Trimble® Juno® T41™ handheld

with Windows® Embedded Handheld operating system

Draft

Version 1.00
Revision C
August 2015

Trimble

Corporate Office

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Legal Notices

Release Notice

This is the August 2015 release (Revision C) of the Trimble Juno T41 handheld documentation. It applies to the Windows Embedded Handheld Professional 6.5 operating system.

Limited Warranty Terms and Conditions

Product Limited Warranty

Subject to the terms and conditions set forth herein, Trimble Navigation Limited ("Trimble") warrants that for a period of two (2) years from date of purchase this Trimble product (the "Product") will substantially conform to Trimble's publicly available specifications for the Product and that the hardware and any storage media components of the Product will be substantially free from defects in materials and workmanship. All accessories and the product battery fall under a warranty period of one (1) year from the data of purchase from Trimble.

Product Software

Product software, whether built into hardware circuitry as firmware, provided as a standalone computer software product, embedded in flash memory, or stored on magnetic or other media, is licensed solely for use with or as an integral part of the Product and is not sold. The terms of the end user license agreement, as included below, govern the use of the Product Software, including any differing limited warranty terms, exclusions and limitations, which shall control over the terms and conditions set forth in the limited Product warranty.

Warranty Remedies

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

How to Obtain Warranty Service

To obtain warranty service for the Product, please contact your Trimble dealer. Dealers may contact their Trimble Technical Support group. Please be prepared to provide:
– your name, address, and telephone numbers;
– proof of purchase;
– a copy of this Trimble warranty
– a description of the nonconforming Product including the model number; and
– an explanation of the problem.
The customer service representative may need additional information from you depending on the nature of the problem.

Warranty Exclusions and Disclaimer

This Product limited warranty shall only apply in the event and to the extent that (i) the Product is properly and correctly installed, configured, interfaced, maintained, stored, and operated in accordance with Trimble's applicable operator's manual and specifications, and; (ii) the Product is not modified or misused. This Product limited warranty shall not apply to, and Trimble shall not be responsible for, defects or performance problems resulting from (i) the combination or utilization of the Product with hardware or software products, information, data, systems, interfaces, or devices not made, supplied, or specified by Trimble; (ii) the operation of the Product under any specification other than, or in addition to, Trimble's standard specifications for its products; (iii) the unauthorized installation, modification, or use of the Product; (iv) damage caused by: accident, lightning or other electrical discharge, fresh or salt water immersion or spray (outside of Product specifications); or exposure to environmental conditions for which the Product is not intended; (v) normal wear and tear on consumable parts (e.g., batteries); or (vi) cosmetic damage. Trimble does not warrant or guarantee the results obtained through the use of the Product or Software, or that software components will operate error free. NOTICE REGARDING PRODUCTS EQUIPPED WITH TECHNOLOGY CAPABLE OF TRACKING SATELLITE SIGNALS FROM SATELLITE BASED AUGMENTATION SYSTEMS (SBAS) (WAAS, EGNOS, AND MSAS), OMNISTAR, GPS, MODERNIZED GPS OR GLONASS SATELLITES, OR FROM IALA BEACON SOURCES: TRIMBLE IS NOT RESPONSIBLE FOR THE OPERATION OR FAILURE OF OPERATION OF ANY SATELLITE BASED POSITIONING SYSTEM OR THE AVAILABILITY OF ANY SATELLITE BASED POSITIONING SIGNALS.
THE FOREGOING LIMITED WARRANTY TERMS STATE TRIMBLE'S ENTIRE LIABILITY, AND YOUR EXCLUSIVE REMEDIES, RELATING TO THE TRIMBLE PRODUCT. EXCEPT AS OTHERWISE EXPRESSLY PROVIDED HEREIN, THE PRODUCT, AND ACCOMPANYING DOCUMENTATION AND MATERIALS ARE PROVIDED "AS-IS" AND WITHOUT EXPRESS OR IMPLIED WARRANTY OF ANY KIND, BY EITHER TRIMBLE OR ANYONE WHO HAS BEEN INVOLVED IN ITS CREATION, PRODUCTION, INSTALLATION, OR DISTRIBUTION, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND NONINFRINGEMENT. THE STATED EXPRESS WARRANTIES ARE IN LIEU OF ALL OBLIGATIONS OR LIABILITIES ON THE PART OF TRIMBLE ARISING OUT OF, OR IN CONNECTION WITH, ANY PRODUCT. BECAUSE SOME STATES AND JURISDICTIONS DO NOT ALLOW LIMITATIONS ON DURATION OR THE EXCLUSION OF AN IMPLIED WARRANTY, THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

Limitation of Liability

TRIMBLE'S ENTIRE LIABILITY UNDER ANY PROVISION HEREIN SHALL BE LIMITED TO THE AMOUNT PAID BY YOU FOR THE PRODUCT. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT SHALL TRIMBLE OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGE WHATSOEVER UNDER ANY CIRCUMSTANCE OR LEGAL THEORY RELATING IN ANYWAY TO THE PRODUCTS, SOFTWARE AND ACCOMPANYING DOCUMENTATION AND MATERIALS, (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF DATA, OR ANY OTHER PECUNIARY LOSS), REGARDLESS OF WHETHER TRIMBLE HAS BEEN ADVISED OF THE POSSIBILITY OF ANY SUCH LOSS AND REGARDLESS OF THE COURSE OF DEALING WHICH DEVELOPS OR HAS DEVELOPED BETWEEN YOU AND TRIMBLE. BECAUSE SOME STATES AND JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATION MAY NOT APPLY TO YOU.
PLEASE NOTE: THE ABOVE TRIMBLE LIMITED WARRANTY PROVISIONS WILL NOT APPLY TO PRODUCTS PURCHASED IN THOSE JURISDICTIONS (E.G., MEMBER STATES OF THE EUROPEAN ECONOMIC AREA) IN WHICH PRODUCT WARRANTIES ARE THE RESPONSIBILITY OF THE LOCAL DEALER FROM WHOM THE PRODUCTS ARE ACQUIRED. IN SUCH A CASE, PLEASE CONTACT YOUR TRIMBLE DEALER FOR APPLICABLE WARRANTY INFORMATION.

Notice to Australian Purchasers - The Australian Consumer Law

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.
Trimble's warranty, as set out in the user manual accompanying this statement, or as described in the warranty card accompanying the Product you purchased, is in addition to any mandatory rights and remedies that you may have under the Australian Consumer Law.

Official Language

THE OFFICIAL LANGUAGE OF THESE TERMS AND CONDITIONS IS ENGLISH. IN THE EVENT OF A CONFLICT BETWEEN ENGLISH AND OTHER LANGUAGE VERSIONS, THE ENGLISH LANGUAGE SHALL CONTROL

Registration

To receive information regarding updates and new products, please contact your local dealer or visit the Trimble website at www.trimble.com/register. Upon registration you may select the newsletter, upgrade, or new product information you desire.

Importer of Record

Trimble European Regional Fulfillment Center, Logistics Manager, Meerheide 45, 5521DZ Eersel, Netherlands.

Notices

FCC Regulations

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. 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 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 radios in this device have been designed and manufactured to not exceed stipulated emission limits for exposure to radio frequency (RF) energy as required by the Federal Communications Commission of the U.S. Government 47 C.F.R. § 2.1091 and 2.1093. The external antenna connector provided in this device is for GNSS antennas only.

IC

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.
This Category II radio communication device complies with Industry Canada Standard RSS-310.
Ce dispositif de radiocommunication de catégorie II respecte la norme CNR-310 d'Industrie Canada.
IMPORTANT NOTE:
IC Radiation Exposure Statement
This EUT is compliant with SAR for general population/uncontrolled exposure limits in IC RSS-102 and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528. This equipment should be installed and operated with minimum distance 0.5 cm between the radiator & your body.
This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter. The County Code Selection feature is disabled for products marketed in the US/Canada.

CE

a. Caution:
• Risk of explosion if battery replaced by an incorrect type.
• Dispose of used batteries according to the instructions.
b. Make sure the temperature for adapter will not be higher than 40 ˚C.

CE SAR Compliance

This device meets the EU requirements (1999/519/EC) on the limitation of exposure of the general public to electromagnetic fields by way of health protection.
The limits are part of extensive recommendations for the protection of the general public. These recommendations have been developed and checked by independent scientific organizations through regular and thorough evaluations of scientific studies. The unit of measurement for the European Council's recommended limit for mobile devices is the "Specific Absorption Rate" (SAR), and the SAR limit is 2.0 W/ kg averaged over 10 gram of body tissue. It meets the requirements of the International Commission on Non-Ionizing Radiation Protection (ICNIRP). For body worn operation, this device has been tested and meets the ICNIRP exposure guidelines and the European Standard EN 62311 and EN 62209-2, for use with dedicated accessories. Use of other accessories which contain metals may not ensure compliance with ICNIRP exposure guidelines.

RoHS Statement

This device conforms to RoHS (Reduction Of Hazardous Substances) European Union regulations that set maximum concentration limits on hazardous materials used in electrical and electronic equipment.
CAUTION: RISK OF EXPLOSION IF BATTERY IS DISPOSED OF INCORRECTLY. DISPOSE OF THE DEVICE AND THE BATTERY ACCORDING TO INSTRUCTIONS FOR ELECTRONIC WASTE.

Canada

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de classe B est conforme à la norme NMB-003.
This device complies with Industry Canada licence-exempt RSS standard (s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
Cet appareil est conforme avec Industrie Canada RSS standard exempts de licence (s). Son fonctionnement est soumis aux deux conditions suivantes:
(1) cet appareil ne peut pas provoquer d'interférences et
(2) cet appareil doit accepter toute interférence, y compris les interférences pouvant entraîner un mauvais fonctionnement de la appareil.
RF Radiation Exposure Statement:
For body worn operation, this phone has been tested and meets RF exposure guidelines when used with an accessory that contains no metal and that positions the handset a minimum of 1.5 cm from the body. Use of other accessories may not ensure compliance with RF exposure guidelines.
Déclaration de l'exposition aux radiations RF:
Pour le fonctionnement du corps, ce téléphone a été testé et répond aux directives d'exposition RF lorsqu'il est utilisé avec un accessoire qui ne contient pas de métal et qui place le combiné d'un minimum de 1.5 cm du corps.
Utilisation d'autres accessoires peut ne pas assurer le respect des directives d'exposition RF.

Europe / EU Conformance

The following CE compliance information is applicable to this device that carry the following CE mark:
This product has been tested and found to comply with all requirements for CE Marking and sale within the European Economic Area (EEA). The Trimble Juno T41 has Bluetooth wireless technology approval in most EU countries and satisfies the requirements for Radio and Telecommunication Terminal Equipment specified by European Council Directive 1999/5/EC. These requirements provide reasonable protection against harmful interference when the equipment is operated appropriately in a residential or commercial environment.
Juno T41 handhelds equipped with wireless cellular modem radios are intended for connection to European Networks operating with GSM 900, or GSM 1800. A copy of the CE Declaration of Conformity for the Juno

T41 handheld can be accessed from
http://www.trimble.com/support.shtml.

European Conformity Statement

Declaration of Conformity with Regard to the R&TTE 1999/5/EC and EMC 89/336/ EEC directives.
According to ISO / IEC Guide 22 and EN 450 14

- Manufacturer's Name: Trimble Navigation Limited.

