



## Blue RuggedReader® Troubleshooting Guide

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### Contents

A. Basic Operation and In-Situ Software .....	1
B. Operating System: Windows Mobile Version 5 .....	4
C. Data Transfer from the RuggedReader to a PC .....	5
D. Software Installation: Pocket-Situ 4 and Win-Situ Mobile .....	7

### A. Basic Operation and In-Situ Software

#### Problem:

The RuggedReader display does not turn on when the power button is pressed.

#### Solution 1:

Make sure the battery is installed properly and has been charged. After charging for approximately six hours, the battery will achieve full charge. The RuggedReader will operate for approximately 20 or more hours following a full charge; this estimate is temperature dependent.

#### Solution 2:

Charge the battery using either the Universal Charger connected to a wall socket or the 12V Auto Adapter connected to a cigarette lighter. If the battery is brand new or has been completely discharged, it requires charging for approximately six hours. The battery is a rechargeable, lightweight, Lithium ion battery pack and cannot be over-charged.



#### Charger Power Specifications

Output: 12 VDC at 0.84A Max  
Input: 100-240 V, ~0.3A, 50-60 Hz  
Center pin positive (+), outer ring  
negative (-)

#### Problem:

How does the user view the status of the battery charge on the RuggedReader?

#### Solution:

Tap the Start menu, and then select 'Settings.' Tap the 'Systems' Tab on the bottom of the screen. Tap the 'Power' icon. The battery status will appear as a bar graph labeled "Battery power remaining." If the RuggedReader is currently being charged, it will state, "Charging" above the bar graph.

#### Problem:

Pocket-Situ 4 or Win-Situ® Mobile is not listed in the Start Menu.

#### Solution 1:

If Pocket-Situ 4 or Win-Situ Mobile is installed on the RuggedReader and not listed in the Start Menu, the user may edit the programs listed in the Start Menu through the following path: Start Menu → Settings → Menus. Use the check boxes to select the programs listed in the Start Menu. Depending on the number of programs already listed in the Start Menu, the user may need to remove a program from the list in order to add a new program.

#### Solution 2:

Assuming that the Pocket-Situ 4 has been previously installed, tap the Start Menu and select 'File Explorer.' Tap the downward-pointing arrow and choose 'My Device.' Tap 'Built-in Storage' then tap 'Pocket-Situ.' Select 'REINSTALL' from the bottom of the list. Pocket-Situ 4 re-installs and is now available under the Start Menu.

### **Solution 3:**

Install the desired software from In-Situ's website at [www.in-situ.com](http://www.in-situ.com). Refer to Section D of this guide for instructions to install Pocket-Situ 4 and Win-Situ Mobile.

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#### **Problem:**

Cannot establish communication with a Level TROLL® or Aqua TROLL®.

#### **Solution 1:**

Use only Win-Situ Mobile to communicate with a Level TROLL or Aqua TROLL. Pocket-Situ 4 will communicate only with miniTROLL, TROLL 9000 or TROLL 9500.

#### **Solution 2:**

Check all cables and inspect physical connections, including submersible cable and TROLL Com communication cable. Inspect all pins and connections for anything suspicious: corrosion, moisture, bent or broken pins, loose connections, etc. Ensure that the TROLL Com communication cable is firmly attached to the serial port connector on the bottom of the RuggedReader.

#### **Solution 3:**

Use Win-Situ Mobile to reset communication settings and search for the Level TROLL or Aqua TROLL. In Win-Situ Mobile, tap the 'File' menu and select 'Settings.' Select the radio button for 'Reset Communications' and tap the check mark. Then tap the 'File' menu and select 'Settings.' Select the radio button for 'Search for Device' and tap the check mark.

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#### **Problem:**

Cannot establish communication with a miniTROLL®, TROLL 9000 or TROLL 9500.

#### **Solution 1:**

Use only Pocket-Situ 4 to communicate with a miniTROLL, TROLL 9000 or TROLL 9500. Win-Situ Mobile will communicate only with Level TROLL and Aqua TROLL.

### **Solution 2:**

Verify that the connection settings are correct. To edit the connection settings, highlight the connection line in the navigation tree labeled 'COM1-19200,' and tap the Edit button at the bottom of the screen. This launches the Connection Wizard, which will guide the user through this process.

### **Solution 3:**

Check all cables and inspect physical connections, including submersible cable and communication cable. Inspect all pins and connections for anything suspicious: corrosion, moisture, bent or broken pins, loose connections, etc. Ensure that the communication cable is firmly attached to the serial port connector on the bottom of the RuggedReader.

