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1. Introduction

1.1. Copyright

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1.2. Declaration of Conformity

Electronic Controls Design, Inc.
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Declaration of Conformity

Product:	"Xpert Ready" SuperM.O.L.E.® Gold W/PP	**Part number:**	E40-2875-40
	"Xpert Ready" SuperM.O.L.E.® Gold W/PP (RoHS)		E45-7647-40
	OvenWATCH® Station		E41-6928-42

The above product is in conformity with the following standards or other normative documents:

- Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio frequency equipment:
  EN55011:1992
- Electromagnetic compatibility generic immunity standard Part 1: Residential, commercial and light industry:
  EN50082-1:1992
- Safety requirements for electrical equipment for measurement, control, and laboratory use Part 1: General requirements:
  EN61010-1:1990, and Amendment 1:1992

Following the provisions of the following European Directives:

- Electromagnetic Compatibility Directive **89/336/EEC**
- Low-voltage Directive **73/23/EEC**
- RoHS **2002/95/EC**

Signed: _____ **Date:** November 27, 2006

Declaration of Conformity

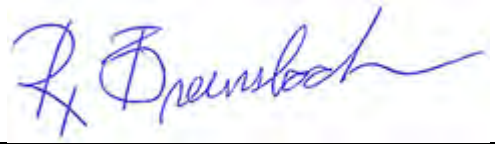
Product: SuperM.O.L.E.® Gold 2 Thermal Profiler **Part number:** E51-0386-40

The above product is in conformity with the following standards or other normative documents:

- Electro Magnetic Compatibility Standard for Radio Equipment and Services
  EN 301 489-01 V1.8.1:2008
- Harmonized Standard for Data Transmission Equipment Operating in the 2.4 GHz Band
  EN 300 328 V1.7.1:2006
- Electro Magnetic Compatibility Standard for Radio Equipment and Services
  EN 301 489-17 V2.1.1:2009
- Information technology equipment – Safety
  EN 60950

Following the provisions of the following European Directives:

- R&TTE **1999/5/EC**
- Low-voltage Directive **2006/95/EC**
- RoHS **2002/95/EC**
- WEEE **2002/96/EC**

Signed:  **Date:** May, 2011

1.3. How to use this Users Help Guide

This Users Help System explains how to use ECD Thermal Profiling instruments and software.

This Users Help System is written for users of varied experience. If a section covers information you already know, feel free to skip to the next section.

- You do not need to be a computer expert to use this Users Help System or the software.
- The Users Help System assumes you are familiar with Microsoft® Windows® Operating Systems.

Hardware portions of this manual are written to reflect the following firmware versions:

- MEGAM.O.L.E.®, V-M.O.L.E.® and SuperM.O.L.E.® Gold 2: 10.64 and higher.

The software portions reflect version(s) 2.20a and higher.

The M.O.L.E.® MAP software is designed to be used with the ECD MEGAM.O.L.E.®, V-M.O.L.E.®, SuperM.O.L.E.® Gold, SuperM.O.L.E.® Gold 2 and PTP® VP-8 Thermal Profilers. Images used in software sections of this Users Help System typically refer to the SuperM.O.L.E.® Gold 2.

1.4. Terms Used

In 1986 ECD introduced our original Thermal Profiling instrument called the **M.O.L.E.® (Multichannel Occurrent Logger Evaluator)**. Over the years ECD has produced several models of the **M.O.L.E.®** for use in a wide variety of applications. In this Users Help System, we may refer to all of our Thermal Profiling instruments as the **M.O.L.E.® Profiler**.

The **M.O.L.E.® Profiler** is a registered trademark of ECD.

The following statements describe special terms that will be used in this Users Help System:

	Informs the user that the note includes important information.
	Informs the user that the note includes a handy tip.
	Informs the user of an equation used.

Hardware Terms:

	Informs the user that the note identifies conditions or practices that could result in damage to the equipment.
	Informs the user that the note identifies conditions or practices that could result in personal injury or damage to property other than the equipment.

- **Thermocouple**, may be referred to as T/C.

Software Terms:

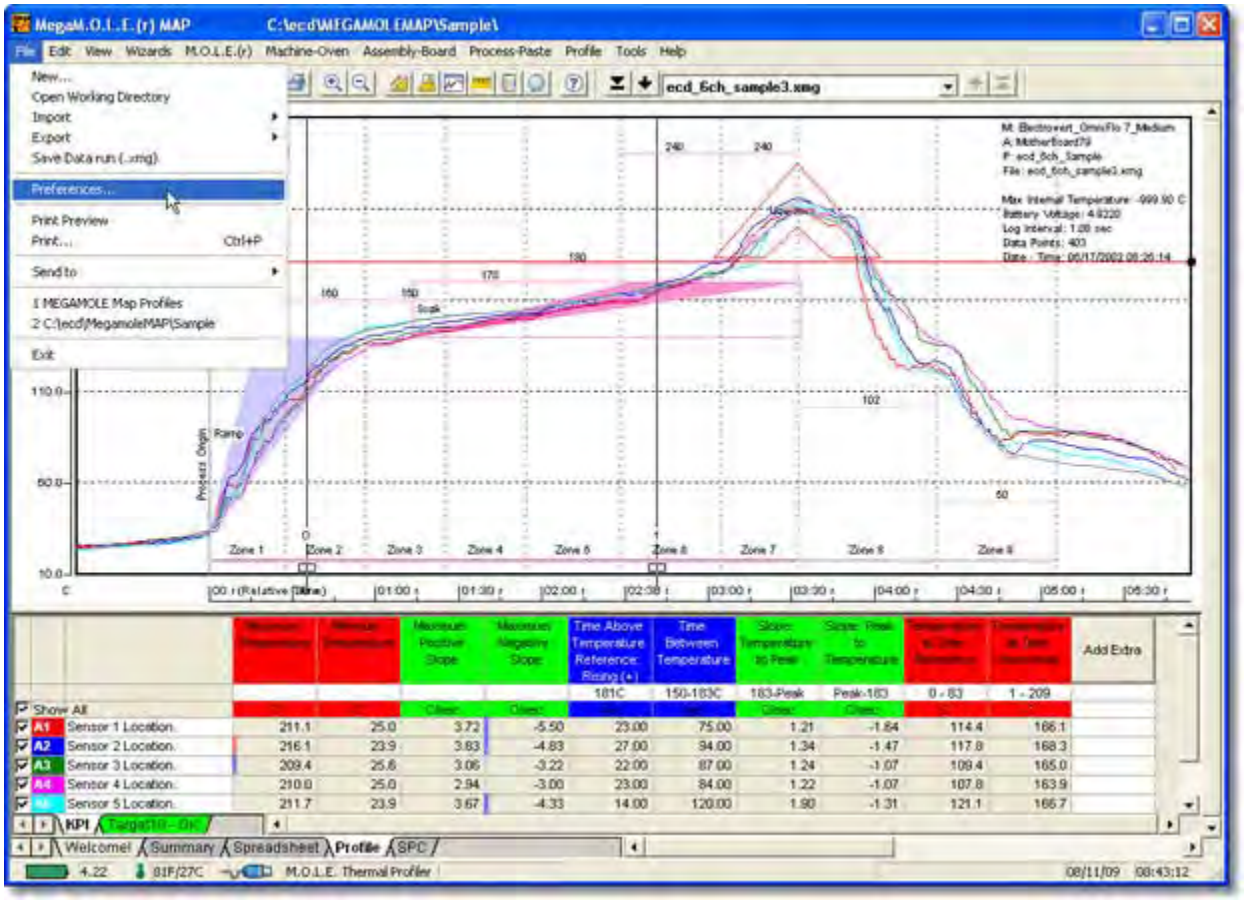
- **Page Tab Views**, the individual page tabs in the MEGAM.O.L.E.® software.
- **Data Set**, multiple data runs saved as individual .XMG files into the open working directory.
- **Data Run**, the data uploaded from the M.O.L.E. Profiler and saved as an .XMG file into a working directory. This data run is displayed on the Data Graph as a Profile.
- **Modes**, a set of page tabs, menus, toolbars, and shortcuts that are grouped and organized so that the user can work in a task-oriented environment.

1.5. Fonts Used

This manual uses a specific font to indicate terms or words that can be found directly on the display of the computer.

For example:

On the ***File*** menu, click ***Preferences*** to configure the software global settings. This ***font*** indicates the words ***File*** and ***Preferences*** are actually found on the computer display.



2. Safety

2.1. Operators Safety Information

The safety information in this section is for the benefit of operating personnel. Warnings and Cautions will also be found throughout the manual where they apply.

Hardware changes or modifications to the M.O.L.E. Profiler or components are not expressly approved by ECD and could void the warranty.

The warranty will not cover damage caused by neglect or abuse of any ECD products. To maintain the safety features incorporated, operation must be in strict compliance with the requirements specified herein.

The MEGAM.O.L.E.® and SuperM.O.L.E.® Gold 2 Thermal Profilers comply with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The user is cautioned to maintain a 20cm (8 inches) spacing from the product to ensure compliance with FCC requirements.

For protection of the M.O.L.E. Profiler and components, observe the following:

- **NEVER** permit the M.O.L.E. Profiler or the battery to exceed the maximum specified internal temperature as permanent damage may result. (***Refer to Appendix A: Specifications***).
- **NEVER** expose the M.O.L.E. Profiler or battery to temperatures below the specified minimum for extended time periods. This may damage the rechargeable battery.
- **NEVER** connect the M.O.L.E. Profiler input channels to objects at elevated electrical potentials.
- **NEVER** operate the M.O.L.E. Profiler in flammable or explosive atmospheres. Such usage constitutes a fire or explosion risk.
- **NEVER** immerse the M.O.L.E. Profiler in liquids.
- **NEVER** subject the M.O.L.E. Profiler and components to sharp impacts.
- **NEVER** excessively stress the computer Interface cable.
- **NEVER** expose the M.O.L.E. Profiler and components to corrosive environments.
- **NEVER** make any changes or modifications to the Wireless RF components. Such changes are not expressly approved by ECD and could void the user's authority to operate the equipment.

When removing M.O.L.E. Profiler from any temperature environment, be careful of extreme temperatures and use protective gloves.

2.2. Battery Warnings

Warnings:

- Charge “Rechargeable” Power Pack batteries using only the ECD approved charger.
- Do not attempt to recharge the SuperM.O.L.E.® Gold Profiler Calendar/Clock battery, disassemble, expose to temperature above 100°C (212°F) or dispose of in fire.
- Always dispose of used batteries promptly and properly.
- Keep all batteries away from children.
- The batteries may explode if mistreated.
- The batteries contain electrolytes.

Replace the M.O.L.E. Profiler batteries with same type only:

- V-M.O.L.E.® & SuperM.O.L.E.® Gold 2: Rechargeable battery, ECD Part No. (F30-0517-45)
- SuperM.O.L.E.® Gold: Clock Battery: Panasonic No. BR2032, or equivalent.
- SuperM.O.L.E.® Gold: Rechargeable Power Pack battery, ECD Part No. (E45-7647-30).

Using alternate batteries may present a risk of fire or equipment damage.

2.3. Equipment Maintenance

Maintain your equipment to prevent future problems and unwanted costs. Keep your M.O.L.E. Profiler at peak performance by taking care of the system components and keeping it calibrated.

Typical maintenance should include the following:

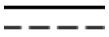
- Wipe the exterior of the instrument enclosure or components with a cloth dampened with water or IPA alcohol.

IPA alcohol is the only type of solvent that is acceptable to clean Thermal Profiling instruments or any of the system components. All other types such as **organic solvents** are not recommended.

- Inspect the Power Pack battery charger enclosure for damage. Do not use the charger if the enclosure is cracked or broken, or if the power plug pins are loose or deformed.
- ECD recommends the M.O.L.E. Profiler is factory re-calibrated every 6 months when it is being used constantly. If the use is occasional, a period of no greater than 12 months between calibrations is recommended. The current calibration status can be checked by using the ***Instrument Status*** command on the ***M.O.L.E.*** menu for all M.O.L.E. Profilers except for the SuperM.O.L.E.® Gold and PTP® VP-8.

2.4. Product Symbols

The following symbols may be present on the M.O.L.E. Profiler and/or system components:

	ON/OFF
	Start Data Run Recording
	Battery Level
	Data Run Verification
	Operating Temperature
	Universal Serial Port (USB)
	Battery Charging Indicator
	Radio Frequency (RF) Activity
	Radio Frequency (RF) Jack
	Waste Electrical and Electronic Equipment (WEEE)
	Direct Current (DC) Power
	Alternating Current (AC) Power
RoHS	RoHS Compliant

	
	CAUTION: Whenever this internationally recognized symbol is used on the product, additional information concerning that particular feature or function appears in the manual.
	European Conformity
FCC	Federal Communications Commission (FCC)
	Power transformer is protected throughout by double or reinforced insulation.
	Indoor use only. For electric-shock protection, always operate the battery charger in a protected, indoor location.

3. Equipment

3.1. SuperM.O.L.E.® Gold

The SuperM.O.L.E.® Gold Profiler is compact and durable. One end has input connectors for attaching up to (6) sensors and the other end is the removable Power Pack. It also has a four-pin Data port, Start/Stop button, and an Activity LED.

Features/Functions:

- **Thermocouple/Inputs:**This is where Type “K” or “S” Thermocouples and the optional Relative Humidity sensors are connected.
- **Start/Stop button:** Allows the user to start and stop data collection.
- **Power Pack:** Supplies power to the Profiler.
- **Data Port:** Transfers data through the computer Interface cable to the computer.
- **Activity LED:** Indicates state of the SuperM.O.L.E.® Gold Profiler.

State:	Action:	LED Color
Power "ON"	Indicates Profiler is "ON" and recording data	Red (Flashing at log interval)
Power "OFF"	Indicates Profiler is not recording data	No illumination
Data Transfer	Indicates data is being uploaded or downloaded	Red (Steady Illumination)
Reset Complete	Indicates when a master reset has been occurred.	Red (Quick flashing 2 sec)

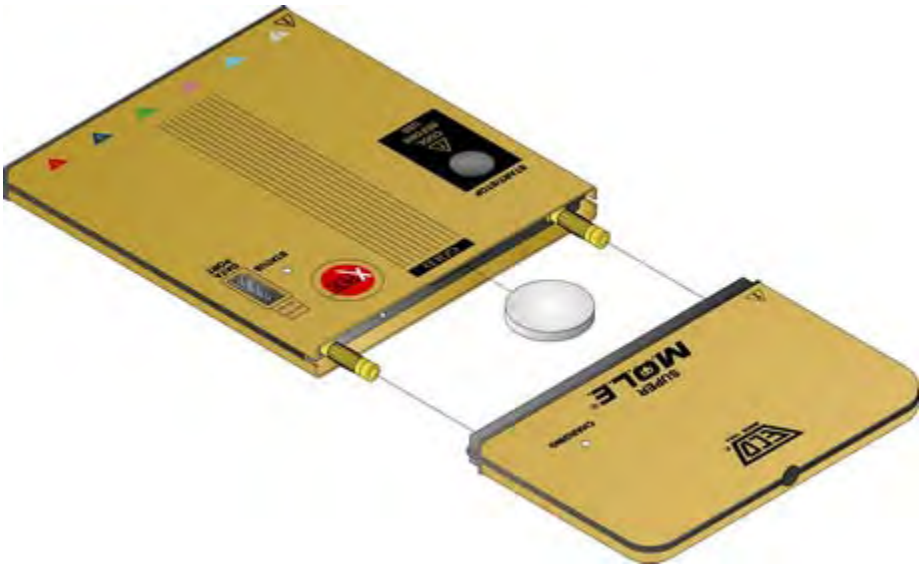
3.1.1. Power Pack

Because the SuperM.O.L.E.® Gold Profiler is powered by a removable Power Pack, it is important to make sure it is charged and operating properly. When connected to a computer, the software displays the voltage of the Power Pack on the Status bar. Refer to topic ***Software>Features>Status Bar*** for more information.

When the Power Pack needs to be re-charged use the charger supplied with the kit and the instructions in topic ***Basics>Setup>Charging the Power Pack***. It is also recommended that a spare Power Pack be ordered so that one is charging while the other one is being used.

3.1.2. Calendar/Clock Battery

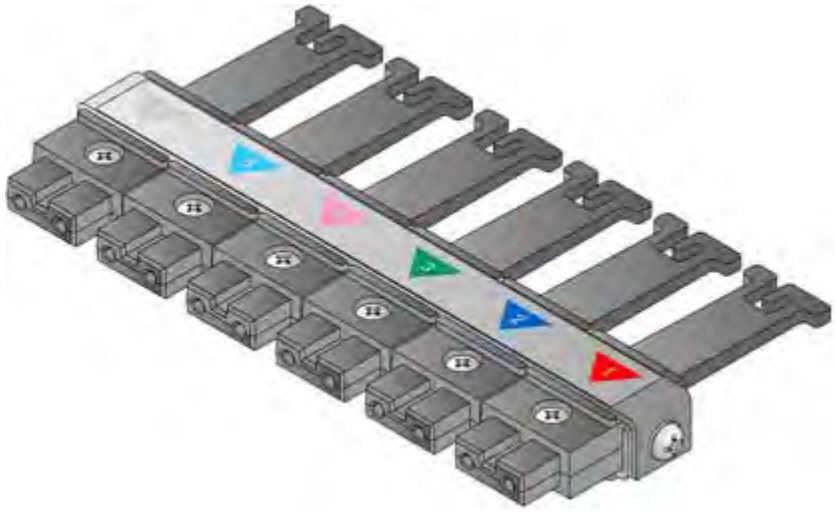
The SuperM.O.L.E.® Gold Profiler has another battery that powers an internal calendar and clock. This battery is not rechargeable and has no status indicator. The expected battery life is about 2-3 years.



If the calendar and clock does not seem to operate (it resets itself), the battery may be discharged. For information on replacing the calendar/clock battery refer to topic ***Service>Changing the Calendar/Clock Battery***.

3.1.3. Sensors

Up to six sensors can be attached to the SuperM.O.L.E.® Gold profiler per experiment. A set of six 0.010” K-Type Color-Indexed thermocouple sensors are included in the Kit.



Plug the sensor connector into the desired SuperM.O.L.E.® Gold profiler channel. The software helps keep a record of the SuperM.O.L.E.® Gold profiler channel number associated with the location and the type of sensor. The Color-Indexed thermocouples correlate to the channels in the software so the sensors can be easy identified.

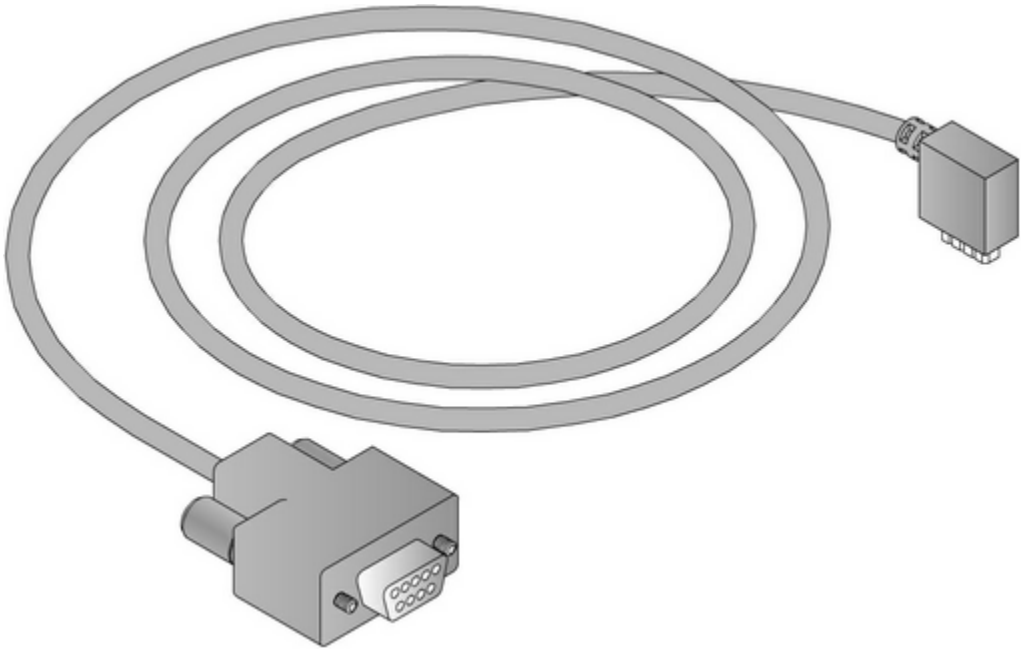
ECD also offers a wide selection of sensors and adaptors to meet the needs of many applications. For more information about optional sensors for specific applications, refer to topic ***How to Get Additional Help*** to contact ECD.

Thermocouple Organizer Clip:

The T/C organizer clip allows six sensors connectors to be combined so that they can be plugged in and removed as a unit.

3.1.4. Computer Interface Cable

A Cable is included in the hardware package that connects the SuperM.O.L.E.® Gold Profiler to a computer serial port.



The SuperM.O.L.E.® Gold Profiler requires a four-pin connector and a nine-pin for the computer serial port.

If your computer does not have an available Serial port, the Kit includes a USB adaptor that connects the SuperM.O.L.E.® Gold to the computer via a USB (Universal Serial Bus) port.

3.1.5. Uni-Barrier & Yellow Jacket

The Uni-Barrier with Yellow Jacket is the standard barrier in all our Lead-Free profiling kits, including the wireless RF kit. A thermal barrier is the protection the SuperM.O.L.E.® Gold needs to ensure longevity through harsh environments. With piano-hinged stainless steel construction, sheathed in cool-to the touch high-temperature fabric this thermal barrier is ideal for lead-free processes. This barrier is rated to protect the SuperM.O.L.E.® Gold for 7 minutes at 200C. When used with the Yellow Jacket it is rated for 14 minutes at 200C.

3.2. SuperM.O.L.E.® Gold 2

The SuperM.O.L.E.® Gold 2 continues the legacy of the original SuperM.O.L.E.® Gold. With all the power of a MEGAM.O.L.E.® 20. It retains the same form factor, thermocouple connector type, and channel count (6) in addition to individual channel LEDs.

- **RED** indicates channel is “active”, as configured in the software.
- **GREEN** indicates that thermocouple is plugged in and a complete circuit.

Features/functions:

- **Thermocouple/Inputs:**This is where Type “K” Thermocouples are connected.
- **Data/Charging Port:** This port is located on the backside of the Profiler. This is used to transfer data through the USB computer Interface cable to the computer and charge the internal Power Pack.
- **RF Antenna Connector:** This is where the Optional RF antenna is connected.
- **Buttons:** ON/OFF, Record & OK.

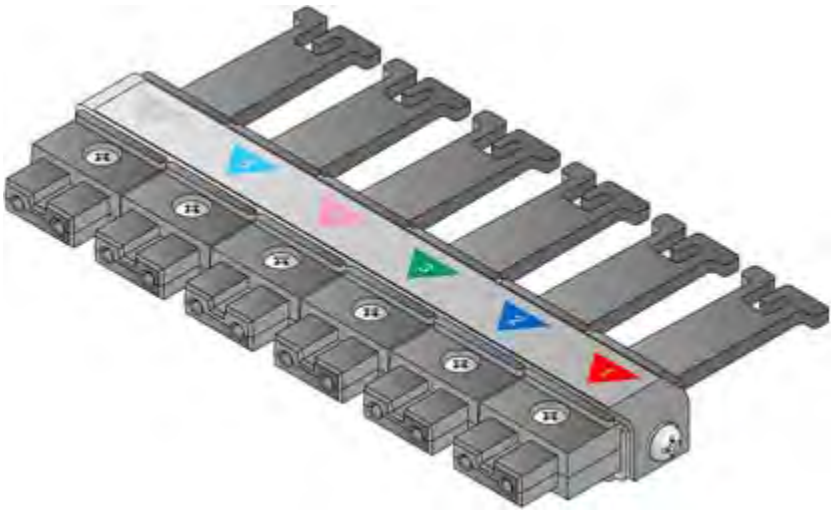
Button:	Action:
ON/OFF	Turns Profiler "ON/OFF".
Record	Starts/Stops Profiler recording data.
OK	Invokes "OK" process where the last recorded profile is compared to pre-configured criteria resulting in a "Pass" or "Fail" mode.

- **Activity Indicators:** These are LED's that indicate what state the SuperM.O.L.E.® Gold 2 Profiler is in. Refer to the illustration and table below.

LED:	Action:	LED Color
ON/OFF	Indicates Profiler is "ON" and idle	Green (Flashing)
Record	Indicates Profiler is recording data	Green (Flashing)
OK	Indicates recorded profile passes pre-configured criteria using the Target 10-OK tab in the software.	Green - Pass (Solid) Red - Fail (Solid)
Temp(eratur e)	Indicates if the internal temperature is at or above a certain threshold.	Red (Solid) >40°C
Battery	Indicates when the internal Power Pack voltage is low	Red (Solid) <3.0V
RF (Radio Frequency)	Indicates when unit and RF receiver is transferring data	Blue (Flashing)
Channel Indicators	Indicates if the channel is configured and/or the attached thermocouple is a complete circuit	Green - Complete Circuit (Solid) Red - Configured (Solid)
Rider	Indicates when Profiler is connected to a RIDER® NL 2 test pallet	Green (Solid)
Charge	Indicates when the internal Power Pack is charging	Yellow (Solid)

3.2.1. Sensors

Up to (6) sensors can be attached to the SuperM.O.L.E.® Gold 2 profiler per experiment. A set of six 0.010” K-Type Color-Indexed thermocouple sensors are included in the Kit.



Plug the sensor connector into the desired SuperM.O.L.E.® Gold 2 Profiler channel. The software helps keep a record of the SuperM.O.L.E.® Gold 2 Profiler channel number associated with the location and the type of sensor. The Color-Indexed thermocouples correlate to the channels in the software so the sensors can be easy identified.

ECD also offers a wide selection of sensors and adaptors to meet the needs of many applications. For more information about optional sensors for specific applications, refer to topic ***How to Get Additional Help*** to contact ECD.

Thermocouple Organizer Clip:

The T/C organizer clip allows six sensors connectors to be combined so that they can be plugged in and removed as a unit.

3.2.2. USB Computer Interface Cable

A USB cable is included in the hardware package. This cable connects the SuperM.O.L.E.® Gold 2 Profiler to a computer USB port and optional charger.

3.2.3. Barrier & Yellow Jacket

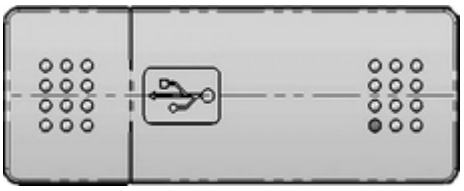
The Uni-Barrier with Yellow Jacket is the standard barrier in all our Lead-Free profiling kits, including the wireless RF kit. A thermal barrier is the protection the SuperM.O.L.E.® Gold 2 needs to ensure longevity through harsh environments. With piano-hinged stainless steel construction, sheathed in cool-to the touch high-temperature fabric this thermal barrier is ideal for lead-free processes. This barrier is rated to protect the SuperM.O.L.E.® Gold 2 for 7 minutes at 200C. When used with the Yellow Jacket it is rated for 14 minutes at 200C.

3.2.4. Wireless RF Option

The Wireless RF Option for the SuperM.O.L.E.® Gold 2 Profiler produces real time profiles for immediate data collection. The Transmitter is an built-in component that when used with the antenna sends data to the RF transceiver which connects to a USB port on the computer.

Wireless RF Transceiver:

This is not a memory “thumb drive” but a full featured RF transmitter and receiver (Transceiver) used to create the wireless RF link to the SuperM.O.L.E.® Gold 2.



Front Side

Back Side

Wireless RF Antenna:

This is the high temp Teflon antenna tuned to 2.45gHz.

4. Basics

4.1. Setup

The Setup topic offers a brief description of the system hardware configuration.

4.1.1. Charging the Power Pack

Because the M.O.L.E. Profiler is powered by a rechargeable Power Pack, it is important that it is charged and operating properly prior to performing every experiment. When using a MEGAM.O.L.E.® or SuperM.O.L.E.® Gold a spare removable Power Pack may be ordered so one is charging while the other one is being used.

4.1.1.1. SuperM.O.L.E.® Gold

To charge the Power Pack:

1) Remove the Power Pack by separating from the unit.

2) Plug the transformer end of the charger into a (60Hz 120VAC, in North America) or (230VAC) wall outlet and the connector end into the Power Pack.

A completely discharged Power Pack takes about 14 hours to be fully charged.

3) When the charging cycle is complete, connect the Power Pack to the M.O.L.E. Profiler. When the Power Pack is first connected, the LED will flash once to indicate that the M.O.L.E. Profiler is ready to collect data. If the LED flashes more than once, a complete reset has occurred and the M.O.L.E. Profiler will need to be re-configured. (Refer to the software manual for detailed configuration information).

The Power Pack can be charged continuously whenever the M.O.L.E. Profiler is not being used, however, if the M.O.L.E. profiler is going to sit idle for five days or more, it should be removed from the charger.

4.1.1.2. SuperM.O.L.E.® Gold 2

To charge the internal Power Pack:

1) Insert the USB computer interface cable into a computer USB port and the other end into the Data/Charging Port.

A completely discharged Power Pack takes about 8 hours to be fully charged. For quick charges, it can be charged for 15 minutes allowing one 10 minute data run to be performed.

The Power Pack can be charged continuously whenever the M.O.L.E. Profiler is not being used, however, if the M.O.L.E. profiler is going to sit idle for five days or more, it should be removed from the charger.

4.1.2. Communications Setup

Prior to operation the M.O.L.E. Profiler must be configured to properly communicate with the M.O.L.E.® MAP Software.

> The M.O.L.E.® MAP software must be installed prior to communications setup. (Refer to ***Software Installation*** for more information).

4.1.2.1. SuperM.O.L.E.® Gold

To connect the M.O.L.E. Profiler:

> The M.O.L.E.® MAP software must be installed prior to communications setup. (Refer to ***Software Installation*** for more information).

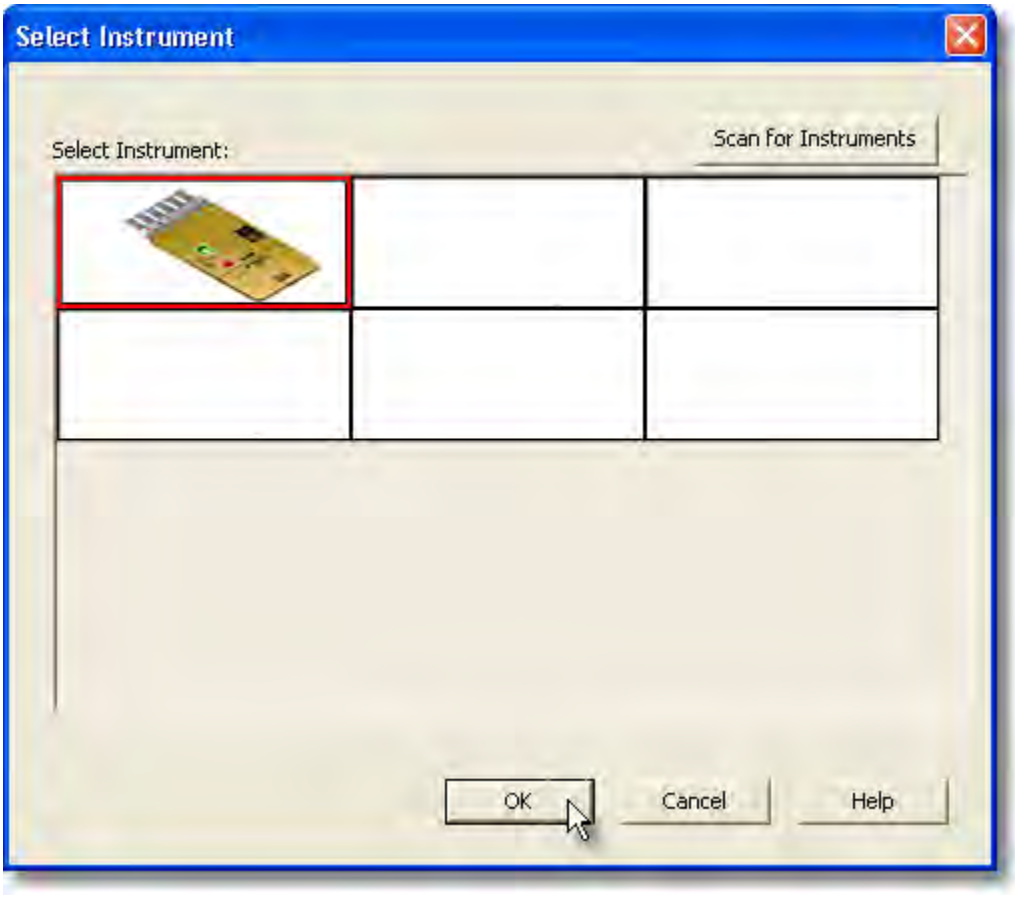
1) Locate the computer Interface cable and plug the 9-pin connector into a computer COM port and the other end into the M.O.L.E. Profiler Data Port.

> **If no Serial port exists, use the included USB adaptor to connect the interface cable to the computer.**

2) After the computer interface cable is connected to a computer, the Communication (COM) port must be configured in the software to match the same COM Port as the computer so they can communicate.

3) Start the software program by either double-clicking the M.O.L.E.® MAP software icon or selecting it from the ECD program sub-menu.

4) On the ***M.O.L.E.*** menu, click the ***Select Instrument*** command.
5) Select the desired instrument from the dialog box. If there are none displayed, click the ***Scan for Instruments*** command button to detect all available instruments.



If the software does not detect a M.O.L.E. Profiler, using the communication cable connect it to the computer and click the ***Scan for Instruments*** command button to search again. M.O.L.E.® MAP software allows multiple instruments to be connected to a computer at one time. Selecting the ***Scan for Instruments*** command button will detect all instruments and display them in the dialog box. If no instrument is detected the software displays all of the Demonstration thermal profilers to select from.

6) Click the ***OK*** command button to accept or ***Cancel*** to quit the command.

4.1.2.2. SuperM.O.L.E.® Gold 2

To connect the M.O.L.E. Profiler:

The M.O.L.E.® MAP software must be installed prior to communications setup. (Refer to ***Software Installation*** for more information).

1) Insert the USB computer interface cable into a computer USB port and the other end into the Data/Charging Port.

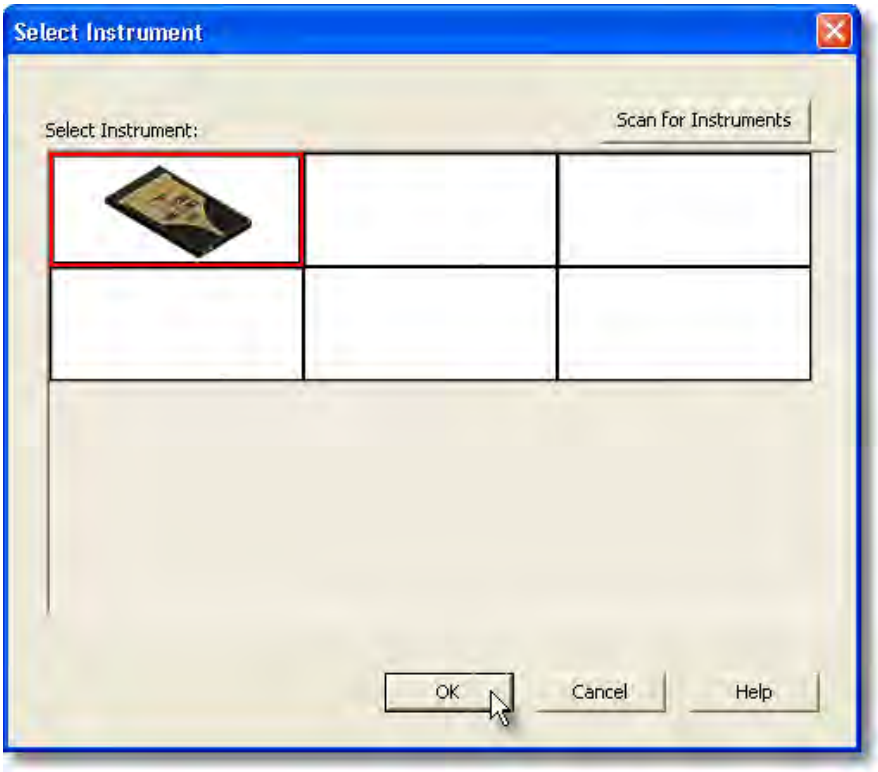
The first time a M.O.L.E. Profiler is connected to a computer two drivers will be installed. One is a device driver for the M.O.L.E. Profiler and the other is for USB communication.

2) During installation of the device driver, when prompted to select the location of the device driver, select "***Install the software automatically***". Follow the remaining wizard instructions closely.

3) During installation of the USB driver a message box appears, select the ***Continue Anyway*** command button and the driver will be successfully installed.

4) After M.O.L.E. Profiler is connected to a computer, the software must be configured so they can communicate. Start the software program by either double-clicking the M.O.L.E.® MAP software icon or selecting it from the ECD program sub-menu.

5) On the ***M.O.L.E.*** menu, click the ***Select Instrument*** command.
6) Select the desired instrument from the dialog box. If there are none displayed, click the ***Scan for Instruments*** command button to detect all available instruments.



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7) Click the ***OK*** command button to accept or ***Cancel*** to quit the command.

4.1.2.2.1. Wireless RF Option Setup

To connect the wireless RF option:

Prior to wireless RF communication, the M.O.L.E. Profiler must first be connected to a computer through the USB port. This allows the software to register the serial number of the M.O.L.E. Profiler. Registering the serial number ensures that other M.O.L.E. RF transmissions in close proximity to each other will not interfere preventing others from controlling your M.O.L.E. Profiler without your consent. (Refer to ***Communications Setup*** for more information)

1) Insert the Wirless RF Transceiver into an available USB port and the Antenna to the M.O.L.E. Profiler. The first time the Transceiver is connected to a computer, the drivers will automatically be installed. The operating system displays the installation status on the taskbar.

The M.O.L.E. Profiler is designed to work with the included antenna **ECD P/N: E51-0386-11** only. Never make any changes or modifications to the Wireless RF components. Such changes are not expressly approved by ECD and could void the user's authority to operate the equipment.

The Transceiver can either be connected directly to a computer USB port or a USB extension cable. Using an USB extension cable can be a simple way to get the Transceiver to a better reception area without moving the PC. No matter which method is used, keep wires and other metal objects away from the Transceiver.

Good

Poor

2) After the Transceiver is connected to a computer, it needs to be detected by the software to properly communicate.
3) Start the software program by either double-clicking the M.O.L.E.® MAP software icon or selecting it from the ECD program sub-menu.

Confirm the M.O.L.E. Profiler power is on. If it is not This can be done by pressing the On/Off button or by connecting it to the PC USB port.

4) On the ***M.O.L.E.*** menu, click the ***Read Instrument*** command.

When the software detects the Wireless RF Transceiver for the first time, the user will be prompted to enter the 5 digit Unlock Key located on the product ID label.

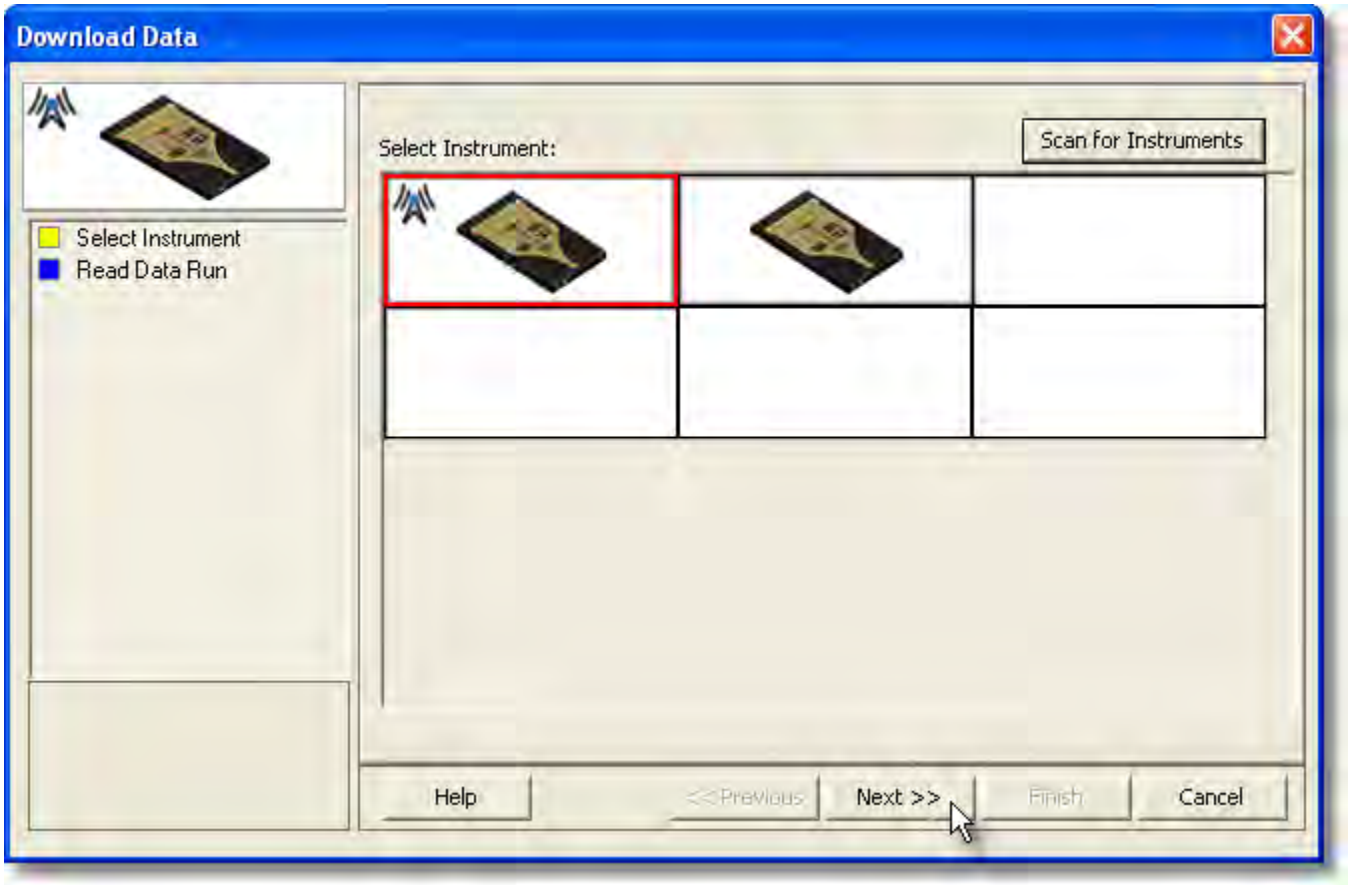
5) Enter the Unlock Key in the field and select the ***OK*** command button.

6) If the unlock key is successfully entered, the software informs the user with a message box and the Blue RF indicator on the M.O.L.E. Profiler flashes.

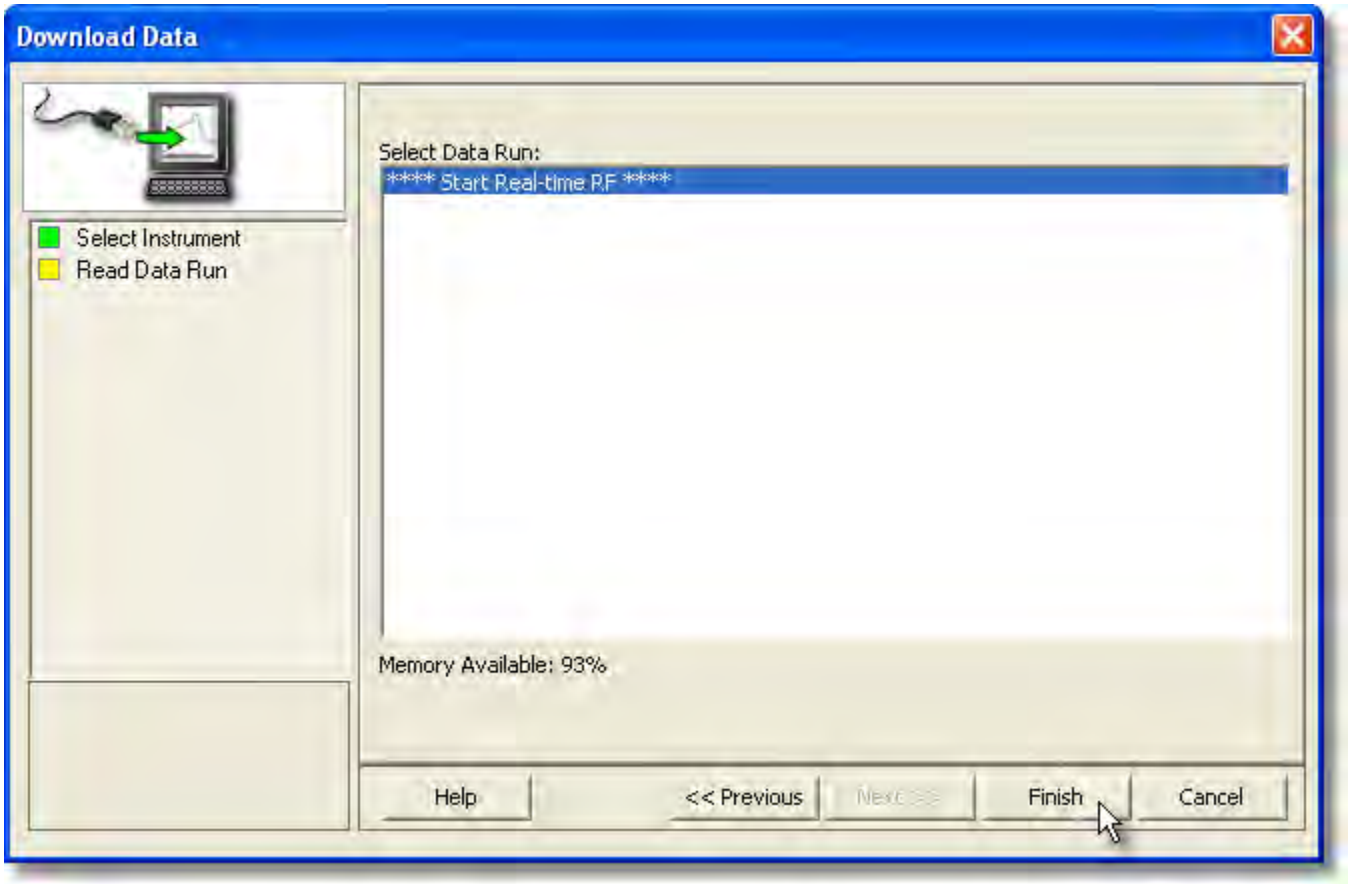
7)Select the ***OK*** command button to continue.

If the software does not detect a M.O.L.E. Profiler, using the communication cable connect it to the computer and click the ***Scan for Instruments*** command button to search again. M.O.L.E.® MAP software allows multiple instruments to be connected to a computer at one time. Selecting the ***Scan for Instruments*** command button will detect all instruments and display them in the dialog box. If no instrument is detected the software displays all of the Demonstration thermal profilers to select from.

8) Select the MEGAM.O.L.E.® profiler from the dialog box and then click the ***Next*** command button to continue.



9) Click the ***Finish*** command button to continue receiving RF data, or ***Cancel*** to quit the command.



The system is now ready to start Wireless RF communication. Refer to topic: ***Menu and Tools Commands>Wizards Menu>Download Data>Wireless RF Communications*** to start the real-time wireless data collection.

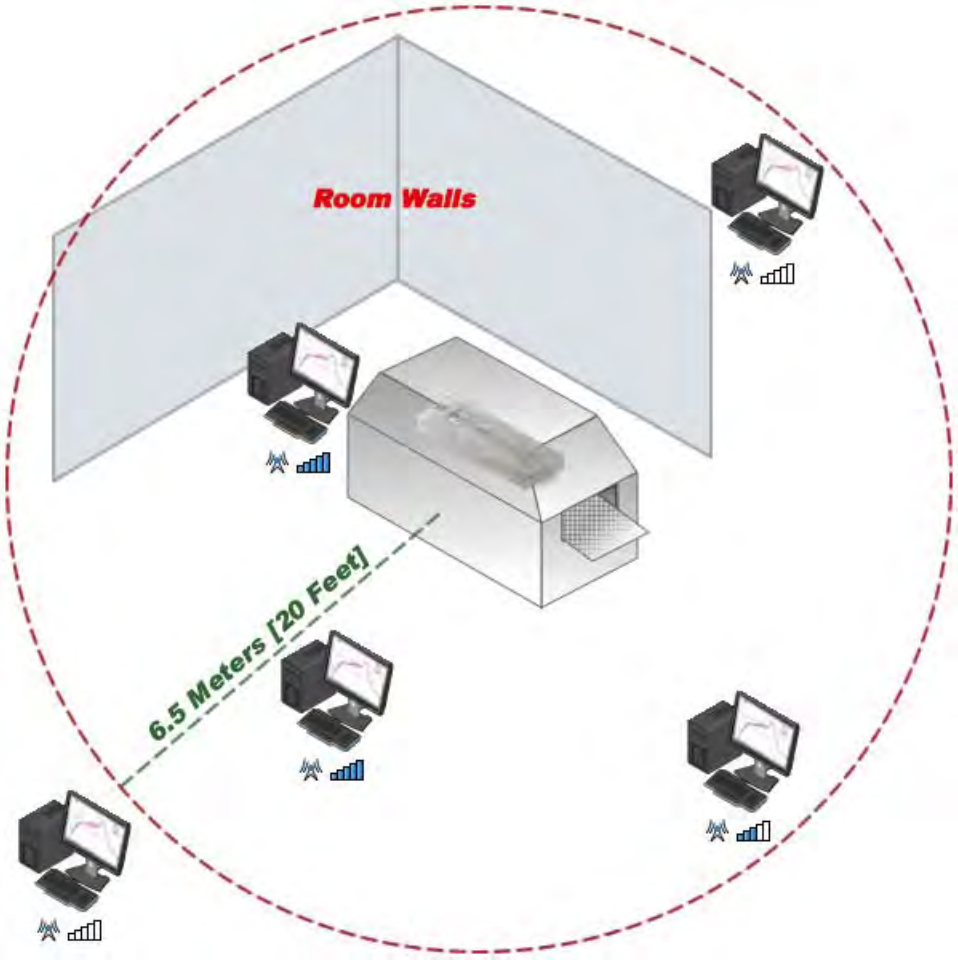
Wireless RF communication tips (MEGAM.O.L.E.® & SuperM.O.L.E.® Gold 2):

RF signals come and go as either the M.O.L.E. Profiler moves through the oven or the Transceiver is moved around like FM radio static as you drive in your car. Moving a few inches in any direction can turn a low signal strength to high signal strength. This gets worse as the Transceiver gets further from the M.O.L.E. Profiler, to a point where no position works.

When setting up the Wireless RF system, the transceiver should be placed as close to the machine as practical. A standard USB extension cable can be used to move the Transceiver closer to the machine or up and away from metal or other interference objects.

Typically if the Transceiver is 3 meters [10 feet] away from the M.O.L.E. Profiler in a machine any location in the room, reception should be fine. Reception is also often a bit better when the Transceiver is perpendicular to the direction of travel through the machine. Metal objects such as carts, walls, or other equipment in the room will impede transmission.

The transmitting Antenna and its proximity to metal can have a big affect. Care should be taken to make sure the Antenna is not laying on metal parts in the machine or barrier box. Keeping the Antenna straight is best.



Wireless RF Range

4.2. Operation - Fresh Start

This section guides the user through a typical collection process. Portions of this section require referral to some software sections of the Users Help System for additional information.

> The M.O.L.E.® MAP software is designed to be used with the ECD MEGAM.O.L.E.®, V-M.O.L.E.®, SuperM.O.L.E.® Gold, SuperM.O.L.E.® Gold 2 and PTP® VP-8 Thermal Profilers. Images used in software sections of this Users Help System typically refer to the SuperM.O.L.E.® Gold 2.

The M.O.L.E. Profiler is dependent on the software to control how it collects and interprets data. Several kinds of data runs may need to be performed to achieve desired information, or the same data run may be performed repeatedly over time to monitor one process. Either way, an data run will need to be setup at least once.

After the hardware is setup and the software is installed, use the following steps to perform an experiment using a M.O.L.E. Profiler.

> This procedure uses the "Fresh Start" wizard for the typical data run process.

Step 1: Set MAP information

1) Start the software by double clicking on the program icon.
2) Connect the M.O.L.E. Profiler to the computer. Refer to topic ***Basics>Setup>Communications Setup*** for more information.

> When the information is being sent to a SuperM.O.L.E. Gold Profiler the Activity LED will illuminate indicating that it is communicating with the computer properly.

3) Make sure the M.O.L.E. Profiler Power Pack battery is fully charged. When a M.O.L.E. Profiler is selected, the software status bar displays the current battery voltage. Refer to topic ***Software>Features>Status Bar*** for more information.

4) On the ***File*** menu, click ***New/Start***. A message box appears with the five workflow wizard options.

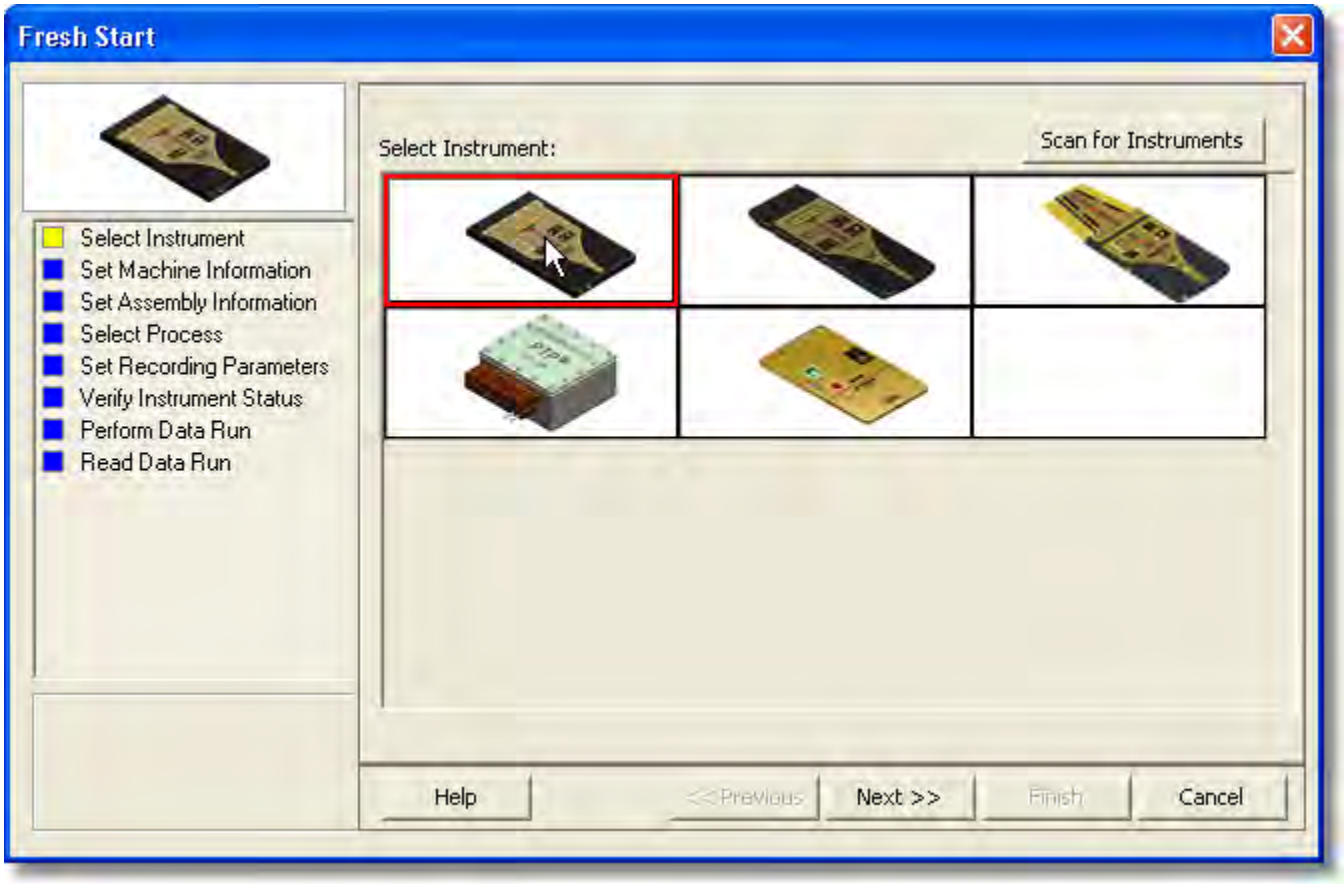
5) On the ***Start*** dialog box, click the ***Fresh Start*** command button and the workflow wizard appears.

When navigating through the wizard, the step list on the left uses a color key to inform the user of the current step, steps that have been completed and remaining steps.

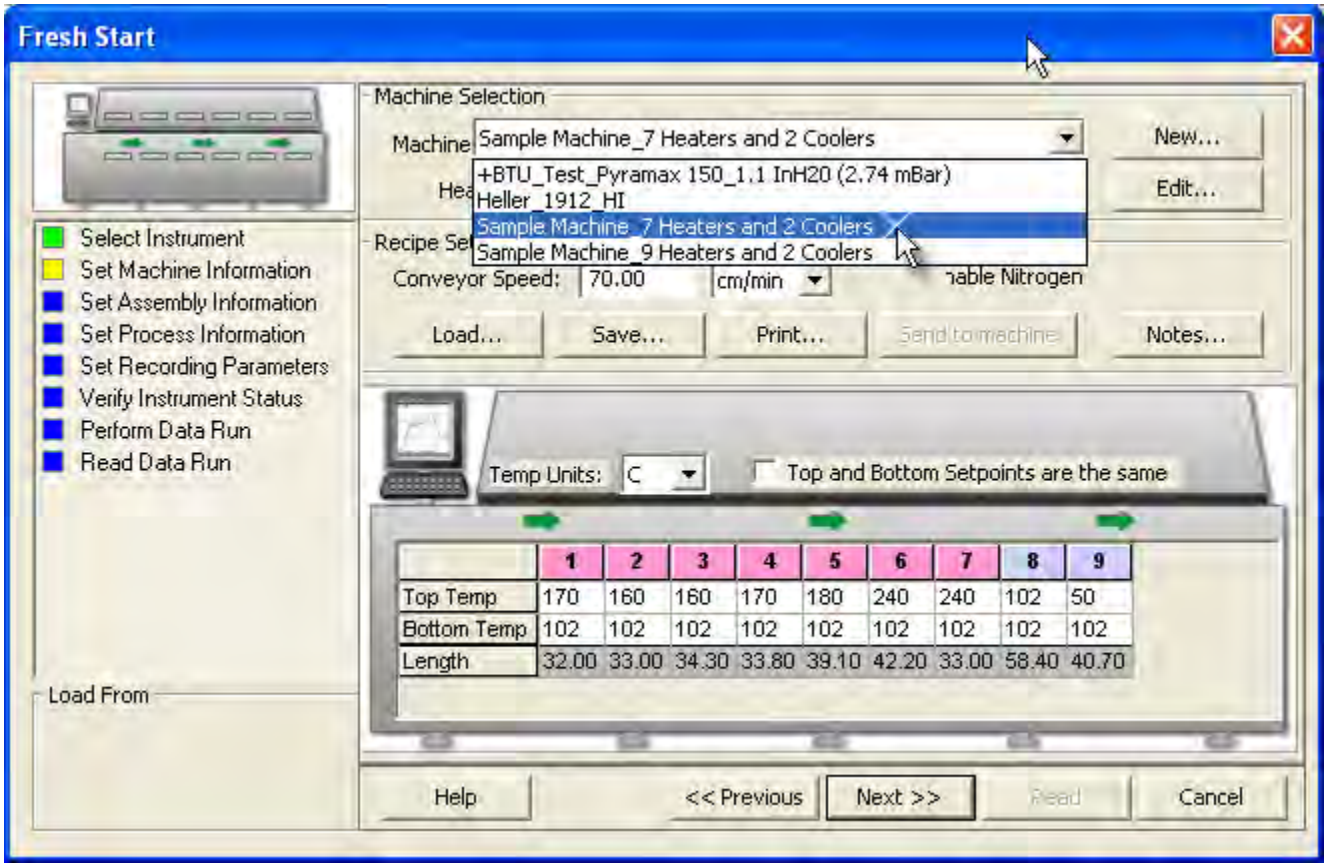
Current Completed Remaining

6) Select the desired instrument from the dialog box to make active. If there are none listed, click the ***Scan for Instruments*** command button to detect all available instruments.

If the software does not detect a M.O.L.E. Profiler, using the communication cable connect it to the computer and click the ***Scan for Instruments*** command button to search again. M.O.L.E.® MAP software allows multiple instruments to be connected to a computer at one time. Selecting the ***Scan for Instruments*** command button will detect all instruments and display them in the dialog box. If no instrument is detected the software displays all of the Demonstration thermal profilers to select from.

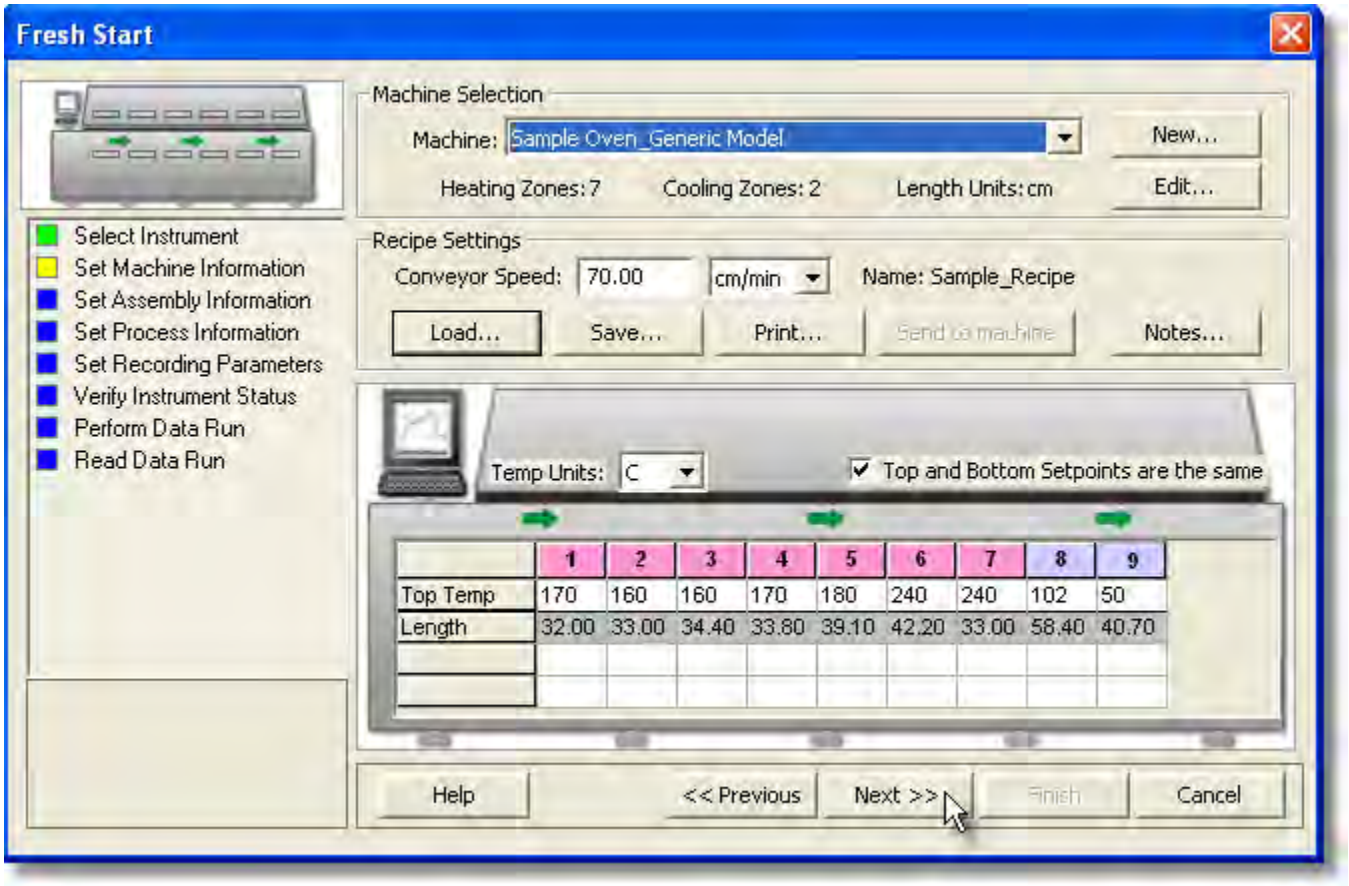


7) Click the ***Next*** command button.
8) Select a machine from the Machine drop down list. If the desired machine does not appear in the list click the ***New*** command button to create a new machine. Refer to topic ***Software>Menus>Machine>Create new Machine*** for more information.



9) Set the machine recipe settings such as Conveyor Speed, Zone Temperatures and Temperature units.

The software includes features to save and load machine recipe setting files. These files are helpful so the user can quickly recall machine information and ensure it is always the same.

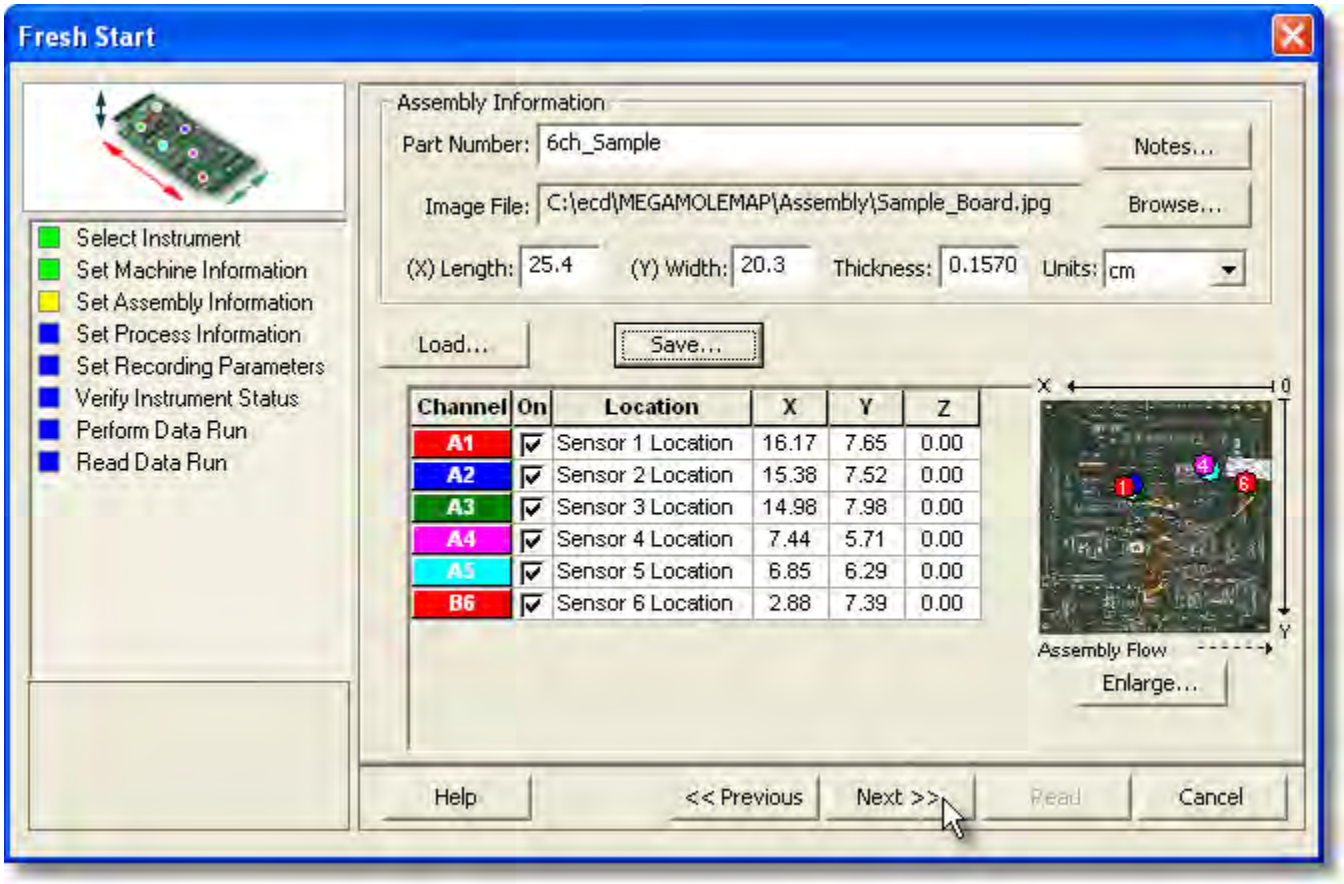


10) Click the ***Next*** command button.

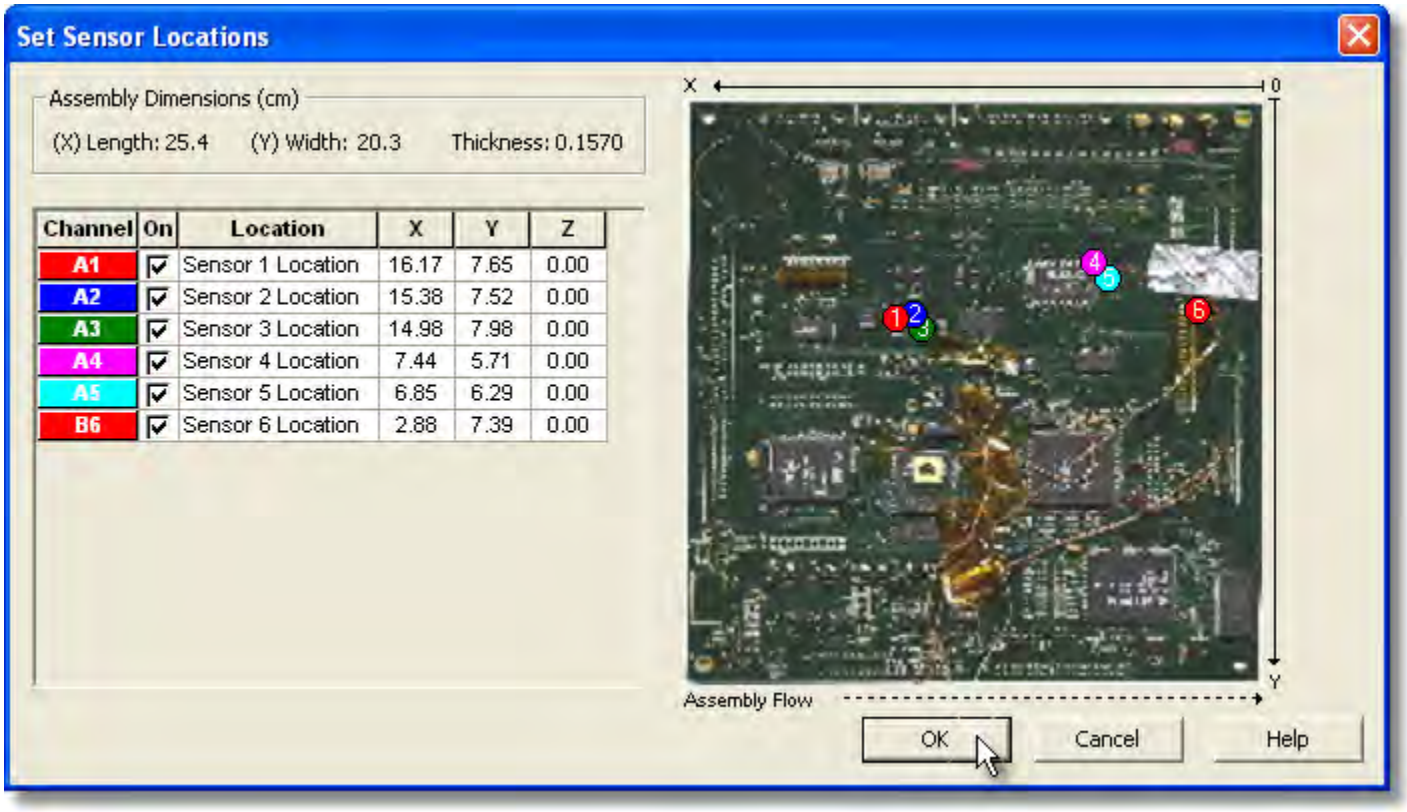
If no value is specified for the conveyor speed or the default machine temperature values, the software will remind the user to set them.

11) Enter the assembly information such as part number, board size, sensor locations and a product image.

When using a SuperM.O.L.E.® Gold Profiler, if fewer than six sensors used, it is important that the unused channels are turned OFF or shorting plug(s) are used for each unused channel. Refer to topic ***Service>SuperM.O.L.E. Gold>Constructing a Thermocouple*** for instructions on how to make a shorting plug.



If a product image has been selected, clicking the ***Enlarge*** command button displays the Set Sensor Locations dialog box where the user can specify the locations of each sensor. To move sensor locations, drag the sensor markers to the approximate location where the sensors are attached.



12) When finished, click the ***OK*** command button to accept or ***Cancel*** to return without making any changes.

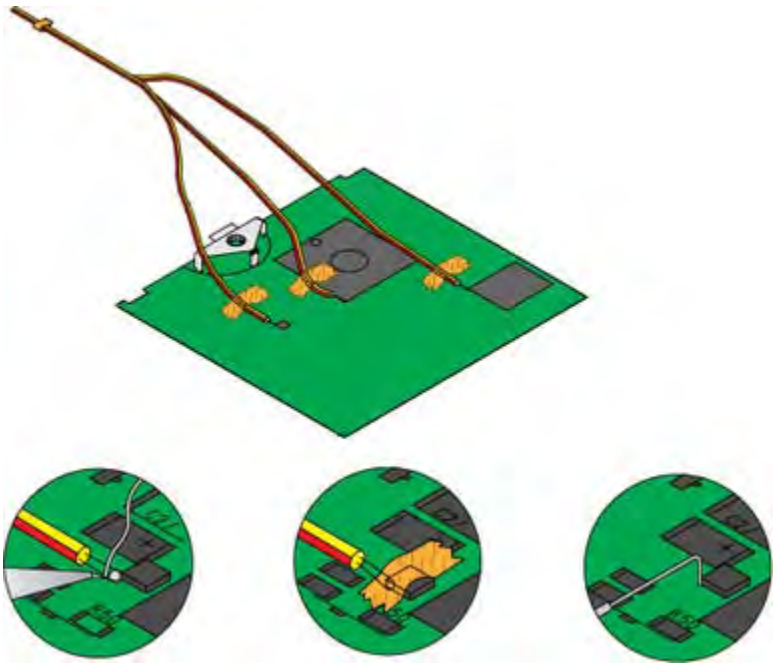
13) Click the ***Next*** command button.

14) Attach sensors to a test assembly.

When soldering a T/C sensor to a component with high temperature solder, use Kester SN10 (or equivalent) for 183°C eutetic solder or Kester SN5 (or equivalent) for lead free soldering.

15) Unwind the sensor leads and attach the connectors to the M.O.L.E. Profiler. Make sure to connect them to the same channel(s) that were configured in the wizard workflow. For example, if configuring the M.O.L.E. Profiler to have Channels 1 through 5 active, be sure the sensors are attached to the same five channels.

