

# **SpecView 2**

## ***User Guide***

**Version 2.11 for build 7xx**

**SpecView Ltd**

**September 3, 2002**

## DISCLAIMER

***SpecView software communicates with industrial instrumentation and displays and stores the information it receives. It is always possible that the data being displayed, stored or adjusted is not as expected. ERRORS IN THE DATABASE OR ELSEWHERE MEAN THAT YOU COULD BE READING OR ADJUSTING SOMETHING OTHER THAN THAT WHICH YOU EXPECT!***

***Safety devices must ALWAYS be used so that safe operation of equipment is assured even if incorrect data is read by or sent from SpecView.***

***SpecView itself MUST NOT BE USED IN ANY WAY AS A SAFETY DEVICE!***

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# Installation

## Instrument Installation and Wiring

**NOTE: If you cannot establish communications between SpecView and your instruments first contact the instrument manufacturer for assistance. Many have test programs that will check your converter and connections.**

Most computers have built in RS232 ports and an external converter to either RS422 or RS485 must be used. SpecView recommends (and can supply) converters made by B&B Electronics Tel: (815) 433-5100 Fax: (815) 434-7094 Internet: <http://www.bb-elec.com>

**NOTE: We strongly caution against using internal 422/485 cards**

Unless you are expert in testing and troubleshooting communications we recommend using internal RS232 ports and external isolated converters. Since all computers have 232 ports a second computer can be used to determine whether a problem is in the computer or wiring if an external converter has been used.

- Each serial port MUST operate with its own interrupt unless special interrupt sharing cards and software are used.
- Serial ports using 16550 UARTS or above are strongly recommended, especially if BAUD rates above 9600 are going to be used. They are required for instruments that use block mode data reading.

The number of controllers that can be connected to SpecView is only limited by the available addresses on the controllers. Most instruments go to 99 addresses and SpecView supports up to 40 ports (see page 124).

*Instrument Settings (see page 5)*

*RS422 (EIA422-A) Instruments (see page 5)*

*RS485 (EIA485) Instruments (see page 6)*

*Connections for SpecView Networking (see page 6)*

## Instrument Settings

SpecView has help available for several makes of instruments:

On the *Ports and Protocols* (see page 39) box when a protocol is chosen for a port a **Help** button appears for that port. Clicking it will open a separate help file specifically for that protocol. Refer to it for details on setting your instruments.

You can also get this help by double-clicking on the instrument name in the Variables List accessed by

clicking the tool 

## RS422/EIA422

This is a four wire connection and all four wires MUST be used.

Follow the instrument manufacturers instructions carefully, paying attention to shielding in electrically noisy environments.

The converter will have two Transmit (sometimes called Send) and two Receive connections

These are marked either "+" & "-" or "A" & "B" (or both)

- In general, the Transmit connections on the converter go to the Receive connections on the instrument.
- In general, the Receive connections on the converter go to the Transmit connections on the instrument.
- In general, the "+" or "B" connections on the converter go to the "+" or "B" connections on the instrument.

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(NOTE: Most instruments made by Eurotherm Controls DO NOT follow this convention. In most cases connect Converter T+ (or B) to Instrument R-, Converter T- (or A) to Instrument R+ and so on.)

### RS485/EIA485

This is normally a two wire connection but some instruments use four wires.

Follow the instrument manufacturers instructions carefully, paying attention to shielding in electrically noisy environments.

**Two wire converters** will have connections marked "A" or "-" and "B" or "+". These go to the corresponding connections on the instrument.

If the instrument has four connections you should **use a converter with four connections**.

If you are told by your instrument manufacturer that you can use a two wire converter, **on the controller** jumper the Transmit + (or B) to the Receive + (or B) and the Transmit - (or A) to the Receive - (or A). This leaves you with one "+" (or B) connection and one "-" (or A) connection to make to the converter.

**Four wire converters** will have two Transmit (sometimes "send") and two Receive connections.

If your instrument has four connections see the *RS422/EIA422* (see page 5) help

These marked either "+" & "-" or "A" & "B" (or both)

If your **instrument** has two connections, **on the converter** jumper the Transmit + (or B) to the Receive + (or B) and the Transmit - (or A) to the Receive - (or A). This leaves you with one "+" (or B) connection and one "-" (or A) connection.

### Connections for SpecView Networking

For SpecView Networking the connection can be made in 3 possible ways:

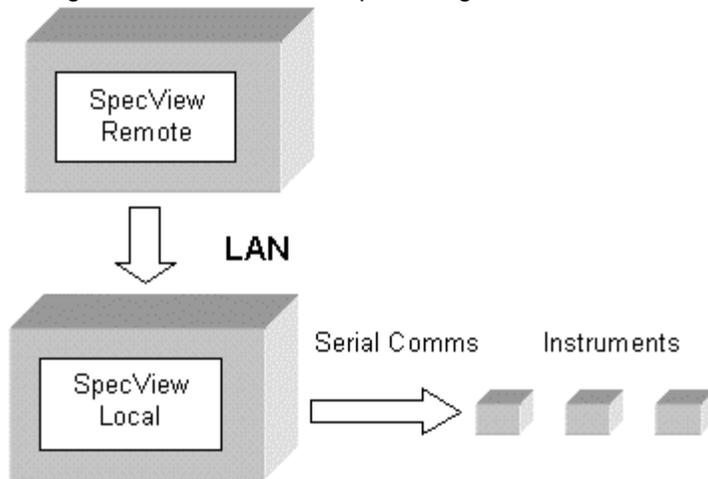
Via TCP/IP over a LAN (Local Area Network).

By using Modem dial-up between computers.

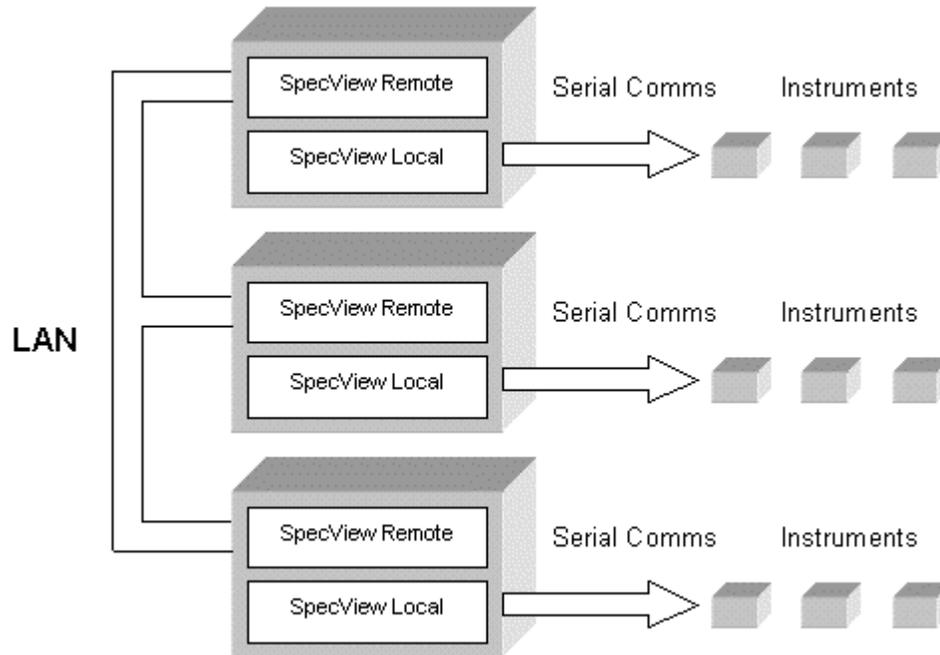
By making the Local computer available to the Internet so that the Remote computer(s) can access it.

However, this has security implications so is not recommended.

The diagrams below show example configurations:



It is possible for a PC to run one SpecView Local and several copies of SpecView Remote simultaneously:



*Setting up SpecView Networking (see page 31)*

## Installing SpecView

If there are any doubts about the suitability of the computer for installation of SpecView, or if you are using Windows XP, please check the *minimum requirements for installing SpecView* (see page 192).

To install SpecView choose one of the following methods:

### CD

If you have SpecView on a CD then load the CD into the drive. It should then automatically run Setup from the CD.

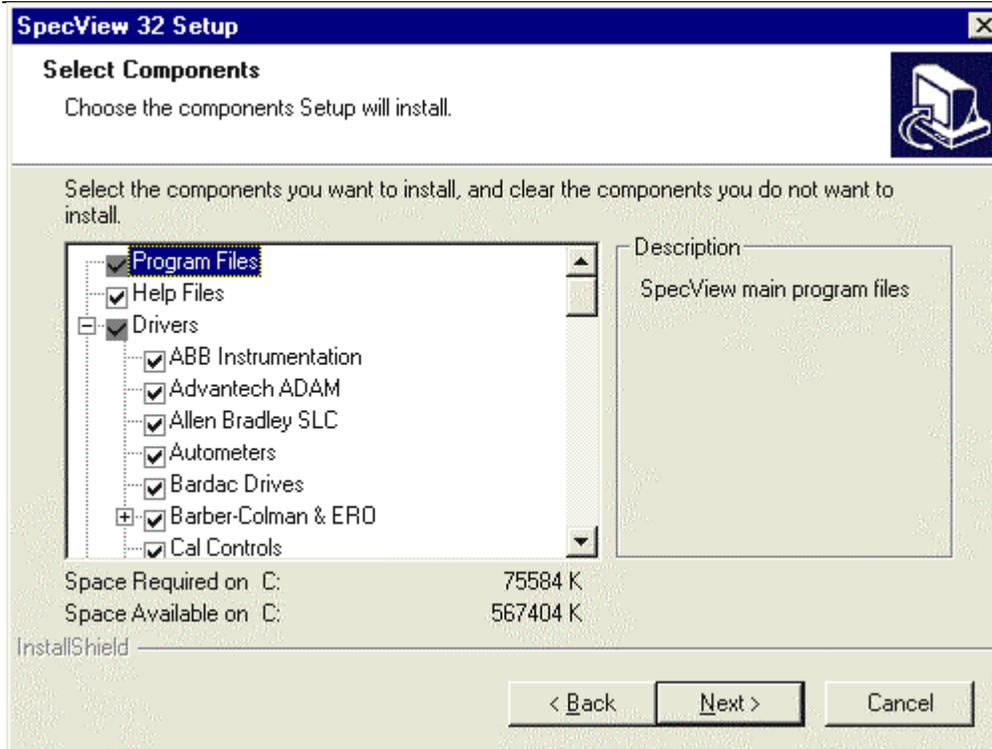


If the CD does not auto-run then double-click the My Computer icon on your screen, open the Compact Disc



and double-click the Setup.exe icon.

***NOTE: It is strongly recommended to install into the default location C:\SV32***



## Demo Configurations

We have a number of fully functional example configurations pre-prepared for many of the instruments that we support. These configurations can be easily installed, and may be modified to meet your exact requirements.

When installing from a CD, by default all the Demo Configurations are installed. Run SpecView then at the first screen (Configurations Found), select the one you require. Each Configuration is stored in its own sub-folder within the installation folder (which is by default C:\SV32). They can be copied using Windows Explorer, therefore it is easy to make a backup of a configuration simply by making a copy of it, or by using SpecView's *Archive/Restore* (see page 39) facility. These configurations can, if required, be modified from *Configuration Mode* (see page 197).

The Demo Configurations are not included in the downloaded product, so they must be downloaded separately from the website by selecting the most appropriate of these for your instrument(s). The file(s) you download is a .SVA file, which is a SpecView Archive, see *Archive/Restore* (see page 39). To use one of these files, install and run SpecView, then at the Configurations Found screen, press the [Restore] button. Find the .SVA file you have downloaded and restore the configuration into SpecView. Once restored, these configurations can, if required, be modified from *Configuration Mode* (see page 197). However modifications will only affect the restored Configuration folder, not the downloaded .SVA file, therefore the .SVA file can be considered as a backup which can be restored again if necessary.

## Diskettes



If you have SpecView on diskettes, insert Disk 1 into drive A: double-click the My Computer icon on your



screen, open the 3½-Inch Floppy Disk and double-click the Setup.exe icon.

**NOTE: It is strongly recommended to install into the default location C:\SV32**

## Download

Downloading SpecView from <http://www.specview.com> can be done either by downloading the single file or the multiple file version.

All files on the website have been zipped, therefore you will need to unzip them using, for example, WinZip (which can be obtained from <http://www.winzip.com>) or another utility such as pkunzip.

Download the multiple file version if the computer(s) you intend to install it on is not the same as the computer which is connected to the internet, and the only way to transfer files between the computers is by using floppy disks.

The multiple file version can be also used if there is a likelihood that the internet connection could be lost during the download. If this is the case unzip all files into a single temporary folder on your hard disk and run SETUP.EXE,

### Single file download:

Download the single file, unzip (using for example, WinZip) it into a temporary folder and then run SETUP. (Newer versions of WinZip may run SETUP.EXE automatically for you).

For example, for SpecView version 697 the file is:  
sv697\_all.zip (12Mb)

### Multiple file download - for floppy disks:

Download all the individual files into a temporary folder on your hard disk. For example, for SpecView version 697 the files are:

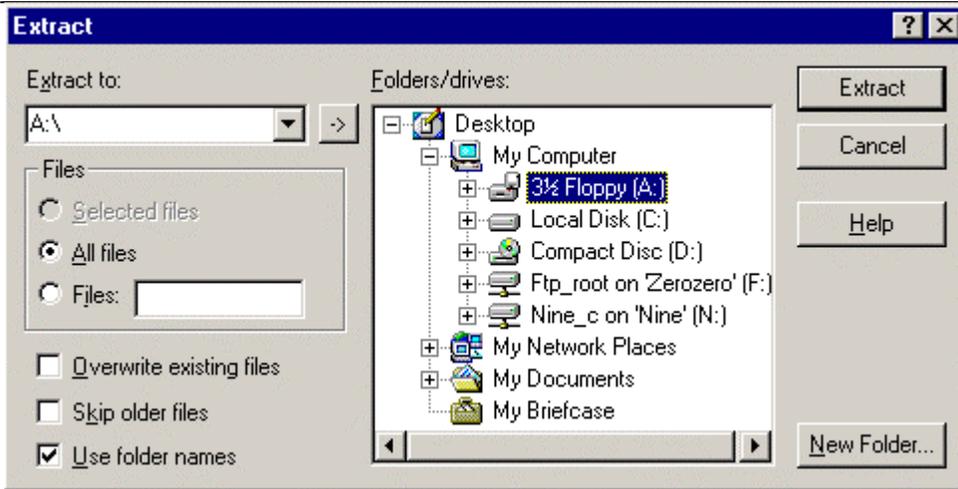
sv697\_1.zip  
sv697\_2.zip  
sv697\_3.zip  
sv697\_4.zip  
sv697\_5.zip  
sv697\_6.zip  
sv697\_7.zip  
sv697\_8.zip  
sv697\_9.zip

Once they have been downloaded, extract each of them **DIRECTLY** onto individual separate (totally empty) floppy disks.

***NOTE: Do not COPY the ZIP files onto the floppies as they will not fit, they MUST be EXTRACTED to the floppies.***

The example below is for WinZip, which is not included with SpecView, but it can be obtained from <http://www.winzip.com>

To extract them use Windows Explorer to list the downloaded files, and for each of them in turn, right-click and select the Extract to... menu command which will run WinZip.



Select the Floppy (A:) and click **Extract**.

The numbered ZIP files contain numbered CAB files and these numbers will not necessarily match, i.e. the file: SV697\_6.ZIP may contain: Data7.cab

***NOTE: Several of the floppy disk ZIP files contain files that will exactly fill a blank floppy.***

If there is not enough space on the floppy to copy the files over, then re-format the floppy (ensuring that it is not formatted as a system floppy) before re-extracting the files. All the files (when unzipped) will fit onto a floppy disk.

Newer versions of WinZip can be configured to run SETUP.EXE automatically, so when you unzip the first file, WinZip tries to run SETUP before the other files are unzipped. If this happens, unzip the files in reverse order, or download the single file.

Once all the floppy disks have been created, put floppy #1 into the drive of the computer which you intend to install it on and run SETUP.EXE.

An alternative method is to Unzip all the files into a single temporary folder on your hard disk and then run SETUP.EXE.

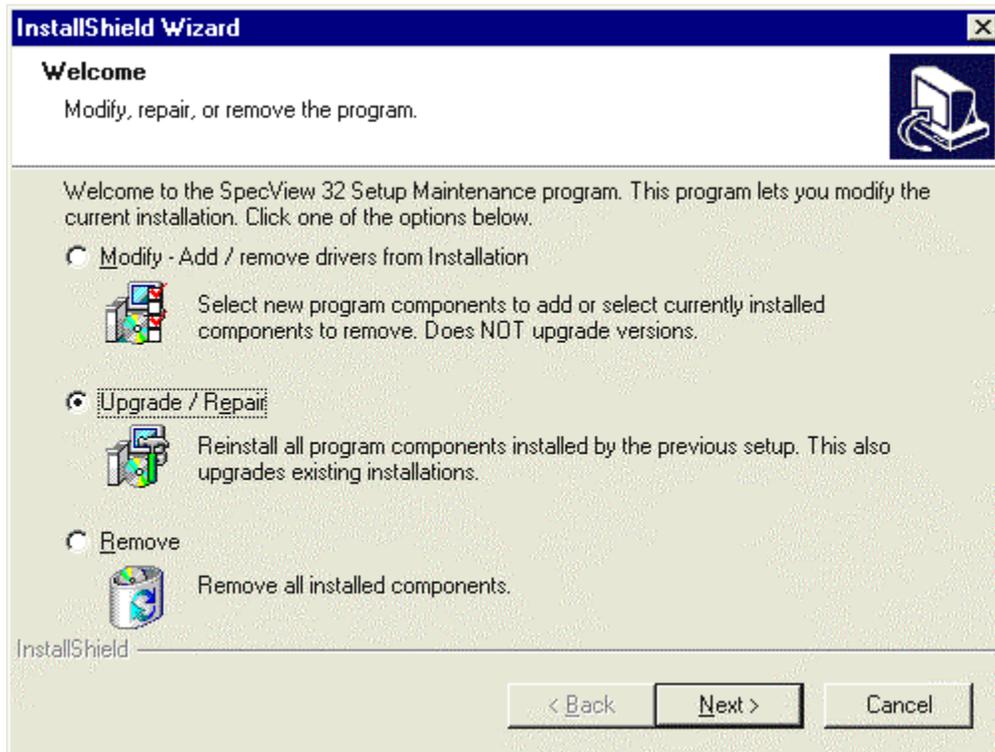
If you have difficulty during installation please contact your SpecView supplier.

*Quick Start (see page 13)*

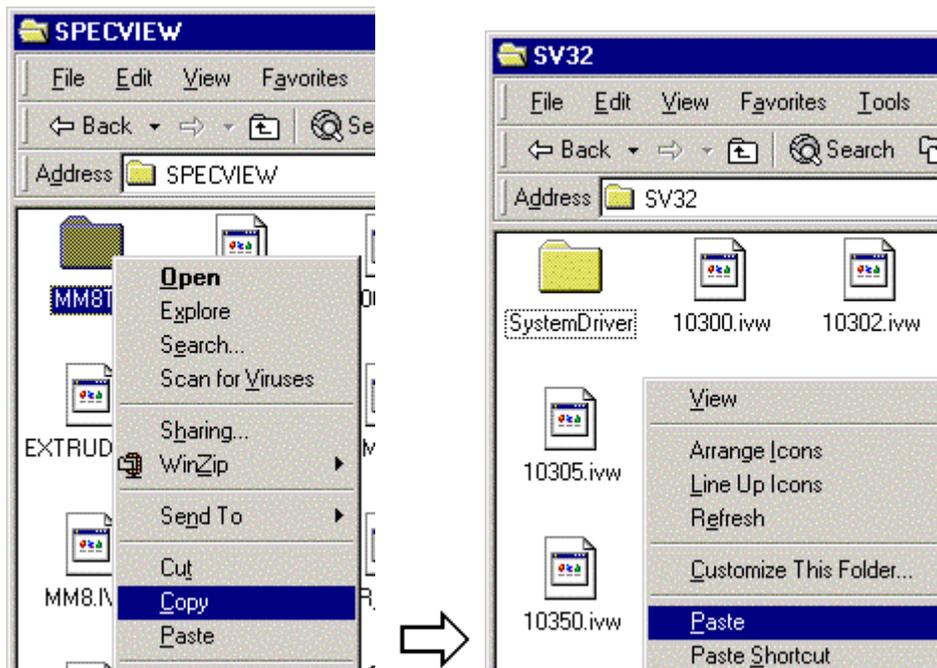
*Starting SpecView (see page 39)*

## Upgrading SpecView from a previous version

Upgrading SpecView from an earlier version of SpecView 32 to a more recent version is just a matter of checking the Upgrade/Repair check box in the InstallShield Wizard.



However, upgrading to SpecView 32 from the 16-bit version (SpecView Plus) is complicated by the fact that the installation folder changed from C:\SPECVIEW in the 16-bit version to C:\SV32 in the 32-bit version. Upgrading from the 16-bit version is still possible without the need to re-create existing configurations by just copying the configuration's folder over to the new installation. Below is an example of copying a configuration folder using Copy and Paste:





# Quick Start Guide

## Quick Start - Introduction

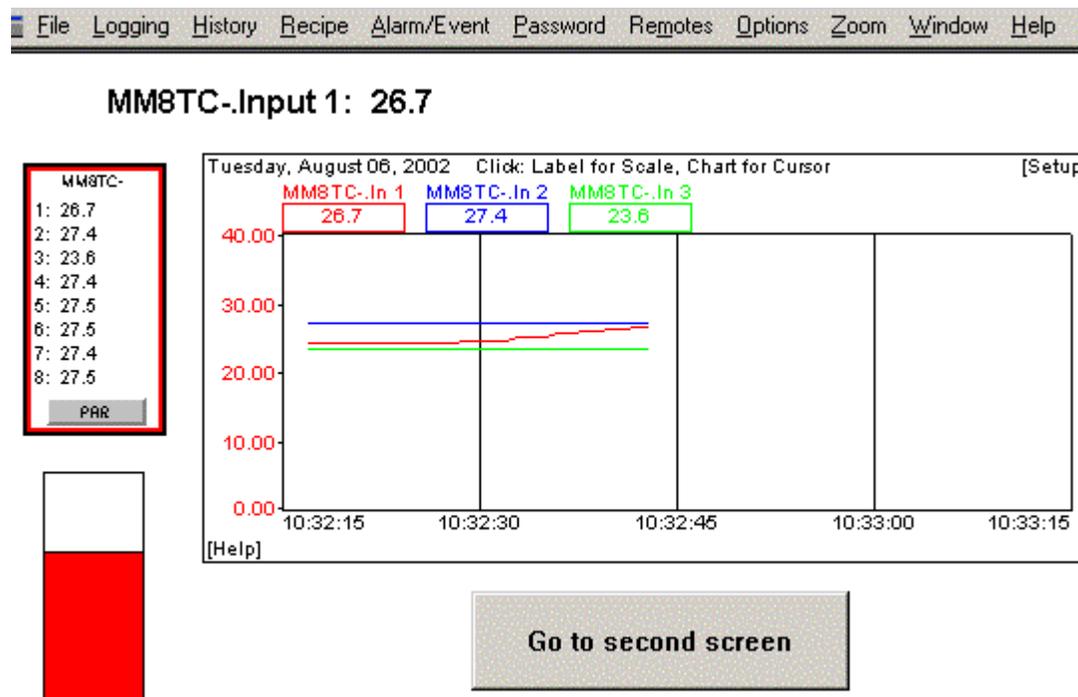
**NOTE: Press the F1 key at any time for help**

This quick start guide covers the installation and initial configuration of SpecView.

When the computer is connected to an instrument via a serial port or Ethernet, SpecView gets data from and can send data to the instrument. Unlike conventional SCADA software, where each data point has to be defined by the user, SpecView has a pre-built database of hundreds of instruments. Most instruments, if already connected to the computer, can be automatically detected by SpecView. If the instrument is not connected to the computer or if that instrument does not support the auto-detection feature, the user picks it from a list. In SpecView this is called "Manually Defining Instruments".

**Once all the steps below have been followed, your screen should look similar to this:**

(The "Instrument View" (the MM8TC-1 object in the top left) will depend on the specific instrument being used)



The steps are as follows:

1. Installing SpecView
2. Starting SpecView

**If you have no instrument currently connected to your computer then follow:**

3. Manual Configuration (see page 14)

**or, if you do have an Instrument(s) connected, then follow:**

3. Automatically detecting instruments and displaying Instrument Views (see page 18)

**then continuing:**

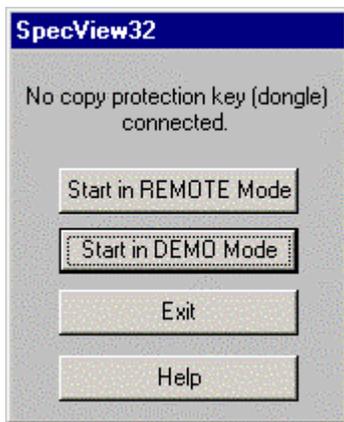
- 4. Add a variable to the GDW (Graphical Display Window)
  - 5. Draw a Trend Chart
  - 6. Define a second GDW
  - 7. Adding buttons to switch between GDW's
  - 8. Adding a Bar chart to a GDW
  - 9. Seeing how it works in Runtime Mode
- Click the link below to go to the next step:

**NOTE: SpecView's name for each screen is a GDW (Graphical Display Window). Each GDW is saved as a file on disk, much like a Word document.**

**Quick Start - Starting SpecView**

Once SpecView is installed, double-click the **SpecView** icon, or click **Start** and select SpecView 32 from the Programs menu.

If SpecView is started **without** a dongle connected then initially the following dialog box is displayed first. Click the **Start in DEMO Mode** button.



This will display the Configurations Found dialog box:



If a dongle **is** connected, the Configurations Found dialog box will be displayed directly.

If you have an instrument connected then go to *Automatically detect instruments* (see page 18) below.

Alternatively, if you have no instrument connected you can still configure SpecView by clicking the **New Manual Configuration** button and then going to *Manual Configuration* (see page 14)

**Quick Start - Manual Configuration**

If you have no instrument connected clicking on **New Manual Configuration** will display the Input Required dialog box



Enter a name for the configuration. SpecView will create a subfolder with this name in the SpecView folder (which is normally C:\SV32), the name you enter should follow the *Windows file naming rules* (see page 200) and should not be too long.

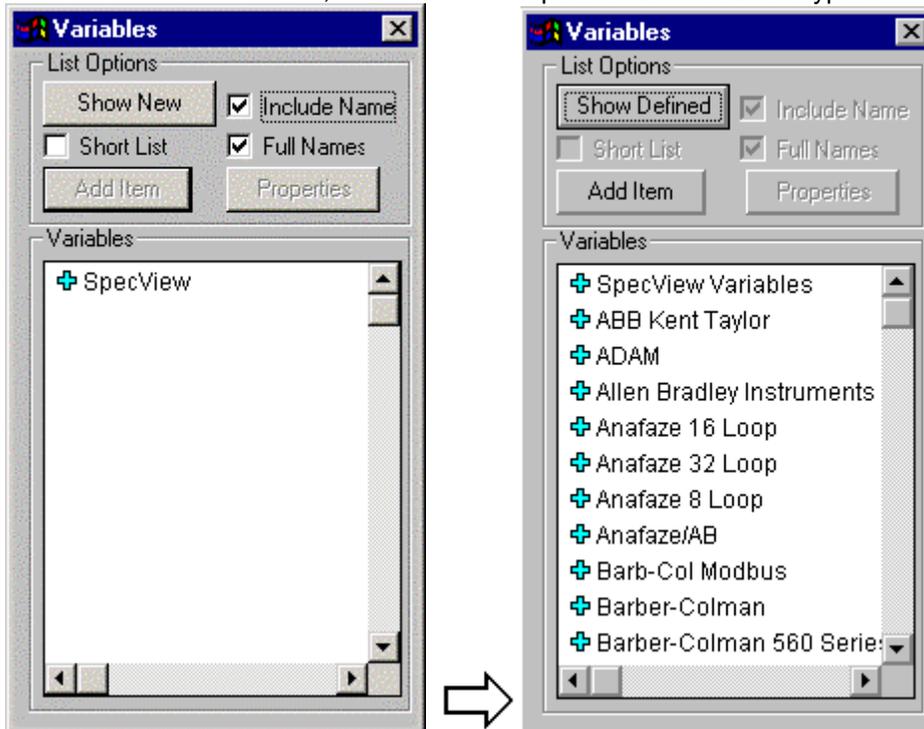
Remember this name. This folder will be where all your log files and configuration files will be stored. Log Reports will also be stored here unless another folder is specified.

When you have entered a name for the configuration and clicked **OK** this will immediately bring you into Configuration Mode displaying a blank Graphical Display Window (GDW) grid.

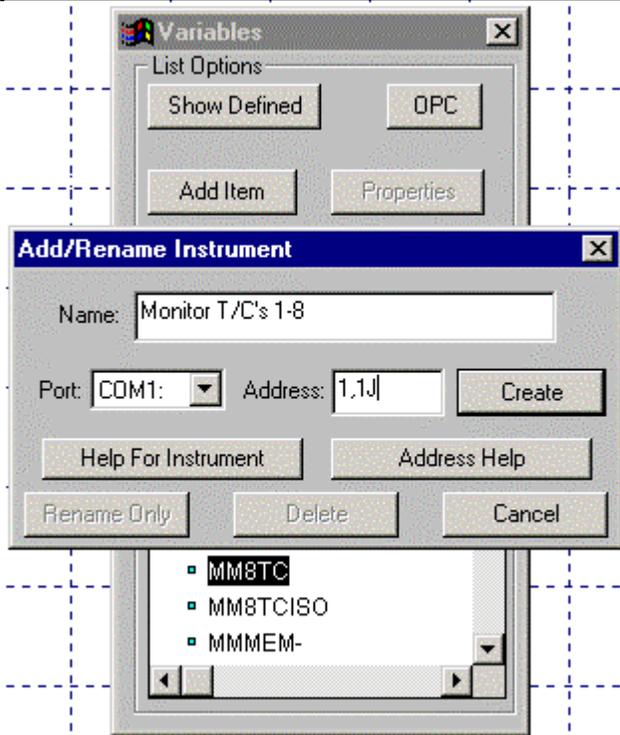
Click the Variables List tool  on the Toolbar to display this dialog box. At this stage the only item listed will be SpecView.

**NOTE: When using the Toolbar, move the pointer over a tool and the Tool Tip will tell you what it does.**

Click the Show New button, which will list the pre-defined instrument types:



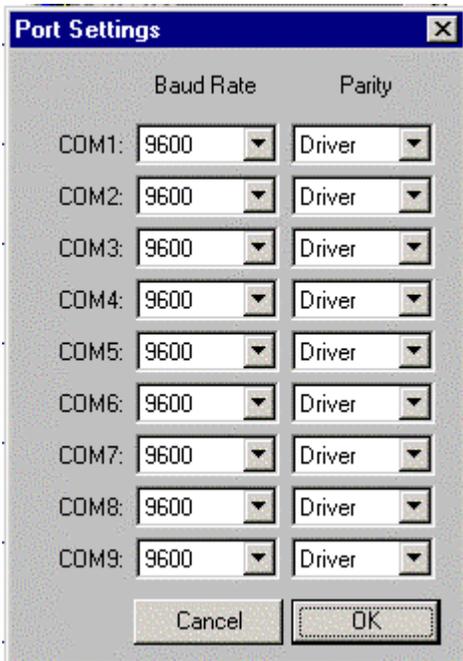
Scroll down the list of available instruments to find the name of the instrument you intend to connect. Click the **+** symbol beside the instrument you require to display the specific instrument types. Select the appropriate one, then click **Add Item**.



Choose the Port from the list (for example COM1) and enter the Address. (If in doubt about what to set the address to, click **Address Help**).

*Modbus instrument addressing (see page 17)*

Click **Create** which will display the Port Settings dialog box:



Enter the Baud Rate and Parity appropriate for the instrument and click **OK**.

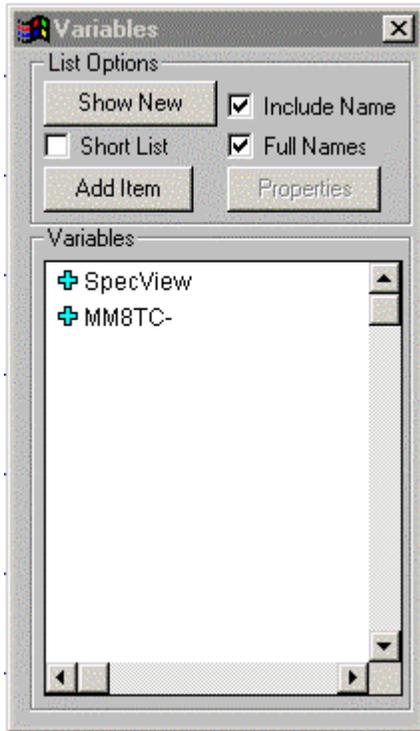
If in doubt about the values for these please consult your instrument manufacturer's manual.

**NOTE: Below is a description of how to use HyperTerminal to test if the COM port that your instrument(s) are connected to is functioning correctly:**

HyperTerminal may already be installed, and may be run from the **Start** button: Programs menu, possibly under the Accessories - Communications submenus. From HyperTerminal's "Connection Description" dialog enter any name & choose any icon, then click **OK**. On the "Connect To" dialog, if you are, for example, testing

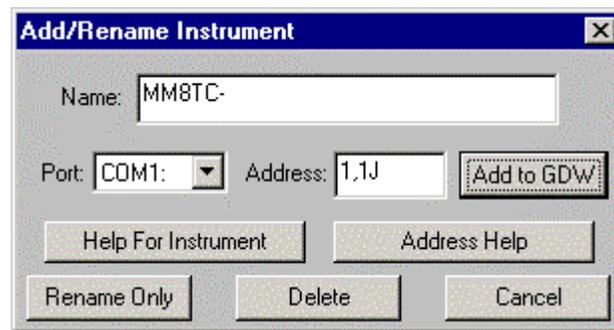
COM1 then select "Direct to Com1" from the "Connect using" list box, and click **OK**, then click **OK** on the "COM1 Properties" dialog leaving the "Bits per second" and the other settings as they are. If the status bar along the bottom of the window now says "Connected 00:00:00" and starts counting up in seconds, then COM1 is Ok. Otherwise an error dialog will be displayed. If HyperTerminal cannot connect to the COM port, then SpecView will also be unable to communicate with it.

The instrument has now been defined within SpecView, clicking the **Show Defined** button at the top of the Variables list dialog will now show it:



Select the name of the instrument in the list and click **Add Item**. The Instrument View will be displayed on the GDW.

Or double-click the name of the instrument in the list then click **Add to GDW**



This is now configured as if the instrument was already connected and you had clicked the **Test Comms for New Config** button to automatically detect the instrument. Therefore you can now skip the next section, and go straight to Configuration mode, starting with *Add a variable to the GDW* (see page 21)

## Quick Start - For Instruments using the Modbus Protocol

If the instrument you are using uses Modbus protocol you need to know how the instrument is configured.

If there is a choice between Modbus or J-Bus protocol choose J-BUS

If there is a choice for Data Bits choose 8 (EIGHT)

If there is a choice for Parity choose NONE

If there is a choice for Stop Bits choose 1 (ONE)

The format of the address specification for Modbus is:

AA,PT;O

Where:

AA: Two-digit address of the instrument in decimal.

P: Number of decimal places for user defined items (see Note 1 below).

T: Type of protocol: J for J-Bus, M for Modbus (see Note 2 below).

O: (Optional) Address offset (see Note 3 below).

Examples:

1,1J Address 1, 0 decimal place, J-Bus parameters

2,1J;2 Address 2, 1 decimal place, J-Bus parameters, offset by 2

10,0M 0 Decimals, Modbus parameters

Note 1 (Decimal Places):

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0 / 1 / 2 / 3 SpecView will put a decimal place in the position indicated by this setting. The setting affects those variables where the number of decimals required is based on an instrument setting such as the range that has been selected. Some items, such as Output Power are fixed at a given number of decimal places and are not affected by this setting.

AutoDetect may assume 0 decimal places when detecting instruments. This might result in values being 10 or 100 times too large on displays. If this is the case, then edit the address for the instruments from AA,0T to AA,1T (See below for the meaning of this).

### Note 2 (Protocol):

If in ANY doubt, do not enter anything for this item. SpecView will add it for you.

There is often confusion between Modbus "Registers" and "Addresses". With SpecView the user does not need to fully understand the difference but the correct setting MUST be made here. When "J" (for J-Bus) is used the "Address" that has been pre-defined by SpecView is sent to the instrument. When "M" (for Modbus) is used ONE is subtracted from the pre-defined address. SpecView pre-defined instruments ALWAYS assume the address and NEVER the register. Unless advised otherwise by SpecView either leave the letter out or use "J".

### Note 3 (Address Offset):

Some instrument companies use an address structure so that a particular instrument view can be re-used with the appropriate address offset. This feature is also used with SpecView's "Generic Modbus" instrument views. The addresses for each instance of the instrument are the same, offset by a fixed number. See Generic Modbus for more details. Also, where this feature is required for a specific instrument, refer to the help for that instrument.

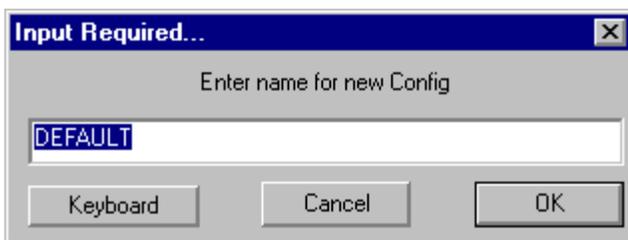
Note that the rate at which the Modbus driver will supply the values of variables from the instruments is defined by the driver command WTTL (default=19 tenths of a second). This can be set using the Setup COM Ports menu command on the *Setup menu* (see page 74).

## For Instruments using Modbus TCP/IP

The address, as detailed above, is prefixed with the full IP address followed by a comma. For example: 192.168.1.99,1,2J

## Quick Start - Automatically detect instruments and display instrument views

Click the **Test Comms for New Config** button, to detect your instruments automatically. The Input Required dialog box is displayed.



Enter a name for the configuration. SpecView will create a subfolder with this name in the SpecView folder (which is normally C:\SV32), the name you enter should follow the *Windows file naming rules* (see page 200) and should not be too long.

Remember this name. This folder will be where all your log files and configuration files will be stored. Log Reports will also be stored here unless another folder is specified.

When you have entered a name for the configuration and clicked **OK**, the Ports and Protocols dialog box is displayed.

Port	Protocol	Baud Rate
COM1:	MOD-MUX Modules	Auto
COM2:	<None>	Auto
COM3:	<None>	Auto
(COM4:)	<None>	Auto
(COM5:)	<None>	Auto
(COM6:)	<None>	Auto
(COM7:)	<None>	Auto
(COM8:)	<None>	Auto
(COM9:)	<None>	Auto

TCP/IP  
 Protocol: Honeywell HC900 Port: 502 Timeout: 5 secs  
 Begin: . . . End: . . .

Auto Configure Status  
 Checking: Checking: Click Start Scan to begin  
 Baud Rate: N/A  
 Address: N/A  
 Auto Build GDW View

## Ports and Protocol

You will need to know which COM port(s) on your computer the instrument(s) are connected to and the types of instruments. If in doubt about this please consult your instrument manufacturer's manual.

For the appropriate COM port(s) select the name(s) of the instrument(s) under Protocol. When you select a protocol for a COM port, a **Help** button is displayed on the same line. Click it for help on the driver selected.

If the default port settings do not match the settings for your instruments, click  to set up the port.

## BAUD Rate

If there is any uncertainty as to the BAUD rate used by the instrument then leave it set to "Auto" to allow SpecView to try a range of BAUD rates. If the BAUD rate is known then set it appropriately.

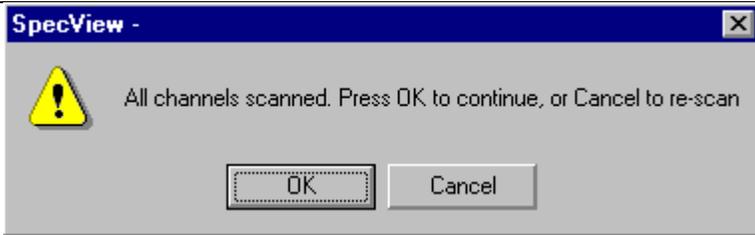
## TCP/IP

There is also *TCP/IP Auto Detection* (see page 46) available for some instrument types.

## Start Scan



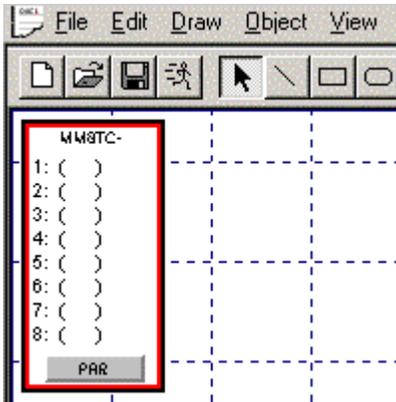
Click  SpecView will begin to scan the ports and determine what instrument(s) you have connected. As each instrument is found, Instrument Views (pictures of the instruments) will be displayed on the Graphical Display Window (GDW) behind the Ports and Protocols dialog box. When all your instruments have been detected for this port, if there are further instruments connected to other COM ports then click **Skip to Next Port**, otherwise if there are no further instruments click **Stop**. A window will be displayed to inform you that all channels have been scanned.



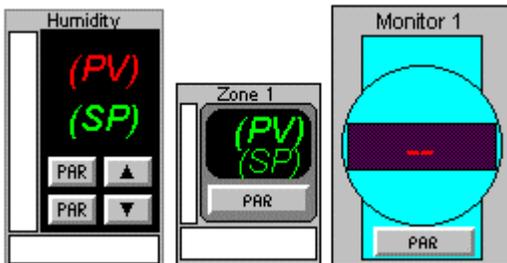
Click **OK** to continue and enter Configuration Mode.

The Configuration Mode screen will look something like that shown below.

However, if no Instrument View(s) appear then SpecView is not communicating with the instrument(s). Check your connections and settings and rescan. If problems persist contact your instrument supplier.



The actual Instrument View displayed will depend on the instrument type, other examples of Instrument Views are shown below:



You have now created a GDW containing Instrument Views.

The Instrument View(s) you see will depend on the kinds of instruments you have connected to your computer.

Now move the Instrument View to a different position on the GDW, by clicking and then dragging, to move it down the GDW a little way.



Click the Save tool and then the **Save** button to save this GDW as "Specview.gdw" in the configuration subfolder.

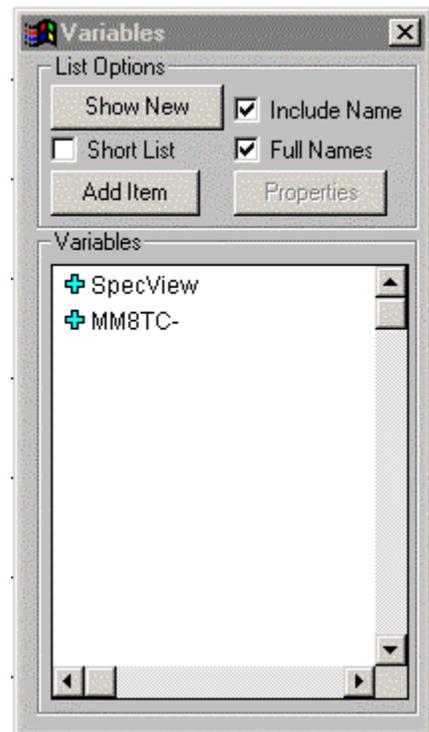


## Quick Start - Add a variable to the GDW

To add a variable to the GDW (Graphical Display Window) click the Variables List tool



to

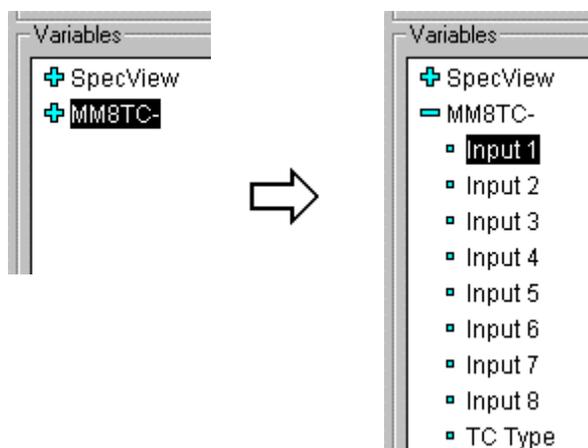


The name SpecView also appears in the list as this represents a list of variables that are associated SpecView, not one of the connected instruments.

If the **Include Name** box is un-checked in the Variables List dialog then the name of the variable will not be displayed on the GDW, just the value of the variable itself.

The **Full Names** checkbox toggles between showing the variables' full names and the abbreviated names.

Click the **+** symbol next to an instrument name to see all the parameters



## 22 SpecView 2

Double-click the variable you want to add to the GDW, for example, Input 1. The variable (XXX, which will be displayed as the numeric value of the variable in Runtime Mode) and its description (for example, MM8TC- ,Input 1) are displayed in the top left hand corner of the GDW.



When the name of the variable and its value are initially put onto the GDW, they are put out as two separate items. In order to move them both together to a different position on the screen they will need to be grouped together.

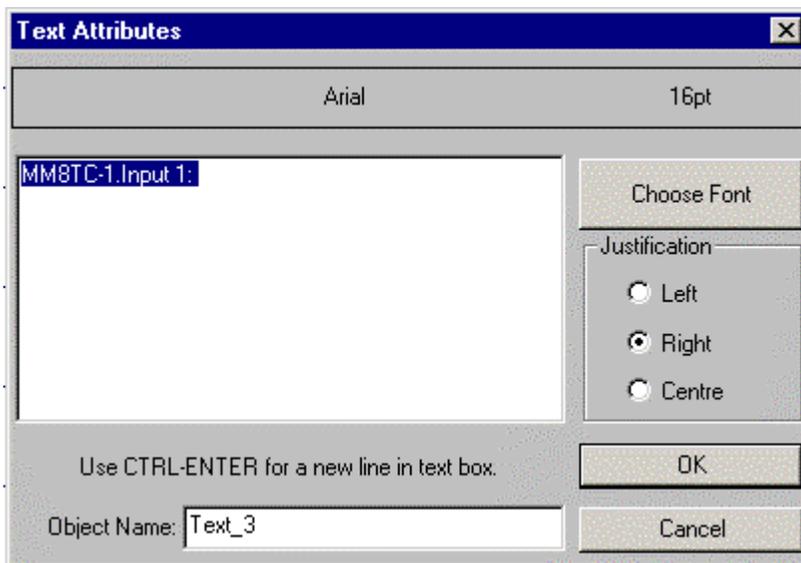
To do this use the Group tool  (or press G) which will group them together



then use the mouse to drag them to where you would like them to be positioned on the GDW.

If you would like to change the name of the variable then it is best to do this from the Variables List dialog BEFORE putting the variable onto the GDW. This is done by selecting the variable then clicking the **Properties** button.

In order to change, for example, the font of the variable's name, use the Ungroup tool  (or press U) to ungroup the variable and its description, then double-click the description to display the Text Attributes dialog box



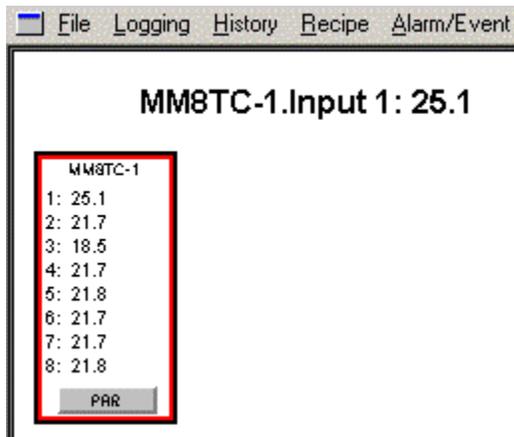
Make the changes to it that you require, then click **OK** to close the dialog box.

NOTE: To change the default text font use the Text Font menu command from the Object menu.

Click the Save tool  and then **Save** to save this GDW again.

Click the Runtime tool  to enter Runtime Mode to start communicating with your instruments.

Values will be displayed on the Instrument Views and the variable you added to the GDW

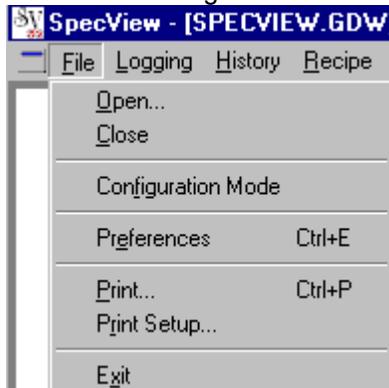


If an Alarms dialog box is displayed close it by clicking the **Close** button.

**NOTE: The immediately obvious differences between Configuration Mode and Runtime Mode are that Configuration Mode displays a grid across the screen (GDW). Although it is possible to disable the grid this is not recommended, as it helps with aligning items when positioning them on the screen (GDW). Variables in Configuration Mode are normally displayed as XXX. There are also significant differences between the contents of the menus in the two modes. Configuration Mode also has a toolbar. If you do not have instrument(s) connected then the values will remain at or change to XXX.**

### Quick Start - Draw a trend chart

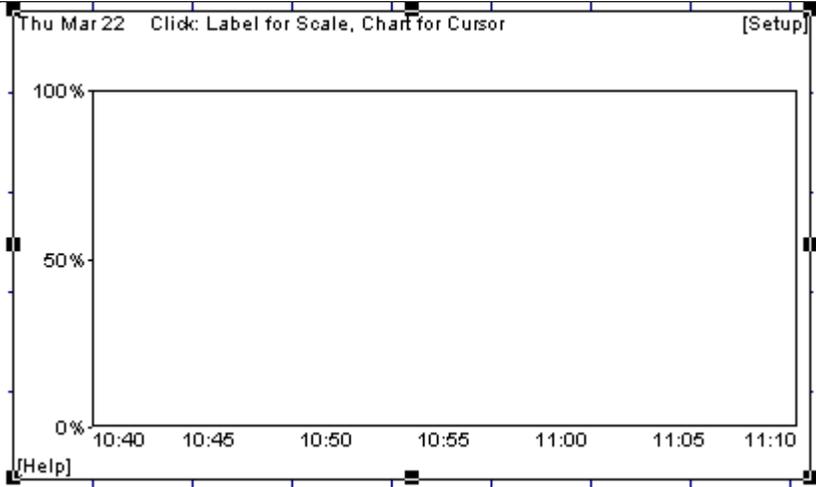
Go back to Configuration Mode by selecting Configuration Mode from the File menu.



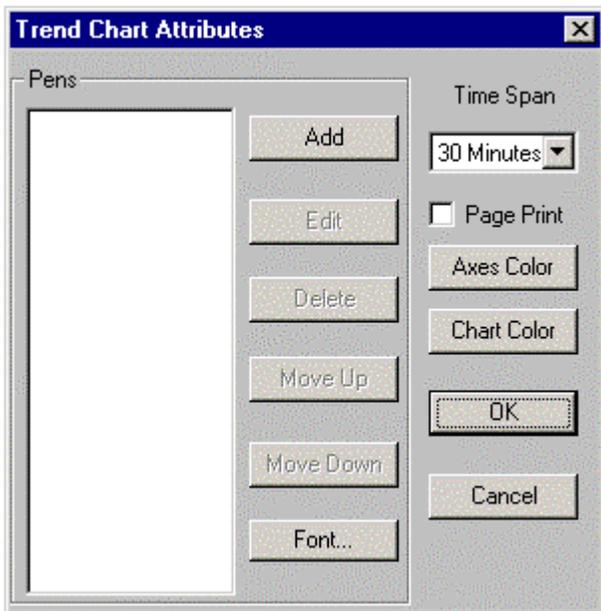
Click the Draw Trend Chart tool and the cursor changes to:



Click and drag on the GDW to draw a rectangle. When you release the mouse button a Trend chart is drawn



and the Trend Chart Attributes dialog box is displayed:



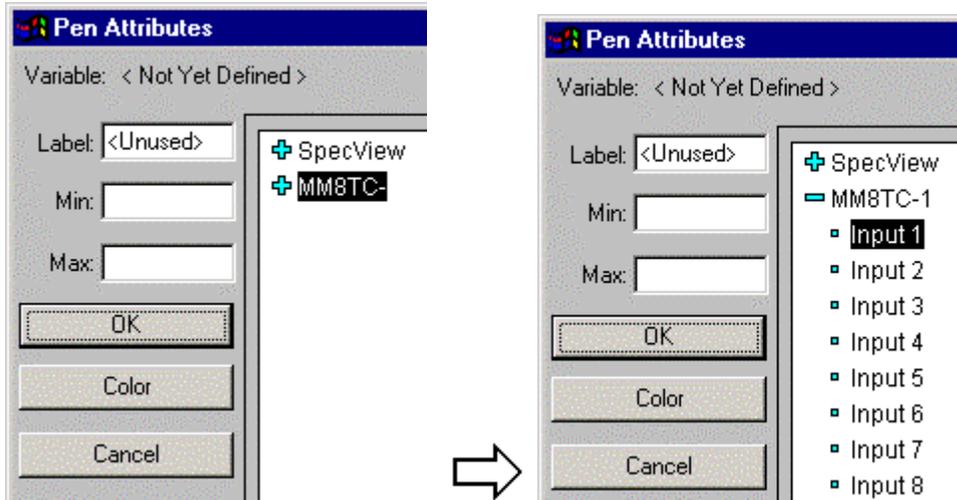
This is used to choose what you want to display on the Trend chart and how you want it to look.

Time spans for the chart range from 1 minute to 28 days. When the Page Print box is checked the SpecView screen will be printed each time the chart is filled with new data.

Initially the Pens list is blank, click **Add** to add a Pen to the Trend chart

A Pen is the word used to refer to a single trace line on a Trend chart.

Open the variable list for the instrument from which you wish to display data by clicking the **+** symbol if it is not already open.



Double-click the variable you want to put on the Trend chart, then set the scale for this Pen by entering values in the Min: and Max: boxes. If you want to change the label for the Pen, change the text in the Label: box.

**NOTE: If the variable is NOT now listed under Pens, ensure that the variable was double-clicked in the list, not just single-clicked.**

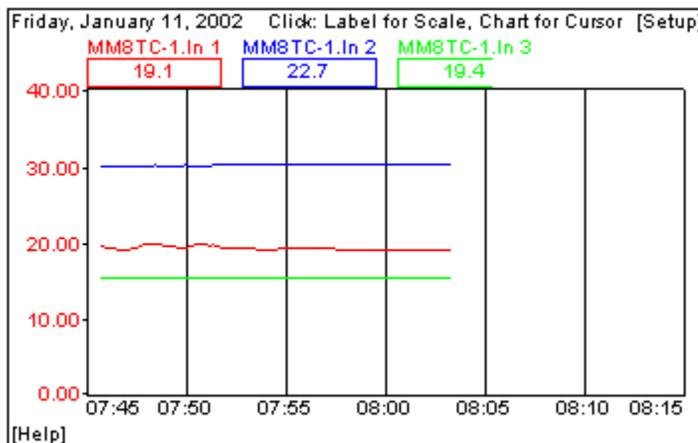
Change the color of the Pen by clicking the **Color** button

Click **OK** to close the Pen Attributes dialog box. Add some more pens to the chart, giving each a different color, then click **OK** to close the Trend Chart Attributes dialog box.



Click the Save tool to save this GDW again.

To subsequently edit the chart while in Configuration Mode, double-click anywhere on the chart.



## Quick Start - Define a second GDW

You have already saved the first GDW (Graphical Display Window).



Now click the New GDW tool to get a new blank GDW.



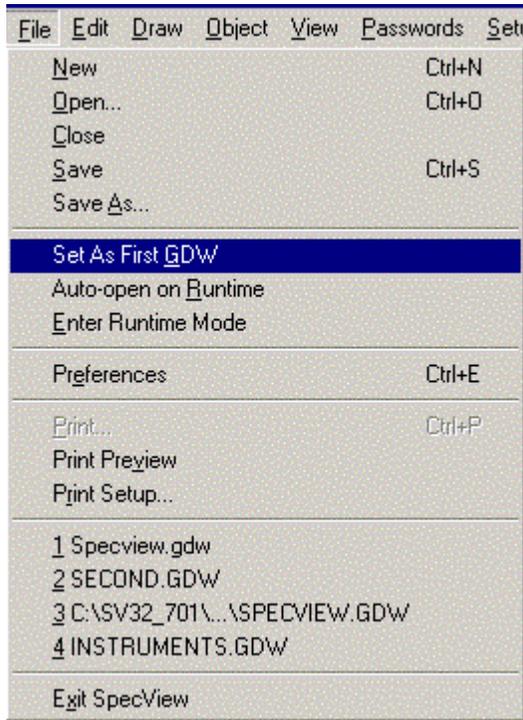
Click the Trend Chart tool and draw a second chart. Any *variables* (see page 23) may be used, even the same ones as before.

