

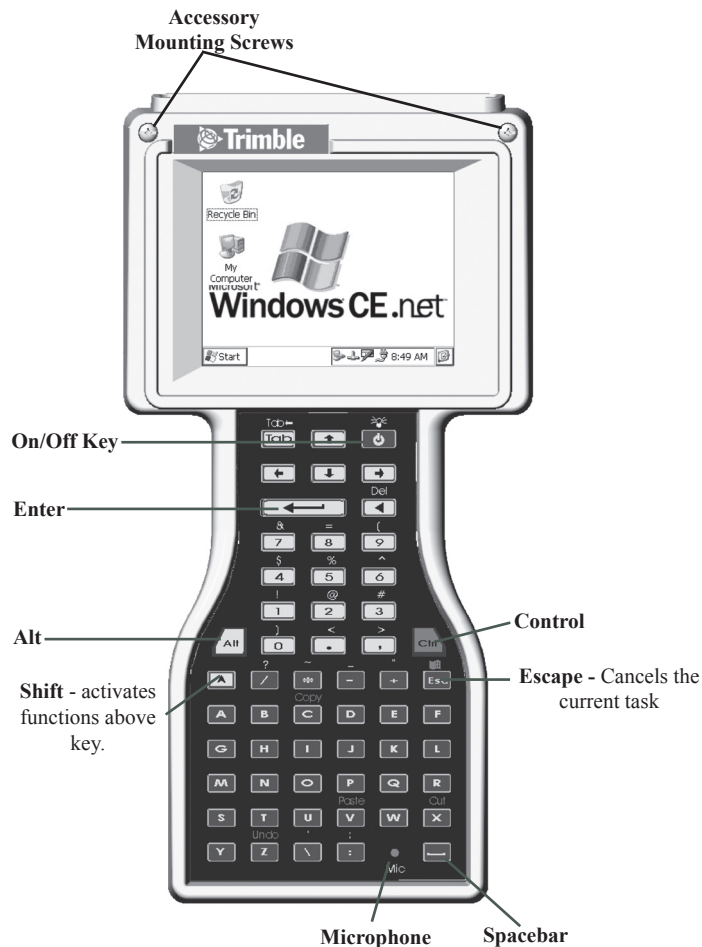
TSCe Controller User Guide



What's in the box?

- TSCe Controller
- TSCe pouch
- Stylus pen
- Power Supply
- 125 V AC power cord
- Null modem DB9 cable
- Multiport adapter
- USB download
- Survey Controller CD

Your TSCe Controller



Shortcut keys

Activate Display Light Tap touch screen

Display Contrast (*Monochrome only*) [Alt] + [.] or [Alt] + [.,]

Right mouse click [Alt] + stylus tap

Soft Reset [Shift] + [Ctrl] + [On/Off]

Hard Reset Hold down [On/Off] key for 20 seconds.

Getting Started

Your Operating System

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

Memory

Your TSCe Controller 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 Controller, 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.

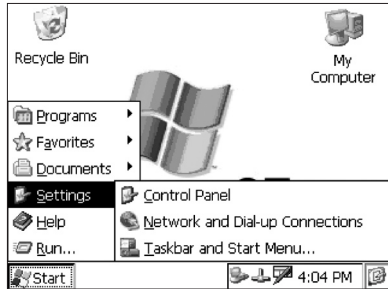
Hard reset

Hold down the On/Off button for 20 seconds.

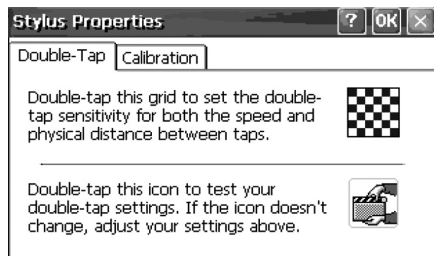
Similar to restarting your desktop computer, a hard reset erases the RAM. The TSCe Controller backs up the data in RAM onto the System Folder on the flash disk. (found under /Disk/System).

