



Super**Systems**
incorporated

PAPERLESS VIDEO RECORDER OPERATIONS MANUAL

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Product Overview

Product Description

You'll find all the necessary information related to how to use the product in this manual. The product is broken up into two parts; the software and hardware components. This user guide is also written in this manner.

The video recorder provides the hardware and software needed to meet industry standard digital chart recording.

It is easy to use and addresses the many industrial applications where data logging, trending, and reporting is required. The product is available with three different screen sizes and up to 48 inputs with user-defined inputs for each channel.

The easy-to-use VR Manager provides users with all the necessary tools to generate trend charts from a remote computer. Data is stored on a flash card on the touch screen display where data can be extracted through a network connection OR by removing the flash card and extracting the files to the computer using the [VR Manager software](#). All data can be printed or stored electronically in an un-modifiable format.

Product Specifications

- User defined logging intervals as frequently as one second
- Optically Isolated inputs
- DC Power Supply: +24 VDC, 9 watts max, fused at 3/4 A
- Password protected menu options
- Easy calibration
- Web-page enabled real-time view
- ETHERNET, RS485 and RS232 serial communications
- 16-Bit A/D converter
- Redundant data storage

Environmental Specifications

- Storage Temperature → -4° F to 158° F (-20° C to 70° C)
- Ambient operating temperature → 32° F to 131° F (0° C to 55° C)
- Ambient humidity → 5% to 95% relative humidity (non-condensing)

TC Type	Degrees F.	
	Min	Max
B	32	3308
C	32	4208
E	-328	1832
J	-346	2192
K	-328	2502
N	-328	2372
NNM	0	1409
R	-58	3214
S	-58	3214
T	-328	752

Thermocouple range listed by thermocouple

Software Installation

You will find the VR Manager software CD that ships with the unit includes all the reporting and data management utilities. Insert the CD into the CD ROM device on your computer and click the setup.exe file. You will be given step-by-step instructions for completing the installation process. See the section *Installing the VR Manager Software* for more details.

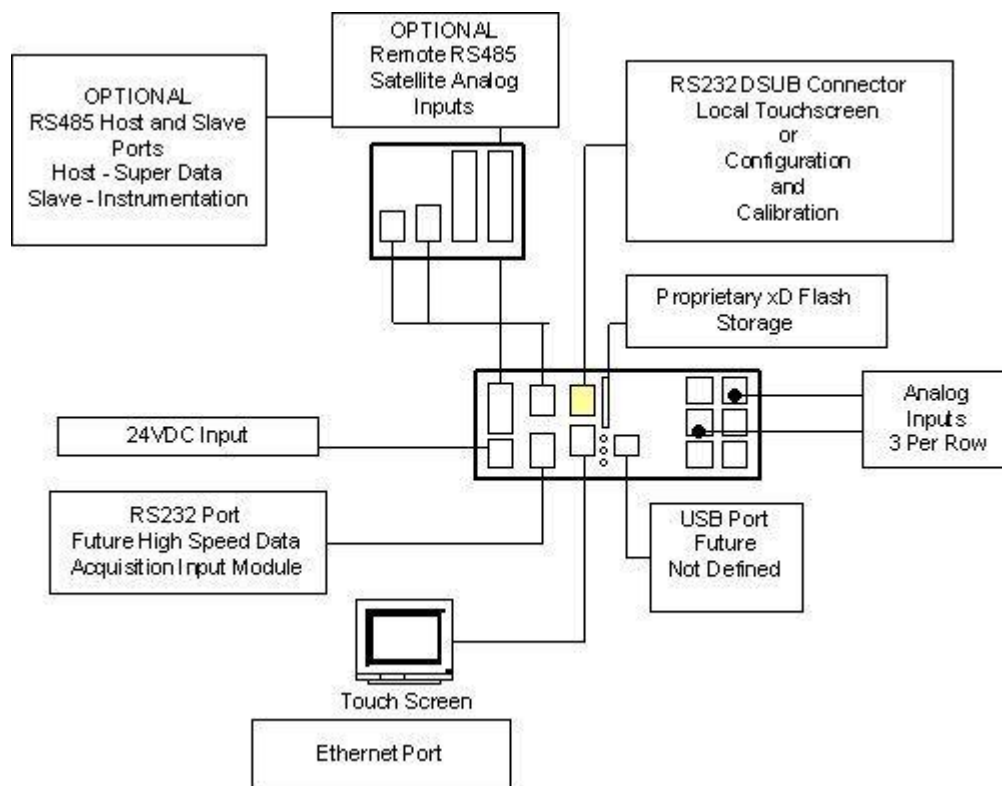
Calibration

The Video Recorder is calibrated prior to shipment, although the calibration process is also available through the touch screen. Instructions for calibration are included in this manual.

The default calibration is performed using a zero and span routine for the millivolt range of 0 – 80mV. Each range that is being used should be calibrated. For a list of suggested mV ranges by thermocouple types, please refer to the *Input Calibration* section of this manual.

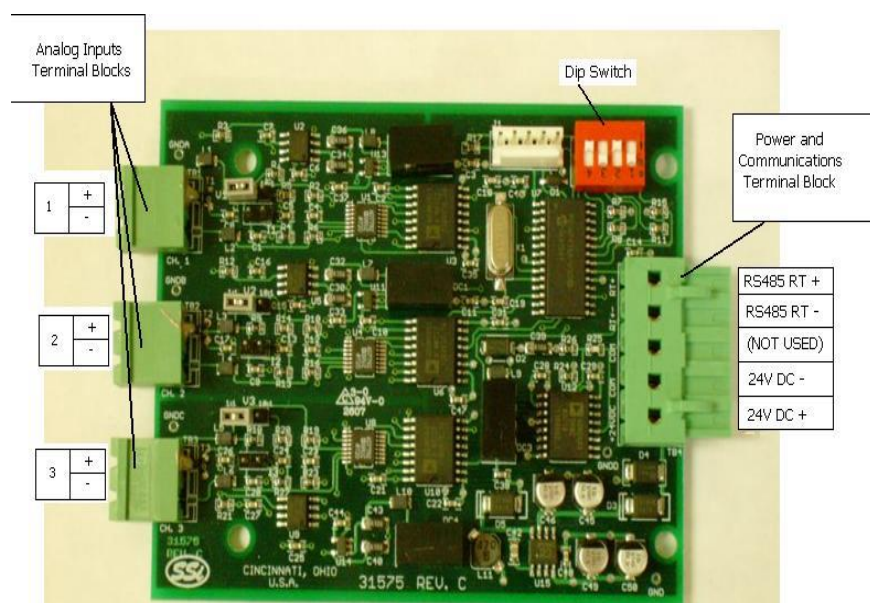
Components

The Video Recorder consists of the Touch Screen Interface, Data Logging Device, and VR Manager Software. The Data Logging device is made up of five user-defined analog inputs per boards. Each input is configurable using the Touch Screen Interface and allows for different math functions to be performed on the input. Each input is fully isolated.



Analog Inputs

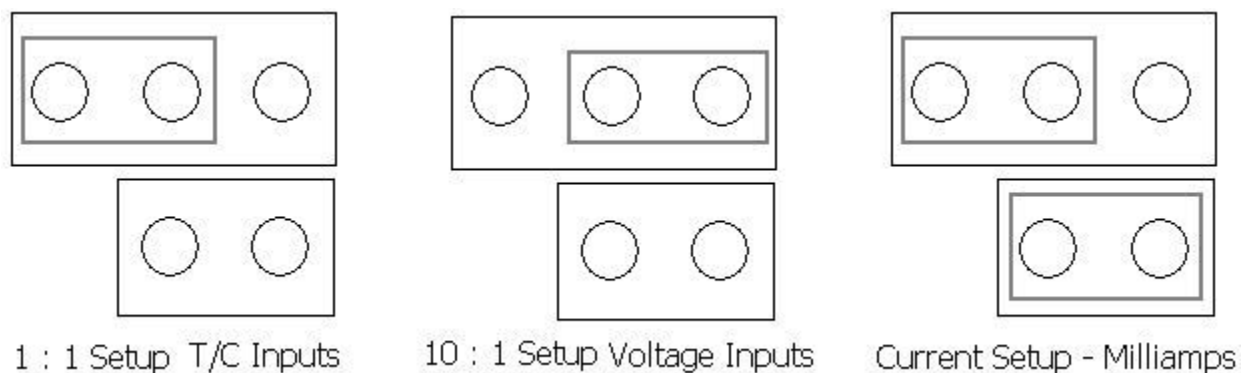
The Super Systems, Inc. Part Number 31575 Analog Board contains a group of three channels isolated from the main DC power source. Each input is fully isolated. The board can be connected to thermocouples, voltage sources from 20mV full scale to 1.28 Volts full scale, voltage sources from 0 V full scale to 10 V DC full scale, or 4 – 20 mA current loops.



Adding a Jumper to an Input

When measuring a 4-20mA current signal or a voltage signal, such as a thermocouple, a jumper must be placed on the corresponding two or three-position header. For example, Input 1 would need to have a jumper placed between the pins labeled "I1" before connecting a 4-20mA signal. Failure to add the jumper will result in damage to the circuit board. The jumper may already be present at each of the three headers, but unless

it is attached across both pins (not just one) it will not be connected.



Thermocouple connections

Thermocouple wires can be connected directly to the terminal blocks. The thermocouple junctions should not be grounded. If they do touch a ground reference, all thermocouples on a board must have a common ground reference. If multiple thermocouples are connected to different ground reference points, the accuracy of all thermocouples on the board cannot be guaranteed to be accurate. When setting up a voltage input signal, such as a thermocouple input or any voltage input signal up to 1.28 volts, the jumper must be placed on the pins in the 1:1 setup (left diagram).

Voltage connections

Voltages from 0 mV to 10 Volts DC can be directly connected to the terminal blocks. When measuring ground-referenced voltages, all references must share a common ground reference. If the voltage sources are connected to different ground reference points, the accuracy of all the voltage sources connected to the board need to be checked for accuracy. Since higher voltages can damage the input board, any voltage input signals, such as a vacuum gauge, must have the jumpers placed on the pins in the 10:1 setup (middle diagram). This will insure that any signal going into the board will be scaled down so it will not damage the input board.

4 – 20 mA. Current Loop connections

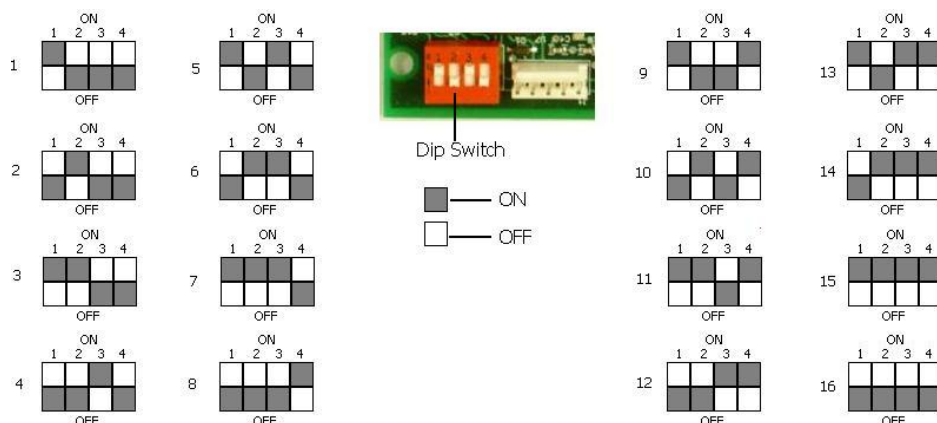
Before connecting the current loop, insert the shorting jumper on the board for each channel used to measure current loops. This jumper inserts the 62-ohm shunt resistor across the input of the A/D. If multiple current loops are connected to one board, all must share the same power supply and ground reference points or the accuracy of all the current loops need to be checked for accuracy. When setting up a current input signal, such as a 4 – 20 mA signal, the jumper must be placed on the pins in the current setup (right diagram). Notice that there is also a jumper set up in the 1:1 setup only when inputting a current signal. This is because current signals also have a corresponding voltage signal.

Warning: Connecting a mA input without the Input Jumper will damage the input.

1. To add a jumper to an input:
2. Power down the unit.
3. Remove the thermocouple connector and the Ethernet cable from the video recorder.
4. Remove the top plate of the video recorder by unscrewing the six (6) screws around the top of the video recorder.

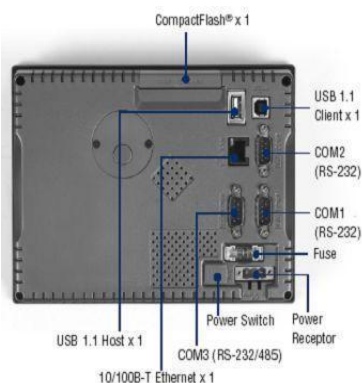
- Grasping both sides of the input board, carefully pull the input board out of the video recorder and set the jumper for the appropriate set of pins, i.e. "V1" for input 1, "V2" for input 2, etc. A jumper will need to be set – placed on both pins – to be considered "on". Slide the input board back into the video recorder slot.
- Replace the top plate of the video recorder by screwing in the six (6) screws around the top of the video recorder.
- Re-connect the Ethernet cable and thermocouple connector.

Setting the DIP switches to Assign Board Numbers



Each input board, whether directly connected in the Video Recorder or connected through a satellite box, must have a unique address assigned by the DIP switches on each input board. A unique address will ensure that the Video Recorder will correctly read all of the boards set up. If two or more boards have the same address,

multiple errors could occur such as: VR reading data from one board one second, then reading data from another board the next second, no data being read from the VR, etc. *It is important that each board has a unique address.* Each DIP switch has four switches on it labeled: 1, 2, 3, and 4. These numbers follow a binary numbering system – i.e. 1 = 1, 2 = 2, 3 = 4, and 4 = 8. There is an ON and an OFF position for each switch. OFF = 0 and ON = 1. Each board number can be assigned by setting the appropriate switches to ON. For example, to set a board number to 1, set the "1" switch to ON and the "2", "3", and "4" switches to OFF $((1*1) + (2*0) + (4*0) + (8*0) = 1)$. To set the board number to 10, set the "1" and "3" switches to OFF and the "2" and "4" switches to ON $((1*0) + (2*1) + (4*0) + (8*1) = 10)$. *The exception to the rule is setting a board number to 16 – all switches are off.*



Getting Started

The data logging device and the touch screen have a unique IP address. The communications between the screen and the data logger is performed through the Ethernet ports. Both the screen

and data logger require separate and unique fixed IP addresses.

Physical Installation

Mechanical Mounting

The 3 foot din rail (Allen-Bradley P/N 1492-N22) is mounted to the enclosure panel. Snap the video recorder enclosure onto the DIN-rail.

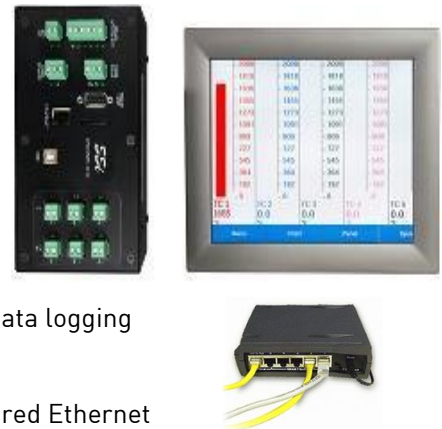
Wiring

Connect power with 18 or 20 AWG wire and inline fuse holder as shown in either the *Wiring Diagram – Network Connection* diagram or the *Wiring Diagram – Direct Connection* diagram. Connect earth ground to the panel connector as shown in either the *Wiring Diagram – Network Connection* diagram or the *Wiring Diagram – Direct Connection* diagram.

Connecting the Video Recorder to the Touch Screen

Every Video Recorder shipped includes a red Ethernet crossover cable that will connect the Video Recorder to the screen. The screen and the data logging device communicate either through the crossover cable OR using an existing network.

If you are connecting the video recorder to your network, you will need a straight-through Ethernet cable (the cable provided is a crossover cable for direct connections to a PC) to be connected from the data logging device to an Ethernet hub and the Touch Screen to an Ethernet hub. The cable is plugged into the data logger Ethernet plug and then other end should be plugged into a network hub. The IP address of the data logging device will be provided with shipment.

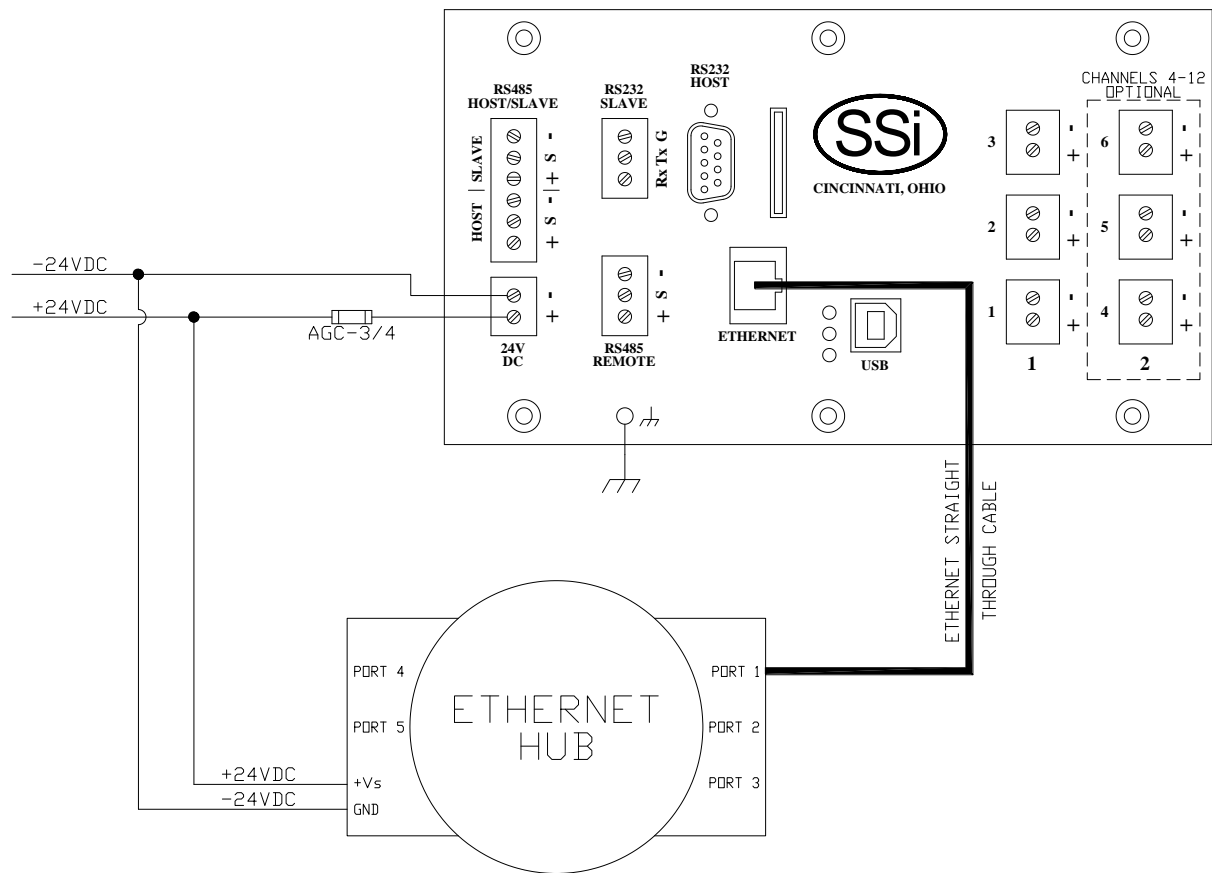


If you are not putting the data logger on the network, you should use the red Ethernet crossover cable that has been provided with the device. Ethernet crossover cables are most often used when connecting two Ethernet computers without a hub. An Ethernet crossover cable has its send and receive wires crossed. When using a hub or switch, this is automatically done for you.

With a crossover cable, you are forming a network between the computer that you are directly plugged into and the touch screen. See the below section *Wiring Diagram – Network Connection* for a wiring diagram for a connection on a network, or *Wiring Diagram – Direct Connection* for a wiring diagram for a direct connection using the crossover cable.

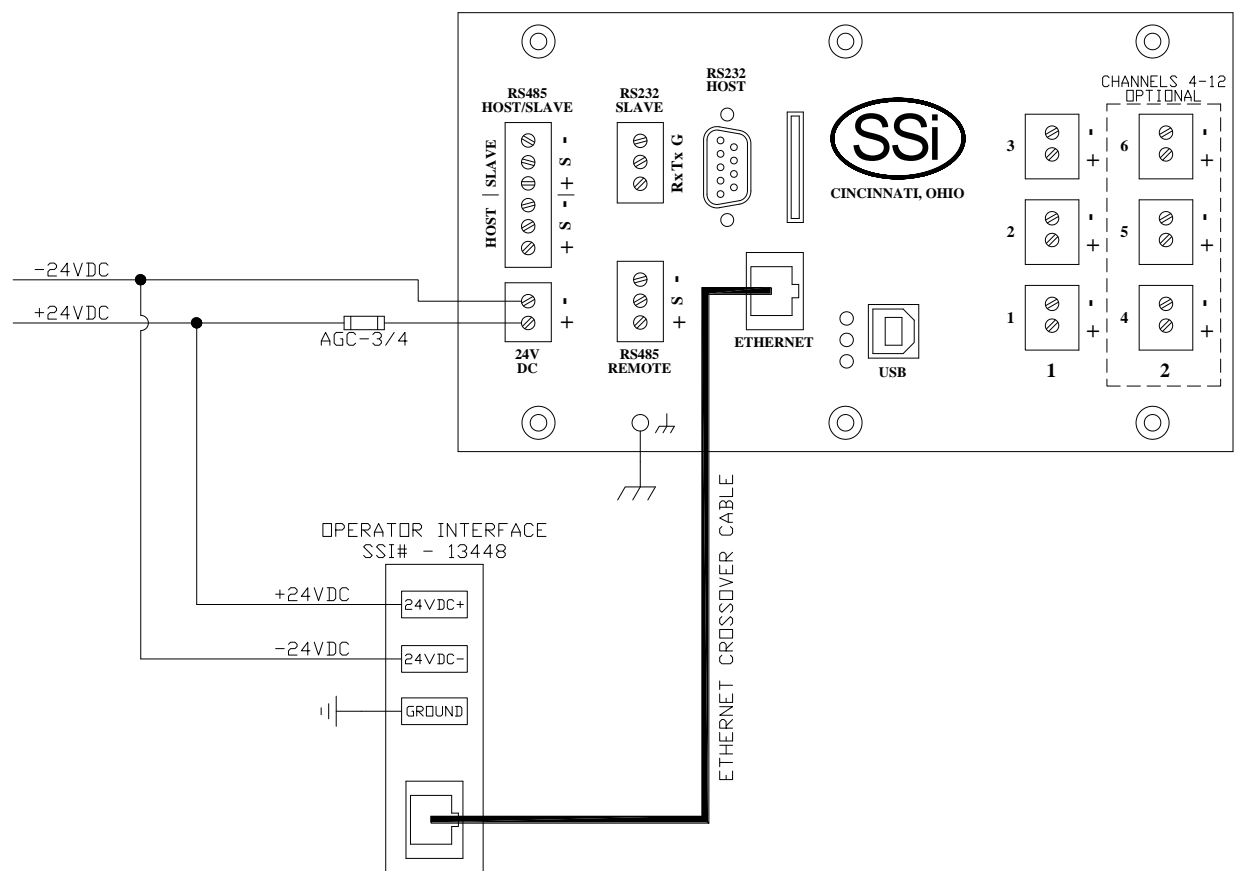
Wiring Diagram – Network Connection

Below is a wiring diagram for a network connection:



Wiring Diagram – Direct Connection

Below is a wiring diagram for a direct connection:



Each screen and Video Logging device is configured and setup with a fixed IP address. The screen is configured to communicate with a specific device. This is done through the *Configuration → Target VR IP Address* Menu Option.

Change the IP Address of the Touch Screen

It is important to obtain an available IP address and correct Net Mask and Default Gateway from an administrator or IT associate before changing any of the IP settings. In order to change the IP address of the touch screen, the program must be shut down. Click on Start Menu → Settings → Network and Dial-up Connections. This will display the Network settings screen. Double-Click on the existing connection to display the properties. To specify an IP address, select the "Specify an IP address" option and fill in the sections for the IP Address, Subnet Mask, and Default Gateway using the on-screen keyboard, which can be started by clicking on the Pen/Paper icon in the lower right corner and then clicking on "Keyboard" from the menu option. Move the keyboard to a position where you will still be able to see the IP address section and the keyboard at the same time. Highlight the first section of the IP address and enter the IP address. *Note – The cursor will move to the next section once three digits have been entered.* To enter a two or one-digit section of the address, begin the section with zeroes, i.e., **001** instead of **1**. Repeat for the Subnet Mask and Default Gateway.

To have the IP address assigned by the network, select the "Obtain an IP address via DHCP" option. This option will disable the text boxes for entering the IP address, since the IP address will be given by the network. Click on the **OK** or **X** button on the top of the screen to close the screen. *Note – If the IP address of the touch screen is changed, then the corresponding profile in the VR Manager will have to be updated as well.*

Touch Screen Interface

The VR Series recorder can be equipped with a touch screen operator interface, which is used to view the different variables that are being recorded. When the screen is powered up with the 24 VDC supply and connected to the VR series analog input base module, the Main screen appears.

