ECU-100

User Manual

R59116700-01

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1 Introduction

1.1 Customer notice

Thank you for buying Barco!

Barco is a world leader in display and visualization solutions. We are convinced that you will enjoy our products.

1.2 Change record

Revision	Date	Description
00	June-2011	Initial Release
01	Feb-2012	Layout and typo corrections

1.3 Contents of the user manual

1.3.1 Structure of the user manual

Chapter 1: Introduction

The introduction contains all general information related to the product, including "Product description", "Important notice", "Safety instructions" and "Environmental information".

Chapter 2: First Use

This paragraph guides you through the basic steps to start up the ECU-100 server and the application ("Connecting the components", "Switch on the system"), and to bring the first inputs on a Display Wall ("Launch Display Control", "Displaying inputs on the wall").

Chapter 3: How to

Frequently used procedures and/or features are described in this chapter. This is a good place to start for users who want to learn more about the basic controls of the Display Control application.

Chapter 4: Display Control menu descriptions

All the Display Control menu options are described in this chapter. This is an extensive and complete list of all features.

Chapter 5: Hardware possibilities

This chapter lists the graphic cards that are compatible with the system and gives an overview of the possible ECU-100 hardware configurations.

Chapter 6: Addendum

The addendum includes more technical parts of information that are useful for people who need more technical specifications to work with the system such as: Troubleshooting, Networking, Command Lines, Recovery, etc...

Chapter 7: Table of contents, list of figures and list of tables

1.4 Product description

1.4.1 ECU-100 GVD-series

The ECU-100 is a powerful, Quad Core Industrial PC providing a high end video wall controller solution capable of capturing RGB/HD/HDMI/DVI/SD Composite and S-Video sources. The captured sources can be displayed anywhere on the display wall using our Display Control Windows® application program.

1.4.2 Display Control
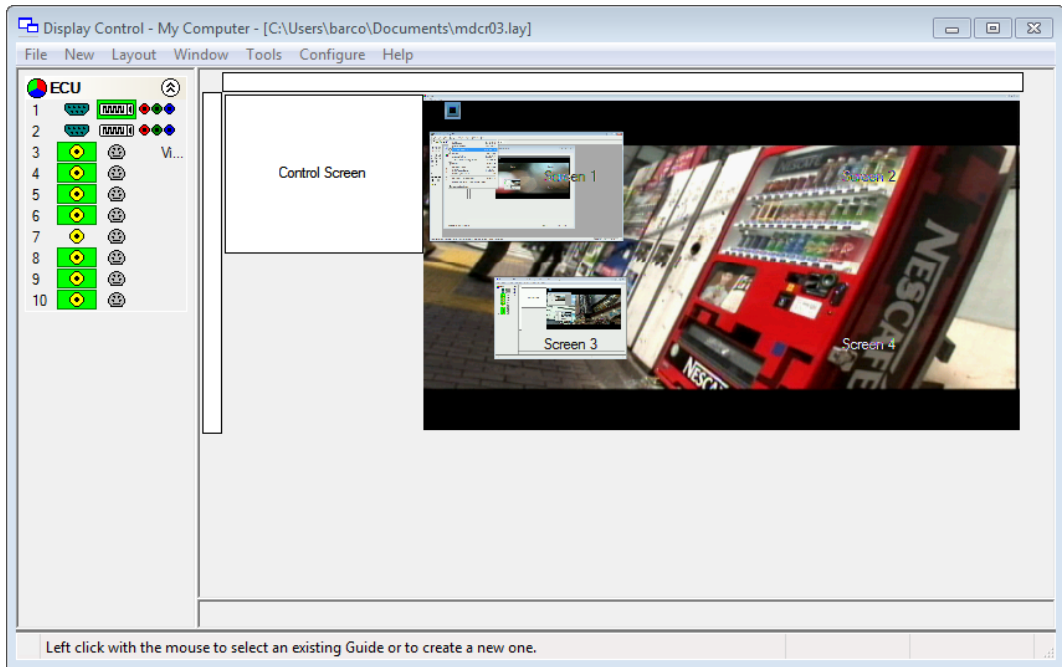
Display Control allows you to organize the display of ECU and application windows locally on the same machine or from across a network on another machine.

You can use the application to interactively move, size and position application windows and control ECU windows by using the Windows Properties sheet. It also has a guide and grid function to aid the positioning of windows.

Display Control allows you to save specific wall layouts as .lay files enabling them to be re-called when required.

Display Control also allows you to save ECU windows as templates called presets. New instances of the saved preset windows can be created in subsequent layouts. Presets can also be used with the split windows functionality; this allows you to divide an ECU window into a set of sub-windows, each displaying a cropped portion of the image in the original window.

There is an area of the application around the desktop where windows can be dragged allowing them to be manipulated without being displayed on the video wall.

1.4.3 Display Control Server versus Application

This system comes pre-installed.

ECU-100 consists of two separate elements that work together to enable you to control the display wall:

1. ECU-100 server

2. Display Control Application

ECU-100 Server

The Display Control Server is used to display ECU and application windows. The Server element of ECU-100 needs to be installed on the machine from which you wish to create ECU and application windows. It should be installed on the machine that contains the relevant hardware.

Display Control Application

The Display Control Application should be installed on the machine that has been identified to control the display wall. This could be the machine driving the display wall or any machine on the network. The application element of ECU-100 is used to control the position, size and properties of each window displayed on the Server machine.

1.5 Important notice

1.5.1 Notation convention

Following notations are applicable to this manual and should be respected throughout the manual.

WARNING:

Warnings – presented in this manual, provide information, which if not adhered to, may result in personal injury or death.

CAUTION:

Cautions – presented in this manual, provide information, which if not adhered to, may result in damage to the equipment.

NOTE:

Notes – presented in this manual, provide information, which emphasize points, significant to understand and operate the unit.

IMPORTANT:

Important – presented in this manual, provide information, which is important to highlight.

1.5.2 Copyright

© Barco n.v., All rights reserved. The information contained herein is Barco confidential information. No part of the information contained herein may be disclosed outside of the organization of the recipient, its sub-contractors, and customers in any form or by any means and/or stored in a database or retrieval system without the prior written consent of Barco.

1.5.3 Technical accuracy notice

Although every attempt has been made to achieve technical accuracy in this document, we assume no responsibility for errors that may be found. Our goal is to provide you with the most accurate and usable documentation possible; if you discover errors, please let us know.

1.5.4 Trademarks

Brand and product names mentioned in this manual may be trademarks, registered trademarks or copyrights of their respective holders. All brand and product names mentioned in this manual serve as comments or examples and are not to be understood as advertising for the products or their manufactures.

1.6 Safety instructions

1.6.1 Safety standards

Safety regulations

The device is built in accordance with the requirements of the international safety standard IEC-60950-1, UL 60950-1 and CSA C22.2 No. 60950-1, which are the safety standards of information technology equipment including electrical business equipment.

These safety standards impose important requirements on the use of safety critical components, materials and isolation, in order to protect the user or operator against the risk of electric shock and energy hazard, and having access to live parts.

Safety standards also impose requirements to the internal and external temperature variations, radiation levels, mechanical stability and strength, enclosure construction and protection against risk of fire.

Simulated single fault condition testing ensures the safety of the equipment to the user even when the equipment's normal operation fails.

Electromagnetic interference

Electromagnetic emission of the device complies with EN55022, EN61000-3-2, EN61000-3-3 and the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. Electromagnetic immunity of the device complies with EN55024.

Federal Communications Commission (FCC Statement)

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be responsible for correcting any interference at his own expense.

⚠️ **CAUTION:**

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

1.6.2   Safety Precautions

⚠️ **WARNING:**

For your own protection, observe the following safety precautions when installing, operating and servicing your device:

- Before operating the units please read this manual thoroughly and retain it for future reference!
- Observe all warnings and instructions printed on the devices!
- Servicing not explicitly mentioned in this manual should never be carried out by unauthorized personnel!
- Never open the case of the unit without first disconnecting the power supply cord!
- To prevent fire or electrical shock hazard, do not expose this unit to rain or moisture!
- This product should be operated from an AC power source!
- Check that the voltage and frequency of your power supply match those printed on the device label with the rated electrical values!
- If you are not sure of the type of AC power available, consult your dealer or local power company!
- This product is equipped with a 3-wire grounding plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug!
- This equipment must be grounded (earthen) via the supplied 3 conductor AC power cable. (If the supplied power cable is not the correct on, consult your dealer.)
- Do not allow anything to rest on the power cord. Do not locate this product where people will walk on the cord. To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord does not exceed the extension cord ampere rating.
- Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electrical shock.
- Never spill liquid of any kind on the product. Should any liquid or solid object fall into the cabinet, unplug the set and have it checked by qualified service personnel before resuming operations.
- Lightning - For extra protection for this video product during a lightning storm or when it is left unattended and unused for a long period of time, unplug it from the wall outlet. This will prevent damage to the unit due to lightning and AC power-line surges.

1.6.3　Unpacking

⚠️ **WARNING:**

The ECU-100 chassis is heavy, lifting precautions should be taken.

Inspect items for damage. Should any items show any signs of damage, report it immediately to your vendor.

🛈 **IMPORTANT:**

The ECU-100 contains additional packaging inside the chassis.
This MUST be removed prior to operation by removing the chassis lid via the 2 screws located on each side of the case.

Retain packaging materials for future transit requirements.

1.6.4　Installation precautions

- Do not place this unit on an unstable cart, stand, or table. The unit may fall, causing serious damage to it.
- Do not use this unit near water.
- Use only the power cord supplied with your unit. While appearing to be similar, other power cords have not been safety tested at the factory and may not be used to power the unit. For a replacement power cord, contact your dealer.
- Slots and openings in the cabinet and the sides are provided for ventilation; to ensure reliable operation of the unit and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This unit should not be placed in a built-in installation or enclosure unless proper ventilation is provided.
- The maximum recommended ambient temperature for this equipment is 40° C.
- When using the unit in a multi-unit rack assembly or closed assembly the ambient temperature inside the assembly may not succeed the maximum rated ambient temperature.
- When installed in a rack, the installation should be such that the amount of air flow required for safe operation of the equipment is not compromised. The mounting of the equipment should be such that no hazardous condition is achieved due to uneven mechanical loading.

1.6.5 Cleaning precautions

Unplug this product from the wall outlet before cleaning.

- Use a soft cloth to periodically clean the cabinet. Stubborn stains may be removed with a cloth lightly dampened with mild detergent solution.
- Never use strong solvents, such as thinner or benzine, or abrasive cleaners, since these will damage the cabinet.
- In order to maintain good air ventilation within the unit, it is advised to clean the filter with a vacuum cleaner on a regular basis. The filter is located behind the ventilation slits on the front side of the unit.

Unplug the device from the wall outlet before cleaning.

⚠️ **WARNING:**

Never clean the case of the device without first disconnecting all power supply cords!

⚠️ **CAUTION:**
Do not use liquid cleaners or aerosol cleaners!

1.7 Environmental information

1.7.1 Disposal of the product (Waste Electrical and Electronic Equipment)

This symbol on the product indicates that, under the European Directive 2002/96/EC governing waste from electrical and electronic equipment, this product must not be disposed of with other municipal waste. Please dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

For more information about recycling of this product, please contact your local city office, your municipal waste disposal service or the shop where you purchased the product.

1.7.2 Disposal of batteries in the product

This product contains batteries covered by the Directive 2006/66/EC which must be collected and disposed of separately from municipal waste.

If the battery contains more than the specified values of lead (Pb), mercury (Hg) or cadmium (Cd), these chemical symbols will appear below the crossed-out wheeled bin symbol.

By participating in separate collection of batteries, you will help to ensure proper disposal and to prevent potential negative effects on the environment and human health.

1.7.3 RoHS Compliance

The device does not contain quantities of the six hazardous substances defined in directive 2002/95/EC at concentration levels above the specified limits. Therefore we certify that the product is RoHS compliant.

2 First use

2.1 Starting up the system

This paragraph guides you through the basic steps to start up the ECU-100 server and the application and to bring the first inputs on the Display Wall:

Connect the components
Switch on the system
Launch Display Control
Display inputs on the wall

2.2 Connect the components

2.2.1 Getting started (cabling and connections)

S2 | USB Input connectors

Figure 1: USB input location

- Connect the USB Keyboard and Mouse into vacant USB connectors located on the rear side of the unit.
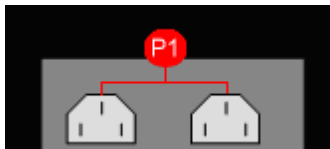
P1 | Power Connectors

Figure 2: Power connector location

- Connect both Power Cables to the chassis. Failure to connect both power cables will result in an audible alarm being sounded when the system is switched on.

2.2.2 Connecting the output screens

⚠️ **CAUTION:**
You should exercise great care when connecting all cables to the connectors.
If the pins are oriented correctly and the connector is pushed on squarely, the use of force is not required. Poor handling may cause some pins to bend within the plug on the cable and this, in turn will cause damage to the output socket and in some instances will cause irreparable damage to the Printed Circuit Board.
Such damage is not covered under warranty!

Control Screen

A Control Screen is a stand alone VGA output screen separate from the display wall. The system is configured to boot up on the Control Screen. The Control Screen is configured as the Primary Monitor in Windows® with the display wall as the Secondary Monitor.

S4	VGA Output connector for the Control Screen

Figure 3: VGA output

- Connect your Control Screen to the VGA output of the ECU-100 unit using an analog VGA Cable.

Display Wall

Figure 4: Screen arrangement (example)
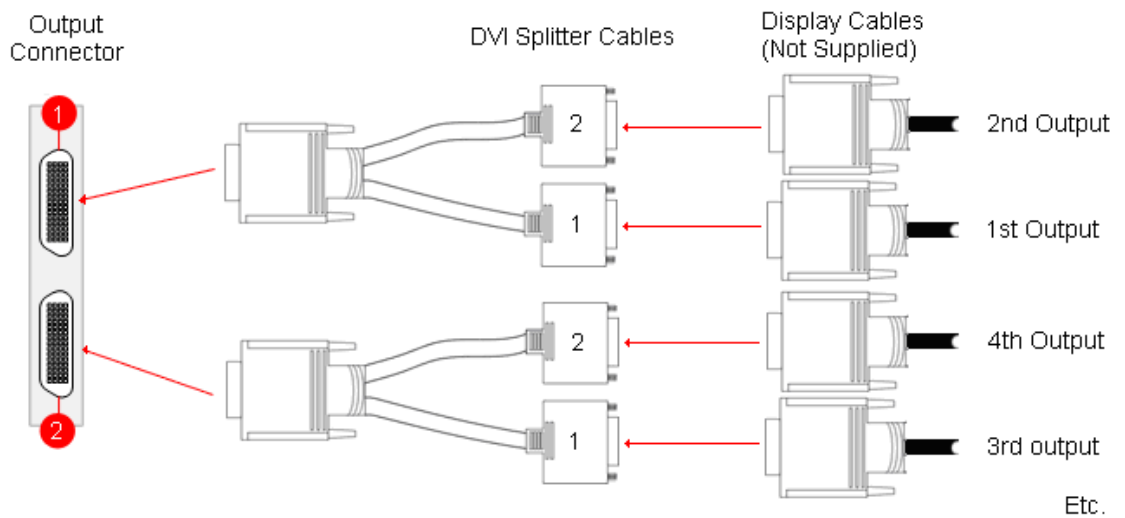
1	Output connector for screens 2 and 1
2	Output connector for screens 4 and 3

Figure 5: Monitor connection (display wall)

- Connect the monitors of the display wall to the output connectors using the DVI Splitter Cables provided.
  The example above illustrates the connection for screens 1 to 4 by making use of output connections 1 and 2.
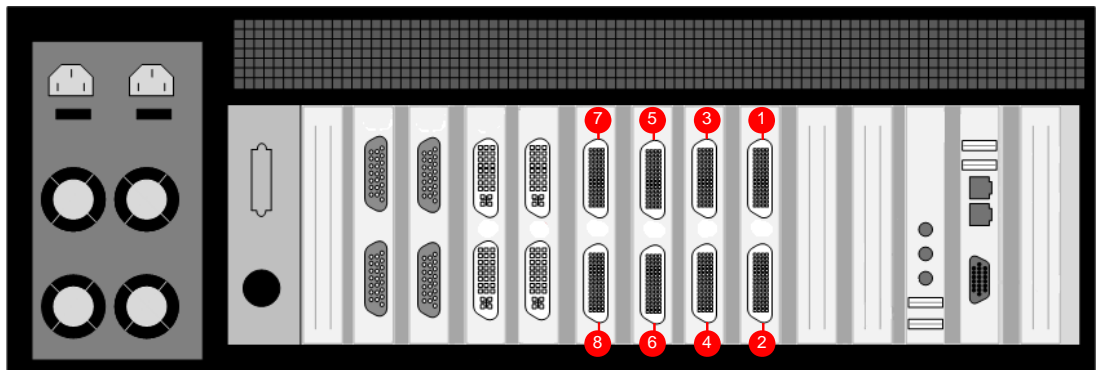
1	Output connector for screens 1 and 2
2	Output connector for screens 3 and 4
3	Output connector for screens 5 and 6
4	Output connector for screens 7 and 8
5	Output connector for screens 9 and 10
6	Output connector for screens 11 and 12
7	Output connector for screens 13 and 14
8	Output connector for screens 15 and 16

Figure 6: Outputs location example of an ECU-100 GVD-1601604

2.2.3 Connecting the input sources

The system provides two types of input connectors:

- DVI-I –Type (See "Rear View" figures in paragraph "Overview of preconfigured ECU hardware configurations")
- D-Type (See "Rear View" figures in paragraph "Overview of preconfigured ECU hardware configurations")

DVI-I type

The DVI-I connectors support DVI, HDMI, Component and RGB (VGA) inputs using the supplied adapters where required. See below, the different DVI-I connection possibilities:

- A DVI input is connected directly into the DVI-I connector which accepts DVI-D (digital) or DVI-A (analog) inputs:
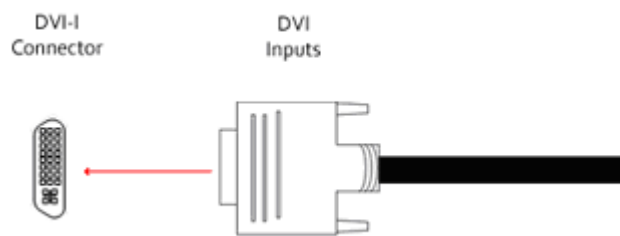
Figure 7: DVI to DVI-I connector

- An HDMI input is connected to the DVI-I connector using the supplied DVI-HDMI Adapter:
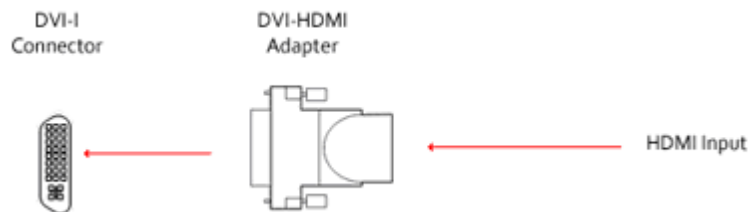
Figure 8: HDMI to DVI-I connector

- A Component input is connected to the DVI-I connector using the supplied DVI-Component Adapter:
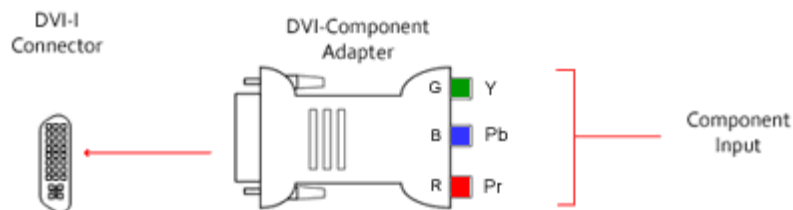
Figure 9: Component to DVI-I connector

- An RGB (VGA) input is connected to the DVI-I connector using the supplied DVI-VGA Adapter:
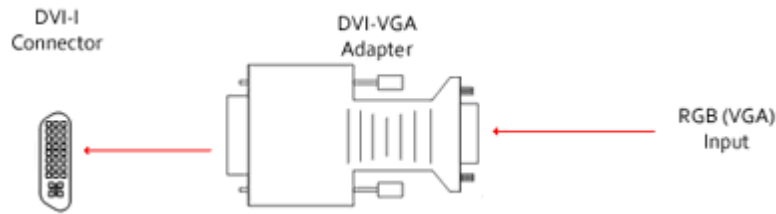
Figure 10: RGB (VGA) to DVI-I connector

D-Type

- Composite/S-Video inputs are connected to the D-Type Connector using the supplied Composite/S-Video Cable:
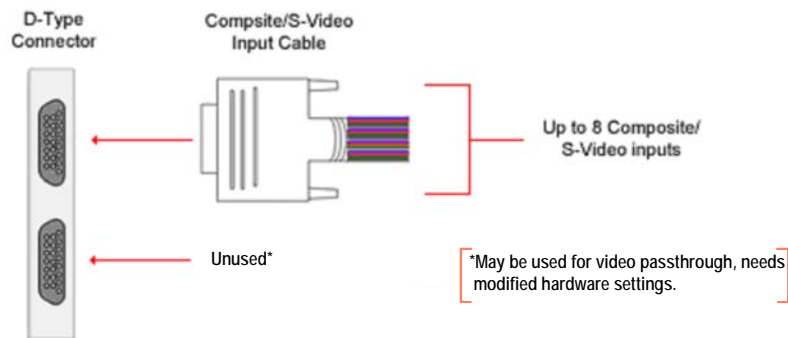
Figure 11: Composite/S-Video to D-Type connector

- Use of Composite/S-Video Input cables

  The Composite/S-Video input cable consists of 16 BNC sockets numbered 1-16, connected to a 26-way D-Type connector.

  ✓ For Composite input signals only the first 8 BNC sockets are used.
  ✓ To connect a S-video input, connect the Composite/S-Video Luma <u>and</u> Chroma signal as indicated in the table below:

Input	Composite/S-Video Luma = BNC Connector	S-Video Chroma = BNC Connector
1	1	9
2	2	10
3	3	11
4	4	12
5	5	13
6	6	14
7	7	15
8	8	16

2.3 Switch on the system

2.3.1 Switching on

- Ensure that both Power Supply Units at the rear side are switched on.
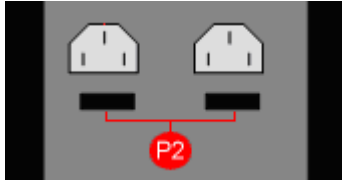
P2 | Main Power Switches at the rear side of the ECU-100

- Press and release the main power switch at the front side.

F3 | Main power switch at the front side of the ECU-100

2.3.2 Setup procedure (only first use)

- The BIOS and boot messages will appear on the Control Screen that is plugged into the VGA output socket of the ECU-100 (see S4 on figure on "Rear View" figures in paragraph "Overview of preconfigured ECU hardware configurations")

- When the system has booted the Windows® "Splash Screen" is displayed on the Control Screen.

- Complete the Windows® setup procedure to select language, user account details and computer name. You will be prompted for the Operating System Product Key, this is located on the Operating System CD case in the Accessories pack.

- Once Windows® has been set up, the Control Screen and Display Wall will open into a Windows® desktop.

- The ECU -100 has pre-configured factory settings for the wall layout and screen resolution. These settings can be changed using the Wall Configuration tab accessed from the Display properties dialog box.

2.3.3　Changing pre-configured factory settings

- To change the pre-configured factory settings for the wall layout and screen resolution, use the Wall Configuration tab.
- To access the Wall Configuration tab, right click on the desktop and select Screen Resolution, the following dialog is displayed:
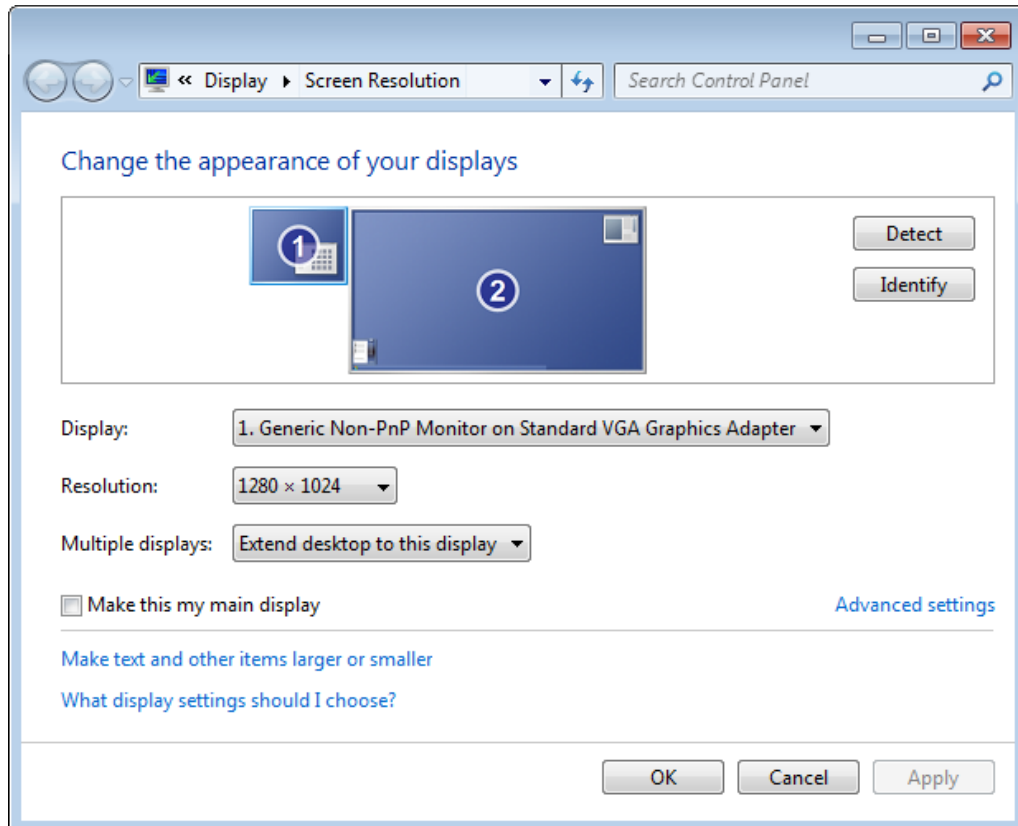
Figure 12: Display properties dialog box

- This dialog shows the Control Screen as the Primary Monitor (1) and the display wall as the Secondary Monitor (2).
- To access the Wall Configuration Properties tab, highlight the Secondary Monitor by clicking once inside the box and then selecting Advanced settings (see figure "Display properties dialog box").
- If you wish to change the default factory settings, use the Wall Configuration tab to set the number of screens, Screen Arrangement and Resolution per Screen (see figure "Wall Configuration")
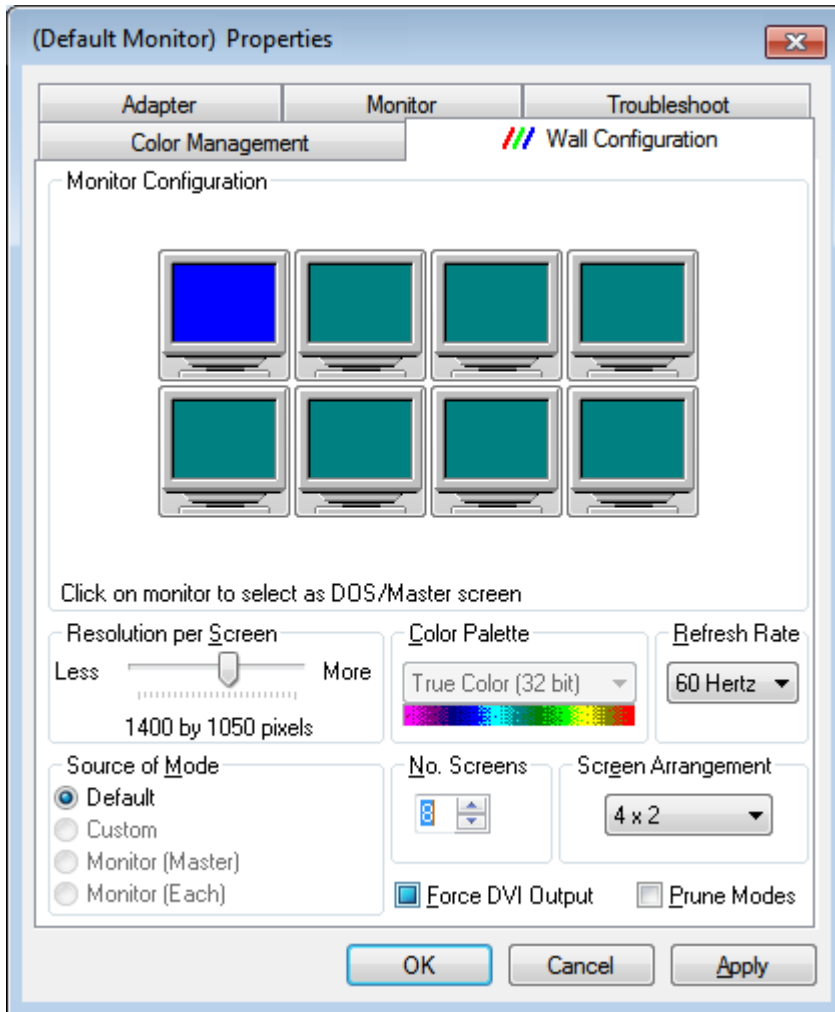
Figure 13: Wall Configuration

- In some instances, these changes may require a system re-start.

