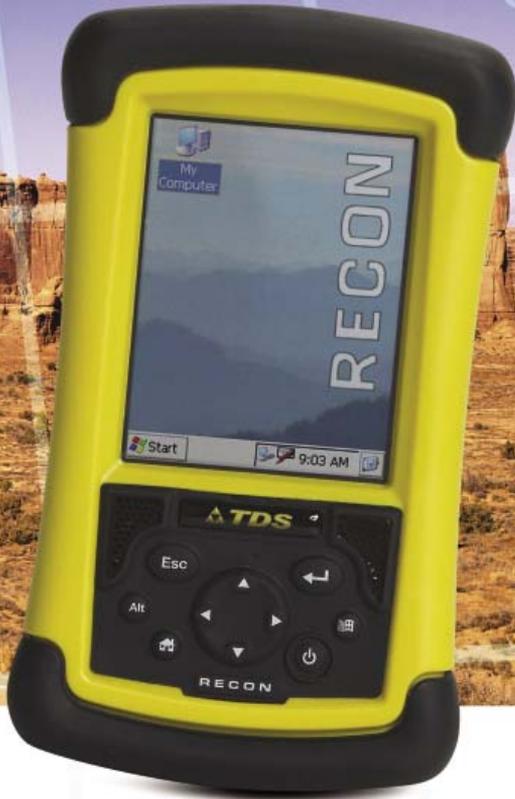# TDS Recon
Getting Started Guide

TRIPOD DATA SYSTEMS
A TRIMBLE COMPANY

Limited Warranty & Liability Limitations

This product is limited warranted against defects in materials and workmanship for twelve (12) months from the original date of purchase. Recon accessories and peripherals are limited warranted against defects in materials and workmanship for ninety (90) days 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. Water damage caused by improper installation of the CF-Cap is not covered by warranty. Removal of the back case voids the limited warranty. There are important seals that will break and the Recon 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.

Contents

Welcome

Congratulations on purchasing a Recon™ handheld. The Recon uses the Microsoft® Windows® CE operating system. The waterproof and shock-resistant design of the Recon allows you to operate in harsh environments with a greatly reduced risk of failure versus other PDA devices. The Recon includes versatile software for keeping your most important business and personal information with you.
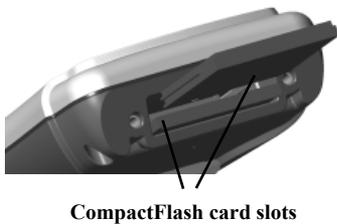
External Features

Front Panel

Removable CF-Cap covers 2x CompactFlash card slots

Esc

Alt

Home

Enter

Windows

Power key

Navigation pad

Back Panel

CF-Cap

Stylus holder

PowerBoot latches

PowerBoot Module

Top View- Minus Cap

CompactFlash card slots

Bottom View

AC   Serial   USB
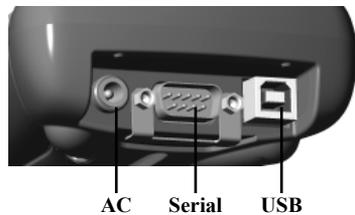
Note: Be sure to read the warranty and safety information in the manual prior to using the Recon.

Getting Started

1. Attach the PowerBoot Module

The PowerBoot for the Recon is shipped unattached. To attach the PowerBoot, turn the latches counter-clockwise until they are parallel to the stylus holder, with the arrows pointing towards the communication ports located at the bottom of the PowerBoot.

Firmly slide the PowerBoot onto the main unit as shown. Pressure should be applied downward and forward as the PowerBoot is positioned.

Use the stylus to lock the PowerBoot latches, by turning them clock-wise one half turn until they are pointed away from the communication ports.

2. Attach the hand strap

To connect the hand strap to the Recon, hold the hand strap clip at a 45 degree angle and push the clip onto the Recon bracket. Repeat the process with the other end of the hand strap.

3. Charge the Recon

Connect the AC adapter to the external power port on the Recon. Charge for at least 12 hours before using. For best results, turn the Recon off while charging. To maximize the service-life of the PowerBoot, do not leave the Recon attached to the AC charger for longer than 16 hours.