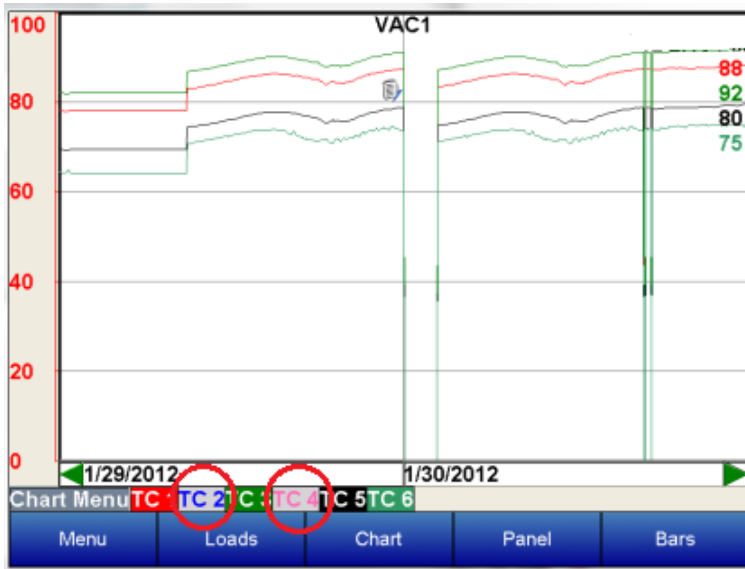


The three options available are **Display**, **Configuration**, and **Template**. Clicking on the **Display** option will load the chart.



On the Chart screen, there are several variables displayed.

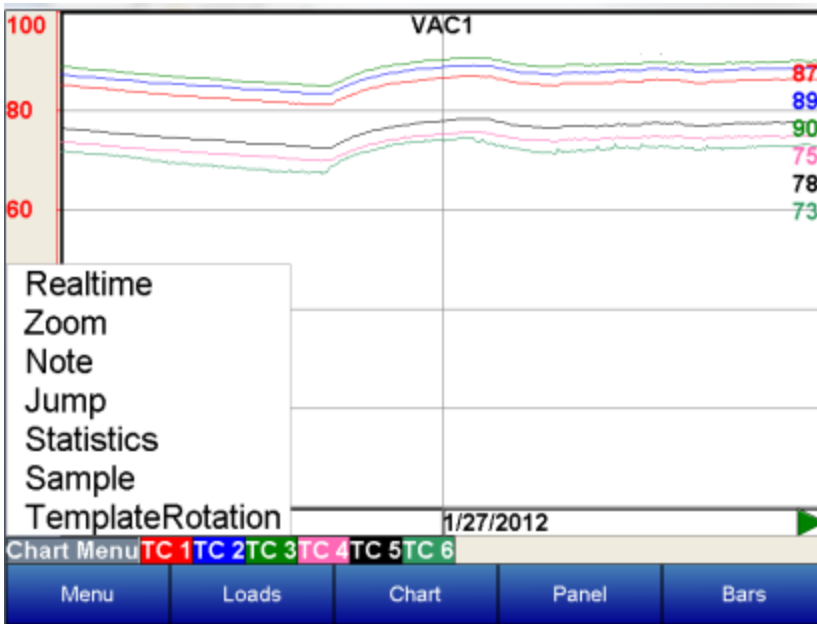
1. Template – the chart view with the chosen process variable.
2. Date/Time – the current date and time in real time or historical mode.
3. Decimal Values – actual value of trend variable.
4. Green arrows – Move the displayed information either forward or backward in time.
5. Chart Menu – More choices for displayed features.



The inputs that appear on the chart can be toggled between being displayed or being left off simply by tapping on the name of the input along the bottom of the chart. The box with the input number will turn gray.

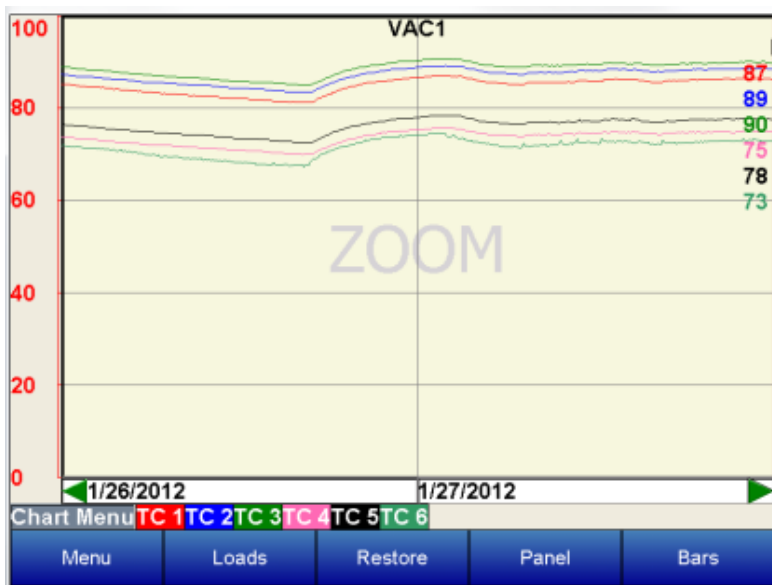
In this example, TC2 and TC4 are left off of the chart display and are in gray boxes.

Selecting the Chart Menu provides more options for the display.



Realtime – Choosing this option sets the displayed values to the present date and time.

Zoom – This selection allows you to move your stylus or finger on the screen to a specific point creating a box. The zoom box will also display decimal values for the low and high variables inside the box. It will



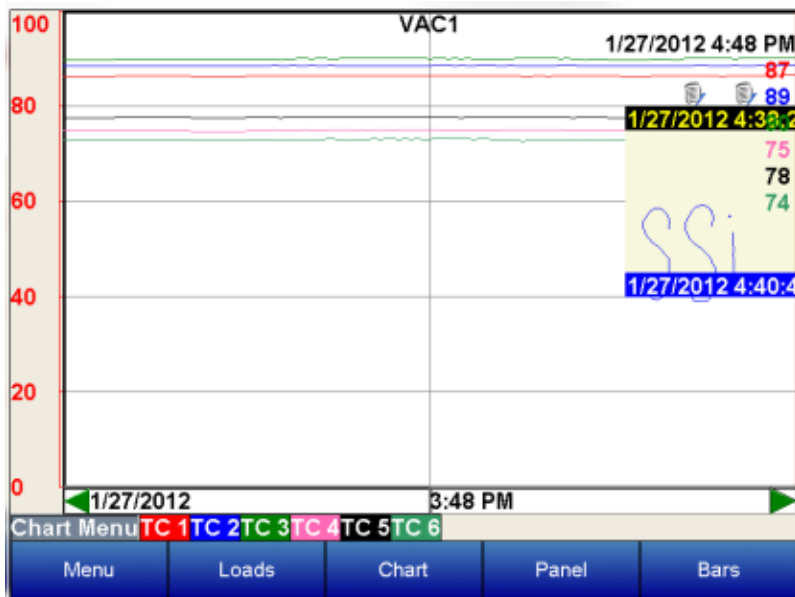
display the start and end time for the zoom box itself. The zoom feature can be used as often as desired allowing the user to drill down on the variable to show a specific value displayed on the screen.



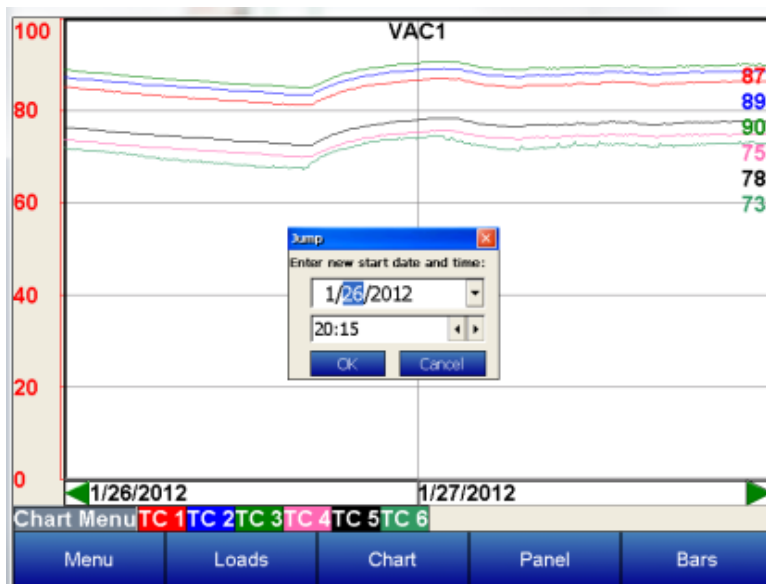
Note – the Note feature available on VR series recorders allows the operator to add notes in the chart display. Notes can be added using either a stylus or the keyboard displayed on the screen. Choose the Add Note option from the Chart Menu then select keyboard or stylus to add a note. *Note on keyboard functionality – pressing the “caps” button or the “shift” button will display more keys for data entry. Also, the “del” key works more like the “Backspace” key on a regular keyboard – i.e. it will delete the character to the left of the cursor.*

If a note requires editing select clear to retype or scribe the note or cancel to go back to the chart display.

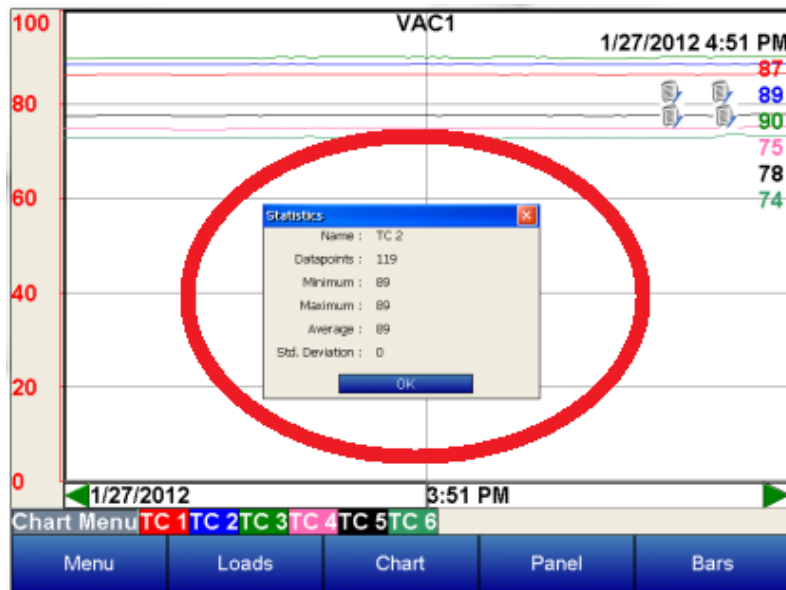
The note is displayed on the chart menu with a small icon. If the icon is touched it will expand to show the information either scribed or typed onto the recorder.



Jump – This option allows the user to input the date and time to be displayed. The chart will jump to this time.



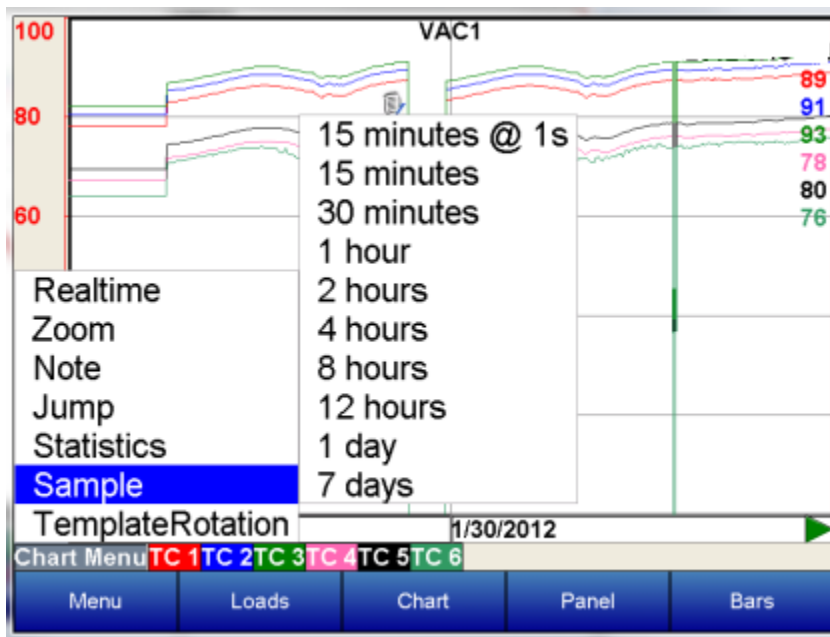
Statistics – The statistics option is also available on the chart menu. Choosing this option allows the



operator to view statistics on any variable displayed on the operator interface. The statistics are based on the screen image displayed whether looking at seven days of data or zoomed in on a few minutes.

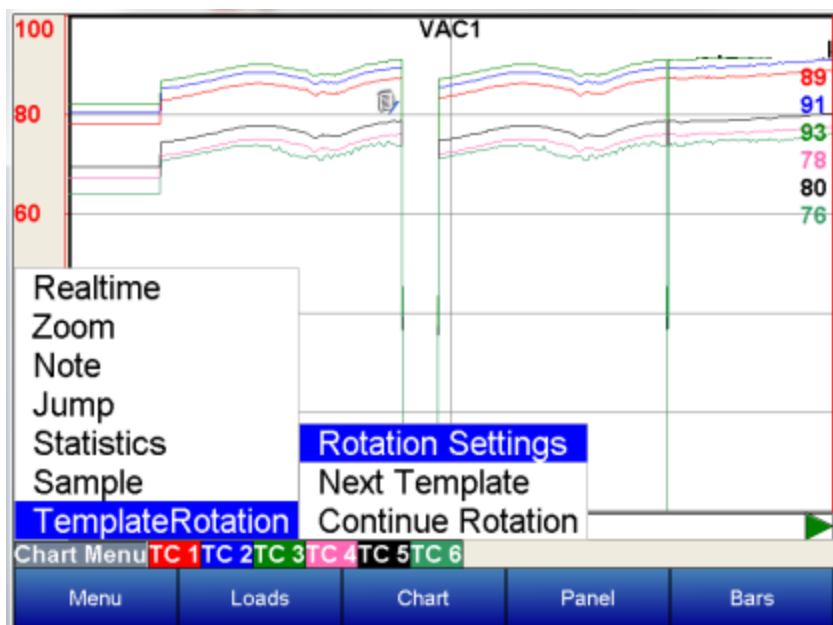
The statistics parameters include the trend name, the number of data points available for calculating statistics, the Minimum value, the Maximum value, the Average value, and the standard deviation.

Sample – Pre selected time frame formats change the displayed values on the screen to this duration.



Note: When the sample rate is "15 minutes @ 1 sec", the averagers will not be displayed on the trend chart (Touch screen Versions 3.00 and above).

Template Roatation – This option enables the display to cycle through the different templates that have been saved.



Selecting Rotation Settings brings up a list of available options for the display settings. Checking the **Use Main Template** box will keep the display on one template. **Select Main Template** allows the user to decide which template to display permanently if Use Main Template is chosen. Checking the **Use Rotation Settings** box will enable the templates to cycle. The templates to be displayed can be customized by checking or unchecking the box next to each name under **Select Rotation Templates**. The amount of time each template is displayed can be adjusted using the **Rotation Settings** button.

The screenshot shows the 'Rotation Settings' dialog box. It has a title bar 'Rotation Settings'. Inside, there are two checkboxes: 'Use Main Template' (unchecked) and 'Use Rotation Settings' (checked). To the right of 'Use Main Template' is a button labeled 'Select Main Template'. Below these checkboxes is a section titled 'Select Rotation Templates:' with a list of templates: 'BIQ1' (checked), 'VAC1' (checked), and 'default' (unchecked). At the bottom of the dialog, there is a label 'Rotation Seconds: 5' and two buttons: 'OK' and 'Cancel'.

The screenshot displays a line chart titled 'VAC1'. The y-axis represents a percentage or ratio, ranging from 0 to 100 in increments of 20. The x-axis shows dates from 1/29/2012 to 1/30/2012. There are six data series plotted: 88 (blue), 90 (red), 92 (green), 77 (magenta), 79 (black), and 75 (light green). The series 88, 90, and 92 are clustered at the top, generally between 80 and 95. Series 77, 79, and 75 are clustered lower, generally between 70 and 80. The chart shows some fluctuations and vertical spikes. At the bottom, there is a navigation bar with buttons: 'Menu', 'Loads', 'Chart', 'Panel', and 'Bars'. The 'Menu' button is circled in red.

Active Loads				
Date In	Template	Name	Company	Notes

Detail
New
Historical

Template:

Records 1

Name

Company

Notes

New Load	
Template:	VAC1
Records 1	Data 1
Name	
Company	
Notes	
<div> <div><<</div> <div>>></div> </div>	
Start Load	Edit Record
Delete	Back

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drop down menu along the top of the screen. When the load begins, press the **Start Load** button. When the load finishes, choose **End Load** on the same screen.

By pressing the **Historical** button on the loads screen, the historical load data will be displayed.

The image shows two overlapping screenshots of a software interface. The background screenshot is titled 'Active Loads' and features a table with columns: Date In, Template, Name, Company, and Notes. Below the table is a row of buttons: Detail, New, Historical, and End Load. The 'Historical' button is circled in red. The foreground screenshot is titled 'Historical Loads' and shows data for two dates: 1/30/2012 and 1/31/2012. It has a table with columns: Date In, Template, Name, Company, and Notes. The data for 1/31/2012 shows '1/31 9:...' and 'VAC1'. Below the table are buttons: Details, Chart, Search, and Back.

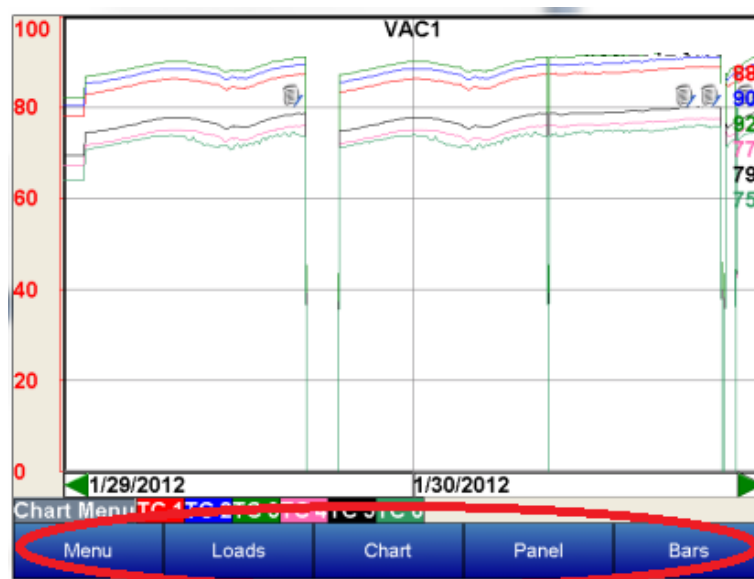
The **Details** button will display the information that has been stored about each load. The **Search** key allows all historical load data to be searched through according to either the Name, Company, or within the Notes. Only notes that have been entered with the keypad can be searched. Notes written the stylus will not be included in searches.

To search historical loads, press the **Search** key.

The image shows a screenshot of the 'Search Loads' screen. It features a table with two columns: Field and Search Key. The 'Field' column has three rows: Name, Company, and Notes. The 'Search Key' column is empty. Below the table are three buttons: Search, Edit Key, and Back.

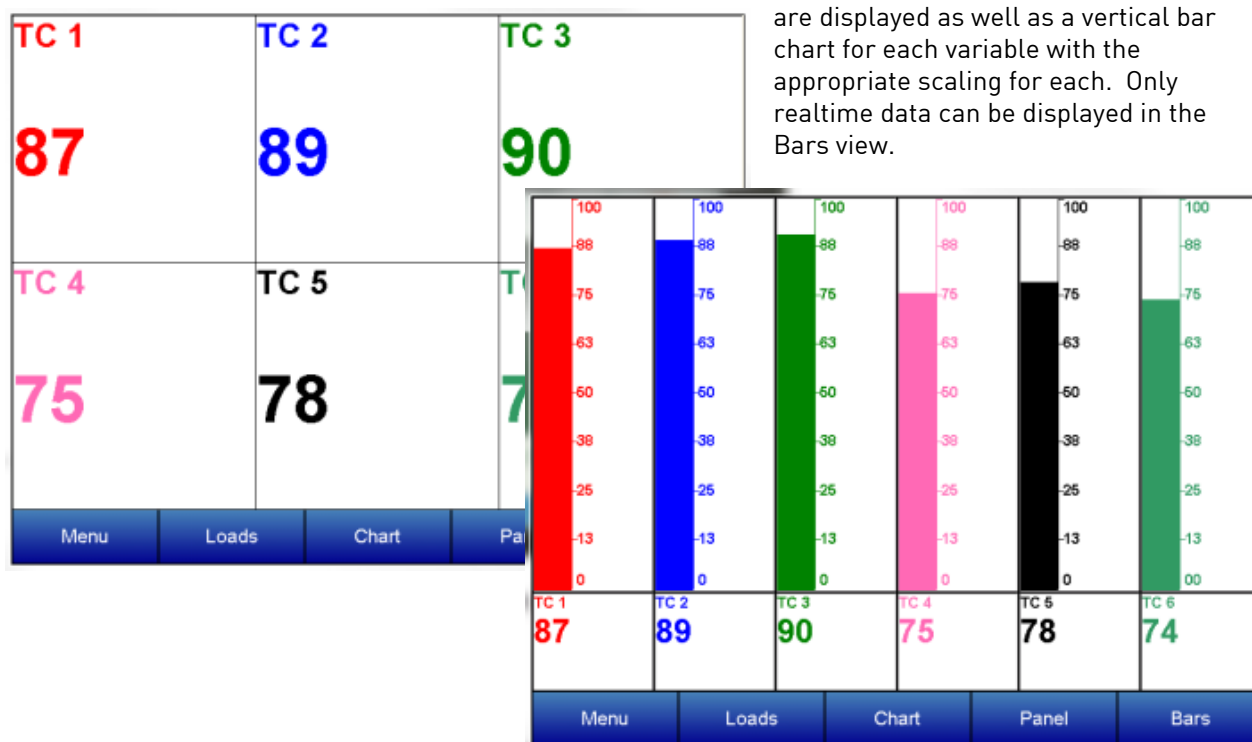
Highlight the appropriate field and press **Edit Key**. A keypad will display. Press **enter** on the keypad to save information, **delete** to backspace a letter, and **esc** to leave the keypad without saving changes. Once the search key(s) have been entered, press the **Search** button, and a list of matching results will be displayed.

Returning to the main display screen, the data can also be displayed in a panel or bar format.



To select the panel view, view touch the **Panel** button on the bottom of the screen. In this mode, decimal values chosen for this template are displayed. Only realtime data can be displayed in the panel view. Starting with version 3.12 of the screen software, it will be possible to send a setpoint down to a slave instrument. The slave instrument's setpoint must be included as a trend line. From the panel view screen, touch the slave instrument's setpoint panel and a menu will pop up that will allow the user to send the setpoint down to the instrument. Select this option and enter the new setpoint.

A third choice for viewing variables on the VR operator interface is the Bars view. To select this view touch the **Bars** button on the bottom of the screen. In this mode, the decimal values chosen for this template



Configuration Menu

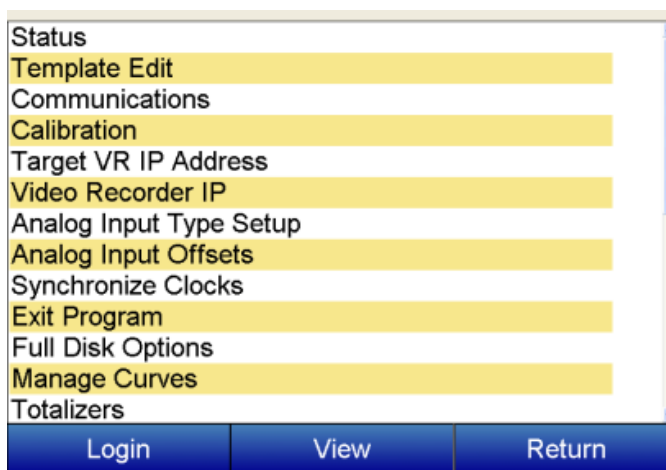
The VR recorder is configured through the operator screen. The user must first select the configuration button from the main menu. Then choose the login button located on the lower left of the next screen.

Login – Allows the operator to enter a password to enter the configuration of variables. The password for logging in is “2”.

View – Allows the operator to view a configuration parameter that has been highlighted.

Return – pressing this button returns the operator interface to the previous viewing screen.

Press Login, type the password and press enter for configuration.



Status

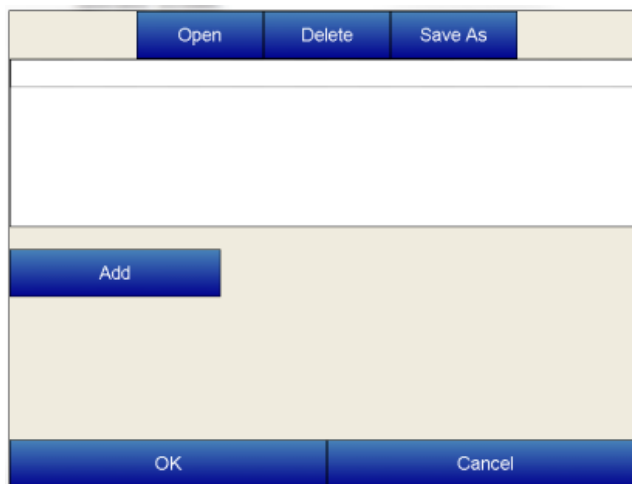
Status – Includes the VR firmware revision, touch screen software revision, communication status, remaining disk space, and estimated storage space remaining, which is displayed in number of days.

The communication status shows the status of communications from the VR base unit to the operator touch screen. This will show either **OK** or **BAD** if communications have failed between the base and the operator screen.

Template Edit

Template Edit allows the operator to edit an existing template, or create a new template. A template is the number of variables displayed on one screen. For example this could be a control, overtemp, or load thermocouple on a batch furnace. Or it could be one thermocouple from eight temper furnaces. There is not a maximum for template selections, but the number of variables displayed on one screen must be a consideration in this process.

To create a template the Add key is pressed which allows the operator to configure the following parameters.