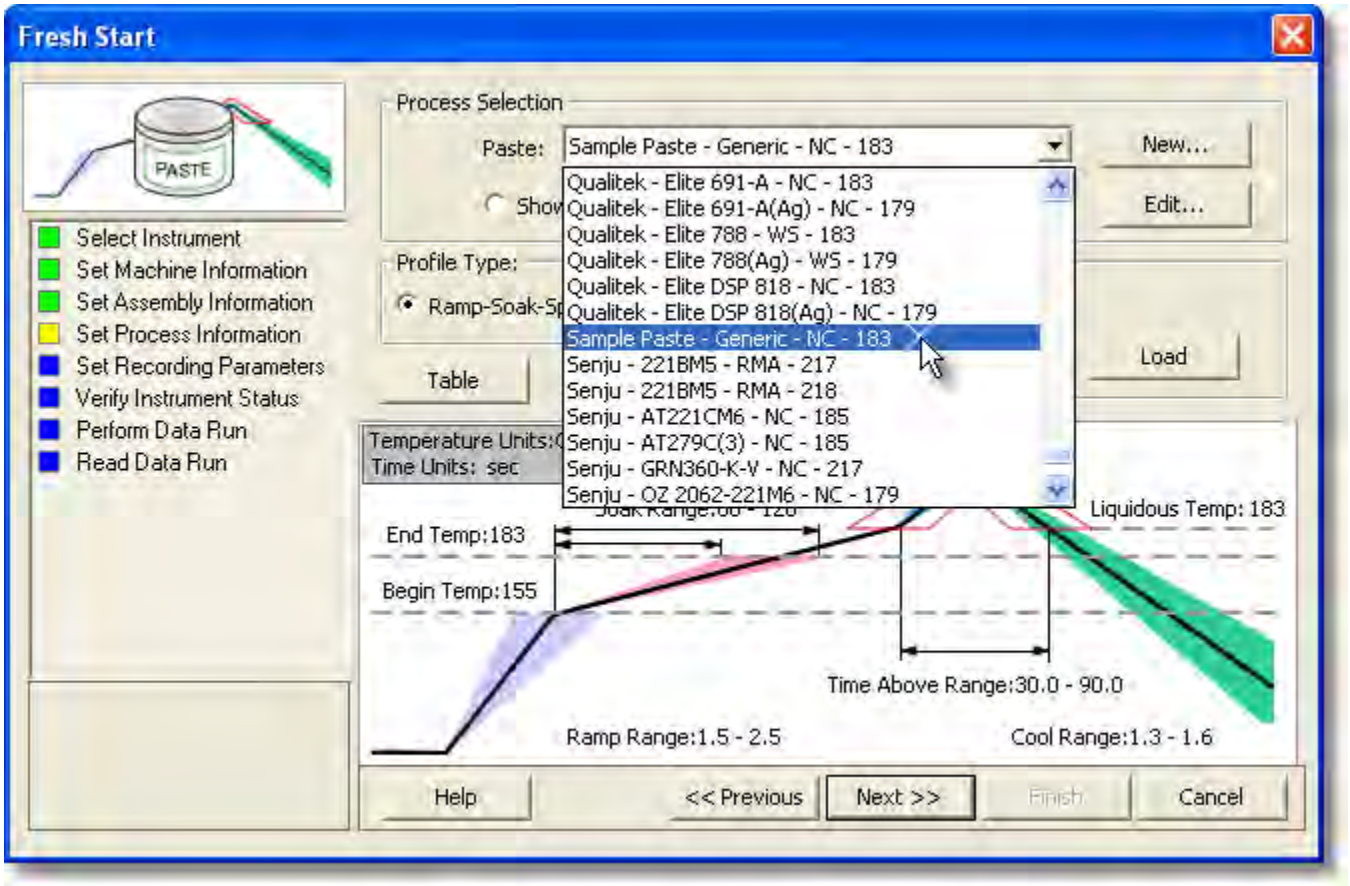
Kapton® tape, aluminum tape and Temprobe™ can also be used to hold T/C wire to the test assembly.



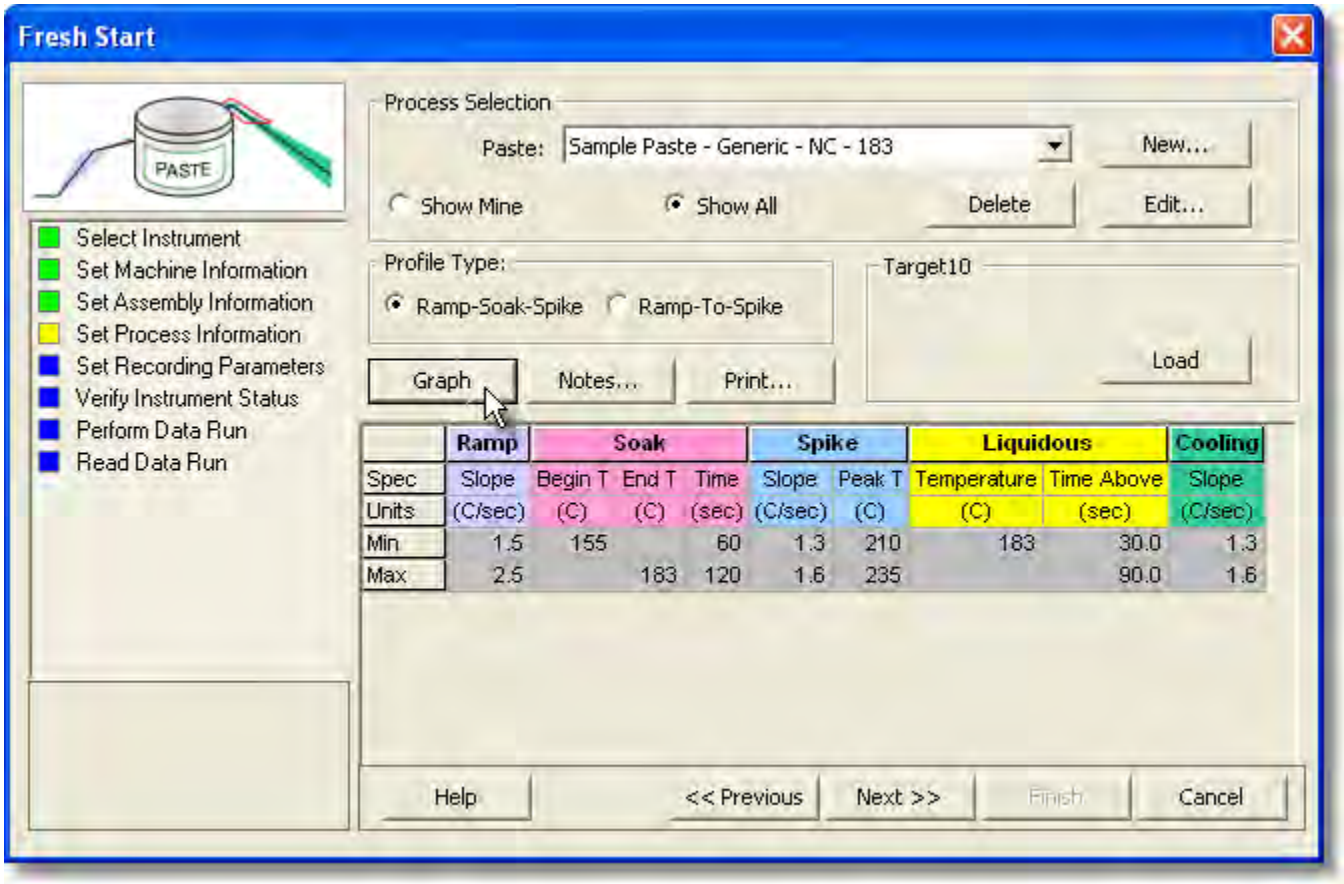
16) Select your process specification. Select a ***Paste*** from the database or previously created ***Target 10 Specification***. If your Paste does not appear in the database list click the ***New*** command button to create a new one. Refer to topic ***Software>Menus>Process>Create new Paste*** for more information.

17) Then choose the ***Profile Type*** (Ramp-Soak-Spike or Ramp-to-Spike). Ramp-Soak-Spike profile types are the only type allowed to be edited.

When the user selects a paste from the database, they can use the radio buttons below the drop down box to filter and display only the user created pastes from paste database.

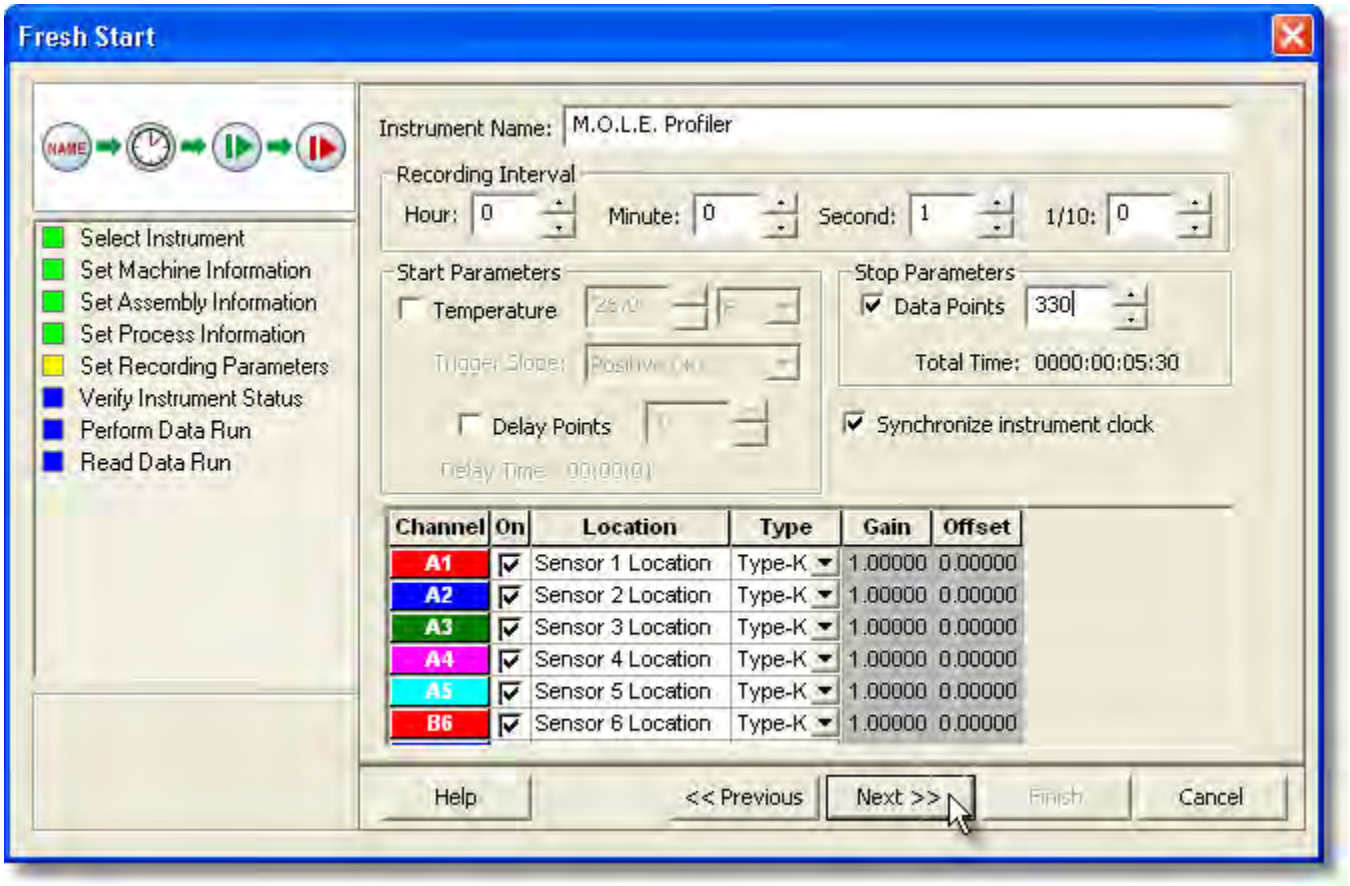


Once a paste is selected the specifications are displayed on the graph. The software also allows paste specification data to be viewed in a table view by clicking the ***Table*** command button.



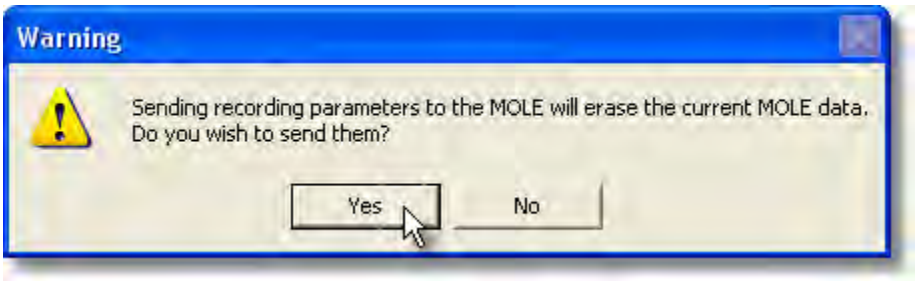
18) Click the ***Next*** command button

19) Set Recording Parameters such as the instrument name, recording interval, start parameters and stop parameters. This step is where the user can also turn a sensor channel **ON** or **OFF**, set the sensor location description and sensor type. Refer to topic ***Software>Menus>M.O.L.E.>Set Recording Parameters*** for detailed information for each setting.



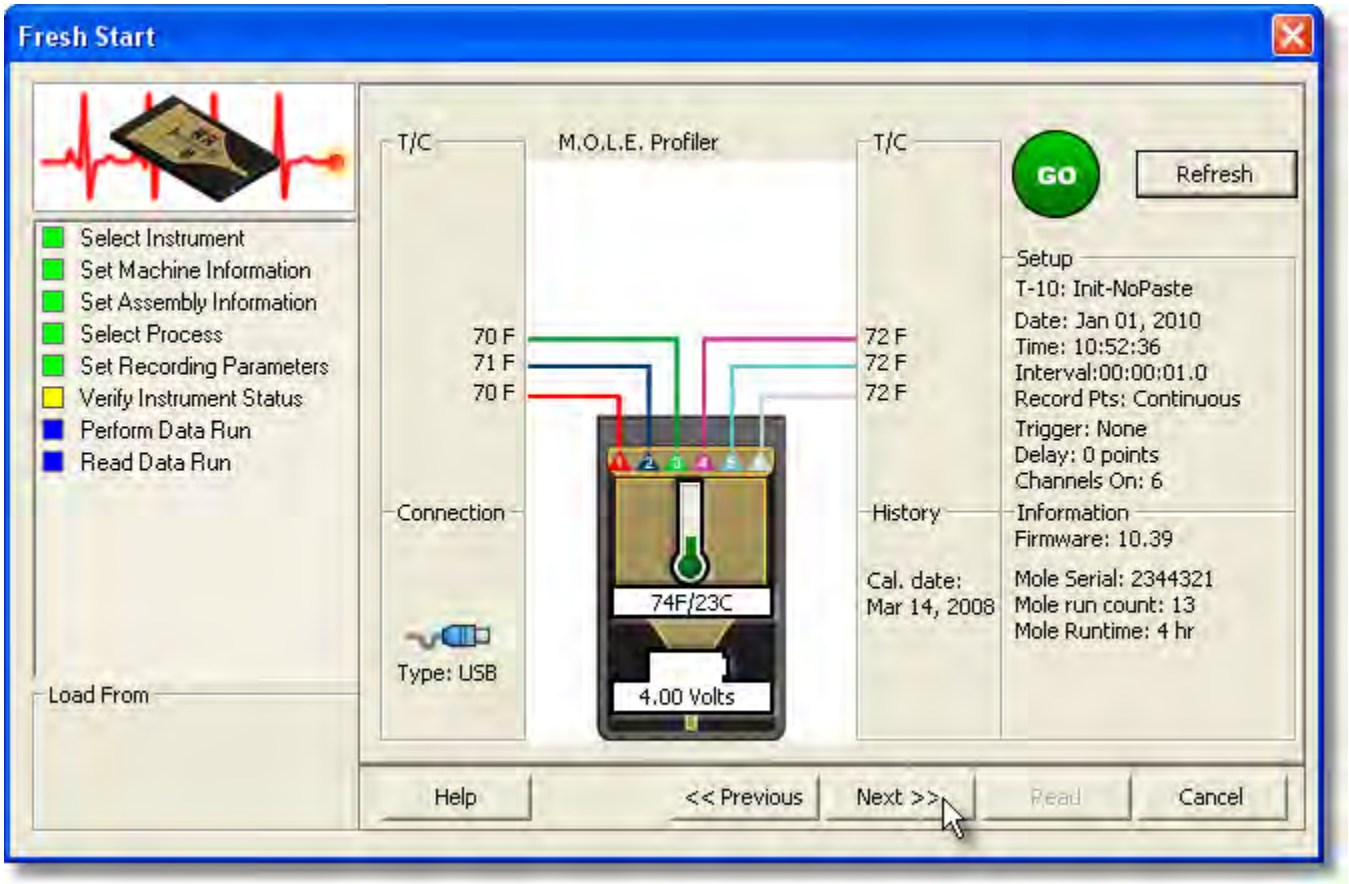
20) Click the ***Next*** command button.

If the currently selected M.O.L.E. Profiler is a SuperM.O.L.E.® Gold, sending recording parameters will erase the data currently stored in the M.O.L.E. Profiler. The software will warn the user with a message box.



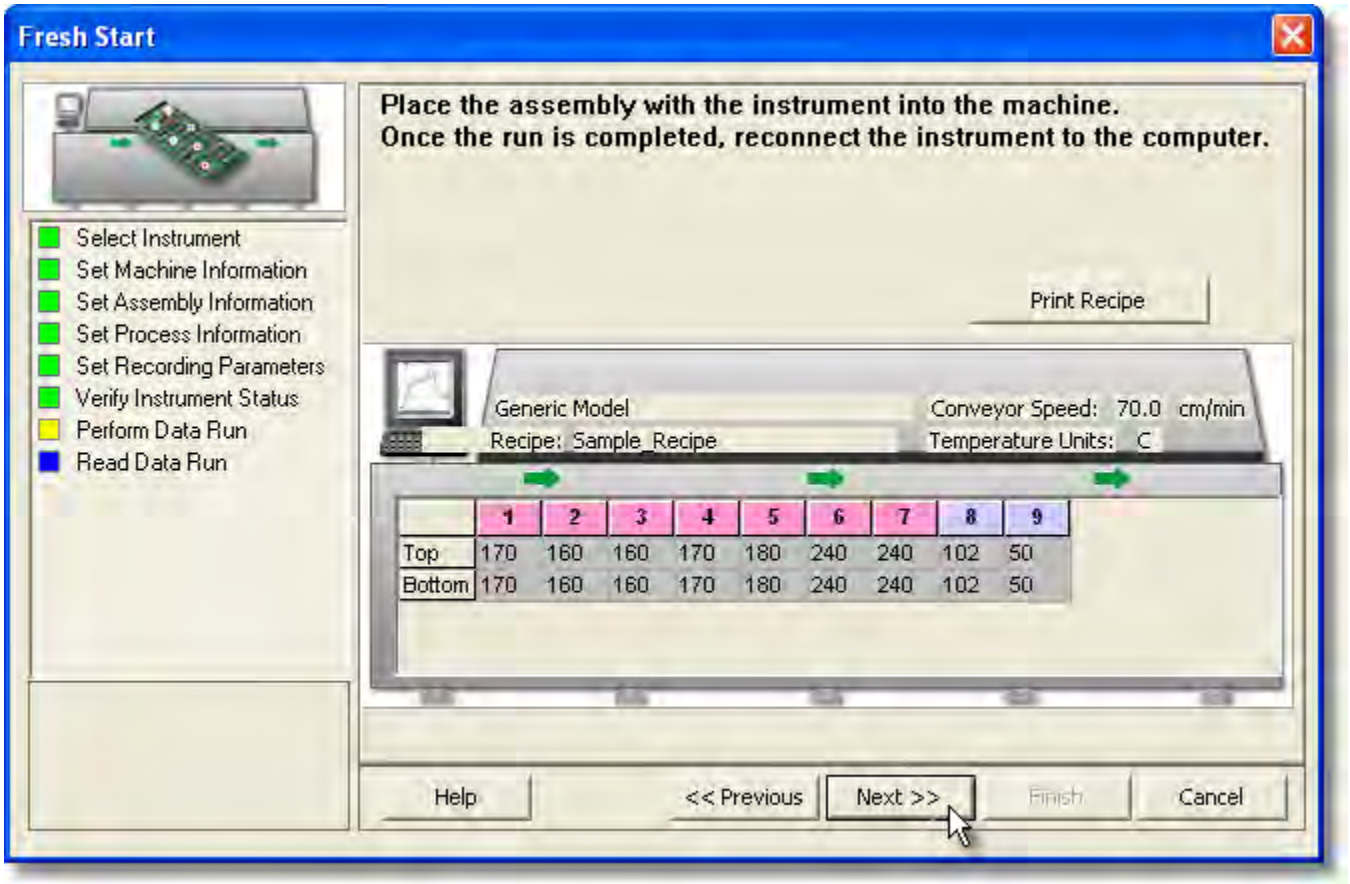
21) Verify the instrument status. This dialog box displays the health of the M.O.L.E. Profiler such as Power Pack charge, internal temperature, thermocouple temperatures.

If everything is ***OK***, the dialog box displays a **GREEN** sign. If there are any items that may prevent the user from collecting good data, they are highlighted and a **RED** sign is displayed.



22) Click the ***Next*** command button.

23) Review the oven settings and click the ***Next*** command button to continue.


Fresh Start
Place the assembly with the instrument into the machine.
Once the run is completed, reconnect the instrument to the computer.
Select Instrument
Set Machine Information
Set Assembly Information
Set Process Information
Set Recording Parameters
Verify Instrument Status
Perform Data Run
Read Data Run
Print Recipe
Generic Model
Recipe: Sample_Recipe
Conveyor Speed: 70.0 cm/min
Temperature Units: C
1 2 3 4 5 6 7 8 9
Top 170 160 160 170 180 240 240 102 50
Bottom 170 160 160 170 180 240 240 102 50
Help
<< Previous
Next >>
Finish
Cancel

Step 2: Perform Data Run

1) Place the M.O.L.E. Profiler in the appropriate thermal barrier making sure the Thermocouple and/or Sensor wires are not damaged.

> Never permit the M.O.L.E. Profiler to exceed the absolute maximum warranteed internal temperature, as permanent damage may result. The warranty will not cover damage caused by exceeding the maximum specified internal temperature.

2) After the oven stabilizes, turn the M.O.L.E. Profiler ON and press the record button.

   When using a SuperM.O.L.E.® Gold press the Start/Stop button on the M.O.L.E. once to initiate data collection. When the M.O.L.E. is “ON”, the Activity light will flash quickly and then flash at the log interval for the duration of the experiment.

> The record button will need to be pressed even if the M.O.L.E. profiler is configured to start if the start parameters **Trigger Temperature** or **Points Delay** are configured.

3) Pass the thermally protected M.O.L.E. Profiler and test assembly through the machine.

It is highly recommended that protective gloves are used when retrieving the thermal barrier from the oven and when opening the thermal barrier.

4) As the test assembly and M.O.L.E. Profiler emerge from the machine, carry the test assembly with sensors attached and the M.O.L.E. Profiler in the Thermal barrier to a table or flat surface.

If a sensor is removed before the M.O.L.E. Profiler has stopped collecting data, the data for that channel might become distorted.

5) Open the Thermal barrier and if the Activity LED is still flashing this means the M.O.L.E. Profiler is still recording and it must be stopped.

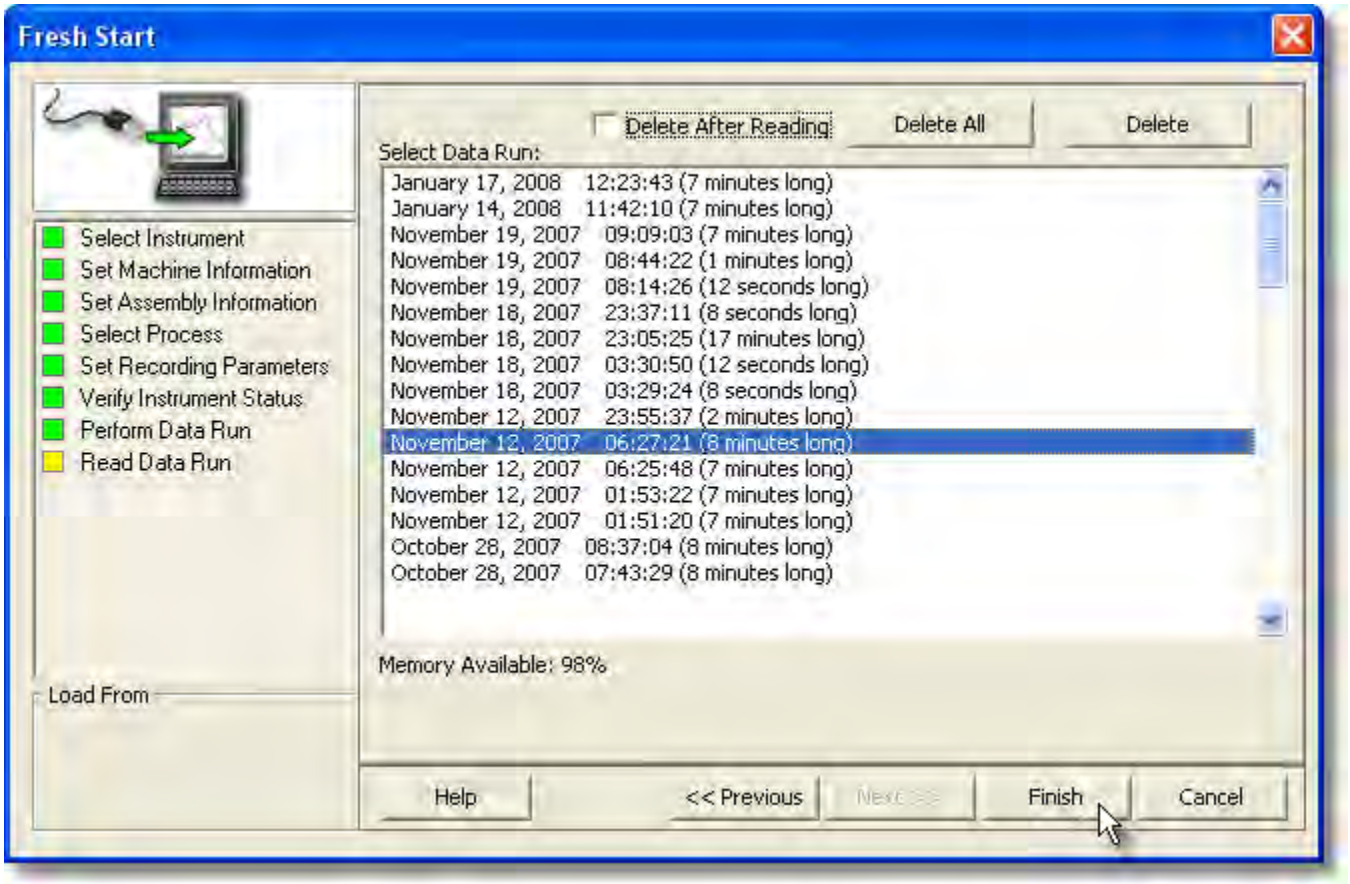
When using a SuperM.O.L.E.® Gold Profiler, press and **Hold** the Start/Stop button until the Activity LED turns OFF. Pressing the Start/Stop button briefly will restart the data collection process and erase all the data in memory.

6) Remove the M.O.L.E. Profiler from the Thermal barrier. Handle it carefully, as the case may still be warm.
7) Disconnect the sensors from the M.O.L.E. Profiler and place it near the computer.

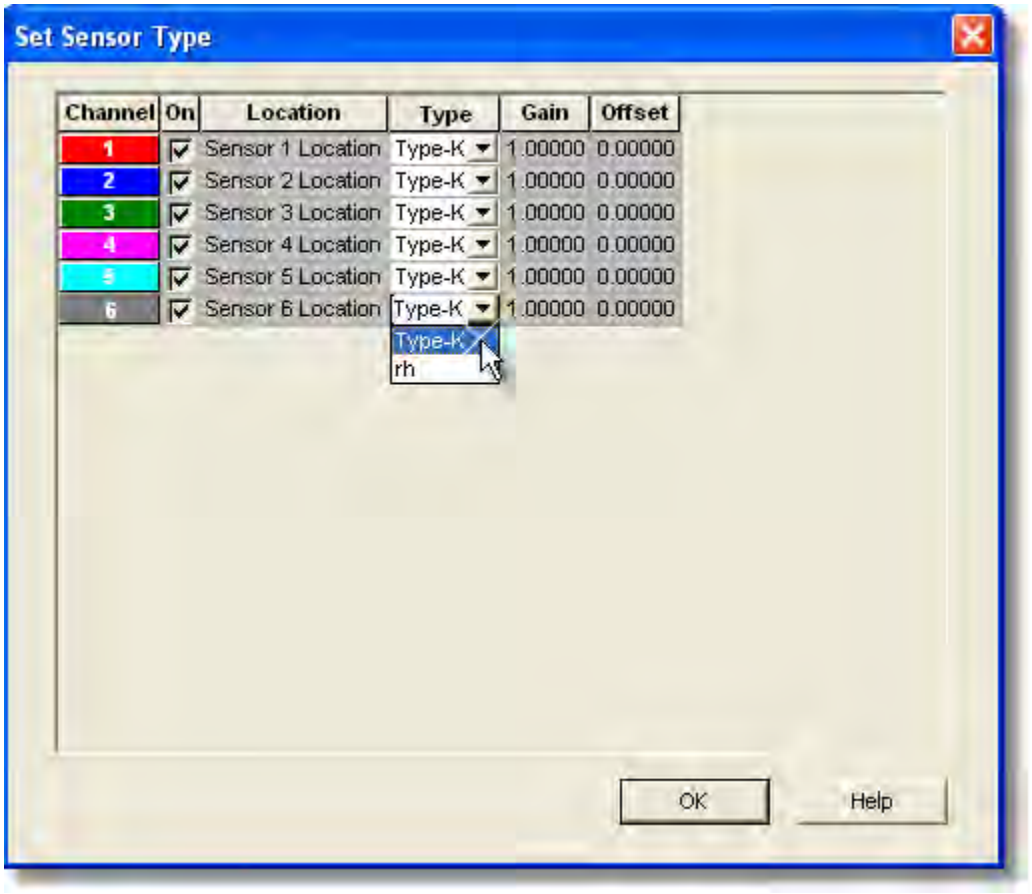
Step 3: Read Data Run

1) Restore the software and click the ***Finish*** command button to read the data run from the M.O.L.E. Profiler.

This step of the wizard allows the user to remove a selected data run from the M.O.L.E. Profiler by either selecting the ***Delete After Reading*** check box or selecting the ***Delete*** command button and removing it before downloading. This feature is not available for the SuperM.O.L.E.® Gold Thermal Profiler as it does not have the ability to store more than one data run.

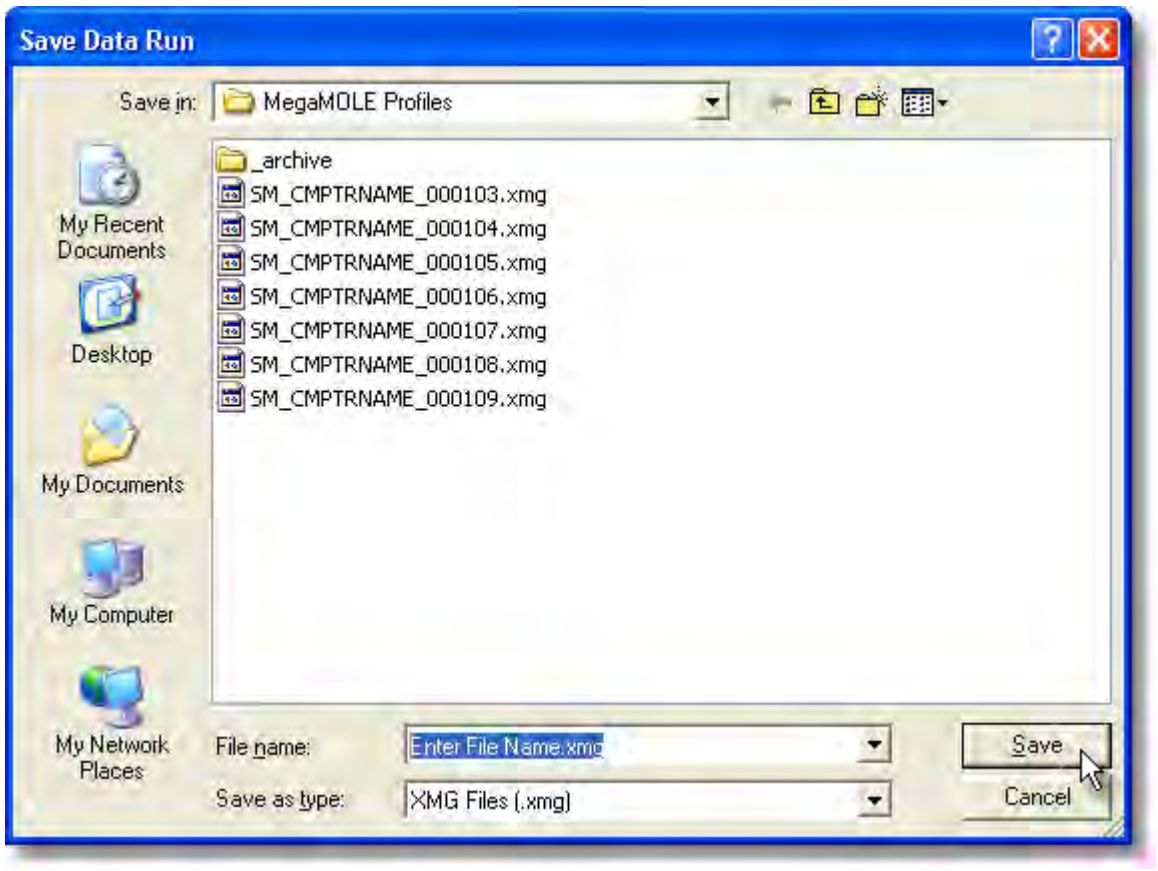


- When using a SuperM.O.L.E.® Gold Thermal Profiler, prior to reading the data run, the software prompts the user to select the sensor type for the active channels. When finished select the ***OK*** command button to proceed.

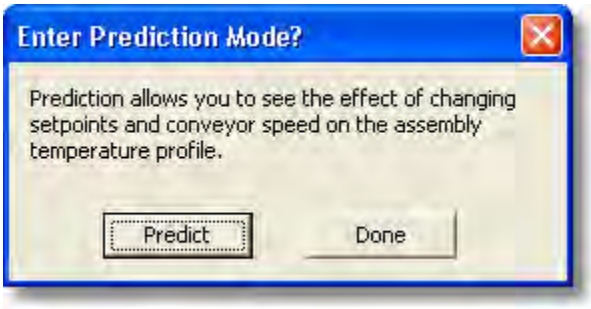


2) When the data run has been downloaded, the software suggests a default file name or prompt the user to specify a new file name (*.XMG).

When saving a data run (***.XMG**) to a different file directory other than the current Working directory, the software automatically sets the new file directory as the current Working Directory. This process does not delete any data run files in the previously set Working directory and can be quickly accessed using the ***Recent Working Directory*** command on the ***File*** menu.



3) When finished, click the ***Save*** command button.
4) The software then prompts the user if they want to enter Prediction mode. Entering prediction mode enables the user to change a zone temperature values or the conveyor speed and predict the outcome of that change on the data run profile. Refer to topic ***Software>Menus>Tools>Prediction*** for more information.



5) Click the ***Predict*** command button to enter Prediction mode or ***Done*** to complete the workflow wizard .

The information is automatically saved in the data run file (.XMG) and the experiment data can now be analyzed with the software tools.

4.3. Operation - Verify

This section guides the user through a typical verification process. Portions of this section require referral to some software sections of the Users Help System for additional information.

> The M.O.L.E.® MAP software is designed to be used with the ECD MEGAM.O.L.E.®, V-M.O.L.E.®, SuperM.O.L.E.® Gold, SuperM.O.L.E.® Gold 2 and PTP® VP-8 Thermal Profilers. Images used in software sections of this Users Help System typically refer to the SuperM.O.L.E.® Gold 2.

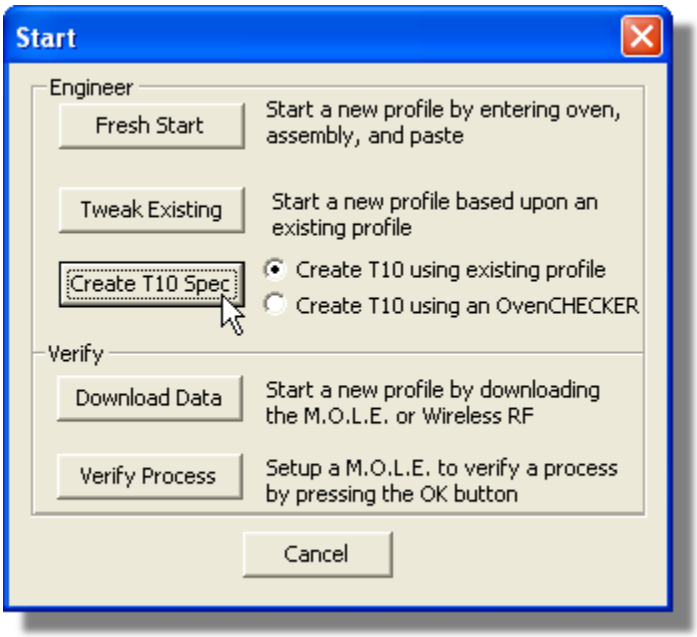
Using the Engineer mode a Target 10 specification can be created by using a data run and recipe or a data run and recipe already developed. Once this file has been created, it can be used to verify a process or machine performance along with the M.O.L.E. Profiler and/or OvenCHECKER™. Refer to topic ***Optional Accessories>Products>OvenCHECKER™*** for more information on the OvenCHECKER™.

After the hardware is setup and the software is installed, use the following steps to verify a process using a M.O.L.E. Profiler.

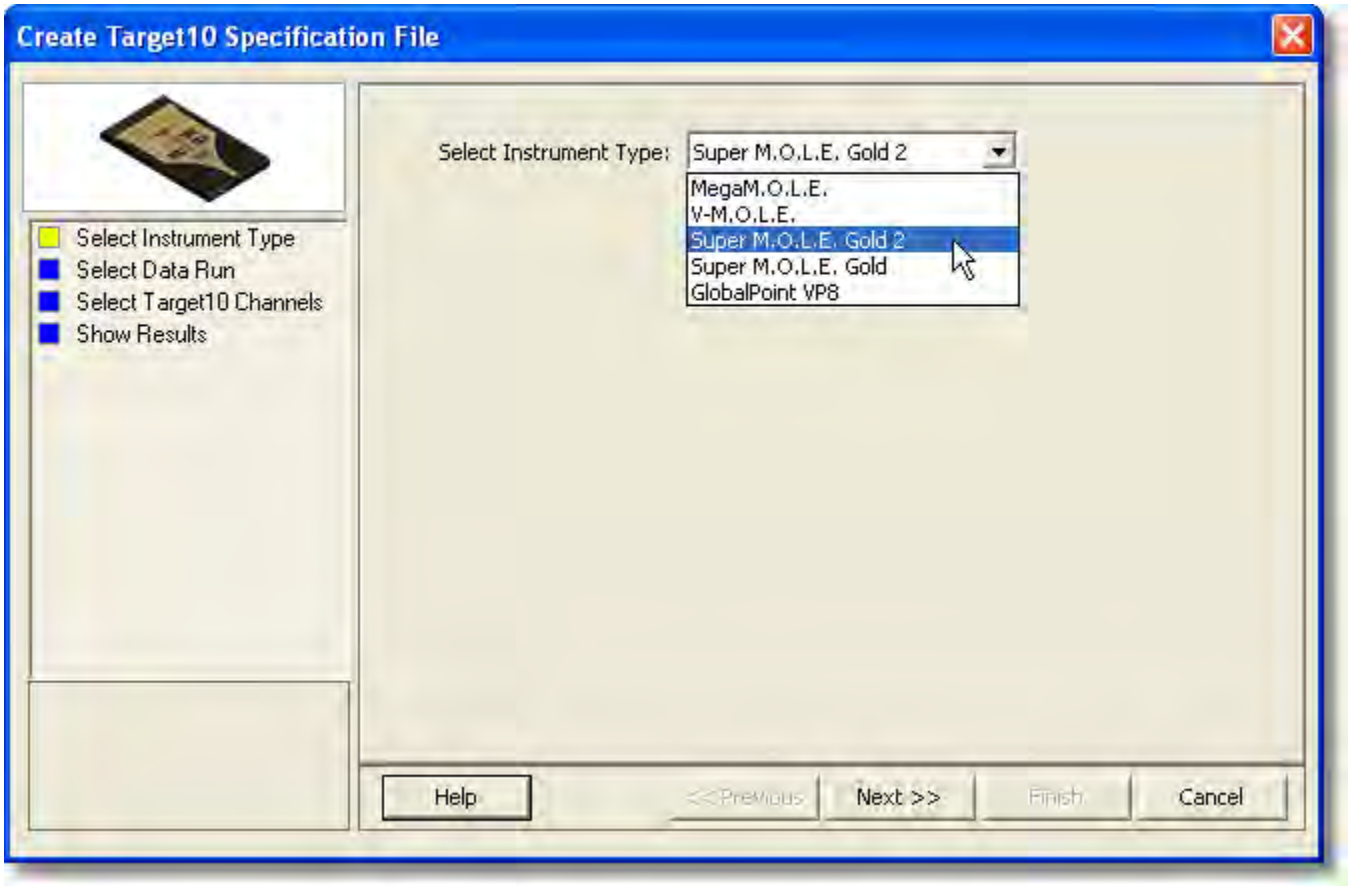
Step 1: Create Target 10 File

> This is available when in Engineer Mode.

1) On the ***File*** menu, click ***New***. A message box appears with the five workflow wizard options.

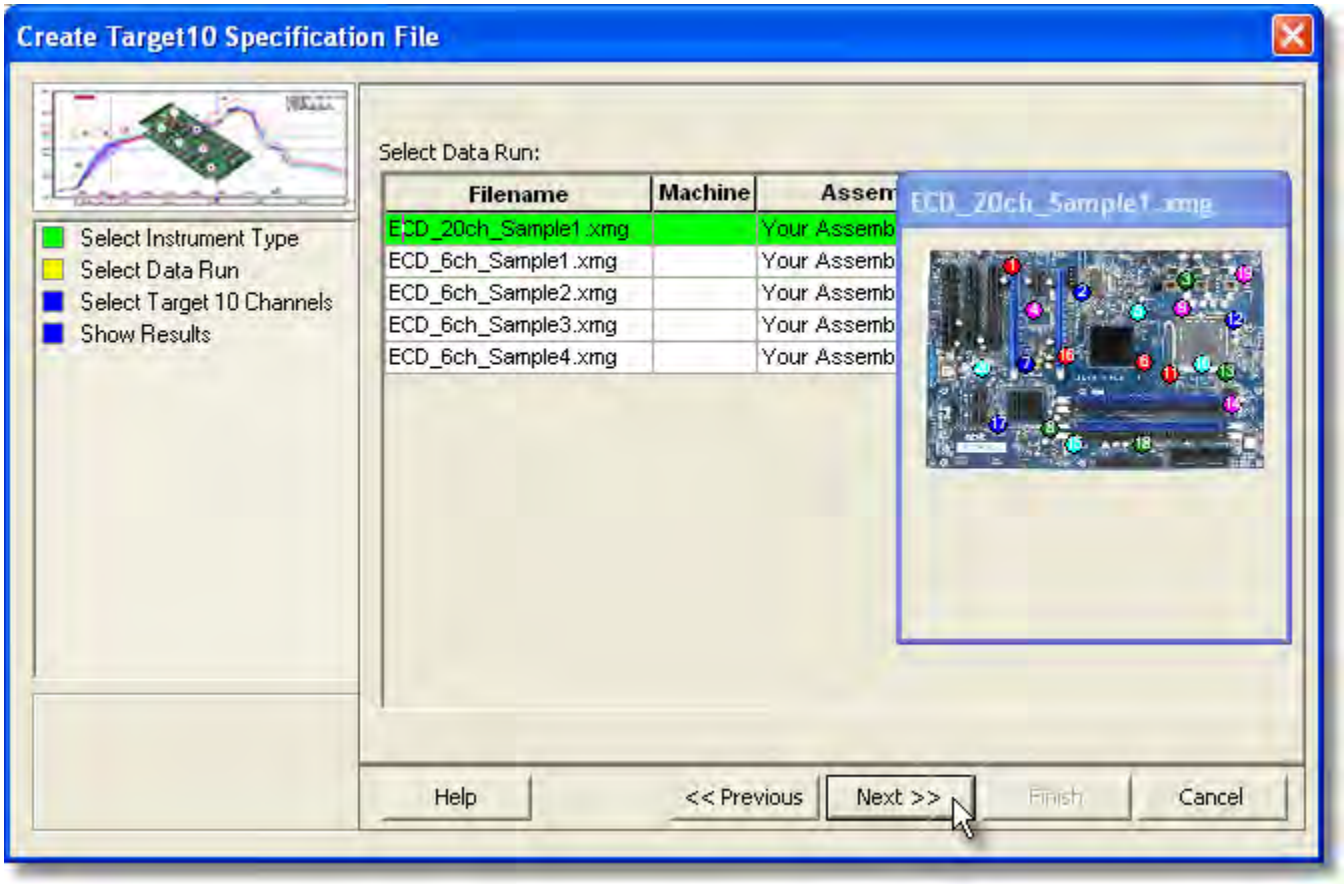


2) On the ***Start*** dialog box, click the ***Create T-10*** command button and the workflow wizard appears.
3) Select the instrument type that will be used to verify the process.



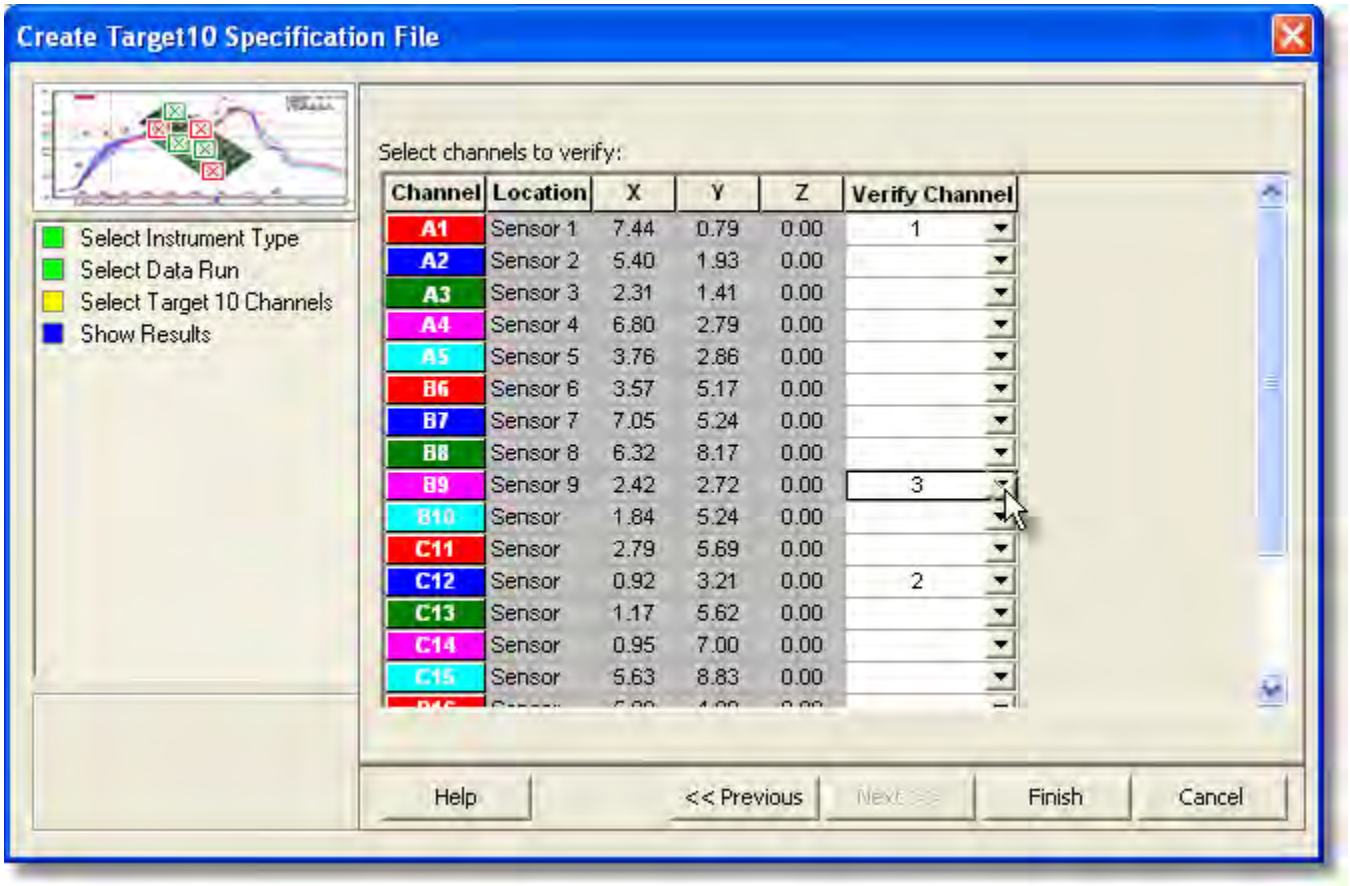
4) Click the ***Next*** command button.
5) Select a data run. This is the data run that is known to be good and the user wishes to confirm the process is reproducing faithfully using the verify process.

If the selected data run was created using a recording interval other than 1.0 second, the Slope calculation will not be included in the Target10 Specification.



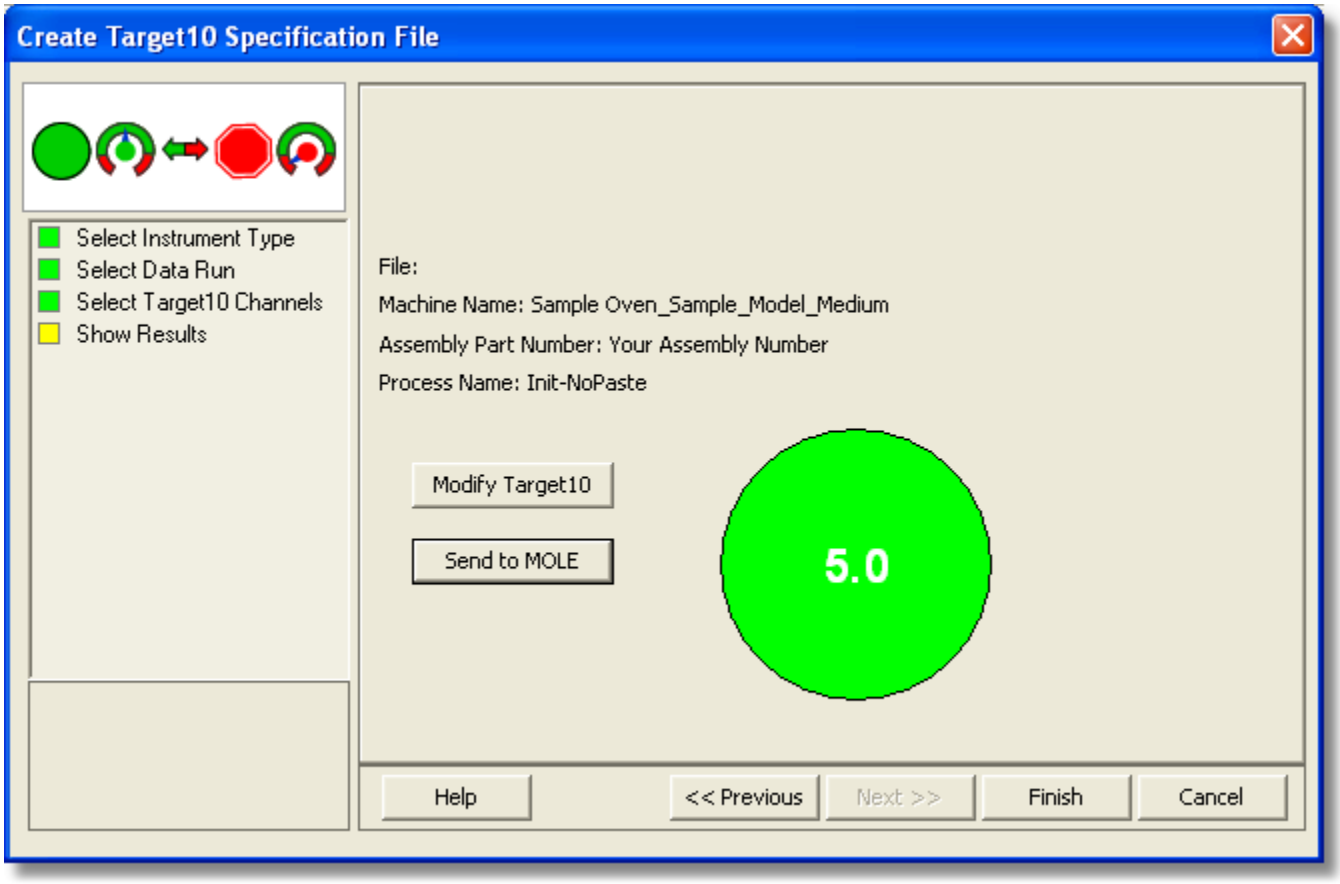
This list displays the data runs from the currently open working directory.

6) Click the ***Next*** command button.
7) Map the desired channels from selected data run to channels of the M.O.L.E. Profiler. These typically are the most important channels that best represent the process being verified.



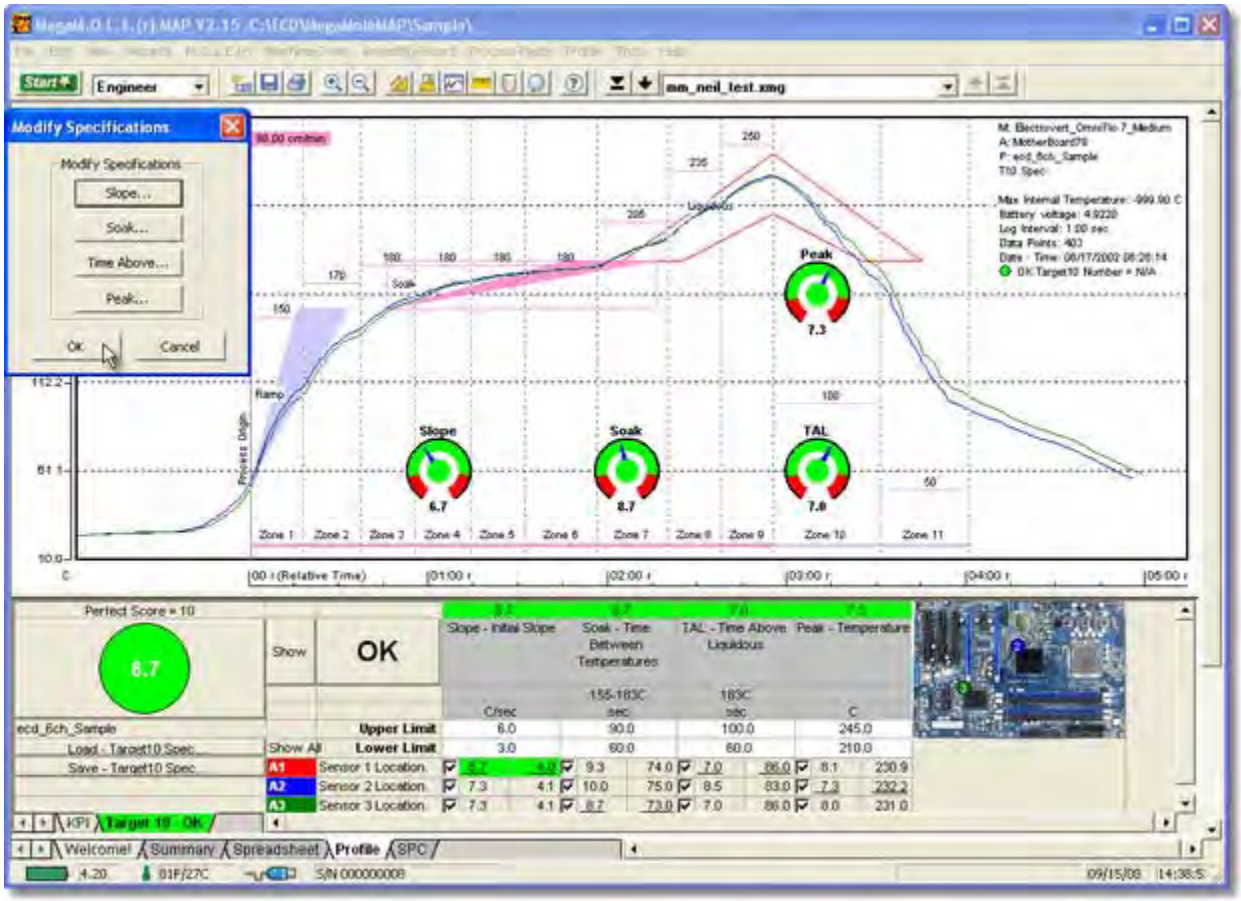
The software displays all the channels in the selected thermal profile. The thermal profile selected in the sample was taken from a 20-channel MEGAM.O.L.E.® thermal profile.

8) Click the ***Next*** command button.
9) Once the channels are mapped, review the results of the Target 10 specification. The user can then decide if they wish to send these to the M.O.L.E. Profiler or make final modifications to the Slope, Soak, Time Above and/or Peak parameter.

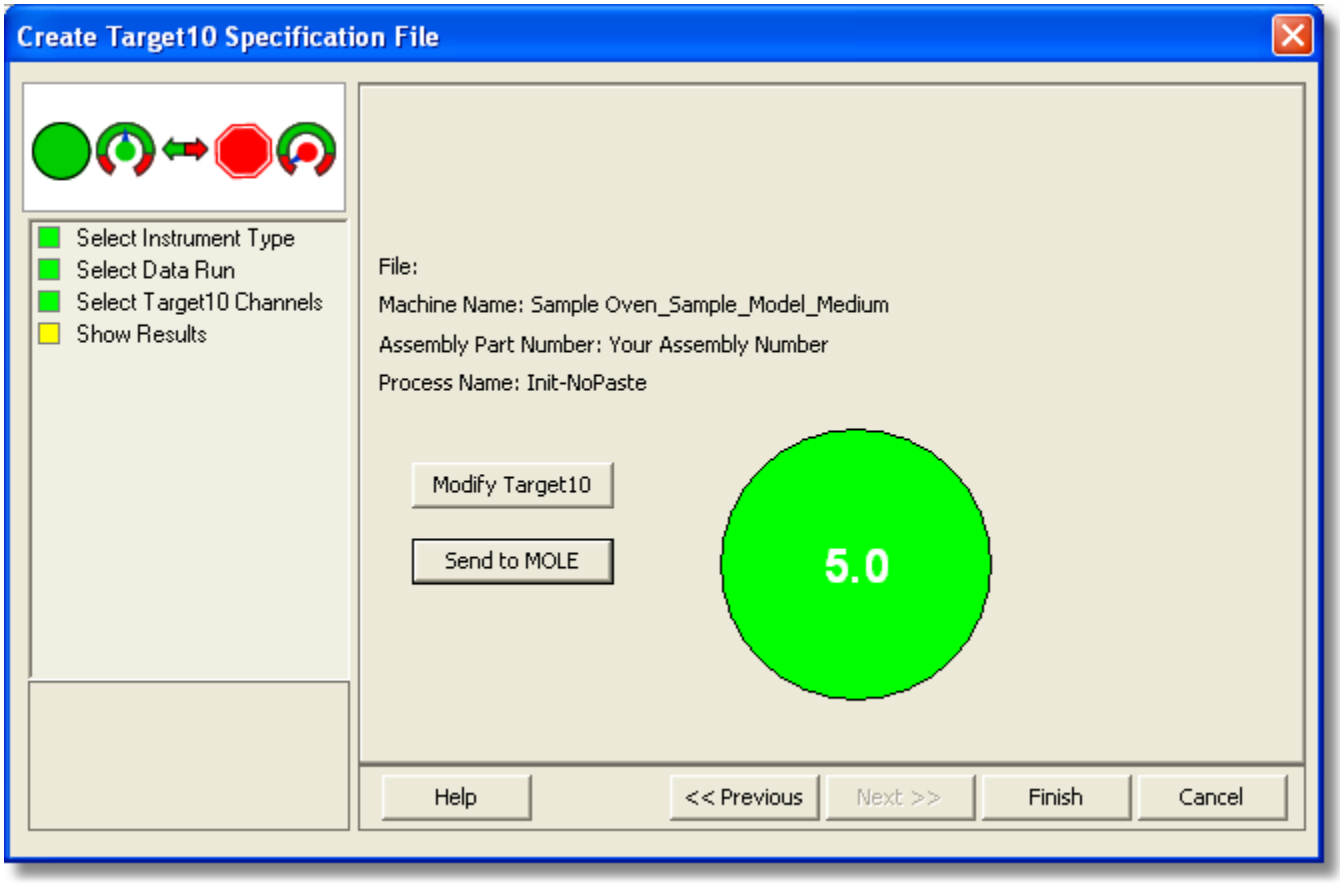


10) If the user decides to make modifications, click the ***Modify Target10*** command button and the the Target 10-OK tab is displayed. Make the desired modifications to the Slope, Soak, Time Above and/or Peak parameter specifications.

If any of the parameter specifications are changed the ***OK*** button will inform the user by displaying (***OKModified***).

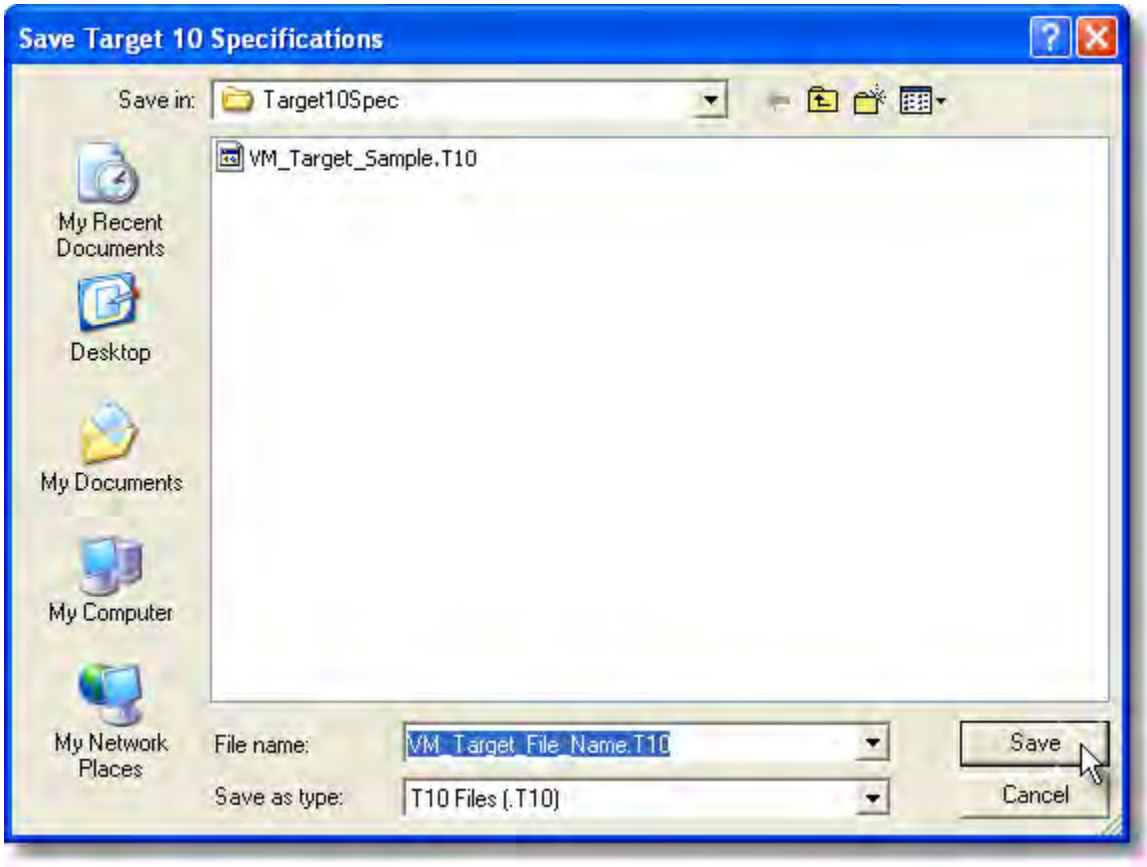


11) Click the ***OK*** command button to accept the modified specifications or ***Cancel*** to discard them and return to the workflow wizard.



12) If the user either decides to send the Target10 to the M.O.L.E. Profiler or complete the wizard by clicking the ***Finish*** command button, the software prompts the user to save the Target 10 file (***.T10**).

Only the MEGAM.O.L.E.®, V-M.O.L.E.® and SuperM.O.L.E.® Gold 2 can have the Target 10 sent to them. When using the SuperM.O.L.E.® Gold the Target 10 will only be able to be saved as a file.

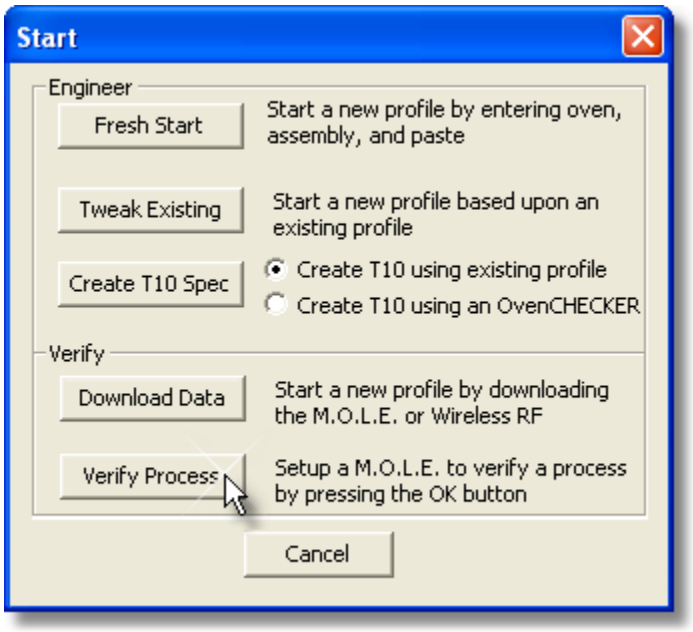


13) When finished naming the file, click the ***Save*** command button to complete the workflow wizard.

Step 2: Verify Process

This is available in both Engineer & Verify Modes.

1) Connect the M.O.L.E. Profiler to the computer. Refer to ***Basics>Setup>Communications Setup*** for more information.
2) On the ***File*** menu, click ***New***. The ***Start*** dialog box appears with the five workflow wizard options.



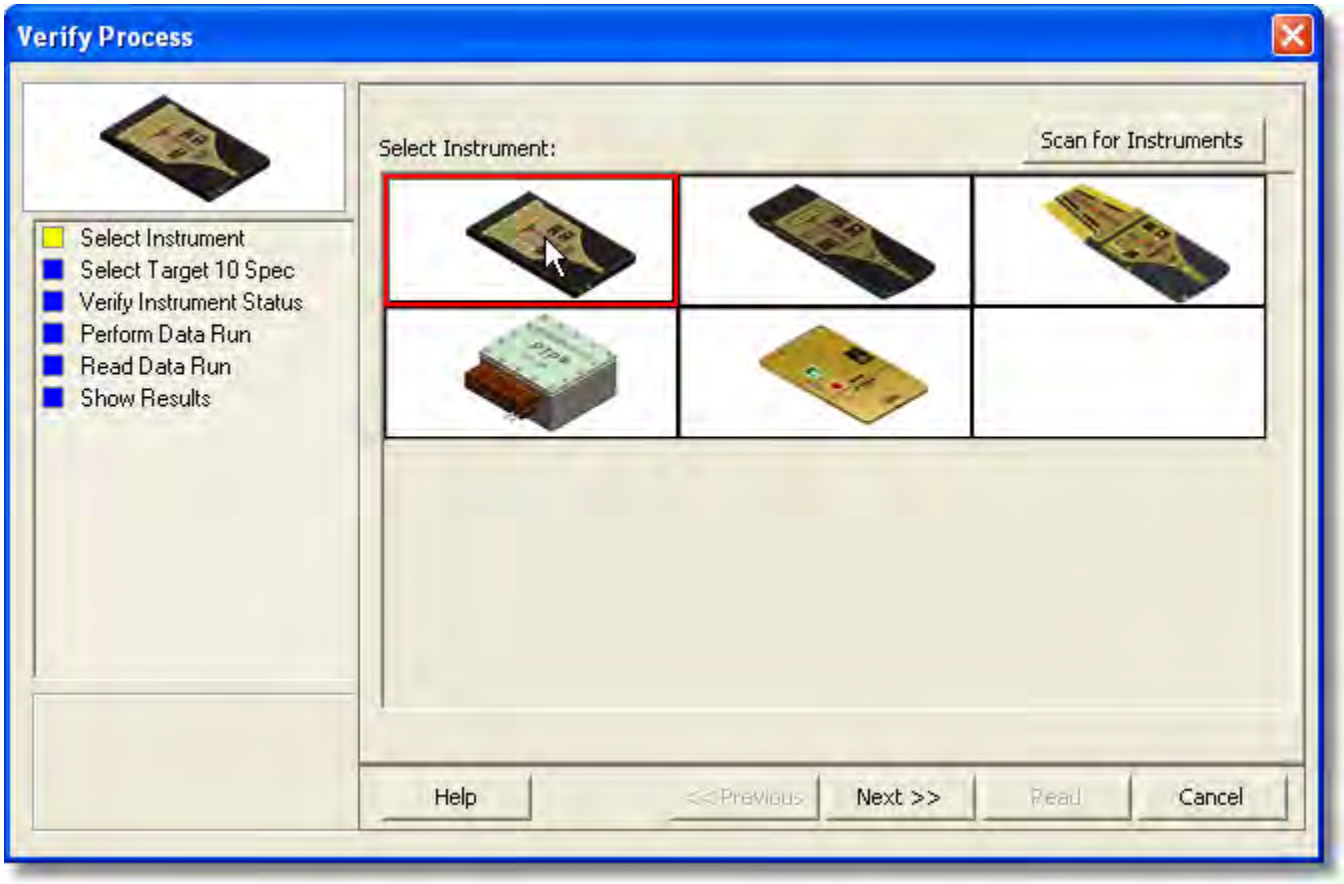
3) On the ***Start*** dialog box, click the ***Verify Process*** command button and the workflow wizard appears.

When navigating through the wizard, the step list on the left uses a color key to inform the user of the current step, steps that have been completed and remaining steps.

Current Completed Remaining

4) Select the desired instrument from the dialog box to choose the M.O.L.E. Profiler. If a M.O.L.E. Profiler has already been selected during a different process, the software automatically selects the M.O.L.E. Profiler connected to the COM Port previously used.

If the software does not detect a M.O.L.E. Profiler, using the communication cable connect it to the computer and click the ***Scan for Instruments*** command button to search again. M.O.L.E.® MAP software allows multiple instruments to be connected to a computer at one time. Selecting the ***Scan for Instruments*** command button will detect all instruments and display them in the dialog box. If no instrument is detected the software displays all of the Demonstration thermal profilers to select from.

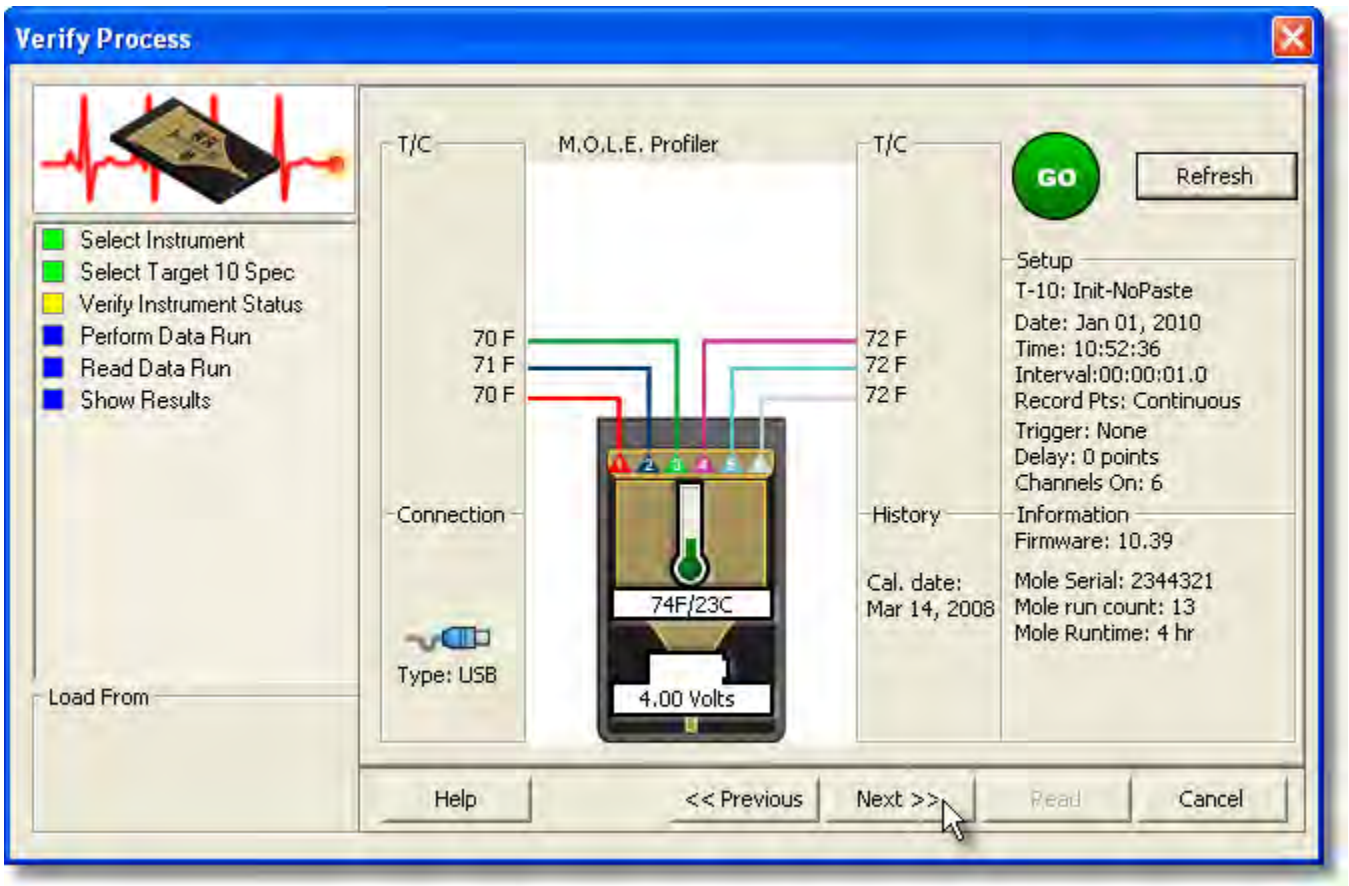


5) Click the ***Next*** command button.
6) Select a Target 10 file from the list to verify. When placing the mouse cursor over a file on the list, a thumbnail image appears to help properly identify the assembly associated with it.

When selecting a Target 10 file to verify, the software displays files located in the ***\ECD\MegaMoleMAP\Target10Spec*** directory that are associated with the currently selected instrument.