Calibration of Touch Screen

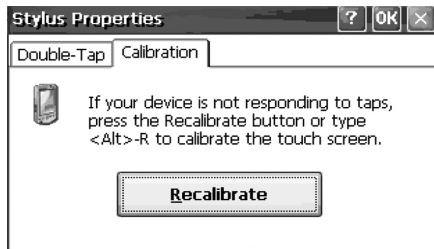
Access the Control Panel:



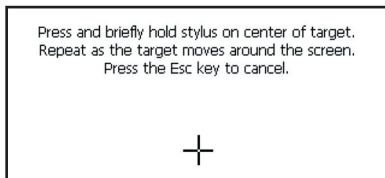
Double-tap the **Stylus** icon in the Control Panel to bring up the following dialog box.



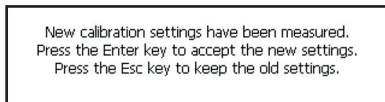
This window allows you to calibrate the double-taps of your stylus.



Tap “Recalibrate” to calibrate the touch screen of your TSCe Controller

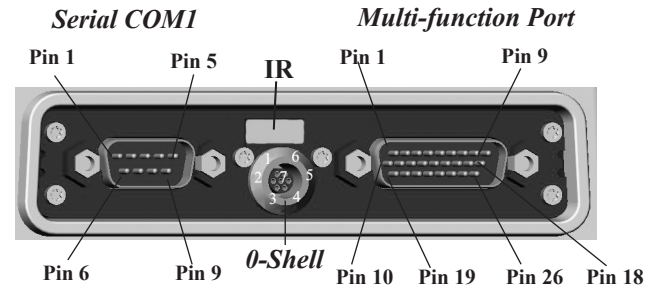


Follow instructions on the screen. As you tap the crosses, be sure to touch the screen firmly with your stylus.



Connecting to your PC

I/O Ports



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

1: GND
2: GND
3: TXT
4:
5:
6: PWR
7: RX

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

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 Controller 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 Controller 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 Controller.

Data/File Transfer

The preloaded software on your TSCe Controller may support data transfer between the TSCe Controller 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/mobile/pocketpc/downloads).

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

Software Programs for the TSCe Controller

The only programs that will run on your Trimble TSCe Controller are those compatible with Windows CE.net 4. 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 your TSCe Controller

Connect the TSCe Controller 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 Controller.

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 Controller 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 Controller

Charging the Battery

Connect the AC Adaptor to the TSCe Controller. Recharge the unit for a minimum of two hours. Please note that charging works only when the temperature is above 0°C (32°F) and below 40°C (104°F).

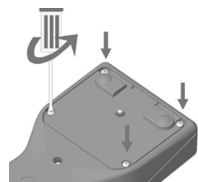
When the TSCe Controller is being recharged, it remains on to monitor the battery charging. The display can be turned on and off with the On/Off key.

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. 2)

2. Remove the handstrap from the battery door as shown.

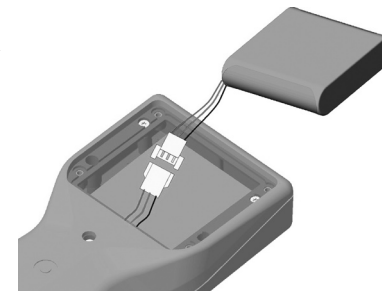


3. Using a screwdriver, completely loosen the four screws on the battery door and remove the battery door.

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 Controller 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 touchscreen clean and protected. Clean the display thoroughly. Add a little water to the screen and peel the backing from the screen protector before applying to the touchscreen. Use a credit card to squeeze the excess water and air from underneath the screen protector.

Temperature Range

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

<i>Operating Temperature</i> ¹	+14°F to +140°F	-20°C to +60°C
<i>Storage Temperature</i>	-22°F to +140°F	-30°C to +60°C

Monochrome display heaters

A screen heater that is built into the TSCe Controller allows the LCD to perform well at sub-freezing temperatures.