- **Name** – the name of the input, for example “Control T/C” which should be changed to the least amount of understood characters “Ctl T/C”

- **Input** - the analog input that is being configured, for example on a VR5 this could be a channel from one through five. The list of options is: TC 1 – TC 40, Averager Group 1 – Averager Group 3, Totalizer 1 – Totalizer 10, and Function Based Timer 1 – Function Based Timer 5. Plus, with version 3.11+ of the screen software, Slave 1 Process Variable, Slave 1 Setpoint, Slave 1 % Output – Slave 10 Process Variable, Slave 10 Setpoint, Slave 10 % Output are available for versions 2.01+ on the VR Brick.
- **Min** – the minimum displayed scale value on a chart
- **Max** – the maximum displayed scale value on a chart
- **Expression** – every input requires an expression to be calculated and displayed correctly. For example an expression for thermocouple inputs would be $x \times 1$. Use the onscreen keyboard to enter an expression.
- **Expression Wizard** – This feature will allow the operator to build an expression using either a custom curve or a regular expression. See the “Note About Expression Wizard” below for more information about this feature.
- **Line Format** – the value displayed on the chart display of the operator interface. A short custom description can be added here. For example, to display one (1) decimal point, enter a value of “#0.0”. For carbon values, enter a value of “#0.00” for 2 decimals. This would display a value like “0.81”. Entering “#.00” would display a value of “.81”.
- **Units** – The type of units used for the trend.
- **Line Width** – a numeric value for the thickness of the trend line. A 1 is a thin line; A higher value = thicker line width.
- **Sample** – a number is entered here to test the expression.
- **Test** – Press the test button to calculate the expression with the value entered in the sample parameter. For example with an expression of $x \times 1$ and a value of 250 entered in the sample parameter will display a 250.

The screenshot shows a configuration window for a trend input. The fields are as follows:

Name	TC 1		
Input	▼ 1 ▲		
Min	▼ 0.00 ▲	Max	▼ 2000.00 ▲
Expression	x*.1		
	Expression Wizard		
Line Format	#0.0		
Units	s		
Line Width	▼ 1 ▲		
Sample	▼ 0.00 ▲	Test	Result
Set		Cancel	

Note About Expression Wizard

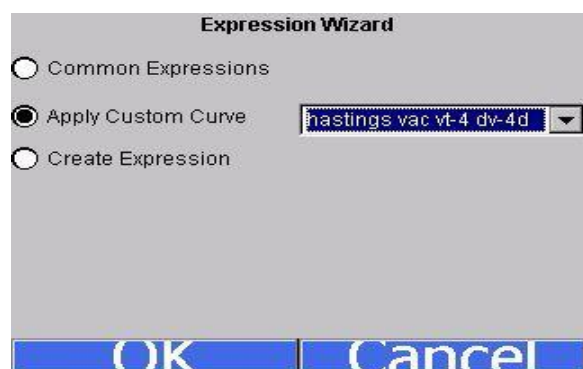
This option will allow the user to select either a common expression, such as “ $x \times 0.01$ ”, a custom curve created with the *Manage Curves* menu option, or to create an expression.

The screenshot shows the Expression Wizard dialog box with the following options:

- ☒ Common Expressions: $x \times 0.1$
- ☐ Apply Custom Curve
- ☐ Create Expression

At the bottom are OK and Cancel buttons.

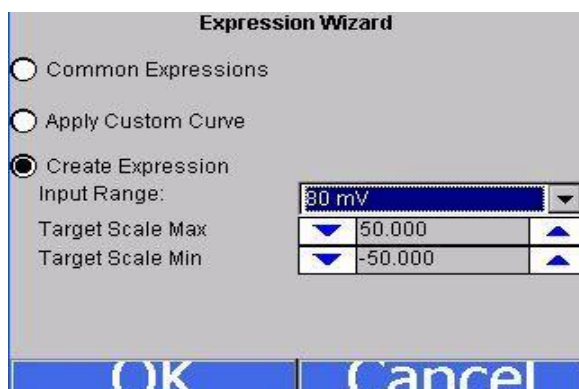
To use a common expression, select the “Common Expressions” menu option and select the desired



of the curve used.

expression from the drop-down list. Clicking on the **OK** button will set the expression to the trend, but clicking on the **Cancel** button will not set the expression to the trend.

To use a custom curve, select the “Apply Custom Curve” menu option and select the desired curve from the drop-down list. Clicking on the **OK** button will set the curve to the trend, but clicking on the **Cancel** button will not set the curve to the trend. If a custom curve is used, the “Expression” line will read “curve: <Custom Curve>” where <Custom Curve> is the name



described above.

To create an expression, select the “Create Expression” menu option. Select the input range for the trend from the drop-down list, and then select the scale minimum and maximum. Clicking the **OK** button will set the expression for the trend, but clicking on the **Cancel** button will not set the expression for the trend. The “Expression” line will contain the new expression, if an expression was created using the wizard. **Note – Expressions can still be entered in the text box manually, as**

The “Open”, “Delete”, “Save As”, and “Save” buttons along the top of the screen will allow the user to work with different templates, while the “Add”, “Edit”, and “Delete” buttons in the middle of the screen allow the user to work with specific trend lines in a template.

Communications

Communications allows the operator to change the baud rate, or mode of these parameters:

RS232 Modbus Host Baud Rate	RS232 Modbus Slave Baud Rate	RS485 Host Mode	RS485 Host Baud Rate	RS485 Slave Mode
RS485 Slave Baud Rate	Serial Address			

The IP Address, IP Netmask, and the IP Gateway are also displayed on this screen, but they cannot be configured from this screen. Starting with Version 3.12, this screen also contains the communications status for any slave instruments that have been configured.

Calibration

This menu option allows the operator to calibrate each input on the VR recorder. This will be covered in detail in the *Input Calibration* section.

Target VR IP Address

Target VR IP address is the address of the operator screen or computer attached directly to the VR series recorder. This address has to match the IP Address setup on the data logging device to display and store data. Changing the IP address on this screen will point the screen to a different video recorder data logger.

Video Recorder IP

This feature will display the IP address of the instrument that the VR is currently talking to and allow this IP address to be changed. Changing this IP address will change the IP address of the instrument that the VR is currently talking to. The VR will continue talking to the same instrument, however the IP address for that instrument will have changed.

Analog Input Type Setup

For information about ensuring that the jumper is set up properly on a 4-20mA input, please see the Analog Inputs section starting on page 6.

Analog Input Type – allows the operator to choose from the following parameters for each input of the VR recorder:

Thermocouple Input Types

B	C	E	J	K
N	NNM	R	S	T

Voltage Input Types

0 – 2.56	0 – 1.28	160 mV	80 mV	40 mV
20 mV				

Current Input Types

4-20mA 124 ohms *Future Use
4-20mA 62 ohms

Note – The 4-20 mA 124 ohms option is currently reserved for future use. Currently, when using a 4-20 mA input, be sure to select the 4-20 mA 62 ohms option. For information about ensuring that the jumper is set up properly on a 4-20mA input, please see the Analog Inputs section starting on page 6.

Analog Input Offsets

Allows the operator to offset the input by a value entered for this parameter. For example if thermocouple input is chosen as an input type, a value of 5 will increase the displayed value 5°. Scaling of the input should be considered when entering an offset value for any input.

Synchronize Clocks

Choose this parameter to synchronize the clock in the operator interface with the clock in the analog input base unit of the VR series recorder. This should only be performed when there has been a loss of power or other data logging issues.

Exit the program

Clicking on this menu item will exit the program and display the Windows screen. The user will have to confirm this action.

Full Disk Options

As the disk space on the flash card nears its capacity, the operator will have to decide how to handle the data logging capabilities if there is not enough free space to continue data logging. There are two options: "Overwrite Old Data", or "Stop Datalogging".

The first option, "Overwrite Old Data", will begin to overwrite the oldest files when the free space goes



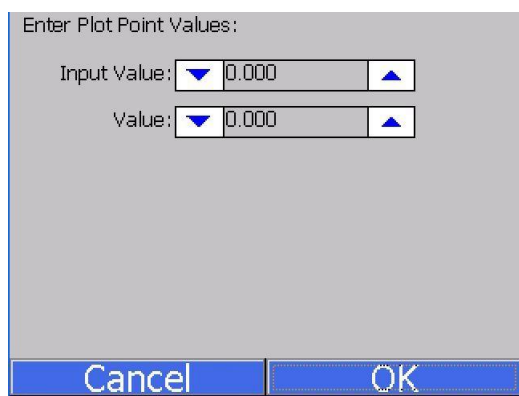
under 10 MB. The software will look for the oldest compressed files and it will begin to delete those files first. The software will delete around 5 MB and then resume normal data logging. Once the disk space gets below 10 MB again, these steps will be repeated.

The second option, "Stop Datalogging", will stop all data logging and inform the user that data logging has stopped. When this option is selected, the software will not log data until the disk space has been cleaned up.

Manage Curves



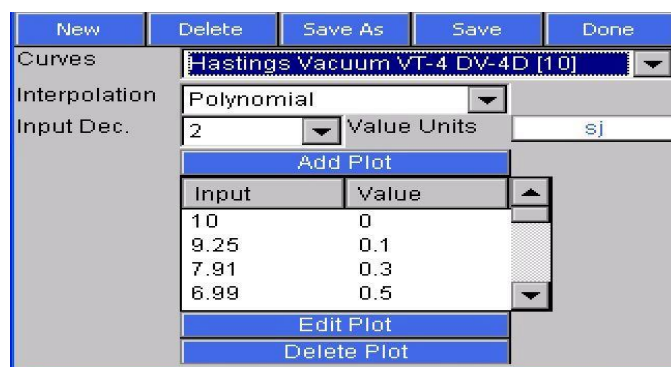
decimal location: 0, 1, 2, 3, or 4. The "Value Units" text box will allow the operator to define the value units for the curve using the onscreen keyboard. The **Add Plot** button will allow the user to add a plot point to the custom curve.



When the *Manage Curves* screen loads up, the drop-down list will load with all of the custom curves that have been set up, if any.

Clicking on the **New** button will allow the operator to add a custom curve.

The operator will have to name the curve before being able to edit a curve. The "Interpolation" drop-down list contains two options: Polynomial or Linear. The "Input Dec." drop-down list has five options for the input



Use the up and down arrows to enter the desired input and value. Clicking on the value will display the numeric keypad, which will allow the user to enter the value that way as well. Click on the **OK** button to set the values, or click on the **Cancel** button to cancel the process.

The **Edit Plot** button will allow the operator to edit a selected plot point, while the **Delete Plot** button will allow

the operator to delete a selected plot point. The operator will have to confirm the delete.

The **Delete** button will delete a selected curve. The operator will have to confirm the delete.

The **Save As** button will allow the operator to save the curve as another curve, while the **Save** button will save the changes made to the current curve.

The **Done** button at the top of the screen will close the *Manage Curves* screen.

Totalizers

This menu option will allow the user to add or modify up to ten totalizers. If the totalizer selected is already set up, then the user will be able to see the type, the active inputs, and the date of the last reset, which is where the totalizer is set back to zero. If the totalizer is not already set up, the user will only see the type and active inputs, which will be blank. To select the type, click on the "Type" line and then click the **Edit** button. The type can be one of the following: **Off**, **Seconds**, **Minutes**, or **Hours**. Select the desired type and click on the **OK** button to set the type, or the **Cancel** button to cancel the action.

Totalizer 1	
Type	minutes
Active Inputs	4, 5
Last Reset	5/29/2007 12:02 PM
RESET	

Edit

Return

<input type="checkbox"/>	hprt1	<input type="checkbox"/>	hprt11	<input type="checkbox"/>	hprt21	<input type="checkbox"/>	hprt31
<input type="checkbox"/>	hprt2	<input type="checkbox"/>	hprt12	<input type="checkbox"/>	hprt22	<input type="checkbox"/>	hprt32
<input type="checkbox"/>	hprt3	<input type="checkbox"/>	hprt13	<input type="checkbox"/>	hprt23		
<input type="checkbox"/>	hprt4	<input type="checkbox"/>	hprt14	<input type="checkbox"/>	hprt24		
<input type="checkbox"/>	hprt5	<input type="checkbox"/>	hprt15	<input type="checkbox"/>	hprt25		
<input type="checkbox"/>	hprt6	<input type="checkbox"/>	hprt16	<input type="checkbox"/>	hprt26		
<input type="checkbox"/>	hprt7	<input type="checkbox"/>	hprt17	<input type="checkbox"/>	hprt27		
<input type="checkbox"/>	hprt8	<input type="checkbox"/>	hprt18	<input type="checkbox"/>	hprt28		
<input type="checkbox"/>	hprt9	<input type="checkbox"/>	hprt19	<input type="checkbox"/>	hprt29		
<input type="checkbox"/>	hprt10	<input type="checkbox"/>	hprt20	<input type="checkbox"/>	hprt30		

OK

Cancel

To select the active inputs, click on the “Active Inputs” line and then click on the **Edit** button. This will display the screen where the user can select the active inputs for the totalizer. To select an input, the user can click on the desired input, which will place a check mark next to the input. The available inputs are Input 1 – Input 32. After selecting the input(s), click on the **OK** button to set the active inputs, or click on the **Cancel** button to cancel the action. *Note: The screen may take a few seconds to update the active inputs and display them.* If the “Type” is set to something other than **Off**, then the date of the last reset will be displayed. If the “Type” is changed from a value to **Off**, then the date of the last reset will become invisible. *Note: The*

totalizer will be reset every time a value is given for the type. The “RESET” line will allow the user to force a reset for the totalizer. The user will have to confirm the reset first. To reset a totalizer, click on the “RESET” line and then click on the **Edit** button. A message box will pop up confirming the reset. Click on the **Yes** button to confirm and reset the totalizer, or click on the **No** or **Cancel** button to cancel the action.

Averagers

Averagers allow the user to get an average value from one or more inputs and display that average on the graph.

Select the averager group to work with from the drop-down list at the top of the screen. The options are: **Averager Group 1 – Averager Group 3**. The first line, “Enabled”, lets the user know if the selected averager is enabled or not. Clicking on this line and then clicking on the **Edit** button will allow the user to enable/disable all three averager groups at once, instead of doing it

Averager Group 2	
Enabled	True
Active Inputs	1, 2, 3, 4, 5
Min Avg Max	2640 2650 2660

Edit

Return

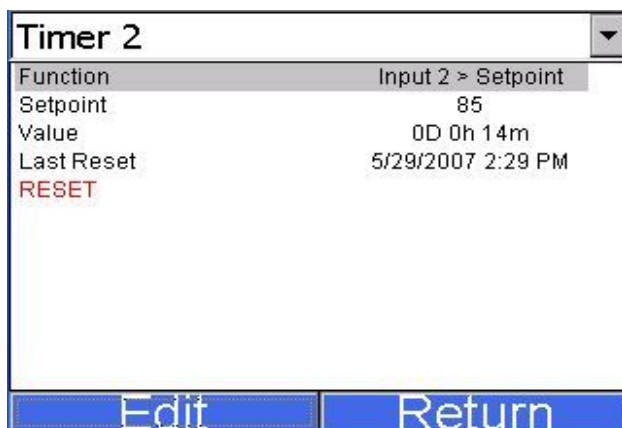
one at a time.



Click on the averager group to enable/disable that group. Click on the **OK** button to set the changes, or click on the **Cancel** button to cancel the action. Clicking on the “Active Inputs” line then clicking on the **Edit** button will allow the user to select the active inputs for the averager. The process is identical to selecting the active inputs for a totalizer. Once the active inputs have been set, the “Min|Avg|Max” line will populate with the appropriate data.

Function Based Timers

The function based timers will allow the user to monitor whether a specific input goes above a certain setpoint and for how long the input is over the setpoint. Select the timer to work with from the drop-down list. The options are: **Timer 1 – Timer 5**.



Function	Input 2 > Setpoint
Setpoint	85
Value	00 0h 14m
Last Reset	5/29/2007 2:29 PM
RESET	

The function will determine what input to base the timer off of. To select the function, click on the “Function” line and then click on the **Edit** button. This will bring up a list of functions to use. The choices are: **DISABLED** (No timer function), or **Input 1 > Setpoint – Input 40 > Setpoint**. Select the desired option and click on the **OK** button to set the function, or click on the **Cancel** button to cancel the action. *Note: Selecting a different function will reset the timer to zero.* To set the setpoint, click on the “Setpoint” line and then click on the **Edit** button. This will bring up the numeric keypad so the user can enter the desired setpoint.

Note: Setting a different setpoint will reset the timer to zero. Once a function and setpoint have been entered, the timer will begin to count if the function’s condition exists. The value of the function is listed on the “Value” line, which shows the timer in terms of days, hours, and minutes. The “Last Reset” line will display the most recent date the timer was reset to zero. The “RESET” line will allow the user to force a reset for the timer. The user will have to confirm the reset first. To reset a timer, click on the “RESET” line and then click on the **Edit** button. A message box will pop up confirming the reset. Click on the **Yes** button to confirm and reset the timer, or click on the **No** or **Cancel** button to cancel the action. *Note: Function based timers can be added as an input on a template, but they will not be displayed on the graph.*

Alarm Text

This option will allow the alarm text displayed to be customized. Select the appropriate alarm number, and press the **Edit** button. A keypad will display. Press **enter** on the keypad to save information, **delete** to backspace a letter, and **esc** to leave the keypad without saving changes.

Alarm Setup

Alarm 2	
Type	process (high)
Setpoint	80
Hysteresis	10
Input Source	2
Delay (sec)	5
Base	75
State	always
State	armed, timing, ala...
Alarm Text	Alarm 2 ON

Edit | Return

This menu option allows the user to set up the alarms for the screen. The user can set up to twelve alarms per screen. Select the alarm to edit from the drop down list at the top of the screen. Once selected, the alarm's settings will be displayed.

The "Type" field will define what type of alarm this alarm will be set up as.

The options are:

Off (No alarm)
Process (High)
Process (Low)
Band (In)
Band (Out)
Deviation (High)
Deviation (Low)

The "Setpoint" field will allow the user to set the setpoint for the alarm. This will bring up the numeric keypad where the user can enter the setpoint.

The "Hysteresis" field will allow the user to set the hysteresis for the alarm. This will bring up the numeric keypad where the user can enter the setpoint.

The "Input Source" field will allow the user to select the input or inputs to focus the alarm on. The process is identical to selecting the active inputs for a totalizer.

The "Delay (sec)" field will allow the user to set the delay time, in seconds, for the alarm. This will bring up the numeric keypad where the user can enter the setpoint.

The "Base" field will allow the user to set the base for the alarm. This will bring up the numeric keypad where the user can enter the setpoint.

The two "State" fields are non-editable, and will display the state of the alarm.

The "Alarm Text" field will allow the user to give a text description that will be displayed on the screen when the alarm is activated. The text of the alarm will also be referenced on the alarms report in the VR Manager.

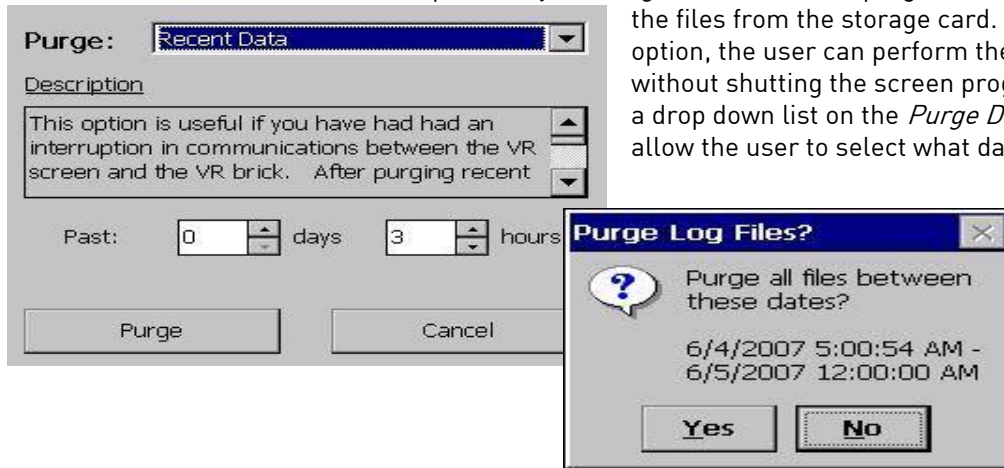
Purge Data

This menu option will allow the user to delete data in one of four ways. This menu option will be useful if any of the following conditions apply:

- There is a "Low disk space" alarm on the screen
- Communication with the video recorder data logger has been down for a few hours and the user needs to get that data from the data logger
- The user believes that data is missing or is incorrect for the past week and would like to synchronize just those hours and/or days

- The user wants to delete all data and completely resynchronize with the video recorder data logger

Before, this would have been accomplished by shutting down the screen program and manually deleting the files from the storage card. With this menu option, the user can perform these operations without shutting the screen program down. There is a drop down list on the *Purge Data* screen that will allow the user to select what data is to be deleted.



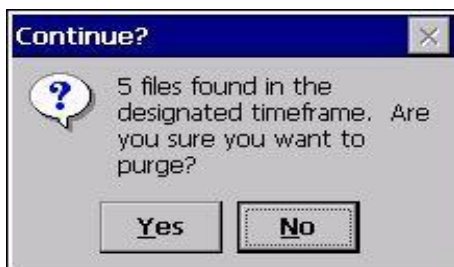
The first option, "Recent Data", will allow the user to delete the most recent data from the screen. Each option will have a brief description listed on the screen that the user can scroll through and read. These descriptions will also be listed in this manual.

Description – This option is useful if you have had an interruption in communications between the VR screen and the VR brick (data logger). After purging recent data and restarting the screen, the screen will download the data from the brick during the synchronization procedure. Assuming continuous operation, data from the past 7 days is available for download from the VR brick.

It may take up to 1 hour for the screen to download and compress the week of data.

The user will have the option to delete between **0** and **7** days, and **0** and **24** hours from the VR screen. Clicking on the **Purge** button will delete the files. Clicking on the **Cancel** button will cancel the purge and close out the screen. The user will have to confirm the purge.

Clicking on the **Yes** button will begin the file deletion. Clicking on the **No** button will cancel the delete process. Since this process involves deleting data logged data, the user will have a second chance to confirm the deletion.



Clicking on the **Yes** button will begin the file deletion. Clicking on the **No** button will cancel the delete.

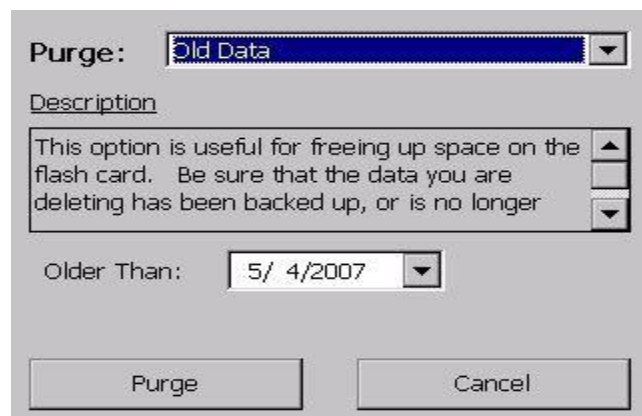
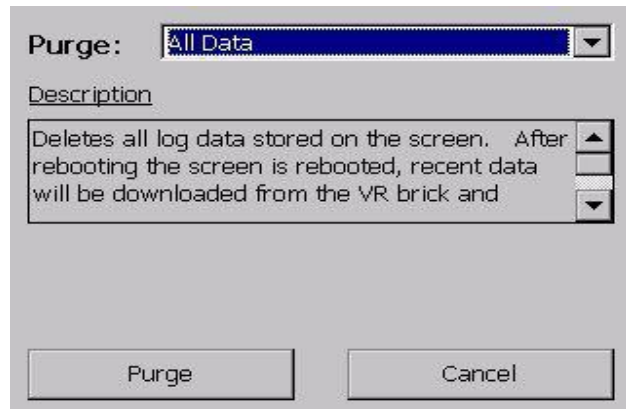
Since the VR screen will need to be restarted in order to resynchronize with the data logger, the user will have the option to restart the screen from the *Purge Data* menu.

The second option, "All Data", will allow users the ability to delete all of the logged data from the VR screen. This option can be used if the user wishes to completely resynchronize the VR screen with the VR data logger.

Description – This option deletes all log data stored on the screen. After rebooting the screen is rebooted, recent data will be downloaded from the VR brick (data logger) and compressed. This will take up to 1 hour to complete.

The user will have to confirm the deletion twice in order for the files to be deleted.

Since the VR screen will need to be restarted in order to resynchronize with the data logger, the user will have the option to restart the screen from the *Purge Data* menu.



The third option, "Old Data", will allow the users the ability to delete older data from the VR screen. The option can be used if the user wishes to free up space on the storage card.

Description – This option is useful for freeing up space on the flash card. Be sure that the data you are deleting has been backed up, or is no longer needed.

The user can select the start date from the list box on the screen. The program will delete any datalog files that are older than the selected

date.

To ensure that the datalog files are backed up before purging the data, it is recommended that the user run the download option from the VR Manager (**Download Data** button on the main screen, or *Tools → Communications → Advanced Download & Maintenance* menu option).

The user will have to confirm the deletion twice in order for the files to be deleted.

Since there is no need to resynchronize the data on the screen with the data on the VR data logger, the user will not have to restart the screen.

The fourth option, "Advanced", will allow the users the ability to delete datalog data from specific time frames. This option can be used to free up space on the flash card, or to cause a resynchronization between the VR screen and data logger.

Description – This option deletes data between two specific dates. If these dates fall within the past week, you may choose to restart the screen to synchronize that data.

The user can select the starting date and time from the "Between:" section and the ending time from the "and" section.

The user will have to confirm the deletion twice in order for the files to be deleted.

Since the VR screen may need to be restarted in order to resynchronize with the data logger, the user will have the option to restart the screen from the *Purge Data* menu.