Battery life varies greatly depending on the application and environment. At moderate or high temperatures with no display light, usage over 30 hours is possible. In typical use, with default display light setting and two CompactFlash® memory cards installed, you can expect 12 to 16 hours of battery life. At cold temperatures (-20C or less) with heavy use of display light and/or non-memory CompactFlash cards (e.g. wireless LAN), battery life may be as short as one or two hours.

The keys to extended battery life are display light management, keeping the batteries warm in cold environments, and using CompactFlash cards that use power conservatively.

4. Turning the Recon on and off

One of the most convenient features of the Recon is the "instant on". There is no waiting for the Recon to start up or shut down. To start working immediately, press the power button. ("Instant on" does not occur on the first boot up.)

When you have finished working, turn off the Recon by pressing the power button.

You can change the power settings from the Control Panel (Start / Settings / Control Panel). Double-tap on the Power icon and tap on the Schemes tab. Choose the settings that work best for you. By default, the Recon will turn off after five minutes of inactivity.

5. Using the CF Expansion

To use the CompactFlash expansion, you must first remove the CF-Cap. To do this, unscrew the two screws on the top of the CF-Cap. Slide the cap off the main unit. Gently insert a CompactFlash card or device into one of the two CF slots. **Do not force the card into the slot.** Cards must be inserted with the face toward the display side of the Recon. Replace the cap and tighten the screws to reseal the CF-Cap.

Note: Be sure to reattach the CF-Cap when you are finished. Recon is NOT sealed when the cap is off. Water damage caused by improper installation of the cap is not covered by warranty.

6. Calibrate the touchscreen

In order for the Recon to function properly, make sure to calibrate your touchscreen. Go to Start / Settings / Control Panel. Double-tap on the Stylus icon. Use the Double-Tap tab to customize the stylus settings. Tap on the Calibration tab. Use a stylus to recalibrate the touchscreen.

7. Navigating Recon

Navigating in Windows CE

The touch screen on the Recon works like a mouse on a PC. Use the stylus to navigate and select objects on the screen.

Tap: A single tap of the stylus will select an item or press a button. A double-tap will launch a program or open a file.

Tap and hold: Some tooltray icons will display pop-up menus when you tap and hold the stylus on them.

Drag: Hold the stylus on the screen and drag across the screen to select text and images. Drag in a square to select multiple items from a list.

Using the hardware buttons

Escape	acts as a close/cancel command.
Alt	implements shortcuts when used with SIP keys or while tapping the screen.
Home	minimizes all active applications.
Enter	executes the current selection or the default selection of the active window.
Windows	executes the Start button, brings up the Start menu.
Navigation Pad	scrolls through windows or moves focus to another selection.

Note: Holding Alt while tapping on the Taskbar allows access to the Task Manager. Holding Alt while tapping with the stylus is the equivalent to a right-mouse click on a PC.

8. Set date/time

1. Go to Start / Settings / Control Panel. Double-tap on the Date/Time icon.

2. Change the time zone to your location, choose the correct daylight savings setting and set the date and time. Tap "Apply" to save changes, and "OK" to exit.

9. Adjust the display light settings

1. Go to Start / Settings / Control Panel. Double-tap on the Display icon.

2. The Background tab allows you to choose a picture or color for the desktop background. The Appearance tab allows you to alter the color scheme of Windows dialog boxes. The Display Light tab controls the brightness of the backlight. Change the settings to match the use of the Recon. Tap "OK" to exit.
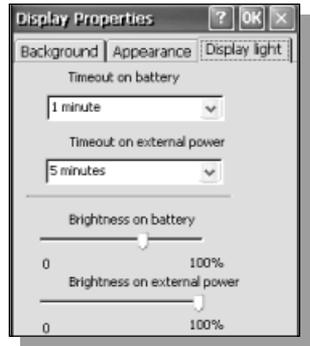
Note: The default backlight settings are 70% for battery power and 100% for external or AC power. The brighter the backlight, the greater the power drainage from the battery. To save power, disable the backlight when working outdoors.