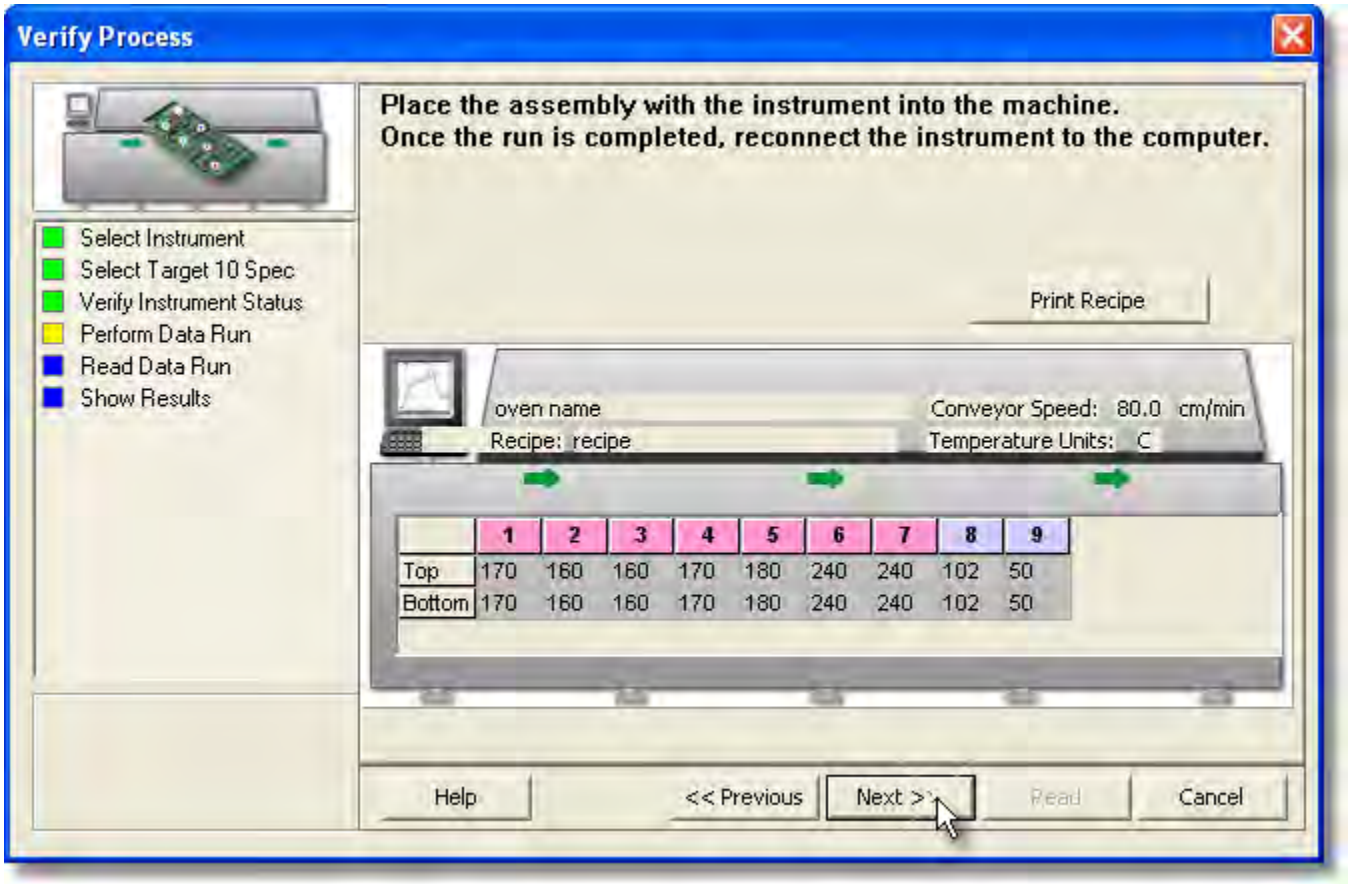
7) Click the ***Next*** command button.
8) Verify the instrument status. This dialog box displays the health of the M.O.L.E. Profiler such as battery charge, internal temperature, thermocouple temperatures.

If everything is ***OK***, the dialog box displays a **GREEN** sign. If there are any items that may prevent the user from collecting good data, they are highlighted and a **RED** sign is displayed.



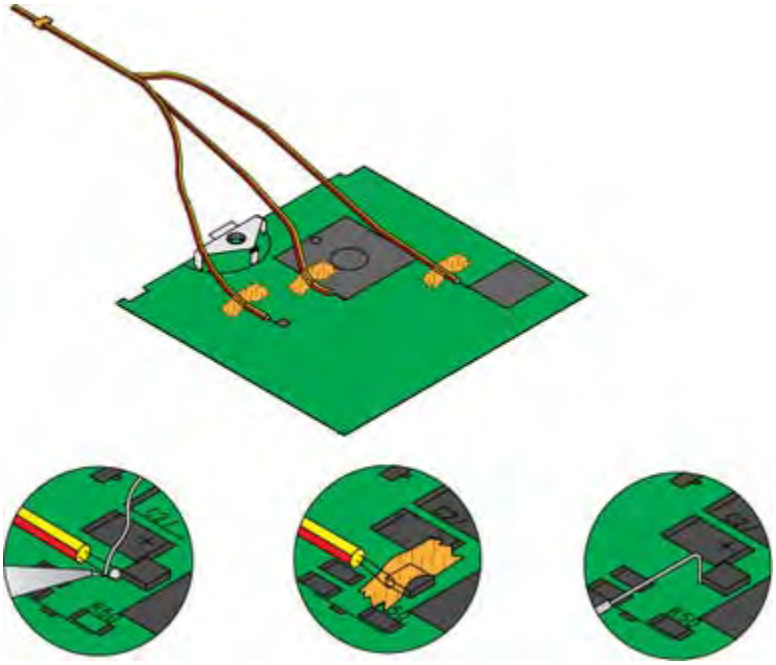
9) Click the ***Next*** command button.

10) Review the machine settings and click the ***Next*** command button to continue.



11) Attach sensors to a test assembly. Make sure to connect them to the same locations that were used when creating the verification specification file. If the same test assembly is being used that was used to create the verification specification file, no thermocouple attachment will be required.

When soldering a T/C sensor to a component with high temperature solder, use Kester SN10 (or equivalent) for 183°C eutetic solder or Kester SN5 (or equivalent) for lead free soldering. Kapton® tape, aluminum tape and Temprobe™ can also be used to hold T/C wire to the test assembly.



12) Unwind the thermocouple sensor leads and attach the connectors to the M.O.L.E. Profiler.

Never permit the M.O.L.E. Profiler to exceed the absolute maximum warranteed internal temperature, as permanent damage may result. The warranty will not cover damage caused by exceeding the maximum specified internal temperature.

13) After the oven stabilizes, turn the M.O.L.E. Profiler on and press the record button.

> The record button will need to be pressed even if the M.O.L.E. Profiler is configured to start if the start parameters **Trigger Temperature** or **Points Delay** are configured.

14) Pass the thermally protected M.O.L.E. Profiler and test assembly through the machine.

> It is highly recommended that protective gloves are used when retrieving the thermal barrier from the oven and when opening the thermal barrier.

15) As the test assembly and M.O.L.E. Profiler emerge from the machine, carry the test assembly with sensors attached and the M.O.L.E. Profiler in the Thermal barrier to a table or flat surface.

> If a sensor is removed before the M.O.L.E. Profiler has stopped collecting data, the data for that channel might become distorted.

16) Open the Thermal barrier and if the Record LED is still flashing this means the M.O.L.E. Profiler is still recording and it must be stopped.

17) Remove the M.O.L.E. Profiler from the Thermal barrier. Handle it carefully, as the case may still be warm.

18) Disconnect the sensors from the M.O.L.E. Profiler and place it near the computer.

19) Press the OK button on the M.O.L.E. Profiler and wait for the GO or NO-GO indication (**RED** or **GREEN**). By pressing the OK button, the M.O.L.E. Profiler

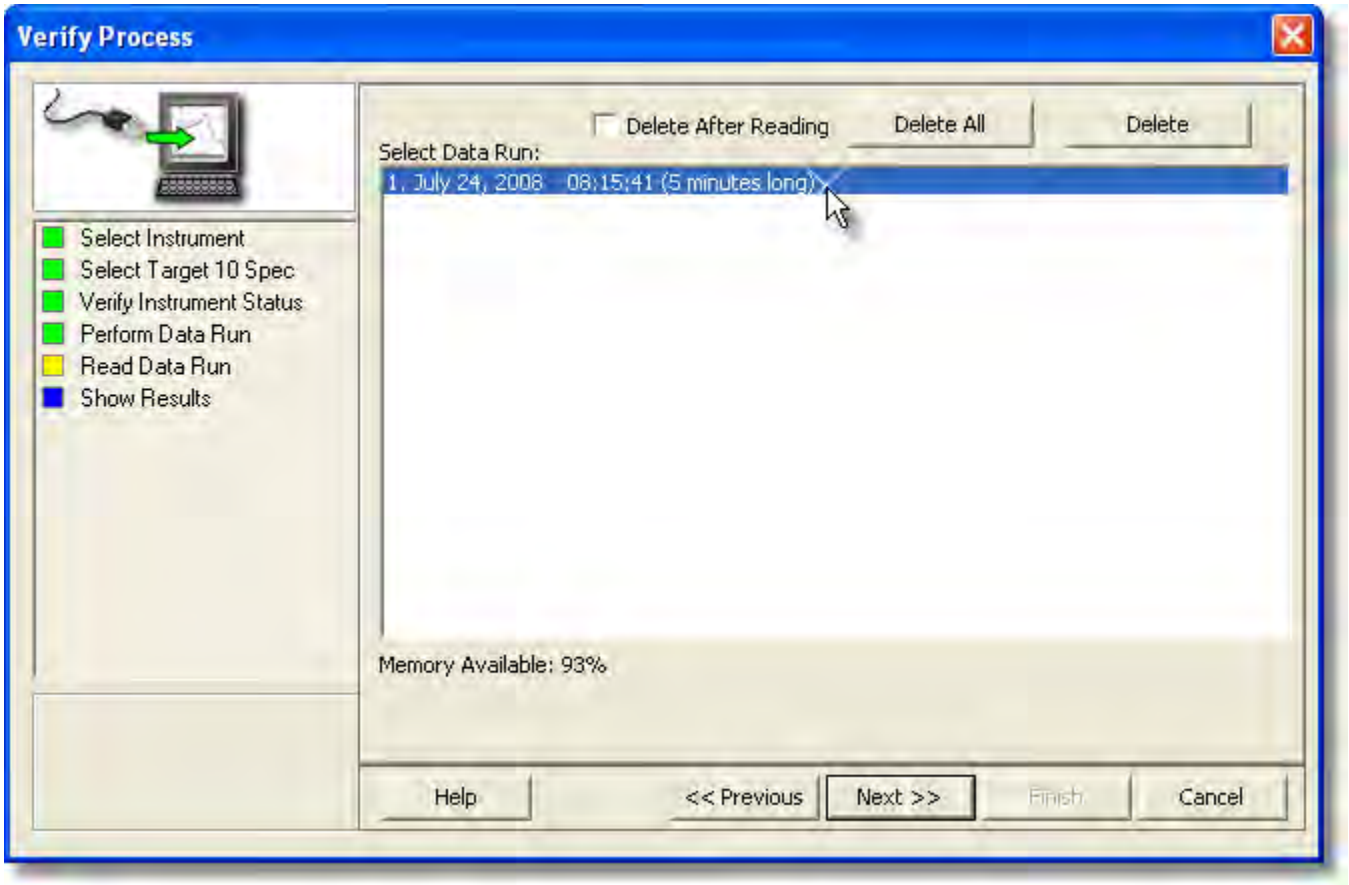
analyzes the most recent data run to verify the Target 10 Specifications applied to the previously selected data run.

> Only the MEGAM.O.L.E.®, V-M.O.L.E.® and SuperM.O.L.E.® Gold 2 are equipped with the OK button. When using the SuperM.O.L.E.® Gold please skip the previous step.

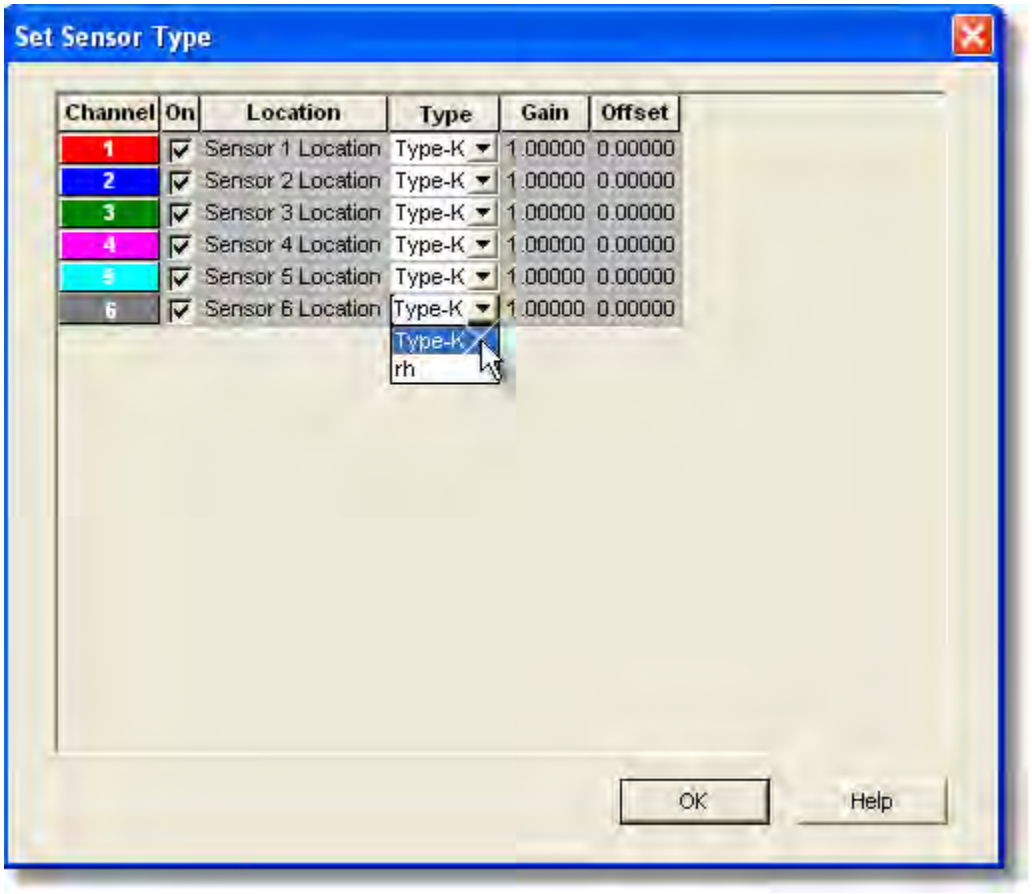
20) Connect the M.O.L.E. Profiler to the computer and click the ***Next*** command button.

21) Select the desired data run and then click the ***Next*** command button to read the data run from the M.O.L.E. Profiler.

> This step of the wizard allows the user to remove a selected data run from the M.O.L.E. Profiler by either selecting the ***Delete After Reading*** check box or selecting the ***Delete*** command button and removing it before downloading. This feature is not available for the SuperM.O.L.E.® Gold Thermal Profiler as it does not have the ability to store more than one data run.

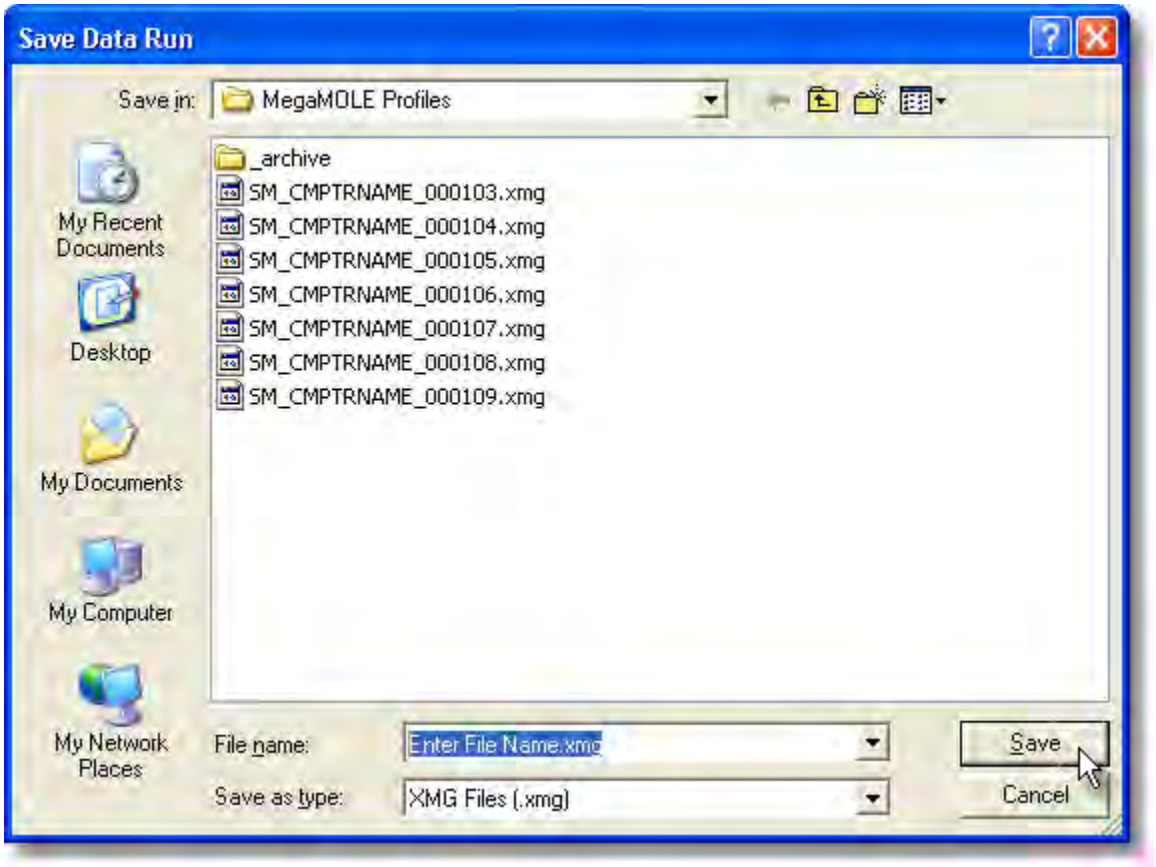


- When using a SuperM.O.L.E.® Gold Thermal Profiler, prior to reading the data run, the software prompts the user to select the sensor type for the active channels. When finished select the ***OK*** command button to proceed.



22) When the data run has been downloaded, the software prompts the user to save the verification data run file (*.XMG).

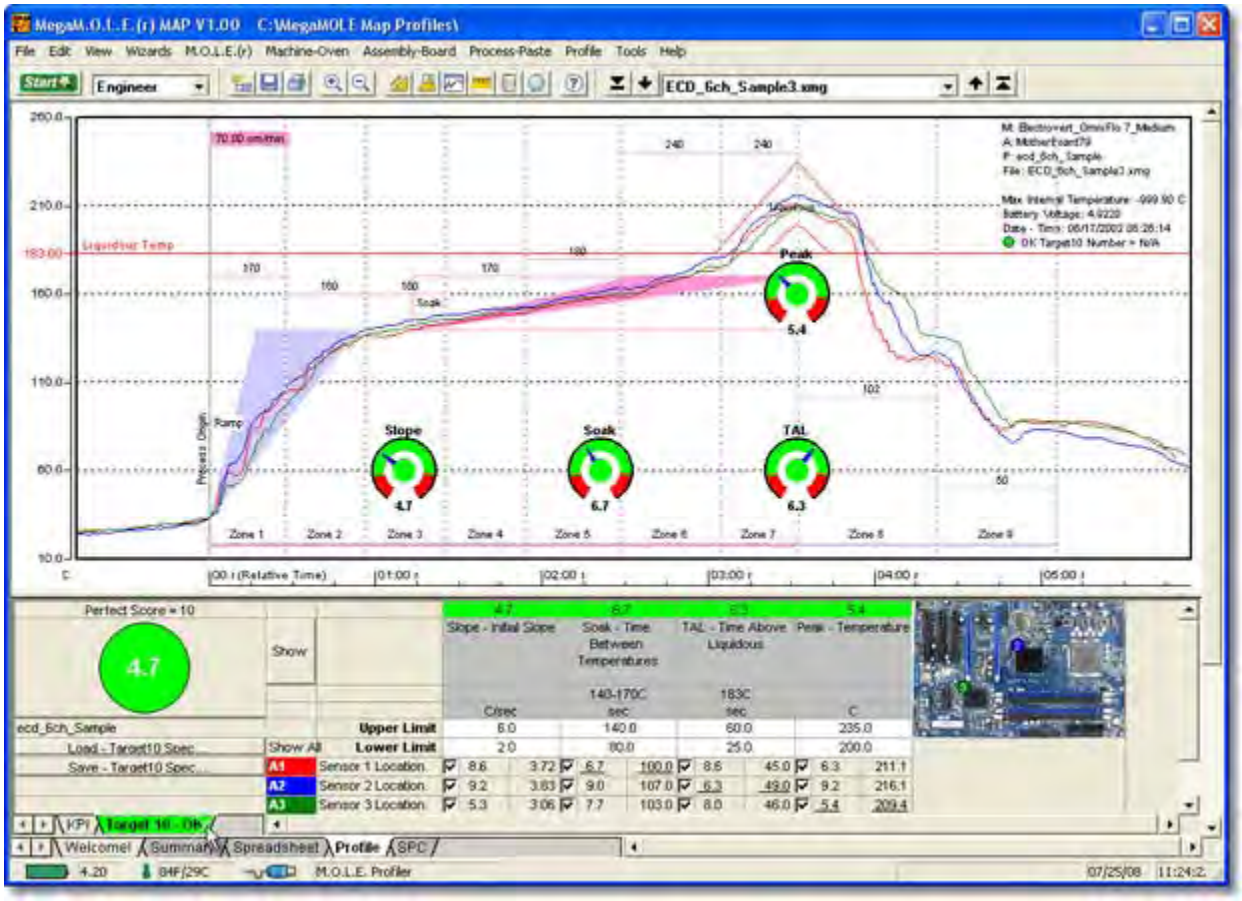
When saving a data run (***.XMG**) to a different file directory other than the current Working directory, the software automatically sets the new file directory as the current Working Directory. This process does not delete any data run files in the previously set Working directory and can be quickly accessed using the ***Recent Working Directory*** command on the ***File*** menu.



23)When finished, click the ***Save*** command button.

24)Click the ***Next*** command button to show the Target 10-OK results.

25) Analyze the data by selecting the Target10-OK tab on the Profile Tab.



5. Software

5.1. Computer Hardware Requirements

The following computer hardware requirements are necessary for the software to properly perform:

Hardware:

- 300mhz processor or equivalent
- 128 megabytes of RAM (minimum)
- 50 megabytes of free disk space
- CD ROM
- USB Port (MEGAM.O.L.E.®, V-M.O.L.E.®, SuperM.O.L.E.® Gold 2 & PTP® VP-8)
- Serial Port (SuperM.O.L.E.® Gold)
- 1024x768 VGA with True Color
- Color printer is recommended

Operating System:

- Windows 7
- Windows Vista
- Windows XP
- Windows 2000

Languages:

M.O.L.E.® MAP software is available in the following languages for the above operating systems:

- English
- Chinese Simplified
- Chinese Traditional
- Italian

5.2. Installation & Authorization

Prior to Installation:

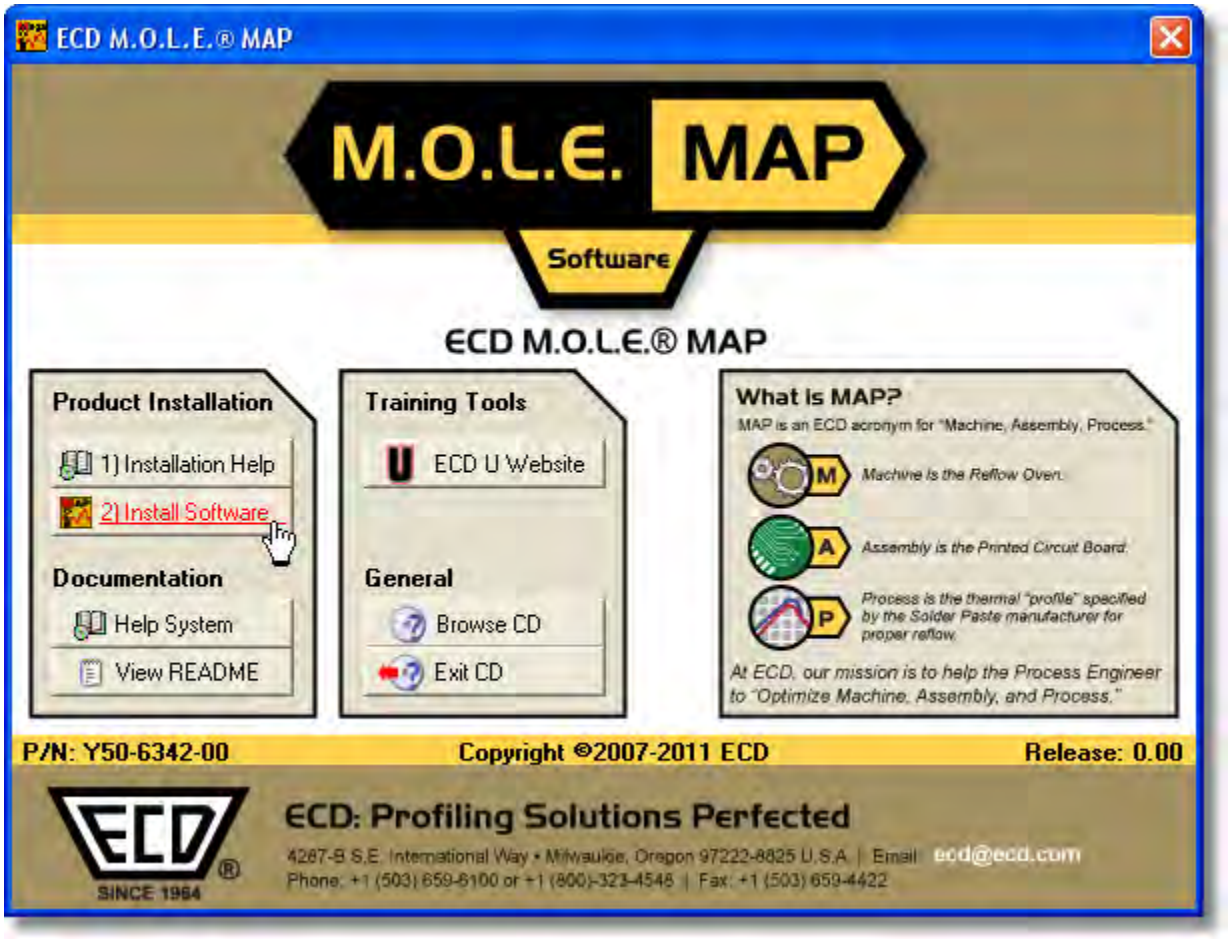
- The user must have administrator permissions for the computer to install M.O.L.E.® MAP
- Verify that no M.O.L.E.® Profilers are attached to your system. (**DO NOT connect your M installation is complete.**)
- The first time you run the M.O.L.E.® MAP software on Windows Vista or 7, it **MUST** be ru

Autorun Install:

1) Insert the CD in the drive and the M.O.L.E.® MAP software autorun menu appears.

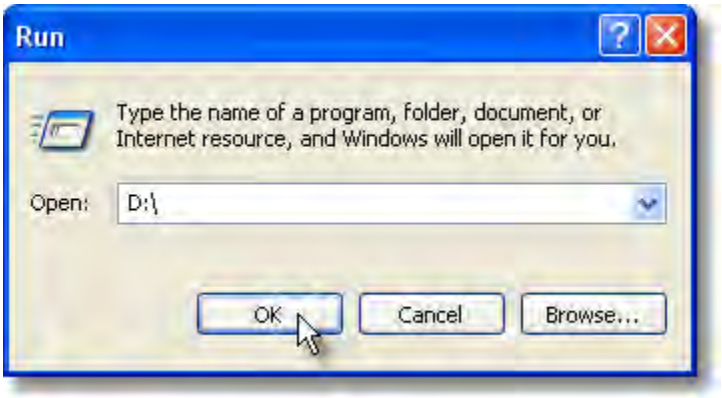
If the autorun menu does not appear, proceed to **Manual Install** for instructions.

2) Select the ***Install Software*** command button to start the installation. Closely follow the installation instructions for your operating system.
   - ***Windows XP***
   - ***Windows Vista***
   - ***Windows 7***



Manual Install:

1) Insert the CD in the drive.
2) Select ***Run*** from the Start menu.
3) Select the ***Browse*** command button and navigate to the software CD. Double-click the installation (**.EXE**) file.
4) Select the ***OK*** command button to start the installation. Closely follow the installation instructions for your operating system.
   - ***Windows XP***
   - ***Windows Vista***
   - ***Windows 7***



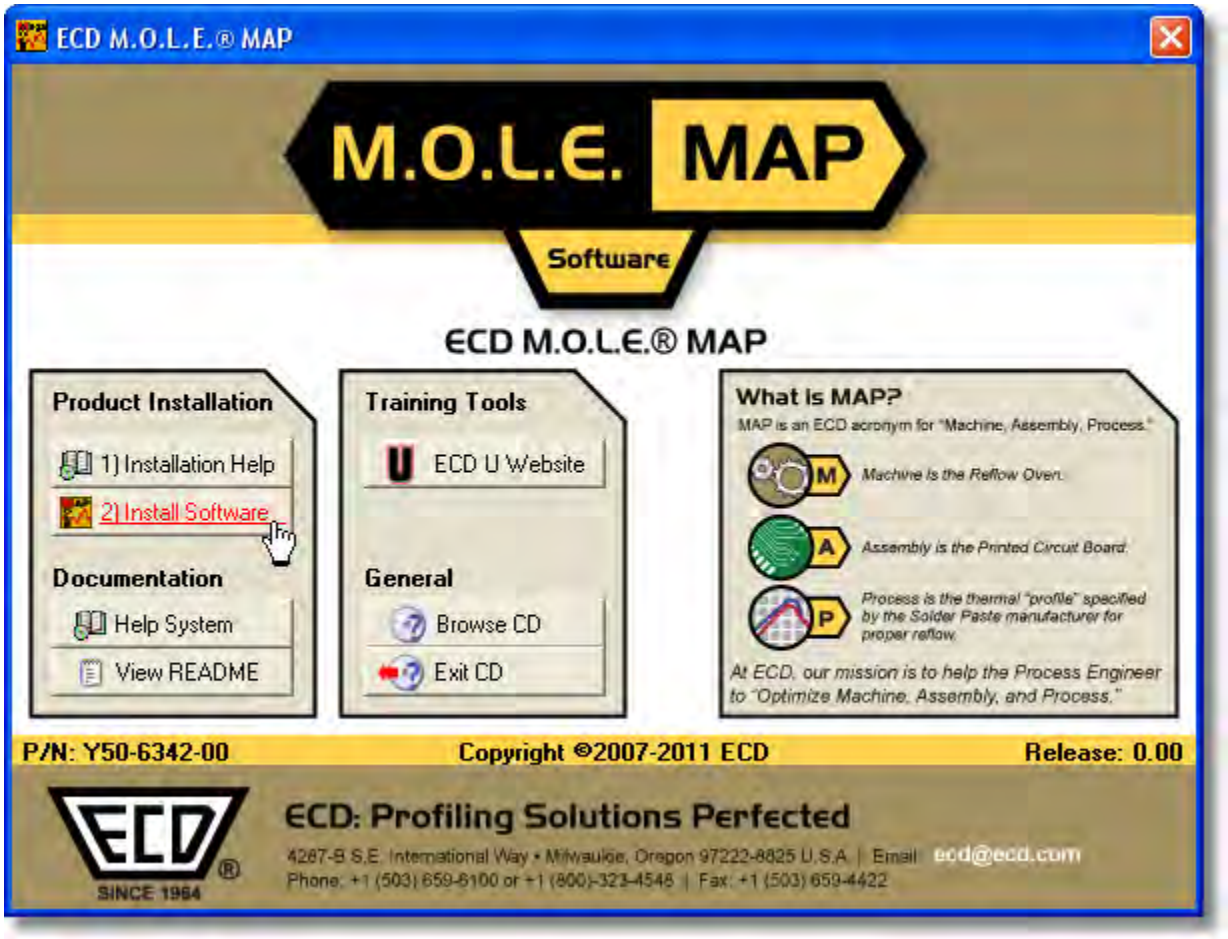
5.2.1. Windows XP

Prior to Installation:

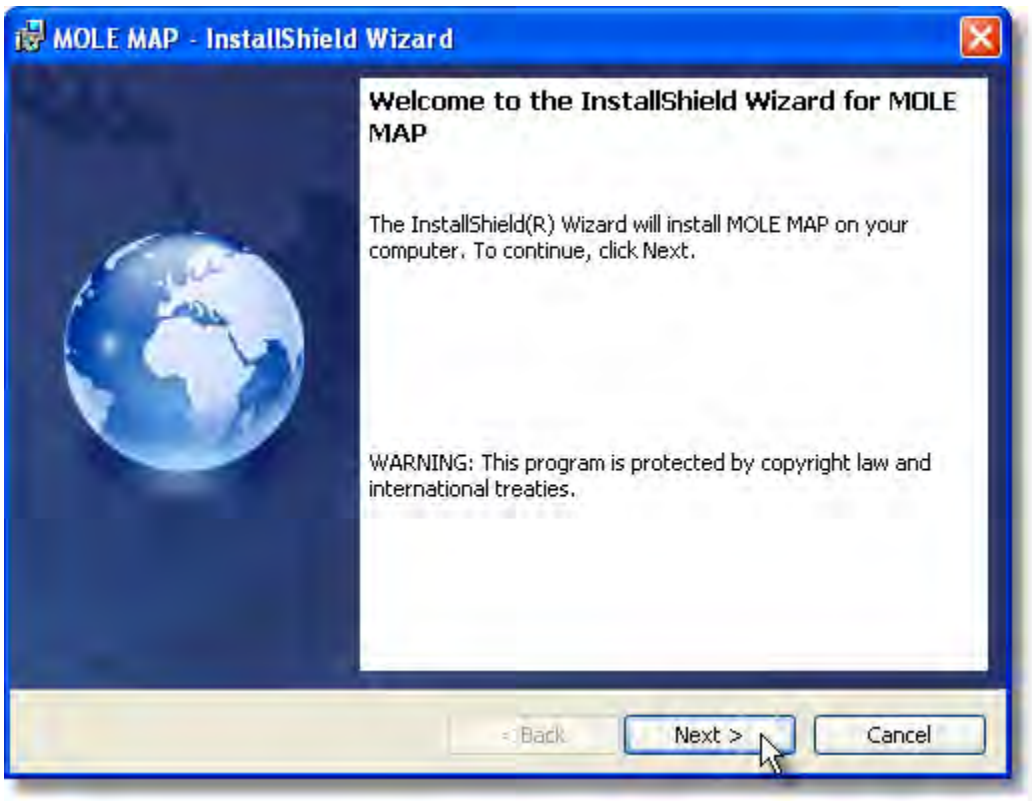
- The user must have administrator permissions for the computer to install M.O.L.E.® MAP
- Verify that no M.O.L.E.® Profilers are attached to your system. (**DO NOT connect your M installation is complete.**)
- The first time you run the M.O.L.E.® MAP software on Windows Vista or 7, it **MUST** be ru

Step 1: Installation Instructions:

1) Select the ***Install Software*** button on the ***Autorun*** dialog to prepare the software for installation.

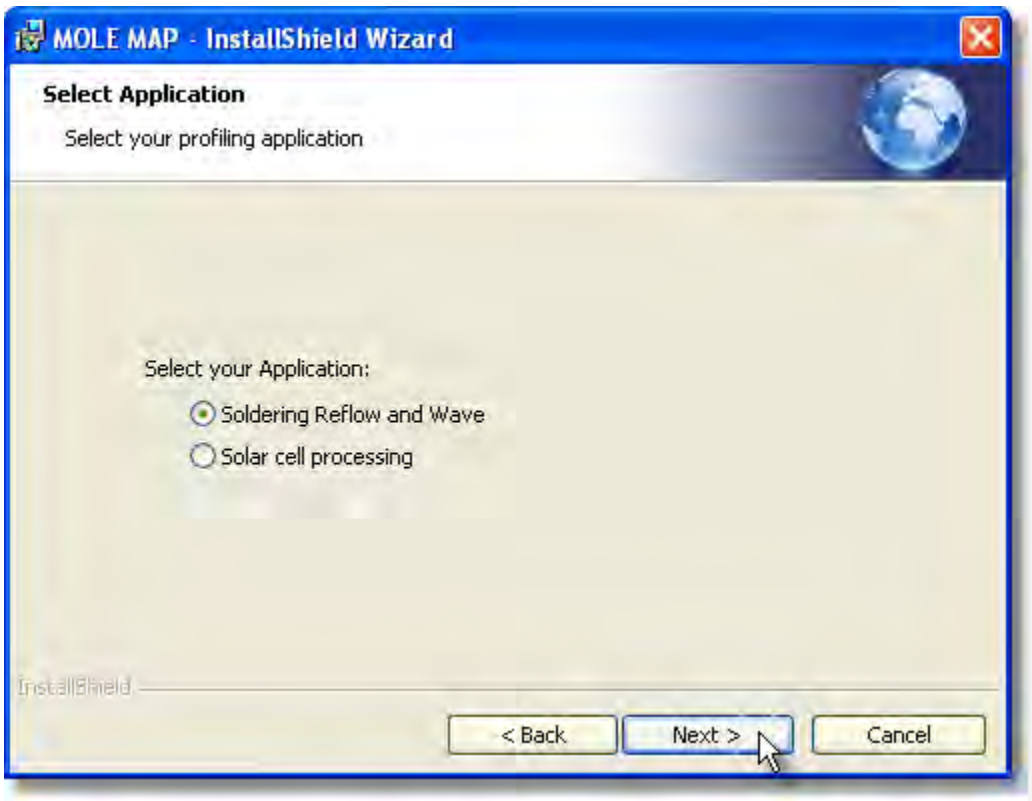


2) Select the ***Next*** command button to continue the installation process.

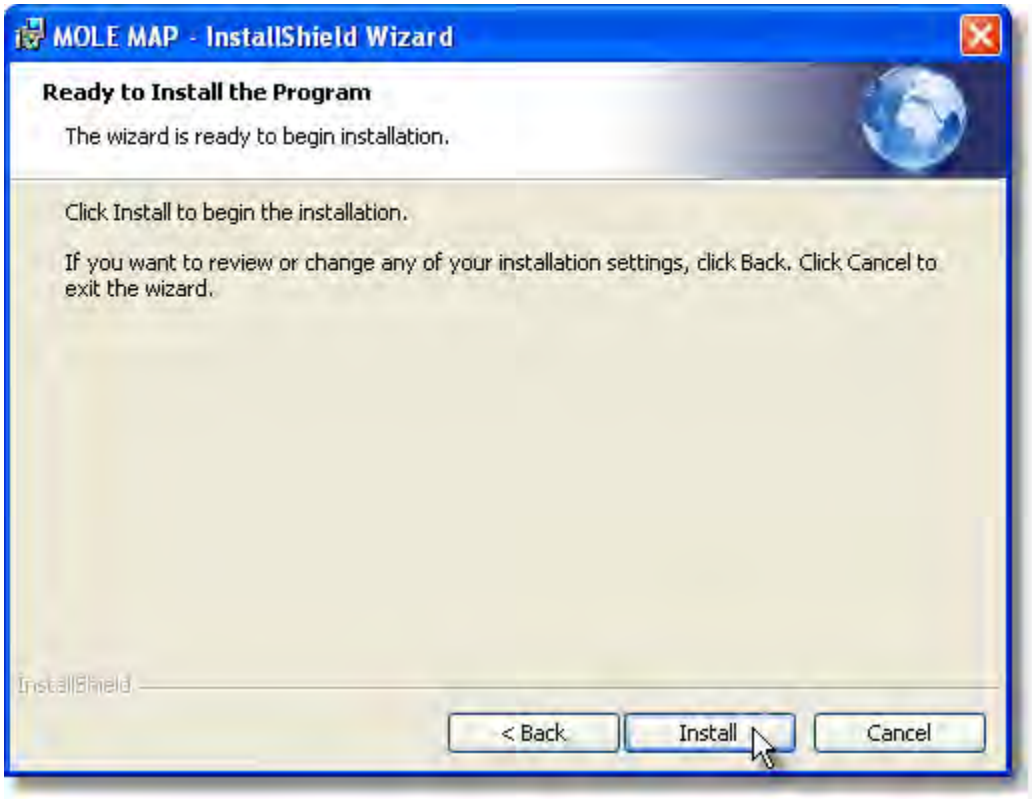


3) Review the Licence Agreement.
4) Select the ***Accept*** option and the ***Next*** command button to continue.

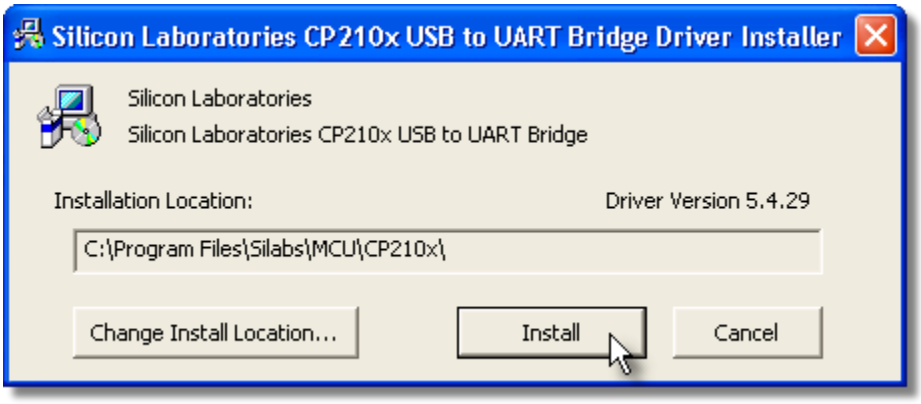
5) ***Select your Application*** and the ***Next*** command button to continue.



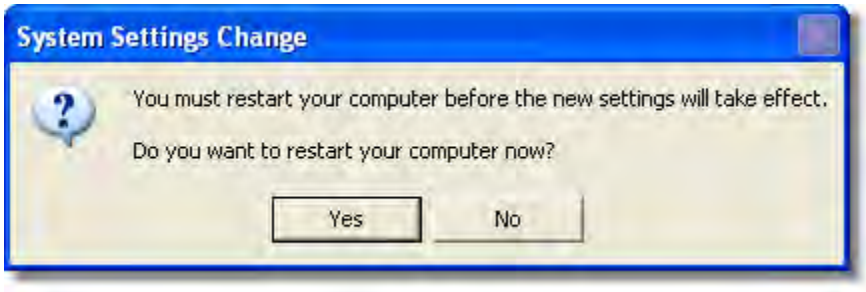
6) Select the ***Install*** command button to install the program.



7) Select the ***Install*** command button to install the USB drivers so the software can communicate with the M.O.L.E.® Profiler.



8) Once the USB drivers are installed the a message box prompts the user to decide if they would like to restart the computer now. If ***Yes*** is selected, the software installation will continue and the computer will be restarted. If ***No*** is selected, the user will need to restart the computer before the software can communicate with the M.O.L.E.® Profiler.



9) To complete the installation, select the ***Finish*** command button.

Install complete. An Users Help System icon appears on desktop.

Step 2: Starting the Software:

	Prior to starting, click the README icon from the M.O.L.E.® MAP program sub-menu to read the latest release notes.

After the software is installed, start the software program by double-clicking the M.O.L.E.® MAP icon from the desktop.

	Once the software installation and is running correctly, it is important to start the software and configure the software to communicate with the M.O.L.E. Profiler. Refer to topic ***Basics>Setup*** for more information.

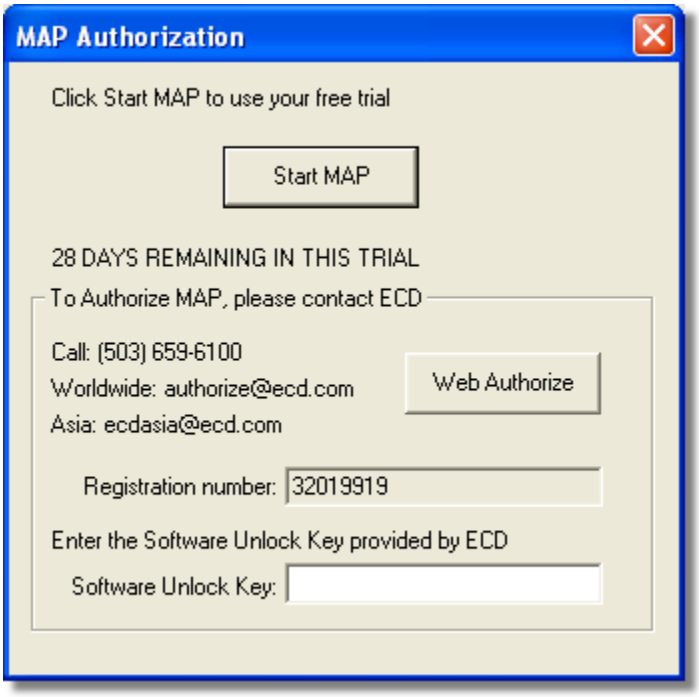
Step 3: Software Authorization:

The software is a fully functional 30-day trial version that can be authorized at any time. Once the trial period is over, the user cannot access the software until it is authorized.

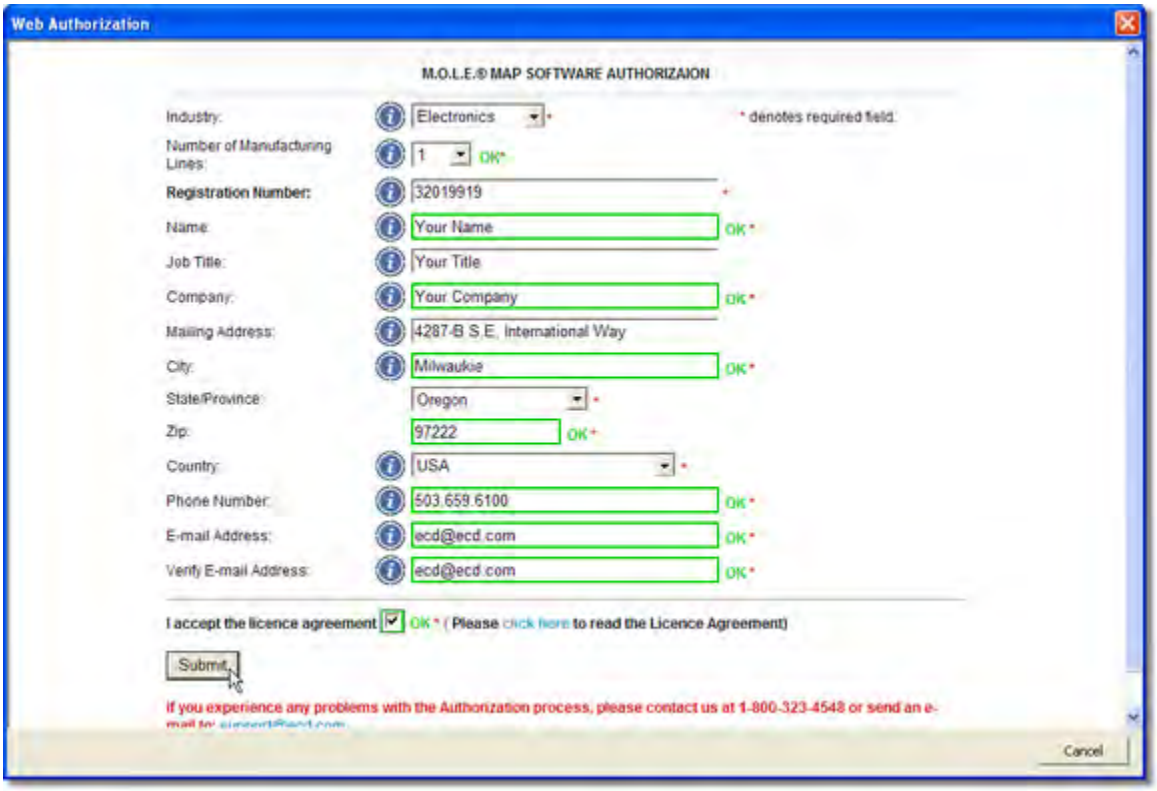
A ***Software Unlock Key*** can be obtained via the web or using the contact information supplied on the dialog box, contact ECD.

To Web Authorize:

1) On the ***File*** menu, click ***Preferences***, and then click the ***Misc*** tab.
2) In the ***Authorization*** section, click the Authorize command button and the Authorization dialog box appears.

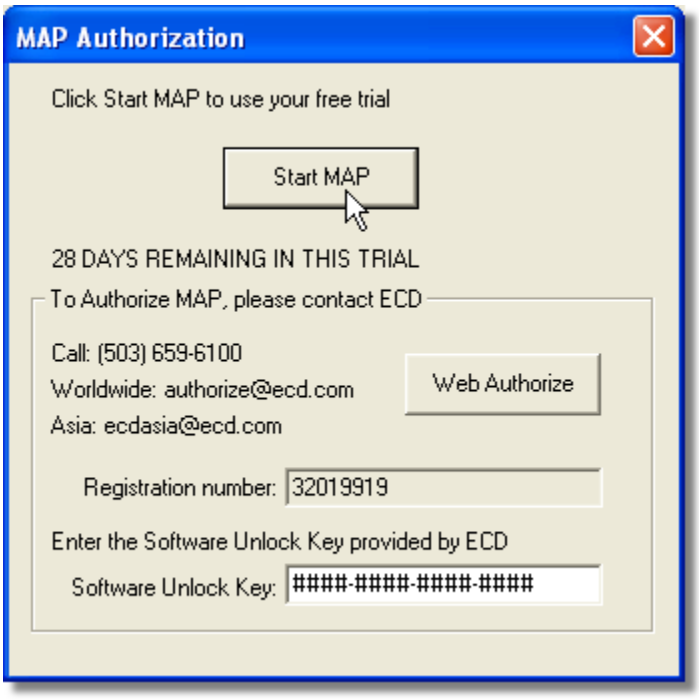


3) Enter the required information on the ***M.O.L.E.® MAP Software Authorization*** form.



4) When finished select the ***Submit*** button. A confirmation screen appears indicating that the Software Unlock Key has been sent to the email address provided in the form.

5) Enter the 16-digit ***Software Unlock Key*** and then the ***Start MAP*** command button to complete the software Authorization.



If the software is activated at a later time, **YOU MUST** repeat running it as an **administrator** as described in ***Step 2: Starting the Software*** as the program will not remember it has been activated.

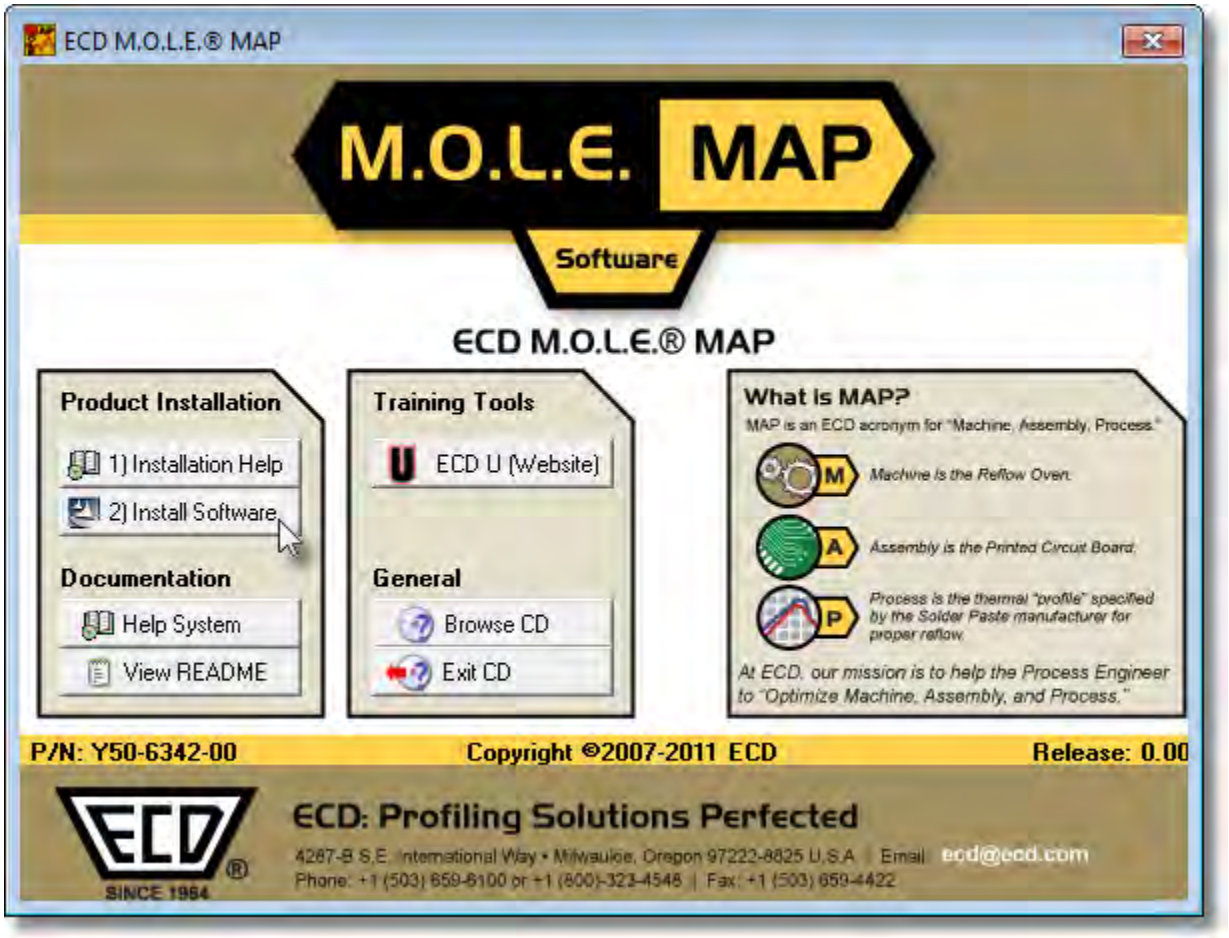
5.2.2. Windows Vista

Prior to Installation:

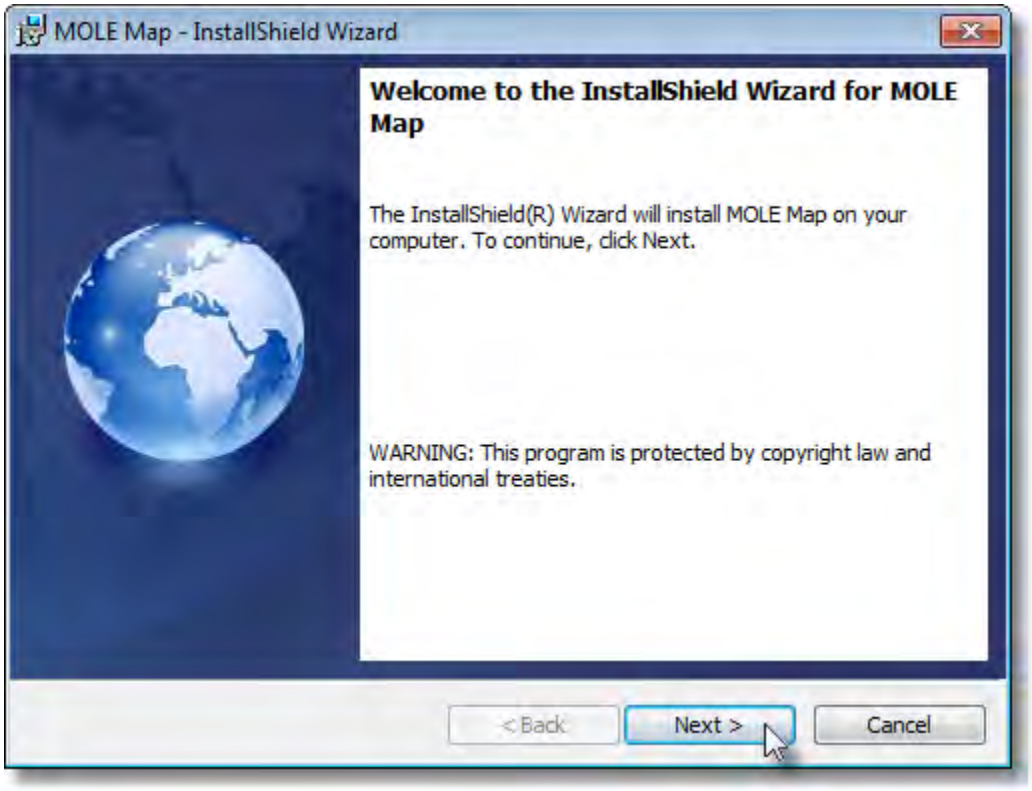
- The user must have administrator permissions for the computer to install M.O.L.E.® MAP
- Verify that no M.O.L.E.® Profilers are attached to your system. (**DO NOT connect your M installation is complete.**)
- The first time you run the M.O.L.E.® MAP software on Windows Vista or 7, it **MUST** be ru

Step 1: Installation Instructions:

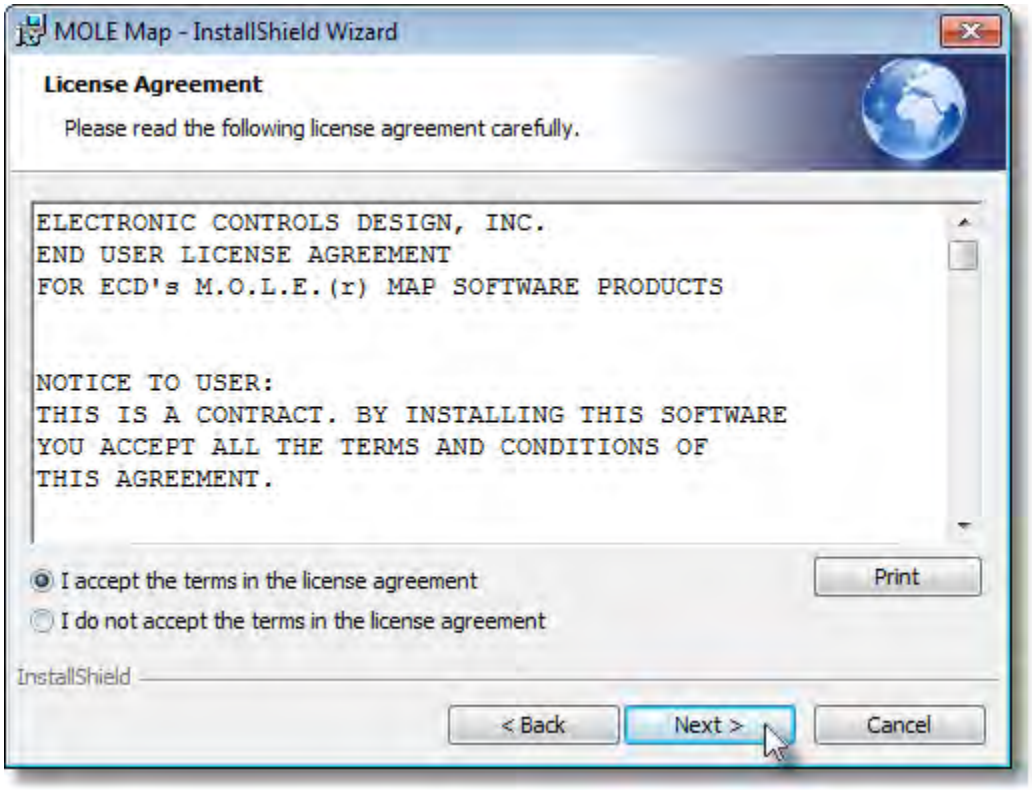
1) Select the ***Install Software*** button on the ***Autorun*** dialog to prepare the software for installation.



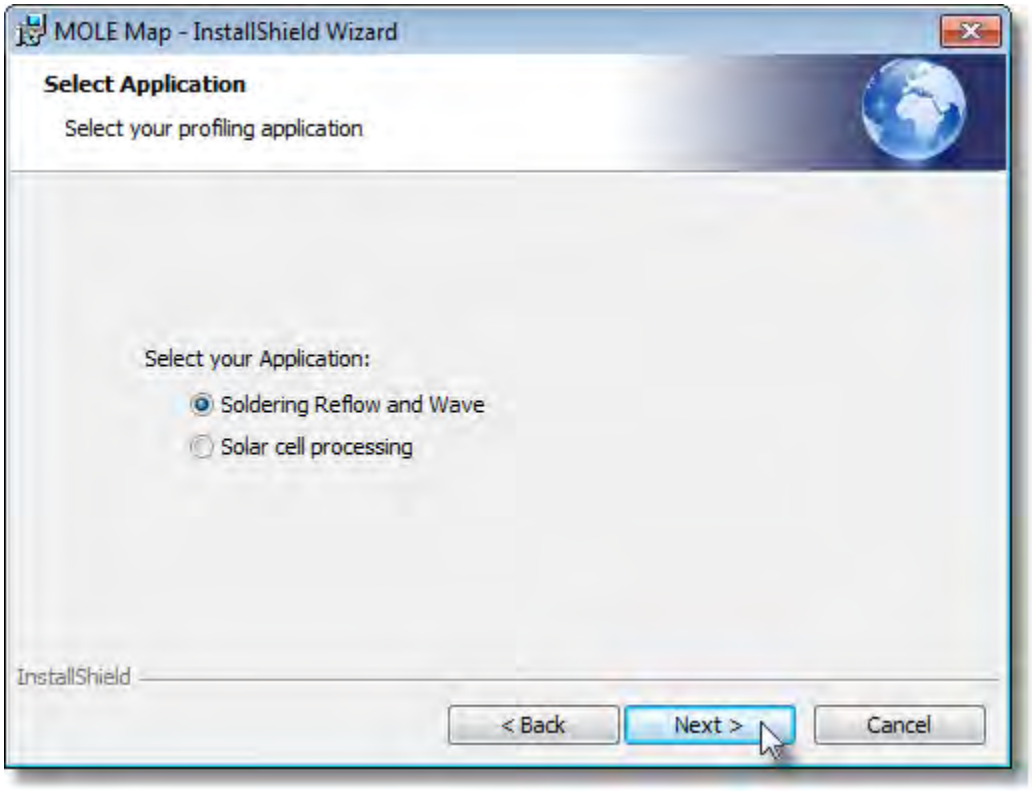
2) Select the ***Next*** command button to continue the installation process.



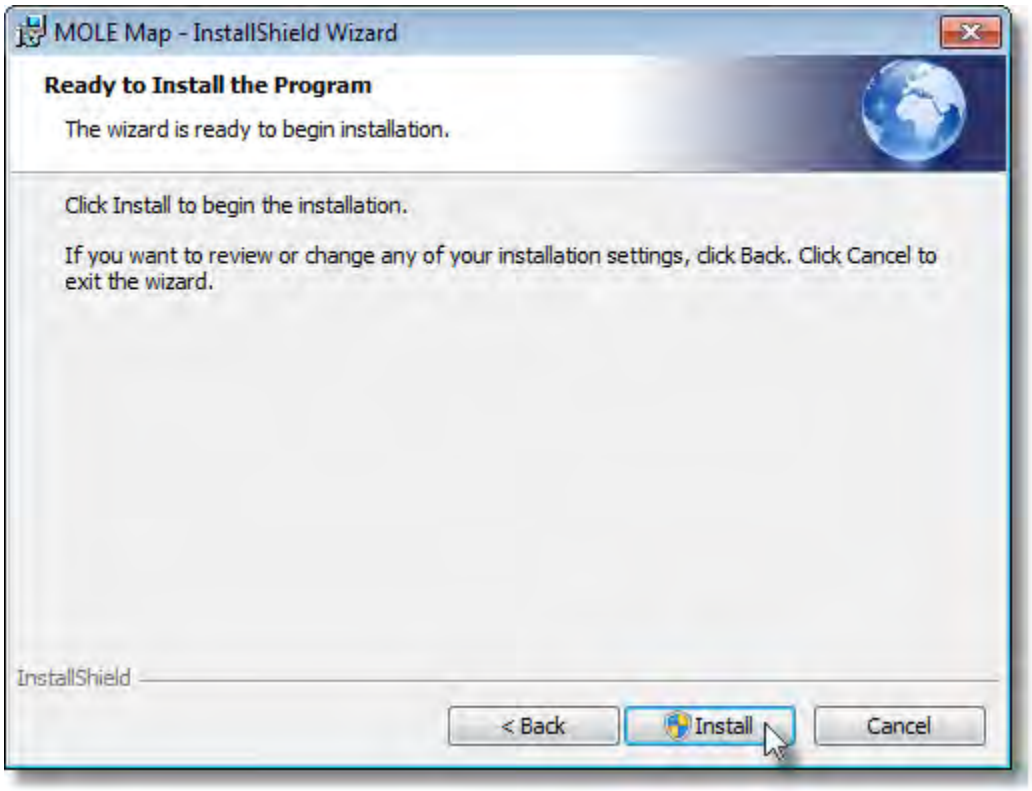
3) Review the Licence Agreement.
4) Select the ***Accept*** option and the ***Next*** command button to continue.



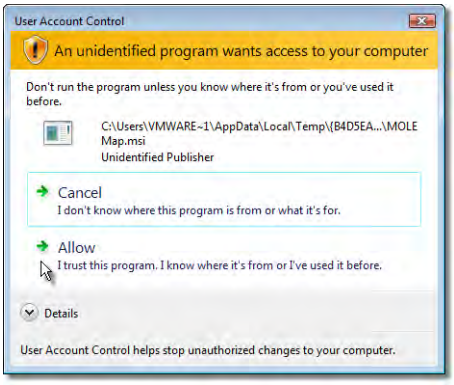
5) ***Select your Application*** and the ***Next*** command button to continue.



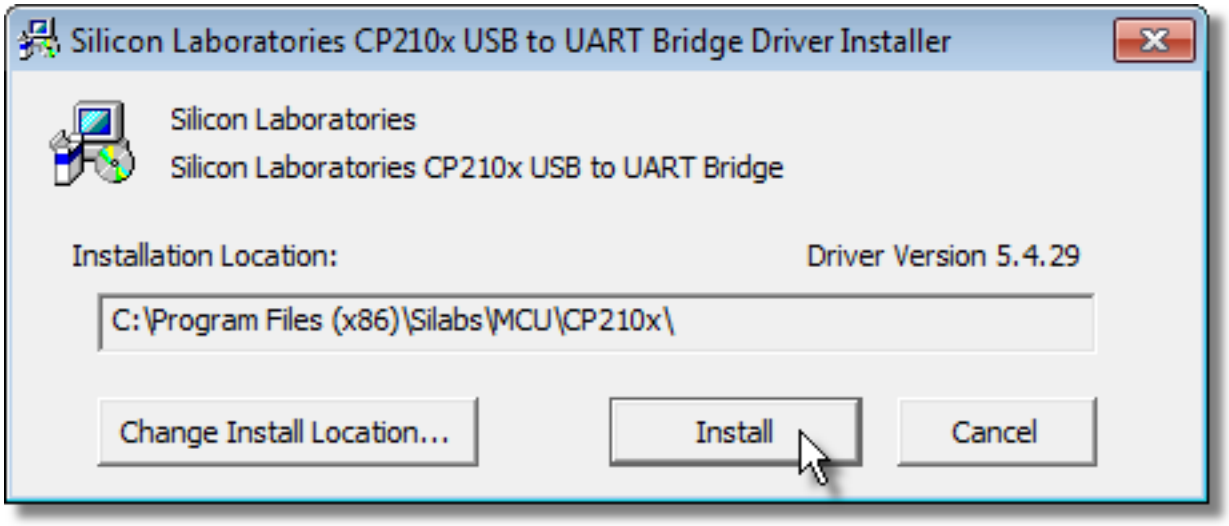
6) Select the ***Install*** command button to install the program.



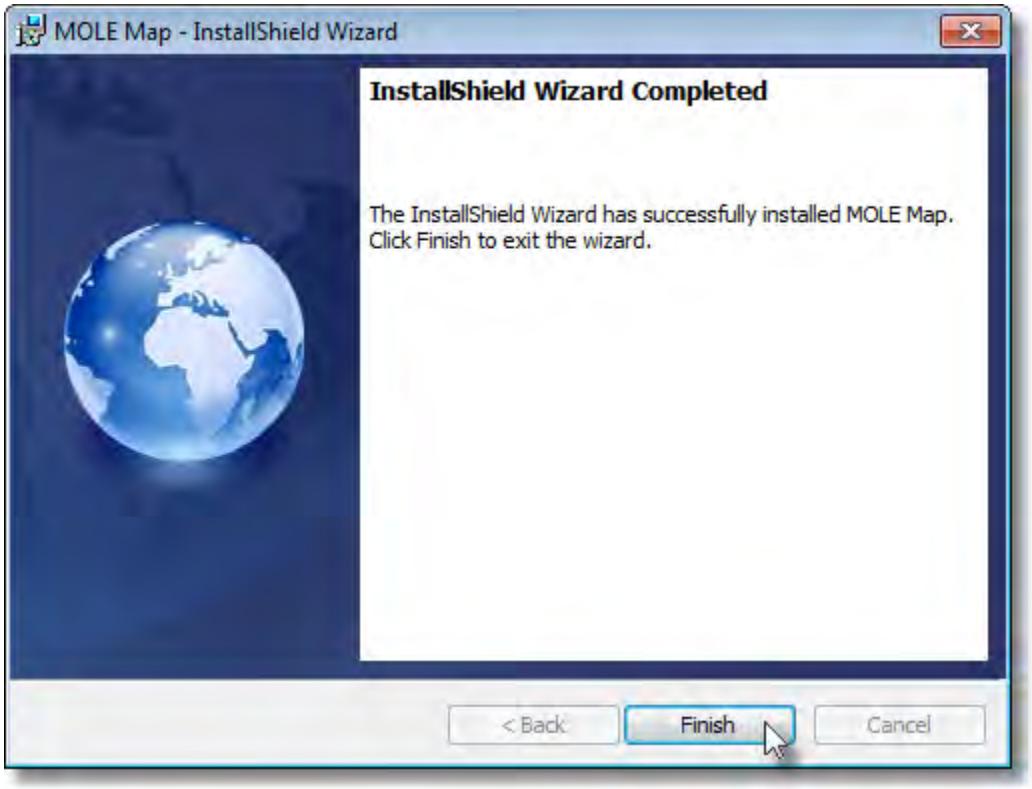
7) Select the ***Allow*** button to continue.



8) Select the ***Install*** command button to install the USB drivers so the software can communicate with the M.O.L.E.® Profiler.



9) To complete the installation, select the ***Finish*** command button.

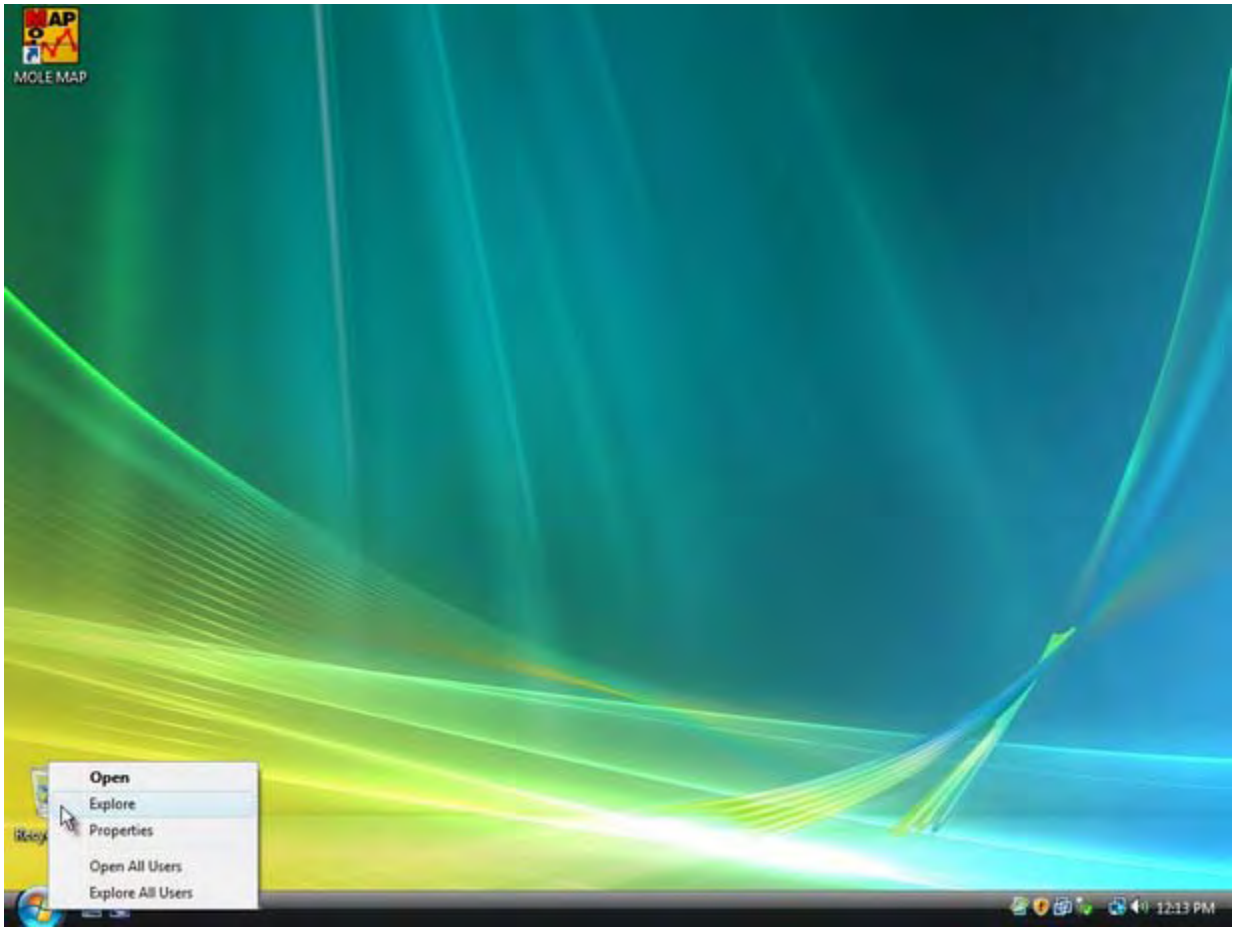


Install complete. A Users Help System icon appears on desktop.