### **Solution 4:**

For miniTROLL and TROLL 9000 only: Unscrew the backshell and carefully check the instrument batteries, elastomer, and flex circuit. Replace with fresh AA-cells for miniTROLL and D-cells for TROLL 9000. Evaluate old batteries for signs of moisture or corrosion. If moisture is present within the housing of the device, there is likely damage to the internal circuitry and the instrument requires service.

Inspect the elastomer for wear and fraying. When new, it is a shiny copper color and smooth. The elastomer is visible upon removing the backshell. It is a copper strip located between two Phillips-head screws, which bisect the black, plastic disc that houses the battery contact. Remove the elastomer using fingernails or plastic tweezers, press it flat on a clean surface and replace it upside-down from the way it was removed. This stretches the elastomer, making it sit higher and helping it bridge the connection between the quick-connect cable and the battery contact. Replacing it upside-down gives the cable contact a fresh surface; there is no right or wrong orientation, it is simply copper wire moving a signal. If the elastomer is frayed, discolored or damaged, replace it with a new one.

Carefully inspect the flex circuit for any bends, crimps, or folds. This is an orange and gold striped, laminar ribbon which is attached to the black, plastic disc that houses the battery

contact. The flex circuit has delicate electron pathways that are easily damaged by crimping. Bending a fold in the reverse direction aggravates the problem by widening the gap in these pathways. A damaged flex circuit cannot be repaired and needs to be replaced by In-Situ service technicians.

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**Problem:**

When Pocket-Situ 4 is launched, the Connection Wizard always appears.

**Solution:**

On the first screen of the Connection Wizard select 'Direct' connection and 'One' device and tap the 'Next' button. On the second screen, select 'COM1' as the communications port and tap the Next button. COM1 is the only valid communication port on the RuggedReader. On the third screen, select '19200' as the baud rate. This rate is ideal for most applications. If using very long cables and communications with an instrument are slow, lower the baud rate to 9600. On the final screen, name the connection or accept the default name given and tap Finish.

After completing the Connection Wizard, the new connection setting appears in the navigation tree. When finished using Pocket-Situ 4, close the software by tapping the Home level of the navigation tree and then tap the 'Exit' button. Pocket-Situ 4 prompts "The current site has been modified. Do you wish to save modifications before continuing?" Choose 'Yes.' This saves the connection setting for future use and eliminates the need to go through the Connection Wizard again.

Typically, there is no need to create multiple connection settings. The RuggedReader utilizes one connection setting regardless of the number of individual devices to which it connects.

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**Problem:**

After selecting Pocket-Situ 4 from the Start Menu, nothing happens, or 'Default IME' is displayed where 'Start' was previously displayed in the upper-left corner.

**Solution 1:**

This is an old version of Pocket-Situ 4. Upgrade to the most current version of Pocket Situ 4, available for download at [www.in-situ.com](http://www.in-situ.com).

**Solution 2:**

If Pocket-Situ 4 was recently in use, the program may still be running. Tap the Start Menu and select 'Settings.' Tap the 'System' Tab and then tap 'Memory.' Tap the 'Running Programs' tab and all currently running programs are listed. To return to Pocket-Situ, highlight the line and choose 'Activate.' Otherwise, highlight Pocket-Situ 4 and choose 'Stop' or choose 'Stop All.' If many applications are listed, close these programs so that the RuggedReader will run more smoothly.



How to Properly Close Pocket-Situ 4:

1. Tap the Communication Line, labeled "On-Line (1) : COM1-19200" and select 'Drop.'
  2. Tap the 'Home' line, located at the top of the navigation tree, and select 'Exit.'
  3. If the program prompts, "Do you wish to quit Pocket-Situ?" tap 'Yes.'
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**Problem:**

Whenever Pocket-Situ 4 is launched, Profiler mode is automatically initiated and this is not desirable to the user.

**Solution:**

In the Pocket-Situ 4 navigation tree, highlight the Home line and tap the 'Setup' button at the bottom of the screen. Tap the 'Settings' tab and un-check the top box labeled "Start application in Profiler mode." Tap 'OK.'

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**Problem:**

Pocket-Situ 4 no longer prompts standard questions, such as:

- When launching the Profiler, Pocket-Situ 4 no longer asks for a data file name, OR
- After downloading data, Pocket-Situ no longer asks if the user wishes to view the data, OR

- After performing a calibration, Pocket-Situ no longer asks if the user wishes to view the calibration report.

**Solution:**

Highlight the Home level of the navigation tree and tap 'Setup' at the bottom of the screen. Tap the 'Settings' tab and check the top box labeled "Re-enable 'Don't Ask Again' dialogs."

