Canada Tech Skyline 2 Software Manual

Rev. February 4, 2011

D0000894-D

Canada Tech

A division of IROC Energy Services Partnership

105, 1437 – 47th Avenue N.E.
Calgary, Alberta
Canada T2E 6N7
Tel.: +1 403 232 1400
Fax: +1 403 232 1401
Email: info@canadatech.com
Web: www.canadatech.com

Copyrights

©2008, Canada Tech. All rights reserved. This document, as well as the software described herein, is furnished under license and may be used or copied only in accordance with the terms of such license. The content of this document is furnished for information purposes only, and is subject to change without notice. Canada Tech assumes no responsibility or liability for any error or inaccuracies that may appear herein. Except as permitted by above-stated license, no part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, recording, or otherwise, without the prior written permission of Canada Tech (info@canadatech.com).

Trademarks

- Viton® is a registered trademark of DuPont Dow Elastomers
- Other trademarks are the property of their respective owners

Contents

Skyline 2 Overview

Skyline 2 is a software application that interfaces with the following devices:

- SPT300 surface gauge
- SLT300 surface logger
- USB Wireless Receiver

By communicating with the listed devices, Skyline 2 can be used to setup SPT300's and SLT300's functional parameters and log wireless SPT field data through the USB Wireless Receiver.

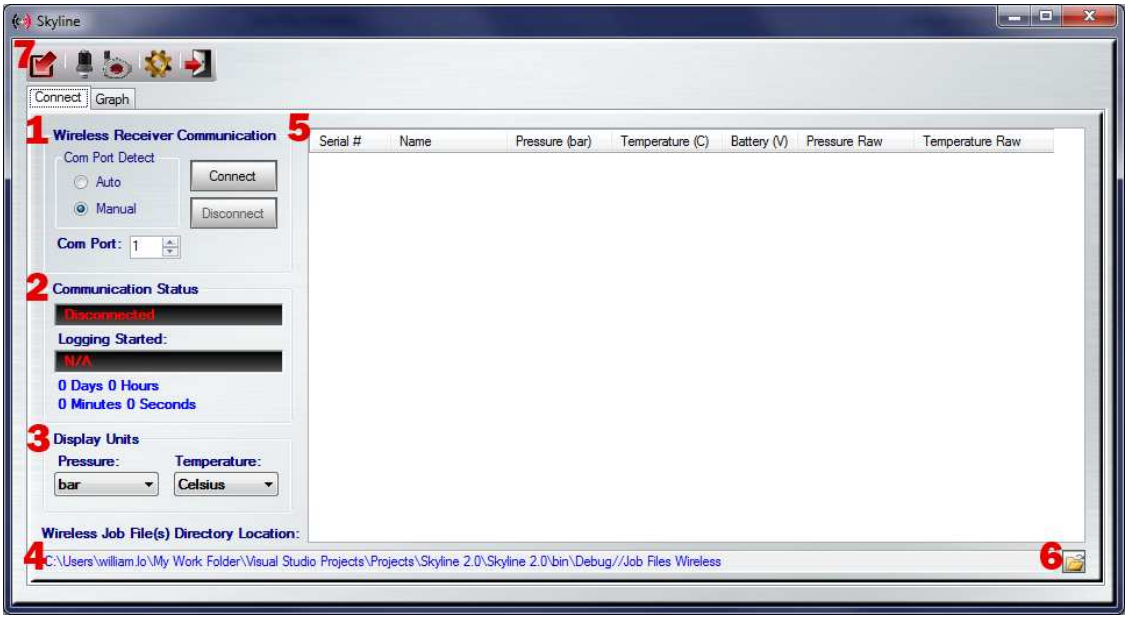
Skyline 2 Main Screen

The Skyline 2 Main Screen contains the controls that interface with the USB Wireless Receiver.

The USB Wireless Receiver intercepts data, transmitted wirelessly, from the SPT300 surface gauges. Skyline 2 analyzes these data messages and performs the following operations.

- Display the data sample to the **Data Display Log**
- Plot the data sample to a graph
- Save the data sample to a data file on the PC's hard drive

Connect Tab



Skyline 2 Main Screen, Connect Tab

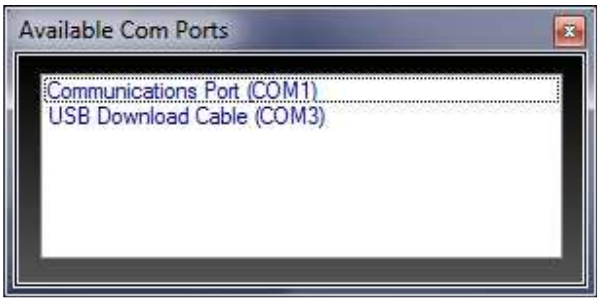
1. Wireless Receiver Communication
2. Communication Status
3. Pressure and Temperature Display Units
4. Wireless Job File Directory Location
5. Data Log
6. Wireless Job Directory Quick Access
7. Toolbar

1. Wireless Receiver Communication

The **Wireless Receiver Communication** control is used to establish communications with the USB Wireless Receiver. Before communication can take place, the USB Wireless Receiver must be plugged into an available USB port on the PC.