Working with the Recon

Memory

User data, Windows registry information and applications are stored on the built-in, non-volatile Flash memory. All data is maintained in the event of a power loss by use of Flash memory, which is unlike other Windows CE devices. All files installed on Recon are installed either in Flash memory or onto an external CompactFlash card (called "Storage card" in the file system).

RAM is primarily used for running programs. It is also used by some programs for database storage.

Here is an analogy comparing your Recon to your PC: Flash memory is like the hard drive, memory cards are like CDs and RAM is like the memory used to run applications.

"Restarting" the Recon

Soft reset - *Start / Programs /Utilities / Reset / Soft Reset*

A soft reset is comparable to pressing "Ctrl-Alt-Del" on your PC, which stops all running programs. It is occasionally used when installing new software.

Hard reset - *Hold down the On/Off button for twenty seconds* ***or*** *Start / Programs / Utilities / Reset / Hard Reset*

A hard reset should only be used if a soft reset fails to resolve an issue. After a hard reset, the operating system is reloaded into RAM from the Flash memory. Some software programs may also store database information in RAM; this will be erased during a hard reset.

Entering information

Entering text through the TDS keyboard

Soft Input Panels (SIP's) allow you to input data as if you were typing on a physical keyboard. TDS has developed a keyboard that one of the advantages is that the keys are larger than the standard SIP which is described on the next page. The TDS keyboard is the default keyboard.

To activate, double-tap on the Input Panel icon located in the taskbar at the bottom of the Recon identified in the circle below.

Tapping on the "123" or "*&%" identified in the circle below, gives additional characters.
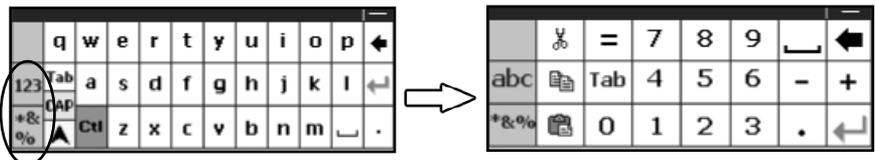
To close, double-tap on the Input Panel icon.

Entering text using the standard Soft Input Panel

To change to the standard Soft Input Panel, tap once on the Input Panel icon identified in the circle below. Tap on "Keyboard" to change to the standard SIP.

Tapping the [áü] key, as shown circled below, changes the keyboard to select international symbols. Additional symbols may be shown by tapping [Shift].
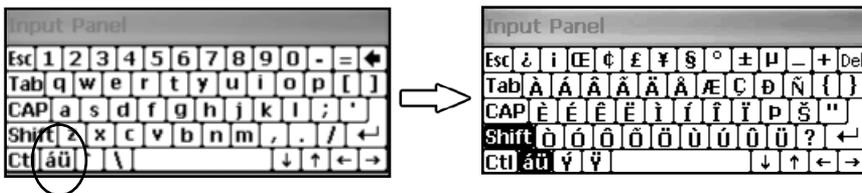
Note: The keyboard used last, will be the default keyboard whenever the Input Panel icon is double-tapped. To switch default keyboards, tap once on the Input Panel icon and select the keyboard desired.

Entering text using Microsoft Transcriber

Transcriber is a program that converts your handwritten notes to text in programs like Notepad. To start Transcriber, go to Start / Programs / Transcriber. The Transcriber icon will show up in the taskbar at the bottom of the Recon and is identified in the circle below.


You can toggle Transcriber on and off by tapping on the Transcriber icon. You can also hold the stylus on the icon for a few seconds to bring up an options menu. You can close Transcriber from within the options menu.

Transcriber has a variety of tools and modes that allow you to customize how it works. To get better acquainted with the tools, consult the online help for Transcriber. This can be accessed by selecting Start / Help, and then selecting Transcriber from the help table of contents.

Connecting to your PC

I/O ports

Recon supports connections to other
devices via USB and 9-pin serial ports.
USB connections to your desktop require
an A-B USB cable (included with the
Recon). USB is faster, more reliable and
does not have baud rates or com ports to
select. Serial connections require a 9-pin
null-modem serial cable (not included).
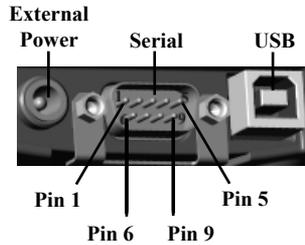
You may also increase your connectivity options through using Recon-
compatible CompactFlash cards.