**Problem:**

Multiple instruments are in use and Pocket-Situ 4 locks up when changing from one to the next.

**Solution:**

Pocket-Situ 4 must be told when changing from one instrument to another, and the first connection must be properly resolved. Before detaching any instrument cables, tap the connection setting line in the navigation tree ('On-Line Com 1') and then tap the 'Drop' button at the bottom of the screen. This properly terminates the connection from the first instrument and resets the communication port; Pocket-Situ is now ready to communicate with the next instrument.

When finished using Pocket-Situ 4, close the software by tapping the Home level of the navigation tree and then tapping the 'Exit' button. If the program prompts, "Do you wish to quit Pocket-Situ?" tap 'Yes.'

**B. Operating System: Windows Mobile Version 5**

**Problem:**

The RuggedReader locks up, is non-responsive, processes tasks abnormally slowly, or otherwise does something unexpected.

**Solution 1:**

A soft reset of the RuggedReader, also called a warm boot, often eliminates the problems listed above. A Soft Reset is comparable to re-booting a desktop computer, restarting the operating system and recovering system resources. All data files stored in 'Built in Storage' are unaffected by this operation.



How to Perform a Soft Reset:

1. Hold the Power Button for approximately five seconds or until the 'Power Button' menu appears.
2. Tap the "Reset" button.
3. The RuggedReader begins re-booting and the first screen says, "Ultra-Rugged Field PC." The following screen says "Windows Mobile." The Today screen appears and the RuggedReader is ready for use.

**Solution 2:**

If the problem is not resolved by a soft reset, perform a hard reset, also called a cold boot. This action restores the RuggedReader to its original factory condition.

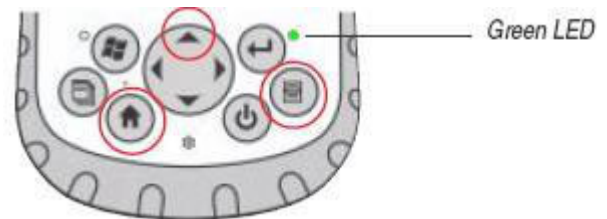


**WARNING:** A Hard Reset will permanently erase all saved data, installed software, and personal settings. Following a Hard Reset, refer to Section D for help with installing Pocket-Situ 4 and Win-Situ Mobile.



How to Perform a Hard Reset:

1. Press and hold the Power Button until the 'Power Button' menu appears.
2. Tap the "Reset" button OR if RuggedReader is locked up, press and hold the Power Button for 10 seconds or until the screen is dark.
3. When the Green LED light appears on the front-right side of the unit, simultaneously press and hold the following buttons: Home, Up Arrow, Context button.



4. The RuggedReader begins re-booting and the first screen says, "Ultra-Rugged Field PC." The following screen says "Windows Mobile."

5. The RuggedReader prompts the user to align the touch screen. Use the stylus to tap on each target.
6. Select a Time Zone.
7. Follow the screen prompts related to the Stylus and Pop-Up Menus.
8. The Today screen is displayed and the RuggedReader is ready for use.
9. See Section D for help re-installing software.

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**Problem:**

When should the user “suspend” the RuggedReader and when should the device be powered off?

**Solution 1:**

Suspend the unit if you plan to resume tasks daily. This puts the device into a “sleep” mode, which uses some battery power. When power is restored, the RuggedReader “remembers” where it was and is ready to go.

- To “suspend” the RuggedReader, press the Power button briefly and release it.

**Solution 2:**

Power the RuggedReader off when you do not plan to use it for two weeks or longer.

Powering off closes all programs and removes power from all system components except the clock.

To power off:

1. Save all files and close running programs.
2. Press the Power button and hold until the Power Button Menu appears, then Tap “Power Off.”

When power is restored the unit must boot up; this takes about a minute

## ***C. Data Transfer from the RuggedReader to a PC***

**Problem:**

How are data files transferred between the RuggedReader and a PC?

**Solution 1:**

The quickest and easiest way to transfer data files from the RuggedReader to the PC is to use Win-Situ Sync. This software automates the data transfer between the two machines. Be sure to install Win-Situ 4 or Win-Situ 5 to the PC prior to data transfer. Win-Situ 4 is required to open \*.BIN and \*.FLO files collected by miniTROLL, TROLL 9000 and TROLL 9500. WinSitu 5 is required to open \*.WSL files collected by Level TROLL and Aqua TROLL.

