Problem	Cause	Solution
A fully charged battery does not last a full day.	The internal temperature has risen above the allowed maximum for optimum battery performance. The handheld and battery were operating in a hot environment.	Remove the handheld and battery from any external heat sources (for example, sunlight).
	The handheld and battery were operating in a very cold environment.	Using the handheld in cold temperatures consumes additional battery power and so shortens battery life between charges. Keep a spare charged battery when working in low temperatures.
	The battery has reached or exceeded its maximum charge cycles / lifespan.	Replace the battery.

Backlight issues

Problem	Cause	Solution
The backlight does not come on when you tap the screen or press a button.	The backlight is not set to turn on in the Backlight control.	Tap  / Settings / System / Backlight to view the Backlight control, and make sure that: <ul style="list-style-type: none"> the <i>Turn on backlight when a button is pressed or the screen is tapped</i> check box is selected. the brightness is not set to <i>Dark</i> in the <i>Brightness</i> tab.
The screen is blank or hard to see.	The backlight is off.	Tap the screen or press a button.
	The backlight level needs to be adjusted.	Tap  / Settings / System / Backlight to view the Backlight control and then adjust the slider in the <i>Brightness</i> tab.

Touch screen issues

Problem	Cause	Solution
The touch screen does not respond to stylus taps.	The touch screen is incorrectly aligned.	Realign the screen (see page 36).
	The touch screen is locked.	To unlock the touch screen, tap Unlock in the menu bar of the <i>Home screen</i> .
	The handheld has locked up.	Reset the handheld (see Resetting the handheld, page 22).
The screen is blank.	The handheld is turned off.	Press the Power button to turn on the handheld.
	The battery is flat.	Recharge the battery (see page 36).
	The handheld has locked up.	Reset the handheld (see Resetting the handheld, page 22).
	A voice call is active.	The screen will become active and visible again when the call is ended (see Voice calls, page 40).

Problem	Cause	Solution
The screen is hard to see.	The backlight level needs to be adjusted.	Open the Backlight control and then adjust the backlight level (see Backlight, page 37).
	The backlight is off.	Tap the screen to turn on the backlight.
	You are unable to see parts of an application windows when the screen is in landscape orientation.	Some applications are designed for portrait orientation only. To view the entire application window, change the screen display to portrait.
	The selected display theme does not have enough contrast.	Select the High-Contrast display theme. Tap  / Settings / Personal / Today , select the High-Contrast theme and then tap OK .

Keypad issues

Problem	Cause	Solution
Pressing the application key does not activate the function shown on the softkey above it.	The hardware application key has been programmed to run another program or to perform another action.	<p>Do one of the following:</p> <ul style="list-style-type: none"> Tap the touchscreen softkey to activate the function shown on the softkey. Re-program the application key to perform the same action as the touchscreen softkey. To do this, tap  / Settings / Personal / Buttons, select the button to reprogram and then select <Left Softkey> or <Right Softkey>.

Memory card issues

Problem	Cause	Solution
The handheld does not recognize a memory card.	The handheld does not support SDIO (SD input/output) cards.	Use a microSD or microSDHC memory card.
Files on the memory card are not visible or are not able to be opened.	Files have been encrypted on another device and have a .menc file extension.	Remove encryption from the files (see Encrypting files on memory cards, page 25).

Connection issues

Windows Mobile Device Center

Problem	Cause	Solution
Windows Mobile Device Center will not connect to the handheld.	The connection is not initiated automatically.	Disconnect the USB cable from the computer and then reconnect the handheld to the computer.. Alternatively, in the Windows Mobile Device Center software on the office computer, select <i>Mobile Device Settings / Connection Settings</i> .
	The Windows Mobile Device Center software does not recognize the Juno series handheld handheld.	Restart the office computer. Disconnect the USB cable from the handheld, reset it (see Resetting the handheld, page 22) and then reconnect the cable to the handheld.
	The connection is not enabled in Windows Mobile Device Center on the computer.	In the Windows Mobile Device Center software on the office computer, click <i>Mobile Device Settings / Connection Settings</i> . If you are using: <ul style="list-style-type: none">• the USB data cable, make sure that the <i>Allow USB connection</i> check box is selected from the drop-down list.• a Bluetooth connection, make sure that the correct port for Bluetooth is selected. Then open the Bluetooth control on the handheld. In the <i>Devices</i> tab, tap the partnership and in the services list make sure that the <i>ActiveSync</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>Synchronize all PCs using this connection</i> check box is selected, and that the correct option is selected.
	The handheld connection settings conflict with network settings or VPN client software.	If you are using the USB data cable, use the <i>USB to PC</i> utility to change the connection method the handheld uses to connect to the 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 the Windows Mobile Device Center.