2.4   Launch Display Control

2.4.1   Starting up the Display Control application
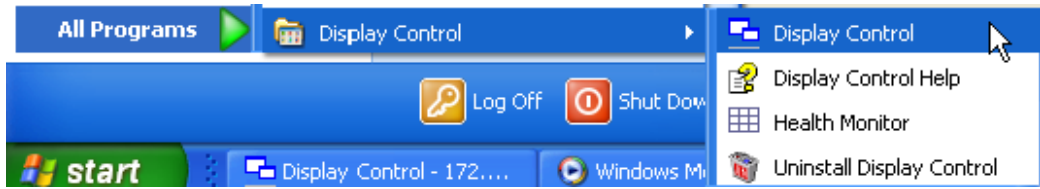
Click on the Windows Start button and select **All Programs/Display Control**. From the Display Control menu, select **Display Control** and the following dialog is displayed:
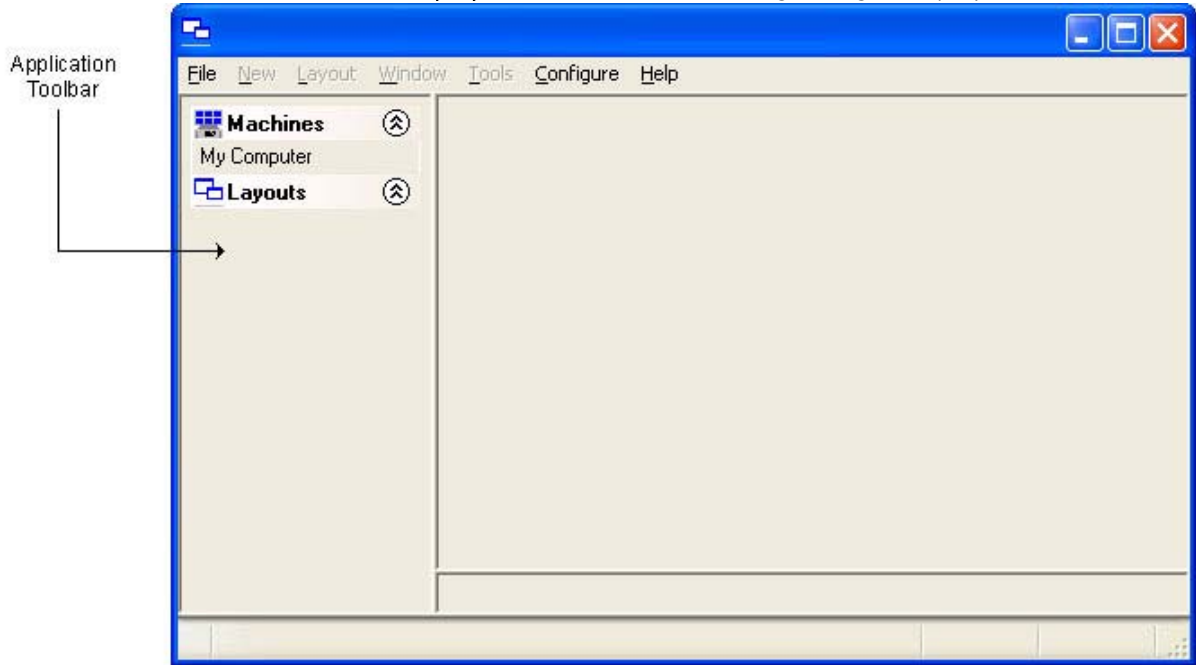
Figure 14: Display Control application

2.4.2   Make connection with the Display Control server

If the Display Control Application and Display Control server are installed on the same machine then select **Display Control-My Computer** from the programs menu, alternatively, double click **My Computer** in the **Machines** list on the Display Control Application **Toolbar**.
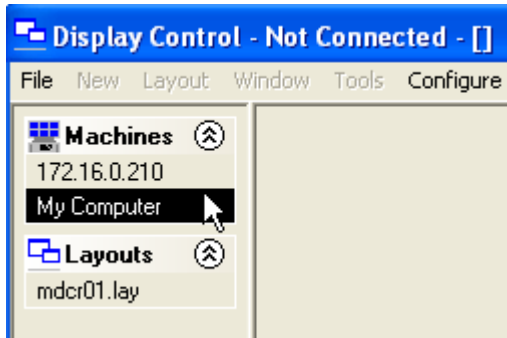
The **Machines** list shows the Display Control Servers that have previously been connected to.

The **Layouts** list shows the most recently used layout files. Double click to open the selected file.

For more details on how to connect to the server, refer to "Connecting the application to specific server".

2.4.3   Application Window
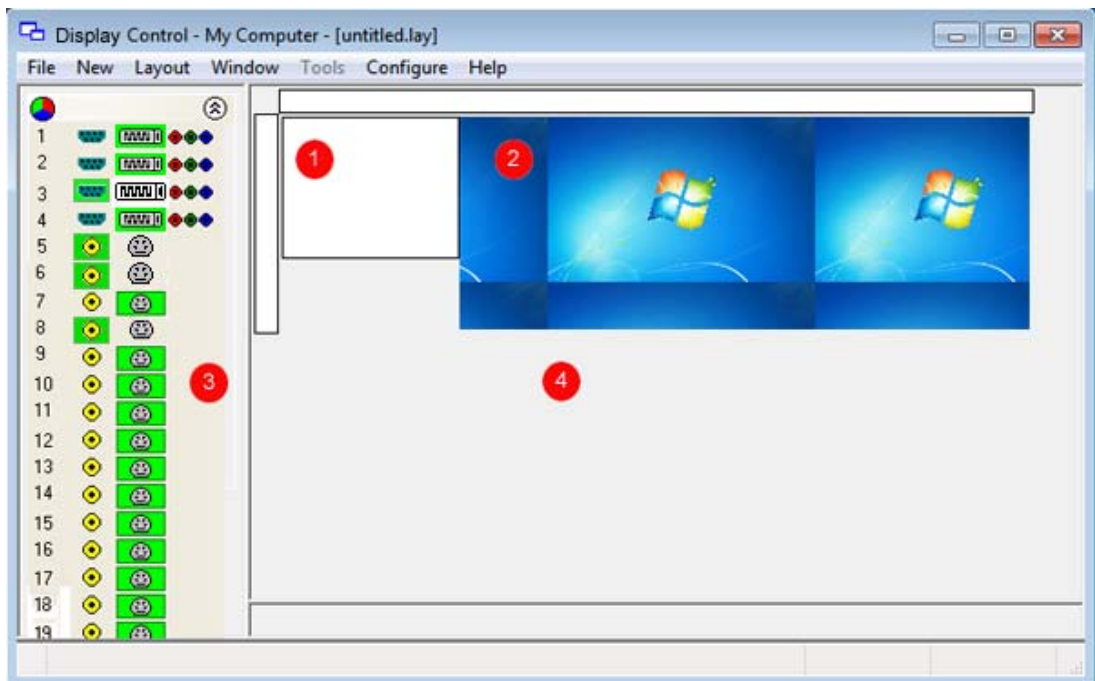
1	Control Screen representation
2	Display Wall representation - Displays a snap-shot of the display wall including any input sources currently displayed
3	Application toolbar - Displays the number and type of inputs available for display
4	Manipulation area - Area of the application around the desktop where windows can be dragged allowing them to be manipulated without being displayed on the display wall

Figure 15: Display control application window

2.4.4 Toolbar

The icons displayed in the application toolbar identify which type of source is available to each input.
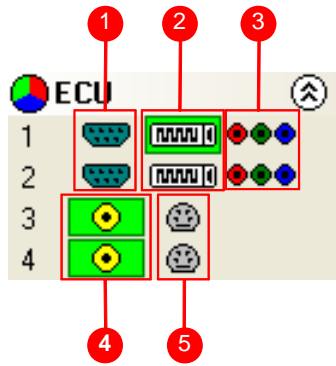
1	Analog source
2	DVI source
3	Component source
4	Composite source
5	S-Video source

Figure 16: Application toolbar icons

If an icon is highlighted green, this indicates that an active input of that type is present.

For example in the figure above input 1 indicates that the DVI source is currently being captured. For inputs 3 and 4, the composite input is captured.

2.5　Display inputs on the wall

2.5.1　Creating Windows

Once the connection to the server has been established then windows can be created for display.

Windows can be created using the **New menu** or the application **Toolbar**.

- By using the **New menu**, the following windows can be created and displayed:

  - ✓ ECU - A ECU output can be displayed if a ECU-2DVI, ECU-8VID card is installed
  - ✓ **Preset** - A preset window can be displayed providing a ECU card is installed in the system and one or more ECU windows have been saved as presets.
  - ✓ **Application** – Windows based applications can be opened and displayed eg. VNC Viewer, Microsoft Powerpoint, DGCPlay.
  - ✓ Select Display Control from the **Configure menu** to capture the desktop and display in the Display Control application window.

- Using the Display Control application **Toolbar**, you can select a particular device or input:
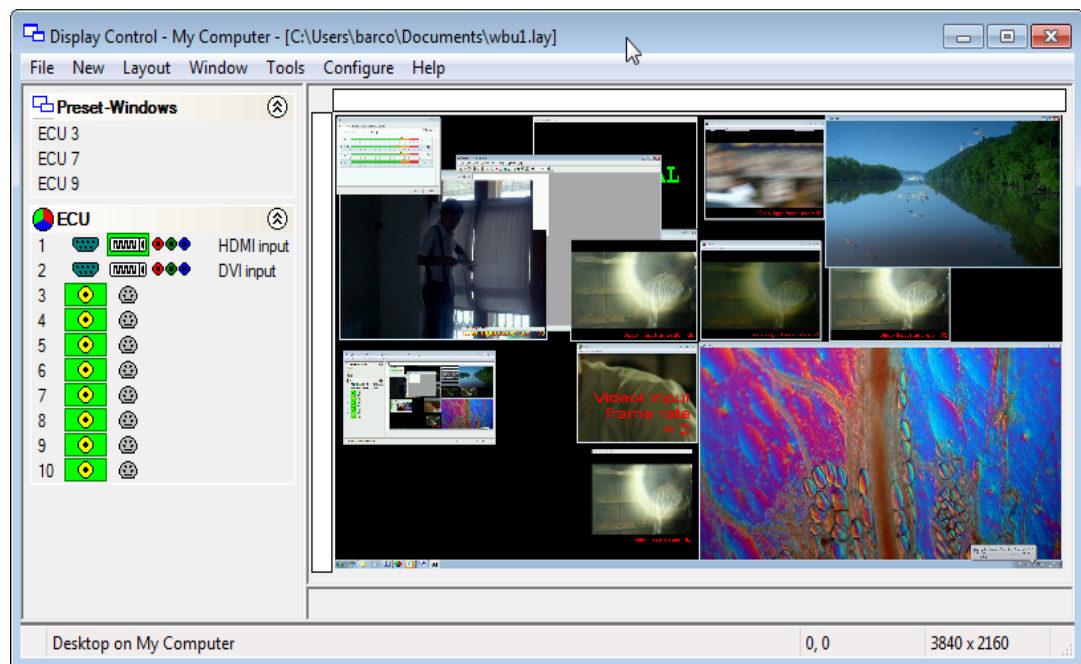
  - ✓ The application **Toolbar** displays a list of the type of windows that can be opened, depending on the hardware you have installed in your machine. Use the drop down menus to select the required inputs for display.
  - ✓ To open the required inputs, you can:
  - ✓ **Select** the **required input** using the cursor and **drag** to a preferred position on the wall.
  - ✓ **Double click** on the **required input** and the window will open, positioned at the top left of the display wall.
  - ✓ Open **multiple inputs** by pressing the **shift key** or **Ctrl key** and clicking the required number of inputs with the mouse.
  - ✓ Using the Define Grid function, the windows can be placed in a specific position using a 3-pixel width snap-to-grid functionality.

2.5.2   Moving Windows around the Display Wall

Setting up a video wall requires windows to be moved on the desktop. All types of window can be moved in the same way.

Using the Window Properties

Windows can also be moved using the Window Properties dialog accessible via the "Adapting Window menu options (Window menu)". Using the Position controls Top and Left the windows can be placed anywhere on the display wall.

Using the Mouse

Use the mouse to select the window in the Display Control application; by keeping the left mouse button pressed, the window can be dragged to any preferred position on the wall. Used conjunction with Grids and Guides, the window can be placed in an exact position.

Again, by using the mouse, right click over the window in the Display Control application and select Move this allows you to move the window around the display wall without depressing the mouse button. To release the window in a preferred position, click the left mouse button.

2.5.3   Changing Window Properties

The properties of a window can be changed using the Windows Properties, Input Settings and On Screen Display Properties dialogs.

- The Window Properties allow you to change the position of the window, the size and aspect ratio, the style, caption title and the window ID.

- The Input Settings allow you to change the appearance of a Display Control inputs using the Input, Cropping and Display setting controls.

- The On Screen Display properties allows you to configure the display type, text and font details of the on screen display.

3   How to

3.1   How to Re-size a Window

The Windows can be re-sized in various ways depending on the style setup on the Window Properties sheet.

If the window has a border and title bar:

- Using the mouse, click on the top, bottom, left or right of the window border. The cursor will change to a size cursor as shown below:

- Use the mouse to drag the border until the required size is achieved.
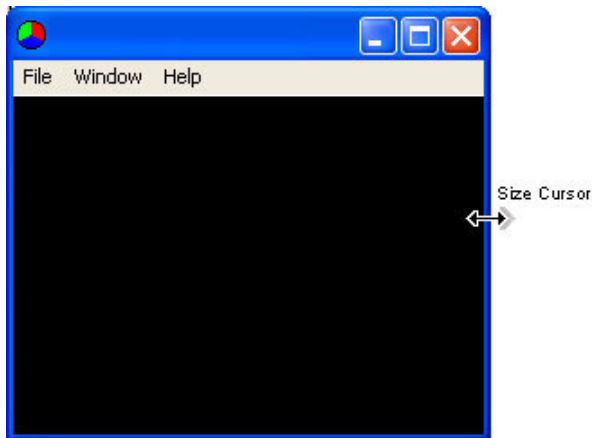
Press the **Alt key** and **spacebar** on the keyboard with the ECU Window active and a menu is displayed as follows:

Select **Size** from the menu options and the cursor will change to a cross hair cursor and displayed in the centre of the ECU window:

- Use the cursor keys to resize the window.

- Use the command line interface -Window as described in the Command Line Interface paragraph.

- Access the Windows Properties dialog box by selecting <u>Window Properties</u> from the Windows Menu. Use the Size controls to re-size the window.

NOTE:

The application can also be re-sized in the Display Control desktop representation.

If the window has no title bar or border:

- Use the command line interface -Window as described in the <u>Command Line Interface</u> paragraph.
- Access the Windows Properties dialog box by selecting <u>Window Properties</u> from the Windows Menu. Use the Size controls to re-size the ECU window.

NOTE:

The application can also be re-sized in the Display Control desktop representation.

3.2   How to Re-position a Window

Windows can be re-positioned anywhere on the desktop. This can be achieved in a number of ways depending on the style setup.

If the window has a border and title bar:

- Using the mouse, position the cursor on the title bar as shown below.
- Press and hold the left mouse button and drag the window to the required position.

- Press the **Alt key** and **spacebar** on the key board with the window active and a menu is displayed as follows:
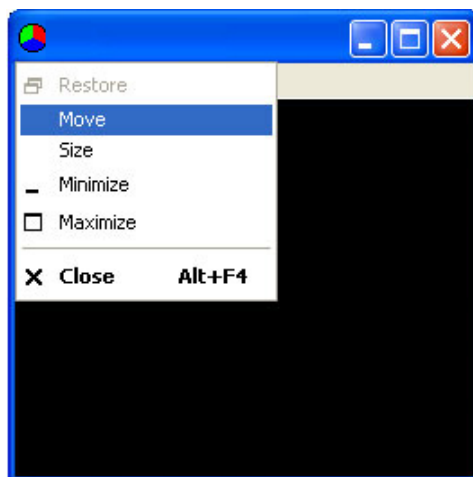
Select **Move** from the menu options and the cursor will change to a cross hair cursor and displayed in the centre of the window:

- Use the cursor keys to move the Window to the required position.

- Use the Command Line Interface -window as described in the <u>Command Line Interface</u> paragraph.

- Access the Windows Properties dialog box by selecting <u>Window Properties</u> from the Windows Menu. Use the Size controls to re-size the window.

3.3　How to Save/Load Wall Layouts

3.3.1　Saving Layouts

When your display wall has been configured i.e. all the required windows have been opened and positioned, you may wish to save the layout.
Display Control allows you to save the layout as a *.lay* file and store it on your machine for future use.

To save a layout, use the **File menu** on the Display Control Application and select **Save** or **Save As.**.

3.3.2　Loading Layout Files

To load a saved layout file:

With the Display Control application open, select the **File menu** and then **Open...** You will be asked if you wish to save the changes you have made. Browse to the layout file you wish to load and select Open. The layout will be opened and the windows positioned on the display wall.

3.4　How to Save a Window as Preset

Once a window has been configured and the window properties and cropping have been set, the window can be saved as a preset. The presets are saved with a *.WCP* file extension in a folder called Preset Windows inside the directory where Display Control Server was installed.

To save an ECU window as a preset, select a displayed ECU window and then select **Save as Preset** from the **Window menu**. Alternatively, **right click** on the **ECU window** and select **Save as Preset**.

4 Display Control menu descriptions

4.1 Overview Menu Options

The Display Control Application has following menu options:
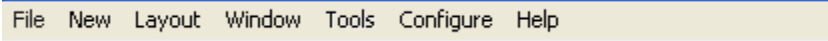
File

[Managing layout files and connections (File menu)](#)

New

[Opening new Windows (New menu)](#)

Layout

[Creating grids, rulers and guides (Layout menu)](#)

Window

[Adapting Window menu options (Window menu)](#)

Tools

[Accessing other tools (Tools Menu)](#)

Configure

[Configuring types of window to be displayed (Configure Menu)](#)

Help

[Information about Display Control (Help Menu)](#)

4.2 Managing layout files and connections (File menu)

The file menu allows you to manage layout files and connections
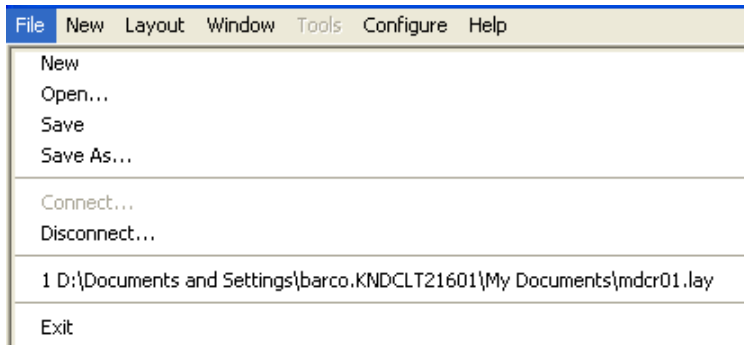
New

Opening a new (empty) layout file

Open

Opening an existing layout file

Save

Saving the current layout

Save As

Saving a layout with a specific name and location

Connect

Connecting the application to specific server

Disconnect

Closing the current connection

Most recently used files

Opening one of the most recently used layout files

Exit

Closing the application

Opening a new (empty) layout file
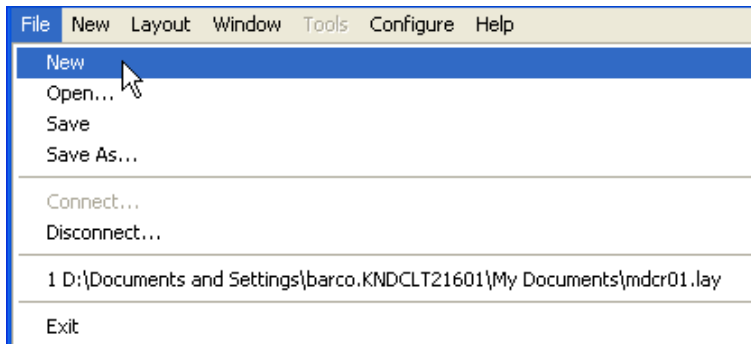
When **New** is selected:

- A prompt is displayed asking if any changes to the current layout are to be saved.
- If changes are to be saved, click **Yes** and follow the steps detailed in Save/Save As
- If changes are not required to be saved click **No**
- The windows on the machine close.
- The image of the desktop from the machine will continue to be displayed.

NOTE:

The **New** option is only available when connected to a machine.

Opening an existing layout file
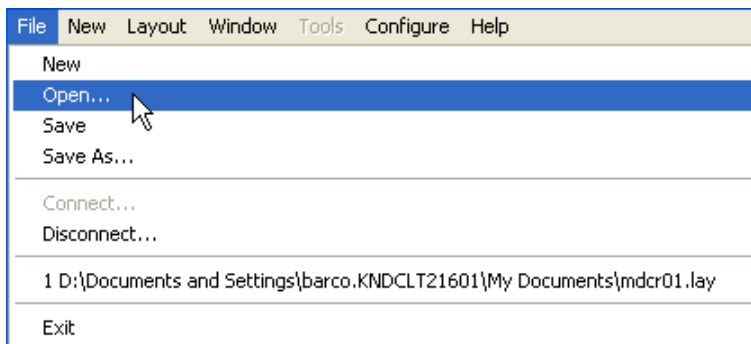
When **Open** is selected:

- A prompt is displayed asking if any changes are to be saved.
- Browse to the layout file to be opened.

When a layout file has been located and selected, the following takes place:

- If a current active connection is being used and the selected layout file is for a different computer, the following dialog is displayed.

Select Cancel and the operation is terminated.

Select **OK**:

- If Close Windows is selected, all windows are closed and the connection is terminated.

Previously Saved Layouts

When opening a previously saved layout the following dialog will be displayed should an error occur:
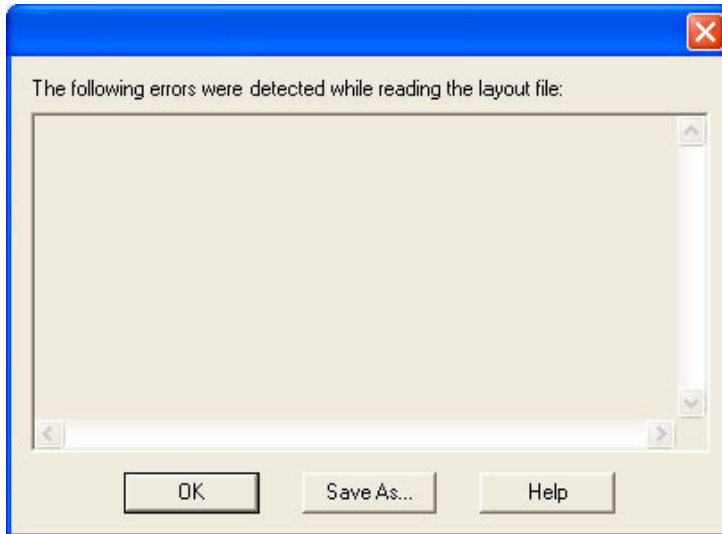
The dialog displays details of any errors found by the application when opening a layout.

- Use the up/down arrows to scroll through the displayed text.

- Click on the **Save As...** button to save the information as a text file for later use or to assist in support queries.

Saving the current layout
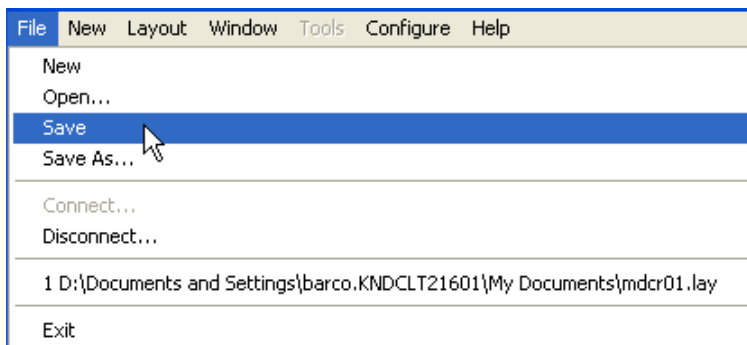
Select **Save** to save the current layout.

If the layout has not been previously saved, i.e. it is a new layout then the **Save As** dialog is displayed.

Browse to the folder where the layout is to be saved, enter a **File name** and click on Save.

Saving a layout with a specific name and location
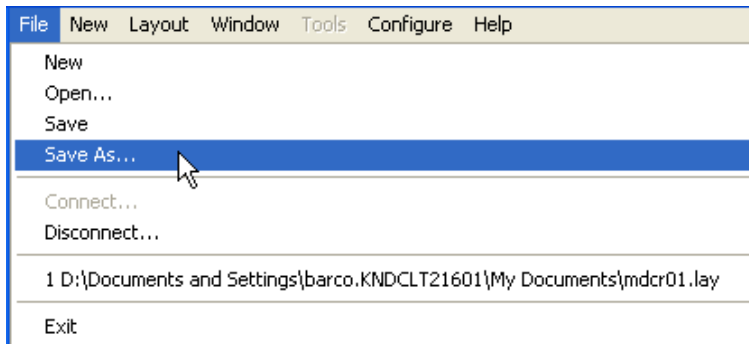
Select **Save As** to save a layout with a specific name to a particular location using the displayed dialog.

Connecting the application to specific server
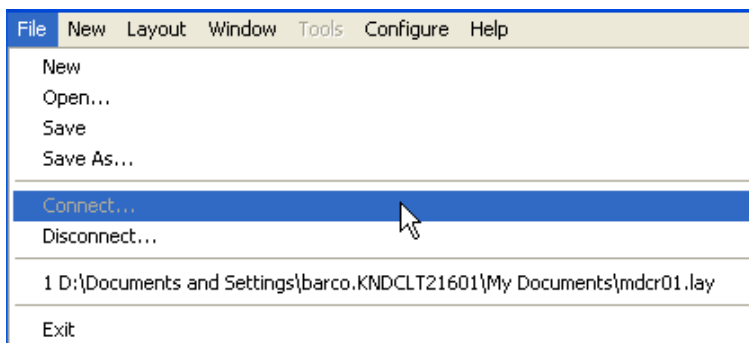
The application can run on a local machine or an external client. Depending on this the procedure to follow is different:

- Connecting the application using a local client
- Connecting the application using an external client

Connecting the application using a local client

- Select **Connect...** from the File menu and the following dialog will be displayed:
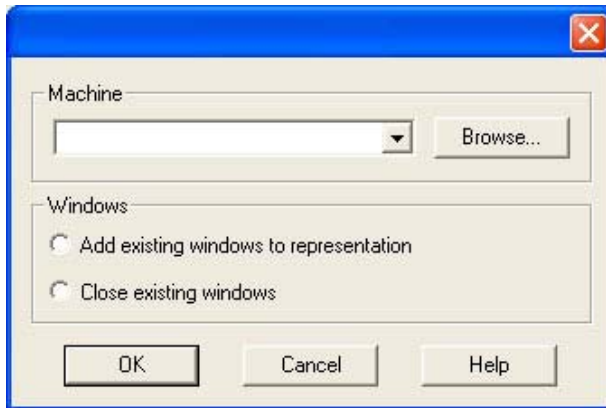
- Use this dialog to specify which machine is to be controlled using the Display Control application:
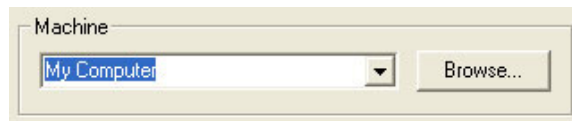
  - ✓ Use the drop down arrow to display a list of the most recently selected machines; the list will include **My Computer** to be used to connect to the machine where the Display Control application is running.