- Manufacturer's Address: PO Box 947, Corvallis, OR 97339 USA

- Declares, under our sole responsibility, that the product:

- Product Name: Rugged Handheld Computer (JUNO/T41/5)

- Model Number: JUNO/T41/5-BW; JUNO/T41/5; JUNO/T41/5-BW

- Regulatory Name: JUNO/T41/5-BW; JUNO/T41/5; JUNO/T41/5-BW

- Product Options: ALL

Conforms to the following Product Specifications:

- EN 300 328: V1.7.1:2006

- EN 301 489-1: V1.8.1:2008

- EN 301 489-17: V2.1.1:2009

- EN 301 511:V9.0.2:2003

- EN 301 489-07 V1.3.1:2005

- EN 301 489-24 V1.4.1:2007

- EN 301 908-1&2:V4.2.1:2010

- EN 55022:2006, Amendment A1:2007

- EN 55024:1998, Amendments A1:2001, A2:2003

- CISPR 22:2005, Amendments A1:2005, A2:2006

- R&TTE Directive 1999/5/EC

- CFR 47, Part 15, Subpart B EN 61000-3-2:2006

- EN 61000-3-3:2008

- EN 61000-4-2:2001

- EN 61000-4-3:2006

- EN 61000-4-4:2004

- EN 61000-4-5:2006

- EN 61000-4-6:2005

- EN 61000-4-11:2004

- EN 60950-1:2001

European Union Customers: (WEEE)

For product recycling instructions and more information, please go to www.trimble.com/Corporate/Environmental_Compliance.aspx.
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

Australia and New Zealand

This product conforms with the regulatory requirements of the Australian Communications Authority (ACA) EMC and Radiocommunications framework, thus satisfying the requirements for C-Tick Marking and sale within Australia and New Zealand.
Additionally, Juno T41 3.5G products that incorporate a modem also comply with the requirements for A-Tick Marking and sale in Australia.

Taiwan

低功率電波輻射性電機管理辦法

第十二條： 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條： 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。低功率射頻電機需忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

SAR 標準值2.0W/Kg，送測產品實測值為0.545w/Kg

Taiwan – Battery Recycling Requirements

The product contains a removable Lithium-ion polymer battery. Taiwanese regulations require that waste batteries are recycled.
廢電池請回收

Contents

Safety Information

- The handhled's battey is partially charged when shipped new from the factory.

- Before inserting or removing a SIM card, the Phone module must be powered off. To do this, press and hold the Power button for two seconds to display the *Power* menu, then tap **Enable Airplane mode**. Alternatively, use the Wireless Manager to disable only the Phone module.

- Do not operate the handheld withouth the card slot cover properly installed.

- Your warranty is invalidated if you open or tamper with the outer casing of the device.Unapproved modifications or operations beyond or in conflict with these instructions for use may void authorization by the authorities to operate the equipment.

- Only approved accessories may be used with the device. In general, all cables must be high quality, shielded, correctly terminated and normally restricted to two meters in length. The power supply approved for this product employs special provisions to avoid radio interference and should not be alteredor substituted.

Radio use

Depending on the model, the Trimble® Juno® T41™ handheld contains a Bluetooth® radio, a Wi-Fi radio, and a cellular modem radio. In some situations, you may be required to turn off the radios. For example, aviation authority regulations restrict the use of wireless transmission devices on board aircraft.

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

- To put the handheld in airplane mode, press and hold the Power button for 3 seconds to display the *Power menu*, then tap **Enable Airplane mode**. This mode turns off all wireless connections.

- To turn off the handheld, press and hold the Power button for 3 seconds to display the *Power menu*, then tap **Power off**.

- To turn off the Bluetooth, Wi-Fi, and wireless cellular modem radios only:

    a. On the *Home* screen or the *Start* screen, tap the title bar, tap any of the radio icons and

    then tap **Wireless Manager**. Or tap / *Settings* / *Connections* / *Wireless Manager*.

    b. Tap **All** at the top of the screen to turn off all the radios.

Note – 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 T41 handheld's radios are approved for use in your country, check with your Trimble reseller.

Exposure to Radio Frequency (RF) Signals

Your device contains a radio transmitter and receiver. The radiated output power is far below the international radio frequency exposure limits. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on the safety standards previously set by international standards bodies:

- American National Standards Institute (ANSI) IEEE. C95.1-1992.
- National Council on Radiation Protection and Measurement (NCRP). Report 86. 1986.
- Int'l Commission on Non-Ionizing Radiation Protection (ICNIRP) 1996.
- Ministry of Health (Canada), Safety Code 6. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.

SAR: 0.545w/kg

Use of unauthorized or modified antennas may impair call quality and damage the phone, causing loss of performance. To assure optimal phone performance and ensure human exposure to RF energy is within the guidelines set forth in the relevant standards; always use your device only in its normal-use position.

Avoiding contact with the antenna area when the phone is IN USE optimizes the antenna performance.

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 100 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 T41 handhelds equipped with wireless cellular modem radios 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.

Telecommunications & Internet Association (TIA) information

Hearing Aids: Some digital wireless phones may interfere with some hearing aids. In the event of such interference, you may want to consult your wireless service provider, or call customer service to discuss alternatives.

Pacemakers and Other Medical Devices: The Health Industry Manufacturers Association recommends a minimum separation of six inches be maintained between a handheld wireless phone and a pacemaker to avoid potential interference with the pacemaker. These recommendations are consistent with the independent research by and recommendations of Wireless Technology Research. Persons with pacemakers should use the ear opposite the pacemaker to minimize the potential for interference. Persons with pacemakers should exercise great caution if using a hands-free device such as a headset, as these persons may be at greater risk of the device not maintaining the recommended minimum six inches of separation from the pacemaker. If you have any reason to suspect that interference is taking place, turn the phone OFF immediately.

If you use any other personal medical device, consult the manufacturer of your device to determine if they are adequately shielded from external RF energy. Your physician may be able to assist you in obtaining this information.

Turn the phone OFF in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external RF energy.

Warranty

Your warranty is invalidated if you open or tamper with the outer casing of the device. Unapproved modifications or operations beyond or in conflict with these instructions for use may void authorization by the authorities to operate the equipment.

Accessories

Only approved accessories may be used with this equipment. In general, cables must be high quality, shielded, correctly terminated and normally restricted to two meters in length. The power supply approved for this product employs special provisions to avoid radio interference and should not be altered or substituted.

Battery safety

The rechargeable Lithium-ion polymer battery is supplied partially charged. Charge the battery completely before using it for the first time (see Powering the handheld, page 19). If the battery has been stored for longer than six months, charge it before use.

⚠ **WARNING** - Use only the battery intended for the product. 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 polymer 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 leave the battery immersed 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 polymer 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 polymer 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 polymer 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.

⚠ **CAUTION** - The battery is designed to stop operating at or above 149 °F (65 °C). If this status icon 🔋 appears, the battery has overheated to 140 °F (60 °C) or more.

If the battery temperature exceeds 158 °F (70 °C), the battery will be disabled and the device must be sent to an Authorized Service Provider to have it replaced.

Operating Temperature Range: -22 °F to 140 °F (-30 °C to 60 °C).

Storage Temperature Range: -40 °F to 158 °F (-40 °C to 70 °C). Do not exceed the specified storage temperature.

AC adaptor safety

To charge the handheld's battery, use the power cable and adaptor kit provided with the handheld (see Powering the handheld, page 19).

⚠ **WARNING** -To use AC adaptors safely

– Use only the AC adaptor intended for the 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.

Electrostatic discharge

⚠ **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.

The handheld is designed for outdoor conditions; however under conditions of low humidity extremely high voltage discharge events are possible. Users are advised that the risk of causing discharge to sensitive electronics can be minimized by avoiding finger contact to the recessed connectors on the unit.

Storage card use

The handheld provides a storage 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.

Exposure to loud audio

To prevent possible hearing damage, do not listen at high volume levels for long periods.

Environmental Hazards

The product complies with international RoHS regulations.

Toxic and Hazardous Substances and Elements

Part name	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr6+)	Poly-brominated biphenyls (PBB)	Poly-brominated diphenyl ethers (PBDE)	
Printed Circuit Assemblies	X	O	O	O	O	O	
Display	X	O	O	O	O	O	
Keypad	X	O	O	O	O	O	
Housing	O	O	O	O	O	O	
Hardware	O	O	O	O	O	O	
Product Period does not include these items							
Battery	X	O	O	O	O	O	
Power supply	X	O	O	O	O	O	
Cable	O	O	O	O	O	O	
Manual	O	O	O	O	O	O	
Hand strap	O	O	O	O	O	O	
Stylus Package	O	O	O	O	O	O	
Companion CD	O	O	O	O	O	O	

About this user guide

This user guide describes how to set up and use the Juno T41 handheld. The information in this guide supplements the information in the *Trimble Juno T41 Rugged Handheld Quick Start Guide*, which you received with the handheld.

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.

The Trimble Juno T41 rugged handheld combines a high sensitivity GNSS receiver with, depending on the model of handheld, an integrated 3.75G cellular modem, Bluetooth wireless technology, and Wi-Fi connectivity.

The Juno T41 handheld is powered by the Windows® Embedded Handheld operating system, is rated IP65 or IP68 depending on the model, and has an integrated 8MP camera with geotagging and dual LED flash.

The integrated GNSS receiver in the Juno T41 'G' configurations provides accurate 1-2 meter positioning information with postprocessed or real-time differential corrections. For more information, see Using the GNSS receiver, page 71.

The Juno T41 handheld also includes an optional integrated 1D / 2D barcode imager or UHF RFID reader for multi-modal data capture.

Use and care of the handheld

- Protect the touch screen by using your finger or the capacitive stylus, 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. The use of ballpoint pens, nails or other sharp objects to operate the touchscreen will scratch and/or damage the device.

- Do not use abrasive cleaners directly on the display. Doing so may void your warranty.

- Keep the outer surface free of dirt and dust.

- Ensure that the protective covers are appropriately fitted to the external antenna port, and SIM / memory card slot, 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.

- Depending on the model, the handheld is rated IP65 or IP68, 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, use a soft, dampened cloth with either water or a diluted mild detergent. If a mild detergent is used, ensure all soap residue is removed. Do not use any chemical cleaners and do not put the device in the dishwasher.

- The device is designed to resist damage for drops up to 4 ft (1.22 meters). However, you should protect the display from impact, pressure, or abrasive substances that can scratch it or crack it. The device should not be dropped unnecessarily.

The device's rugged design allows you to run your device in harsh outdoor environments. Here are some considerations that will help you get the most out of your device when working in very wet, hot or cold conditions.

- Water: This device is designed to IP65 (yellow units) or IP68 (grey units). IPx5 is defined as resistant to driving rain and water spray. IPx8 is defined as resistant to submerson in water up to 1 meter deep for up to 2 hours.

  Removal of the back case screws could cause leakage and will void your warranty.

  Note – *Although an optional accessory for the port cover is available and the audio jack has a protective cover, these are not required to maintain the seal against water. The covers are intended to keep mud, sand and other materials from blocking these ports*

- Temperature range: The operational temperature range is from -22 °F to +140 °F (-30 °C to +60 °C). Although the device is designed to be rugged, do not leave it in direct sunlight in excessive heat or in a vehicle in the sunlight for extended periods as the internal temperature may exceed the operating or storage temperature limits.

