®Trimble.

Trimble Navigation Limited
www.trimble.com

TSCe™
Getting
Started
Guide

The following limited warranties give you specific legal rights. You may have others, which vary from state/jurisdiction to state/jurisdiction.

Hardware Limited Warranty

Trimble Navigation Limited warrants that this hardware product (the "Product") will perform substantially in accordance with published specifications and be substantially free of defects in material and workmanship for a period of one (1) year starting from the date of delivery. The warranty set forth in this paragraph shall not apply to software products.

Software License, Limited Warranty

This Trimble software product, whether provided as a stand-alone computer software product, built into hardware circuitry as firmware, embedded in flash memory, or stored on magnetic or other media, (the "Software") is licensed and not sold, and its use is governed by the terms of the relevant End User License Agreement ("EULA") included with the Software. In the absence of a separate EULA included with the Software providing different limited warranty terms, exclusions and limitations, the following terms and conditions shall apply. Trimble warrants that this Trimble Software product will substantially conform to Trimble's applicable published specifications for the Software for a period of ninety (90) days, starting from the date of delivery.

Warranty Remedies

Trimble's sole liability and your exclusive remedy under the warranties set forth above shall be, at Trimble's option, to repair or replace any Product or Software that fails to conform to such warranty ("Nonconforming Product") or refund the purchase price paid by you for any such Nonconforming Product, upon your return of any Nonconforming Product to Trimble in accordance with Trimble's standard return material authorization procedures.

Warranty Exclusions and Disclaimer

These warranties shall be applied only in the event and to the extent that: (i) the Products and Software are properly and correctly installed, configured, interfaced, maintained, stored, and operated in accordance with Trimble's relevant operator's manual and specifications, and; (ii) the Products and Software are not modified or misused. The preceding warranties 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 or Software with hardware or software products, information, data, systems, interfacing or devices not made, supplied or specified by Trimble; (ii) the operation of the Product or Software under any specification other than, or in addition to, Trimble's standard specifications for its products; (iii) the unauthorized modification or use of the Product or Software; (iv) damage caused by accident, lightning or other electrical discharge, fresh or salt water immersion or spray; or (v) normal wear and tear on consumable parts (e.g., batteries). Trimble does not warrant or guarantee the results obtained through the use of the Product.

The warranties above state Trimble's entire liability, and your exclusive remedies, relating to performance of the products and software. Except as otherwise expressly provided herein, the products, software, and accompanying documentation and materials are provided "as-is" and without express or implied warranty of any kind by either Trimble Navigation Limited 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 products or software. Some states and jurisdictions do not allow limitations on duration or the exclusion of an implied warranty, so the above limitation may not apply to you.
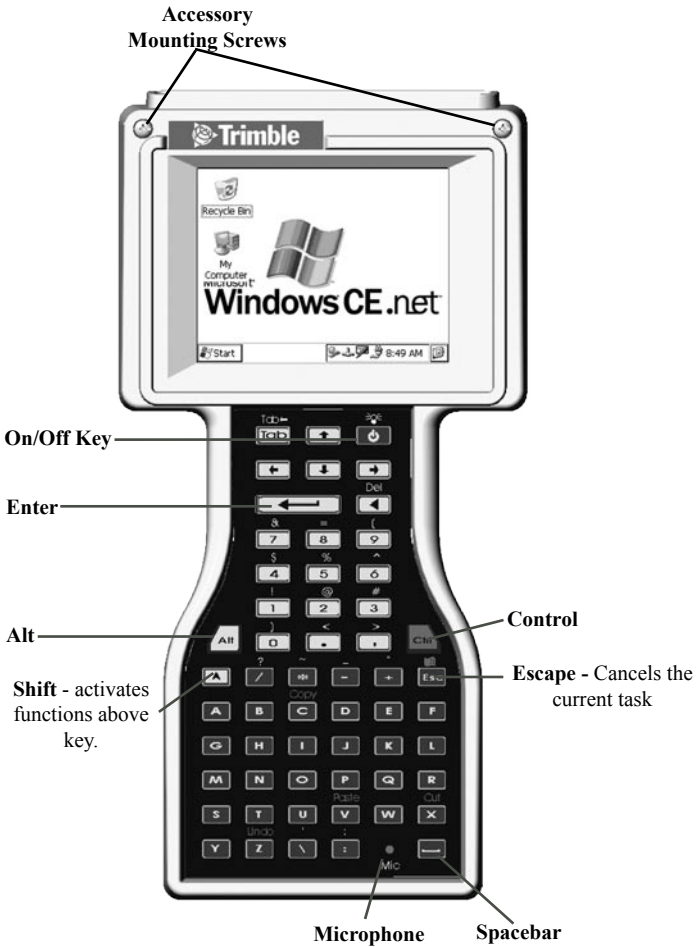
TRIMBLE NAVIGATION LIMITED IS NOT RESPONSIBLE FOR THE OPERATION OR FAILURE OF OPERATION OF GPS SATELLITES OR THE AVAILABILITY OF GPS SATELLITE SIGNALS.