- Use this dialog to specify the Windows settings:
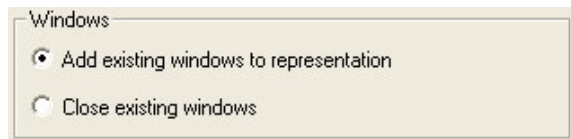
  - ✓ Add existing windows to representation: Displays the open windows.
  - ✓ Close existing windows: Closes all Display Control managed windows.

- Click on **OK** to connect to the selected machine.

Connecting the application using an external client

An external client connection is needed when you would like to run the Display Control Application from a different machine (= external client) over a network.

Therefore you will need to:

1. Install the **Display Control Application** on the external client by making the selection below during the installation process (see application installation paragraph)
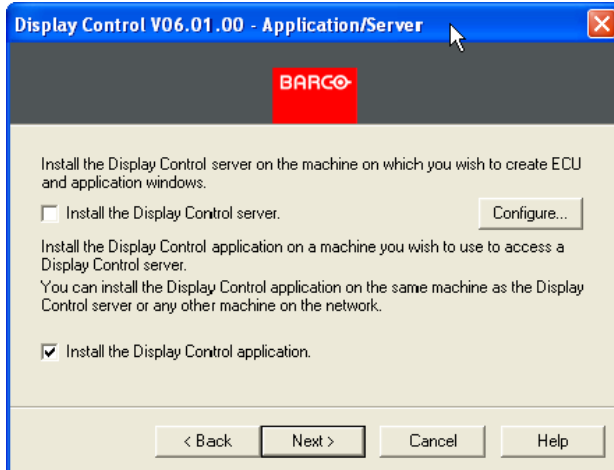
2. Connect the **external client to** the **Display Control Application** over the **network.** Therefore proceed as follow:

· Select **Connect...** from the File menu and the following dialog is displayed:
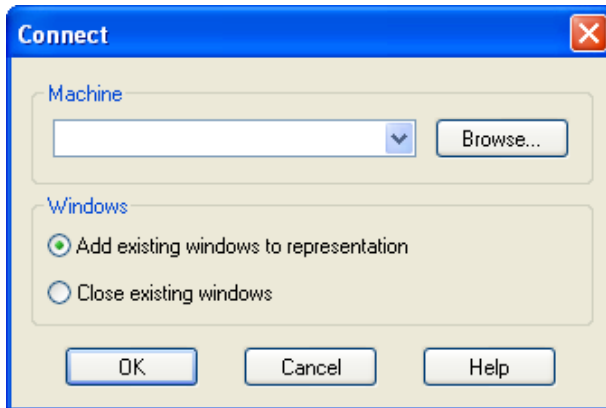
· Use this dialog to specify which machine is to be controlled using the Display Control application
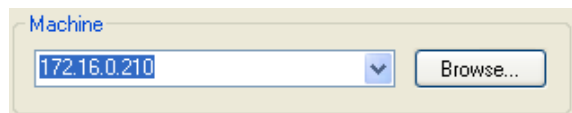
   ✓ The machine can be specified by name or by IP address.
   ✓ Select **Browse**... to locate a machine on the local network.

· Use this dialog to specify the Windows settings:
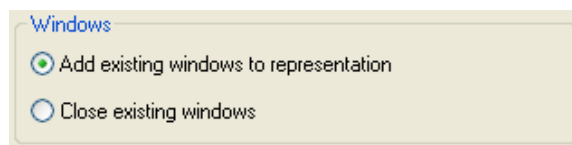
   ✓ Add existing windows to representation: Displays the open windows.

✓   Close existing windows: Closes all Display Control managed windows.

·   Click on **OK** to connect to the selected machine.

In case you connect to a machine that has been configured to **authenticate connections**:
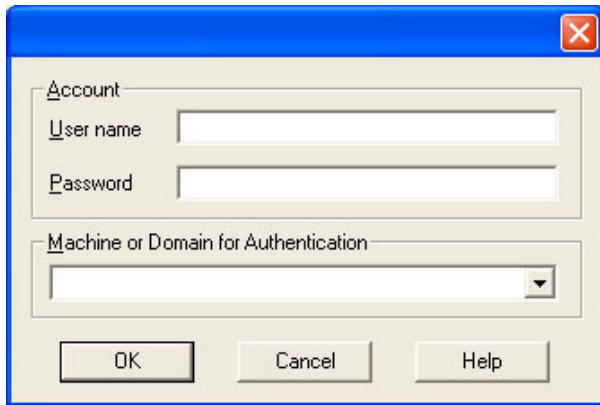
·   You will be required to provide a user name and password.
The user name and password must be for an account on the machine you are connecting to or on the domain if the machine is part of a domain.

- If the error message below is displayed one of the following problems has occurred:
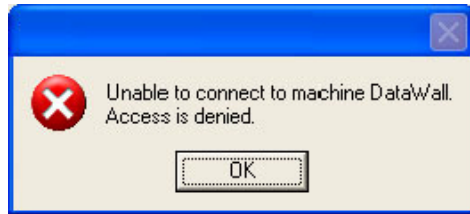
- ✓ The user name, the password or the machine/domain that you have entered are not correct. Try entering the details again.
- ✓ If the machine to which you are connecting is running Windows XP® Service Pack 2 and you have not entered a password, you will need to change your account so that you have a password.
- ✓ If the machine you are connecting to is running Windows XP® and it is not participating in a domain, you will need to change the Network Logon settings on the machine. Network Authentication.

- You can create a shortcut on your desktop that specifies the machine and your user name. When you double click on this shortcut, it will take you straight to the **Logon** dialog for you to enter your password.

Closing the current connection
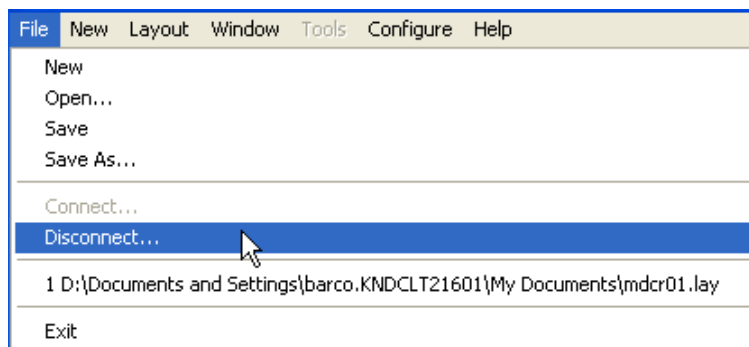
This option is only available when a connection is active.

When **Disconnect** is selected, the following dialog is displayed:

The dialog offers two selections.

Leave windows open:

- Leaves open all windows that Display Control manages.

Close windows:

- Closes all windows that Display Control manages.

If any changes to the layout have been made, a **Save** prompt will be displayed.

Opening one of the most recently used layout files
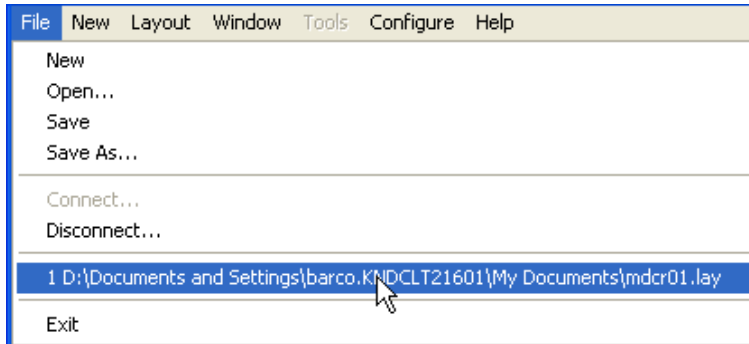
Most Recently Used File List:

The File Menu contains a section where the six most recently used files are displayed, the most recent at the top of the list. By selecting a particular file, the layout is re-loaded.

To select a file simply click on it or press the corresponding number on your keyboard.

If a file is selected that no longer exists then the file name will be automatically deleted.

Closing the application
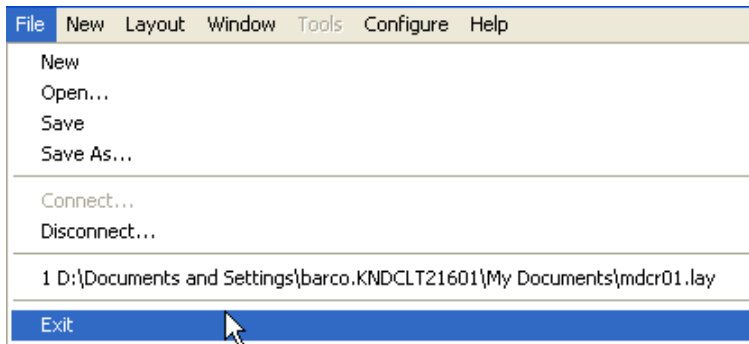
Select **Exit** to close the application.

4.3   Opening new Windows (New menu)

The New menu displays options for each window category

Preset Windows

Opening a new Preset Window

ECU Window

Opening a new ECU Window

Run Application

Opening the Run Application dialog

Opening a new Preset Window
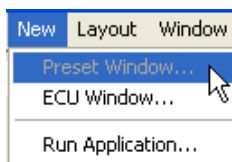
When **Preset Window...** is selected from the **New** Menu the following dialog is displayed:
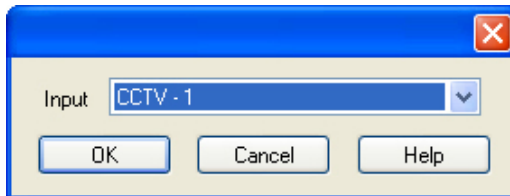
The New Preset Windows option will not be available unless an ECU card is installed and preset windows have been previously saved.

Use the drop down list to select the preferred Preset Window and click on OK. An ECU window with the same window settings, input properties and on screen display that was saved as a preset is created and displayed in the top left of the display.

Opening a new ECU Window

When **ECU Window...** is selected from the New Menu the following dialog is displayed:
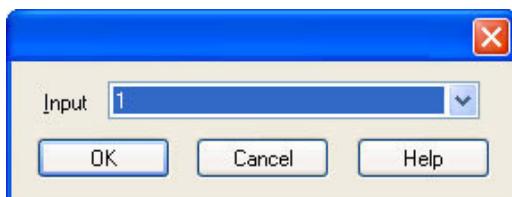
Opening the Run Application dialog

When **Run Application...** is selected from the New menu and the following dialog is displayed:
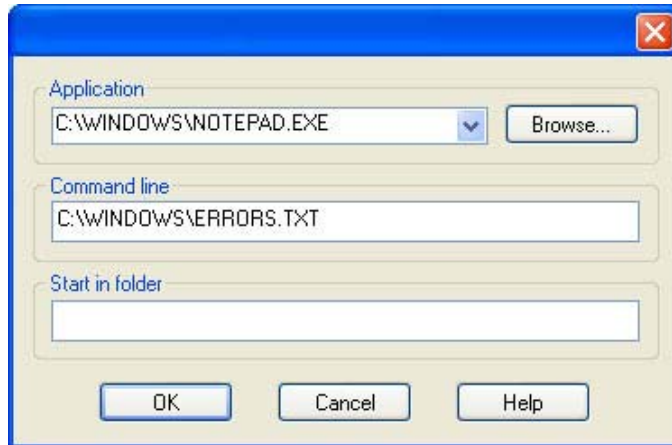
Application

The full path of the application executable must be specified.

You can select the application as follows:

- Use the drop down list to select a previously run application

- Click on the **Browse** button to select a new application

- Type in the full path of the application executable

Command line

Use the **Command line** edit box to specify parameters for the application. Many applications accept the name of a file to be opened. For details of command line arguments, refer to your application documentation.

Start in folder

The **Start in folder** is the folder in which the application is run.

If a **Start in folder** is not specified, the application will run in the folder in which it resides.

With **Run Application**, ECU-100 can launch any application. Unfortunately, each application works in its own way so the exact outcome when you launch an application varies.

DGCPlay

DGCPlay is a utility that will play movie files including WMV, MPEG, and AVI depending on the codecs installed on the system. Some media will require additional codecs not installed as standard components of Windows.

To activate the DGCPlay application open **Run Application** from the New Menu by specifying Dgcplay.exe as the target followed by the command line options separated by spaces. The Dgcplay.exe will be located in the Display Control folder

Command Line Options

Nomenclature

Italic - Information that you must supply.

Bold - Elements that you must type exactly as shown.

Ellipsis (...) - Parameter that can be repeated several times in a command line.

Between brackets ([]) - Optional items.

Between braces ({}) - Set of choices (separated by I) from which you must choose only one.

`Courier font` - Code or program output.

- **-path**=*media file path*

- **-Window**=[*left*],[*top*],[*width*],[*height*]

   ✓ Change the position and size of the window.
   ✓ All the values are optional but the commas must be used.

- **-WindowStyle= {BorderAndTitleBar|BorderOnly|NoBorderOrTitleBar}**

- **-repeat={Yes|No}**

RealVNC Viewer

When you run RealVNC Viewer it will display a dialog asking you for a RealVNC server and then display another dialog for a password for that server. You may not be able to respond to these dialogs.

Once a connection has been made using RealVNC Viewer, you can save the connection details to a configuration file. The configuration file can be specified on the command line allowing RealVNC Viewer to run without displaying any dialogs.

Saving the Configuration File:

- Connect to the machine you wish to view with RealVNC Viewer.

- Click on the icon at left end of the title bar to display the menu.

- Select **Save connection info as...**

- Choose a file name and a folder and click on **Save**.

- You will be asked Do you want to save the password to this file? Click on **Yes**.

Using the Configuration File

In the Run Application dialog:

- In the Application box put the full path of the RealVNC viewer application.

For example:

C:\Program Files\RealVNC\vncviewer.exe

- In the Command Line box put /config followed by the full path of the configuration file. For example:

/config "C:\Documents and Settings\User\ My Documents\file.vnc"

If the configuration file name or path contains spaces, enclose the path in quotes.

Microsoft PowerPoint®

To open a PowerPoint presentation as a slide show, use the following command line:

/s "C:\Documents and Settings\User\My Documents\presentation.ppt"

If the presentation file name or path contains spaces, enclose the path in quotes.

For a slide show to continue cycling through the slides, the PowerPoint window must be the active window.

Only one PowerPoint application can be running at a time. If you try to start PowerPoint while it is already running, the second PowerPoint sends a message to the first and then exits.

When a layout file is opened, ECU-100 closes the windows and applications it is responsible for and then creates the windows specified in the layout file. The windows and applications are sent messages to close them. The PowerPoint application is run to create a PowerPoint window.

If the existing PowerPoint application has not finished closing by the time ECU-100 tries to open the new presentation, it is possible that a message to open a new PowerPoint presentation and a message to close are sent to the existing PowerPoint application. The result is that PowerPoint closes.

4.4   Creating grids, rulers and guides (Layout menu)

The Layout Menu enables you to create grids, rulers and guides in the Display Control application.
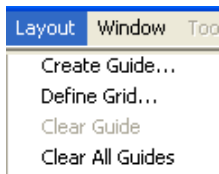
Create Guide

Define Grid

Clear Guide

Clear all Guides

Create Guide
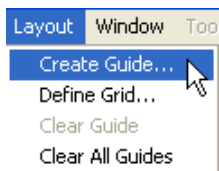
Select the **Create Guide** option and the following dialog is displayed:
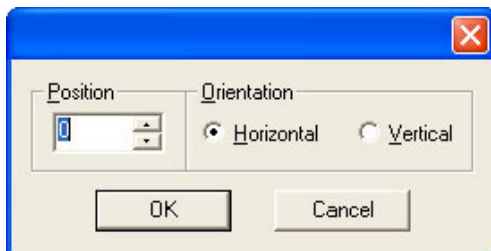
Select the **Orientation**, either horizontal or vertical. Use the up/down arrows to adjust the position of the guide i.e. the number of pixels from the top for vertical or left for horizontal then click on **OK**. A guide is then created at the specified position.

You can also create a guide by clicking on one of the rulers.

Define Grid
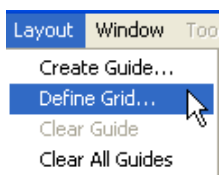
Using the **Define Grid** option, a grid may be placed over the representation to assist in the positioning of windows. The grid has a three pixel snap-to-grid functionality.
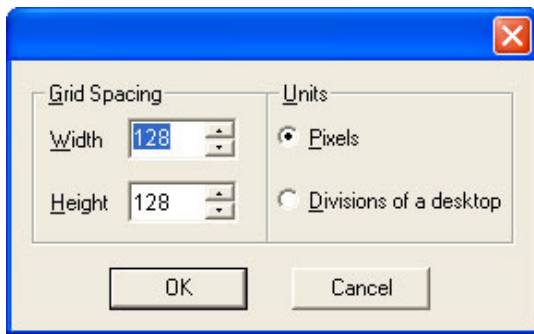
Using the up and down arrows, select the size of grid required.

Pixels

The grid can be defined by pixel size i.e. 150 x 150 pixels.

Divisions of a desktop

This option will divide the desktop into equal sized rectangles depending on the number of divisions selected.

When the correct grid spacing has been selected, click on **OK** and a grid will be displayed in the representation window.

To re-set a defined grid you must first select the Clear all Guides option otherwise the previous grid will remain displayed.

Clear Guide
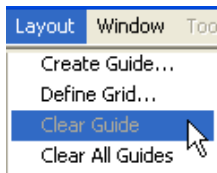
Right click on a guide in the ruler and select this option to clear the guide.

Clear all Guides
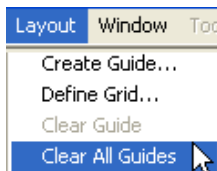
The **Clear All Guides** option removes all guides from the ECU-100 application window.

4.5 Adapting Window menu options (Window menu)

The options contained in the Window menu will not be activated unless windows are displayed in the application.
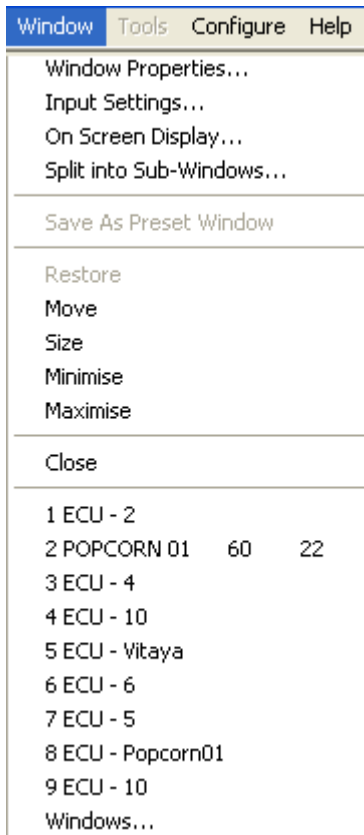
Window Properties

Input Settings

On Screen Display

Split into Sub-Windows

Save As Preset Window

Restore

Move

Size

Minimise

Maximise

Close

Windows

NOTE:

The Window menu options will not be activated unless windows are displayed in the application.
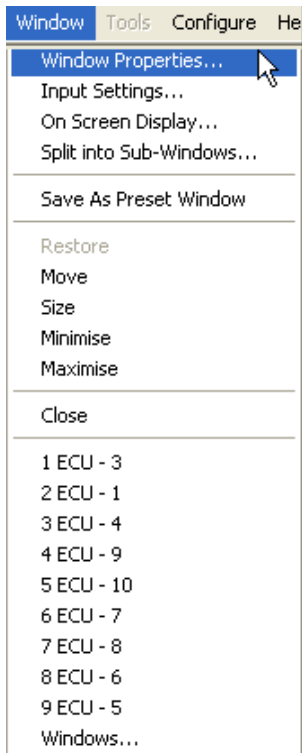
Window Properties

Selecting **Window Properties** from the **Window Menu** will display a properties dialog box relevant to the type of window currently active:

ECU Properties

Application Window Properties

ECU Properties

The ECU Window Properties sheet enables you to change the appearance of the ECU window. When the required changes have been entered, click on **Apply** or **OK** for the changes to take effect.

Select "Window Properties" with an **ECU Window** activated and the following dialog is displayed.
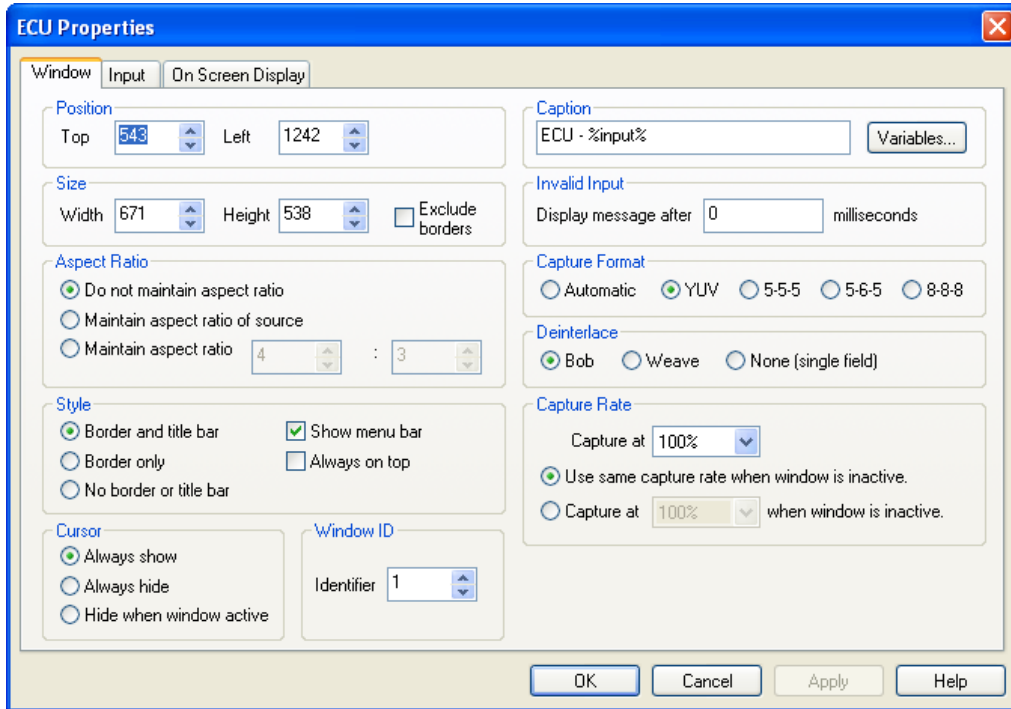
The ECU Window Properties dialog has the following groups:

Position

Size

Aspect Ratio

Style

Cursor

Window ID

Caption

Invalid Input

Capture Format

Deinterlace

Capture Rate

Position

The position of the selected ECU window can be adjusted to suit your requirements using the following controls:

Top and Left

Using the up and down arrows the selected ECU window can be positioned anywhere on the desktop. The values are in pixels. The value Top = 0 and Left = 0 will position the ECU window in the top left corner of the desktop. When the required values have been entered, click on **Apply** and the changes will take effect.

Size

The size of the selected ECU window can be adjusted to suit your requirements using the following controls:
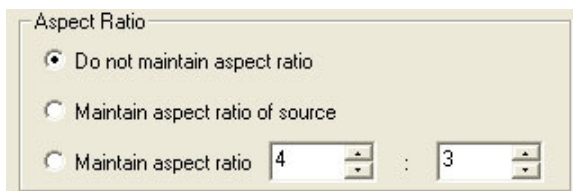
Width and Height

The required width and height of the ECU window can be determined by using the up and down arrows. The values are in pixels.

If **Exclude borders** is selected then the numbers in the "Width" and "Height" controls will not include the borders, title bar and menu, only the active area within the application window.

Aspect Ratio

Maintain aspect ratio enables the data to be resized by changing the height; the width is adjusted automatically so that the aspect ratio is maintained.

Do not maintain aspect ratio

Selecting **Do not maintain aspect ratio** enables the selected ECU window to be resized to any rectangular configuration without constraints.

Maintain aspect ratio of source

Checking the **Maintain aspect ratio** of source button will preserve the aspect ratio of the source captured by the ECU card in your machine.

If **Cropping** is not enabled on the **Input Properties** sheet then the "Width" and "Height" values displayed in the **Capture Settings** group on the **Input Properties** sheet are used to reflect the aspect ratio.

If **Cropping** is enabled then the Width and Height values in the cropping dialog are used as the aspect ratio.

Maintain aspect ratio

If you select **Maintain aspect ratio** you can specify the aspect ratio you would like the ECU window to have.

When the required values have been entered, click on **Apply** or **OK** and the changes will take effect.

Style

The appearance of the ECU window can be changed to suit your particular requirements:

Border and title bar

Select this option to display the border and title bar of the active ECU window.

Border only

Select this option to display the ECU window with just a border. In this state, the ECU window may still be resized using the borders.

No border or title bar

Select this option to display the source only. The ECU window can only be resized by using the Size and Position function as described above. See "How To Re-size a Window".

Click on Apply or OK and the style chosen will take effect.

Show menu bar

Select to display the ECU window menu bar.

If you want to restore the menu bar you can access the Window Properties sheet by right clicking in the ECU window and selecting Window Properties from the menu. Show menu bar can then be selected.

Always on top

If the Always on top option is selected the windows will be displayed in front of all others windows that are not always on top.

Cursor

Always Show

Always shows the cursor in the client area of the window.

Always Hide

Always hides the cursor in the client area of the window.

Hide when window active

Only hides the cursor in the client area of an active window. If the window is divided using the split screen function, the cursor is visible in all sub-windows that are not active.

NOTE:

Cursor hiding only works when cursor is stationary over the ECU window.

Window ID

Use the up/down arrows to select a required Window ID. The Window ID identifies a window enabling it to be modified from the command line. See Command Line Interface dialog.
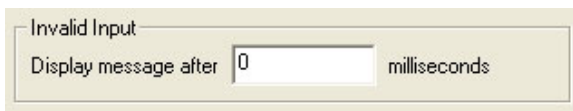
Caption

The **Caption** edit box can be used to change the caption in the title bar of the selected ECU window.

Variables

The Variables function is a means of displaying a changeable value in the title bar.

Invalid Input

Should the source become disconnected, switched off, changed to a mode that is out of range of the ECU capture card and no frames are being captured you have the option to:

Display message after - milliseconds

If you want to be made aware that the source cannot be captured then you can display a message informing you that no signal is being received for example:

Capture Format
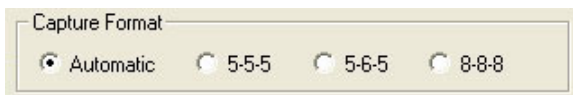
This option allows you select the pixel format you wish use. The Capture Format has an effect on the performance of a system.

Automatic

Select Automatic and the data is captured in the same pixel depth as the desktop.

5-5-5 or 5-6-5

If either of these options is selected, the format will be captured at 16 bit. For most systems this is by far the most efficient

8-8-8

If this option is selected then the format will be captured at 32 bit.

Deinterlace

Deinterlace is only available if an interlaced source is being captured.

Bob

Bob is more suited to captures displaying motion and offers higher frames per second.

Weave

Weave is more suited for images captured with little or no motion; any change in the captured image will cause artifacts known as tearing.

None

Only a single field will be displayed.

Capture Rate
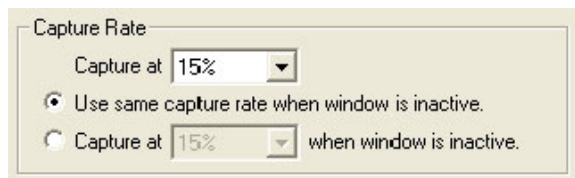
The **Capture Rate** control gives a degree of control over the capture rate by enabling you to select the percentage of frames to be captured from the source. 100% is the default capture rate.

For example:

If the refresh rate is 60Hz, selecting a capture at 15% will capture a maximum of 9 frames per second (FPS), selecting 10% will capture a maximum of 6 FPS.

If a capture rate of 100% is selected, an attempt is made to capture as many frames as possible. In this instance, the capture may be directed to the buffer at the same time as the buffer is being displayed. This can sometimes cause a single horizontal tear on moving images in the ECU application window.

A different capture rate can be selected for when the ECU window is inactive. This enables system resources to be managed more efficiently. Reducing the percentage of frames captured for an inactive window will free more system resources for other tasks.