Slave Instrument Setup

This menu option is only available with versions 2.01+ on the VR Brick and with version 3.11+ of the screen software. The Slave Instrument Setup menu option will allow the user to set up to ten slave instruments off of the Video Recorder. To set the slave type, select the appropriate slave instrument type and press the **Edit** button. *Note: Any slave instrument must be wired to the RS485 Slave terminals on the Video Recorder brick.*

The list of possible slave types is:

- SSi AC20/7EK/20Q/20PQ
- SSi 7SL
- 9200 LP 1
- 9200 LP 2
- 9200 LP 3
- AE Flow_Meter
- Eur 2404, E2704 LP 1
- Eur 2500 LP 1
- Eur 2500 LP 2, E2704 LP 2
- E2704 LP 3

Slave 1 Type	9200 LP1
Slave 1 Address	1
Slave 2 Type	9200 LP1
Slave 2 Address	2
Slave 3 Type	9200 LP2
Slave 3 Address	1
Slave 4 Type	9200 LP2
Slave 4 Address	2
Slave 5 Type	9200 LP3
Slave 5 Address	1
Slave 6 Type	9200 LP3
Slave 6 Address	2

- UDC 3300
- Yoko UT320, UT350
- Yoko UP350
- Yoko 550 LP 1, 750 LP 1
- Yoko 550, 750 LP 2

The slave address can be an integer ranging from **1** to **250**. A value of **0** will disable the slave instrument, and the address will be displayed as **disabled**.

Notes Search



The screenshot shows a software interface titled "Search Notes". At the top is a dark blue header bar with the text "Search Notes" in white. Below the header is a light blue button with the text "click to input search phrase". Underneath the button is a large, empty white rectangular area for text input. At the bottom of the interface are two blue buttons: "Chart" on the left and "Back" on the right.

To search for a certain word or phrase in the notes, press the **click to input search phase** button. A keypad will be displayed. *Note on keyboard functionality – pressing the “caps” button or the “shift” button will display more keys for data entry. Also, the “del” key works more like the “Backspace” key on a regular keyboard – i.e. it will delete the character to the left of the cursor.* Press **esc** to go back without saving, or **enter** to save the search criteria. A list of notes with this phrase will then be displayed. Only notes written with the keypad can be searched. Notes written with the stylus will not be included in the search.

Loads

The **Loads** option keeps track of Active and Historical load data.

The 'Active Loads' screen displays a table with the following columns: Date In, Template, Name, Company, and Notes. Below the table is a navigation bar with buttons for 'Detail', 'New', and 'Hi'. The 'New' button is circled in red. A 'New Load' dialog box is open, showing a 'Template' dropdown menu set to 'VAC1', a 'Records 1' field, and input fields for 'Name', 'Company', and 'Notes'. At the bottom of the dialog are navigation buttons: '<<', '>>', 'Start Load', 'Edit Record', 'Delete', and 'Back'.

Pressing **New** will bring up the screen for a New Load.

To input information about the new load, highlight any field, **Name**, **Company**, or **Notes**, and press **Edit Record**. A keypad will display. Press **enter** on the keypad to save information, **delete** to backspace a letter, and **esc** to leave the keypad without saving changes. Choose the corresponding template from the drop down menu along the top of the screen. When the load begins, press the **Start Load** button. When the load finishes, choose **End Load** on the same screen.

The 'Active Loads' screen is shown with the 'Historical' button in the navigation bar circled in red. A 'Historical Loads' dialog box is open, displaying a table with columns: Date In, Template, Name, Company, and Notes. The table shows data for '1/30/2012' and '1/31/2012', with a specific entry for '1/31 9:... VAC1'. Below the table are buttons for 'Details', 'Chart', 'Search', and 'Back'. A text box to the right of the dialog states: 'By pressing the **Historical** button on the loads screen, the historical load data will be displayed.'

The **Details** button will display the information that has been stored about each load. The **Search** key

Search Loads	
1/30/2012	1/31/2012
Field	Search Key
Name	
Company	
Notes	
<div>Search Edit Key Back</div>	

allows all historical load data to be searched through according to either the Name, Company, or within the Notes. Only notes that have been entered with the keypad can be searched. Notes written the stylus will not be included in searches.

To search historical loads, press the **Search** key. Highlight the appropriate field and press **Edit Key**. A keypad will display. Press **enter** on the keypad to save information, **delete** to backspace a letter, and **esc** to leave the keypad without saving changes. Once the search key(s) have been entered, press the **Search** button, and a list of matching results will be displayed.

Date Time Settings

The Date Time Settings option lets the user change the current date and time from this menu. Furthermore, the Date and Time settings can be changed to 24 hour instead of AM/PM. For changes to take effect, the screen must be shut down and rebooted (See the Exit Program configuration menu option).

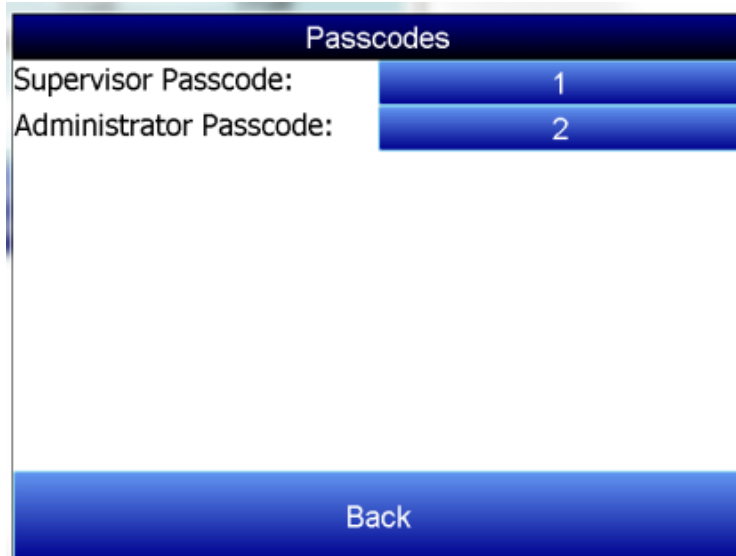
DateTime Settings
Current Time: 1/27/2012 5:07:56 PM
Change Time
Current Time Zone: Eastern Standard Time
Set Time Zone
(GMT-12:00) International Date Line West
Auto adjust daylight savings: On
<input type="checkbox"/> Use 24 Hour DateTime
Back

User Fields

The User Fields feature allows for the Name, Company, and Notes associated with a load to be either displayed or hidden. To toggle between, select the appropriate field name and press the **Show/Don't Show** button.

User Fields	
Field Name	Show On Screen
Name	True
Company	True
Notes	True
<div>Show / Don't Show</div> <div>Add Edit Delete Back</div>	

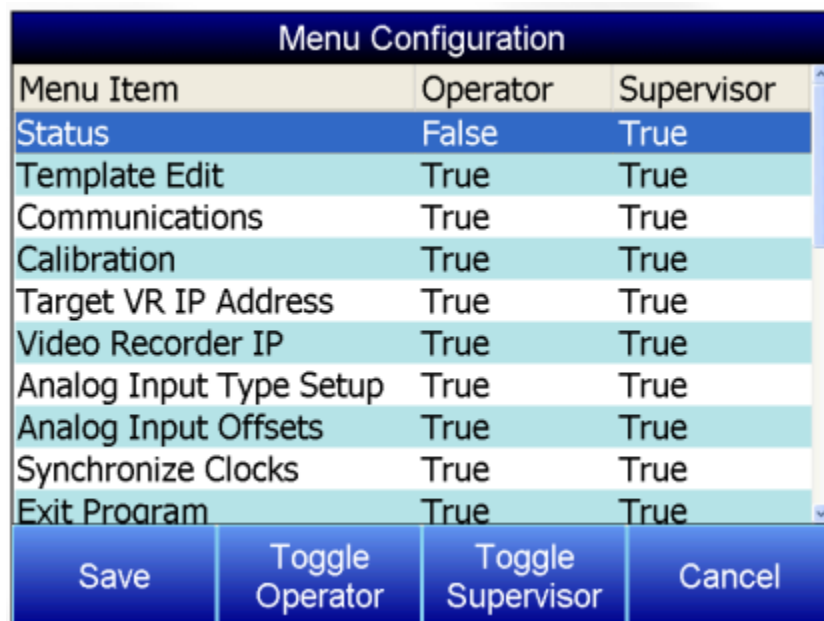
Passcodes



A screenshot of the 'Passcodes' menu. The title 'Passcodes' is at the top. Below it, 'Supervisor Passcode:' is followed by a blue box containing the number '1'. 'Administrator Passcode:' is followed by a blue box containing the number '2'. At the bottom is a large blue button labeled 'Back'.

Passcodes allows the login numbers for the supervisor or administrator passcodes to be customized. The administrator is the only login with access to this menu. To change the passcode, press the corresponding box. A numerical keypad will be displayed. Select the new number and press **Enter**.

Menu Configuration



Menu Item	Operator	Supervisor
Status	False	True
Template Edit	True	True
Communications	True	True
Calibration	True	True
Target VR IP Address	True	True
Video Recorder IP	True	True
Analog Input Type Setup	True	True
Analog Input Offsets	True	True
Synchronize Clocks	True	True
Exit Program	True	True

Below the table are four buttons: 'Save', 'Toggle Operator', 'Toggle Supervisor', and 'Cancel'.

Menu configuration allows the Configuration Menu to be customized in terms of what is displayed depending on the login level. The Administrator is the only login with access to this menu. To adjust whether or not the Menu Item is displayed, highlight the appropriate item and press either the **Toggle Operator** or **Toggle Supervisor** button. If the status reads True, the item will be accessible in the

configuration menu. If the status reads False, it will not appear in the configuration menu list. Press **Save** to save changes.

Input Calibration – Screen Version 1.47 and Below



*Note: To check the screen version number, click on the Status menu option from the Configuration menu. The screen's revision number will be listed next to the "Touchscreen Revision" line. This screen displays information to setup the calibration of the inputs. Calibration can be performed 1 channel at a time or from 1 – 5 inputs per board. The user can select board one through sixteen from the selector box on the bottom left of the screen. Clicking on the yellow area will display the onscreen keyboard, which will allow the operator to enter in the number of the board to calibrate. Once a board has been selected, press the **Enter Cal Mode** button to start the calibration process.*

If the module is not communicating, the software will display an error message.

The user will need a thermocouple calibrator capable of outputting a thermocouple signal to calibrate the zero, span or cold junction value of the video recorder data logger. The user will need to connect the calibrator to one of the inputs on the data logger for the channel that will be calibrated. It is recommended to let everything (calibrator and datalogger) sit for approximately thirty minutes to allow the temperature to achieve equilibrium. Set up the calibrator for the specific thermocouple type of the thermocouples in the video recorder datalogger, i.e. type K, type J, etc. Then, source a specific temperature, like 1000 °F, or millivolt to the connected input. It is recommended that the actual temperature used be similar to an appropriate process temperature. For example, if your equipment normally operates at 1700 °F, then perform the cold junction calibration using a 1700 °F signal. It is important to note that when performing a zero or span calibration, *do not use* regular thermocouple wiring. Instead, use any kind of regular sensor wire, or even regular copper wire. To perform the calibrations, the user will need a calibrator that is capable of outputting volts, millivolts, and temperature.

Below is a listing of the suggested ranges for the various TC types.

TC Type mV Range Chart

<u>TC Type</u>	<u>Range in mV</u>
B	20
C	40
E	80
J	80
K	80
N	80
NNM	80

R	40
S	20
T	20

Zero Calibration

Zero Calibration screen showing the 'Zero' option selected. The 'Range' is set to 20 mV. The 'Recommended value' is 0.0. A list of inputs is shown with checkboxes: Input 1 (checked, 0.000), Input 2 (checked, 0.000), Input 3 (checked, 0.001), Input 4 (checked, 0.000), and Input 5 (checked, 19.995). The 'CJ' value is 84.9. A 'Calibrate' button is at the bottom left, and an 'Exit Cal Mode' button is at the bottom right.

To perform a zero calibration, click on the “Zero” option. The circle will be filled in for the selected option. The drop down list under “Range” will allow the user to select the millivolt range of the inputs being calibrated. When a range is selected, the recommended value will also be populated. For a zero calibration, the recommended value is 0. The list of ranges is:

20 mV
40 mV
80 mV
160 mV
1.28 Volt
2.56 Volt

The recommended value can be changed either by using the up and down arrows to adjust the value, or by clicking on the value, which will display the numeric keypad. The user can enter the new value in that way. The user can also individually select each input (one through five) to calibrate, where Check = yes (calibrate) and No Check = no (do not calibrate). Once an input is checked, its current value will be displayed.

For a zero calibration, a value of 0 mV will need to be sourced to the input or inputs.

Click on the **Calibrate** button to begin the calibration.

A progress bar will be displayed along the bottom of the screen giving the progress of the calibration.

Span Calibration

To perform a span calibration, click on the “Span” option. The circle will be filled in for the selected option. The drop down list under “Range” will allow the user to select the millivolt range of the inputs being calibrated. When a range is selected, the recommended value will also be populated. For a span calibration, the recommended value is 90 % of the full range. For example, if the range is 80 mV, then the span should be 75. The recommended value can be changed either by using the up and down arrows to adjust the value, or by clicking on the value, which will display the numeric keypad. The user can enter the new value in that way. *Note: If the user is*

Span Calibration screen showing the 'Span' option selected. The 'Range' is set to 80 mV. The 'Recommended value' is 75.00. A list of inputs is shown with checkboxes: Input 1 (checked, 8.44), Input 2 (checked, 8.44), Input 3 (checked, 8.44), Input 4 (checked, 8.44), and Input 5 (checked, 33.07). The 'CJ' value is 84.4. A 'Calibrate' button is at the bottom left, and an 'Exit Cal Mode' button is at the bottom right.

using a 10:1 jumper (see the Adding a Jumper to an Input section in the Analog Inputs section), the user will need to multiply the source signal by 10 to get the correct span value. For example, if the 10:1 jumper is set on a 1.25V range, the suggested source signal will read 1000 mV. The supplied signal will need to be 10000 mV to account for the 10:1 jumper. The user can also individually select each input (one through five) to calibrate, where Check = yes (calibrate) and No Check = no (do not calibrate). Once an input is checked, its current value will be displayed.

For a span calibration, a value of 90 % of the full range will need to be sourced to the input or inputs.

Click on the **Calibrate** button to begin the calibration.

A progress bar will be displayed along the bottom of the screen giving the progress of the calibration.

Cold Junction Adjust

To perform a cold junction adjust, click on the “CJ Adjust” option. The circle will be filled in for the selected option. The cold junction offset can be entered by using the up and down arrows to modify the “Enter Cold Junction Offset” value. The user could also click on the value, which will display the numeric keypad, which will allow the user to enter the new value in that way. The cold junction adjust will adjust all of the inputs on one board simultaneously. *Note – To subtract a value from the current cold junction value, be sure to set the offset value as a minus value by clicking on the plus/minus key on the keypad (+/-).* The overall Cold Junction value is modified by adding or subtracting a value to the current value.

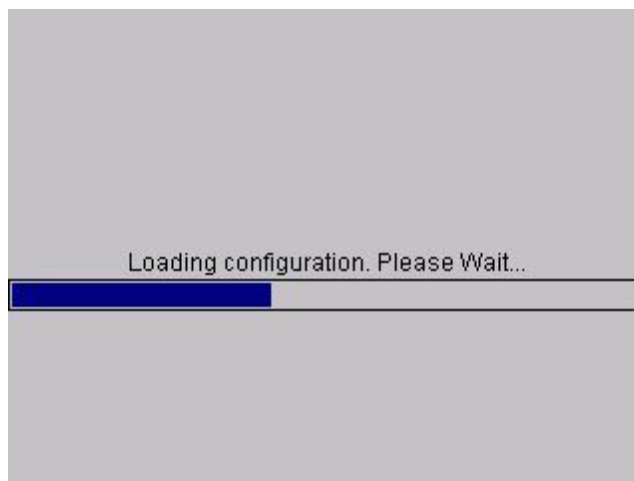
Click on the **Calibrate** button to begin the calibration.

A progress bar will be displayed along the bottom of the screen giving the progress of the calibration.

Press the **Exit Cal Mode** to return to the previous screen and select a different board. Pressing the **Done** button from that screen will exit the calibration menu item.

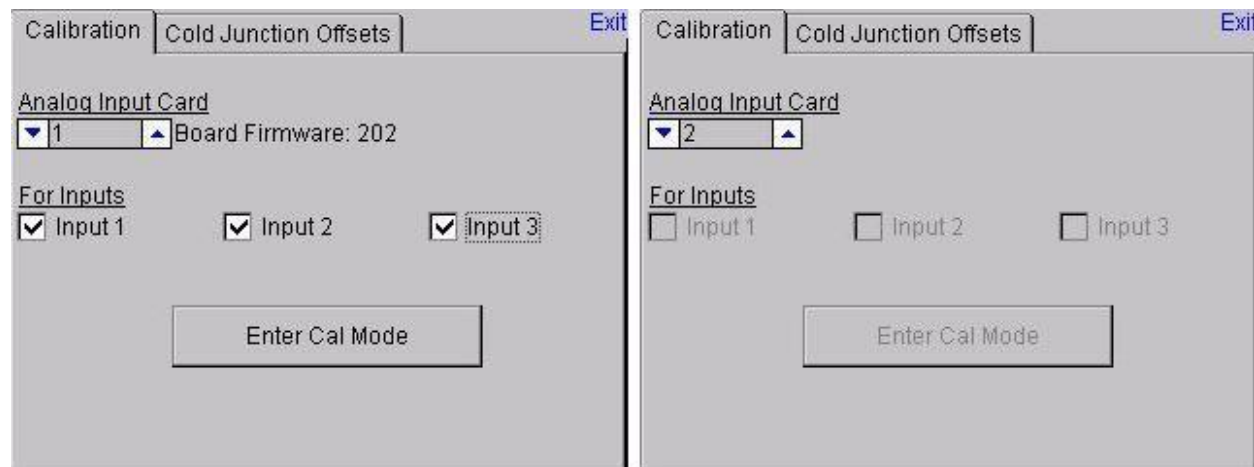
Input Calibration – Screen Version 1.49 and Above

The user will need a thermocouple calibrator capable of outputting a thermocouple signal to calibrate the zero, span or cold junction value of the video recorder data logger. The user will need to connect the calibrator to one of the inputs on the data logger for the channel that will be calibrated. It is recommended to let everything (calibrator and datalogger) sit for approximately thirty minutes to allow the temperature to achieve equilibrium. Set up the calibrator for the specific thermocouple type of the thermocouples in the



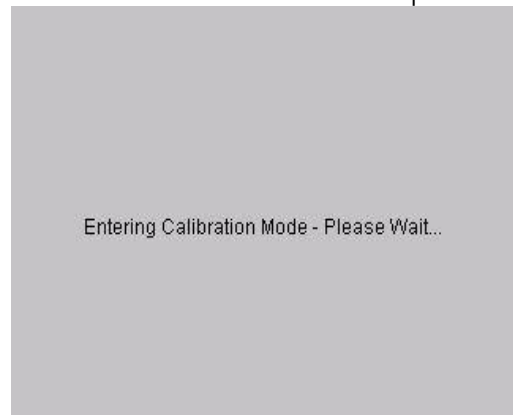
video recorder datalogger, i.e. type K, type J, etc. Then, source a specific temperature, like 1000 °F, or millivolt to the connected input. It is recommended that the actual temperature used be similar to an appropriate process temperature. For example, if your equipment normally operates at 1700 °F, then perform the cold junction calibration using a 1700 °F signal. It is important to note that when performing a zero or span calibration, *do not use* regular thermocouple wiring. Instead, use any kind of regular sensor wire, or even regular copper wire. To perform the calibrations, the user will need a calibrator that is capable of outputting volts, millivolts, and temperature.

Note: To check the screen version number, click on the Status menu option from the Configuration menu. The screen's revision number will be listed next to the "Touchscreen Revision" line. When the Calibration menu is first selected, the screen software must first load up the screen's configuration



settings. When the settings have been loaded, the Calibration tab will be displayed.

If an existing input board is selected in the "Analog Input Card" section, then that input board's firmware revision number will be displayed next to the input board number and the inputs to be calibrated will be enabled (see the figure on the left above). If a non-existing board is selected, there will be no firmware revision number shown and the inputs to be calibrated will be disabled (see the figure on the right above).



The user will be able to select boards **1** through **8**. Select the inputs to calibrate by checking the checkbox next to each input where: check = Yes (calibrate) and no check = No (do not calibrate). Once the inputs to calibrate have been chosen, press the **Enter Cal Mode** button to begin the calibration process.

Once the calibration screen is displayed, the drop-down list on the left of the screen will allow the user to select either **Zero Cal** or **Span Cal**, depending on which calibration is desired.

The "Input Values (mV)" section will display the selected inputs and the associated values for those inputs. If an input has not been selected from the previous screen, that input's value will be dashes "---". The "Calibration Range" drop-down list will allow the user to select the appropriate range for the thermocouples. See the *TC Type mV Range Chart* on page 35 if the range is not known for a specific thermocouple type.

For a zero calibration, a value of 0 mV will need to be sourced to the input or inputs, and the “Enter Source:” field should be set to **0.00**. A recommended value will be displayed next to the “Recommended Value:” field.

For a span calibration, a value of 90 % of the full range will need to be sourced to the input or inputs, and the “Enter Source:” field should be set to 90% of the full mV range. A recommended value will be

Input Values (mV)	
Input	Value
Input 1	111.71
Input 2	0.00
Input 3	0.37

Zero Cal	Calibration Range	80 mV
Enter Source : 0.00		
Recommended value: 0		
Cancel	Calibrate	

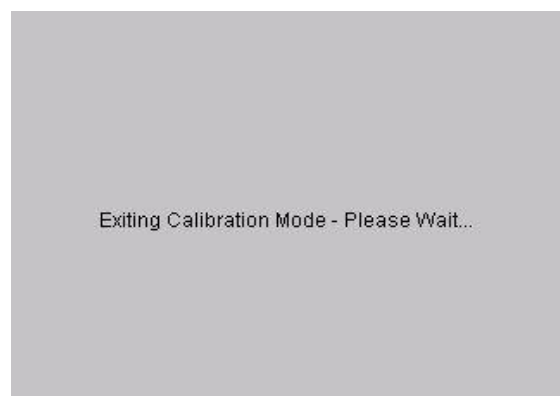
Input Values (mV)	
Input	Value
Input 1	11.17
Input 2	0.00
Input 3	0.03

Span Cal	Calibration Range	80 mV
Enter Source : 75.00		
Recommended value: 75.00 mV		
Cancel	Calibrate	

Zero Calibration

Span Calibration

displayed next to the “Recommended Value:” field. *Note: If the user is using a 10:1 jumper (see the Adding a Jumper to an Input section in the Analog Inputs section), the user will need to multiply the source signal by 10 to get the correct span value. For example, if the 10:1 jumper is set on a 1.25V range, the suggested source signal will read 1000 mV. The supplied signal will need to be 10000 mV to account for the 10:1 jumper.*

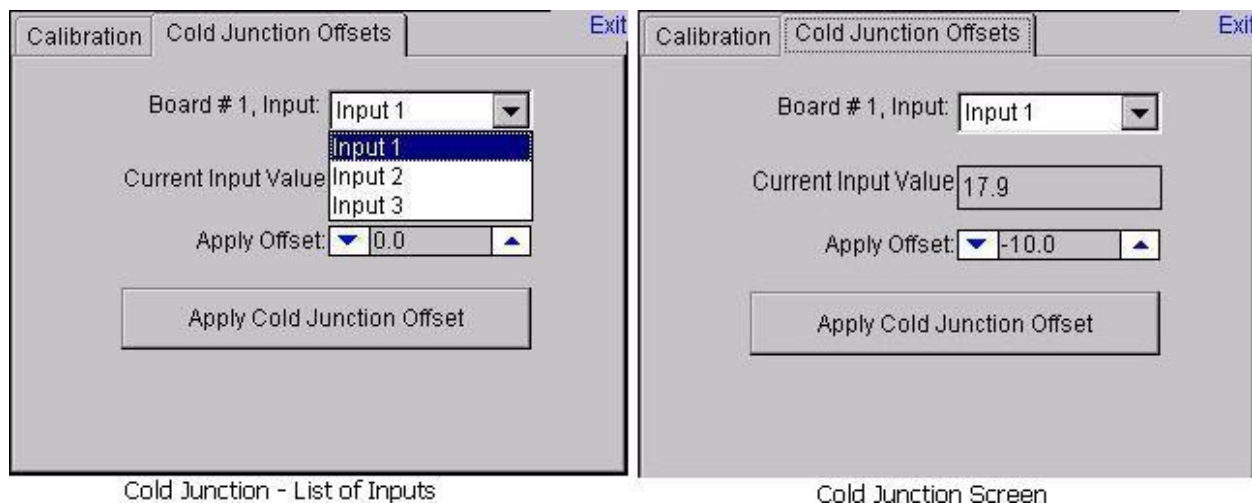


Press the **Calibrate** button to begin the calibration. Press the **Cancel** button to cancel the calibration and return to the previous screen.

The Cold Junction tab will allow the user to set the cold junction offset for a specific input on a specific board.

The board being calibrated will be listed in the “Board #x, Input:” line, where x is the board selected from the Calibration tab. The drop-down list will allow the user to select the input to set a cold junction offset for. The “Current Input Value” line will display the selected input’s current value. The “Apply Offset:” box will allow the user to select the cold junction offset to set.

Press the **Apply Cold Junction Offset** button to apply the selected offset.



The "Exit" link at the top right of the screen will exit the *Calibration* menu option.