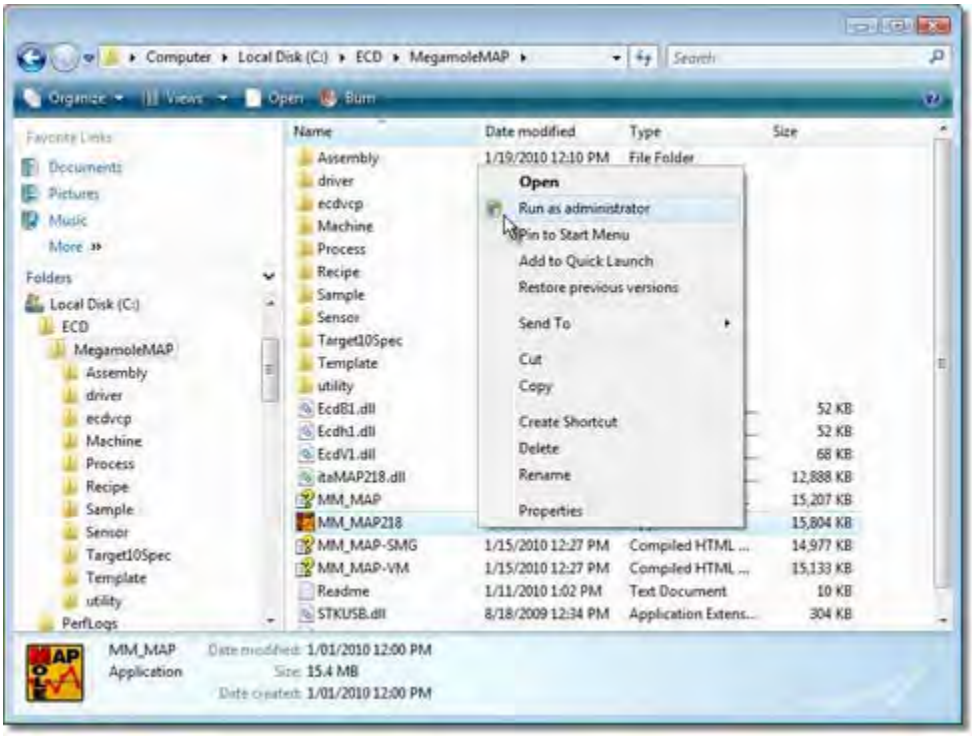
Step 2: Starting the Software:

The first time you run the M.O.L.E.® MAP software on Windows Vista or 7, it **MUST** be run as an **"Administrator"**

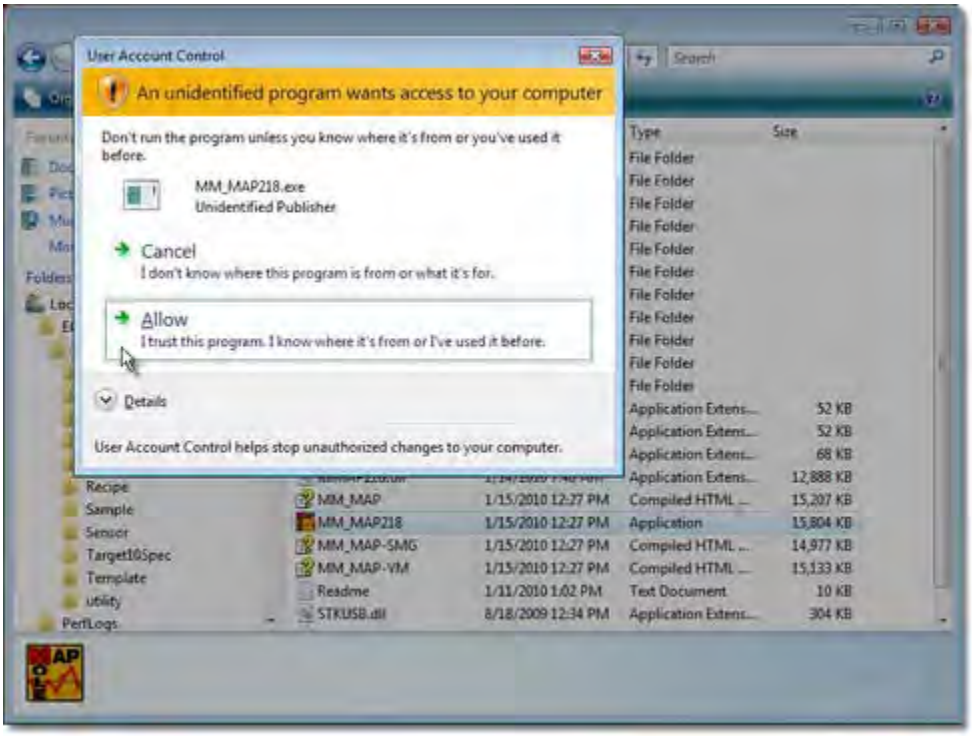
1) Right-click the ***Windows start icon*** (lower left corner) and select ***Explore*** to Open Windows Explorer from the menu.



2) Navigate to the M.O.L.E.® MAP installation directory. This is typically is ***C:\ECD\MegamoleMAP***.
3) Right-click the ***MM_MAP218*** icon and select ***Run as administrator*** from the menu.



4) Select ***Allow*** to allow the operating system to run the software as an administrator.



Once the software installation and is running correctly, it is important to start the software and configure the software to communicate with the M.O.L.E. Profiler. Refer to topic ***Basics>Setup*** for more information.

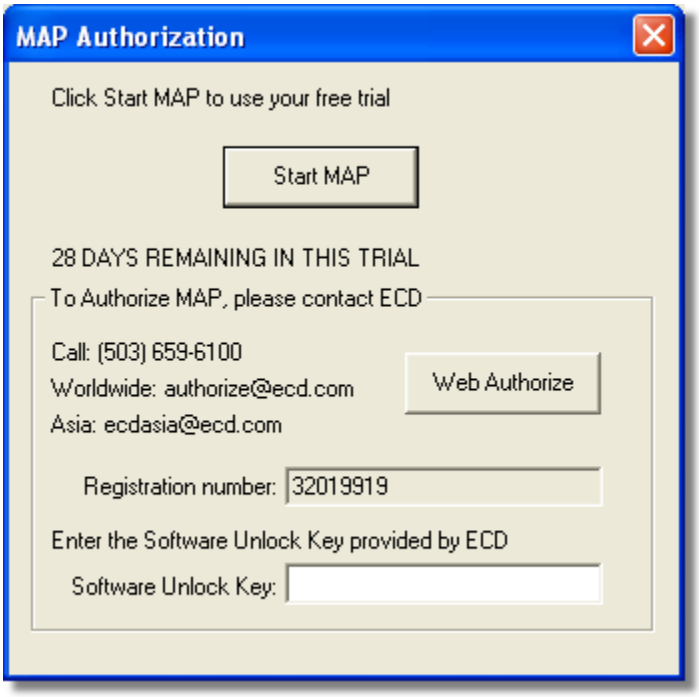
Step 3: Software Authorization:

The software is a fully functional 30-day trial version that can be authorized at any time. Once the trial period is over, the user cannot access the software until it is authorized.

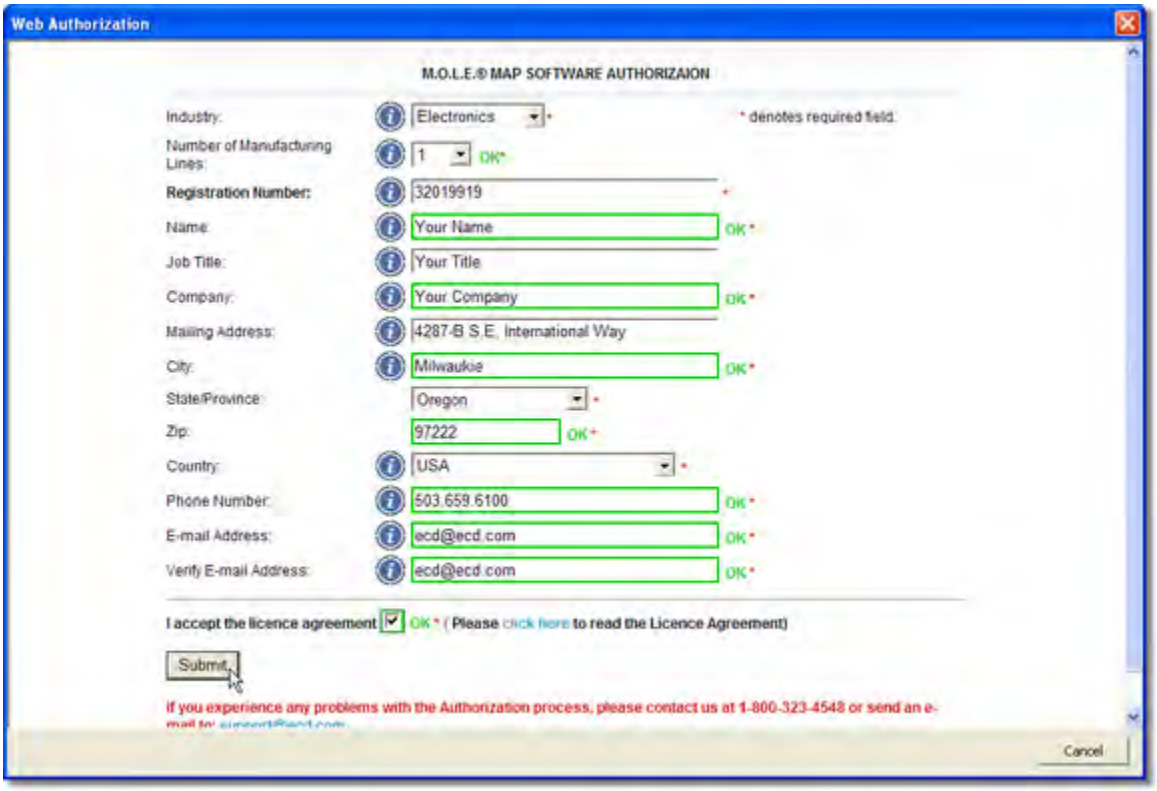
A ***Software Unlock Key*** can be obtained via the web or using the contact information supplied on the dialog box, contact ECD.

To Web Authorize:

1) On the ***File*** menu, click ***Preferences***, and then click the ***Misc*** tab.
2) In the ***Authorization*** section, click the Authorize command button and the Authorization dialog box appears.

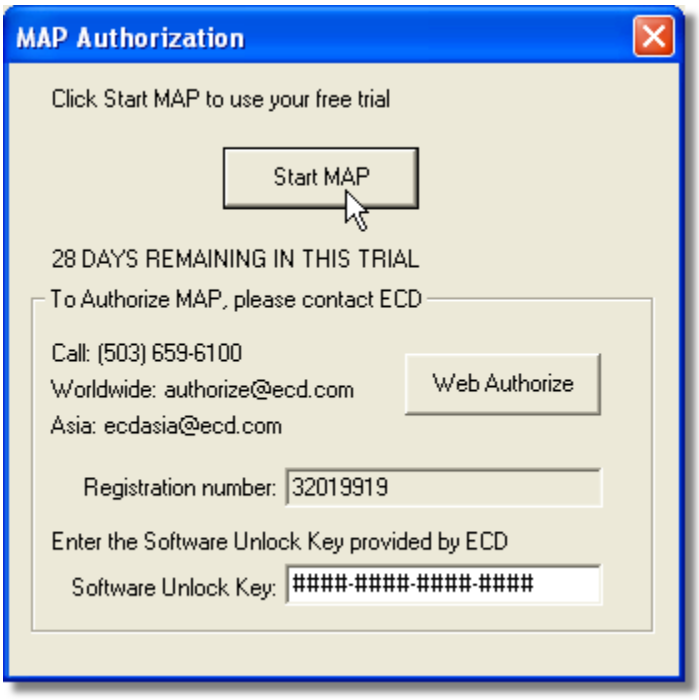


3) Enter the required information on the ***M.O.L.E.® MAP Software Authorization*** form.



4) When finished select the ***Submit*** button. A confirmation screen appears indicating that the Software Unlock Key has been sent to the email address provided in the form.

5) Enter the 16-digit ***Software Unlock Key*** and then the ***Start MAP*** command button to complete the software Authorization.



If the software is activated at a later time, **YOU MUST** repeat running it as an **administrator** as described in ***Step 2: Starting the Software*** as the program will not remember it has been activated.

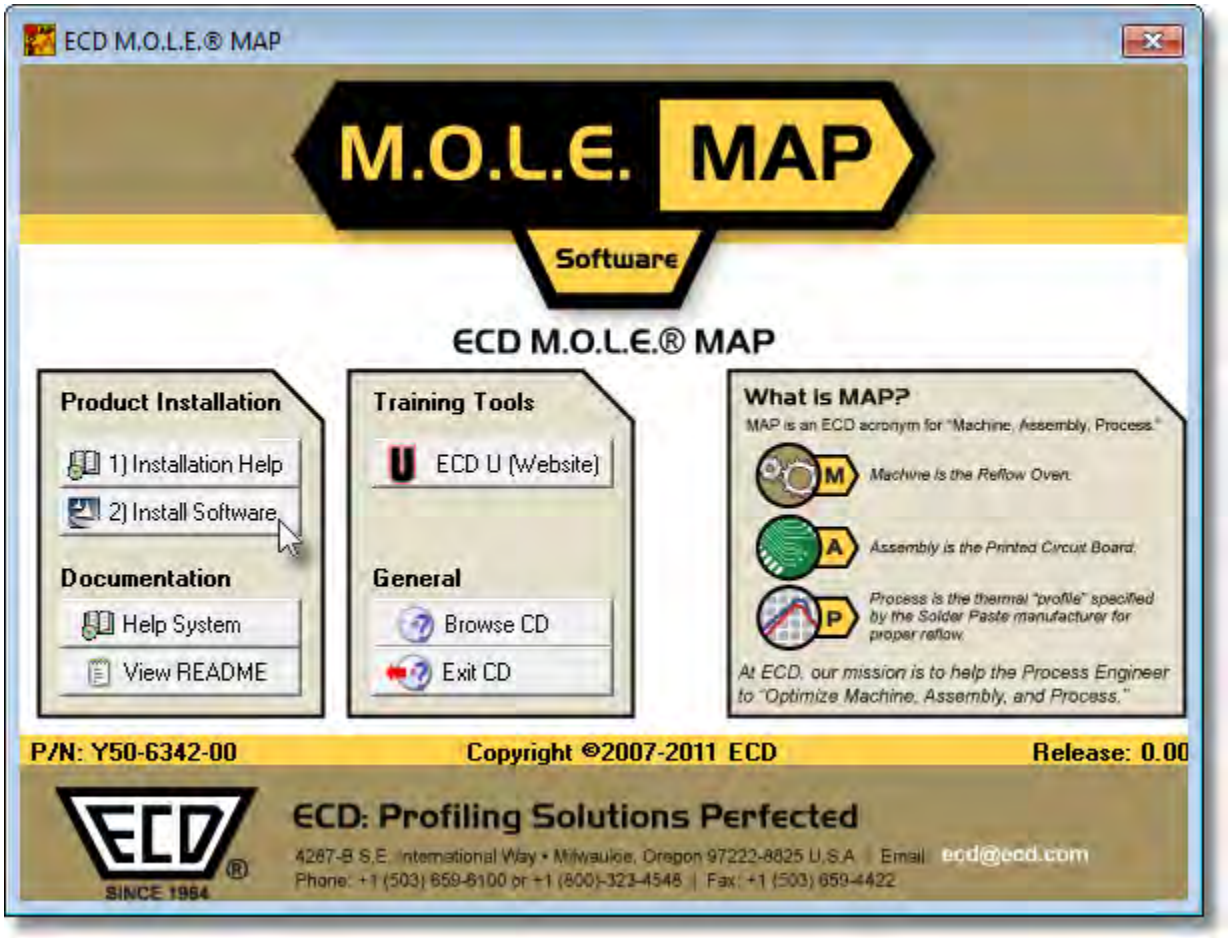
5.2.3. Windows 7

Prior to Installation:

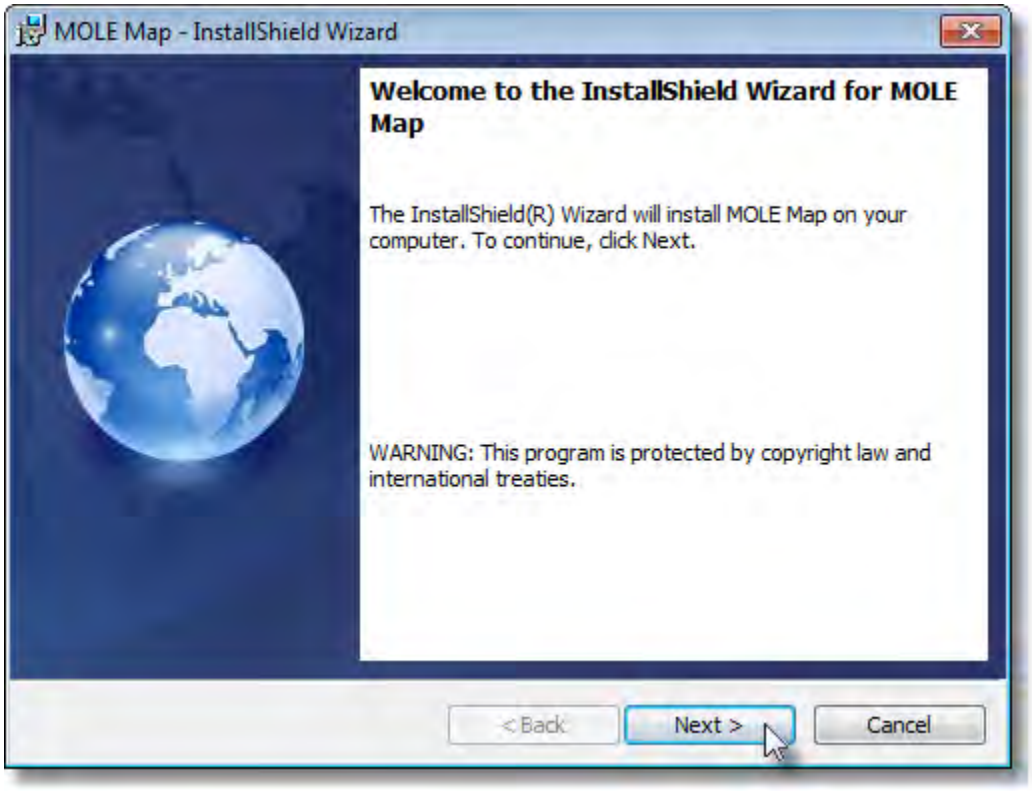
- The user must have administrator permissions for the computer to install M.O.L.E.® MAP
- Verify that no M.O.L.E.® Profilers are attached to your system. (**DO NOT connect your M installation is complete.**)
- The first time you run the M.O.L.E.® MAP software on Windows Vista or 7, it **MUST** be ru

Step 1: Installation Instructions:

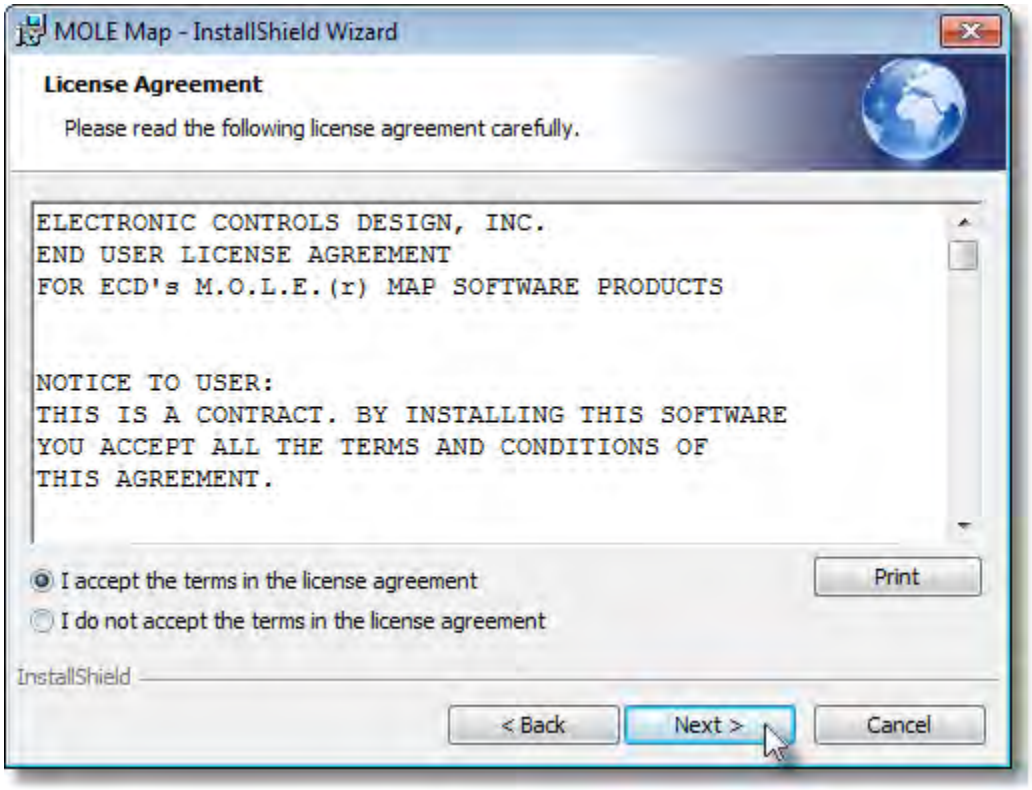
1) Select the ***Install Software*** button on the ***Autorun*** dialog to prepare the software for installation.



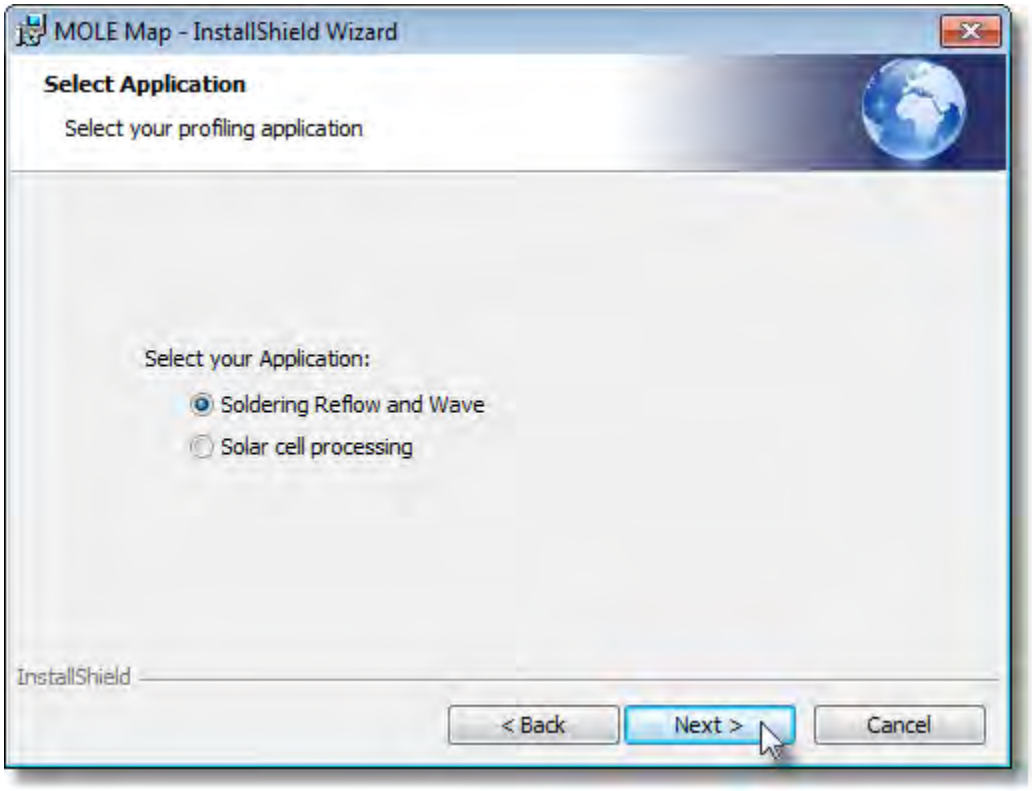
2) Select the ***Next*** command button to continue the installation process.



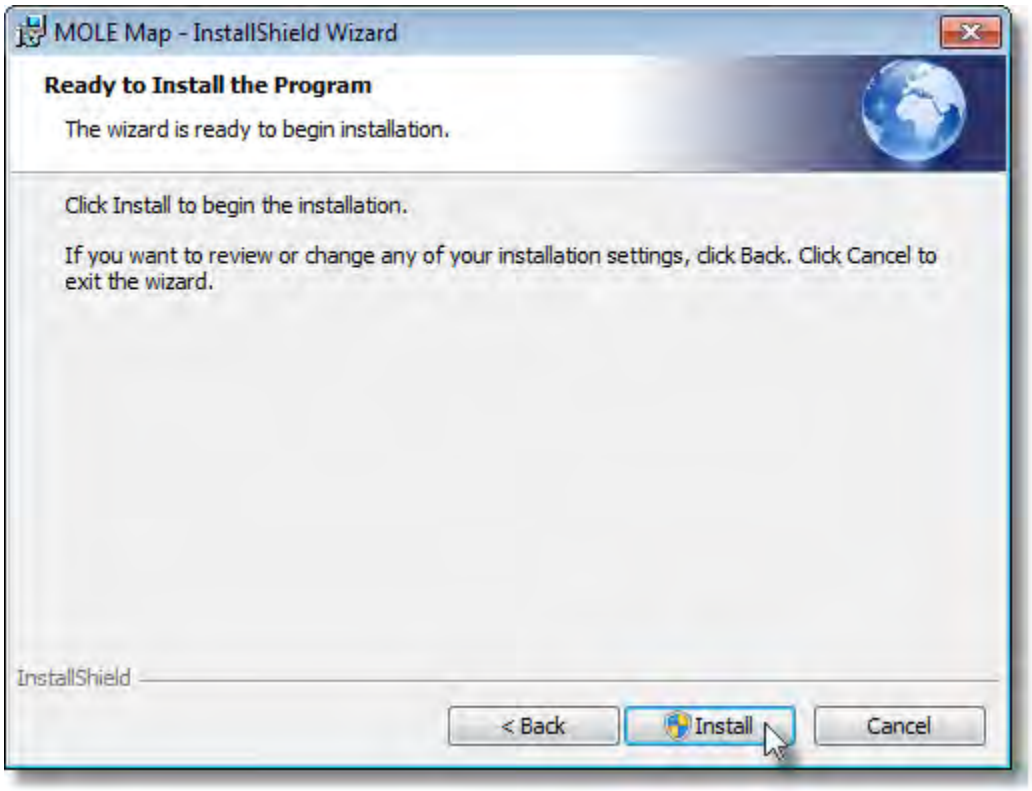
3) Review the Licence Agreement.
4) Select the ***Accept*** option and the ***Next*** command button to continue.



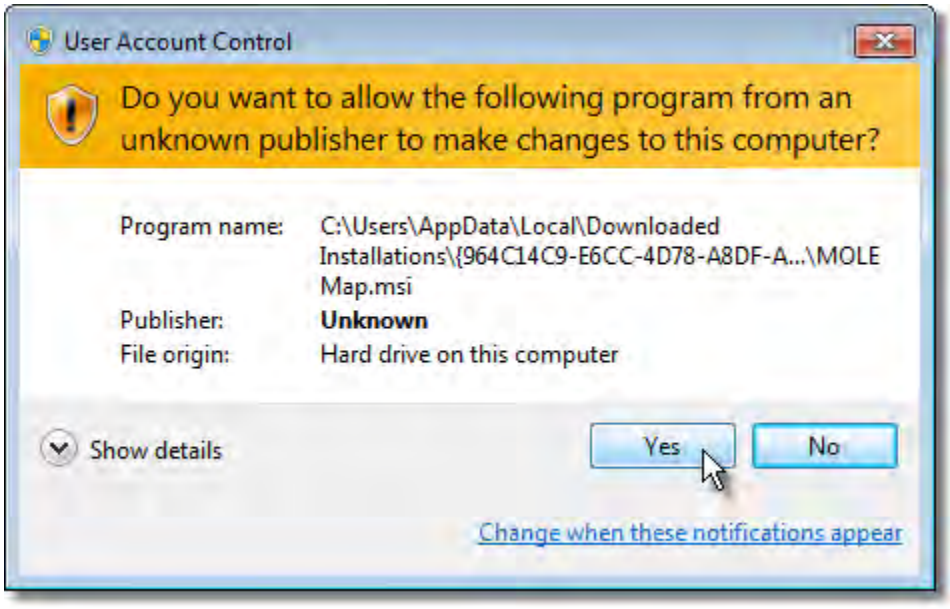
5) ***Select your Application*** and the ***Next*** command button to continue.



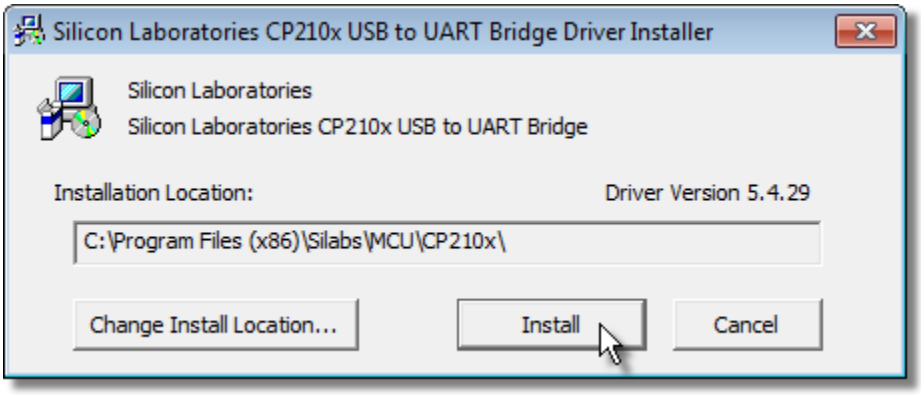
6) Select the ***Install*** command button to install the program.



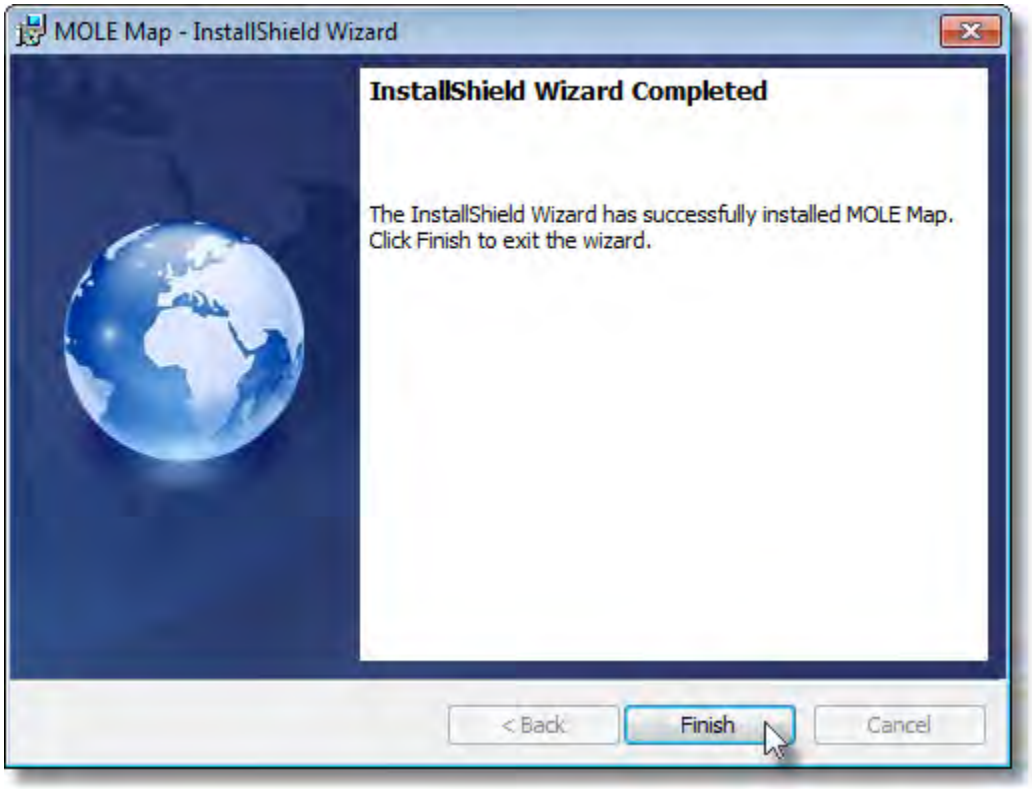
7) Select the ***Yes*** command button to continue the installation.



8) Select the ***Install*** command button to install the USB drivers so the software can communicate with the M.O.L.E.® Profiler.



9) To complete the installation, select the ***Finish*** command button.

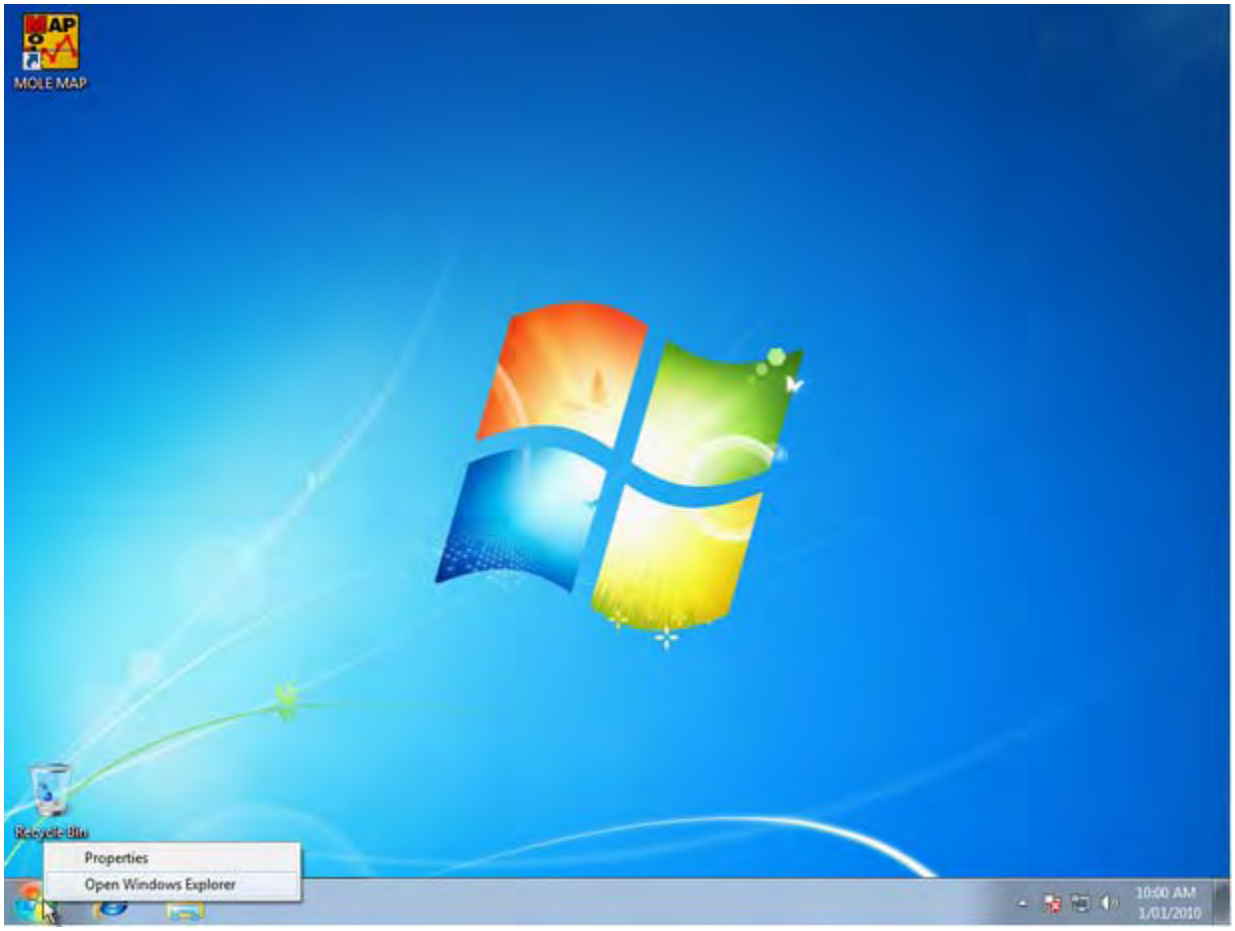


Install complete. A Users Help System icon appears on desktop.

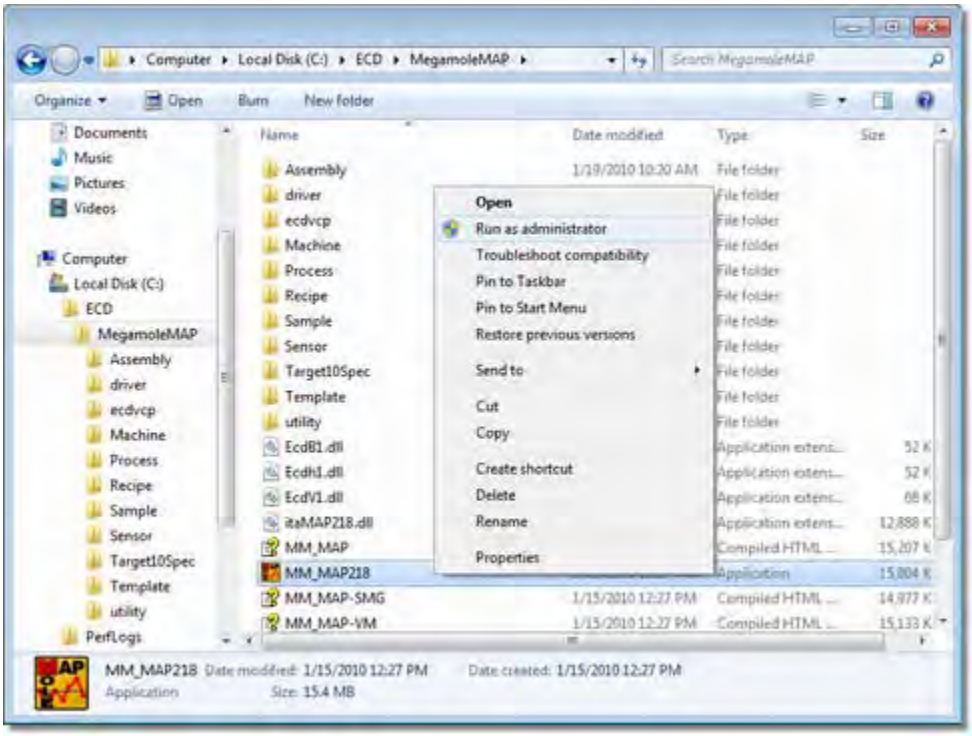
Step 2: Starting the Software:

	The first time you run the M.O.L.E.® MAP software on Windows Vista or 7, it **MUST** be run as an **"Administrator"**

1) Right-click the ***Windows start icon*** (lower left corner) and select ***Explore*** to Open Windows Explorer from the menu.



2) Navigate to the M.O.L.E.® MAP installation directory. This is typically is ***C:\ECD\MegamoleMAP***.
3) Right-click the ***MM_MAP218*** icon and select ***Run as administrator*** from the menu.



	Once the software installation and is running correctly, it is important to start the software and configure the software to communicate with the M.O.L.E. Profiler. Refer to topic ***Basics>Setup*** for more information.

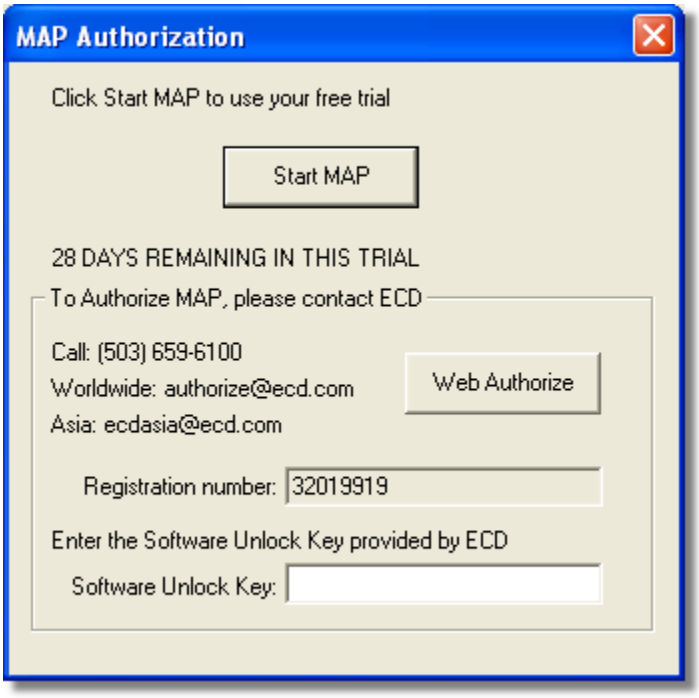
Step 3: Software Authorization:

The software is a fully functional 30-day trial version that can be authorized at any time. Once the trial period is over, the user cannot access the software until it is authorized.

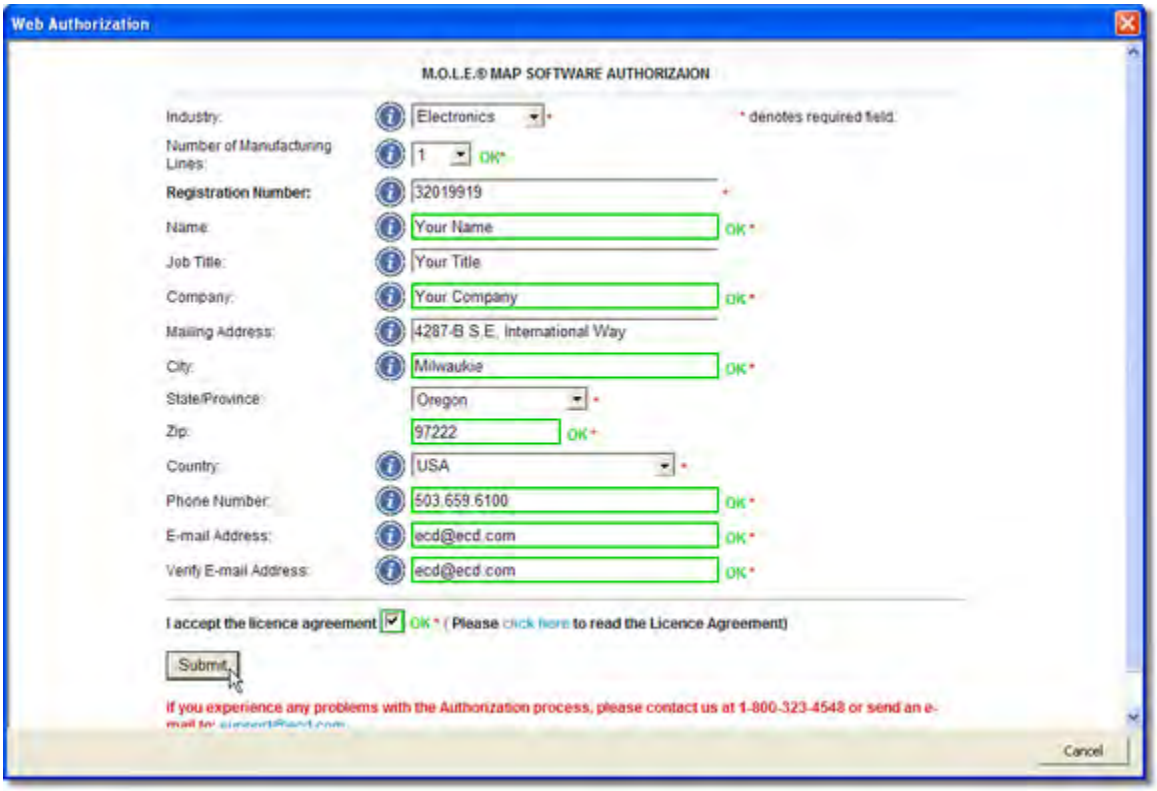
A ***Software Unlock Key*** can be obtained via the web or using the contact information supplied on the dialog box, contact ECD.

To Web Authorize:

1) On the ***File*** menu, click ***Preferences***, and then click the ***Misc*** tab.
2) In the ***Authorization*** section, click the Authorize command button and the Authorization dialog box appears.

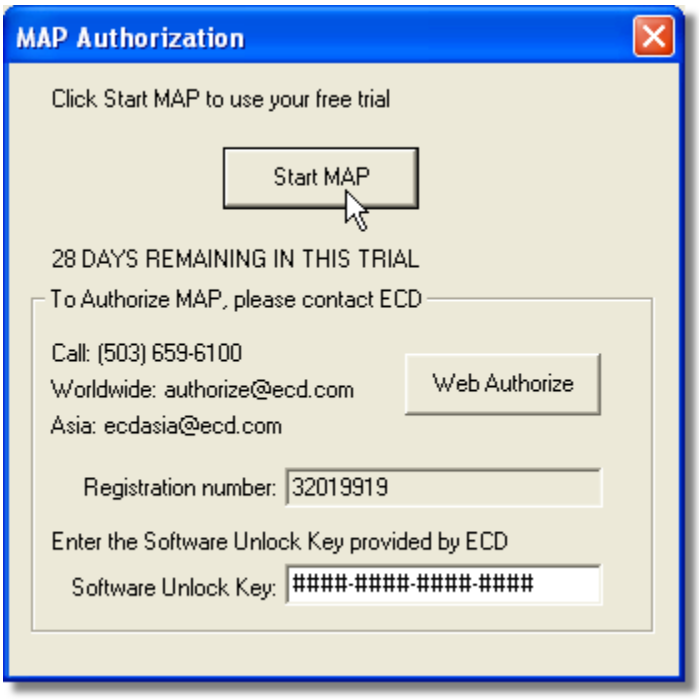


3) Enter the required information on the ***M.O.L.E.® MAP Software Authorization*** form.



4) When finished select the ***Submit*** button. A confirmation screen appears indicating that the Software Unlock Key has been sent to the email address provided in the form.

5) Enter the 16-digit ***Software Unlock Key*** and then the ***Start MAP*** command button to complete the software Authorization.

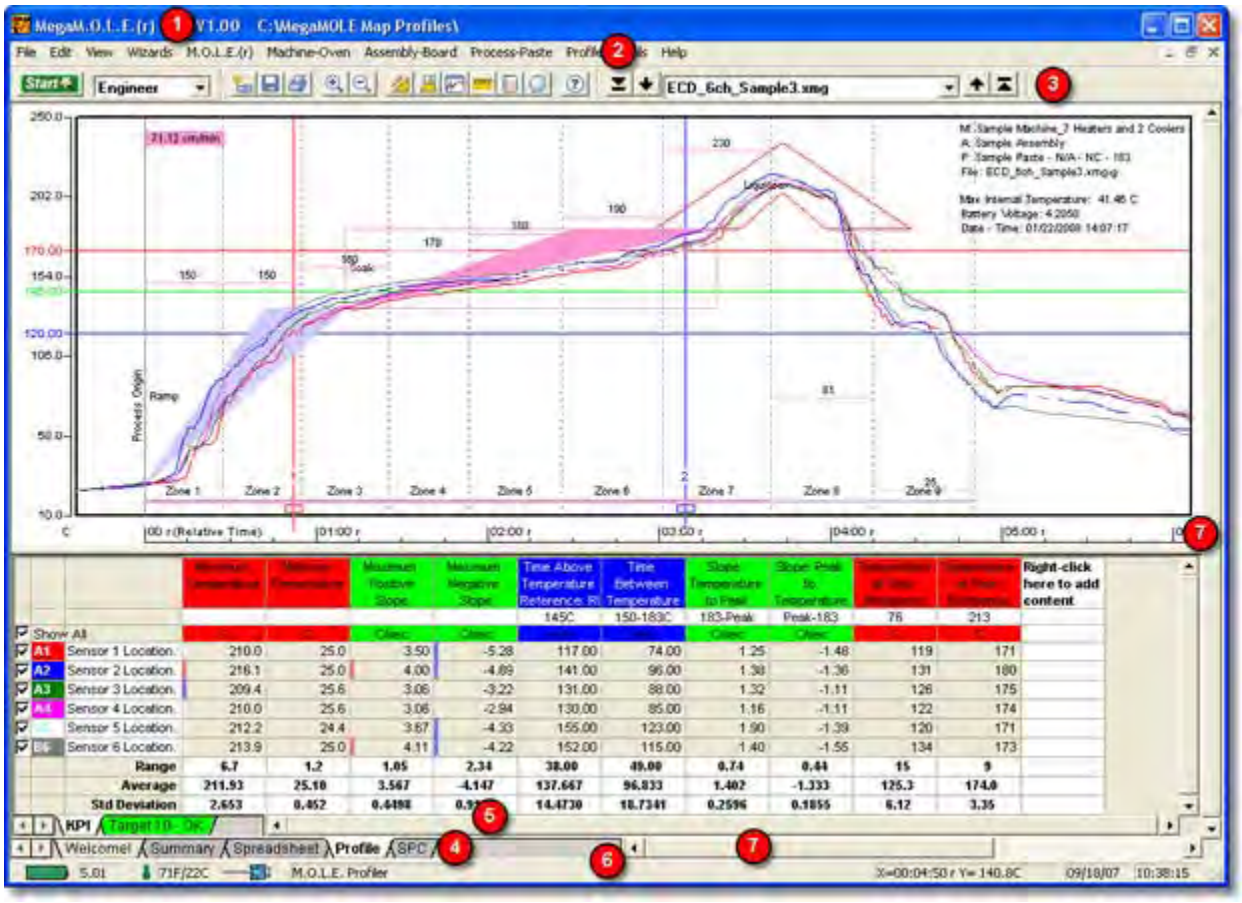


5.3. Features

This section presents an overview of the software window. When the software is started, it automatically defaults to the previously open working directory. Refer to topic ***Software>Menus>File>Open Working Directory*** for more information.

> After installation, the software is started a with the a sample working directory with files will be selected for users to familiarize themselves with the program. It is recommended when the user starts collecting process data, a new or exiting working directory should be used.

The software offers several features as described in the following section.



1. **Title Bar:** This bar contains the program name, version, and the open working directory.
2. **Menus:** These menus contain the commands and tools for all Page Tab Views. Each Page Tab View may contain different commands that supply specific support. Individual menus are described in detail in their specified sections. Refer to topic ***Software>Menus and Tool Commands*** for more information.
3. **Toolbar:** The Toolbar has buttons to serve as shortcuts to the menu commands. Individual toolbar buttons are described in detail in their specified sections of this manual. Each Page Tab View may have different items on the toolbar because of the different features offered.
4. **Page Tab Views:** These tabs are used to gain access to each Page Tab View.

❺ **Split Bar:** This bar slides the Horizontal Scroll bar to the left or right so all or part of the page tabs can be viewed.

❻ **Status Bar:** This bar on the bottom of the display, shows the status of the M.O.L.E. Profiler Power Pack battery, Internal operating temperature, connected COM port, available Help information, mouse pointer X-Y position, current date and time.

❼ **Scroll Bars:** These bars scroll the display horizontally and vertically.

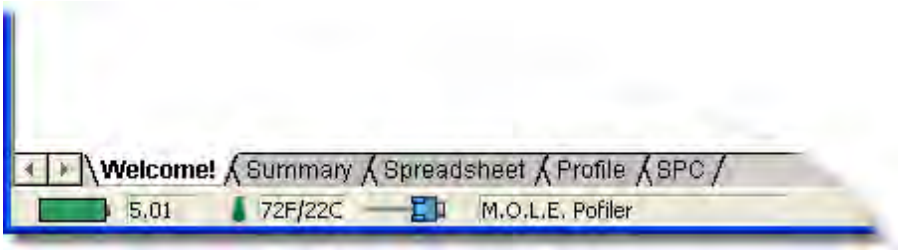
❽ **AutoPlay:** This feature offers quick access to the M.O.L.E. MAP software.

5.3.1. AutoPlay

This feature offers quick access to the M.O.L.E.® MAP software. When a MEGAM.O.L.E.®, SuperM.O.L.E.® Gold or SuperM.O.L.E.® Gold 2 is connected to a computer through a USB Port with MAP installed, the AutoPlay panel appears in the lower right corner of the desktop. This panel displays the four most common MAP commands. If the software is already open, it is restored.

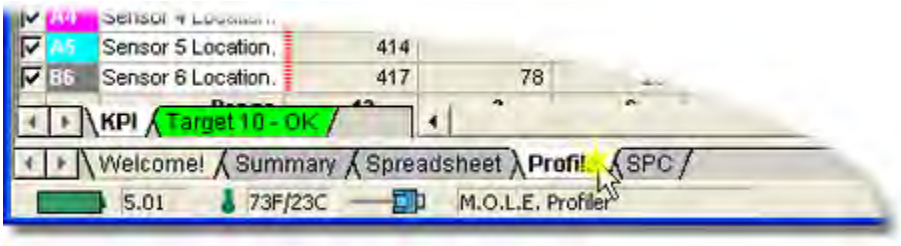
5.3.2. Page Tabs

There are five standard Page Tabs. These tabs are located on the bottom left of the display.



To display the contents of a Tab, use the mouse pointer. The tab will then become highlighted, and the worksheet will now be visible.

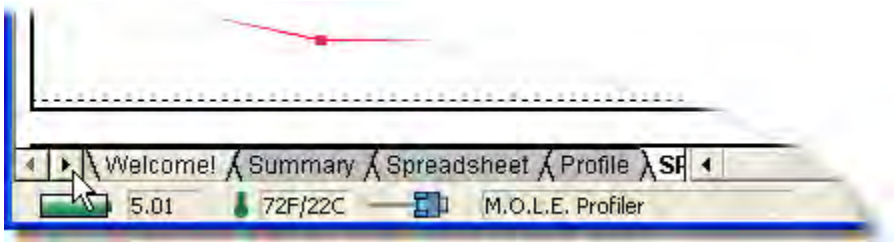
The keyboard does not allow access to the Tabs. The only way to select a Tab is by using the mouse pointer.



5.3.3. Split Bar

The Split bar lets the user slide the resize the Horizontal scroll bar to the left or right, so all of the Tabs can be viewed. This feature is always located on the left edge of the Horizontal scroll bar.

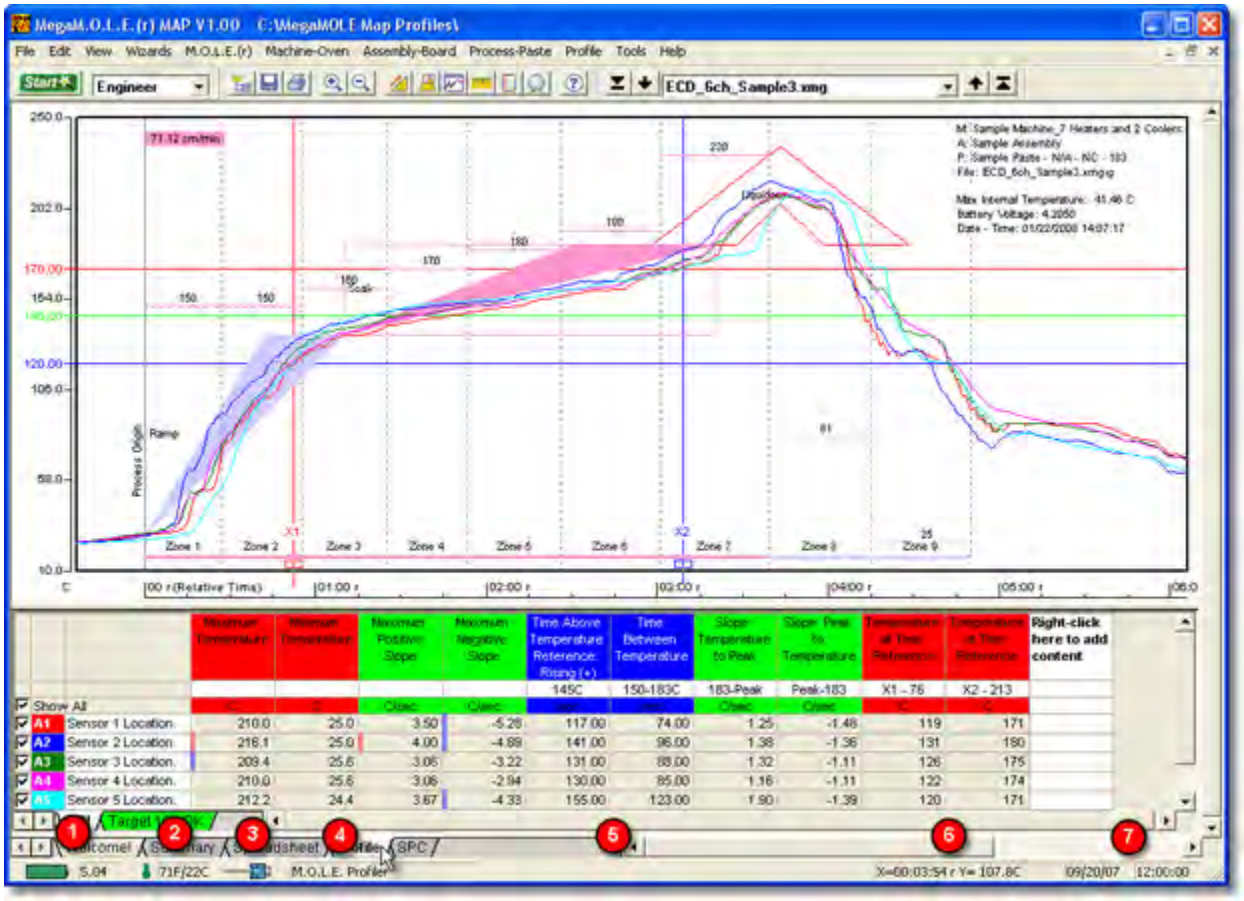
Hidden Tabs may also be displayed by using the Tab Scroll Arrows located on the left side of the Tabs.



5.3.4. Status Bar

This bar is located on the bottom of the software display. It shows the status of the M.O.L.E. Profiler Power Pack, Internal operating temperature, connected COM Port, available Help information, mouse pointer X-Y position, current date and time.

Using the ***Preferences*** command, the user can decide which M.O.L.E. Profiler status bar items are displayed. Refer to topic ***Software>Menus>File>Preferences>M.O.L.E.*** for more information.



1. **Power Pack:** This indicator displays the voltage reported by the currently selected M.O.L.E. Profiler. The nominal range for normal MEGAM.O.L.E.®, V-M.O.L.E.® and SuperM.O.L.E.® Gold 2 Profilers is 4.0V to 3.0V and SuperM.O.L.E.® Gold Profiler operation is 5.1V to 4.7V.
2. **Temperature:** This indicator displays the internal operating temperature reported by the currently selected M.O.L.E. Profiler.

If the internal operating temperature is within the acceptable range (**0°-40°C [0°-104°F]**) the symbol appears in **GREEN**. When the internal operating temperature is above the acceptable range (**41°C> [105.8°F>]**), it appears in **RED** indicating that the M.O.L.E. Profiler has reached the temperature warning zone.

3. **M.O.L.E. Profiler Connection:** This indicator displays a symbol for the computer communication connection type such as Serial, USB or wireless RF.
4. **Instrument User Name:** This indicator displays the user configured name for the M.O.L.E. Profiler.
5. **Help Information:** This indicator displays the action that button performs when the mouse pointer is placed over a Toolbar button or Menu command.
6. **Time (X)/Temperature (Y) Readout:** This indicator displays the Time and Temperature values of the mouse pointer location on the Profile tab Data Graph. The units displayed for Time and Temperature values are the same as those displayed on the graph.

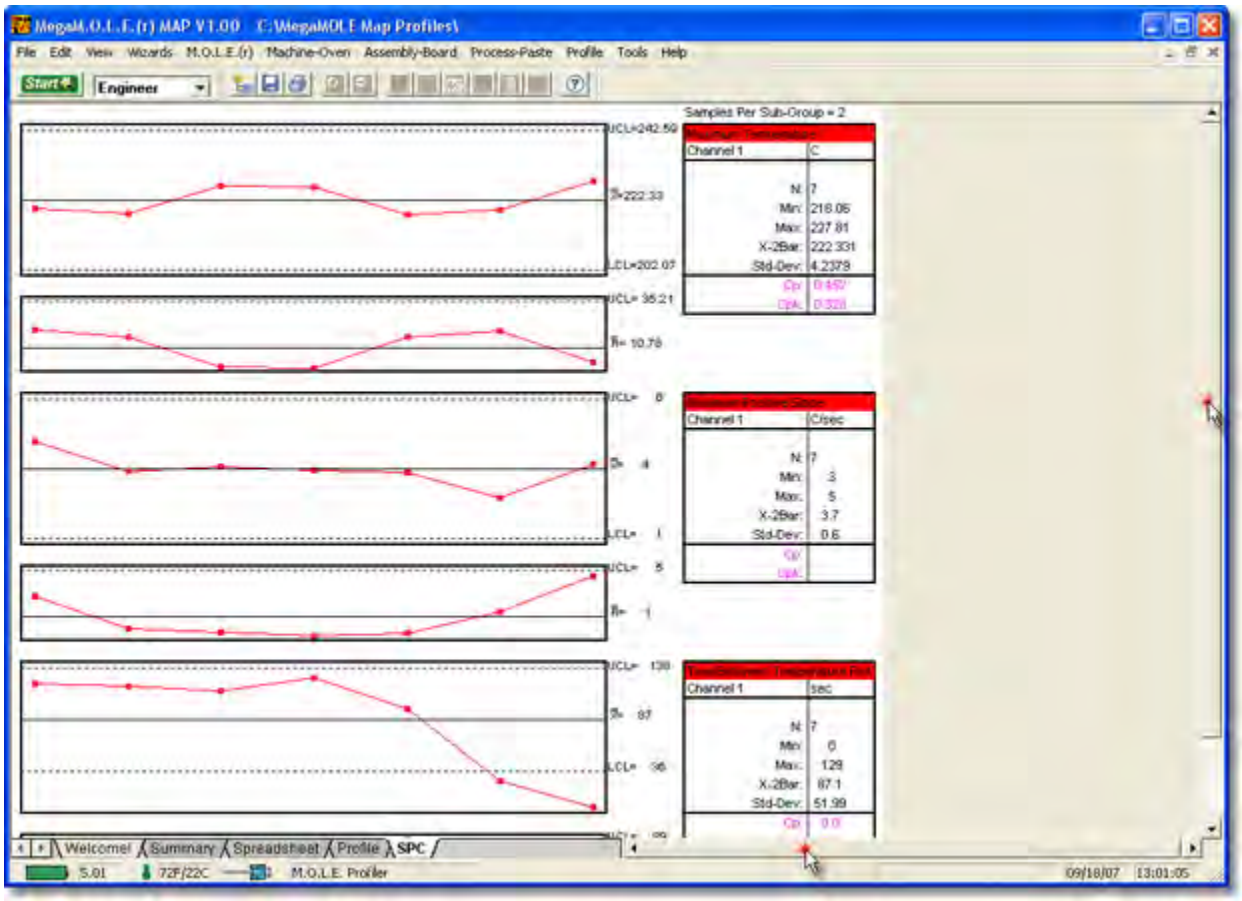
❼ **Date and Time:** This indicator displays the current time and date of the computer. The user can auto synchronize this clock with the M.O.L.E. Profiler internal clock. Refer to topic ***Software>Menu>File Menu>Preferences>M.O.L.E.*** for more information.

5.3.5. Scroll Bars

All Tab Views have both Horizontal and Vertical screen scroll bars so the non-visible areas of the display can be scrolled into view.

The Horizontal scroll bar is located in the lower right corner and can be scrolled left or right by pressing the left or right arrows located on each end of the scroll bar.

The Vertical scroll bar located on the right side of the screen has the same features as the Horizontal scroll bar except it scrolls the display up and down.



For best performance, it is recommended that the minimum computer display area be set to 1024 X 768. Refer to Microsoft® Windows® documentation for details.

5.4. Page Tab Descriptions

The Page Tabs offer four different ways to view the data recorded by the M.O.L.E. Profiler. Each page tab focuses on specific data and offers different features and functions. Along with the Welcome page tab they formulate a complete Profiling report.

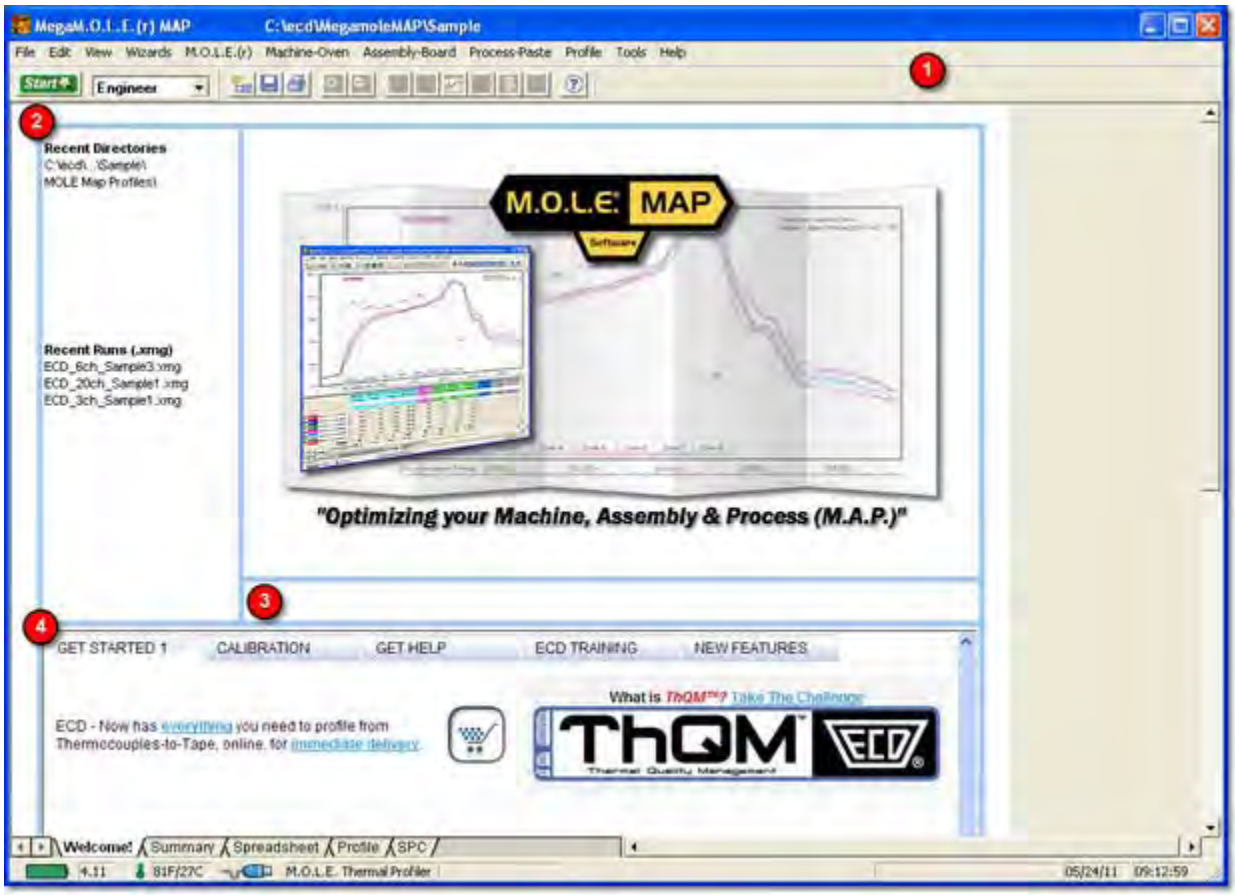
5.4.1. Welcome Page Tab

Welcome is the introductory tab. It is considered the launch pad of the software where the user can quickly access different sections of the software.

This is available in both Engineer & Verify Modes.

Welcome Tab features:

1. Menus and Toolbar
2. Recent Directories/Data Runs
3. Company/Report Name Text Box
4. ECD News



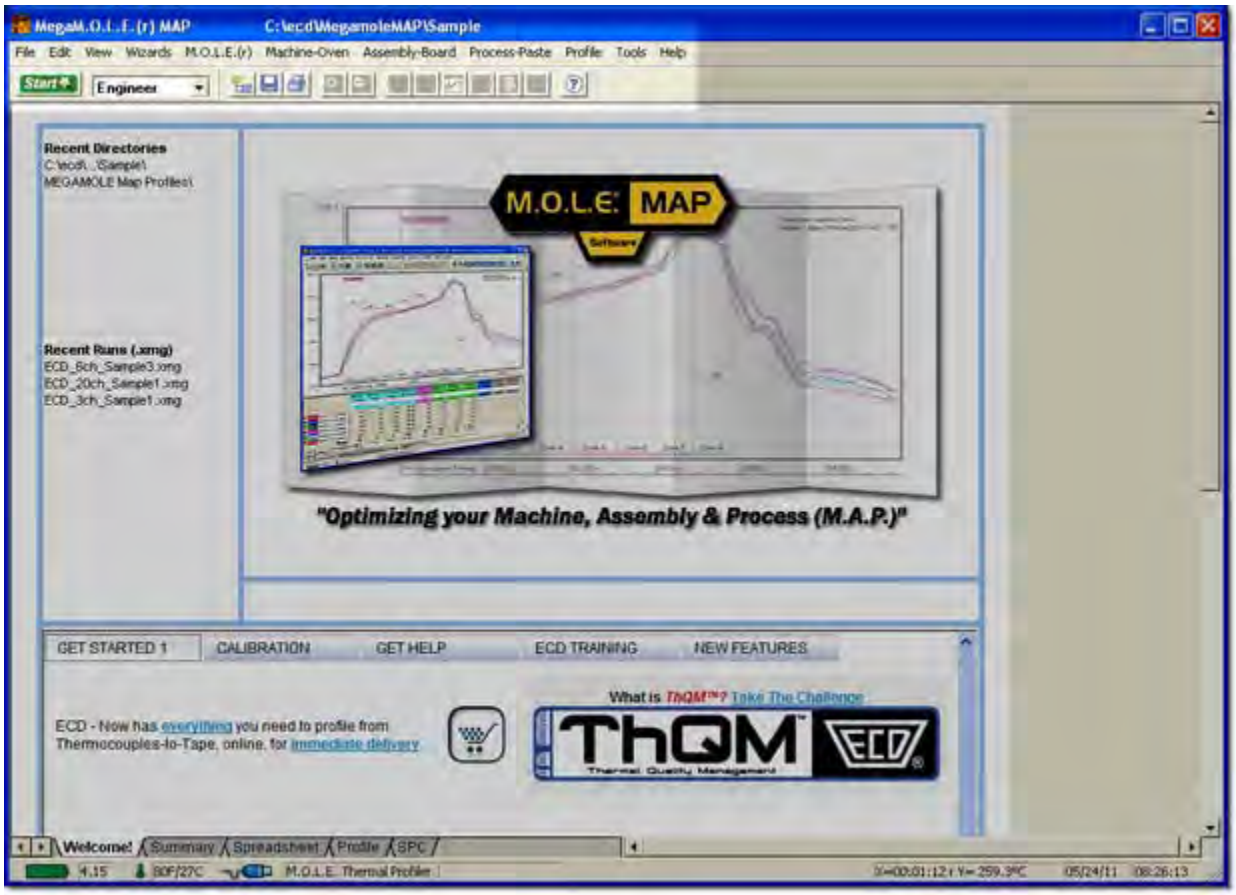
5.4.1.1. Menus & Toolbar

- **Menus:**

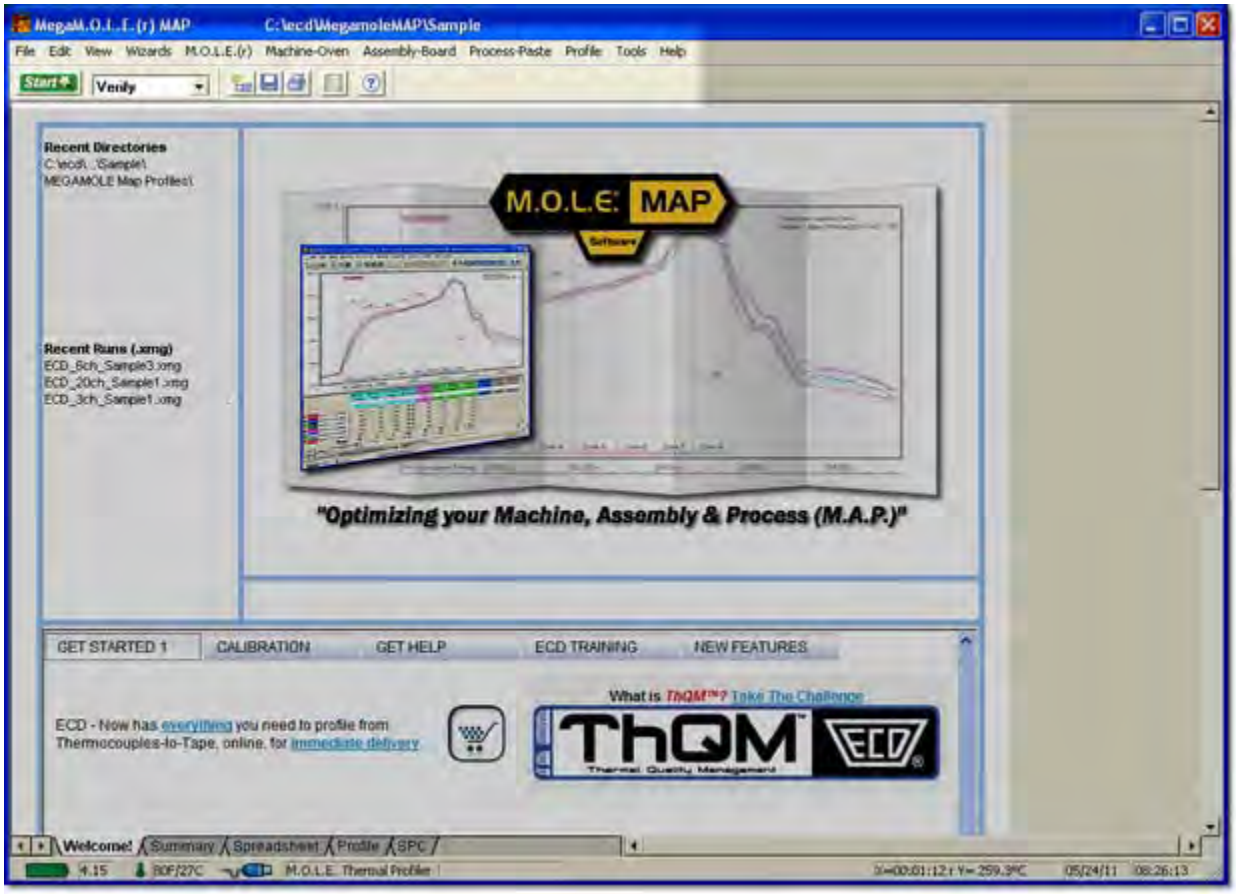
  File, Edit, Wizards, M.O.L.E.®, Machine-Oven, Assembly-Board, Process-Paste, Profile, Tools and Help.

- **Toolbar Buttons:**

  Engineer Mode - Start, Open Working Directory, Save, Print, and Help.



Verify Mode - Start, Open Working Directory, Save, Print, and Help.



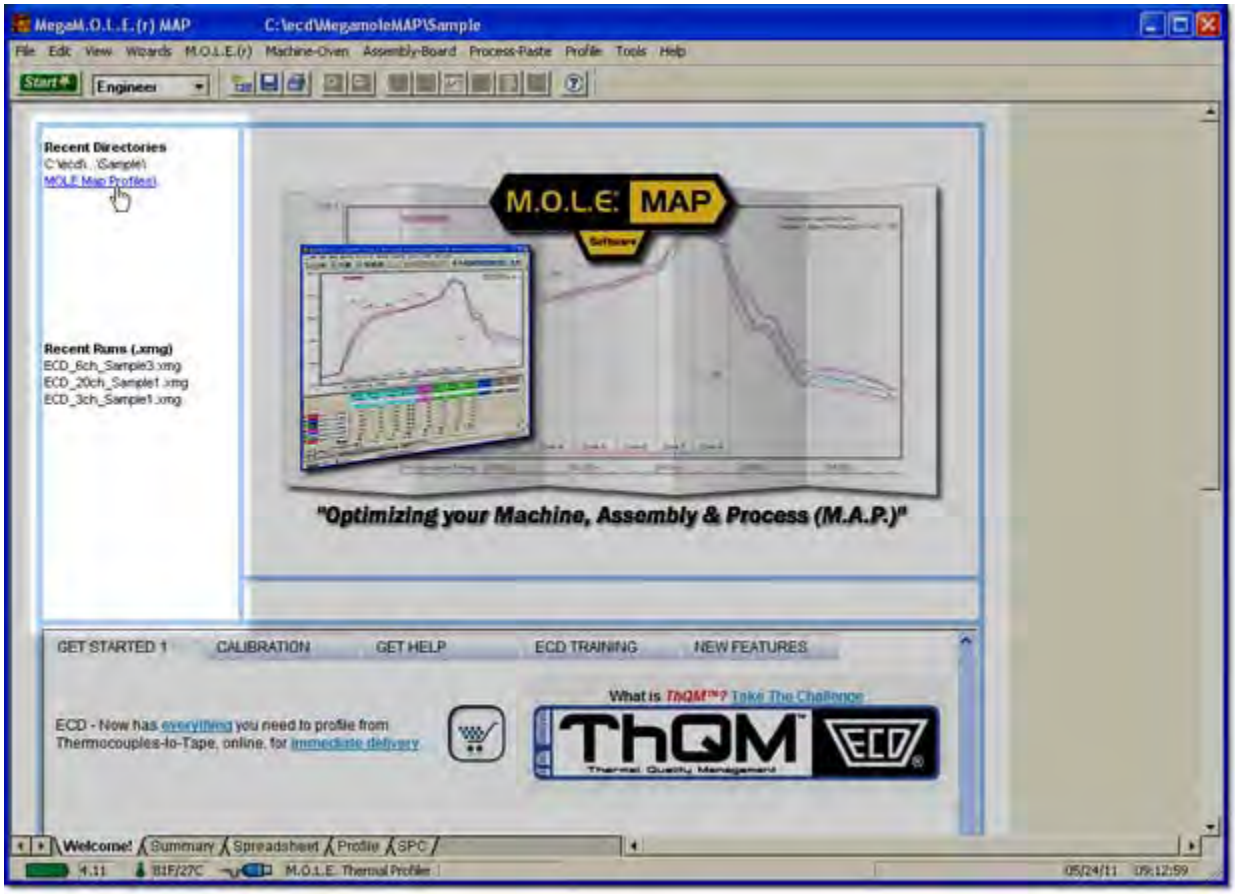
5.4.1.2. Recent Directories/Data Runs

The text box located on the Welcome page tab allows the user enter a company or report name.