  Batteries perform best at room temperature. The battery has a stable capacity as temperatures rise; however, the colder the temperature, the greater the reduction in available battery capacity. Under very cold conditions (-4 °F / -20°C and below), the battery capacity is noticeably reduced. To improve the battery performance in very cold conditions, consider increasing the load on the battery, such as by adjusting the backlight to full brightness. Increasing the battery load causes the battery to generate heat, thus warming the battery and improving the performance. There are limits to how hard to push the battery before you reduce the run-time instead of increasing it.

Do not attempt to dismantle the device for repair. There are no user-serviceable parts inside. For service, contact your local dealer.

Battery safety: Lithium-ion polymer batteries are classified by the U. S. Federal Government as non-hazardous waste and are safe for disposal in the normal municipal waste stream except where prohibited by local or regional regulations. These batteries contain recyclable materials and are accepted for recycling.

Note – *In the event of a battery failure, return the device to Trimble or an Authorized Service Provider. Trimble disposes of used batteries in accordance with local regulations.*

- Do not disassemble or open, crush, bend or deform, puncture, or shred the battery assembly. There are no user-serviceable parts in the battery assembly.

- Do not use battery if plastic case is cracked, compromised or punctured.

- Do not attempt to separate the battery from the device.

- Do not modify or remanufacture, attempt to insert foreign objects into the battery, immerse or expose to water or other liquids.

- Do not expose to fire, explosion, or other hazard. Do not expose to temperatures above +158 °F (+70 °C). The battery is designed to stop functioning if it reaches an unsafe temperature.

- Only use a charging system that has been qualified for use with the device.

- In the event of a battery leak, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, flush the affected area with water and seek medical advice.

Power supply safety: Use only AC and vehicle adapters intended for the device. Other external power sources may damage your product and void the warranty. Certification of this Class III product is only valid with the power supply – PSA10F-050Q.

- Ensure the input voltage on the power supply matches the voltage in your location. Ensure the power supply has prongs compatible with your outlets.

- The power supply is designed for indoor use only. Avoid using the power supply in wet areas.

- Unplug the power supply from power when not connected to the device.

- Do not create a short circuit in the power output connector.

Technical assistance

Go to the Juno T41 handheld webpage on the Trimble website www.trimble.com/Outdoor-Rugged-Computers/junot41.aspx for the latest support information, including:

- 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.

About the Trimble Juno T41 handheld

- Parts of the Juno T41 handheld
- Powering the handheld
- Selecting the language
- Aligning the screen
- Setting the time zone, date, and time
- Setting a password (optional)
- Using the Power menu
- Resetting the device
- Resetting the handheld to factory defaults
- Absolute Power Off mode
- Inserting and removing the SIM card

Parts of the Juno T41 handheld

This section describes the main features of the Juno T41 handheld, and provides the information you need to get up and running with the handheld.

Enhanced GPS model

Enhanced GPS + Barcode imager model

1 Color band: yellow = IP65, grey = IP68	12 Wrist strap tie point
2 Touch screen	13 Ok button
3 1D/2D barcode imager and/or enhanced GPS or UHF RFID and/or enhanced GPS	14 Programmable button
4 Phone receiver	15 Microphone
5 Light sensor	16 Programmable button
6 Notification LED	17 Windows Home button
7 Power button	18 T41 custom / power connector
8 GNSS antenna connector	19 MicroSD card and SIM card slots
9 Accessory latch	20 Volume control and Action buttons
10 Camera and flash	21 Headphone or headset connector
11 Speaker	

Powering the handheld

The Juno T41 handheld contains a rechargeable Lithium-ion polymer 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 connected to a wall charger to recharge it fully.*

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

Charging the battery

CAUTION - The battery is designed to stop operating at or above 149 °F (65 °C). If this status icon appears, the battery has overheated to 140 °F (60 °C) or more.
If the battery temperature exceeds 158 °F (70 °C), the battery will be disabled and the device must be sent to an Authorized Service Provider to have it replaced.
Operating Temperature Range: -22 °F to 140 °F (-30 °C to 60 °C).
Storage Temperature Range: -40 °F to 158 °F (-40 °C to 70 °C). Do not exceed the specified storage temperature.

1. Connect the AC power adaptor cable to the power socket on the handheld:

   a. Loosen the thumbscrews on the AC power adaptor cable.

   b. Snap the connection on the cable into place on the handheld's power socket, until it holds in place. Tighten the thumbscrews.

2. Connect the USB end of the power cable to the AC charger.

3. Connect the adaptor to main power. An international adaptor kit is provided with the handheld.

4. Check that the Charge / Notification LED on the handheld is solid amber, indicating that the handheld is properly connected to the power source and the battery is charging.

Fully charging the battery from empty takes approximately four hours when connected to a wall charger. Trimble recommends charging with the wall charger for the most efficient charging.

The Charge / Notification LED on the handheld indicates the battery power or charging status, and operating system notifications, as shown below:

LED State	Handheld / battery state
Solid amber	Battery is charging.
Flashing amber	Battery is charging, operating system notification; or, operating system notification, battery is not charging.
Solid red	Low battery charge.

LED State	Handheld / battery state
Flashing red	Low battery charge, operating system notification.
Solid green	Battery fully charged.
Flashing green	Battery fully charged, operating system notification.
Off	Handheld is off, or, it is and there are no notifications, and the battery charge is not low.

Avoid keeping the battery at full charge at high temperatures.

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.

Turning the handheld on and off

To turn on the handheld, press the **Power** button until the screen lights up.

To completely shut down the handheld, press and hold 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.

Note – You can also use the Power menu to put the handheld into Vibration mode or Airplane mode.

Checking the level of battery power

To check the level of battery power remaining at any time while the handheld is on:

1. On the *Home* screen or the *Start* screen, tap the title bar, then tap the battery icon.

2. The *Battery* tab shows the battery status and battery level.

Conserving power

The Lithium-ion polymer battery life is dependent upon the application and operating environment. For example, estimated battery life for a new battery is approximately 12 hours with the device turned on but idle, backlight at 15% and all radios and compass off.

Trimble recommends that you do the following to reduce power consumption:

- Set the handheld to automatically turn off when idle. For more information, see Adjusting the display and keypad brightness, page 48.

- Reduce the brightness setting for the backlight. For more information, see Adjusting the display and keypad brightness, page 48.

- Turn off the integrated Bluetooth and Wi-Fi radios, and the handheld's cellular modem, whenever you are not using them. For more information, see Turning on and turning off the integrated radios, page 63.

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.

Selecting the language

The first time the device is turned on or if the firmware is re-loaded, you may need to select the language you want to use on the device.

IMPORTANT: Carefully choose the correct language because all other languages are removed after this selection. Contact technical support if you select the wrong language.

1. Because the touchscreen is not yet enabled, use the Up and Down volume buttons to highlight the language you want from the list. Press the **Action** button to select it.

2. When you have selected the language, place a checkmark in the box for **Yes**; press the **+** (Volume up) button to highlight the box, the press the **Action** button.

3. Press the **-** (Volume down) button twice to highlight the **Next** button, then press the **Action** button.

4. Wait while the device is configured to the selected language. It will restart when finished.

Note – Only Microsoft applications and messages will be translated into languages other than English. All other error messages, notifications and other applications may appear in English.

Aligning the screen

When you use the device for the first time, the message Tap the screen to set up your Windows Mobile-based device appears.

The align screen message displays a series of targets to tap in sequence on the screen. Use the stylus to tap the targets firmly and accurately. Sometimes you need to repeat the alignment procedure more than once to provide a satisfactory alignment.

*Note – You can align the screen at any time. Tap   / Settings / System / Screen, select the General tab, then tap **Align Screen**.*

Setting the time zone, date, and time

When you use the device for the first time, you are prompted to select your time zone and set the date and time. Select your time zone location, set the time and date to the correct values and tap **Next**.

To change these settings at any time, tap   / *Settings* / *Clocks & Alarms*, then select the *Time* tab.

Setting a password (optional)

When you use the device for the first time, yo are prompted to enter a password. You do not have to provide a password for the device unless you are concerned about unauthorized use. If you do not want to set a password, tap **Skip**.

If you opt for password protection the password must be entered every time the device is turned on or the **Power** button is pressed to resume operation.

MAKE SURE YOU REMEMBER THE PASSWORD. The only way to recover from a forgotten password is to factory-reset the device, which will erase all application software, licenses, settings, and data on the device.

To change the password or to set one later if you skipped this step, see Locking the device, page 36

Using the Power menu

To open the *Power menu*, when the device is on, press and hold the **Power** button for 1-2 seconds (if you hold it for longer, the device will reset). From the *Power menu* you can:

- shutdown the handheld to power it off completely. Tap **Shutdown**.

- enable *Airplane* mode, which turns off all the integrated wireless radios. Tap **Enable Airplane mode**. To disable *Airplane* mode, tap **Disable Airplane mode**.

- reset the handheld. See Resetting the device, page 22.

- turn of audible notifications, by setting the handheld to vibrate only. Tap **Vibration On**. Tap **Vibration Off** to resume audible notifications.

Resetting the device

If something is not working as expected, try closing and reopening the application, or restarting or resetting the device.

To force an application to close, tap   / *Task Manager*. Select the application you want to close, then tap **End Task**.

If you cannot force the application to close, or if closing and restarting the application does not fix the problem, reset the device. This forces the operating system to reboot, but may cause unsaved data to become corrupted. A reset should be done only if the device is otherwise unresponsive.

To perform a reset, do one of the following:

- press and hold the **Power** button to display a countdown; continue to hold the **Power** button until it counts down to zero, followed by a brief appearance of the boot screen. Release the **Power** button.

- press and hold the **Power** button for 1-2 seconds to display the *Power menu*, then tap **Reset**.

Resetting the handheld to factory defaults

You can factory-reset the Juno T41 handheld if you forget the password that you use to lock the device, or to delete all of your personal data from the handheld's internal storage, system and application settings, and any downloaded applications.

1. Press and hold the **Power** button for 1-2 seconds to display the *Power menu*, then tap **Reset**.

2. When the screen goes completely black, press and hold the **Windows** button .

3. When the Juno T41 screen appears, press the right programmable button while still holding the Windows button. Then release both buttons.

4. Press the **Action** button on the left side of the handheld to clear the persistent store. Press any other button to cancel and continue booting normally.

Absolute Power Off mode

The Juno T41 handheld features a battery cut-off mode that enables the device to enter the absolute lowest power mode possible, even lower than the Shutdown power state. In this mode, the draw on the battery is less than 20 uA. The primary purpose for this mode is to prolong the shelf life of the battery while the product is between the production factory and the customer. A secondary purpose is to ensure the device is completely powered down before shipping the product via air freight, or when putting the product into storage for an extended period, typically longer than a week.

To activate the Absolute Power Off mode:

1. Disconnect the power cable, if connected.

2. Press and hold the **Power** button for 1-2 seconds to display the *Power menu*, then tap **Reset**.

3. The handheld resets. When the Juno T41 screen appears, press and hold the left programmable button and the right programmable button. The message Please remove AC. System is turning off appears.

The device is now in *Absolute Power Off* mode.