Limitation of Liability

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NOT WITHSTANDING THE ABOVE, IF YOU PURCHASED THIS PRODUCT OR SOFTWARE IN THE EUROPEAN UNION, THE ABOVE WARRANTY PROVISIONS MAY NOT APPLY. PLEASE CONTACT YOUR DEALER FOR APPLICABLE WARRANTY INFORMATION.

Your TSCe™

Accessory Mounting Screws

On/Off Key

Enter

Alt

Shift - activates functions above key.

Control

Escape - Cancels the current task

Microphone

Spacebar

Shortcut keys

Activate Display Light Tap touch screen
Right mouse click [Alt] + stylus tap
Soft Reset [Shift] + [Ctrl] + [On/Off]
Hard Reset Hold down [On/Off] key for 20 seconds.

3

Getting Started

Your Operating System

Your TSCe uses an OS called Windows CE .NET, a version of Windows adapted for your TSCe.

Memory

Your TSCe has two kinds of memory: the RAM and the flash card. RAM is volatile, and you risk losing contents during power losses. The compact flash card is non-volatile, and protects valuable data and software programs against memory loss. In order to ensure the integrity of important data and user programs, we recommend that you load and save these on your flash disk instead of RAM.

When you desire to "restart" your TSCe, you have one of two options -- a soft reset or a hard reset.

Soft reset
[Shift]+[Ctrl]+[On/Off]
A soft reset leaves the RAM intact, but stops all running programs. It is the preferred method for dealing with lockups, and will clear all but the most severe system freezes.
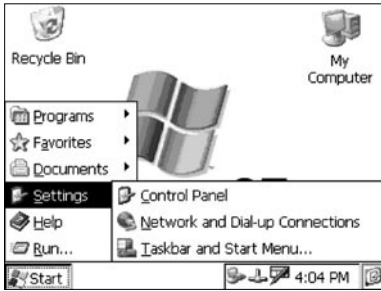
Hard reset
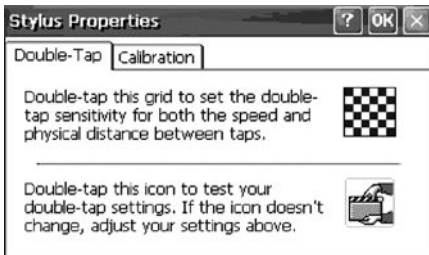*Hold down the On/Off button for 20 seconds.*
Similar to restarting your desktop computer, a hard reset erases the RAM. The TSCe backs up the data in RAM onto the System Folder on the flash disk. (found under /Disk/System).

Calibration of Touch Screen
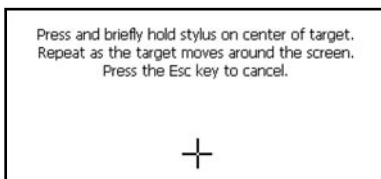
Access the Control Panel:

Double-tap the **Stylus** icon in the Control Panel to bring up the following dialog box.
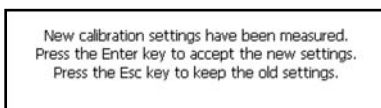
This window allows you to calibrate the double-taps of your stylus.

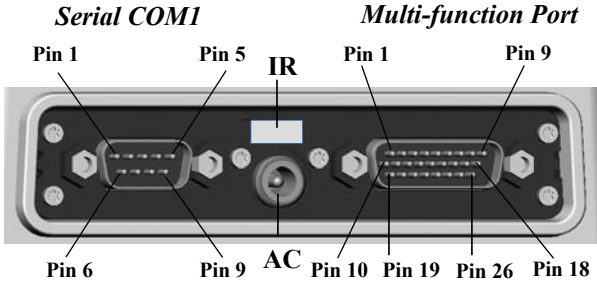Tap "Recalibrate" to calibrate the touch screen of your TSCe.