Select **Capture at____ when window is inactive** *and using the drop down menu select the required capture rate for when the window is inactive.*

Application Window Properties
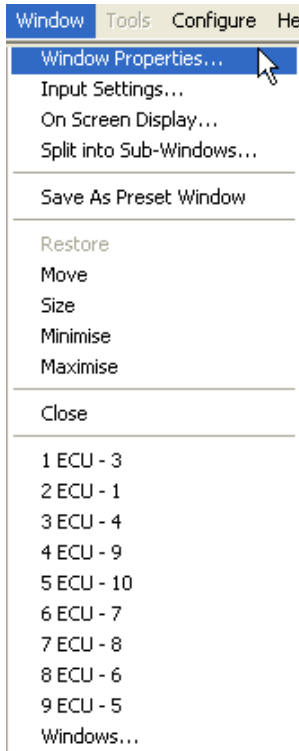
Select **Window Properties...** with an **Application** window activated and the following dialog is displayed.

There are various ways to access the Window Properties page, select from the following:

- In the ECU-100 application, with the window active, open the **Window menu** and select **Window Properties...** from the list of options.

- In the displayed window, open the **Window menu** and select **Window Properties...**

- In the ECU-100 application, place the cursor over the representation of the Window and click the right mouse button. Select **Window Properties...** from the list of options.

- Place the cursor over the active Window on the desktop, click the right mouse button and select **Window Properties...** from the list of options.

- In the ECU-100 application, if a window has been minimized an application icon will be displayed in the application mini bar. Place the cursor over the application icon and right click the mouse button. Select **Window Properties...** from the list of options.
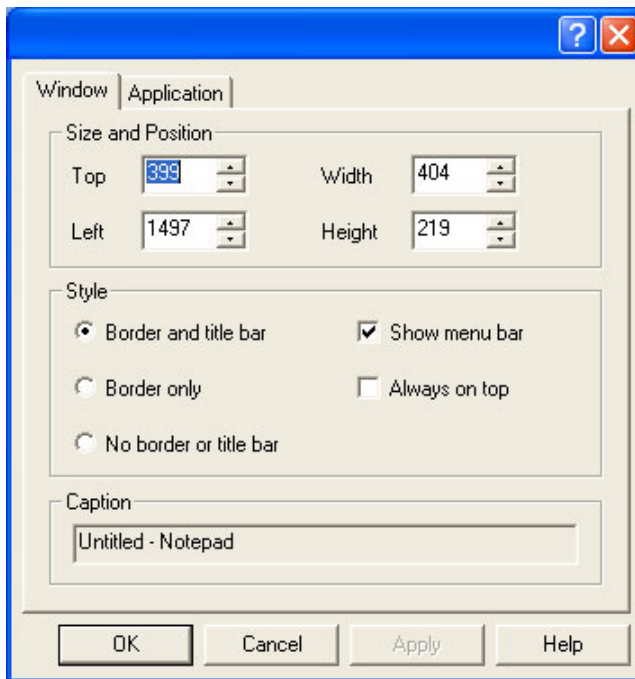
When this dialog is displayed, the application window is disabled, preventing other users from modifying or closing it.

Size and Position
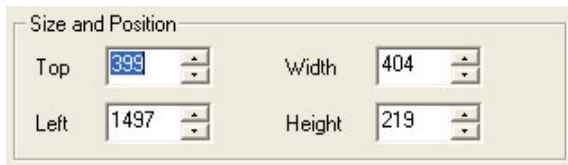
The size and position of the window can be entered manually. The position values are relative to the top left corner of the desktop.

Style
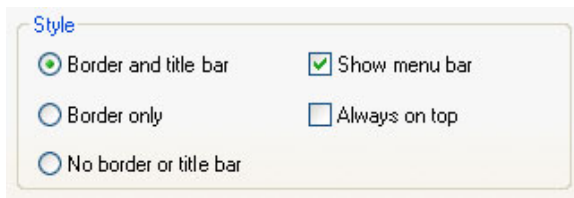
The Style options can be used to alter the border style of the window, for example, select the **Border only** option and the title bar will not be displayed, select the **No border or title bar** and the application only is displayed.

The Show menu bar option allows you to hide the menu bar.

If the Always on top option is selected the window is displayed in front of all others windows that are not always on top.

Caption

The caption box displays the title of the application window.

Input Settings
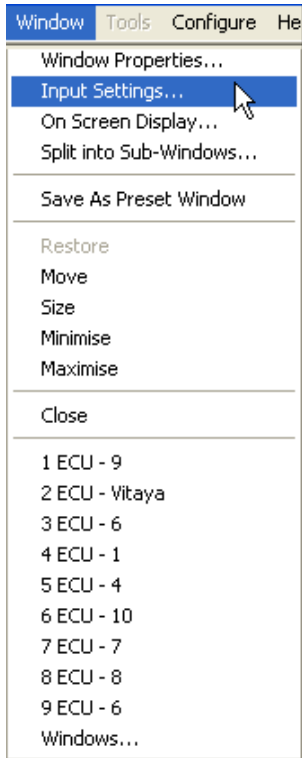
Selecting **Input Settings** from the **Windows menu** will display the Input Settings dialog relevant to the type of window currently active:

ECU Input Settings

Application Input Settings

ECU Input Settings

Accessing the ECU Input Settings.

There are various ways to access the Application Input Settings page, select from the following:

- In the Display Control application, with the Application window active, open the **Window menu** and select **Input Settings...** from the list of options.

- In the Display Control application, place the cursor over the representation of the Application Window and click the right mouse button. Select **Input Settings...** from the list of options.

- In the Display Control application, if a window has been minimized an application icon will be displayed in the application mini bar. Place the cursor over the application icon and right click the mouse button. Select **Input Settings...** from the list of options.

The Input Settings sheet allows you to control how the source is captured and displayed in the ECU window. All the controls on this sheet are interactive; therefore, any changes made are shown when the next frame of data is displayed in the ECU window.

There are two types of Input Setting sheet in the ECU application; RGB/DVI capture and Video capture.

RGB/DVI
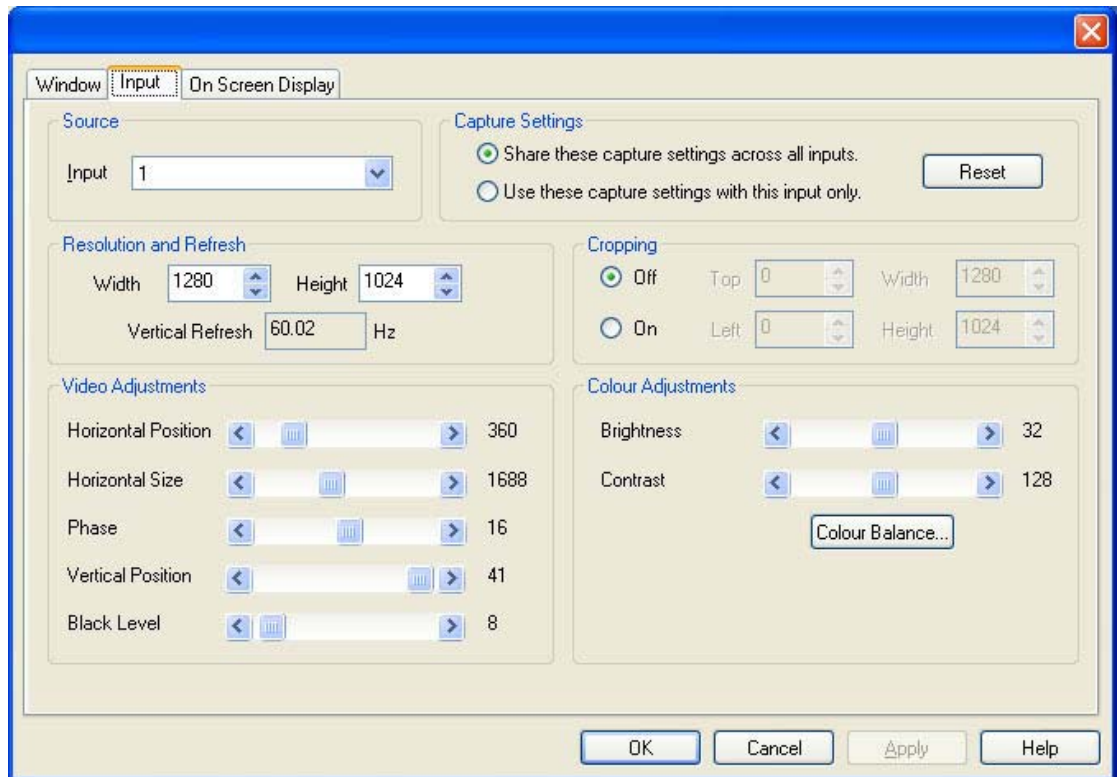
Video Capture
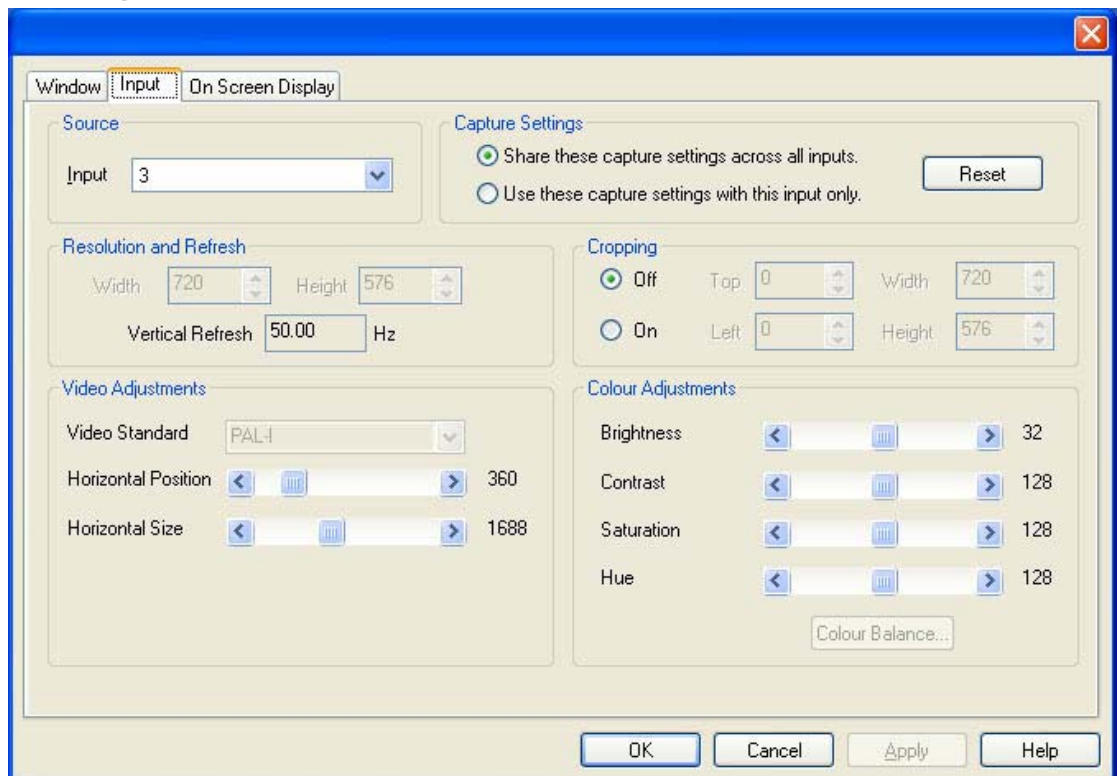
The ECU Input Settings sheet has the following groups:

Source

Capture Settings

Resolution and Refresh

Cropping

**Video Adjustments**

Colour Adjustments

Source
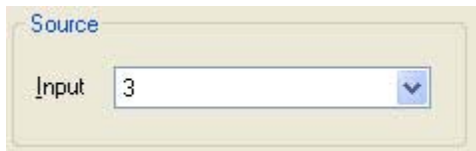
The Source control specifies which source is displayed in the window. Select the input from the drop down list. You can give the inputs meaningful labels in the Configure ECU dialog.

When you change inputs, the Capture Settings controls may change.

See the ECU User Manual for information on the input connections.

Capture Settings
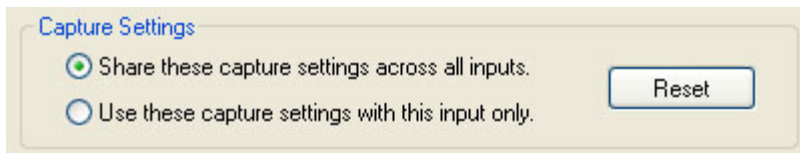
Share these capture settings across all inputs.

With **Share these capture settings across all inputs** selected, the changes you make to the capture settings controls will be shared with other inputs of the same type. The capture settings will also be saved automatically so that the next time a ECU window is created, the capture settings can be used.

Use these capture settings with this input only.

With **Use these capture settings with this input only** selected, the changes you make to the capture settings controls will be applied to this ECU window only.

Reset

The Reset button will discard any changes you have made to the capture settings and display the source with default settings.

Resolution and Refresh

Width

The width specifies the horizontal resolution of the source.

Height

The height specifies the vertical resolution of the source.

Vertical Refresh

The Vertical Refresh specifies the vertical refresh rate of the captured source.

Cropping

The cropping controls allow you to display a specific area of the signal within the ECU window. The co-ordinates are relative to the start position defined by Horizontal Position and Vertical Position.

For a single ECU window, a different cropping area is remembered for each video mode. If the source being captured changes, a different cropping area is used.

Video Adjustments

RGB/DVI

Composite/S-Video

The Video Adjustment controls describe the video timings being used to capture the source. Ideally, the values should match the video timings of the source.

Horizontal Position

The Horizontal position specifies the offset, in pixels, from the end of the horizontal sync to the start of the active video.

Horizontal Size

The Horizontal size specifies the total number of pixels used to sample lines within the source. This includes the active portion of video and blanking.

Phase

If the captured image is noisy, it may be that the signal is being sampled close to the transition between pixels. The Phase control allows you alter the point at which the signal is sampled. You can think of it as a fine horizontal position control. This control is not available when composite or S-Video is being captured.

Vertical Position

The Vertical position specifies the offset, in lines, from the end of the vertical sync to the start of the active video. This control is not available when composite or S-Video is being captured.

Black Level

At the beginning of each line the source must be sampled to measure the black level. This sample is used as a reference for determining the brightness of the pixels on the line. The Black Level control allows you to specify the position at which the black level of the signal is sampled. This control is not available when composite or S-Video is being captured.
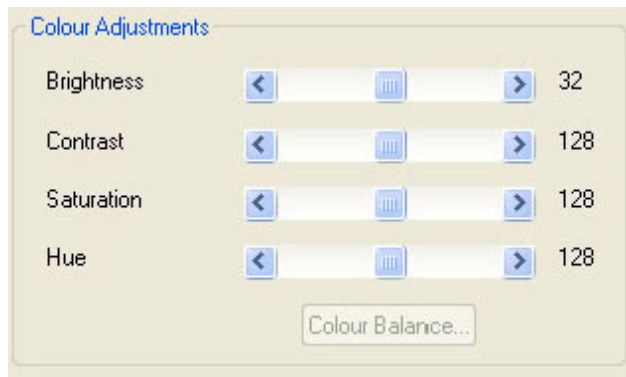
NOTE:

The Video Adjustment settings are not available when a DVI source is being captured.

Video Standard

Select the required video standard from those available in the drop down menu.

Colour Adjustments

Brightness

The Brightness control allows you brighten or darken the capture.

Contrast

The Contrast control allows you to alter the difference between the light parts of the capture and the dark parts of the capture.

Saturation

The Saturation control allows you to increase or decrease the saturation

Hue

The Hue control allows you to increase or decrease the hue. This is only available for NTSC captures.

Click on the **Colour Balance...** button to change the colour balance for the specified input connector. This function is only available when capturing analog sources.

NOTE:

All colour controls are the only ones available when a DVI source is being captured. The Red, Green and Blue controls are for RGB analog only.

Colour Balance

The Colour Balance dialog allows you to change the colour balance for an input connector.

All controls in this dialog box are interactive so the changes you make will be seen when the next frame of data is displayed in the ECU window.

All Colours

The Brightness and Contrast controls alter the settings for all Colours. These are the same as the Brightness and Contrast controls in the ECU Input Settings sheet.

Red

The red controls allow the brightness and contrast of the red part of the ECU signal to be adjusted a small amount relative to the over all brightness and contrast settings.

Green

The green controls allow the brightness and contrast of the green part of the ECU signal to be adjusted a small amount relative to the over all brightness and contrast settings.

Blue

The blue controls allow the brightness and contrast of the blue part of the ECU signal to be adjusted a small amount relative to the over all brightness and contrast settings.

Reset

The Reset button will set all the values to the default settings.

Application Input Settings
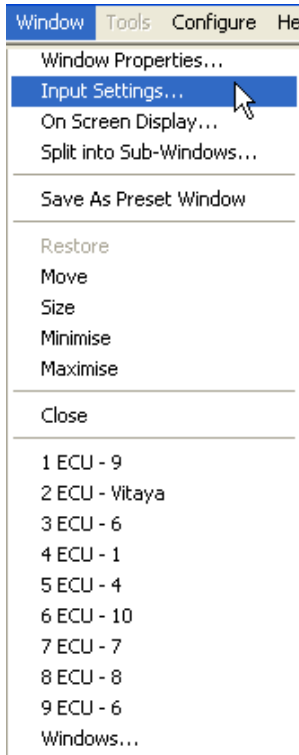
Accessing Application Input Settings

There are various ways to access the Application Input Settings page, select from the following:

· In the Display Control application, with the Application window active, open the **Window menu** and select **Input Settings...** from the list of options.

· In the Display Control application, place the cursor over the representation of the Application Window and click the right mouse button. Select **Input Settings...** from the list of options.

· In the Display Control application, if a window has been minimized an application icon will be displayed in the application mini bar. Place the cursor over the application icon and right click the mouse button. Select **Input Settings...** from the list of options.

Select Input Settings with an **Application** window activated and the following dialog is displayed.
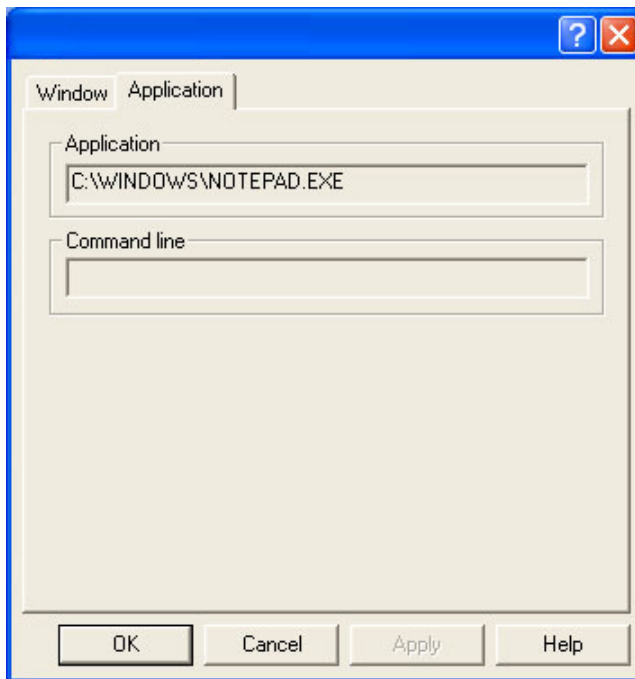
When this dialog is displayed, the application window is disabled preventing other users from modifying or closing it.

The dialog displays the application currently selected and the command line arguments (if any) associated with the application.

On Screen Display
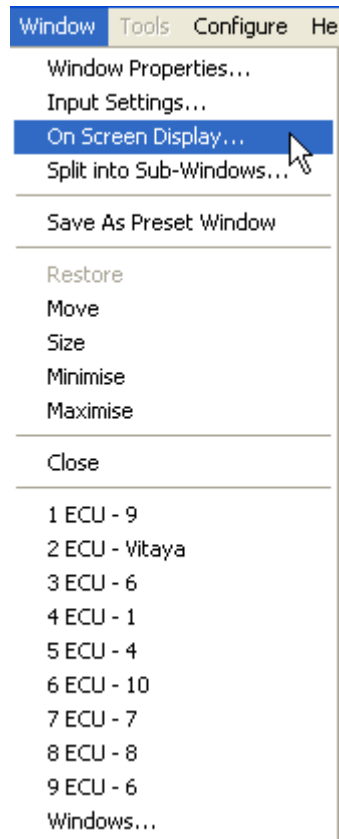
Selecting **On Screen Display** from the **Window Menu** will display the screen display dialog relevant to the type of window currently active:

ECU On Screen Display Properties

Accessing ECU On Screen Display.

There are various ways to access the On Screen Display (OSD) properties sheet, select from the following:

- In the Display Control application, with a window active, open the **Window menu** and select **On Screen Display...** from the list of options.

- In the displayed window, open the **Window menu** and select **On Screen Display...**

- In the Display Control application, place the cursor over the representation of the window and click the right mouse button. Select **On Screen Display...** from the list of options.

- Place the cursor over the active window on the desktop, click the right mouse button and select **On Screen Display...** from the list of options.

In the Display Control application, if a window has been minimized an application icon will be displayed in the application mini bar. Place the cursor over the application icon and right click the mouse button. Select **On Screen Display...** from the list of options.
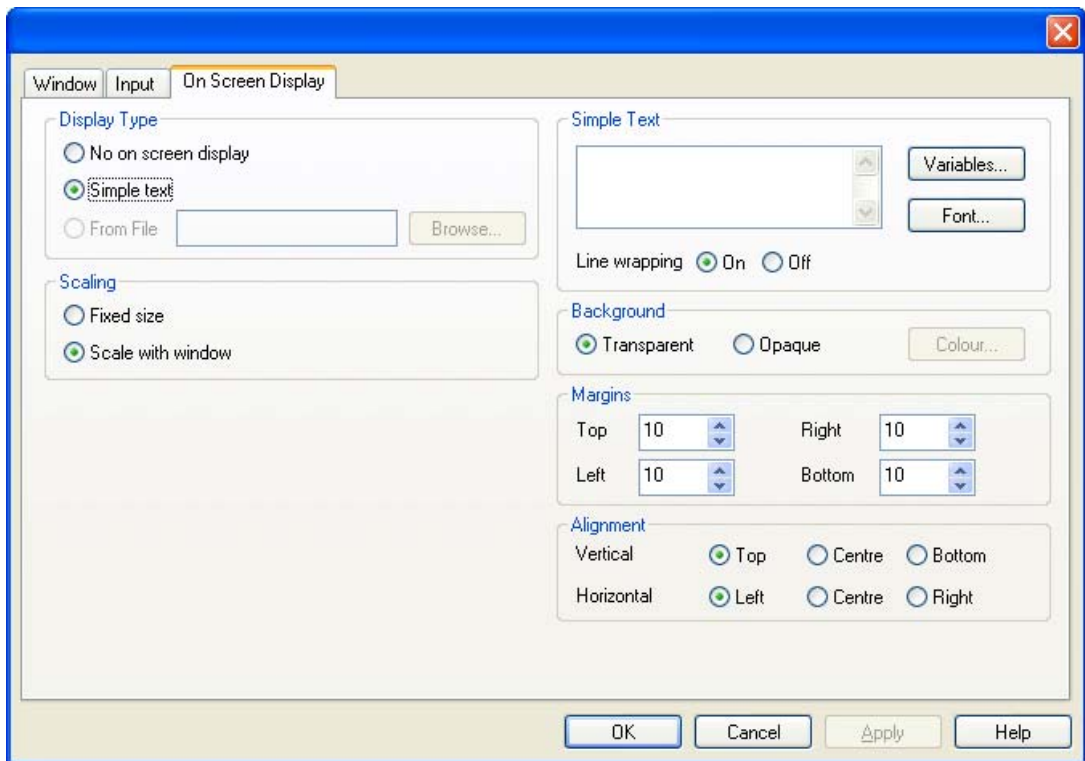
The On Screen Display sheet allows you to configure the On Screen Display in the ECU window. Any changes made to the settings on the On Screen Display sheet take effect immediately.

If a ECU window is opened without a source connected, any text entered in the On Screen Display dialog is not displayed until a source has been connected.

Display Type

No on screen display

Disables the OSD function.

Simple Text

Select to insert the required text into the Simple Text edit box. When the Simple text option is selected, the Simple Text, Background, Margins and Alignment groups are displayed on the OSD sheet.

From File

Not yet functional.

Scaling
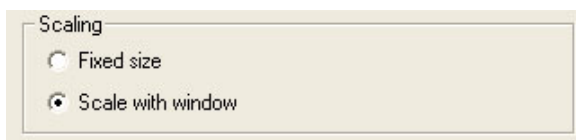
Fixed size

When Fixed size is selected, the OSD is displayed at the same size regardless of the size of the window.

Scale with window

When Scale with window is selected, the OSD is scaled up or down according to the size of the window.

Simple Text

To enter text for the OSD simply type the required message in the Simple Text edit box.

Variables

The Variables function is a means of displaying a changeable value in the title bar.

Line wrapping

With Line wrapping switched on, if a line of text does not fit between the margins, line breaks are inserted between words to produce shorter lines.

If Line wrapping is switched off, the text is displayed with the same spaces and line breaks as it has been entered.

Font

Select Font and the following dialog is displayed:
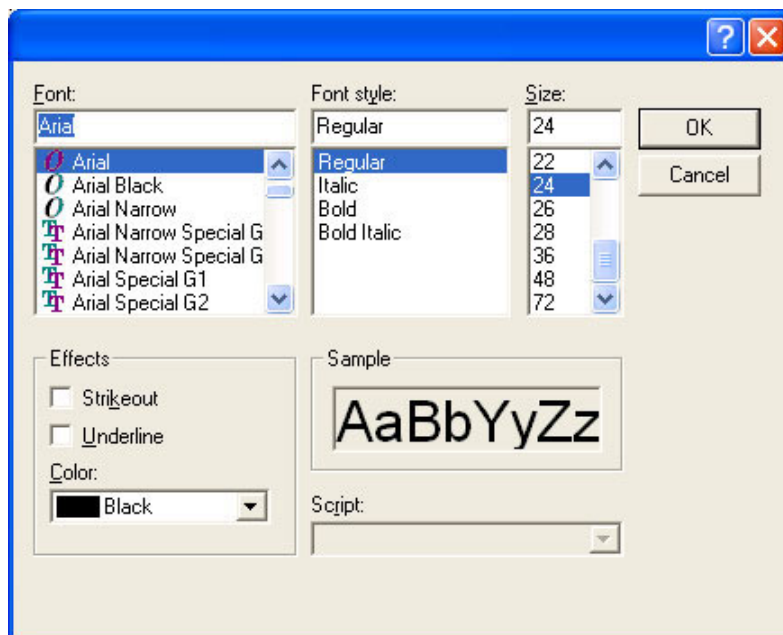
Using the groups available, the characteristics of the font can be determined.

Background

Background

Transparent | Opaque | Colour...
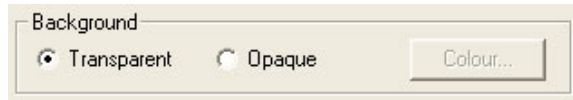
Transparent

When Transparent is selected, the ECU capture in the area behind the text is visible.

Opaque

When Opaque is selected, the area behind the text is displayed in a chosen colour. A range of colours are available by selecting **Colour...**

Margins

Margins

Top 10   Right 10

Left 10   Bottom 10

The margins define the area in which OSD is displayed.

If Scale with window is selected, the margins are measured in pixels of the source. If Fixed size is selected, the margins are measured in pixels of the interior of the ECU window.

Any part of the OSD that falls outside the margins is not displayed.

Alignment

Alignment

Vertical   Top   Centre   Bottom

Horizontal   Left   Centre   Right

The alignment controls allow you to position the OSD within the margins.

Vertical

If you select **Top**, the top edge of the OSD will be displayed against the top margin.

If you select **Centre**, the centre of the OSD will be positioned half way between the top and bottom margins.

If you select **Bottom**, the bottom edge of the OSD will be displayed against the bottom margin.

Horizontal

If you select **Left**, the left edge of the OSD will be positioned against the left margin and each of the individual lines will be left aligned.

If you select **Centre**, the centre of the OSD will be positioned half way between the left and right margins and each of the individual lines will be centered.

If you select **Right**, the right edge of the OSD will be positioned against the right margin and each of the individual lines will be right aligned.