Also, many types of variable can be plotted on a Trend chart, including boolean (On/Off functions).



Click the Save tool and give this new GDW a name so it can be saved.

**NOTE: When SpecView enters Runtime mode it will normally start by opening the GDW last edited. To specify which GDW is opened on Runtime use the Set As First GDW menu command from the File menu while in Configuration mode.**



To open more than one GDW use the Auto-open on Runtime menu command. It is highly recommended that this feature is used for all GDW's that contain Trend Charts in order to start their trace lines.

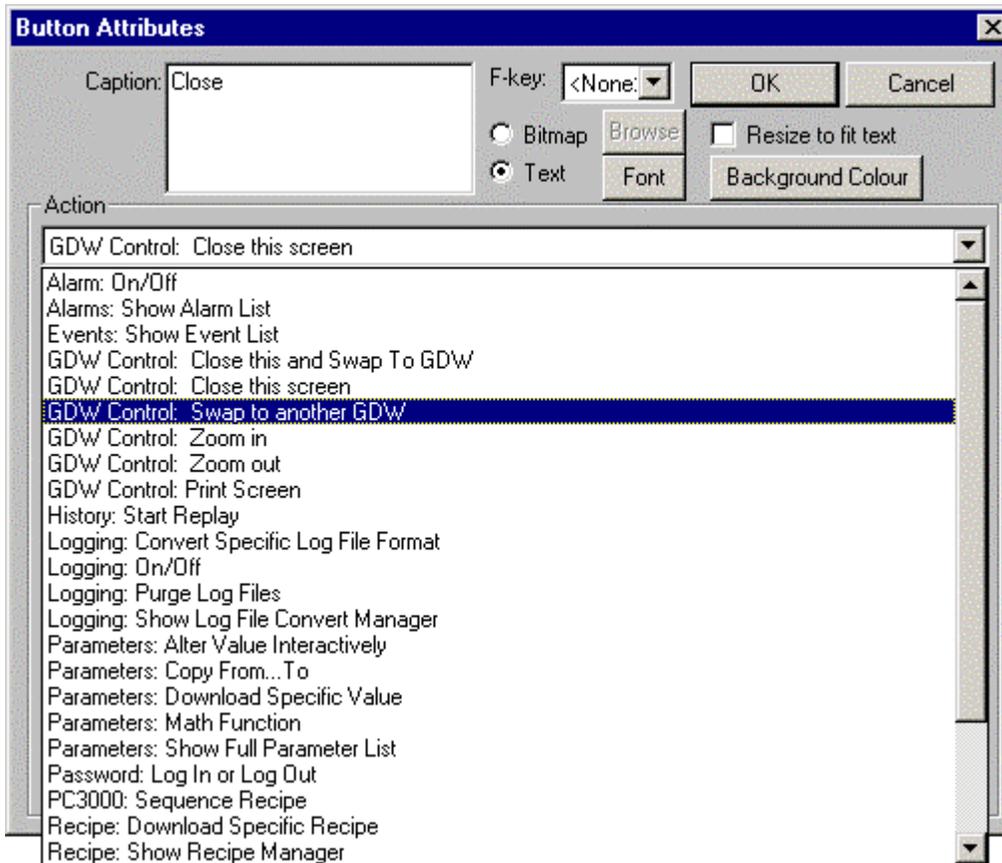
**Quick Start - Add buttons to switch between GDW's**



To put a button on the GDW click the Draw Buttons tool Draw the button by clicking and dragging the mouse until the button is the size and shape you require



Double-click the button to display the Button Attributes dialog box,



and change the text in the Caption: box to say, for example, "Return to first screen".

Then from the Action: list, select **GDW Control: Swap to another GDW**, then select the name from the Swap To: list



that you gave to the first GDW.

Click **OK** to close the Button Attributes dialog box, then click the Save tool  to save this new GDW again.

Open the first GDW by either

clicking the Open GDW tool  and then selecting the name of the GDW from the list and clicking **OK**,

or  
by selecting the name of the GDW from the Window menu.

Click the Draw Buttons tool  and draw a button on this GDW.  
As before, double-click this button and change its attributes.

Change the caption to say, for example, "Go to second screen".

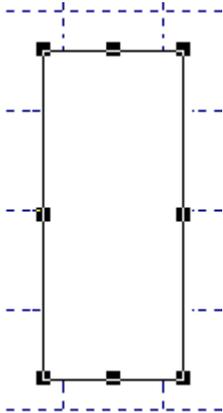
From the Action: list, select **GDW Control: Swap to another GDW**, then select from the Swap To: list the

name that you gave to the second GDW, click **OK**. Click the Save tool  to save again.

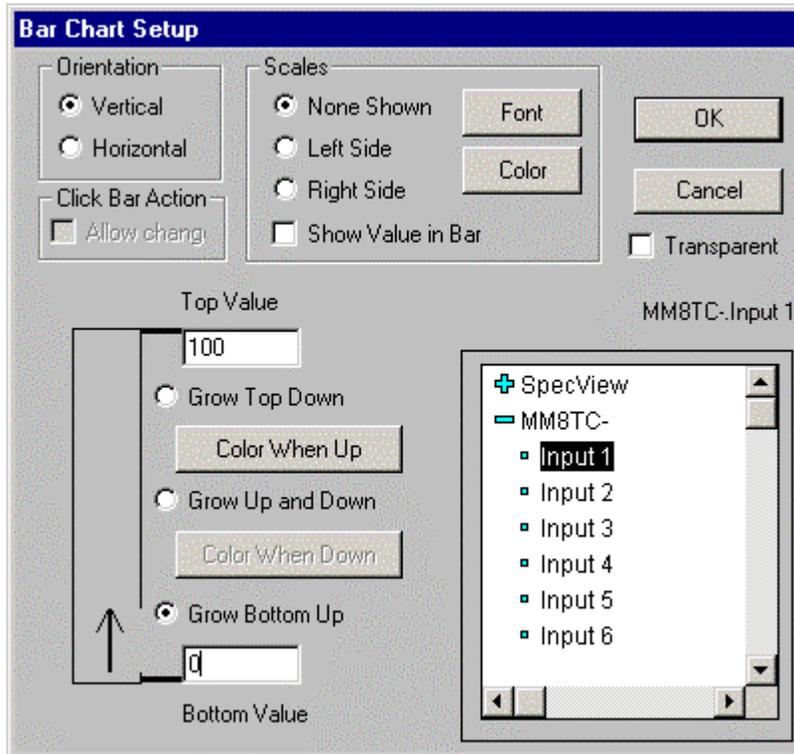
### Quick Start - Add a Bar chart

Adding a Bar chart to a GDW is very similar to adding a Trend chart.

Click the Draw Bar Chart tool  and the cursor changes to . Click and drag on the GDW to draw a rectangle as shown below. When you release the mouse button a Bar chart is drawn on the GDW



and the Bar Chart Setup dialog box is displayed



This is used to choose the variable you want to display on the Bar chart and the appearance of it. Select the variable you want to display from the variables list by clicking the + symbol next to the name of the instrument, if it is not already open, and then double-clicking on the name of the variable.

**NOTE: If the name of the variable is NOT now shown on the right hand side of the Bar Chart Setup dialog box, ensure that the variable was double-clicked in the list, not just single-clicked.**

Orientation defines how the value is displayed within the bar chart; **Vertical** for up/down, **Horizontal** for left/right.

Enter a Top Value and a Bottom Value. You can choose the color of the bar, whether the bar grows from the bottom up, from the top down, or both up and down. And in the Scales section of the dialog box you can also choose whether to display a scale for the Bar chart and whether or not to show the value numerically within the bar.



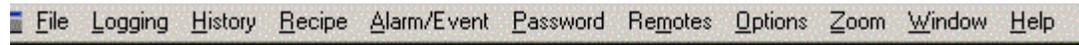
Once you have made all the appropriate changes, click **OK** and then click the Save tool again.

### Quick Start - See how it works in Runtime mode



Click the Enter Runtime tool to see how the configuration you have just set up working in Runtime Mode.

Your GDW screen should now look similar to this:

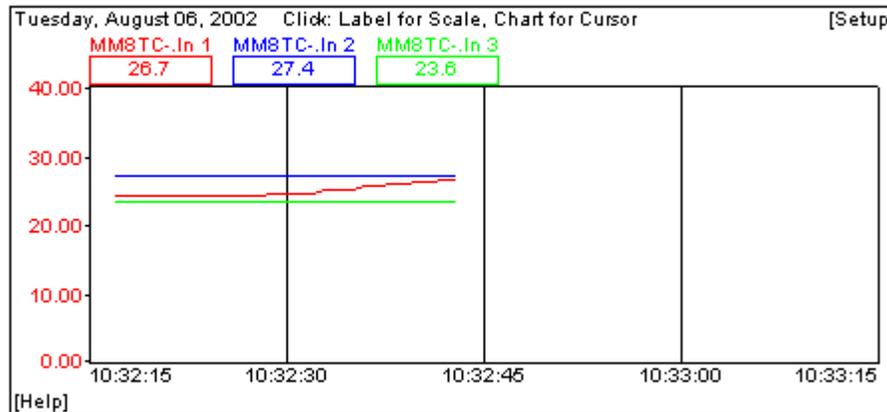


**MM8TC-.Input 1: 26.7**

MM8TC-

- 1: 26.7
- 2: 27.4
- 3: 23.6
- 4: 27.4
- 5: 27.5
- 6: 27.5
- 7: 27.4
- 8: 27.5

PAR



Go to second screen

The Instrument View, variable, Trend chart and Bar chart on the first screen of the GDW will be displaying data.

Clicking on the button(s) shown within the Instrument View(s), in this example the **PAR** button, should perform similar actions to clicking on the respective buttons on the front of the actual instruments themselves.

Clicking on the value of the variable, in this case 26.7:

**MM8TC-.Input 1: 26.7**

## 30 SpecView 2

could if the variable was writeable allow this value to be changed. However, as the variable "Input 1" is not a writeable variable this is not possible in this example.

The Trend chart lines will initially be invisible. However, after a few moments the lines will start to be drawn depending on the time-span that was specified for the Trend chart when it was created.

Clicking on the [Setup] button in the top right-hand corner of the Trend chart allows you to modify the Trend chart attributes.

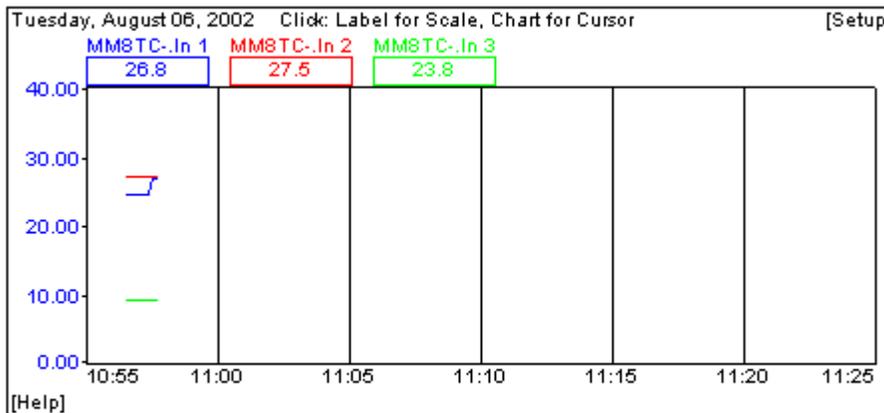
Clicking on the [Help] button in the bottom left-hand corner of the Trend chart will display help for the Trend chart attributes.

Clicking on any of the Pen labels along the top of the Trend chart switches the vertical scale to match the scale that you defined for that Pen.

Go to second screen

Clicking on the button will switch to the other GDW which you defined, which may look similar to this:

File Logging History Recipe Alarm/Event Password Remotes Options Zoom Window



Return to first screen

CONGRATULATIONS! You have just created your own custom multi-screen supervisory system in just a few minutes.

Now explore the *Data Logging* (see page 134) and (optional) *Historical Replay* (see page 142) features. Then you can go back into *Configuration mode* (see page 79) and explore the custom *graphics* (see page 90), *Recipe* (see page 199), *Networking* (see page 31) and other features of SpecView.

Use the help system, by pressing the F1 key, to find out about SpecView's advanced features.

# SpecView Networking

## Setting up SpecView Networking

Further detail on all these steps is provided below, but in brief:

### On the Local:

- Ensure the dongle connected to the Local has the Networking Option enabled for the required number of simultaneous remote users.
- From Runtime Mode use the Preferences menu command from the File menu. Click the Remote tab and ensure that at least one of the checkboxes for Network & Modem are checked.
- Use the User Setup command from the Remotes menu to setup username(s) and password(s).

### On the Remote:

- On the Configurations Found dialog click Remote.
- Click New and create a new connection.
- Click Connect.

### To check all is working:

Check instrument values are updating as expected

On the Local use the View Connected Users menu command from the Remotes menu.

*SpecView Networking - Local (see page 31)*

*SpecView Networking - Remote (see page 32)*

*SpecView Networking - Runtime Functions (on Remote) (see page 36)*

*SpecView Networking - Runtime Functions (on Local) (see page 37)*

*SpecView Networking - Troubleshooting (see page 37)*

*SpecView Networking - Minimum Requirements (see page 38)*

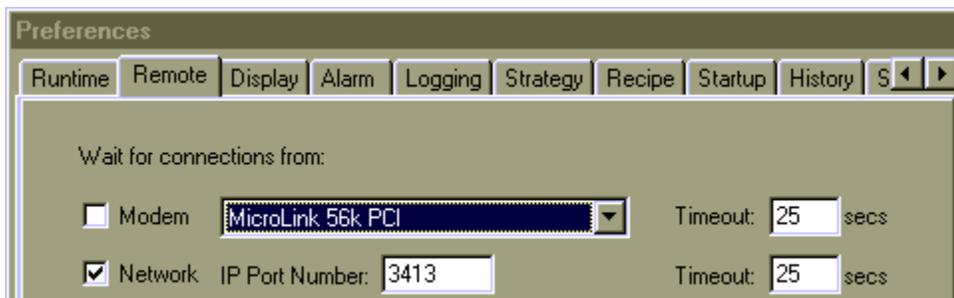
*Connections for SpecView Networking (see page 6)*

## SpecView Networking - Local

A dongle (copy protection key) with the Networking Option enabled must be connected to the Local computer.

The next step is to ensure that the required SpecView configuration has been created. Further detail on SpecView configurations can be found in the SpecView Users Guide.

From Runtime mode use the Preferences menu command from the File menu. Click the Remote tab:



Either one (or both) of the Modem and Network checkboxes must be checked. If both are checked then SpecView will 'listen' on both for remote connections.

Note that these will take effect immediately, you do not need to restart SpecView for changes on the Remote tab to take effect.

The Timeout value is used in the event of a network failure. This is the number of seconds after which the connection will be dropped.

The next step is to register the remote users. Use the User Setup menu command on the Remotes menu. Each user will be assigned a password and will be assigned either "Read Only" (Level 1) or "Read & Write Access" (Level 2).

Read Only will prevent the Remote user from changing the values of variables on the Local.



Click Add, or select the user's name and click Edit:



Note that this is an extra security mechanism for Networking. It is independent of SpecView's Password system, which will continue to function on the Remote.

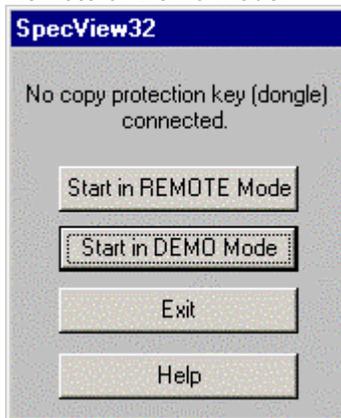
SpecView will decide whether a variable can be changed on the Local, based on the Access Level setting for the Remote user (in the dialog box above) and SpecView's Password system.

We recommend that careful thought is given as to whether Remote users can change (Write to) variables, as they could be some distance away and oblivious to the subsequent effects of their change.

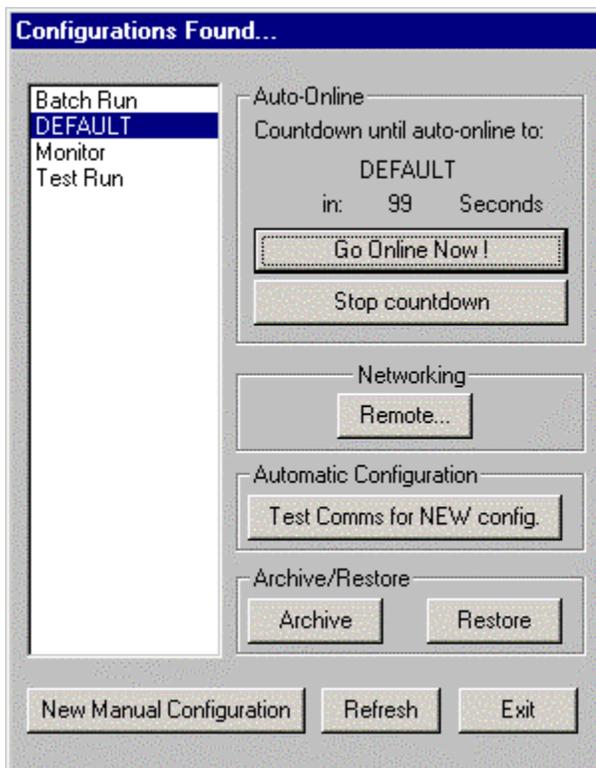
## SpecView Networking - Remote

The Remote computer(s) do **not** require dongles. However, the dialogs displayed will differ based on whether or not a dongle is connected.

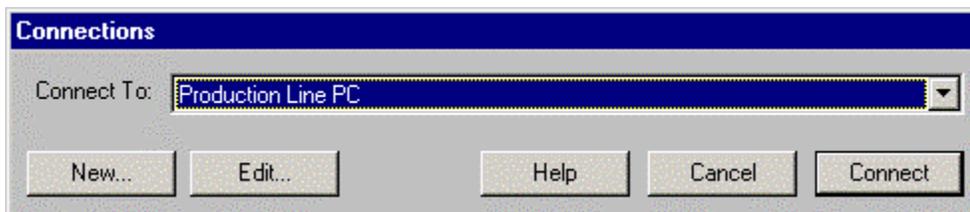
When SpecView Remote is started **without** a dongle, the user will be asked to run SpecView in either Remote or Demo mode:



However, if a dongle **is** connected, the Configurations Found dialog box will have a Remote button:



When Remote mode is selected the Connection dialog is displayed:



The user can select which Local computer to connect to, or click **New...** or **Edit...** to create or modify a connection:

The Description can be any name. This name will be appended to the name of the configuration from the Local computer when the configuration is copied to the Remote. For example, if this name is "Production Line PC" and the configuration is called "Batch Run" then the name of the Local configuration once it is copied to the Remote will be: "Batch\_Run\_Production\_Line\_PC". This is to distinguish between identically named configurations copied from different computers.

**Network:**

Enter the IP address (or network name) of a PC running SpecView Local or click Browse. SpecView's default TCP/IP port number is 3413; it is recommended to use this, as it is registered with: <http://www.iana.org/assignments/port-numbers> and therefore should not conflict with other communications software running on the PC.

To confirm the address is correct, click the Check button.

The Check button will only check that the other computer is contactable over the network, it will not at this stage check to see if it is running as a SpecView Local.

**Modem:** Select the Modem to be used from the list and enter the number to dial in the Call: box.

**Redial attempts:** (Default: 1) The number of times the connection will be tried before giving up.

**Reconnect on fail:** (Default: Off) Whether the connection will automatically try to reconnect if it fails.

**Timeout:** (Default 25 secs) The number of seconds that SpecView Remote will wait for a reply from SpecView Local, before timing out.

**Inactivity timeout:** (Default: 5 mins) In the event of a network failure this is the number of minutes after which the connection will be dropped. A value of 0 is not allowed. In addition:

**Auto log off:** (Default off) When checked, the user will be logged off after the Inactivity timeout period, if there has been no user activity, such as clicking buttons.

When it is unchecked, the user will not be logged off, the connection will remain open indefinitely.

This is useful if the Remote machine is likely to be left unattended.

**Update rate:** (Default 2 secs) This is the rate at which the Remote will update from the Local. Reducing this time will increase network traffic, but will mean that the Remote will be more tightly in-sync with the Local.

**Packet size:** (Default 1000 bytes) This is the maximum number of bytes sent between the Local and the Remote. Adjust this together with Packet count according to the type of network detailed below.

**Window Size:** The entries for Packet size and Window size can be adjusted to give optimum response times over the network medium, as follows:

For rapid transfer of data over a lightly loaded LAN connection, set Packet size to 8000 and set Packet count to 50.

For a Direct Modem to modem connection, to allow a timely response to user-initiated activities, set Packet size to 1000 and Window Size to 5

In the case of Dial-up Networking, where the medium is a 'LAN', but the underlying mechanism is a modem, use the Modem settings (1000 & 5) above.

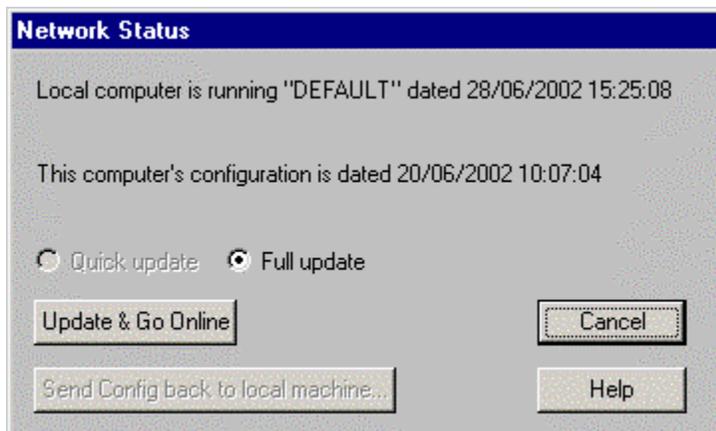
If you experience reductions in transfer rate, such as on a heavily loaded LAN, then a higher Packet count would be advisable, however, this will adversely affect the response time to operations like Parameter Downloads by the user.

The minimum Packet count is 5 and the realistic maximum value is 500.

**User Name & Password:** The user name and password to be used to connect to the Local. If these fields are left blank then the Username & Password will be prompted for when the connection is made, which is useful if many users will be using this connection.

These will need to have been previously set up using the User Setup menu command on the Remote menu on the Local computer. Then click Save.

Now clicking Connect on the Connections dialog will display the Network Status dialog:



SpecView Remote will check to see if it already has a copy of the configuration which is running on the Local computer. There is the option of either copying the configuration which is running on the Local computer to

the Remote computer using the Update & Go Online button, or vice versa, using the Send Config back to local machine button.

Full update takes the whole configuration, so that it can be worked on off-line at the Remote.

A SpecView configuration can be created/modified on either computer. To do this on the Local computer SpecView's Configuration mode can be used directly.

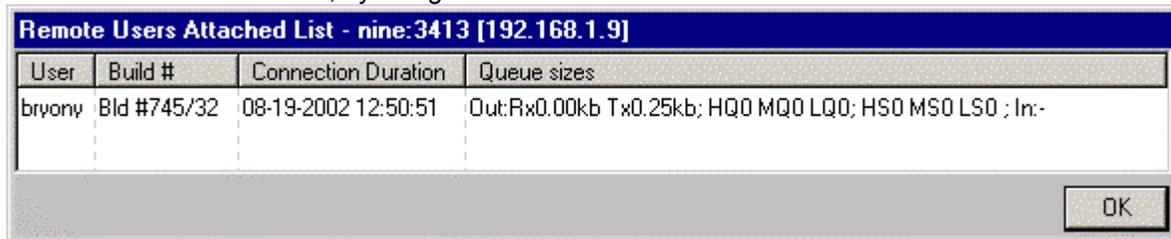
However, on the Remote computer, SpecView's Configuration mode is disabled, therefore, SpecView will need to be run in 'Stand-alone' mode. To do this, select the configuration and then hold the shift key down while clicking the Go Online Now button on the Configurations Found dialog box.

Once the Update & Go Online button, or the Send Config back to local machine button has been clicked, it will then go on-line. Note that if the configuration is the same as it was last time then it will immediately go online, without the need to click a button.

When a GDW is displayed on the Remote computer, the values of the variables on the GDW are sent from the Local computer.

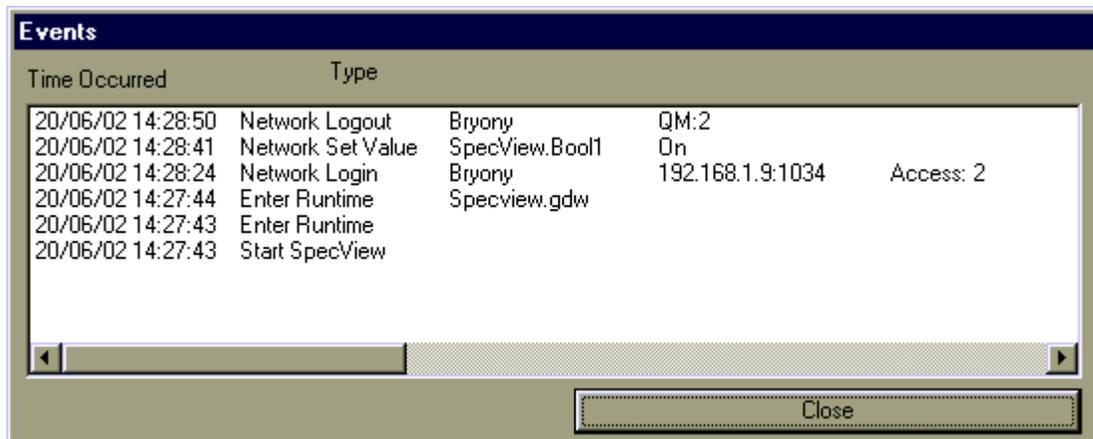
SpecView Local is able to process requests from multiple Remote computers simultaneously.

The Local user will be unaware that a remote user is accessing it, other than by viewing the Remote Users Attached list, by using the View Connected Users menu command from the Remotes menu:



Or via the Events Window, as the Event Logger will record all Network Login and Network Logout events and all values sent to the instruments by the remote user (Network Set Value).

The reporting of these events can be disabled using the Event Logging menu command on the Setup menu.



## SpecView Networking - Runtime Functions (on Remote)

The following will be 'seen' by other Remotes connected to the same Local computer:

Changing values of variables being displayed on the GDW.

Changes to Recipes using the Recipe Manager. These are only stored on the Local computer.

However, the following will **not** be 'seen' by other computers (Remotes or Locals):

- Swapping the GDW which is being viewed
- Changes to Trend chart(s), such as adding pens. Edits to Trend charts on the Remote will be overwritten the next time the connection is made. Therefore permanent changes need to be made on the Local.
- Viewing the Alarm/Event log windows.
- Viewing the Instrument Parameter List from the Instrument View.
- A restricted set of Preferences
- Converting a Logfile. This can be set up so that the resulting file will be written either to the Local or to a Remote computer.

## SpecView Networking - Runtime Functions (on Local)

Certain functions are restricted to the Local computer, such as:

- Setting Users & User passwords from the Remote menu
- Displaying the View Connected Users dialog from the Remote menu.
- Going into Configuration mode. Note: This will disconnect all the Remote connections.

## SpecView Networking - Troubleshooting

### If you see the message "Local is not available or the connection failed."

Then the following three checks should be made:

1. Is the address (or network name) and port number right?  
To confirm this; on the Local, look at the title bar of the Remote Users Attached list, accessed by using the View Connected Users menu command from the Remotes menu. The address (or network name) and port number will be displayed in the title bar. Ensure this is what is being used by the Remote then click the Check button on the Remote to confirm it can reach the Local computer.
2. Is SpecView Local running and is it in Runtime mode?  
On the Local has Networking been enabled? Ensure that, on the Local, at least one of the checkboxes for Network and Modem have been checked on the Preferences Remote tab. This is accessed by using the Preferences menu command on the File menu.
3. Are there remote users setup (i.e. login names/passwords) and are there enough remote users setup?

### If you see the message "TCP/IP is not installed on this PC" and you are using Windows95

Then the version of Windows Sockets (WinSock) will need to be upgraded to version 2.2 in order for SpecView to communicate using TCP/IP.

To do this download the Sockets2 upgrade from:

[http://www.microsoft.com/windows95/downloads/contents/wuadmintools/s\\_wunetworkingtools/w95sockets2/](http://www.microsoft.com/windows95/downloads/contents/wuadmintools/s_wunetworkingtools/w95sockets2/)

### If the Remote appears to be running slowly

Then it is useful to look at the information on the Remote's Statusbar:



The time is the time that the last updated value on the Local was updated, so this is the real data timelag. If this stops then there may be a network fault. The Tx and Rx show the data rate in kb (kilobytes) going across the connection. The Q shows the size of queue of data trying to be sent to the Local. If the queue size increases to above 20 then there may be a problem with sending data to the Local.

The Local's Statusbar shows the same information as above, but for the total of communication with all Remotes.

From the Local, using the View Connected Users menu command on the Remote menu, the dialog also has information about individual connections:

Remote Users Attached List - nine:3413 [192.168.1.9]			
User	Build #	Connection Duration	Queue sizes
bryony	Bld #745/32	08-19-2002 12:50:51	Out:Rx0.00kb Tx0.25kb; HQ0 MQ0 LQ0; HSO MSO LSO ; In:-

OK

**Note that the name of the computer and port number are displayed in the title bar of this dialog. This can be used to check that these are correctly set on the Remote if there is difficulty making a connection.**

## SpecView Networking - Minimum Requirements

SpecView is a 32 bit Windows application that will run on Windows 95/98/NT/2000/Me/XP.

Any computer that runs Windows and programs such as Word or Excel should run SpecView. A minimum of a Pentium with 64 MB RAM is recommended. Normal SpecView activity does not put any great load on computer performance.

For SpecView Remote the specification above applies.

For SpecView Local, the number of simultaneously connected users affects the required specification. If there are going to be many, then more computer power is appropriate, hence at least a 400MHz Pentium processor would be required.

It is almost impossible to exactly specify the requirements because the load on the computer is dependant on what the Local computer's configuration is, how much data it is acquiring, which screens the Remotes are looking at, how many Remotes are connected or what they are doing. Coupled with this are any Strategy Controller and Logging overheads.

As a rough starting point, if the PC running SpecView already (before Local operation is enabled or used) is quick to respond in all areas, then a small number of Remotes should not impose any noticeable load. If the PC is already feeling 'slow', then it will be a little worse!

The biggest single effect that may be seen is the situation where the data update rate on the Local PC appears to slow down when remotes are connected. This will happen because one or more remotes may be asking for additional data across the Local PC's communications links to the connected instruments. This extra data means that the Local PC can only get data at a slower rate across saturated links. This can often happen if a remote user displays a large Parameter list, but the effect is no worse than a Local user displaying the same parameter list.

It is important that the screen resolution of the Remote is comparable with that of the Local to allow the Remote to adequately display the contents of the Local's screen.

For Windows95 the version of Windows Sockets (WinSock) will need to be upgraded to version 2.2 in order for SpecView to communicate using TCP/IP.

To do this download the Sockets2 upgrade from:

[http://www.microsoft.com/windows95/downloads/contents/wuadmintools/s\\_wunetworkingtools/w95sockets2/](http://www.microsoft.com/windows95/downloads/contents/wuadmintools/s_wunetworkingtools/w95sockets2/)

Follow the instructions on the screen carefully, as there are several steps that need to be performed.

*Minimum Requirements for running SpecView (see page 192)*

# Starting SpecView and Instrument Definition/Detection

## Starting SpecView

Double-Click the **SpecView** Icon to start the program, or run from Programs on the Start menu.

If you do not have the copy protection key (called the *dongle* (see page 198)) connected then a dialog box to that effect will be displayed. SpecView will be fully functional but a timer limits communication with the instruments to ten minutes. This timer is reset each time configuration mode is entered.

When SpecView starts up it displays a splash screen containing the logo and the Copyright. This splash screen can be clicked on to jump to the Configurations Found dialog box (shown below).



The **Refresh** button on this dialog box allows for the list to be refreshed to take into account any new configurations that might have been manually created after SpecView has been started.

The **Archive/Restore** buttons allow you to *Archive or Restore* (see page 40) entire configurations.

If you have an existing configuration, which may be a demo configuration installed as part of SpecView, or previously *Restored* (see page 40), which you intend to run, then select it and click the **Go Online Now!** button, and continue from *Runtime Mode - Using SpecView* (see page 51)

Alternatively, clicking either **Test Comms for NEW config** or **New Manual Configuration** will display the Input Required dialog box:



Enter a name for the configuration. SpecView will create a subfolder with this name in the SpecView folder (which is normally C:\SV32), the name you enter should follow the *Windows file naming rules* (see page 200) and should not be too long.

Remember this name. This folder will be where all your log files and configuration files will be stored. Log Reports will also be stored here unless another folder is specified.

Then continue from *Instrument Definition/Detection* (see page 41)

## Archive and Restore

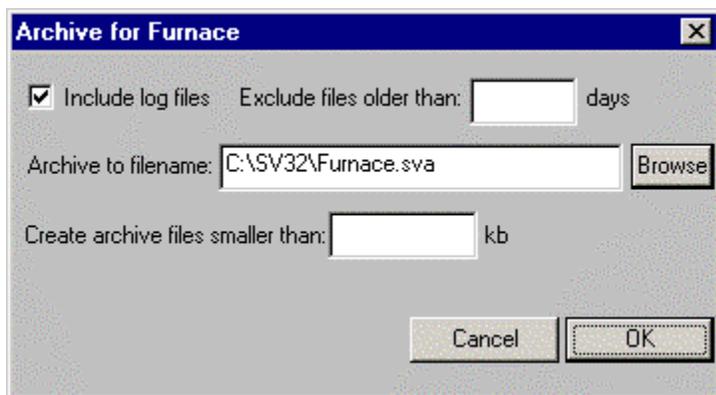


The **Archive** and **Restore** buttons allow you to Archive or Restore entire configurations. This can be used for backup purposes, for sending configurations from one computer to another, or for technical support purposes.

### Archive

SpecView creates a file known as a SpecView Archive, which has a filename extension of .SVA

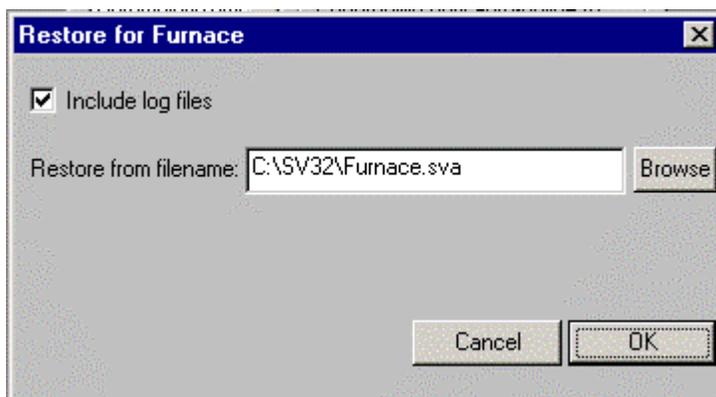
To create an Archive, exit from SpecView and run it again, then at the Configurations Found screen, select the name of the configuration to be archived and click the **Archive** button.



The default place (disk and folder) to create the archive is specified in *Preferences - Runtime* (see page 124). Use the **Browse** button to specify a different location. If the floppy drive is specified (A:\) and the configuration is too large to fit onto a single floppy disk, then the Archive process will automatically prompt for the additional floppies. Please ensure that you have a number of blank disks ready for use.

### Restore

To Restore a SpecView Archive (.SVA) file, start SpecView, then at the Configurations Found screen click the **Restore** button.



Use the **Browse** button to locate the .SVA file to be restored. If the file is on floppy disk(s) then the Restore process will automatically prompt for them.

NOTE: For that archives which use more than one floppy disk the restore process will ask for the last floppy of the set to be inserted first, then will ask for the floppies to be inserted in sequence. This is because certain information is written to the last floppy during the archive process, which must be read first during the restore process.

Once restored, these configurations can, if required, be modified from *Configuration Mode* (see page 197). However modifications will only affect the restored Configuration folder, not the downloaded .SVA file, therefore the .SVA file can be considered as a backup which can be restored again if necessary.

## Instrument Definition/Detection

The following sections describe in more detail how to setup SpecView to communicate with the instrument(s) either that you have currently connected see *Auto Instrument Detection* (see page 44) or which you intend to connect see *Manually Defining Instruments* (see page 41). However, if you have already successfully done this then go to Runtime Mode - Using SpecView

### Manually Defining Instruments

Instruments can be defined manually if they:

## 42 SpecView 2

- 1 Are not physically connected to the computer for auto detection
- 2 Are a special instrument that cannot be auto detected, for example, Red Lion, Dupline and Omron.
- 3 Are being added to an existing configuration

For 1 and 2:

After you have started SpecView click the **New Manual Configuration** button on the Configurations Found dialog box. This will bring you directly into Configuration mode.

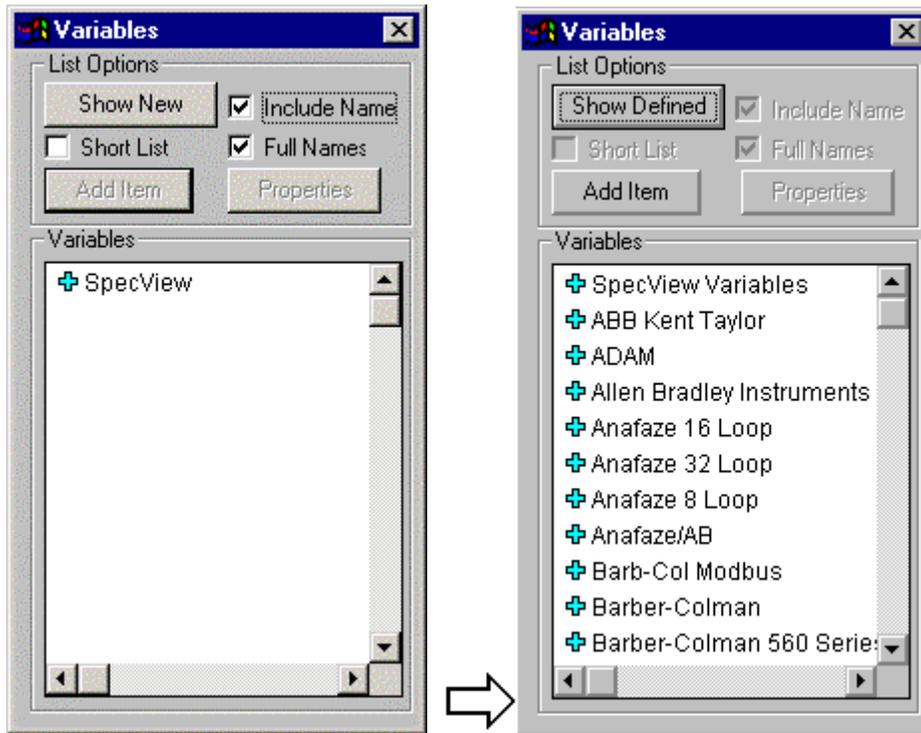
For 3:

Select your existing configuration and go directly into Configuration Mode (by pressing the SHIFT key while clicking the **Go Online Now!** button).

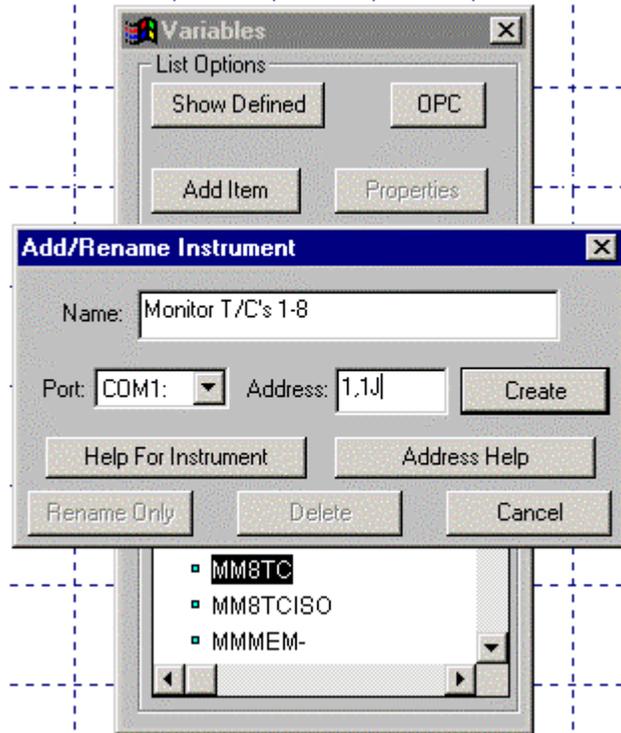
Then continuing...



Open the Variables List by clicking the tool and then click the **Show New** button. The new list is displayed and the button changes to the **Show Defined** button. Click the appropriate + symbol and double-click the instrument you want



### Defining a new Instrument



1. Enter a name for the new Instrument
2. Select the COM Port
3. Enter the Address. For help click on Address Help.  
*Modbus instrument addressing (see page 43)*
4. Click **Create**

When all the new Instruments have been created click the **Show Defined** button to switch back to the defined Instrument Variables List

You can now add an *Instrument View* (see page 48) or individual *numeric values* (see page 84) to the GDW

### Precautions Deleting and Creating Instruments

When an Instrument is defined in SpecView it is given a unique identity code (Unique ID) When any variable from that Instrument is used, SpecView identifies it by the Unique ID, NOT by name.

***NOTE: If an Instrument is deleted IT IS GONE FOREVER. All variables from that Instrument on GDW's, in Logging, on Trends will no longer be updated.***

Defining another instrument with the same name is NOT regarded by SpecView as the same Instrument, Be Careful.

### Adding Instruments to the Database

Special configuration tools are used to define the database. These are available, for some drivers only, to qualified users.

It is not possible to add variables to defined instruments from within SpecView. The configuration tools are required. For help with this contact your SpecView supplier.

This is now configured as if the instrument was connected and you had chosen Automatic Configuration by clicking the **Test Comms for NEW config** button.

Therefore you can now skip the next section, and go straight to *Configuration Mode* (see page 79) below.

## For Instruments using the Modbus Protocol

If the instrument you are using uses Modbus protocol you need to know how the instrument is configured.

If there is a choice between Modbus or J-Bus protocol choose J-BUS

If there is a choice for Data Bits choose 8 (EIGHT)

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If there is a choice for Parity choose NONE

If there is a choice for Stop Bits choose 1 (ONE)

The format of the address specification for Modbus is:

AA,PT;O

Where:

AA: Two-digit address of the instrument in decimal.

P: Number of decimal places for user defined items (see Note 1 below).

T: Type of protocol: J for J-Bus, M for Modbus (see Note 2 below).

O: (Optional) Address offset (see Note 3 below).

Examples:

1,1J Address 1, 0 decimal place, J-Bus parameters

2,1J;2 Address 2, 1 decimal place, J-Bus parameters, offset by 2

10,0M 0 Decimals, Modbus parameters

Note 1 (Decimal Places):

0 / 1 / 2 / 3 SpecView will put a decimal place in the position indicated by this setting. The setting affects those variables where the number of decimals required is based on an instrument setting such as the range that has been selected. Some items, such as Output Power are fixed at a given number of decimal places and are not affected by this setting.

AutoDetect may assume 0 decimal places when detecting instruments. This might result in values being 10 or 100 times too large on displays. If this is the case, then edit the address for the instruments from AA,OT to AA,1T (See below for the meaning of this).

Note 2 (Protocol):

If in ANY doubt, do not enter anything for this item. SpecView will add it for you.

There is often confusion between Modbus "Registers" and "Addresses". With SpecView the user does not need to fully understand the difference but the correct setting MUST be made here. When "J" (for J-Bus) is used the "Address" that has been pre-defined by SpecView is sent to the instrument. When "M" (for Modbus) is used ONE is subtracted from the pre-defined address. SpecView pre-defined instruments ALWAYS assume the address and NEVER the register. Unless advised otherwise by SpecView either leave the letter out or use "J".

Note 3 (Address Offset):

Some instrument companies use an address structure so that a particular instrument view can be re-used with the appropriate address offset. This feature is also used with SpecView's "Generic Modbus" instrument views. The addresses for each instance of the instrument are the same, offset by a fixed number. See Generic Modbus for more details. Also, where this feature is required for a specific instrument, refer to the help for that instrument.

### For Instruments using Modbus TCP/IP

The address, as detailed above, is prefixed with the full IP address followed by a colon.

For example: 192.168.1.99:1,2J

## Automatic Instrument Detection

### Auto Detection - Overview

What does "Automatic Instrument Detection" mean?

Conventional supervisory systems require you to define each variable that you want to access from your computer. Many instruments have an "Instrument Identity" code that SpecView asks for. When the instrument responds SpecView uses its built in *database* (see page 41) to create an "Instrument View" that gives access to everything. Some instruments have hundreds of parameters. In larger systems this can mean tens of thousands of tags. Defining this manually could take weeks.

Click the **Test Comms for New Config** button, to detect your instruments automatically.

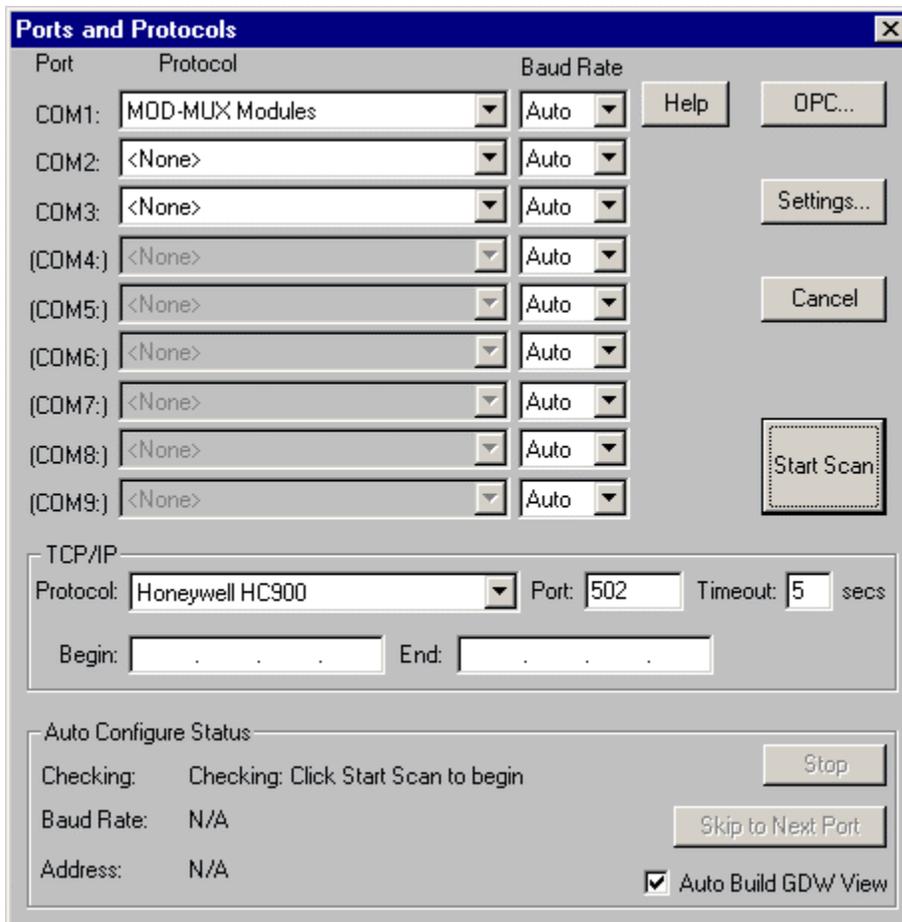
The Input Required dialog box is displayed.



Enter a name for the configuration. SpecView will create a subfolder with this name in the SpecView folder (which is normally C:\SV32), the name you enter should follow the *Windows file naming rules* (see page 200) and should not be too long.

Remember this name. This folder will be where all your log files and configuration files will be stored. Log Reports will also be stored here unless another folder is specified.

When you have entered a name for the configuration and clicked **OK**, the Ports and Protocols dialog box is displayed.



Either select the protocol required for the COM port or use *TCP/IP Auto Detection* (see page 46) which is available for some types of instrument.

### Auto Build GDW View

When this box is checked an Instrument View is created automatically for each instrument found. Do NOT use this feature if you:

- Have more instruments connected than can fit on one screen
- Intend to rename your instruments

Instead:

- Let SpecView detect your instruments
- After scanning all ports click **Stop** which will enter Configuration Mode



- Open the Variables List tool
- Rename each instrument and add Instrument Views to the GDW(s) as required

Click *Start Scan* (see page 46)

## Start Scan



Click

When there is an Instrument View displayed on the GDW for each of the instruments which are connected then click the  to stop the automatic scanning. Or if you have instruments on other COM ports then click the **Skip to Next Port** button to continue scanning on the next COM port.

There is also auto detection for *TCP/IP* (see page 46)

If you encounter problems then check your *wiring and instrument setup* (see page 5)

This is now setup. Therefore, you can now go straight to *Configuration Mode* (see page 79) below.

## TCP/IP Auto Detection

TCP/IP Auto Detection for instruments connected via TCP/IP works only with Instruments supporting ModBus/TCP, either natively or via an Ethernet Bridge.

Native instruments are:

- ModMux MMTCP-xxx range
- Honeywell HC900
- Honeywell TrendView Recorder
- Eurotherm Chessell 5000 recorder

Ethernet Bridges allow any Modbus RTU device to be communicated with by Modbus TCP/IP. Some examples of these Bridges are:

- ModMux TCPCONV
- Lantronix CoBox
- Honeywell Ethernet bridge

The Modbus protocol specifies a "Slave Address", for RS422/485 devices, this is the address of the instrument over comms. For ModBus/TCP, the slave address is still relevant in the following cases:

For native instruments, there is only one slave address per IP Address because there is only one instrument. In this case the "Slave Address" is usually 1.

For Bridge connected instruments, there can be up to 255 discrete Modbus Slaves connected through the one IP addressed bridge, so the Slave Address has the usual meaning.

In SpecView's Autodetect setup we can specify a start and end IP Address. SpecView will start at the beginning IP Address and scan Slave addresses 1 to 255 on that IP address before moving to the next IP address.

In the case where each IP address is a native ModBus/TCP instrument this scanning can be unnecessary, as there is only ever one Slave Address to be found. In this case the [Skip to Next IP] button can be used in a similar way to the existing [Skip to Next Port] button.

It is useful to think of each IP Address as a separate COM port, where it is clear that there is only one instrument attached to a port then looking for 254 more is not required.

Port	Protocol	Baud Rate
COM1:	MOD-MUX Modules	Auto
COM2:	<None>	Auto
COM3:	<None>	Auto
(COM4):	<None>	Auto
(COM5):	<None>	Auto
(COM6):	<None>	Auto
(COM7):	<None>	Auto
(COM8):	<None>	Auto
(COM9):	<None>	Auto

TCP/IP  
 Protocol: Honeywell HC900 Port: 502 Timeout: 5 secs  
 Begin: . . . End: . . .

Auto Configure Status  
 Checking: Checking: Click Start Scan to begin  
 Baud Rate: N/A  
 Address: N/A  
 Auto Build GDW View

Firstly, if all the instruments to be autodetected are accessible via TCP/IP then set the Protocol for all the COM ports to <None>.

### Protocol:

Select the relevant protocol for one of the instruments to be detected.

### Port:

The 'port' field should be left as 502 unless there is a specific reason to change it. Port 502 is the standard Modbus TCP/IP port.

### Timeout:

Due to limitations inside the ModBus TCP/IP protocol and the Internet in general, scanning for Slave Addresses on a single IP Address can take a long time. The 'Timeout' field is used to control this. For a LAN, the default of 5 seconds is suggested, meaning that one slave address per 5 seconds is tested. For testing across the Internet, a value higher is recommended, such as 25 seconds.

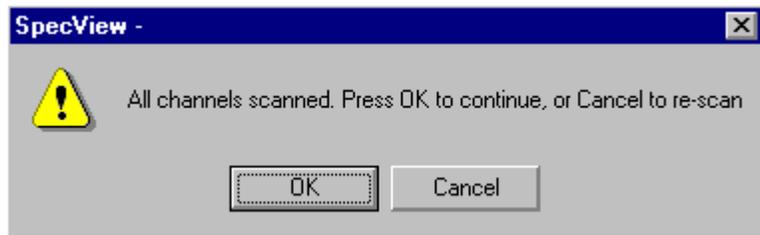
**Begin: and End:**

The Ending IP Address is set to the same as the start address by default, this allows for quick scanning of a single IP addressed native instrument or a string on a single bridge.

The Honeywell HC900 Autodetect is pre-set as there can only be one Slave Address on any given IP Address, so it will always skip to the next IP Address (if any) when an HC900 is found.



Click  once the instrument view(s) have been displayed on the GDW (which may be behind the Ports and Protocols dialog box) then click  The following dialog will be displayed:



to finish scanning for instruments click **OK**. To scan for more instruments click **Cancel**.

Once this process is complete Autodetect cannot be used to add further TCP/IP instruments to this configuration. It is necessary to either add additional instruments manually (see page ...). If the autodetect scanning is required to confirm the exact address for instrument(s) then create a new configuration and



autodetect them. Then using the Variables List tool select the name of the instrument then click Properties. The address field will show the exact address to use to manually (see page ...) add that instrument to a pre-existing configuration.

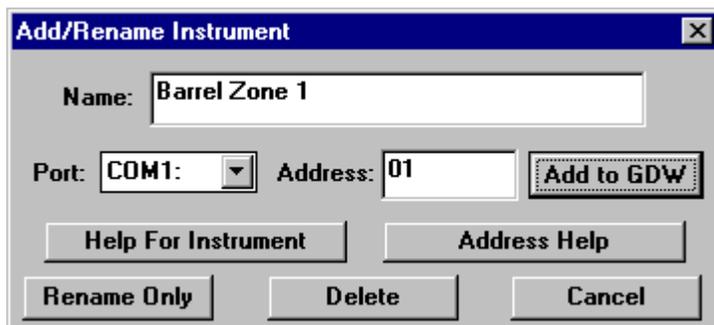
**Add/Rename Instruments**

To change the name and/or address of an Instrument OR  
To add an Instrument View to the GDW



Open the Variables List by clicking on the toolbar, then

- Double-Click an instrument name in the Variables List OR
- Single Click an instrument name and click **Properties** OR
- Right Click an instrument name in the Variables List



**NOTE: The names of existing Instrument Views will NOT be changed. To get an Instrument View with the new name, click Add to GDW and delete the existing Instrument View on the GDW by selecting it and pressing the Delete key. DO NOT CLICK THIS DELETE BUTTON.**

## Decimal Points

Some protocols (examples include *Modbus* (see page 43), Red Lion and Yokogawa Green Series) do not provide the computer with information about decimal points. Therefore when SpecView auto detects instruments it will assume NO decimal places for Modbus and Red Lion and ONE decimal place for Yokogawa Green series.

Some instrument values are known by SpecView to require a decimal point and this will be added automatically. Other instrument values MAY need one or more decimal points depending on how the instrument is configured. These values take their decimal point requirements from part of the *address* (see page 43) details.

When you start SpecView, if the reading is ten or a hundred times too big/small (for example, 123.4 instead of 1234), then you will need to edit the instrument address.

To change the decimal places for a specific variable on a GDW use the *Dynamic Attributes* (see page 86) menu command.

## Name (of Instrument)

Names can be any length and include spaces and special characters (# ; \* etc.)

***NOTE: Do not make them too long. That will make list boxes very wide.***

## Port

Select the communications port (COM1 to COM9) that this instrument is (to be) connected to.

## Address

Type in the address for this instrument. Click **Address Help** if you are not sure.

## Add to GDW

Click this button to add an Instrument View to the GDW. Any changes to Name, Address or COM Port are also saved.

## Help for Instrument / Address

Help for your instrument(s) may be included if provided by the instrument manufacturer  
Address Help will detail how to define the address SpecView uses to communicate with this instrument.

## Rename Only

Saves any changes made to Name, Address or COM Port without adding a new Instrument View to the GDW.

## Delete Instrument

***NOTE: Please read Precautions Deleting Creating Instruments under Manually Defining Instruments (see page 41) before deleting Instruments***

Clicking the button will delete the Instrument.

To continue with Configuration go to *Configuring SpecView* (see page 79)

If you have the configuration the way you want it go to *Runtime Mode - Using SpecView* (see page 51)



# Using SpecView

## Runtime Mode

Click the **Go Online Now!** button to go into *Runtime Mode* (see page 199) with the highlighted configuration.