The USB Wireless Receiver's com port can be discovered by one of the following two methods:

- **Auto Detect**, Skyline 2 will automatically locate the com port.
- **Manual**, the com port can be manually selected.
    - Selecting **Manual** will automatically open the **Available Com Ports List** window. This window lists all the ports currently available to the computer. To select the appropriate com port, simply double click on the listed port.
    - Double clicking on the **Com Port** label will also open the Available Com Ports List window.



Available Com Ports List

2. Communication Status

The **Communication Status** displays the current USB Wireless Receiver communication status. There are two states which communications can be in, *Connected* and *Disconnected*. By default, Skyline 2 starts up in Disconnected state, where there is no communication with the USB Wireless Receiver. Skyline will enter Connected state when the **Connect** button is clicked. A date and time stamp is captured and displayed, and a timer displaying the time elapsed since entering Connected state is triggered. Clicking on the **Disconnect** button will place Skyline 2 back in Disconnected state.

In Connected state, a connection to the USB Wireless Receiver is made. At this point, any wireless SPT300 data received will be displayed to the Data Log, plotted on the graph, and written to a data file.

Each SPT300's incoming data will be logged to a corresponding data file. This data file is automatically saved in its own subfolder. The data file is named after the transmitting SPT300's serial number, followed by the date and time at which the file was created. The date time format used for naming the file is YYYY / MM / DD HH:MM:SS.

SPT300 data files are given a **(.rec)** extension.

Example:

A data file with the filename, 'PT00001_2009-03-20 13-33-43.rec' indicates that the transmitting SPT300 has a serial number of PT00001 and the file was created on March 20th, 2009 at the time of 13:33:43 (1:33 pm).

During Connected state, it is highly recommended that no file manipulations are done to the data files. These include: opening the file, deleting the file, renaming the file, or editing the file.

Note: Each time Skyline 2 enters Connected state, a new SPT300 data file is created to distinguish it from the previous files.

If a data file is deleted or renamed during Connected state, a replacement file is automatically created so that further data logging is still possible. The replacement file is given the same name as its original data file but with *_VERSION_#* appended to the end, where # indicates the number of times

the data file has been created. A replacement data file ensures that any further data samples can be logged, however, any past data samples collected prior to the data file being tampered with are lost.

Example:

A data file with the filename 'PT01111_2009-03-20 10-48-03_VERSION_3.rec' indicates that the data file has been created three times, including the first time it was created, unhampered. Hence, the data file has been removed or renamed twice.

Data files are safe to manipulate during Disconnected state, as no further writing to the SPT300 data files is taking place.

Further information regarding the data file folders is available under the **File** section in the **Settings** chapter.

3. Pressure and Temperature Display Units

The **Pressure and Temperature Display Units** control changes the standard units which pressure and temperature are displayed and written in. Prior to entering Connected state, it is recommended that the desired pressure and temperature are chosen accordingly.

If the pressure or temperature units need to be changed during Connected state, a new data file for each SPT300 will be generated to accommodate the new units. The new data files will not contain the data samples collected prior to the change in display units.

The following display units are available:

Pressure	Temperature
PSI	Celsius
bar	Fahrenheit
kPa	

4. Wireless Job File Directory Location

The **Wireless Job File Directory Location** displays the root file directory location that contains the SPT300's data file folder. The root directory can be changed by editing the **Wireless Job File Directory Location** under the **File** section in the **Settings** menu. During the Connected state, the root directory cannot be changed.

Further information regarding the data file folders is available under the **File** section in the **Settings** chapter.

5. Data Log

The **Data Log** lists each SPT300, by serial number, from the **Vault** file**.** During the Connected state, incoming SPT300 wireless data is displayed here.

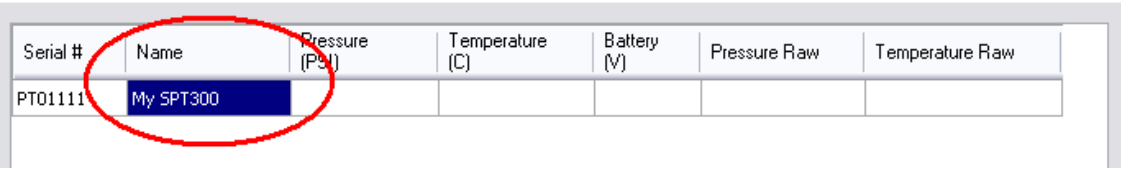
Further **information** regarding the Vault is available under the **Vault Tab** section in the **Settings** chapter.