Data/file transfers

Microsoft ActiveSync® provides a way for Windows CE devices like
Recon to communicate with desktop computers and laptops that run
Microsoft Windows operating systems. ActiveSync is already a part of
the operating system on your Recon. You need to install ActiveSync
on your laptop or desktop computer. You can install ActiveSync
from the Resource CD that is shipped with your Recon. You can also
download the most current version of ActiveSync at:

*http://www.microsoft.com/mobile/pocketpc/downloads/*

The installation instructions for ActiveSync may vary if you choose to
use a version other than the version originally shipped with the Recon.

There are two types of ActiveSync connections. The table below summarizes the advantages and disadvantages of each choice.

Connection Type	Advantages	Disadvantages
Guest	Fewer questions to answer on initial connection. Safer because synchronization cannot adversely impact data either on your Recon or your PC. For use on borrowed or shared computers	Slower subsequent connections (one more step per connection that requests for partnership). LAN connection is not possible.
Partnership	Fast subsequent connections (one less step per connection). Once a partnership is established you can connect to your PC via wired or wireless LAN. Your Recon's clock gets set to match your PC's clock.	More questions to answer on initial connection. Synchronization is not supported on Recon. If the clock on your PC is wrong, it will make the clock on your Recon wrong. Partnership will be deleted when Recon is hard reset.

Setting Up ActiveSync
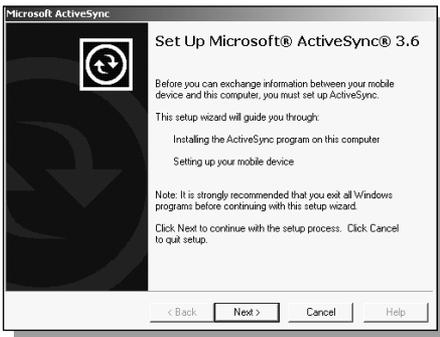
Connect Recon to your PC using either USB or serial null-modem cable. After installing ActiveSync on the PC, you will see the screen to the left. Click Next.

A screen will appear asking what folder to install to. We recommend using the default setting. Click Next. Reboot PC, if necessary.
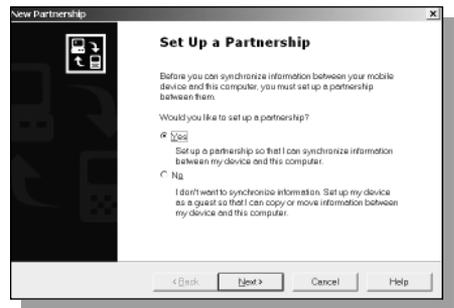
Running ActiveSync

To use a serial null-modem cable, connect the Recon. The "Get Connected" dialog box will automatically appear on the PC. Click Next.


To use a USB cable, simply connect the Recon and wait several seconds while ActiveSync automatically establishes a connection.
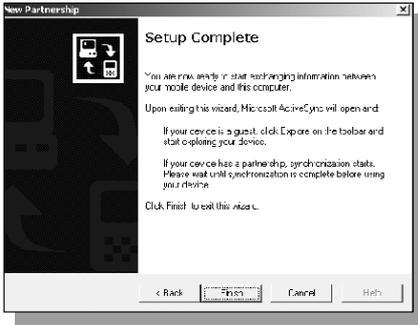
Click Next on the PC for the Partnership option.

Note: If you select No for "Set Up a Pertnership", you will be set up as a guest. For the guest option, skip the next step for "Select Synchronization Settings". Move to "Setup Complete".