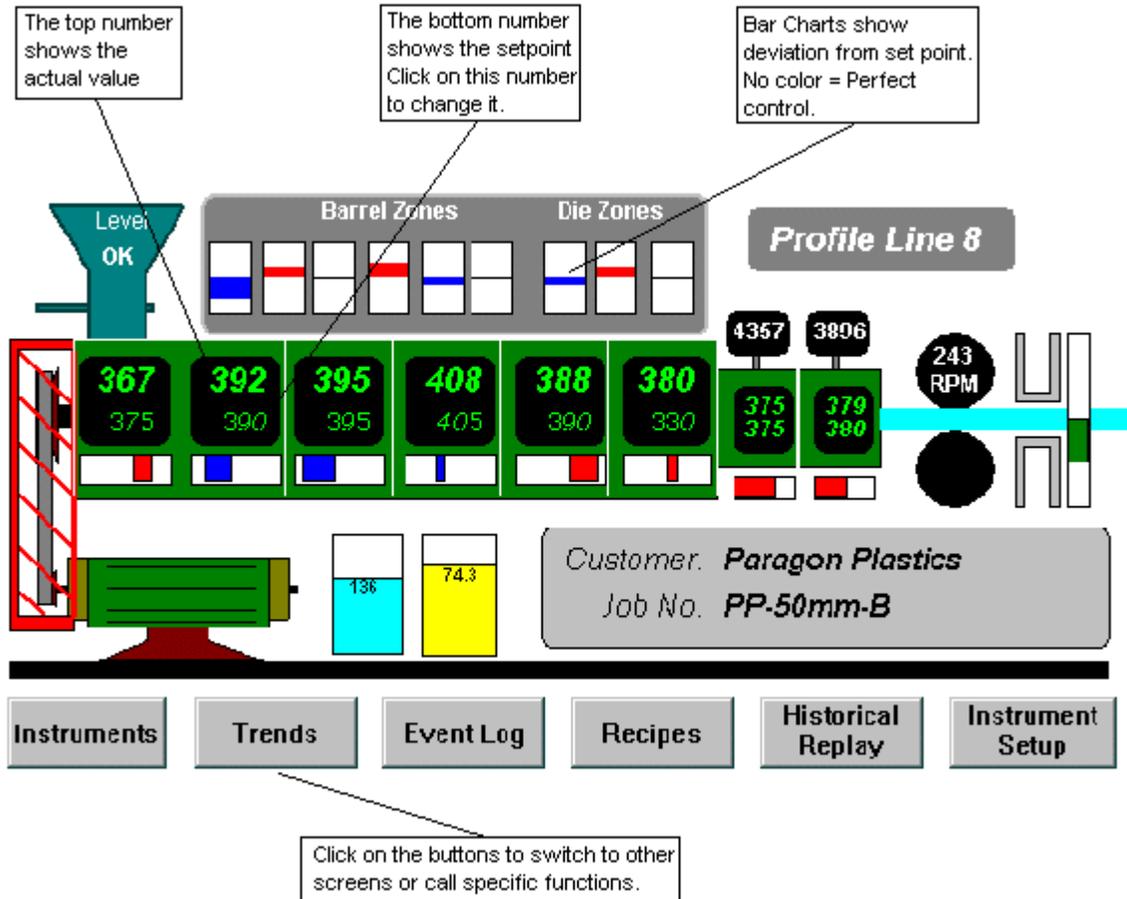
This will happen automatically when the countdown ends. Click the **Stop countdown** button to cancel the countdown.

**NOTE: To go directly into the Configuration Mode (see page 79) of the highlighted configuration, press and hold the shift key while clicking the Go Online Now! button**

Actions are initiated by clicking on an object (variable, Bar chart or button) on the GDW, double-clicking on a variable in a Parameter List or by using the *Runtime Menu* (see page 58)

- GDW's (see page 79) are communicating with the instruments
- Current or Historical Data is displayed on the GDW
- *Data Logging* (see page 134) is storing values for use in Log Reports
- Recipes may be selected, edited, saved and loaded

To change a value click the one you want to change. For example, click the 390 Set Point for zone 2



During Runtime the values of variables can be changed by any of the following:

- The instrument
- The user via *data entry* (see page 52)
- Strategy Controller or Button actions* (see page 160):
  - Parameters: Alter Value Interactively
  - Parameters: Copy From... To
  - Parameters: Download Specific Value
  - Parameters: Math Function
- Recipe: Download Specific Recipe
- DDE* (see page 168)

## Data Entry

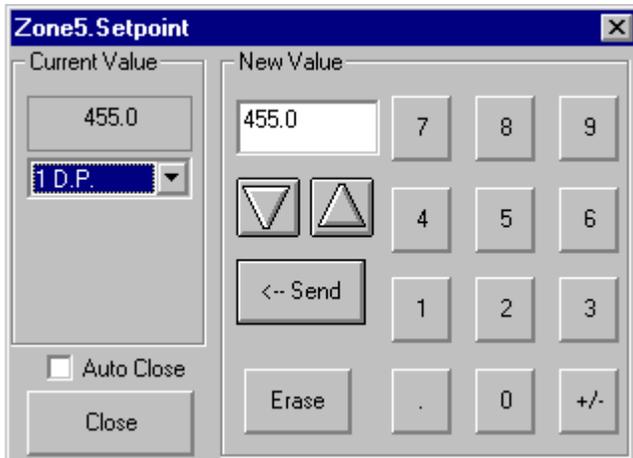
Any writeable variable's value which is displayed on the GDW can be changed by just clicking on it

See:

- Data Entry Numeric* (see page 52)
- Data Entry Text* (see page 54)
- Bar Chart Setup* (see page 112)

## Data Entry - Numeric

Used for changing numeric values on the GDW

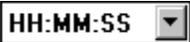


The current value is shown which is used as the start point for the new value  
To change the value:

Click the   buttons OR

Use the numeric keypad and then click 

**NOTE: Each time you click the up/down buttons the new value is sent to the instrument.**

Time variables are entered in the selected format  or 

If you make a keypad error click the **Erase** button: the current value will be re-read into the New Value field.  
If the value is not accepted by the instrument an error code will be displayed. Check that a valid number is being sent.

*Error Codes (see page 174)*

### Decimal Places

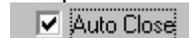
To change the decimal place resolution of the value sent with each up/down click and select from the list:



To permanently change the decimal places of a numeric variable edit the *Dynamic Attributes (see page 86)* of the variable.

### Auto Close

To speed data entry check the Auto Close box

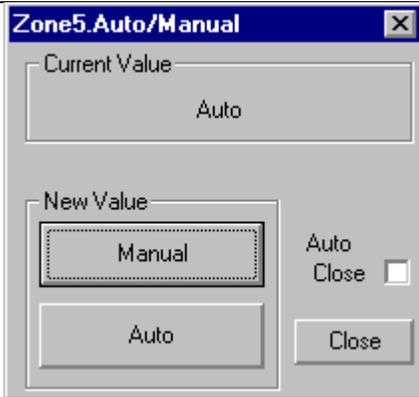


This applies to all data entry boxes

The box will close automatically when SpecView gets confirmation that the entry has been accepted.

### Data Entry - Boolean

Click the button required



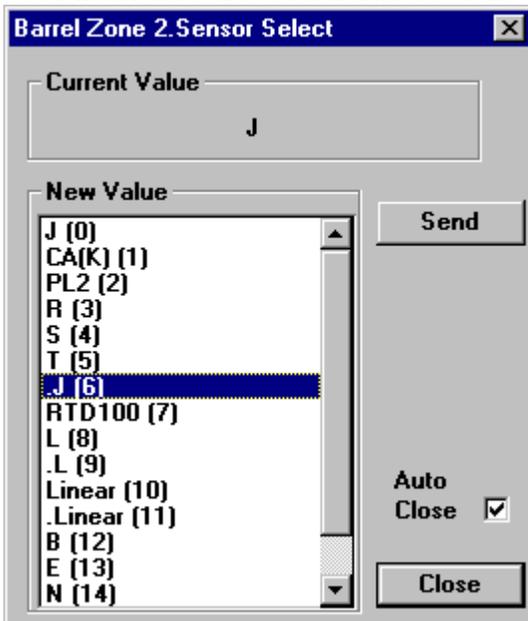
To change the wording on the buttons edit the Variable Properties using the Variables List tool



Error Codes (see page 174)

### Data Entry - Enumeration

Used when there are several choices of discrete settings



Double-Click (or single-click and click **Send**) on the required value

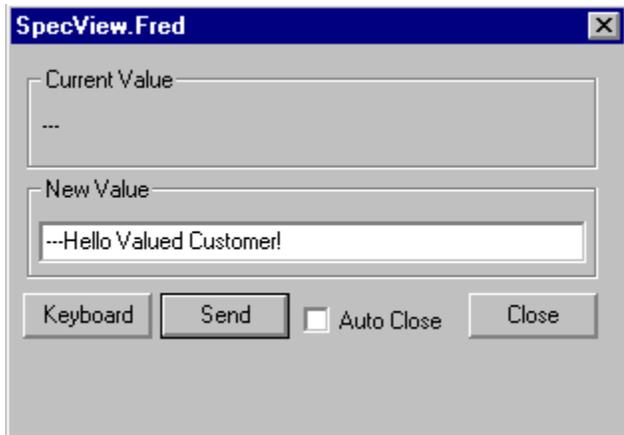
**NOTE: Some instruments immediately change the data back to a default setting. This will cause a write error. Check to see whether the instrument has accepted the expected result. If not, maybe the wrong number of decimal places have been entered.**

Error Codes (see page 174)

### Data Entry - Text Strings

Fixed text cannot be edited. Text variables from instruments and SpecView Text User Variables can be edited in Runtime mode.

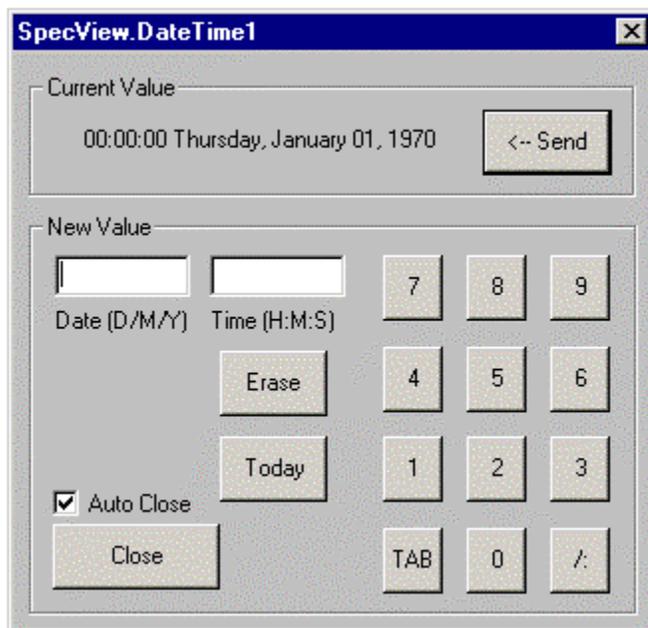
Click the text to edit:



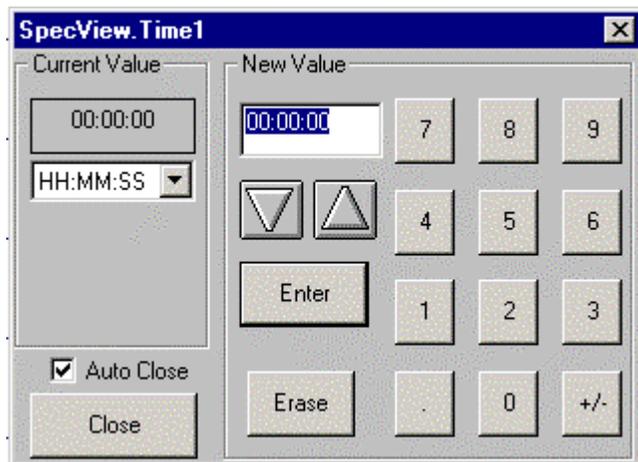
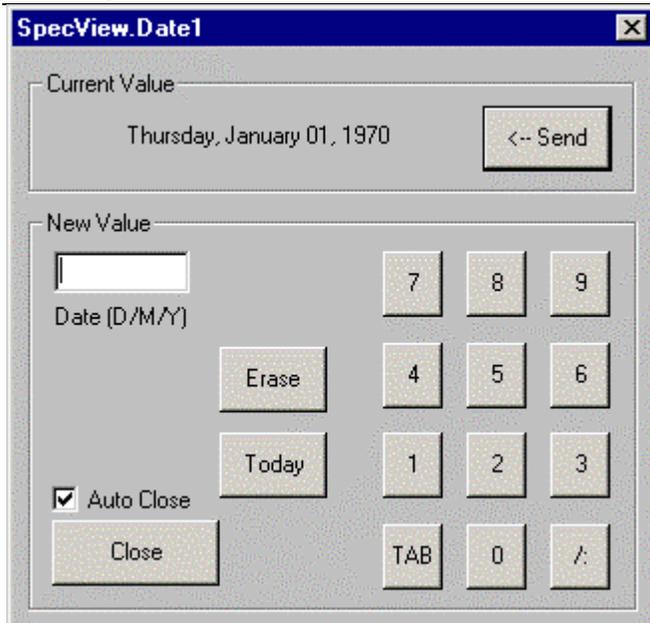
Click the **Keyboard** button to use an on-screen keyboard  
 When the text has been entered click the **Send** button  
*Error Codes (see page 174)*

### Data Entry - Date and Time

Date and Time variables from SpecView Date and Time User Variables can be edited in Runtime mode.  
 Click the Date and Time to edit:



This dialog box shows entry of both Date and Time, there are also dialog boxes for entering the Date and Time separately, as shown below:



When the Date and/or Time have been entered click the **Send** button

If an error occurs see: *Error Codes (see page 174)*

## Parameter List

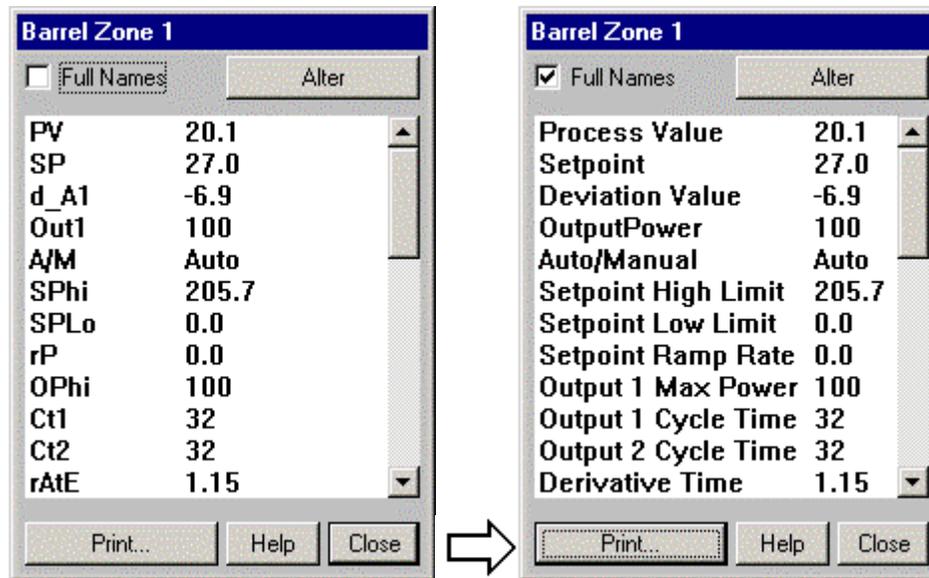
The Instrument View on the GDW is a representation of the instrument itself and as such the buttons on it have similar functions.

Typically one of the buttons on the Instrument View will display the complete Parameter List showing the values for all the variables for the instrument.

The particular button on the Instrument View that displays the Parameter List depends on the specific instrument, so some experimentation may be needed.

Once the Parameter List is shown, if some of the parameters appear to be missing then it may be because it is just the abbreviated list of frequently required variables. To display the full list use the Options Menu and select the Short List menu command. All the parameters will appear. Click again to toggle back to the short list mode.

The Full Names check-box on the dialog box switches between a mnemonic and full name mode

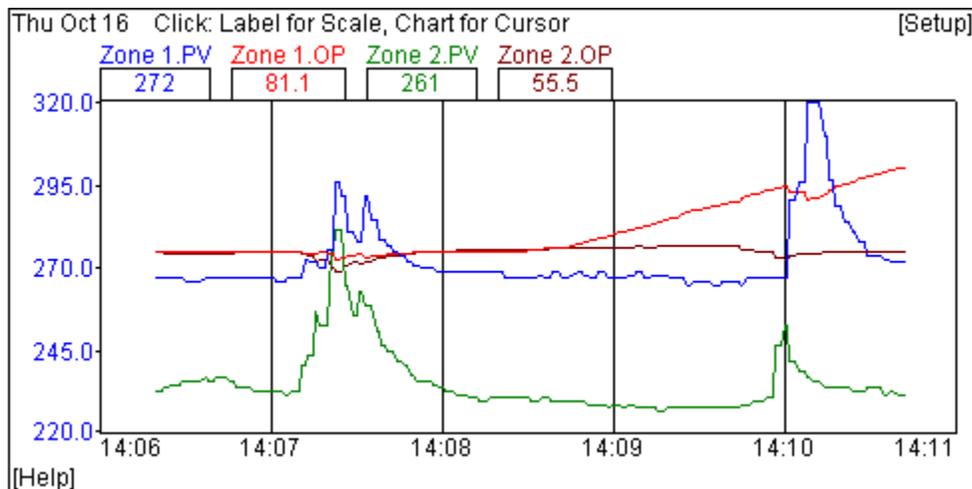


To change a value:

- Single-click a variable and then click **Alter** OR
- Double-Click a variable

Click the **Print...** button to save the file to disk for future printing. To send the file directly to the printer use the name of the printer, for example LPT1: as the filename.

## Trend Charts



To see the scale of any Pen, click the label; for example, Zone 2.PV. However, this will only become noticeable if the Pens have different scales. This can be made more obvious if the Pens have different colors.

Cursors (the vertical lines) are used to display exact times and values

To edit the chart click *[Setup]* (see page 108)

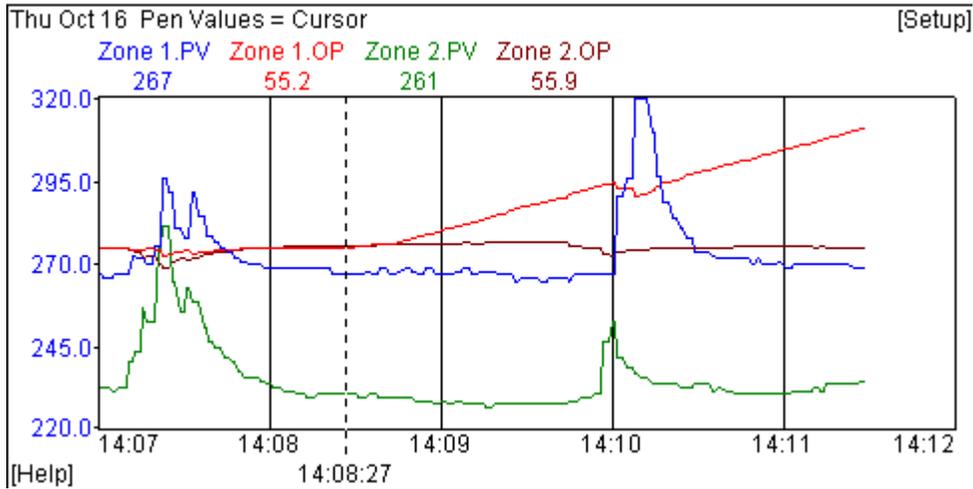
### Trend Chart Cursors

These are the vertical lines which appear on the chart.

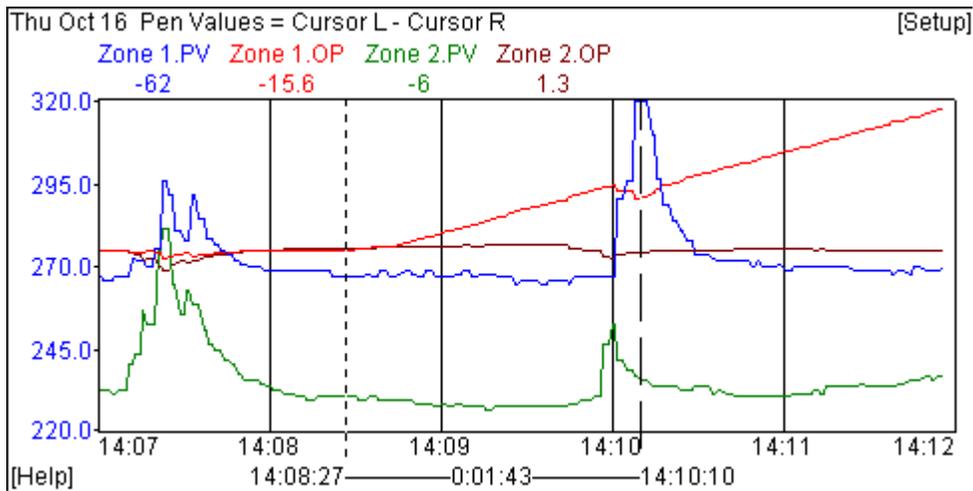
Single-click anywhere on the body of the chart to get a cursor.

**Click the cursor time(s) to remove the cursors**

The time at the cursor is shown and the numeric values under the labels show each value at that time:



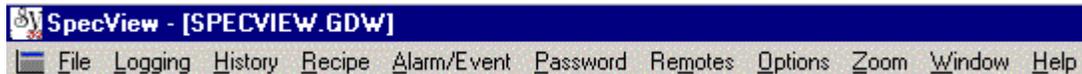
Double-click the chart and a second cursor appears. The time between the cursors is shown and the numeric values change to the **difference** in value between the cursors:



For further details on *Trend charts* (see page 108) which includes adding horizontal grid lines.

## Runtime Menubar

### Runtime Menus



Accessed from the **Enter Runtime Mode** menu command on the Configuration Mode's *File menu* (see page 66).

See:

- File Menu* (see page 59)
- Logging Menu* (see page 60)
- History Menu* (see page 60)
- Recipe Menu* (see page 61)
- Alarm/Event Menu* (see page 61)
- Password Menu* (see page 61)
- Remotes Menu* (see page 62)

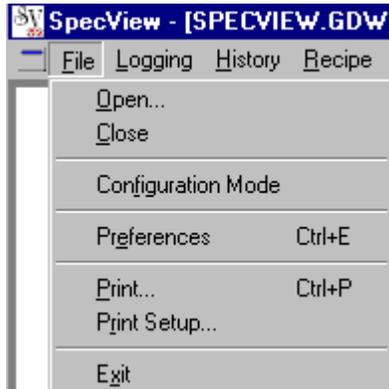
*Options Menu (see page 62)*

*Zoom Menu (see page 63)*

*Window Menu (see page 64)*

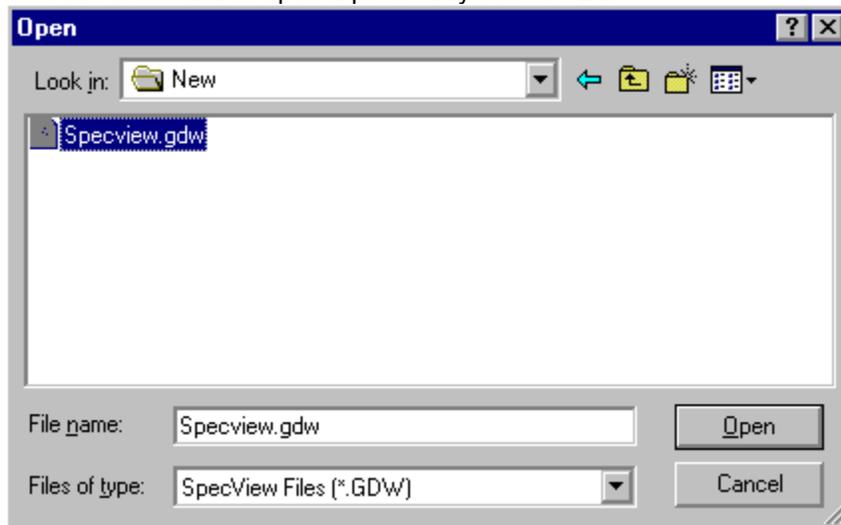
*Help Menu (see page 64)*

## File Menu (Runtime)



### Open

Use this command to open a previously saved GDW



### Close

Closes the current GDW. This is the same as the *SpecView: Exit Program (see page 105)* button attribute.

### Configuration Mode

Switches to the *SpecView Configuration Mode (see page 197)*

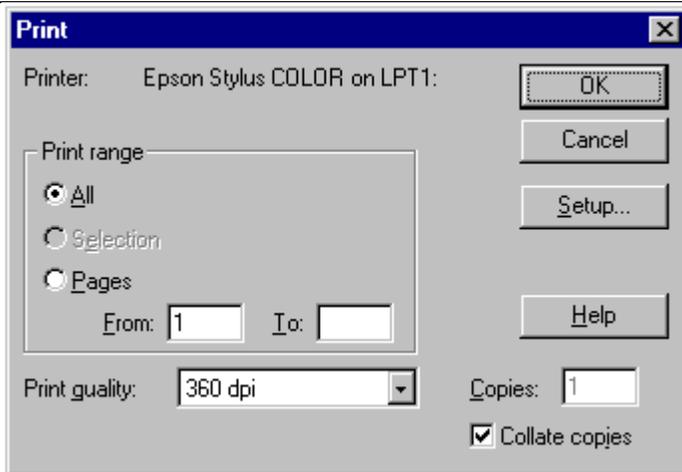
### Preferences

Shortcut: Ctrl + E

Displays the *Preferences (see page 124)* dialog box.

### Print

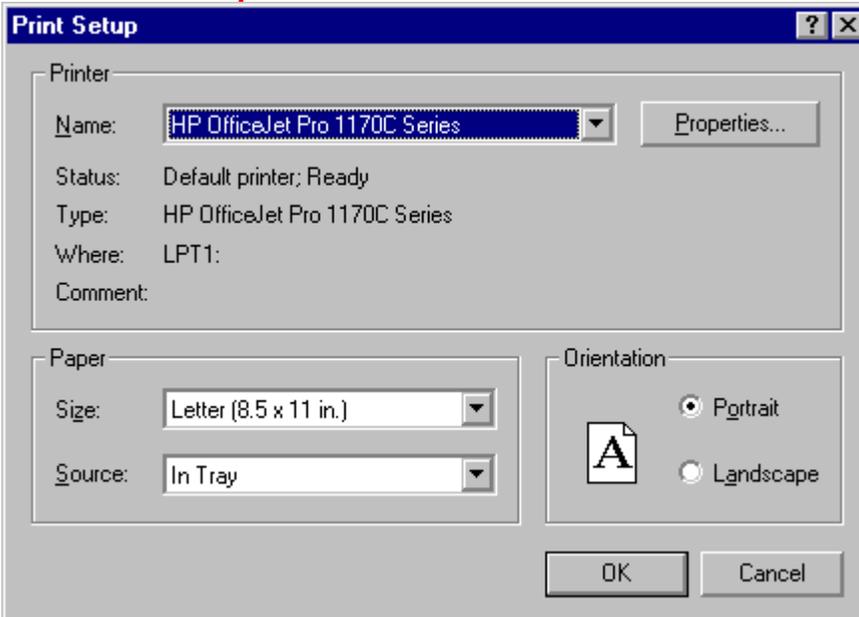
Shortcut: Ctrl + P



Click the **OK** button to print the current screen (GDW) to the printer shown.

### Print Setup

**NOTE: Landscape mode is recommended for GDW's containing Trend charts**



Use this dialog box to select and setup the printer.

**NOTE: To change the default settings use the printer setup in Windows Control Panel**

### Exit

Shortcut Alt + F4  
Exits (closes) SpecView

### Logging Menu



Logged data is converted into *Log Reports* (see page 137) using this menu command

### History Menu



This menu starts *Historical Replay* (see page 142)

## Recipe Menu



Use this menu to open the Recipe Manager for this GDW. See *Recipes* (see page 114)

The Recipe Manager can be displayed by the *Recipe: Show Recipe Manager* (see page 105) button attribute.

## Alarms Menu



Use this menu to display the Alarm Window which list the *Alarms* (see page 86) which have occurred.

When the Alarm Window is displayed it can be resized. SpecView remembers the last position and size. If the Alarm Window is not visible use the Reset Window Position menu command.

The alarm list can be displayed by the *Alarms: Show Alarm List* (see page 98) button attribute.

The Alarm Window can be disabled using the *Preferences - Alarm* (see page 126)

However, the Alarm Window can be viewed from the Alarm/Event menu when desired.

**NOTE: that with the Alarm Window set to not pop-up, there is no other indication from SpecView that the alarm has occurred. Use the SpecView.NewAlarm variable or your own variables to warn the user by some other means.**

The Alarm Window position can be re-set using the *Preferences - Settings* (see page 127)

## View Alarm Window

Use this menu function to display the list of current and old alarms.

## Reset Window Position

If the Alarm Window has been dragged off the screen use this menu command to reset the position. The Alarm window position can also be reset using *Preferences - Settings* (see page 127)

## View Event Window

Displays the list of events recorded by SpecView

The Event list can be displayed by the *Events: Show Event List* (see page 99) button attribute.

## Password Menu (Runtime)



Use this menu to Log In to SpecView with a Password.

Password Log In can be accessed by the *Password: Log In or Log Out* (see page 104) button attribute

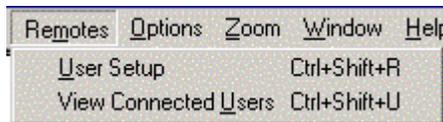
## Log In / Log Out

Select the user from the list and enter the password



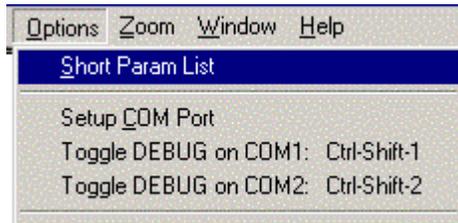
For setting up passwords in Configuration mode see *Passwords* (see page 130)

### Remotes Menu



Further details *Specview Networking - Local* (see page 31)

### Options Menu



### Short Param List

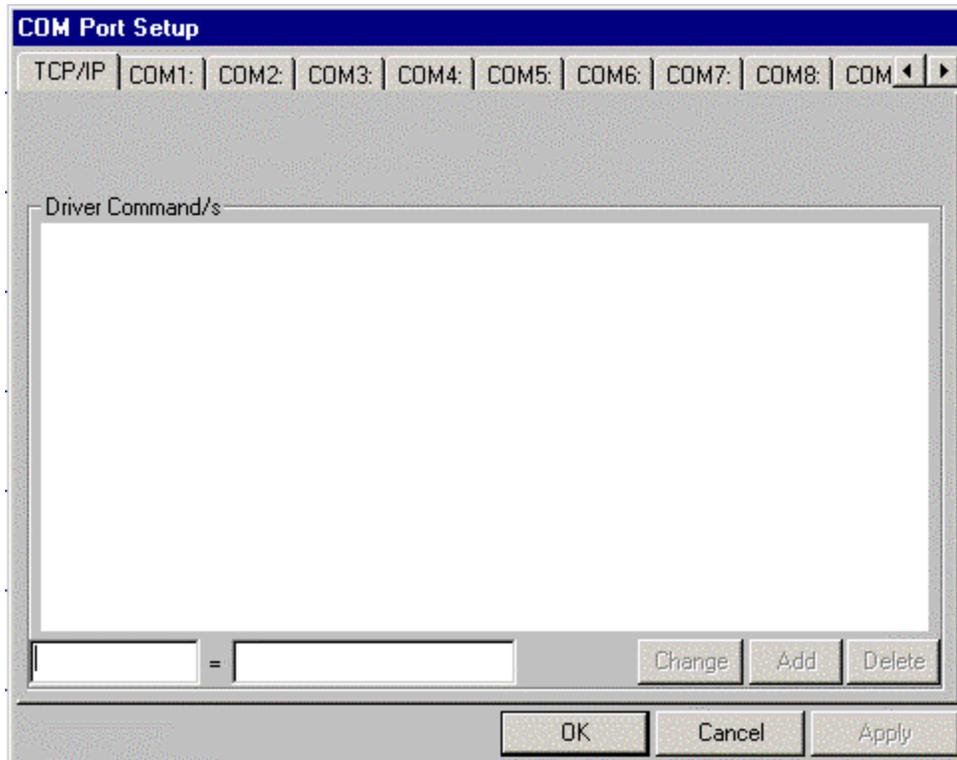
This menu command toggles the parameter list on *Instrument Views* (see page 198) between Short List and Full list modes. Full List mode lists ALL the parameters for the instrument, whereas Short List mode displays just some of the most frequently used parameters.

**NOTE: Full List mode is not the same as the Full Names checkbox on the Parameter List (see page 56) dialog, which toggles between Full variable names and abbreviated variable names.**

Access to the Full Parameter List can be restricted by *Password Log In Level* (see page 130)

### Setup COM Port

Displays the COM Port Setup dialog box and allows the COM port(s) settings to be changed during Runtime.



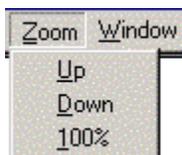
### Toggle DEBUG on COM1

Enable/disable debug information on COM1 by setting the driver command: DEBUG=1  
It is not recommended to change this setting unless under the direction of a SpecView representative.

### Toggle DEBUG on COM2

Enable/disable debug information on COM2 by setting the driver command: DEBUG=1  
It is not recommended to change this setting unless under the direction of a SpecView representative.

### Zoom Menu



#### Up

Enlarge the size of the graphics & text within the GDW. Repeatedly selecting this keeps on enlarging.

#### Down

Reduce the size of the graphics & text within the GDW. Repeatedly selecting this keeps on reducing.

#### 100%

Restore to the original size.

***NOTE: Do not click the Trend chart cursors (vertical lines) when zoomed***

## Window Menu (Runtime)



Cascade and Tile commands are standard Windows commands to arrange open Windows. Arrange Icons has no function in SpecView. Select any open GDW listed to switch to that GDW.

## Help Menu (Runtime)



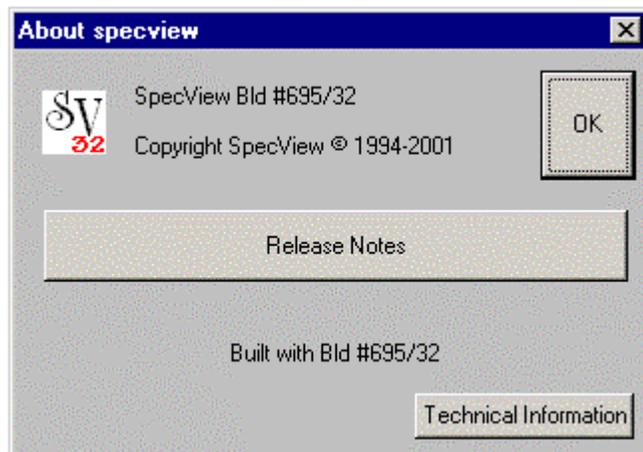
### SpecView Help

This menu command starts SpecView's help system and displays the contents page.

### Using Help

Starts the help system for Windows, which will explain how to use the help system for maximum effectiveness.

### About SpecView



Displays the SpecView version and build information. Click Release Notes for the details on this version.

If you need to contact SpecView's *Technical Support* (see page 188) you may be asked to click the **Technical Information** button to provide further details of your specific installation.

### Registration Info

Displays the serial number and status of the SpecView Dongle.

This dialog box is used to upgrade the Dongle.

Click *Enable Further Options* (see page 176) to upgrade the dongle

### Release Notes

Details changes made to SpecView such as new features and fixed problems.

# Configuring SpecView

## Configuration Menubar

### Configuration Menubar & Toolbar



Accessed from the **Configuration Mode** menu command on the Runtime Mode's *File menu* (see page 59).

The configuration menus and menu commands are individually described below. However, for detailed information on how to configure SpecView see *Configuring SpecView* (see page 79)

See:

*File Menu* (see page 66)

*Edit Menu* (see page 68)

*Draw Menu* (see page 70)

*Object Menu* (see page 71)

*View Menu* (see page 72)

*Passwords Menu* (see page 74)

*Setup Menu* (see page 74)

*Window Menu* (see page 77)

*Help Menu* (see page 78)

## File Menu (Configuration)



### New

Shortcut: Ctrl + N



Opens a new blank GDW

Instrument Views and Variables can now be added to this new GDW by clicking on the Variables List tool



and a button can be used to swap between GDW's at Run Time as is described in the Quick Start Guide.

### Open (Configuration)

Shortcut: Ctrl + O



Opens an existing GDW. Same function as *File Open (Runtime mode)* (see page 59)

### Close (Configuration)

Closes a GDW

### Save

Shortcut: Ctrl + S



Saves a GDW This will save all changes made.

**NOTE: There is no "Replace Existing?" warning dialog box, so to save as a different name use Save As... on the File menu.**

### Save As

Saves a GDW with a new name. This is useful if you want to make an exact copy of a GDW and then edit the variables.

*Editing Dynamic Attributes (see page 86)*

## Set As First GDW

This only applies where a configuration contains more than one GDW.

Click this menu command to make this GDW the first window when entering Runtime mode.

If this is not set, then the last GDW to be edited will be the first one opened when entering Runtime mode.

## Auto-open on Runtime

Click this menu command to tell SpecView to open (start) this GDW when entering Runtime mode

**NOTE: Be sure to click this menu command if the GDW has a Trend chart. If you do not, the GDW will have to be opened in Runtime mode before the Trend chart will start to be drawn.**

## Enter Runtime Mode



Toolbar: Exits Configuration Mode and enters Runtime mode. You start communicating with the connected instruments.

## Preferences

Shortcut: Ctrl + E

Click this menu command to display the *Preferences dialog box* (see page 124) to modify SpecView's settings.

## Print (Configuration mode File menu)

Shortcut: Ctrl + P

Toolbar:  Prints the current GDW. Use the Print Setup menu command to change your printer settings.

## Print Preview

Previews the printed page

## Print Setup (Configuration mode File menu)

Use this to change the printer settings, such as using landscape format.

## Print to JPG

Prints the screen to a .JPG (Jpeg format) file.

## Recently Used File List

Shows the four last GDW's that were edited. Clicking on one will open it.

**NOTE: If the GDW was in another configuration all dynamic links will be removed. Do not open a GDW from another configuration unless you only want to use the background.**

## Restart SpecView

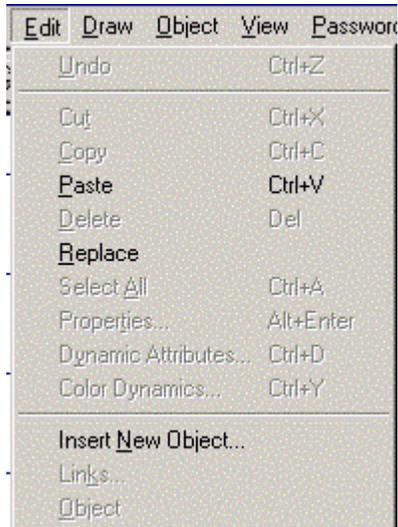
Restarts SpecView as if the user had exited and started it again.

## Exit SpecView

Shortcut: Alt + F4

Closes all GDW's and SpecView.

## Edit Menu



### Undo

Shortcut: Ctrl + Z

**NOTE: Undo will only undo a move of an object.**

### Cut

Shortcut: Ctrl + X

Cuts the selected object and puts in on the Window's clipboard

### Copy

Shortcut: Ctrl + C

Copies the selected object and puts it on the Window's clipboard

**NOTE: Do not copy Dynamic objects (Instrument Views, Trend / Bar charts or variables) as the Dynamic Attributes (see page 86) will be lost.**

SpecView has a quick way to copy drawing objects - *Quick Copy* (see page 92)

### Paste

Shortcut: Ctrl + V

Pastes the contents of the Window's clipboard on the GDW.

**NOTE: The selection will be pasted into the same location on the GDW as the Cut or Copy was taken from. Hence copied items will be overlaid on each other and will need to be dragged into the correct position. Objects in front behind others (see page 92)**

### Delete

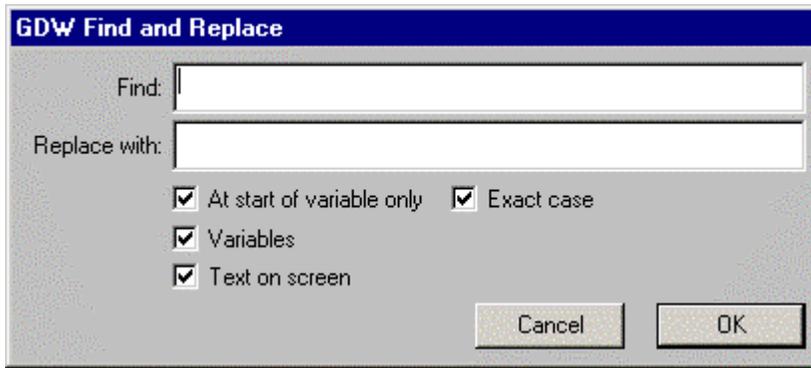
Shortcut: Del(ete) key

Deletes the selected object(s)

**NOTE: Do not forget that SpecView does not support Undo for deleted objects.**

### Replace

If a GDW has been duplicated for use by another identical instrument, then this function can be used to rename all the instrument variables on the GDW from, for example, "Furnace A" to "Furnace B".



### Select All

Shortcut: Ctrl + A

Selects all the objects on the GDW.

**NOTE: This is useful to find stray objects such as very small drawing objects put down by mistake.**

To de-select the objects just click the background.

### Properties

Shortcut: Alt + Enter

*Shape Properties (see page 92)*

Edits - depending on the selected object:

- Shape properties of a drawing object
- Text attributes
- Trend chart attributes
- Bar chart attributes

There is no function for grouped objects or Instrument Views

### Dynamic Attributes

Shortcut: Ctrl + D

**NOTE: This is only relevant to values of variables displayed on the GDW during Configuration mode as XXX, not to the names of the variables or other objects (for example, Trend charts or bitmaps) on the GDW.**

Select the object by SINGLE clicking on it. Then use the Edit - Dynamic Attributes menu or the shortcut key. The Dynamic Attributes dialog box is displayed for the selected variable.

### Color Dynamics

Shortcut: Ctrl + Y

Select the object by SINGLE clicking on it. Then use Color Dynamics... from the Edit menu or the shortcut key.

The *Color Dynamics (see page 87)* dialog box is displayed

### Insert New Object

Displays the Insert New Object dialog box which allows items created by other Windows applications to be displayed on the GDW.

### Links

Displays the Edit Links dialog box to allow items created by other Windows programs to be added to a GDW, for example, Excel spreadsheets.

However, this menu command will only be enabled if the Link box was checked on the Insert New Object dialog box.

## Object

This menu command will only be enabled if an object has been inserted onto the GDW using the Insert New Object dialog box, and that object is currently selected.

It will then display a submenu with menu commands appropriate for that type of object.

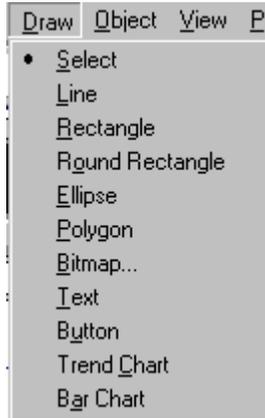
## Draw menu

These menu commands and Tools are used to draw graphics on a GDW

You can also add *Bitmaps* (see page 94) (.bmp files) to a GDW

If you are not familiar with standard Windows drawing functions please read *Drawing Basics* (see page 90)

Menu:



Toolbar:



These drawing functions are described in greater detail under *Drawing Basics* (see page 90) below, see:

*Select* (see page 93)

*Line* (see page 93)

*Rectangle* (see page 93)

*Round Rectangle* (see page 93)

*Ellipse* (see page 94)

*Polygon* (see page 94)

*Bitmap* (see page 94)

*Text* (see page 95)

*Button* (see page 96)

*Trend Chart* (see page 96)

*Bar Chart* (see page 96)

## Object Menu



### Line Color

The word "Line" applies to both lines and the outlines of the other drawing objects. Changes the color of an already selected line AND chooses the color for all lines you draw from now on during this Configuration Mode session because the default values will be restored when exiting Configuration Mode.

### Line Thickness

The word "Line" applies to both lines and the outlines of the other drawing objects. Changes the thickness of an already selected line AND chooses the thickness for all lines you draw from now on. You can also get the Shape Properties dialog box by double clicking on the object. The default values will be restored when exiting Configuration Mode.

### Fill Color

Changes the fill color of an already selected object AND changes the fill color of all objects you draw from now on. The default values will be restored when exiting Configuration Mode.

### Text Font

Sets the default *Text Font* (see page 84) for text objects added to the GDW during *this* editing session. The default values will be restored when exiting Configuration Mode.

### Group

Shortcut: G

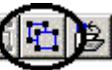


Toolbar:  and on the Object Menu:  
Objects may be grouped together for moving and saving. See *Selecting, Grouping and Saving* (see page 91) objects.

### UnGroup

Shortcut: U



Toolbar:  and on the Object Menu:  
A previously grouped object may be ungrouped for editing.  
Select the object.  
Click the UnGroup tool (or click this menu command).

### Align Left/Top/Right/Bottom, Distribute evenly horizontal and vertical

If a number of objects on the GDW are selected (but NOT grouped), then these menu commands will align or distribute the objects evenly.

For align, all objects are aligned with the one furthest in the direction specified; for example, if a number of objects are Aligned Left, then it uses the left-most one to align all the others to.

For Distribute, all the selected objects are distributed between the outermost two objects in the selection.

### Move To Front

Shortcut: Ctrl + (numeric keypad) Plus

Moves the selected object in front of ALL other objects

*Objects In Front / Behind others (see page 92)*

### Move To Back

Shortcut: Ctrl + (numeric keypad) Minus

Moves the selected object behind ALL other objects

*Objects In Front / Behind others (see page 92)*

### Move Forward

Shortcut: (numeric keypad) Plus

Moves the selected object up one layer

*Objects In Front / Behind others (see page 92)*

### Move Back

Shortcut: (numeric keypad) Minus

Moves the selected object back one layer

*Objects In Front / Behind others (see page 92)*

### Save Object

***NOTE: Do not include variables in saved objects***

*Grouped Objects (see page 91) may be saved for re-use*

Objects are saved in a file with the extension .gdo (graphical display objects)

### Load Object



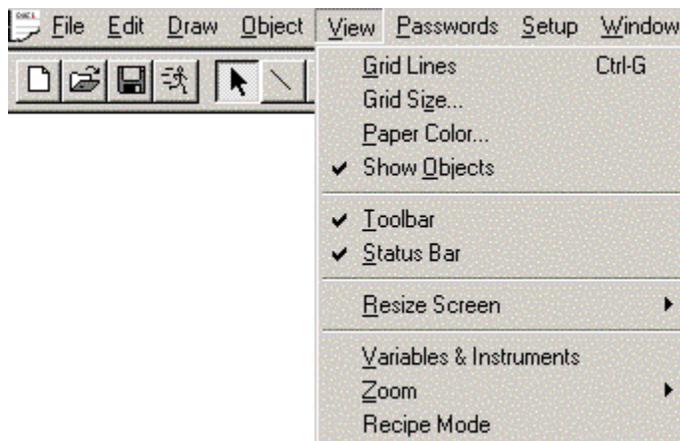
Toolbar:

Loads a previously saved object

### Name

Used for SpecView diagnostic purposes only

### View Menu



### Grid Lines

Shortcut: Ctrl + G

Toggles the editing grid on and off.

The purpose of the Grid is to help with alignment of objects when positioning them with respect to each other, as objects will appear to jump by the Grid Size setting (see below), which saves having to move the mouse quite so precisely.

The Grid lines themselves are drawn at intervals of ten times the actual Grid size for clarity.

### Grid Size

Changes the Grid spacing

**NOTE: If you are putting values in tables set the grid to a larger number than the default value of 5 before starting**

Enter the value for a new grid size. A larger number = a coarser grid.

The Grid lines themselves are drawn at intervals of ten times the Grid size for clarity.

### Paper Color

Changes the color of the GDW background

**NOTE: If you are going to print the GDW leave background as white to save ink**

### Show Objects

This toggles the highlighting of objects which have been inserted using Insert New Object... from the Edit Menu.

### Toolbar

Toggles the Toolbar On and Off

### Status Bar

Toggles the Status Bar (at the bottom of the screen) On and Off

**NOTE: Turning Off the Status Bar in Configuration Mode will hide it in Runtime mode**

### Resize Screen

If the GDW was created on a computer with a different screen resolution it will be necessary to resize the GDW to fit the current resolution.

**Resize 1024x768 » 800x600**

**Resize 800x600 » 640x480**

**Resize 640x480 » 800x600**

**Resize 800x600 » 1024x768**

Resizes this GDW from the first resolution to the second

## Variables and Instruments



Toolbar:

Toggles the Variables List On and Off

### Zoom

Zooms the current GDW. This is useful for detailed editing and precise positioning of objects.

#### Zoom 100%

Returns the GDW to normal size

#### Zoom 150%

#### Zoom 200%

#### Zoom 300%

#### Zoom 400%

#### Zoom 500%

Zooms the GDW to the specified percentage of normal size

### Recipe Mode

Toggles the *Recipe Mode* (see page 199) On and Off

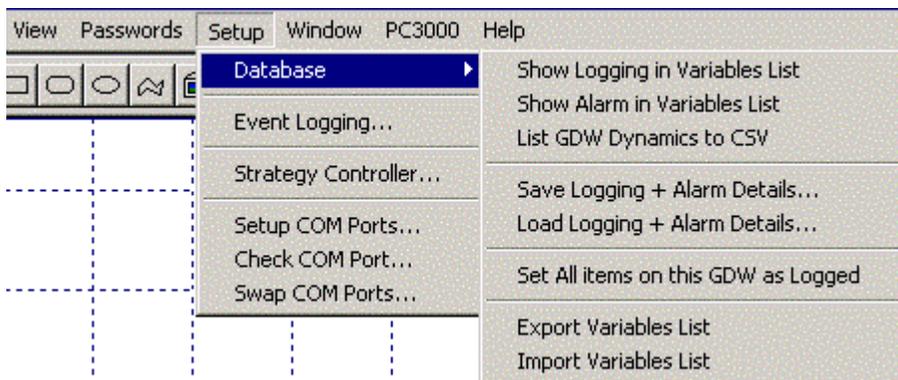
**NOTE: You can also cancel the Recipe Mode by clicking the Right mouse button**

### Password Menu (Configuration)



These commands are detailed in *Passwords* (see page 130)

### Setup Menu



#### Database - Show Logging in Variables List

Shows, in the *Variables List* (see page 80), which variables are logged

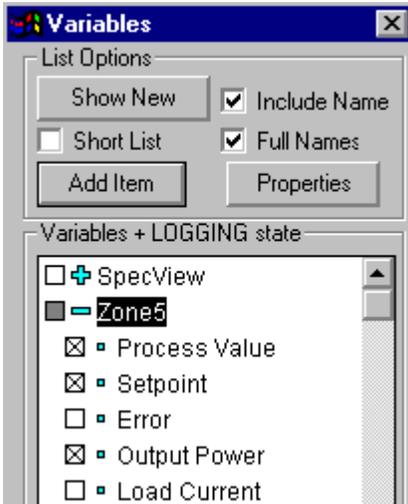
To add/delete a variable to/from logging

**NOTE: If the Show Logging in Variables List menu command is enabled, then the Show Alarm in Variables List menu command will be disabled.**

Open the *Variables List* (see page 80) by clicking



on the toolbar



The crosses show which variables are logged. Click the box to check/uncheck each one

**NOTE: To include ALL the variables on a GDW in logging see the "Set All items on this GDW as Logged" menu command from the Database submenu on the Setup menu (see page 74)**

See *Disk Space for Logging* (see page 136) for file size details, as logging more variables will increase disk space requirements.

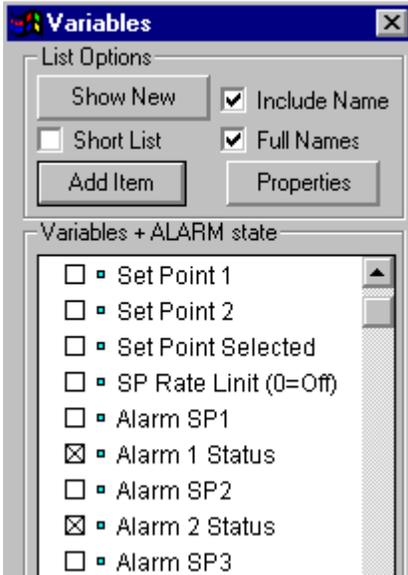
**Database - Show Alarm in Variables List**

Shows, in the *Variables List* (see page 80), which boolean variables will be considered alarms when they become true.

To add/delete a variable to/from alarm monitoring



Open the *Variables List* (see page 80) by clicking on the toolbar



The crosses show which variables are Alarms

Click the box to check/uncheck each one

**NOTE: Any boolean can be selected. If you want to be alerted when a loop has been put into manual mode you can check Auto/Manual.**

**Database - List GDW Dynamics to CSV**

Used for SpecView diagnostics only

## Database - Save Logging + Alarm Details

Used for SpecView diagnostics only

## Database - Load Logging + Alarm Details

Used for SpecView diagnostics only

## Database - Set All items on this GDW as Logged

Adds ALL the variables on *this* GDW in logging.

**NOTE: Use this feature if you want to Historically Replay ALL the variables on this GDW**

To remove any unwanted variables from logging, use the Show Logging in Variables List menu command from the Database submenu on the *Setup menu* (see page 74)

## Export Variables List

Exports a list of all currently defined variables and their properties to a .CSV (Comma Separated Variable format) file which can then be edited using Excel and saved again as a .CSV file, then subsequently imported using the Import Variables List menu command from the Database submenu on the Setup menu.

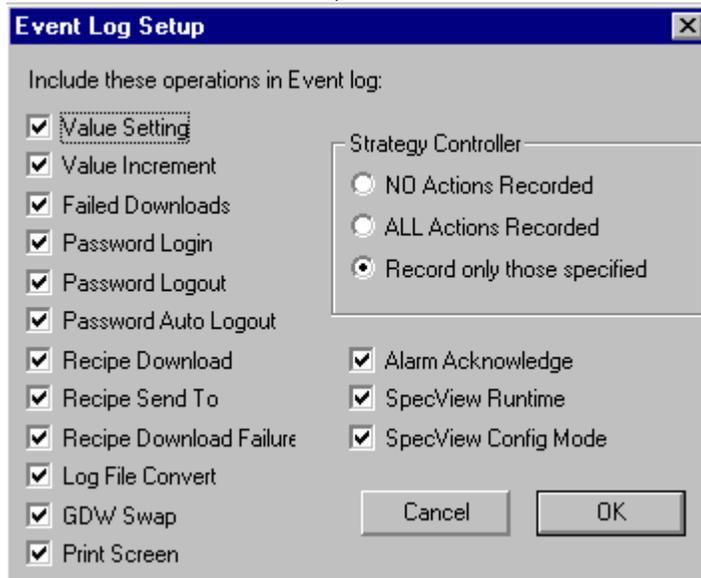
This is useful if a large number of changes need to be made to the variables list. For example, some instruments have numerous data registers, which must be accessed indirectly using an address offset. These variables will then need to be renamed accordingly, for example, registers named with numbers D000 to D255 with an offset of 2560 will need to be renamed to D2560 to D2815 which can be done quickly using the features in Excel.

## Import Variables List

Imports a list of all currently defined variables and their properties from a .CSV file which has been edited using Excel and saved again as a .CSV file.

## Event Logging

Sets the actions and events, which will be included in the Event Log

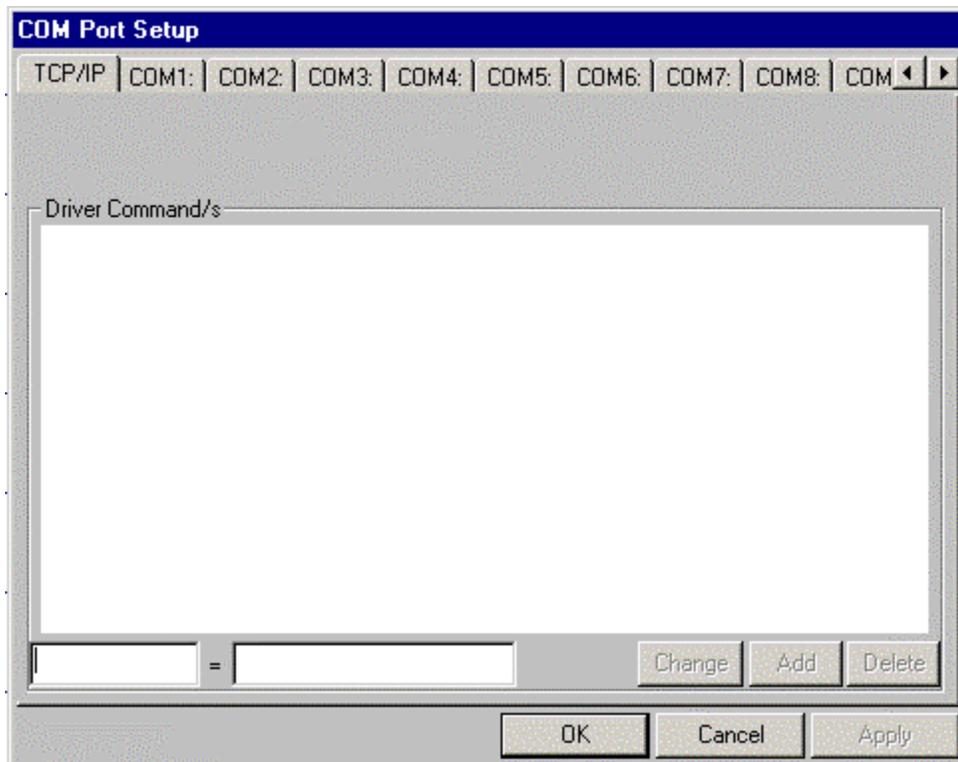


## Strategy Controller

Displays the *Strategy Engine* (see page 146) setup box

## Setup COM Ports

Displays the COM Port Setup dialog box and allows the COM port(s) settings to be changed during Runtime.