The Data Log contains the following data columns:

Serial #	The SPT300's serial number
Name	A user defined name given to identify an SPT300
Pressure Real	Real pressure counts transmitted by an SPT300. Can be expressed in either, PSI, bar, or kPa
Temperature Real	Real temperature counts transmitted by an SPT300. Can be expressed in either degrees Celsius or degrees Fahrenheit
Battery	The transmitting SPT300's battery voltage, expressed in Volts
Pressure Raw	Raw pressure counts transmitted by an SPT300
Temperature Raw	Raw temperature counts transmitted by an SPT300

The **Name** column of the Data Display Log allows the corresponding SPT300 to be given an optional name that identifies the SPT300 better than its Serial Number. To name an SPT300, highlight the desired Name cell and type in its name.

Note: User defined names are not stored on the actual SPT300 gauge. They are stored in a file called 'names.txt' located in the same file directory as Skyline 2. Any changes made to the names.txt file will result in changes to the data in the Name column. It is recommended that this file should not be manipulated.



Data Log, Names Column

Any of the data columns, except the Serial # column, can be hidden from view. The display controls for the Data Log can be found under the **Display** section under the **Settings** window.

6. Wireless Job Directory Quick Access

Clicking this button will immediately open an Explorer window to the Job Files Wireless folder.

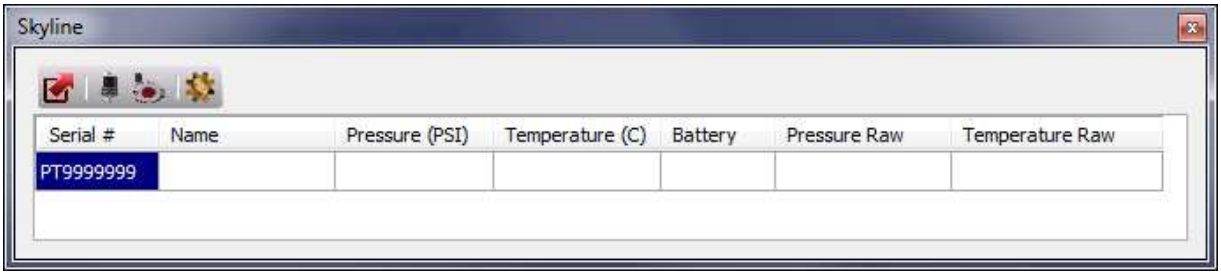
7. Toolbar

Toolbar

1. Switch to Compact View
2. SPT Setup
3. SLT Setup
4. Settings
5. Quit

Compact View

Compact View is a condensed version of the Skyline 2 main screen. In Compact Mode, only the Data Log and the Toolbar are available. Compact View provides an alternative to run the application on computers with limited desktop space. Compact View is accessed by clicking on the **Switch to Compact View** Toolbar button. Alternatively, Compact View can be accessed by right mouse clicking anywhere on the Data Log, then click on **Switch to Compact View** from the context menu.



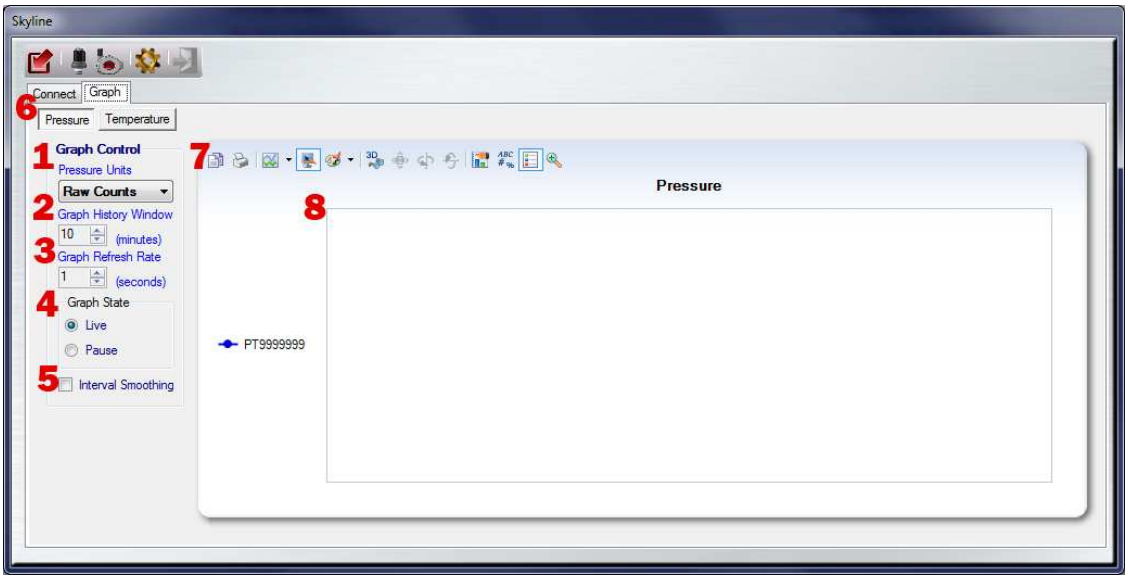
Compact Mode

To return to the standard view, click on the **Switch to Standard View** Toolbar button. Alternately,

Right mouse clicking anywhere on Compact Mode will bring up a popup menu with the options to return to Standard View. Closing the Compact View will also return Skyline 2 to its Standard View.