ActiveSync technology

Problem	Cause	Solution
ActiveSync technology will not connect to the handheld.	The connection is not initiated automatically.	Disconnect the USB cable from the computer and then reconnect the handheld to the computer. Alternatively, in the ActiveSync technology on the office computer, select <i>File / Connection Settings</i> and then tap Connect .
	ActiveSync does not recognize the Juno series handheld handheld.	Restart the office computer. Disconnect the USB cable from the handheld, reset it (see Resetting the handheld, page 22) and then reconnect the handheld to the computer.
	An incompatible version of ActiveSync technology is installed.	ActiveSync version 4.5 and later is compatible with the Juno series handheld handheld. If version 4.5 or later of the ActiveSync technology is not installed on the office computer, you can install it from the <i>Juno Series Getting Started Disc</i> . You can also download the latest version from the Microsoft website.
	The connection is not enabled in ActiveSync on the computer.	In the ActiveSync technology on the office computer, click <i>File / Connection Settings</i> . If you are using: <ul style="list-style-type: none"> the support module, make sure that the <i>Allow USB connections</i> check box is selected from the drop-down list. a Bluetooth connection, make sure that the correct port for Bluetooth is selected. Then open the Bluetooth control on the handheld. In the <i>Devices</i> tab, tap the partnership and in the services list make sure that the <i>ActiveSync</i> check box is selected.
	The connection is not enabled in ActiveSync on the handheld.	On the handheld, tap / Programs / ActiveSync / Menu / Connections. Make sure that the <i>Synchronize all PCs using this connection</i> check box is selected, and that the correct option is selected.
	The handheld connection settings conflict with network settings or VPN client software.	If you are using the USB data cable, use the USB to PC utility to change the connection method the handheld uses to connect to ActiveSync on the computer. Tap / Settings / Connections / USB to PC Utility. Clear the <i>Enable advanced network functionality</i> check box. The handheld stops using the default RNDIS method to connect to the ActiveSync technology.

Network connections

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

Bluetooth wireless technology

Problem	Cause	Solution
The handheld cannot discover a nearby Bluetooth device.	The device is out of range.	Move the devices closer to each other and then scan again.
	Bluetooth wireless technology is not enabled on one or both devices.	Make sure that the Bluetooth radio is turned on, on both the handheld (see page 50) and the other Bluetooth device.
	The device has not been made Discoverable.	Make sure that the Bluetooth device has been made Discoverable.
The COM port that you assigned to a serial port service is not available in your application.	The application cannot recognize ports if they are added after the application opens.	Exit from the application, add the port and then run the application again.
The Bluetooth connection fails while in use.	The Bluetooth device has moved out of range.	Move the devices closer to each other. The devices should reconnect automatically. If they do not, select the Bluetooth device in the <i>Devices</i> tab. Tap and hold the device name and then 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 page 50).
	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.

Wi-Fi connections

Problem	Cause	Solution
The “New Network Detected” notification does not appear automatically.	The Wi-Fi radio is off.	Tap the wireless icon in the Home screen or go to the Wireless Manager and make sure Wi-Fi is on.
	The handheld is out of range of the network.	Move to within range of the network, then tap  / <i>Settings /Connections /Network Cards</i> and then setup the connection.
The handheld cannot connect to a secure site.	The date on the handheld is incorrect.	Check that the handheld has the date set correctly on the <i>Home screen</i> . If the date is incorrect, tap the clock icon on the <i>Home screen</i> and then adjust the date and time.
You cannot configure an Internet connection.		

Problem	Cause	Solution
Within range of more than one network, you are not connecting to the network you would prefer to use.	The radio is connecting to the first network signal it has received.	Tap  / Settings / Connections / Network Cards. Tap and hold the network you would prefer to use and then select Connect.
The "New Network Detected" notification appears but the menu bar and soft key options are not displayed.	Some applications are not fully compatible with all features of the Windows Embedded Handheld 6.5 Professional operating system.	<p>Use the application buttons on the keypad, as they map to the soft keys in the menu bar:</p> <ul style="list-style-type: none"> • To dismiss the notification, press the right application button on the keypad. • To connect to the network, press the left application button. <p>Alternatively, select a Windows Embedded Handheld application from the Start menu, such as the Home screen or File Explorer, and the menu bar and soft keys will be displayed correctly.</p>

WAPI issues (China only)

Problem	Cause	Solution
If you use Windows Live and register your email address, the following message appears: Unable to establish the Internet connection to Windows Live services. Please check your Internet setting and ensure the mobile service you paid for includes this data service. Please contact your mobile services supplier if you need any help.	Microsoft email and contacts are not supported over a WAPI connection.	Switch to a cellular connection (Juno 3D handheld only) or a Wi-Fi connection.

Audio issues

Problem	Cause	Solution
Poor sound from the earpiece.	Water has pooled in the earpiece.	Turn the handheld so that it is face-down, then shake it to expel the water from the earpiece cavity.

GNSS receiver issues

Problem	Cause	Solution
The handheld is not receiving GNSS positions.	The integrated GNSS receiver is not activated.	Use the Connect or Activate GNSS command in the GNSS field software to open the GNSS COM port and activate the integrated GNSS receiver. For more information, see Using the GNSS receiver, page 72 .
	The GNSS COM port is already in use. Only one application at a time can have the port open.	Do the following: <ul style="list-style-type: none">Exit the software that is using the GNSS COM port and then retry in your application.Check that a GNSS application is not running in the background. Tap  / Settings / Memory, select Running Programs, and then select and close any GNSS applications you are not using.
	The GNSS field software is using the wrong GNSS COM port.	Connect to COM4.
	Not enough satellites are visible.	Move to a location where the receiver has a clear view of the sky and ensure the antenna is not obstructed.
	Wait for real-time is selected in the GNSS field software and the integrated receiver is waiting to receive real-time corrections.	If you are collecting data for postprocessing, clear the wait for real-time selection. Check that the real-time correction source is setup correctly (see Connecting to a real-time differential correction source, page 74).
	Handheld is lying on a metal surface.	The design and location of the GNSS antenna have been maximized for GNSS reception in a typical user environment. Locating the handheld on a metal surface without being in contact with the user may cause a decrease or loss of satellite reception. Hold the handheld for optimum reception.
NMEA data includes autonomous positions.	The integrated GNSS receiver outputs autonomous positions when real-time corrections are unavailable.	Configure the NMEA application to filter out non-DGNSS positions.

Real-time DGNSS issues

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