### Check COM Port

Checks whether the COM Port is available and working.  
Does NOT check communications. The port MIGHT be a modem.

### Swap COM Ports

This allows the COM ports for multiple instruments to be re-assigned without manually editing each instrument.

### Window Menu (Configuration)



#### Cascade

Standard Windows function to Cascade all open windows

#### Tile

Standard Windows function to Tile all open windows

#### Arrange Icons

This has no useful function with SpecView. (It is a standard Windows function and is not used by SpecView)

## Help Menu (Configuration)



### SpecView Help

Help Menu: This menu command starts SpecView's help system and displays the contents page.

### Using Help

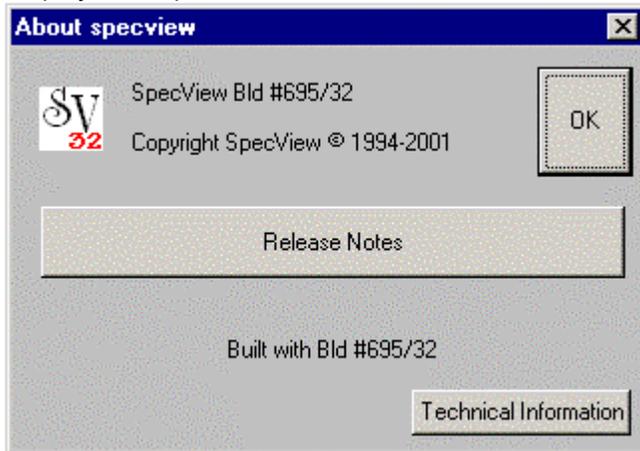
Help Menu: Starts the help system for Windows

### About SpecView



Toolbar:

Displays the SpecView version and build information.



Displays the SpecView version and build information. Click Release Notes for the details on this version.

If you need to contact SpecView's *Technical Support* (see page 188) you may be asked to click the **Technical Information** button to provide further details of your specific installation.

### Registration Info

Displays the serial number and status of the SpecView Dongle.

This dialog box is used to upgrade the Dongle.

Click *Enable Further Options* (see page 176) to upgrade the dongle

### Release Notes

Details changes made to SpecView such as new features and fixed problems.

### Technical Support

For further information see contacting *Technical Support* (see page 188)

# Configuring GDWs - Graphical Display Windows

## Configuring SpecView

Here are the basic steps in setting up SpecView. The order can be changed to some degree and each step can be edited at any time.

Firstly, you will need to select **either** Manual **or** Automatic Instrument Detection:

1a. *Manual Configuration (see page 41)* of instrument(s):

This is only required in the following cases:

- If the instrument(s) are not physically connected to the computer for auto detection
- If the instrument(s) are special such that they cannot be auto detected
- If the instrument(s) are being added to an existing configuration

Define the instruments you are going to be using by clicking the **Show New** button to display the full list of available variables

**Or:**

1b. *Auto Instrument Detection (see page 44)*

Then:

2. *Add/Rename Instruments (see page 48)*

Edit the names of each instrument if required.

3. *Create your GDW(s) (see page 80)*

Define any SpecView User Variables required

Create / Import any graphics

Add Buttons to the GDW's to switch between them

Put numeric values on the GDW

Add Trend and Bar Charts

4. Add or remove any variables from *Data Logging (see page 134)*

5. Choose variables to be included in *Recipe (see page 199)*

6. Configure the (optional) *Strategy Controller (see page 146)*

## GDWs - Graphical Display Windows

These are the screens you look at using SpecView.

GDW's are created or edited in the Configuration Mode and used in the Runtime Mode

Data is shown on a GDW in four ways:

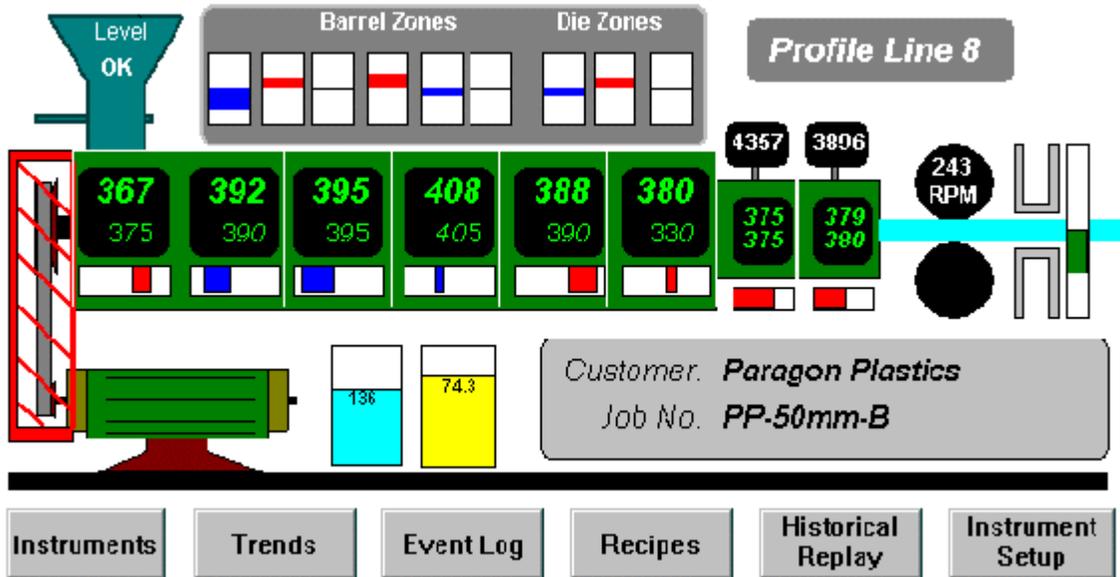
- Instrument Views
- Numerically
- As a Pen on a Trend chart
- Bar Chart

The Extruder Graphic shown below uses SpecView drawing tools to arrange data in an unambiguous way and shows both numeric values and Bar charts

*Creating and Editing GDW's (see page 80)*

### Extruder Graphic

This is an example of a graphic made with SpecView's drawing tools with both Bar Chart and Displays



For further information see:  
 Creating / Editing GDW's (see page 80)

### Creating / Editing GDW's

- GDW's contain background graphics and variables
- Managing Instruments and Variables (see page 80)*
- Menus and Toolbar (see page 65)*
- Creating a background graphic (see page 70)*
- Adding numeric values to a GDW (see page 84)*
- Adding a Trend chart to a GDW (see page 96)*
- Adding a Bar Chart to a GDW (see page 96)*

### Variables List

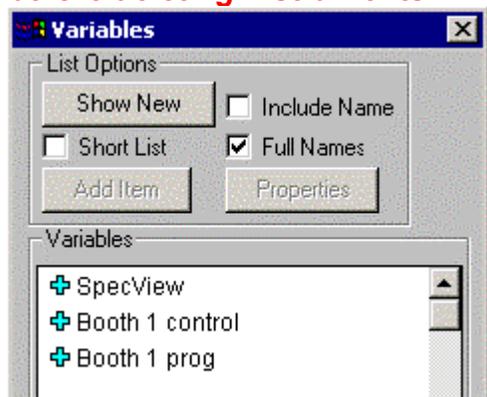
The Variables List is used to:

- Define and/or edit connected instruments
- Add Instrument Views and/or individual *Numeric Values (see page 84)* to the GDW

Open the list by selecting Variables & Instruments from the View menu OR click  on the toolbar

- Double-Click the name of an instrument to Rename or to put an Instrument View on the GDW
  - Click the  symbol to expand that instruments variables
- The list below shows the instruments defined in THIS configuration. To *add more instruments (see page 41)* click the **Show New** button to display the list of available instruments in the database.

**NOTE: Please read Precautions Deleting and Creating Instruments (see page 41) before deleting Instruments**



You can resize and position the list. The size and position is remembered when you close the list.

The position of the Variables List can be reset using *Preferences - Settings* (see page 127)

### SpecView Variables

The first Instrument shown in the Variables List Variables List is SpecView, these are the variables that exist only in SpecView but have all the same properties as other variables and can be;

- Logged
- Included in Recipes
- On Trend / Bar Charts

SpecView boolean variables are used as switches to control events in the Strategy Controller

There are two kinds of SpecView variables, Pre-Defined and User:

### SpecView Pre-Defined Variables

### SpecView User Variables

SpecView User Variables are variables that exist only in SpecView, not in the connected instruments. They are sometimes called Software Tags or Dummy Gates.

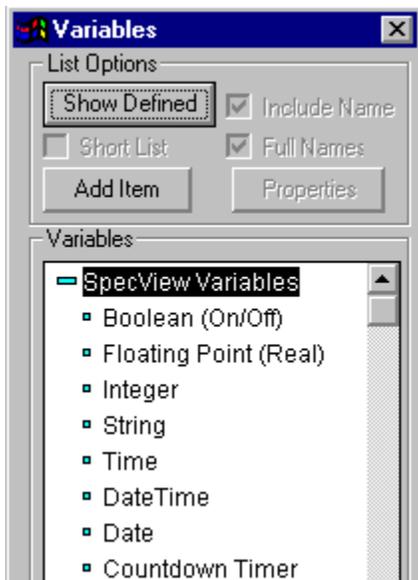
Examples include: Text for "Batch Numbers", "Material ID" "Customer Name", Times for timers, log report start and stop times, booleans for automation.

To define a SpecView Variable:



Click the Variables List tool and click the **Show New** button, then the **+** symbol next to "SpecView Variables"

Double-Click the variable type you want to create



Give the variable a name together with an initial value using the displayed dialog boxes. The initial value is only used when the variable is displayed on the GDW for the very first time, subsequent SpecView runs will use whatever was the last value of the variable.

Click the **Show Defined** button and then the **+** symbol next to "SpecView" and your new variable will be listed under "User Variables" and then grouped by type. Clicking on the **+** symbols will expand these lists. The user variable you have just created can now be added to the GDW in the same way as the instrument variables, by either double-clicking it or selecting it and clicking the **Add Item** button.

Text Variables are used for text that is editable in Runtime mode

Time variables may have a value entered manually from a GDW, or have its value set by a *Button Attribute* or *Strategy Controller Action* (see page 97)

Date/Time and Date variables may only be set to current computer values using the *Parameters: Download Specific Value* (see page 102) button attribute

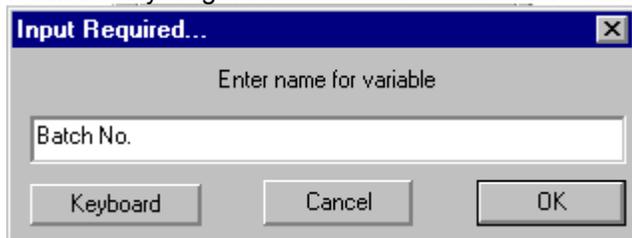
The Countdown Timer may be written to as a time variable and it will count down from that value.

**NOTE: Countdown Timers are not stopwatches. They have no reset function or start/stop capability. They are always running towards zero from the last value set. They do NOT count when SpecView is not running. When SpecView is re-started they will resume from their last value.**

### SpecView User Variable Names

Enter a name for the User Variable

It can be any length but shorter names are more manageable



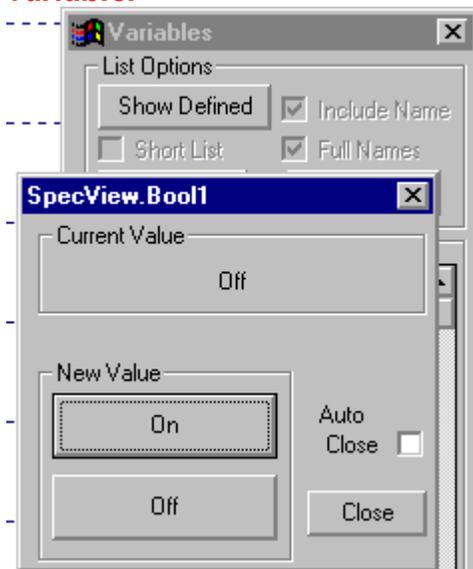
Use the **Keyboard** button to get an on-screen keyboard

When you click **OK** you will be asked to enter a default value

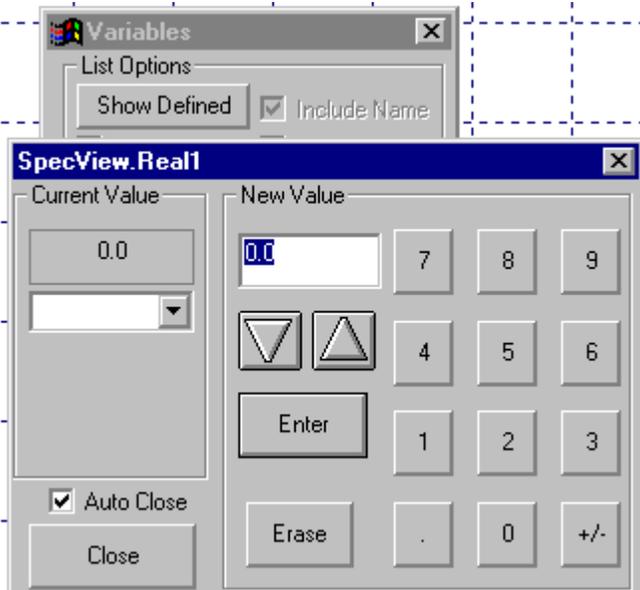
It is not possible to enter a default value for Date and Date/Time variables

Boolean default value box

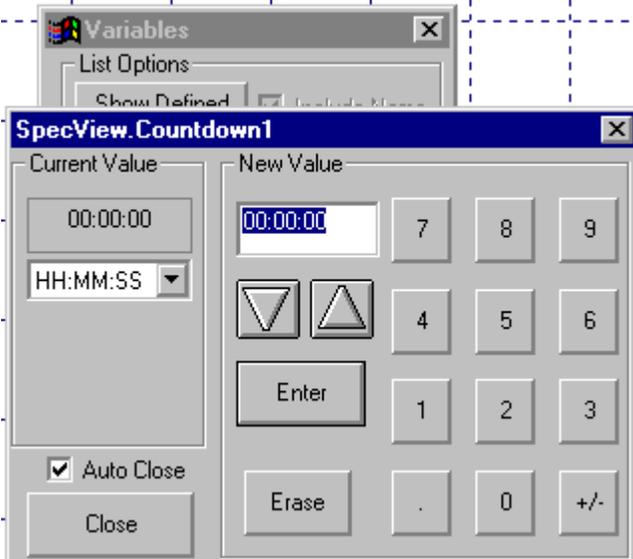
**NOTE: You can change the names of the boolean states from On/Off to something more logical for your application by using the Properties (see page 84) of the defined variable.**



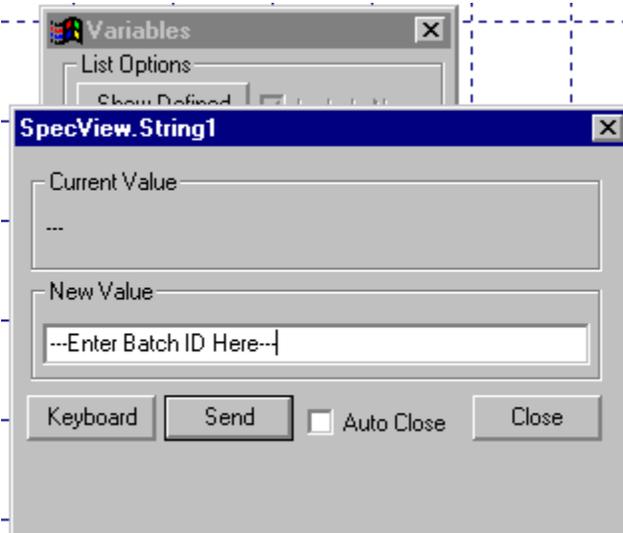
Number (with decimals) default value box:



Time default value box (and Countdown Timer)



Text default value box:



## Date and DateTime User Variables

Date and DateTime user variables can only have the current computer date and time copied to them by using the *Parameters: Download Specific Value* (see page 102) button action in a *Button Attribute* or *Strategy Controller Action* (see page 97)

## Adding Numeric Values to a GDW

**NOTE: All numeric values are put on the GDW in the top left corner. Move objects out of the way before adding values, otherwise they all appear on top of each other.**

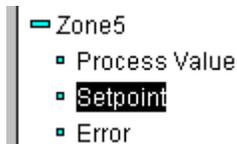
**Remember you may need to group them using "G" or the Group tool**



Open the Variables List by clicking  on the toolbar

Remove the check mark from  Include Name if you DO NOT want the name included with the variable

Click the  symbol by the Instrument you want



Double-Click the variable you want to add to the GDW



With Name:

Without Name:

In either case, the XXX's will be the value of the variable in Runtime mode

The text font and color will be that defined using Text Font menu command on the *Object menu* (see page 71)

See *Text Justification* (see page 95) for details on aligning text

**NOTE: When a variable is first displayed on a GDW the name of the variable and its value are separate objects with their own set of eight Handles to show they are selected.**

**To move either of them drag from the middle of the object.**

**To move both of them together see *Selecting, Grouping and Saving* (see page 91) objects.**

## Variable Properties

- Change the name of a variable parameter

Add / Delete a variable from:

- Data Logging
- Alarm Checking (booleans)
- Short List
- Scaling (Real numbers)
- On/Off Labels (booleans)



Open the Variables List by clicking  on the toolbar, then

Single Click the variable name and click **Properties** OR right Click the variable name

**Properties for:**

**Name Information**

Instrument Name: Zone5  
Instrument Type: 2400 Series  
Original Full Name: Process Value  
Original Short Name: PV  
New Full Name:   
New Short Name:

**Attributes**

Logged  Apply Log To All  
 Alarm  Apply Alarm To All  
 Short List  Apply Short List To All

Each 'apply' only affects 'Process Value' on '2400 Series'

**Scaling**

Scale:  Offset:    
Value is multiplied by 'scale', then has 'offset' added.

### Name Information

Edits the names of variables such as alarms using the Variables Properties dialog box  
Example: Change "Alarm 1 Status" to "High Alarm"

### Attributes

Edits the attributes of a variable using the Variables Properties dialog box

Check the Logged box to add a variable to logging

Check the Alarm box to have SpecView monitor this boolean as an *alarm* (see page 86); this option will be grayed-out if this variable is not a boolean.

Check the Short List box to have the variable included in the Short List mode

Checking all the "Apply to ... All" boxes will change the attributes on the same variables of ALL identical instruments in the configuration.

### Scaling

Scales a real number using the Variables Properties box

Example 1 - Changing °C to °F: Enter 1.8 for scale and the offset to 32

Example 2 - Scaling a variable that is returned un-scaled, such as 65535 (FFFF Hex). To scale to 0-500 units set Scale to 500/65535 ( 0.00763) and the offset to 0

For a change like this it would also be appropriate to change the variable's name from, in this example, "Temp C" to "Temp F".

### Boolean Names

On the *Variable Properties* (see page 84) dialog box

Edits the names that appear on the boolean data entry box

Enter the name for the 0 or Off state and for the 1 or On state

**Boolean Parameter Settings**

0=  1=

## Alarms

An alarm is a status flag within an instrument, which is typically set when a value goes beyond a setpoint. SpecView will display the Alarm dialog box and write an entry into the Alarm logfile when an alarm status is received from an instrument

SpecView Boolean *User variables* (see page 200) can also be set to be alarms by selecting the boolean variable in the *Variables List* (see page 80), clicking the **Properties** button and checking the **Alarm** attribute checkbox. This will cause SpecView to display the Alarm dialog box and write an entry into the Alarm logfile when this boolean variable becomes true.

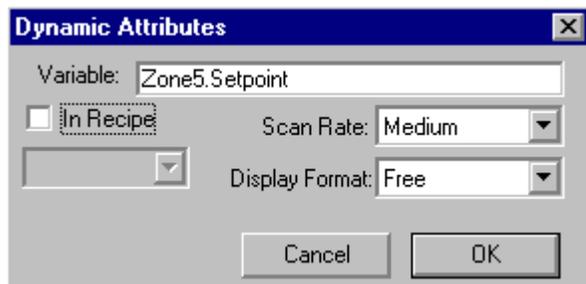
Using the menu command **Show Alarm in Variables List** from the *Setup menu* (see page 74) causes the *Variables List* (see page 80) to indicate which boolean variables, both Instrument & User variables, have their Alarm attribute set.

Alarms are configured using *Preferences - Alarm* (see page 126), by an action from a button or via the *Strategy Controller* (see page 146). To view the Alarm dialog window at any stage during Runtime, use either the *Alarm/Event menu* (see page 61) or the button action *Alarms: Show Alarm List* (see page 98)

Using the Strategy Controller's *Run External Program* (see page 105) it is possible to launch a program when an alarm occurs, for example, one which pages the operator.

## Dynamic Attributes Dialog Box

This is accessed from the Dynamic Attributes menu command on the *Edit menu* (see page 68).



## Dynamic Attributes - Variables

The variable associated with an object on the GDW may be edited in this box. No variables list is presented to choose from, just edit the name.

For example, If you want to make a GDW for Furnace 2 that is identical to Furnace 1 then...

1. Use the File menu - Save As command to make a copy of the GDW
2. Single click an item to select it
3. Use the Edit - Dynamic Attributes menu OR the shortcut: Ctrl+D
4. Edit the name Furnace 1.Setpoint to Furnace 2.Setpoint



If the new name is not valid this box will appear:  
Check the spelling on the Variables List

## In Recipe / Level

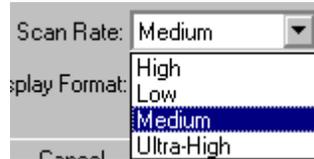
In Recipe is checked if this variable is included in this GDW's *Recipe* (see page 199)  
Removing the check WILL REMOVE THE VARIABLE FROM RECIPE

Adding the check WILL NOT PUT IT BACK.

Variables can only be added to Recipe using the *Recipe Mode* (see page 114)

The Level determines the **order that the values will be sent to the instruments** (see page 121).

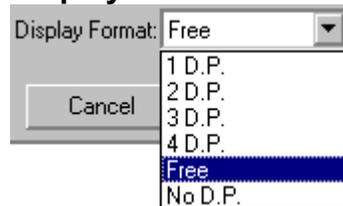
### Scan Rate



Sets the rate SpecView gets the value from the instrument. Use this setting to change the rate at which the value of a variable is read over communications.

The times associated with the four settings are defined under the *File Menu - Preferences* (see page 124)

### Display Format



Sets the number of decimal places used to display a numeric value on a GDW.

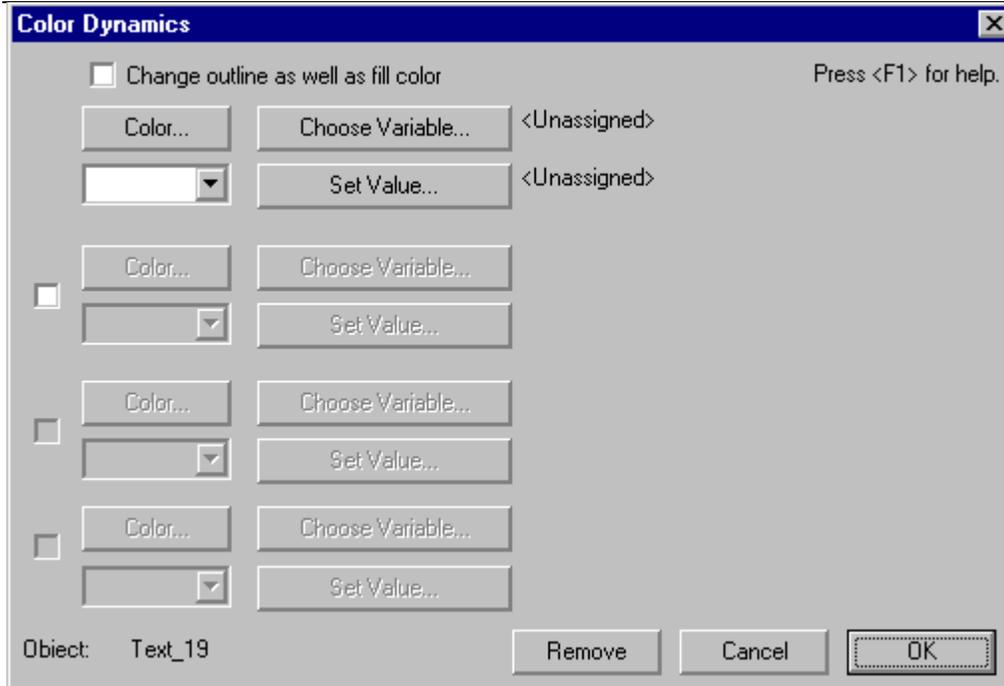
Free means that the display will take the value reported by communications

***NOTE: Some instruments send data to SpecView with the correct number of decimal places identified. Others, such as Modbus, do not tell SpecView how many decimal places the variable has. The driver will have a setting in the address field to tell SpecView how many decimal places to use. This is accessed from the Variables List (see page 80) Add/Rename Instruments box***

The Edit Dynamic Attributes also allows for the setting of attributes from many objects in a selection (not a group). This allows quick changes of Recipe level or scan rate for a number of items.

### Color Dynamics

This box allows you to setup how an object, button or grouped object will change color based on the value of a variable



**Change outline as well as fill color** When this box is checked the outline color of the object will change to the selected color. Unchecked the outline color will stay the same. Up to four color changes per variable can be specified so that with the default fill color a total of five colors are available.

***NOTE: A different variable and test can be selected for each level. The last one defined will have priority over the others***

### Insert New Object

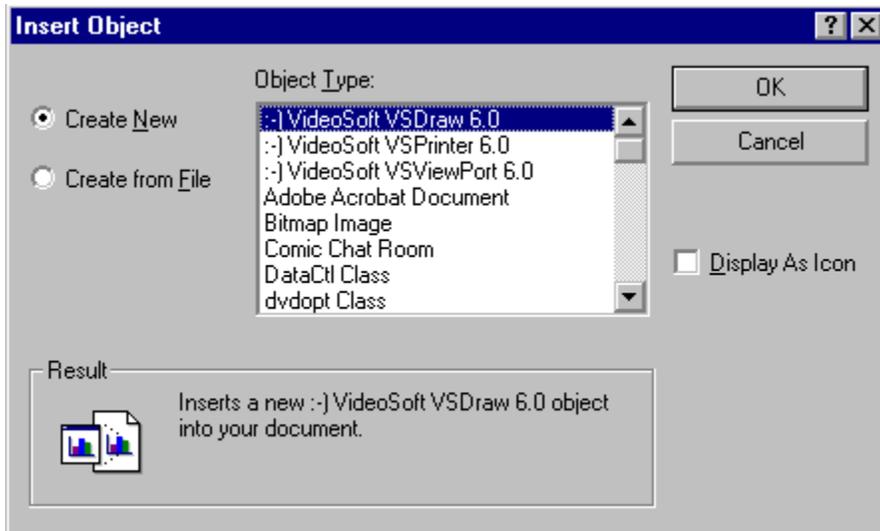
Accessed from the **Insert New Object** menu command on the *Edit menu* (see page 68).

***NOTE: Use this command with caution. SpecView can only offer limited support as it uses features outside our control. This command has been known to cause problems with SpecView. Make a backup of your configuration before proceeding. It is particularly recommended not to use this for inserting bitmaps. Use the***

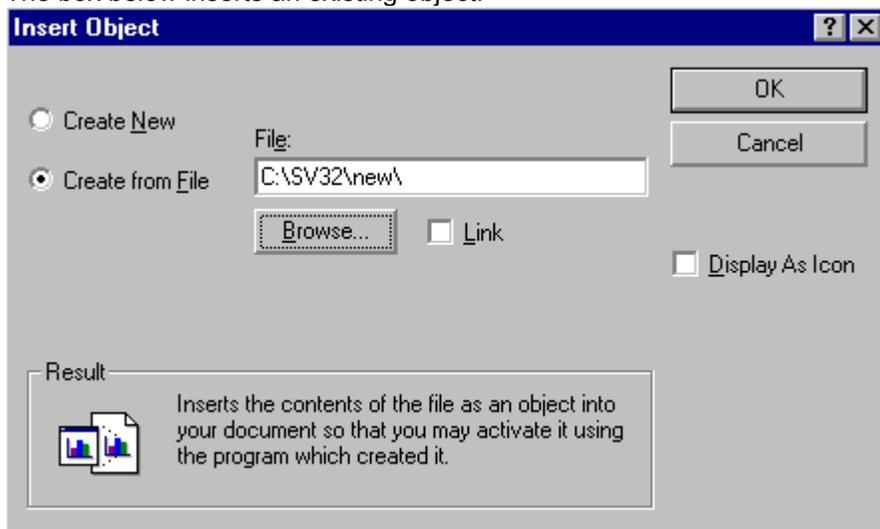


***tool instead.***

SpecView does not allow you to access another program using this feature in Runtime mode so it should be primarily used for graphics objects.



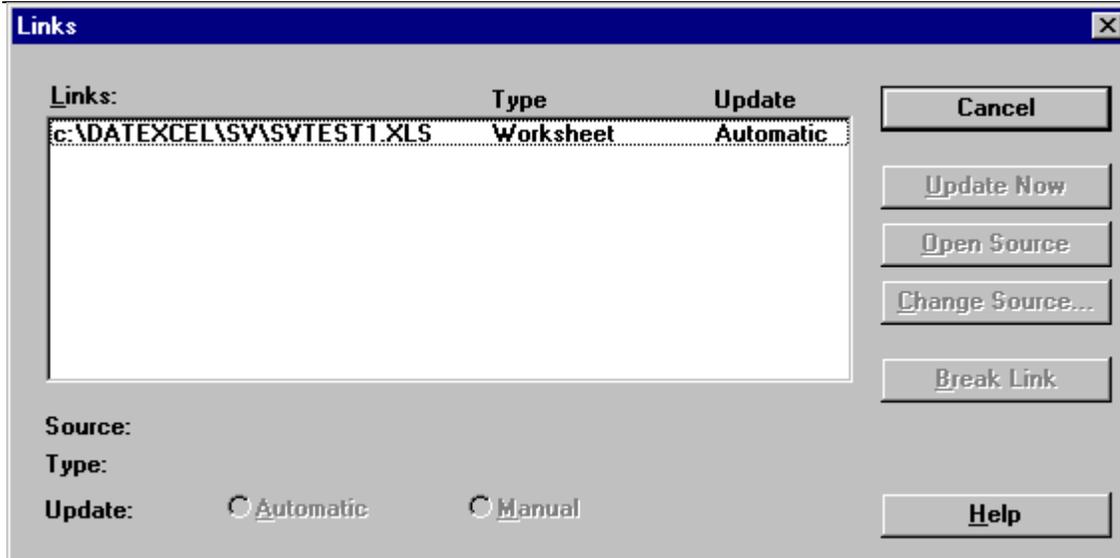
This will insert a new object from another Windows program into the GDW. The box below inserts an existing object.



## Edit Links

Accessed from the **Links** menu command on the *Edit menu* (see page 68).

**NOTE: Use this command with caution. SpecView can only offer limited support as it uses features outside our control. This command has been known to cause problems with SpecView. Make a backup of your configuration before proceeding**



## Drawing Basics

### Drawing Menu and Toolbar

The Draw menu and Tools are accessed from the Configuration mode menubar. They are used to draw graphics on a GDW. You can also add *Bitmaps* (see page 94) (.bmp files) to a GDW.

Menu:



Toolbar:



See:

- Select* (see page 93)
- Line* (see page 93)
- Rectangle* (see page 93)
- Round Rectangle* (see page 93)
- Ellipse* (see page 94)
- Polygon* (see page 94)
- Bitmap* (see page 94)
- Text* (see page 95)
- Button* (see page 96)
- Trend Chart* (see page 96)

Bar Chart (see page 96)

SpecView uses most standard Windows rules for drawing, see:

*Selecting, Grouping and Saving Objects (see page 91)*

*Shape Properties (see page 92)*

*Selecting objects in front or behind others (see page 92)*

*Quick Copying of Drawing Objects (see page 92)*

**NOTE: Do not use Cut, Copy and Paste (or Ctrl Copy) to move or duplicate objects that have variables. This includes Instrument Views, Trend and Bar Charts.**



Click the tool for the type of object you want

The pointer will change to OR OR OR OR depending on the tool  
 Click on the screen (and HOLD DOWN THE MOUSE BUTTON ) where you want the top left part of the object , and drag the mouse down and to the right .  
 Release the mouse button when you have the size you want.

**NOTE: The POLYGON (see page 94) tool follows different rules from lines, rectangles etc.**

The cursor does not automatically change back to the pointer after you draw the object. Use the:

Left mouse button to draw another object OR

The Right Mouse Button to get the normal pointer (Select Tool) OR

Click  on the toolbar

Use the Shift key to:

- Snap lines to vertical, horizontal etc.
- Snap rectangles to squares
- Snap ellipses to circles

**NOTE: Once drawn use the Handles to adjust the object**

- Use the corner ones to resize with the same aspect ratio
- Use the corner ones *while pressing the Shift key* to change the aspect ratio
- Use the side ones to adjust width/height

Back to Draw Menu (see page 70)

### Selecting, Grouping & Saving drawing objects

Use the Select Tool  OR the right mouse button to get the standard pointer  
 Click an object to select it

To select (or de-select) multiple objects press and hold the Shift key and click the object(s)  
 OR

Click away from any object and drag the mouse while holding down the mouse button.  
 All objects *touched* by the dotted rectangle will be selected.

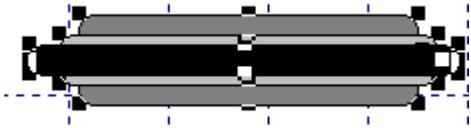
**NOTE: SpecView draws an imaginary box around each object. Touching the object means touching this imaginary box. You may select objects (especially lines drawn diagonally) that you do not expect to be included.**

When more than one object has been selected they may be Grouped (Object Menu - Group OR

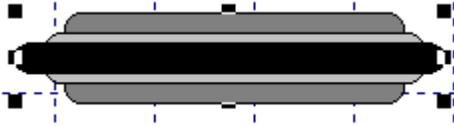


OR "G")

All objects Selected:



After Grouping:

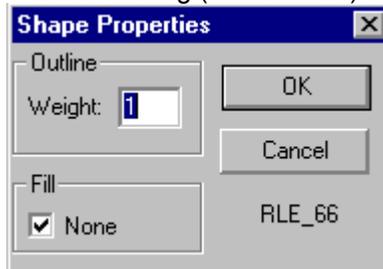


*Objects in front/behind others (see page 92)*

Grouped objects may be saved and reused with the Save Object and Load Object menu commands on the *Object Menu* (see page 71)

## Shape Properties

Double Clicking (or Alt+Enter) on an object will bring up the shape properties box



Outline Weight changes the line thickness of the border. 0 = No Border

Click the Fill box, to remove the check mark and to fill the object with the currently selected Fill Color

Click again, adding the check mark to remove the fill color

***NOTE: With no Fill, the object is transparent - you can see objects underneath. To mask objects, fill the object with the Paper Color.***

## Objects in front / behind others

Objects can be arranged in layers, one on top of another. If an object is masked by another, then it will need to be moved out of the way.

The easiest way to do this is to select the one that is in the way and then use Move to Back or Move Back from the Object menu, which will reveal the one behind.

However, an alternative way to select the object(s) underneath is to click the top object

*WITHOUT MOVING THE MOUSE* click again. The object underneath will be selected *even though you might not be able to see it.* (If you hold the mouse button and drag, the object underneath will move)

Subsequent clicks without moving the mouse selects successive layers down.

This shows the second object selected:



## Quick Copying of Drawing Objects

***NOTE: Do not use this feature to copy ANY objects with variables. This includes Trend and Bar Charts, Instrument Views or any grouped object containing variables, as the variable information will be lost.***

To make a copy of a drawing object (or Grouped object):

1. Press and hold the Ctrl key
2. Click the object and STILL HOLDING THE LEFT MOUSE BUTTON

3. Drag the mouse  
 A copy of the selected object will be made  
 To copy an object between GDW's use either:
  - The Edit menu (Cut, Copy, Paste) OR
  - Ctrl + X (Cut), Ctrl + C (Copy), Ctrl + V (Paste) OR
  - The Object menu (Save / Load Object)

### Select Tool

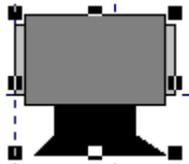


Use the Select menu command from the *Draw menu* (see page 70) OR click  
*Go to Drawing Basics for general instructions* (see page 90)

Selects the normal Pointer (or Cursor) and de-selects any drawing tool.

**NOTE: The right mouse button has the same action as this function. It is a useful and quick way to de-select a drawing tool. Try drawing a rectangle and then click the right mouse button.**

Click an object to select it.



Eight Handles show that the object is selected.

Moving the pointer to one of the handles allows you to re-size the object.

### Line Drawing Tool



Draw menu - Line OR

*Go to Drawing Basics for general instructions* (see page 90)

The cursor changes to  Click and hold the left mouse button, then drag the line to the desired length and direction. Click the right mouse button when you have drawn all the objects you want.

Press and hold the shift key to snap the line to regular angles

Use the Ctrl Copy feature to make exact copies of the object

Double-Click the object to edit the Shape Properties

### Rectangle Drawing Tool



Draw menu - Rectangle OR

*Go to Drawing Basics for general instructions* (see page 90)

The cursor changes to  Click and hold the left mouse button, then drag the rectangle to the desired size. Click the right mouse button when you have drawn all the objects you want.

Press and hold the shift key to snap to a square

Use the Ctrl Copy feature to make exact copies of the object

Double-Click the object to edit the Shape Properties

### Round Rectangle Drawing Tool



Draw menu - Round Rectangle OR

*Go to Drawing Basics for general instructions* (see page 90)

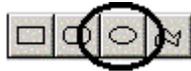
The cursor changes to  Click and hold the left mouse button, then drag the rectangle to the desired size. Click the right mouse button when you have drawn all the objects you want.

Press and hold the shift key to snap to a square



Use the extra Handle in the top right corner to change the radius of the corners  
 Use the Ctrl Copy feature to make exact copies of the object  
 Double-Click the object to edit the Shape Properties

### Ellipse Drawing Tool



Draw menu - Ellipse OR  
 Go to *Drawing Basics* for general instructions (see page 90)

The cursor changes to Click and hold the left mouse button, then drag the ellipse to the desired size.  
 Click the right mouse button when you have drawn all the objects you want.  
 Press and hold the shift key to snap to a circle  
 Use the Ctrl Copy feature to make exact copies of the object  
 Double-Click the object to edit the Shape Properties

### Polygon Drawing Tool



Draw menu - Polygon OR  
 Go to *Drawing Basics* for general instructions (see page 90)

**NOTE: This tool uses different rules from the other drawing tools.**

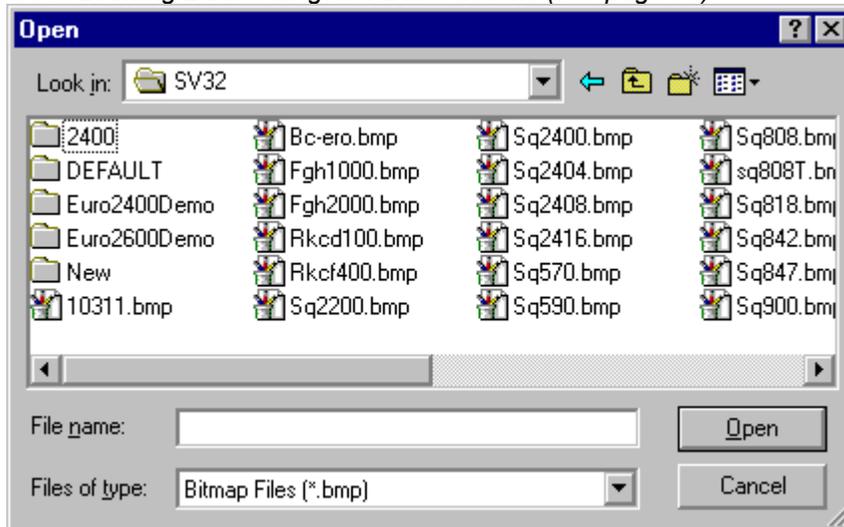
1. At the start point of the polygon click and release the mouse button.
2. Move the mouse to the next apex and click and release again.
3. Repeat for the all the apexes.
4. To finish the polygon EITHER double-click the left button OR click the right button or press the Esc key.

Polygons may be re-sized by clicking on an apex and dragging the mouse  
 Use the Ctrl Copy feature to make exact copies of the object  
 Double-Click the object to edit the Shape Properties

### Bitmaps on a GDW



Draw menu - Bitmap OR  
 Go to *Drawing Basics* for general instructions (see page 90)



Locate the bitmap file and click **OK**

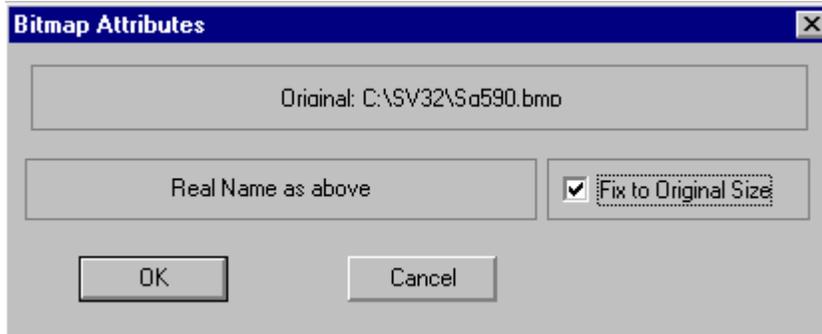


The bitmap will appear on the GDW

Double-Click the bitmap to edit its Properties

### Bitmap Properties

**NOTE: Some video cards are known to have problems sizing bitmaps so SpecView Bitmaps are fixed to their original size by default**



Uncheck the Fix to Original Size box. Then click **OK**, the bitmap can now be re-sized.

### Text on a GDW



Draw menu - Text OR

Use this command to put static text on a GDW (NOT editable in Runtime mode)

(To put editable text on a GDW use a *SpecView Text User Variable* (see page 81))

Go to *Drawing Basics* for general instructions (see page 90)

The cursor changes to . Click on the GDW where you want the text:

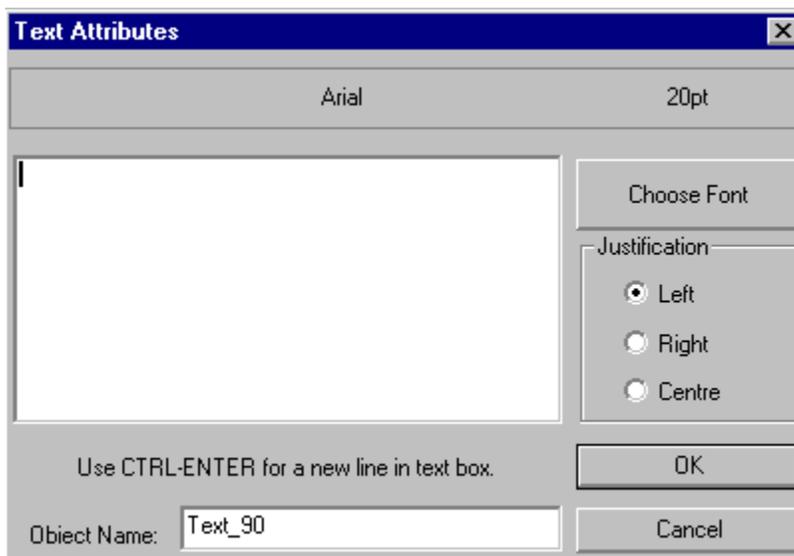
The Text Attributes box will appear

Click the right mouse button when you have added all the text objects you want.

Use the Ctrl Copy feature to make exact copies of the object

Double-Click the object to edit the Text Attributes

### Text Attributes



### Text Item

Enter the text you want to appear on the GDW

### Choose Font

Selects the font for THIS text. To change the font for ALL text you are going to put on the GDW, use Text Font on the *Object Menu* (see page 71)

Choose the Font, Style, Size and Color

### Justification

Align the text for best appearance:

**Left Justified**                      **Center Justified**                      **Right Justified**  
 Text aligned to the left    Text aligned to the center    Text aligned to the right

**NOTE: Numeric Values added to a GDW that INCLUDE the name are LEFT justified. Numeric Values added to a GDW that DO NOT include the name are RIGHT justified**

### Object Name - Text

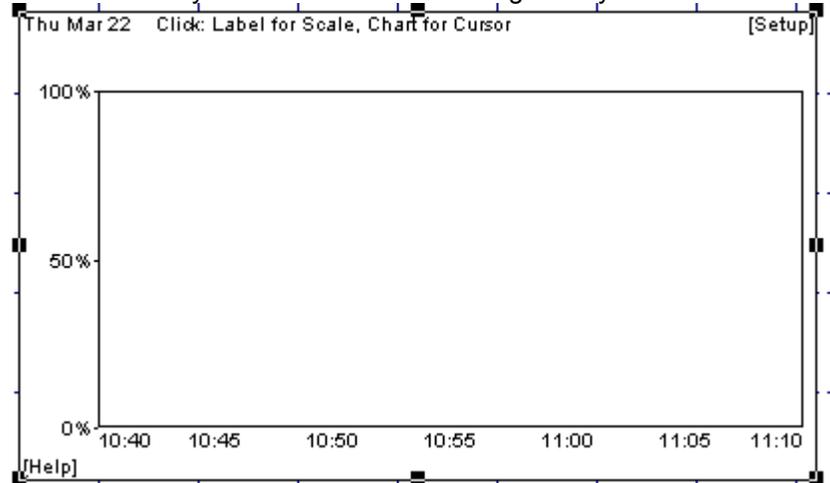
This information is for SpecView diagnostic purposes only

### Trend Chart Drawing Tool



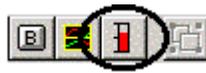
Draw menu - Trend Chart OR  
 Go to *Drawing Basics* for general instructions (see page 90)

After clicking the tool the cursor changes to   
 Use the tool as you would to draw a rectangle. As you move the mouse the Trend chart appears:



When you release the mouse button the *Trend Chart Attributes* (see page 108) box will appear. Use this to set up the Trend chart.

### Bar Chart Drawing Tool



Draw menu - Bar Chart OR  
 Go to *Drawing Basics* for general instructions (see page 90)

After clicking the tool the cursor changes to   
 Use the tool as you would to draw a rectangle. When you release the mouse button the *Bar Chart Setup* (see page 112) box will appear. Use this to set up the Bar Chart.

### Buttons - Drawing on a GDW



Use the Button menu command on the *Draw menu* (see page 70) OR click  
 Go to *Drawing Basics* for general instructions (see page 90)

Buttons are used for specific actions such as switching to another screen (GDW), controlling Recipes and starting other programs.

The cursor changes to  Click and hold the left mouse button, then drag the button to the desired size. Click the right mouse button when you have drawn all the buttons you want. Double-Click the button to edit the *Button Attributes* (see page 97)

Once the Button Attributes have been defined the button can be made to change color on an event see *Color Dynamics* (see page 87)

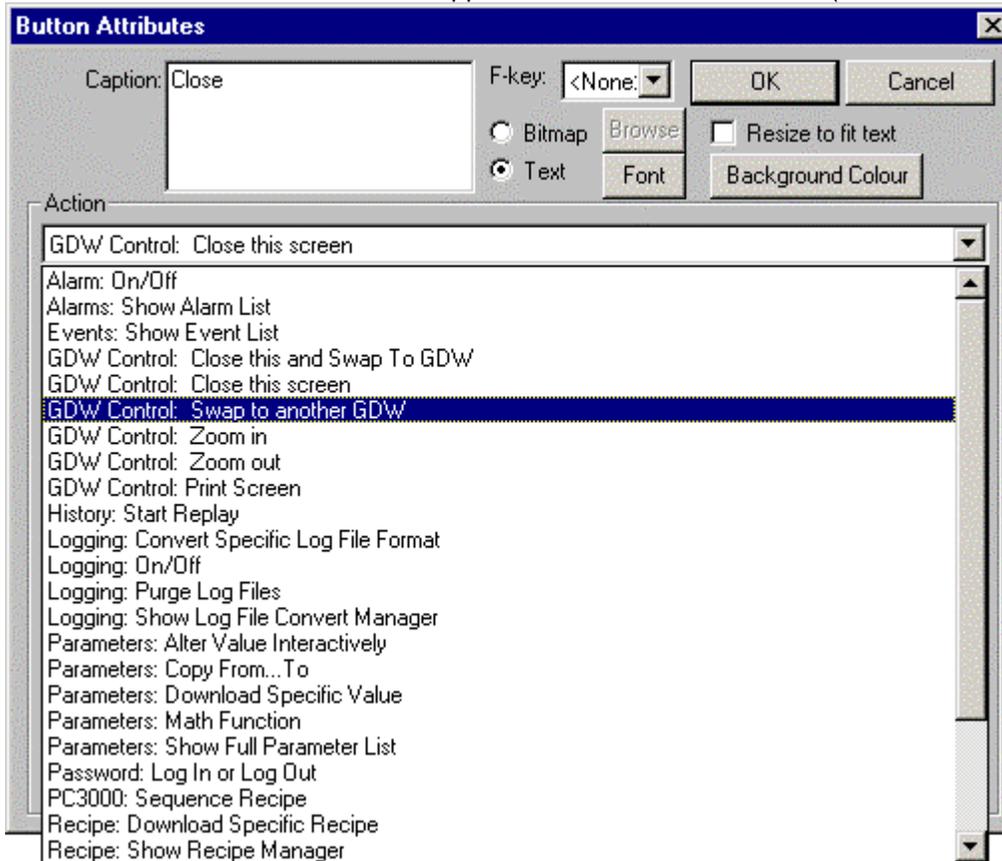
Buttons can also have multi-line text, different fonts or bitmaps on them.

## Button Attributes & Strategy Controller Actions

### Available Attributes/Actions

Button Attributes and Strategy Controller Action use the same mechanism in the *Strategy Controller* (see page 160)

This box selects the action that will happen when the button is clicked (in Runtime mode)



### Button Caption

This is a function of the Button Attributes dialog box  
Enter the text you want on the button

### Function Keys

This is a function of the Button Attributes dialog box  
Select a Function Key to have the same action as clicking on the button

**Button Bitmap and Resize to fit text check boxes**

Allows the button to contain a bitmap.

**Button Text, Font & Background Color**

Allows the button's font and color to be defined.

**Button Action**

For further details see:

*Alarm: On/Off (see page 98)*

*Alarms: Show Alarm List (see page 98)*

*Events: Show Event List (see page 99)*

*GDW Control: Close this and Swap To GDW (see page 99)*

*GDW Control: Close this screen (see page 99)*

*GDW Control: Swap to another GDW (see page 99)*

*GDW Control: Zoom in (see page 99)*

*GDW Control: Zoom Out (see page 99)*

*GDW Control: Print Screen (see page 99)*

*History: Start Replay (see page 100)*

*Logging: Convert Specific Log File Format (see page 100)*

*Logging: On/Off (see page 100)*

*Logging: Purge Log Files (see page 100)*

*Logging: Show Log File Convert Manager (see page 100)*

*Parameters: Alter Value Interactively (see page 100)*

*Parameters: Copy From... To (see page 101)*

*Parameters: Download Specific Value (see page 102)*

*Parameters: Math Function (see page 103)*

*Parameters: Show Full Parameter List (see page 104)*

*Password Log In or Log Out (see page 104)*

*Recipe: Download Specific Recipe (see page 104)*

*Recipe: Show Recipe Manager (see page 105)*

*Recipe: Show Recipe Manager (Read Only Mode) (see page 105)*

*Recipe: Show Recipe Manager (Read Only Send To Mode) (see page 105)*

*Recipe: Show Recipe Manager (Send To Mode) (see page 105)*

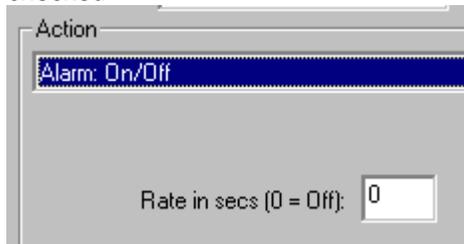
*SpecView: Exit Program (see page 105)*

*SpecView: Run External Program (see page 105)*

*SpecView: Write Line to file/printer (see page 106)*

**Alarm On/Off**

This Button Attribute turns *alarm* (see page 86) checking On and Off and sets the rate at which alarms are checked



A rate of 5 seconds (the default) means that SpecView will check the booleans identified as alarms every 5 seconds. A value of 0 seconds will disable alarm checking.

*Adding variables to Alarm Monitoring (see page 74)*

**Alarms: Show Alarm List**

This Button Attribute will open the *alarm* (see page 86) list (duplicates the function of the View Alarm Window menu command on the View menu)

### Events: Show Event List

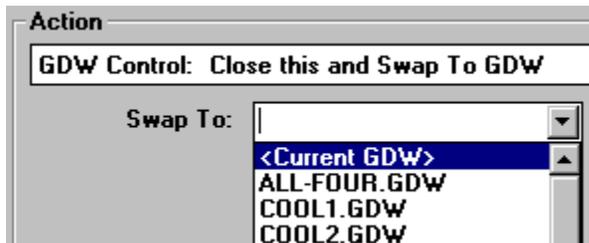
This Button Attribute will open the event list (duplicates the function of the View Event Window menu command on the Alarm/Event menu)

### GDW Control: Close this and Swap To GDW

This Button Attribute will swap to another GDW and close this GDW

**NOTE: Use this action when swapping from a GDW that is only used occasionally such as setup screens. This is because a GDW left open will automatically be refreshed in background and this wastes communications bandwidth.**

Choose which GDW to swap to off the drop down list:



**NOTE: This will clear the trace on any Trend chart(s) on the currently open GDW.**

To swap to another GDW screen without closing and clearing the trace line(s) use *GDW Control: Swap to another GDW* (see page 99)

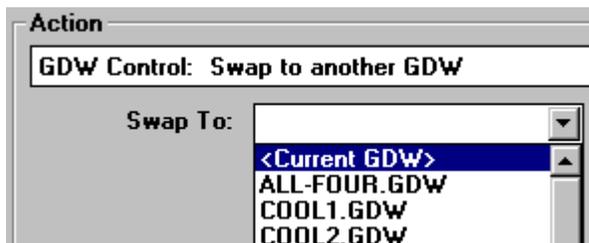
### GDW Control: Close this Screen

This Button Attribute will close this GDW

### GDW Control: Swap to another GDW

This Button Attribute will swap to the GDW selected in the drop down box

**NOTE: Use this action when swapping from a GDW that is used frequently, especially ones with Trend charts. All variables on a GDW left open will be updated in the background.**



### GDW Control: Zoom in

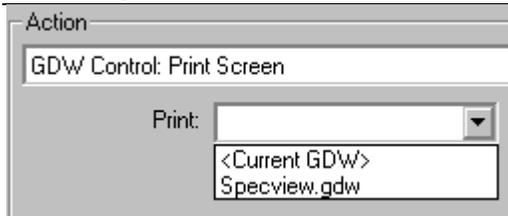
This Button Attribute will zoom in, enlarging the size of the graphics & text within the GDW. This duplicates the function Zoom - Up on the *Zoom menu* (see page 63)

### GDW Control: Zoom Out

This Button Attribute will zoom out, decreasing the size of the graphics & text within the GDW. This duplicates the function Zoom - Down on the *Zoom menu* (see page 63)

### GDW Control: Print Screen

This Button Attribute will cause the selected GDW to be printed.