To select a recent working directory or data run:

1) Using the mouse pointer, click the recent working directory or data run. When selecting a recent data run the software automatically switches to the ***Profile Tab*** and displays the selected data run.

> The displayed amount of recent working directories and data runs can be changed on the ***Misc tab*** on the ***Preferences*** property sheet. Refer to topic ***Menu and Tool Commands>File Menu>Preferences>Misc*** for more information.

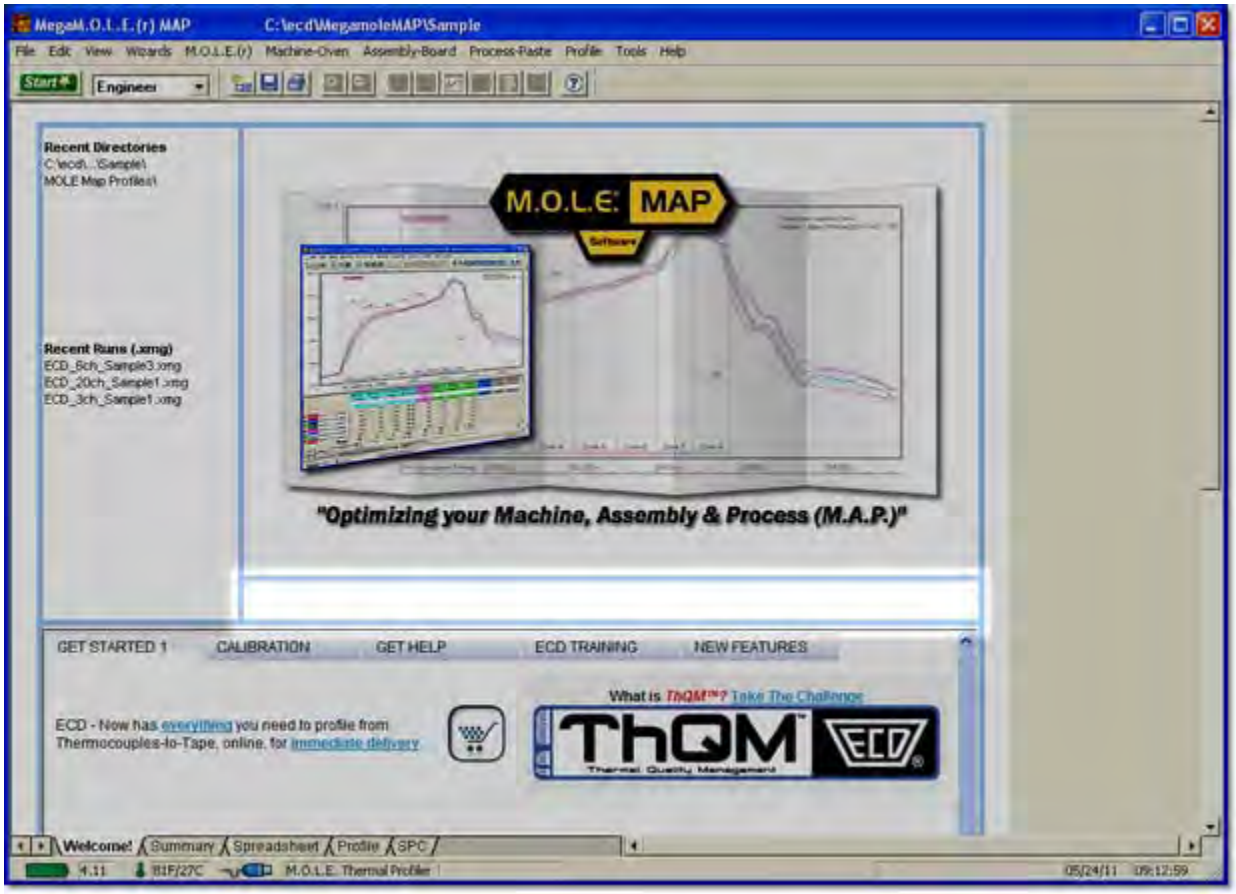


5.4.1.3. Company/Report Name

The text box located on the Welcome page tab allows the user enter a company or report name.

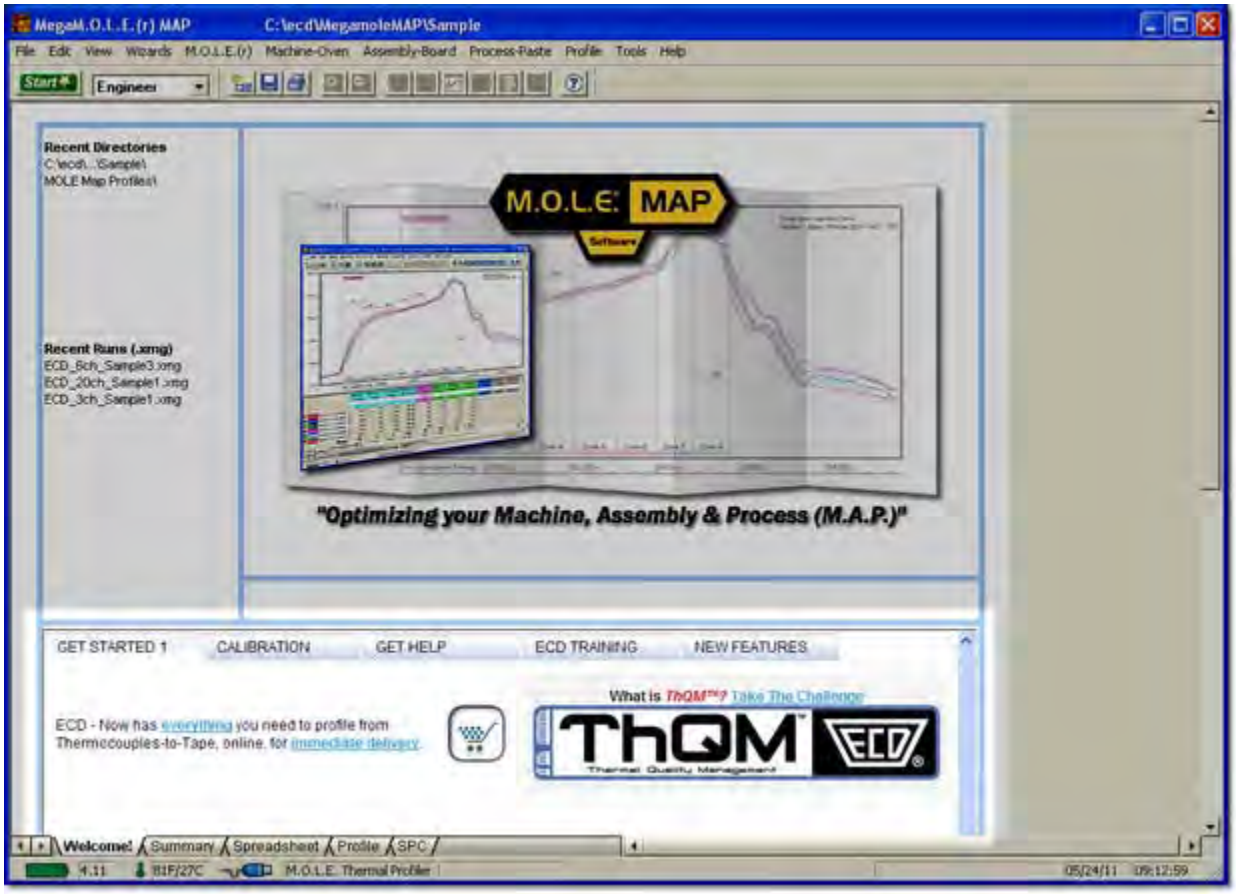
To enter a name:

1) Using the mouse pointer, click in the text box.
2) Type a desired name and then hit the [enter] key to accept or [esc] to cancel.



5.4.1.4. ECD News

The ECD News section of the Welcome tab includes quick links to help the user learn about the M.O.L.E.® MAP software and related M.O.L.E. Profilers. It also displays the latest version of the software so the user is informed when there is an upgrade available.



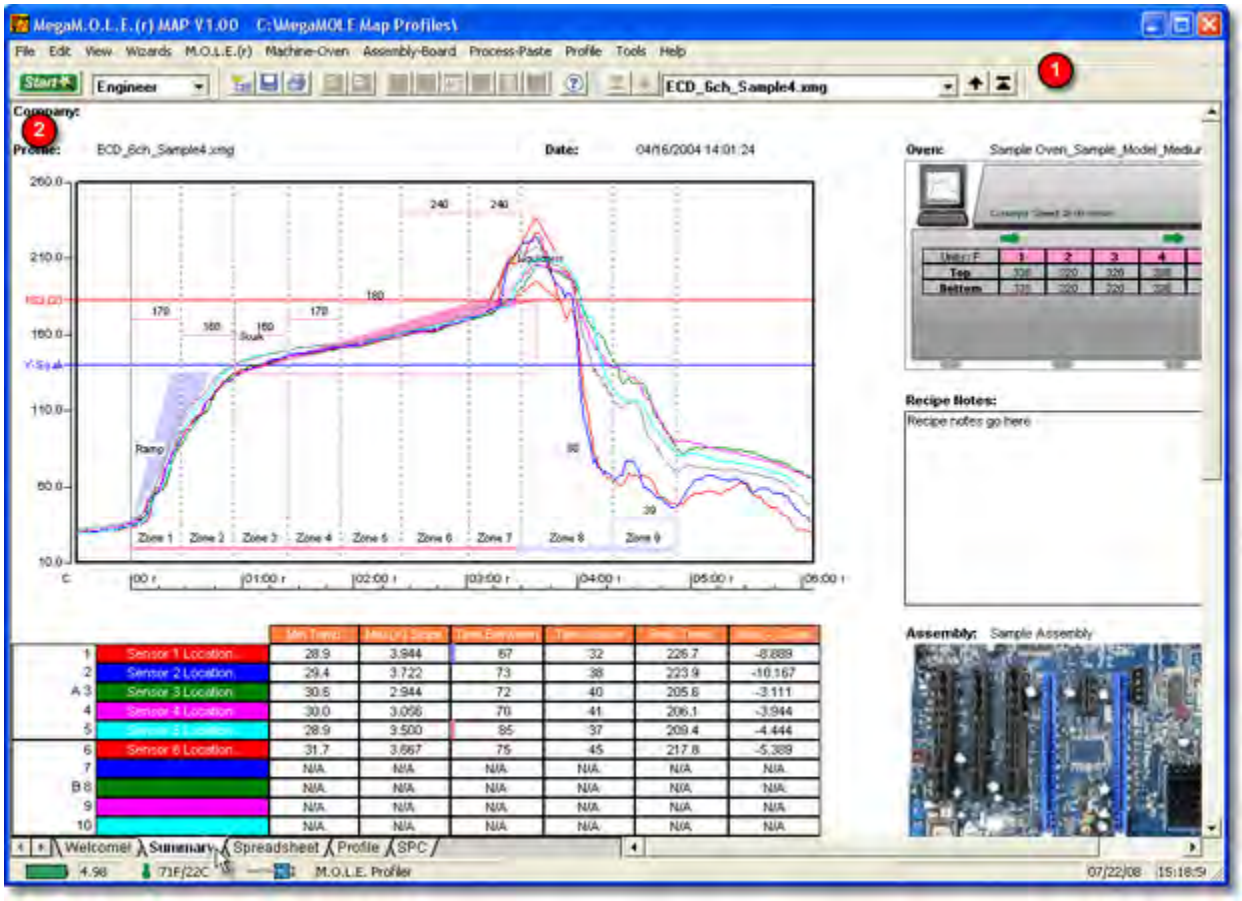
5.4.2. Summary Page Tab

The Summary Page Tab is where individual data runs are viewed in summarized page format.

This is available when in Engineer Mode.

Summary Tab features:

1. Menus and Toolbar
2. Summary Template



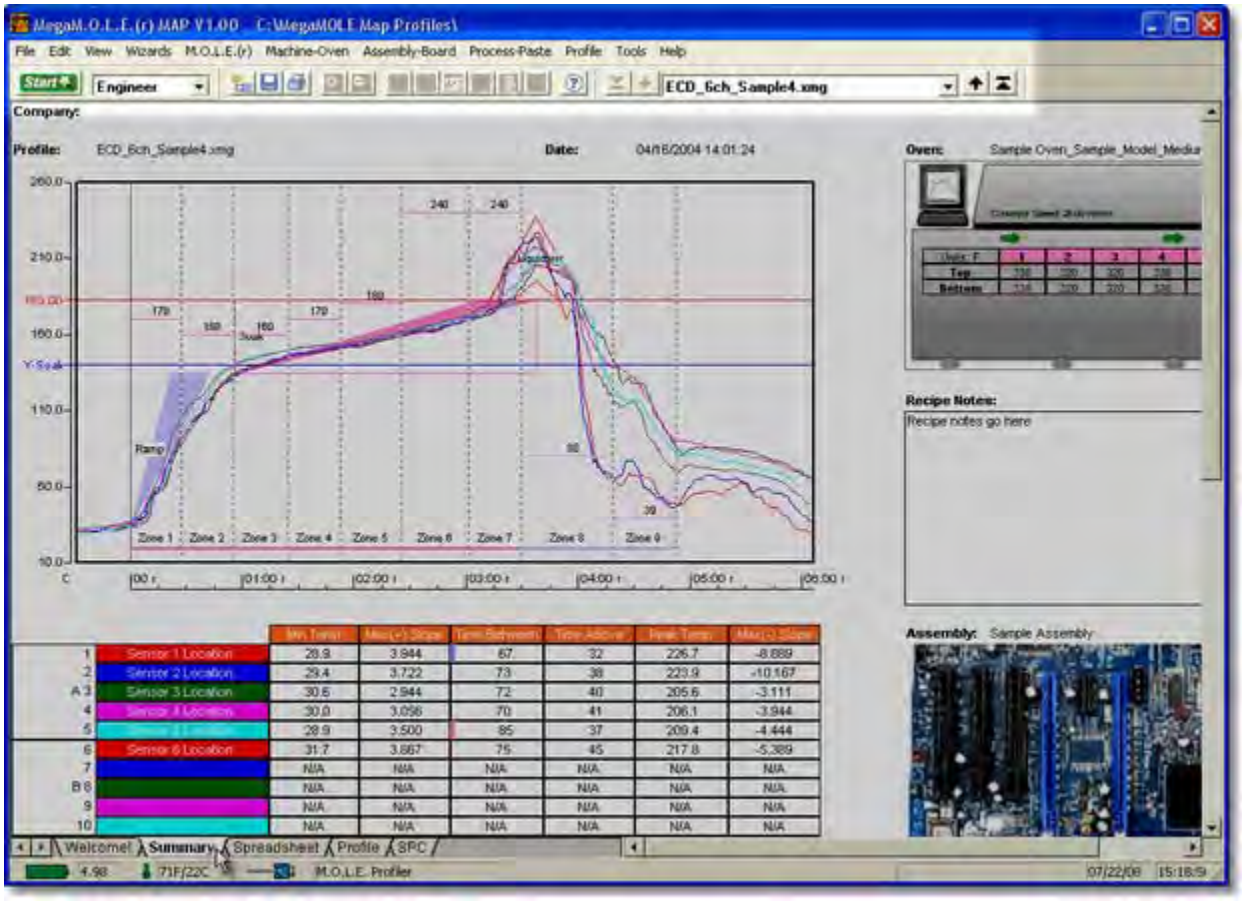
5.4.2.1. Menus & Toolbar

- **Menus:**

  File, Edit, Wizards, M.O.L.E.®, Machine-Oven, Assembly-Board, Process-Paste, Profile, Tools and Help.

- **Toolbar Buttons:**

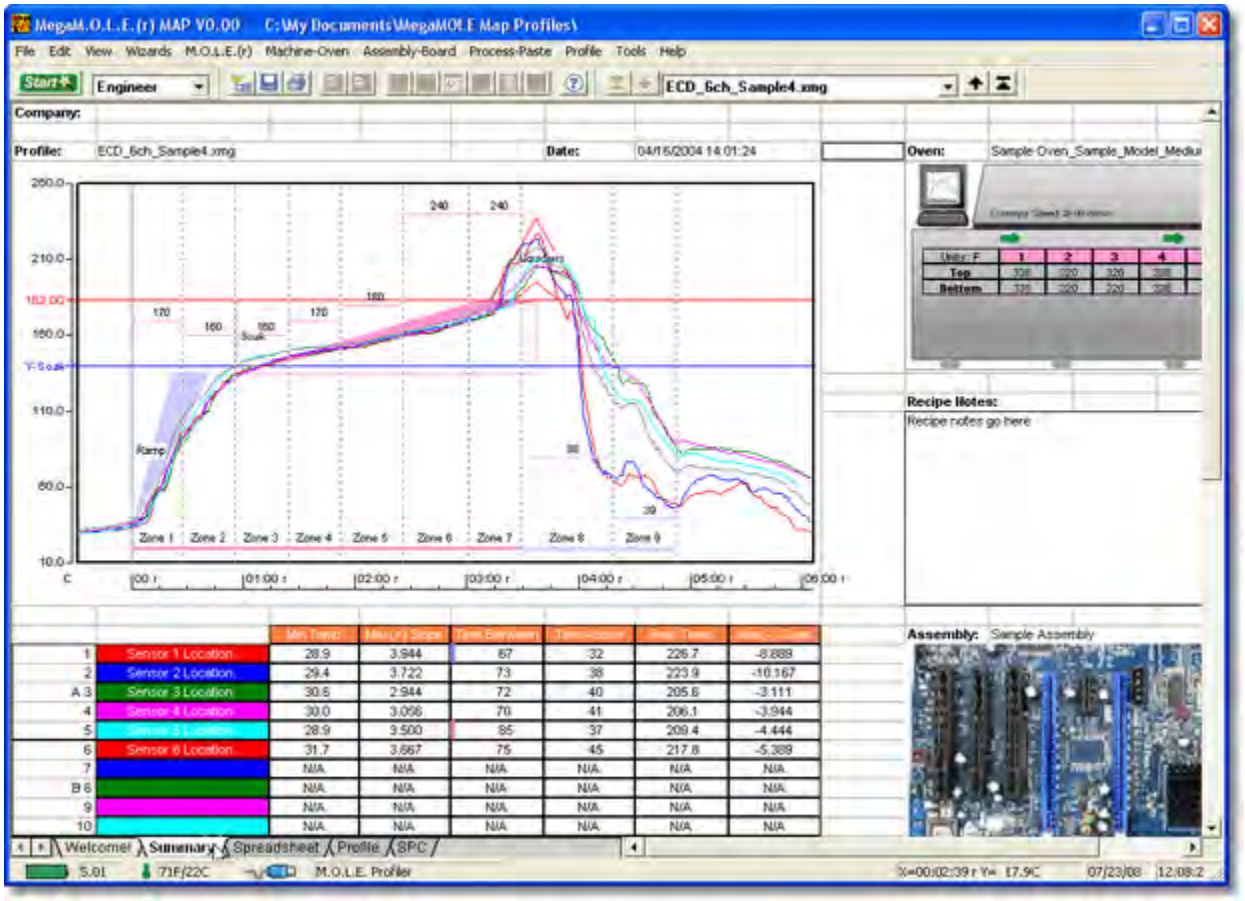
  Engineer Mode - Start, Open Working Directory, Save, Print, Help, First (data run of the data set), Back (to previous data run), Forward (to the next data run), and Last (data run of the data set).



Verify Mode - Tab not available.

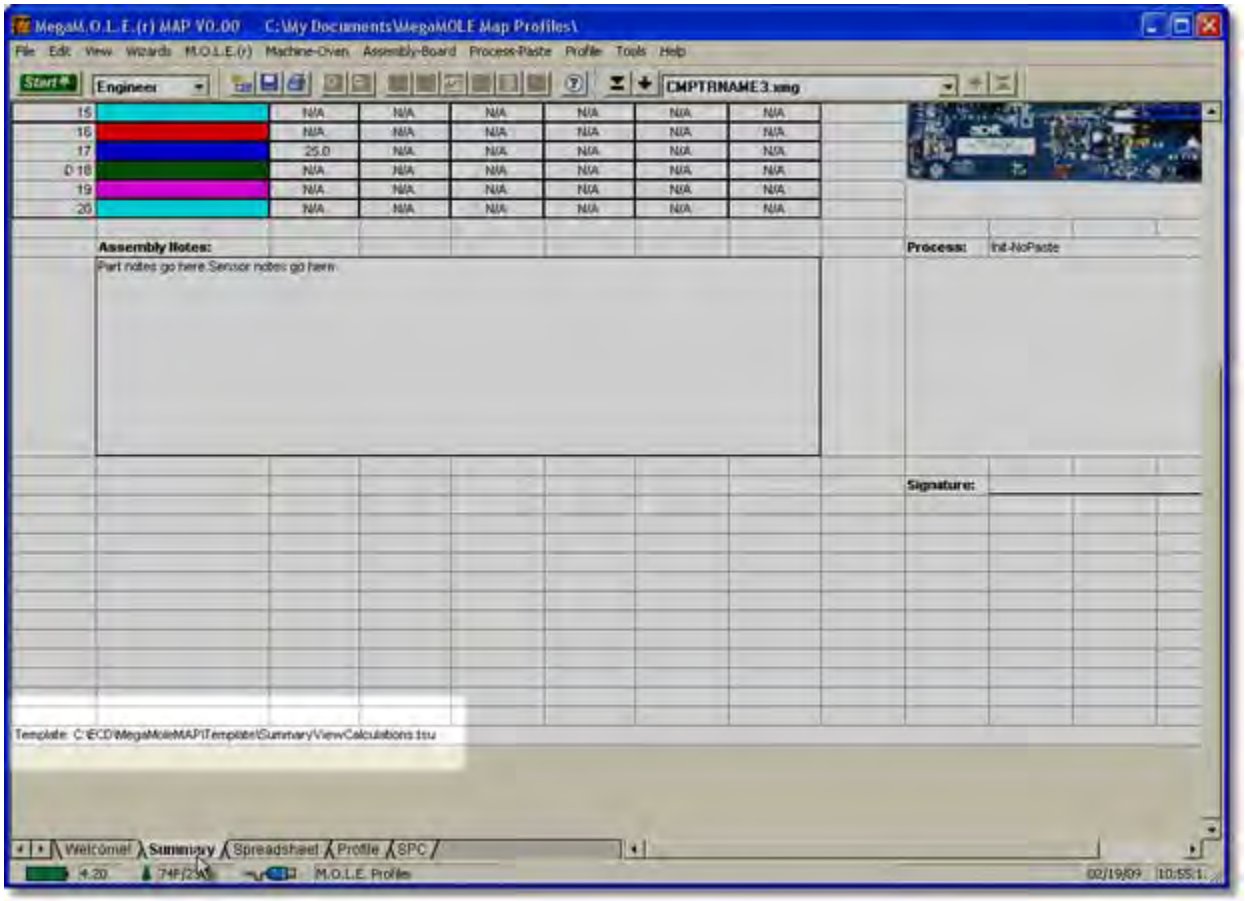
5.4.2.2. Summary Template

The Summary Page Tab is built using a template file (*.TSU) overlaid on a cell grid.



The Summary template is automatically loaded every time the software is started and is used as the default template for every downloaded data run. This template file is specified on the Summary page tab of the Preferences dialog box. Refer to topic ***Software>Menus>File>Preferences>Summary*** for more information.

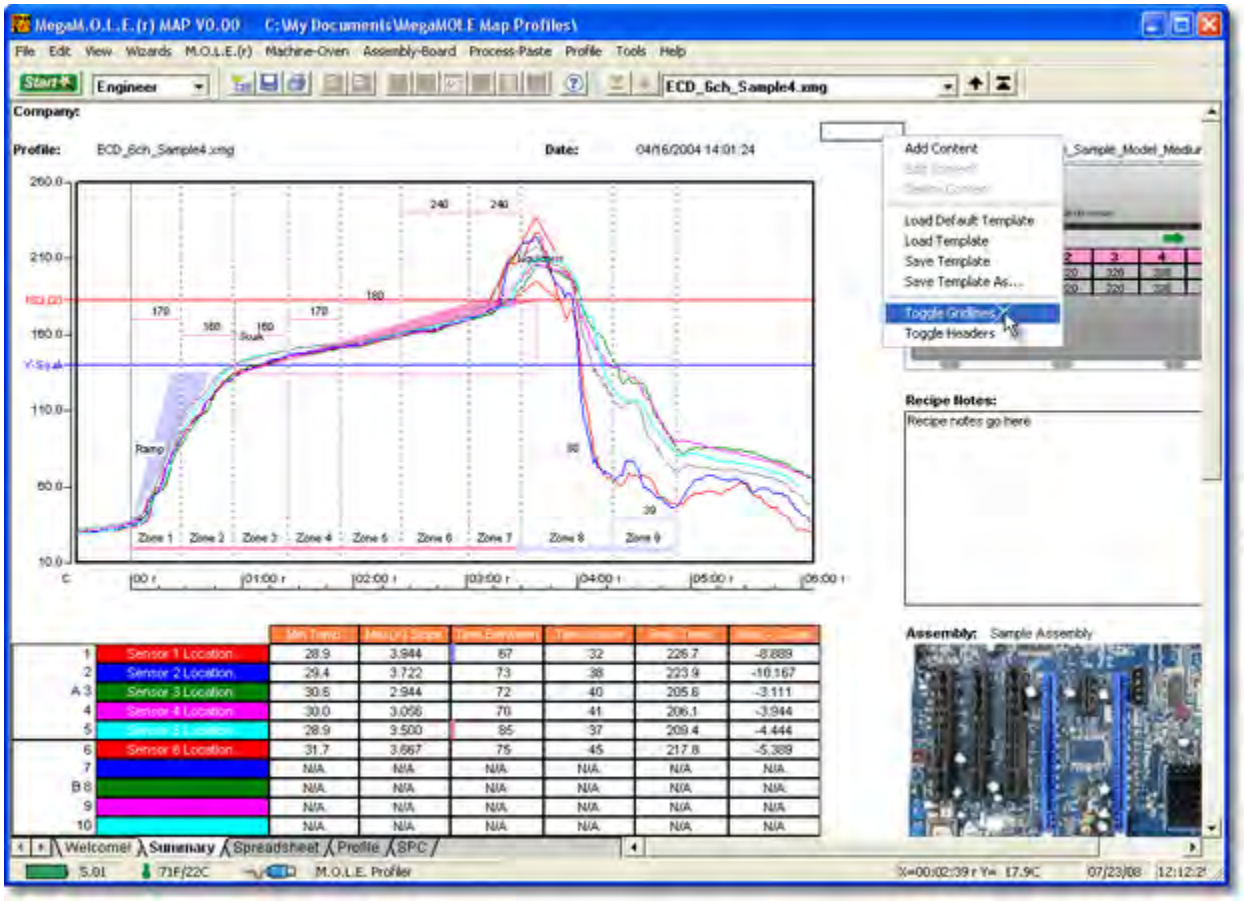
For reference, the file name for the loaded template appears in the lower left corner of the template grid.



To display Template commands:

1) Move the mouse pointer over a template cell.
2) Using the right mouse button, right-click and a shortcut menu appears.

Template commands can also be accessed on the View menu. Refer to topic ***Software>Menus>View>View Menu*** for more information. To add or edit a calculation refer to topic ***Software>Page Tabs>Summary Template>Add & Edit Content*** for more information.



3) You can now select from the following template commands.

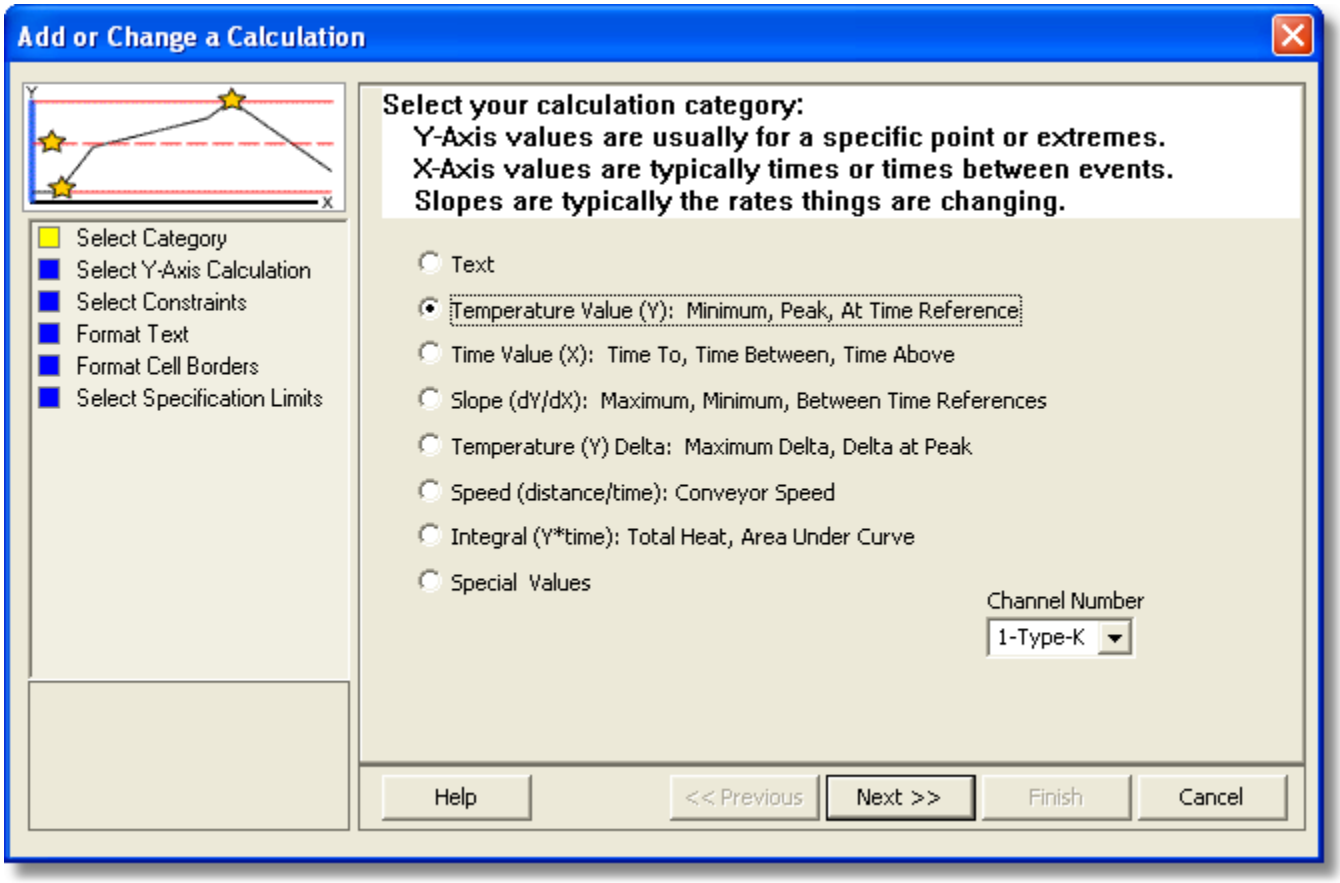
5.4.2.2.1. Add & Edit Content

To add or edit template content, the software includes a wizard to guide the user through the related content options. The template allows eight different calculation categories to be displayed.

Add & Edit Content wizards:

1. Text
2. Temperature Value (Y)
3. Time Value (X)
4. Slope (dX/dY)
5. Temperature (Y) Delta
6. Speed (distance/time)
7. Integral (Y*time)
8. Special Values

This wizard contains all the related steps to add or edit content to the template. It is recommended to process all steps in order but the software allows you to navigate forward and backward setting options individually. When the minimum options have been selected, ***Finish*** command button will become active.



5.4.2.2.1.1. Text

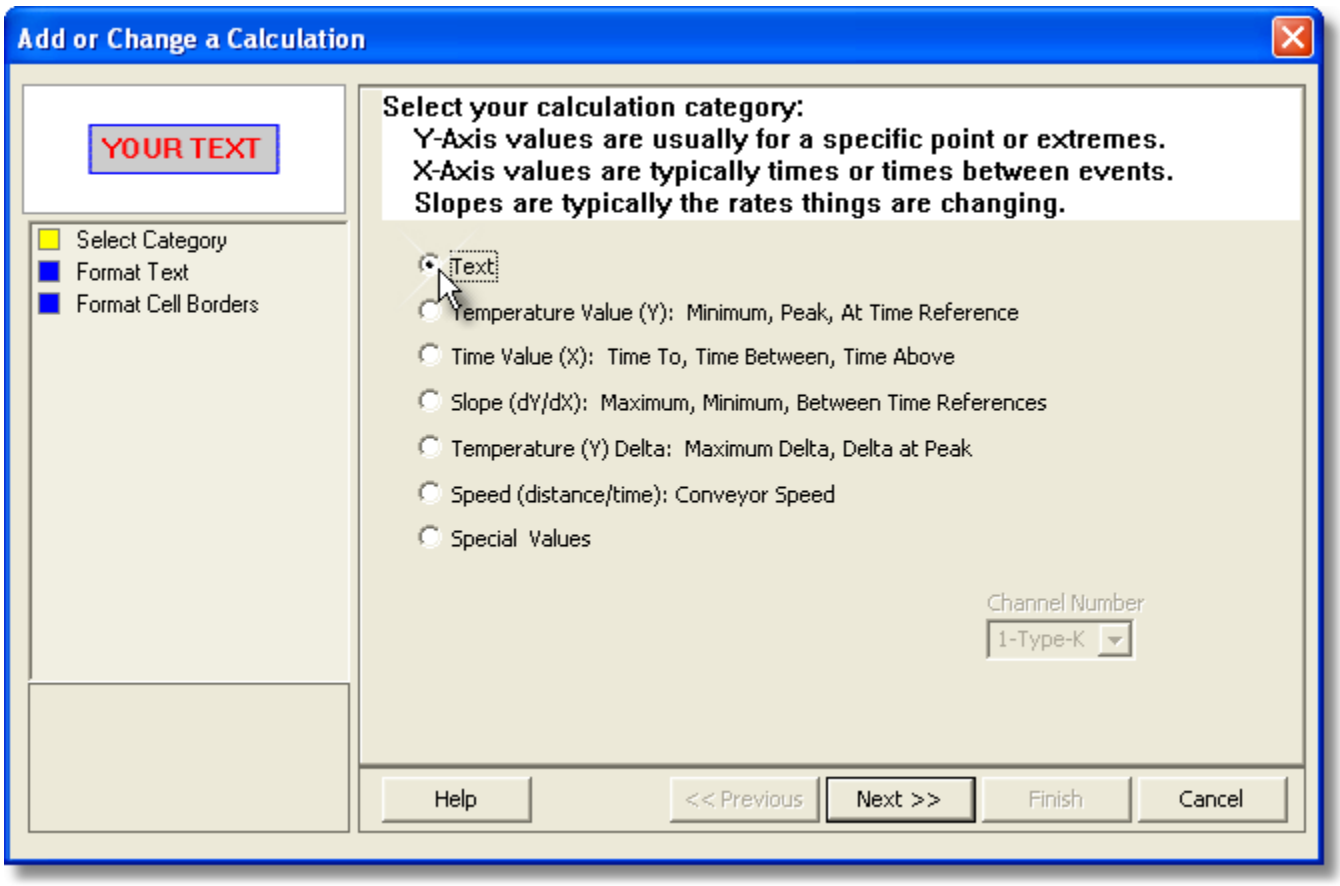
To add or edit Text content:

1) Right-click a template cell and a shortcut menu appears.
2) Select ***Add Content*** or ***Edit Content*** from the shortcut menu and the ***Add or Change a Calculation*** wizard appears.

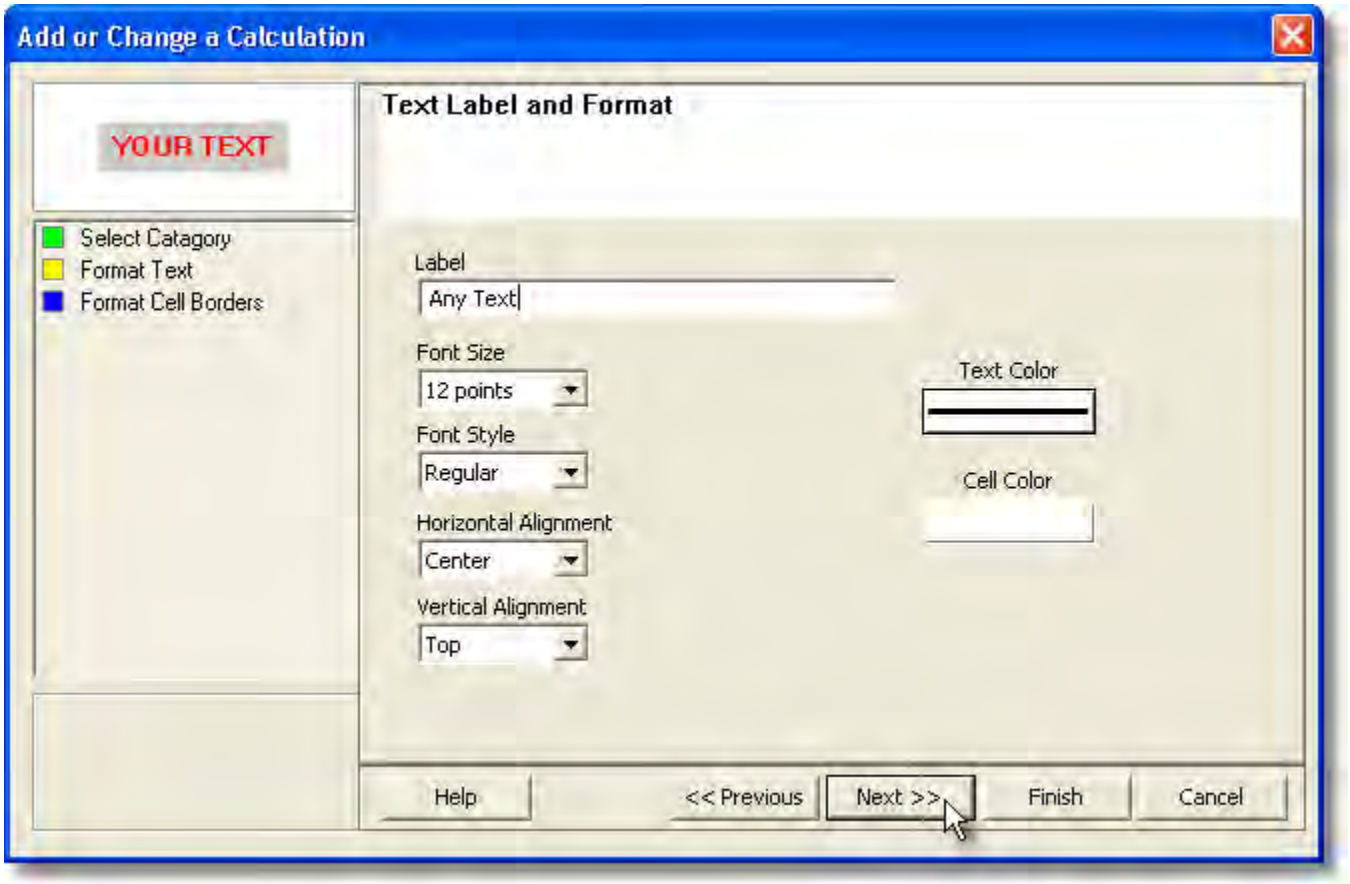
When navigating through the wizard, the step list on the left uses a color key to inform the user of the current step, steps that have been completed and remaining steps.

Current Completed Remaining

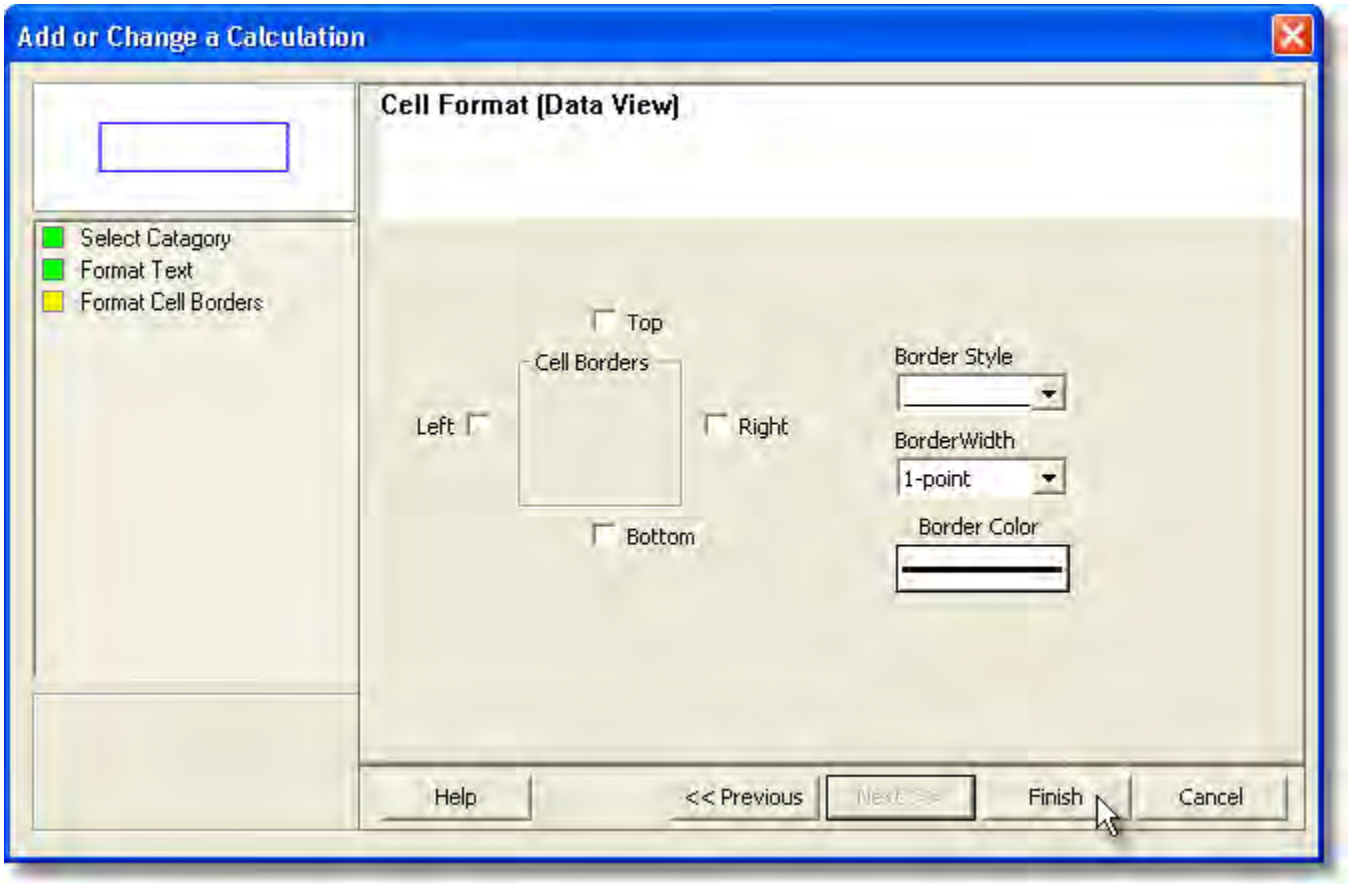
3) Click ***Text***.



4) Select the ***Next*** command button.
5) Select desired text formatting options.



6) Select the ***Next*** command button.
7) Select desired cell border options.



8) Select the ***Finish*** command button to complete the wizard and display the new calculation data in the selected template cell.

5.4.2.2.1.2. Temperature Value (Y)

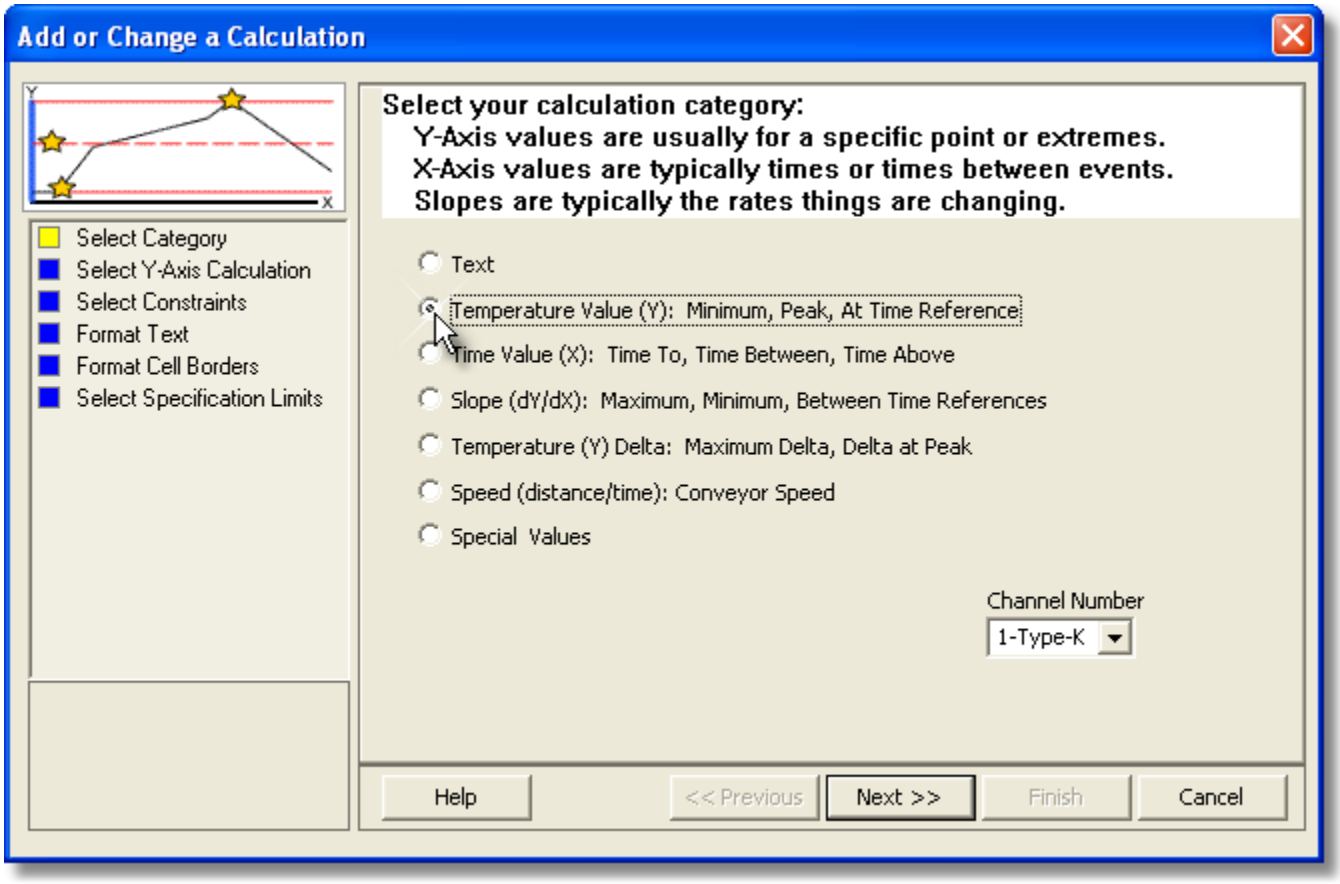
<u>To add or edit Y-Axis Values content:</u>

1) Right-click a template cell and a shortcut menu appears.
2) Select ***Add Content*** or ***Edit Content*** from the shortcut menu and the ***Add or Change a Calculation*** wizard appears.

When navigating through the wizard, the step list on the left uses a color key to inform the user of the current step, steps that have been completed and remaining steps.

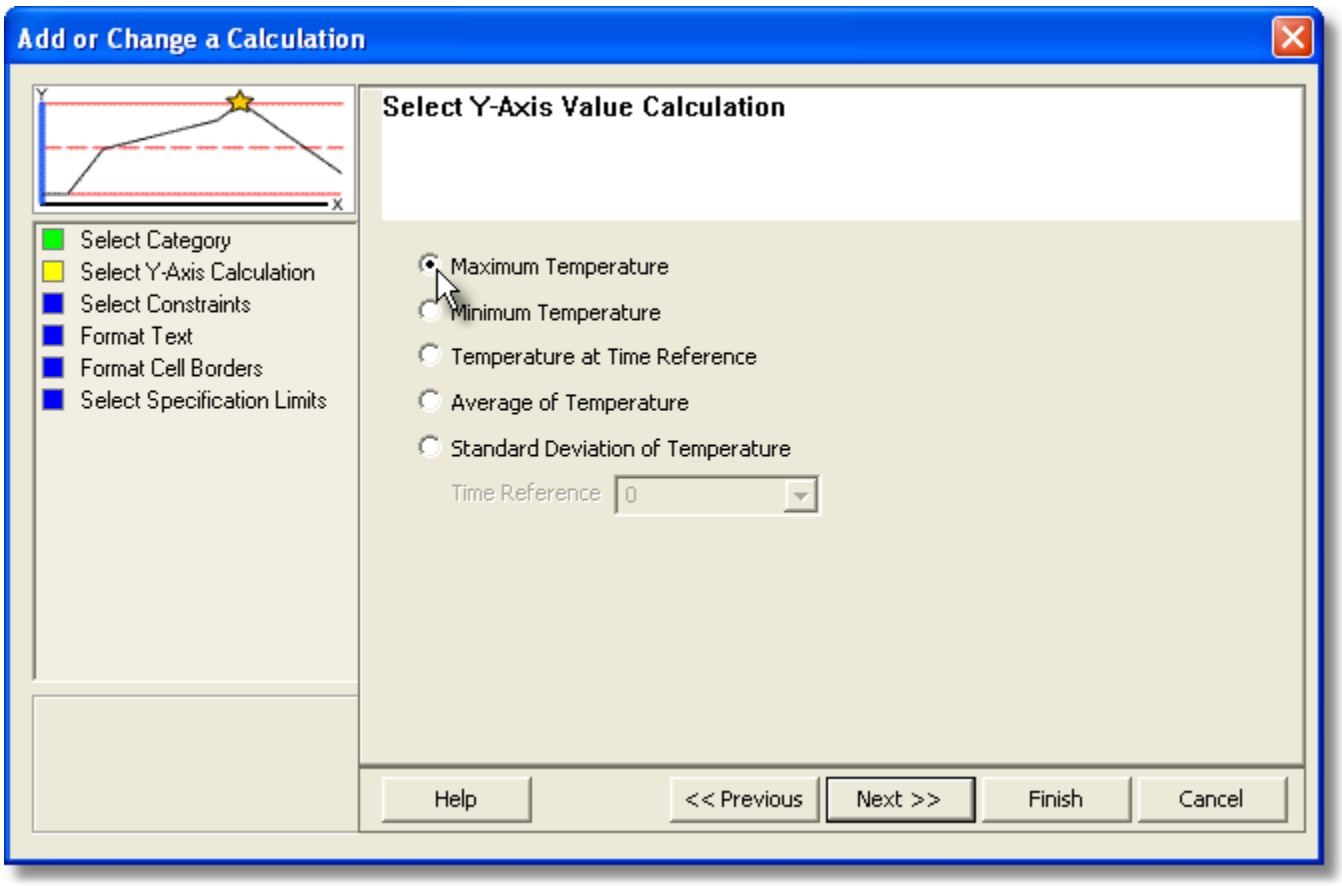
Current Completed Remaining

3) Click ***Temperature Values (Y)*** and which channel to derive the data from.



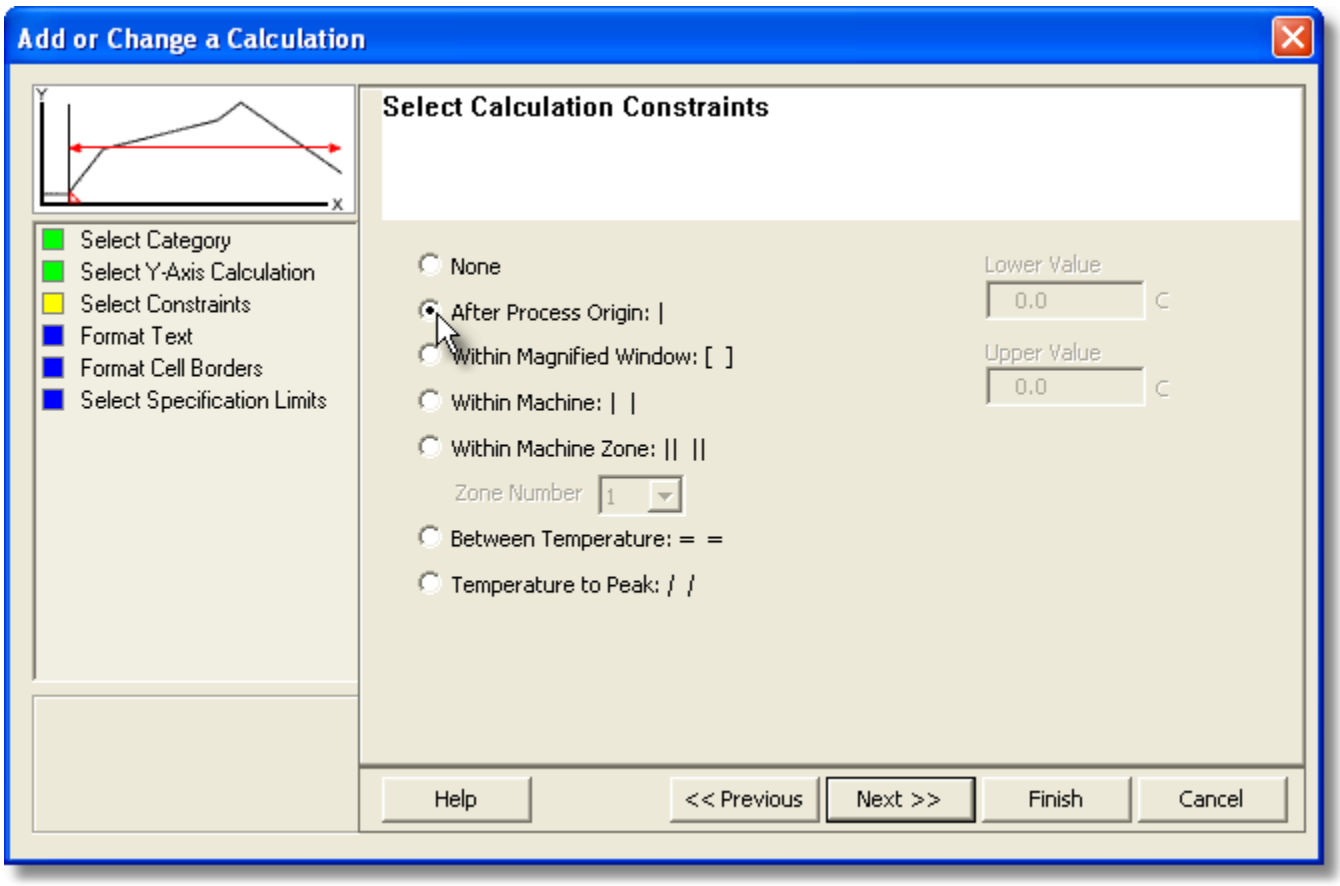
4) Select the ***Next*** command button.
5) Select a Temperature (Y) Axis Value.

If ***Temperature at Time Reference*** calculation is selected, the software requires the user to select an established Time (X) Reference line. If one is not established the software automatically creates one on the Profile Page Tab Data Graph.

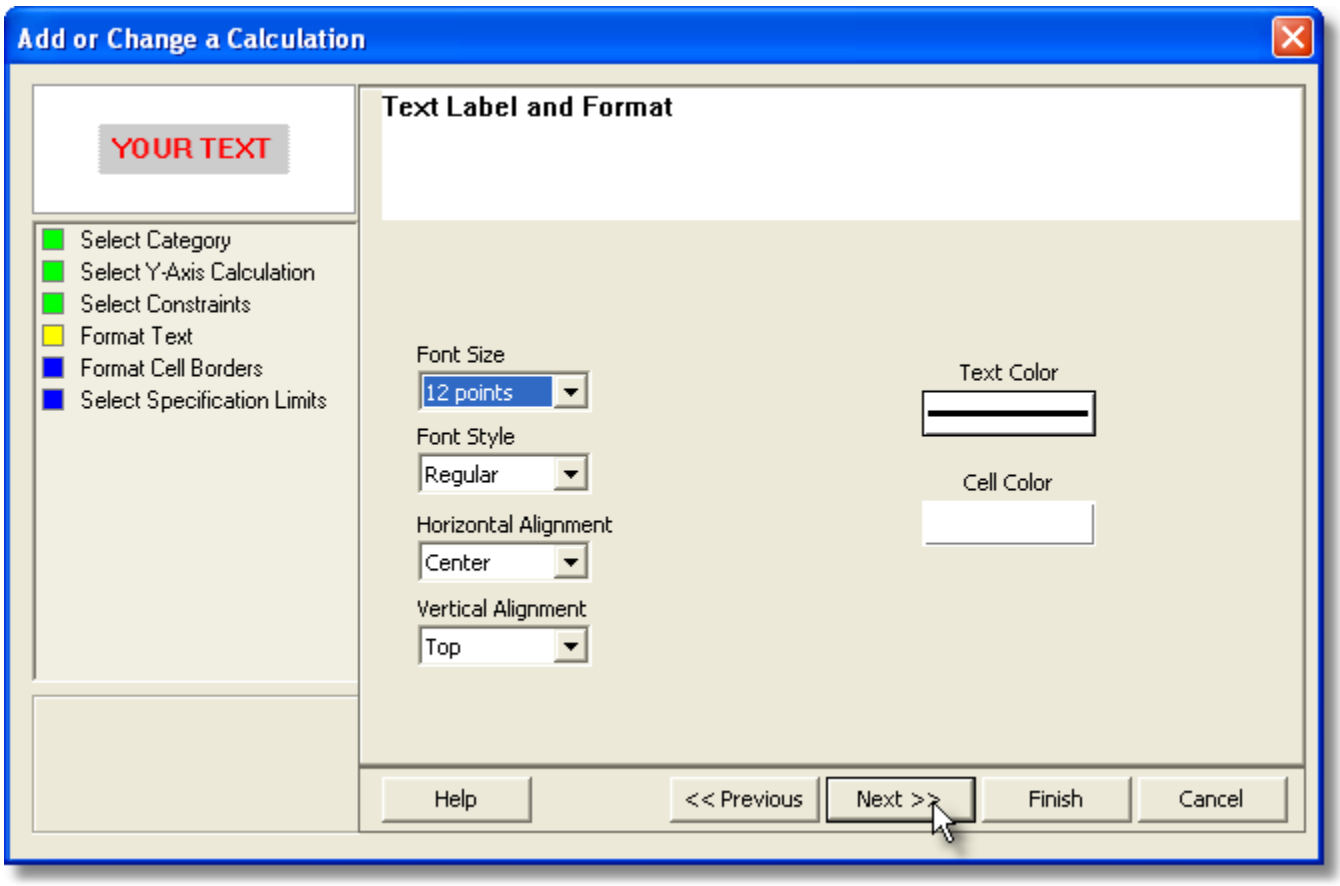


6) Select the ***Next*** command button.
7) Select the calculation constraints. These options are the specified area on the Time (X) Axis where the values are to be extracted from.

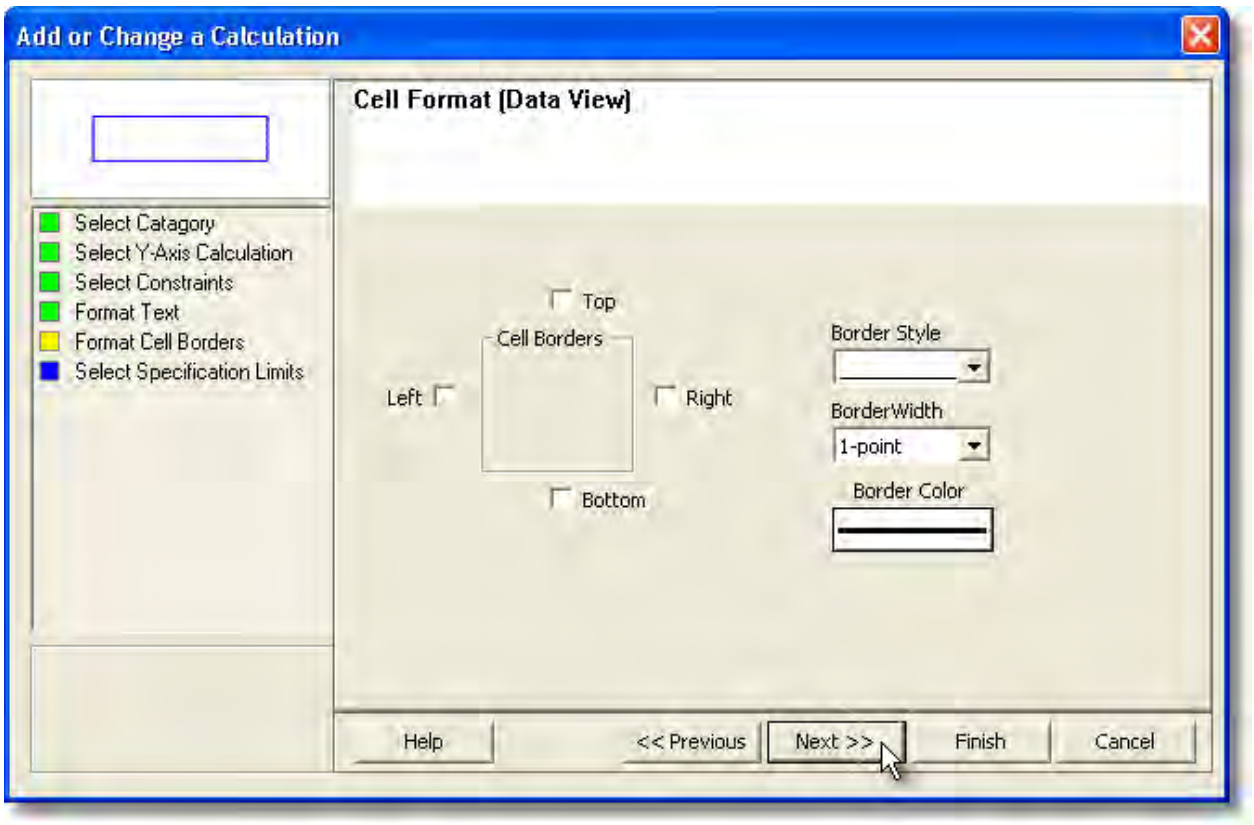
If the ***Within Magnified Window*** constraint is selected and the Magnify tool is used to zoom in on a portion of the Data Graph, the Data Table displays the statistics for those values within the magnified window.



8) Select the ***Next*** command button.
9) Select desired text formatting options.

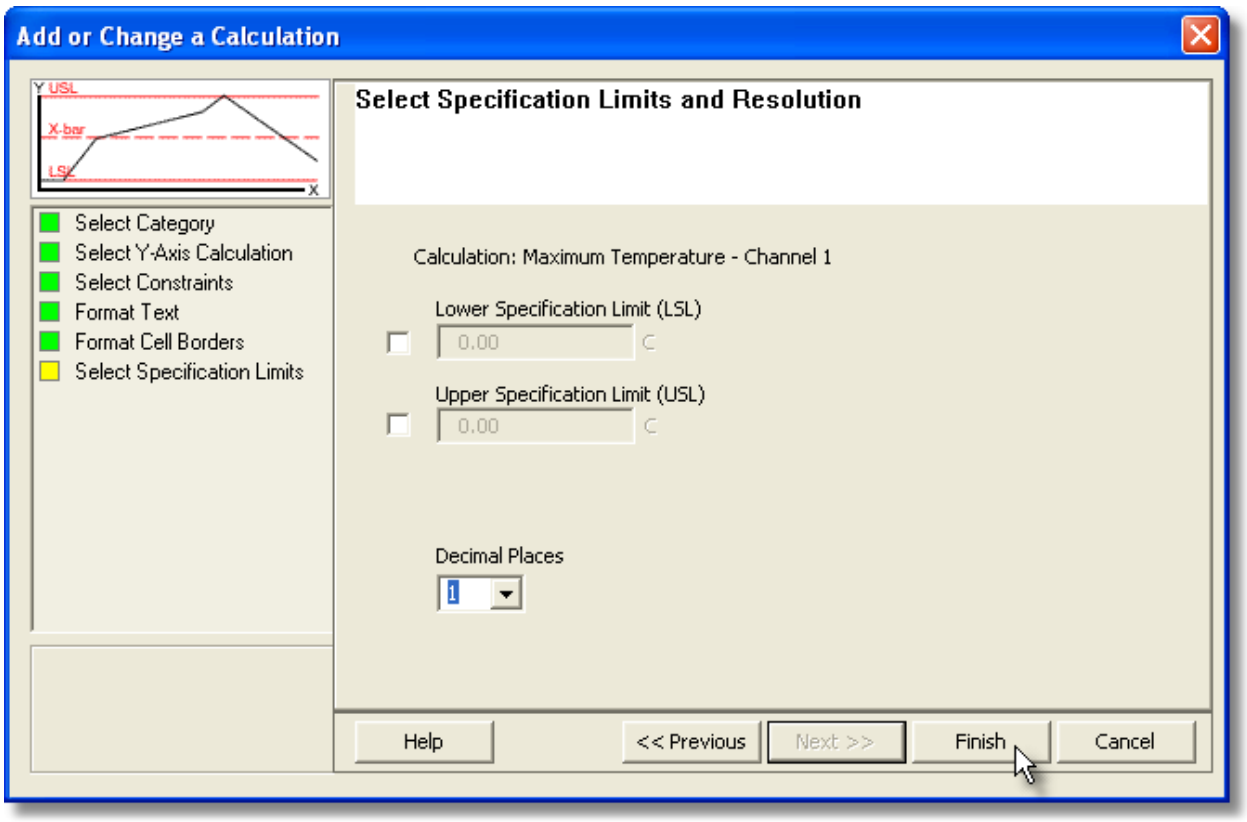


10) Select the ***Next*** command button.
11) Select desired cell border options.



12) Select the ***Next*** command button.

13) Select Specification Limits and Units. If these values are violated colored bars will appear in the formatted template cell. Refer to topic ***Software>Page Tabs>Summary>Template>Specification Limit Indicators*** for more information.



14) Select the ***Finish*** command button to complete the wizard and display the new calculation data in the selected template cell.

5.4.2.2.1.3. Time Value (X)

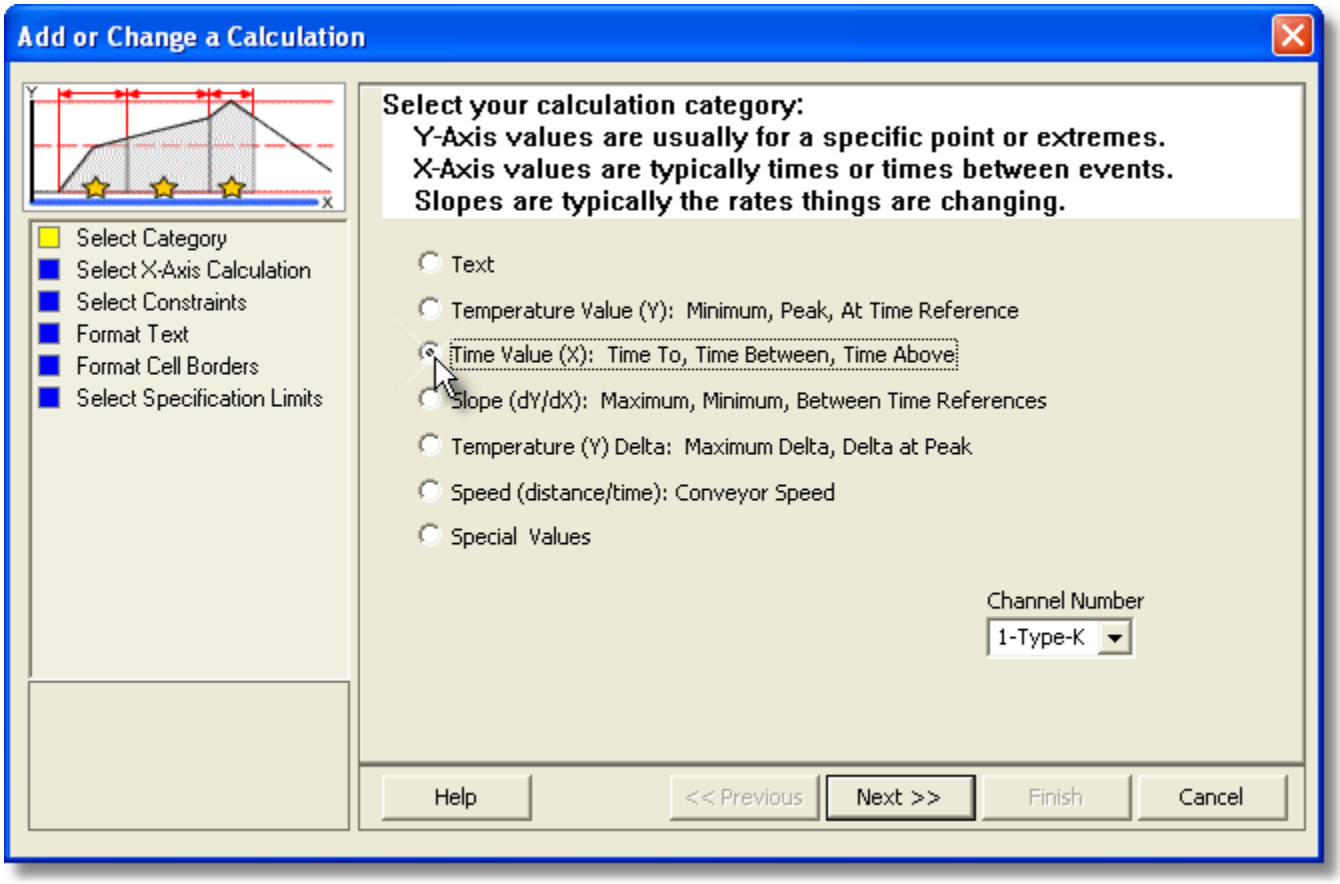
<u>To add or edit X-Axis Values content:</u>

1) Right-click a template cell and a shortcut menu appears.
2) Select ***Add Content*** or ***Edit Content*** from the shortcut menu and the ***Add or Change a Calculation*** wizard appears.

When navigating through the wizard, the step list on the left uses a color key to inform the user of the current step, steps that have been completed and remaining steps.

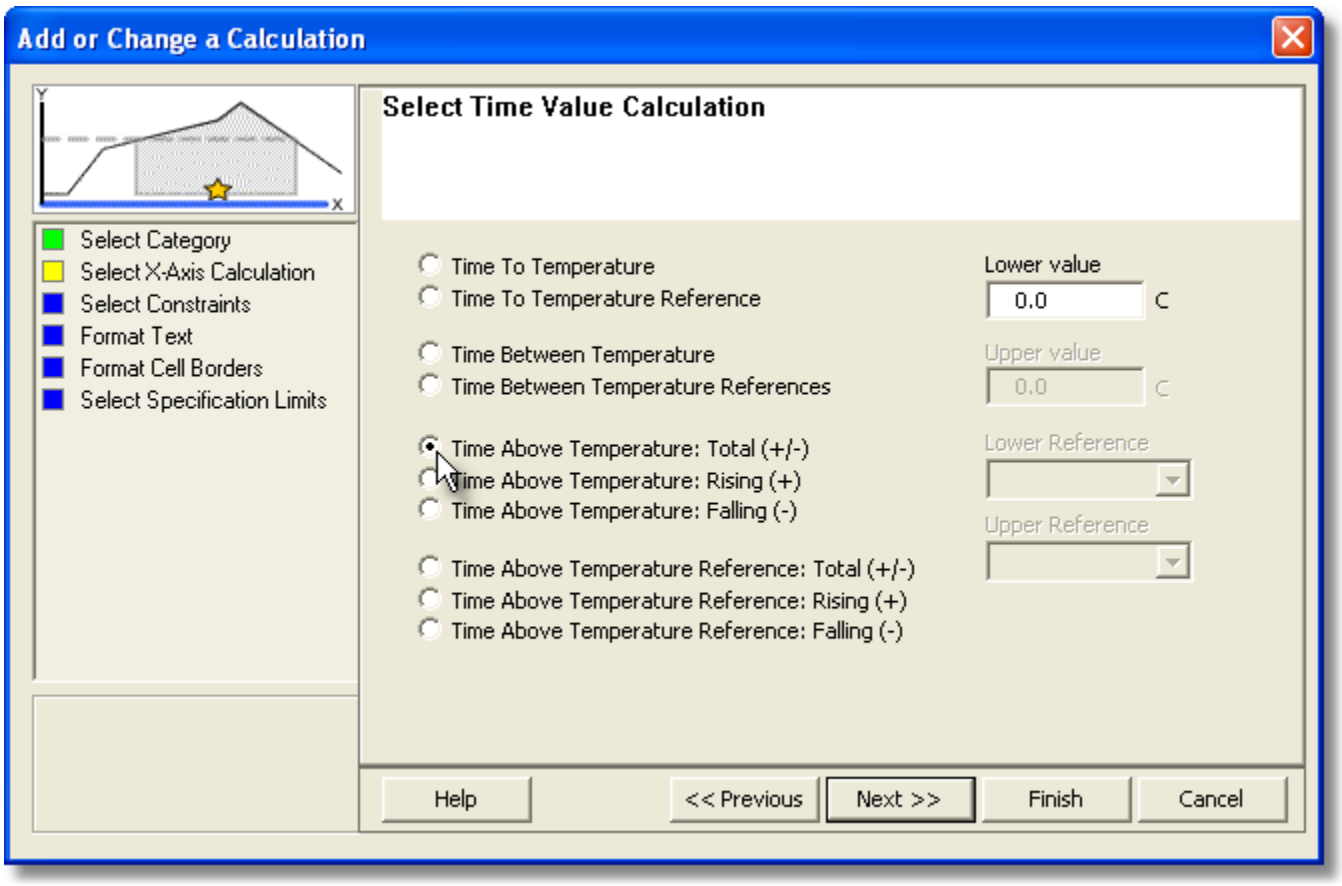
Current Completed Remaining

3) Click ***Time Value (X)*** and which channel to derive the data from.