Note *– The sole method for powering the device back on after enabling Absolute Power Off mode is to connect it to the AC Power cable, or use the docking station or Extended Battery Pack accessory to charge the handheld. If you use the Extended Battery Pack accessory, you must push the button on the Extended Battery Pack to exit Absolute Power Off mode and turn on the Juno T41 handheld.*

Inserting 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.

⚠ **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.

To insert a SIM card:

1. Turn off the handheld. See Turning the handheld on and off , page 20.

2. In a dust-free indoor environment, remove the two small screws to remove the SIM card slot cover (on the left side of the handheld).

3. Insert the SIM card, with the gold contacts face down.

4. Replace the SIM card slot cover, tightening the two small screws.

To remove a SIM card, make sure the phone is turned off, and push the card to release it from the slot.

Using the phone

- Using the Phone: Voice calls and SMS

- Customizing the phone

- Working with WWAN (mobile data service)

- Manually connecting to a cellular network from the modem

Not all Juno T41 handheld models feature a GSM phone and WWAN feature. Some Juno T41 handheld models with WWAN support CDMA.

Do not place a SIM card in models that do not support these features.

Before using the phone feature, purchase a GSM or CDMA cellular voice or data plan from a GSM or CDMA cellular service provider.

You can use the phone to make phone calls, set up speed dials, keep track of calls, and send SMS messages just like the standard features of a mobile phone. Also, there are several dialing features unique to your device. For example, you can take notes while talking, dial directly from Contacts and easily transfer contacts between your SIM card and the storage of your handheld.

Using the Phone: Voice calls and SMS

The *Phone* screen lets you open, call, or find a contact, or save a new number in *Contacts*. To open the *Phone* screen, tap the *Phone* option on the *Home* screen, or tap ⊞ / *Phone*.

Making a call

You can make calls from the *Phone* screen, from *Contacts* screen, from *Speed Dial* and from *Call History*.

From the *Phone* screen:

1. Open the *Phone* screen.

2. Enter the phone number by tapping numeric buttons on the screen. Tap [←] if you need to delete a number.

3. Tap [Talk] to begin the call.

> **Tip** – When you tap a key on the on-screen keypad, a list of names and numbers is displayed as your device searches Contacts, Call History, and Speed Dial to find a matching name or number. The next key you tap continues to narrow the search. When you see the name of the person you want to call, tap it then tap [Talk].

From *Contacts*:

1. Tap ⊞ / *Contacts*, then select the contact you want to call.

2. Select the number to call, and then tap 📞.

From *Call History*:

1. Open the *Phone* screen, then tap **Call History**.

2. Select the number to call, and then tap 📞.

Making an international call

1. Tap and hold the 0 (Zero) key on the keypad until the "+" symbol appears.

2. Enter the full phone number you want to dial, then tap ![Talk]. The full phone number includes the country code, area code (without the leading zero, if any), and phone number.

Making an emergency call

Enter the emergency number for your locale and then tap ![Talk].

Receiving and ending a call

When you receive a phone call, an incoming call message appears on the screen and you are given the option to answer or ignore it.

- To answer the call, tap ![icon].
- To reject the call, tap ![icon].

> **Tip** – To adjust the in-call volume, press the VOLUME $+$ / $-$ button on the left side of the device.

Ending a call

To end a call, tap **End**.

Using Speed dial

You can create speed dial entries for frequently-called numbers so you can dial a number by tapping a single key.

To save a number as a Speed dial:

1. Tap ![icon] / *Contacts*.

2. Select a contact to view the contact details.

3. Select the desired phone number and tap ![icon] / *Add to Speed Dial*.

4. Specify the Name, Number, and Location assignment of the Speed Dial entry.

5. Tap **OK**.

   Note – The first speed dial location is generally reserved for your voicemail. Speed Dial uses the next available location by default. If you want to place a number in a location that is already used, the new number replaces the existing number.

To dial a number saved as a Speed dial, tap and hold the numberic key that is assigned to the contact's number to dial it.

Working with SMS text messages

You can send an SMS (short message service) in much the same way as with a typical mobile telephone. Each SMS text message can contain a maximum of 160 characters, depending on your service provider.

To send a message from the *Start* screen or the *Home* screen, tap *Text*, then tap / *New*.

Customizing the phone

1. Make sure the SIM card is installed and the phone turned on.

2. Tap / *Settings* / *Personal* / *Phone*. You can:

   - Customize sounds: ring type, ring tone, keypad.

   - Set Security: you can set a PIN to block unauthorized access to your phone connection.

   - Configure Services: you can configure settings for Call Barring, Caller ID, Call Forwarding, Call Waiting, Fixed Dialing and Voicemail and Text Messages.

   - Set Network preferences.

   - View Version information: view the RIL, MUX, RHA and AUD versions, as well as the Manufacturer, Model and Revision number of the WWAN module.

   - View other information about your phone, such as phone hardware ID number, current signal strength, cell tower ID number.

     - IMEI: The unique number that identifies the phone module that is embedded in the device. (If you purchase a SIM card separately, the phone service provider may want your IMEI number.)

     - IMSI and ICCID: Unique numbers embedded on the SIM card.

   - Band: Leave all the settings selected unless you are instructed by Technical Support to make an adjustment

Working with WWAN (mobile data service)

After purchasing a data connection plan from your local GSM or CDMA cellular provider, you can communicate from field to office, send e-mail messages and send text messages.

Note – When browsing the internet using the cellular connection, you must turn off the Wi-Fi (802.11) or the unit will default to the Wi-Fi to browse.

Before you begin, make sure you have inserted a SIM card in to the handheld. See Inserting and removing the SIM card, page 24.

Depending upon the configuration of your handheld, it may have the additional 3G or CDMA wireless wide area network (WWAN) feature.

Configuring the cellular connection using CellStart

Note – Applications or services that send or receive data over a cellular network may incur additional fees. Contact your carrier for information about your service plan and fees.

If you are connecting to a GSM network, you will need a SIM card to use cellular services. Make sure the SIM card is inserted into the handheld before you turn on and set up the handheld. See Inserting and removing the SIM card, page 24.

1. Tap   / **CellStart**. (You may need to tap **OK** to agree to the terms to open the program.) Under *Available Settings*, tap the **[+]** by your country to expand carriers.

2. Tap the **[+]** by the carrier you have signed up with and highlight *Typical* and tap **New**. (If using multiple configuration settings, you can tap on the primary setting and tap **Default**.)

3. Ensure the phone is turned on. Tap   / **Settings** / **Connections** / **Wireless Manager** / **Phone**.

4. Test the settings by tapping   / **Internet Explorer** and then browse to a web page. The phone will automatically start dialing when you try to open a web page.

5. If the phone will not connect, try other settings before calling the carrier technical support.

6. You can also manually change modem settings by tapping   / **Settings** / **Connections** / **Connections**.

Note – Once connected, G (GPRS) or E (EDGE - a faster form of GPRS) or H (HSDPA) will automatically appear in the notification bar depending on the network capabilities in that area; some service providers may only provide GPRS.

Configuring the cellular connection on a CDMA network

Trimble Juno T41 products are approved for use on the Verizon network in the USA.

To register the handheld with Verizon:

1. Provide the handheld's MEID (unique cell radio identifier) to your Verizon account contact. The MEID is printed on the label on the battery (look for the MEDI/IMEI; the MEID is the first 14 digits).

    Alternatively, tap / *Settings* / *Personal* / *Phone*, and select the *Info* tab. The MEID number is shown on this screen.

2. When the handheld has been registered on the Verizon network (this can take a couple of days, check with your Verizon contact), enable and activate CDMA on the unit.

To enable CDMA operation on the handheld:

1. Tap / **Settings** / **Personal** / **Cellular Network**.

2. From the *Network Type* dropdown list, select CDMA, then tap **OK**. The modem resets and reinitializes in CDMA mode.

3. To activate CDMA, make sure the phone is turned on, and connected to the Verizon network in an area of good coverage (the signal-strength indicator should show at least two bars).

    Tap / **Settings** / **Personal** / **Cellular Network** and then click **Activate**.

A pop-up message indicates that activation was successful. This may take several minutes.

Note *– The activation step requires that the unit is able to connect to the Verizon network during the activation sequence. Check your location's Verizon coverage using the Verizon Coverage Locator: http://www.verizonwireless.com/b2c/support/coverage-locator.*

Removing cellular data settings

1. Tap / *CellStart*.

2. Tap Refresh to see the current list of configurations

3. Select the configured data setting you want to remove.

4. Tap **Remove** then tap **OK**.

When you remove a default configuration, the top setting becomes the new default.

To access the detailed settings for each configuration, tap *Menu* / *Open Connections Applet* to change the modem connections.

For information on connecting to a cellular network to access the Internet or a company network, see Connecting to a cellular network from the modem, page 1.

Manually connecting to a cellular network from the modem

Use the integrated cellular modem in the Juno T41 handheld 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 e-mail access.

Before you begin the steps below, make sure that:

- a SIM is inserted and the cellular network is configured (see Configuring the cellular connection on a GSM network, page 1 or Configuring the cellular connection on a CDMA network, page 1.

- the modem can access the Internet directly. If necessary, contact your service provicer 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.

Some applications automatically launch the connection when you start the application, if a current connection is not already established. To manually connect:

1. Tap / *Settings* / *Connections*/ *Wireless Manager*. If the modem 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.

5. The task bar shows the "connecting" icon. When the connection is open/established, the task bar shows the "connected" icon. The icons shown depend on the network—see Speaker and network status indicators, page 38 for full details.

Once connected, open an application, for example, Internet Explorer, to test the connection.

Using the operating system

The Juno T41 handheld is powered by the Windows Embedded Handheld 6.5 Professional operating system. This chapter describes the main features of the handheld and this generation of the Windows Embedded Handheld operating system. When you start the handheld, the *Home* screen appears. From here you can access all the features on the handheld.

The main screens

The *Windows Home* screen

1 Home screen: provides access to the key functions on your handheld. Scroll, and tap any item to open it.

2 Title bar: contains status icons for important system functions.

3 Start button: tap to open the Start screen, where you can access programs and system controls.

4 Tile bar: contains touchable tiles providing access to applications, menus, and notifications.

The *Start* screen

1 Start screen: tap any item on the screen to open it.

2 Lock device: tap to lock the screen. See Locking the device, page 36.

The pull-down list

You can access the pull-down list from the *Home* screen or the *Start* screen.
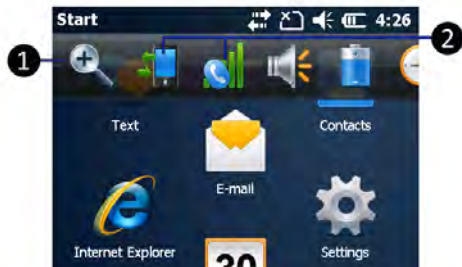
❶ Pull down list: tap anywhere on the title bar to open the title bar pull-down list, where you can access connectivity controls (the Wireless Manager), battery information, time and date settings, and volume.

❷ Connectivity icons: tap either icon to access the Wireless Manager.

Personalizing the Home screen

1. Tap ⊞ / *Settings* / *Home* / *Appearance.*

2. From the list, select the theme you want to use.

3. To set a picture as the *Home* screen background:

    a. Select *Use this picture as the background*.

    b. Tap **Browse** to select the picture you want to use.