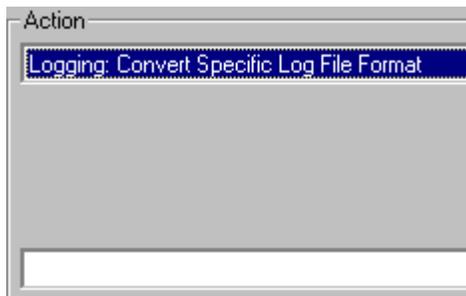


### History: Start Replay

This Button Attribute will start *Historical Replay* (see page 142) on this GDW

### Logging: Convert Specific Log File Format

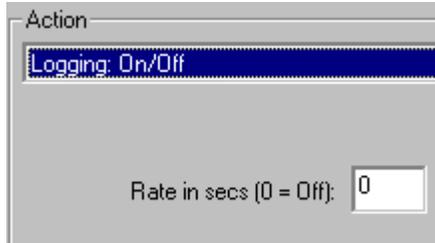
This Button Attribute will convert a *specific log format* (see page 137)



### Logging: On/Off

This Button Attribute turns data logging On and Off. It is usually used as an Action in the *Strategy Controller*. The logging rate will be changed to this value when the button is clicked.

A value of 0 seconds turns off data logging.



**NOTE: This button action only changes the logging rate for THIS Runtime session. To change the default log rate use Preferences - Logging (see page 126).**

### Logging: Purge Log Files

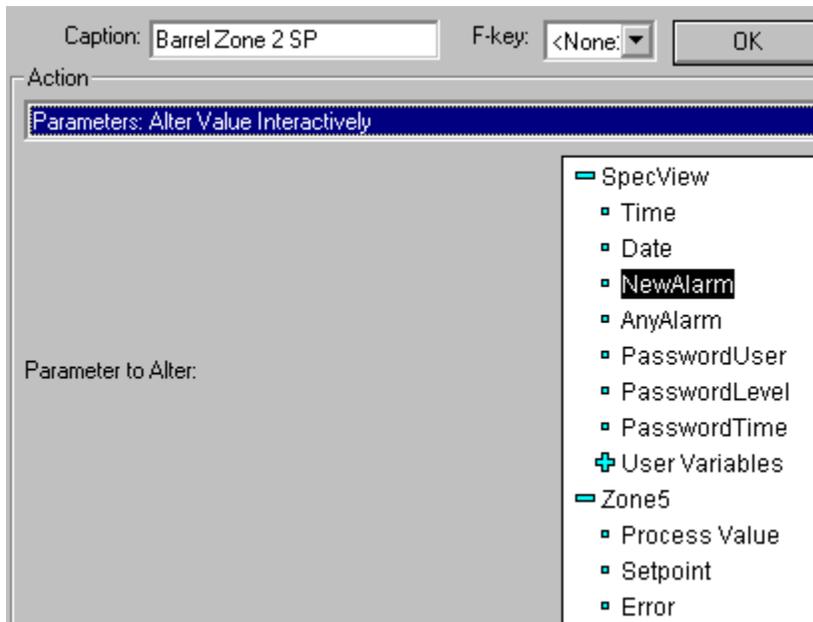
This Button Attribute will cause the log files older than the specified number of days to be deleted. Logging is enabled/disabled and the logging rate is specified in *Preferences - Logging* (see page 126)

### Logging: Show File Convert Manager

This Button Attribute displays the *Log Report Setup* (see page 137) box (same action as the Logging - Convert Log File menu)

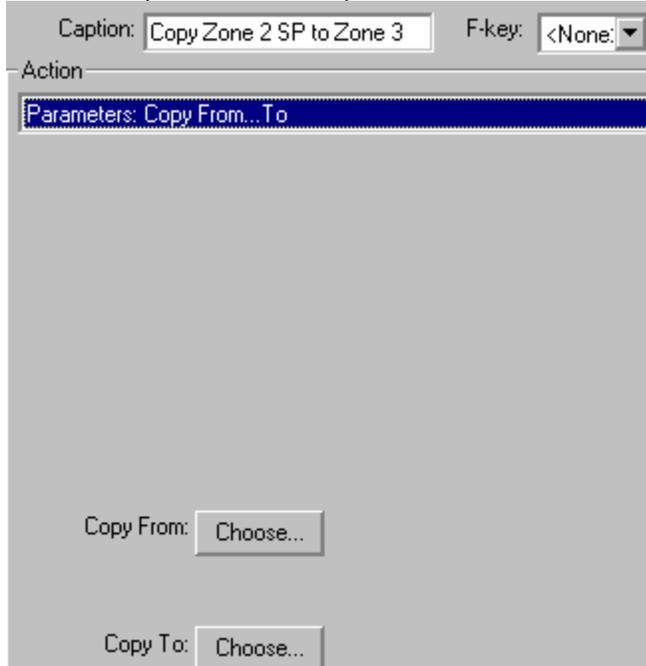
### Parameters: Alter Value Interactively

This Button Attribute will have the same action as clicking on the variable. Choose the desired variable from the Variables List.



### Parameters: Copy From.. To

This Button Attribute will value of the first variable to the second variable  
 In the example below the setpoint of Barrel Zone 2 will be copied to Barrel Zone 3:



The Copy Value Button attribute (or Strategy Controller action) will copy a value from one parameter to another. In general, the source and destination of the copy should be the same type, but some type conversions are allowed, as below:

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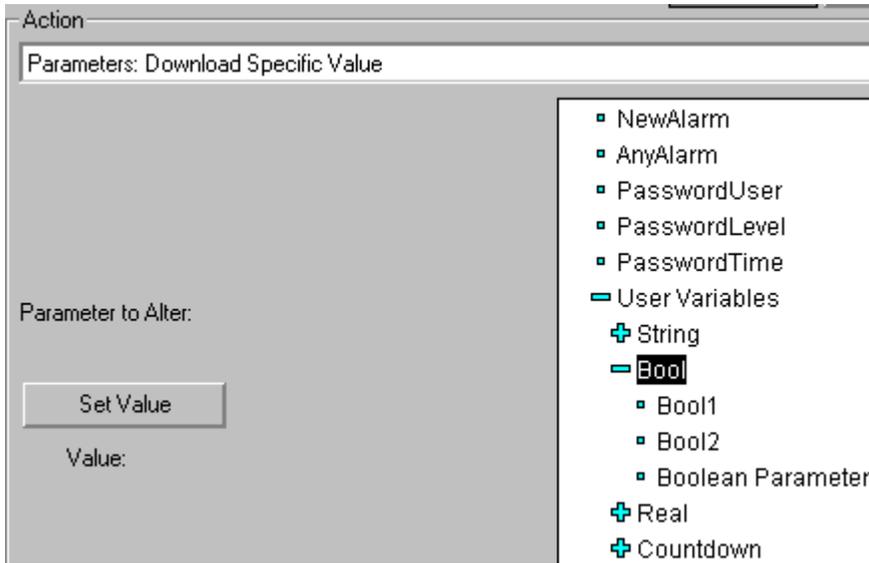
Copy FromType	Copy To Type	Result
Float (Real)	Int	Decimals are truncated
Time	Number (with decimals)	Number of seconds is used, for example, copying 00:01:02 gives 62.0
Float	Time	Number of seconds is used, opposite of above
Any Type	Text	The Text is setup with what would normally be displayed on a GDW for the Copy From type. For example, copying a time might give text with the contents "00:01:02". Copying a boolean type might result in the word "Manual" in a Text variable. A DateTime might give "Sunday, July 8, 1997 08:00:00"
Text	Float	The first number found in the text is used. For example, if the Text contains "66.1", then 66.1 is used. If the text contains "4 5", then 4.0 is taken. If the text has "1.2Fred", then 1.2 is taken.
Text	Integer	See above, but no decimals are used.

Other type conversions not listed above will not work as expected.

### Parameters: Download Specific Value

This Button Attribute will *immediately* download the value to the instrument  
The settings below will cause the Adapter instrument to be set to Manual:

The box below shows how to set a SpecView DateTime user variable to the current computer date and time:



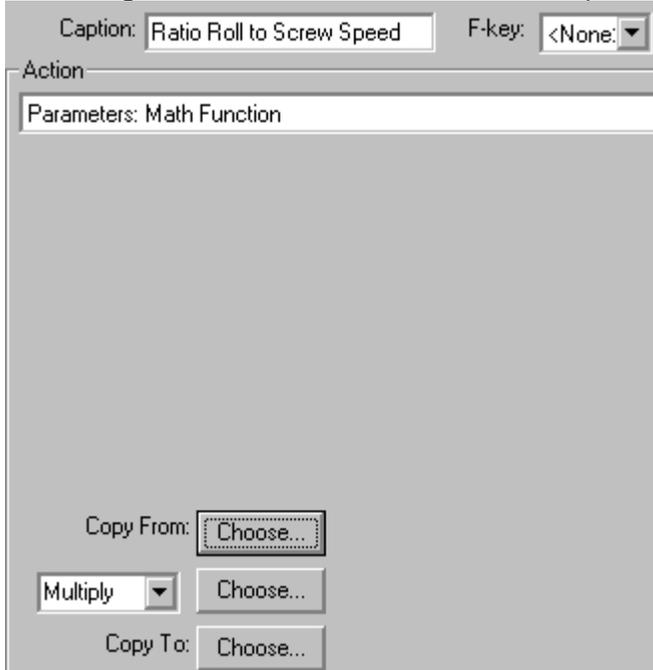
**Parameters: Math Function**

The Math Function Button Attribute (or Strategy Controller action) allows limited amounts of mathematical and other operations to be performed on Parameters.

Math functions always take the form of:

"Copy From Parameter" <Math Function> "Operator Parameter" -> "Copy To Parameter"

The settings below will write the value of Screw Speed x Drive Ratio to Roll Speed



The parameters chosen for the 'From', 'Operator' and 'To' fields should usually be of the same type. For example, you cannot take a date, divide it by a boolean and put the result into a text type. There are however, some exceptions listed in the table below. If you must do math on items of different types not listed below, then use the appropriate Copy Facilities to copy the value(s) to the correct type first.

***NOTE: This feature can be used to extract part of the text, such as one read from a barcode reader.***

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CopyFrom Type	MathFunction	Operator Type	CopyTo Type	Comments
Time	Any	Float	Time	Appropriate math is done on the time, e.g Multiply a time by 2.0
Text	Add	Text	Text	Concatenation. Use to add 2 pieces of text together.
Text	Subtract	Integer	Text	Left or Right function. If the Integer is positive, the Left-most "x" characters are taken. If the integer is negative, the Right-most "x" characters are taken. Examples:"ABCDE" Subtract 2 -> "AB" "ABCDE" Subtract -2 -> "DE"
Text	Divide	Integer	Text	Mid function. The characters from the "x"th position onward are taken, until the end of the text (First position is 0). Example:"ABCDE" Divide 2 -> "CDE"
Text	Multiply	Text	Integer	Find function. The integer is setup with the position of the first occurrence of "Operator Text" in the "Copy From" text. If the text is not found, -1 is used. Example:"ABCDE" Multiply "BC" -> 1"ABCDE" Multiply "FRED" -> -1
Bool	Add	Bool	Bool	AND function.
Bool	Subtract	Bool	Bool	NOT function. Note that the Operator Parameter is not used, but must be specified. Use the same parameter for the Copy From and the Operator. The "Copy To" boolean is setup with the opposite state of the "Copy From" boolean.
Bool	Multiply	Bool	Bool	OR function.
Bool	Divide	Bool	Bool	XOR function

The following three math functions use variables of type integer or number (with decimals):

- The Abs Math Function takes the first Copy From value and puts into the Copy To variable the absolute value (the positive value) of it. However, it is also necessary to specify the second Copy From variable so set it to be the same variable name as the first.
- The Max Math Function takes the two Copy From values and puts the higher value into the Copy To variable.
- The Min Math Function takes the two Copy From values and puts the lower value into the Copy To variable.

Doing math on types not listed above or not of the same type will usually result in no action being performed. Occasionally however, unpredictable results may occur. To avoid confusion, only perform math on items of the same type, or those listed above.

### Parameters: Show Full Parameter List

This Button Attribute will display the parameter list of the selected instrument. Whether the full list or short list will be displayed is determined by the Options menu

### Password: Log In or Log Out

This Button Attribute will display the Password login dialog from the *Password menu* (see page 61).

### Recipe: Download Specific Recipe

This Button Attribute will download the selected Recipe. It allows you to download a Recipe from any other GDW. Often used as the action following a Time Based *Strategy Controller* (see page 146) event. First select the GDW the Recipe is on, then choose the specific Recipe

### Recipe Download Booleans

SpecView User Variables (booleans) can be set on success or fail of a Recipe download.

This most often used when a Recipe is downloaded unattended using the *Strategy Controller* (see page 146)

**NOTE: The user must arrange for the booleans to be turned off, either manually or using the Strategy Controller**

### Recipe: Show Recipe Manager

This Button Attribute will display the *Recipe Manager* (see page 115) (The same action as the Recipe - Recipe Management menu)

### Recipe: Show Recipe Manager (Read Only Mode)

This Button Attribute will display the *Recipe Manager* (see page 115) in the Read Only mode

### Recipe: Show Recipe Manager (Read Only Send To Mode)

This Button Attribute will display the Recipe Manager in the *Read Only - Send* (see page 120) To mode

### Recipe: Show Recipe Manager (Send To Mode)

This Button Attribute will display the Recipe Manager in the *Send To* (see page 120) mode

### SpecView: Exit Program

This Button Attribute will cause SpecView to exit

This action is usually only used with the Strategy Controller

### SpecView: Run External Program

This Button Attribute will start another program

Example: To start your own custom help program called myhelp.hlp that is in your SpecView folder enter:

C:\windows\winhlp32.exe c:\specview\myhelp.hlp

(Change paths as appropriate)

This command has the ability to accept the name of variables in the line. Each variable should be enclosed in double-percents, like this, showing an example of using SpecView.Time:

%%SpecView.Time%%

Another example, run the program "C:\TEST.EXE" passing in the number contained in "Zone1.PV":

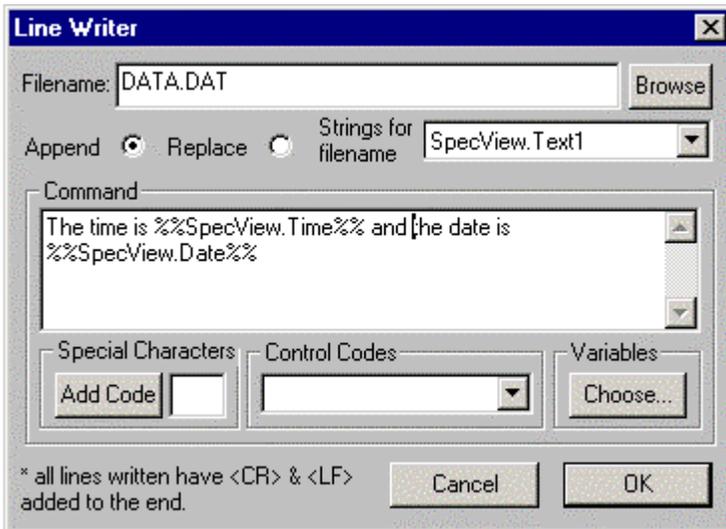
C:\TEST.EXE %%Zone1.PV%%

You can have multiple variables, as long as they are always enclosed in the double-%%

## SpecView: Write Line to file/printer

This Button Attribute will write a line of text allowing the writing of fixed text and SpecView variables into files. Files can be appended to or recreated each time.

Click the **Visual Editor** button to edit the line to be printed:



Either specify a filename to write to in the Filename box or use a SpecView Text variable from the list of currently defined Text variables for the filename.

On some printers it is possible to print directly to the printer by setting the filename to the name of the printer, for example, "LPT1:", or for a network printer "\\print server\epson" a Form Feed can be added to the end of the text using the Control Codes drop down menu, described below.

It is also possible to write to a COM port by setting the filename to, for example "COM2:".

Check the Append box to append to an existing file, or check the Replace box to overwrite or create a new file.

The Command box defines the line(s) to be written to the file. Any text can be entered together with variable names, which are added using the **Choose** button. These will be enclosed in a pair of percent signs, such as: %%varname%% and will be substituted at runtime.

The number of decimal places to be used for Numbers (with decimals) is specified in *Preferences - Runtime* (see page 124) under Line Writer DP. This setting will then apply to all Numbers (with decimals).

**NOTE: The Line Writer requires that any variables you include in the %% items are on a screen (GDW) that is always open.**

If you fail to put a variable on a GDW, then it will probably not appear in the file. The reason for this is that the last known value for the variable must be available at the time the Line Writer needs to write the line. The Line Writer cannot read the value over comms because this may take several seconds (or minutes in cases of timeouts with bad comms). By putting the value on a GDW, SpecView will usually have the value available.

The line written always has a <CR> and <LF> automatically added to the end, but these can also be added at any point in the line to generate multiple lines.

Use the **Control Codes** drop down menu to add typical control codes such as <HT> (Horizontal Tab) but for the more obscure codes, type the decimal code into the Special Characters box and click **Add Code**. These codes may be required, for example, for printer control or for other non-SpecView software to pick up and process such as Visual Basic programs.

See below for a list of ASCII special characters (or search the web for "ASCII character codes")

Dec Code	Dec Code
00 NUL	16 SLE
01 SOH	17 CS1
02 STX	18 DC2
03 ETX	19 DC3
04 EOT	20 DC4
05 ENQ	21 NAK
06 ACK	22 SYN
07 BEL	23 ETB
08 BS	24 CAN
09 HT	25 EM
10 LF	26 SIB
11 VT	27 ESC
12 FF	28 FS
13 CR	29 GS
14 SO	30 RS
15 SI	31 US

### Making your own 'Log Files'

Making a form of .CSV file is easy with the Line Writer. These three separate Line Writer commands illustrate the concept - note the commas between the %% to cause commas to be output in the file.

Call the file, for example LOG.CSV, and append to it each time:

```
+LOG.CSV Time,Zone1,Zone2
```

```
+LOG.CSV %%SpecView.Time%%,%%Zone1.pv%%,%%Zone2.Pv%%
```

```
+LOG.CSV %%SpecView.Time%%,%%Zone1.pv%%,%%Zone2.Pv%%
```

Provided that the last 2 lines are done independently by the Strategy controller, the file may look like this:

```
Time,Zone1,Zone2
```

```
12:10:34,560.1,580.0
```

```
12:11:34,560.2,579.9
```

# Trend Charts

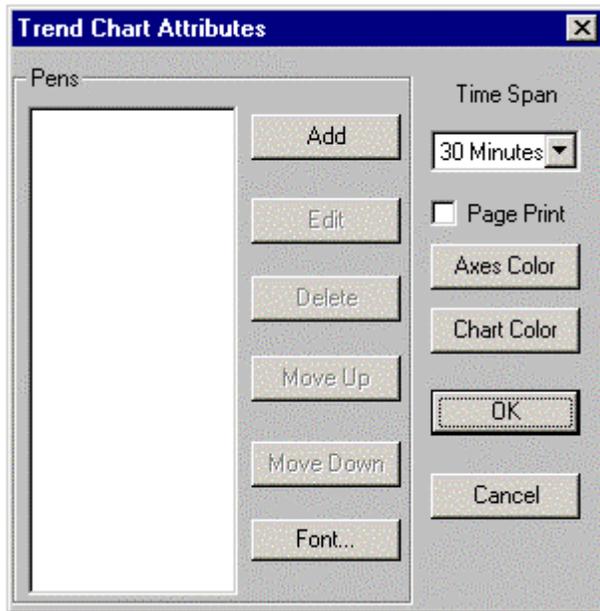
Trend charts graph (or plot) variables with respect to time

Adding a Trend chart to a GDW

To edit the attributes of a Trend chart:

- In Configuration Mode double click anywhere on the chart
- In Runtime mode click the **[Setup]** label in the top right of the Trend chart

Click the areas on the picture for specific help...



## Maximum number of Trend chart Pens

There is no limit to the number of pens on a Trend chart BUT the number of labels that can be shown is limited by:

- The length of the label
- The width of the chart
- The Font selected for the chart

If more pens are defined than can be shown on the top line of the chart:

- A ">" symbol to the right of the last label indicates that not all the label is displayed
- A "+" sign to the right of the right of the last numeric value indicates that not all the defined pens are shown

## Page Print

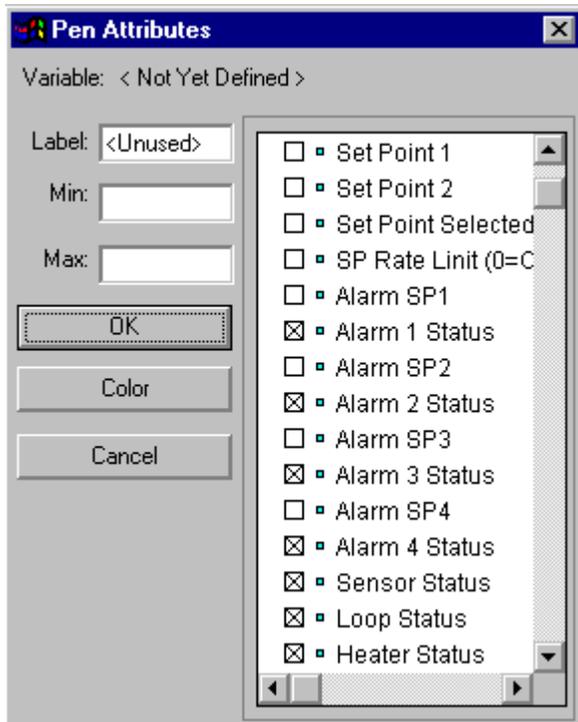
When this box is checked the whole GDW is printed including any graphics, Bar charts, numeric values, etc.

If you just want a full page Trend chart:

- Make the Trend chart as big as you can on the screen
- Set the defaults for your printer to landscape mode

***NOTE: Use a white Paper Color (Accessed from the View Menu (see page 72)) as a background for the GDW and a white chart. Background colors and detailed graphics will use a lot of ink when printed.***

## Add/Edit (Pen)



All defined instruments previously selected using the Variables and Instrument list will be shown in the window

Click the Plus sign alongside the Instrument to expand the variables list, then pick from the defined variables shown by double-clicking

Fill in Min and Max parameters for the Trend chart.(These can be changed during run time if required)

### Variable (Trend chart)

To assign a variable to a chart Pen:

1. Click the Plus sign alongside the Instrument to expand the Variables List
2. Double-Click the required variable

The Pen label will be automatically assigned, however you can modify this if required to your own label.

Note that for variables with decimal places only one decimal place will be shown on the Trend chart.

### Label (Trend chart)

The Pen label is the name of the Pen as displayed on the Trend chart. The default assigned by SpecView is the same as the variable. This can be edited by clicking in the **Label** box.

If you cannot see all the Pen labels defined shorten the Pen labels OR select a smaller (or narrower) font

### Min / Max scales for a chart Pen

For **each Pen** enter the minimum and maximum scale values.

Click a Pen label during (Runtime mode) and the scale displayed on the chart y-axis will change to:

- The Pen color
- The scaling for that Pen

### Pen Color

Pick a color from the standard windows chart. This will be the line and label color within the chart

Click **OK** and repeat for as many variables you wish to chart.

### Edit (Pen)

To edit an existing Pen, highlight the Pen to be edited in the Pens list in the Trend Chart Attributes dialog box and click the **Edit** button, or just double-click the Pen and the Pen Attributes box will be displayed. (Repeat for any further editing).

**Delete (Pen)**

Use this button to remove an existing Pen from the Trend chart.  
After deleting Pen(s) click the OK button to save the changes NOT the Cancel button.

**Move Up / Move Down (Trend chart)**

Enables the eventual position of the Pens listed along the top of the Trend chart to be moved in relation to one another. Up is to the left, and down is to the right.

**Font (Pen)**

The smaller the font the more Pens are available.

**Time Span (Trend chart)**

Time ranges are available from 1 minute to 48 Hours; click the box to display the list and select the one most appropriate for your use.  
Check the page print to print full page charts on a printer.

**Axes color (Trend chart)**

Select a color from the standard windows chart. The time and variable axis will be displayed in the color selected.

**Chart color (Trend chart)**

Select a color. The whole of the Trend chart will be displayed in this color.

**NOTE: Use white if you intend to print the chart.**

**Auto-open on Runtime**

This menu command on the Configuration mode *File menu* (see page 66) should be used if a configuration has more than one GDW defined which contain Trend Chart(s).

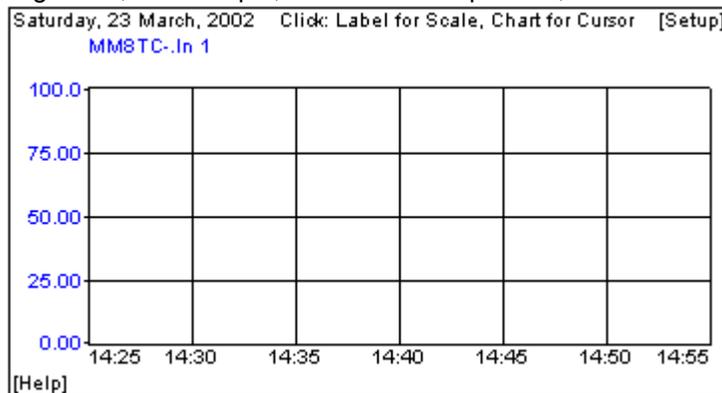
In this case the menu command should be used on each of the GDW's to ensure that their traces start whenever SpecView goes into Runtime mode.

**NOTE: Be sure to click this menu command if the GDW has a Trend chart. If you do not, the GDW will have to be opened in Runtime mode before the Trend chart will start.**

**Horizontal Grid Lines**

To add horizontal grid lines to the Trend chart use *Preferences - Runtime* (see page 124).  
from the File menu while in Configuration mode.

The setting of Trend Grid Segments draws horizontal lines to divide the Trend chart into this number of segments, for example, 4 = divide into quarters, as shown below:





# Bar Charts

Bar Charts display variables as a moving vertical or horizontal bar

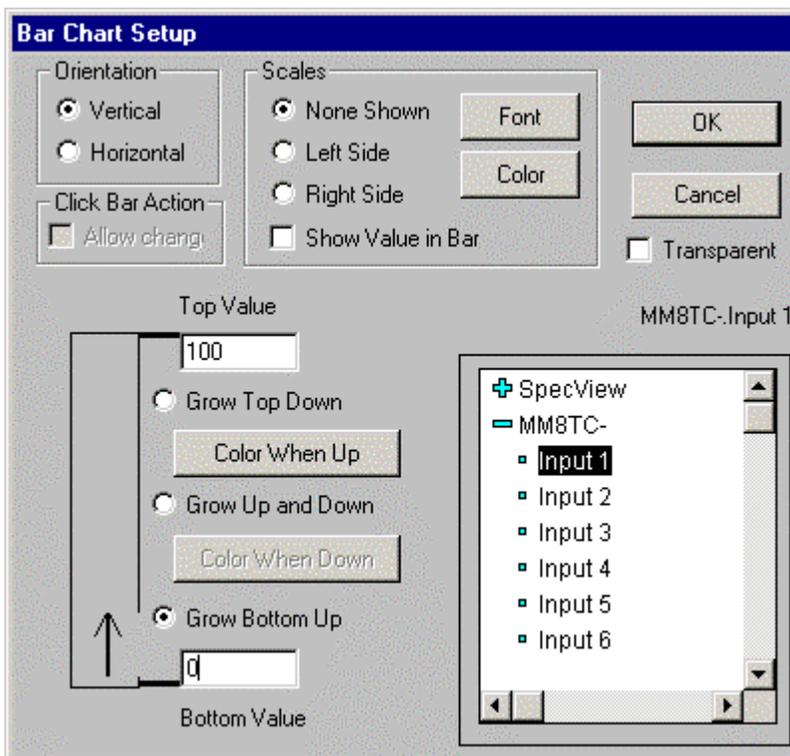


Adding a Bar Chart to a GDW

The mouse pointer changes to:  Click and drag a rectangle to the shape you want for the Bar chart. When you release the mouse button the Bar Chart Setup box automatically appears

**NOTE: Bar Charts can be used with boolean (on-off) variables. Set the bottom value to 0 and the top value to 1. This can be used to indicate alarms (see page 86).**

## Bar Chart Setup



### Bar Chart - Variables List

Choose the variable to be displayed on the chart

### Bar Chart - Orientation

Vertical charts grow up / down with increasing values  
Horizontal charts grow left / right with increasing values

### Growth Direction

Determines the growth direction with increasing value  
Use the Grow Up and Down check box (Left and Right) for variables that can go negative such as Deviation/Error and Output Power in heat/cool controllers

### Bar Chart - Click Bar Action

If the variable is writeable, checking this box will allow the variable to be changed by clicking on the chart

### Bar Chart - Scales

Shows a scale on the chart: 

### Bar Chart - Show Value in Bar

Shows the numeric value of the Variable in the chart: 

**NOTE: Use a light chart color to make the numbers more visible**

### Bar Chart - Font and Color

Sets the Font and outline Colors for the Border, Scales and Values shown on the chart

**NOTE: To make the chart disappear when empty, set this outline color to the same as the GDW Paper Color (accessed from the View Menu (see page 72))**

### Bar Chart - Fill (empty) Color

The color of the empty part of the chart is set by the Fill Color from the Object Menu.

Firstly ensure that the *Bar Chart Setup* (see page 112) dialog does not have the Transparent box checked. Single Click the chart to select it (Do NOT double-click)

On the Object Menu select Fill Color

Choose the color from the palette

### Bar Chart - Top (Left) and Bottom (Right) Values

Sets the minimum and maximum values of the displayed chart

For  $\pm$  Variables (Deviation, Output Power with heat/cool) set the Bottom (Left) value to a negative number

### Bar Chart - Color When Up (Left) and Down (Right)

Sets the color for the value part of the chart

# Recipes

## Recipes - Overview

A Recipe is when SpecView saves values of selected variables (that you can write to) so they can be later reloaded to the connected instruments. Recipes give these benefits:

- Snapshot current process values when good product is being made
- Exactly reproduce previous machine setup
- Review and edit complex programmer profiles
- Eliminate operator error in setting machine parameters
- On-screen display of which Recipe is loaded
- Save and reload instrument setup parameters

Each screen (GDW) in SpecView can have one Recipe associated with it. When the Recipe mode is selected a highlight appears around all the variables selected for Recipes.

The Recipe defines the set of variables, and there can only be one of these per GDW, but there can be up to 1295 different sets of values for these variables which are saved as files to disk. However, each set of values may not need to set all the variables, therefore in order to set only some of the variables at a time the value N/C (No Change) can be used.

Recipe names may be any length and include spaces and any special characters.

A description, which for example, may include special instructions to the operator, can be associated with each set of Recipe values.

Button actions or the Strategy Controller can make use of Recipes.

The order that values are downloaded into variables can be defined using *Recipe Levels* (see page 121)

SpecView will automatically retry Recipe value downloads if there is a failure.

See:

*Selecting Variables to be Included in Recipe* (see page 114)

*Recipes - Using* (see page 115)

*Recipe Warning* (see page 116)

*Recipe Names* (see page 117)

*Recipe Description* (see page 117)

*Recipe Hide this box* (see page 117)

*Recipe Save & Save As* (see page 118)

*Recipe Import/Export* (see page 118)

*Recipe Send* (see page 119)

*Recipe "Send To"* (see page 120)

*Source and Target Instruments* (see page 120)

*Recipe Send To: Warning* (see page 120)

*Recipe "Send To" Problems* (see page 120)

*Setting the Recipe download order* (see page 121)

*Preferences - Recipe* (see page 126)

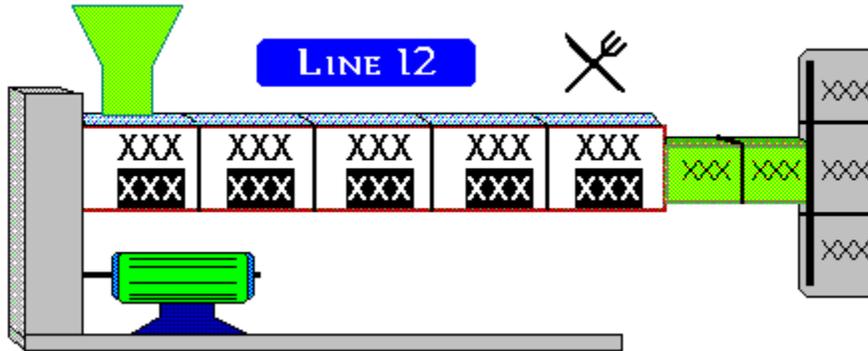
## Selecting Variables to be Included in Recipe

**NOTE: In order to be able to do this you must first have setup a GDW containing all the variables which you intend to put in to the Recipe. See: Adding Numeric Values to a GDW (see page 84)**

In Configuration Mode open the GDW which is to have the Recipe



Select Recipe Mode: Click on the toolbar (or View Menu - Recipe Mode)  
 The cursor changes to a knife and fork and any variables that have already been selected will highlight.  
 To add or remove a variable, click the value with the knife and fork cursor. However, make sure that the variable is not *Grouped* (see page 71) with other items on the GDW.



**NOTE: As you move the cursor over each variable the Status Bar shows the name of the variable**

Be sure NOT to select any variables that are Read Only.

### Recipes - Using

Recipes are *Setup* (see page 199) in the Configuration Mode

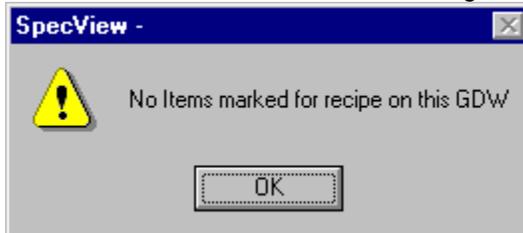


To do a Recipe action during Runtime Mode either click

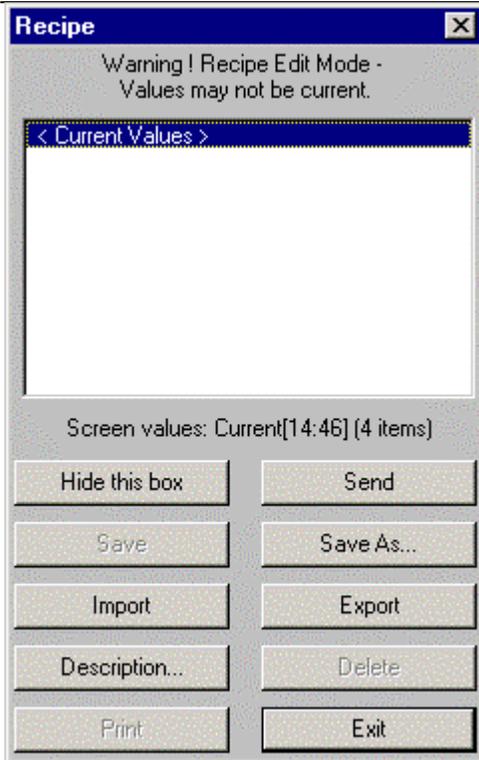


OR click which is a button which has been previously defined in Configuration Mode to perform the required Recipe action.  
 The Recipe dialog box will appear.

If no items have been selected in Configuration Mode for Recipe for this GDW this box will appear:



The variables need to be selected using  on the toolbar in Configuration Mode



To define the values for each variable click the highlighted values on the GDW itself and enter the new value. Do this for each variable. However, if a variable does not need to be changed in this set of values, just click the **No Change** button on the data entry dialog box for that variable.

Then click the **Save As...** button to save the set of values to a name. This name can then be used when in Configuration Mode for button actions or by the Strategy Controller.

You can define numerous different sets of values (up to 1295), each given a different *Recipe Name* (see page 117), but typically only a few sets are needed for most requirements.

If the Recipe dialog box has been hidden using the Hide this box button, then

click  OR  to restore the Recipe box.

***NOTE: Those items in the Recipe will show Color Dynamics (see page 87) based on the Recipe value. This can cause confusion in some cases if some color dynamics are a result of the Recipe and others are not.***

### Recipe Warning

The highlighted values on the GDW are no longer updated once the Recipe dialog box is on the screen. When a Recipe has been selected on the list or if a highlighted variable has been edited the values shown **are no longer current.**

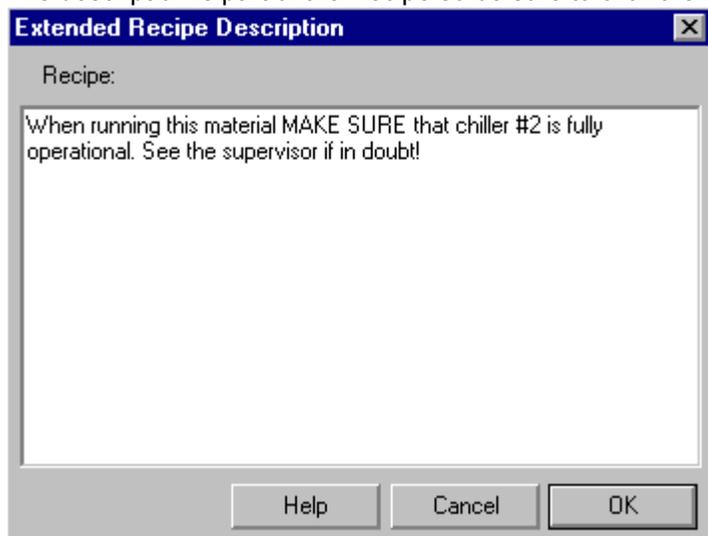
## Recipe Names



Click a Recipe name and the highlighted values on the GDW will change to the stored values. Click the **Send** button to write the values to the instruments. If required, the values may be edited before sending (click a value on the GDW to edit it). The changes may be stored by clicking **Save** (overwriting the existing Recipe) or **Save As** (save as a new Recipe)

## Recipe Description

Any text may be typed into the description box. The description is part of the Recipe so be sure to click the Save tool after you exit the description box.



## Recipe Hide this box

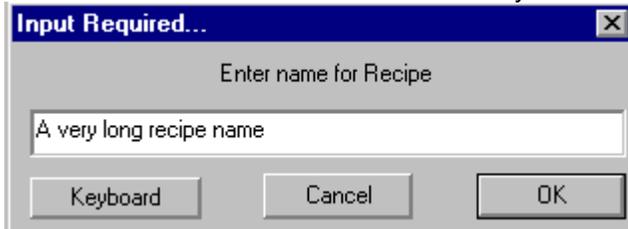
The Recipe box may be covering some of the Recipe variables on the GDW. The **Hide this box** button hides the Recipe box while you edit the Recipe values.

Click  OR  to restore the Recipe box.

## Recipe Save & Save As

### New Recipes:

Click the **Save** button when the <Current Values> line is highlighted OR  
Click the **Save As...** button. In either case you will be asked to enter a name:



Names may be any length and include any characters  
(SpecView assigns the file names. A maximum of 1295 Recipes are allowed per GDW)

**NOTE: This is the same data entry box as used for Configuration names and SpecView text user variable names.**

### Existing Recipes:

The Save button saves the current values **overwriting the old ones**.

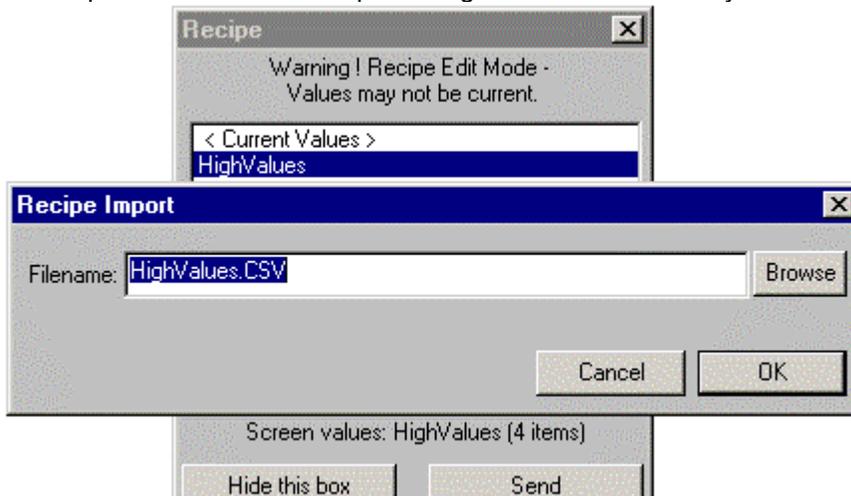
**NOTE: There is NO "overwrite existing" warning dialog box.**

## Recipe Import/Export

Recipe Import and Export are used to save a recipe to a file in a format that may be edited using Microsoft Excel and then subsequently imported into SpecView. This allows you to distribute recipes to other SpecView users in an easy to use manner. The exported recipe is in Comma Separated Value (CSV) format and can be directly edited in Excel. Editing restrictions are detailed below.

### Recipe Import

The Import button on the Recipe Management screen is always enabled.



The recipe which is imported does **not** relate to the one which is currently selected. It is just used to create the default name. Hence the default name will be the <name of the recipe currently selected>.CSV  
If a folder is not specified then the recipe CSV file will be imported from the current configuration folder.  
Alternatively use the Browse button to select a folder and file to import from.  
The file selected must be in CSV format and have been exported using the Export button from within SpecView.

When you click the OK button you will be prompted to discard any outstanding changes. Then the recipe CSV file will be read.

Each line representing a recipe item is validated to ensure that it can be imported correctly. If not then an error is displayed and you may cancel the import if required.

The number of recipe items being imported is checked, if it does not match the items currently in recipe then you are prompted. If there are fewer then the remainder will have their values set to "No Change". Extra items in the CVS file will be ignored.

### Recipe Export

The Export button is only available once a recipe to be exported has been selected on the Recipe Management screen.

The Export will prompt for a file name, the default will be the <name of the recipe>.CSV

If a folder is not specified then the recipe CSV file will be saved in the current configuration folder. Alternatively use the Browse button to select a folder and file to save to.

### Editing the exported recipe

The recipe CSV file can be edited before importing it back into SpecView.

This can be done using MS-Word or a text editor, such as Notepad or WordPad, as well as Excel

The name of the recipe on the first line may be changed and the recipe item's new value in the 4th column. However, do **not** remove any of the commas that separate the columns, or change the data in first 3 columns as these are used by SpecView to match up the recipe items when importing the recipe.

Whole lines can be removed if you wish to remove a recipe item from recipe, but be aware of the importing issues detailed above.

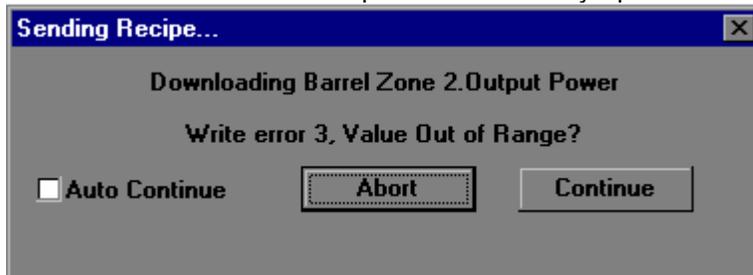
### Recipe Send

(See also *Send To* (see page 120))

Sends the values shown on the GDW to the instruments.

A progress box is displayed.

If an instrument does not accept the value sent by SpecView:



#### Recipe Send: Auto Continue

SpecView will continue to send the Recipe and ignore all future write errors

#### Recipe Send: Abort

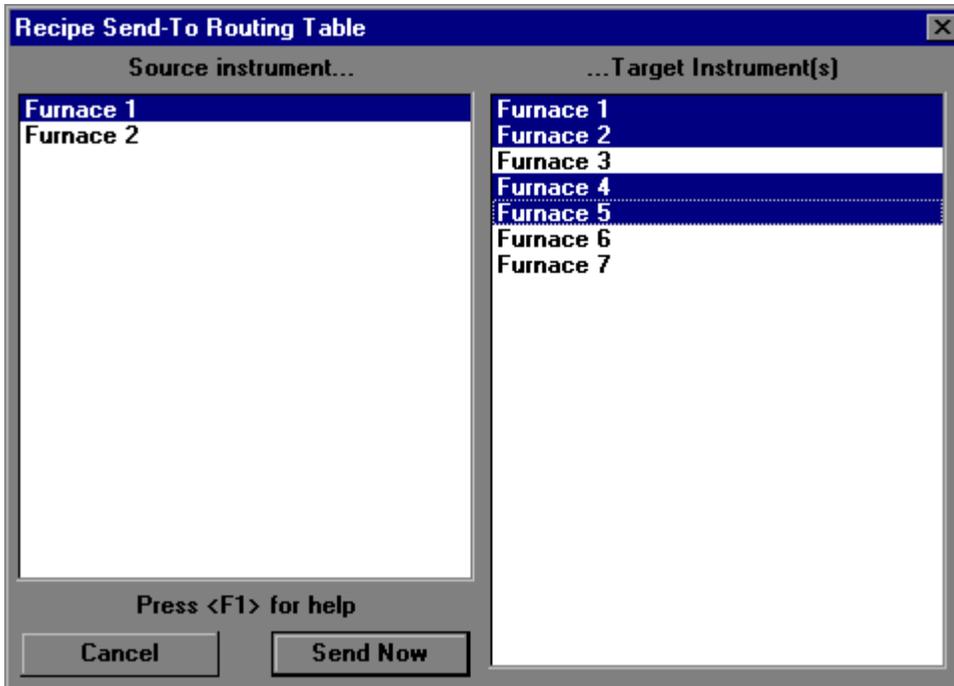
The Recipe send is aborted

**NOTE: Values already sent will be the values in the instruments. Previous values are not restored.**

#### Recipe Send: Continue

Clicking **Continue** will resume the Recipe send. The loading will pause again if there is another write error.

## Recipe "Send To"



Select Source and Target Instruments. *Problems? (see page 120)*

### Source and Target Instruments

If more than one instrument has Recipe values on the GDW they will be shown in the Source Instrument window. Select one and then select one or more Target Instruments to receive the values associated with *that source instrument*.

Then select the next Source Instrument and select target(s) for its values, and so on.

In this example, the values for "Furnace 1" on the GDW will be sent to Furnace 1, 2, 4 and 5.

When all required targets have been selected, click the **Send Now** button

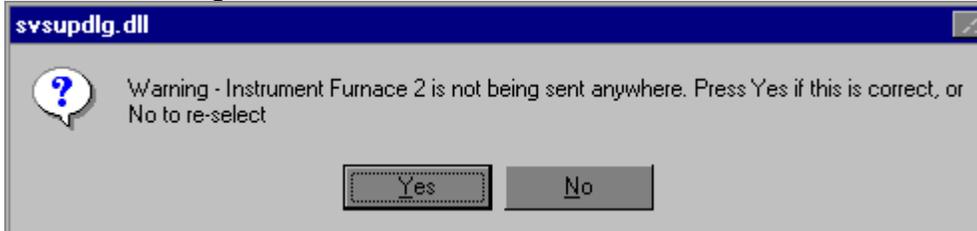
**NOTE: At least one target must be selected.**

### Recipe Send To: Warning

No Target Instruments have been selected for the Source Instrument "Furnace 2"

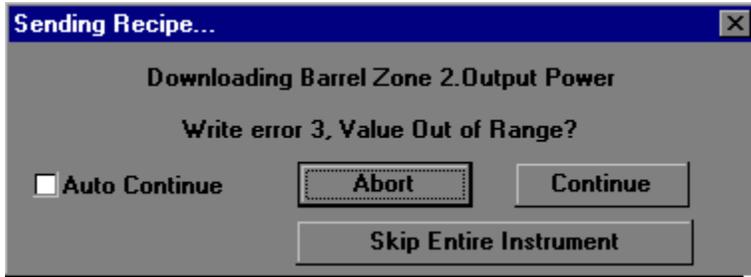
### Recipe "Send To" Problems

If at least one Target Instrument has not been selected for each Source Instrument:



Click **Yes** or **No** as required.

If an instrument does not accept the value sent by SpecView:



**Recipe Send To: Skip Entire Instrument**

SpecView will not attempt to send any more values to that target instrument

**Setting the recipe download order**

It is sometimes necessary to send values to instruments in a specific order. Examples are:

- Setting a controller to manual BEFORE setting the output power
- Setting a programmer segment or step number BEFORE writing to target time and setpoint

**NOTE: Setting the Recipe download order is only required if the order of the download matters for the particular instrument variables used by the Recipe.**

Segment Number	XXX	XXX	XXX	XXX
Target SetPoint	XXX	XXX	XXX	XXX
Segment Time	XXX	XXX	XXX	XXX



In this picture all these variables have been selected for Recipe. It is required that the following order is followed:

1. The first segment number
2. The first target SP and Time
3. The second segment number
4. The second target SP and Time
5. And so on...

SpecView supports up to 99 download levels which specify the order. Any number of parameters may be sent at any level. It is advisable to leave one or two spare levels at the top. So typically the first item (the first segment number, in this example) will be set to level 3, the next to level 4 and so on. The reason for this is in case you need to add something in the future that needs to be set first.

To set the download level:



First ensure  is not enabled on the toolbar.

- Single-click the value to select it
- Press the shortcut: Ctrl + D or use the Edit - Dynamic Attributes menu command

Segment Number	XXX
Target SetPoint	XXX
Segment Time	XXX

**Dynamic Attributes**

Variable:

In Recipe

Scan Rate:

Display Format:

04th Level

03rd Level

04th Level

05th Level

06th Level

07th Level

08th Level

Cancel OK

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Select the required level

SpecView will send the Recipe in the specified order.

There is a pause between levels to allow the controller enough time to register the values and be ready for the next data. This pause is adjustable in *Preferences - Recipe* (see page 126)

Then click the Save tool  and the Runtime tool  to save and run.



# Preferences

## Preferences Dialog Box

In earlier versions of SpecView modifications to SpecView's program settings had to be done by hand by editing the Settings.ini file. It is now strongly recommended to use Preferences... from the File menu instead.

The Preferences dialog box, accessed by Preferences on the File menu, allows modification of almost all the configurable items in Settings.ini. The exceptions is support for COM10 and above by setting the value of MaxPorts in the [COMMS] section of Settings.ini. This is initially set to 9, but can be increased up to 40 to allow the use of com ports from COM1: to COM40:

For further details on the Preferences dialog box tabs see:

*Preferences - Runtime (see page 124)*  
*Preferences - Remote (see page 125)*  
*Preferences - Display (see page 125)*  
*Preferences - Alarm (see page 126)*  
*Preferences - Logging (see page 126)*  
*Preferences - Strategy (see page 126)*  
*Preferences - Recipe (see page 126)*  
*Preferences - Startup (see page 126)*  
*Preferences - History (see page 127)*  
*Preferences - Settings (see page 127)*  
*Preferences - Web Server (see page 127)*  
*Preferences - Logfile Conversion (see page 127)*  
*Preferences - DDE (see page 128)*  
*Preferences - Debug (see page 128)*

## Preferences - Runtime

- \*GDW Refresh Rate 1/10s: 4  
The rate at which values on a GDW page are redrawn
- \*Low Scan Rate 1/10s: 100  
The speed of this Scan rate at which values are obtained over the wire.
- \*Medium Scan Rate 1/10s: 20  
The speed of this Scan rate at which values are obtained over the wire.
- \*High Scan Rate 1/10s: 10  
The speed of this Scan rate at which values are obtained over the wire.
- \*Ultra High Scan Rate 1/10s: 5  
The speed of this Scan rate at which values are obtained over the wire.
- Trend Grid Segments: 0  
Puts in horizontal lines to divide into this number of segments  
(for example, 4 = divide into quarters)
- \*Comms Back Off Multiplier: 20  
If a value can't be accessed over comms, then this number is multiplied by the scan rate and used as a 'delay' factor before retrying.
- Parameter List PPS: 15  
When the Instrument View's parameter list button is clicked on in Runtime Mode, this is the number of values read per second (Points Per Second) in order to display the parameter list.
- Disable Config Access: Disabled  
Used to Disable access to Configuration Mode.

- Hide Status Bar: Disabled  
Used to Hide the Status Bar to maximize screen space.
- Single Click Alter: Enabled  
In Runtime Mode this is used to determine if values can be changed by just a single-click or a double-click. This is useful if Maximized is disabled on the Startup tab (see below), and there are other windows on the screen to click between, as single clicking on a variable by accident will popup the variable change dialog box.
- Disable COM Port Settings Popup: Disabled  
Used to Disable COM Port Settings dialog box
- Archive/Restore Directory:  
This defaults to the folder that SpecView is installed in, but it can be set to any drive and folder.
- Line Writer DP:  
The *Line Writer* (see page 106) is either a button or strategy controller action type. This specifies the number of decimal places to be used.

**NOTE: \* indicates: A change will not take effect until next entry to Runtime mode**

### Preferences - Remote

- Network - IP Port Number
  - Timeout
- Further details *SpecView Remote* (see page 32)

### Preferences - Display

- Time Format HMSC: No Milliseconds  
(Other options: 1 Millisecond place/2 Millisecond places/3 Millisecond places)  
Whether or not to display Milliseconds in time variables.
- N/A Value: XXX  
This is what is used to represent the variable's value in Configuration Mode or when the value cannot be read from the instrument in Runtime Mode.
- Recipe No Value: N/C  
N/C stands for No Change. It is only possible to have one set of Recipe variables per GDW, but each Recipe can have many sets of values (Max 1295). However, not all of the variables will need to be set in each set of values, so this is what is used to indicate the variables which are not to be set.
- Date Format: %A, %B %d, %Y  
The % sequence used to format date variables, see below.
- Date Time Format: %H:%M:%S %A, %B %d, %Y  
The % sequence used to format date and time variables, see below.
- Blank Value: [ ]  
What is displayed when a text value is blank

### Date and Time Format Specifications

- %a Abbreviated weekday name
- %A Full weekday name
- %b Abbreviated month name
- %B Full month name
- %c Date and time representation appropriate for locale
- %d Day of month as decimal number (01 – 31)
- %H Hour in 24-hour format (00 – 23)
- %I Hour in 12-hour format (01 – 12)
- %j Day of year as decimal number (001 – 366)
- %m Month as decimal number (01 – 12)
- %M Minute as decimal number (00 – 59)
- %p Current locale's A.M./P.M. indicator for 12-hour clock
- %S Second as decimal number (00 – 59)
- %U Week of year as decimal number, with Sunday as first day of week (00 – 53)

%w Weekday as decimal number (0 – 6; Sunday is 0)  
%W Week of year as decimal number, with Monday as first day of week (00 – 53)  
%x Date representation for current locale  
%X Time representation for current locale  
%y Year without century, as decimal number (00 – 99)  
%Y Year with century, as decimal number  
%z, %Z Time-zone name or abbreviation; no characters if time zone is unknown  
%% Percent sign

### Preferences - Alarm

- \*Enabled: Enabled  
Whether *alarms* (see page 86) are enabled

- \*Rate: 5  
The alarm rate

- Popup Enabled: Enabled  
Whether an alarm displays the Alarm dialog box

**NOTE: \* indicates: A change will not take effect until next entry to Runtime mode**

### Preferences - Logging

- \*Enabled: Enabled  
Whether logging is enabled

- \*Rate (secs): 60  
The logging rate

**NOTE: \* indicates: A change will not take effect until next entry to Runtime mode**

### Preferences - Strategy

- \*Enabled: Enabled  
Whether or not the Strategy Controller is enabled

- \*Rate: Medium (Low/Medium/High/Ultra-High)  
The speeds for these settings are defined on the Runtime tab.

**NOTE: \* indicates: A change will not take effect until next entry to Runtime mode**

### Preferences - Recipe

- Recipe Level Delay 1/10s: 5  
The delay between downloading each of the 99 Recipe levels

- Recipe Retries: 1  
The number of times a Recipe download is attempted before reporting failure.

- Sequence Recipe Directory (PC3000 Only):  
The folder where the sequence Recipes are stored

- Select Invert: Disabled  
In Configuration Mode when the 'knife and fork' button is clicked the Recipe values are highlighted by a box being drawn round each of them. However, on a very complex GDW screen layout the boxes may overlap too much. So this feature has been provided to highlight the values using reverse video rather than a box.

### Preferences - Startup

- \*Maximised: Enabled  
Whether or not SpecView starts with its window using the whole screen.

- \*Configuration Timeout: 20  
The number of seconds to countdown on startup

- \*Port: 1

The default printer port on which to detect the dongle

- \*Timing: 0

This is a timing value for the dongle. It is not recommended to change this

- \*Auto Update of Parameter Lists: Enabled

Whether or not SpecView will read new values added to an instrument's definition. It is not recommended to change this

- \*Title screen delay: 5

The duration that the copyright logo splash screen is displayed during start-up while instrument definitions are being loaded

**NOTE: \* indicates: A change will not take effect until next entry to Runtime mode**

## Preferences - History

- Auto Pause on Short Trend charts: Enabled

Historical replay will be paused when the Trend chart line(s) hits right-hand edge of the Trend chart on the GDW with the shortest overall duration on the horizontal axis

- Auto Pause on Long Trend charts: Enabled

Historical replay will be paused when the Trend chart line(s) hits right-hand edge of the Trend chart on the GDW with the longest overall duration on the horizontal axis

- CPU Replay Factor: 10

A number (where the units are undefined) which defines how much CPU is used by Historical Replay. The bigger the number the more CPU and hence the faster it goes, but the slower other functions in SpecView will run while a Historical Replay is in progress

## Preferences - Settings

- [Reset Variables List Window Position:]
- [Reset Password Options Window Position:]
- [Reset Alarm Popup Window Position:]
- [Reset Event Popup Window Position:]
- [Reset Parameter List Window Position:]

Resets the respective dialog box window's position

- List Font: Arial

The font to be used

- List Font Size: 9

The font size to be used

- Show Name On Move: Enabled

In Configuration Mode moving an XXX shows the name of the variable on the status bar

## Preferences - Web Server

SpecView has a built-in Web Server which can be enabled.