Follow instructions on the screen. As you tap the crosses, be sure to touch the screen firmly with your stylus.
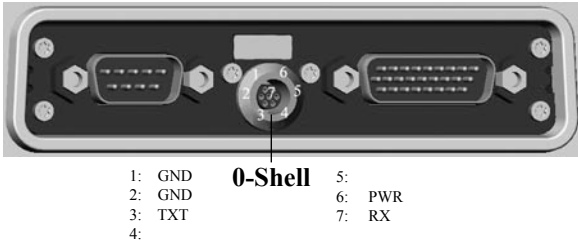
Connecting to your PC

I/O Ports with AC Adaptor

Serial COM1   *Multi-function Port*

Pin 1   Pin 5   **IR**   Pin 1   Pin 9

Pin 6   Pin 9   **AC** Pin 10 Pin 19 Pin 26 Pin 18

1:← DCD	
2:← RX	
3:→ TX	
4:→ DTR	
5: GND	
6:← DSR	
7:→ RTS	
8:← CTS	
9:← RI	

1:→ DTR com2	10: Mic Mute	19:→ LAN traffic
2:← CTS com2	11:→ RTS com2	20: +5V
3:← DSR com2	12:→ TX com2	21:← RX com2
4:← DCD com2	13: Mic GND	22:→ Audio out
5:← RI com2	14: Mic	23: GND
6: GND	15: GND	24:← Charge +
7: Reserved	16:← ERX-	25:← ERX+
8: Reserved	17:→ ETX-	26:→ ETX+
9: USB+	18: USB-	

I/O Ports with 0-Shell Connector

1: GND	**0-Shell**
2: GND	5:
3: TXT	6: PWR
4:	7: RX

Connecting via the Serial Port

Connect a serial interface cable (9-pin female to 9-pin female, null-modem; available from Trimble as RGR-CNULLCAT), to the serial ports of your TSCe and your PC.

Connecting via USB or RJ-45 (Ethernet)

A multiport adaptor is available from Trimble (part number RGR-MULTIADPT). This adaptor permits you to connect the multifunction port of your TSCe to either the USB port or Ethernet card on your PC.

Connecting via Infrared Port

Connect to your desktop via a IrDA compatible device (connector/ dongle), readily available in retail. Most laptop computers have an IR port that you may use to connect to your TSCe.

Data/File Transfer

The preloaded software on your TSCe may support data transfer between the TSCe and other platforms. If no data transfer software is supplied with the software you are using, then you can use Microsoft© ActiveSync©. (Available at *www.microsoft.com/ windowsmobile/resources/downloads/default.mspx*).

Please note the file structure of your TSCe: all files stored on your flash disk, or permanent memory storage for the TSCe, are located in the Disk folder. We recommend that all data and software programs be stored in this folder.

Software Programs for the TSCe

The only programs that will run on your Trimble TSCe are those compatible with Windows CE .NET. You cannot run programs designed for Windows 95/98/ME/NT/2000/XP or other Windows Mobile platforms, like the Pocket PC.

Installing Additional Software on the TSCe

Connect the TSCe to the desktop computer on which the program that you want to install is located.

On your PC, double-click the Setup.exe or Install.exe to launch the installation wizard.

When prompted by ActiveSync to "Use the default application install path?", answer "No". Then select "Disk" from the dropdown list of available installation paths.

If prompted by the installation wizard, perform a soft reset (See **Memory** section on pg. 2 of this guide)

NOTE: Some Windows CE programs do not incorporate an automated installation routine. In this case, copy the executable file directly into the Disk folder on the TSCe.

Control Panel

A few interesting features....

If you have a BlueCap™, this allows you to scan the area for other **Bluetooth™** devices.

Dialing: specify the country code, area code and specific dialing requirements for the place you are dialing from.

Display: change the background image, the color scheme, and the display light settings for your touch screen.

Network and Dial-up Connections: set up network and dial-up connections.

Owner: enter your name and company information.

Password: set passwords for the system and determine when your TSCe will prompt user for a password.

PC Connections: modify connection to your desktop computer.

Power: tracks battery levels and adjust power off features.

Regional Settings: change the way Windows CE displays numbers, currency amounts, times and dates. When changing number format, you may also change the system of measurement (U.S./Metric)

System: access system information on the OS and hardware, to modify memory allocation, and change your device name.