PARTNERSHIP OPTION only: Select the synchronization options. We recommend clearing all check boxes. Select Next to continue.
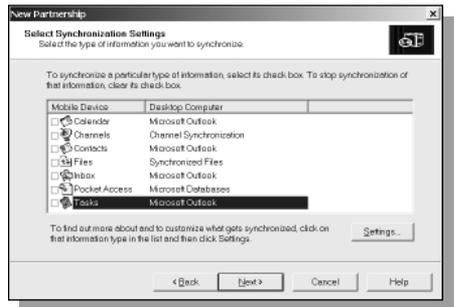
You have completed the ActiveSync connection process and formed a partnership. Click the Finish button on your PC.
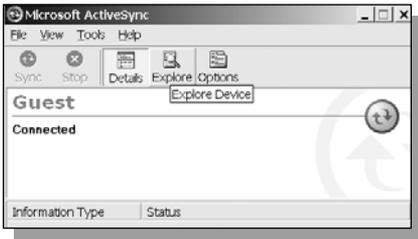
Click on the Explore icon on the PC to view the file structure on the Recon, which now looks and acts like the Windows Explorer on your PC.

Disconnecting ActiveSync

To avoid connection problems, disconnect ActiveSync on the Recon before removing the cable from either the PC or Recon.

Double-tap on the connection icon circled here that is located in the taskbar at the bottom of the Recon.
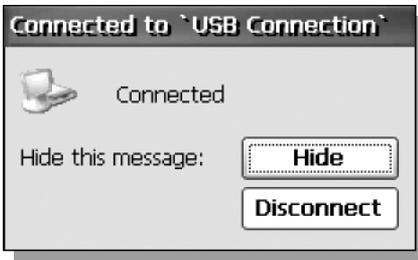
Tap "Disconnect" and then remove the cable.

For additional information on using ActiveSync visit the Microsoft site and search for articles on ActiveSync. For information specific to the use of ActiveSync with Recon, see the website listed under reference materials on the last page.

Increasing connectivity

In addition to the two built-in I/O ports (serial and USB), Recon has two CompactFlash card slots. This allows for expanded connectivity options. Recon-compatible CompactFlash cards allow you to connect via Ethernet and 802.11b, among others. A complete list of supported cards is available at the website listed under reference materials on the last page.

Software programs for the Recon

Third-party software designed for Windows CE .NET or Handheld PC 2000 may run on Recon. Look for programs that are compatible with the XScale™ or StrongARM™ processor. Programs designed for Windows 95/98/ME/NT/2000/XP or most other Windows mobile platforms, such as Pocket PC may not run. A list of Recon-compatible software is available at the website listed under reference materials on the last page.

Installing additional software on the Recon

Note: For best results, follow the setup instructions that came with your software.

Use ActiveSync to connect the Recon to the desktop computer, where the Recon-compatible software is located.

On your PC, double-click on Setup.exe or Install.exe to launch the installation wizard.[1]

Follow the installation prompts.

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

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[1] Some Windows CE programs do not incorporate an installation routine. In this case, copy the executable file directly to the Recon.

Remote Connections

To establish a connection with the Internet, you need a Hayes-compatible serial modem or a web-enabled cell phone, a 9-pin null-modem cable, and a current account with an internet service provider (ISP). Certain CompactFlash serial modems can also be used; see website for a list of supported devices. Before connecting, check with your ISP to make sure that they support Windows CE devices.

Setting up a connection

1. Open the Control Panel. Double-tap on Network and Dial-up Connections. Double-tap on Make New Connection.

2. Enter a name for the connection and make sure the connection type is Dial-Up Connection. Tap "Next."

3. Tap on "Configure". Change the baud rate to the highest possible rate compatible with your modem (For example, if you are using a 56K modem, change the baud rate to 57600). Tap "OK" and then tap "OK" again if changed, to confirm the baud rate. Tap "Next".

4. Use the Soft Input Panel (see pg. 7) to enter the country code, area code and phone number for your ISP. Tap "Finish."

Note: Do not check the "Force Local" checkbox unless you want to prepend an area code to the phone number. "Force Long Distance" prepends a 1 and an area code.

5. Double-tap the icon for the connection you just created.

6. Enter the user name and password provided by your ISP. Tap the check box, "Save password".

7. Tap "Dial Properties". Change your location to "Home" if you want to dial directly, or to "Work" if you dial 9 first. Change the area code and country code to reflect your current location, if necessary. Tap "OK" to save the settings.

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Control Panel

You can review and change Recon's settings using the Control Panel. The following is a brief overview of your options. To make adjustments, double-tap on the relevant icon and follow the instructions within the individual dialogs.