A screen-shot is taken every 5 seconds; this rate can be modified (see Update Rate below).

The screen-shot uses the specified JPEG Quality, where 100 is maximum definition, but uses much greater bandwidth. This screen-shot is then made available via the Web Server.

- Enabled: Disabled by default
- IP Port Number: 80
- Update Rate: 5 secs
- JPEG Quality: 70 (Range: 5 - 100)

## Preferences - Logfile Conversion

- Thread Priority: Slow

This is how much CPU priority is given to logfile conversions

- Inhibit Progress Display: Disabled

Whether or not to display the Progress dialog box for logfile conversions

### Preferences - DDE

- \*Application Name: SpecView (see DDE application name)
- \*Variable Topic: var (see DDE topic name)

***NOTE: \* indicates: A change will not take effect until SpecView has been restarted***

### Preferences - Debug

***NOTE: Do not change any settings unless under the direction of a SpecView representative - or corruption of your configuration may occur.***

- Debug Mode: 0
- \*Enable Strategy Debug: Disabled
- Special Mode 0: Disabled
- Special Mode 1: Disabled
- Special Mode 2: Disabled
- Special Mode 3: Disabled
- Special Mode 4: Disabled
- Old Ordering: Disabled
- Disable Invalid Ports: Enabled



# Passwords

## Passwords - Overview

**NOTE: Passwords are optional. If you do not need them skip this section.**

SpecView has the facility of password protection, which can be used as detailed below.

- Up to 5 levels of password access
- Any item may be password protected
- Adjustable inactivity timeout
- Hierarchical or Non-hierarchical operation
- Menu command blocking
- Windows / PC key blocking



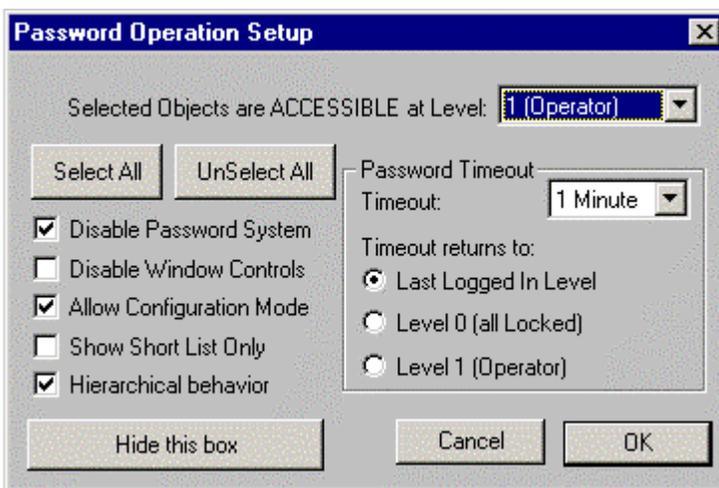
GDW Setup (see page 130)

User Control (see page 132)

## GDW Setup



Each GDW must be setup for variables to be available for change. Just because a variable has been marked as ACCESSIBLE at a level on one GDW does NOT mean it is ACCESSIBLE on another.



## Selected Object Access Levels

- SpecView provides (up to) 5 levels of log-in access.
- Level 0 = ALWAYS locked - only the Password menu command is available
- Level 1 (Operator) is the next level
- Level 5 = ALWAYS unlocked - everything is available

### Select All / UnSelect All Buttons

These buttons provide a quick way to Select / UnSelect all the objects on a GDW

### Disable Password System (Default = On)

When checked (default) the password system is not active and the system is unlocked at all times. This is useful during configuration development when switching frequently between Configuration mode and Runtime mode.

### Disable Window Controls

When checked the Window's menus are hidden and the maximize/minimize controls are disabled.

### Allow Configuration Mode

When NOT checked the Configuration Mode menu command is not available on the File menu.

### Short List Only

- When checked the parameter button on Instrument Views is restricted to the short list
- The Options menu command is disabled

***NOTE: Since the variables that appear on the short list can be customized the user can restrict access to chosen variables.***

### Hierarchical Behavior

When checked each level behaves in a hierarchical way; i.e. When an object is marked as ACCESSIBLE at level 3, it is ACCESSIBLE at levels 1 and 2

***NOTE: The following example should be studied in order to understand how this behavior could be confusing.***

- An object, say Zone 1.Setpoint, is marked as accessible at Level 1 (Operator)
- It is therefore accessible at all higher levels
- The user switches to Level 4 (Configuration)
- The user clicks by mistake on Zone 1.Setpoint, de-selecting it
- Seeing the mistake, the user clicks again on Zone 1.Setpoint to re-select it....
- ***However***, since de-selecting it LOCKED it at Level 4 AND ALL LEVELS BELOW, re-selecting it only made it accessible at Level 4 - it is STILL LOCKED AT LEVEL 1.
- You MUST return to Level 1 and re-select it at that level

### Password Timeout

Select a time for the inactivity timeout.

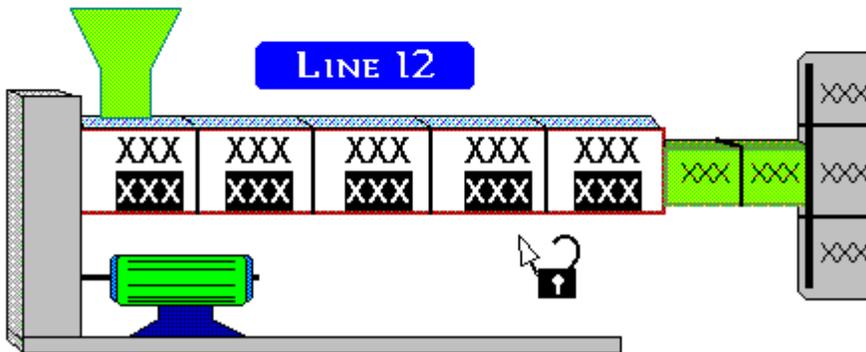
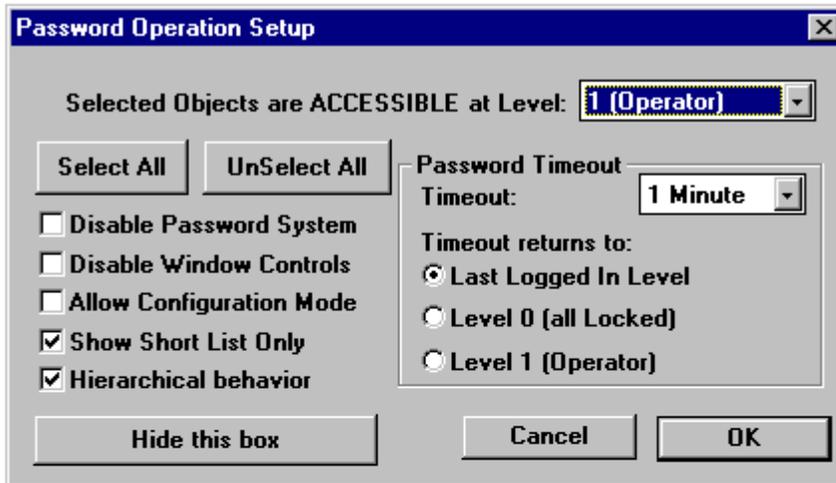
Inactivity is defined as not accessing a variable. Moving the mouse is not activity. The time left on the timeout is shown in the status bar

### Timeout Returns To

Select the required action:

- Last Logged In Level
- Level 0 (all Locked)
- Level 1 (Operator)

## Selecting Objects for Access



When the GDW Setup menu command is selected the cursor changes to the padlock shown above.

Click those objects you want **TO BE ACCESSIBLE** at the level shown.

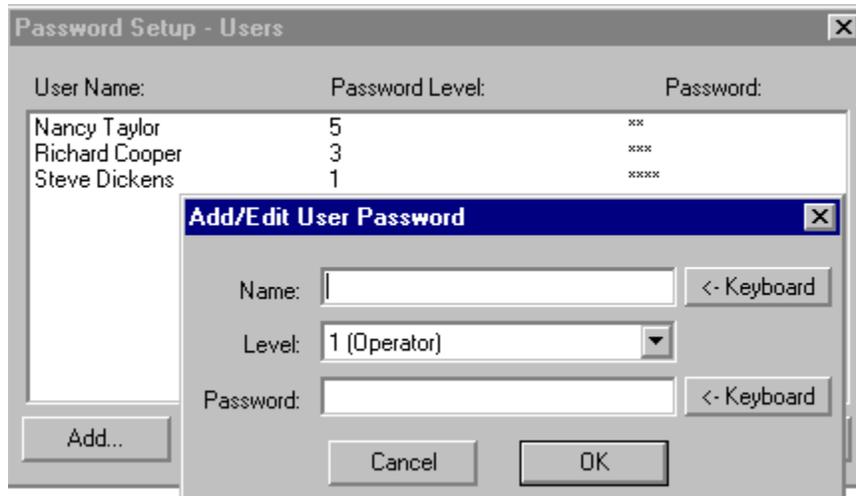
Each object selected will highlight (as shown above) in either reverse video or with an outline box. (As for Recipe, the highlight type is defined by the Select Invert check box in *Preferences - Recipe* (see page 126))

## User Control



This is used to enter the names and passwords of the users of the system

1. Selecting the User Control menu command brings up the "Password Setup" Users box appears
2. Then click the **Add** or **Edit** buttons to get the Add/Edit User Password box



Up to 5 levels of user access are provided - use as many (or as few) as you wish

***NOTE: Use only the levels you know you need. Too many levels can be counter-productive.***

The designations "Operator" and "Configuration" are provided only as a reminder that higher numbers mean a higher level of access in hierarchical mode.

# Data Logging

## Data Logging - Overview

Data logging functions in SpecView are in two parts:

- 1 Specifying which items to log to the hard disk
- 2 Using the logged data to create reports and replay GDW's (Historical Replay option)

**Data Logging is a background function. Variables do not have to be on an open GDW to be logged. Conversely, a variable on an open GDW may not be being logged.**

Three types of data may be logged:

*Variables (see page 134)* This is the saving of the values of all variable types

*Alarms (see page 140)* SpecView time stamps and saves all items marked as *alarms (see page 86)*

*Events (see page 141)* SpecView records all actions of specified types made by the user.

**Data logging is active by default when SpecView is started.** Which variables are logged by default has been pre-configured by SpecView as part of the initial instrument definition. Typically this is only specified for control instruments: Process Value, Set Point and Output Power are the normal selections For indicators / data acquisition modules Process Value is selected. To see what variables are being logged use the Show Logging in Variables List menu command on the Database submenu from the Setup menu. This is described in *Data Logging - Variables (see page 134)*

The logged data is used for two purposes:

*Historical Replay (see page 142)* of a GDW

**If an item has no value when using Historical Replay it is probably not included in logging. Add the variable to logging as described in Data logging - Variables**

Creating a text file *Log Report (see page 199)*

**If an item not available for a log report it is probably not included in logging. Add the variable to logging as described in Data logging - Variables**

Log Reports may be stored on any drive/folder in your system

See *Disk Space for Logging (see page 136)* for file size details

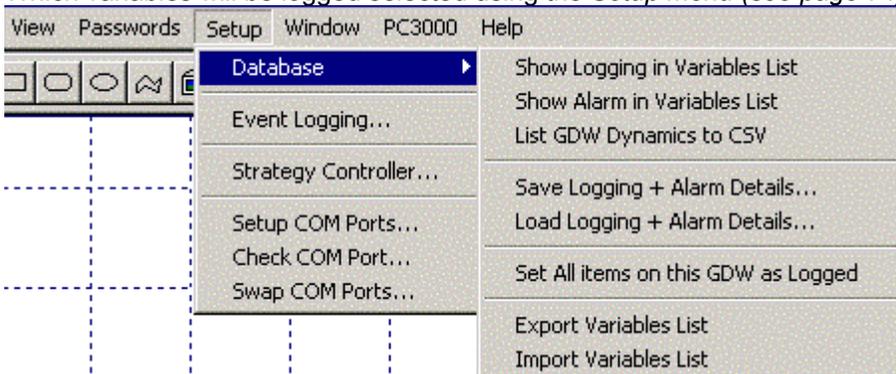
Changing the *Logging Rate (see page 136)*

## Data Logging - Variables

Variables are any items in the Variables List. Types include numbers, integers, boolean (on/off), date, time and text. This topic tells you how to see what variables are being logged and how to add or remove a variable to/from logging.

**Only variables that have been selected for logging will be available for Log Reports and Historical Replay.**

Which variables will be logged selected using the *Setup menu (see page 74)*

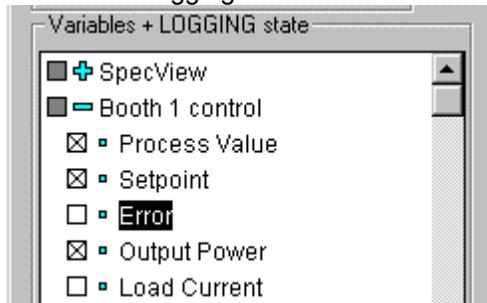


When the checkmark is by the "Show Logging in Variables List" a box will appear alongside each item in the

variables list. To open the Variables list use the tool



In the picture below the gray box alongside the instrument name means that at least one variable in that instrument has been selected for logging. The cross in the white box means that the variable has been selected for logging.



**To ADD a variable to logging click on the empty box by the variable.**

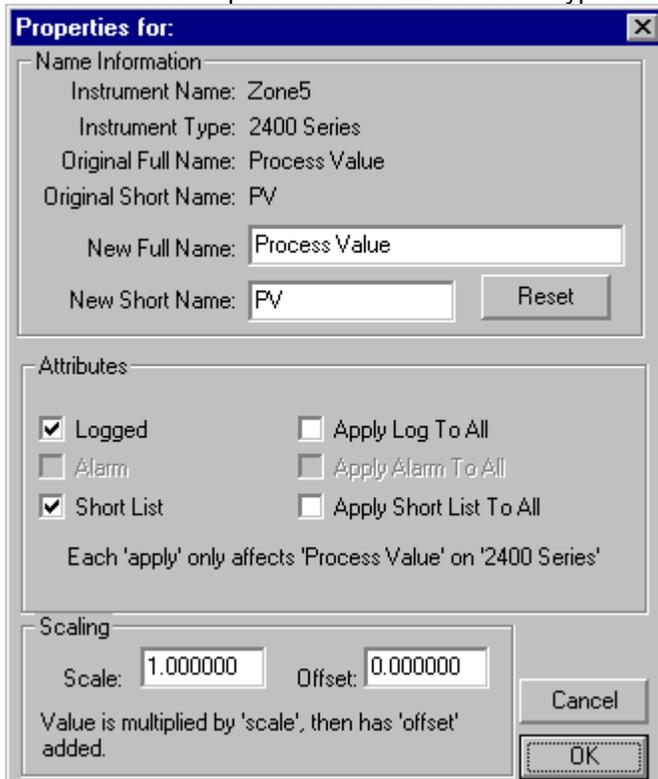
**To REMOVE a variable from logging click on the x in the box by the variable**

Variables may also be selected for logging by using the Properties dialog box.

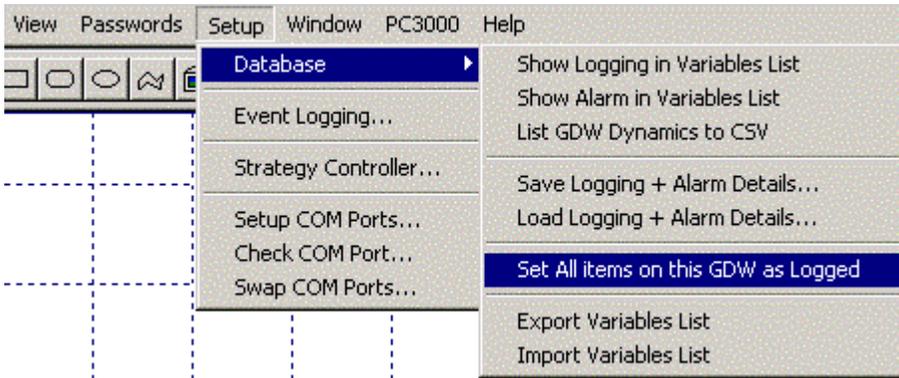
**The Properties box should be used to select the same variable in multiple instruments. For example, if you have a large number of the same instrument and you want to add Working Setpoint to logging for each of them you should use the "Apply to All" feature of the Properties box.**

To view the Properties box open the Variables List and click on the variable you want with the RIGHT mouse button OR select the variable with a SINGLE click and then click the Properties button.

In this picture the variable Zone5.Process Value is being logged. If the **Apply Log To All** box is checked then the Process Value parameter of ALL the same type of instrument will be included in logging.



All the variables on a GDW can be added to logging with a single command using the "Set All items on this GDW as Logged" menu command:



**This feature is most useful when a GDW is frequently used with Historical Replay and it is desired that all the variables replay. This is typical of an Overview screen. HOWEVER, use caution! Once selected, the only way to remove an item from logging is to use the "Show Logging in Variables List" method described above. For example, If used on a GDW that has several hundred items for a ramp/soak program, all those items will be added to logging with a single mouse click.**

Creating Log Reports (see page 137)

## Disk Space for Logging

The data is stored by SpecView in the Configuration Folder This location is fixed.

**Log files are always stored in the Configuration folder. To backup the files to another location such as a network drive, a batch file triggered by a Strategy Controller event should be written. The Strategy Controller topic shows an example.**

The amount of space taken up by log files depends on how often you log data and how many variables have been selected for logging.

The SpecView logging system uses 5 files per day, all with the prefix YY\_DDD (year\_day-of-year):

- .LOG file - variables data
- .IDX file - index file used in report conversion and historical replay
- .LNM file - names of logged variables
- .ALM file - *alarm* (see page 86) data
- .EVT file - event data

The exact size of log files depends on the type of variables logged (text strings take more space than integers, for example). A typical variable logged every minute (default value) will take about 25KB of disk space per day. So, 100 variables will take about 2.5MB per day.

## Data Logging Rate

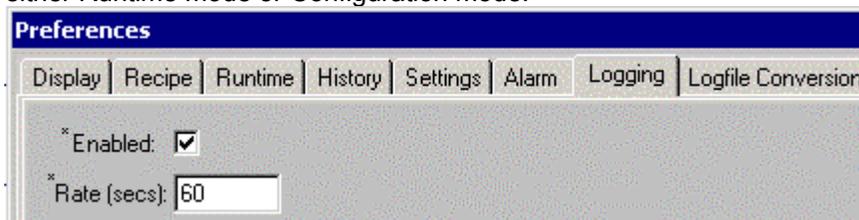
By default data logging is running when in the Runtime Mode

SpecView stores values of selected variables at Logging Rate. Logging turned off by setting the rate to 0. The default rate is 60 seconds.

The rate may be changed using:

- 1 The Preferences dialog box
- 2 A Button Attribute
- 3 A Strategy Controller event

The Preferences dialog box is used to *permanently* change the rate. It is accessed from the File menu in either Runtime mode or Configuration mode.



**NOTE: The new rate will NOT be used until the Runtime mode is restarted. I.e. you must go to Configuration mode and back to Runtime for the change to take effect.**

Using a Button Attribute or Strategy Controller event to change the rate it is a *temporary* change. The next time the Runtime mode is entered the rate will return to that specified in the Preferences dialog box.

**NOTE: Use caution when adjusting the rate this way. Disk space is inexpensive. If you forget to change the value back you may have logging disabled or at the wrong rate without realizing it. There is no indication of the active logging rate.**

## Log Reports

A Log Report is a text file in CSV (Comma Separated Variable) format. Most Windows operating systems have this file type registered to Excel. This means that double clicking on a file of this type will automatically start Excel and open the file into it. For help in using this type of file please consult your Windows advisor.

**NOTE: To be available for inclusion in a Log Report a variable must be selected for Data Logging (see page 134).**

There are two steps to generating a log report:

1. Choosing the *Report Format* (see page 138)
2. Choosing a Start & Stop date/time for the report

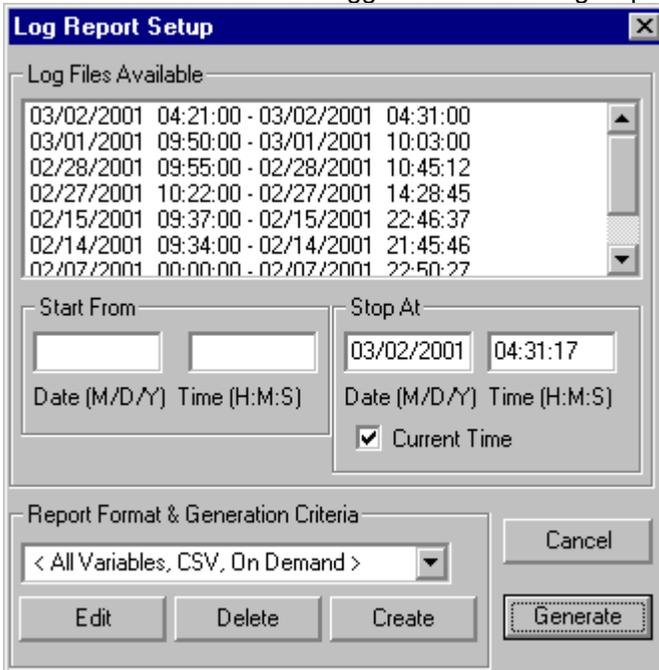
Use the Logging menu (below) OR an on-screen button if one has been defined:



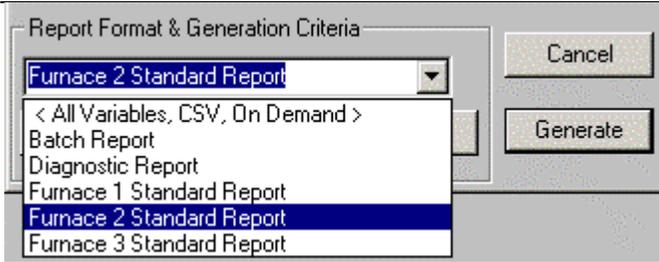
The *Log Report Setup* (see page 137) dialog box is displayed.

## Log Report Setup

This box is used to convert logged data into a Log Report



Step 1: Choose a Report Format.



Step2: Enter the "Start From" Date and Time and "Stop At" Date and Time  
 (If you click on one of the "Log Files Available" the start and stop times of that file will be entered automatically.)

When you have chosen the Report Format & Start/Stop Time click **Generate**

**Log Files Available**

A list of all log files available on the system is shown in the dialog box. They include start date and time and end date and time of the files. A file is created every day.

**Start From - Stop At**

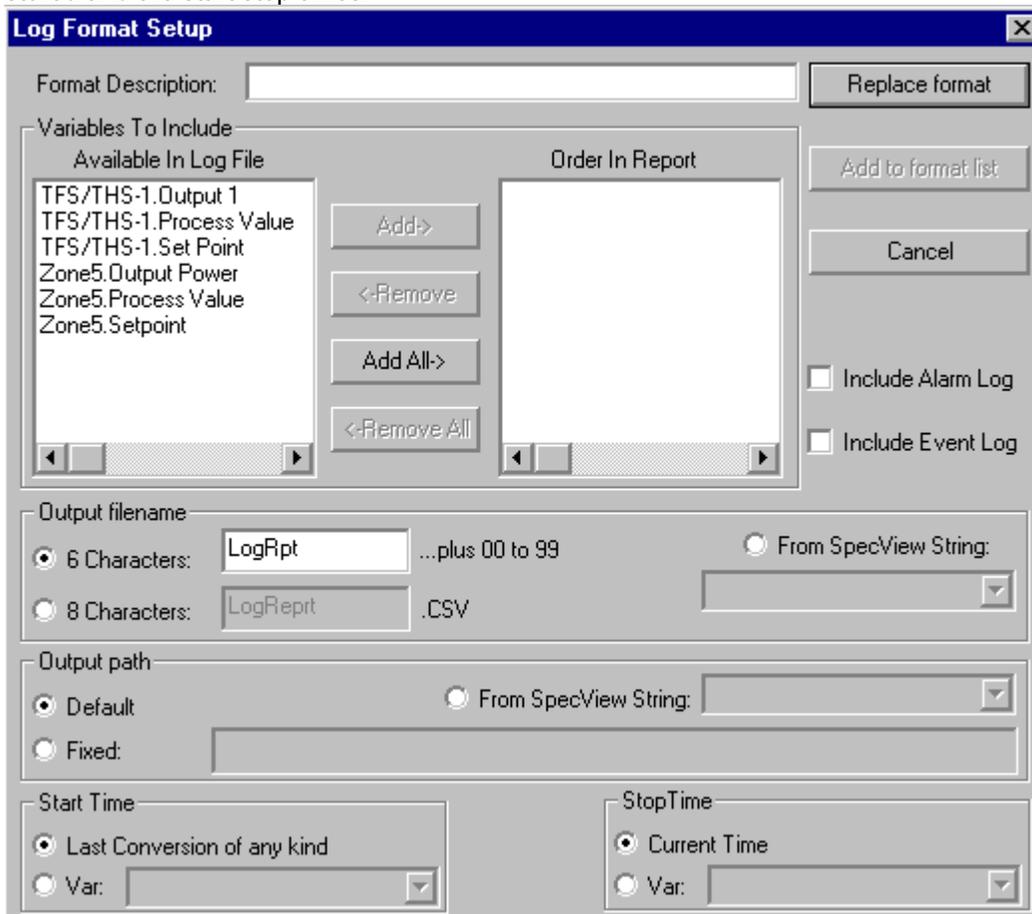
Enter the time & dates for the start and stop times of the desired report.

If a report has been previously generated, SpecView will use the stop time & date of the previous report as a suggested start time for the next report.

By checking the current time box the current date and time will be entered in the Stop At boxes.

**Log Report Format**

This box sets up the variables that will be included in THIS report, the name of the file generated, where it is stored and the start/stop times.



## Format Description

Name the format for easy identification: "Line 1 - PV's only" "Line 2 Barrel Zone diagnostics" "Furnace 3 Run Data"

An unlimited number of formats can be defined.

## Replace Format and Add to format list

These buttons save the report format

When creating a new format click **Add to format list**

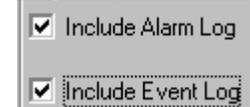
If you edit an existing format you can save the edits by clicking **Replace Format** OR save as a new format by editing the name and clicking **Add to format list**

## Choosing Variables

Select the variables you want in *this* report: Click on the ones you want and then click **Add->** If you select one you do not want, click on it again to de-select it. The order in the "Order In Report" window is the order of columns in the text file produced when the report is "generated".

## Log Report: Include /Event Log

To get a printable report of either the event or alarm log check these boxes



Each will generate a Comma Separated Variable file using the same name as defined in the "Output File Name" but with the extension .cse (events) & .csa (alarms). The files will be in the location specified in the "Output File Path"

## Output File Name

***NOTE: Standard file naming conventions (see page 200) must be followed. Long file names are supported if the name is taken from a SpecView text variable. All log files are in the format "Comma Separated Variable" format.***

Extensions used are: .csv for values; .cse for events; .csa for alarms

### Option 1 (default) - Select (up to) the first six characters of the file name

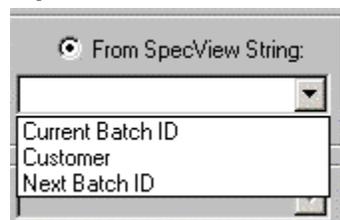
Choose any characters: e.g. line1- furn1-

The files will have the names: line1-02.csv; furn1-05.cse

### Option 2 - Select the specific file name

The file will always use the same name and the previous file will be overwritten.

### Option 3 - Get the name from a SpecView string user variable



The value entered by the operator for "Lot ID" will be the file prefix for the log/alarm/event report(s).

## Log Report: Output File Path

Specifies where to put the log files. This can be any folder on any drive available to the SpecView computer - i.e. it can be any drive on a network.



Default selects the configuration folder.

## Start Time / Stop Time

This area defines the Start and Stop Time/Date of a report.

### Manual Report Generation

The radio buttons for "Last Conversion of any kind" and "Current Time" are selected as the default values. These are typically used when reports are being generated manually. When a report is generated manually the stop time is remembered. When the Log Report Setup dialog box is next selected this time is automatically entered as the "Start From" date and time.

The routine generation of a log report simply requires the user to select the Log Report Setup box (either from the Logging menu or from a Button Attribute) and clicking the **Generate** button.

**NOTE: This feature is disabled when the report is generated automatically by either a Button Attribute (Logging - Convert specific log format) OR by a Strategy Controller action. When using these features the Start and Stop time must be obtained from SpecView Date/Time User Variables (see below)**

### Automatic Report Generation

One of the most popular features of SpecView is to generate log reports automatically when an event occurs.

**The Strategy Controller option is needed to achieve this.** The two most common are:

- 1 At a fixed time period (every day; every shift; every week etc.)
- 2 At the end of a batch process

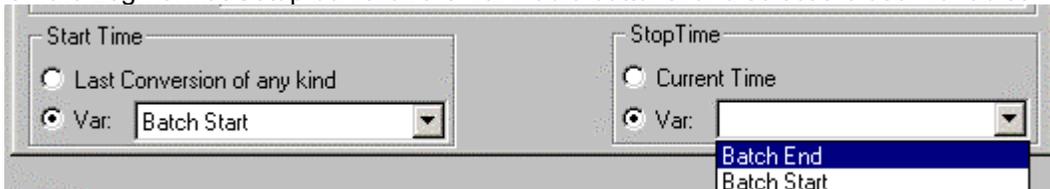
To do this it is necessary to define two SpecView Date/Time user variables. One is used as the Start time and one as the Stop time.

To define the user variables:

- 1 Open the Variables List
- 2 Click the **Show New** button
- 3 Click the **+** symbol by SpecView Variables
- 4 Double-Click DateTime
- 5 Enter a name for the first variable ("Batch Start") and click **OK**
- 6 Click Close on the default data entry box
- 7 Repeat these three steps to create the second variable ("Batch End")

See SpecView variables for more details.

On the Log Format Setup box click the **Var:** radio buttons: and select the user variables



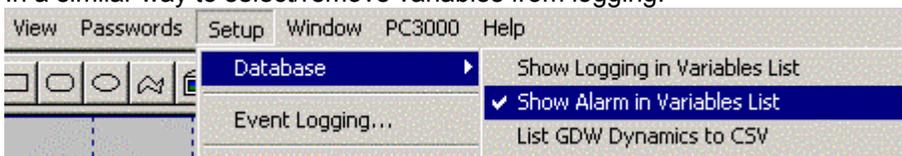
It is then up to the actions defined in the Strategy Controller to get the desired values to these user variables. See Strategy Controller for examples on doing this.

## Data Logging - Alarms

**CAUTION: SpecView's alarm monitoring MUST IN NO WAY be used as a safety feature! Use fully redundant approved safety devices only!**

Which boolean variables are monitored as alarms is set up using the *Setup menu* (see page 74)

In a similar way to select/remove variables from logging:



The Variable List will show which variables SpecView is checking as alarms:

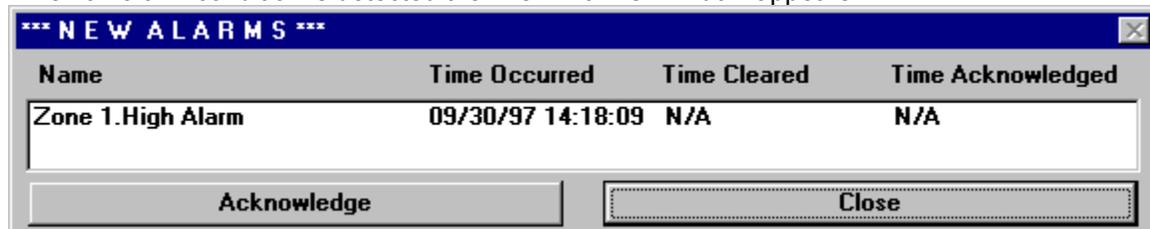
- SP Rate Limit (0=Off)
- Alarm SP1
- Alarm 1 Status
- Alarm SP2
- Alarm 2 Status

Clicking on a blank square will ADD the variable to alarm checking (only boolean variables can be selected)  
 Clicking on an "X" will REMOVE the variable from alarm checking.

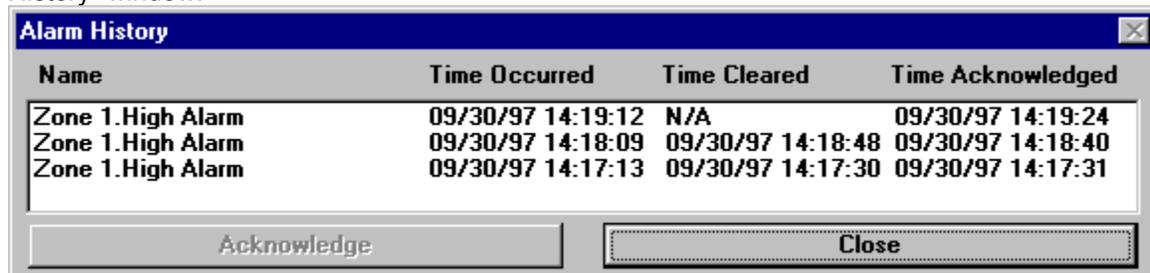
The rate at which they are checked is defined in the *Preferences* (see page 124) dialog box. The default value is every 5 seconds.

**If instrument(s) are disconnected from communications by either being removed or turned off, alarm checking can cause excessive slow down of communications to the remaining instruments. It may be necessary to set a slower rate for alarm checking, turn it off (remove the "enable" check) or remove specific variables from alarm checking.**

When an alarm condition is detected the "New Alarms" window appears:



Clicking the **Acknowledge** button time stamps the "Time Acknowledged" column and displays the "Alarm History" window:



This shows all the alarms since runtime was last entered. If SpecView is just re-started (either the program or by coming from configuration mode) all of TODAY's alarms are shown.

**There is no way to clear or delete alarms**

**This window cannot currently be printed**

To get a printable report of the alarms, convert any *log format* (see page 138) for the time span required with the "Include Alarm Log" checked.

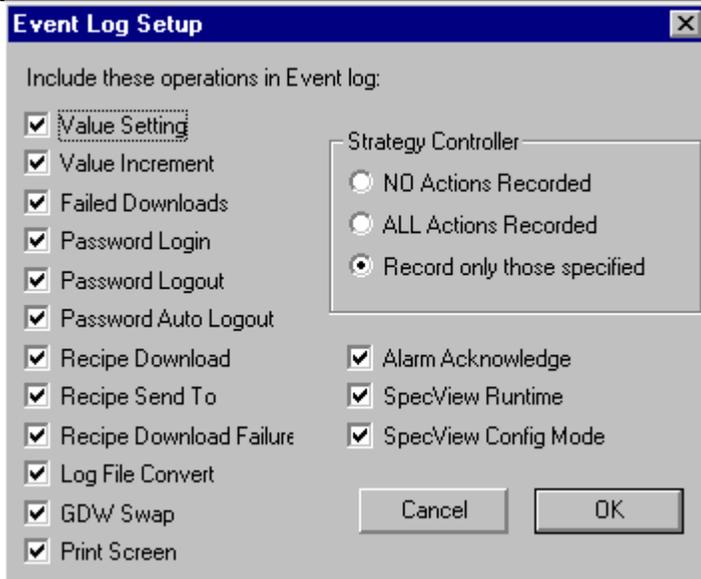
Logrpt.csa opened in Excel:

	A	B	C	D
1	Variable	Time Occurred	Time Cleared	Time Acknowledged
2	Zone 1.Low Alarm	9/30/97 14:56	NA	9/30/97 14:56
3	Zone 1.High Alarm	9/30/97 14:55	9/30/97 14:55	9/30/97 14:55
4	Zone 1.High Alarm	9/30/97 14:38	9/30/97 14:54	9/30/97 14:38

## Data Logging - Events

A very powerful feature of SpecView is to record all specified actions made by the user in RunTime. Any changes made to the connected instruments are logged.

Which events are logged is set up using the Event Logging menu command on the *Setup menu* (see page 74)



These are the default settings.

**NOTE: the settings available for the Strategy Controller. This is a very powerful tool for helping to debug complex strategy events and actions.**

To view the Event Window in runtime use the menu command

Events			
Time Occurred	Type		
09/30/97 14:41:24	Log file Convert		
09/30/97 14:40:42	Value Set	Zone 1.Proportional band 1.000	
09/30/97 14:40:35	Value Set	Zone 1.Alarm SP1	25.000
09/30/97 14:40:03	Value Set	Zone 1.Setpoint	92.000
09/30/97 14:39:56	Alarm Ack		
09/30/97 14:39:54	Value Set	Zone 1.Setpoint	77.000
09/30/97 14:39:43	Enter Runtime	Area1:SPECVIEW.GDW	

The event list shown will include all the events since the runtime mode was entered. If SpecView is closed or configuration mode is entered the current days events will be shown.

**This window cannot currently be printed**

To get a printable report of the events, generate any log format (see page 138) for the time span required with "Include Event Log" checked.

This is an example of a event report ".cse" file opened in Excel:

	A	B	C	D
1	09/30/97 09/30/97 14:39:54	Value Set	Zone 1.Setpoint	77
2	09/30/97 09/30/97 14:39:56	Alarm Ack		
3	09/30/97 09/30/97 14:40:03	Value Set	Zone 1.Setpoint	92
4	09/30/97 09/30/97 14:40:35	Value Set	Zone 1.Alarm SP1	25
5	09/30/97 09/30/97 14:40:42	Value Set	Zone 1.Proportional band	1
6	09/30/97 09/30/97 14:41:24	Log file Convert		

### Historical Replay Option

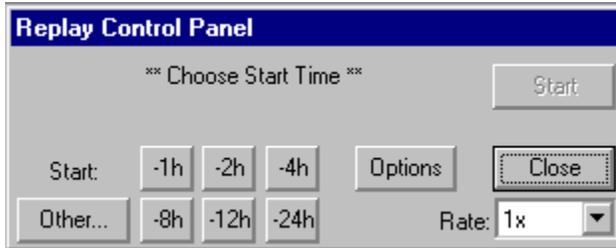
Accessed from the *History* (see page 60) menu during Runtime.

Historical Replay is an option for SpecView. If the option has not been purchased you are limited to replaying the last 4 hours of data.

You can upgrade (see page 176) your copy of SpecView by phone. Contact your SpecView distributor for details.

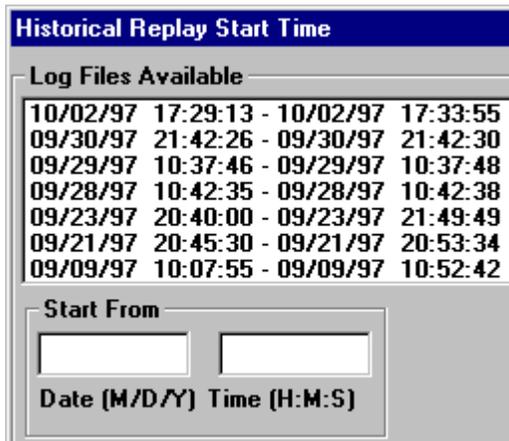
### Historical Replay

When Historical Replay is started SpecView makes a copy of the GDW and shows the Replay Control Panel.



## Historical Replay - Start Time

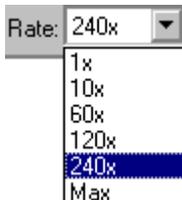
The six " - XX h " buttons set the start time at 1 to 24 hours back from the current computer time. The "Other" button lets you choose the start date & time from the log files in the configuration.



Enter a start date & time in the boxes.

**NOTE: Click on any of the "Log Files Available" and the start time of that file will be inserted automatically.**

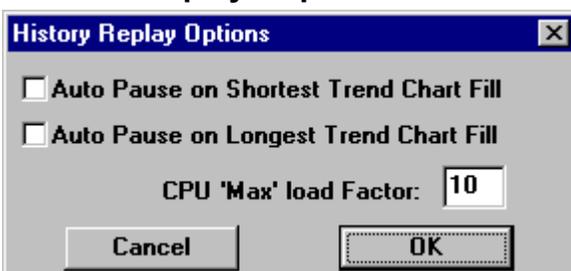
## Historical Replay - Rate



1x to 240x sets the rate at a multiple of real time. If data has been *logged* (see page 126) every minute (default) 60x will give one point per second on the replay GDW.

"Max" should only be used for trend chart replay. Numeric & Bar Charts are not refreshed at this rate.

## Historical Replay - Options



"Auto Pause" will stop the historical replay when the trend chart has filled with new data.

If there are two (or more) charts on the GDW that have different time spans, as specified in the *Trend Chart Attributes* (see page 108) dialog, check the box for the one you want to pause the replay.

The "CPU 'Max' load Factor" allocates a percentage of the CPU time for replay activity. The bigger the number the faster the trend chart(s) will fill but other computer activity will slow. Experiment to get the best performance for your computer.



# Strategy Controller

## Strategy Controller - Overview

The Strategy Controller is used to automate functions in SpecView such as:

- Automatic Recipe Downloading
- Automatic Report Generation
- Turning a Variable On/Off when an event occurs
- Setting Variables to new values
- Timing events such as Down Time
- Counting events
- Implementing cascade control
- Performing multiple adjustments from a single click such as incrementing several set points at once

Using the Strategy Controller involves two steps:

1. Defining an Event
2. Defining one or more Actions to go with the Event

This may also be thought of as an "IF - THEN" statement.

***NOTE: There is no ELSE function in the Strategy Controller.***

If an event is defined such as:

"Zone1.Process Value > 200 → Turn On Outputs.Relay3"

SpecView will do nothing when the value falls below 200. A second event

"Zone1.Process Value <= 200 → Turn Off Outputs.Relay3"

must be defined.

***EVENTS are tested continuously and in no particular order***

***ACTIONS are executed in the order that they are shown in the list***

The manual will lead you through a typical example and then explain the function of each item available in the Strategy Controller. More examples are at the end of the section.

The first example is shown in step-by-step detail. It is strongly suggested that the user follow through this example, even if it is not relevant to the application, to become familiar with the concepts of the Strategy Controller.

## Example: Automatic Log Report

This example will show the steps for a simple log report. A more complex example that incorporates some extra features is described later in this section.

To use the Strategy Controller you must first plan the steps needed and define any SpecView variables that will be required. In this example we want to watch a programmer controller to see when it starts a program and note the time it starts. When the program is complete we want to note that time and create a log report that covers the duration of the run. These steps are required:

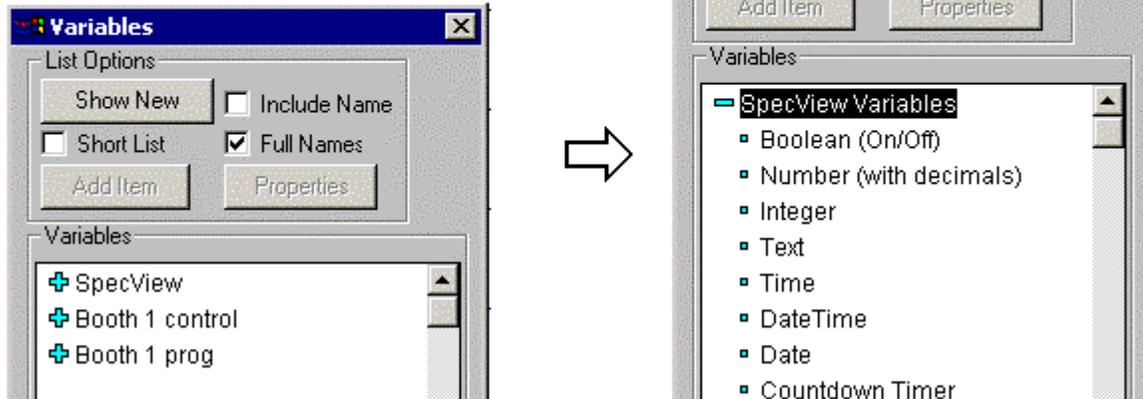
- 1 Create two SpecView Date/Time user variables, one for the start time and one for the stop time
- 2 In runtime, define the log report format that you want to use for the file (See the Data Logging section for details)
- 3 Define the first Strategy Controller event that watches for the start of the program
- 4 Define an action to time stamp the program start
- 5 Define the second strategy controller event that watches for the end of the program
- 6 Define an action to time stamp the program end
- 7 Define a second action to generate the log report

Step 1: Create two SpecView Date/Time user variables, one for the start time and one for the stop time

Open the Variables List by clicking the tool

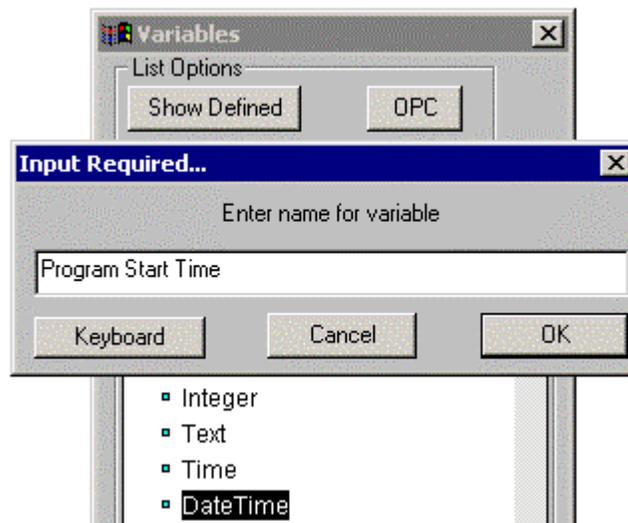


Click the "Show New" button and then click the blue plus sign by SpecView Variables



Double click on DateTime and enter the name Program Start Time.

Click **OK** to create the user variable. The DateTime data entry box will appear

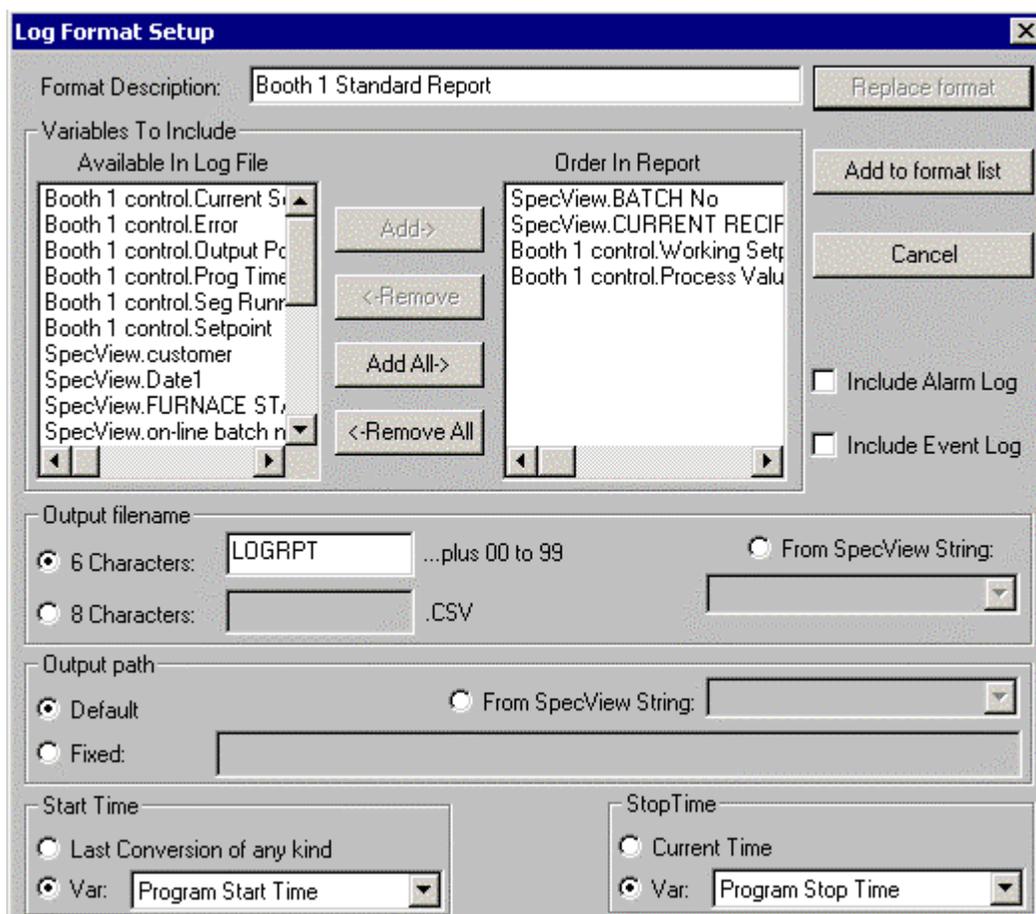




Since the Strategy Controller is going to be setting the values for us it is not necessary to enter any default value. Click the **Close** button.

Repeat the above steps to create a second user variable called Program Stop Time.

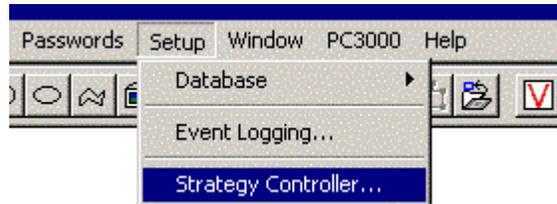
Step 2: Define the log report format that you want to use for the file  
In runtime, create the Log Report Format to be used for the automatic report. (See the Data Logging section for more details)



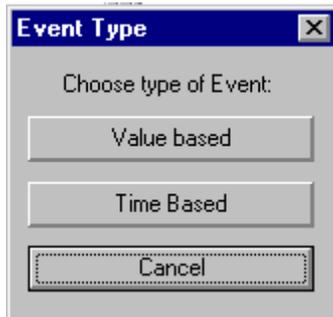
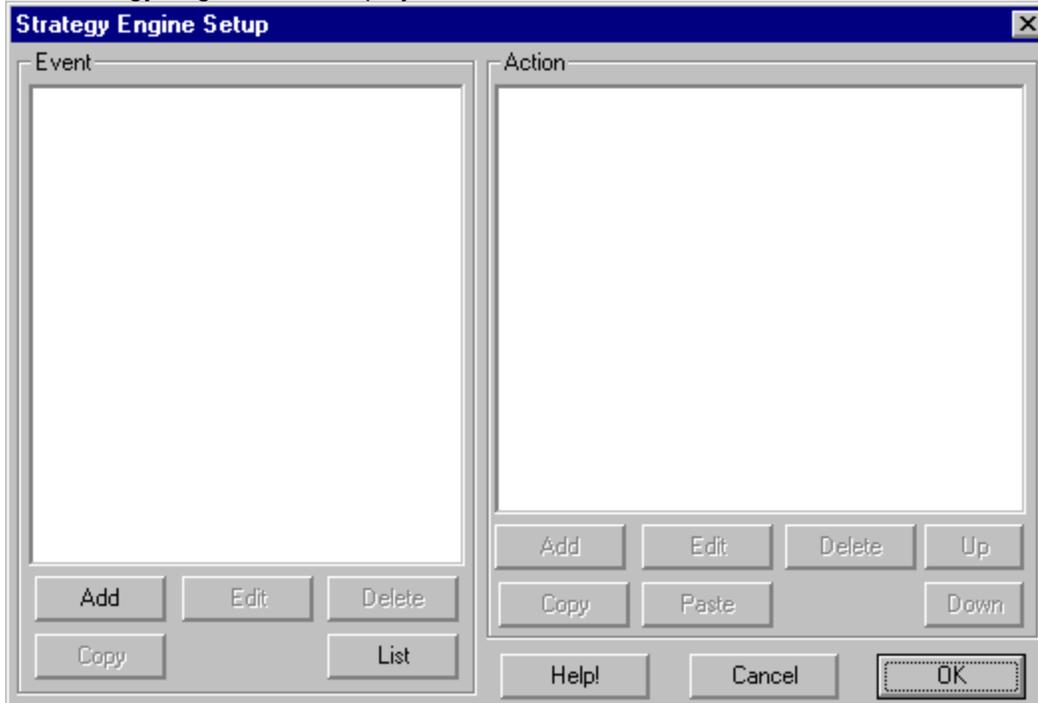
Note that Start Time and StopTime fields use the SpecView User Variables you created in Step1.

Step 3: Define the first Strategy Controller event that watches for the start of the program

Back in configuration mode select the menu Setup - Strategy Controller



The Strategy Engine box is displayed



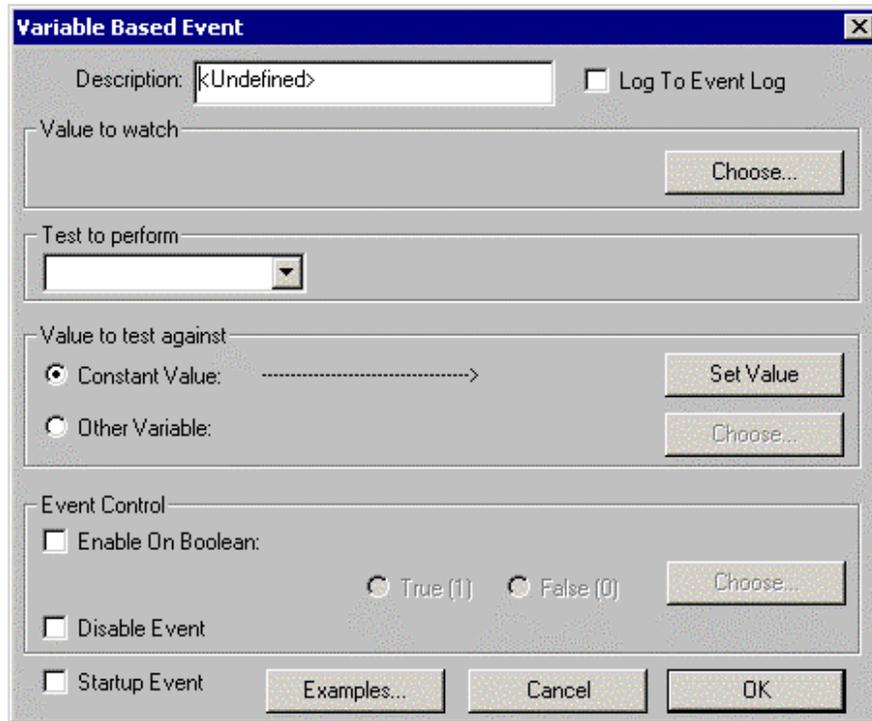
Click the **Value based** button

The Value Based Event box is displayed

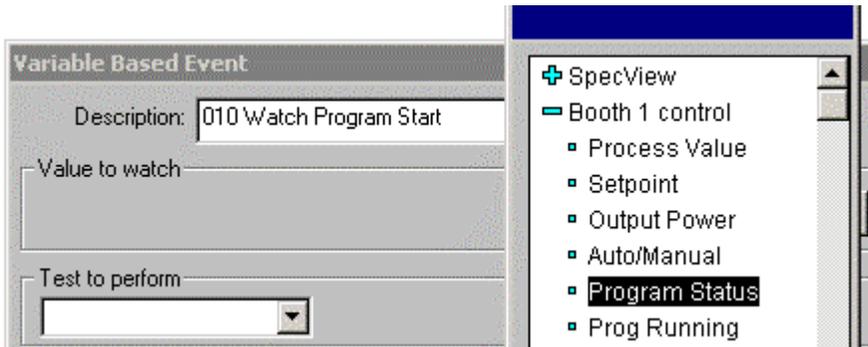
In the Description window enter:

Watch Program Start

**NOTE: Put a number in front of the description so that you can specify the order the events are shown in the list. (this is for convenience - list order has no impact on how events are tested)**



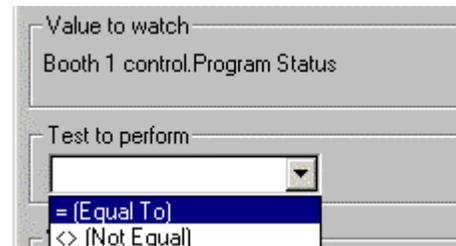
Then click the **Choose** button to select the variable that the Strategy Controller will monitor

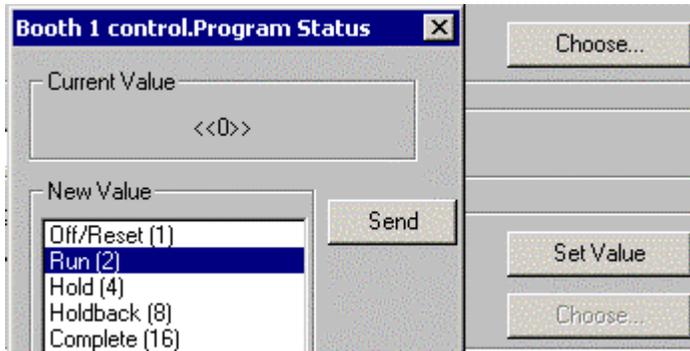


The Variables List will appear. Find the variable that you want to monitor to determine the start of the log report.