Graph Tab

During Connected state, any incoming SPT300 data will be plotted to a graph. The pressure and temperature data are plotted individually, on separate graphs.



Skyline 2 Main Screen, Graph Tab

1. **Pressure and Temperature Display Units** - change the graph's pressure and temperature display units.
2. **Graph History Window** - the amount of data to plot on the graph. The graph history window can store from one minute up to fifteen minutes worth of data. **Note:** This value is dynamically limited based on the number of receiving SPT300s.
3. **Graph Refresh Rate** - select how often the data is re-plotted on the graph. Choose from a refresh rate of one to sixty seconds. **Note:** Value is dynamically limited based on the number of receiving SPT300s.
4. **Graph State** - select whether the graph is Live or Paused.
    a. **Live** - graph data is constantly being re-plotted at the interval specified by the Graph Refresh Rate
    b. **Pause** – no re-plotting, the current data plot remains stationary.
5. **Interval Smoothing** - if an SPT300 is transmitting at a rate slower than the Graph Refresh Rate, Interval Smoothing will dynamically calculate and plot values in between each data point. This makes the SPT300 appear to transmit at a rate equal to the Graph Refresh Rate.
6. **Graph Switch** - switch between the Pressure and Temperature graphs.
7. **Graph Toolbar** - toolbar containing various options, further described below.
8. **Graph** - SPT300 data plot area.

Graph Toolbar

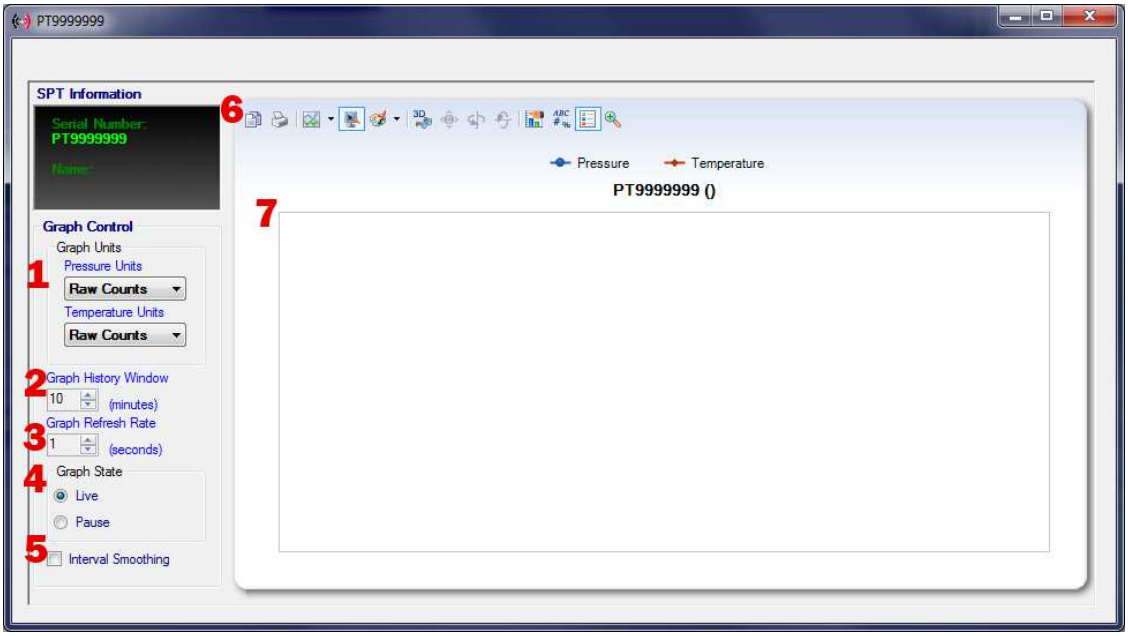
1. **Copy to Clipboard** - Copy the current graph data to clipboard as either a Bitmap (high quality image file), Metafile (low quality image file), or Text (data only).
2. **Print** - send the current graph data to a printer.
3. **Gallery** - choose to represent the graph data in a different graph type. The following graphs are available:
    a. Line Graph
    b. Curve Graph
    c. Area Graph
    d. Curve Area Graph
    e. Scatter Graph
4. **Anti-Aliasing** - when enabled, graph lines will appear smoother and less jagged.
5. **Palette Selector** - select a different set of colors for the graph.
6. **3D/2D** - switches between a 2D or 3D version of the graph.
7. **Rotated View** - when in 3D view, this switches between a rotated view or non-rotated view.
8. **Rotate Around Y Axis** - when in 3D rotated view, this rotates the graph along the Y-axis.
9. **Rotate Around X Axis** - when in 3D rotated view, this rotates the graph along the X-axis.
10. **Axes Settings** - changes the appearance of the x and y-axis such as grid lines and labels.
11. **Point Labels** - show or hide data point labels for each point on the graph.
12. **Legend Box** - show or hide the graph legend box.
13. **Zoom** - toggles graph zooming on and off. When zoom is on, use the mouse to draw a rectangle around the desired area to be zoomed. To reset the zoom, click the zoom button again. The zoom function is only available in non-rotated view.