Install Microsoft ActiveSync to the PC, either from the CD provided with the equipment or from the Microsoft website, [www.microsoft.com](http://www.microsoft.com). Do not connect the RuggedReader to the PC until prompted to do so. Choose a ‘Guest Partnership’ to establish a temporary relationship between the RuggedReader and the PC. Choosing a ‘Standard Partnership’ will synchronize all Outlook e-mails and contact information upon every ActiveSync connection. For the simplest relationship, choose a Guest Partnership.

Next, install Win-Situ Sync to the PC, either from the CD or from the website, [www.in-situ.com](http://www.in-situ.com). Once a connection is established via ActiveSync, launch Win-Situ Sync from the desktop shortcut or the Start Menu. Win-Situ Sync may be customized to run automatically with every ActiveSync connection by using the radio button at the top. If ‘Automatically Run on Connection’ is turned Off, all functions within Win-Situ Sync are performed manually by using the elective boxes and the Sync Button. A screen shot of Win-Situ Sync is shown below.



**Win-Situ Sync application screen, showing manual sync button**

**Solution 2:**

Use Microsoft ActiveSync to manually transfer files between the RuggedReader and the PC.

Establish a physical connection between the RuggedReader and the PC using an AutoSync cable. All actions from this point are performed on the PC. Launch ActiveSync (it may launch automatically upon connecting the computers). When prompted, choose a Guest Partnership. ActiveSync displays “Connected” when the RuggedReader and PC are ready for data transfer. With a connection established, click the ‘Explore’ button at the top of the ActiveSync window on the PC. This brings up a File Explorer window that allows the PC to navigate through the RuggedReader’s memory.

**Manually transfer data files collected by Pocket-Situ 4**

1. Navigate to ‘My Windows Mobile-Based Device\ Built-in Storage\ Pocket-Situ\ Data’ to access the \*.BIN data files. Data files created using the Low-Flow Wizard, \*.FLO

files, are located within the Low-Flow sub-directory: ‘My Pocket PC\ Built-in Storage\ Pocket-Situ\ Data\ Low-Flow’.

2. Highlight the data files of interest and copy them using a right-click and choose ‘Copy,’ or use the shortcut ‘Ctrl + C.’
3. Navigate to the location where the data files will be stored on the PC. In order to easily view the data that uses Win-Situ 4’s navigation tree, paste \*.BIN files into ‘C:\ Win-Situ\ Data.’ If transferring Low-Flow data files, paste them into the Low-Flow sub-directory: ‘C:\ Win-Situ\ Data\ Low-Flow.’
4. Paste files by using a right-click and choosing ‘Paste,’ or use the shortcut ‘Ctrl + V.’

**Manually transfer data files collected by Win-Situ Mobile**

1. Navigate to ‘My Windows Mobile-Based Device \ Built-in Storage\ WinSitu Mobile\ Site Data\ Your Site’ to access the \*.WSL data files.

2. Highlight the data files of interest and copy them using a right-click and choose 'Copy,' or use the shortcut 'Ctrl + C.'
3. Navigate to the location where the data files shall be stored on the PC. This location will be the Working Directory for Win-Situ 5, typically "C:\Documents and Settings\UserName\My Documents\WinSitu Data\Site Data."
4. Paste files by using a right-click and choosing 'Paste,' or use the shortcut 'Ctrl + V.'

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**Problem:**

How are data files viewed after being transferred from the RuggedReader to the PC?

**Solution for MiniTROLL, TROLL 9000 and TROLL 9500 data files**

The \*.BIN and \*.FLO data files are a compressed binary format that only Win-Situ 4 and Pocket-Situ 4 can read. These files must be opened through Win-Situ 4 or Pocket-Situ 4, and cannot be opened by double-clicking on them in the File Explorer.

All files stored in the Win-Situ 4 Data folder are accessible through the Data Folder branch of the navigation tree, located on the left side of the split-screen. Win-Situ 4's navigation tree organizes data files first by instrument type, then by instrument serial number. All low-flow data files are accessible through the Flow-Sense branch of the navigation tree, given that they are stored in the Low-Flow sub-directory of the Win-Situ 4 Data folder. All \*.FLO files must be stored in this location in order to be viewed.

If the desired \*.BIN data file is located anywhere other than the Win-Situ 4 Data Folder, Click 'File' and select 'Open BIN File...' from the pull-down menu. Browse to the location of the desired \*.BIN file and Click 'Open.'

To export this data file to Excel, Click the 'File' menu and select 'Export to Excel...' Exporting to Excel is only an option when viewing the data as text format; change from graph to text format by clicking the 'Report' button. See the Win-Situ 4 Operator's Manual for further details.