Split into Sub-Windows
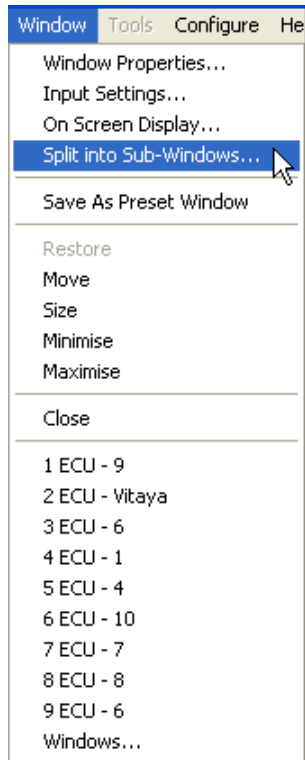
Accessing the Split into Sub-Windows dialog

There are various ways to access the Split into Sub Windows page, select from the following:

- In the Display Control application, with an ECU window active, open the **Window menu** and select **Split into Sub-Windows**.

- In the displayed ECU window, open the **Window menu** and select **Split into Sub-Windows**

- In the Display Control application, place the cursor over the representation of the ECU window and click the right mouse button. Select **Split into Sub-Windows** from the list of options.

- Place the cursor over the active ECU window on the desktop, click the right mouse button and select **Split into Sub-Windows** from the list of options.

The Split into Sub-Windows function only applies to ECU windows

Select **Split into Sub-Windows** and the following dialog is displayed:
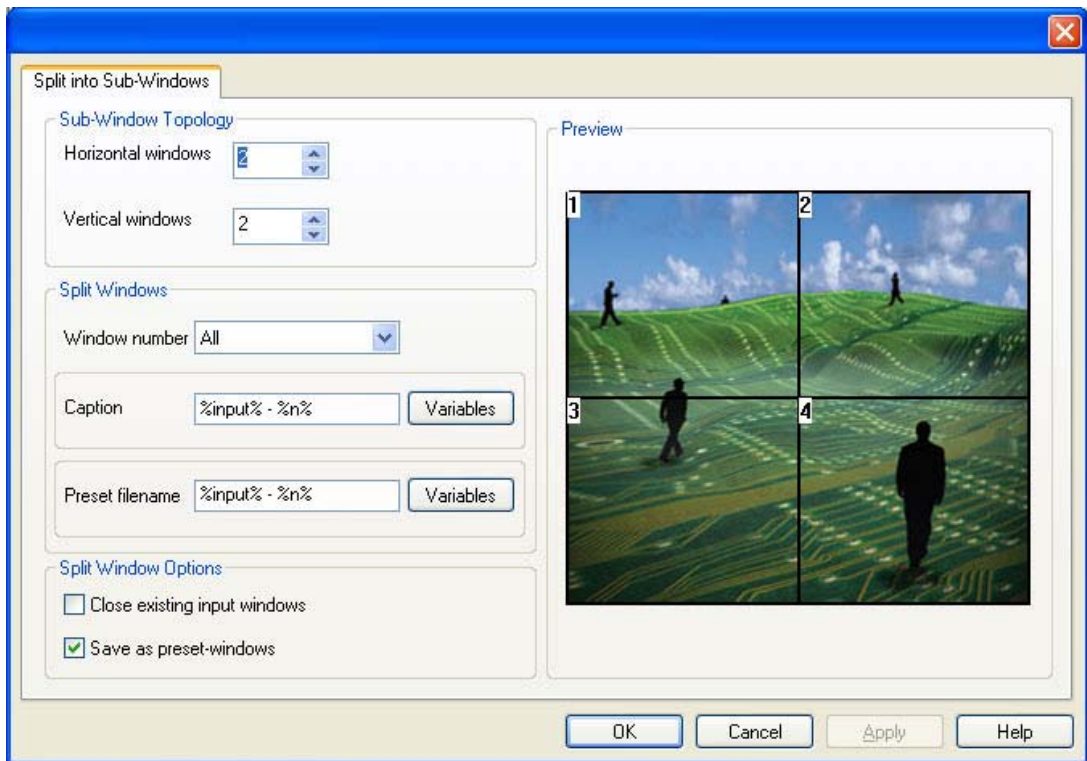
The Split into Sub-Windows dialog is used to divide an active ECU window into sub-windows. Each sub-window will display a cropped portion of the image that was shown in the original window. The sub-windows will all be the same size and will occupy the same total screen size and position as the window that is being split.

NOTE:

Once a window has been split the sub-windows will replace the original window and the split operation cannot be undone.

Cropping restrictions may result in pixel loss for certain input resolutions and split topologies.

The Split into Sub-Windows dialog has the following groups:

Sub-Window Topology

Split Windows

Split Window Options

Preview

Sub-Window Topology
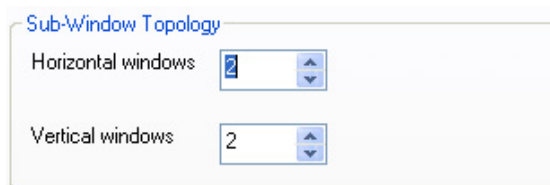
The Sub-Windows topology group allows you to select the number of sub-windows that will be created when the window is split. The number of sub-windows must be between two and sixteen inclusive. However, the maximum number of split-windows may be limited by

the size of the window being split. The minimum sub-window size is 160x120 pixels. Therefore, in order to split a window into sixteen sub-windows then the size of the window being split must be at least 640x480 pixels. Use the horizontal and vertical window edit boxes to select the desired sub-window topology.

Split Windows

The Split-Windows group allows you to select the caption names and preset filenames for the sub-windows. The preset filenames are used to save each sub-window as an individual template called a preset. These presets can subsequently be used in Display Control to create an instance of the sub-window.

Window Number

The Window number drop down list allows you to select a specific sub-window. The Caption and Preset filename edit boxes may then be used to set the desired caption and filename for the respective sub-window. When **All** is selected then any changes to the Caption and Preset filename edit boxes will be applied to all of the sub-windows.

Caption
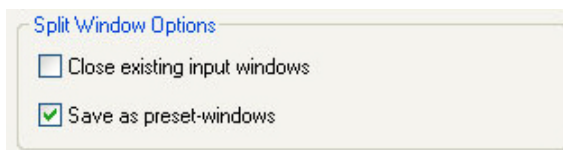
The Caption edit box is used to change the name in the title bar of the selected ECU sub-window(s).

Preset filenames

The Preset filename edit box allows you to select the filename (without suffix) that will be used to save the preset for the specific sub-window selected in Window number. The preset filenames must be unique with respect to each other. If the input variable is inserted into the Preset filename for a specific sub-window then it will be substituted with the name of the input itself before the preset is saved.

The Preset filename edit box will only be enabled if the Save as preset-windows checkbox is selected.

Split Window Options

The Split Window Options allow you to select whether existing ECU windows are closed or saved as presets when the window has been split.

Close existing input windows

If selected, other displayed ECU windows from the same input will automatically close when the window is split. ECU windows from other inputs are not affected.

By default, Close existing input windows is not selected.

Save as preset-windows

If selected, then the sub-windows will be saved as Display Control preset files when the window is split.

By default, Save as preset-window is selected.

Once all options have been selected, click OK to split into sub-windows.

Preview

The preview frame displays an image showing how the window will look after it is split into sub-windows.
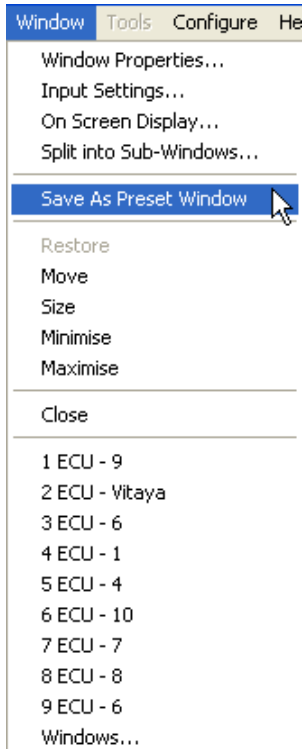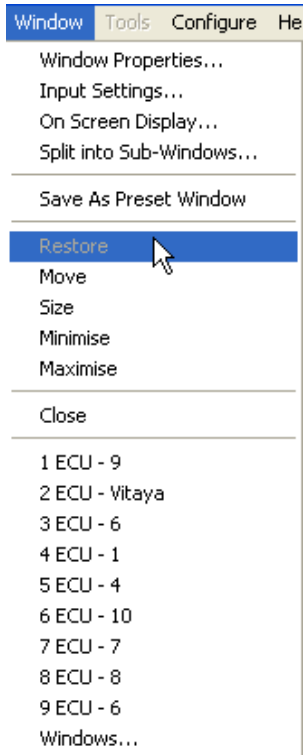
Save As Preset Window

Once a window has been configured and the window properties and cropping have been set, the window can be saved as a preset. The presets are saved with a .*WCP* file extension in a folder called Preset Windows inside the directory where Display Control Server was installed.

To save an ECU window as a preset, select a displayed ECU window and then select **Save as Preset** from the **Window menu.** Alternatively, **right click** on the **ECU window** and select **Save as Preset**.

Restore

Window | Tools | Configure | He
Window Properties...
Input Settings...
On Screen Display...
Split into Sub-Windows...

Save As Preset Window

Restore
Move
Size
Minimise
Maximise

Close

1 ECU - 9
2 ECU - Vitaya
3 ECU - 6
4 ECU - 1
5 ECU - 4
6 ECU - 10
7 ECU - 7
8 ECU - 8
9 ECU - 6
Windows...

This option restores the current window. This option is only available when the window is minimized or maximized.

Move
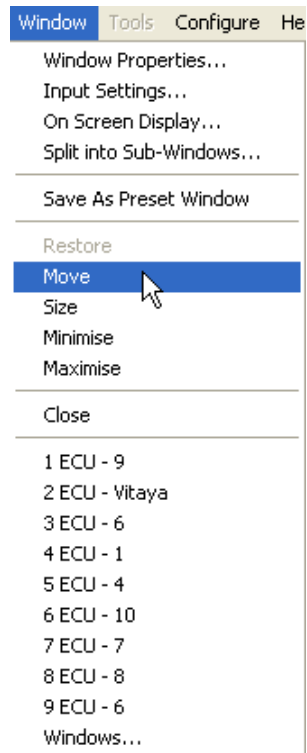
The selected window can be moved using the keyboard interface of the representation. This option is not available when the window is minimized or maximized.

Size

Window | Tools | Configure | He
Window Properties...
Input Settings...
On Screen Display...
Split into Sub-Windows...

Save As Preset Window

Restore
Move
Size
Minimise
Maximise

Close

1 ECU - 9
2 ECU - Vitaya
3 ECU - 6
4 ECU - 1
5 ECU - 4
6 ECU - 10
7 ECU - 7
8 ECU - 8
9 ECU - 6
Windows...
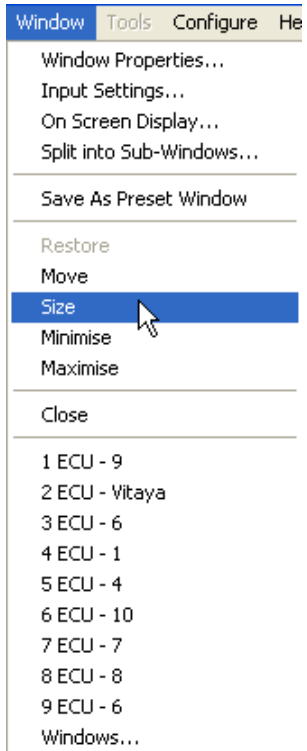
The size of the selected window can be changed using the keyboard interface of the representation. This option is not available when the window is minimized or maximized.

Minimise
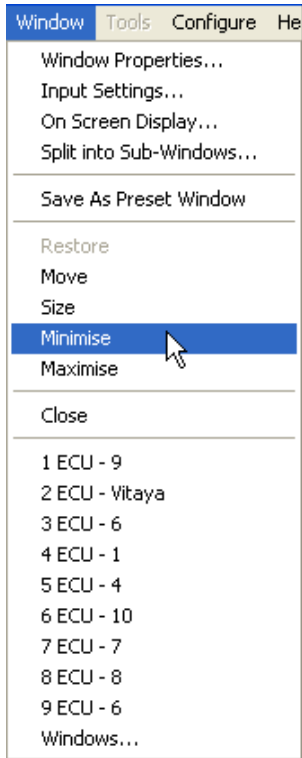
Selecting this option minimises the selected window and an icon representing the minimised window is displayed in the bottom left corner of the representation.

Maximise
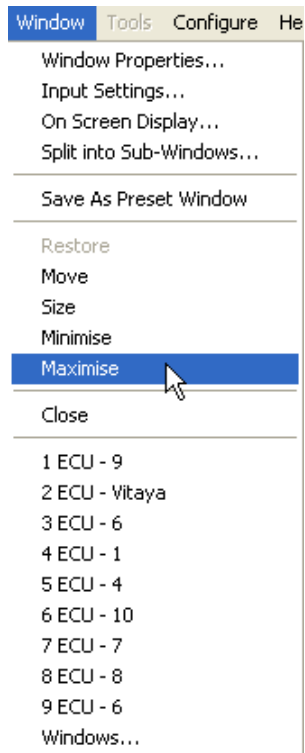
Selecting this option maximises the window across the desktop of the target machine.

Close
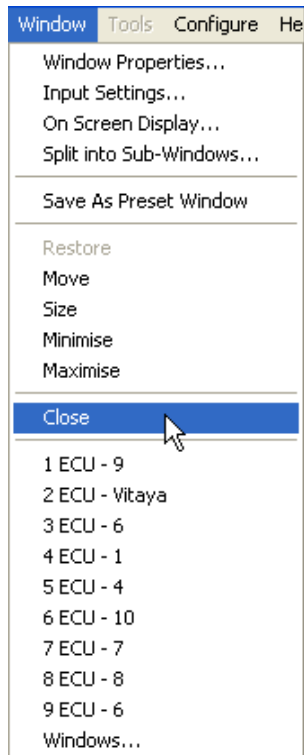
Select this option to close the selected window.

Windows
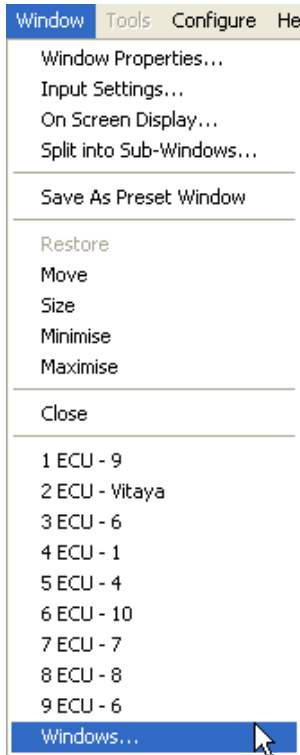
Selecting **Windows...** from the Windows Menu displays the following dialog:
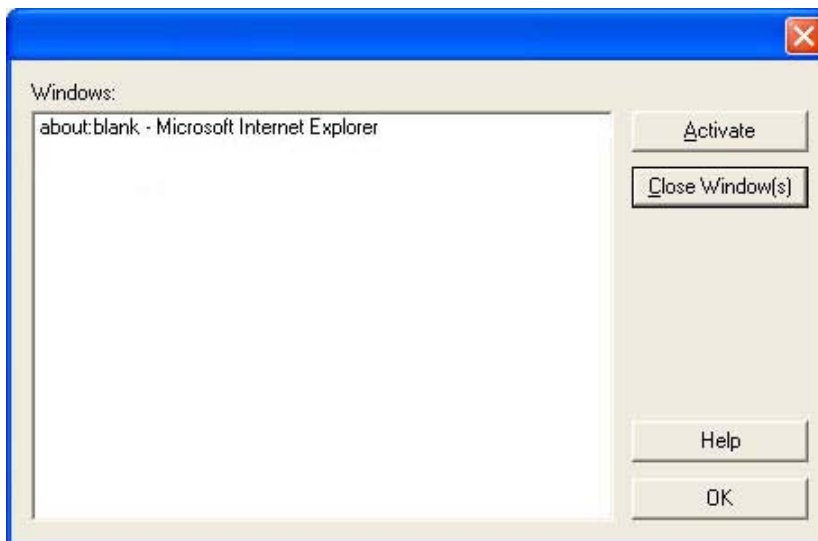
The Windows dialog displays a list of the windows being controlled by the Display Control application.

If you click on a single window in the list, you can activate or close the window using the buttons.

If you click on multiple windows with the Ctrl key held down, you could close the selected windows by clicking on the Close button.

Click on **OK** to close this dialog.

4.6   Accessing other tools (Tools Menu)

The tools menu displays a list of available tools in use in conjunction with Display Control.

4.7   Configuring types of window to be displayed (Configure Menu)

The configure menu allows you to configure the types of window to be displayed.
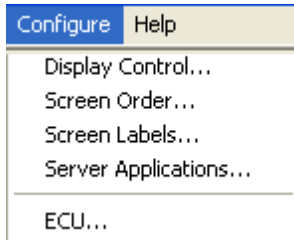
Display Control
Screen Order
Screen Labels
Server Applications
ECU

Display Control
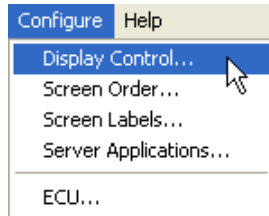
Select **Display Control** from the **Configure menu** and the following dialog is displayed:
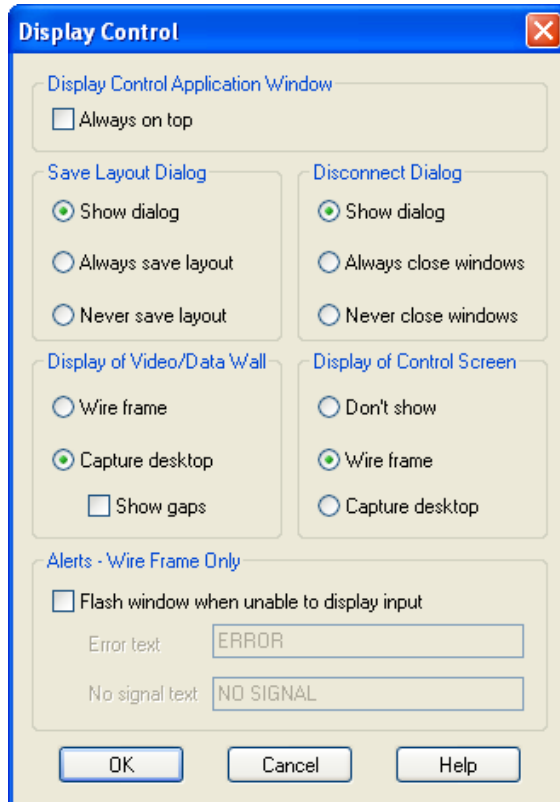
Display Control Application Window

Always on top

This option, if selected forces the Display Control application window on top of all other application windows.

Save Layout Dialog

Select **Show dialog** to show the Save Layout Dialog in the application. Select **Always save layout** and layout changes will automatically be saved. When **Never save layout** is selected, layout changes will never be saved.

Disconnect Dialog

When **Show dialog** is selected, the Disconnect Dialog is displayed in the application. When **Always close windows** is selected, windows will be closed automatically. When **Never close windows** is selected, windows will never be closed automatically.

Display of Video/Data Wall

The Display Control application can be configured to display a capture of the desktop within the application window.

Select **Wire frame** to display a wire frame representation in the Display Control application window.

Select **Capture desktop** and the desktop is displayed in the Display Control application window. The captured desktop is refreshed approximately every second. Capturing the desktop will use up more system resources than the wire frame display.

Show gaps enables you to display any desktop gaps you have created on the captured desktop. This function is only available when **Capture desktop** is selected.

Display of Control Screen

A non-Barco graphics card such as an on board graphics adapter can be used as a Control Screen for the Display Control application. If this method is used a representation of the Control Screen is displayed in the Display Control application.

Display of Control Screen enables you to configure how the control screen is displayed in the Display Control application window.

Select **Don't show** and the Control Screen representation is removed from the Display Control application window.

Select **Wire frame** to display a wire frame representation in the Display Control application window.

Select **Capture desktop** and the desktop of the Control Screen is captured and displayed in the in the Display Control application window.

Alerts - Wire Frame Only

If it is not possible to display a ECU input, the area where the window is displayed in Display Control can be made to flash.

The reasons why a source cannot be displayed fall into two categories: no signal and error.

If no signal is detected the source has been disconnected or switched off.

If an error has occurred, one of the following has happened:

· The signal is beyond the capabilities of the hardware.

· There are no hardware resources available to display the signal.

· An error has occurred within the system.

You can switch the flashing of the windows on or off and change the text that appears when the input cannot be displayed.

Screen Order
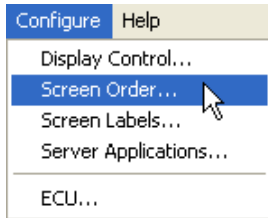
Select **Screen Order** from the **Configure menu** and the following dialog is displayed:
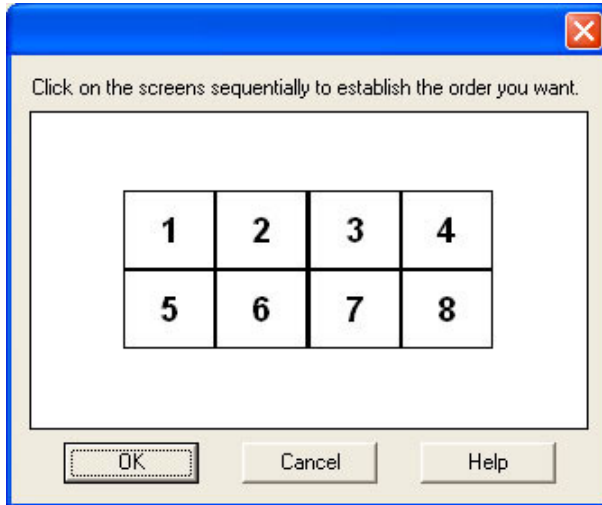
The dialog is used to set the order in which the screens appear on the desktop. When first opened, the dialog displays the current screen order.

The screen order is set by clicking the screens in the representation. The sequence the screens are selected defines what the screen order will be. When the screen is clicked, it will be shaded and a number will be allocated to the screen indicating its position in the sequence.
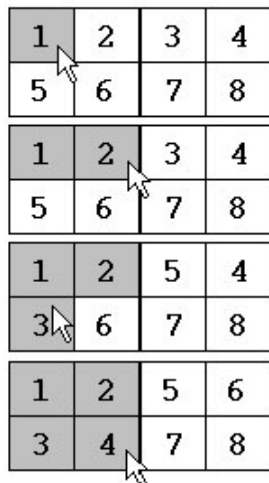
If an error is made whilst entering the sequence, click on **Cancel** and start again.

When the screen order has been entered, click on **OK**. To reject the new selection, click on Cancel.

NOTE:

Note: The new screen order will not be applied until the Display Control server is re-booted.

Screen Labels
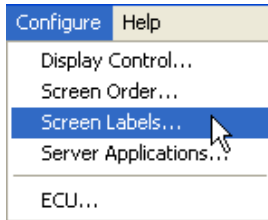
Select **Screen Labels** from the **Configure menu** and the following dialog is displayed:
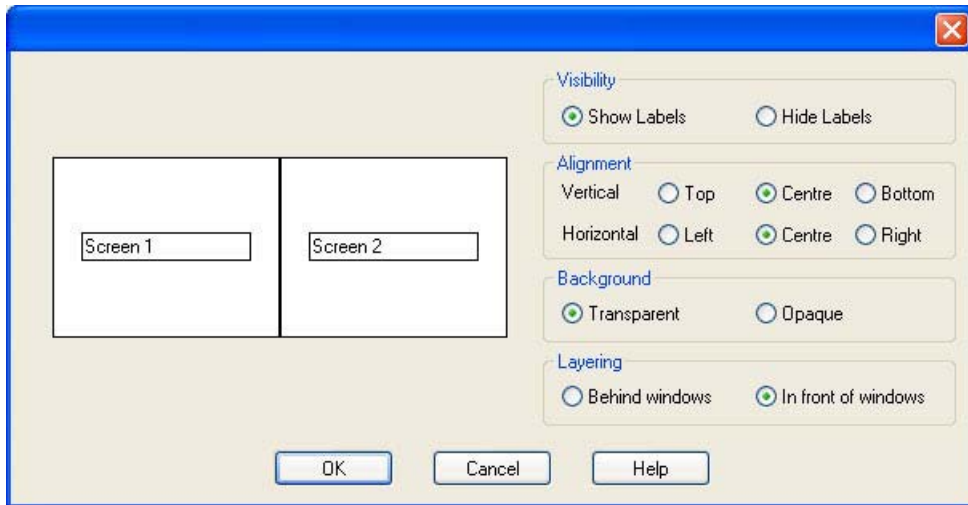
The **Screen Labels** dialog enables you to display labels on each screen within the Display Control application window.

To label the screens, click inside the label edit box in the screen representation on the left of the **Screen Labels** dialog and type in the desired label. Once the labels have been entered, click on **OK**.

Visibility

Once your screen labels have been created you can use the **Visibility** control to show or hide the labels in the Display Control application.

Alignment

Use the **Alignment** control to position the Screen Labels within the Display Control application; any changes to the alignment settings will affect the position of all the labels.

Background

The Screen Labels are created as black text on a white background. The **Background** control enables you to choose to display the white background or not.

To display the white background select **Opaque**, to remove the white background select **Transparent**.

Layering

The layering control allows you to set the labels to display behind or in front of the window representations in the Display Control application.

Server Applications
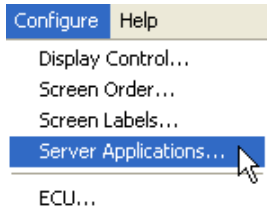
Selecting **Server Applications** displays the following dialog:
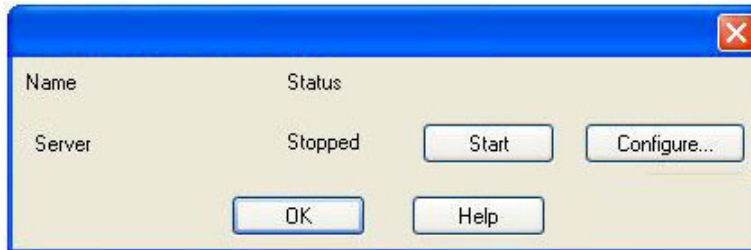
The **Server Application Manager** shows the status of each of the server applications installed on the Display Control server and allows them to be started, stopped and configured.

The **Status** column indicates the status of each of the server applications:

Running indicates that the server application is running correctly. To stop the server application click on the **Stop** button.

Stopped indicates that the server application is not running. To start the server application click on the **Start** button. If the server application fails to start, you will need to look in the application Event Viewer<XREF>.

Error indicates that the server application is running but that it encountered a problem that will prevent it functioning correctly. Click on the **Details** button to see a message describing the problem. You should correct the problem and start the server application again.

Configure
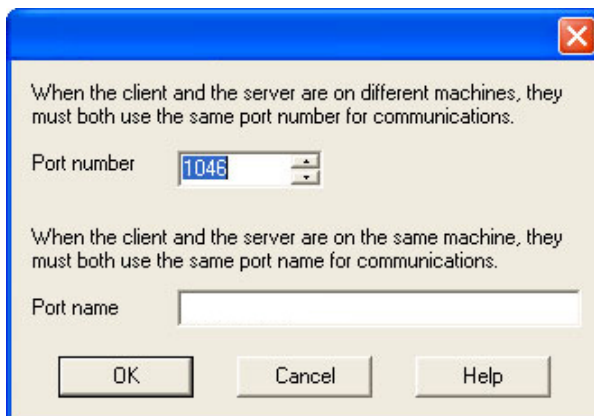
Port Number

The Port number describes the communication channel between the local and remote machines.

A port conflict will occur if another application is using the same Port number.

Port Name

The Port name describes the communication channel used when the application and server are on the same machine.

Once the Port number or Port name has been configured, click OK to continue. The server application will need to be stopped and started again for the changes to take effect.