Graph Popup Menu

Right mouse clicking anywhere on the Graph will open a popup menu with selections similar to the ones described in the Graph Toolbar.

Individual Graph Windows

An Individual Graph Window can be opened to display a single SPT300's pressure and temperature data. To open an Individual Graph Window, double click on the specific SPT300 on the Data Log. Unlike the main Graph, Individual Graph Windows plot both pressure and temperature on the same graph. Individual Graph Windows work the same as the main Graph and have the same functions.



Skyline 2 Individual Graph Window

1. Pressure and Temperature Display Units
2. Graph History Window
3. Graph Refresh Rate
4. Graph State
5. Interval Smoothing
6. Graph Toolbar
7. Graph

SPT Setup

SPT Setup is a setup and communication interface for the SPT300 surface gauges. The setup utility has the following functionality:

- Read and write calibration files to an SPT300
- Adjust the SPT300's data sampling rate
- Acquire pressure and temperature data samples from the SPT300, with an option to save the samples to a data file
- Add or remove the unique SPT300 sender information from the **Vault** file

To access SPT300 Setup, click on the **SPT Setup** toolbar button from the Skyline 2 Main Screen.

Setup Tab

SPT Setup, Setup tab

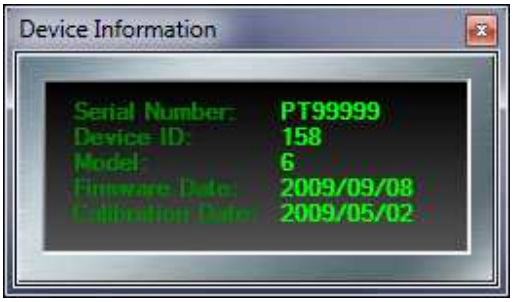
Connect

Using the *SPT USB Download Cable*, connect the SPT300 to an available USB port on the PC.

The SPT300's com port can be discovered by one of the following two methods:

- **Auto Detect**, SPT Setup will automatically locate the com port.
- **Manual**, the com port can be manually selected.
    - Selecting **Manual** will automatically open the **Available Com Ports List** window. This window lists all the ports currently available to the computer. To select the appropriate com port, simply double click on the listed port.
    - Double clicking on the **Com Port** label will also open the Available Com Ports List window.

Clicking the **Connect** button will initiate communications with the SPT300. The SPT300's serial number is displayed on the left panel of the bottom status bar. Double clicking on this panel will open a **Device Information** window that displays specific information about the SPT300.



SPT Device Information

Changing Sample Rate

When the SPT300 is properly connected, the current sampling rate of the gauge is displayed in the **Current Sample Rate** display box. This value can be changed by selecting a new sampling rate value from the **New Sample Rate** drop down box, then click the **Set** button.

Calibration Files

Every calibrated SPT300 gauge requires two unique Canada Tech Coefficient files to operate properly. The Canada Tech Coefficient files, included with each SPT300, contain the necessary pressure and temperature calculations that are used to resolve pressure and temperature in standard units, *Real Counts*. Any SPT300 missing either one or both Coefficient files, or has the incorrect Coefficient Files, will not produce any valid *Real Counts*.

The two Coefficient files have the file extensions **(.cff)**, used to resolve real pressure and **(.cft)**, used to resolve real temperature.