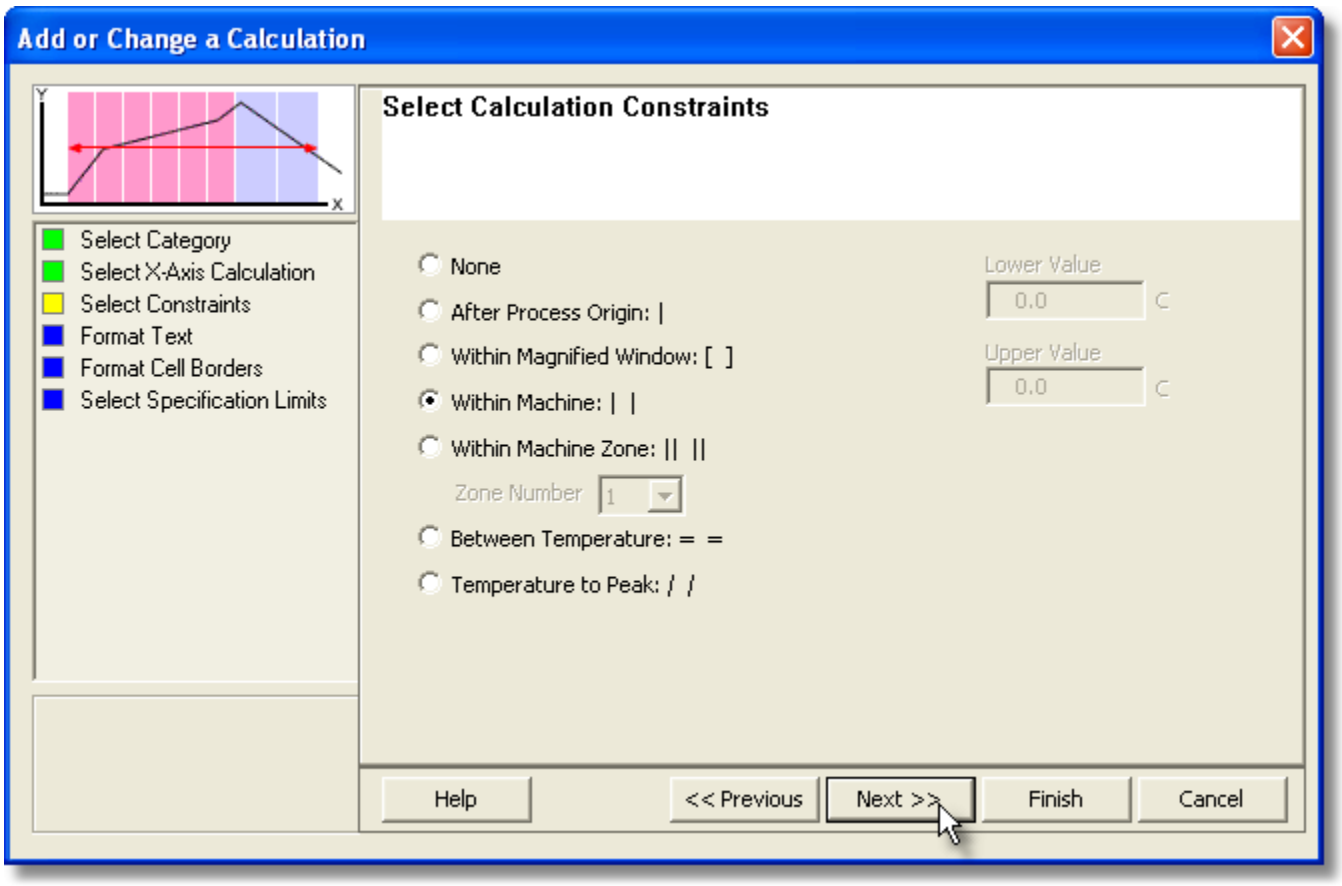
4) Select the ***Next*** command button.
5) Select a Time (X) Axis Value.

If any ***Temperature Reference (Y)*** calculation is selected, the software requires a Temperature (Y) Reference Line to be established. Refer to topic ***Add Temperature (Y) Reference Lines***.

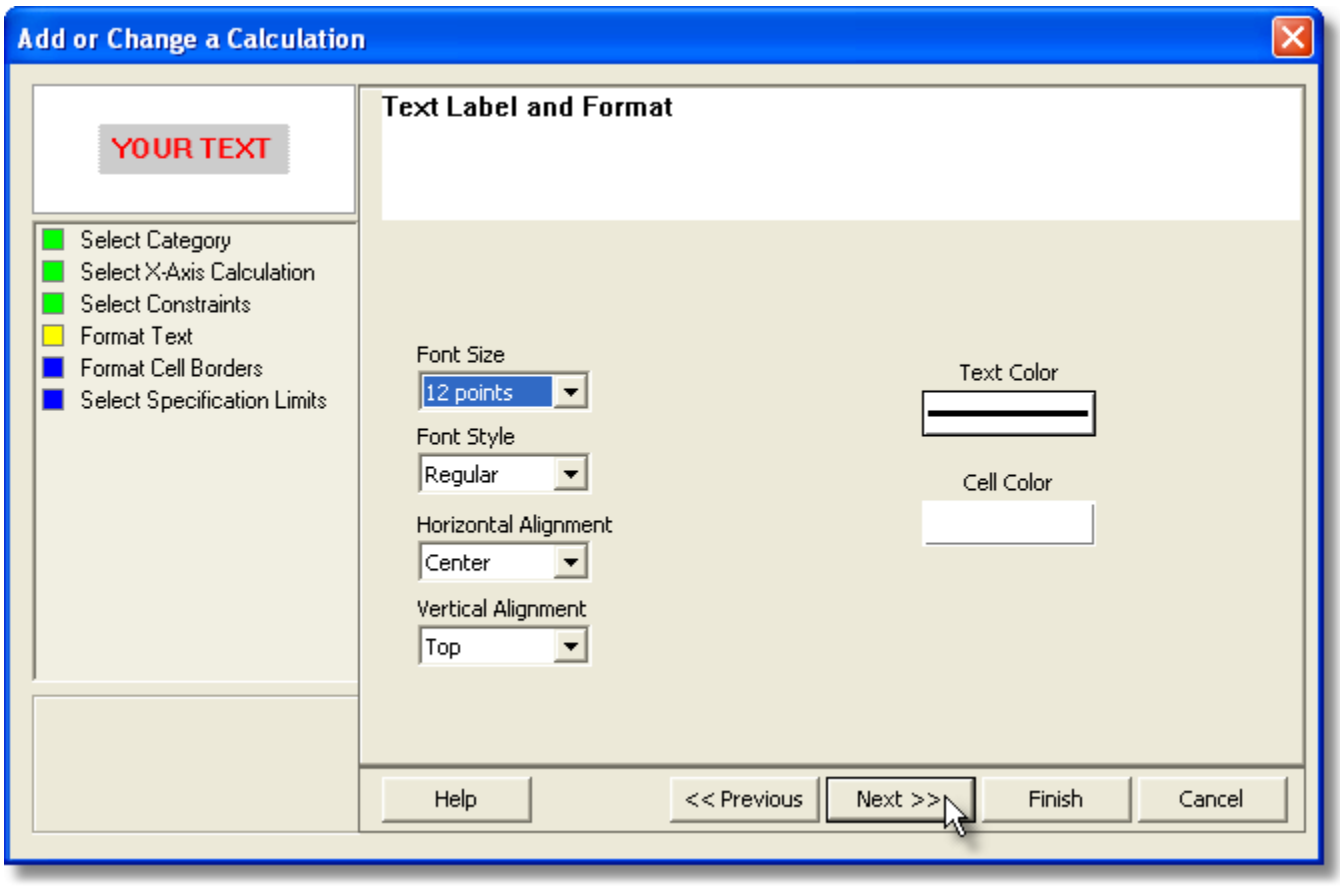


6) Select the ***Next*** command button.
7) Select the calculation constraints. These options are the specified area on the Time (X) Axis where the values are to be extracted from.

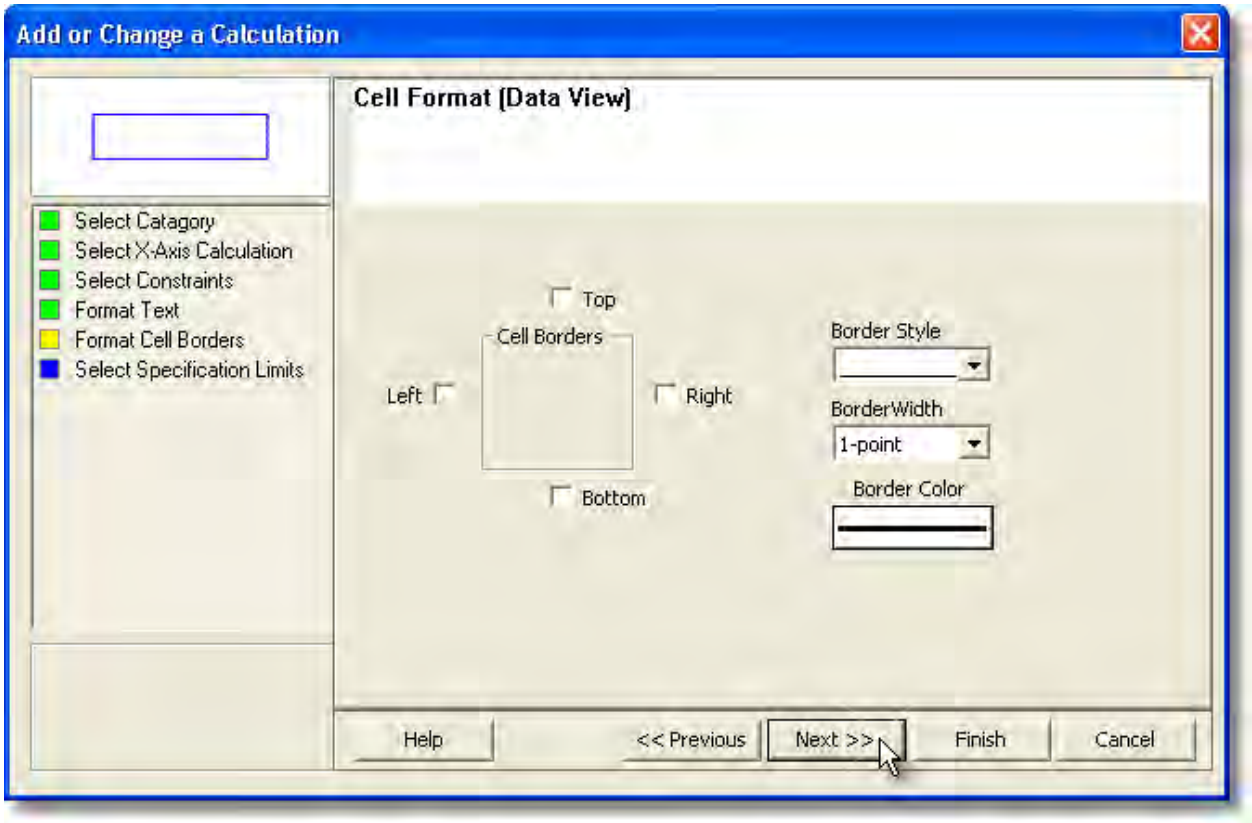
If the ***Within Magnified Window*** constraint is selected and the Magnify tool is used to zoom in on a portion of the Data Graph, the Data Table displays the statistics for those values within the magnified window.



8) Select the ***Next*** command button.
9) Select desired text formatting options.

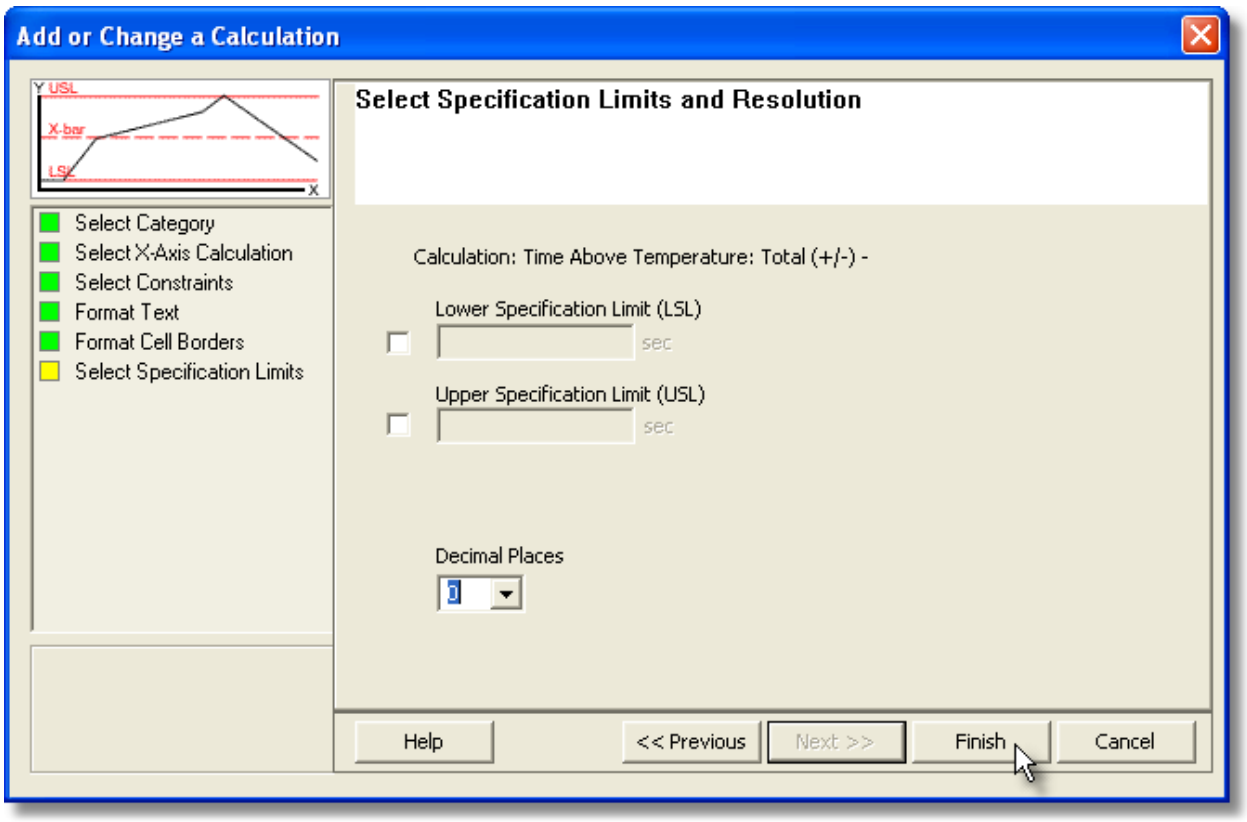


10) Select the ***Next*** command button.
11) Select desired cell border options.



12) Select the ***Next*** command button.

13) Select Specification Limits and Units. If these values are violated colored bars will appear in the formatted template cell. Refer to topic ***Software>Page Tabs>Summary>Template>Specification Limit Indicators*** for more information.



14) Select the ***Finish*** command button to complete the wizard and display the new calculation data in the selected template cell.

5.4.2.2.1.4. Slope (dX/dY)

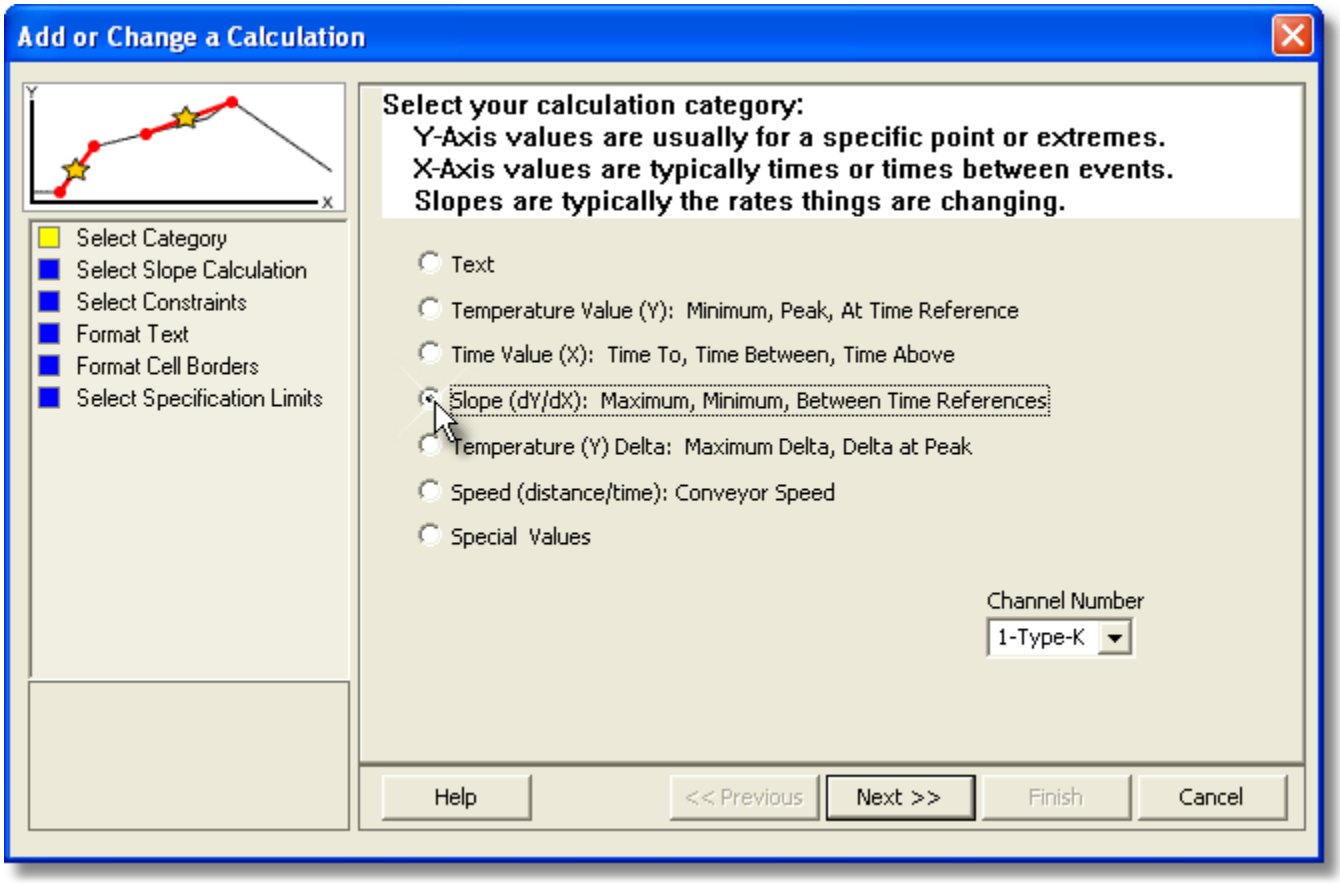
<u>To add or edit Slope Value content:</u>

1) Right-click a template cell and a shortcut menu appears.
2) Select ***Add Content*** or ***Edit Content*** from the shortcut menu and the ***Add or Change a Calculation*** wizard appears.

When navigating through the wizard, the step list on the left uses a color key to inform the user of the current step, steps that have been completed and remaining steps.

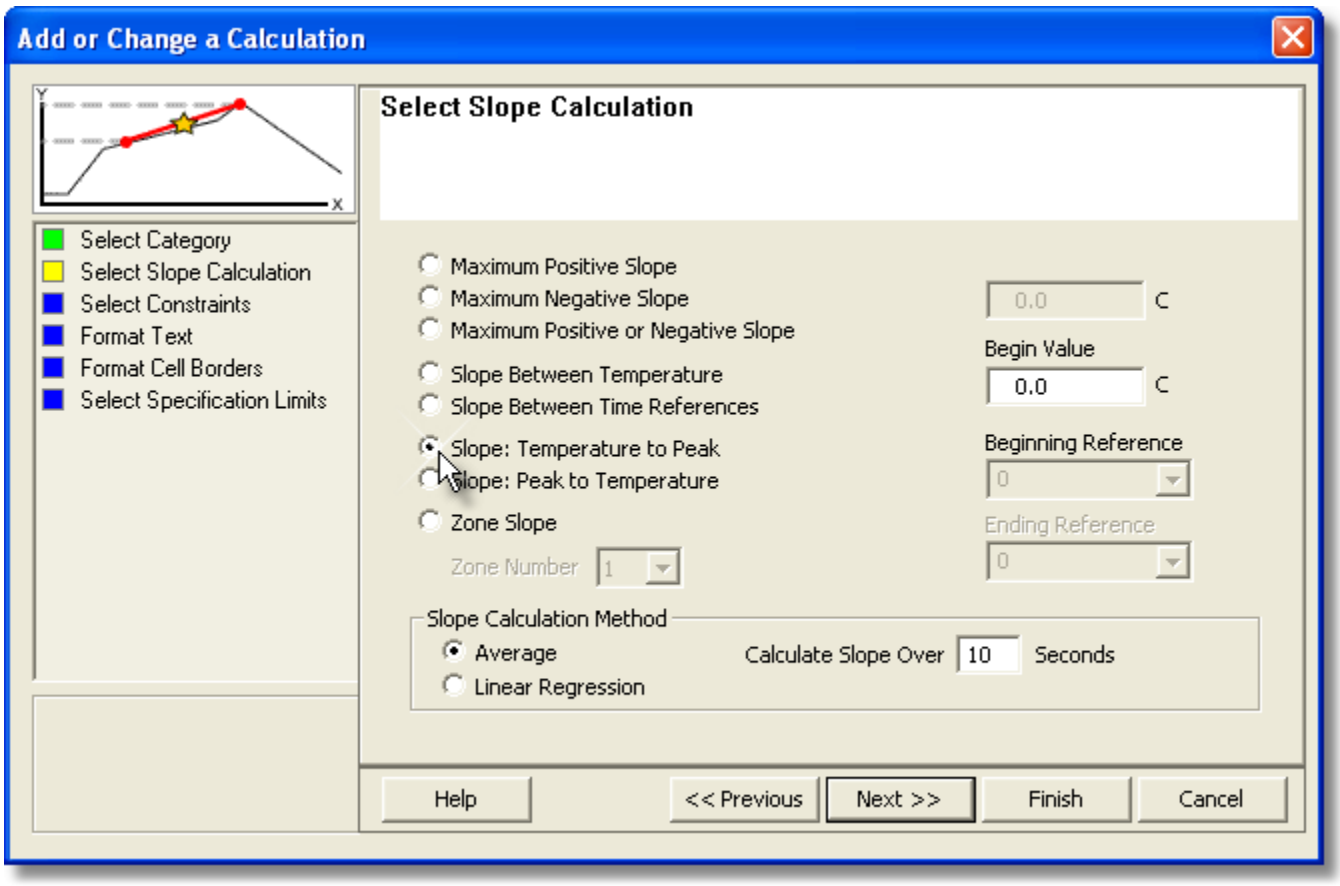
Current Completed Remaining

3) Click ***Slope (dX/dY)*** and which channel to derive the data from.

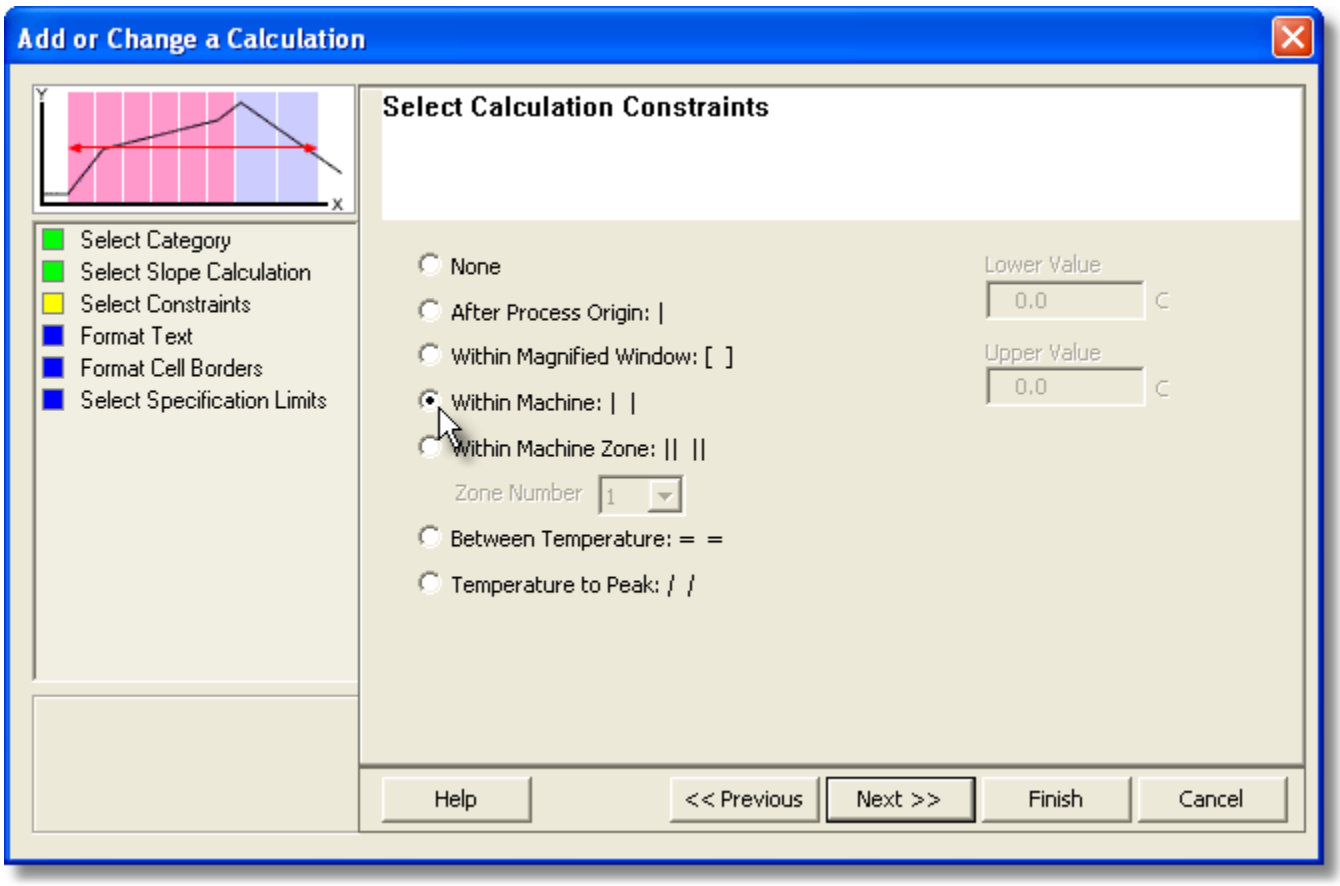


4) Select the ***Next*** command button.
5) Select a Slope Value.

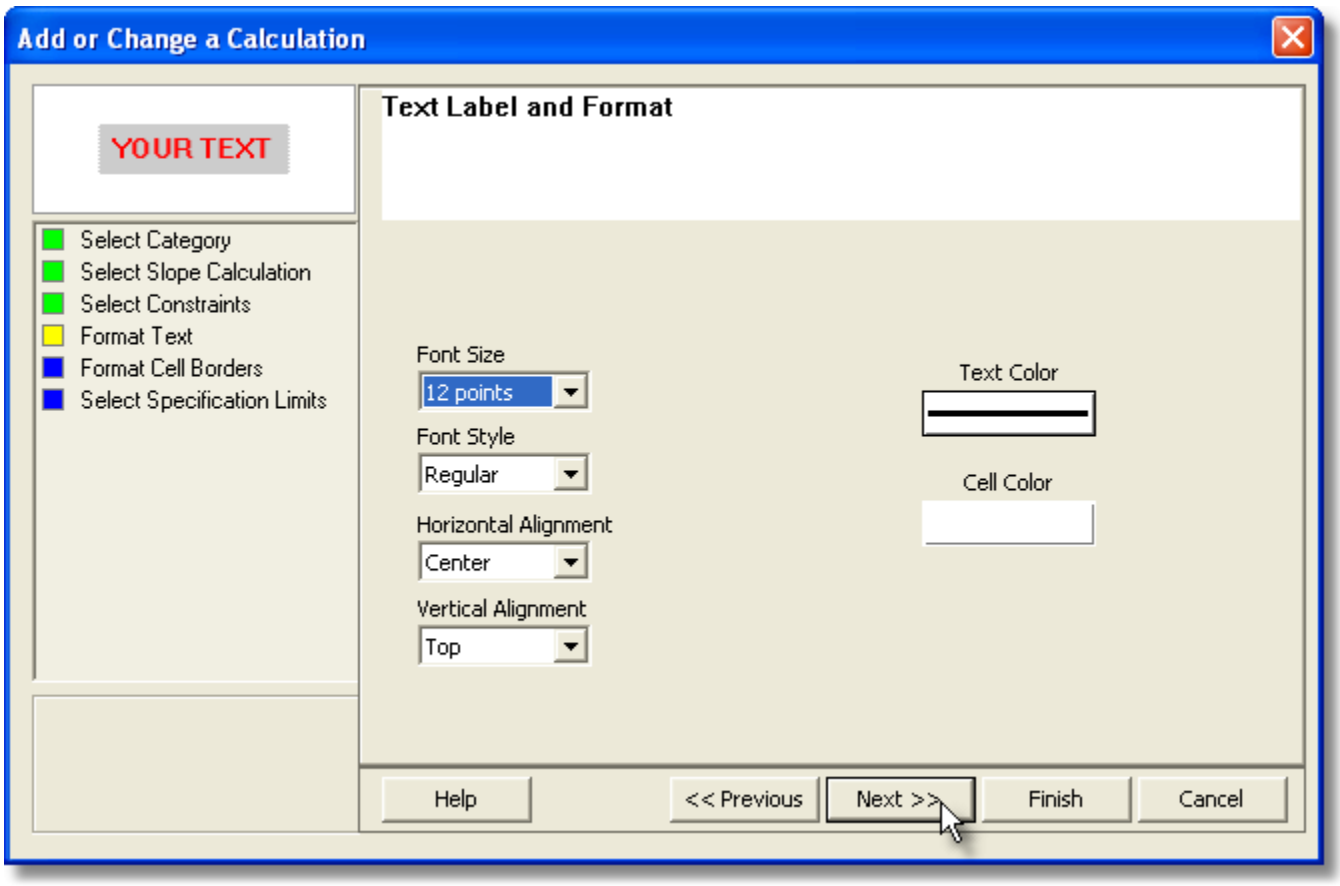
If ***Slope Between Time References*** calculation is selected, the software requires the user to select an established Time (X) Reference line. If one is not established the software automatically creates one on the Profile Page Tab Data Graph.



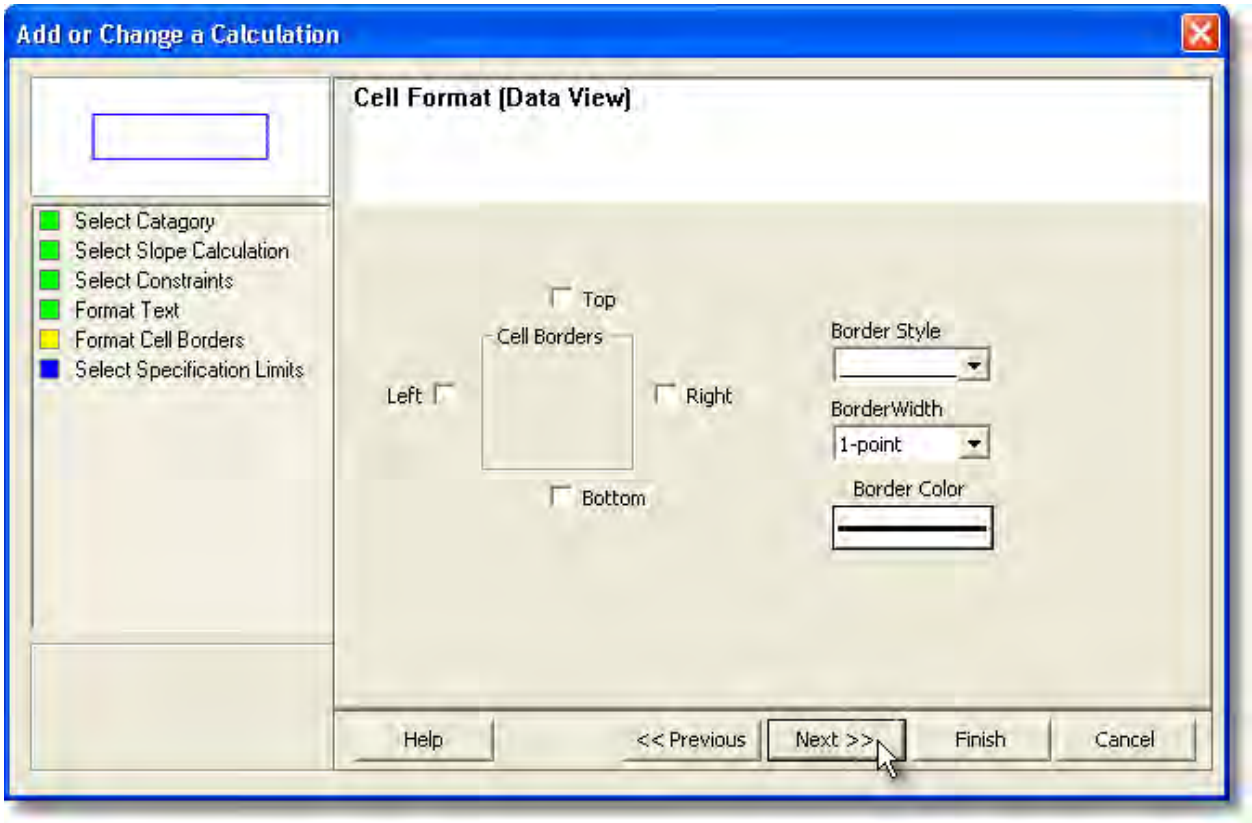
6) Select the ***Next*** command button.
7) Select the calculation constraints. These options are the specified area on the Time (X) Axis where the values are to be extracted from.



8) Select the ***Next*** command button.
9) Select desired text formatting options.

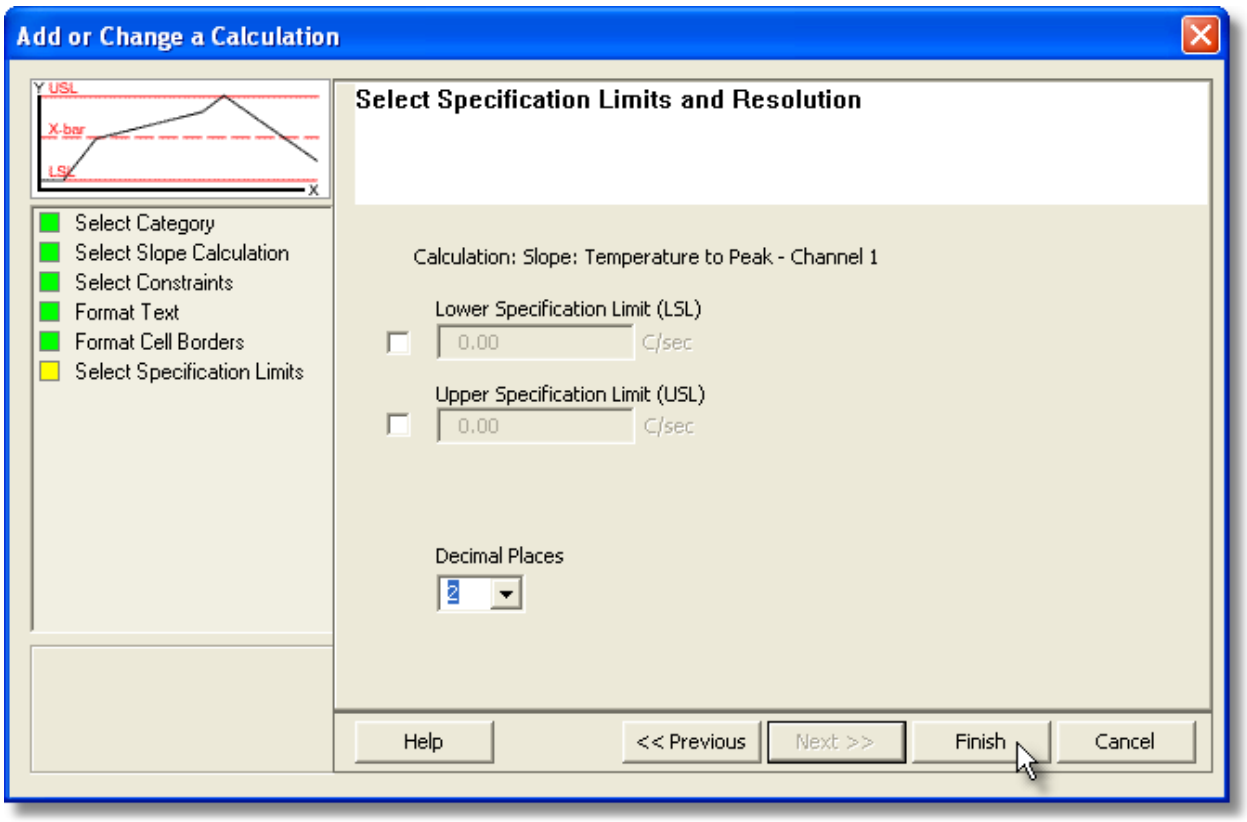


10) Select the ***Next*** command button.
11) Select desired cell border options.



12) Select the ***Next*** command button.

13) Select Specification Limits and Units. If these values are violated colored bars will appear in the formatted template cell. Refer to topic ***Software>Page Tabs>Summary>Template>Specification Limit Indicators*** for more information.



14) Select the ***Finish*** command button to complete the wizard and display the new calculation data in the selected template cell.

5.4.2.2.1.5. Temperature (Y) Delta

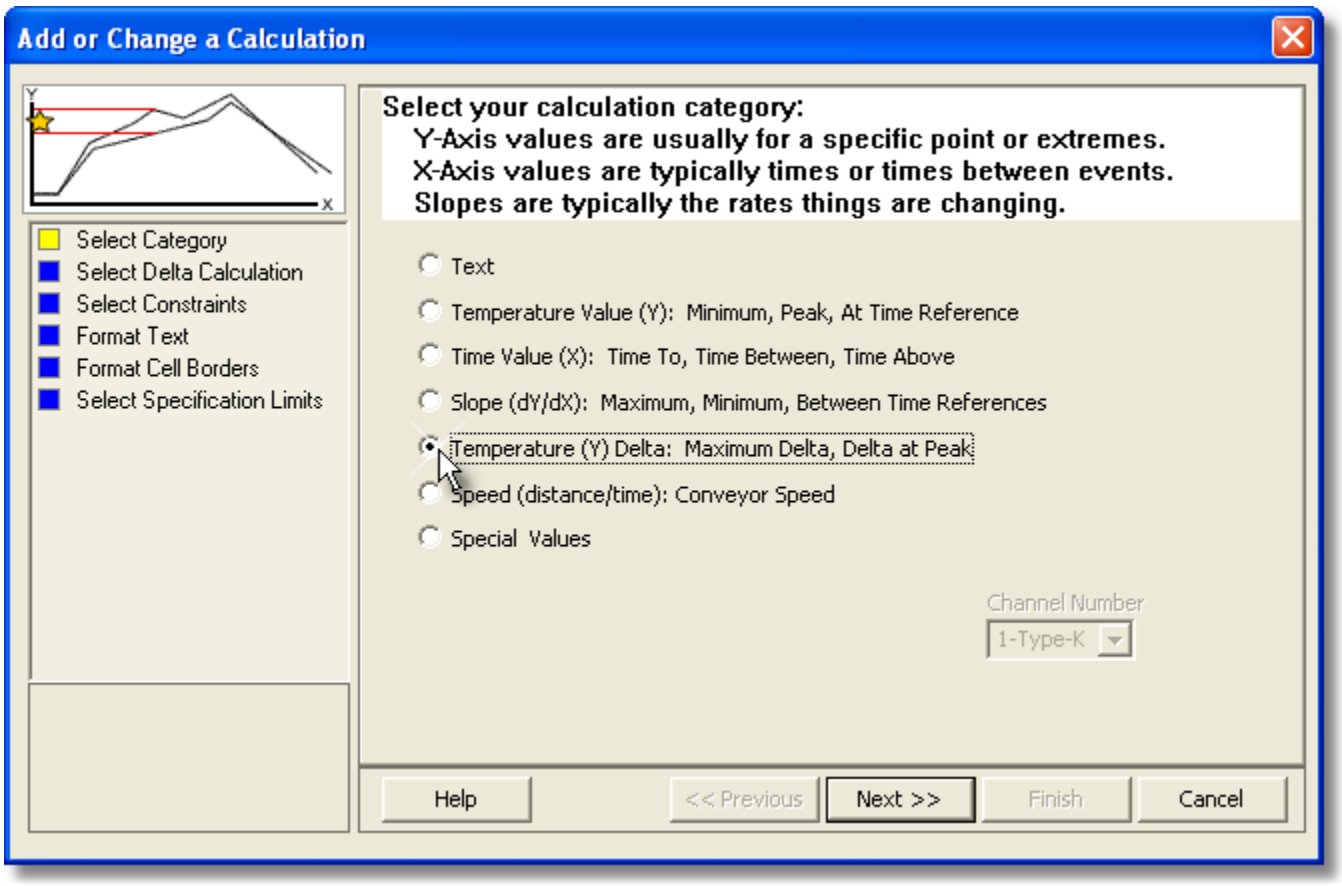
<u>To add or edit Temperature (Y) Delta content:</u>

1) Right-click a template cell and a shortcut menu appears.
2) Select ***Add Content*** or ***Edit Content*** from the shortcut menu and the ***Add or Change a Calculation*** wizard appears.

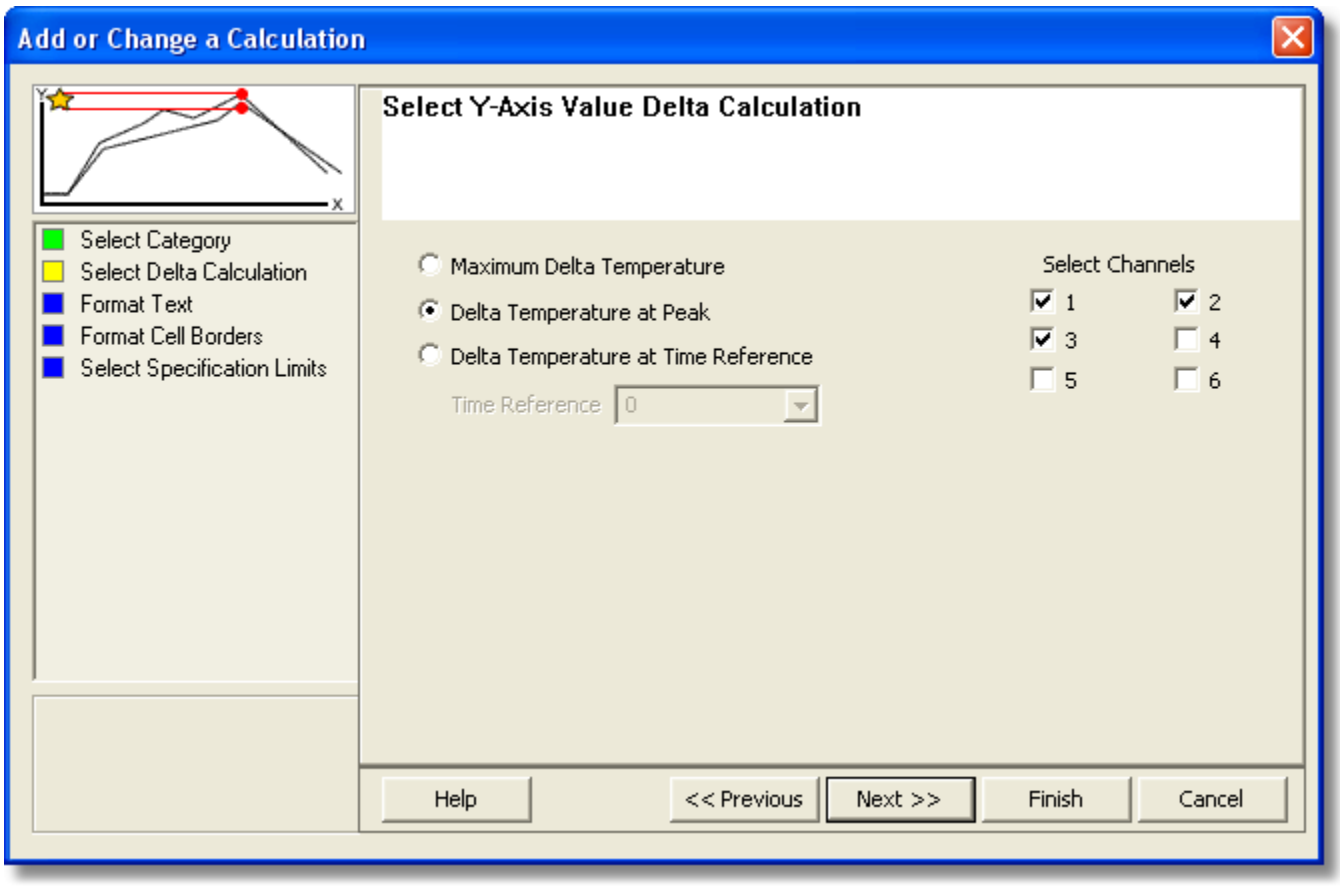
When navigating through the wizard, the step list on the left uses a color key to inform the user of the current step, steps that have been completed and remaining steps.

Current Completed Remaining

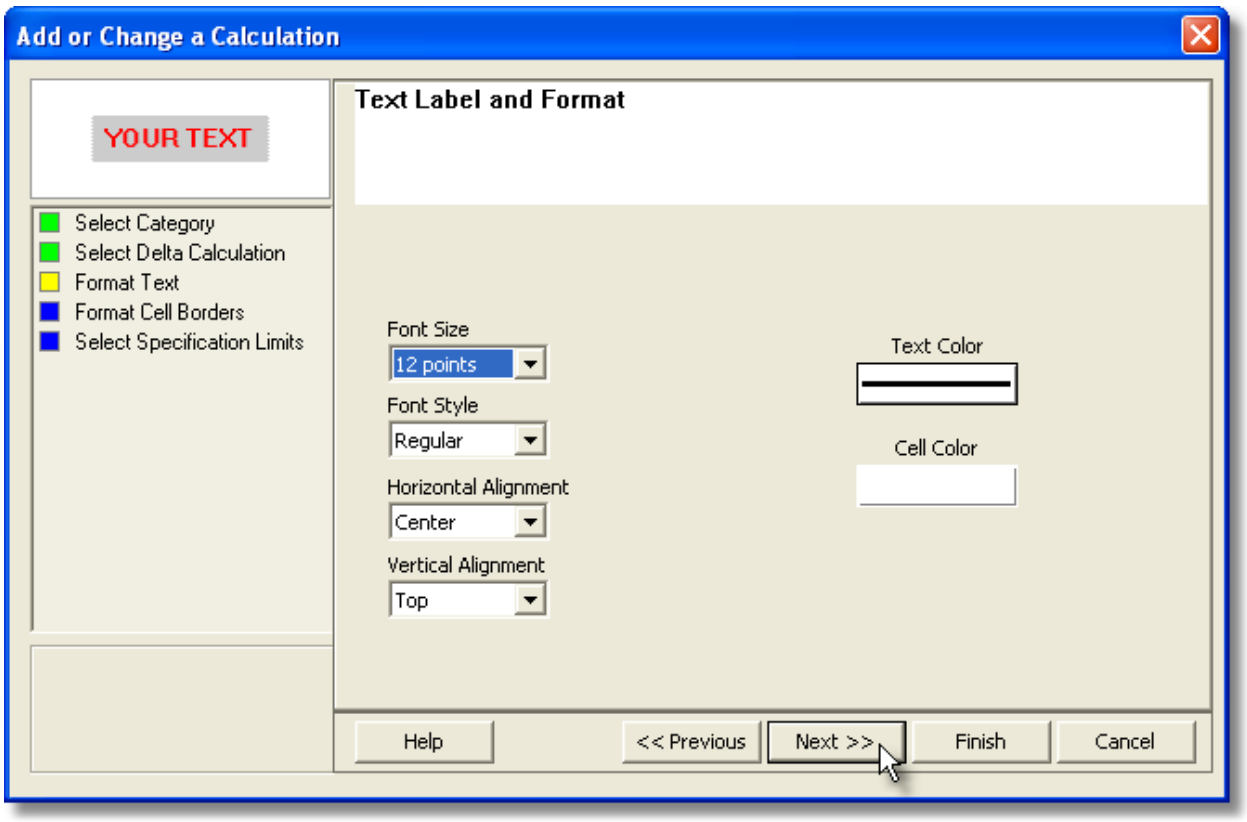
3) Click ***Temperature (Y) Delta***.



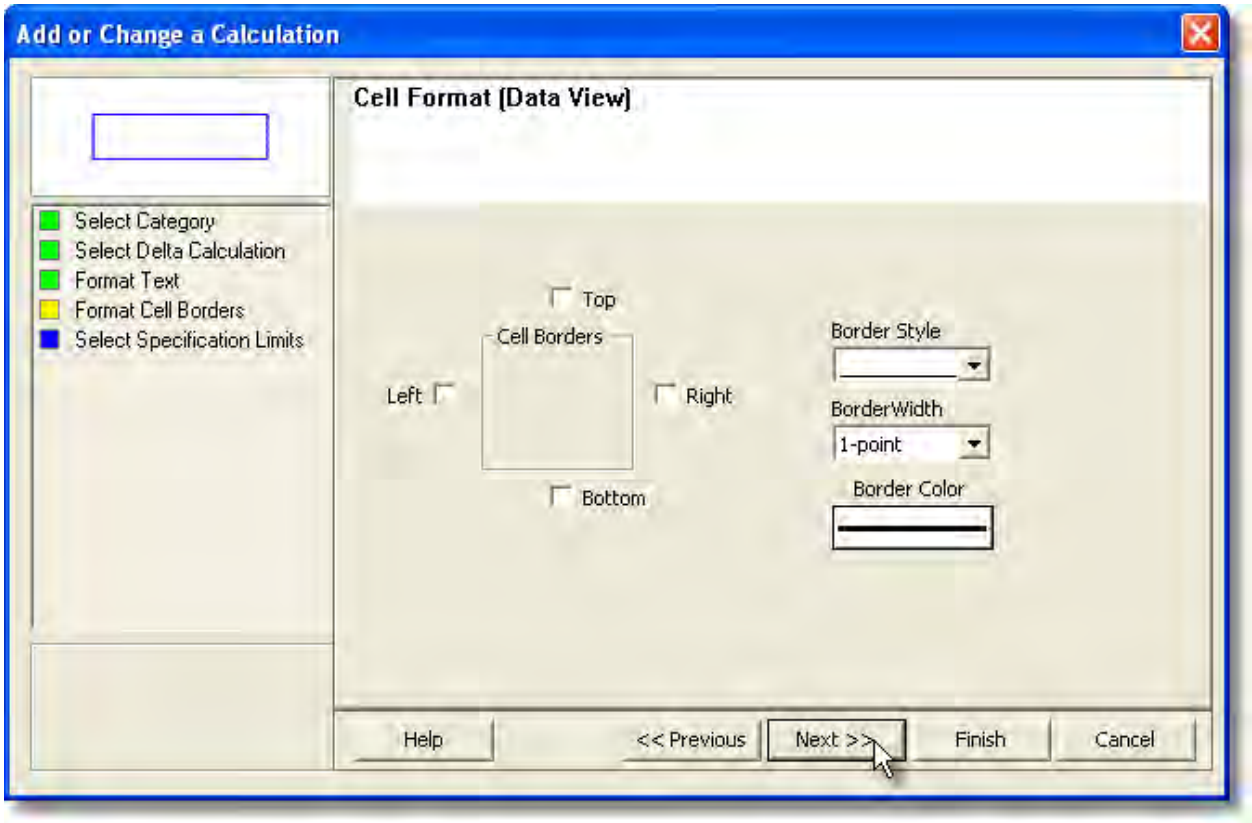
4) Select the ***Next*** command button.
5) Select a Y-Axis value delta calculation and which channels to you wish to be included in this calculation.



6) Select the ***Next*** command button.
7) Select desired text formatting options.

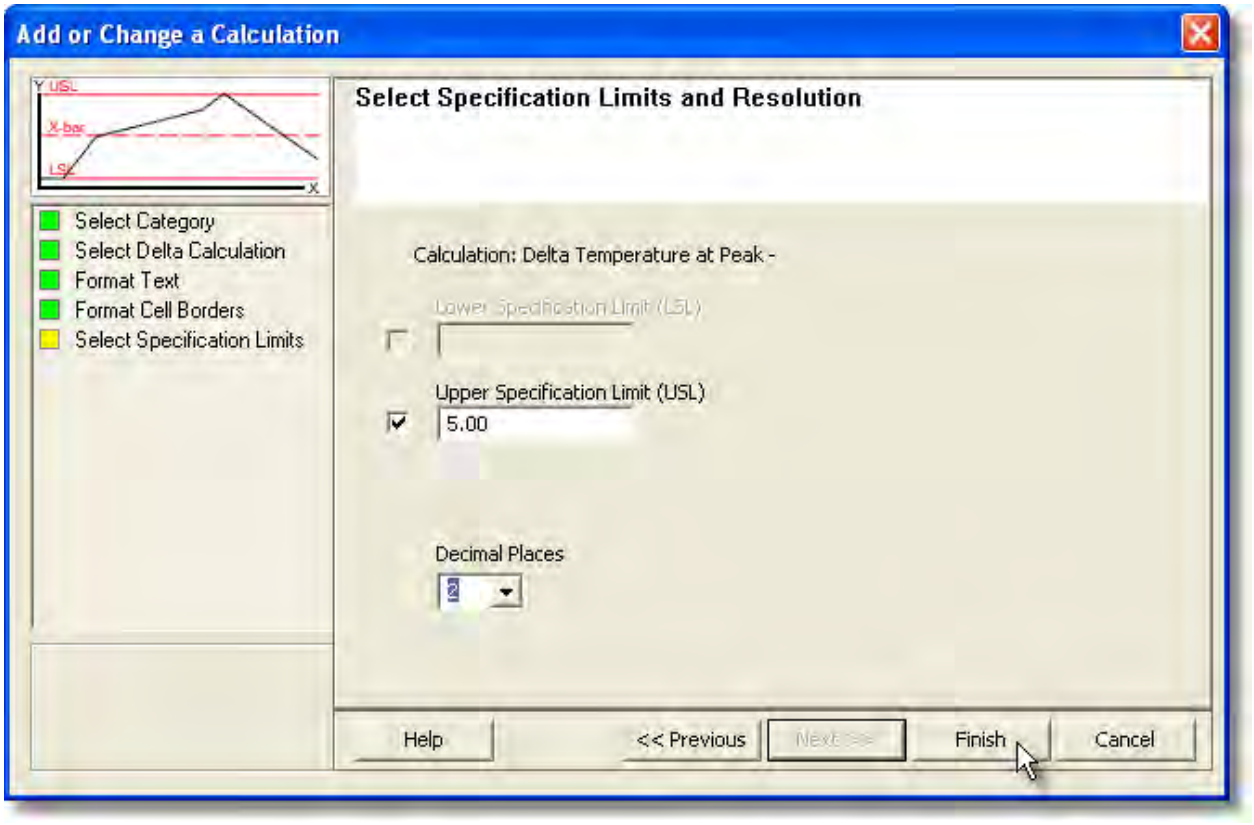


8) Select the ***Next*** command button.
9) Select desired cell border options.



10) Select the ***Next*** command button.

11) Select Specification Limits and Units. If these values are violated colored bars will appear in the formatted template cell. Refer to topic ***Software>Page Tabs>Summary>Template>Specification Limit Indicators*** for more information.



12) Select the ***Finish*** command button to complete the wizard and display the new calculation data in the selected template cell.

5.4.2.2.1.6. Speed (distance/time)

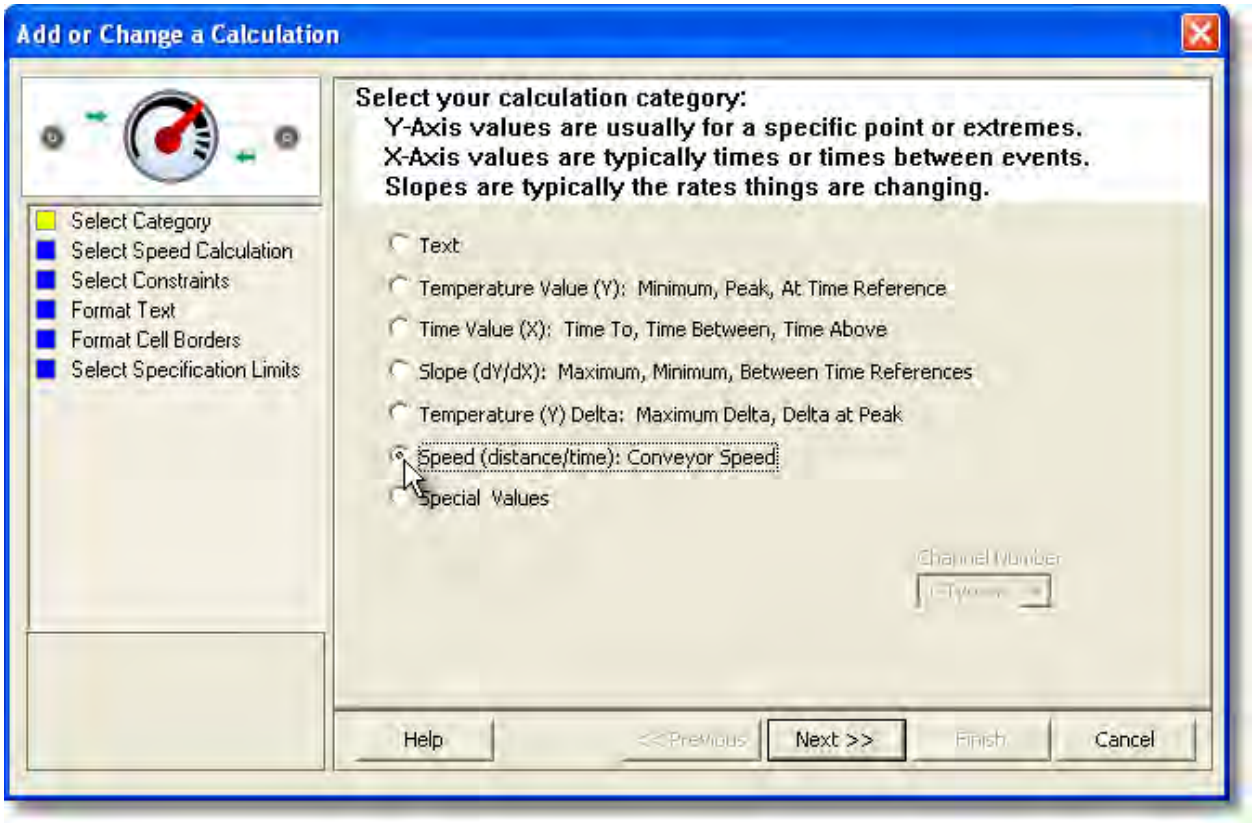
<u>To add or edit Speed (distance/time) content:</u>

1) Right-click a template cell and a shortcut menu appears.
2) Select ***Add Content*** or ***Edit Content*** from the shortcut menu and the ***Add or Change a Calculation*** wizard appears.

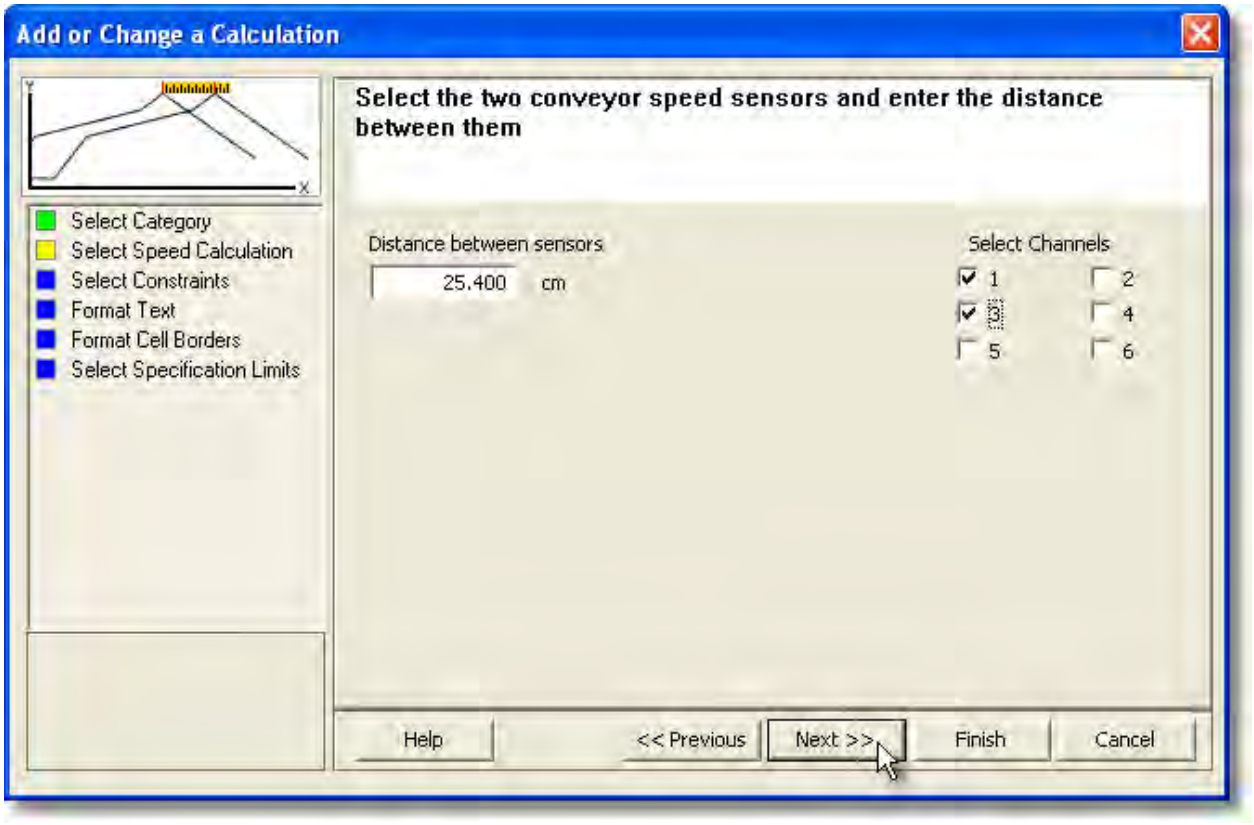
When navigating through the wizard, the step list on the left uses a color key to inform the user of the current step, steps that have been completed and remaining steps.

Current Completed Remaining

3) Click ***Speed (distance/time).***

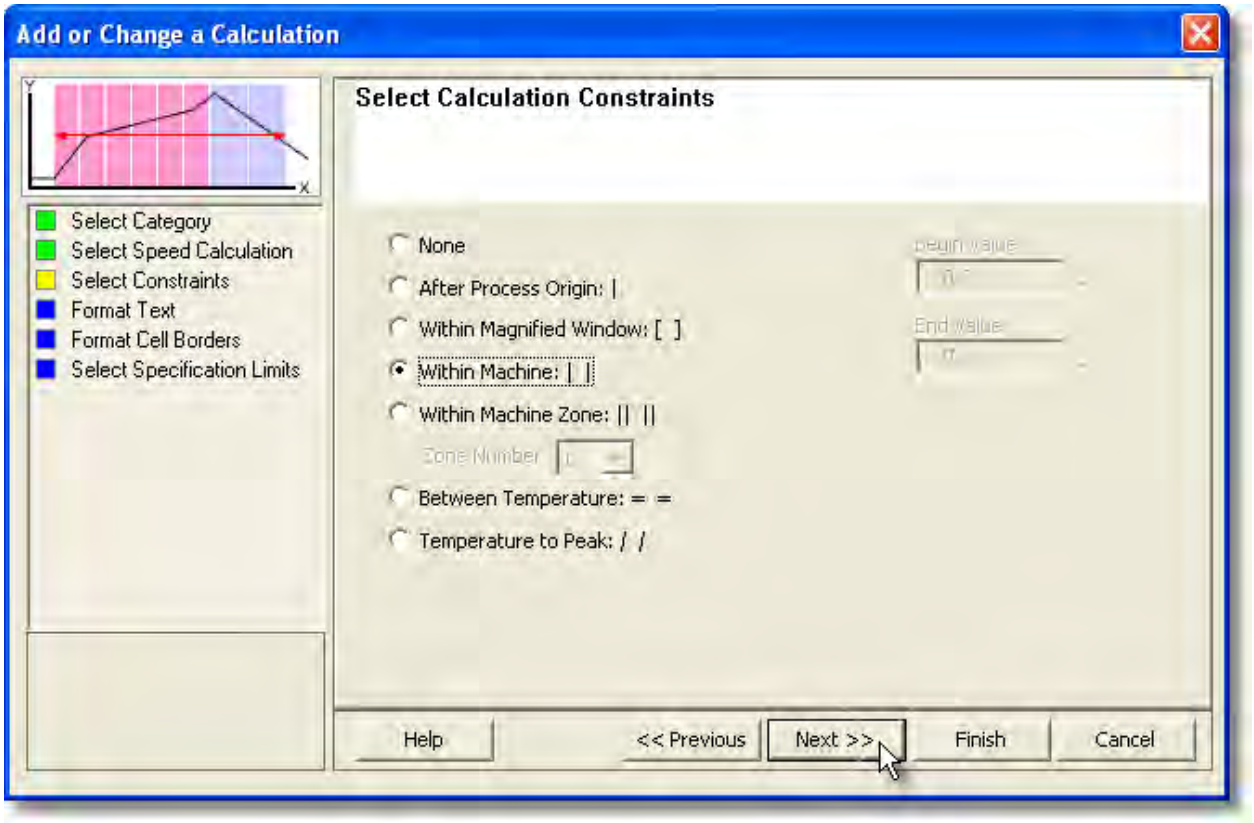


4) Select the ***Next*** command button.
5) Select the two conveyor speed sensors and the distance between them.

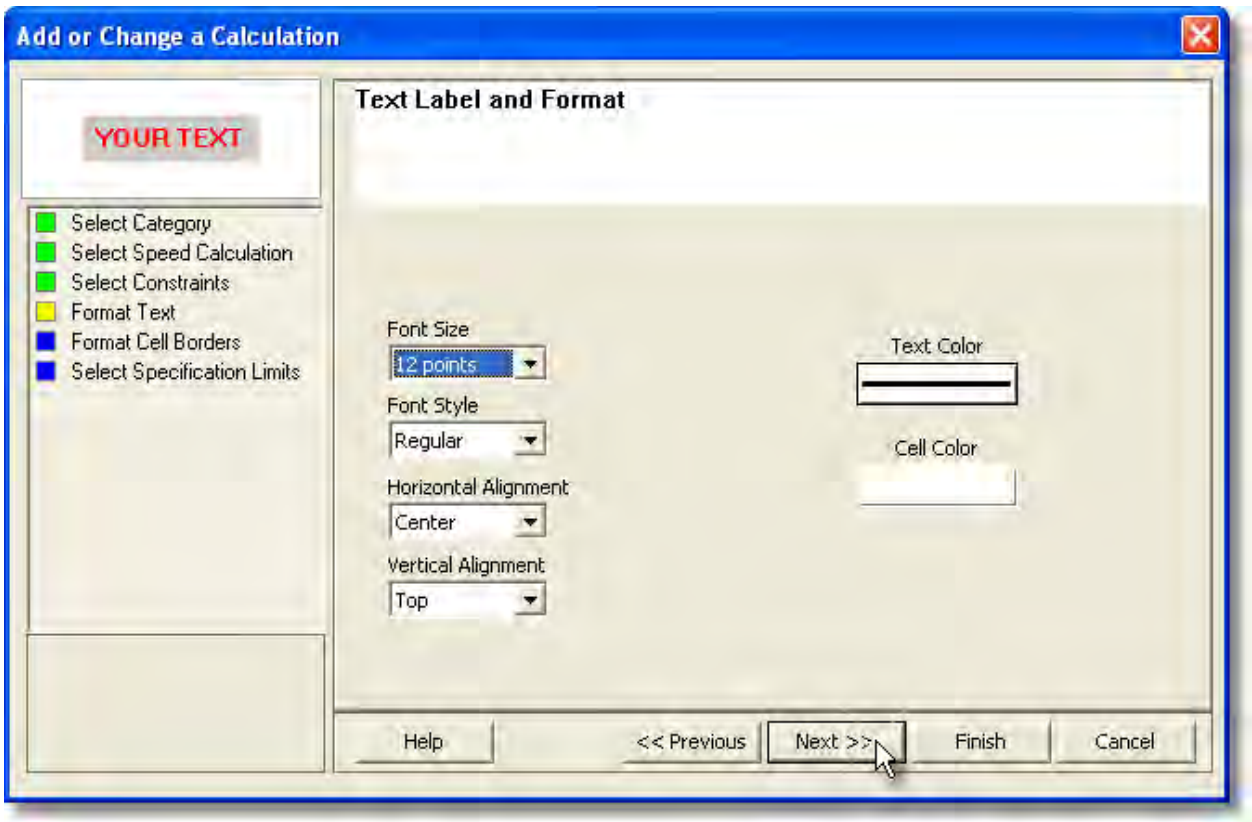


6) Select the ***Next*** command button.
7) Select a Time (X) Axis Value.

If any ***Temperature Reference (Y)*** calculation is selected, the software requires a Temperature (Y) Reference Line to be established. Refer to topic ***Add Temperature (Y) Reference Lines***.

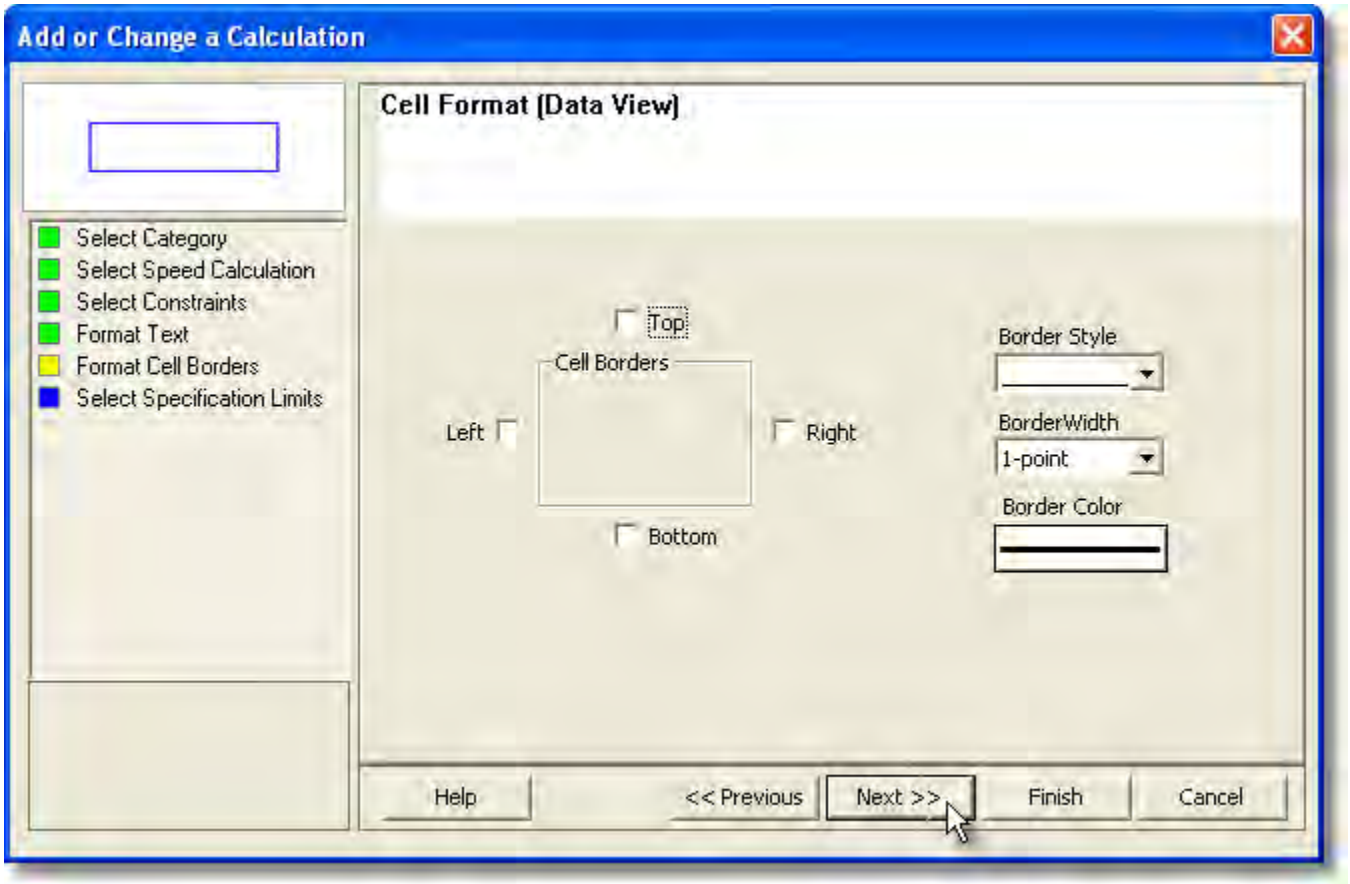


8) Select the ***Next*** command button.
9) Select desired text formatting options.



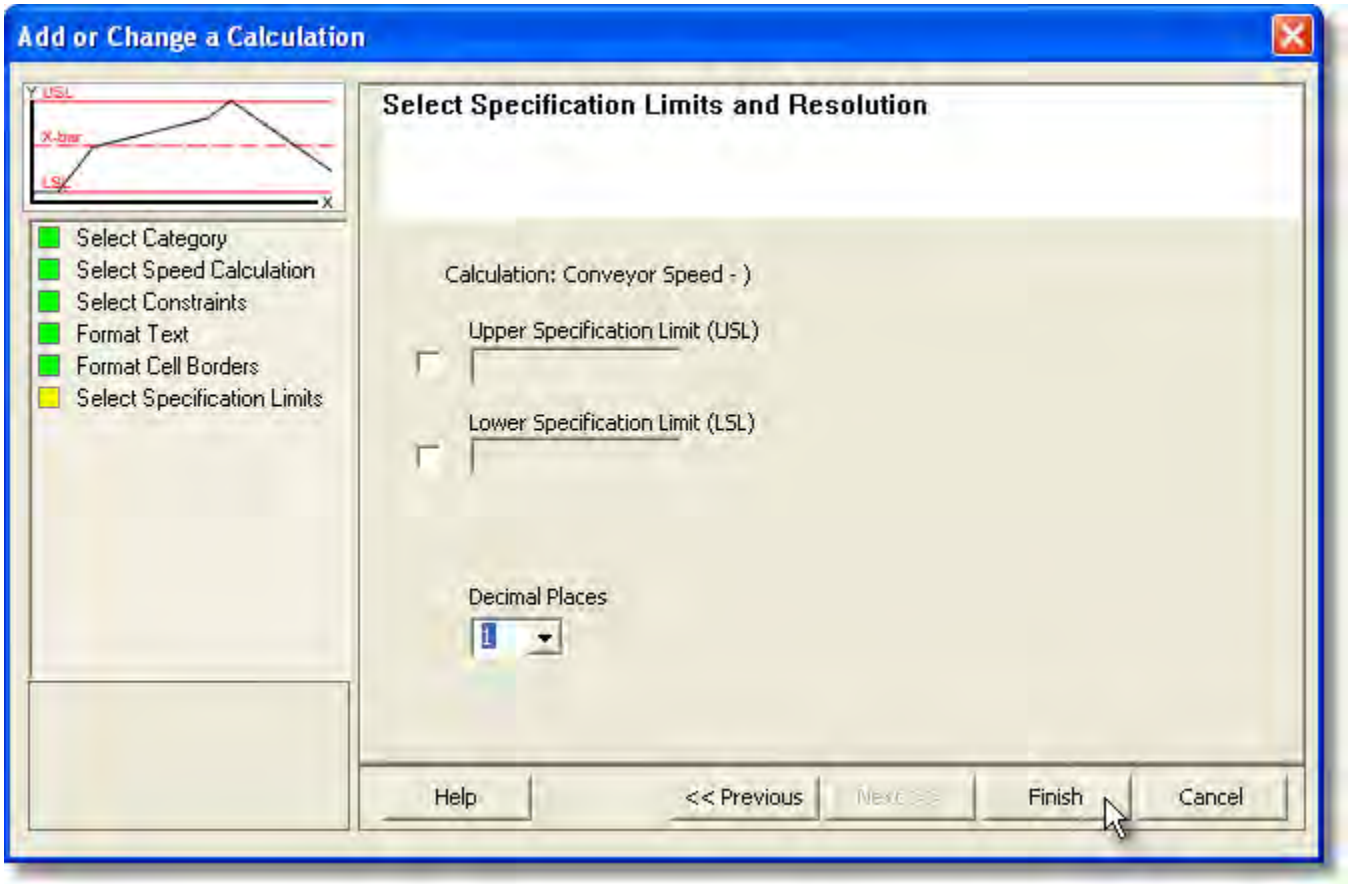
10) Select the ***Next*** command button.