ECU
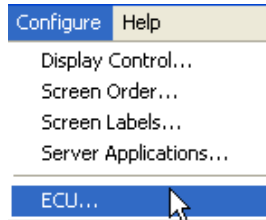
When **ECU** is selected the following dialog is displayed:
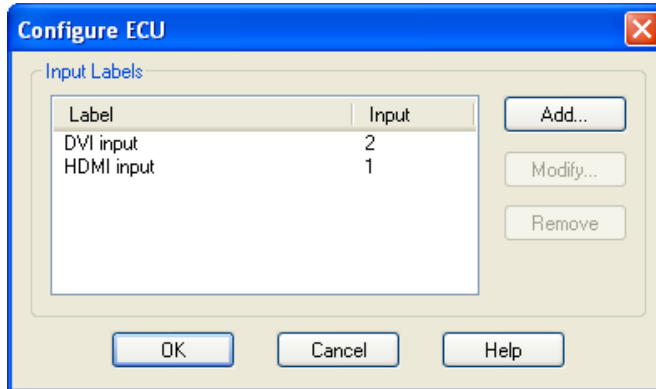
Input Labels

Click on **Add...** to create a new label and the following dialog is displayed:
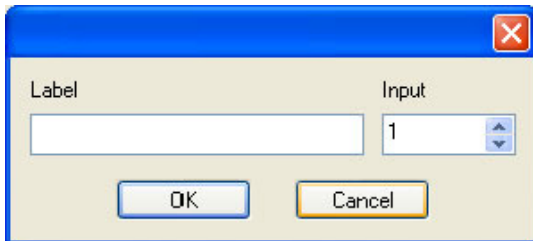
Label

Type the label in the Label edit box. The label can be up to 31 characters long with no leading or trailing spaces. Only one label can be created for each input.

Use the up/down arrows to select an ECU input.

Click on OK and the label will be added to the list of Input Labels in the Configure ECU dialog box.

The label will also be displayed in the list of available ECU Sources on the Input Settings sheet.

4.8   Information about Display Control (Help Menu)

The **Help Menu** provides information about how Display Control works and how to use the application.

Contents

About...

Contents

Selecting **Contents** opens the on-line help files displaying a contents tree containing all the help topics associated with the Display Control application.

About...

Selecting the **About...** option will display a dialog containing details of the version number of the Display Control application and the serial number of the red dongle which is inserted in the USB port. To upgrade the number of Render Station licenses the dongle serial number will need to be provided.

5 Hardware possibilities

5.1 Overview of preconfigured ECU hardware configurations

5.1.1 Naming convention hardware configurations

This is the naming convention used for the ECU hardware configurations. All items have a specific meaning explained below.

ECU	-	100	G	V	D	-	xx	yyy	zz

ECU	Element Capture Unit
100	100 range
G	"G"raphic Outputs
V	"V"ideo Inputs
D	"D"VI Inputs
xx	# Graphic Outputs
yyy	# Video Inputs
zz	# DVI Inputs

Table 1: ECU naming convention

Example :

ECU-100 GVD-0400804

Is a **Element Capture Unit**
providing **4 G**raphic Outputs (4 screen display wall)
capable of displaying **8 V**ideo Inputs and **4 D**VI Inputs.

5.1.2   Front view ECU-100 GVD-series
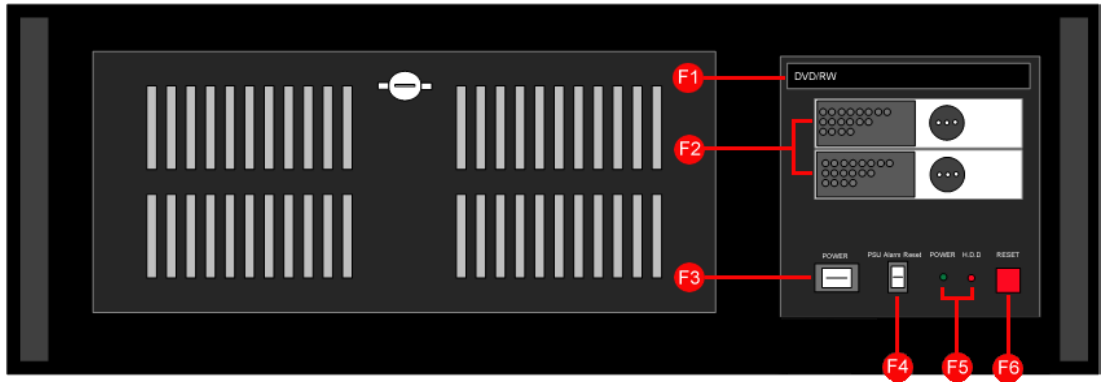
F1	DVDRW drive
F2	2 x 500GB removable SATA hard drives
F3	Power switch
F4	PSU Alarm Reset switch
F5	Operating LED's
F6	System Reset switch

Figure 17: Front view

5.1.3   Rear view ECU-100 GVD-0800808
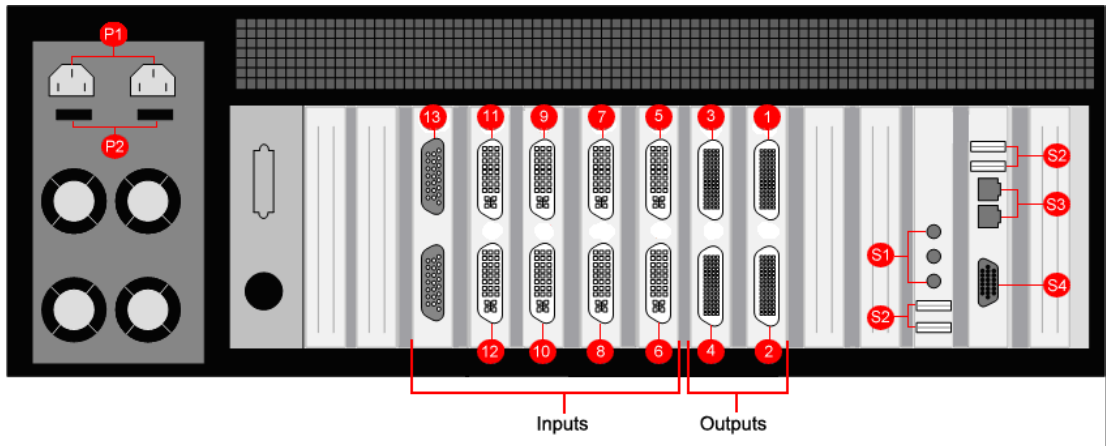
P1	Power Connectors	
P2	Main Power Switches	
1	Output connector for screens 1 and 2	
2	Output connector for screens 3 and 4	
3	Output connector for screens 5 and 6	
4	Output connector for screens 7 and 8	
5	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 1)
6	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 2)
7	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 3)
8	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 4)
9	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 5)
10	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 6)
11	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 7)
12	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 8)
13	Input connector for Composite/S-Video input	(Input 9–16)
S1	Aux Input connectors	
S2	USB Input connectors	
S3	Network connectors	
S4	VGA Output connector for the Control Screen	

Figure 18: Rear view ECU-100 GVD-0800808

5.1.4   Rear view ECU-100 GVD-0400804
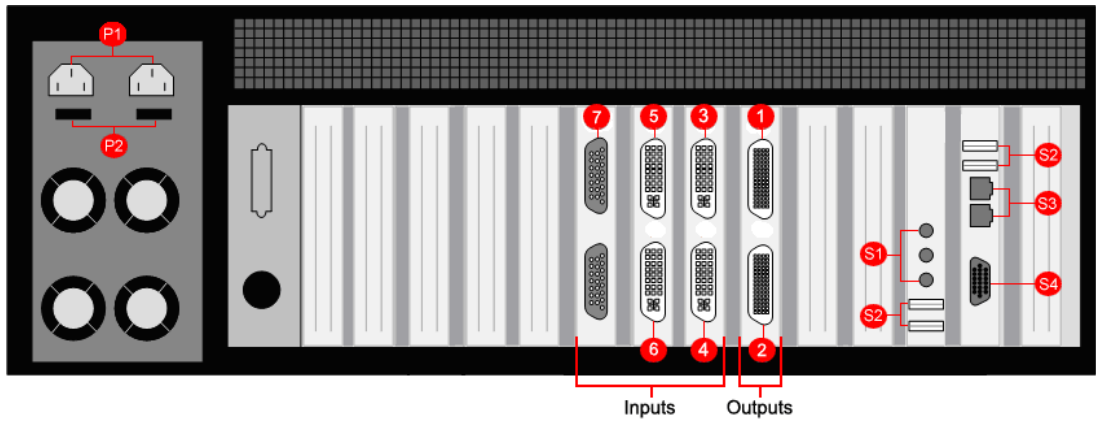
P1	Power Connectors	
P2	Main Power Switches	
1	Output connector for screens 1 and 2	
2	Output connector for screens 3 and 4	
3	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 1)
4	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 2)
5	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 3)
6	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 4)
7	Input connector for Composite/S-Video input	(Input 5-12)
S1	Aux Input connectors	
S2	USB Input connectors	
S3	Network connectors	
S4	VGA Output connector for the Control Screen	

Figure 19: Rear view ECU-100 GVD-0400804

5.1.5   Rear view ECU-100 GVD-1600808

P1	Power Connectors	
P2	Main Power Switches	
1	Output connector for screens 1 and 2	
2	Output connector for screens 3 and 4	
3	Output connector for screens 5 and 6	
4	Output connector for screens 7 and 8	
5	Output connector for screens 9 and 10	
6	Output connector for screens 11 and 12	
7	Output connector for screens 13 and 14	
8	Output connector for screens 15 and 16	
9	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 1)
10	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 2)
11	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 3)
12	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 4)
13	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 5)
14	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 6)
15	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 7)
16	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 8)
17	Input connector for Composite/S-Video input	(Input 9–16)
S1	Aux Input connectors	
S2	USB Input connectors	
S3	Network connectors	
S4	VGA Output connector for the Control Screen	

Figure 20: Rear view ECU-100 GVD-1600808

5.1.6   Rear view ECU-100 GVD-1601604

P1	Power Connectors	
P2	Main Power Switches	
1	Output connector for screens 1 and 2	
2	Output connector for screens 3 and 4	
3	Output connector for screens 5 and 6	
4	Output connector for screens 7 and 8	
5	Output connector for screens 9 and 10	
6	Output connector for screens 11 and 12	
7	Output connector for screens 13 and 14	
8	Output connector for screens 15 and 16	
9	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 1)
10	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 2)
11	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 3)
12	Input connector for DVI/HDMI/Component/RGB (VGA) input	(Input 4)
13	Input connector for Composite/S-Video input	(Input 5–12)
14	Input connector for Composite/S-Video input	(Input 6–13)
S1	Aux Input connectors	
S2	USB Input connectors	
S3	Network connectors	
S4	VGA Output connector for the Control Screen	

Figure 21: Rear view ECU-100 GVD-1601604

5.2 Graphic cards

5.2.1 Compatible hardware

Display Control is designed for use with the following hardware:

ECU-4HDOUT

ECU-2DVI

ECU-8VID

ECU-4HDOUT

ECU-4HDOUT operates under Windows® 7 and spreads the Windows desktop across the multi-screen display. Both portrait and landscape display configurations are supported. This is ideal for video wall and digital signage applications.

ECU-2DVI
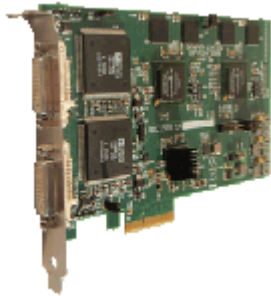
The ECU-2DVI is a PCI-e x4 dual channel capture card. It displays the output from one video source as a window on the desktop of your PC.

Display Control is able to launch, configure, format the input sources and also move and re-size the ECU window on the display wall.

ECU-8VID
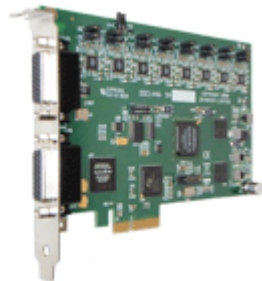
The ECU-8VID is a PCI-e x4 eight channel video capture card. It displays the output from one video source as a window on the desktop of your PC.

Display Control is able to launch, configure, format the input sources and also move and re-size the ECU window on the display wall.

6　Addendum

6.1　Online Help

In the Help menu of the Display Control application, an online help system can be consulted.

6.2　Troubleshooting

Common Error Messages:

[Access is denied](#)
[RPC Server unavailable](#)
[The endpoint is a duplicate](#)
[The remote procedure call failed and did not execute](#)
[Changing Screen Resolution](#)

Access is denied

This message means that the attempt to connect to the server application failed because the authentication information provided was not acceptable.

One of the following has occurred:

- The user name, the password or the machine/domain that you have entered are not correct. Try entering the details again.

- If the machine to which you are connecting is running Windows XP Service Pack 2 and you have not entered a password, you will need to change your account so that you have a password.

- If the machine you are connecting to is running Windows XP and it is not participating in a domain, you will need to change the Network Authentication settings on the machine.

RPC Server unavailable

This message means that the attempt to connect to the server failed.

- If you are connecting to My Computer:

- Is the server application running?

- Did an error occur that prevented the server application starting the RPC server?

- Are you using the correct port name?

If you are connecting across a network:

- Has the Display Control server been activated? When Display Control is installed on the server, a serial number must be entered to enable the networking features.

- If the server is running Windows XP Service Pack 2, is the firewall blocking the port for the server component? See Windows XP Service Pack 2 .

- Is the Display Control server configured for network access? Security Policy

- Is the server application running?

- Did an error occur that prevented the server application starting the RPC server?

- Are you using the correct port?

If a connection is possible with the Display Control application either remotely or locally, you can use the Server Application Manager dialog to find out if the server application has been installed, is running and which port and port name it is using and if an error occurred. In the Display Control application, go to the Configure menu and select Server Applications.

If a connection is not possible with the Display Control application, you will need to look at the application event viewer on the Display Control server.

The endpoint is a duplicate

This error message suggests that an attempt to open a communication port failed because it is already in use.

If the Display Control server has not been activated or the networking has been disabled in the Display Control Administrator dialog or Display Control has not been activated, the problem is with the port name.

If networking is enabled, the problem could be with either the port number or the port name.

You can find out the port number and the port name that the server application is using through the Server Application Manager dialog or the application event viewer.

You can find out which port numbers are in use on a machine with the netstat command. There is no way to find out which port names are in use.

Use the Server Application Manager to change the port number and/or port name and restart the server application.

The remote procedure call failed and did not execute

This is displayed when trying to contact a server application that has been stopped after it had been connected to successfully. Go to the Server Application Manager dialog and start the server application again.

Changing Screen Resolution

Prior to making any changes to the resolution, it is recommended that the ECU server be stopped beforehand. This can be done using the Server Application Manager dialog.

The servers retain resources on the graphics card which my not be available if the resolution is changed.

6.3   Event Viewer

Each of the server applications writes to the event log at following times:

- When the server application is starting.

- When the communications ports are opened.

- When an error occurs. The message includes a description of the error.

- When the server application is stopping.

To open the Event Viewer, select Administrative Tools from the Control Panel and click on the Event Viewer shortcut.

The information presented in the Event Viewer can be filtered for ease of use by selecting Filter from the View menu.
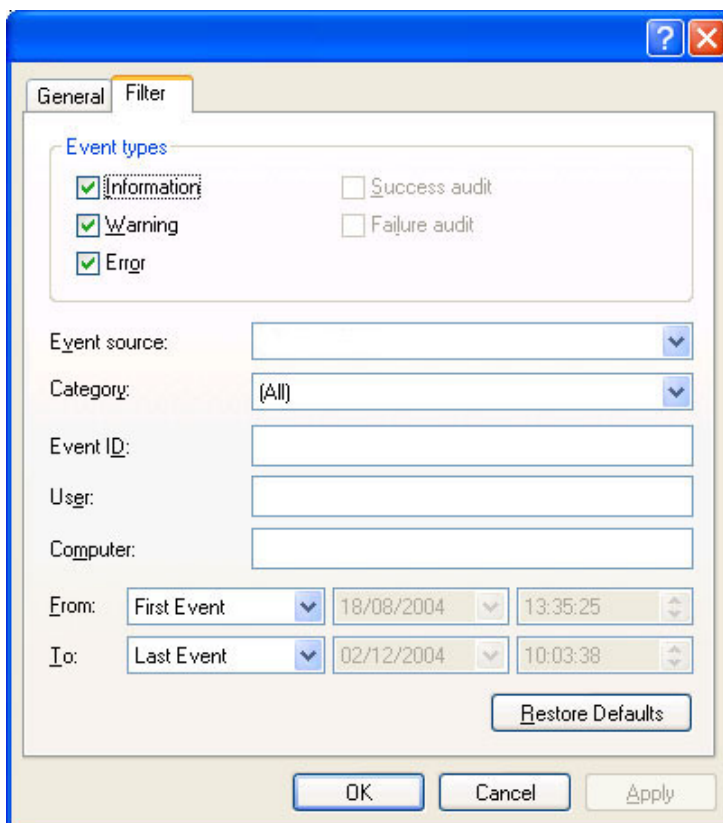
6.4   Networking

If you intend to allow access to your Display Control Server across a network you will need to:

Decide the Security Policy

Configure security level in Display Control

Configure your Operating System (Windows® 7)

Decide the Security Policy

In order for a user to connect to a Display Control server, the server must be listening on at least one port. These ports have a potential vulnerability. If your server is working in a secure environment, you probably don't need to worry about unauthorized access to the ports. If your Display Control server is on a network that is generally accessible, you will probably want to restrict access to the ports.

By default, Display Control will require that users who connect to a port on the Display Control server provide a user name and a password. The user name and password must correspond to an account on the Display Control server or if the Display Control server is participating in a domain, an account on the domain.

Configure security level in Display Control

To access the Display Control Administrator dialog select:

· *Start/All Programs/Display Control/ Display Control Administrator*

NOTE:

To use the administrative dialog you must be a member of the Administrator Group.

Use the dialog to select the level of security you require, if, as stated above, your Display Control server is working in a secure environment then you may wish to allow network connections without the need to authenticate.

If the Display Control server is on a generally accessible network then you may wish to select the **Use Windows user accounts to authenticate connections** option.

Once Network Access has been determined, click on **OK** and re-boot for the changes to be applied.

You must be a member of the Administrator group to run the Display Control Administrator program.

Configure your Operating System (Windows® 7)

If the Display Control server is not participating in a domain, you will need to change the Inbound Rules.

Prior to carrying out this procedure, ensure that a network cable is plugged in to your machine.

Open the Control Panel and click on Windows ® Firewall, the following dialog is displayed:
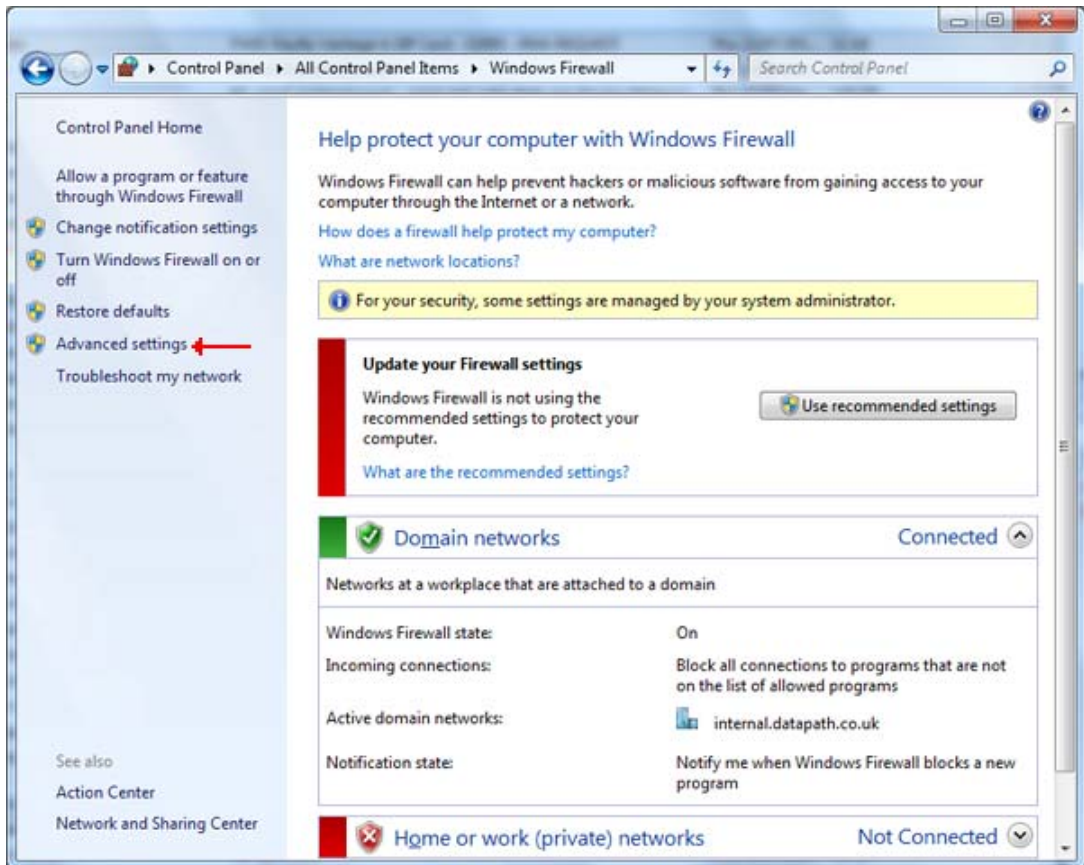
Click on Advanced settings to open the Advanced Setting dialog
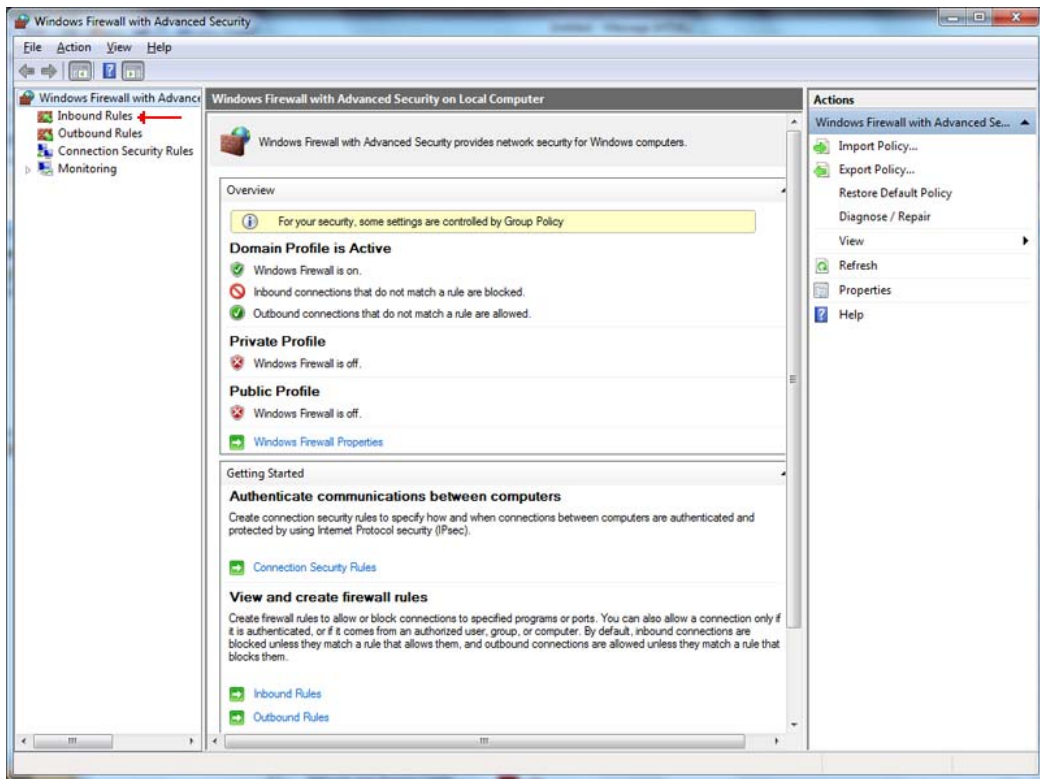
Click on Inbound Rules to open the Inbound Rules dialog:
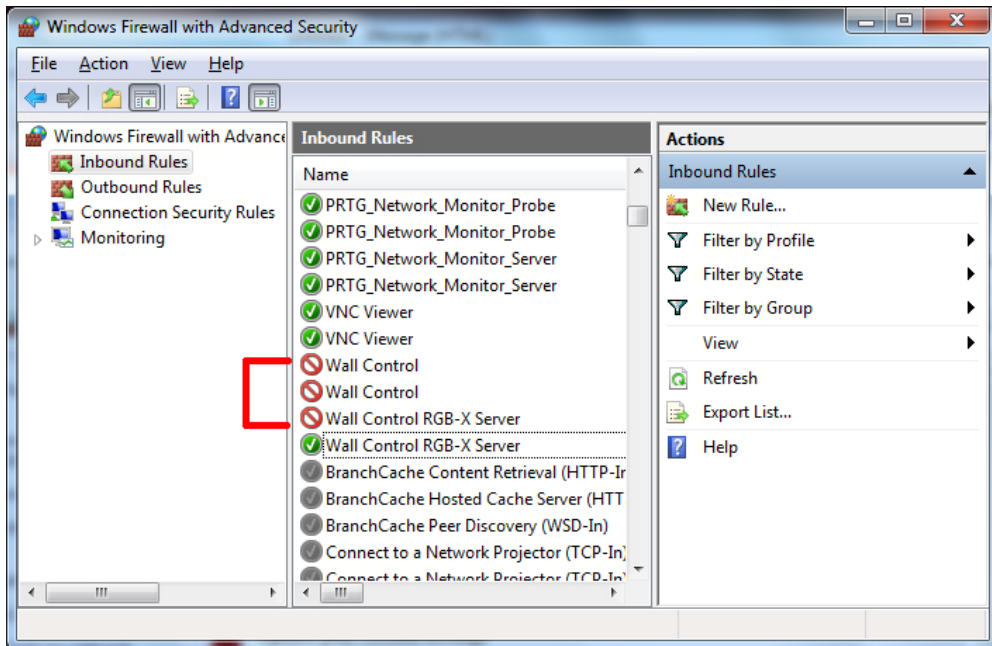
Locate all Display Control settings and ensure each one is active (has a green icon). The Profile should = Domain, Enabled should = Yes and Action should = Allow.

To unblock or allow a broken connection, double click on the specific Inbound rule to open the Properties dialog and on the General tab select **Allow the connection** and click on Apply as shown in the following dialog:
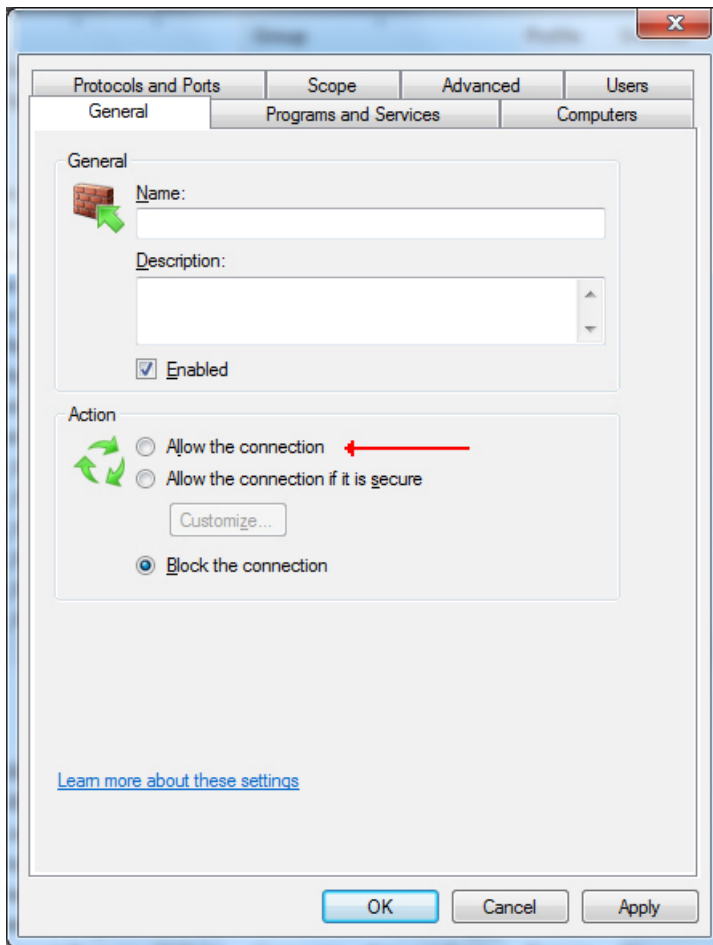
Once all the Inbound Rules have been established, ensure the Network cable is plugged into your machine and then re-install Display Control.

6.5   Command Line Interface

6.5.1   Display Control - Command Line Interface

The Display Control command line interface allows you to open layout files.

The command line interface can be accessed in a number of ways:

- From a shortcut specifying **wallctl.exe** as the target followed by the command line options separated by spaces.

- From a command prompt by specifying the full path of wallctl.exe or by having the folder where Display Control was installed on the path.