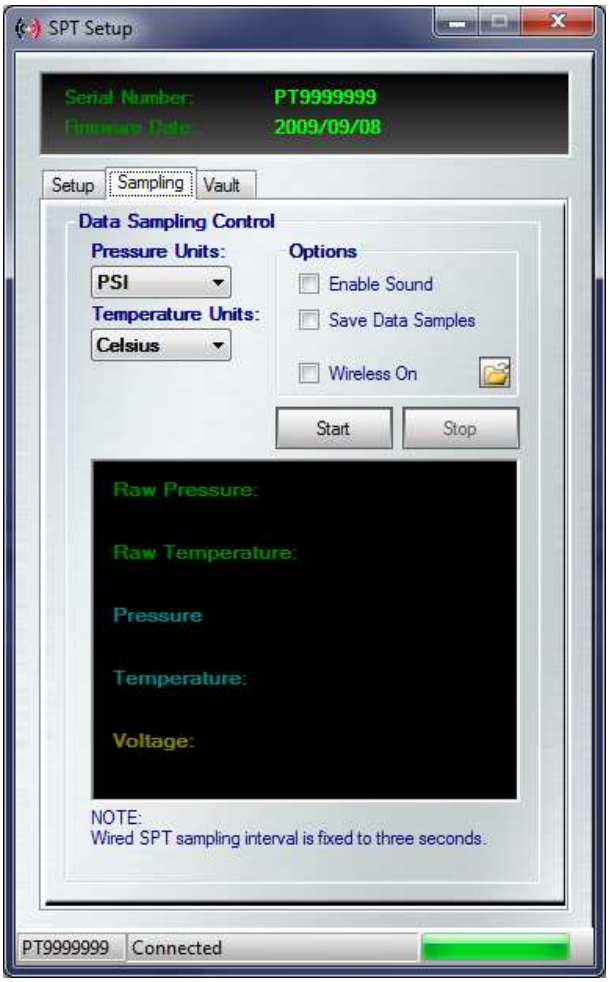
Saving Calibration Files

To save a calibration file to the SPT300, both .cff and .cft files must be available on the PC. Clicking on the **Save Cal** button will open file dialog windows where the respective .cff and the .cft files can be selected. Once the files have been selected, they will be saved to the SPT300.

Retrieving Calibration Files

To retrieve an SPT300's calibration files, click the **Get Cal** button. A save file dialog window will open where the SPT300's .cff and .cft files can be saved to a designated location on the PC.

Sampling Tab



SPT Setup, Sampling Tab

Sampling in Wired Mode

While connected to the PC, data samples from the SPT300 can be collected in wired mode, as opposed to its regular wireless mode. If desired, these samples can also be saved to a data file.

Sampling an SPT300 will retrieve the following information from the connected gauge:

- Raw Pressure Counts
- Raw Temperature Counts
- Real Pressure
- Real Temperature
- Battery Voltage

The **Pressure** and **Temperature Units** for the real counts can be changed by selecting new ones in the Pressure or Temperature Units drop down boxes.

The following units are available:

Pressure	Temperature
PSI	Celsius
bar	Fahrenheit
kPa	

Clicking on the **Start** button will begin sampling the connected SPT300's at three second intervals.

Note: In Wired Mode, the three second sampling rate cannot be changed.

Enabling Sound

Checking off the **Enable Sound** checkbox, causes a sound tune to be played every time a data sample is taken.

Auto Save Samples

Checking off the **Save Data Samples** check box will automatically save the data file to a folder location on the PC. The data file will be created in a directory defined by the **Wired Job File Directory Location** under the **Settings** window.

Enable Wireless Sampling

Wireless sampling can be enabled allowing the SPT300 to transmit the data sample, wirelessly, to a **USB Wireless Receiver**. To enable wireless sampling, check off the **Wireless On** checkbox.

Once sampling begins, the connected SPT300's data samples will be displayed to the data window and transmitted wirelessly to a USB Wireless Receiver nearby.

Wired Job Directory Quick Access

Clicking this button will immediately open an Explorer window to the Job Files Wired folder.

Vault Tab

SPT300s devices are capable of broadcasting data out into the open to be picked up by a receiver. The USB Wireless Receiver is designed to listen for signals broadcasted from any SPT300, within range. It is possible for the USB Wireless Receiver to pick up undesired signals from other SPT300s or devices using the same wireless protocol.

Skyline 2 implements security measures designed to protect users from either, intercepting data belonging to other SPT300 owners or similar devices, or having their SPT300 data intercepted by other owners of the Canada Tech Wireless Receiver. The **Vault** is designed to ensure users will only intercept data that belongs to their own SPT300's.

Every SPT300 signal contains the transmitting SPT300's serial number and a unique *Sender Address*. These two pieces of information are used to identify an SPT300. The Vault contains a list of the Sender Addresses and serial numbers of each SPT300 owned by the user. Upon receiving a wireless message, Skyline 2 will refer to the Vault to check if the received message contains the received Sender Address and serial number. Any message with an unknown Sender Address or serial number is ignored.

The Vault information is stored in an encrypted file named "vault.aur." The file is automatically created in the same file directory as the Skyline 2 application. If the vault.aur file is moved or deleted from the Skyline 2 folder, a new, blank, vault.aur file will be created the next time Skyline 2 is launched. A backup of the current vault.aur file is created whenever a change is made to the existing Vault. Old Vault files are backed up in a folder called "Vault Backup" which is also automatically created and placed in the same file directory as Skyline 2.