Volume and Sounds: change system volume, enable clicks and taps, and change sounds for specific system events.
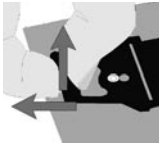
Caring for your TSCe

Charging the Battery

Connect the AC Adaptor to the TSCe. Recharge the unit for a minimum of two hours. Please note that charging works only when the temperature is above 10ºC (50ºF) and below 35ºC (95ºF).

When the TSCe is being recharged, it remains on to monitor the battery charging. The display can be turned on and off with the On/Off key.
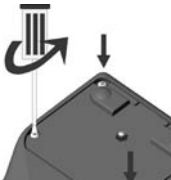
Changing the Battery

Note: To obtain a replacement battery, contact your dealer.

1. Before changing the battery, close all applications and save data. Changing batteries has no effect on programs and data on the flash disk. (See **Memory** - pg. 4)
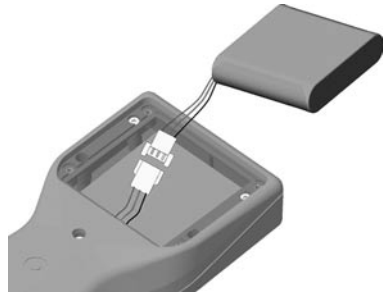
2. Remove the handstrap from the battery door as shown.

3. Using a screwdriver, completely loosen the four screws on the battery door and remove the battery door.

4. Using the strap directly attached to the battery pack, remove the battery from the battery compartment.

5. Disconnect the battery from the white plug by pulling firmly on both halves of the connector. *Do not pull on wires!*

6. Connect the replacement battery to the white plug.

7. Insert the battery into the compartment with the wires tucked in the front of the compartment to keep the wires from getting pinched in the battery door.

8. Replace the battery door and tighten the four screws.

Cleaning the Case

Clean with a soft cloth dampened with either water or diluted mild detergent. If the keyboard has dirt or grime on it, use compressed air or a vacuum cleaner, or gently rinse with clean water. **Do not put the TSCe in the dishwasher.**

Care of Touch Screen

Abrasives are the enemy of touch screens. Keep the touch screen clean using a soft cloth dampened either with clean water or glass cleaner. Do not apply any cleaner directly to the display. Apply the cleaner to the cloth and then **gently** wipe the display. **Do not use any abrasive cleaners.**

Applying Screen Protectors

Use screen protectors to keep the touch screen clean and protected. To apply a screen protector, first clean the display thoroughly. Peel the backing from the screen protector. Align the edge, then drop the remainder onto the display. Use a credit card, if necessary, to squeeze the air from underneath the screen protector.

Temperature Range

Although the TSCe is designed to be rugged, do not leave it in direct sunlight for extended periods.

	Low	High
Storage Temperature	-30°C (-22°F)	60°C (140°F)
Operating Temperature	-25°C (-13°F)	60°C (140°F)

Shock

The TSCe is designed to resist damage for drops up to 122 cm (4 ft). However, you should protect the display from impact, pressure, or abrasive substances that can scratch it or cause it to crack.

Water

The TSCe is designed to withstand accidental immersion. After replacing the battery, ensure that the battery door screws are secured tightly . Removal of backcase torx screws could cause leakage, thereby voiding warranty.

Reference Materials

If you have a problem and cannot find the information you need in the product documentation, *contact your local Distributor*. Alternatively, go to the Trimble Support page at www.trimble.com/support.html, and then do one of the following:

- Browse the available online support resources.
- Request technical assistance from Trimble Support, click the submit an inquiry link, fill in the form, and then click **Send.**

Trimble: www.trimble.com/support.html

Survey Controller: www.trimble.com/tsce.html

Survey Pro: www.tdsway.com

GIS TSCe: www.trimble.com/gistsce.html

ActiveSync™: www.microsoft.com/windowsmobile/
resources/downloads/pocketpc/default.mspx

Windows CE: www.microsoft.com/windows/embedded/ce.net

Hardware Specifications

Feature	TSCe
Processor	Intel StrongARM SA-1110, 206 MHz
Memory	64 MB low-power SDRAM
Storage	512 MB non-volatile flash disk
Screen	1/4 VGA transflective color LCD
Touch Screen	Passive - 87% transmissivity
Keyboard	57 key tactile action
9-Pin serial port	RS232 COM1
26-Pin MultiPort	RS232 COM2, Ethernet 10BaseT, USB client, power in/out and audio in/out
Infrared	IrDA Type1 COM3
Audio	Integrated speaker and microphone
Batteries	NiMH rechargeable pack, 3800 mAH, 18.5 W-h, 4.8 V
AC Adaptor	Line voltage: 100 - 240 V AC 47-63 Hz

Safe Use of Your TSCe

TSCe Repair

Please do not attempt to dismantle your TSCe for repair. There are no user-serviceable parts inside. For service, please contact Trimble or your local dealer for assistance.