- From a batch file. The same rules as command prompt apply.

Nomenclature

Italic - Information that you must supply.

Bold - Elements that you must type exactly as shown.

Ellipsis (...) - Parameter that can be repeated several times in a command line.

Between brackets ([]) - Optional items.

Between braces ({}) - Set of choices (separated by I) from which you must choose only one.

`Courier font` - Code or program output.

Commands

-Layout=layout file

- This command line argument specifies the layout file to be loaded.

- If the layout file name or path contains spaces then enclose the path in quotes, for example:

-layout="C:\Documents and Settings\user\Desktop\file.lay"

- -layout is not compatible with -machine.

-Exit

- When used with the -layout option, -Exit will cause the Display Control application to load the layout file without the application window being displayed and to terminate once the layout file has been loaded.

- Use this option to open a layout file without displaying the Display Control application.

- When -Exit is specified on the command line, an exit code is returned.

-Quiet

- Used in conjunction with -Exit to suppress user interface dialog boxes.

-CloseWindows={YesINo}

- Use **–CloseWindows=Yes** to close existing windows.

- Use **–CloseWindows=No** to keep existing windows open.

- When the -layout command line option is specified, the default value for -CloseWindows is Yes.

- When the -machine command line option is specified, the default value for -CloseWindows is No.

-ShowState={Minimised|Restored|Maximised}

- Controls the appearance of the Display Control application window.

-Window=[*top*],[*left*],[*width*],[*height*]

- This option enables the Display Control application window to be positioned.

- If a number is left out of the list then the value saved when the application was last terminated is used.

- To change the position of the window without changing the size:

-window=100,200

- To change the size of the window without changing the position:

-window=,,800,600

-AlwaysOnTop={True|False}

- This sets the Always on Top state of the Display Control application window.

- To enable the window to behave normally, the value should be set to false.

- To force the window to be displayed on top of all other normal windows the value should be set to true.

- 1 or on can be substituted for true.

- 0 (zero) or off can be substituted for false.

Networking Options

To control a machine other than the one you are working on you will need some of the following options:

-Machine={*machine name*|*IP address*}

This option specifies the machine to connect to.

- If the machine name contains spaces then enclose the name in quotes, for example:

-machine="My Computer"

- You can also specify an IP address, for example:

 -machine=10.0.0.21

- -machine is not compatible with -layout.

If the server requires a User Name and Password the following options should be used:

-UserName=*user name*

-Password=*password*

If the machine is not participating in a domain, the account must be on the machine you are connecting to.

If the machine is participating in a domain, you have a choice:

- The account can be on the machine you are connecting to.

- It can be an account on the domain.

If the account is on the domain, the domain name must be specified with the following option:

-Domain=*domain name*

-Port=*port number*

You need specify the port if you are attempting to connect to another machine and Display Control has been configured to listen on a port other than the default port.

A port number is any integer between 1 and 65535 inclusive.

6.5.2 ECU - Command Line Interface

The command line interface allows you to create, modify or close ECU windows.

The command line interface can be accessed in a number of ways:

- From a shortcut specifying RGBXCMD.EXE as the target followed by the command line options separated by spaces.

- From a command prompt by specifying the full path of RGBXCMD.COM or by having the folder where the ECU software was installed on the path.

- From a batch file. The same rules as command prompt apply.

Nomenclature

Italic - Information that you must supply.

Bold - Elements that you must type exactly as shown.

Ellipsis (...) - Parameter that can be repeated several times in a command line.

Between brackets ([]) - Optional items.

Between braces ({}) - Set of choices (separated by I) from which you must choose only one.

`Courier font` - Code or program output.

-ID=*number*

- When a window is created it can be allocated an ID. To modify or close a window, specify its ID so the correct window is modified or closed.

- An ID is any integer between 1 and 65535 inclusive. The ID is specific to ECU windows.

-Close

- If this command line option is specified with an ID, the window with that ID is closed.

-ShowState={**Minimised|Restored|Maximised|Show|Hide**}

- Sets the show state of the window.

- To activate a window use **Restored**.

-AlwaysOnTop={**On|Off**}

-AspectRatio=[{**On|Off|Source**}],[*width*],[*height*]

- Switch the maintain aspect ratio feature on or off and specify the ratio of the width and height of the window.

- If Source is specified, the width and height of the source are used as the aspect ratio.

- All the values are optional but the commas must be used.

-Caption=

- Set the caption of the window. To include spaces, enclose the string in double quotes (").

-ShowFrameRate={**On|Off**}

- Display or remove the current frame rate in the title bar,

-ShowMenuBar={**On|Off**}

- Use to specify if the menu bar is to be displayed.

-Window=[*top*],[*left*],[*width*],[*height*]

- Change the position and size of the window.

- All the values are optional but the commas must be used.

-WindowStyle={BorderAndTitleBar|BorderOnly|NoBorderOrTitleBar}

-DisplayMessageAfter=*time in milliseconds*

-CaptureFormat={Automatic|5-5-5|5-6-5|8-8-8}

-TransferData={ViaSystemMemory|DirectToGraphicsCard}

-Scaling={Fast|Slow}

-ActiveCaptureRate=percentage

- Select one of the following percentages: 1, 5, 10, 15, 20, 25, 33, 50 or 100. If you use a number that is not in the list, it will be rounded down.

-InactiveCaptureRate=*percentage*

- Select one of the following percentages: 1, 5, 10, 15, 20, 25, 33, 50, 100. If you use a number that is not in the list, it will be rounded down.

-DifferentCaptureRate={On|Off}

-Input=*input number*

-Reset

- Discards the capture settings for the mode the ECU source is currently generating.

-ShareCaptureSettings={On|Off}

- With ShareCaptureSettings switched on, the changes made to the capture settings controls are shared with other ECU windows. The capture settings are saved automatically so that the next time a ECU window is created, the capture settings can be used.

- With ShareCaptureSettings switched off, the changes made to the capture settings controls are applied to this ECU window only.

- When switching ShareCaptureSettings on, the capture settings for the ECU window will be discarded.

- By default, ShareCaptureSettings is switched on.

-Cropping=[{On|Off}],[*top*],[*left*],[*width*],[*height*]

The following command line options allow changes to the appearance of the ECU source. The numbers correspond to the values displayed on the Input Settings sheet.

-CaptureWidth=*number*

-CaptureHeight =*number*

-HorizontalPosition=*number*

-HorizontalSize=*number*

-Phase=*number*

-VerticalPosition=*number*

-BlackLevel=*number*

-Brightness=*number*

-Contrast=*number*

-Saturation=*number*

-Hue=*number*

-Information

Creates a text file called information.ini in the current directory. The file contains details of the minimum and maximum values and supported features that can be used with the command line.

The information.ini file is over written every time the –information is used.

-CursorStyle=*Show*

Always shows the cursor within the client area of the window

-CursorStyle=*Hide*

Always hide the cursor within the client area of the window

-CursorStyle=*HideWhenActive*

Only hide the cursor within the client area of the window when the window is the active window on the desktop.

Networking Options

To control a window on a machine other than the one you are working on you will need some of the following options:

-Machine={*machine name*|*IP address*}

Use this option to specify the machine to connect to.

-Port=*port number*

You need specify the port if you are attempting to control a window on another machine and the ECU server has been configured to listen on a port other than the default port 1049.

A port number is any integer between 1 and 65535 inclusive.

If the server requires a User Name and Password, the following options should be used:

-UserName=*user name*

-Password=*password*

If the machine is not participating in a domain, the account must be on the machine you are connecting to.

If the machine is participating in a domain you have a choice:

· The account can be on the machine you are connecting to.

· It can be an account on the domain.

If the account is on the domain, the domain name must be specified with the following option:

-Domain=*domain name*

6.5.3   On Screen Display - Command Line Interface

Nomenclature

Italic - Information that you must supply.

Bold - Elements that you must type exactly as shown.

Ellipsis (...) - Parameter that can be repeated several times in a command line.

Between brackets ([]) - Optional items.

Between braces ({}) - Set of choices (separated by I) from which you must choose only one.

`Courier font` - Code or program output.

-OSDType={*Disabled*|*SimpleText*}

- Switches the OSD on or off -OSDText=

- Specifies the on screen display text.

- If the text includes spaces, the text must be enclosed in double quotes.

- Line breaks are indicated by the characters \n. If you wish to include a \ in the text, it must be preceded by a \.

For example -OSDText="The quick\nbrown fox\njumps over\nthe lazy dog." Gives the on screen display:

The quick

brown fox

jumps over

the lazy dog

-OSDScaling={*FixedSize*|*ScaleWithWindow*}

- Allows you to specify how the OSD is scaled. When FixedSize is specified, the OSD is displayed at the same size regardless of the size of the window. When ScaleWithWindow is specified, the OSD is scaled up or down according to the size of the window.

-OSDFontName=*font name*

- Specifies the name of the font to be used for OSD text. If the font name includes spaces, the name must be enclosed in double quotes.

-OSDFontSize=*number*

- Specifies the point size of the font to be used for OSD text.

-OSDFontStyle={Regular|Bold }

-OSDFontItalic={On|Off}

-OSDFontStrikeout={On|Off}

-OSDFontUnderline={On|Off}

-OSDFontColour=*red,green,blue*

- Specifies the colour of the text in red, green and blue components. Each of the components is a number from 0 to 255.

-OSDBackground={Transparent|Opaque}

- When Transparent is specified, the OEM_ECU_TAG capture in the area behind the text is visible.

- When Opaque is specified the area behind the text is displayed in the colour specified using the OSDBackgroundColour option.

-OSDBackgroundColour=*red,green,blue*

- When OSDBackground is set to Opaque, this option specifies the colour displayed behind the text in red, green and blue components. Each of the components is a number from 0 to 255.

-OSDMargins=[*top*],[*left*],[*right*],[*bottom*]

- The margins define the area in which OSD is displayed.

- If ScaleWithWindow is specified, the margins are measured in pixels of the ECU source. If FixedSize is specified, the margins are measured in pixels of the interior of the ECU window.

- Any part of the OSD that falls outside the margins is not displayed.

-OSDTextWrap={*On/Off*}

- When text wrapping is switched on, if the text does not fit between the left and right margins, spaces between words are replaced with line breaks to produce shorter lines.

- When text wrapping is switched off, the text is displayed with the same spaces and line breaks as it has been entered.

-OSDHorizontalAlignment={*Left*|*Centre*|*Right*}

- If you specify Left, the left edge of the OSD will be positioned against the left margin and each of the individual lines will be left aligned.

- If you specify Centre, the centre of the OSD will be positioned half way between the left and right margins and each of the individual lines will be centred.

- If you specify Right, the right edge of the OSD will be positioned against the right margin and each of the individual lines will be right aligned.

-OSDVerticalAlignment={*Top*|*Centre*|*Bottom*}

- If you specify Top, the top edge of the OSD will be displayed against the top margin.

- If you specify Centre, the centre of the OSD will be positioned half way between the top and bottom margins.

- If you specify Bottom, the bottom edge of the OSD will be displayed against the bottom margin.

6.6   Driver Installation

This chapter guides you through the installation of the Barco Windows Drivers for the compatible cards as described in the chapter above. Follow the instructions described in the installation Wizard below.

The drivers can be found in the tools directory on the User Manual CDROM.

-   The wizard installs drivers for the graphic cards that work with following operating systems:

-   Select the products for which you would like to install the drivers.
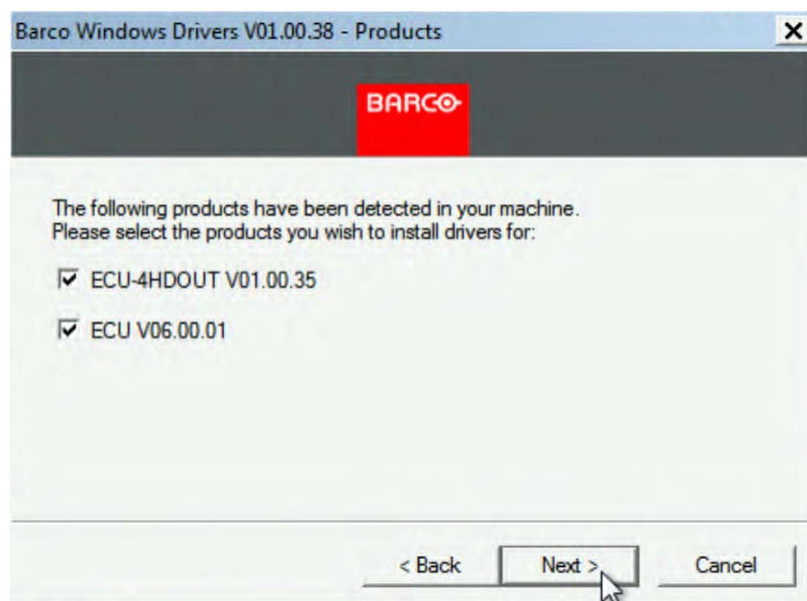
- Select the number of screens and how you would like them to be arranged.
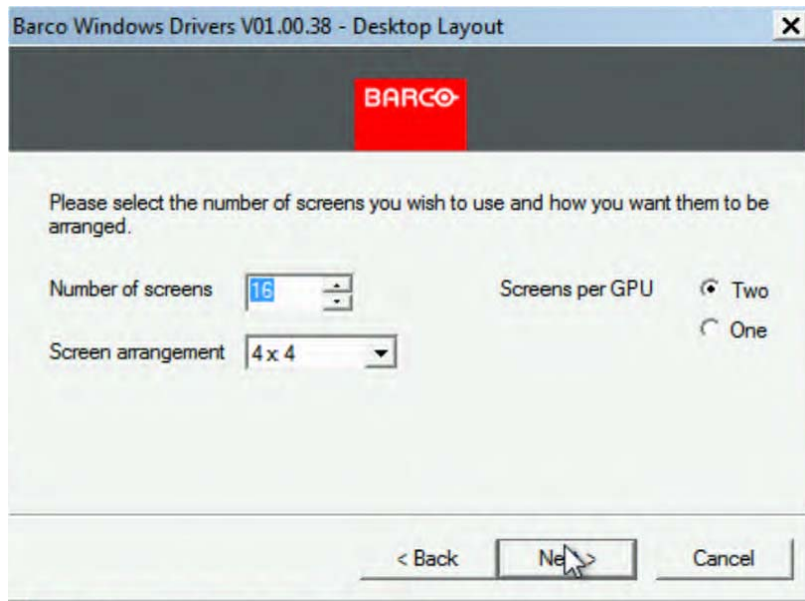
- Set the resolution, refresh rate and pixel depth you would like to use.
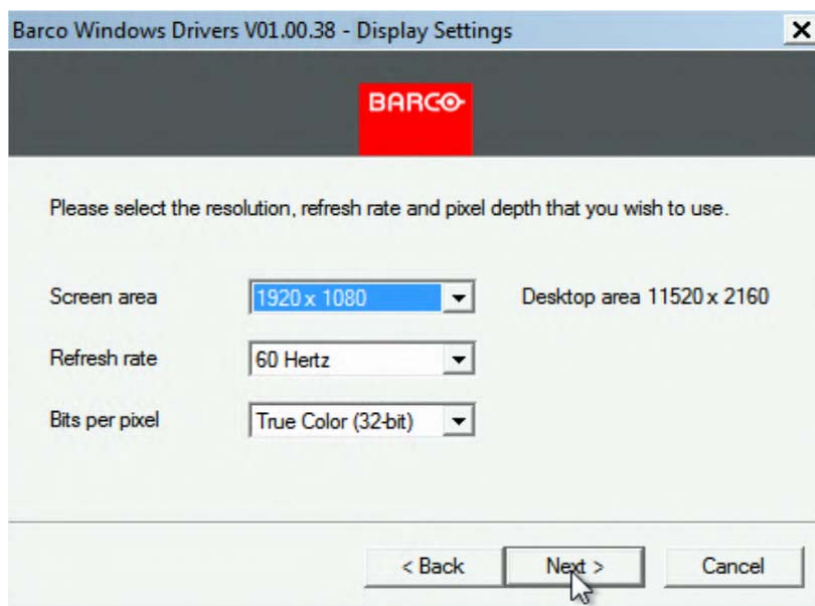
- The following dialog gives a summary of the selected options. It is not recommended to select "Force Driver Install" when simply upgrading a system with a new driver.

- When re-installing the same version of driver Windows, the driver files will not normally be copied. The driver installation simply changes the settings as requested.

- If the files on the system have been corrupted and you need to force Windows to copy the files then you can select "Force Driver Install".
  If you wish to downgrade a system to an older driver then "Force Driver Install" is also necessary.

NOTE:

The Force Driver Install option cannot harm a system if it is selected, however the driver installation can take a lot longer to run. On very large systems it may take ten minutes.
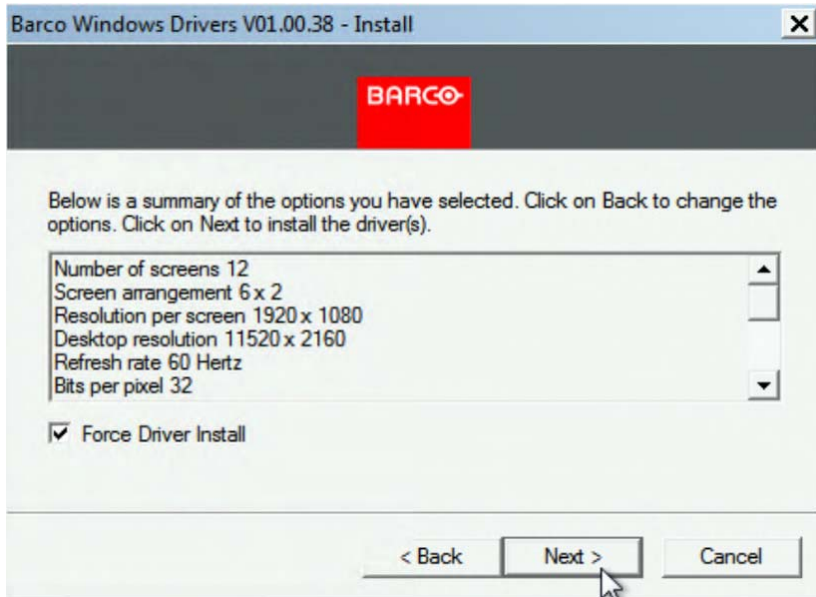
- Wait until Driver installation is done.
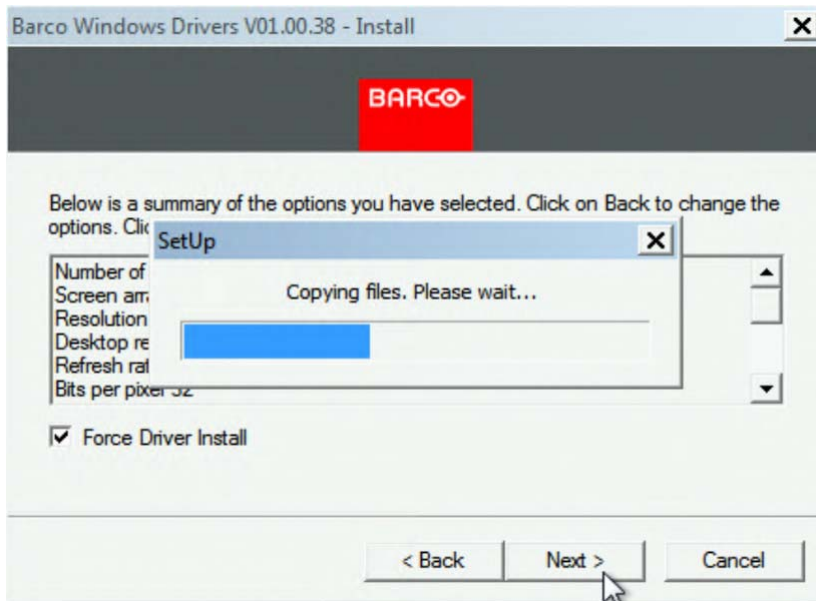
6.7 Application Installation/Upgrade

The application installation zip file can be found in the tools directory on the User Manual CDROM.

- Copy the application zip file on a USB stick.

- Plug the stick into the ECU server.

- Unzip the application zip file and Run the Install.exe file.

- Follow the different steps of the Display Control Installation Wizard.
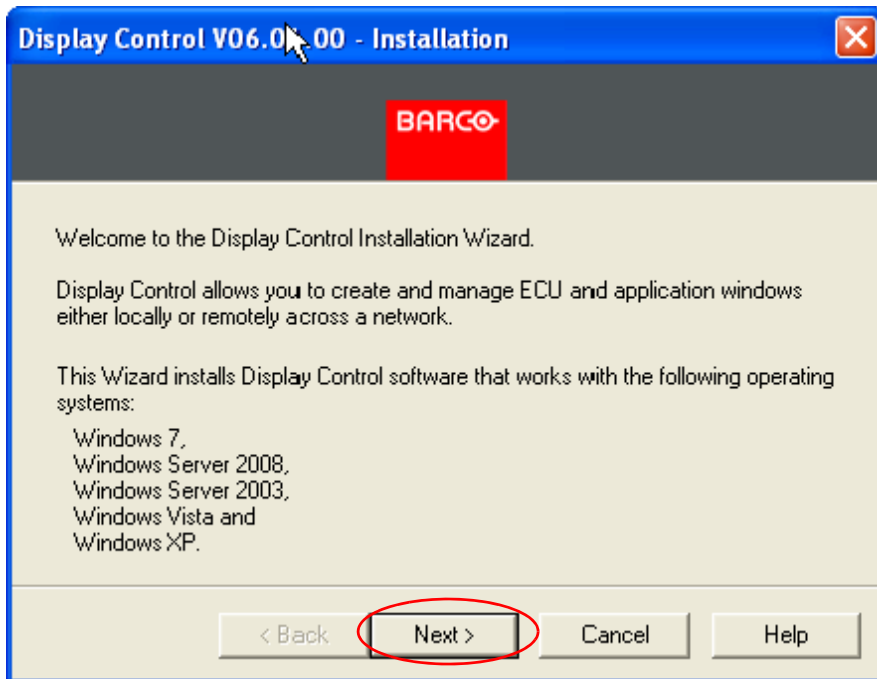
- Click **Next** to continue.
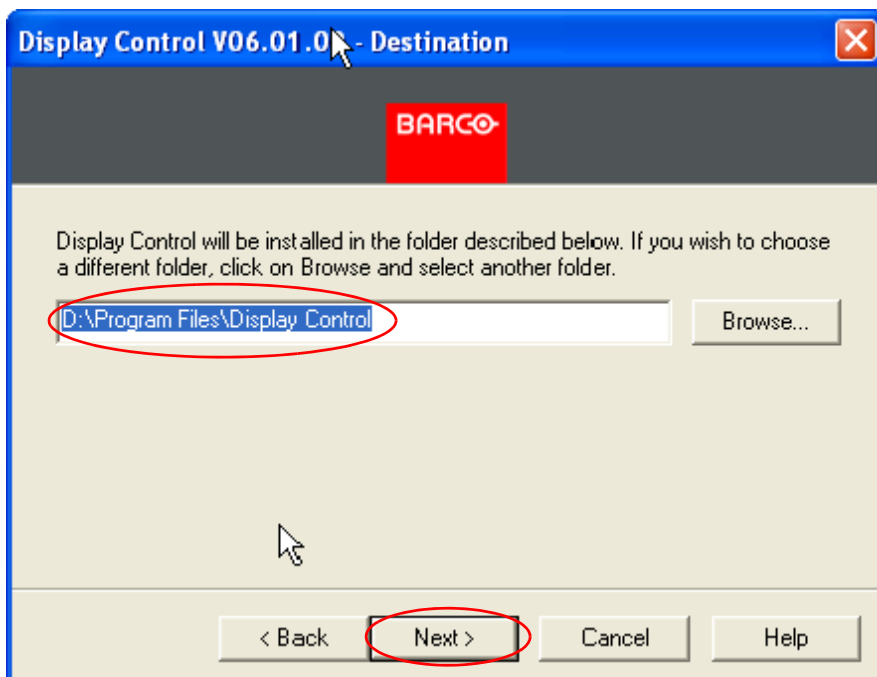
- Select the installation folder or just click **Next** if default folder is ok.
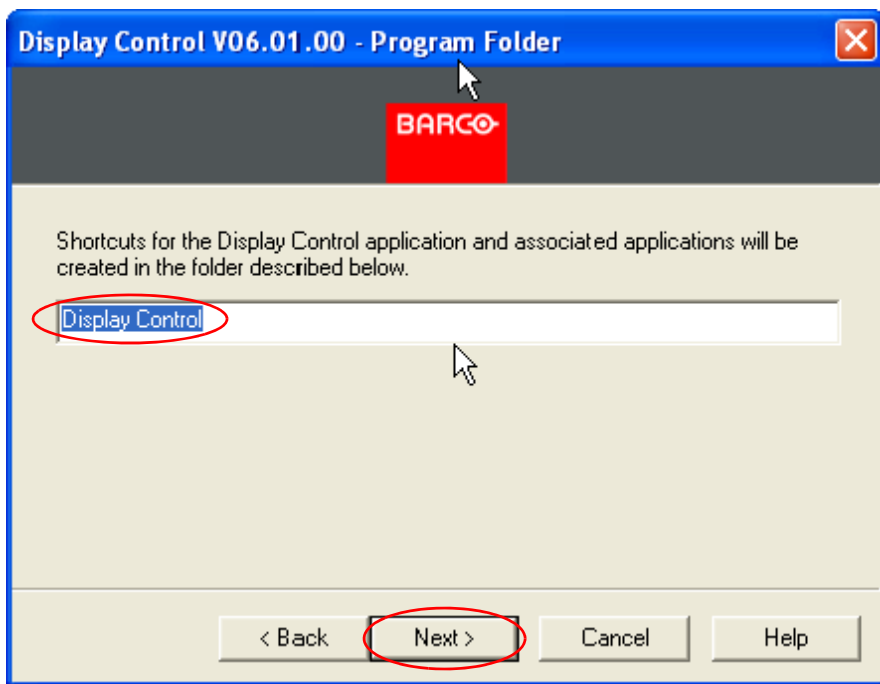
- Select folder for application shortcuts and associated applications and click **Next** to continue.

1. <u>To install the Display Control Server and Application on the same machine (a local machine), make selection below:</u>
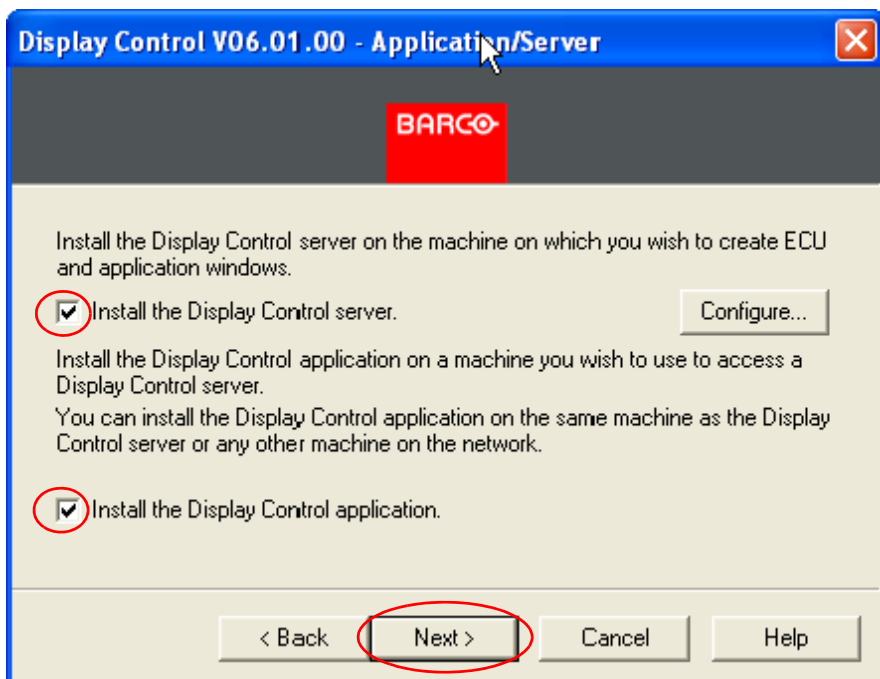
✓ Select both "Install the Display Control server" and "Install the Display Control application" if this is the machine on which you would like to create ECU and application windows.