4. Tap **OK**.

Setting regional options

The handheld comes with the regional settings that are appropriate for your locale. To change regional settings:

1. Tap ⊞ / *Settings* / *System* / *Regional Settings*.

2. On the *Regional Settings* screen, select the *Region* tab and then select your preferred language from the list.

3. If required, you can specify the locale, date and time style, and number and currency formatting options applicable to your region.

4. Tap **OK**.

Locking the device

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 the buttons do not respond until the handheld is unlocked.

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

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

To unlock the device, tap **Unlock**, then tap *Unlock* on the screen.
You can also 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.

Make sure you remember the password! The only way to recover from a forgotten password is to factory-reset the handheld. This will erase all application software, licenses, settings, and data on the device.

Interacting with the handheld, opening applications

To interact with the handheld using the touchscreen, use a capacitive stylus or your finger to tap items on the touch screen, to scroll up or down, and to enter information.

Action	Definition
Tap	Tap the screen once to open items and select options. Use the keyboard input panel to enter typed text by tapping keys on the on-screen keyboard.
Tap and hold	Tap and hold the stylus or your finger 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 or your finger on the screen and drag across the screen to select text and images. Drag in a list to select multiple items.
Swipe or slide	Quickly move your finger across the surface of the screen, without pausing when you first touch it, to scroll a page or a list up or down.
Double tap	Tap quickly twice on a webpage, map, or other screen to zoom. Double-tapping after pinching to zoom in some applications, such as Browser, reflows a column of text to fit

Action	Definition
	the width of the screen.
Pinch	In some applications (such as Browser and Gallery), place two fingers on the screen at once and pinch them together to zoom out or spread them apart to zoom in.

Entering information

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

Input method	Description
Synchronizing	Connect the handheld to an office computer to exchange information between the handheld and the office computer. For more information, see Connecting and syncing to an office computer, page 58.
Writing	Use your finger or a stylus like a pen to write directly on the screen.
Typing	Use the keyboard input panel to enter typed text by tapping keys on the on-screen keyboard.
Recording	Create a recording.

Using the Home screen and the Start menu

You can open applications from the *Home* screen or the *Start* menu. All applications installed on the handheld are accessible from the *Start* menu.

To open an application, tap it.

If at any time the touch screen does not respond correctly to stylus taps or your finger, realign it. For more information, see Aligning the screen, page 21.

Changing button assignments

If required, you can assign a customized action to the left and right programmable buttons, such as:

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

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

To assign a custom action to a button:

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

2. Specify an action for a button:

   a. Tap the *Program Buttons* tab. The list of assignable buttons is shown on the left hand side, with the program that is assigned by default on the right.

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

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

   d. Tap **OK**.

3. Tap **OK**.

Battery status indicators

The battery charging icon in the Title bar at the top of the screen shows one of the following icons to denote the battery charge status:

Icon	Description	Icon	Description
🔋	Battery has full charge	🔋	Battery has high charge
🔋	Battery has medium charge	🔋	Battery has low charge
🔋	Battery has very low charge (20% or less)	🔌	Battery charging/using external power
🚫	Battery communication error	🔋	Battery out of temperature range warning

Speaker and network status indicators

Status indicators that appear in the title bar at the top of the screen are as described below.

Speaker status indicator

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

Icon	Description
	Speaker is On
	Speaker is Off

Network and modem status indicators

The network and modem status icons on the title bar show the status of each radio. You can tap the title bar and then on the pull-down list tap the   or   icon to open the Wireless Manager (see Using the Wireless Manager, page 63).

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

Icon	Description
	Connected to ActiveSync® or the 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
	Bluetooth radio is available
	Wi-Fi radio is on but not connected
	Wi-Fi is detected
	Connected to a wireless network
	Maximum cellular modem signal strength

Icon	Description
	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
3G	UMTS network is available
	UMTS network is connecting
	UMTS connection is active
3G+	3G+ network is available
A	Analog network is available
E	EDGE network is available
	EDGE network is connecting

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

Pre-installed programs

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

Icon	Program	Function
	About	Shows information about your device.
	ActiveSync	Synchronize information between the device and a computer.
	Adobe Reader LE	Read PDF documents.
	Alarms	Set alarms.
	Backlight	Manage backlight power settings.
	Beam	Manage Beam settings.
	Bluetooth	Manage Bluetooth connection settings and devices.
	Buttons	Customize keypad button assignment.
	Calculator	Perform basic arithmetic functions.
	Calendar	Keep track of appointments and arrange meetings.
	Camera	Capture photos and videos.
	Certificates	View and delete client-side certificates.
	Clocks & Alarms	Manage time zone and alarm settings.

Icon	Program	Function
	Connections	Manage network and internet connection settings.
	Contacts	Keep track of your friends and colleagues.
	Customer Feedback	Choose to participate in the Microsoft Customer Feedback program
	Domain Enroll	Enroll your device on a company network
	E-mail	Write, send, and receive e-mail messages.
	Encryption	Enable/disable external storage card file encryption.
	Error Reporting	Enable/disable automated error logging and reporting.
	File Explorer	View and manage files.
	Home Settings	Configure how the Home screen appears.
	Input	Manage user input configuration settings.
	Internet Explorer	Browse the World Wide Web.
	Internet Sharing	Share an internet connection between devices.
	Lock	Lock the display.
	Managed Programs	Manage user-installed applications.

Icon	Program	Function
	Memory	View system internal and external memory status.
	Messenger	Send instant messages using Windows Live™ Messenger.
	Network Cards	Manage WiFi network connections and settings
	Notes	Create handwritten, typed, or recorded notes.
	Office Mobile 2010	Provides access to these Office Mobile applications: Excel® Mobile 2010, PowerPoint® Mobile 2010, OneNote® Mobile 2010, SharePoint WorkSpace Mobile 2010, and Word Mobile.
	Pictures and Videos	Take, view, and edit pictures, or record and launch video clips.
	Power	Manage device power settings.
	Regional Settings	Manage regional settings for time, date, and numeric information display.
	Remove Programs	Uninstall user-installed applications.
	Screen	Text size and display settings.
	Search Device	Search for files and data.
	Settings	Access the handheld's settings options, such as wireless connections, sounds and notifications, and power.
	Sounds & Notifications Settings	Adjust audio settings.

Icon	Program	Function
	System Report	Generates and displays a report on system status.
	Task Manager	Display currently running tasks and applications.
	Tasks	Keep track of your tasks.
	Text	Send and receive text messages (requires cellular data service).
	USB to PC	Configure PC USB connections.
	Windows Live	
	Windows Media® Player	Play audio and video files.
	Wireless Manager	Manage Bluetooth, Wi-Fi, and cellular radios.

Changing screen settings

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 align the touch screen, tap **Align Screen**, and then follow the on-screen instructions.

4. Tap **OK**.

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

To enable ClearType:

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

2. Tap **OK**.

To change the size of text on screen:

1. Tap the *Text Size* tab.

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

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

4. Tap **OK**.

Using the on-screen keyboard

The Soft Input Panel (S.I.P.) is a special on-screen keyboard for devices which do not have standard keyboards. The Juno T41 handheld includes a custom S.I.P. application called Resco Keyboard Pro.

To configure it, tap   / *Resco Keyboard Pro*.

Resco Keyboard Pro enables you to customize the handheld for fast insertion of frequently used phrases, and to customize various features including haptic or audio feedback, basic or advanced gestures and more. Resco Keyboard Pro supports 39 languages.

The keyboard icon   automatically appears in the tile bar of any application requiring text or numeric input.

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

To enter characters, use the stylus to tap the keys on the keyboard.

When you finish entering text in a field, tap   Tab   to accept the text you have entered and then move to the next field.

To enter upper case characters, tap the Shift key   Shift   before tapping the letter you want, or tap the CAP key   CAP   to type multiple capital letters.

To enter numbers and symbols, tap   123   to display a keyboards containing numbers and other symbols. To switch back to the main keyboard, tap   123   again.

To hide the keyboard, tap   again.

To change the size of the keypad, see Changing screen settings, page 45.

Editing text

If you need to edit text, tap on the screen to place the insertion point where you need it.

You can select text, and cut, copy, and paste text.

- To select text, double-tap the display at the point you want to select a word, or tap and hold then tap *Select All* to select all text.

- To cut or copy text, select the required text, then tap and hold, then select *Cut* or *Copy*.

- To paste text, tap the required insertion point, then tap and hold, then select *Paste* to insert the last text that you cut or copied. To replace text, select it before tapping *Paste*.

Using Auto-suggestion

The device uses the active dictionary to make word suggestions as you type. When the device suggests a word, tap the suggestion if you want to accept it. If the word you want to type is not displayed, you must type the whole word.

Writing or drawing on the screen

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

1. Tap and then tap Notes .

2. Open a note, tap Menu and select *Draw*.

3. Use the stylus to write or draw on the screen.

Making a recording

The device comes with an integrated speaker and a microphone. It also has an audio jack that is wired for a headset with a mono speaker and microphone combination. It is not for stereo headsets.

With the 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 Notes .

2. Tap Menu and select *View Recording Toolbar*.

3. Do one of the following:

- To create a stand-alone recording, in the screen displaying the list of notes, tap ● to begin recording.

- To add a recording to a note, create or open a note and then tap ● to begin recording.

4. When you finish recording, tap ■ . If you are creating a stand-alone recording, a new recorded item 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.

The recorded file is saved in the Notes folder.

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

Sounds and notifications

You can set the device to play a sound for system warnings and events, program notifications, screen taps, and hardware buttons presses.

To change sound settings:

1. Tap / *Settings* / *Sounds & Notifications*.

2. Tap the *Sounds* tab.

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

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

5. Tap **OK**.

You can also adjust the system volume to suit the ambient environment so that system and application sounds can be heard adequately.

To set the system volume, tap the status bar at the top of the screen, tap in the pull-down list, then drag the volume sliders as required.

Adjusting the display and keypad brightness

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. Use the brightness sliders to adjust the display brightness.

To adjust the brightness of the screen:

1. To turn Auto Brightness on or off, tap ![icon] / *Settings* / *System* / *Backlight*, and select the *Brightness* tab.

2. Drag the brightness level sliders as required.

3. Tap **OK**.

To set the backlight to automatically turn off:

1. Tap ![icon] / *Settings* / *System* / *Backlight*.

2. 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 if device is not used for* check box and then select a time from the drop-down list.

3. To automatically turn off the backlight when the handheld is idle and is using ***external power***, tap the *External Power* tab. Select the *Turn off backlight if device is not used for* check box and then select a time from the drop-down list.

4. Tap **OK**.

Using the flashlight

The dual LEDs that are used for the camera flash can also be used as a flashlight. Tap ![icon] / *Flashlight* to toggle the flashlight on and off.

Calibrating the compass

To re-calibrate the compass:.

1. Tap ![icon] / *Settings* / *System* / *Compass*.

2. Follow the instructions on the screen: set the handheld on a level surface and tap **Calibrate**.

3. Wait 3 seconds and then rotate the handheld spinning it on its back without lifting or tilting it. Complete at least a full rotation in 10 seconds.

4. Turn the device end over end, returning to the starting position. Complete at least a full rotation in 10 seconds.

5. Roll the device over to the right, complete at least a full rotation in 10 seconds, to return to the

starting position.