Note: It is strongly not recommended to manipulate the encrypted data contained in a Vault file. Doing so will corrupt the file rendering one, if not all, of the SPT300 entries to be unrecognizable by Skyline 2.

SPT Setup, Vault Tab

Adding Sender Addresses

There are two methods to add a Sender Address.

Method 1 – SPT300 is connected to the PC

Requirements**:**

- SPT300 connected to the PC through the SPT USB Download Cable

Operations**:**

- Click **Connect** on the **Setup Tab**
- Click on the **Vault Tab**, then click on the **Add Address** button
- The connected SPT300's serial number will show up in the **Serial Number** list to indicate that the SPT300's Sender Address and serial number has been added to the Vault.

Method 2 – SPT300 is not connected to the PC

Requirements**:**

- Sender Address and Serial Number of the desired SPT300 is to be added

Operations**:**

- On the **Vault Tab**, check off the **Manual Entry** checkbox
- Enter in the Sender Address of the SPT300 in the **Sender Address** input box
- Enter in the Serial Number of the SPT300 in the **Serial Number** input box
  - **Note:** In order for this to work properly, the Sender Address and the serial number of the SPT300 must be known and cannot have any typos.
- Click on the **Add Address** button
- The new SPT300's serial number will show up in the **Serial Number** list to indicate that the SPT300's Sender Address and serial number has been added to the Vault.

Removing Sender Address

Removing an SPT300 Sender Address will cause Skyline 2 to cease further listening for that SPT300. Do not remove Sender Addresses from the Vault unless it is absolutely certain that the data from the specific SPT300 is no longer desired.

To remove a Sender Address, select the desired serial number of the SPT300 by clicking on it. Then click on the **Delete Address** button. Prior to any Sender Address removals, a backup copy of the Vault file is created and stored in the **Vault Backup** folder. The backup folder is located in the same directory as the Skyline 2 application. Backup up Vault files are automatically named with the date and time of the moment the Sender Address was removed. The date format used for naming the Vault backup file is YYYY / MM / DD HH:MM:SS

Example:

A Vault backup file with the name, 'Vault_2009-08-26 11-20-14.aur' indicates that the backup file was created on Aug 26th 2009, at 11:20am.

Restoring Backed Up Vault Files

Vault files that have been backed up can be restored to be used as the current Vault file. Restoring a backup Vault file is useful if something accidental were to happen to the current Vault file.

To restore a Vault file from backup, open the **Import Vault** window by clicking on the **Load Vault File** button, from the Vault Tab. To open a backed up Vault file, click on the **Open Vault** button. An open file dialog window will open where a backed up Vault file can be selected.

When a backed up Vault file has been selected and opened, all the entries of that particular Vault file is displayed on the Import Vault window. If the contents of the backed up Vault file are incorrect, another Vault file can be selected by repeating the process described above.

Clicking on the **Import Vault** button will finalize the restoration process. This will overwrite the current Vault file with all the contents contained in the backed up Vault file.

Restoring a backed up Vault will overwrite the current Vault. The Vault file being overwritten does not get backed up. A warning window will pop up after clicking the **Import Vault** button. Clicking **Cancel** will stop the process and no changes will be made to the current Vault file.

SPT Setup, Import Vault

SLT Setup

SLT Setup is a setup interface for the SLT300 device. The setup utility has the following functionality:

- Change the SLT300's pressure and temperature standard display units
- Adjust the SLT300's sampling rate
- Enable or disable the SLT300's LED display screen
- Save the current time of day of the PC to the SLT300

To access SLT300 Setup, click on the **SLT Setup** toolbar button from the Skyline 2 Main Screen.

Connect Tab

SLT Setup, Connect tab

Connect

Using a *Mini B USB cable*, connect the SLT300 to an available USB port on the PC and then turn on the SLT300.

The SLT300's com port can be discovered by one of the following two methods:

- **Auto Detect**, SLT Setup will automatically locate the com port.
- **Manual**, the com port can be manually selected.
  - Selecting **Manual** will automatically open the **Available Com Ports List** window. This window lists all the ports currently available to the computer. To select the appropriate com port, simply double click on the listed port.
  - Double clicking on the **Com Port** label will also open the Available Com Ports List window.

Clicking the **Connect** button will initiate communications with the SLT300. The SLT300's serial number is displayed on the left panel of the bottom status bar. Double clicking on this panel will open a **Device Information** window that displays specific information about the SLT300.

SLT Device Information

Setup Tab

SLT Setup, Setup tab

Display Units

The **Units** selection box is used to change the SLT300's standard units for displaying pressure and temperature.

The following units are available:

Pressure	Temperature
PSI	Celsius
bar	Fahrenheit
kPa	

Changing Sample Rate

When the SLT300 is properly connected, the current sampling rate of the gauge is displayed in the **Current Sampling Rate** display box. This value can be changed by selecting a new sampling rate value from the **New Sampling Rate** drop down box.