Battery safety

- To reduce the risk of fire or burns, do not disassemble, mutilate, or puncture the battery pack. There are no user-serviceable parts inside.

- Handle a damaged or leaking battery with extreme care. If your skin comes in contact with the electrolyte, wash the exposed area with soap and water. If it contacts the eye, flush the eye with water for 15 minutes and seek medical attention.

- Do not expose the battery pack to high storage temperatures above 60° C (140° F) for extended periods.

- Do not charge the battery pack if the ambient temperature exceeds 40° C (104° F) or is below 0°C (32° F).

- Contact your local waste disposal provider regarding the disposal or recycling of the battery pack.

Power Cords & AC Adaptors

The AC adaptor requires an input power cord. The cord needs to match the plug and voltage requirements for your local area. If it does not, or if you are traveling to another country, please contact your dealer for the appropriate power cord.

AC Adaptor Safety

- Only use AC adaptors intended for the TSCe. Using any other AC adaptor may damage your product and may void your warranty.

- AC adaptors are designed for indoor use only. Avoid using the AC adaptor in wet outdoor areas.

- Unplug the AC adaptor from power when not in use.

- Do not short the output connector.

- Do not attempt to repair a defective TSCe. There are no user-serviceable parts inside it.

Infrared LED Safety

The infrared port located on the back panel of the TSCe is classified as a Class 1 LED (light-emitting diode) device according to International Standard IEC 825-1 (EN60825-1) This device is not considered harmful, but the following precautions are recommended:

• If it needs servicing, contact your dealer.

• Do not attempt to make any adjustments to the LED.

• Avoid direct eye exposure to the infrared LED beam.

  Be aware that the beam is invisible light.

• Do not attempt to view the infrared LED beam with any type of optical device.

Regulatory Information

U.S.A.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is used in a commercial or residential environment. This equipment generates, uses and can radiate radio frequency energy and, if not used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment is subject to the following two conditions:
(1) The device may not cause harmful interference.
(2) This device must accept any interference received, including interference that may cause undesired operation.

Canada

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

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

Declaration of Conformity

Europe

According to ISO / IEC Guide 22 and EN 45014

Manufacture's Name:	Tripod Data Systems, Inc.
	At Work Computer Division
Manufacture's Address:	345 SW Avery Ave.
	Corvallis, OR 97333
	USA

Declares, under our sole responsibility, that the product:

Product Name:	Field Data Collector
Model Number:	Ranger
Product Options:	All

conforms to the following Product Specifications:

Safety:	EN 60950: 1992 +A1,A2,A3,A4,A11
	EN 60825-1:1997 Class 1 for LED's
EMC:	EN 55022: 1998 Class B, EN 55024: 1998
	EN 61000-4-2, EN 61000-4-3
	EN 61000-4-4, EN 61000-4-5
	EN 61000-4-6, EN 61000-4-8
	EN 61000-4-11*, EN 61000-3-2: 1995**
	EN 61000-3-3: 1995

Supplementary Information:
The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC, amended by 93/68/EEC and the EMC Directive 89/336/EEC, amended by 93/68/EEC. In addition to meeting the above EMC requirements during system test, the AC Adapter provided with this product has been certified to IEC 60950 +A1,A2, A3, A4, A11.

*Product is battery powered.

** Product has less than 20-Watts active input power.

Corvallis, OR USA
March 20, 2001   *Dennis C. York*, Division Manager

CAUTION:

Approved accessories only may be used with this equipment. In general, all cables must be high quality, shielded, correctly terminated, and normally restricted to two meters in length. AC adaptors approved for this product employ special provisions to avoid radio interference and should not be altered or substituted.

Unapproved modifications or operations beyond or in conflict with these instructions for use may void authorization by the authorities to operate the equipment.

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