You must use an external power supply for the screen heater; it draws too much power to run off of the TSCe Controller batteries. You can plug any 8-24V source into the AC port of the multiport adaptor to operate the heater.² Power may also be applied, in the same voltage range, to pin 6 of the Lemo port. The heater is controlled by a thermostat, so it will cycle on and off to keep the LCD slightly above 0° Celsius. The heater will automatically start running when external power is applied to the TSCe Controller if the temperature is cold enough.

Shock

The TSCe Controller 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 Controller 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.

¹ Screen requires display heater to function below -10° Celsius.

² Use a cable with a barrel connector. The barrel should be >11 mm in length, > 2.1 mm inside diameter, and < 5.5 mm outside diameter.

Reference materials

Trimble:	www.trimble.com/support.html
Survey Controller:	www.trimble.com/tsce.html
Survey Pro:	www.tdsway.com
TSCe Controller	
Hardware Support:	www.atworkcom.com/support.asp
ActiveSync™:	www.microsoft.com/mobile/pocketpc/downloads/activesync35.asp

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

Hardware specifications

Feature	TSCe Controller
<i>Processor</i>	Intel StrongARM SA-1110, 206 MHz
<i>Memory</i>	32 MB low-power SDRAM
<i>Storage</i>	32 MB non-volatile flash disk
<i>Screen</i>	1/4 VGA transreflective monochrome LCD
<i>Illumination</i>	EL
<i>Touch Screen</i>	Passive - 87% transmissivity
<i>Keyboard</i>	57 key tactile action
<i>9-Pin serial port</i>	RS232 COM1
<i>26-Pin MultiPort</i>	RS232 COM2, Ethernet 10BaseT, USB client, power in/out and audio in/out
<i>Infrared</i>	IrDA Type1 COM3
<i>Audio</i>	Integrated speaker and microphone
<i>Batteries</i>	NiMH rechargeable pack, 3800 mAH, 18.5 W-h, 4.8 V
<i>AC Adaptor</i>	Line voltage: 100 - 240 V AC 47-63 Hz

Safe Use of Your TSCe Controller

TSCe Controller Repair

Please do not attempt to dismantle your TSCe Controller 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 Controller. 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 Controller. There are no user-serviceable parts inside it.

Infrared LED Safety

The infrared port located on the back panel of the TSCe Controller 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 TSCe Controller
Model Number: TSCe Controller
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

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.

Limited Warranty & Limitations of Liability

This product and accessories are limited warranted against defects in materials and workmanship for twelve (12) months from the original date of purchase. If notice is received of such defects during the limited warranty period, the proven defective product(s) will either be repaired or replaced, at the manufacturer's option. Replacement products may be either new or like new.

The manufacturer does not warrant that the operation of the products will be uninterrupted or error free. If the product is not, within a reasonable time, repaired or replaced to a condition as limited warranted, the customer will be entitled to a refund of the purchase price upon prompt return of the product.

Limited warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts, or supplies not supplied by manufacturer, (c) unauthorized modification, or misuse, (d) operation outside of the published environmental specifications for the product, or (e) physical damage due to external causes, including accident, abuse, misuse or problems with electrical power. Removal of the backcase voids the limited warranty. There are important seals that will break and the TSCe Controller will no longer be waterproof.

To the extent allowed by local law, the above limited warranties are exclusive and no other warranty or condition, whether written or oral, is expressed or implied, specifically disclaiming any implied warranties or conditions of merchantability, satisfactory quality, and fitness for a particular purpose.

To the extent allowed by local law, the remedies in this limited warranty statement are the customer's sole and exclusive remedies. Except as indicated above, in no event will the manufacturer or its suppliers be liable for loss of data or for direct, special, incidental, consequential (including lost profit or data), or other damage, whether based in contract, tort, or otherwise.



Data subject to change.
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