6. Repeat as necessary if the calibration fails.

Installing applications 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 device. To install software on a Windows Embedded Handheld device:

1. Connect the handheld device to a computer (see Connecting and syncing to an office computer, page 58).

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

3. Browse to the folder on the handheld device. Tap the installation setup file to run it, or tap and hold the file and then select **Run**.

4. If prompted after installation, restart the handheld device.

To install software that is provided as an installation setup that runs on an office computer, either from a CD or that you have downloaded:

1. Connect the handheld device to a computer (see Connecting and syncing to an office computer, page 58).

2. If the software is provided on a CD, insert the software CD into the office computer. Otherwise, download the software onto 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 device.

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

5. If prompted after installation, restart the handheld device.

Storing data

The handheld has several types of memory available:

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

- Internal storage is used for storing applications and private app data.

- Internal SD card is similar to the hard disk in a computer and is used for storing data and/or apps.

- Removable SD card refers to micro SD cards inserted into the handheld's removable SD card slot.

The Juno T41 handheld's internal storage is where most applications and private data for those applications are stored. The operating system manages and carefully guards internal storage, because it can contain your private information; you cannot view its contents when you connect the handheld to a computer with a USB cable.

The handheld's internal SD card (sometimes just called "SD card") is the primary non-removable storage for data files. Some applications are also designed to be stored on this card, rather than in internal storage, by default or as an option. When the Juno T41 handheld is connected to a computer (see Connecting and syncing to an office computer, page 58), you can copy files to and from the internal SD card.

The handheld also has a slot for a removable SD card. When a removable card is inserted, it is mounted as /removablesdcard. Like the internal SD card, this storage device is accessible when the Juno T41 handheld is connected to a computer.

To check the memory capacity on the handheld, tap / *Settings*/ *System* / *Memory*. Then select the *Main* tab, and the *Storage Card* tab to check the capacity of each.

Trimble recommends that you regularly copy important data to an office computer. For more information, see Connecting and syncing to an office computer, page 58.

Note – *The Windows Embedded Handheld operating system does not have a Recycle Bin. Once a file is deleted, it cannot be recovered.*

Memory cards

As an alternative to storage memory, you can save data to a memory card. Use a MicroSD memory card to securely transfer data to and from another device that supports MicroSD memory cards.

The device supports up to 32 GB SDHC microSD storage cards. SDXC cards are not supported.

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

⚠ **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.

To insert a memory card:

1. Turn off the handheld. See .

2. In a dust-free indoor environment, remove the two small screws to remove the memory card slot cover (on the left side of the handheld).

3. Insert the memory card into the card slot with the gold contacts facing up.

4. Replace the cover, tightening the two small screws.

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

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 a memory card, push the card to release it from the slot.

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 device. 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 device, encrypted files are only readable on the device on which they are initially encrypted. It is not possible to read encrypted files on the storage card with any other device, including another handheld device 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 device 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 device's internal memory or to an office computer.

2. Ensure encryption is enabled on the device.

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 device and then connect the device to an office computer (see Connecting and syncing to an office computer, page 58).

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

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

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

Working with files

You can copy files between an office computer and the handheld's main memory or a storage card installed on the handheld. You can also efficiently manage your files and folders using File Explorer.

To copy files to an office computer:

1. Connect the handheld device to a computer (see Connecting and syncing to an office computer, page 58).

2. Browse to the file on the handheld device.

3. Select and copy the files [Ctrl + C] and then paste them [Ctrl + V] to the destination folder on the office computer.

Note *– The Windows Embedded Handheld operating system does not have a Recycle Bin. Once a file is deleted, it cannot be recovered.*

Using File Explorer

File Explorer provides many easy-to-use features for file and folder management. File Explorer lets you browse and manage the contents of your device.

Tap / *File Explorer*. The root folder on the device is named *My Device*.

Tap a folder or file to open it.

To return to an upper level folder, tap Up.

To copy files to a storage card:

1. Make sure the storage card is properly installed. See Memory cards, page 51

2. On the File Explorer screen, navigate to the required folder.

3. Select the file you want to copy, and then tap *Menu / Edit / Copy*.

4. Tap *Menu / Storage Card*.

5. Tap *Menu / Edit / Paste*.

Working with Task Manager

Task Manager allows you to view or stop the programs currently running on your device.

1. Tap ![icon] / *Task Manager*.

2. Do any of the following:

    - To stop a specific task, on the *Task Manager* screen, select a program on the list and then tap **End Task**.

    - To stop all running programs, tap **Menu** / **End All Tasks**.

    - Tap **Menu** to access options to change the view or sorting order, refresh the screen, and more.

Using Battery Logger

The battery logger is useful for monitoring battery performance under certain user scenarios or to check if the battery has a performance issue.

To run the Battery Logger:

1. Tap ![icon] / *File Explorer* .

2. Under *Device* / *Windows*, find **batlog** and tap it to start the program.

3. Tap **File** / *Start Battery Logging*. Specify where to log the data file.

The program analyzes and logs the following information about the battery:

- Charge cycles begun and % capacity at initiation.

- Charge cycles fully completed.

- Aborted charge cycles and % capacity at termination.

- Provide notification when the number of charge cycles reaches 90% of the max.

Using E-mail

You can send and receive e-mail messages using the Juno T41 handheld. To use e-mail, you can do one of the following:

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

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

Synchronizing e-mail messages

You can synchronize e-mail messages on the handheld and the computer.

> ⚠ **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.

To synchronize e-mail, 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.

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

- e-mail messages in subfolders in other e-mail folders in Outlook are synchronized only if they were selected for synchronization (using ActiveSync technology or the WMDC).

To send and receive e-mail for a synchronized Exchange or Outlook account, connect the handheld to the office computer (see Connecting and syncing to an office computer, page 58). Synchronization automatically begins, and the handheld sends and receives e-mail.

Connecting directly to an e-mail server

You can send and receive e-mail messages by connecting to an e-mail server. Before you can send and receive e-mail, you must create an e-mail account in the Messaging software.

Note – You must set up an Internet connection on the handheld before you can set up and use your e-mail account. For more information, see Connecting to a Wi-Fi access point, page 64, Manually connecting to a cellular network from the modem, page 32, or Connecting to a Bluetooth-enabled device , page 67

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 e-mail 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 e-mail 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**, then tap **OK** to download mail immediately.

When you connect the handheld to the e-mail server, new messages are downloaded to the Messaging folder, messages in the Outbox folder are sent, and messages that have been deleted on the e-mail server are removed from the Messaging folder. Messages received directly from an e-mail server are linked to the e-mail server rather than an office computer. When you delete a message on the handheld, it is also deleted from the e-mail server the next time you connect the handheld to the e-mail server.

You can work online or offline. When working online, you read and respond to messages while connected to the e-mail server. Messages are sent as soon as you tap **Send**, which saves space on the handheld. When working offline, you can disconnect from the e-mail server after you download new message headers or partial messages and then decide which messages to download completely. The next time you connect, Messaging downloads the complete messages you have marked for retrieval and sends any messages that you have written.

Connecting and syncing to an office computer

- Connection management software
- Managing the connection using the Windows Mobile Device Center
- Managing the connection using ActiveSync technology

You may need to connect the Juno T41 handheld to an office computer to install and activate software or receiver options; transfer information, settings, and files from one device to the other; or synchronise data with an office computer.

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

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 device, or to copy files between the device 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.

  Note – *The Windows 7 and Windows Vista operating systems include a basic connectivity driver for Windows Embedded Handheld devices. This driver allows you to transfer files from the handheld to an office computer. The Windows Mobile Device Center enables you to synchronize office applications on an office computer with the handheld.*

- the Windows XP 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 device.*

You can download the latest version of the Windows Mobile Device Center or ActiveSync technology from the Microsoft website.

⚠ **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.

To connect the handheld to a computer:

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

2. Make sure you have installed the appropriate connection management software onto the computer.

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

   - Use a USB connection:

     a. Connect the USB data cable to the USB connector on the device.

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

   - Use the device's integrated Bluetooth radio to establish a wireless link to a Bluetooth-enabled computer. For more information, see Connecting to a Bluetooth-enabled device , page 67.

When the handheld device 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 60

- Managing the connection using ActiveSync technology, page 60

Managing the connection using the Windows Mobile Device Center

1. Connect the handheld device to the computer Connecting and syncing to an office computer, page 58.

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.

4. Do one of the following:

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

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

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

6. To install software onto the handheld device, see Installing applications onto the handheld, page 50.

7. To uninstall software from the handheld device, 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 Microsoft *Windows Mobile Device Center Help*.

Managing the connection using ActiveSync technology

1. Connect the handheld device to the computer (see Connecting and syncing to an office computer, page 58). 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 device.*

2. Do one of the following:

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

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

5. To install software onto the handheld device, see Installing applications onto the handheld, page 50.

6. To uninstall software from the handheld device, 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 Microsoft *ActiveSync Help*.

Using the integrated radios

The Juno T41 handheld includes an integrated Bluetooth radio and Wi-Fi radio, and provides a number of options for connecting to networks and other devices. Some models also include an integrated cellular modem for sending and receiving data, and support voice calls and text messaging.

To use the Wi-Fi or 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 T41 handheld's integrated cellular modem can be used to connect to the Internet, 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 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 ("hotspot").

You can use Bluetooth wireless technology to connect directly to other Bluetooth-enabled devices such as a headset, laser rangefinder, or a barcode scanner that are within range (typically within 5- 10 meters of the handheld).

Choosing a connection method

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...
Cellular modem	Connect to a cellular network	Manually connecting to a cellular network from the modem, page 32
Wi-Fi	Connect to a Wi-Fi access point	Connecting to a Wi-Fi access point, page 64
Bluetooth wireless technology	Connect to another Bluetooth-enabled device	Connecting to a Bluetooth-enabled device , page 67
Wi-Fi, or cellular modem	Access a corporate network (Virtual Private Network)	Accessing a corporate network, page 69

Turning on and turning off the integrated radios

To save power and optimize battery life, turn off wireless radios when they are not in use.

You can use the Wireless Manager application to turn on and turn off the handheld's Bluetooth and Wi-Fi radios, and the handheld's cellular modem (see Using the Wireless Manager, page 1).

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 1).

To make the handheld visible to other Bluetooth-enabled devices and enable them to connect, see Making the handheld visible (discoverable) to other Bluetooth devices (page 1).

Using the Wireless Manager

You can use the Wireless Manager application to turn on and turn off the Wi-Fi and Bluetooth radios and the 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 and/or Bluetooth radio to be able to connect to other devices or networks.

Turn on the cellular modem to be able to send and receive data, and send text messages.

Turn off the Wi-Fi and/or Bluetooth radio, and/or cellular modem to prevent the handheld from sending or receiving wireless signals.

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

To turn the radios on or off, do one of the following:

- 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, **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.

To exit the Wireless Manager, tap .

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. Tap / *Settings* / *Connections* / *Wireless Manager*.

2. Tap **Menu** and then select *Wi-Fi Settings*. Any networks that you have already configured are displayed in the list of preferred networks.

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

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

5. 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*.

6. Tap **Next**.

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

8. Tap **Finish**.

Step 2: Connecting to the network or access point

1. Make sure the handheld is not connected to any other device using a 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 netwprk or access point is detected, the icon appears on the title bar. If the access point icon 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 appears.