Certificates: Manage your digital certificates for secure internet communications.

Date/Time: Set date, time, time zone and daylight savings information.

Dialing: Specify the country code, area code and specific dialing requirements for your location.

Display: Change the background image, color scheme, and backlight settings for your touch screen.

Input Panel: Set the preferred method of inputting data.

Keyboard: Set character repeat and delay times for data input.

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

Owner: Enter your name and company information. You may choose to display this information whenever you turn on the Recon.

Password: Set a password and control when it is required to be entered.

PC Connections: Modify the connection with your desktop computer.

Power: Track battery levels and adjust power off features.

Regional Settings: Change the way Windows CE displays numbers, currency times and dates. When changing a number format, you may also change the system of measurement.

Remove Programs: Uninstall software that has been added to the device.

Storage Manager: Format flash cards and partition drives.

Stylus: Calibrate the touch screen and set double-tap speed.

System: Access system information on the operating system and hardware, modify memory allocation, and alter device name.

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

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Caring for the Recon

Changing the PowerBoot Module

You have at least 30 seconds, with the Recon turned off, to change the PowerBoot Module™ before it will reboot. Rebooting can lose some synchronization information with the desktop, but will have no effect on programs or data on the built-in Flash memory. (See **Memory** on page 6.)

1. Before changing the PowerBoot, close all applications, save your data, and **turn off** the Recon. Remove the hand strap from the Recon.

2. To unlock the PowerBoot latches, turn them counter-clockwise until the arrows point towards the I/O ports. Ensure the latches on your new PowerBoot are also in the unlocked position.

3. Remove the PowerBoot using both thumbs to push on the PowerBoot, as shown.

4. Quickly (within 30 seconds) slide the new PowerBoot onto the Recon. Lock the latches and replace the hand strap.

Care of the touch screen

Abrasives may scratch 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.**

Cleaning the case

Clean the case with a soft cloth dampened with either water or a 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 Recon in the dishwasher.**

Shock

The Recon 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 crack it. The Recon should not be dropped unnecessarily.

Applying screen protectors

Use the screen protectors included with the Recon 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 squeegee the air from underneath the screen protector.

Water

The Recon is designed to withstand accidental immersion. To maintain Recon's water resistant seal, it is important to ensure that the screws on the CF-Cap are tightened after replacing CompactFlash cards. Removal of the back case torx screws, or not tightening the screws on the CF-Cap could cause leakage, and void your warranty.

Temperature Range

Although the Recon is designed to be rugged, do not leave it in direct sunlight or a parked vehicle in the sunlight for extended periods.

Operating & short-term temperature	-22°F to +140°F (-30C to +60C)
Long-term storage temperature[1]	-40°F to +158°F (-40C to +70C)

Hardware Specifications

Features	Recon Series
Operating System	Embedded Windows CE .NET 4.1
Processor	200 MHz or 400 MHz XScale
Memory	64 MB or more SDRAM
Storage	64 - 128 MB non-volatile Flash
Display	1/4 VGA color TFT with LED frontlight
Batteries	NiMH rechargeable pack
I/O	Standard 9-pin D-shell RS232 serial, USB, charging port

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[1] Storing the PowerBoot Module in long-term temperatures above 35C (95°F) may shorten battery life.

Safe Use of the Recon

Recon repair

Please do not attempt to dismantle the Recon for repair. There are no user-serviceable parts inside. For service, please use the contact details listed on the back page or your local dealer for assistance.

Obtaining a replacement PowerBoot Module

Replacement PowerBoot Modules are available. See the contact details listed on the back page.

Battery safety

• To reduce the risk of fire or burns, do not disassemble, mutilate, or puncture the PowerBoot Module. 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 comes in contact with the eye, flush the eye with water for 15 minutes and seek medical attention.

• Do not expose the PowerBoot Module to storage temperatures above 35C (95°F) for extended periods.

• Do not charge the PowerBoot Module if the ambient temperature exceeds 35C (95°F) or is below 0C (32°F).

• Contact your local waste disposal provider regarding the disposal or recycling of the PowerBoot Module.