In this case, the parameter is "Program Status". The type of instrument that you are using will determine which parameter you want. If in doubt, please contact the instrument manufacturer.

Click the arrow to drop down the list for "Test to Perform"  
In this case we want "= (Equal To)"

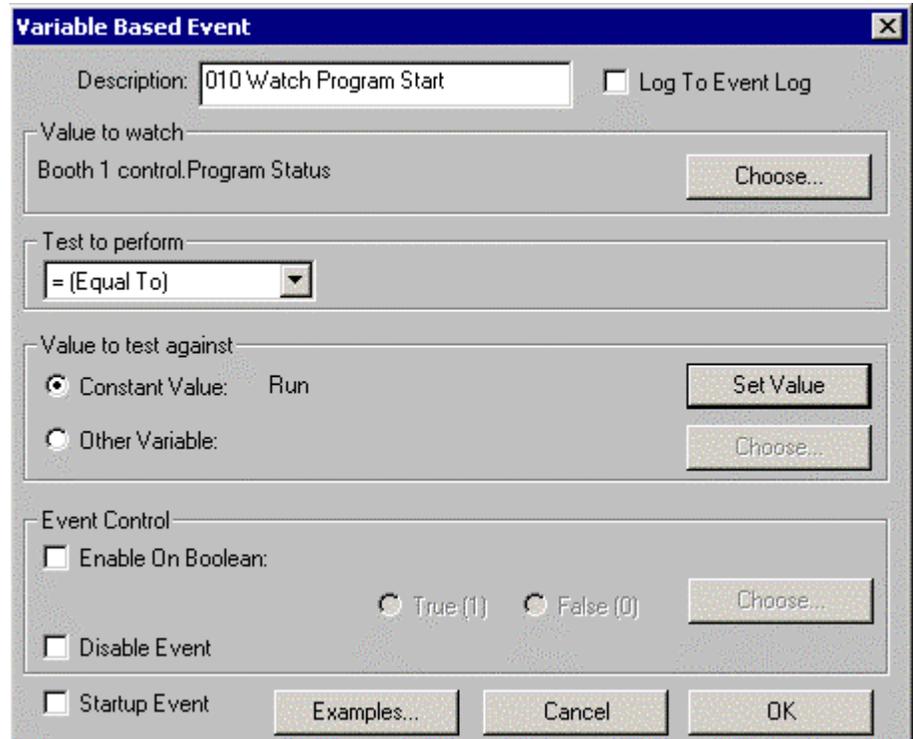




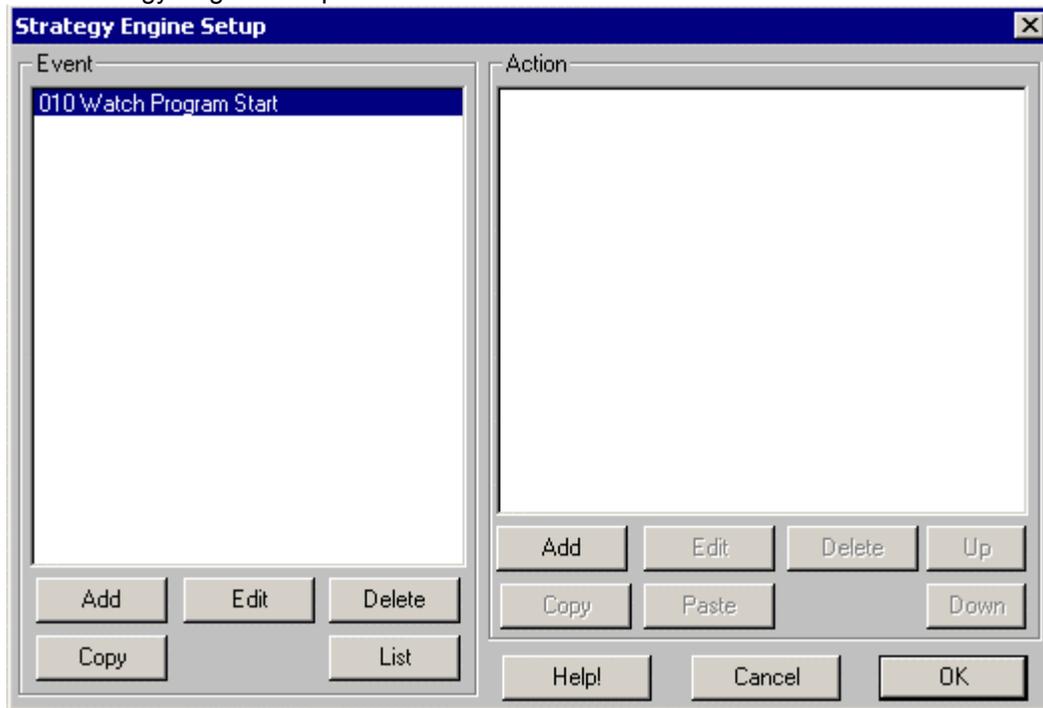
Next Click the **Set Value** button. The type of parameter that you selected to watch will determine the type of dialog box that appears. In this case it is an "enumerated" variable, which gives you a list to choose from. Double click the one you want, in this case "Run"

The Value Based Event box should now look like this.

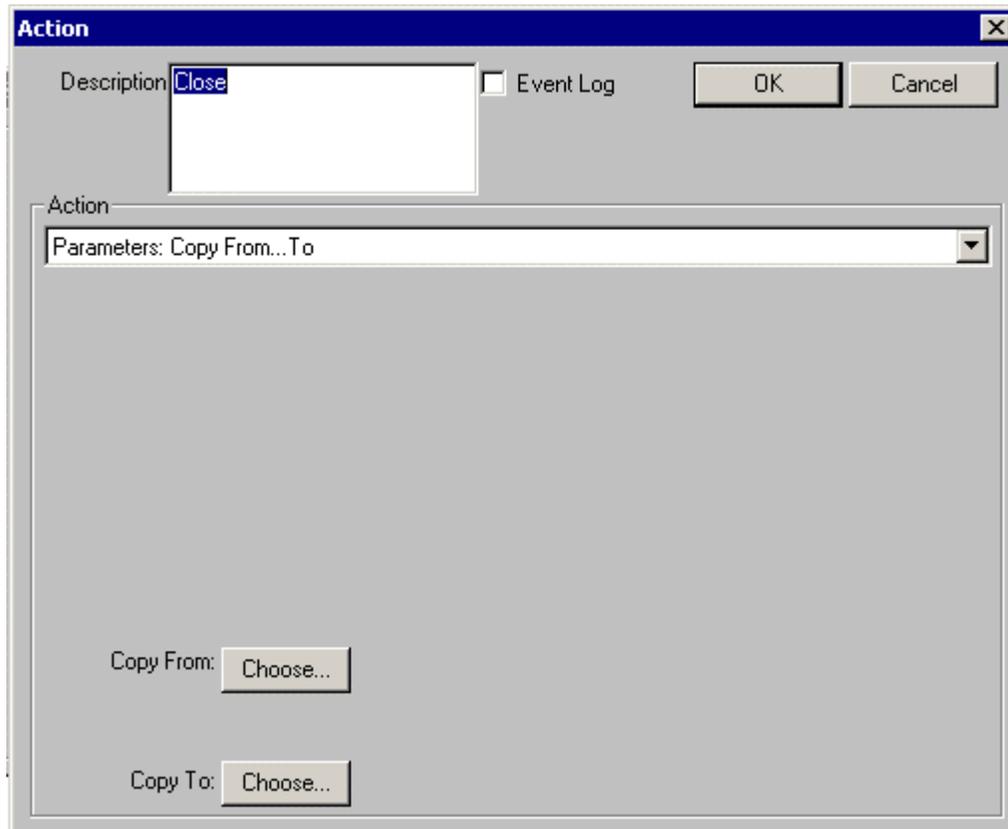
Click **OK** to close this box



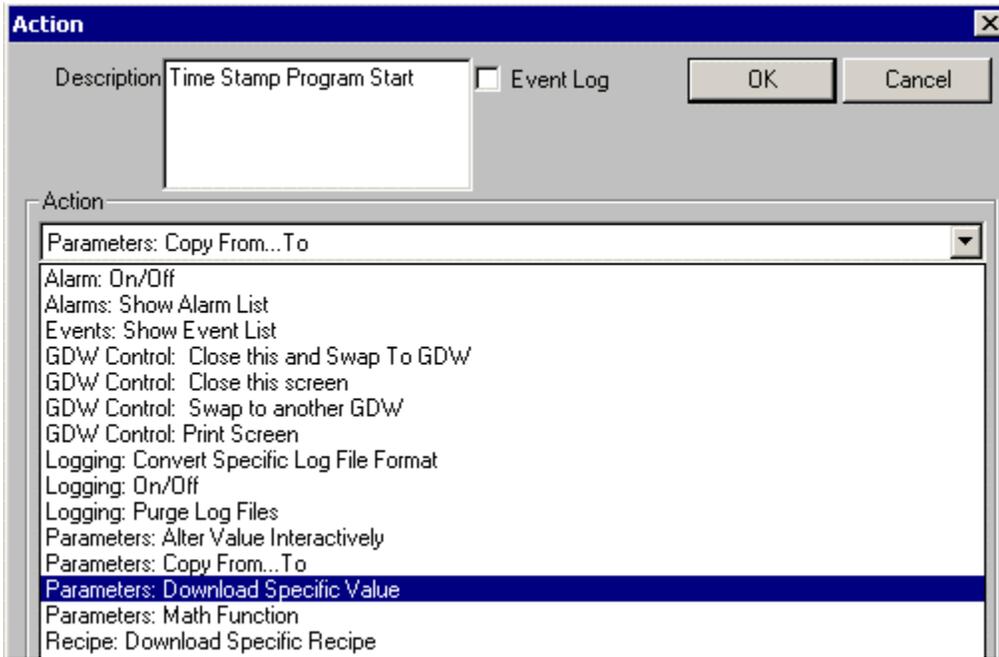
Your Strategy Engine Setup box should now look like this



Step 4: Define an action to time stamp the program start  
Click the **Add** button on the Action side of the box. The Action dialog box is displayed:



Enter a description, such as "Time Stamp Program Start". Then click the arrow to drop down the list of available actions:



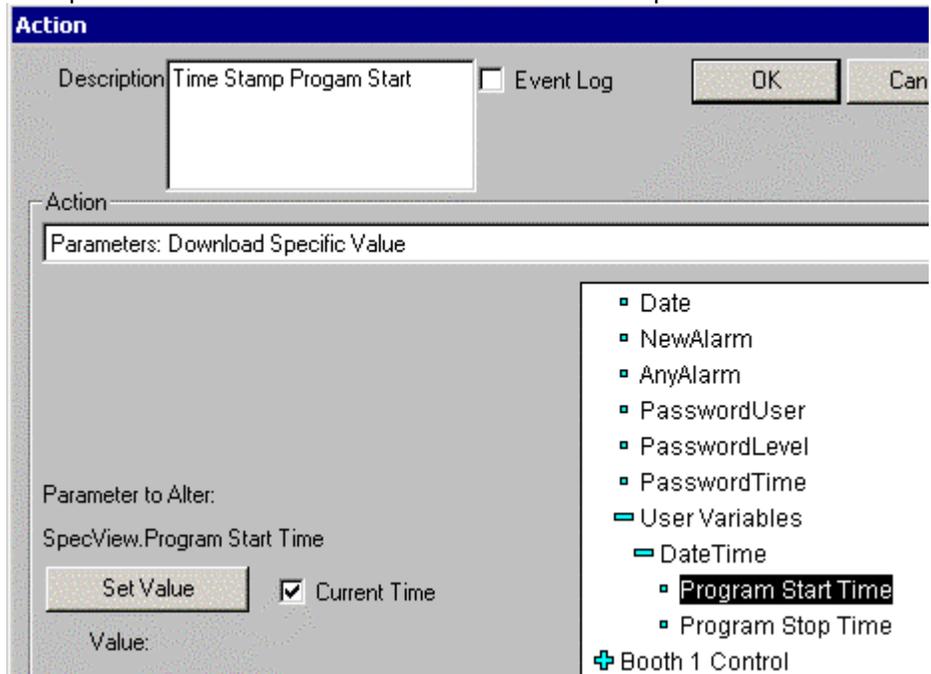
You want to set a value to a specific parameter so choose "Parameters: Download a Specific Value"

The Variables List appears. Click the plus sign by SpecView, the plus sign by User Variables, the plus sign by DateTime.

Click on "Program Start Time".

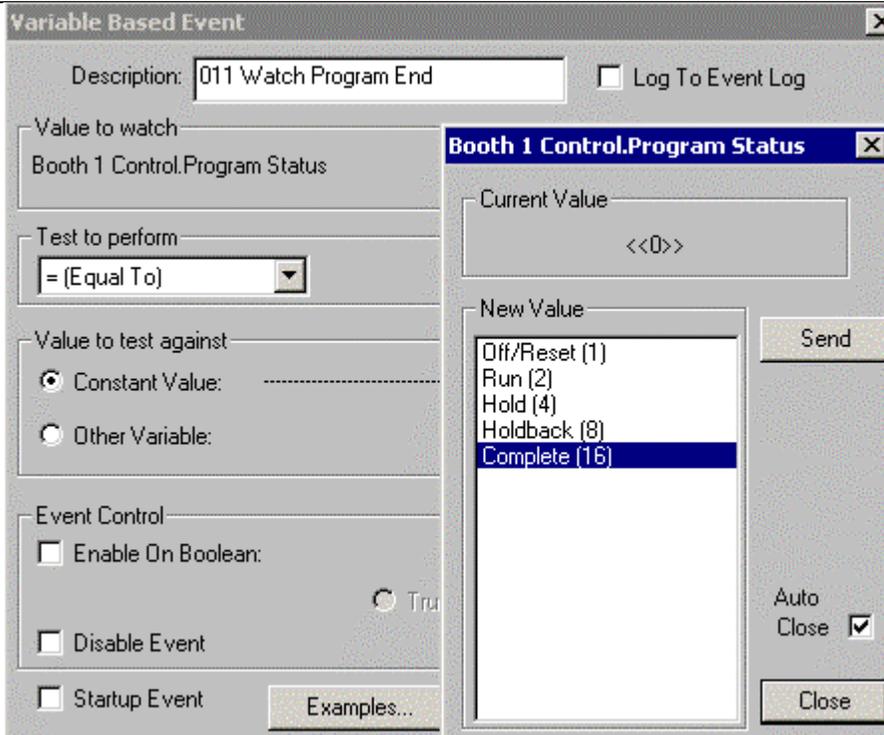
We want to have SpecView copy the current time to this variable so click on the white square by current time to put in the check mark, as shown in the picture.

Click **OK**.

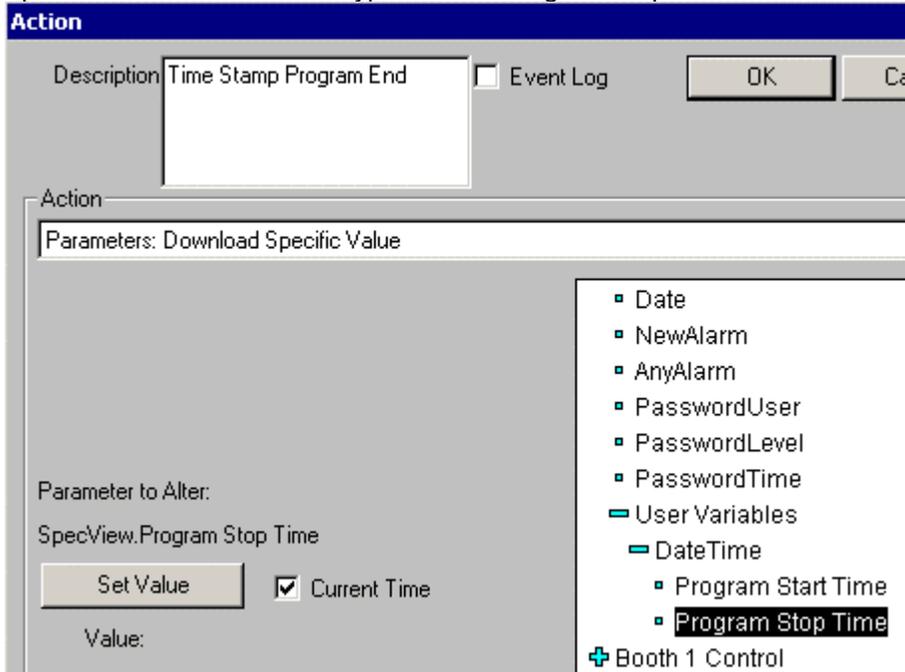


The dialog box should now look like this.

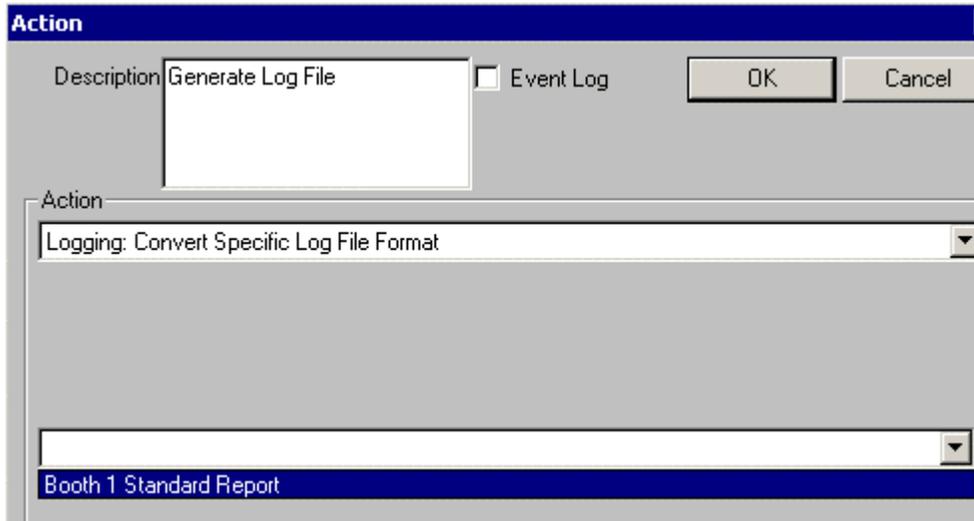
Step 5: Define the second strategy controller event that watches for the end of the program  
 Click the **Add** button on the Event side of the box. Enter a description. Click the **Choose** button and select the variable to watch that will tell SpecView that the program is complete. Select "[Equal To]" for the Test to perform. Click the **Set Value** button and choose the appropriate value. The box should look something like this, depending on the variables you have chosen.



Step 6: Define an action to time stamp the program end  
 Click the **Add** button on the Action side of the box. Enter a description. Choose "Parameters: Download Specific Value" as the action type. Select "Program Stop Time" and check the "Current Time" box.

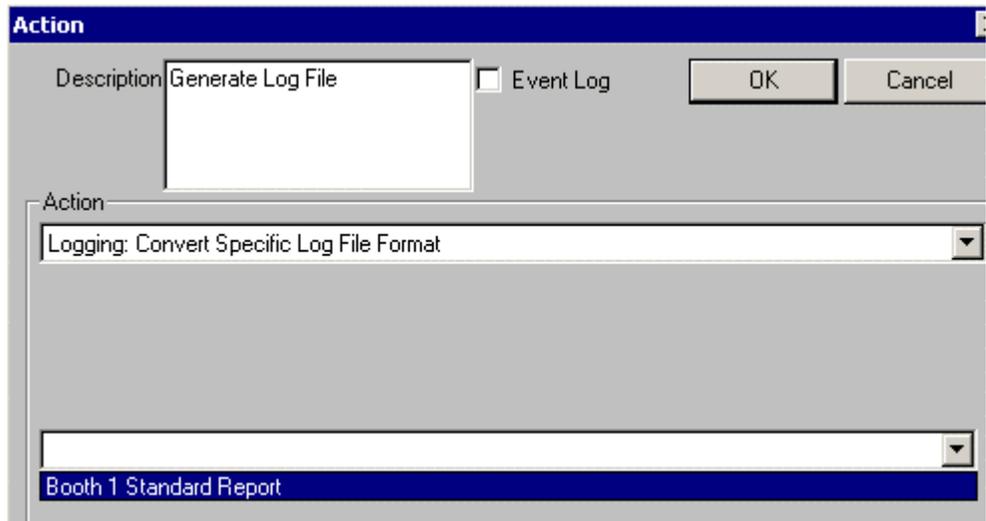


Step 7: Define a second action to generate the log report

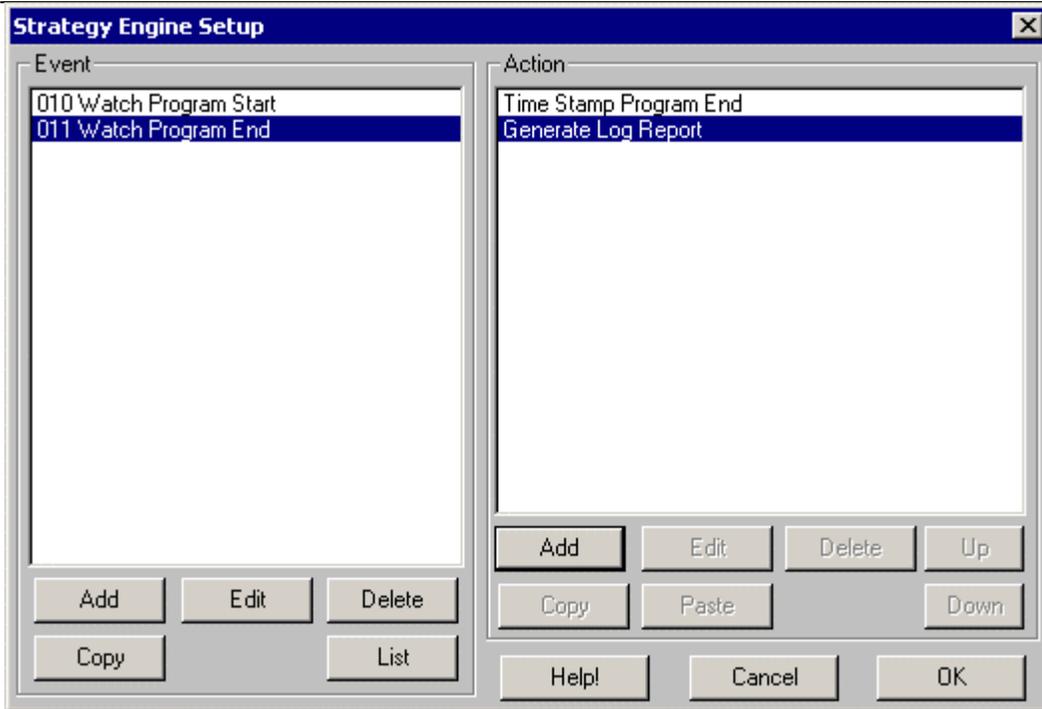


Click the **Add** button again on the Action side of the box. Enter a description and select "Logging: Convert Specific Log File Format" as the action type.

Choose the log format you defined in Step 2.



The Strategy Engine Setup box should now look like this:



The setup is now complete. Click **OK** to save the strategy.

NOTE: Strategy events in SpecView are "Edge Triggered". This means that the event becomes true when SpecView sees that occurrence of the event conditions. When SpecView is started (either by starting the program or by going into RunTime from Configuration Mode) all the events are checked. If an event is true, the Strategy Controller will execute the actions associated with that event. In this example, if the program is already running when SpecView is started "010 Watch Program Start" will trigger and the time stamp will be done. If this is a problem extra strategy steps and intermediate boolean variables must be used to prevent unwanted triggering of the event. An example of this is shown later in this section.

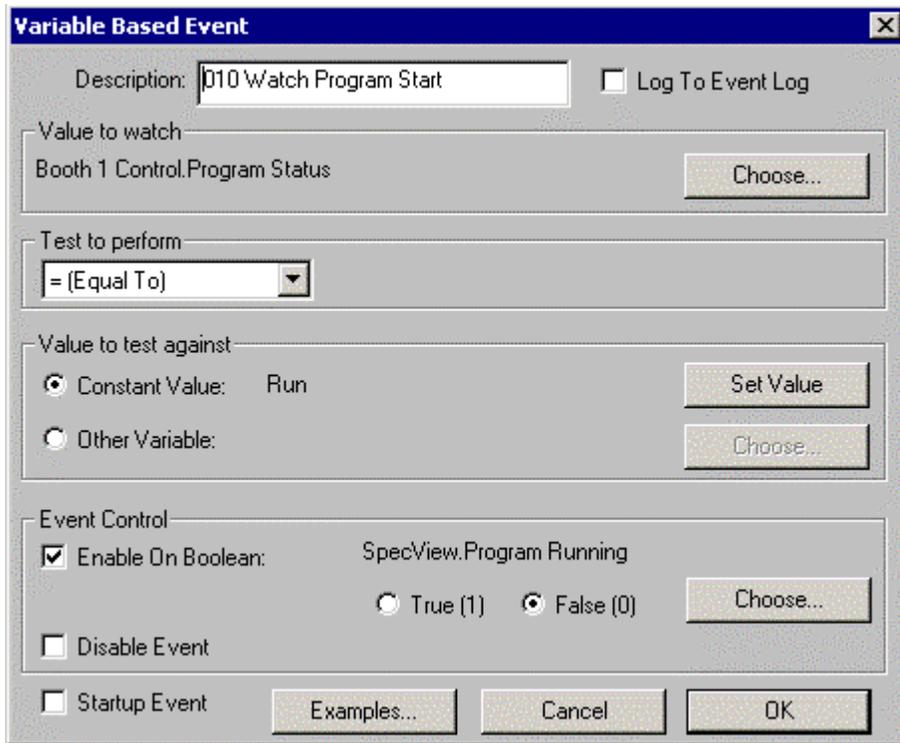
## Event Type

"Value Based" events test the value of a Variable against either a constant or another Variable

"Time Based" events monitor Time, Day, Date, Day of Week etc.

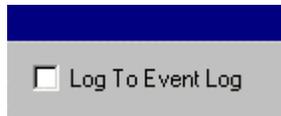
## Value (Variable) Based Event Setup

*Examples (see page 161)*

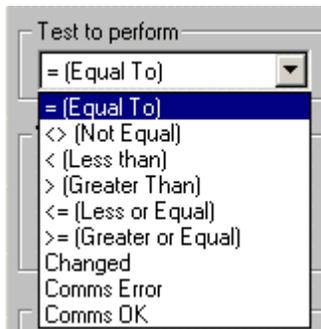
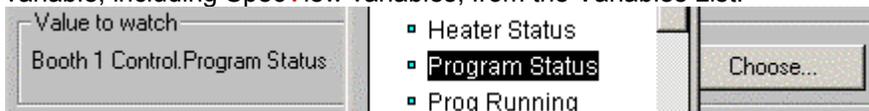


Description is a text field to identify the event. Events are listed in alphabetical order so it is a good idea to use a numeric prefix so that related events may be grouped together in the list.

When the "Log to Event Log" box is checked each occurrence of the event will be time stamped in the Event Log. (If the event log has been set to record specified events)

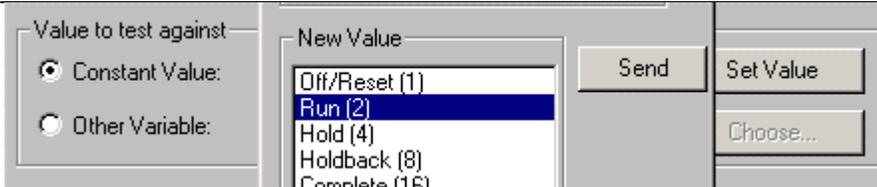


"Value to Watch" is where the variable is selected that SpecView will continuously "watch". This can be any variable, including SpecView variables, from the Variables List.



This is where the type of test SpecView will apply is specified. "Changed" means any change to the variable. This includes time, boolean functions and values. "Comms Error" will become true any time SpecView does not receive a response from the instrument when the variable is requested. This can be used to alert an operator that communications has been lost or corrupted.

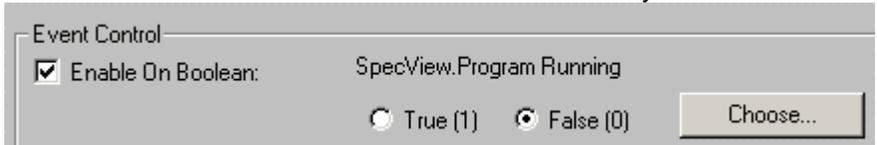
The "Value to test against" may be a constant value OR the value of another variable.



A constant value would be used when the test is always the same. Other Variable is used when two values are to be compared such as Zone 1.Process Value > Zone 2.Process Value.

Or if a test involves comparing a value to a setpoint that requires adjustment. For example, a counter is to be reset when the count value exceeds a particular value, and that value is to be set by the user. A SpecView variable would be defined called "Count Reset Value" that is put on a GDW. The Strategy Controller event is: "Counter.Value > SpecView.Count Reset Value"

Event Control allows an AND function with a secondary boolean



For example: Zone 1.Process value < 200 AND Furnace.Door = Open  
If it is required to AND a variable that is not a boolean, such as a number, an intermediate event must be defined.

For example, Zone 1.Process Value > 250 AND Zone 3.Process Value > 300

A SpecView boolean user variable must be defined "Zone 3 over 300"

A strategy controller event/action: "Zone 3.Process Value > 300 → Parameters: Download Specific Value of On to SpecView.Zone 3 over 300" turns on the boolean.

A second event: "Zone 1.Process value < 200 AND "SpecView.Zone 3 over 300 = True" completes the required statement.

In such an example do not forget to have an event to turn OFF the boolean since the Strategy Controller has no implied ELSE function.



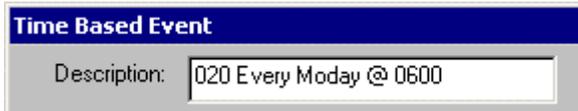
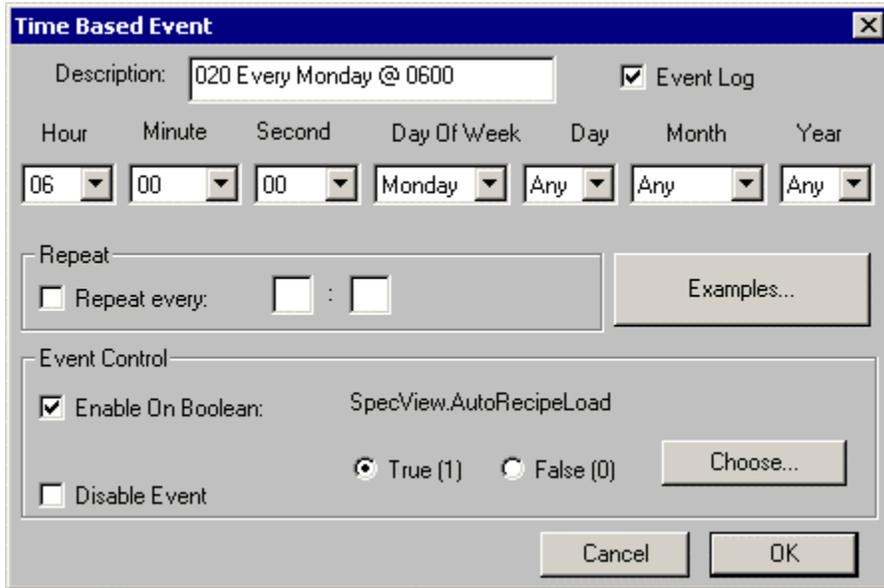
When this box is checked the Strategy Controller will NOT test the event.

The Startup Event is a special event that is always true when SpecView is started or RunTime is entered from Configuration Mode. It is not necessary to define any variable to watch or specify any test.



## Time Based Event Setup

Examples (see page 165)



Description is a text field to identify the event. Events are listed in alphabetical order so it is a good idea to use a numeric prefix so that related events may be grouped together in the list.

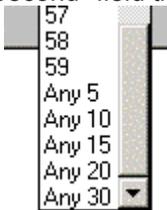
When the "Log to Event Log" box is checked each occurrence of the event will be time stamped in the Event Log. (If the event log has been set to record specified events)



The time at which the event will trigger is determined by the settings in these lists



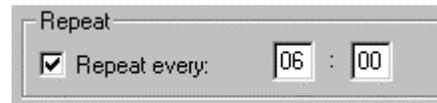
This event will last for one second every Monday at 6 o'clock in the morning. If "Any" had been left in the "Second" field the event would be true any time between 06:00:00 and 06:00:59.



Note the "Any 5, Any 10 etc. that are at the bottom of the Minute and Second lists. When possible, these should be used in place of the "Repeat Every" function described below.

Use this setting with caution.

The event will trigger every 6 hours with the setting shown. What SpecView does is compute when the next event should occur and automatically enter those values into the time and day fields.



If the first event was set to be 06:00 on Monday, as shown above, and it is March 5, 2002 when the event is first triggered SpecView will compute that the next event will be:

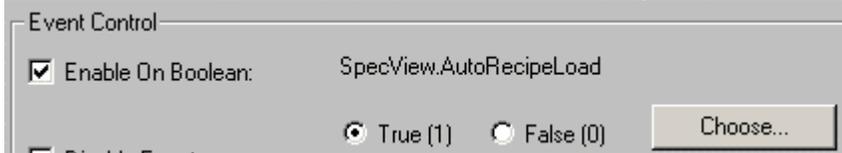


If SpecView is not in Runtime mode at that precise moment the event will be missed and will never be triggered again.

The user will need to re-edit the Strategy Controller event to get it to trigger again.

It is recommended that a Value based event watching SpecView.Time with a test of Changed by a constant value of 6 hours be used instead of the above time based event.

Event Control allows an AND function with a secondary boolean



For example: Every Monday at 06:00 AND SpecView.AutoRecipeLoad = On

If it is required to AND a variable that is not a boolean, such as a number, an intermediate event must be defined.

For example, Zone 1.Process Value > 250 AND Zone 3.Process Value > 300

A SpecView boolean user variable must be defined "Zone 3 over 300"

A strategy controller event/action: "Zone 3.Process Value > 300 → Parameters: Download Specific Value of On to SpecView.Zone 3 over 300" turns on the boolean.

A second event: "Zone 1.Process value < 200 AND "SpecView.Zone 3 over 300 = True" completes the required statement.

In such an example do not forget to have an event to turn OFF the boolean since the Strategy Controller has no implied ELSE function.

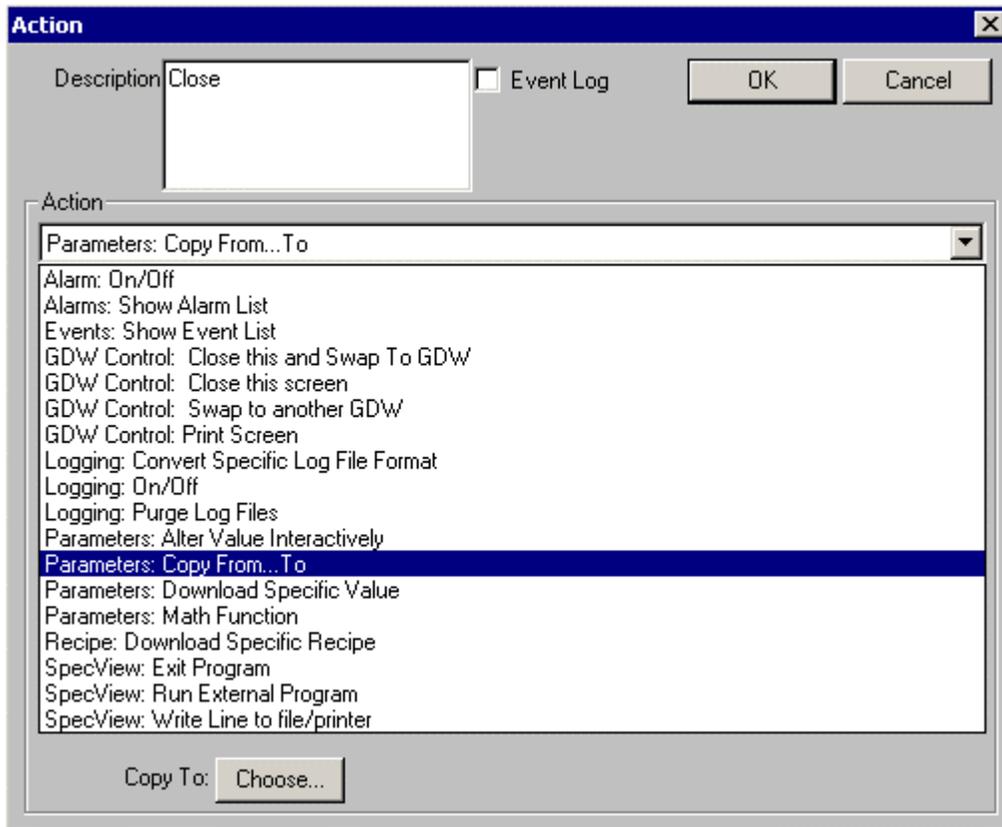
When this box is checked the Strategy Controller will NOT test the event.



### Strategy Controller Actions

For more details on these functions see the descriptions for *Button Attributes* (see page 97)

Choose an Action off the list:



If the "Event Log" box is checked the action will be time stamped in the event log each time it is executed. (If the event log has been set up to record specified strategy items. This is the default setting of the event report)

## Examples of Value Based Events

*Turn on a digital output on a New Alarm (see page 161)*

*Simple Count Up Timer (see page 162)*

*Cascade Control (see page 164)*

Automatic Log Report (with protection from unwanted triggers)  
(Contact SpecView for more examples)

### Turn on a digital output on a New Alarm

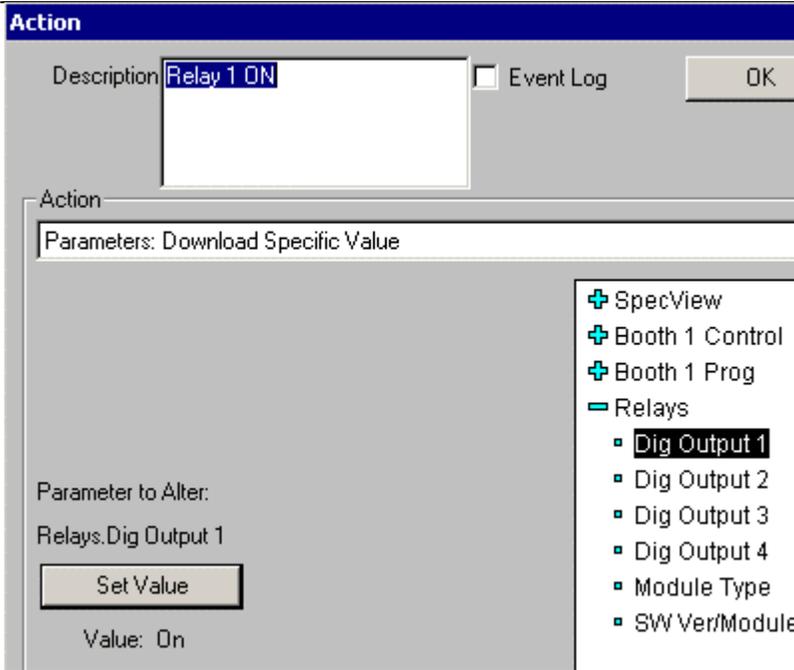
SpecView can monitor any boolean variable as an Alarm, see *Alarm/Event Menu (see page 61)*

This Strategy Controller example shows how to turn on a digital output whenever SpecView detects a new alarm.

The screenshot shows the 'Variable Based Event' configuration window within the 'Strategy Engine Setup' application. The window has a title bar with a close button (X). The main area is divided into several sections:

- Description:** A text box containing 'New Alarm'. To its right is a checkbox labeled 'Log To Event Log' which is currently unchecked.
- Value to watch:** A text box containing 'SpecView.NewAlarm'. To its right is a 'Choose...' button.
- Test to perform:** A dropdown menu showing '= [Equal To]'.
- Value to test against:** Two radio button options: 'Constant Value: On' (which is selected) and 'Other Variable:'. To the right of the 'Constant Value' option is a 'Set Value' button, and to the right of the 'Other Variable' option is a 'Choose...' button.
- Event Control:** A section containing:
  - A checked checkbox 'Enable On Boolean:' followed by the text 'SpecView.Alarm Check'.
  - Two radio button options: 'True (1)' (selected) and 'False (0)'.
  - A 'Choose...' button to the right of the radio buttons.
  - An unchecked checkbox 'Disable Event' below the radio buttons.
- Startup Event:** An unchecked checkbox at the bottom left.
- Buttons:** At the bottom are three buttons: 'Examples...', 'Cancel', and 'OK'.

This event is watching the SpecView variable "SpecView.NewAlarm". When it is On (There IS a New Alarm) AND the SpecView user variable "Alarm Check On" the event will trigger. The use of event control would allow the user to disable this event by turning Off the SpecView.Alarm Check variable. The appropriate action is shown below - The variable "Digital I/O. New Alarm Relay" will be set to On



### Count Up Timer

Many timing functions can be done using a *SpecView User Variable* (see page 81) Countdown Timer. A value can be set to the Countdown Timer by:

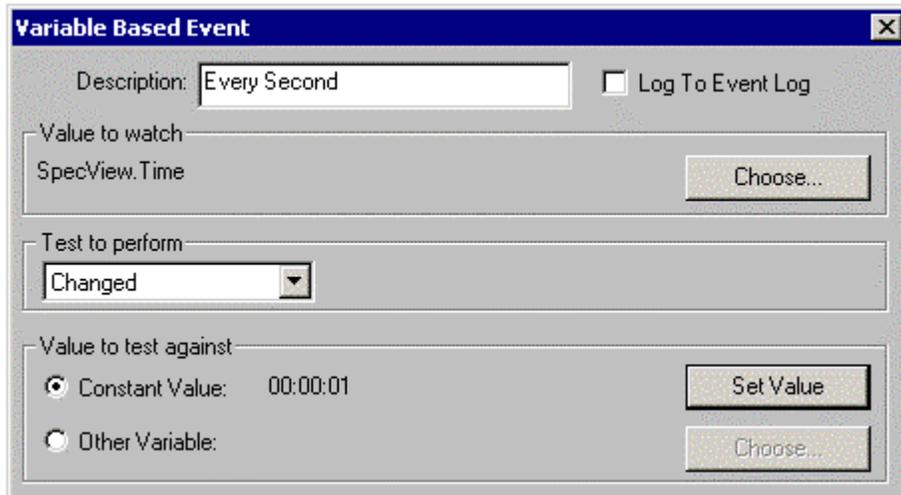
- Entering a value to it on a GDW
- Assigning a value as an action following a strategy event

It is sometimes more convenient to use a count up rather than count down timer and this can be made using the Strategy Controller:

1. Define two SpecView time user variables; name one "Timer" and the other "Time 1s". Give the "Time 1s" variable a default value of 1 second. It is then not necessary to put it on any GDW.
2. Add a Value Based event called "Every Second". The "value to watch" is SpecView.time and the "Test to Perform" is changed by the Set Value of 1 second.
3. Add an action called "Count Up". Use Parameters: Math function: COPY FROM SpecView.timer ADD SpecView.time1s COPY TO SpecView.timer

The event occurs every second and one second (the value of SpecView.time1s) is added to the value of SpecView.timer.

The Strategy Controller boxes for this example are shown below  
Event:



Action:

**Action**

Description:   Event Log

Action

Parameters: Math Function

Copy From:  SpecView.Timer

SpecView.Time 1s

Copy To:  SpecView.Timer

A similar example would be to watch a specific function in an instrument and count the number of times it occurs.

If it is desired to only have the time count at certain times (make it function like a stopwatch) the add the boolean function to the event as shown below:

**Variable Based Event**

Description:   Log To Event Log

Value to watch  
SpecView.Time

Test to perform

Value to test against  
 Constant Value: 00:00:01   
 Other Variable:

Event Control  
 Enable On Boolean: SpecView.Timer On/Off  
 True (1)  False (0)   
 Disable Event  
 Startup Event

## Cascade Control

The Strategy Controller can be used to trim the set point of one controller based on the output of another. This is used in many applications where the desired measurement is "thermally remote" from the heat source. Examples include:

- Controlling from the internal (part) sensor of a furnace
- Using "Deep/Shallow" thermocouples on an extruder barrel

In this example the output of the "Master" controller is used to adjust the set point of the "Slave" controller. (If the master is a programmer type controller then "Master.Working SP" should be added to the "SpecView.SP Trim" instead of the "Slave.SP")

(Using the SpecView user variable "cascade gain" gives more flexibility in tuning)

Define two SpecView Floating Point (real) user variables, called "Cascade Gain" and "SP Trim"

Add a value based event: Value to watch = Master.Output; Test to Perform = Changed

Add an action Parameters: Math Function: COPY FROM Master.Output MULTIPLY SpecView.Cascade Gain COPY TO SpecView.SP Trim

Add a second math function action: COPY FROM Slave.Setpoint ADD Strategy Controller.SP Trim COPY TO Slave.Setpoint

The Strategy Controller boxes for this example are shown below

Event:

**Variable Based Event**

Description:   Log To Event Log

Value to watch

Test to perform

Value to test against  
 Constant Value: .....   
 Other Variable:

Action 1:

**Action**

Description   Event Log

Action

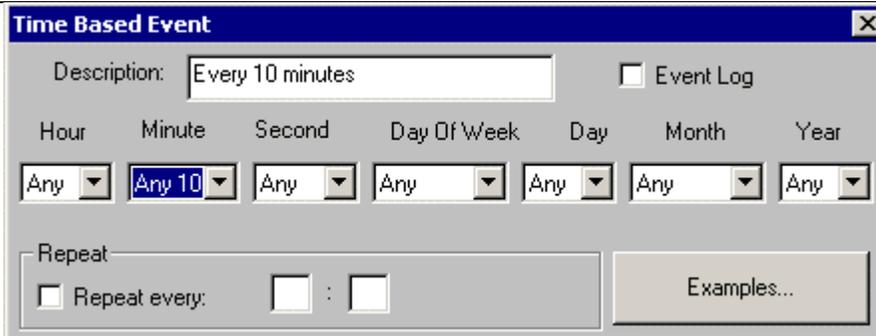
Copy From:  Master.Output Power  
  SpecView.Cascade Gain  
Copy To:  SpecView.SP Trim

Action 2:

### Examples of Time Based Events

This event will trigger every Monday at 6 o'clock in the morning:  
 (Note that it is "Enabled" by a SpecView boolean user variable called "SpecView.AutoRecipeLoad". This means that this event will only trigger when that boolean is On)

This event will trigger every 10 minutes:



***NOTE: It is recommended to use this method to get a recurring event rather than use the "Repeat Every" function***



# DDE

## DDE (Dynamic Data Exchange) - Overview

NOTE: DDE is an option for SpecView. If the option has not been purchased DDE will not function. To find out if it is available see the list under *Help - Registration Info* (see page 78)

You can upgrade your copy of SpecView by phone. Contact your SpecView distributor for details.

*DDE Application Name* (see page 168)

*DDE Topic Name* (see page 168)

*DDE Status Topic* (see page 168)

*SpecView DDE Restrictions* (see page 169)

*Getting data from SpecView DDE* (see page 169) and *Example* (see page 171) of getting data

*Setting data into SpecView DDE* (see page 169) and *Examples* (see page 170) of setting data

The SpecView DDE Server allows the retrieval and setting of Instrument parameters across the Windows DDE Interface.

The SpecView DDE Interface is somewhat unorthodox in its implementation due to practical considerations. as follows:

Normally, a DDE server would 'register' a whole set of topics and items for which conversations can be transacted. For SpecView, this would mean that each and every variable in the SpecView Variables List would have to be registered, and furthermore, each one would have to be requested over the comms link to supply any DDE Client that happened along. This is clearly unfeasible. Consequently:

The SpecView DDE Server registers no variables by default - nor does it request anything from the comms. When a DDE request comes in from a DDE Client, if it is the name of a variable or parameter that SpecView understands, then that variable begins to be requested over comms. In the meantime, SpecView must have answered back to the DDE Client to allow the client to continue processing. SpecView can only answer back that the request succeeded - even if the instrument is down or the comms link has failed - this is because it could be up to 3 or 4 seconds before the comms engine knows (due to re-tries etc.) that the variable is not online.

*Return* (see page 168) to DDE help topics

## DDE Application Name

This setting defines the name that the SpecView DDE Server registers when SpecView starts.

It is defined in *Preferences - DDE* (see page 128)

Although you can choose anything for the application name, it is recommended that this setting be left as "SpecView" because some DDE clients facilitate the starting of the DDE Server by name - in the case of SpecView, this name must be "SpecView" so that SPECVIEW.EXE can be run in these situations.

## DDE Topic Name

This setting defines the topic for which SpecView's DDE Server will 'listen' for requests for real time data on.

It is defined in *Preferences - DDE* (see page 128)

By default it is set to "var", meaning variables.

The fixed Status topic is not affected by this setting.

## DDE Status Topic

There are 3 items that SpecView registers for DDE under the Status topic:

LastError        The last reason for failure of a DDE request.

ErrorItem        The item that caused the above failure

PokeStatus      The running Status of the current (or last) poke command.

**NOTE: The upper/lower case of the requests is significant (unlike the variables).**

Examples:

- 1) Suppose a request is made for "Specview|var!ANameThatDoes.NotExist". This will cause "LastError" to be set to "Unknown Variable" and "ErrorItem" to be set to "ANameThatDoes.NotExist".
- 2) A DDEPoke request to set a setpoint above the Setpoint High Limit for that particular instrument might result in the final PokeStatus being "Write Error 18023".

## SpecView DDE Restrictions

For reasons explained in the *Introduction to DDE* (see page 168), SpecView only supports the getting of data using the *DDE Advise* (see page 169) (or 'Hot' Link method).

DDE Request is not supported for one-off conversations.

Data can be Set into Instruments using the *DDEPoke* (see page 169) mechanism.

DDEExecute is not supported.

**NOTE: The CF\_TEXT format is the only format supported by SpecView. All data is sent in this text form.**

SpecView must be Online and showing a GDW for DDE Server activity. If the SpecView is taken out of RunTime mode, then all DDE links are terminated.

SpecView DDE can support multiple simultaneous clients, requesting the same data items, and at different speeds.

Return (see page 168) to DDE help topics

## Getting data from SpecView DDE

SpecView supports the DDE Advise mechanism for supplying DDE Clients with data. (See *restrictions* (see page 169)).

See the *DDE Read Example* (see page 171)

SpecView listens on the "var" topic (or that setup by the user in *Preferences - DDE* (see page 128)) for an item that is the name of the variable you want to read. The format of the item is:

Instrument <dot> parameter <comma> rate(optional)

All items are not case sensitive, and the parameter can be either the short or long name of the parameter.

The rate can be omitted, in which case 'medium' is assumed, or can be specified as M,L,H or U, meaning Medium, Low, High, Ultra-High rate. The actual rate used depends on

the *settings* (see page 124) for the config.

For example:

Zone1.pv	Gets process value at medium rate
Zone1.Process Val	The same
Zone1.PV,m	The same
zOnE1.PROCess VAL,M	Still the same.
Zone1.PV,U	Gets the PV at the Ultra High Rate.

When a request for a new variable comes in via the DDEAdvise mechanism, it is checked by SpecView to see that the variable exists. If it does exist, then SpecView begins to request that variable over comms and from then on supplies the Client with the data at the given rate (or faster), until the Client signals that data is no longer required. If the variable does not exist, then the SpecView DDE Status information reflects this.

**NOTE: Due to the potentially long startup time of any given request, a blank answer is sent back to the DDE Client first. Thus, the very first item of data from SpecView should be ignored for each new item that is requested.**

In the event of comms errors or missing instruments, no data is sent across DDE.

Return (see page 168) to DDE help topics

## Setting data into SpecView DDE

Data can be sent down to the Instrument using the DDEPoke command.

See the *DDEPoke Examples* (see page 170)

Due to the fact that (A) there can be a significant time delay before the data is sent, and (B) the data may not be accepted by the instrument (over-range etc), the SpecView DDE Server reports back immediately that the DDEPoke succeeded. It is the responsibility of the Client to only make one Poke request at any time.

The Status of the write process is reflected in the SpecView DDE Status Information. This DDE items can have one of the following values:

- Idle

- Writing
- Written
- Write Error X

When a Client makes a DDE Poke request, it should monitor the PokeStatus item. This will be changed as the state changes. The Client will only know that the Poke request actually gave data to the instrument if the PokeStatus shows "Written". If "Write Error X" is shown, then the write failed for the reason given.

"Idle" is shown before the very first Poke request is actioned, and never afterwards (because "Written" or "Write Error" is shown after any Poke).

Data is sent to SpecView using the CF\_TEXT format, and SpecView formats it to the correct type depending on the variable prior to sending. This may or may not require more or less decimal places for numbers that is supplied. SpecView will add or truncate as necessary, so it is always best to send the full resolution to be written.

*Return (see page 168) to DDE help topics*

## DDEPoke Examples

The following example shows just the Poke section of making a DDEPoke request - the client program should include code to monitor the status of the Poke using the Status Hot Links provided by the SpecView DDE Status Information

For Microsoft Excel and Microsoft Access, a small piece of BASIC code is required to be written.

For Excel, a Macro (module) can be associated with a button (*show me how to do this (see page 171)*) and the following code assigned to that macro:

'This example uses 4 cells to define what and where to write to

```
Set appToPoke = Worksheets("Sheet1").Range("B3")
Set topicToPoke = Worksheets("Sheet1").Range("C3")
Set itemToPoke = Worksheets("Sheet1").Range("D3")
Set valuetopoke = Worksheets("Sheet1").Range("E3")
On Error Resume Next
Dim Chan
Chan = DDEInitiate(appToPoke, topicToPoke)
If Err Then
    Exit Sub
End If
DDEPoke Chan, itemToPoke, valuetopoke
If Err Then
    Exit Sub
End If
DDETerminate (Chan)
```

For Access, a button on a form can be used to cause a similar effect:

'This example assumes a small form with 4 input fields has been defined, and a button to call this.

```
On Error Resume Next
Dim Chan
Chan = DDEInitiate(Me![App], Me![Topic])
If Err Then
    Exit Sub
End If
DDEPoke Chan, Me![Item], Me![Value]
If Err Then
    Exit Sub
End If
DDETerminateAll
```

*Return (see page 168) to DDE help topics*

## Setting up an Excel DDE Poke Example

This example is for **Excel 2000**:

1. Open a new Sheet inside Excel
2. Show the Forms Toolbar
3. Choose the Button tool from the Forms Toolbar
4. Draw out a button on the sheet
5. When the Assign Macro dialog box appears, click **New**
6. Type (or paste) in the example code from the *previous help section (see page 170)* in between the 2 lines, for example:

```
Sub Button1_Click()
```

```
End Sub
```

7. Save and close Microsoft Visual Basic
8. Click on the button with MB2, choose Edit Text to modify the button's label.
9. Then set the cells to, for example, as follows:  
Set B3 to: SpecView  
Set C3 to: var  
Set D3 to the variable to be set, for example: 'Zone1.Setpoint  
Set E3 to, for example: '20.5
10. Click your button to do the Poke.

This example is for **Excel 97**:

1. Open a new Sheet inside Excel
2. Show the Drawing Toolbar
3. Choose the Button tool from the Drawing Toolbar
4. Draw out a button on the sheet
5. When the Assign Macro dialog box appears, choose New Macro
6. Type in the example code from the *previous help section (see page 170)*
7. Save the Macro
8. Then set the cells to, for example, as follows:  
Set B3 to: SpecView  
Set C3 to: var  
Set D3 to the variable to be set, for example: 'Zone1.Setpoint  
Set E3 to, for example: '20.5
9. Click your button to do the Poke.

*Return (see page 168) to DDE help topics*

## DDE Read Example

An example of Excel reading some items from an Instrument called "Zone1" follow.

See the important note at the bottom of this section.

Type these formulas into cells on the Spreadsheet:

=SpecView Status!LastError	To get the Error Reason in case of an error.
=SpecView Status!ErrorItem	To get the Item for which the last error occurred.
=SpecView var!Zone1.pv	Get the Process Val at medium rate
=SpecView var!Zone1.OP	Get the Output Power at medium rate
=SpecView var!Zone1.pv,h'	Get the PV at the high rate. The quotes allow Excel to <u>not</u> treat the comma as part of some strange formula.
=SpecView var!Zone1.Output Power'	Get the OP, using its full name.

Since you are typing this into Excel as a formula, there are certain restrictions you must observe. In particular, where the name of an Instrument or variable contains any character likely to affect Excel's formula engine, then the item must be enclosed in quotes so that Excel does not see it. For example, suppose (hypothetically) you had named an instrument "Zone + 2". If you just type in:

```
=SpecView|var!Zone + 2.pv
```

Then this is a formula that takes "SpecView|var!Zone" and adds two to it.

To get Excel to correctly read the formula, you need to put quotes in:

```
=SpecView|var!'Zone + 2.pv'
```

## 172 SpecView 2

---

This applies particularly to the following cases:

"Output Power" - has a space.

"Auto/Manual" - has a slash - could be seen as a divide.