3. Tap the access point icon on the title bar. A popup message shows the available networks.

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

5. Select *The Internet* or *Work* and then tap **Connect**.

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

7. When the handheld is connected to the network or access point, the Wi-Fi connected icon appears in the title bar.

8. Start using the program you want to use, for example Internet Explorer.

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*.

Using the Summit utility

The Juno T41 handheld includes a Wi-Fi connection management and monitoring utility called the Summit Client Utility (SCU). SCU allows you to view all radio and security settings and status, and enables you to troubleshoot connectivity issues.

The SCU software is useful for establishing network connections on networks that require more complex settings than the *Configure Wireless Network* wizard provided in the Windows Embedded Handheld operating system.

For more information how to use the SCU, go to http://www.summitdata.com/documentation.html and click on the User's Guide.

To access SCU, tap [icon] / *Settings* / *Connections* / *SCU*.

SCU has the following five tabs:

- **Main**: provides an overview of the current wireless network connection configuration (Active Profile), a snapshot of connection information, and additional information regarding SCU (About SCU). You can also import and export settings configurations, which is useful if you have multiple devices to configure to access your local networks.

- **Profile**: Profile settings are radio and security settings that are stored for each configuration profile. Tap **New** to create a new Profile and enter the necessary connection settings for a Wi-Fi network access point. Tap **Commit** to save changes to the Profile.

- **Status**: provides status information on the radio connection between the client device and the associated access point.

- **Diags** (for troubleshooting): enables you to troubleshoot connection issues with SCU.

- **Global**: Global settings include radio and security settings that apply to all profiles and settings managed by SCU.

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

1. Tap [icon] / *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**.

Making the handheld visible (discoverable) to other Bluetooth devices

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

To make the device 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.

4. Select the *Make this device visible to other devices* check box, and tap **OK**.

Connecting to a Bluetooth-enabled device

To use another Bluetooth-enabled device with the Juno T41 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 handheld to another Bluetooth-enabled device, you can use either a paired connection or a non-paired connection.

To access Bluetooth settings, tap ⊞ / *Settings* / *Bluetooth*. You can set the following:

- *Mode*: To enable Bluetooth, select the check box *Turn on Bluetooth*. If you want other Bluetooth devices to find the device, select the check box *Make this device visible to other devices*.

- *Devices*: Tap **Add new device** to search for other Bluetooth devices. For enhanced security, use passcodes.

- *COM Ports*: Available only for Bluetooth-connected devices that support serial (COM) connections.

- *Power*:

  - When the check box *Maintain Bluetooth connections when device is turned off* is selected, Bluetooth connections on the device are not terminated when the device is turned off (suspended). When the device is turned back on, the Bluetooth connections are still active, provided the other Bluetooth device is still connected (the other device may not have this feature and may disconnect.)

> ***Note*** *– Communication cannot occur with other Bluetooth devices while the device is suspended.*

- When the check box *Allow Bluetooth activity to turn the device on* is selected, another Bluetooth device can send data and the device will turn on and reply if necessary.

> ***Note*** *– Trimble recommends that the device be configured to automatically turn off when not in use. Otherwise, another Bluetooth device could turn on the device, transfer data and if it does not turn off again, drain the battery.*

To connect to a Bluetooth device, you must turn on the handheld's Bluetooth radio, and set up a paired Bluetooth connection between the two devices. See Turning on and turning off the Bluetooth radio from within the Bluetooth application, page 66, and Working with paired Bluetooth-enabled devices, page 68.

Turn off the Bluetooth radio when it is not in use, to extend the charge of the handheld battery. You may also be required to turn Bluetooth off in some locations. See Turning on and turning off the integrated radios, page 63.

Working with paired Bluetooth-enabled devices

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.

You must pair the handheld with a device before you can connect to it. Once you pair the handheld with a device, they stay paired unless you unpair them.

To pair with a Bluetooth device:

1. Tap / *Settings* / *Bluetooth* / *Mode*. Ensure that both devices have Bluetooth turned on, are visible, and within close range.

2. Tap *Devices* / *Add new device…*. Wait a few moments while the device searches for other Bluetooth devices.

3. Tap the name of the other Bluetooth device and tap **Next**. For enhanced security, use passcodes. Enter the same passcode on the other device.

4. If required, change the name of the other device and tap **Finish**.

If the pairing is successful, the handheld connects to the device. The device shows as connected in the list.

You can easily connect to the paired device in the future by tapping it in the list of Bluetooth devices.

Disconnecting from a Bluetooth device

1. Tap / *Settings* / *Bluetooth* / *Devices*.

2. Tap the name of the connected Bluetooth device you want to disconnect

Tap the connected device in the list of Bluetooth devices on the Bluetooth settings screen, then tap **OK** to confirm that you want to disconnect.

Unpairing a Bluetooth device

You can unpair a Bluetooth device to delete all pairing information about it. Tap next to the device in the list of Bluetooth devices, then tap *Unpair*.

Accessing a corporate network

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:

- username 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:

- Connect to the Internet using the cellular modem. For more information, see Manually connecting to a cellular network from the modem, page 32.

- Set up a Wi-Fi connection access point. For more information, see Connecting to a Wi-Fi access point, page 64.

Step 2: Setting up a VPN connection

1. On the 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

- GPS settings
- Using an external GNSS antenna

The Juno T41 handheld includes an integrated GNSS receiver that enables you to use GPS satellites. GPS (Global Positioning System) is a Global Navigation Satellite System (GNSS), consisting of a constellation of satellites that orbit the earth. GNSS provides worldwide, all-weather, 24-hour time and position information.

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.

Using GPS enables the handheld to determine your location (within 1 to 2 meter accuracy for Juno T41 'G' configurations, and 2 to 4 meter accuracy for all other Juno T41 handheld configurations), and geo-tagging of photos you take using the handheld's integrated camera.

GPS settings

Tap / *Settings* / *System* / *System Information* / *Wireless* to check that GPS is installed. COM2 is the dedicated hardware port for the built-in GPS (COM1 is dedicated to the external 9-pin).

The GPS is compatible with applications that accept the NMEA position information using a default baud rate of 38400.

To change GPS settings if you use multiple GPS-aware applications:

Note – *If you are using only one GPS-aware application, these settings do not need to be changed.*

Tap / *Settings* / *System* / *GPS*. The tabs available are as follows:

- **Access**: The GPS Intermediate Driver (GPSID) allows multiple applications to access the GPS receiver. If the *Manage GPS automatically* check box is not selected, the GPSID is disabled.

- **A-GPS**: use assisted-GPS to improve time-to-fix.

- **Programs**: Programs that use GPS need to know which COM port to use to access GPS data. When using more than one GPS-aware application, the same GPSID port must be used in each application. Ensure that the COM port on the GPS-aware application(s) is set to the same GPSID port as shown in the Programs tab of the GPS applet. The program port must be a different port than the hardware port. By default, the GPS program port is COM3 and should not be modified unless directed by Technical Support.

- **Hardware**: COM2 is the hardware port dedicated for the built-in GPS. Verify that COM2 is selected. The internal GPS communicates at 38400 baud by default. If it has been modified by a third-party program, adjust to match the receiver baud rate.

Note – *Some GPS-aware applications may not communicate over GPS program ports.*

Using SatViewer

SatViewer provides information such as your current longitude, latitude, elevation, how many GPS satellites are visible and the quality of the computed coordinates.

To open SatViewer, tap / *SatViewer*. To begin monitoring GPS satellites, select the *GPS* tab and tap **Connect to GPS**.

Note – *External GPS receivers, Bluetooth GPS receivers or other external GPS devices are not supported and may not work correctly with SatViewer.*

Exiting GPS applications

Any time you exit a GPS application (such as SatViewer) it is advisable to close the port, for example, tap **Disconnect from GPS** and then exit the application. Failure to do so may leave the port open and hinder the next GPS operation.

Using an external GNSS antenna

The Juno T41 handheld provides an external GNSS antenna port, which is suitable for use in most conditions. This port is suitable for GPS antennas only.

⚠ **CAUTION** - 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.

To use an external antenna, you must configure antenna settings in the GNSS field software, once you have connected the external antenna to the handheld. Refer to the relevant software documentation for details.

Using the camera

- Starting and exiting the camera app
- Taking a photo or recording a video
- Camera setting options
- Managing photos and videos

Some models of the Juno T41 handheld contain an integrated 8 megapixel digital camera, with geotagging and dual LED flash, which you can use to capture photos or video.

Starting and exiting the camera app

To start the *Camera* app, tap / *Pictures & Videos* , then tap the *Camera* icon or the **Camera** tile (or press the left programmable button under the **Camera** tile, unless it has been assigned to some other application).

Note – If you do not see the Camera icon, your handheld does not have an integrated camera.

To exit the *Camera* app, tap on the camera screen, or press **OK**.

Taking a photo or recording a video

When the camera application is started, it is by default in Still (photo) mode.

Note – The thumbnail that is displayed at the top of the camera screen is the most recently captured image. You can tap on it to work with it in Pictures & Videos.

To capture a photo:

1. Hold the handheld steady. Use the preview window to frame the subject in the centre of the frame.

2. If *Focus* is *Enabled* (see Camera setting options, page 76), quickly double-tap the preview window to manually focus the camera. A white box appears, which then turns green. If you do not double-tap the preview window, the camera assumes that the distant focus (that is, targets > 1m or so away) is ok, and it does not autofocus.

3. To capture the photo, tap the *Camera* icon on the screen. Or Tap the **Action** button on the left side of the handheld.

Photos are stored with a .jpg file extension. See Managing photos and videos, page 1.

To capture a video:

1. Tap the *Video* icon on the screen.

2. Use the preview window to frame the start of the video.

3. To start recording, tap the *Record* icon on the screen. Move the handheld to record the video.

4. To pause recording, tap the *Pause* icon. To stop recording, tap the *Stop* icon.

When the camera application displays , it is storing the photo or video file. Removing the battery or the memory card while recording may affect photos / videos or damage the memory card.

To switch to back to Still mode from Video mode, tap the *Camera* icon on the screen.

Videos are stored with a .wmv file extension. See Managing photos and videos, page 1.