AC adapter safety

• Use only AC adaptors intended for the Recon. Using any other external power source can damage your product and may void your warranty.
    • Make certain that the input voltage on the adapter matches the voltage in your location.
    • Make certain that the adapter has prongs compatible with your outlets.

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

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

• Do not short the output connector.

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 450 14

Manufacturer's Name:	Tripod Data Systems, Inc.
Manufacturer'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:	Recon
Product Options:	ALL

conforms to the following Product Specifications:

Safety: EN 60950: 1992 +A1, A2, A3, A4, A11

EMC: EN 55022: 1994 +A1, A2:1997
EN 55022: 1998 +A1:2000
EN 61000-3-2, 1995+A1+A2:1998
EN 61000-3-2:2000
EN 61000-3-3:1995
EN 61000-3-3:1995+A1:2001
CFR 47, Part 15, Subpart B
EN 55024:1998**
EN 55024:1998+A1:2001**

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

Corvallis, OR USA

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.

052703

Reference Materials

Recon support (TDS):
  email: support@tdsway.com
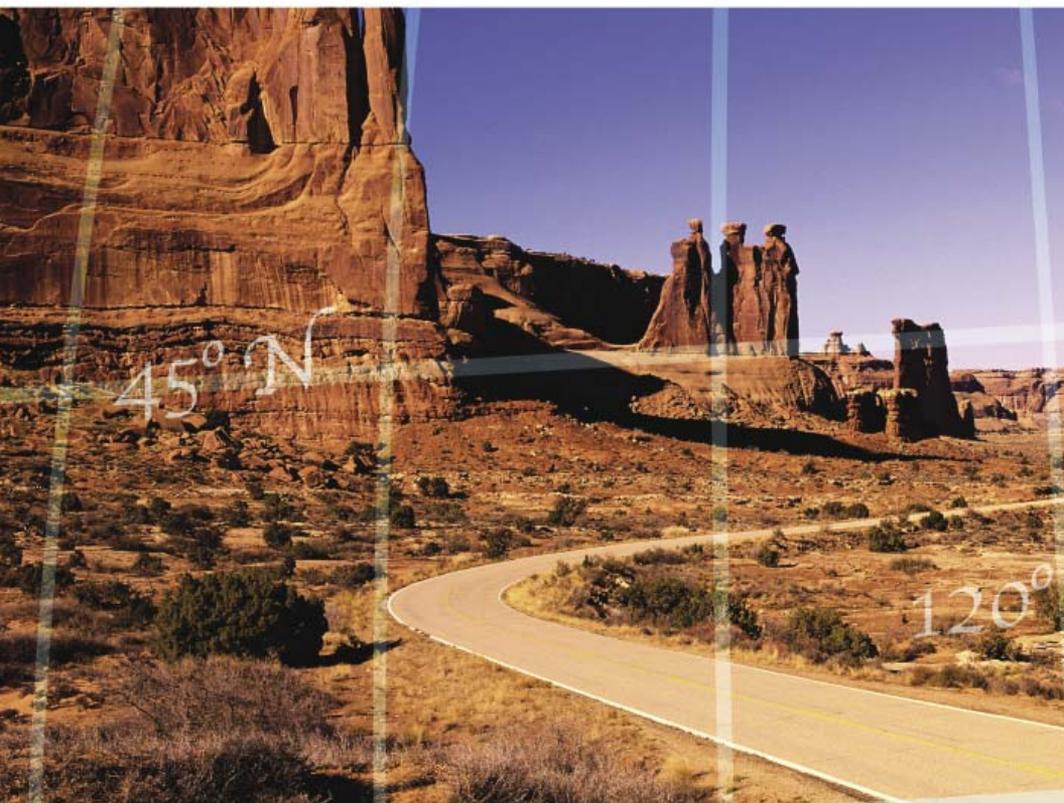 www.tdsway.com
  Click on support, handheld computers and then TDS Recon.

ActiveSync:
  www.microsoft.com/mobile/poeketpc/downloads

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

Tripod Data Systems

345 S.W. Avery Avenue
P.O. Box 947
Corvallis, OR 97333
541-753-9322
www.tdsway.com

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