11) Select desired cell border options.



12) Select the ***Next*** command button.

13) Select Specification Limits and Units. If these values are violated colored bars will appear in the formatted template cell. Refer to topic ***Software>Page Tabs>Summary>Template>Specification Limit Indicators*** for more information.



14) Select the ***Finish*** command button to complete the wizard and display the new calculation data in the selected template cell.

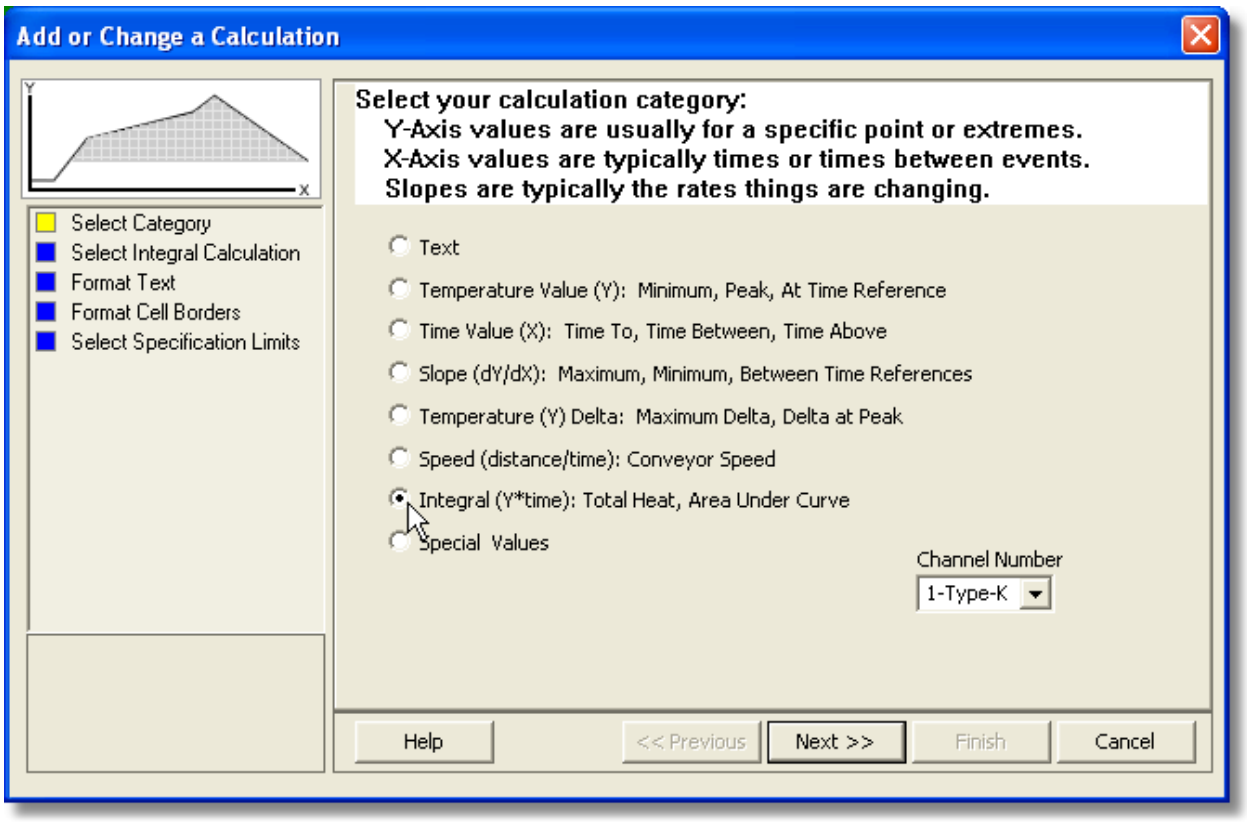
5.4.2.2.1.7. Integral (Y*time)

<u>To add or edit Speed (distance/time) content:</u>

1) Right-click a template cell and a shortcut menu appears.
2) Select ***Add Content*** or ***Edit Content*** from the shortcut menu and the ***Add or Change a Calculation*** wizard appears.

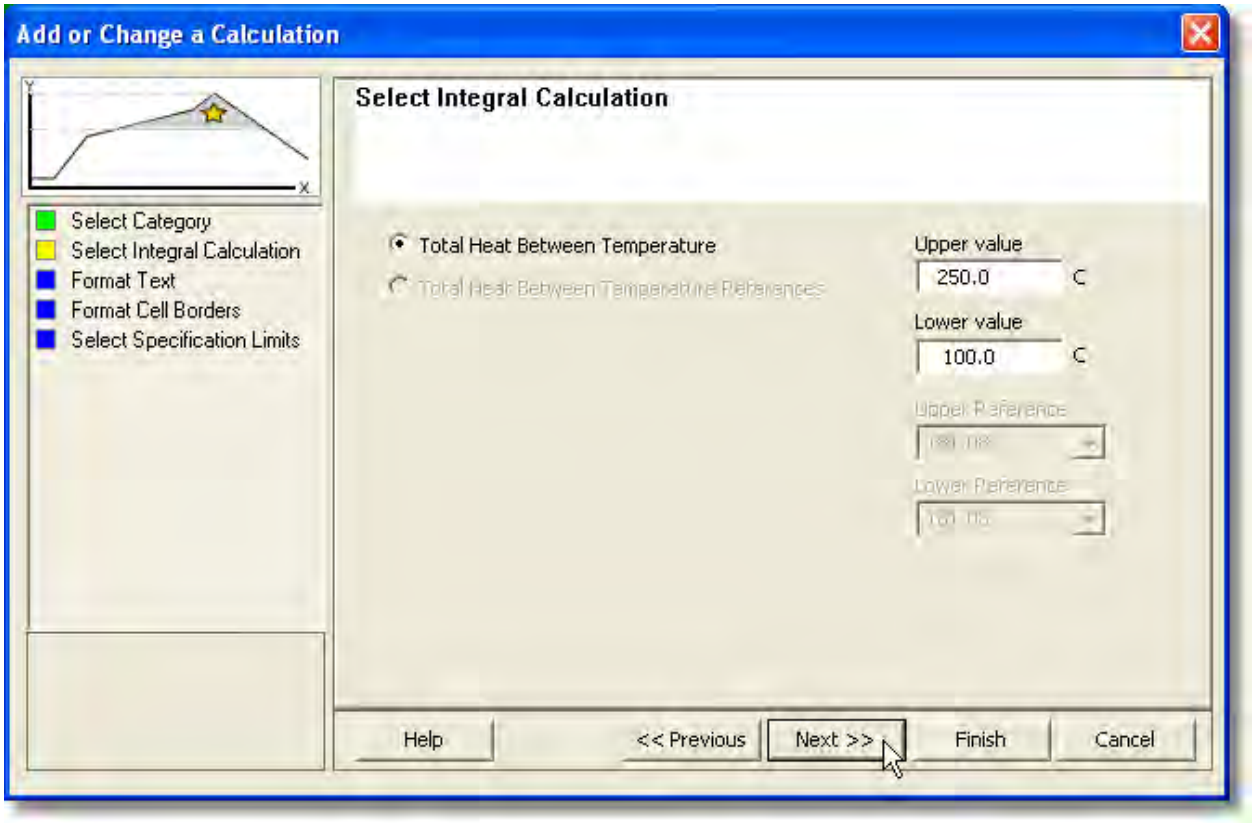
> When navigating through the wizard, the step list on the left uses a color key to inform the user of the current step, steps that have been completed and remaining steps.
>
> Current Completed Remaining

3) Click ***Intergral (Y*time)*** and which channel to derive the data from

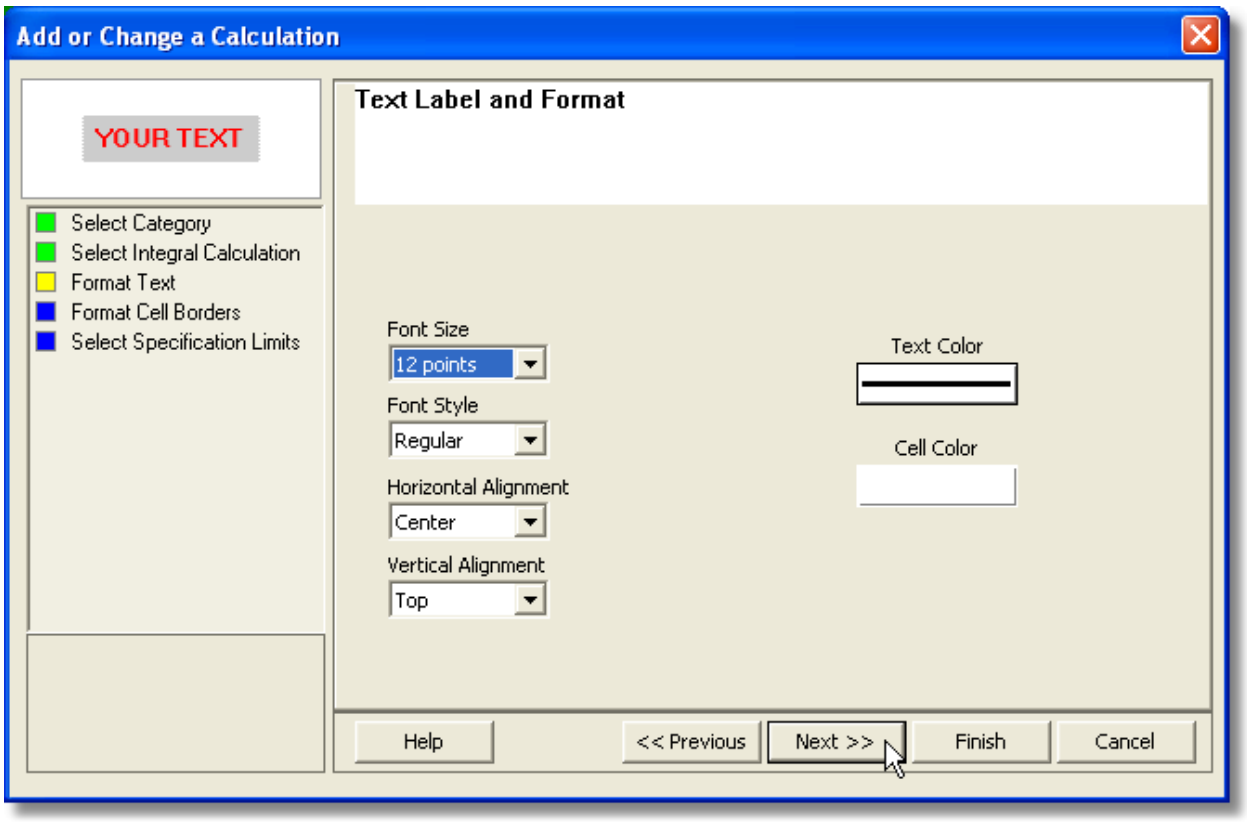


4) Select the ***Next*** command button.
5) Enter the Lower value to define the base of the integral calculation and an Upper value to define maximum value to include in the integral.

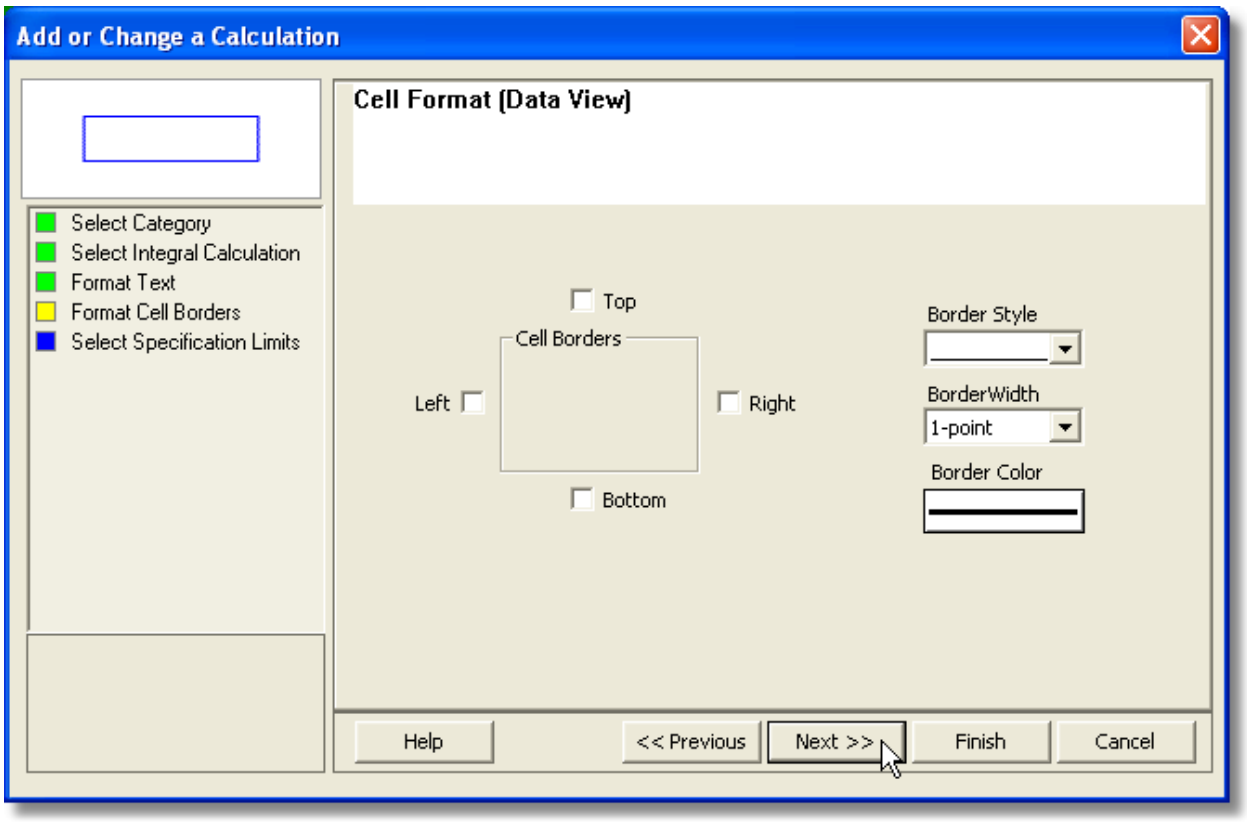
To not restrict the maximum value of the integral, a very large value can be set for the Upper value.



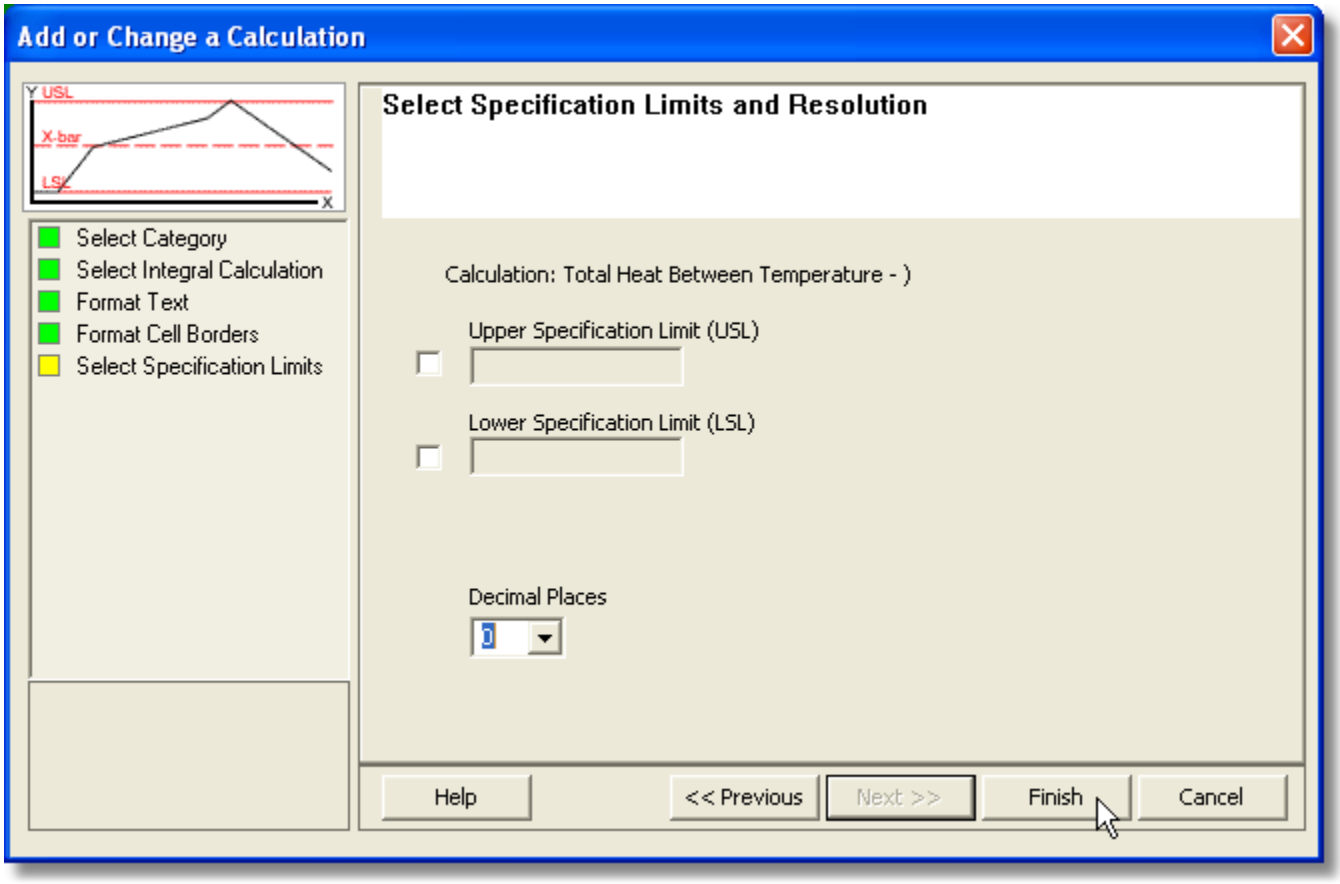
6) Select the ***Next*** command button.
7) Select desired text formatting options.



8) Select the ***Next*** command button.
9) Select desired cell formatting options.



10) Select Specification Limits and Units. If these values are violated colored bars will appear in the formatted template cell. Refer to topic ***Software>Page Tabs>Summary>Template>Specification Limit Indicators*** for more information.



11) Select the ***Finish*** command button to complete the wizard and display the new calculation data in the selected template cell.

5.4.2.2.1.8. Special Value

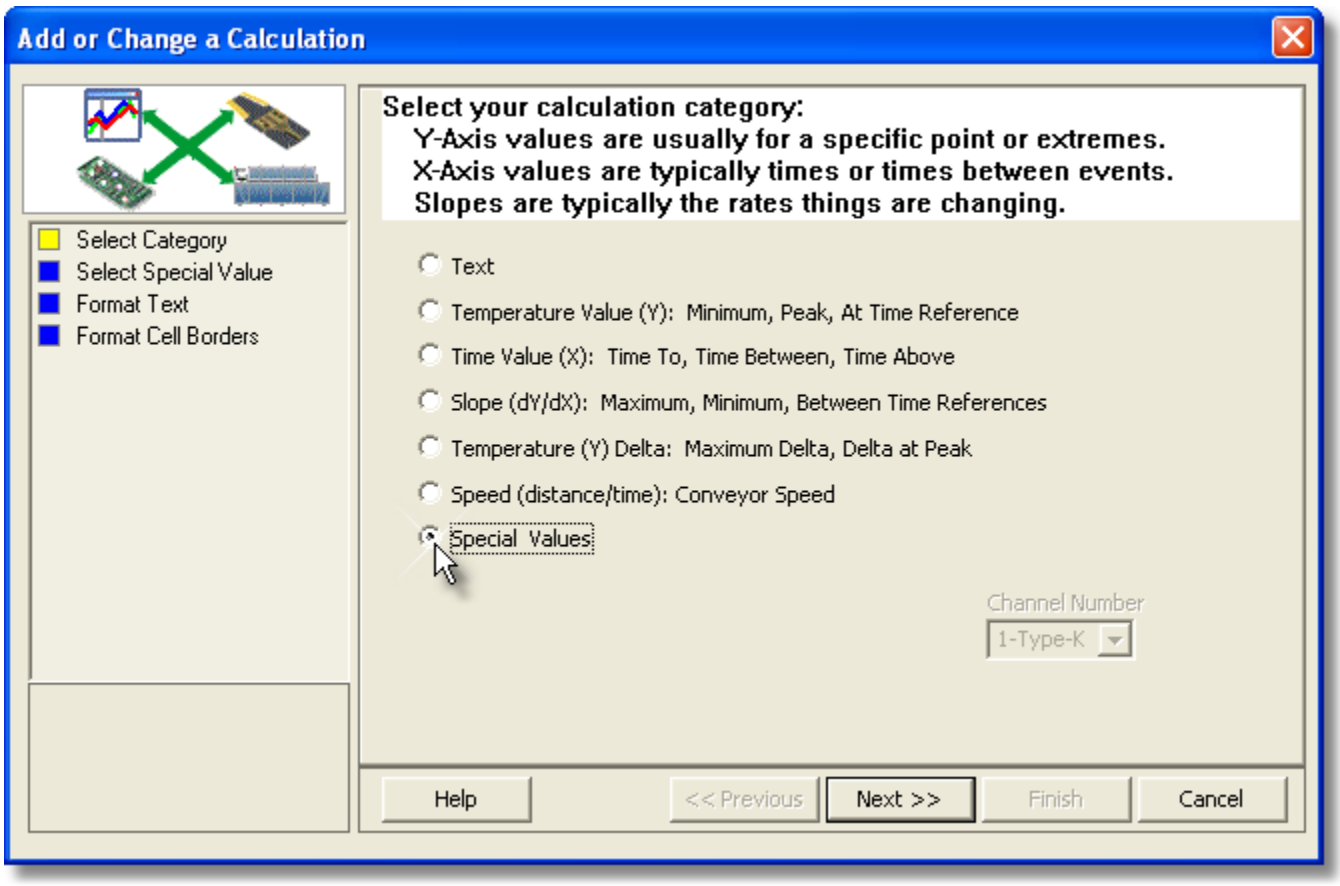
<u>To add or edit Special Value content:</u>

1) Right-click a template cell and a shortcut menu appears.
2) Select ***Add Content*** or ***Edit Content*** from the shortcut menu and the ***Add or Change a Calculation*** wizard appears.

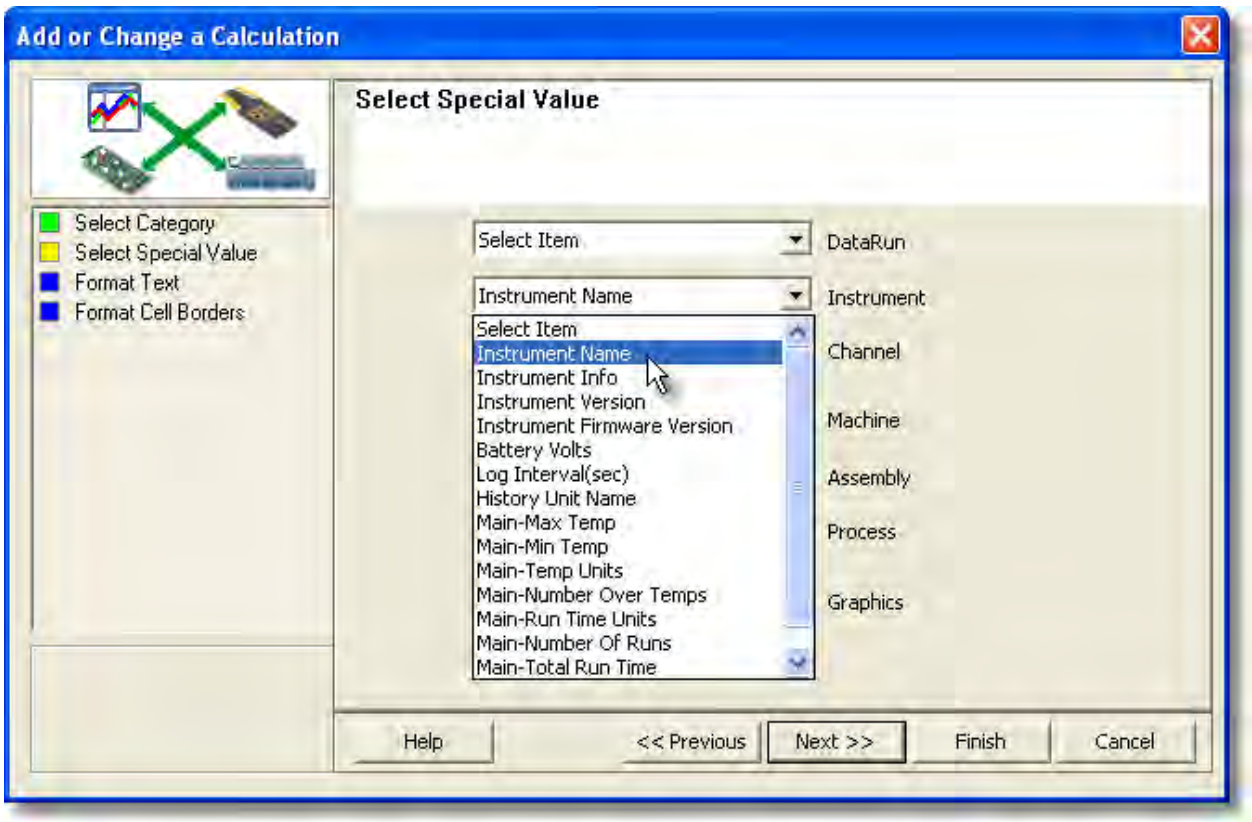
When navigating through the wizard, the step list on the left uses a color key to inform the user of the current step, steps that have been completed and remaining steps.

Current Completed Remaining

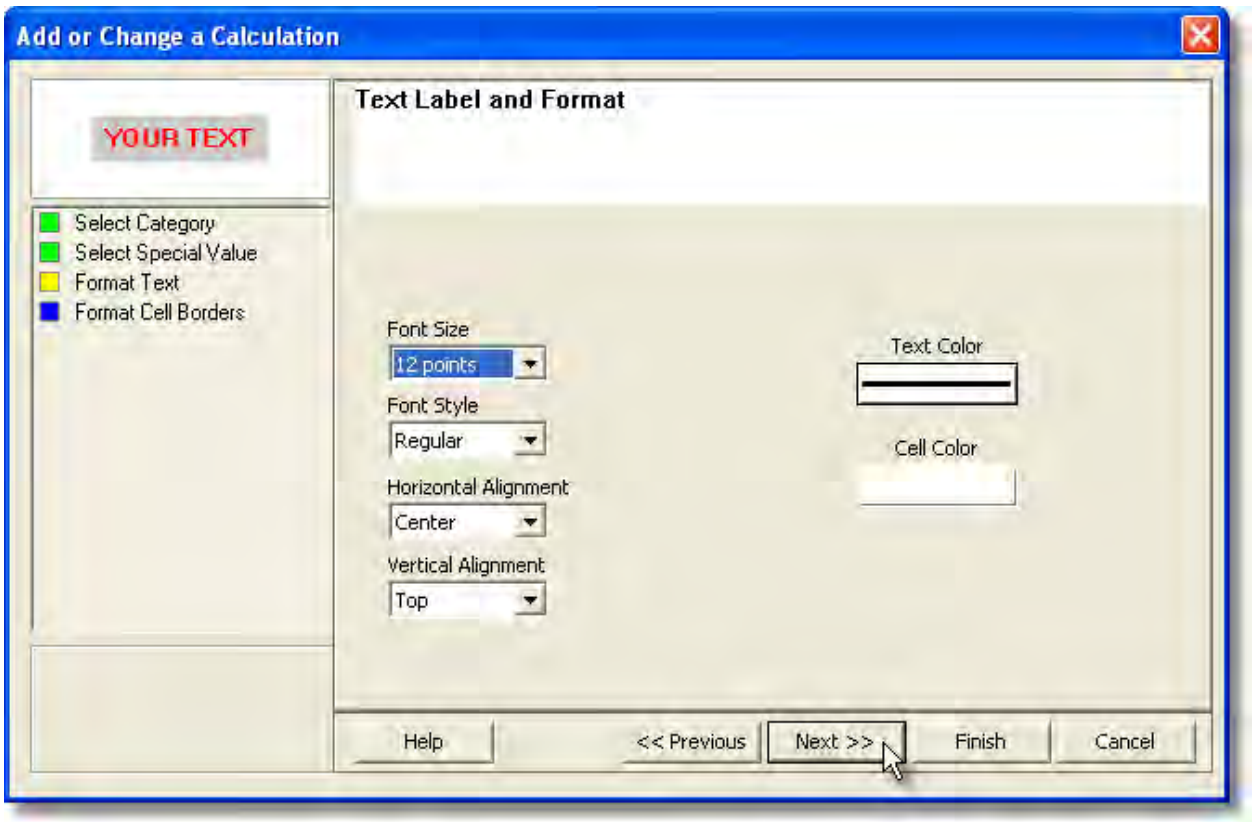
3) Click ***Special Value***.



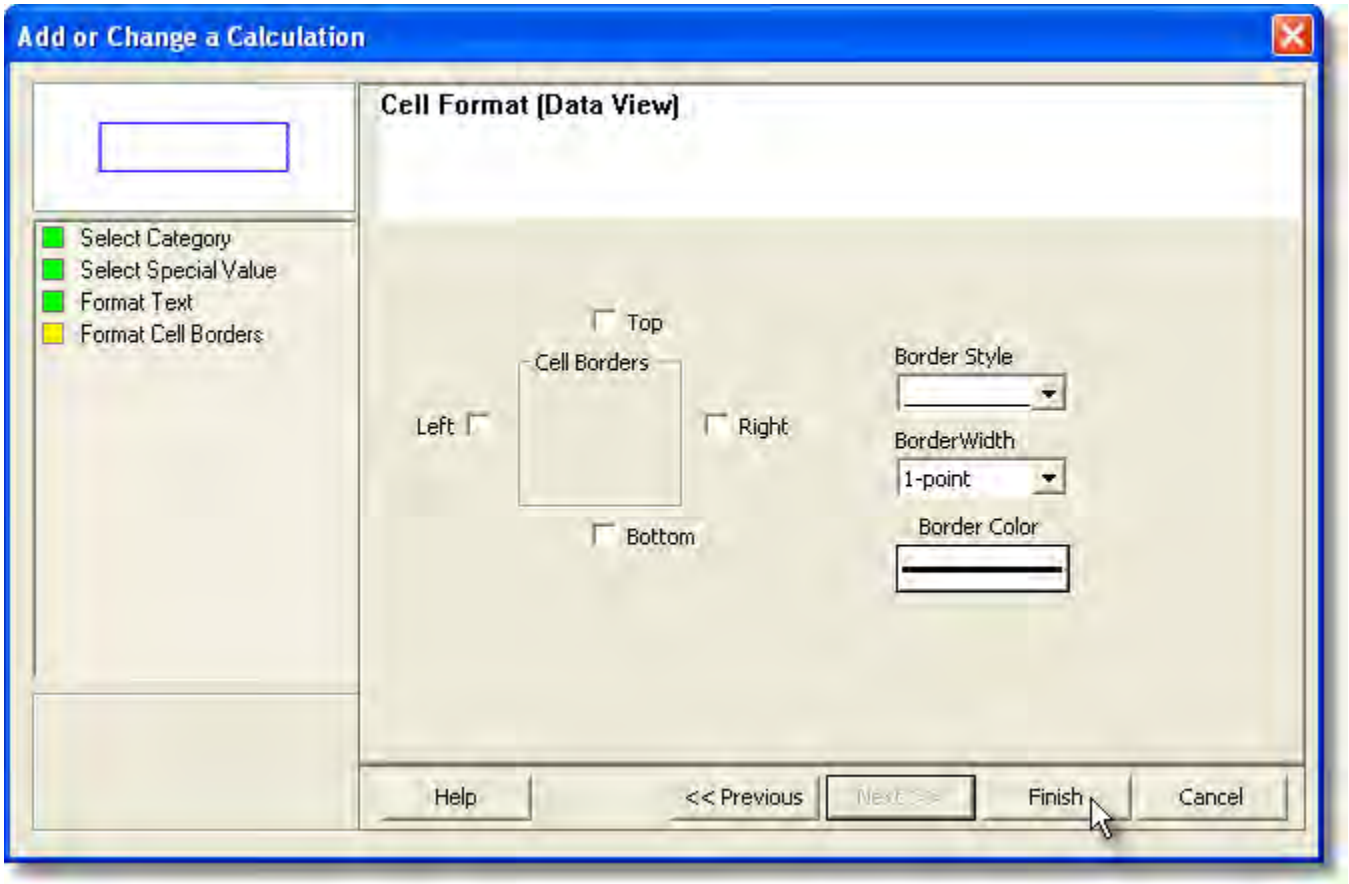
4) Select the ***Next*** command button.
5) Select a Special Value type.



6) Select the ***Next*** command button.
7) Select desired text formatting options.



8) Select the ***Next*** command button.
9) Select desired cell border options.

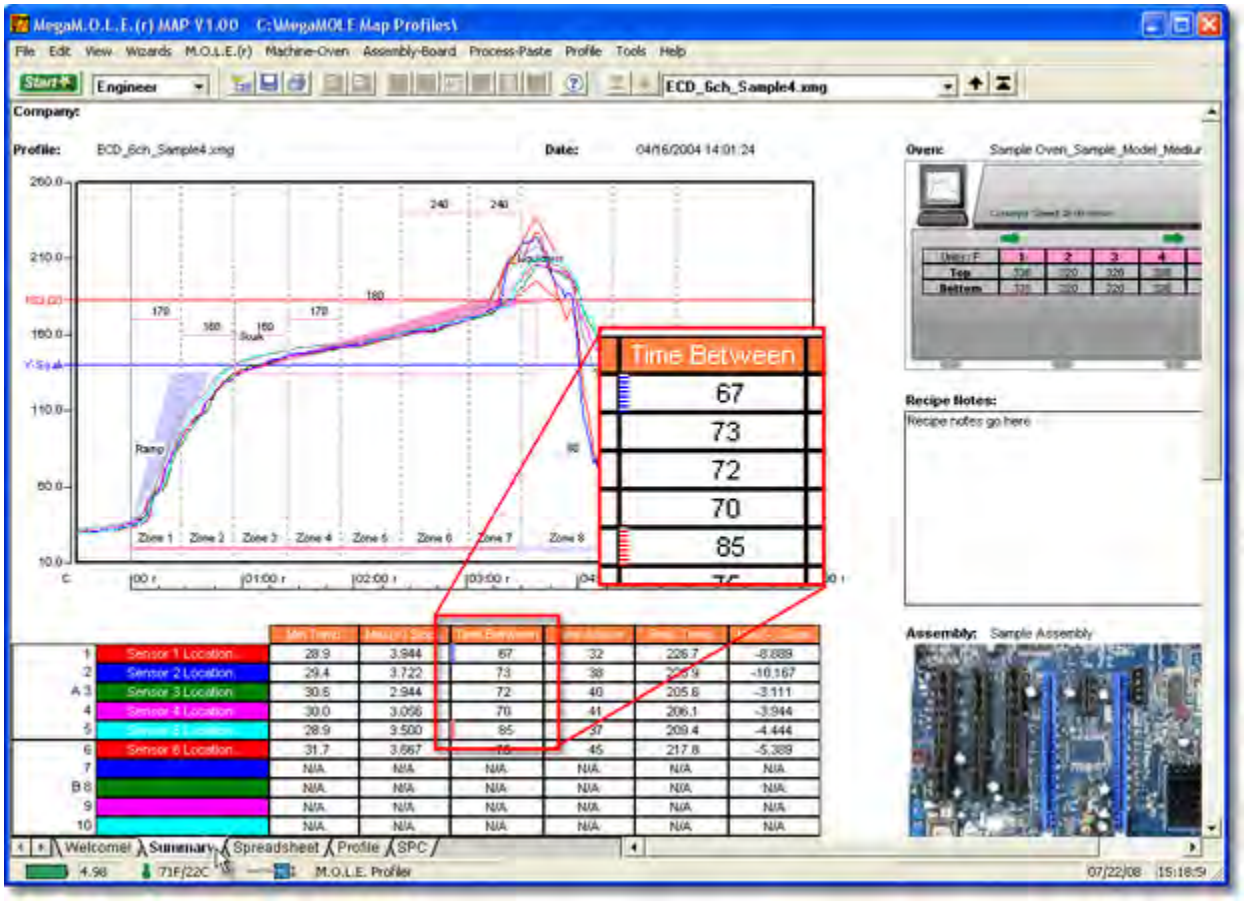


10) Select the ***Finish*** command button to complete the wizard and display the new calculation data in the selected template cell.

5.4.2.2.2. Specification Limit Indicators

Parameters displayed on the Summary Page Tab can have both Lower and Upper specifications applied. If a specification limit is violated, the software displays a red or blue indicator on the left edge of the Data Table cell.

If a USL has been exceeded, that parameter indicator will appear in **red** (indicating it is above the specification limit). If a parameter is less than the user specified LSL, that parameter indicator will be appear in **blue** (indicating below the specification limit).



Refer to topic *Software>Page Tabs>Summary>Template>Add & Edit Content* for information on how to apply LSL and USL values.

5.4.3. Spreadsheet Page Tab

The Spreadsheet Page Tab contains data that is collected by the M.O.L.E. Profiler put into standard spreadsheet format. Each row in the spreadsheet represents one data run. The columns after the Data Run and User defined Parameter Groups include SPC Flags so the user can select which parameters are to be displayed on the SPC Page Tab.

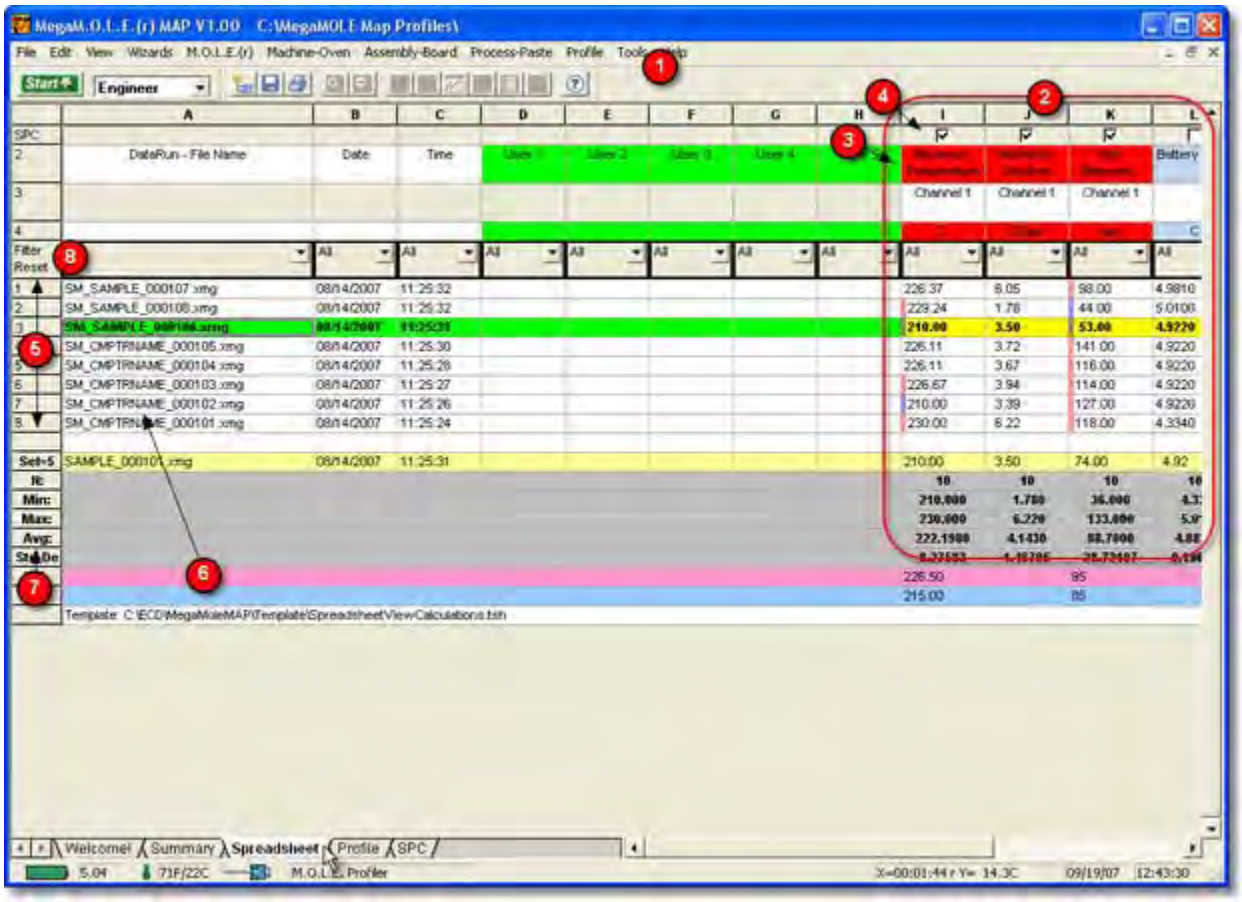
This is available in both Engineer & Verify Modes.

Spreadsheet Worksheet features:

1. Menus and Toolbar
2. Spreadsheet Template
3. Parameters
4. SPC Flags
5. Data Run Rows
6. Selected Data Run

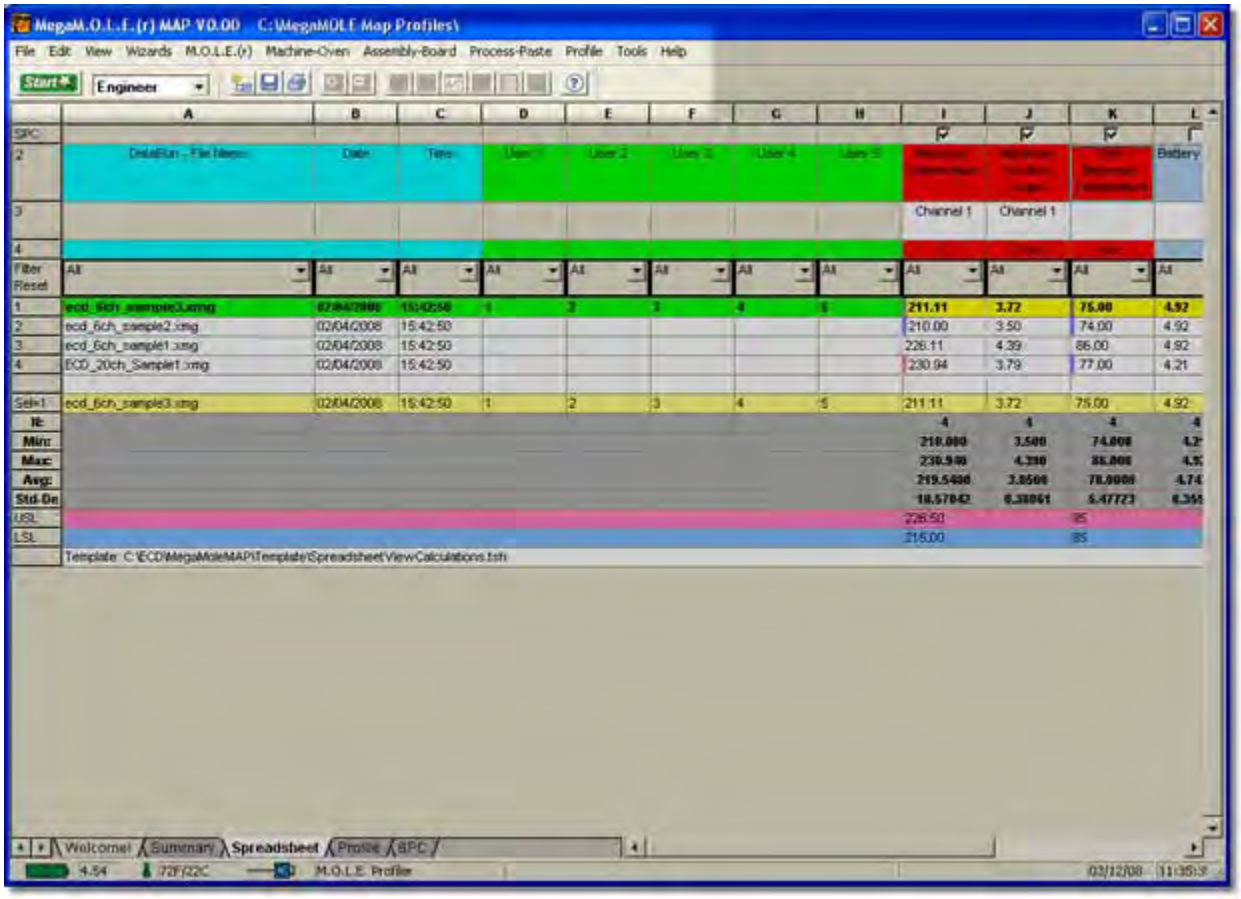
❼ **Filters**

❽ **Statistics**

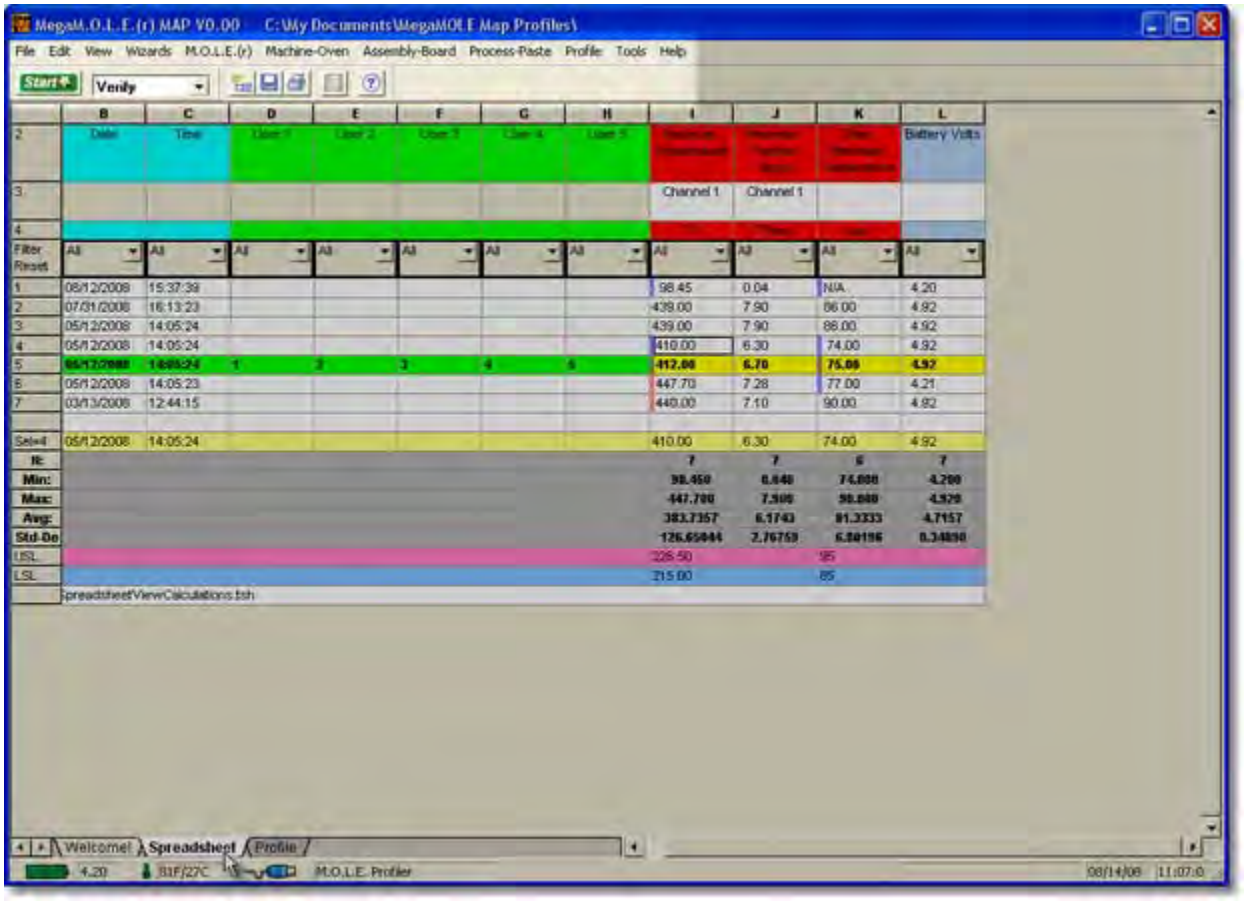


5.4.3.1. Menus & Toolbar

- **Menus:**
  File, Edit, Wizards, M.O.L.E.®, Machine-Oven, Assembly-Board, Process-Paste, Profile, Tools and Help.
- **Toolbar Buttons:**
  Engineer Mode - Start, Open Working Directory, Save, Print, and Help.

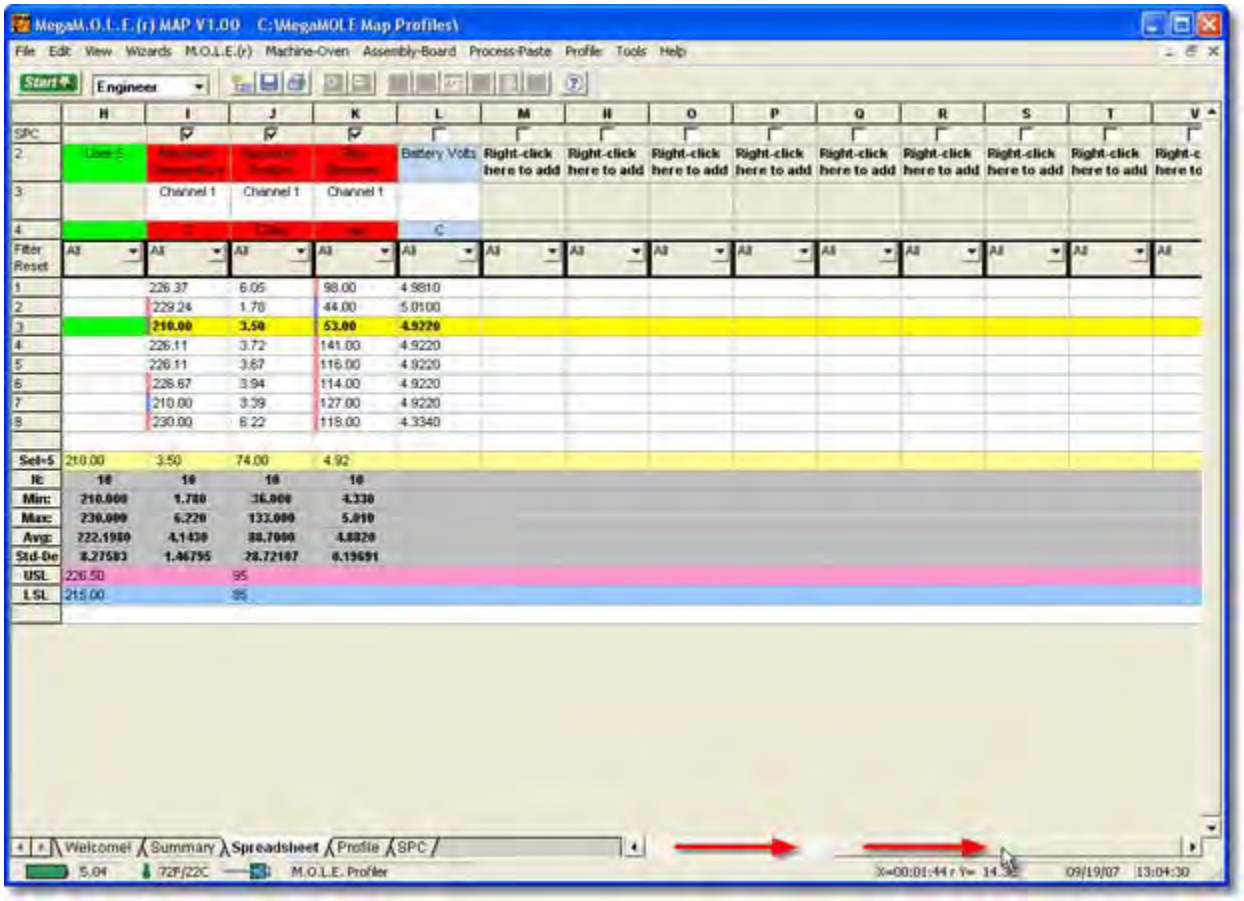


Verify Mode - Start, Open Working Directory, Save, Print, and Help.



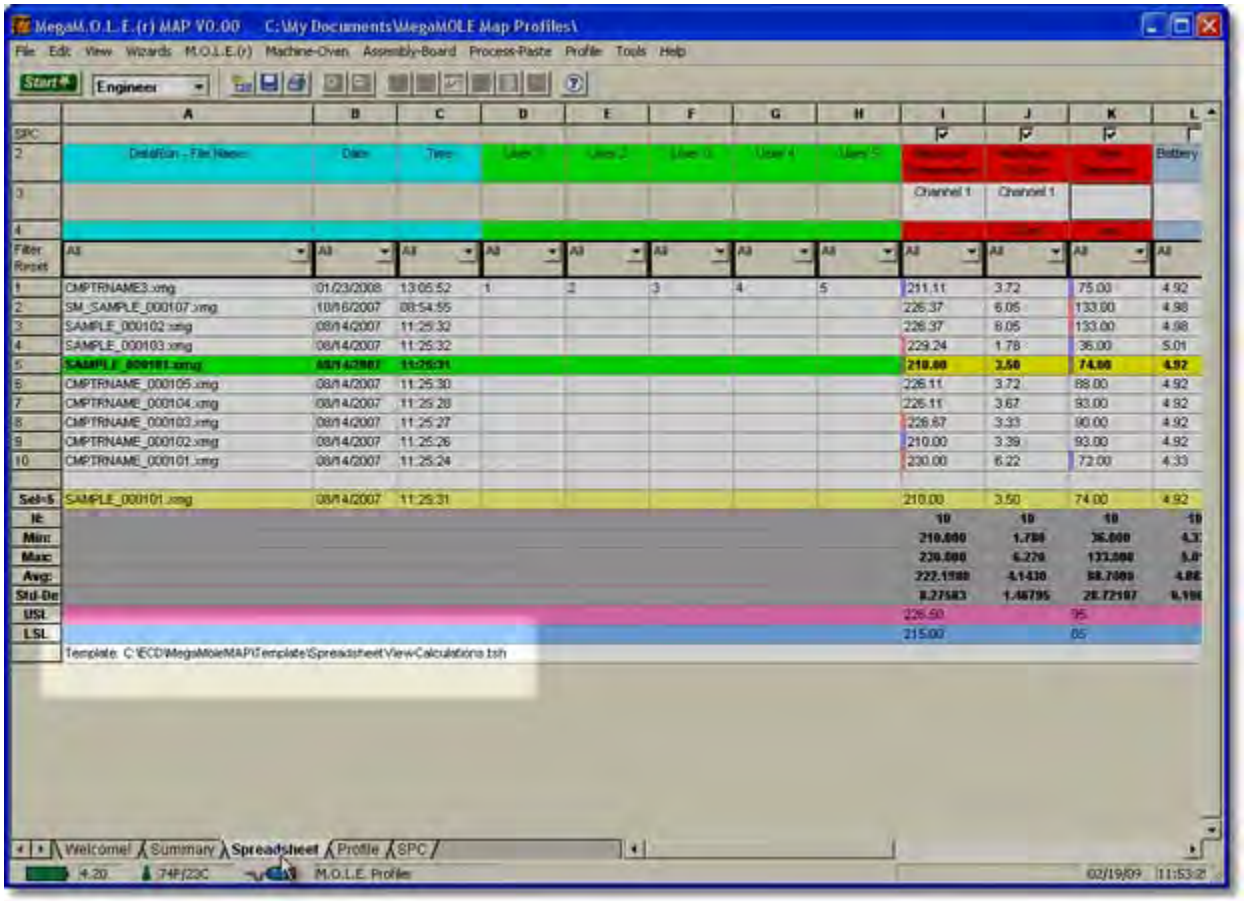
5.4.3.2. Spreadsheet Template

The Spreadsheet Page Tab is built using a template file (*.TSH) overlaid on a cell grid. Columns after the Data Run and User Parameter Groups allow the user to define parameters using the Template commands. To view the template use the horizontal scrollbar to slide the template left.



The Spreadsheet template is automatically loaded every time the software is started and is used as the default template for every downloaded data run. This template file is specified on the Spreadsheet Page Tab of the Preferences dialog box. Refer to topic ***Software>Menus>File>Preferences>Spreadsheet*** for more information.

For reference, the file name for the loaded template appears in the lower left corner of the template grid.

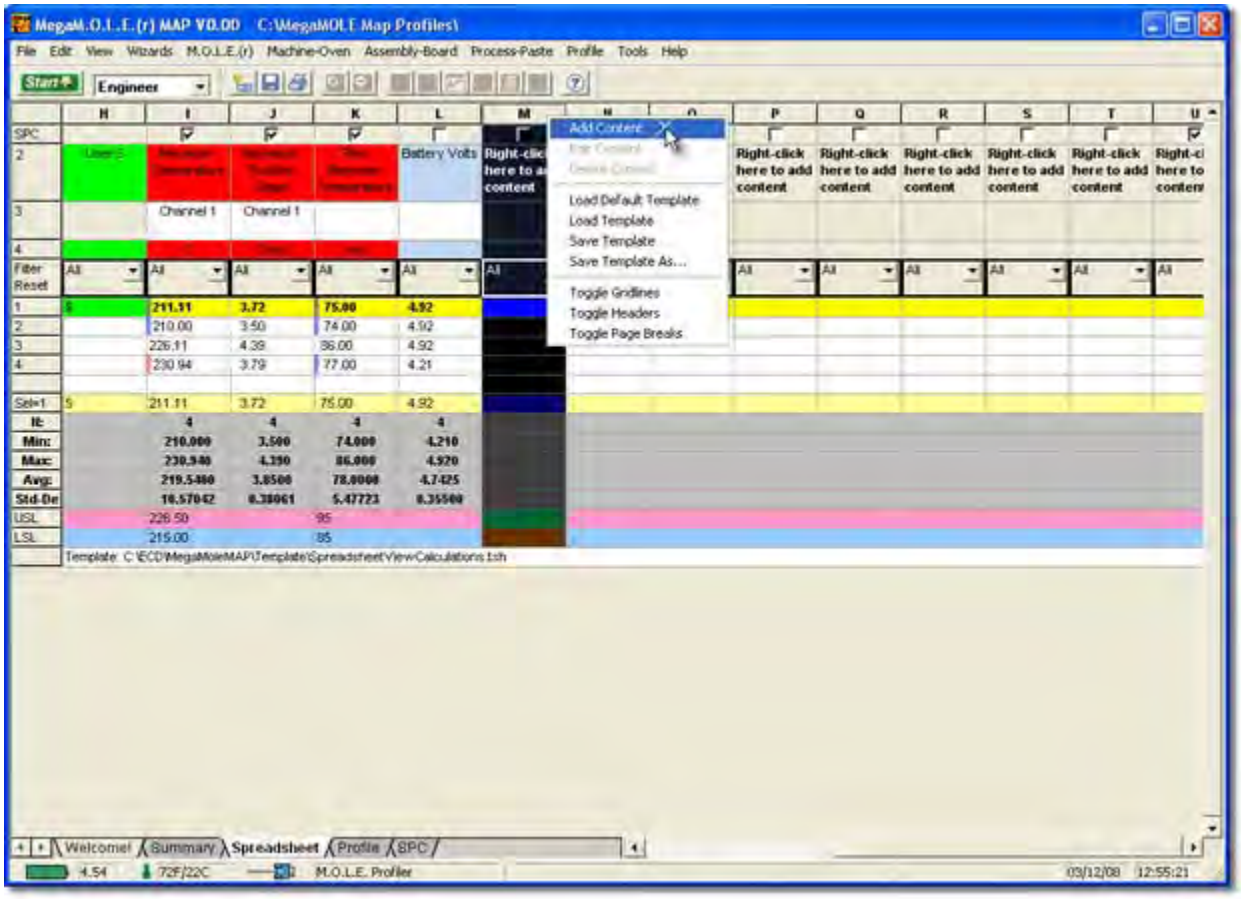


To display Template commands:

This is available when in Engineer Mode.

1) Move the mouse pointer over a parameter label.
2) When the mouse pointer becomes a , right-click and a shortcut menu appears.

Template commands can also be accessed on the View menu. Refer to topic ***Software>Menus>View Menu*** for more information. To add or edit a calculation refer to topic ***Software>Page Tabs>Spreadsheet>Spreadsheet Template>Add & Edit Content*** for more information.



3) You can now select from the template commands.

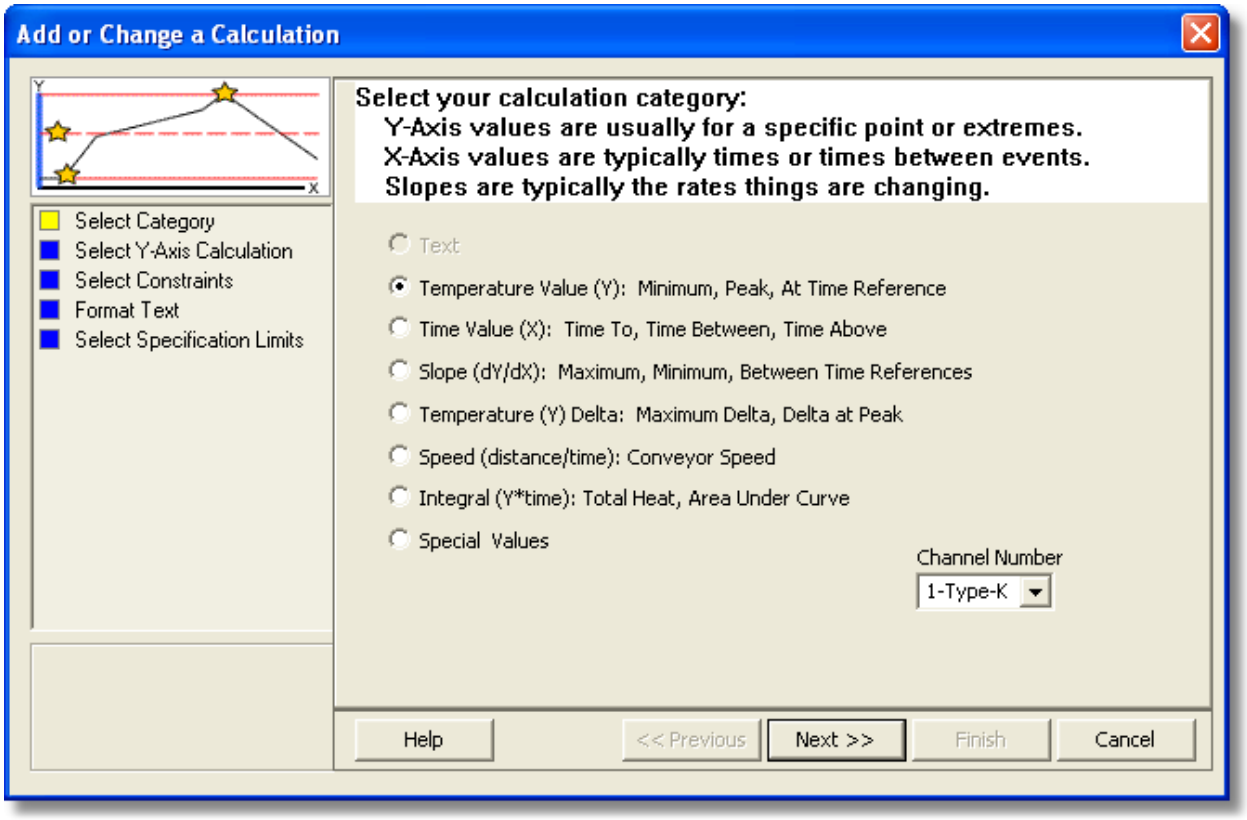
5.4.3.2.1. Add & Edit Content

To add or edit template content, the software includes a wizard to guide the user through the related content options. The template allows seven different calculation categories to be displayed.

Add & Edit Content wizards:

1. Temperature Value (Y)
2. Time Value (X)
3. Slope (dX/dY)
4. Temperature (Y) Delta
5. Speed (distance/time)
6. Integral (Y*time)
7. Special Values

This wizard contains all the related steps to add or edit content to the template. It is recommended to process all steps in order but the software allows you to navigate forward and backward setting options individually. When the minimum options have been selected, ***Finish*** command button will become active.



5.4.3.2.1.1. Temperature Value (Y)

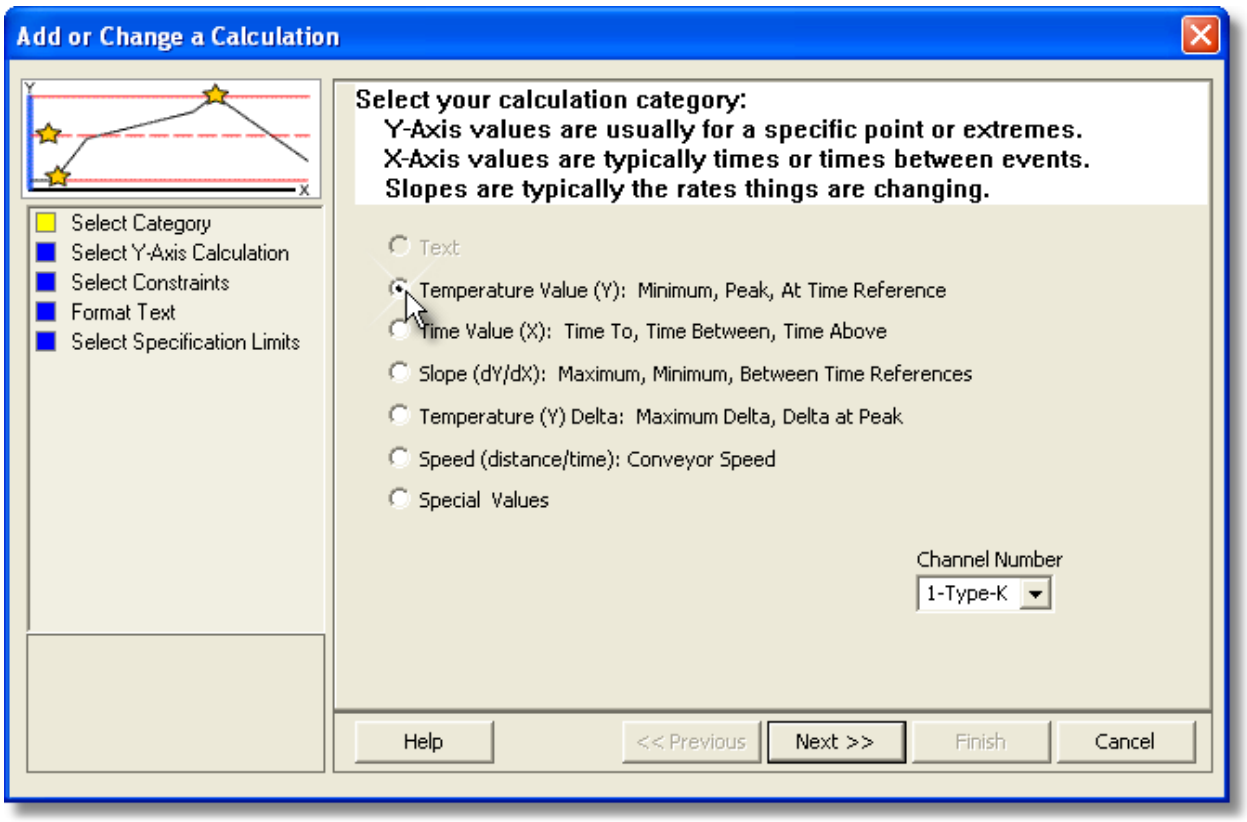
<u>To add or edit Y-Axis Values content:</u>

1) Right-click a template cell and a shortcut menu appears.
2) Select ***Add Content*** or ***Edit Content*** from the shortcut menu and the ***Add or Change a Calculation*** wizard appears.

When navigating through the wizard, the step list on the left uses a color key to inform the user of the current step, steps that have been completed and remaining steps.

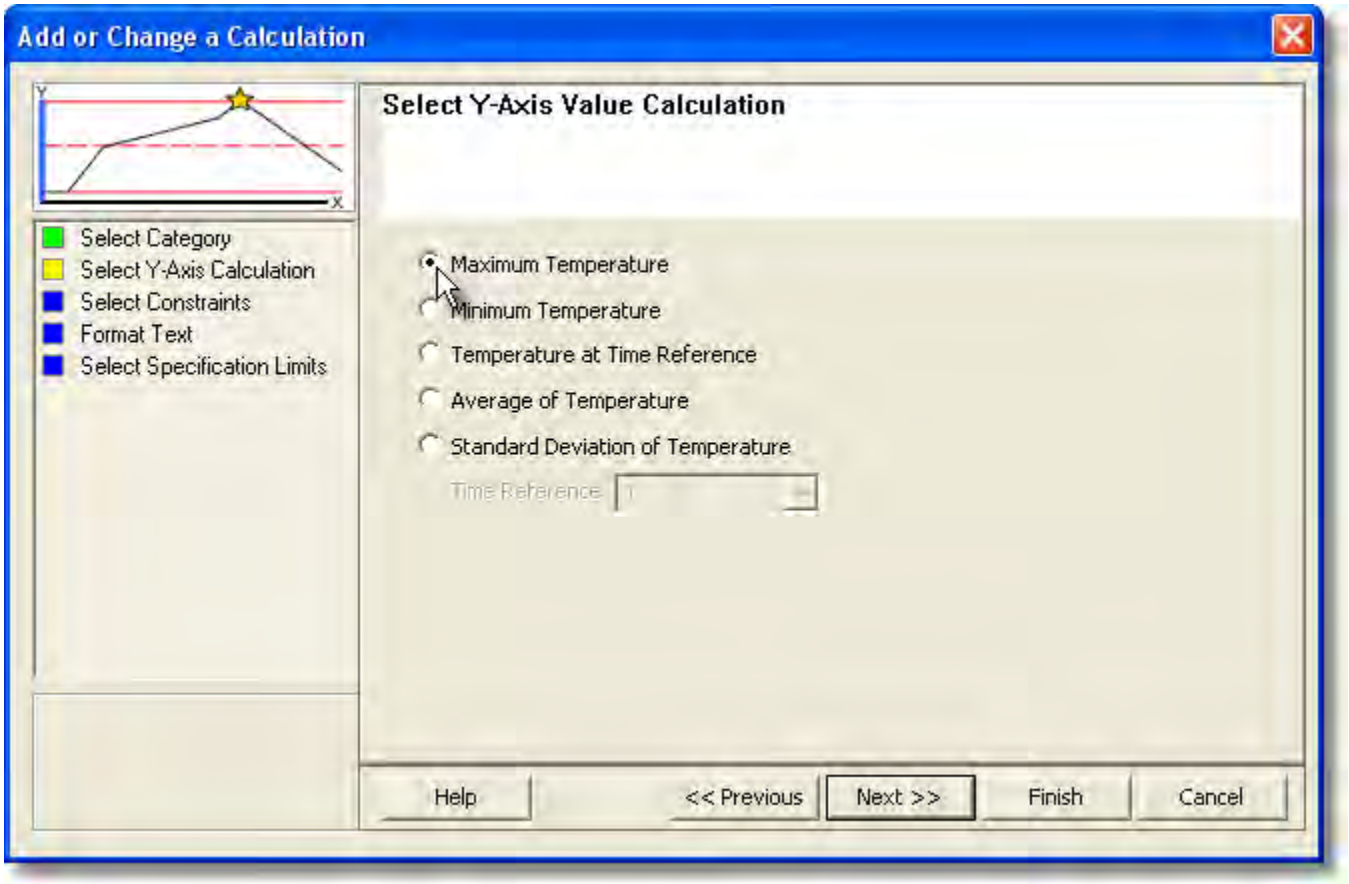
Current Completed Remaining

3) Click ***Temperature Values (Y)*** and which channel to derive the data from.



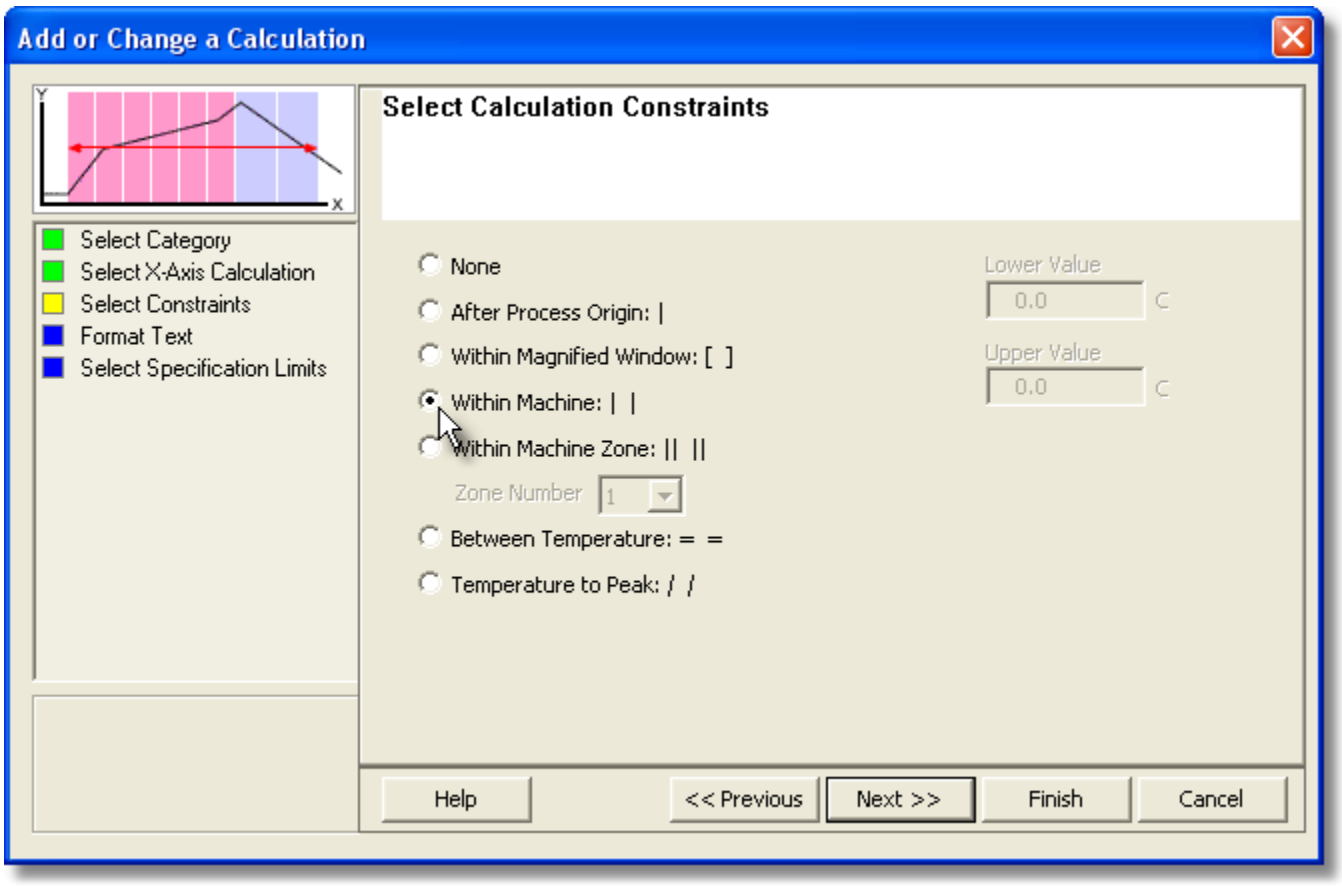
4) Select the ***Next*** command button.
5) Select a Temperature (Y) Axis Value.