Changing the Date/Time of the Touch Screen display

If the date or time needs to be changed on the Touch Screen display unit, use the following steps:

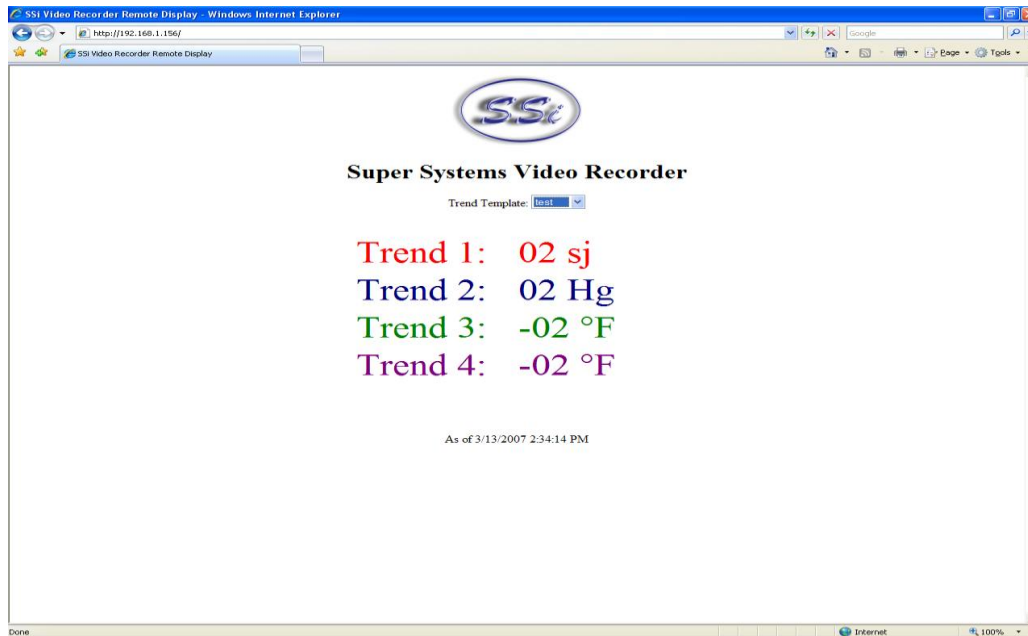
1. Exit the Video Recorder display by selecting the "Exit Program" menu option from the "Configuration" menu.
 - a. Click on the **View** button along the bottom of the screen to select the menu option.
 - b. Click on the **Yes** button to confirm the program close.
2. Once the Video Recorder display has closed, double-click on the time in the taskbar in the lower left corner. This will bring up the dialog to change the date or time.

OR

3. Go to Start Menu → Settings → Control Panel
 - a. Click on "Date/Time" once and select File → Open or
 - b. Double-click the "Date/Time" icon to open the Date/Time dialog
4. If necessary, select the new date from the calendar by clicking on the date. Months can be changed by using the left or right arrow buttons next to the month/year on the calendar.
5. If portions of the dialog are not visible due to the screen size, click and hold the title bar and move the dialog by dragging the dialog.
6. If necessary, select the new time zone from the drop-down list.
7. Check the "Automatically adjust clock for daylight saving" checkbox if desired.
8. If necessary, adjust the time:
 - a. Highlight the hours, minutes, or seconds by clicking on the desired section. When selected section will be highlighted in blue.
 - b. Use the up or down arrows to change the selected section
9. Click on the **Apply** button or the **OK** button at the top of the dialog to save the changes
10. If no changes were made, click on the **X** button in the top right of the dialog to close the dialog
11. Cycle the power to the Video Recorder Touch Screen to bring up the Video Recorder display.

Remote Trend Web Page

Each touch screen will also contain a simple web page that will display the trend information for all of the templates. However, before anyone can view this web page, the web server may need to be configured. Open a web browser such as Internet Explorer or Mozilla Firefox, and enter the following into the address

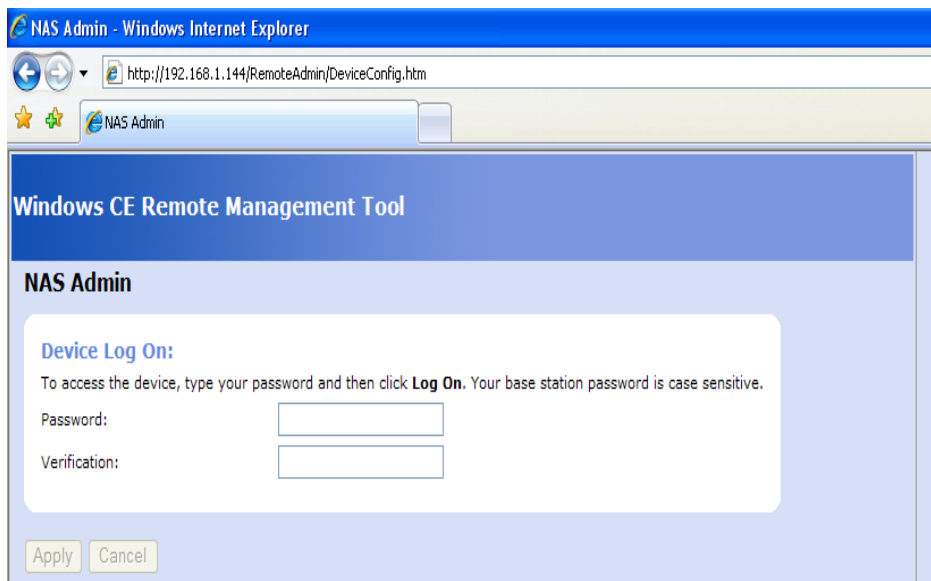


bar: `http://< Touch Screen IP >` where `< Touch Screen IP >` is the IP address of the *touch screen* (not the video recorder box). This will display the web page.

The templates are listed in the drop-down list next to "Trend Template:". Once a template has been selected, the trends will be displayed underneath. The

current date and time of the touch screen will be displayed beneath the trends.

If the above web page is not displayed, then the web server on the touch screen will need to be configured. First, enter the following address into a web browser's address bar:

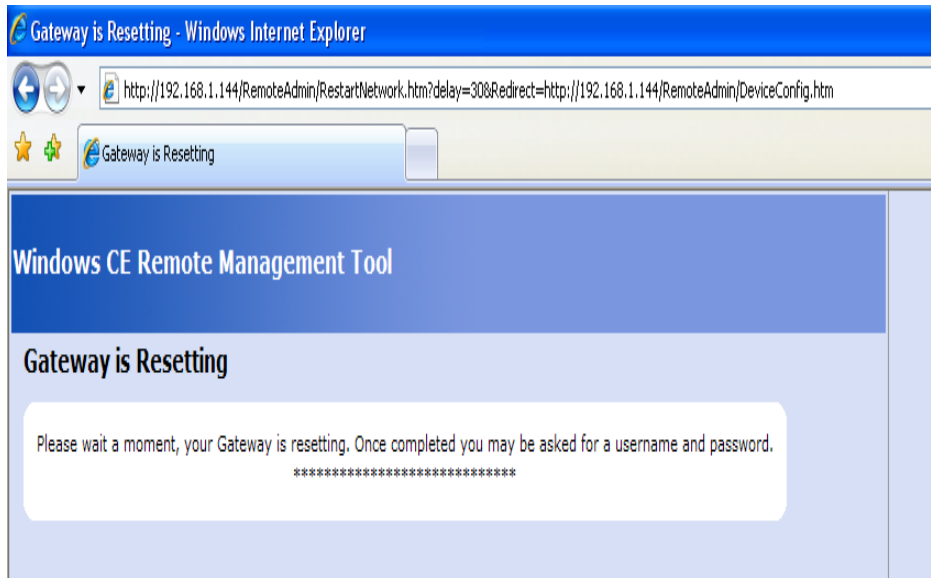


`http://< Touch Screen IP >/remoteadmin` where `< Touch Screen IP >` is the IP address of the touch screen.

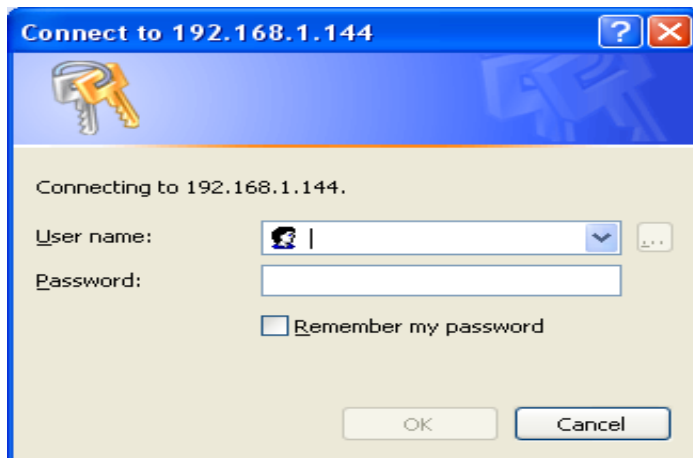
This will display the remote administration page for the touch screen

Enter a password in the "Password:" and "Verification:" fields and then click on the **Apply** button. Clicking on the **Cancel** button will clear out the 2 fields. *Note –*

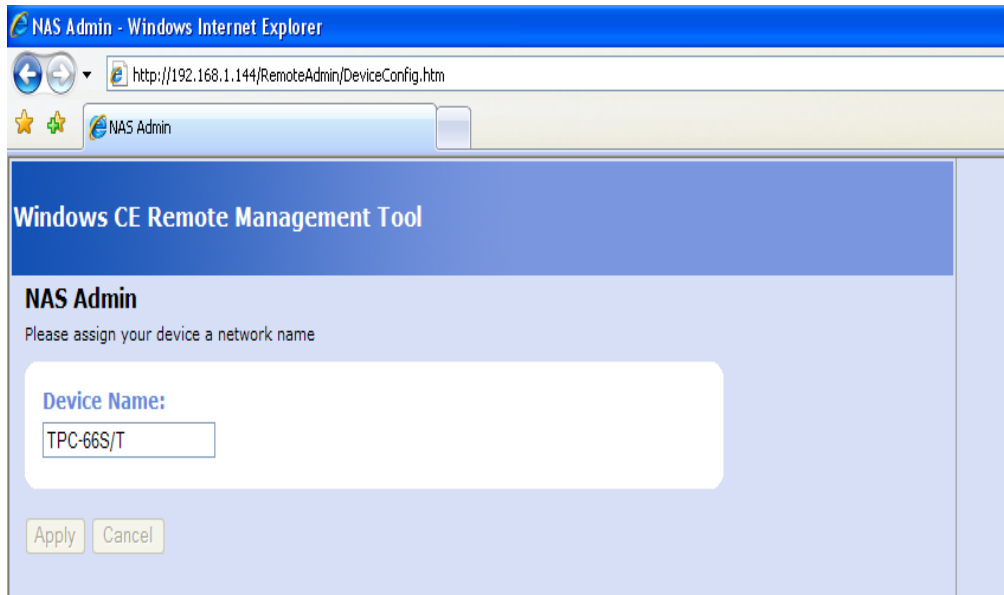
This operation will only have to be performed once. This will set up the administration password for the web page. The user name will be "admin". The web server will reset and then it will load the same web page again.



When the page reloads, you will be prompted for the username and password. If you are asked for a domain name, leave the domain name blank. Remember – the user name is “admin”.

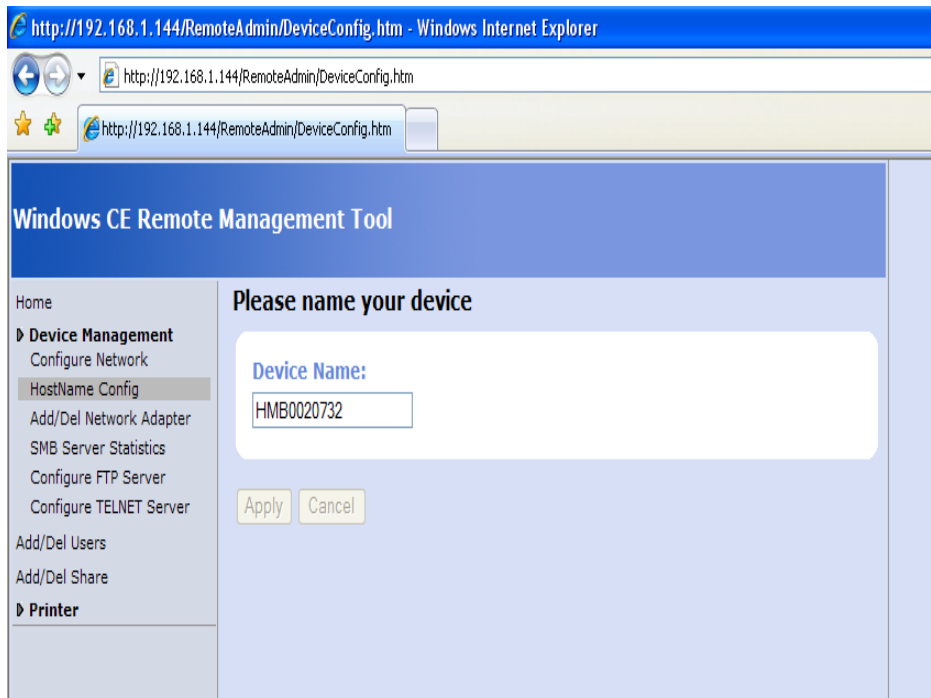


Once you are logged in, you will be asked to assign a device name. Use the serial number located on the back of the touch screen – i.e. HMB0000000.



Clicking on the **Cancel** button will reset the device name. Once the new device name has been entered, click on the **Apply** button.

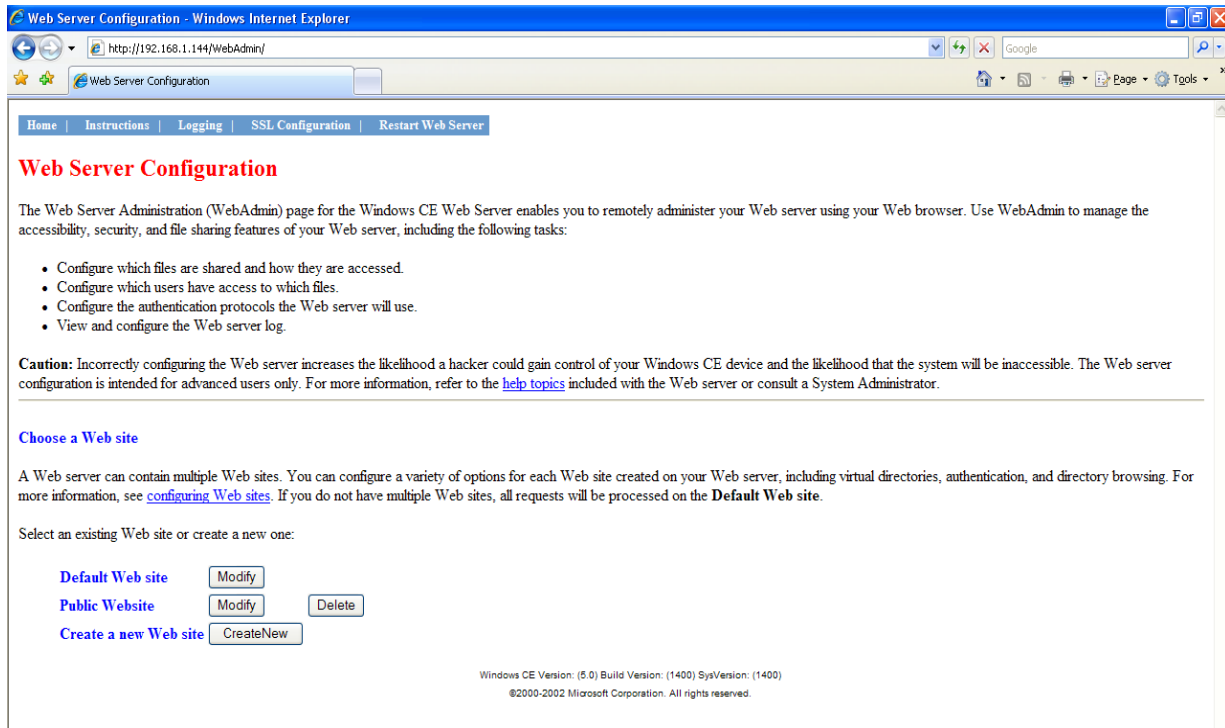
You will see the device name listed.



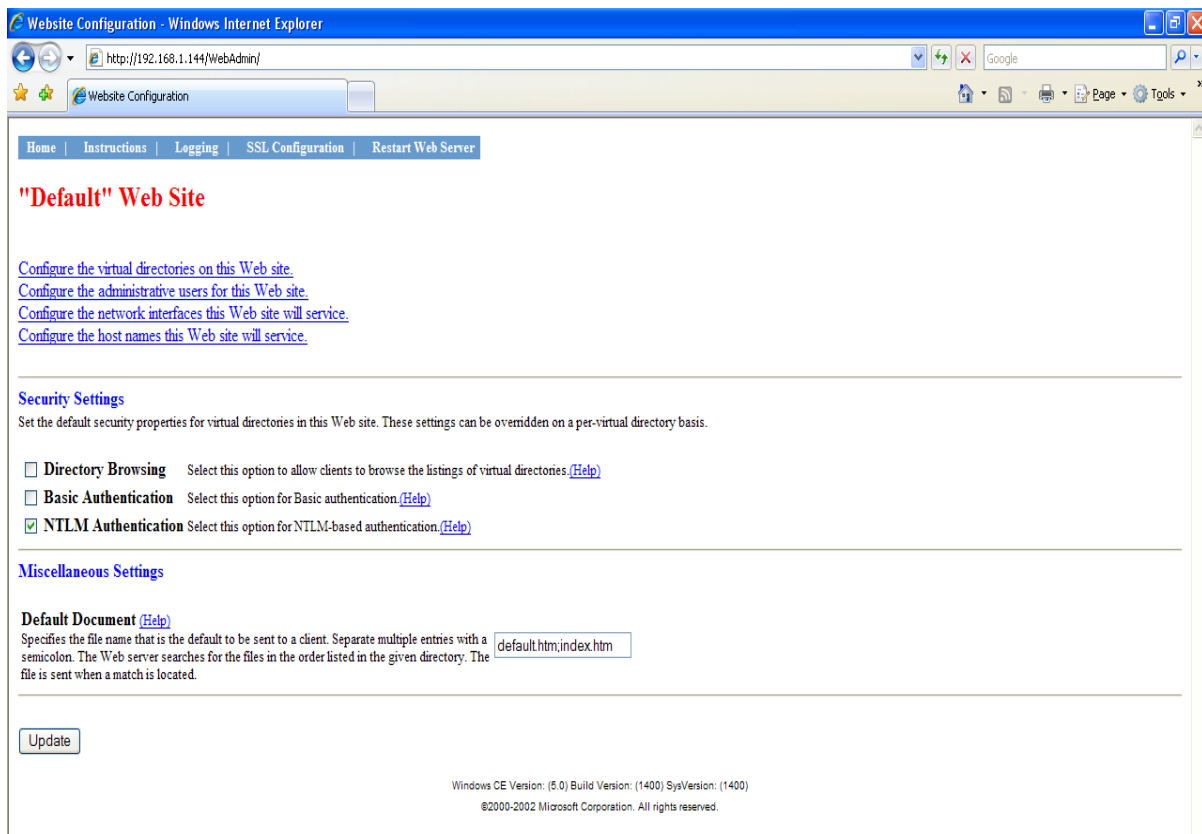
We now have to access the web administration page.

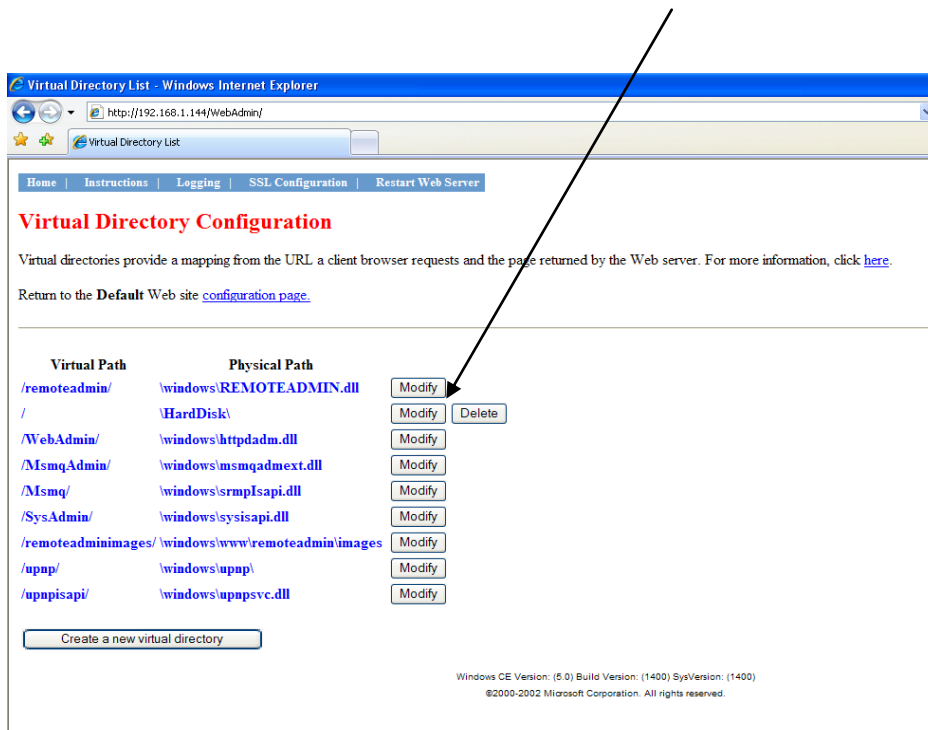
Type the following into the web browser's address bar:

`http://< Touch Screen IP >/webadmin` where < Touch Screen IP > is the IP address of the touch screen. This will display the Web Server Configuration page.



Click on the **Modify** button located next to the “Default Web site” text.



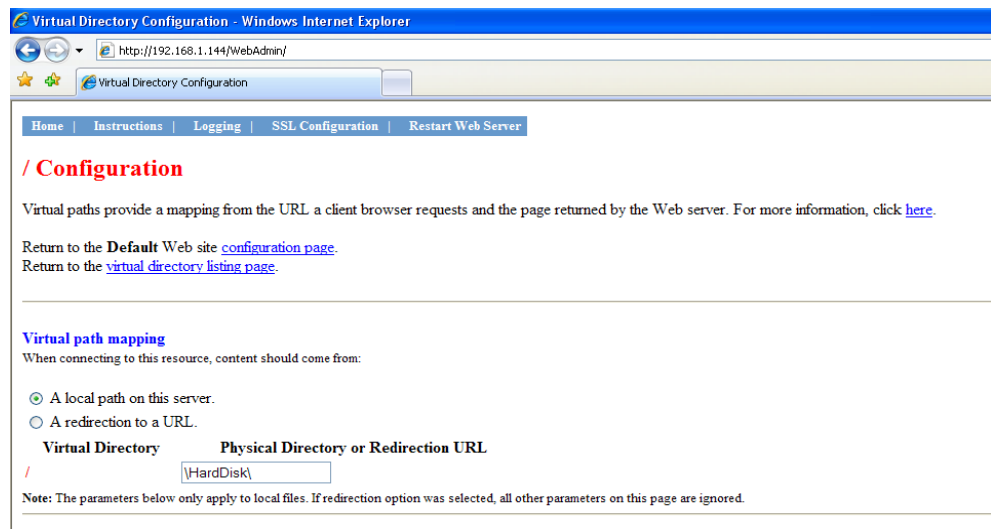


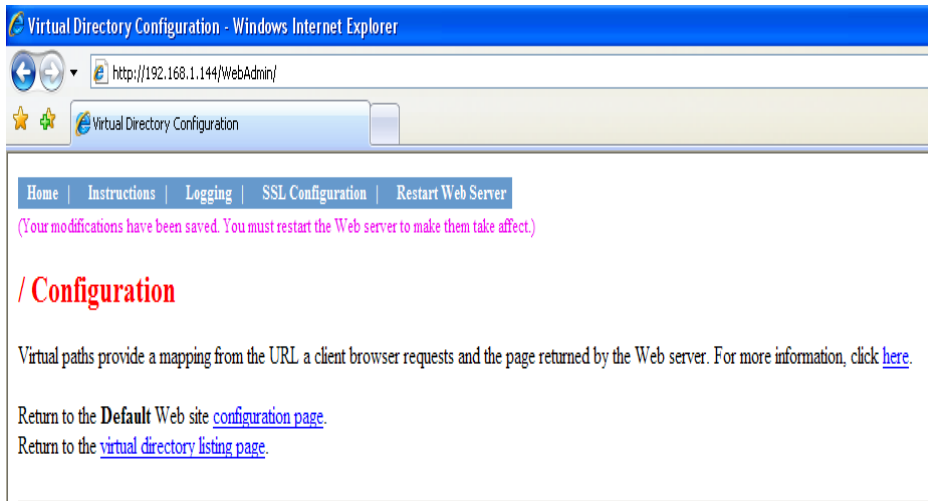
Immediately under the “Default” Web Site title, there will be a series of links. Click on the link titled “Configure the virtual directories on this web site”.

The virtual path that you want to modify is the base path of the web server, which is just a slash [/]. The default physical path for the base path is “\HardDisk\”. Click on the **Modify** button for the base path of the web server.

In the text box which reads “\HardDisk\” under “Physical Directory or Redirection URL” in the “Virtual path mapping” section, replace “\HardDisk\” with “\Storage Card\web\”. *Note – Storage Card must be typed as two words. Note: If the screen is a 12” screen, then the directory will be “\HardDisk\web”.* Scroll down to the bottom of the page and click on the **Update** button.