SLT Display On Rate

The **Display On Rate** dropdown menu contains selections for how long the LED Display on an SLT300 will remain on for.

Note: SLT300's with firmware versions older than version 2.0 **only** have the option to set the display to Always On, or Always Off. Firmware versions 2.0 or higher have the option to set the display on interval from 5 seconds to 5 minutes.

Predicted Battery Life

Depending on the selected Sample Rate and the Display On Rate, the expected battery life of an SLT300 is calculated and displayed in days. The expected battery life calculation assumes a 25% safety factor, thus the total expected battery life should last 25% longer than the calculated battery life.

Note: The Predicted Battery Life calculation only applies to SLT300's with firmware versions 2.0 or higher.

SLT Wireless Toggle

The **Wireless On** checkbox will toggle the SPT300 wireless data transmission mode on and off. SPT300 wireless data transmissions can be picked up by an active *USB Wireless Receiver*.

Save Settings

The **Save Settings** button will save all of the modified settings to the SLT300's memory. The following will be saved to the SLT300 after the **Save Settings** button is clicked:

- Pressure display units
- Temperature display units
- Sampling Rate
- SLT300 display On or Off
- Wireless On or Off
- The PC's current time and day

Note: Be sure that the time showing on the PC's clock is accurate, as this will be the time and date saved to the SLT300's memory.

Settings

Adjustments to Skyline 2 are done through the **Settings** window. The following lists the settings that can be changed:

- File directories where the SPT300 wireless and wired data files will be saved
- Show or hide specific data columns on the **Data Log**
- Toggle the SPT300 low battery indicator on and off
    - If the Low Battery Indicator is enabled, define the minimum voltage limit that will trigger the warning

To access the Settings window, click on the **Settings** toolbar button. Alternatively, the Settings window can be accessed by right mouse clicking anywhere on the Data Log to bring up a context menu then click **Settings.**

File

Skyline 2 creates two file directories which are used to automatically create and store wireless and wired SPT300 sampling data. The Wireless directory defines where to create and store sampling data collected wirelessly, via the USB Wireless Receiver. The Wired directory, defines where to create and store sampling data collected from a wired SPT300 that is connected to the PC, via the SPT USB Download Cable.

When the Job File Directories for both Wired and Wireless have been chosen, new subfolders respectively named Job Files Wired and Job Files Wireless are created at the specified directory paths. Furthermore, upon incoming data received wired or wirelessly, another subfolder, named after the transmitting SPT300's serial number, will be created. The data file for the SPT300's data will be automatically placed in its own subfolder and also named after the transmitting SPT300's serial number, followed by the date and time of which the file was created. The date format used for naming the data file is YYYY / MM / DD HH:MM:SS. SPT300 data files are given a (.rec) extension.

Example:

A data file with the filename, 'PT00001_2009-03-20 13-33-43.rec' indicates that the transmitting SPT300 has a serial number of PT00001 and the file was created on March 20th, 2009 at the time of 13:33:43 (1:33 pm).

By default, both wired and wireless Job File Directory Locations are set to the same directory as the Skyline 2 application. To change either of the two directories, click on the Change Directory button under the corresponding directory that is to be changed. A folder browser dialog window will appear where a folder can be chosen. Once a new folder has been chosen, it will immediately become the new location for either the Wired or Wireless Job File folder(s).

By selecting **Log Separate Data Files,** the real, raw, and voltage counts will be logged separately into their own individual data files, or not logged at all.

The **Time Format** selects whether the data file is logged in **Real Time** or **Elapsed Time.**

Display

The **Display** section is used to show or hide specific data columns on the Data Log. Un-checking any one of the Data Display Column checkboxes will hide the corresponding data column on the Data Log. Likewise, checking off a checkbox will show the corresponding data column.

General

A low SPT300 battery voltage alarm can be enabled from the **General** section. Selecting **Enabled** from the **Low Battery Alarm** radio group will turn on Skyline 2's battery voltage checking for every received SPT300 data sample. The battery voltage transmitted from an SPT300 will be compared to the value in the **Low Battery Limit.** If the SPT300 voltage is less than the Low Battery Limit voltage value, the low battery alarm will trigger. The Low Battery Limit value can be changed by simply entering in a new value.

Serial #	Name	Pressure (PSI)	Temperature (C)	Battery (V)	Pressure Raw	Temperature Raw
PT01111	My SPT300	14.24	19.78	3.50	8390482	14984557

Data Display Log, Battery Voltage Low

Serial #	Name	Pressure (PSI)	Temperature (C)	Battery (V)	Pressure Raw	Temperature Raw
PT01111	My SPT300	14.26	19.67	3.60	8390491	14989936

Data Display Log, Battery Voltage