Camera setting options

To display the camera setting options displayed on the camera screen, tap . The settings are:

Control	Settings	Mode

Settings
	Still Resolution:
	
	• 4:3. Image resolutions available are:
	  • 1.3MP - 1280x960
	  • 3MP - 2048x1536
	  • 5MP - 2560x1920
	  • 8MP - 3264x2448
	• 5:3. Image resolutions available are:
	  • WVGA - 800x480
	  • WXGA - 1280x768
	  • 2.4MP - 2000x1200
	  • 3.9MP - 2560x1536
	  • 6MP - 3264x1960
	
	The still image resolution displays on the top right corner of the preview window when the camera user interface is visible.
		Still

	Video Resolution: • QVGA - 320x240 • VGA - 640x480 • WVGA - 800x480	Video
	Storage Selection:	Still and video

Control	Settings	Mode
	• Main Memory: Save images to the on-board storage. • SD Card: Save images to the microSD card. This item is not selectable if no microSD card is installed.	
Focus: • Enable: enables the Auto Focus feature, which is you double-tap on the image preview. • Disable: disables the Auto Focus feature.		Still and Video (note in Video mode, this option is not under the Settings menu)
Image Review: • 2 Seconds: The captured image is displayed for 2 seconds. • 3 Seconds: The captured image is displayed for 3 seconds. • User Prompted: The captured image is displayed until you delete or save the image; tap to delete the image file and return to the camera preview window, or tap to save the image file and return to the camera preview window. • Off: The captured image is not displayed. This mode is useful for capturing images as quickly as possible.		Still
Video Review: • On: If selected, the video review mode is enabled. When video capture is completed, the video review window enables you to to review the captured video by playing it back. Delete and Save video icons are also enabled in the review window. Tap to delete the video file and return to the video preview window, or tap to save the video file and return to the video preview window. • Off: If selected, the video review feature is disabled. The application		Video

Control	Settings	Mode
	will return to the preview window after capturing the video and storing the video file.	
	Image Tagging: the capture of date, time and GPS location data on your images. The data may be stored in the EXIF data or both the EXIF data and on the visible image.	Still

- Date.
  - Date Source:
    - Device Date-Time: Get the date-time from the handheld's real-time clock.
    - GPS Date-Time: Get the current GPS date-time.
      Note – If the current GPS time is not available (due to lack of GPS signal), the Device Date-Time is used.
  - Stamp Settings:
    - EXIF: Store the date-time information as EXIF data.
    - EXIF & Stamp: Store the date-time information as EXIF data and embedded on the visible image.
    - Off: Do not store date-time information.
- GPS
  - Format:
    - Deg/Min/Sec: Format in Degrees, Minutes, Seconds.
    - Decimal Degree: Format in Degrees with decimal precision.
  - Stamp Settings:
    - EXIF: Store the location information as EXIF data.
    - EXIF & Stamp: Store the location information as EXIF data and embedded on the visible image.
    - Off: Do not store date-time information.

Control	Settings	Mode
Pause Time-out:		Video

- 10 seconds
- 20 seconds
- 60 seconds
- Disable

Control	Settings	Mode
	Select an option to specify the timeout duration of the Pause feature while recording. If you pause the recording , the video recording pauses for the selected time-out. Then the pause icon changes to a record icon, enabling you to resume recording. If you don't resume recording before the time-out period specified, the video review window displays, enabling you to to review the captured video by playing it back. Delete and Save video icons are also enabled in the review window. Tap to delete the video file and return to the video preview window, or tap to save the video file and return to the video preview window.	
App Settings: - UI Orientation - Rotation on Tilt: Enable the automatic rotation of the camera user interface based on device orientation/tilt. - Fixed Landscape: Lock the camera application in landscape mode. - Fixed Portrait: Lock the camera application in portrait mode. *Note* – *This option only applies to the image capture and does not apply to video capture, which is only available in fixed landscape mode.* - Sounds - Enable: enables the beep sound while focusing and click sound for capturing the images. - Disable: disables the sound while focusing and capturing the images. - Modify Prefix. Select the Modify Prefix option to display the prefix window enabling you to edit the prefix of Image and Video files. By default, Image files append with prefix IMG and video files append with VID. The file is saved with a name that is auto-generated with the prefix followed by a four digit number. The number is sequential.	Still and Video
 White Balance	- Auto: adjusts the white balance automatically while taking pictures and videos in different lighting conditions. - Sunny: Select this option when taking pictures and videos in full sunlight. - Incandescent: Select this option when taking pictures and videos in places lit with Incandescent lighting. - Fluorescent: Select this option when taking pictures and videos in	Still and video

Control	Settings	Mode
	places lit with Fluorescent lighting.	
Zoom	1.0x [Minimum Zoom], 1.5x, 2.0x, 2.5x , 3.0x, 3.5x, 4.0x [Maximum Zoom]. Selection of any option applies that setting to camera preview and to images captured. *Note – The Image Tagging of date-time and GPS on the image is not compatible with a Digital Zoom setting other than 1.0x. The EXIF tagging is not affected by Digital Zoom.*	Still
Brightness	+3 [Maximum Brightness], +2, +1, 0 [Normal Brightness], -1, -2, -3 [Minimum Brightness]. The selected option applies that setting to the camera preview and to images captured. Increase the brightness if the subject is underexposed, or decrease the brightness if the subject is overexposed. A common situation requiring adjustment to brightness is capturing a scene with high contrast caused by direct exposure of light sources or areas of shading or shadows.	Still and video
Flash settings	• On: enable the flash; the flash icon appears on the screen and dual LEDs will flash while capturing images. • Off: disable the LED flash. • Auto: enable the LEDs to flash if needed to illuminate the scenes with low-light. The auto flash icon displays on the screen.	Still
Image quality	• Economy: save the captured image with low quality (high compression). • Normal: save the captured image with medium quality (medium compression). • Fine: save the captured image with good quality (low compression). • Super Fine: save the captured image with very good quality (very low compression). Images are stored with the selected quality; the file size of the image increases as quality increases.	Still
Audio Record	• Enable: Audio capture from the microphone is enabled while recording. • Disable: The video that is recorded does not include any sound.	Video

Managing photos and videos

To view and manage photos and videos, tap [icon]/*Pictures & Videos*. The *Pictures &Videos* screen appears.

To rename a photo or video:

1. Tap the required file top open it, tap **Menu**, then scroll down and select *Properties*. Alternatively, make sure the file is selected without opening it, and then tap **Menu**, and select *Tools/ Properties*.

2. Enter a name in the *Name* field and tap **OK**.

To delete a photo or video, tap and hold the required file, and then select *Delete* from the pop-up menu.

To copy a photo or video, tap and hold the required file, and then select *Copy* from the pop-up menu.

To send a photo or video using e-mail or SMS, tap and hold the required file, and then select *Send* from the pop-up menu.

To edit a photo:

1. Tap the required file, tap **Menu**, then scroll down and select *Edit*.

2. You can:

   - Tap **Rotate** to rotate the photo 90 degrees clockwise. Tap **Rotate** again if required until the photo has the desired orientation.

   - Tap **Menu**, and then select one of the following:

Option	
Crop	Drag a box around the area of the photo that you want to crop, and then tap inside the box to crop the photo.
Auto Correct	Auto correct the photo.
Undo	Undo the last action.
Revert to Saved	Reject any changes you have made since the last Save.
Save As...	Save the file with a new name.

Using the barcode imager

- Supported symbologies
- Configuring the barcode imager
- Reading barcodes

Some models of the Juno T41 handheld contain an integrated barcode imager, to scan 1D and 2D barcodes.

The barcode imager is available through the Scanner application installed on the handheld, and through the Juno T41 SDK.

For Juno T41 SDK documentation and details on adding barcode functionality to applications, go to www.trimble.com/JunoT41/support.

Supported symbologies

The barcode imager supports the following symbologies:

- 1D symbologies:
  - EAN/UPC
  - GS1 Databar (limited expanded & omni-directional)
  - Code 39
  - Code 128
  - UCC/EAN 128
  - ISBN
  - ISBT
  - Interleaved/Matrix/ Industrial and Standard 2 of 5
  - Codabar
  - Code 93/93i
  - Code 11
  - MSI
  - Plessey
  - Telepen
  - Postal codes (Australian Post, BPO, Canada Post, Dutch Post, Japan Post, PostNet, Sweden Post)
- 2D symbologies:
  - Data Matrix
  - PDF417
  - Micro PDF 417
  - Codablock
  - Maxicode
  - QR
  - Aztec

Configuring the barcode imager

Tap / *Settings* / *Setup Scanner*. The *Scanner Setup* dialogue displays. From here you can:

- Test the functionality of the integrated barcode imager. Tap **Scan Now**.
- Edit enabled symbologies and settings. Tap **Symbologies**. You can:
  - Enable/disable specific symbologies.
  - Tap on a symbology name to edit its parameters.
  - Enable/disable the scan beep. Tap **Scan Beep**. Tap the checkbox to enable/disable.
  - **Edit Config**

Reading barcodes

Tap the ScanAgent icon to scan a barcode. Or, press the button you assigned to scanning barcodes.

See Changing button assignments, page 37 for information on assigning buttons to programs.

Using the UHF RFID scanner

■ Using the RFID Setup app

Some models of the Juno T41 handheld contain an integrated ultra-high frequenc (UHF) RFID scanner.

The UHF RFID scanner is available through the RFID Setup app, and through the Juno T41 SDK.

For Juno T41 SDK documentation and details on adding RFID functionality to applications, go to www.trimble.com/JunoT41/support.

Using the RFID Setup app

Use the RFID Setup app to:

- Enable the RFID keyboard wedge.

- Configure the RFID scanner (set parameters).

  Note – The settings configured using the RFID Setup app apply to any RFID scanner used with the device. You can set local settings (via an API) for a 3rd party app.

- Read RFID tags, test the configured settings.

To open the RFID Setup app, tap [icon] / *Settings* / *RFID Setup*. The *ThingMagic RFID SearchLight* app opens.

Note – To use the RFID Setup app, you must have the correct time zone, time, and date set on the handheld. See Setting the time zone, date, and time, page 22.

Using a keyboard wedge

If you use a keyboard wedge to scan RFID tags directly into, for example, a spreadsheet (such as Microsoft Excel):

1. Tap **Configure Application**, then tap **Wedge Settings**.

2. Select the button that you want to use as the keyboard wedge, then tap **Save**.

3. Tap **OK** to exit the *Configuration* screen.

4. Tap **Enable RFID keyboard wedge** to enable it.

5. You are warned that power consumption will be increased; tap **Yes**.

6. To read tags directly into the spreadsheet, open the spreadsheet program and press the button that you specified in stpe 2.

To reduce power consumption when you are not using the keyboard wedge, tap **Disable RFID keyboard wedge** then tap **OK**.

Configuring the application

Tap **Configure Application** to access the following settings:

- **Display Format**. Tap to set how the EPC (Electronic Product Code) is displayed in the application it is being read to if you are using the keyboard wedge.

- **Read Parameters**. Tap to set audible alerts, and keyboard wedge settings such as the scan duration and metadata settings (timestamp / RSSI - Received Signal Strength Indicator / position of when a tag is read).

- **Prefix / Suffix**. Tap to set a prefix and suffix for all the tags that are read.
- **Reader Settings**:
  - **Read power (dBm**: Set how much power the RFID scanner uses when reading tags; select the required value from the list (from 10dB to 30dB). The default is 20dB. The higher the power usage, the greater the reading range, and the greater the battery power consumption
  - **Population size**. This setting gives the scanner an indication of the number of tags it is likely to read in a session. The scanner is then optimized for the selected population size. The default is Small (less than 10 tags).
  - **Tag Selection**. If required, you can set a filter mask so that only tags that match the filter are scanned. Select *None*, *On EPC*, *On TID*, or *On User Data* from the list.
  - **Tag Types**. Select the tag types you want to read. Currently you can choose from EPC Gen 2 (Electronic Product Code) and ATA . You can select one or both; Trimble recommends that you only select the tag types you will be reading.
  - **Selection Address**. You can specify where in the tag data the scanner starts to filter. Set to 0 (the default) if you do not want to specify a tag selection address.
  - **Select tags not matching mask**: If this option is selected, tags that DO NOT match the filter are reported. If this option is not selected, tags that match the filter are reported.
- **Wedge Settings**. See Using a keyboard wedge, above .
- **Upgrade RFID Firmware**. You will be sent an upgrade file and an installation key.

Reading tags

Tap **Read RFID Tags** to begin reading tags directly into the RFID Setup app. Then tap **Start Reads**.