You will see some text at the top of the screen letting you know that your changes have been saved. You will now need to restart the web server. Click on the **Restart Web Server** button from the list of menu buttons along the top left of the screen (it will be the last button). If all of the necessary files are already located on the screen, you should now be able to view the trend page. Enter the following into the address bar of a web browser: `http://< Touch Screen IP >` where < Touch Screen IP > is the IP address of the touch screen. *Note – you may need to give the web server a few minutes to restart before viewing the trend page.*





Video Recorder Web Page

Each Video Recorder unit will also contain a simple web page that the user will be able to view. The web page will display the current values of all of the inputs on the video recorder unit, plus any alarms. The web page will display information for sixteen boards, even if the Video Recorder unit does not have sixteen input boards installed. Any line for an input board that is not installed will display asterisks (*). To access the web page, enter the IP address of the Video Recorder unit itself into the address bar of any Internet browser, such as Internet Explorer or Mozilla Firefox, i.e. `http://<VR Unit IP Address>` where `<VR Unit IP Address>` is the IP address of

		SSI Model VR8500 Video Recorder Ver 2.00 SN 11090-026	
Input	1	2	3
Board 1	89.4	89.8	89.9
Board 2	*****	*****	*****
Board 3	*****	*****	*****
Board 4	*****	*****	*****
Board 5	*****	*****	*****
Board 6	*****	*****	*****
Board 7	*****	*****	*****
Board 8	*****	*****	*****
Board 9	*****	*****	*****
Board 10	*****	*****	*****
Board 11	*****	*****	*****
Board 12	*****	*****	*****
Board 13	*****	*****	*****
Board 14	*****	*****	*****
Board 15	*****	*****	*****
Board 16	*****	*****	*****
Alarms	-	-	-
Alarms	-	-	-
Alarms	-	-	-
Alarms	-	-	-

the unit. For example, if the IP address was "192.168.1.216", then to access the Video Recorder unit's web page, the user will have to enter "`http://192.168.1.216`" into the web browser's address bar. *Note: An Internet connection is not needed to access the Video Recorder unit's web page.*

VR Manager Software

Installing the VR Manager Software

Note – The person installing the VR Manager Software must have administrative rights on the computer(s) where the installation is taking place for the installation to be successful.

If there is no install file, make sure the following six files are located in the same folder:

- VRManager.exe
- AutoUpgrade.exe
- AutoUpgrade.Lib.dll
- SSiControls.dll
- SSiLibrary.dll
- ZedGraph.dll



If there is a setup file, follow these instructions. Double-click on the setup file, VRManagerSetup.msi to start the auto-installation. If there is no version of the VR Manager running on the computer, the installation will display a splash screen. Click on the **Next >** button to begin the installation.

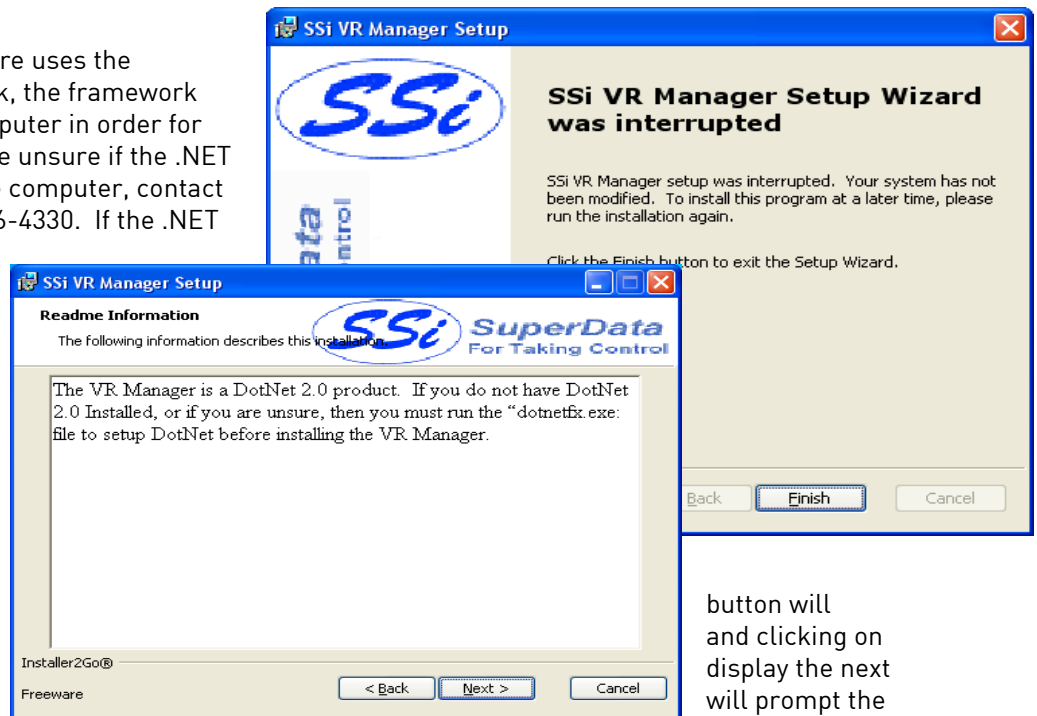
Click on the **Cancel** button to cancel the installation. The user will have to confirm the cancellation.

the installer.

Click on the **Finish** button to close out

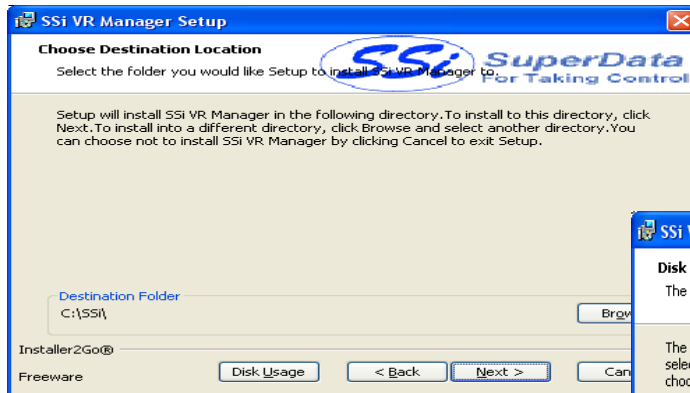
Since the VR Manager software uses the Microsoft .NET 2.0 framework, the framework must be installed on the computer in order for the software to run. If you are unsure if the .NET framework is installed on the computer, contact Super Systems Inc at 800-666-4330. If the .NET 2.0 framework is not installed, click on the **Cancel** button to close out the installer and install the framework. The user will have to confirm the cancellation. *Note: The .NET framework installation file is named "dotnetfx.exe".*

Clicking on the **< Back** button will display the previous screen, the **Next >** button will display the next screen. The next screen will prompt the user for the download



button will display the next screen. The next screen will prompt the user for the download

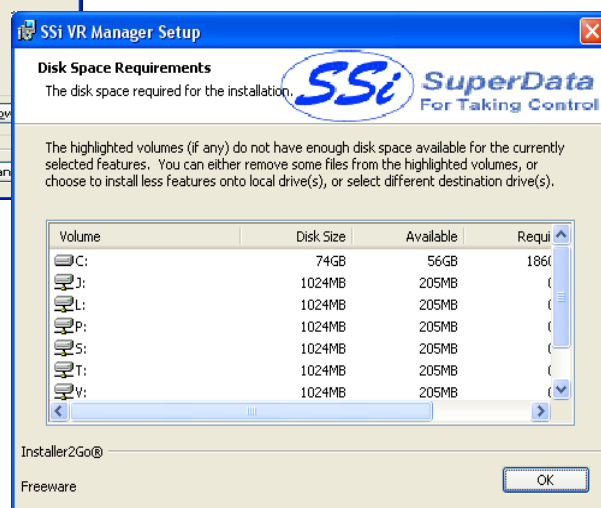
The default location is "C:\SSI\". *Note: The installer will automatically create a "Bin" folder to install the files to. For example, if the default location, "C:\SSI\" is used, then the files will be installed to "C:\SSI\Bin".* Click on the **Browse** button to select an alternate location. Clicking on the **Disk Usage** button will display the available computer drives onto which the SDS Reporter can be downloaded, as well as the total space, available space, required space, and the difference between the available and required space for each drive.

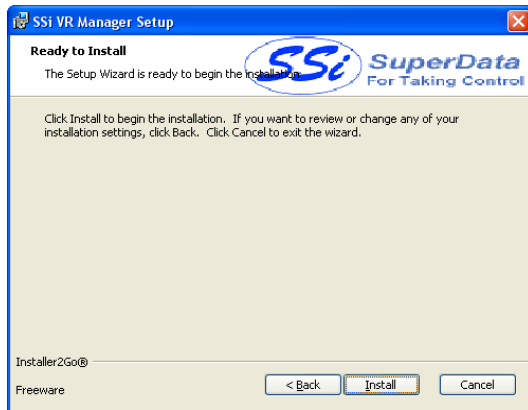


Clicking on the **OK** button will close out the disk usage screen. Clicking on the **< Back** button will display the previous screen. Clicking the **Next >** button will continue with the installation process. Clicking on the **Cancel** button will cancel the installation

process. The user will have to confirm the cancellation.

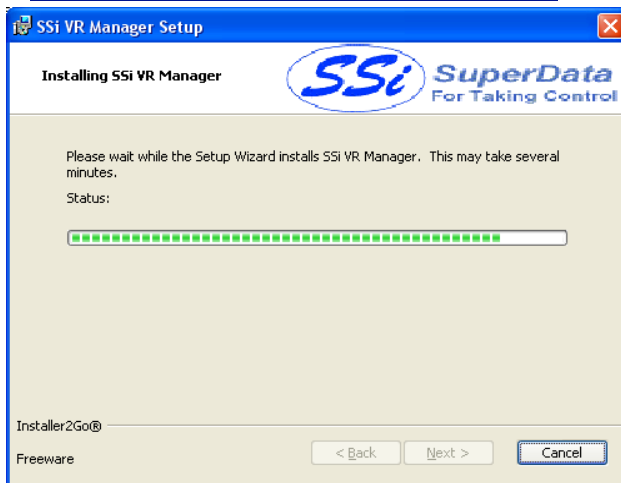
Clicking on the **Cancel** button will cancel the installation process. The user will have to confirm the cancellation. Clicking on the **< Back** button will display the previous page. Clicking on the **Install** button will install the software to the specified location.





Once the software has been installed, the VR Manager will be ready to use.

Click on the **Next >** button to continue.



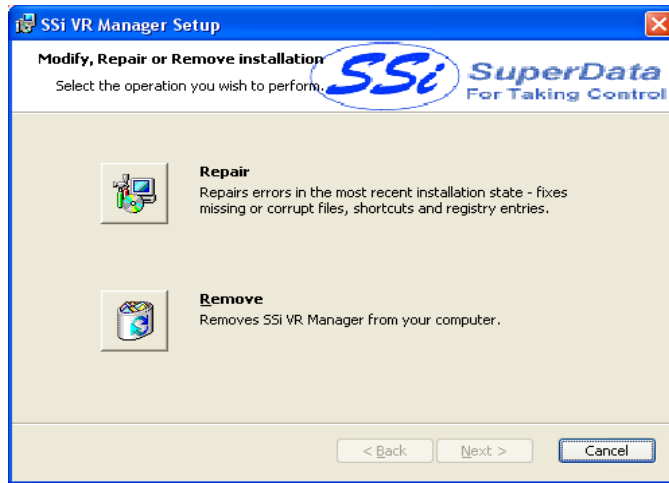
The last screen is a description of the software used to install the VR Manager software. Clicking on the **dev4pc.com** button will display the dev4pc.com homepage, the authors of the installer software. Clicking on the **Finish** button will close out the

installer.

If there is a version of the VR Manager already installed on the computer, the installer will either re-install the software (**Repair** button) or remove the software from the computer (**Remove** button). Clicking on the **Cancel** button will cancel the actions. The user will have to confirm the cancellation. *Note: the installer does not remove any subfolders in the main VR Manager folder. These files will have to be manually removed.*



The *Repair* option will allow the user to repair the installed files. This option is useful if the installation was interrupted in some way and did not finish on its own. The *Remove* option will remove the main executable file from the computer.



VR Manager Minimum System Requirements

- Computer with a minimum of 600 MHz processor clock speed (Intel, AMD, etc).
- Operating System – Microsoft© Windows© 98/2000/XP/Vista
- Memory – 256 MB RAM or higher
- Disk Space - Minimum of 1 GB storage space
- CD-ROM drive or DVD-ROM drive
- Keyboard and mouse
- Monitor with 1024 x 768 resolution or higher and 256 colors

The VR Manager also requires the .NET Framework version 2.0 to be installed on the computer. The install file for the .NET framework is located on the setup disk included with the Video Recorder shipment

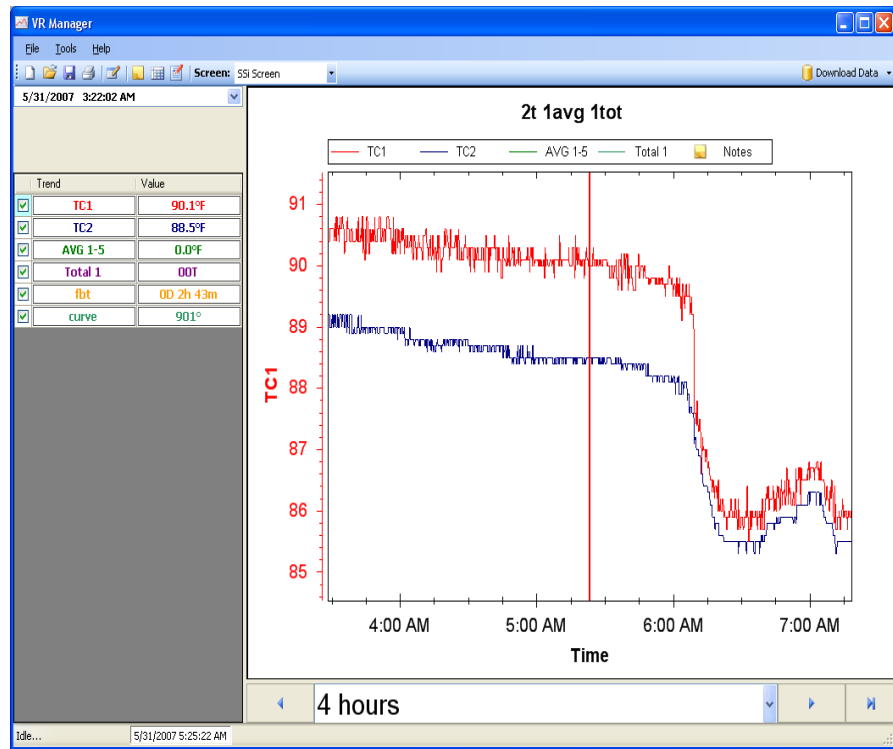
VR Manager Overview









The VR Manager software provides all the necessary utilities to collect, review and print data that is being logged on SSI Video Recorders. The software can be used to retrieve data over the network when the VR Recorders are hooked up to the same network as the computer or data can be retrieved from the flash card using the flash card reader, which is included with the shipment.

VR Manager Screen

There are drop down lists and buttons that activate the functions on the screen. The screen is used to

- Select Video Recorders to Manage
- Review Historical Trend Data In Graphical and Data Grid Format
- Review Notes Written on Screen
- Print Trend and Data Grid
- Export Data to File
- Select Chart Data Interval
- Look at Specific Data Points
- Download Data from Video Recorder
- Review Statistics of Displayed Data
- Pan Through Historical Data
- Zoom In Display
- Save Displayed Image
- Turn On/Off Trend Points
- Backup Data to a Network



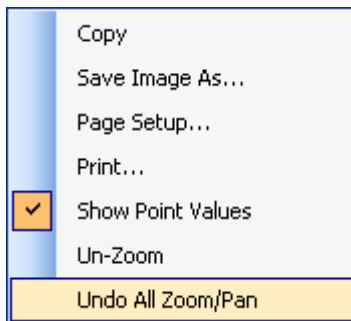
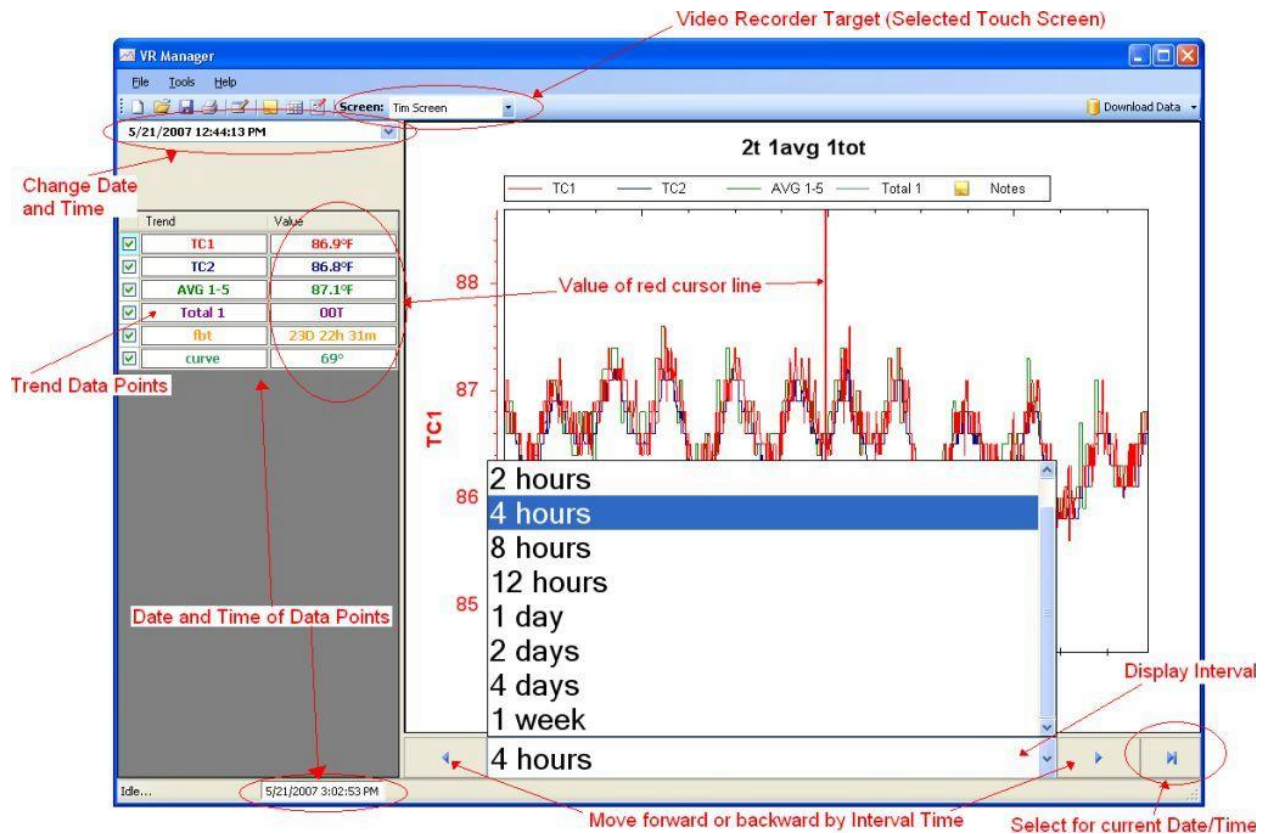
When the VR Manager software is started up, the user sees the above screen. The three menu options to choose from are: *File*, *Tools* and *Help*. There are eight buttons to choose from: New , Open , Save , Print , Edit Custom Curves , Show Notes , Show Data Grid , and Edit Chart .

When multiple Video Recorders are being managed using VR Manager, the operator can select which VR and set of data for the Video Screen to use. This is done using the drop down list.



A VR device can be added through the *Tools* → *Communications* → *Setup* menu option.

Operating the VR Manage Screen



"Copy" will copy the graph image onto the system clipboard, where it can be copied to another location.

"Save Image As" will allow the user to save the image as a separate file.

"Page Setup" will allow the user to set up the page settings, such as page margins for printing purposes.

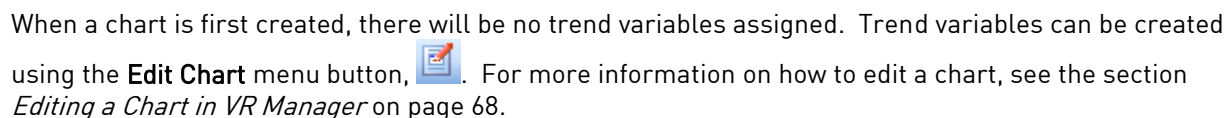
"Print" will print the graph to a printer.

"Show Point Values" will show all of the point values on the graph when the mouse is hovered over them on the graph.

"Un-Zoom" will undo the last zoom.

"Undo All Zoom/Pan" will undo all zooms/pans performed.

File → New / New Button



Recorder Screen. The Video Screen that is highlighted will be one of the previously created profiles for a device. The Trends that are available here have to be Synchronized with the Video Screen in order to be up to date with the data logger and screen. This is performed using the Synchronize option under the *Tools* → *Communications* → *Advanced Download & Maintenance* selection, or by clicking on the **Download Data**

button on the top right of the screen. See the section *Tools → Communications → Advanced Download & Maintenance* on page 59 for more information on the **Download Data** button and its features.

The **Open** button will look at the Trends that have been downloaded and allow the operator to select one of the previously setup trends. This will display all the data associated to the Video Recorder for the Trends selected.

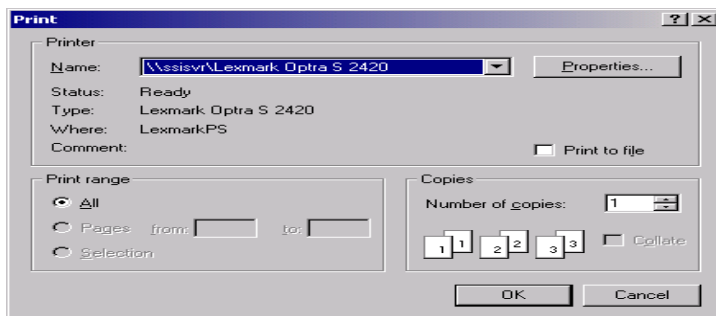
Trends consist of inputs for the specified device, alarms, function based timers, totalizers, and averagers. Trends can be modified in the VR Manager, but the changes cannot be saved back to the data logger.

File → Save / File → Save As / Save Button



The Save option is used when editing a trend chart. For more information on this topic please refer to section *Editing a Chart in VR Manager* on page 68.

File → Print → Chart



When the user clicks on the Print Chart menu option, the software will prompt the user to confirm the print job by displaying a print dialog box. Clicking on the **OK** button will print the report.

The print dialog box will allow the user to select the number of copies to print. Clicking on the **Properties** button will allow the user to change some of the properties of

the printed material, such as margins, page layout, etc.

File → Print → Notes

When the user clicks on the Print Notes menu option, the software will prompt the user to confirm the print job by displaying a print dialog box. Clicking on the **OK** button will print the report. The print dialog box will allow the user to select the number of copies to print. Clicking on the **Properties** button will allow the user to change some of the properties of the printed material, such as margins, page layout, etc. The report will consist of all Screen Notes during the currently viewed data. *Note: The notes do not need to be shown in order to print them out. All notes during the viewing time frame will be printed.*

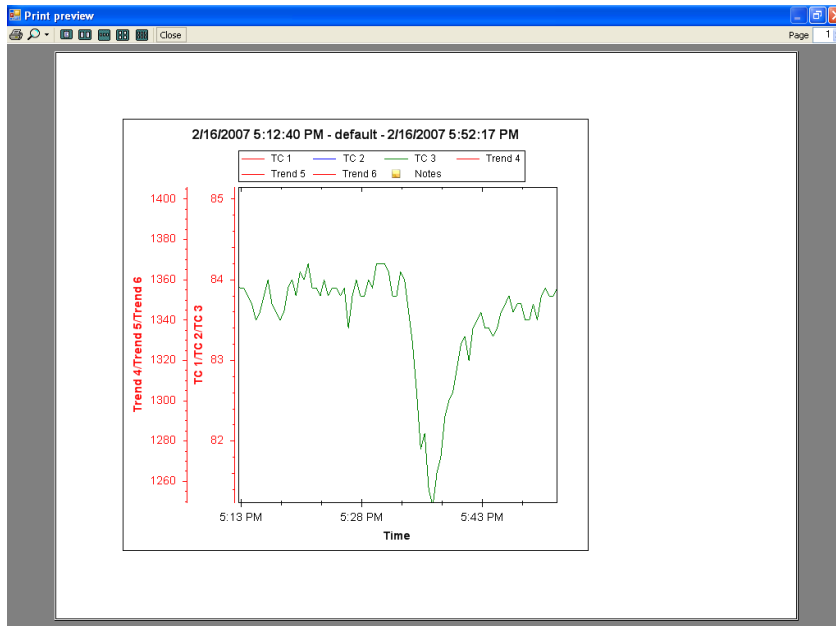
Print Button



When the user clicks on the **Print** button, the software will display the print dialog box, which is similar in design and function to *File → Print → Chart* menu option.

File → Print Preview → Chart

The Print preview will pull up a dialog box to display what will be sent to the printer for printing as displayed below.



The chart can be printed directly from the print preview by clicking on the printer icon in the top left of the screen, or from the *File → Print → Chart* menu option. Clicking on the **Close** button will close out the print preview. *Note: If the chart is printed from the print preview screen, it will be sent to the last printer used on the computer. If there are no printers set up on the computer, the print preview will not be displayed and a warning message will be displayed.*

File → Print Preview → Notes

The Print preview menu option will display a preview of what will be sent to the printer. The notes can be printed directly from the print preview by clicking on the printer icon in the top left of the screen, or from the *File → Print → Notes* menu option. Clicking on the **Close** button will close out the print preview. *Note: The notes do not need to be shown in order to print them out. All notes during the viewing time frame will be printed. If the chart is printed from the print preview screen, the software will display a dialog box allowing the user to select a printer. If there are no printers set up on the computer, the print preview will not be displayed and a warning message will be displayed.*

File → Exit

This menu option will exit the application.