If ***Temperature at Time Reference*** calculation is selected, the software requires the user to select an established Time (X) Reference line. If one is not established the software automatically creates one on the Profile Page Tab Data Graph.

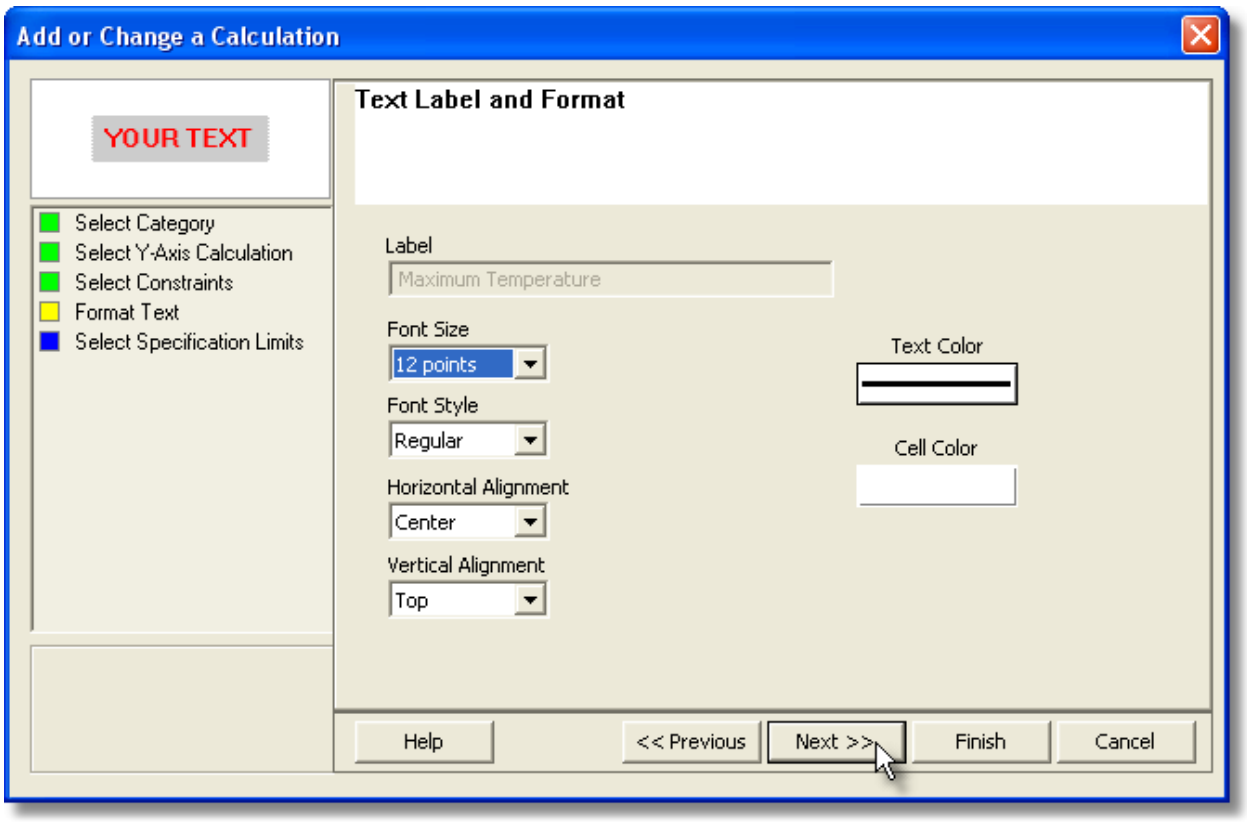


6) Select the ***Next*** command button.
7) Select the calculation constraints. These options are the specified area on the Time (X) Axis where the values are to be extracted from.

If the ***Within Magnified Window*** constraint is selected and the Magnify tool is used to zoom in on a portion of the Data Graph, the Data Table displays the statistics for those values within the magnified window.

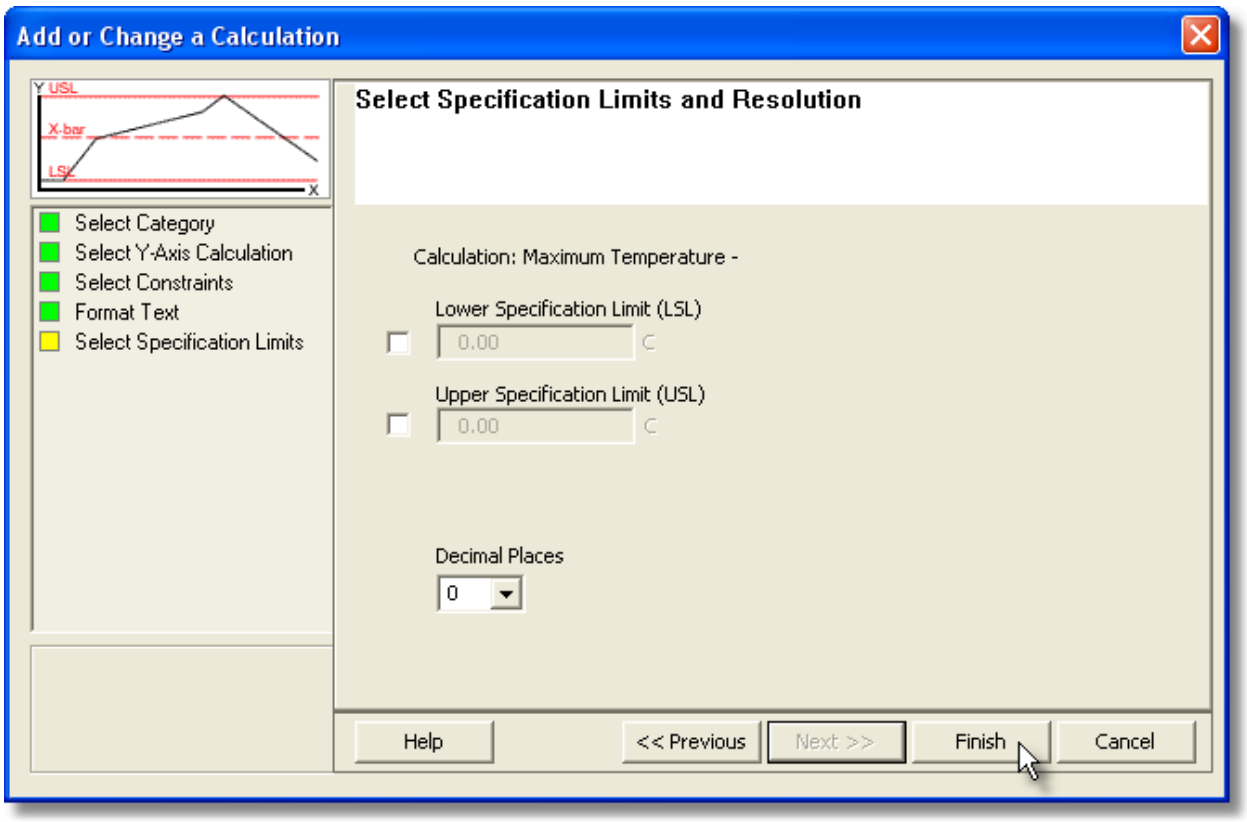


8) Select the ***Next*** command button.
9) Select desired text formatting options.



10) Select the ***Next*** command button.

11) Select Specification Limits and Units. If these values are violated colored bars will appear in the formatted template cell. Refer to topic ***Software>Page Tabs>Spreadsheet>Template>Specification Limit Indicators*** for more information.



12) Select the ***Finish*** command button to complete the wizard and display the new calculation data in the selected template column.

5.4.3.2.1.2. Time Value (X)

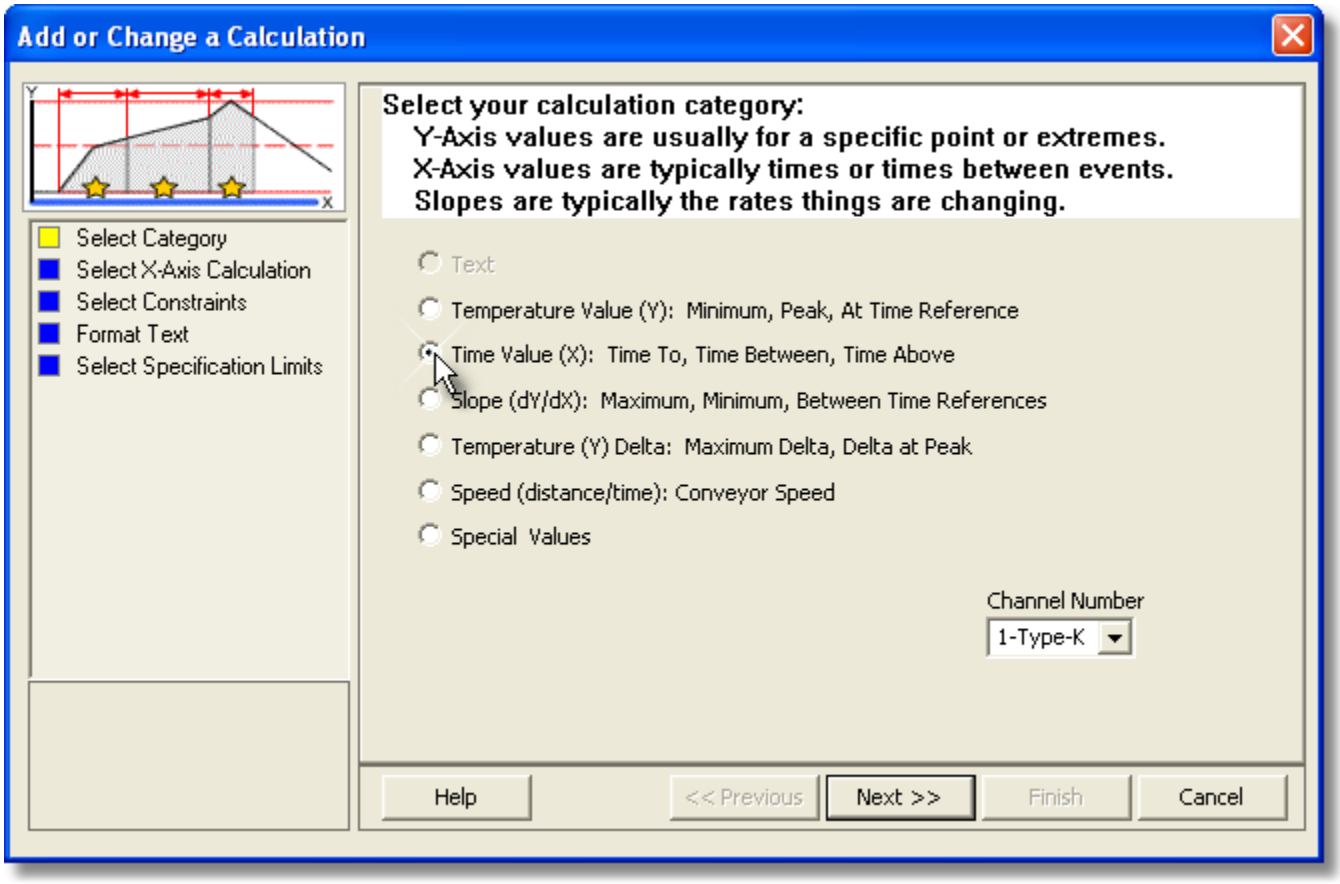
<u>To add or edit X-Axis Values content:</u>

1) Right-click a template cell and a shortcut menu appears.
2) Select ***Add Content*** or ***Edit Content*** from the shortcut menu and the ***Add or Change a Calculation*** wizard appears.

When navigating through the wizard, the step list on the left uses a color key to inform the user of the current step, steps that have been completed and remaining steps.

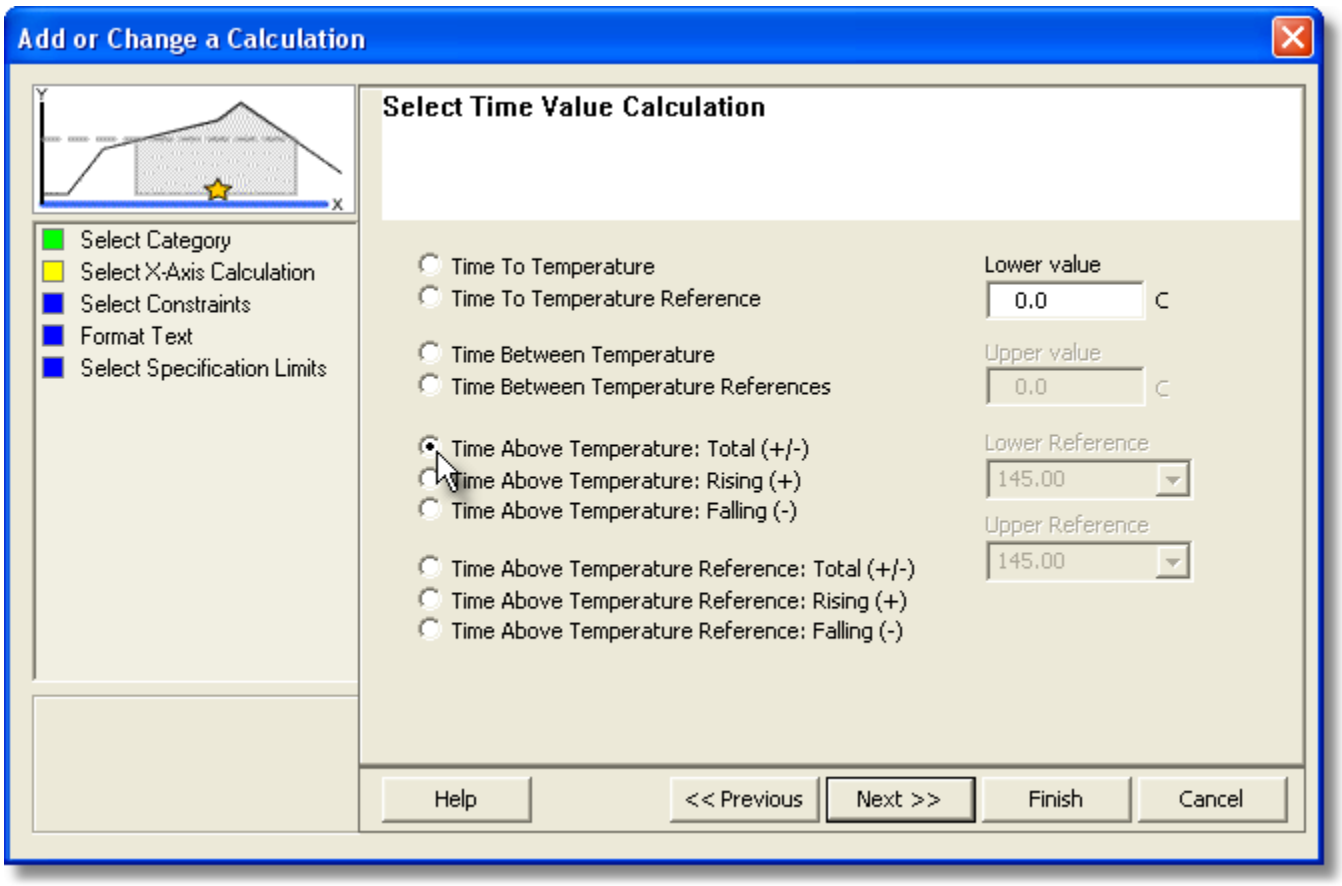
Current Completed Remaining

3) Click ***Time Value (X)*** and which channel to derive the data from.



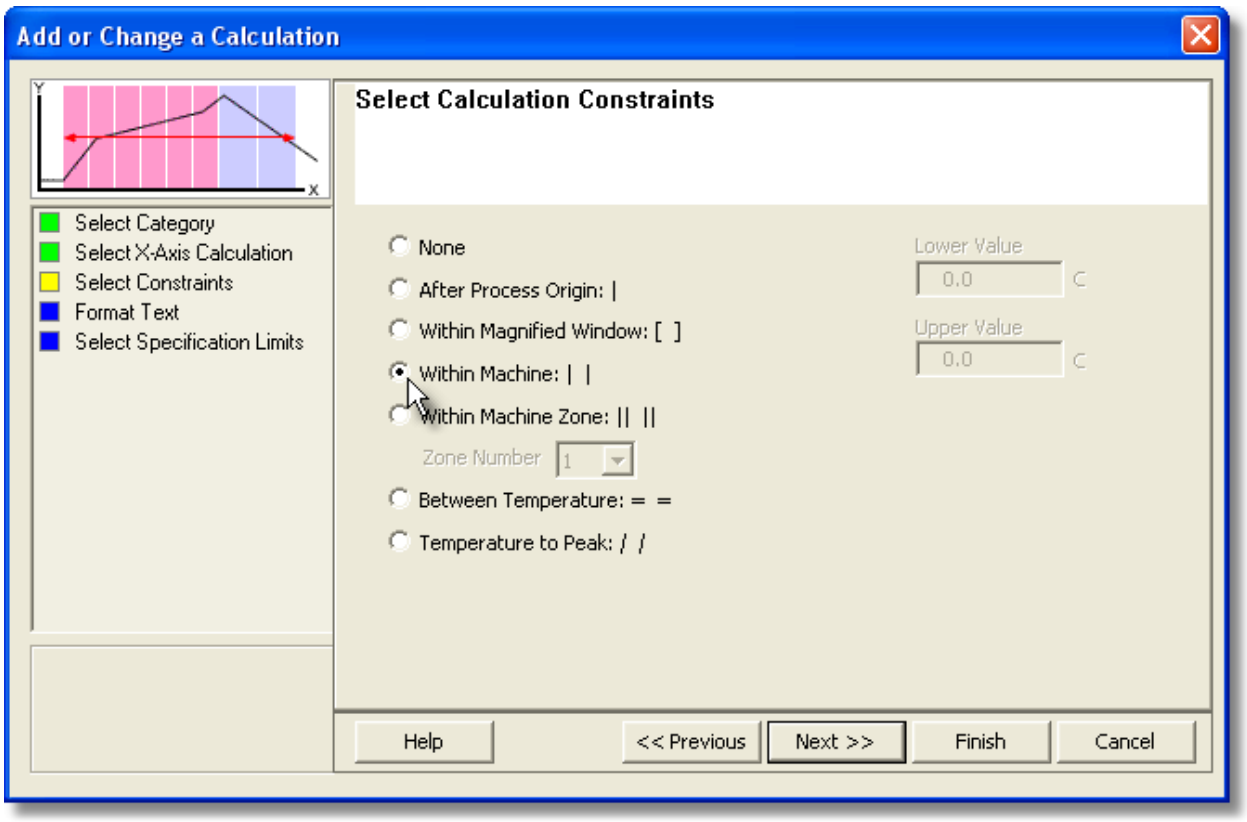
4) Select the ***Next*** command button.
5) Select a Time (X) Axis Value.

If any ***Temperature Reference (Y)*** calculation is selected, the software requires a Temperature (Y) Reference Line to be established. Refer to topic ***Software>Menus>Profile>Add Temperature (Y) Reference Lines***.

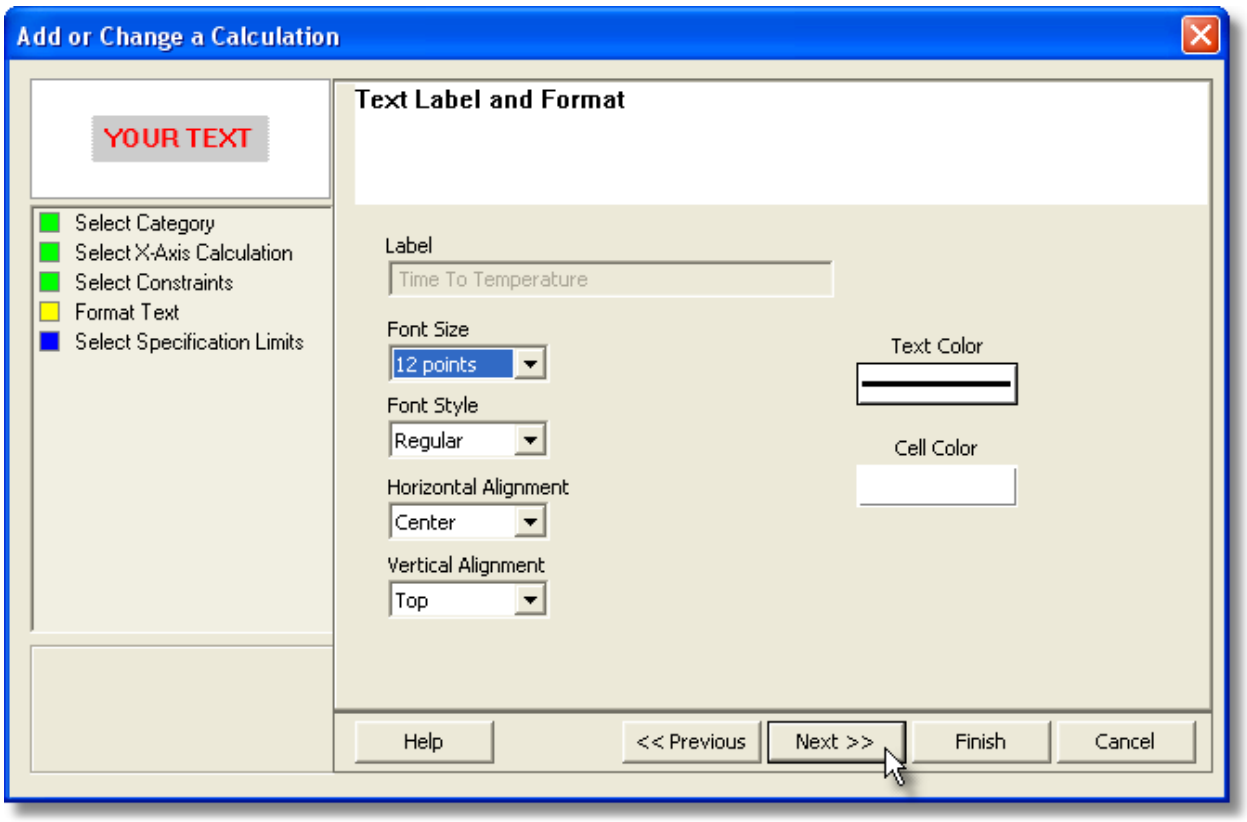


6) Select the ***Next*** command button.
7) Select the calculation constraints. These options are the specified area on the Time (X) Axis where the values are to be extracted from.

If the ***Within Magnified Window*** constraint is selected and the Magnify tool is used to zoom in on a portion of the Data Graph, the Data Table displays the statistics for those values within the magnified window.

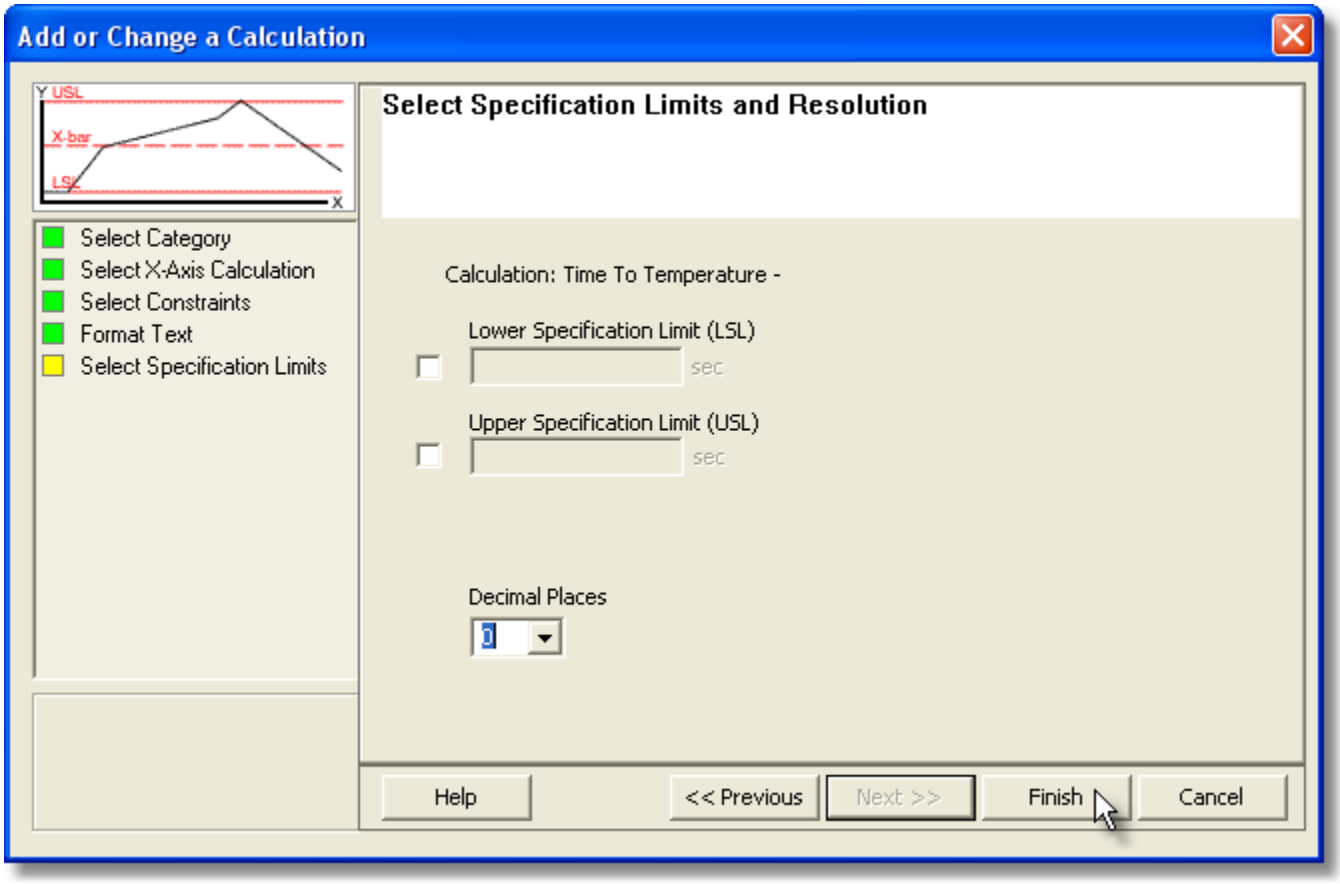


8) Select the ***Next*** command button.
9) Select desired text formatting options.



10) Select the ***Next*** command button.

11) Select Specification Limits and Units. If these values are violated colored bars will appear in the formatted template cell. Refer to topic ***Software>Page Tabs>Spreadsheet>Template>Specification Limit Indicators*** for more information.



12) Select the ***Finish*** command button to complete the wizard and display the new calculation data in the selected template column.

5.4.3.2.1.3. Slope (dX/dY)

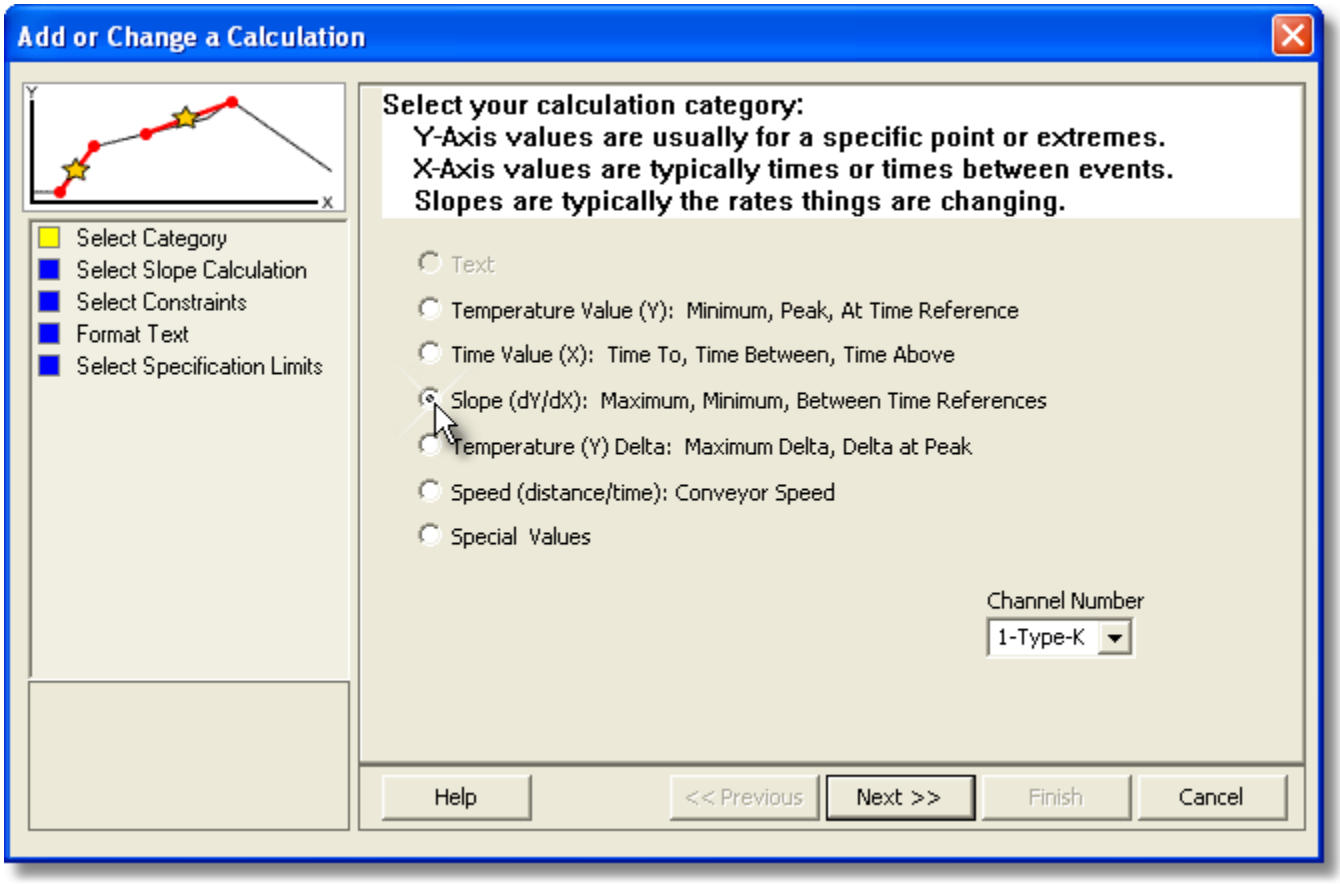
<u>To add or edit Slope Value content:</u>

1) Right-click a template cell and a shortcut menu appears.
2) Select ***Add Content*** or ***Edit Content*** from the shortcut menu and the ***Add or Change a Calculation*** wizard appears.

When navigating through the wizard, the step list on the left uses a color key to inform the user of the current step, steps that have been completed and remaining steps.

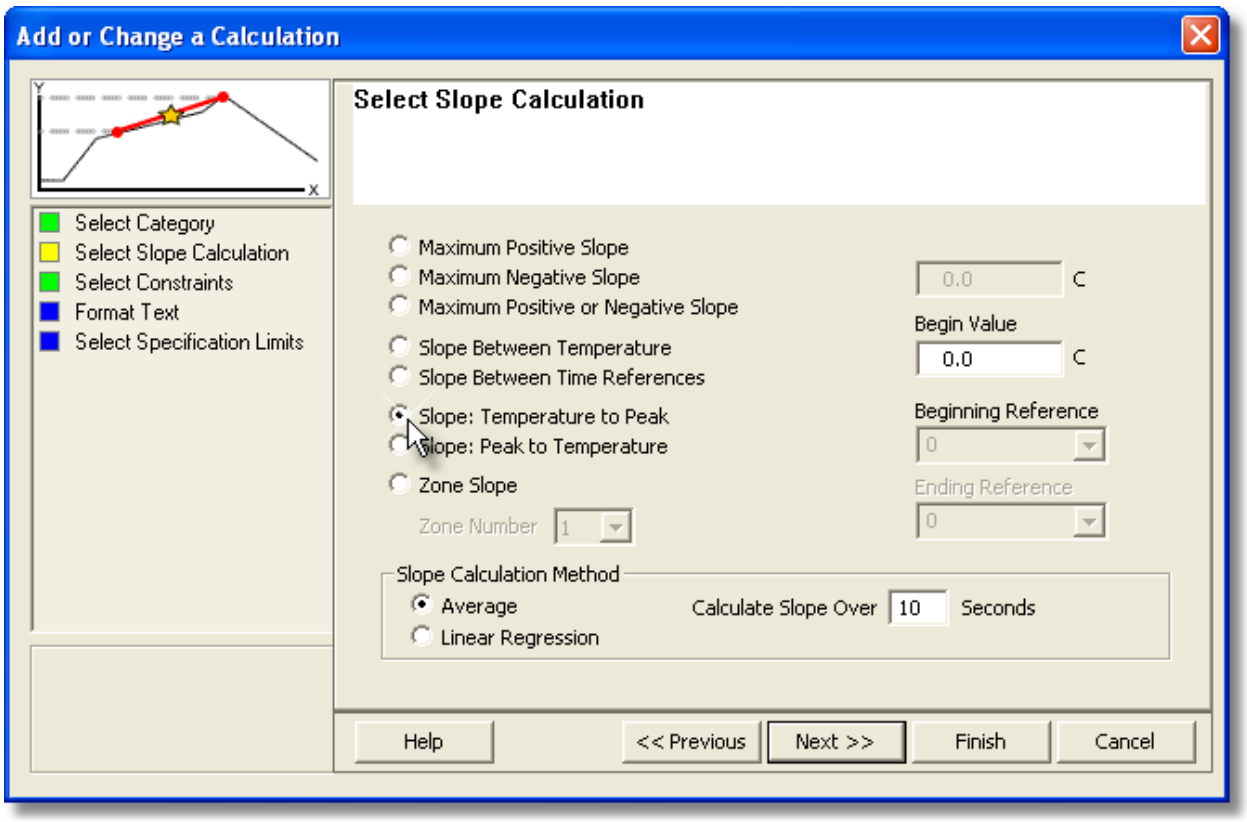
Current Completed Remaining

3) Click ***Slope (dX/dY)*** and which channel to derive the data from.

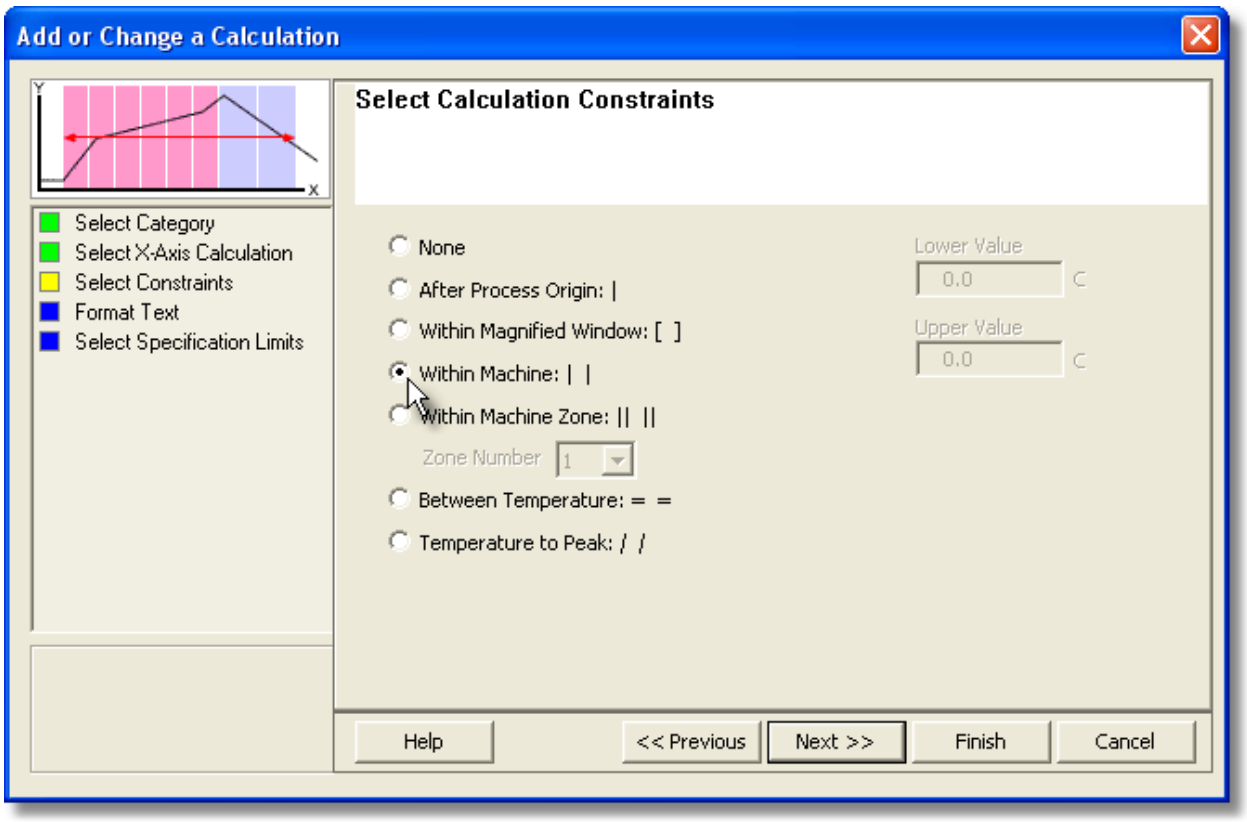


4) Select the ***Next*** command button.
5) Select a Slope Value.

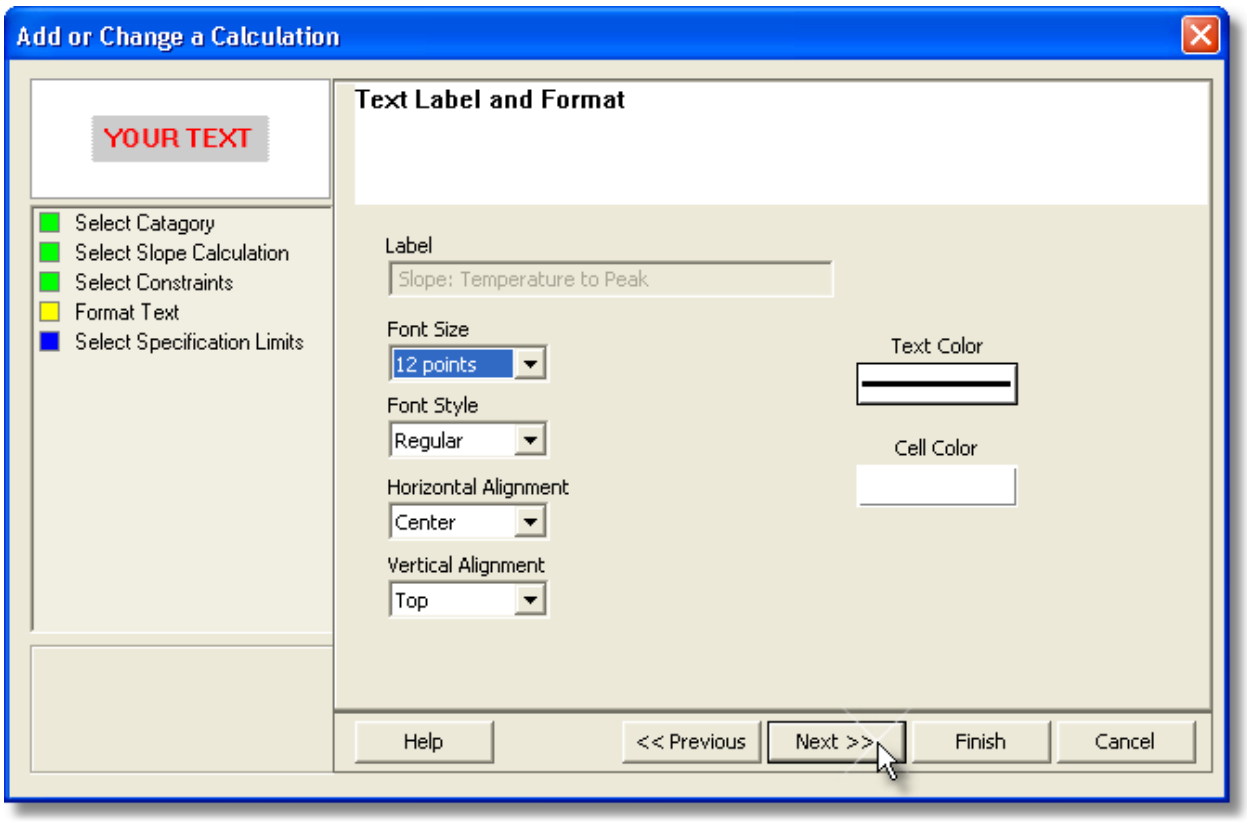
If ***Slope Between Time References*** calculation is selected, the software requires the user to select an established Time (X) Reference line. If one is not established the software automatically creates one on the Profile Page Tab Data Graph.



6) Select the ***Next*** command button.
7) Select the calculation constraints. These options are the specified area on the Time (X) Axis where the values are to be extracted from.

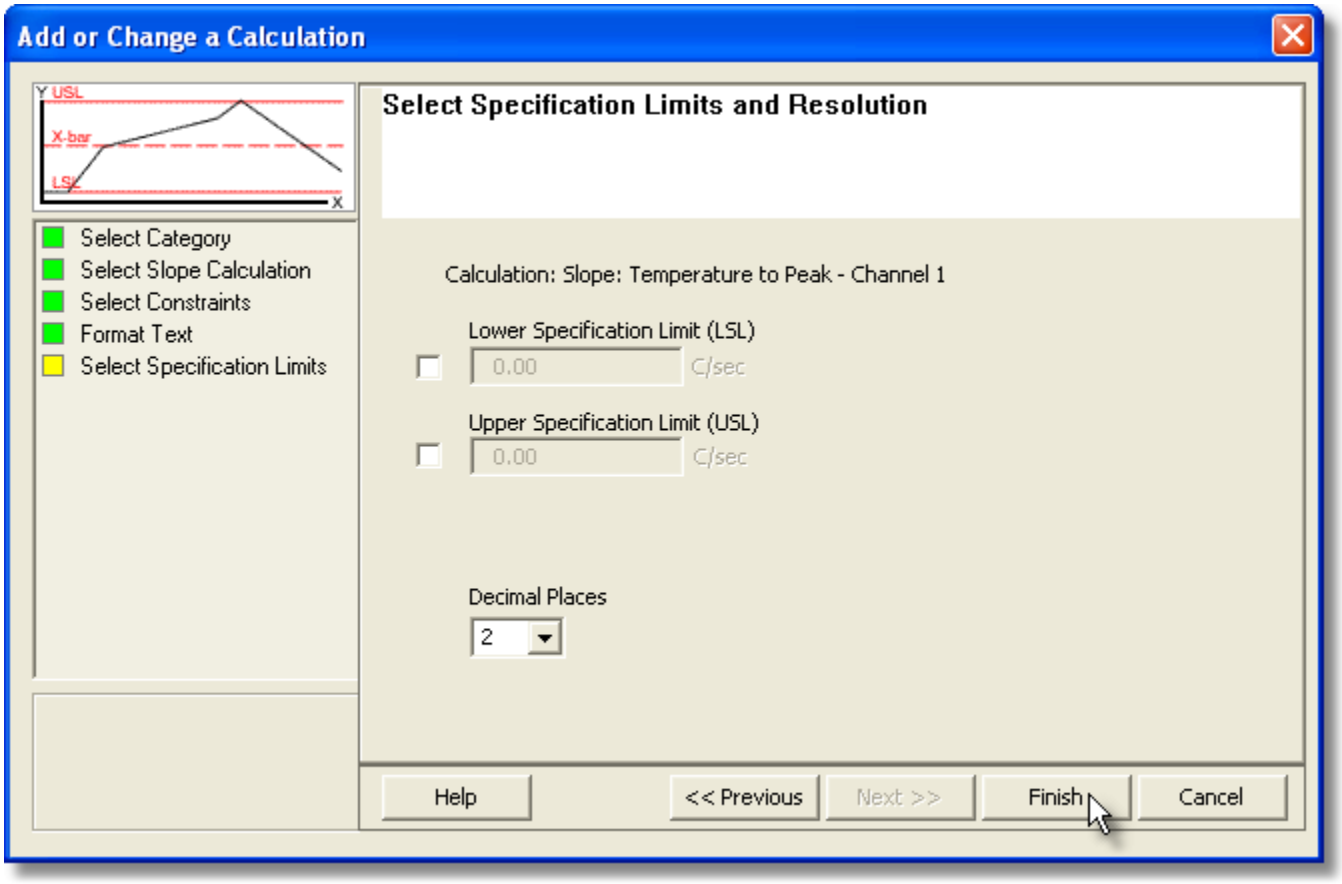


8) Select the ***Next*** command button.
9) Select desired text formatting options.



10) Select the ***Next*** command button.

11) Select Specification Limits and Units. If these values are violated colored bars will appear in the formatted template cell. Refer to topic ***Software>Page Tabs>Spreadsheet>Template>Specification Limit Indicators*** for more information.



12) Select the ***Finish*** command button to complete the wizard and display the new calculation data in the selected template column.

5.4.3.2.1.4. Temperature (Y) Delta

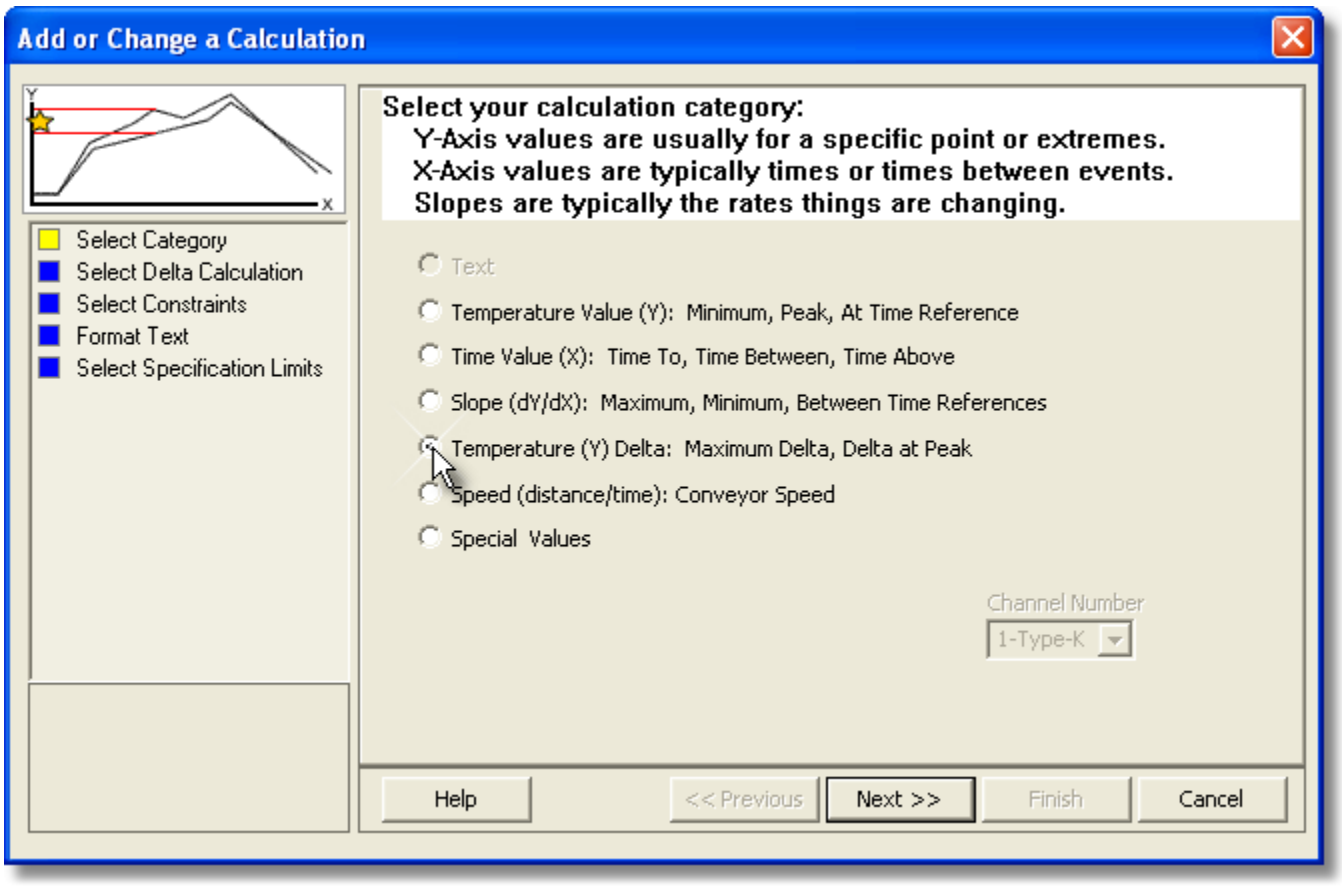
<u>To add or edit Temperature (Y) Delta content:</u>

1) Right-click a template cell and a shortcut menu appears.
2) Select ***Add Content*** or ***Edit Content*** from the shortcut menu and the ***Add or Change a Calculation*** wizard appears.

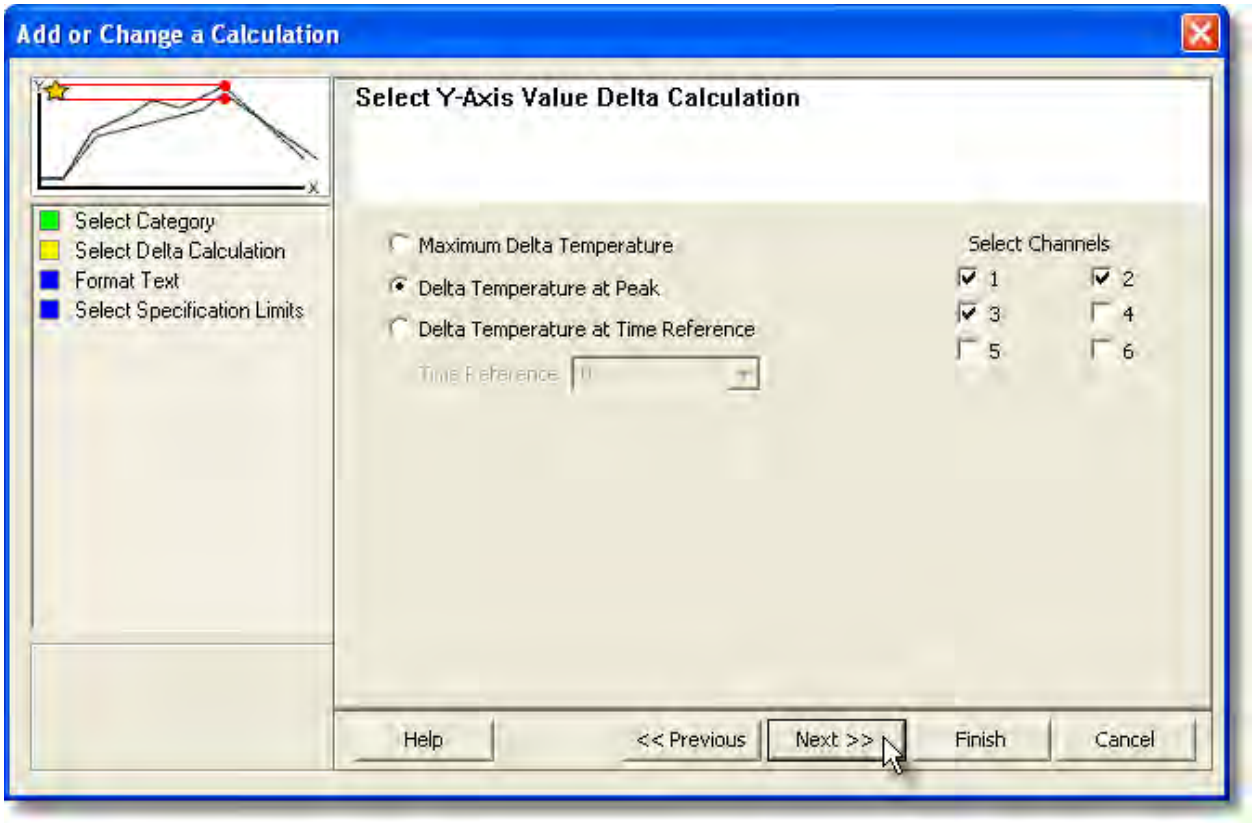
When navigating through the wizard, the step list on the left uses a color key to inform the user of the current step, steps that have been completed and remaining steps.

Current Completed Remaining

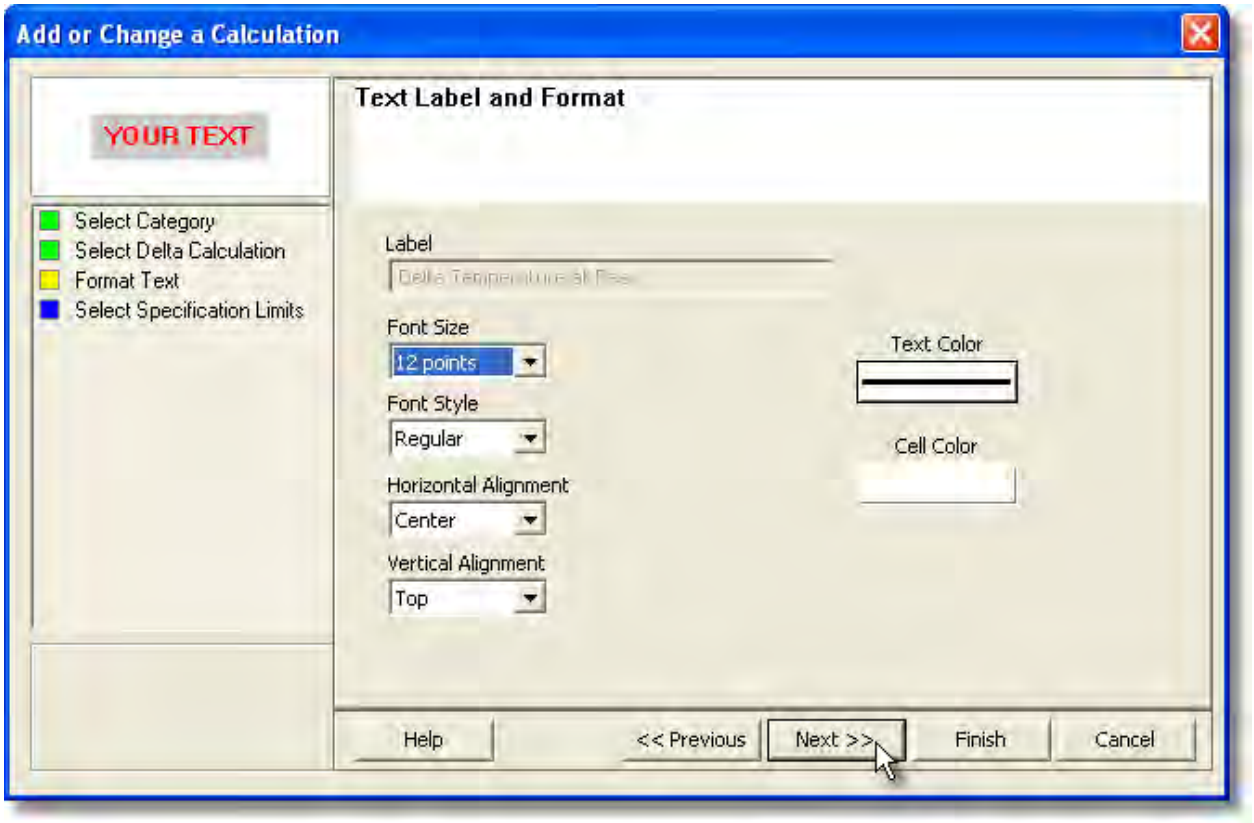
3) Click ***Temperature (Y) Delta*** and which channel to derive the data from.



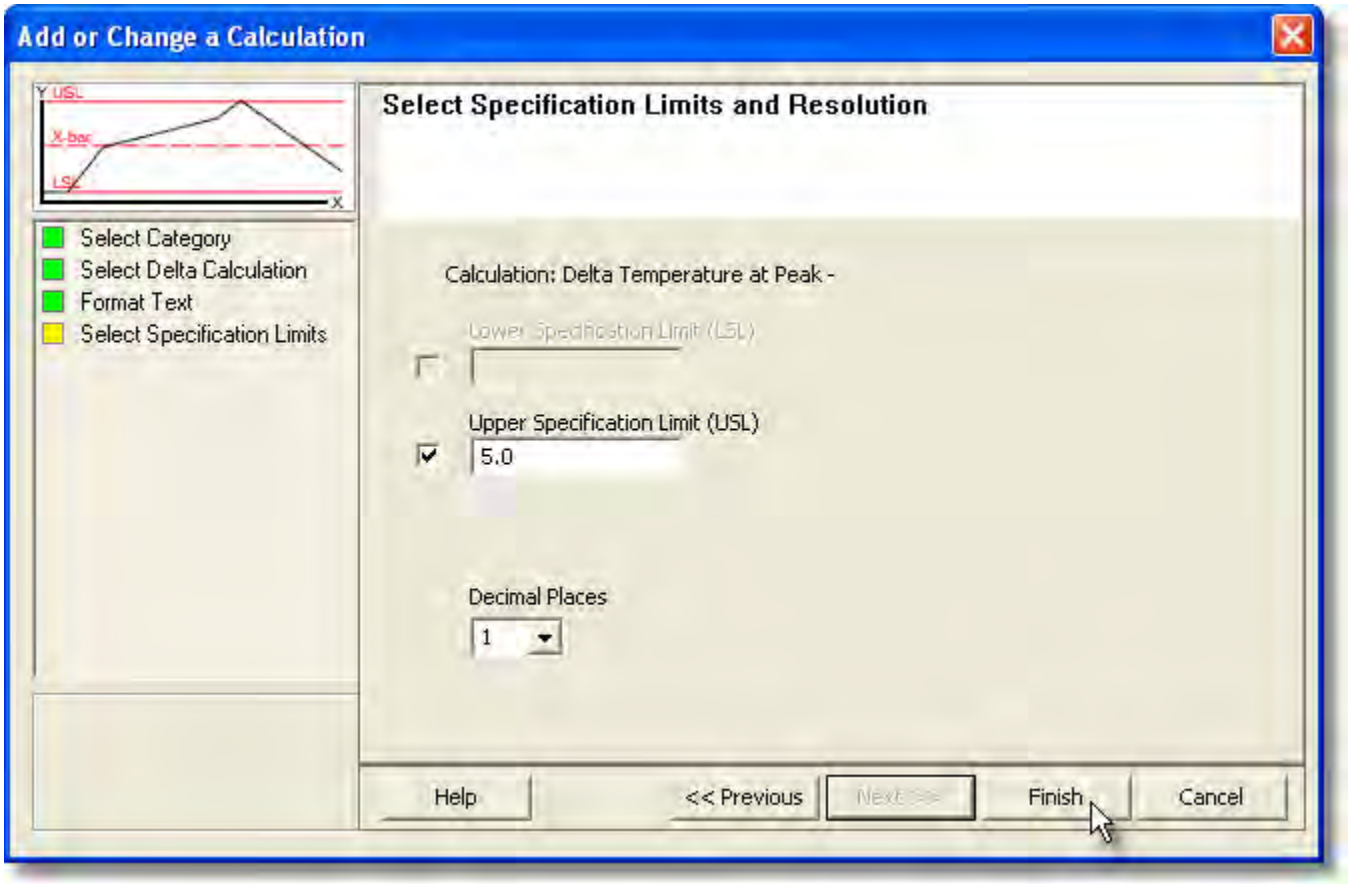
4) Select the ***Next*** command button.
5) Select a Y-Axis value delta calculation and which channels to you wish to be included in this calculation.



6) Select the ***Next*** command button.
7) Select desired text formatting options.



8) Select the ***Next*** command button.
9) Select Specification Limits and Units. If these values are violated colored bars will appear in the formatted template cell. Refer to topic ***Software>Page Tabs>Spreadsheet>Template>Specification Limit Indicators*** for more information.



10) Select the ***Finish*** command button to complete the wizard and display the new calculation data in the selected template cell.

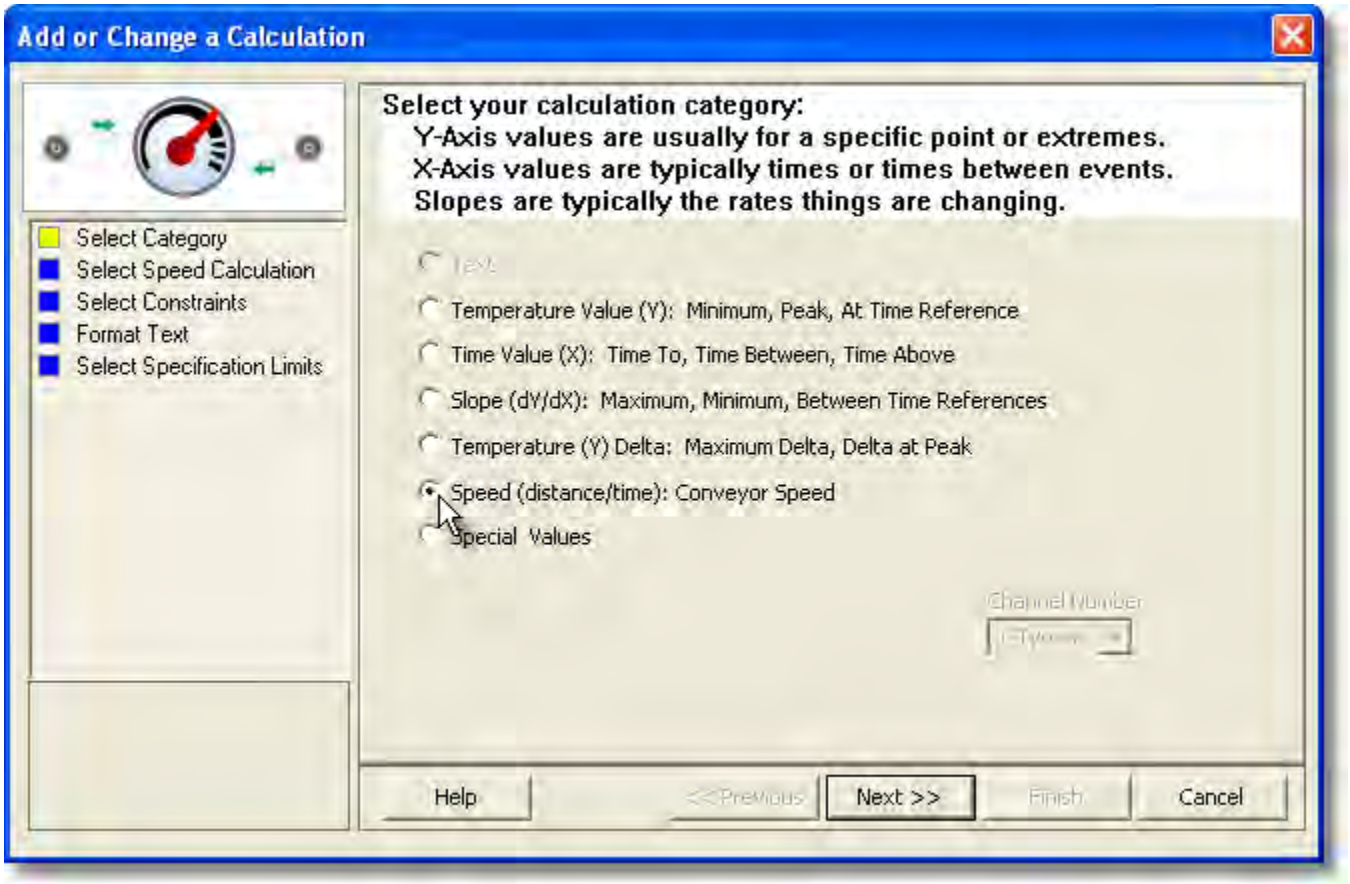
5.4.3.2.1.5. Speed (distance/time)

<u>To add or edit Speed (distance/time) content:</u>

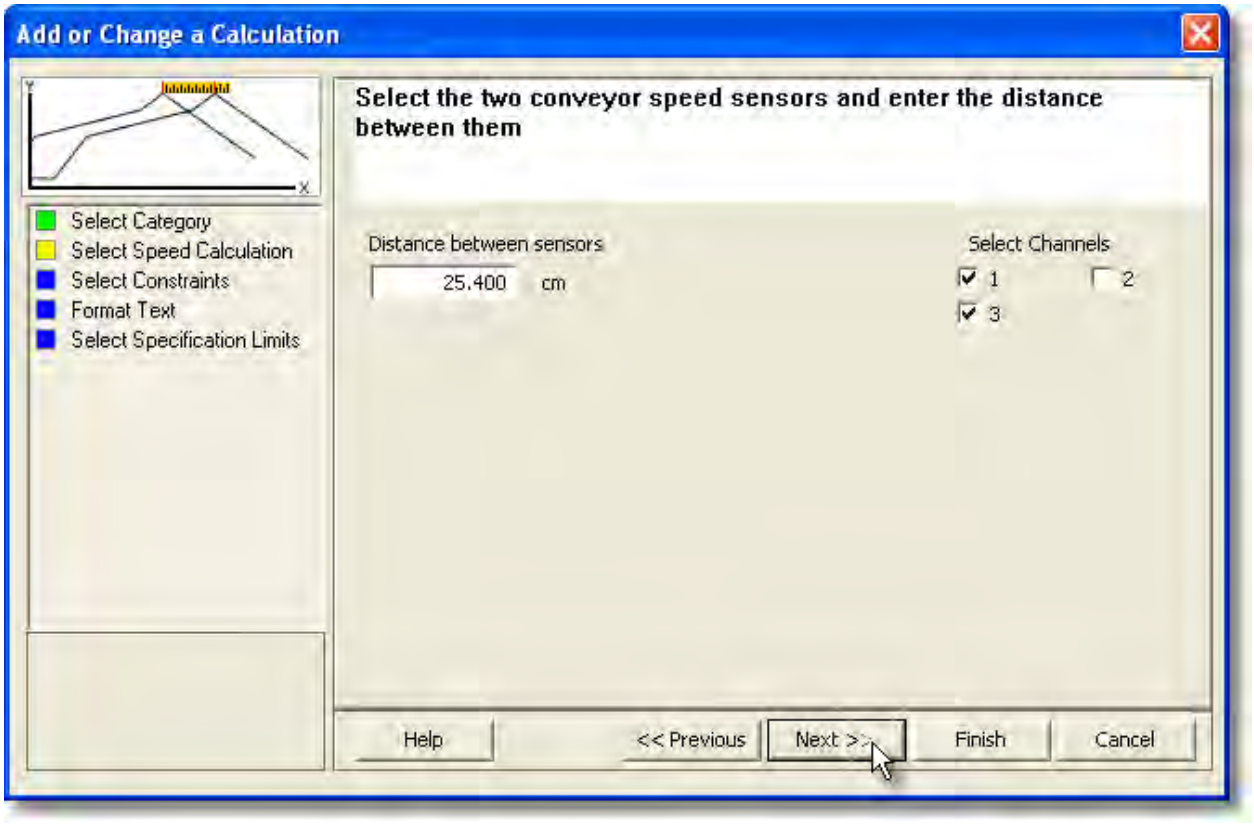
1) Right-click a template cell and a shortcut menu appears.
2) Select ***Add Content*** or ***Edit Content*** from the shortcut menu and the ***Add or Change a Calculation*** wizard appears.

> When navigating through the wizard, the step list on the left uses a color key to inform the user of the current step, steps that have been completed and remaining steps.
>
> Current Completed Remaining

3) Click ***Speed (distance/time)***.

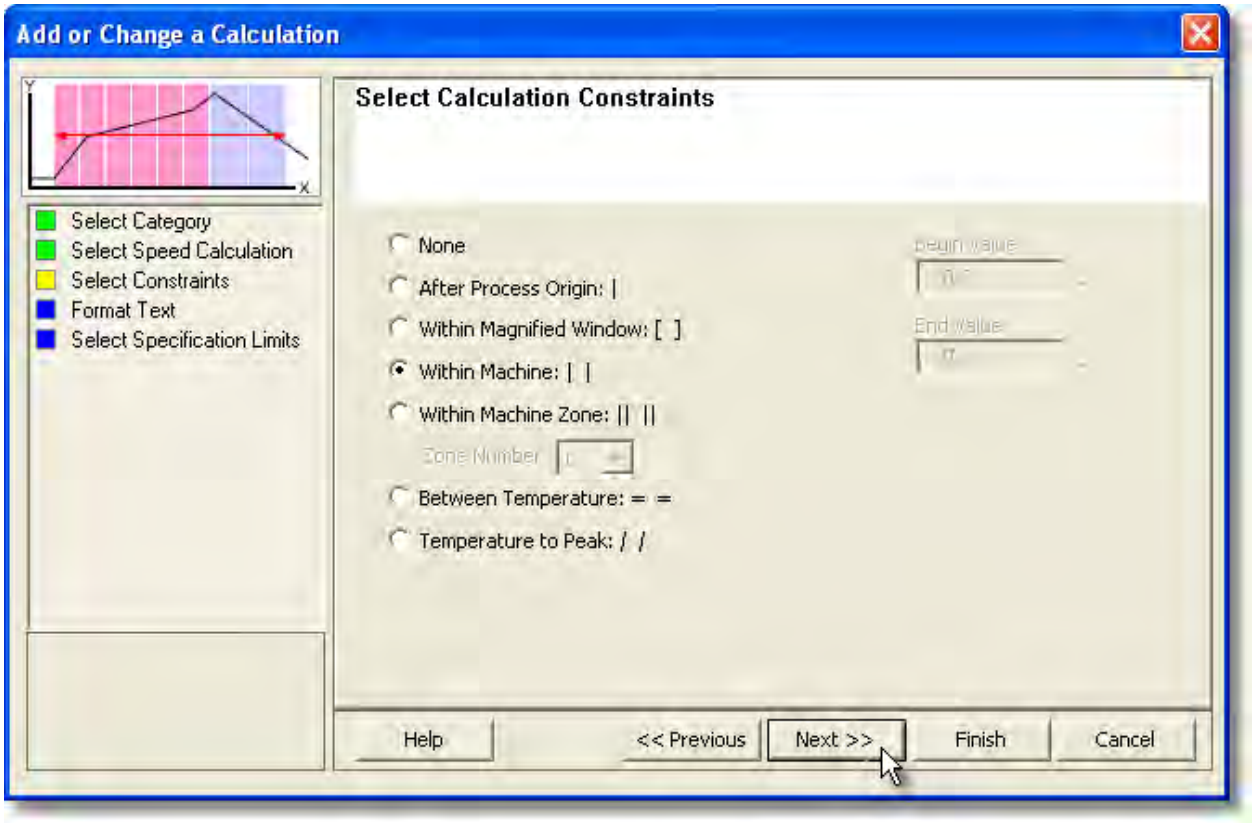


4) Select the ***Next*** command button.
5) Select the two conveyor speed sensors and the distance between them.

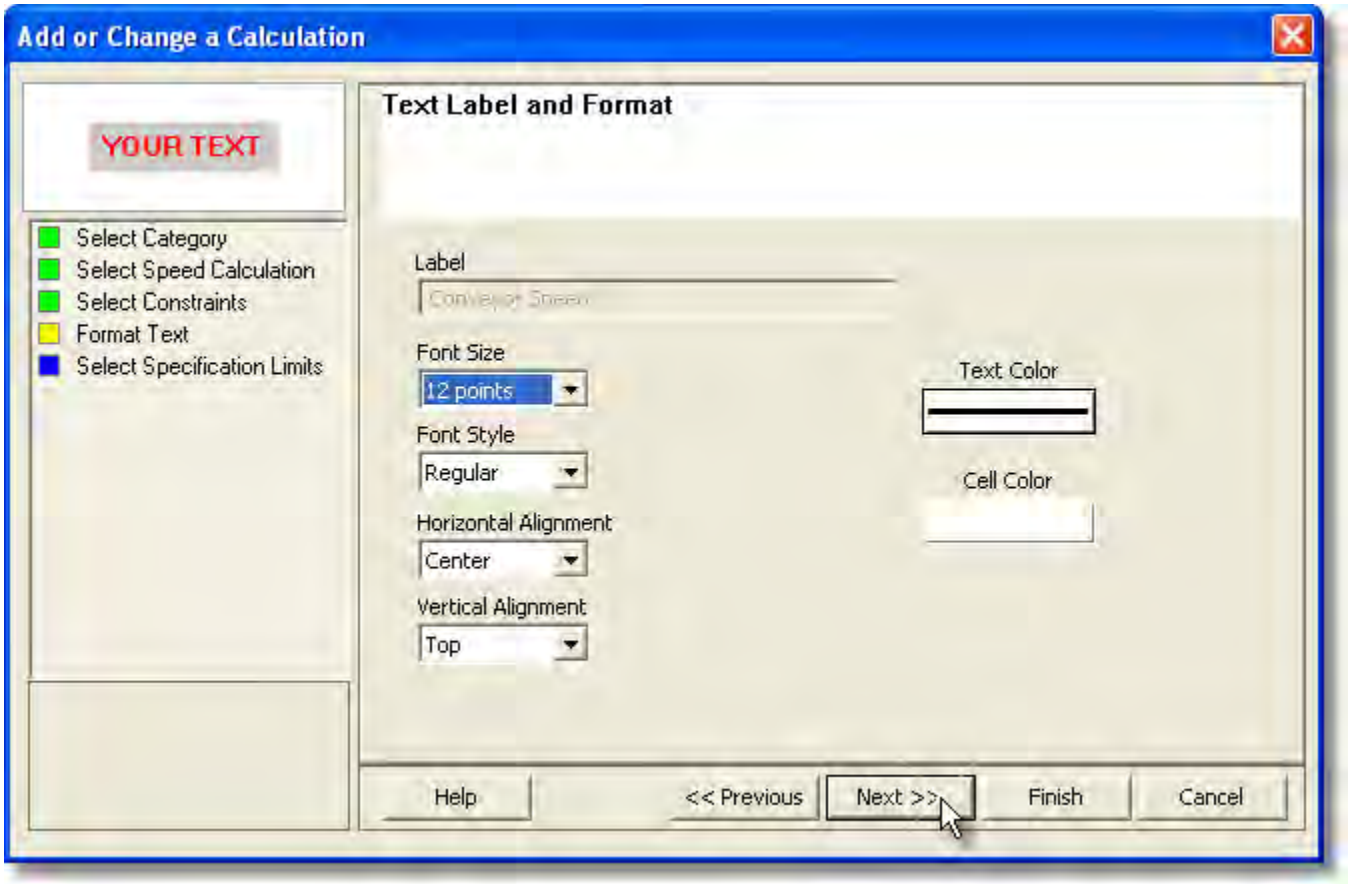


6) Select the ***Next*** command button.
7) Select a Time (X) Axis Value.

If any ***Temperature Reference (Y)*** calculation is selected, the software requires a Temperature (Y) Reference Line to be established. Refer to topic ***Add Temperature (Y) Reference Lines***.



8) Select the ***Next*** command button.
9) Select desired text formatting options.



10) Select the ***Next*** command button.

11) Select Specification Limits and Units. If these values are violated colored bars will appear in the formatted template cell. Refer to topic ***Software>Page Tabs>Summary>Template>Specification Limit Indicators*** for more information.