**Solution for Level TROLL and Aqua TROLL data files**

The \*.WSL data files are a proprietary format that only Win-Situ 5 and Win-Situ Mobile can read. All files stored in the Site Data folder within the Win-Situ 5 working directory. The user can check the location of the working directory by clicking the 'Preferences' menu and selecting 'Working Directory.'

To view a \*.WSL file in Win-Situ 5, click on the My Data Tab, denoted by an open folder icon, in the upper-right corner. Within the My Data tab, the navigation tree on the left organizes data files by Site. Expand the Site to view the data files associated with that site. Click on the data file of interest and it will appear on the right-side of the screen.

To export this data file to Excel, either click the 'File' menu or right-click the data file in the navigation tree and then select 'Export to CSV.' 'CSV' stands for Comma Separated Value. See the Win-Situ 5 Help Menu for further details.

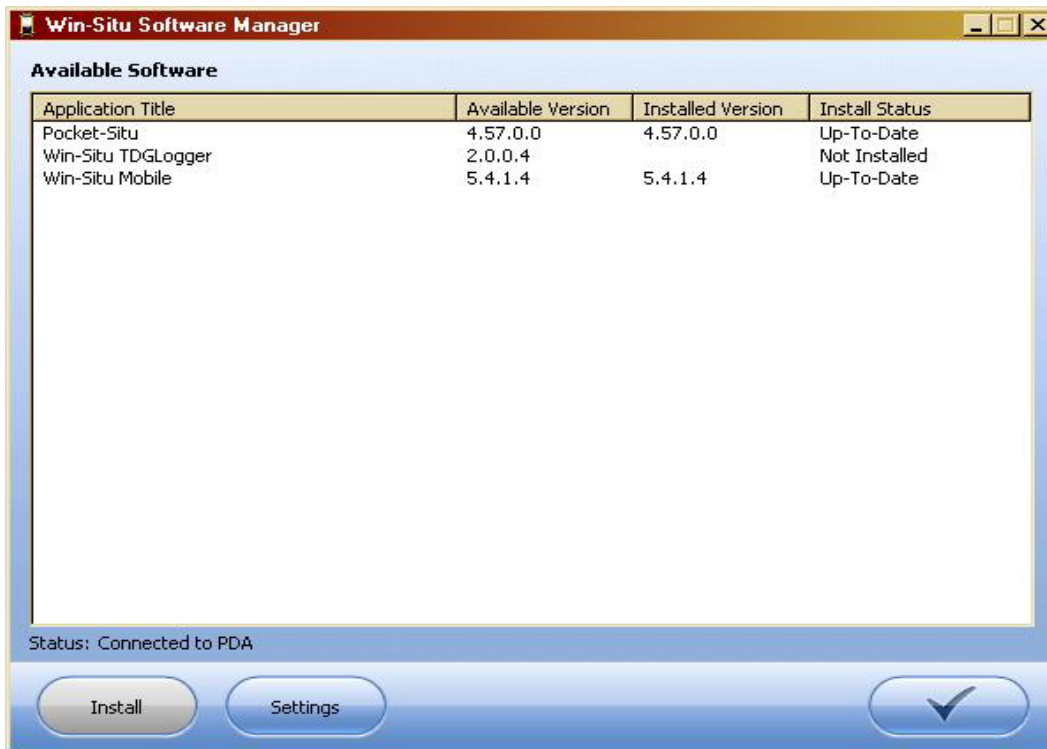
**D. Software Installation: Pocket-Situ 4 and Win-Situ Mobile****Problem:**

How is new software installed or updated on the RuggedReader?

**Solution:**

1. Insert the software CD or visit [www.in-situ.com](http://www.in-situ.com).
2. Click the link to Win-Situ Mobile, Pocket-Situ 4 or TDG Software and choose Open or Run. The "Win-Situ Software Manager" utility download will begin.
3. After the download is complete, connect to the RuggedReader using Microsoft ActiveSync.
4. Run the "Win-Situ Software Manager" utility. It can be found from the Start menu > Programs > In-Situ Inc. folder. A screenshot is shown below.

5. The "Win-Situ Software Manager" utility displays the available and current versions of the handheld software and the status of each.
6. Select the software to add to the RuggedReader and press the "Install" button.
7. The selected versions will be installed on the RuggedReader.
8. Check the In-Situ web site for updates to Win-Situ Mobile and Pocket-Situ 4.



**Win-Situ Software Manager utility, showing current versions of In-Situ software installed on the connected RuggedReader**