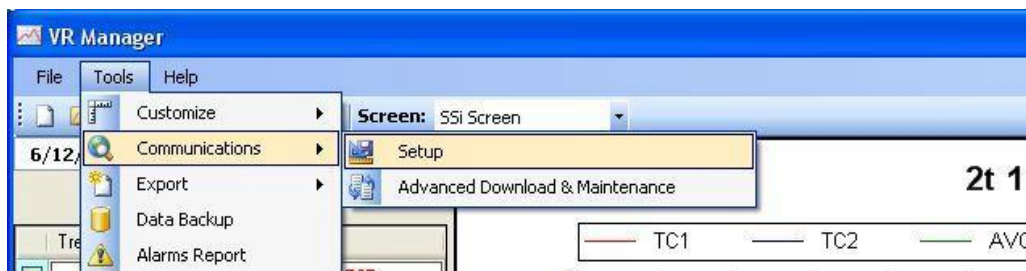
Tools → Customize → Chart Interval

The operator can customize the number of data points that are displayed on the screen. The operator can change the data to be displayed for 1 Second, 5 Seconds, 10 Seconds, 30 Seconds and 1 Minute. The Video Recorder is always logging data in 1-second intervals, but the Customize Option allows the number of data points to be increased or decreased. *Note: The shorter the chart interval, the longer the screen will take to refresh.*

Tools → Communications → Setup

The Communications Setup screen is used to Add, Edit and Delete managed video recorders. As displayed below the operator will click on the *Tools* menu option and tab through to the *Communications* option and select *Setup*.

The Setup option will display the Configuration screen (frmConfiguration) as displayed below.

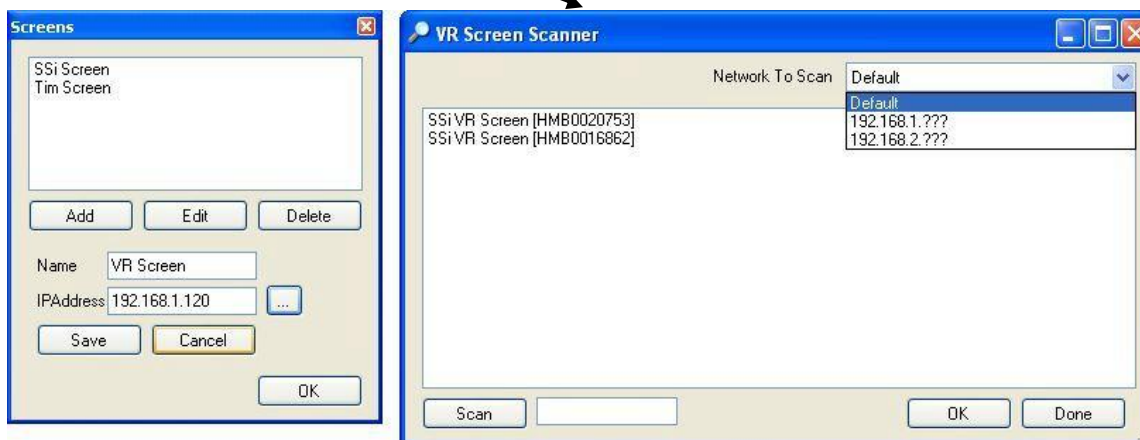


Setup → Add

Used to Add new Video Recorders to the VR Manager Menu. All added Video Recorders will be available in

the drop down list on the main VR Manager Screen once they have been added. All changes are instantaneous.

The **Add** Button displays the text box with a Name and IP Address fields set to a default value. The system will default the name to VR Screen. The system will default the IP Address to 192.168.1.120. The name is user defined and can be configured by the operator. The IP address is the IP address of the touch screen device. If the computer is connected to the touch screen either directly or through a network, the 3 period button [...] can be selected to search the network for existing devices. The VR Screen Scanner is displayed below.



Clicking on the **Scan** button will scan the network for any touch screens. The "Network To Scan" drop down list will allow the user to select the specific network to scan for the screens. This option is useful if the user is using the VR Manager software on a laptop that also has a wireless network setup, or is connected to more than one network. The screens will be displayed with the following format: SSi VR Screen [Device Name], where [Device Name] is the device name given to the touch screen, which is typically the serial number located on the back of the screen. Select the desired touch screen from the list and click on the **OK** button to select that screen and close the VR Screen Scanner form. When a touch screen is selected, the IP address will be displayed in the textbox. Clicking the **Done** button will close out the scanning screen without selecting a screen. *Note: The touch screen must be powered up and the screen program (DCR.exe) must be running in order for the screen to be seen in the scan.*

In order to download the data directly from the flash card on the touch screen, the IP Address needs to be correct. Click on the **Save** button to save any changes or add the touch screen.

Setup → Modify

This menu option allows the operator to change the Name or the IP address of an existing Video Recorder definition.

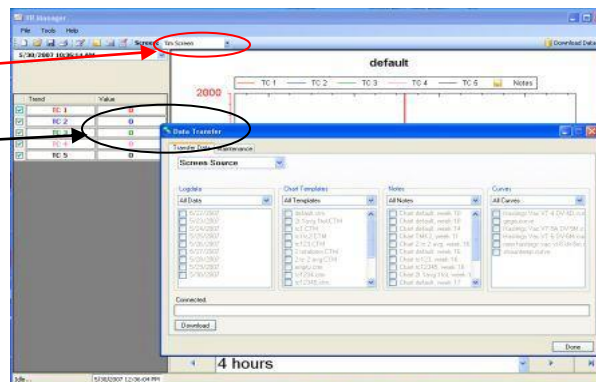
Setup → Delete

This menu option allows the operator to delete an existing Video Recorder definition. The deleted device will no longer be available as an option in the drop down list for Recorders to manage. *Note – There must be at least one device set up in the system.* When there is only one device set up in the system, the user will be unable to delete it. *Note: When a screen is deleted, all of the corresponding data is deleted as well from the local computer, unless it has been backed up using the Tools → Data Backup menu option.*

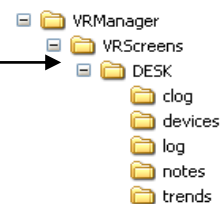
Tools → Communications → Advanced Download & Maintenance

The Transfer Data tab is used download data from the selected Video Recorder. The specified recorder is identified on the drop down list from the initial VR Manager Screen.

There are 2 ways to synchronize data. This can be done using the Screen as the source of the data (network connection) or Disk source (flash card from the screen). *Note: Users can also download data from the main VR Manager screen using the "Download Data" button on the top right corner.*



Synchronization will pull all Log Data, Chart Templates, Notes, and Curves that were entered on the screen onto the computer that is running VR Manager. The data will be stored in the VRManager directory under the screen name.




Log Data – Users can use the drop down list to select: All Data, Selected Data, or Skip. The check boxes are used to select which data gets included for the download when the Selected Data is selected.

Chart Templates – User can use the drop down list to select: All Templates, Selected Templates, or Skip. The check boxes are used to select which templates get included for the download when the Selected Templates is selected

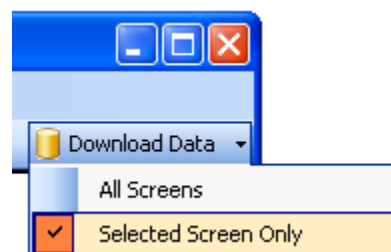
Notes – User can use the drop down list to select: All Notes, Selected Notes, or Skip. The check boxes are used to select which notes get included for the download when the Selected Notes is selected

Curves – Users can use the drop down list to select: All Curves, Selected Curves, or Skip. The check boxes are used to select which notes get included for the download when the Selected Curves is selected.

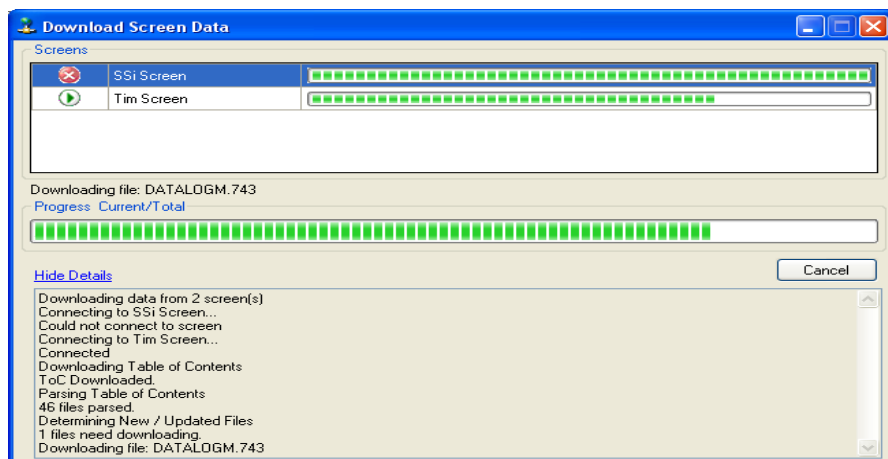
The **Download** button  is used to start the synchronization process.

Note: A file that is downloaded will overwrite any existing file.

Download Data button on VR Manager main screen.



Clicking on the down arrow will give the user the ability to download data from all of the Video Recorder screen definitions, or only the selected screen. Clicking on the button will begin the download progress.

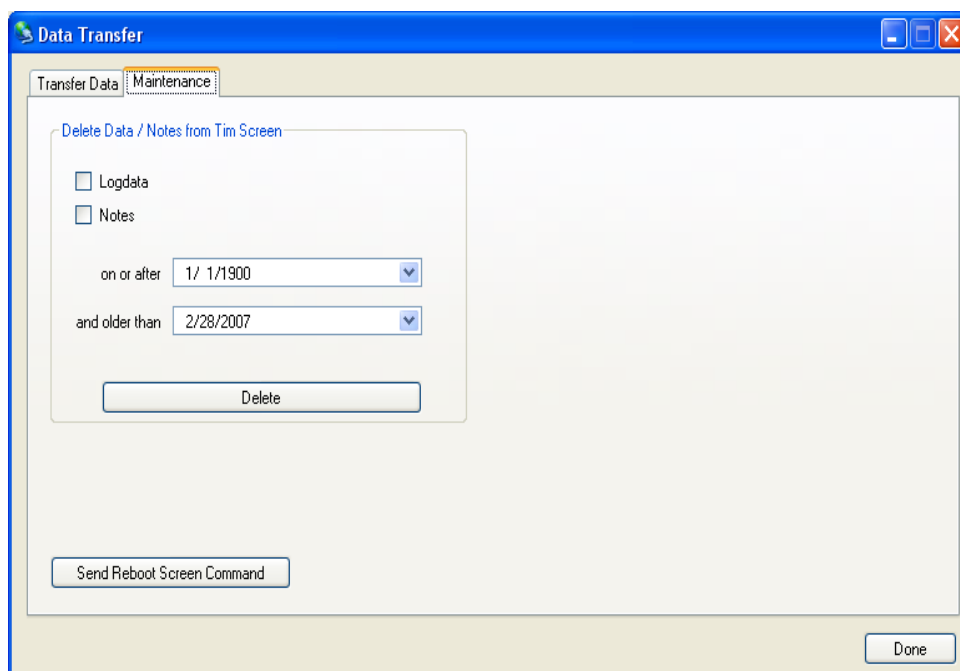


If there are multiple screens, then each screen will be displayed along with the progress of each download. Clicking on the “Show Details” link will expand the screen and show any download details. The link will then say “Hide Details”, which will shrink the screen and not provide any details. If there are any errors with downloading, then there will be an “X” next to the screen with the issue. The error will


be listed in the details section. If the download is successful, then the download screen will close when the download is finished.

Flash Card Synchronization

When synchronizing from a flash card, the flash card needs to be retrieved from the touch screen on the video recorder. **The screen should be turned off before pulling the flashcard.** When the screen is turned off, data is still being stored. Data will be stored on the data logging device and when the flash card is



returned to the screen and the screen is turned on, the data will be transferred to the flashcard for the period of time when the screen was turned off automatically. The data logging device storage depends on the number of points being logged but is capable of storing over 3 days of data on a 10 channel video recorder.

The storage location of the flash card should be selected using the period button  on the Data Transfer

screen's Transfer Data tab.

The Maintenance tab is used to delete logged data either from the video screen directly or on the flash card. Logged data and notes can be removed to create additional free space on the storage card. All data

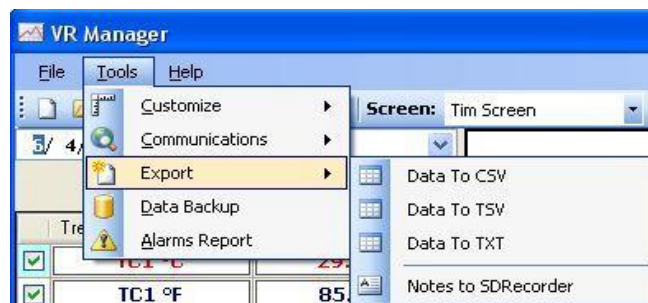
that is synchronized with VR Manager maintains a backup of the data in the ..VRManager\VRScreens\"video recorder name"\Log, Clog and notes directories.

To delete the log data, select the "Logdata" option, and to delete the notes, select the "Notes" option. One or both options may be selected at the same time. The data will be deleted by a date range, which means the user will have to select a beginning date for the date range and an ending date for the date range. The "on or after" control is the beginning date for the date range, and the "and older than" control is the ending date for the date range. Clicking on the **Delete** button will delete the selected files from the screen. The user will have to confirm the delete. The **Send Reboot Screen Command** button will force a reboot for the screen. One of the purposes of the maintenance tab is to force synchronization between the screen and the data logger, and deleting log data will force that synchronization, but the screen will need to be rebooted first.

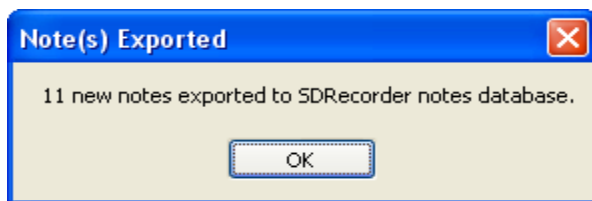
The **Done** button will close out the screen.

Tools → Export

This menu option is used to export the data in the current view to 3 different file formats. CSV (comma separated variable) TSV (tab separated variable) and TXT (text) files. The files are stored in the "trends" folder for the selected screen.

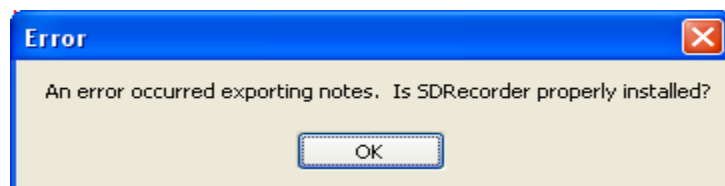


Tools → Export → Notes to SDRRecorder



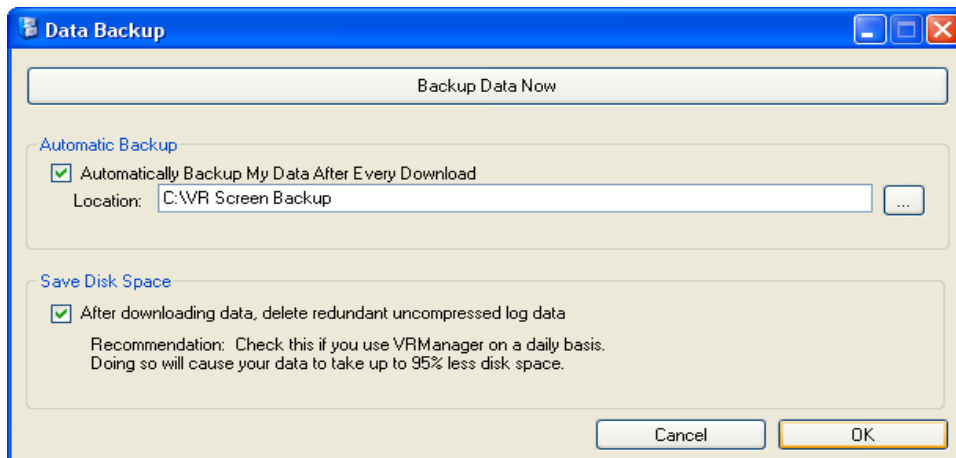
This menu option will allow the users the ability to export the notes to the SDRRecorder software, if the software is installed on the computer. If the export was successful, then the user will see a message detailing the export.

If SDRRecorder is not installed, or there was a problem with the install, no notes will be exported and the user will get an error message.




Currently, the VR Manager cannot export notes that were entered on the screen with a stylus.

Tools → Data Backup

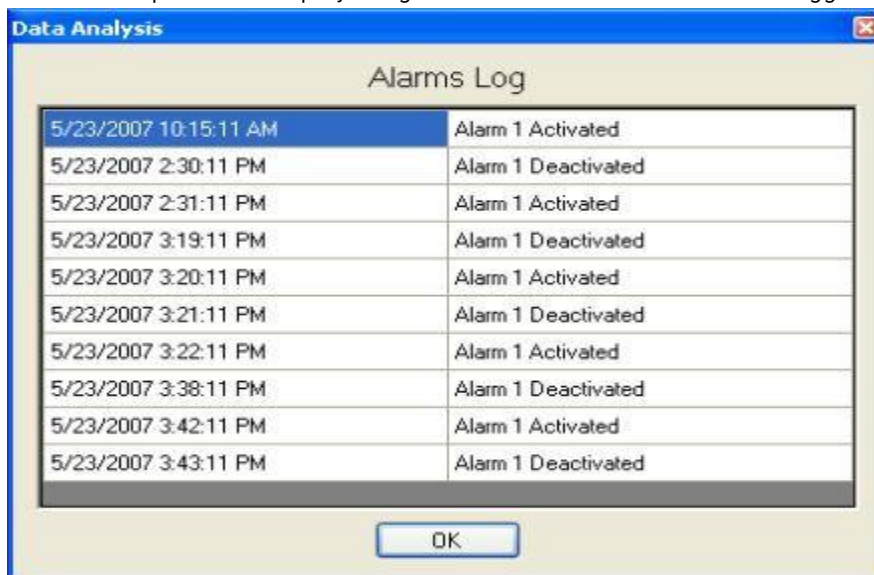


The Data Backup menu option will allow the user to backup all of the data from the local computer to another location on the local computer, or to a location on a server. The **Backup Data Now** button will allow the user to backup all of the data. Clicking on this button will bring up a folder browsing

dialog box that will let the user browse to the specific location for the backup. Checking the “Automatically Backup My Data After Every Download” box will let the user backup all of the data every time data is downloaded from the screen. The search button, , will display a folder browsing dialog box that will let the user browse to the specific location for the backup. The “After downloading data, delete redundant uncompressed log data” box will delete any log data that has been compressed on the local computer. Each day, the hourly log files on the VR screen and the data logger are compressed into a compressed log file, which is stored in a separate location from the log files. However, the uncompressed hourly log files on the computer are not deleted, since the new compressed log file will be downloaded. Each hourly log file is around 600 KB, which will take up unnecessary space if they are not deleted. Clicking on the **OK** button will close out the form and save any settings that were made on the screen. Clicking on the **Cancel** button will just close out the form. When the backup is running, the user will see a DOS-style dialog box displayed on the screen until the backup is finished.

Tools → Alarms Report

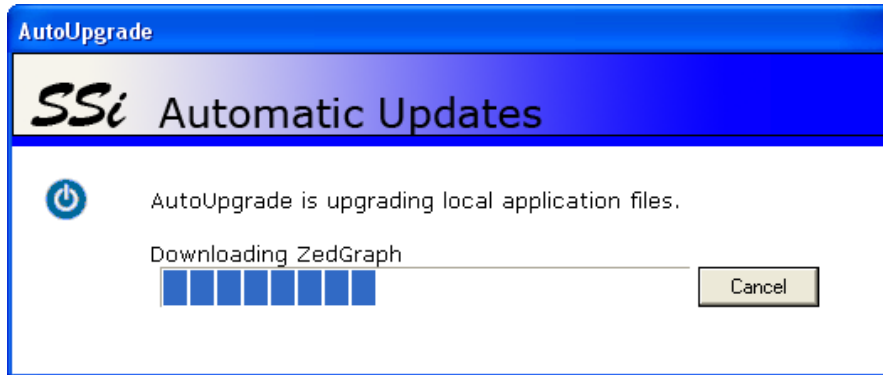
This menu option will display a log of all of the alarms on the data logger.



The alarms log will show when all alarms were activated and when they were deactivated. Clicking on the **OK** button will close out the log form.

Help → Check for Updates

This menu option requires an Internet connection to work. *Be sure to save any changes in the VR Manager before updating the VR Manager.* Clicking on this menu option will allow the user to easily



update the VR Manager software, as well as receive any updates for the VR Screen. If there are no updates available, the software will display a message box saying that there are no updates available. If there is an update available, then the software will display a message box asking the user whether to begin the

update process or not. If the user begins the process, the VR Manager screen will shut down and the auto-update will begin. *Note: Since a new executable file is being downloaded, some settings, such as the backup information (Tools → Data Backup) will be lost. These settings will need to be reapplied once the download is finished.*

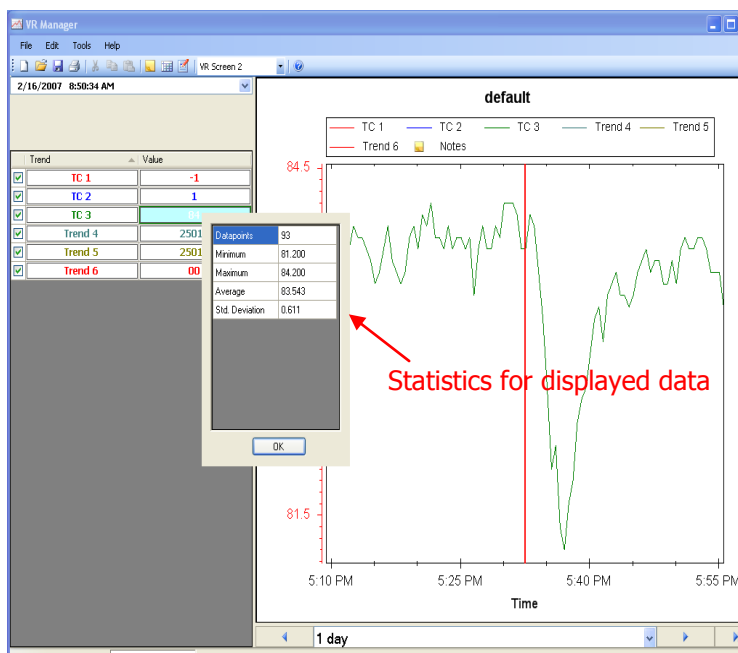
Once the update has completed, the VR Manager software will start up.

Help → About

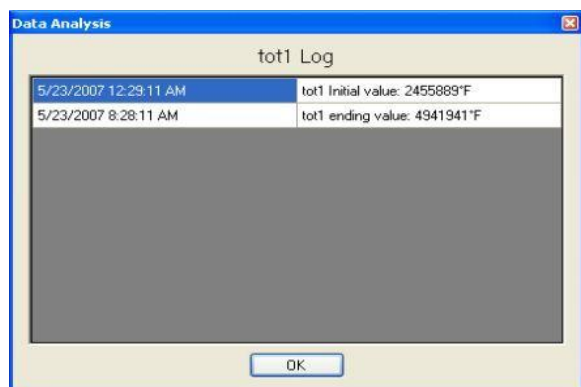
This menu option will display the current version number. This will be helpful when troubleshooting any issue with the VR Manager, or when in contact with someone from Super Systems Inc.

VR Manager – Data Point Statistics

Data points for a given display and trend are displayed in detail on the VR Manager screen. Click on a TC's "Value" cell to display the statistics. The data set that is displayed is based on the location of the red cursor. For additional information about a data point, click on the trend value to see the statistics of the data currently on the screen. The system will display the number of data points, minimum value, maximum value, average and standard deviation.



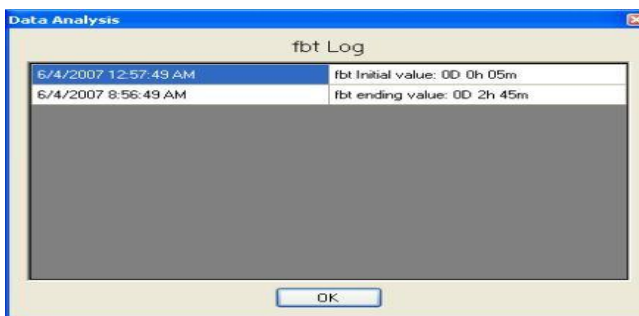
Totalizers and Function Based Timers Logs




Clicking on the "Value" cell for a totalizer or a function based timer will display a log for that item. For a totalizer, the log will display the initial and ending value for the given time range.

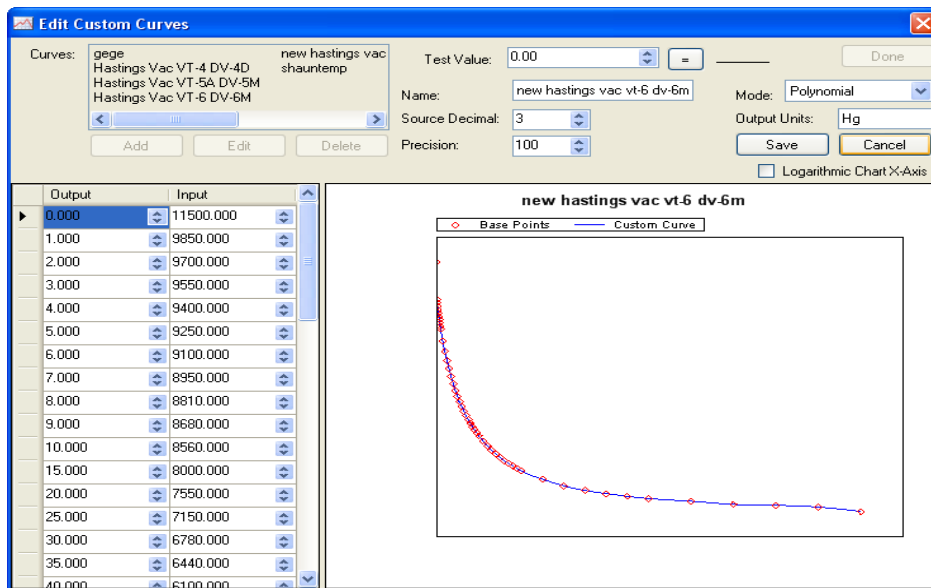
Clicking on the **OK** button will close out the log form. For a function based timer, the log will display when the timer was activated and when it was deactivated during the given time range.