"inst.param,RATE" - the comma will confuse - so if a rate is specified, use the quotes.

*Return (see page 168) to DDE help topics*



# SpecView Error Codes

## SpecView Error Types

The only place you should see an error code is if SpecView has had a problem writing to a variable. There are three areas of error codes:

*Write Errors (see page 174)*

*Generic Errors (see page 175)*

*Protocol Specific Errors (see page 175)*

## SpecView Write Errors

In general, if you get an error code in a data entry box such as

**Error 18210.  
Value Over  
Range ? Press  
F1 for Help.**

SpecView has failed to write the value correctly. The most common cause is that the value being sent is outside the acceptable range for that parameter. Check that any limits are not being exceeded for that instrument. (Try entering the value on the instrument itself) The error codes below may help. Contact SpecView if you cannot resolve the problem.

There are also generic *Error Codes (see page 175)*

These error codes can be returned when attempting to write data to a parameter:

- 3 Timeout - Response not received from controller
- 18000 Internal IDF Error - Seek advice from SpecView
- 18001 Address too long - Too many Characters in the address field
- 18002 Address too short - Not enough typed in
- 18003 Address is invalid for this Protocol
- 18004 Incorrect information after the comma
- 18005 Precision specification is incorrect
- 18006 Parity Error at Instrument end
- 18007 Rx Overflow on Instrument
- 18008 Rx Overrun at Instrument end
- 18009 Instrument message was corrupted
- 18010 Tx Buffer overflow at Instrument
- 18011 Instrument message was corrupted
- 18012 Parameter value was incorrect for this parameter
- 18013 Internal IDF Error - Seek advice from SpecView
- 18014 Rx Buffer overflow at Instrument
- 18015 Instrument message was corrupted
- 18016 Write to read only parameter
- 18017 Internal Instrument Error (Yokogawa) RJC error
- 18018 Internal Instrument Error A/D Convertor Failure
- 18019 Parameter value was incorrect for this parameter
- NOTE: With Yokogawa UT550 and UT750 the setpoint is a read only variable. To change the SP you must edit Target SP 1-8, which are available on the parameter list.**
- 18020 Parameter value was incorrect for this parameter
- 18021 Internal IDF Error - Seek advice from SpecView
- 18022 Rx Buffer overflow at Instrument
- 18023 Internal Instrument Error - Controller Busy
- 18024 Data Over Range
- 18025 Data Under Range
- 18026 Internal Instrument Error - Burn Out
- 18027 Internal Instrument Error - Unknown - Seek Advice

18028 Channel or Loop Number incorrect, or Internal IDF Error - Seek advice from SpecView

18029 CPU Number Invalid

18030 Operator Panel Address Invalid

18031 Invalid Delimiter

18032 Invalid Time To Live

18033 Read To Write Only Parameter

18034 Protocol Type Invalid

18035 Invalid Time

18200-18500 Protocol Specific Error Codes

### SpecView Generic Error Codes

These are generic Error codes. There are also Errors that apply specifically to writing variables to instruments. They are listed *here (see page 174)*.

3 Timeout

10001 Cannot Open Comms - Port In use

10002 Cannot Open Comms - Port Setup Error

10003 Cannot Open Comms - Port Characteristics Error

10004 Failed Write

10005 Incorrect Baud Rate

10006 Cannot Initialize Windows Comms Subsystem

10007 Cannot Save Config

10008 Cannot Start System Timer

10009 Cannot find Folder

10010 Invalid Parameter

10011 Invalid Function

10012 Address Out of range

10013 Data Out of Range

10014 Parameter Write protected

10022 Cannot Find Required DLL

18000-18199 Write Errors (*see page 174*)

18200-18500 Protocol Specific Error Codes

### Error Codes - Protocol Specific

Error codes in the range 18200 to 18500 are reserved for Protocol Specific errors returned by the equipment connected. Subtract 18200 to get the error code and then consult the Protocol or Instrument manual for details.

For example, a ModBus Instrument could return Error Code 18208. Thus, the Modbus error is 8, which is "Parameter to be modified is write protected".

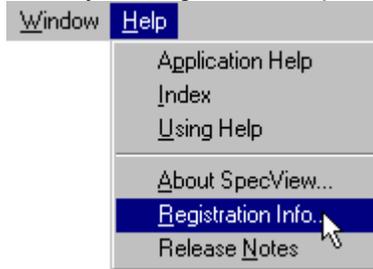
***NOTE: 18210 - With Barber-Colman Series 7 controllers you must first click the REM button on the Instrument View to enable writing to any variable.***

# Upgrading SpecView

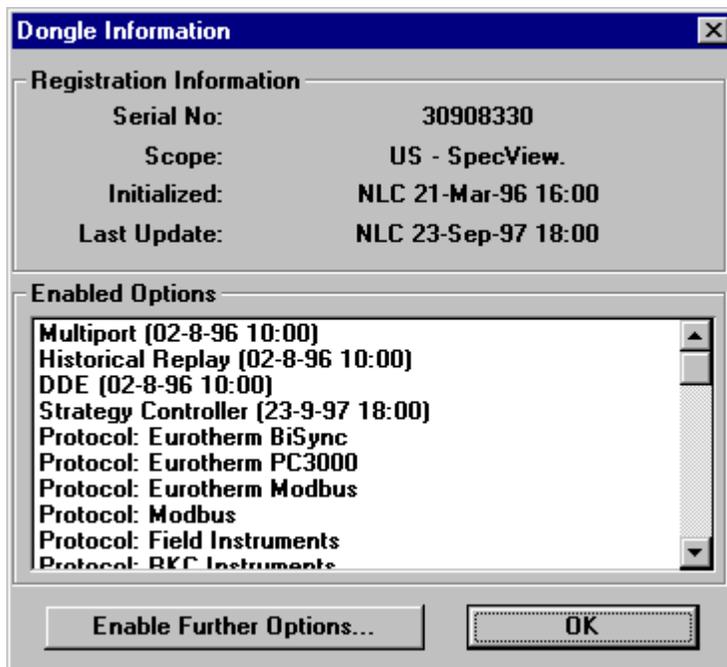
SpecView is copy protected using a dongle, which is attached to the printer port of your computer. It contains all the options purchased with your copy. The user can add additional options. This is a two step process:

1. Your copy of SpecView generates a code that you give to SpecView, by phone, fax or email
2. SpecView gives you two or more codes that you enter

Start by clicking on the Help menu command and then on Registration Info.

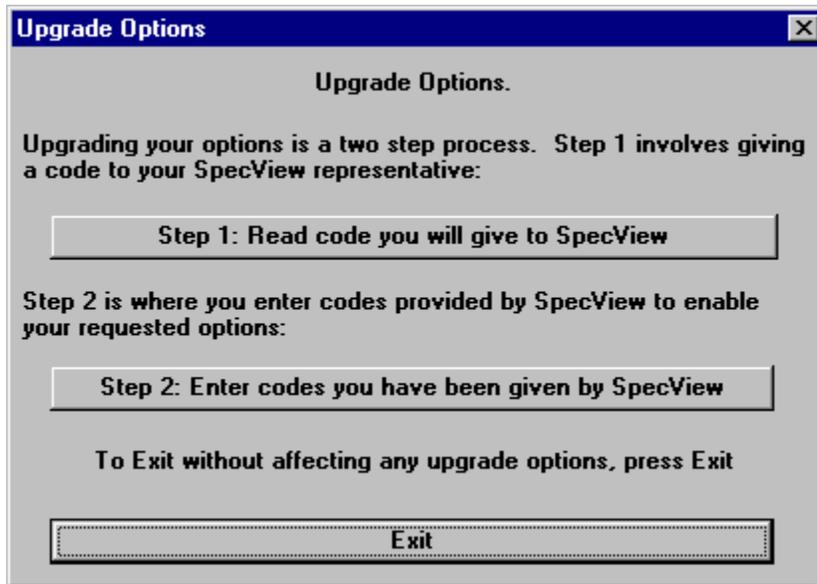


## Dongle Information



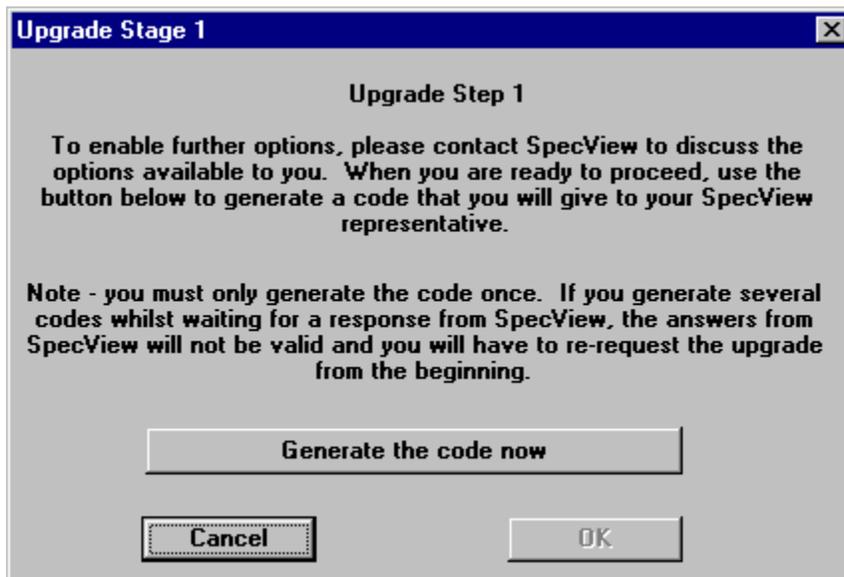
Click **Enable Further Options** to begin the upgrade process.

## Upgrade: Step 1

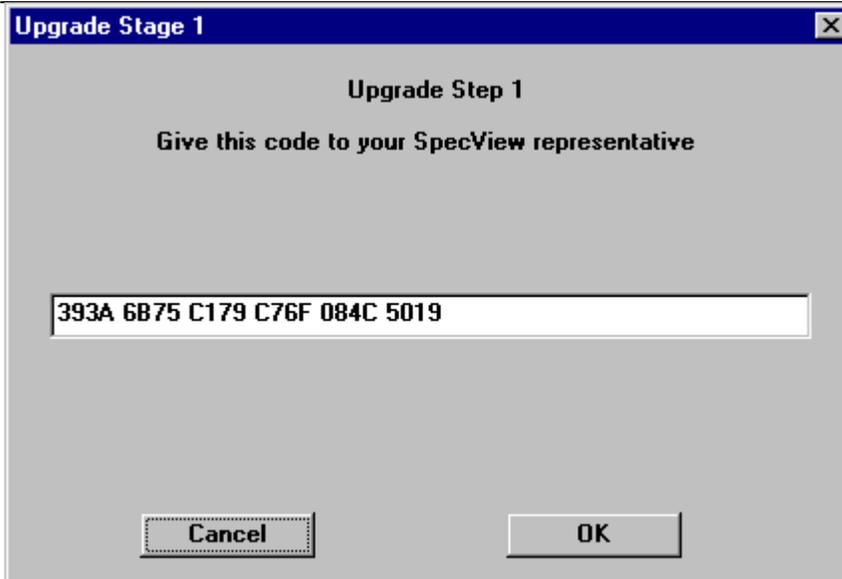


When you are ready to contact SpecView click **Step 1** to generate the code to give to SpecView.

## Upgrade Stage 1: Generate Code



Click **Generate the code now**. Be ready to write down the code. Do not do this again until you have been given the new codes by SpecView. The codes you will be given will only be valid for this code you will generate now.



Write down this code and give it to your SpecView contact.  
Click **OK** and then **Exit**.

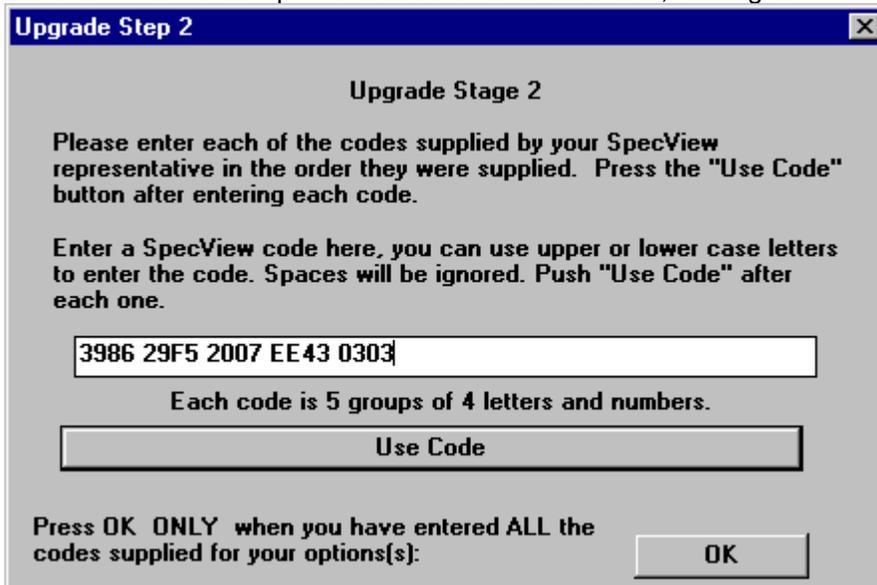
### Upgrade Stage 2: Enter codes

Open the Dongle Information box (Help menu; Registration Info)

Click Enable Further Options

Click Step 2: Enter Codes you have been given by SpecView

Enter the codes from SpecView in the box shown below, clicking the Use Code button after each:



**NOTE: After the first code has been entered the first 8 characters will remain - only 12 characters are entered for subsequent codes. (Codes may be any case and spaces are not required)**

After the last code has been entered this box appears:



It is necessary to restart SpecView for the new options to be recognized.

# OPC Client Support in SpecView

## OPC Client Support - Overview

SpecView offers an OPC Client; initially the client only supports local OPC Servers (when support for remote OPC Servers is available this will be a free upgrade to existing OPC Client customers). It will support any OPC Server that provides an OPC Data Access standard 1 or 2 interface – this currently means that all OPC Servers are supported (if in doubt then check with your SpecView representative).

In order for OPC to function you must have the OPC *option in your dongle* (see page 176) .

Since OPC is treated within SpecView as another 'channel'; you can mix OPC 'instruments' with COM port and TCP/IP based 'instruments'.

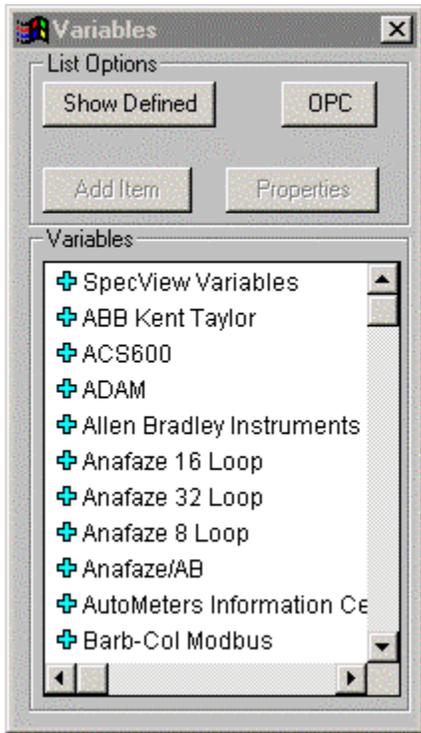
OPC is implemented in SpecView in both Configuration mode and Runtime mode. In Configuration mode you can use SpecView's OPC Browser to view all of the OPC Servers currently available. This is achieved either by using the *Test Comms for NEW Config* (see page 44) button, then clicking the **OPC** button, for example:

Port	Protocol	Baud Rate
COM1:	MOD-MUX Modules	Auto
COM2:	<None>	Auto
COM3:	<None>	Auto
(COM4:)	<None>	Auto
(COM5:)	<None>	Auto
(COM6:)	<None>	Auto
(COM7:)	<None>	Auto
(COM8:)	<None>	Auto
(COM9:)	<None>	Auto

TCP/IP  
 Protocol: Honeywell HC900 Port: 502 Timeout: 5 secs  
 Begin: . . . End: . . .

Auto Configure Status  
 Checking: Checking: Click Start Scan to begin  
 Baud Rate: N/A  
 Address: N/A  
 Auto Build GDW View

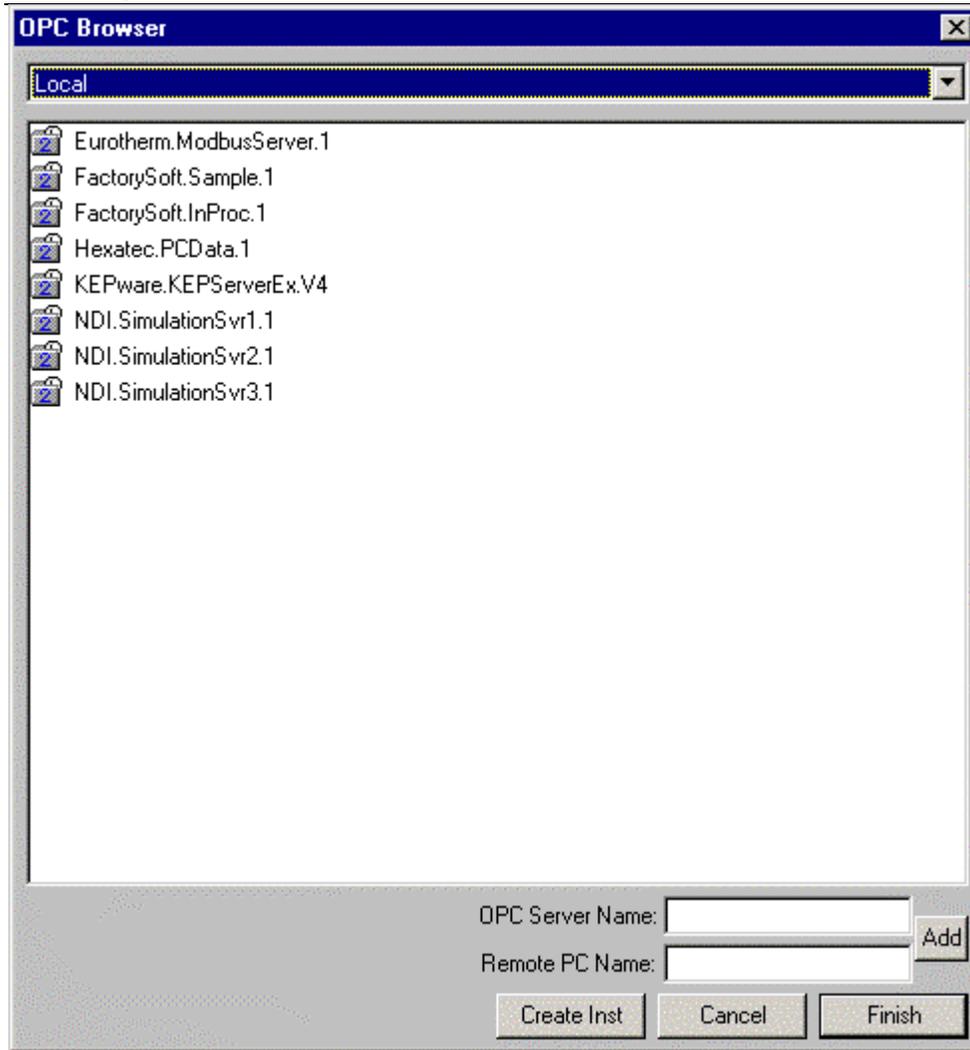
or the *New Manual Configuration* (see page 41) button, then clicking the **Show New** button on the Variables dialog box, then clicking the **OPC** button, for example:



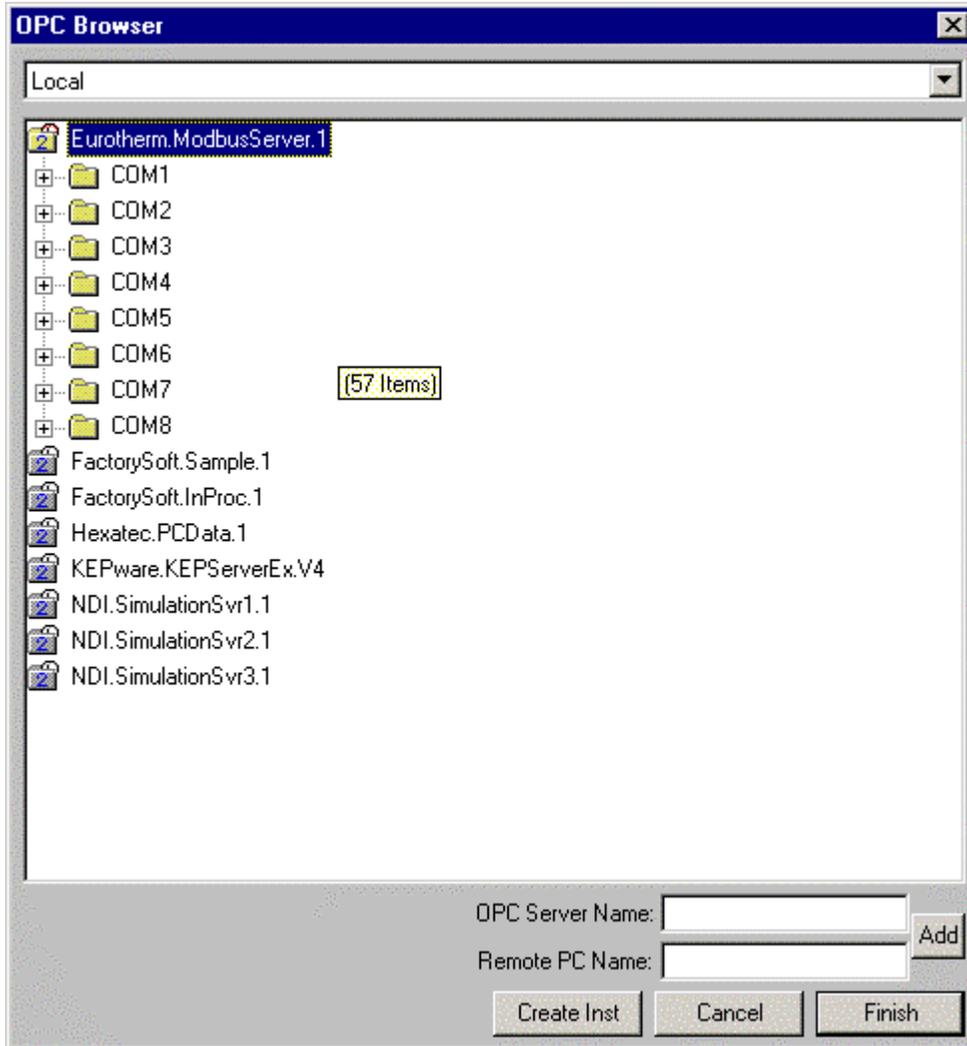
See:  
*OPC Browser (see page 181)*  
*Supported OPC Servers (see page 184)*  
*OPC - Frequently Asked Questions (FAQs) (see page 185)*  
*OPC - PC Specification/Performance (see page 186)*

## OPC Browser

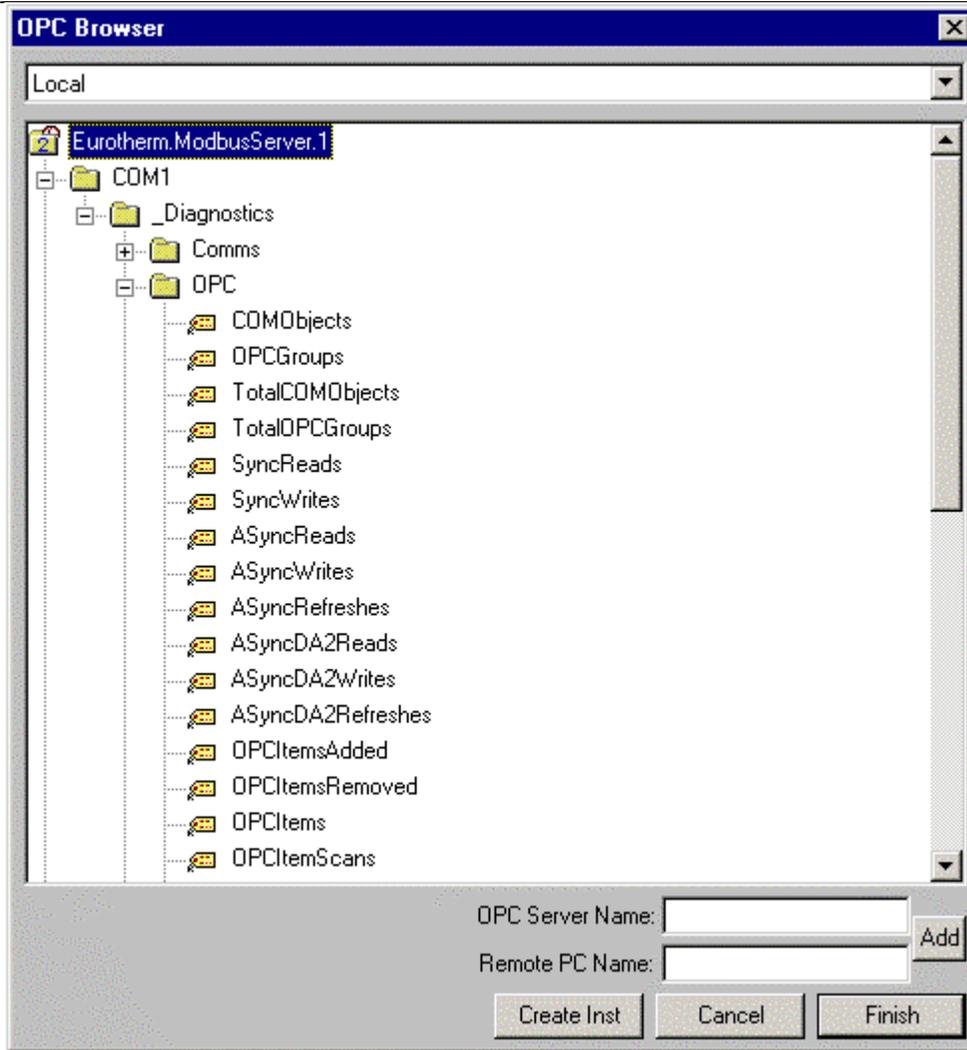
SpecView's OPC Browser will list the available OPC Servers, see below. If your OPC Server is not listed, then it may not be running, if so click the **Cancel** button on the OPC Browser screen, start up the OPC Server and then restart the OPC Browser. If you wish to use SpecView to monitor/control an instrument/controller (via an OPC Server) that has access levels in it, then you should set the required access level in the instrument/controller before you start up the OPC Browser. If this is not done, then when you try to create a SpecView instrument you may find that SpecView cannot retrieve the parameter(s), or tag(s), that you require.



When you click an OPC Server SpecView will 'contact' that Server and retrieve a list of 'Groups' and ultimately 'Item IDs', **this process can take a long time**. The 'Groups' and 'Item IDs' are pre-programmed and stored in a hierarchy by the OPC Server's manufacturer. SpecView will then display this hierarchy, for example:



You can then click the individual 'Groups' to open them up to see further 'Groups' or a list of their 'Item IDs', for example:



You can create a SpecView 'instrument' from any of the 'Groups' listed. If you have the multiport option in your dongle (see page 176) then you can have 'Groups' from multiple OPC Servers. To create a SpecView 'instrument' you just click the 'Group' you wish to select and then click the **Create Inst** button. You will then be asked to give your new SpecView 'instrument' a name (one will be suggested using the group hierarchy, but you can override it). Once you have typed in a new name and clicked **OK** then SpecView will again contact the OPC Server to retrieve details about the 'Item ID' that it requires to build a SpecView 'instrument'. As a result of this process you will be informed if there are any 'Item IDs' that are not supported by SpecView (see below).

## Supported OPC Servers

### CALServer

This server allows you to monitor/control CAL controllers – see <http://www.cal-controls.com>. You should be aware of the following issues:

If you want to run this server alongside another OPC Server then start this server first as it does not like contending for COM ports with other software.

You must set the access list to the level that you want to retrieve parameter/tags for, for example, if you wish to see Level 3 Registers and below then you must set the access level to 3.

Most 'Item IDs' are supported as Text, which appear to be writeable, however the server accepts no writes. Numeric values are writeable.

If any of your PC software crashes whilst this server is running then you will have to reboot your PC to get this server working again.

**Hexatec**

This server allows you to monitor PC disc space – see <http://www.hexatec.com>. There are no known issues with this server.

**iTools**

This server allows you to monitor/control Eurotherm instrument/controllers – see <http://www.eurotherm3.com/itools>. There are no known issues with this server.

**KEPServerEx**

This server allows you to monitor/control a wide variety of instrument/controllers/PLCs – see <http://www.kepware.com>. There are no known issues with this server.

**Sunware's OPC Servers**

Allen Bradley SLC500 (DF1 Protocol) OPC Server

As yet untested with SpecView

Mitsubishi A Type OPC Server

As yet untested with SpecView

Mitsubishi FX Type OPC Server

As yet untested with SpecView

Modbus (RTU/ASCII) OPC Server

As yet untested with SpecView

Nudam OPC Server

As yet untested with SpecView

Omron C Series OPC Server

This server allows you to monitor/control Omron C Series instrument/controllers – see <http://www.sunware.com.tw>. You must have SpecView build #694 (or above) to use this server. There are no known issues with this server.

**OPC - Frequently Asked Questions (FAQs)****I cannot see any OPC buttons anywhere in SpecView.**

You need to upgrade to the latest build of SpecView, go to <http://www.specview.com>

**The OPC Server I want does not appear in SpecView's OPC Browser.**

You should cancel out SpecView's OPC Browser and then start up the OPC Server; then go back into SpecView's OPC Browser. If the OPC Server still does not appear in SpecView's OPC Browser then try reinstalling the OPC Server.

**The SpecView 'instrument' I created does not have all of the 'Item IDs' in it that were listed in SpecView's OPC Browser.**

This is either because:

- The access level in the instrument/controller is not set high enough so that the 'Item IDs' can be accessed.

Or:

- Not all of the 'Item IDs' data types are supported (see **Supported Data Types** below).

**XXXs are shown for some 'Item IDs' but not all.**

The OPC Server is returning the value back for the XXX 'Item IDs' as *bad*, hence SpecView shows them as XXXs. Consult the OPC Server manufacturer for the cause of the *bad* value.

**I cannot connect to a remote server that I know exists and is running.**

Check that the case of the OPC Server and PC name you have typed in is correct and try again.

If you are still having problems then it could be an authorization issue. Does the 'remote' PC, with the OPC Server running, have authorization for the PC with SpecView running on it. In other words, the user logged onto the PC with SpecView running must be setup as a user (with the same password) of the PC with the OPC Server running on it and possibly even logged in and running the OPC Server. This is all dependent upon which version of Windows you are running.

NOTE: The following steps are taken at your own risk, beware that you will be editing registry settings; possibly losing personalized settings and rebooting your PC several times. Read these instructions through VERY CAREFULLY before trying them:

If you are still having problems then it could be that DCOM has not been configured on the OPC Server PC to "Enable remote connection"; to do this is rather involved and may require reboot(s) of your PC. What you have to do is to run DCOMCNFG.EXE (which is normally found in your Windows SYSTEM folder). This in itself may require you to go to the **Network** icon in the **Control Panel** and set **User-level access control**

under the **Access Control** tab (and the **Obtain list of users and groups from:** to be your **Computer Name:** from the **Identification** tab) before DCOMCNFG.EXE will run. **NOTE: This step will cause your PC to lose its Shares and personalized settings for all users.** DCOMCNFG.EXE has a tab called **Default Security**. Go there and check that **Enable remote connection** is checked. If it is enabled then you have a separate problem; if it is not checked then check it and (probably after a reboot) go back to the **Network** icon in the **Control Panel** and set **Share-level access control** under the **Access Control** tab on your OPC Server. This whole process will have removed any Shares that you had setup on the OPC Server PC, so reset them as the last step.

If you are still having problems then ensure that the following registry entry has the value 1 (this is documented in Microsoft's article **Q174024 "DCOM95 Frequently Asked Questions"**):

HKEY\_LOCAL\_MACHINE\Software\Microsoft\Ole\LegacyAuthenticationLevel

NOTE: If you are still having problems then consult the OPC Server manufacturer.

If you still have a problem then consult SpecView's website <http://www.specview.com>

## Supported Data Types

Currently SpecView only supports the following OPC data types:

VT\_BOOL  
VT\_BSTR  
VT\_DATE  
VT\_FILETIME  
VT\_I1  
VT\_I2  
VT\_I4  
VT\_INT  
VT\_R4  
VT\_R8  
VT\_UI1  
VT\_UI2  
VT\_UI4  
VT\_UINT

If your SpecView instrument does not contain the 'Item IDs' that you expect, then check with the OPC Server's manufacturer to see if it is a type in the above list.

## OPC - PC Specification/Performance

To provide some idea of the overhead that OPC puts on a PC we ran SpecView (build #693) and created configuration that included a Eurotherm 2404 connected to running iTools running on the same PC.

Operating System	Processor	Memory (Mb RAM)	Time taken to for OPC Browser to appear	Time taken to load up the Eurotherm.ModbusServer.1 with Groups and Items in the OPC Browser	Time taken to create an instrument for the 2404 with 4,438 parameters
Windows XP	AMD Athlon 1100	256	< 1 second	< 1 second	16 seconds
Windows 2000	Pentium III 450	380	3.3 seconds	3.8 seconds	34.1 seconds
Windows 98	Pentium I 100	48	5.8 seconds	1 minute 39 seconds	3 minutes 54 seconds

The above test was used to give a worse case scenario – it is doubtful that any user would put 4,438 parameters on open GDW's. However it is good at pointing out that using today's low-end PC is best suited for OPC.

## Debugging

SpecView can generate debug messages for errors generated by the OPC Browser. To turn debugging on or off use *Preferences - Debug* (see page 128) from the File menu.

### SpecView Error Codes

You will see these if you have turned debugging on and look at the debug.txt file in your configuration folder e.g. C:\SV32\default

Error code	Description	Meaning
18219	OPC Server status cannot be obtained	The OPC Server must be shutdown and restarted.
18229	OPC Server status indicates not running normally	The OPC Server must be shutdown and restarted.

### OPC Error Codes

You will see these if you have turned debugging on and look at the svdata.txt file in your SpecView installation folder e.g. C:\SV32

Error code (in hex)	Description	Meaning
0004000D	OPC_S_UNSUPPORTEDRATE	The OPC Server cannot handle the scan rate in your configuration. Change the scan rates in File->Preferences under the Runtime tab and retry.
80010108	RPC_E_DISCONNECTED	The OPC Server has gone off line. Go into configuration mode or exit SpecView. Then OPC Server must be shutdown and restarted. Then go online to SpecView.
80040154	REGDB_E_CLASSNOTREG	Upgrade to build #693 or above. If you are using a build of #693 or above then contact your SpecView representative to pass on your svdata.txt.
800706BA	RPC_S_SERVER_UNAVAILABLE	OPC Browser is trying to connect to remote OPC Server. OPC Browser cannot connect to remote OPC Server as either it is not running or you do not have security access to it or access to DCOM.
800706D3	RPC_S_UNKNOWN_AUTHN_SERVICE	OPC Browser is trying to connect to remote OPC Server. OPC Browser cannot connect to remote OPC Server, as you do not have security access to it or access to DCOM.
C0000005	Unknown	Shutdown and restart your OPC Server.
C0040007	OPC_E_UNKNOWNITEMID	Contact your SpecView representative to pass on your svdata.txt.
C004000C	OPC_E_DUPLICATENAME	Contact your SpecView representative to pass on your svdata.txt.

### Further information

<http://www.opcfoundation.org/>

<http://www.opceurope.org/>

Microsoft's article Q174024 "DCOM95 Frequently Asked Questions"

# Technical Support

## Contact Information

If you encounter a problem with SpecView, in the first instance please contact your SpecView supplier.

**NOTE: The latest versions of SpecView can always be obtained from our Web Site <http://www.specview.com>**

However, if you need to contact SpecView's Technical Support then use one of the following:

- Electronic Support - e-mail and Web
- Telephone Support in the USA Canada and other countries not listed below.
- Telephone support in the UK
- Telephone support in Europe

If you have problems with a specific configuration, it is most helpful if the entire problem configuration folder is saved to a single file and attached to an e-mail message. This can be done using the *Archive/Restore* (see page 40) button. This will allow our Technical Support team to run exactly what you are running.

You may also be asked to click the *Technical Information* (see page 78) button to provide further details on your specific installation.

Manual & Online help version 2.11

## USA Contact Numbers

Telephone: (360) 437-5100

Fax: (360) 437-5112

If dialing from outside the USA and Canada, the country code is (+1)

Time zone: PST (GMT -8 Hours)

## UK Contact Numbers

Telephone: (01825) 766 566

Fax: (01825) 766 966

Time zone: GMT

## Europe Contact Numbers

Telephone: (+44) 1825 766 566

Fax: (+44) 1825 766 966

Time zone: GMT

## Internet Support

Sales and application information: [sales@specview.com](mailto:sales@specview.com)

Technical Support: [support@specview.com](mailto:support@specview.com)

World Wide Web page: <http://www.specview.com>



# Licensing in SpecView

SpecView uses a hardware *dongle* (see page 198) as a copy protection key.

SpecView 32 may be downloaded at any time from the SpecView web site: <http://www.specview.com> at no charge.

When used without a **dongle** there is a 10 minute limit on communications in **each Runtime session**. This timer is reset each time the user enters Configuration mode and returns to Runtime mode. It is not necessary to restart either SpecView or the computer. All the functions within the standard software are available, including the save functions.

It is possible to add software options to SpecView, such as *Historical Replay* (see page 142) and the *Strategy Controller* (see page 200) by *upgrading the dongle* (see page 176). This can be done remotely - there is no need to send the dongle to SpecView.

Remote computers used with SpecView's Networking option do not require a dongle to be connected to them. The dongle connected to the local computer will need to have been purchased for the required number of **simultaneous** remote users.

Each dongle is considered to be a license to use the software. There is no concept of a 'Site Licence' within SpecView.



# Minimum Requirements for running SpecView

SpecView is a 32 bit Windows application that will run on Windows 95/98/NT/2000/Me/XP.

A 16-bit application compatible with Windows 3.1 is available by special request.

Any computer that runs Windows and programs such as Word or Excel should run SpecView, a minimum of a Pentium with 32 MB RAM (although 64 MB is recommended). Normal SpecView activity does not put any great load on computer performance. Although, if a large number of Strategy Controller events are used or large numbers of Logfile conversions are taking place, then more computer power is appropriate.

Communications ports should have 16550 UARTS or better.

SpecView may be downloaded at any time from the SpecView web site: <http://www.specview.com> at no charge. When used without a "**Dongle**" (copy protection key) there is a 10 minute limit on communications in **each Runtime session**. This timer is reset each time the user enters Configuration mode and returns to Runtime mode. It is not necessary to restart either SpecView or the computer. No save functions are disabled.

It is possible to add options to SpecView by upgrading the dongle. This can be done remotely - there is no need to send the dongle to SpecView. See the SpecView help system or manual for details.

On Windows XP the following dialog may be displayed during installation of SpecView. This is because SpecView has yet to complete Microsoft's Windows XP compatibility testing.



*SpecView Networking - Minimum Requirements (see page 38)*

# Frequently Asked Questions (FAQ)

## FAQ - Index

FAQ - Installation/Upgrade (see page 193)

FAQ - Instrument (see page 193)

FAQ - SpecView Runtime (see page 194)

FAQ - SpecView Configuration (see page 194)

## FAQ - Installation/Upgrade

### Does SpecView work with Win95/98/NT/2000/Me/XP?

- Yes, this is detailed in *Minimum Requirements* (see page 192)

### Do I need to send back the dongle to get it upgraded?

- No, once you have decided to *upgrade* (see page 176) and have raised an order

- Use the Registration Info menu command from the *Help* (see page 78) menu

- Click Enable Further Options.

- Copy the Step 1 code, which is generated, to the order and fax it to us.

- We will then give you the Step 2 code(s) to complete the upgrade.

### Will upgrading affect my existing configurations?

- No, *upgrading* (see page 176) preserves existing configurations

- However, as with all computer files, taking regular backups is a good idea.

- To do this use the *Archive* (see page 40) button on the Configurations Found dialog to save an entire configuration.

### Can I copy SpecView to another PC?

- Yes, it may be copied freely because, without a *dongle* (see page 198) connected, it will only operate in Runtime mode for 10 minutes.

## FAQ - Instrument

### Why am I getting XXX's on the screen where the instrument's values should be?

- This is correct operation while in *Configuration mode* (see page 197).

- However, if this occurs while in *Runtime mode* (see page 199) then:

- Check the wiring between the instrument & the PC

- Click the *Variables List* (see page 200) tool, select the instrument's name and click Properties

- Check that the address for the instrument in SpecView is the same as the address setting on the instrument itself.

- Check the instrument is connected to the correct COM port as specified in SpecView.

- Use the Setup COM Ports menu command on the *Setup menu* (see page 74)

- Check the Baud rate.

- Check the instrument settings & refer to instrument user manual

- Use *Hyperterminal* (see page 14) to test the COM port

### On my generic Modbus instrument how do I access higher registers?

- Use an *offset* (see page 43) on the address specification by adding a semicolon followed by the offset, for example 1,0J;256

### Why are the instrument values shown 10 or 100 times too big (or too small) or without the decimal point positioned correctly?

- Check the *address* (see page 48) specification to see if the number of decimal places is correct.

**Why are the wrong values being returned from the instrument?**

- Check the instrument's manual, as some instruments return raw data (for example, Chessell & ABB Chart Recorders), which needs to be scaled.
- This can be done from the Properties button on the *Variables List* (see page 80).

**FAQ - SpecView Runtime****Can I monitor SpecView remotely?**

- Yes, use *SpecView Networking* (see page 31)

**How do I view previous Event Logs?**

- Use the Convert Log File menu command from the *Logging* (see page 60) menu
- Create a Report Format which has **Include Event Log** checked.
- This will create a .CSE file, which can be viewed using Excel.

**How can I restore the Historical Replay window to its original size?**

- Use File->Preferences *Settings* (see page 127) "Reset Historical Replay Window Position"

**Why am I getting steps or gaps on my Trend Chart rather than a smooth curve?**

- This could be because SpecView is busy trying to read non-existent instruments, or getting repeated comms failures. Maybe increasing the *Comms Back Off Multiplier* (see page 124) to 1000 may help.
- Alternatively the PC could be busy, so check the loading on the PC.
- Gaps can be caused by the PC's power save function.

**I am getting empty logfiles, what could be the reason for this?**

- Use the **Show Logging in Variables List** menu command on the *Setup->Database submenu* (see page 74).
- Then, using the *Variables List* (see page 80), check that the required variables are set as logged.
- Or maybe the logging rate needs adjusting from Preferences *Logging* (see page 126)

**How can the rate that the values of variables change be increased?**

- Adjust Medium scan rate using File->Preferences: Runtime tab.
- However, there are many factors affecting the rate that variables are acquired
  - Blocking of comms based parameters (please see the appropriate protocol section for details on how to adjust these)
  - Network parameters for TCP/IP connections
  - OPC parameters for OPC servers

Values are requested separately by the different parts of SpecView, at the rates specified below:

Data Logger	<i>Preferences - Logging</i> (see page 126) - rate (default 60 secs)
Screen	<i>Preferences - Runtime</i> (see page 124) - Medium scan rate (default 20 tenths of a sec)
Strategy Controller	<i>Preferences - Strategy</i> (see page 126) - rate (default Medium as defined above)
DDE	See <i>DDE</i> (see page 168) (default Medium as defined above)

**FAQ - SpecView Configuration****How do I configure SpecView Networking (Remote/Local)**

- See *SpecView Networking* (see page 31)

**What can I do if Auto detect doesn't work for my instrument?**

- Use *Manual Instrument Configuration* (see page 41)

**How do I do a Strategy Controller event every second?**

- In the *Strategy Controller* (see page 146) create a Value Based event
- Value to watch: SpecView.Time
- Test to perform: Changed
- Value to test against will default to Constant Value: 00:00:00

**How do I do a Strategy Controller event every minute?**

- In the *Strategy Controller* (see page 146) create a Value Based event
- Value to watch: SpecView.Time
- Test to perform: Changed,
- With the constant value 00:01:00

**My variables list box doesn't appear, why not?**

- It may be off screen,
- use File->Preferences *Settings* (see page 127) "Reset Variables List Window Position"

**How do I animate a graphic using the Strategy Controller?**

- Set a SpecView *User variable* (see page 81) to represent the phase of the animation.
- Create a number of *shapes* (see page 90) for the animation
- Use Edit->*Color Dynamics* (see page 87) to make the shapes change color between the background color and another color, to make it 'appear' & 'disappear' according to the value of the user variable.

**How do I make clicking somewhere on a GDW do a button-type action?**

- Create a *polygon* (see page 90) with line width = 0 and position it appropriately
- Create a *button* (see page 96) and position it off-screen with the required action
- Change the name of the button to be the same as that of the polygon

**I've set the Fill Color of a shape but it isn't being filled, why?**

- Double-click the shape & uncheck **fill-none** box

**Why is it that using the Edit->Paste of an object doesn't appear to work?**

- It has been pasted over the top of the original, move it to one side.

**What can I do if comparing an instrument value (with decimal places) with an integer in the Strategy Controller doesn't work?**

- Comparisons of *variables* (see page 200) must be between variables of the same type.

**Can I get SpecView to page the operator when something happens?**

- Use the *Strategy Controller* (see page 146) action: SpecView: Run External Program
- This can be used to run a separate package (for example, SMSPagemaster can be used in England to send a txt msg to a mobile phone).

**If copying objects doesn't preserve dynamic attributes, How do I copy them?**

- Setup the *Color Dynamics* (see page 87) after copying & pasting the object
- Alternatively to copy whole GDW use the Save As menu command to save the GDW to another name
- It is not recommended to copy & paste bar charts & objects with Color Dynamics attached.

**Can I copy a whole Configuration?**

- Yes, either use Windows Explorer to copy the *Configuration folder* (see page 39)
- or use *Archive/Restore* (see page 40)

**Adding a bitmap to a GDW makes the GDW much larger, why?**

- This occurs if a *bitmap* (see page 94) is added using Edit->Insert New Object
- It is recommended to use the Insert a *Bitmap* (see page 94) tool on the toolbar (or Draw->*Bitmap...* (see page 70)) instead.

**Can I write a line of text at the top of a logfile?**

- Use the *SpecView: Write Line to file/printer* (see page 106) action for a Button or via the Strategy Controller.
- Use this to write the line you require to a file called, say, LINE.TXT.
- Generate a log report to, say, REPORT.CSV
- Create a file called, say JOIN.BAT, containing a line something like:  
COPY LINE.TXT+REPORT.CSV FINAL.CSV
- Then use *SpecView: Run External Program* (see page 105) action to run JOIN.BAT.

**How do I archive logfiles?**

- There are 5 files which make up a day's *logfiles* (see page 134): .LOG .LNM .EVT .ALM .IDX
- Using Windows Explorer go into the configuration subfolder and sort by name
- All logfiles will be listed first
- These can be copied or zipped as required.

# Glossary of Key Terms used in SpecView

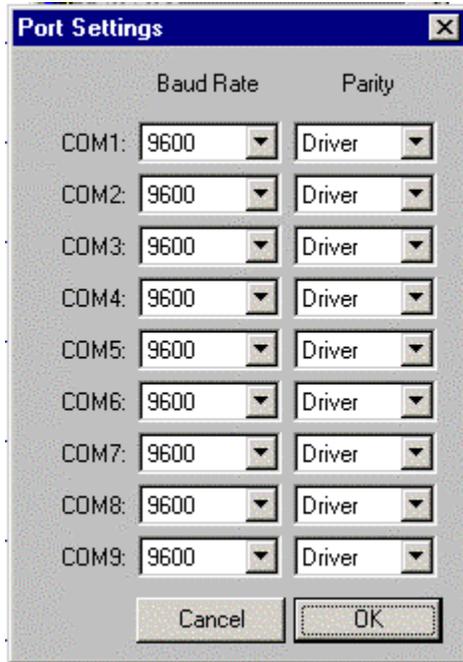
## Glossary Index

*Alarm (see page 196)*  
*Communications Ports "Com Port" (see page 197)*  
*Communications Protocol (see page 197)*  
*Configuration (see page 197)*  
*Configuration Mode (see page 197)*  
*Data Logging (see page 198)*  
*Dongle (see page 198)*  
*Dynamic Attributes (see page 198)*  
*GDO - Graphical Display Object (see page 198)*  
*GDW - Graphical Display Window (see page 198)*  
*Instrument (see page 198)*  
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*Log Report (see page 199)*  
*Read Only Variable (see page 199)*  
*Recipe (see page 199)*  
*Runtime Mode (see page 199)*  
*Strategy Controller (see page 200)*  
*Variable - Definition (see page 200)*  
*Variable Types (see page 200)*  
*Variables List (see page 200)*  
*Windows file-naming rules (see page 200)*  
*Writable Variable (see page 200)*

## Alarms

An *Alarm* (see page 86) is an On/Off status within an instrument, or a boolean User variable which has the Alarm attribute enabled. When an alarm occurs SpecView will display the Alarm dialog box and write an entry into the Alarm logfile.

## COM Port Settings



### Baud Rate

If the BAUD rate is known then set it appropriately.

If there is any uncertainty as to the BAUD rate used by the instrument then leave it set to "Auto". Left at "Auto" SpecView will test different BAUD rates for address 1 for the selected protocol. It then tests all addresses at 9600 BAUD, then 19,200 BAUD etc. If your first instrument is set to higher than address 1 AND at other than 9600 BAUD set the BAUD rate you are using.

### Parity

The Driver settings will be the factory defaults for the selected protocol. Click the **Help** button on the Ports and Protocol box for details for the driver defaults.

If your instrument is set to other than factory defaults, specify the Data bits, Parity and Stop Bits you need.

### Communications Ports "Com Port"

A serial port on your computer. Usually RS232 but special cards may be used that have RS422 or RS485 ports. Windows identifies ports with the term COM1, COM2 etc. SpecView supports up to COM9.

Communication Ports are a hardware item in your computer and should not be confused with Communications Protocol.

### Communications Protocol

The communication standard used by the instrument. This is how the *software* communicates with the instrument and is not related to the type of communications standard used by the port (RS232, RS485 etc.)

### Configuration

A saved database of instruments, graphical screens (GDW's), Recipes, logging information etc. The configuration name is the name of a subfolder of the SpecView folder.

### Configuration Mode

SpecView has two modes of operation: Configuration mode and Runtime mode

GDW's are created or edited in the Configuration Mode, see *Creating and Editing GDW's (see page 80)*

When in Runtime mode use the *File - Configuration Mode (see page 66)* menu command to return to Configuration mode.

## Data Logging

Storing on disk the value of selected variables at a pre-set time interval.

*Data Logging in detail (see page 134)*

## Dongle

The dongle is a copy protection key available from your SpecView distributor that is required for all versions of SpecView. It is plugged onto the parallel (printer) port of the computer. The dongle is programmed for different versions and options and may be *upgraded (see page 176)* at any time. It will not affect the operation of the printer port.

## Dynamic Attributes

These attributes are associated with a variable on a GDW. They are:

- Scan Rate - The rate at which this value is read from the instrument
- Recipe - Whether or not the variable is included in the Recipe
- Recipe Level - The order in which the Recipe values are downloaded
- Decimal Places - The number of decimal places shown for this variable

See *Dynamic Attributes (see page 86)* dialog box

## GDO - Graphical Display Object

Graphics made with SpecView's drawing tools can be grouped and saved as GDO's. The saved GDO's can be re-used in any GDW in any copy of SpecView.

## GDW - Graphical Display Window

The window used to display data from the connected instruments. Graphics drawings are used so that the data may be arranged in a logical and unambiguous format. SpecView may have as many GDW's as disk space and Windows limitations will permit.

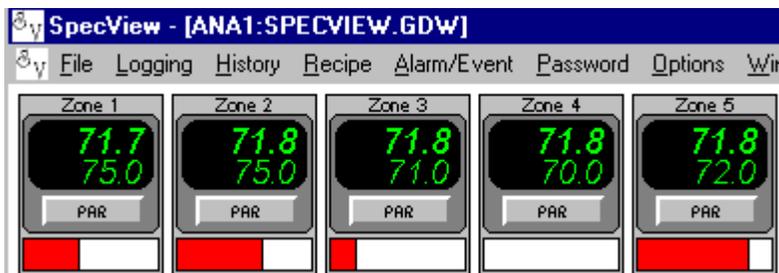
*Creating and Editing GDW's (see page 79)*

## Instrument

The complete device connected at a unique address on the communications link. A temperature controller, an indicator, a process controller, a PLC, a control system are all considered to be Instruments by SpecView.

## Instrument View

A pictorial view of a connected instrument. In most cases it will look like and have buttons that operate in a similar way to the actual instrument when SpecView is in Runtime Mode.



Adding *Instrument Views (see page 80)* to a GDW

## Log Report

A text file containing the values of selected variables over a time period. The file is in a CSV (Comma Separated Variable) format. This means that the data fields are separated by commas. This format is intended to be imported into a spreadsheet program such as Excel.

Viewed with a text editor:

```
Time,"Zone 1.Output Power","Zone 1.Process Value","Zone 1.Setpoint"
07/06/97 00:00:00,68.9,72.7,90.0
07/06/97 00:00:05,69.2,72.7,90.0
07/06/97 00:00:10,69.1,72.7,90.0
07/06/97 00:00:15,69.3,72.7,90.0
```

The same file opened in Excel (use Type of File: Text Files (.prn .txt .csv))

	A	B	C	D
1	Time	Zone 1.Output Power	Zone 1.Process Value	Zone 1.Setpoint
2	7/6/97 0:00	68.9	72.7	90
3	7/6/97 0:00	69.2	72.7	90
4	7/6/97 0:00	69.1	72.7	90

*Log Reports in detail (see page 137)*

## Read Only Variable

A variable that cannot be changed over communications, for example, a measurement

## Recipe

This is a set of values for variables on a GDW that are saved on disk under a Recipe name. This Recipe file can then be run by SpecView to set the variables to those values.

Only variables on the instrument that are writeable (changeable by the user) can be included in Recipes.

Every Recipe for a given GDW (see page 198) contains values for a single set of variables, i.e. different Recipes can't contain values for variables, which aren't included in this single set.

Therefore it is appropriate to include in the Recipe as many variables as will be needed to be set by any Recipe.

There can be up to 1295 different sets of values, but they can only set that ONE set of variables. Therefore if you do not wish to set them all, then use "N/C" (No Change) for the variables, which you do not wish to change.

More information is in the *Recipes (see page 114)* chapter.

## Runtime Mode

SpecView has two modes of operation: Runtime mode and Configuration mode

Runtime mode is also referred to as On-Line, this is SpecView's normal mode of operation - SpecView is communicating with the connected instruments. See *Runtime Mode - Using SpecView (see page 51)*

When in Configuration mode use the Enter Runtime Mode menu command from the File menu or the



tool to return to Runtime mode.

## Strategy Controller

(This is an optional feature of SpecView. Without the option you are limited to two events)  
A logic engine based on Events associated with Actions

Events can be based on either Time/Date or the value of a Variable  
*Strategy Controller (see page 146)*

## Variable

A variable is a specific piece of information within an instrument. The variable name is always made up of two components: **<name of instrument>.<name of parameter>**

Examples:

Barrel Zone 1.Setpoint  
Furnace 3.Process Value

Variables may be selected and placed anywhere on a GDW, used as a Pen on a Trend chart, as a value in a Bar chart or selected to be included in a Recipe or data logging.

There are several Variable Types

SpecView itself is considered an Instrument with its own *Variables (see page 81)*

For those who are familiar with the abbreviated variable names used by the instrument's control panel SpecView also has the concept of variable Short Names. See *Parameter List (see page 56)*

## Variable Types

booleans: On / Off variables. The words for the on and off states can be edited

Number (with decimals): A number which may have one or more decimal places

Integer: A number without decimal places

Text - May include any characters or numbers

Time: Expressed in Hours:Minutes:Seconds

Date: The computer date

Date Time: The computer date and time

*SpecView User Variables (see page 81)* have some additional types

## Variables List



Accessed by clicking  on the Toolbar while in Configuration Mode, it is a pop-up box listing all the variables of all the instruments in the current configuration.

To display a variable (name and value) on the GDW Double-Click the variable within the *Variables List (see page 80)* dialog box.

*SpecView Variables (see page 81)*

## Windows filenames rules

A file name can contain up to 215 characters, including spaces. However, it is not recommended that you create file names with 215 characters. Most programs cannot interpret extremely long file names. File names cannot contain the following characters:

| \ ` ~ ! " £ \$ % ^ & \* ( ) + = { } [ ] : @ ~ ; ' # < > ? , . /

## Writable Variable

A variable that can be changed over communications, for example, a setpoint

NOTE: Some variables can be both Writable AND Read Only, for example, output power in a controller can be writable when the Instrument is in "Auto" and be read only when the controller is in "Manual".



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