Clicking on the **OK** button will close out the log form.




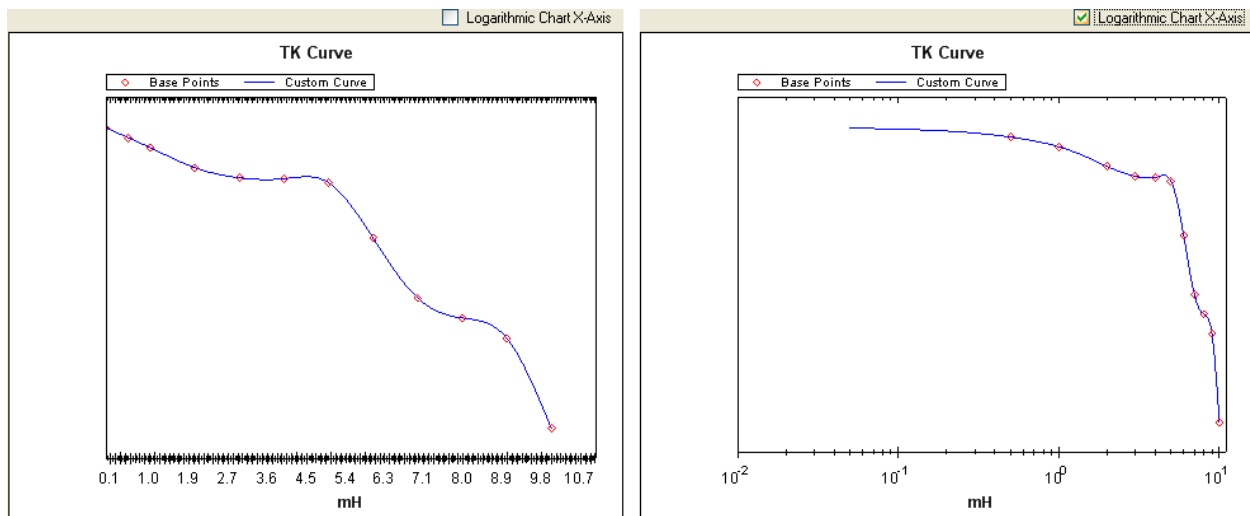
Edit Custom Curves

The **Edit Custom Curves** button on the toolbar, , will allow the user the option to edit a curve that is located on the computer.



The curves in the “Curves:” section are the curves that have been downloaded from the screen or created on the computer. To edit a curve, select the curve from the list and then click on the **Edit** button. To add a curve, click on the **Add** button. When the **Edit** or **Add** button has been clicked, the rest of the screen will become visible. The user can now begin entering information about the curve. The “Output” column

represents the X-Axis on the graph, and the “Input” column represents the Y-Axis on the graph. The output is the value that will be output if a certain input is received. For example, using the graph above, if an input value of **8000.000** is received, the corresponding output would be **15.000**. Values between the points will be curved to accommodate. For example, again using the graph above, if an input value of **8400.000** is received, then the corresponding output would be **11.35**. As points are entered in the “Output/Input” area, the graph on the right will add those points to it and the graph with the curve will begin to take shape. The “Test Value” field at the right will allow the user to test out the curve with sample input values. Clicking on the button with the equals sign, , will display the output value to the right of the button. The “Name” field will set the name of the curve. The “Source Decimal” field will set the number of decimals for the source, with a range of **0** to **4**. The “Precision” field will set the precision, with a range of **1** to **1000**. The “Mode” field will set the mode of the curve, and it can be either **Linear** or **Polynomial**. The output units will describe what kind of units the output will be in. The “Logarithmic Chart X-Axis” box will convert the graph into a logarithmic function, as seen below.





Click the **Save** button to save the changes or add the curve. Click the **Cancel** button to cancel any changes.

Clicking on the **Delete** button will delete the curve. The user will have to confirm the delete.


Clicking on the **Done** button will close the screen.

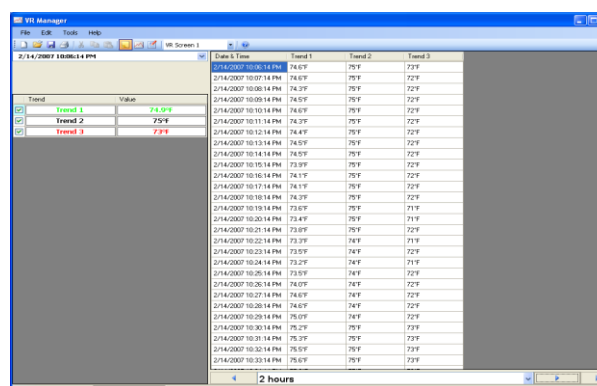


The **Show Notes** toolbar button, , will show any notes on the screen. A note is signified by the note icon, , on the graph. Clicking on the note icon on the graph will expand the note and display the note's contents.

The top date/time is the date/time the note was made for, and the bottom date/time is when the note was created.

Tabular Data

Tabular data can be reviewed by using the **Show Data Grid**  button on the toolbar. The data that is displayed on the screen will be defined by the start and stop time displayed on the screen and the data points will be selected in intervals defined by the *Customize Chart Interval* menu option under the *Tools* menu option.



Date & Time	Trend 1	Trend 2	Trend 3
5/31/2007 10:00:14 PM	74.5°F	75°F	72°F
5/31/2007 10:07:14 PM	74.6°F	75°F	72°F
5/31/2007 10:08:14 PM	74.3°F	75°F	72°F
5/31/2007 10:09:14 PM	74.5°F	75°F	72°F
5/31/2007 10:10:14 PM	74.6°F	75°F	72°F
5/31/2007 10:11:14 PM	74.3°F	75°F	72°F
5/31/2007 10:12:14 PM	74.4°F	75°F	72°F
5/31/2007 10:13:14 PM	74.5°F	75°F	72°F
5/31/2007 10:14:14 PM	74.5°F	75°F	72°F
5/31/2007 10:15:14 PM	73.9°F	75°F	72°F
5/31/2007 10:16:14 PM	74.1°F	75°F	72°F
5/31/2007 10:17:14 PM	74.1°F	75°F	72°F
5/31/2007 10:18:14 PM	74.3°F	75°F	72°F
5/31/2007 10:19:14 PM	73.6°F	75°F	71°F
5/31/2007 10:20:14 PM	73.4°F	75°F	71°F
5/31/2007 10:21:14 PM	73.8°F	75°F	72°F
5/31/2007 10:22:14 PM	73.3°F	74°F	71°F
5/31/2007 10:23:14 PM	73.5°F	74°F	72°F
5/31/2007 10:24:14 PM	73.2°F	74°F	71°F
5/31/2007 10:25:14 PM	73.5°F	74°F	72°F
5/31/2007 10:26:14 PM	74.0°F	74°F	72°F
5/31/2007 10:27:14 PM	74.6°F	74°F	72°F
5/31/2007 10:28:14 PM	74.6°F	74°F	72°F
5/31/2007 10:29:14 PM	75.0°F	74°F	72°F
5/31/2007 10:30:14 PM	75.2°F	75°F	73°F
5/31/2007 10:31:14 PM	75.3°F	75°F	73°F
5/31/2007 10:32:14 PM	75.5°F	75°F	73°F
5/31/2007 10:33:14 PM	75.6°F	75°F	73°F

To print tabular data, simply choose the print option through the *File* menu or the **Print** button on the screen.


To return to the trend view, select the **Show Chart** button  on the tool bar.

Editing a Chart in VR Manager



Name	Data	Min	Max	Width	Format	Units	Expression	Test	Total
TC1	TC 1	70	100	1	#0.0		x^1		0.0°F
TC2	TC 3	70	100	1	#0.0		x^1		0.0°F
AVG 1-5	Averag...	70	100	1	#0.0		x^0.1		0.0°F
Total 1	Totalize...	0	2000	1			x^0.1		0.0°F
lbt	Timer 1	0	120	1	OH				0.0
curve	TC 1	0	2000	1	OH		curve:shauntmp		0.0°F
*									

To edit a chart in VR Manager, use the **Edit Chart**

toolbar button . This will display the current trend chart definition screen. Trend data can be modified so that when using this chart through VR Manager the trend data will be using these definitions. Click on the **Edit Chart** button again to return to the Trend Chart view.

- Name – User defined field for trend / input.
- Data – The input number used from the data logging device.

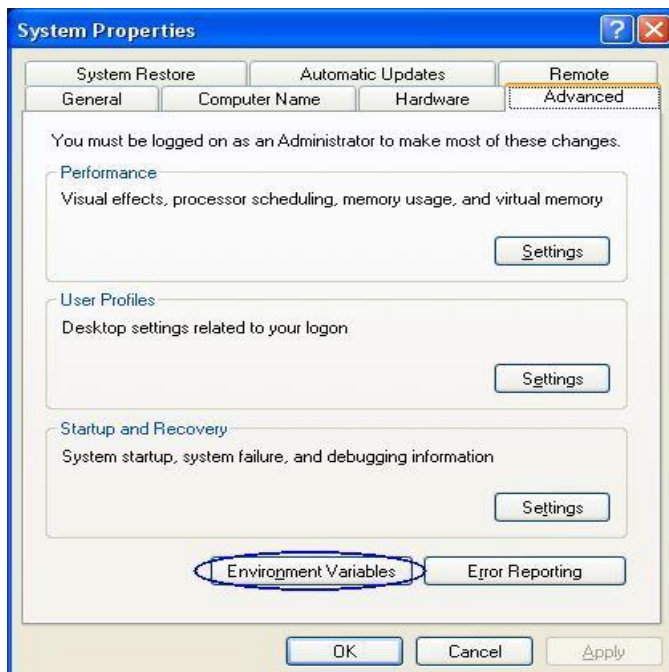
- Min – Minimum number to display on the trend chart scale for that data.
- Max – Maximum number to display on the trend chart scale for that data.
- Format – Number of decimal points to display.
- Units – Unit definition for the value (scfh, °C, etc).
- Expression – This is the function that is performed on the actual input data. For temperature, the data should be multiplied by .1 to apply the decimal point value.
- Test – To test an expression that is being used, enter in a value into the TEST field to see what the calculation on the data will produce.
- “=” – By clicking on this, the value entered into the Test field will be used in the Expression field. The results will be displayed in the Total field.
- Total – Results of the tested value in the expression.

To Save the changes made to the trend chart, use the *File* → *Save* or *Save As* options. If using the *Save* option, remember that when data is synchronized with the data from the Video Recorder, this trend chart definition may be overridden.

VR Manager Batch Mode (Version 1.0.1.11 & up)

Starting with VR Manager version 1.0.1.11 and up, there is an optional batch mode that will automatically download new data and export any new notes to SD Recorder without the need to start up the VR Manager software.

Adding The VR Manager Location to the System Path



The first step in setting up the batch mode for the VR Manager is to add the VR Manager's installation path to the system's Path variable. This will simplify the execution of the application. From the Start Menu, click on the "Control Panel" option. Once the Control Panel is opened, double-click on the "System" icon to open the System Properties screen. There will be a few tabs across the top of the screen. Click on the "Advanced" tab to select it. From the "Advanced" tab, click on the **Environment Variables** button.

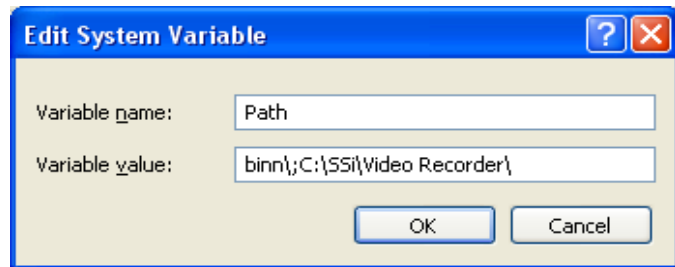
On the "Environment Variables" screen, there will be a list of environment variables in the section labeled "System variables". Scroll down this list until the "Path" variable is visible. Select the "Path" variable and click on the **Edit** button within the "System variables" section. This will allow a user to modify the system's path variable. Click in the "Variable

value:" field and use the right arrow button to scroll to the end of the variable. Add the following text to the end of the variable:

; <VR Install Location>

Where <VR Install Location> is the location of the VR Manager software on the computer.

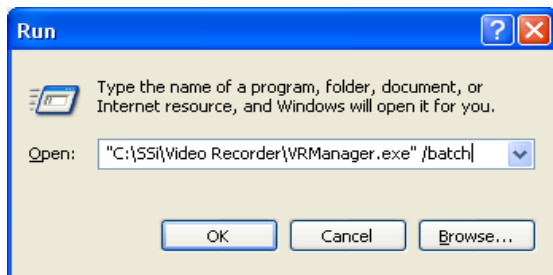
For example, if the software was located at the following path: C:\SSi\Video Recorder\, then the text entered at the end of the variable would be: ;C:\SSi\Video Recorder\. It is important to include the semicolon (;) at the beginning, since the semicolon indicates separate variables to the computer. It is also important to keep the backslash at the end of the text (\), since the backslash will allow the computer to add the proper location to the path variable. *Note: To avoid any future errors with other programs, make sure that none of the text in the "Variable value" field is highlighted when editing this value. Any highlighted text will be erased when the user begins to type in the new path text.* Click on the **OK** button to close out the "Edit System Variable" screen. Click on the **OK** button to close out the "Environment Variables" screen. Click on the **OK** button to close out the "System Properties" screen.




Adding the VR Manager's installation location to the system path is not necessary to run the VR Manager software in batch mode and should only be completed if the administrator wishes to simplify the execution of the application for the users.

Running the VR Manager Software in batch mode

The batch mode operation can be started by using the "Run" screen for Windows. From the Start Menu, click on the "Run" menu option to open the "Run"

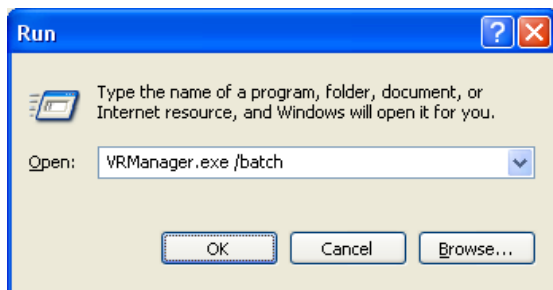


screen, or press the Windows key () + R. If the VR Manager's installation path was not added to the system's path variable, the user will have to enter the whole path to execute the batch mode. For example, to run the batch mode type in:

"C:\SSi\Video Recorder\VRManager.exe" /batch

in the field on the "Run" screen and press the **OK** button or press the **Enter** button. *Note: The quotes are necessary if there is a space in the path for the VR Manager software. So:*

"C:\SSi\Video Recorder\VRManager.exe" /batch will require quotes around the VR Manager path and filename (VRManager.exe) because of the space in the "Video Recorder" folder name. However



C:\SSi\VR\VRManager.exe /batch will not require quotes, since there are no spaces in the path and filename.

If the VR Manager's path was included in the system's path variable (see *Adding the VR Manager Location to the System Path* section above), then all that would need to be entered would be the file name and parameters:

VRManager.exe /batch

Running the VR Manager in batch mode will not actually open the VR Manager software; rather, it will download any new datalog files from all of the screens set up and export any new notes to the SD Recorder database if desired. While the VR Manager is running in batch mode, the cursor will change to an hourglass. When the VR Manager has finished, the cursor will change back to an arrow.

Error logging

The VR Manager will maintain an error log of the batch mode process in the installation location called "batch.log". This file will contain a step-by-step list of the batch mode, and it can be helpful when contacting Super Systems Inc with any issues. The log will only contain the most recent batch run.

List of Batch Mode Parameters

Currently there are only two parameters that can be used with the batch mode.

- /batch – This will initiate the datalog file download. This parameter must be located directly after the "VRManager.exe".
- /exportnotes – This will export any new notes into the SD Recorder notes database. If this parameter is included, it must be placed after the /batch parameter:

VRManager.exe /batch /exportnotes

The /exportnotes parameter cannot be used by itself, i.e., VRManager.exe /exportnotes.

Satellite Boxes

The satellite boxes represent expandable input slots for the Video Recorders which can be mounted remotely and connected back to the main Video Recorder unit using the RS485 ports. These satellite boxes will give customers the ability to add inputs to the Video Recorder.



The SR3 (pictured) contains three additional inputs for the Video Recorder.

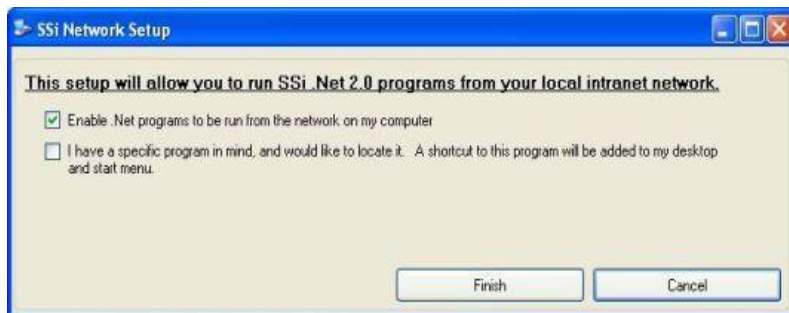
To connect the satellite box back to the main Video Recorder unit, the "Remote RS485" on the satellite box must be wired into the "RS485 Remote" on the main unit. 24VDC need to be provided to the satellite box either by using a jumper from the main VR unit or from a separate source.

Running Applications Over A Network

Super Systems Inc has developed an application called “SSi Network Setup” that will allow users to run SSI programs that require the Microsoft .Net Framework version 2.0 directly from a local intranet network.

In order to run the SSiNetworkSetup.exe file, the Microsoft .Net framework 2.0 will need to be installed on the local computer. Contact Super Systems Inc at 800-666-4330 if you are not sure if the .Net framework 2.0 is installed on your computer. The .Net framework 2.0 installation file should be included with the installation CD for the VR Manager application. If the installation file was not included, it can be downloaded directly from Microsoft’s website free of charge. Go to:

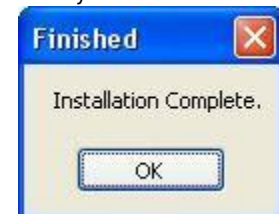
<http://www.microsoft.com/downloads/Browse.aspx?displaylang=en&categoryid=10>, and look for the download link for “.NET Framework Version 2.0 Redistributable Package (x86)”. *Note: The VR Manager application also requires the .Net framework 2.0 to run. If the VR Manager application can be run on the computer, then the .Net framework 2.0 has already been installed.* Also, the user logged on to the local computer should have administrative rights when running the SSI Network Setup application or certain access errors may result.



To enable Microsoft .NET programs, such as the VR Manager, to be run on a local computer directly from a network location, make sure the first checkbox “Enable .Net programs to be run from the network on my computer” is checked and click on the **Finish** button. Clicking on the **Cancel** button will not allow .Net programs to be run locally from a network

resource. When the setup has been completed, a message box will be displayed.

Once this setup has been completed, the operator can navigate to the network location and be able to run the desired SSI .Net 2.0 application directly from the network.



The second checkbox “I have a specific program in mind, and would like to locate it. A shortcut to this program will be added to my desktop and start menu.”, will allow the operator to add a shortcut to an application in a network location directly onto the local computer’s desktop and start menu.



Clicking on the **Browse** button will open up a Windows-style file browsing dialog, which will allow the user to locate the specific application file. Once an application has been selected, the SSI Network Setup application will create a shortcut to the network location on the local computer’s desktop, as well as create a shortcut to the program in the SSI

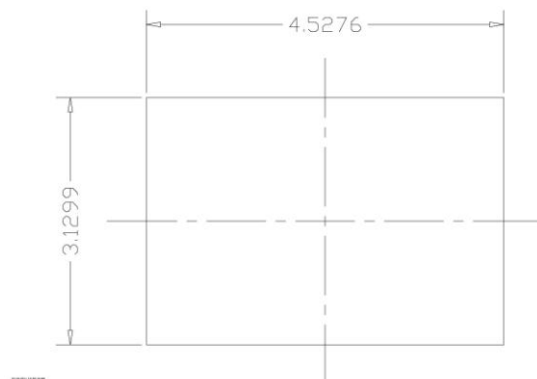
folder in the Start Menu’s programs list.

Purpose

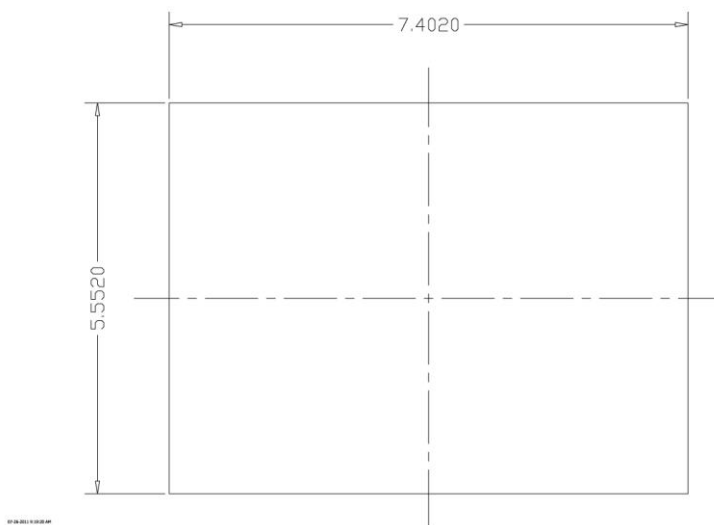
The purpose of the SSi Network Setup application is to allow .Net framework version 2.0 applications, such as Configurator or VR Manager to run across a network as opposed to locally on a PC. The advantage to this setup would be the centralization of the application. For example, suppose that the VR Manager is installed on a network server, and all data logging will be stored on the server. With the SSi Network Setup application, any number of workstations will be able to run the VR Manager application and view the data without having to download the data to each specific workstation. Also, any update for the application will automatically apply to any workstation.

Without the SSi Network Setup application, each workstation would need to install and download logged data separately to use the VR Manager software.

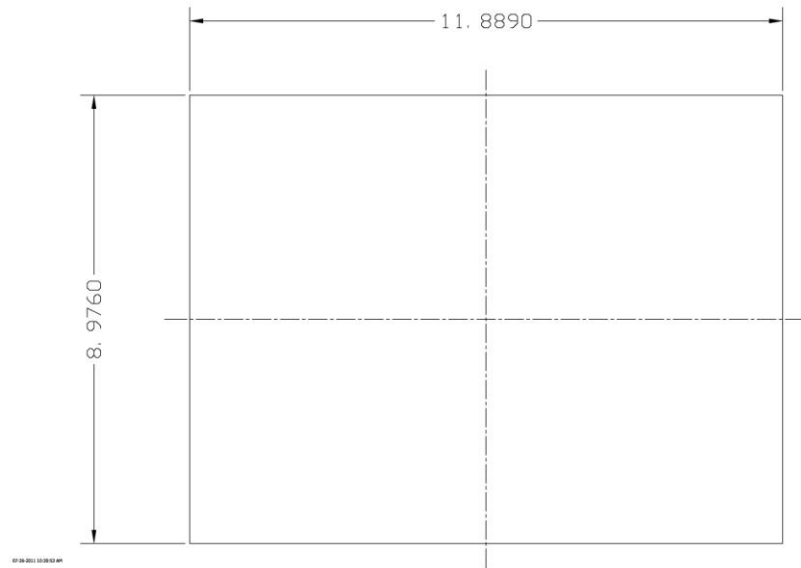
Cutout Dimensions for Touch Screens



3.5" Operator Interface Cutout dimensions



5.7" Operator Interface Cutout dimensions



12" Operator Interface Cutout dimensions

Parts List

Part No.	Description
13448	5.7" Color Touch Screen
13450	VR12 Video Recorder – 12 Channel w/ 3.5" HMI
13455	12.1" Color Touch Screen
13470	VR6 Video Recorder 6 Channel w/5.7" HMI
13471	VR12 Video Recorder 12 Channel w/5.7"
13472	VR6 Video Recorder 6 Channel w/12.1"
13473	SR3 Satellite Remote input 3 Channel
13475	SR3 Satellite Remote input 3 Channel
13476	SR6 Satellite Remote input 6 Channel
13477	SR9 9 Channel Satellite/Remote Input
13478	SR12 12-channel remote input
13479	SR15 15-channel remote input
13498	3.5" Color Touch Screen
13506	VR6 6 Channel Video Recorder w/3.5" Color Touch screen
13507	VR3 3 Channel Video Recorder w/3.5" Color Touch Screen
13508	VR3 3 Channel Video recorder w/5.7" Color Touch Screen
13509	VR3 3 Channel Video Recorder w/12" Touch Screen
13552	VR9 9 Channel Video Recorder w/3.5" Color Touch Screen
13553	VR9 9 Channel Video Recorder w/5.7" Color Touch Screen
13554	VR9 9 Channel Video Recorder w/12.1" Color Touch Screen
13613	VR15 15 Channel Video Recorder w/12.1" Color Touch Screen
20661	VR3 Brick 3 Channel Brick, No Screen or Power Supply
20662	VR3 Brick 3 Channel Brick, No Screen or Power Supply
20663	VR9 Brick 9 Channel Brick, No Screen or Power Supply

Revision History

Rev.	Description	Date	MCO #
-	Initial Release	01-28-08	N/A
A	Changed Power Supply specifications in "Product Specifications"; Added "Environmental Specifications" section; Changed the "Wiring Diagram – Network Connection" diagram; Changed the "Wiring Diagram – Direct Connection" diagram; Added the "Physical Installation" section; Changed "Revision History" layout; Added note about jumper to input span calibration sections	04-15-08	2062
B	Added configuration screens Video Recorder IP, Alarm Text, Notes Search, Date Time Settings, User Fields, Passcodes, and Menu Configuration. Updated Parts list. Updated main touch screen interface section.	2/1/2012	2094