2. In case you want to be able to run the Display Control Application from a different machine over a network (via an external client connection), the Display Control application needs to be installed on the other machine by making the selection below:
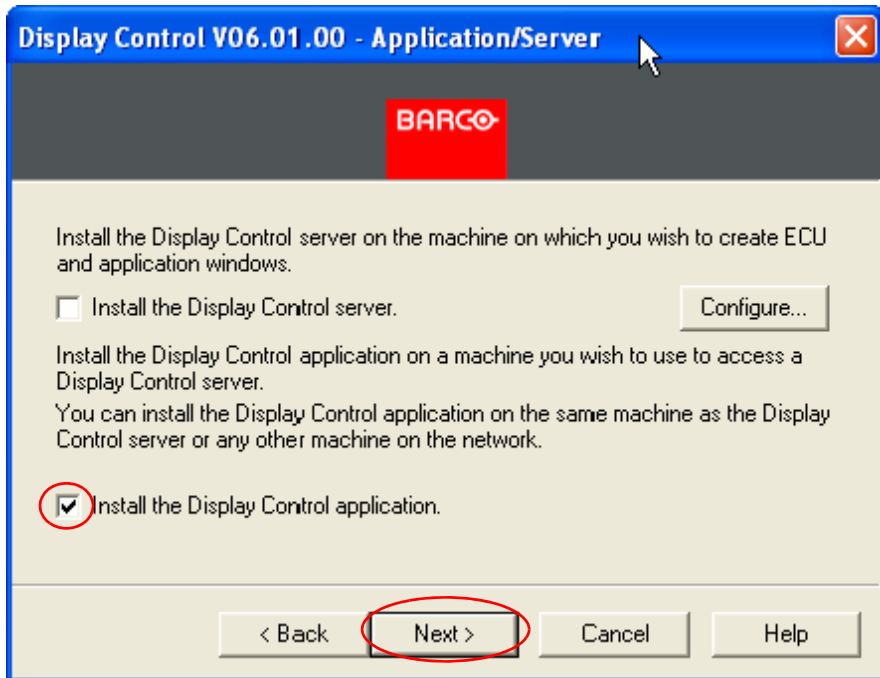
✓ Select "Install the Display Control application".
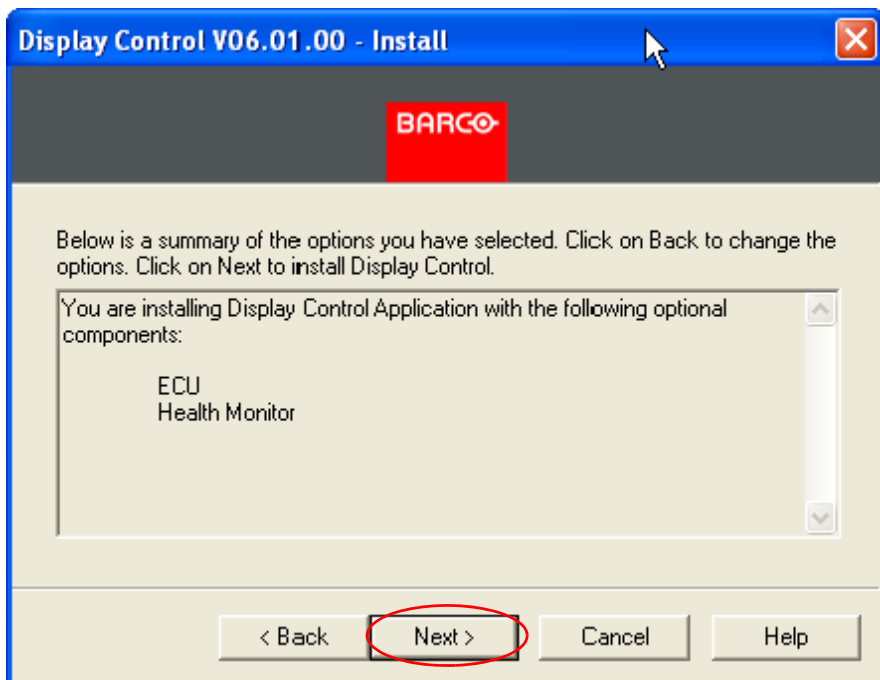
· A summary of the items that will be installed is given. Click **Next** to install.

Display Control V06.01.00 - Installation Complete

BARCO

Display Control has been installed successfully.

< Back   Finish   Cancel   Help
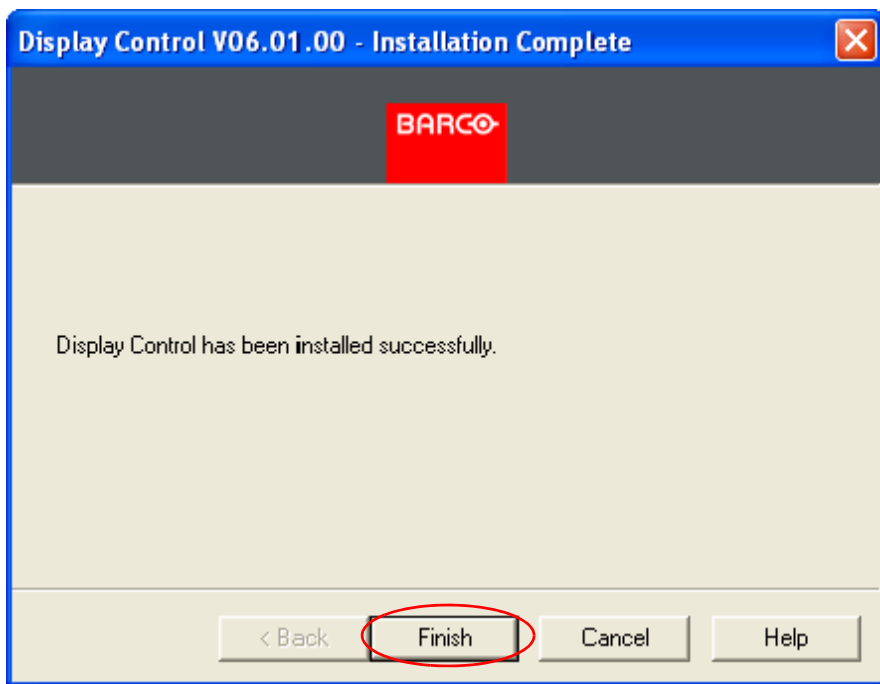
6.8   System recovery

Using the Barco Recovery DVD will overwrite the system and restore it to its original factory settings. All previously saved data will be erased.

NOTE:

Only use this recovery DVD after an error or a crash, and when nothing else is helping

- To recover the system, insert the Barco Recovery DVD into the DVD drive and restart the system.

- Press enter when "Press any key to boot from CD or DVD" is displayed on the screen.

- When the System Recovery Options dialog is displayed select a keyboard input method (language). Click **Next** to continue.
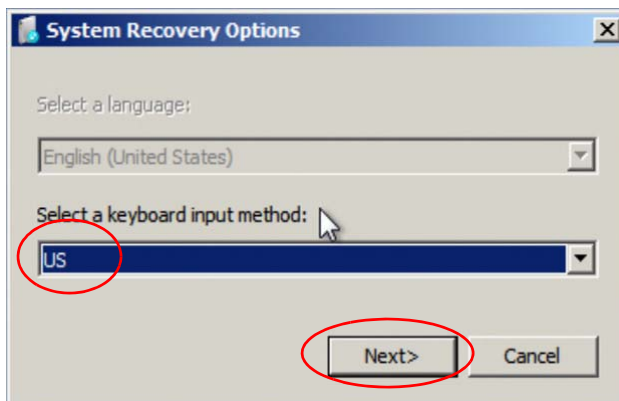
- When the System Recover Options dialog is displayed, asking to apply repairs and to restart your computer. Click **No** to continue.
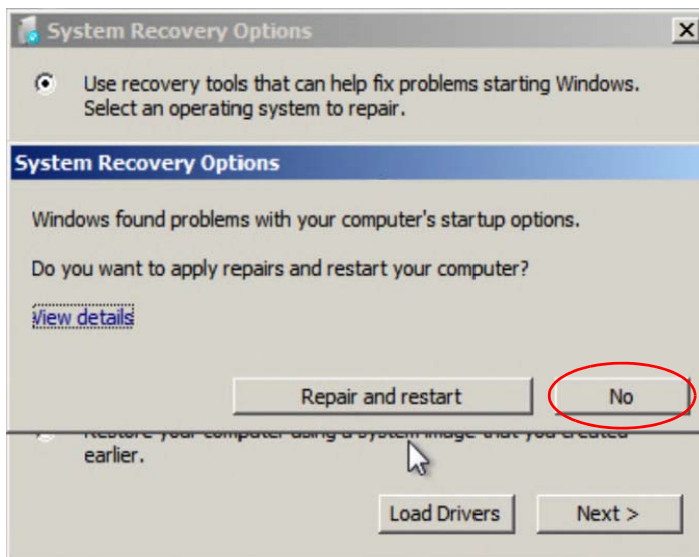
- Select "Restore your computer using a system image that you created earlier" and click **Next**.
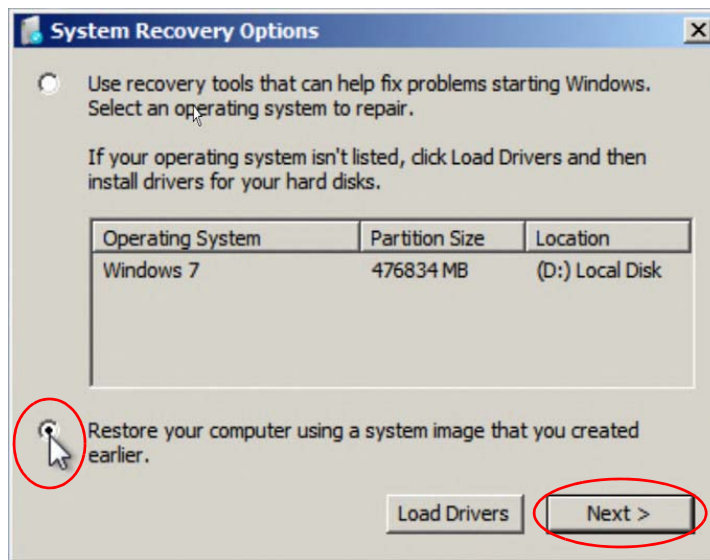
- The disk will then be scanned for a system image.
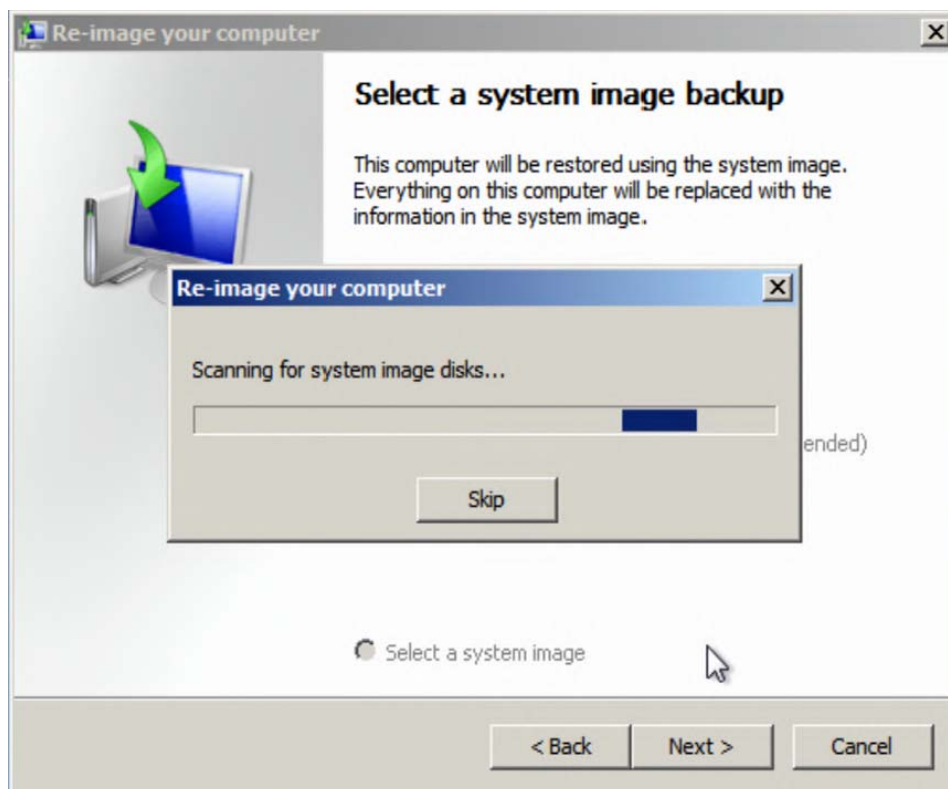
- When the scan is complete, details of a system image back up will be displayed in the "Select a system image backup" dialog. Select "Use the latest available system image (recommended)" and click **Next** to continue.
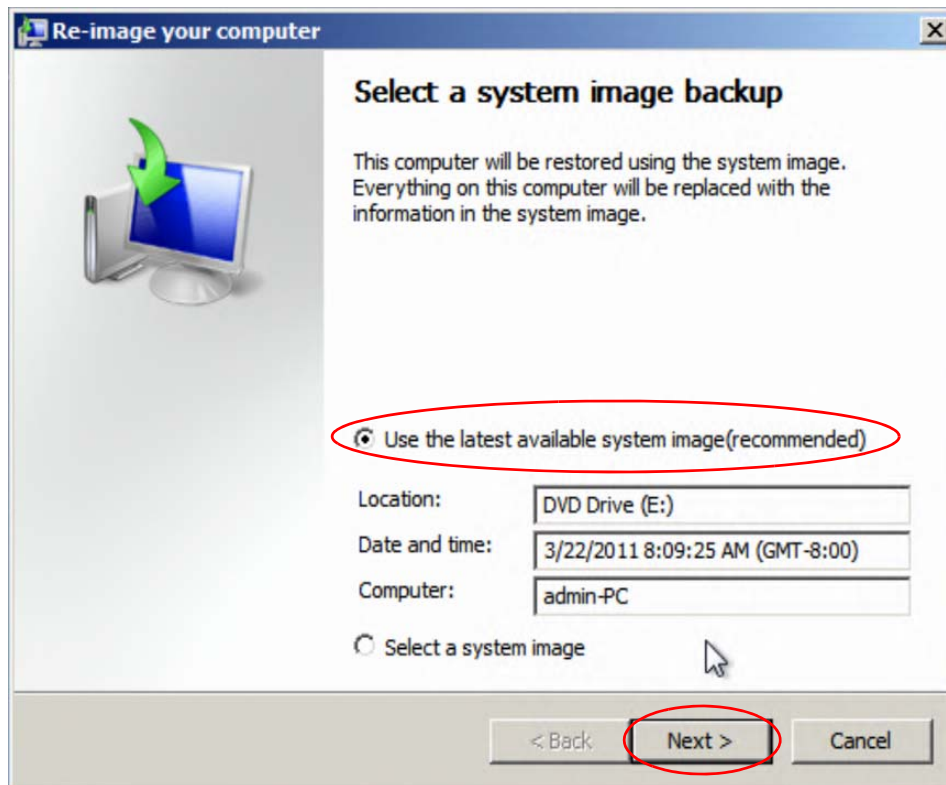
- In the "Choose additional restore options" dialog click **Next**.
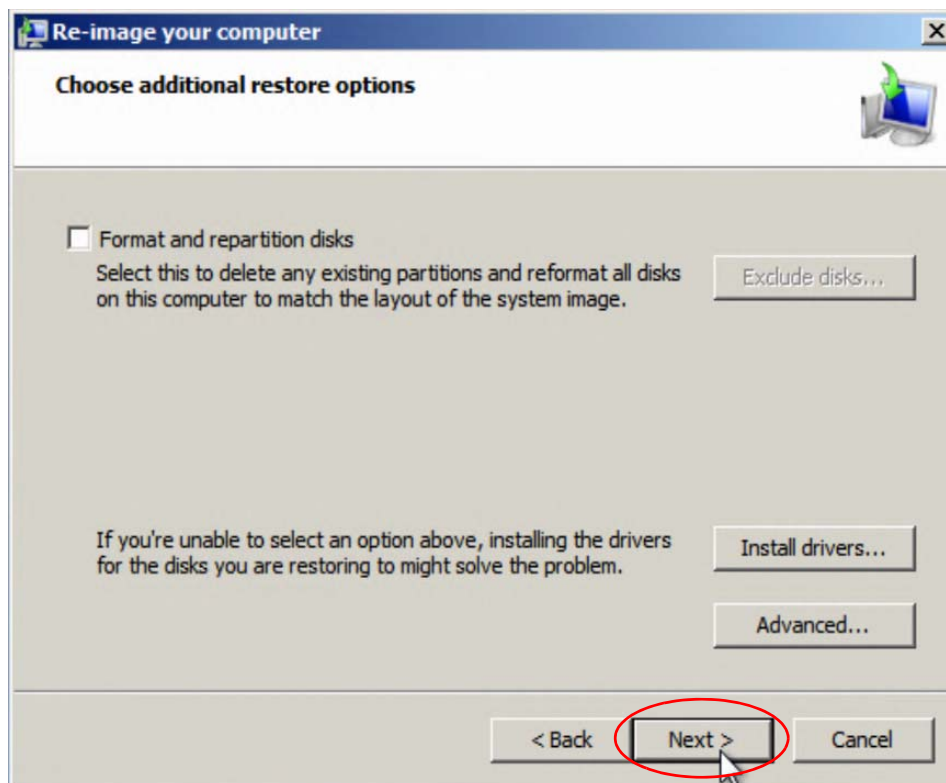
- Click **Finish** to restore your system to its original factory settings.
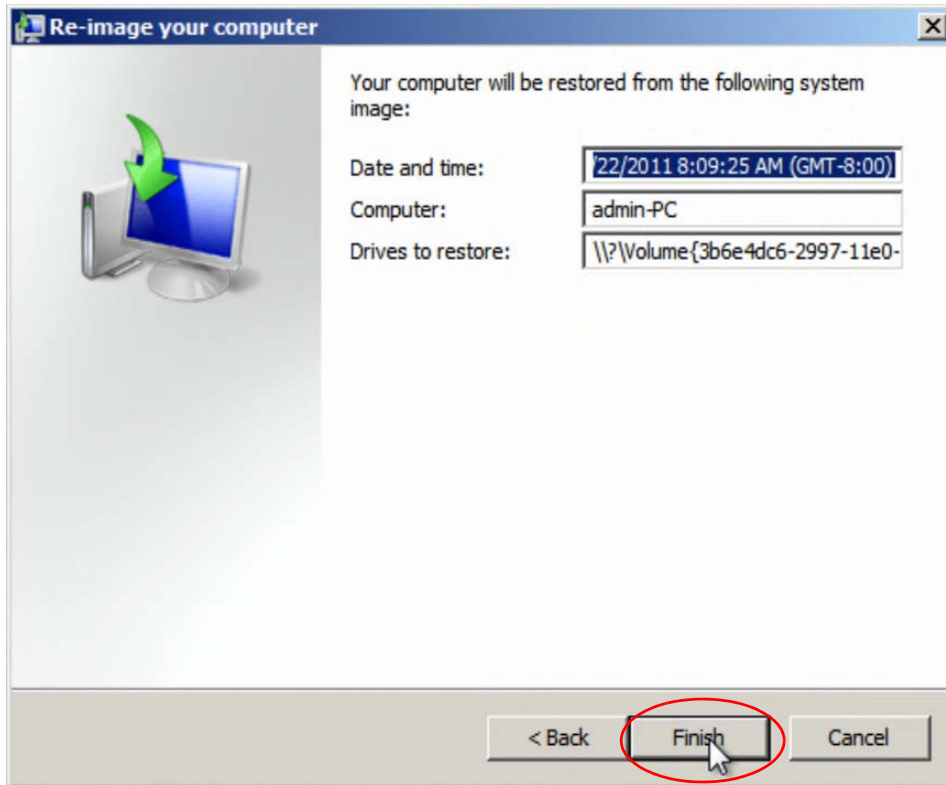
- When the system restore warning message is displayed Click **Yes**.
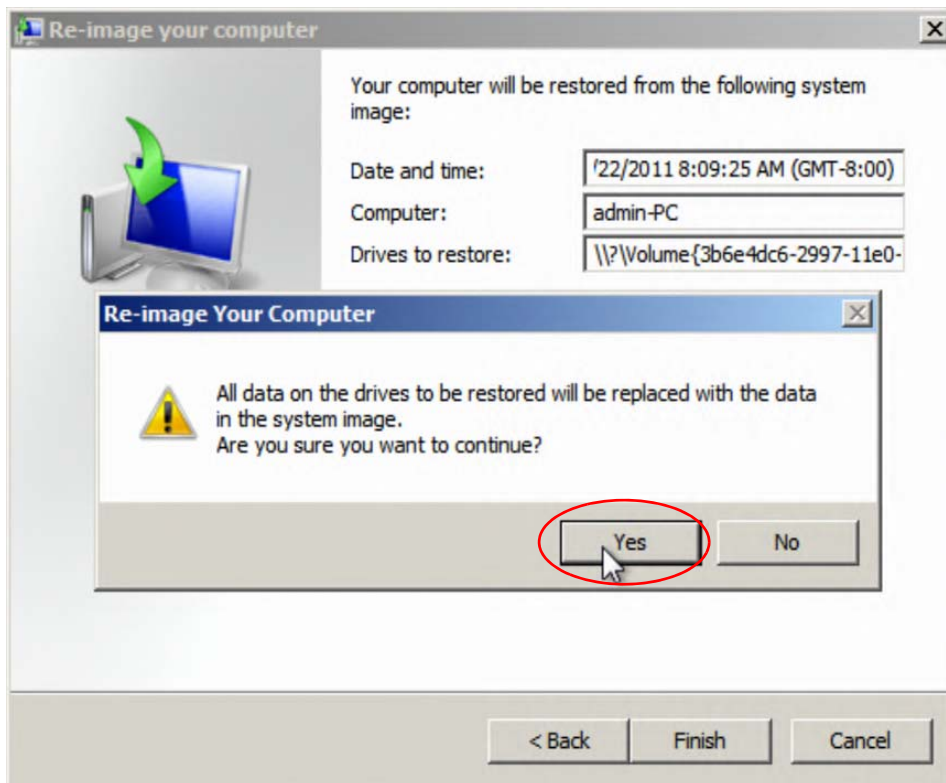
- The system restore process can take approximately 1 hour.
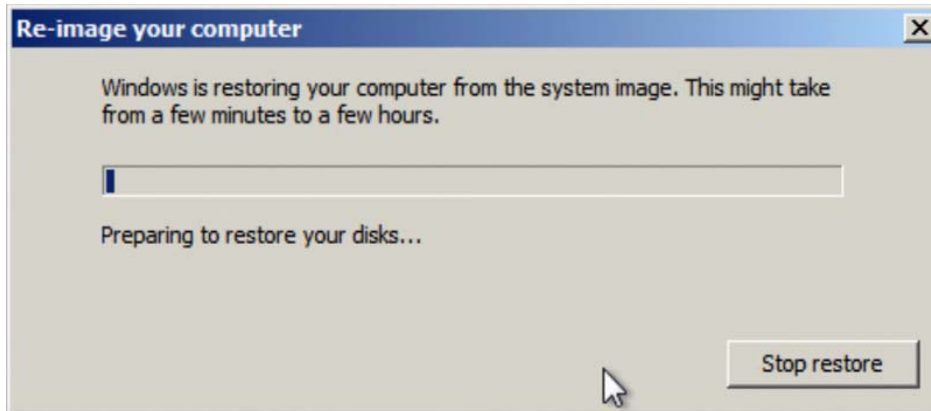
- Once the restore is complete you will need to set up the operating system by selecting the language. Click **Next** to continue.

Addendum
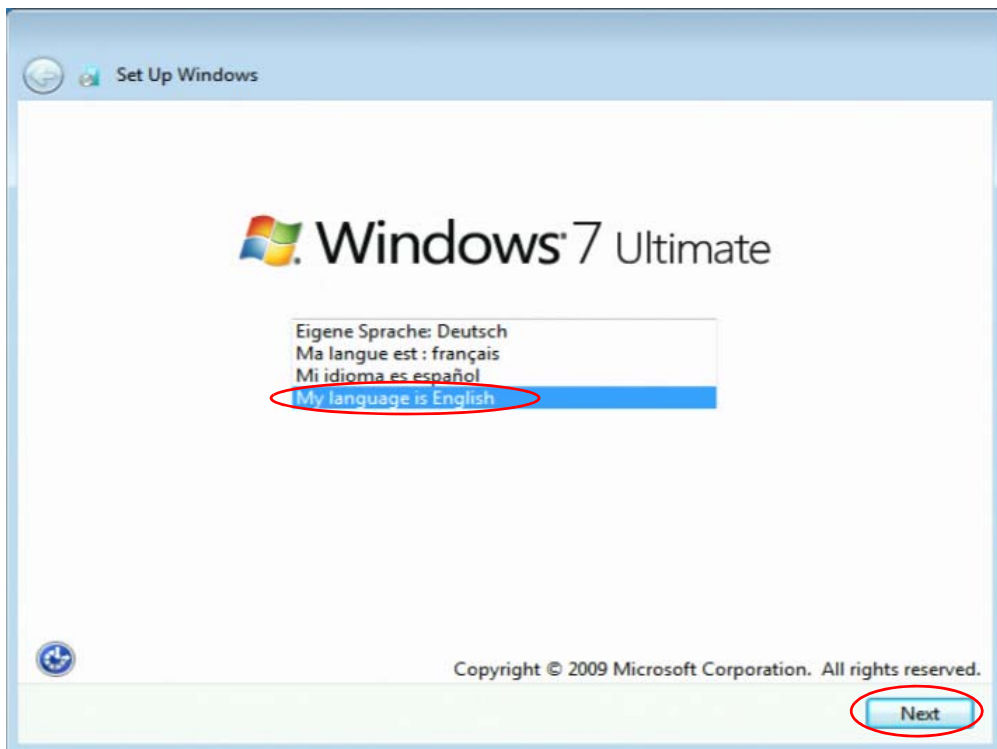
- Select the country or region, time, currency and keyboard layout. Click **Next** to continue.

- Type in a user name and computer name and click **Next**.
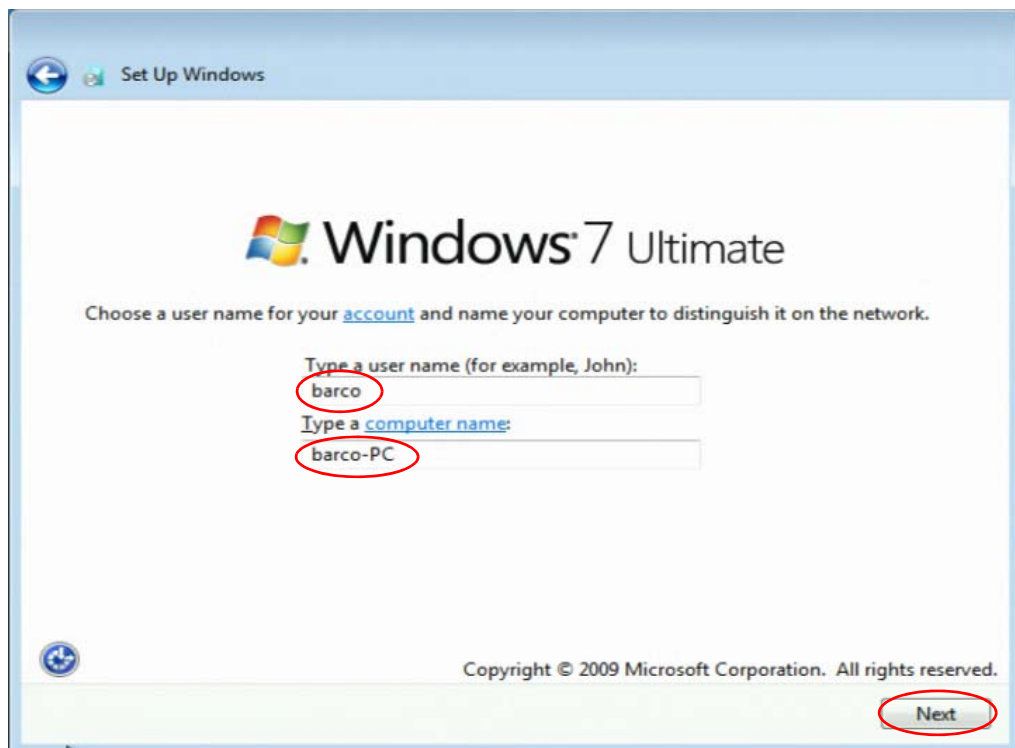
- Type the password (if no password is required just click next).
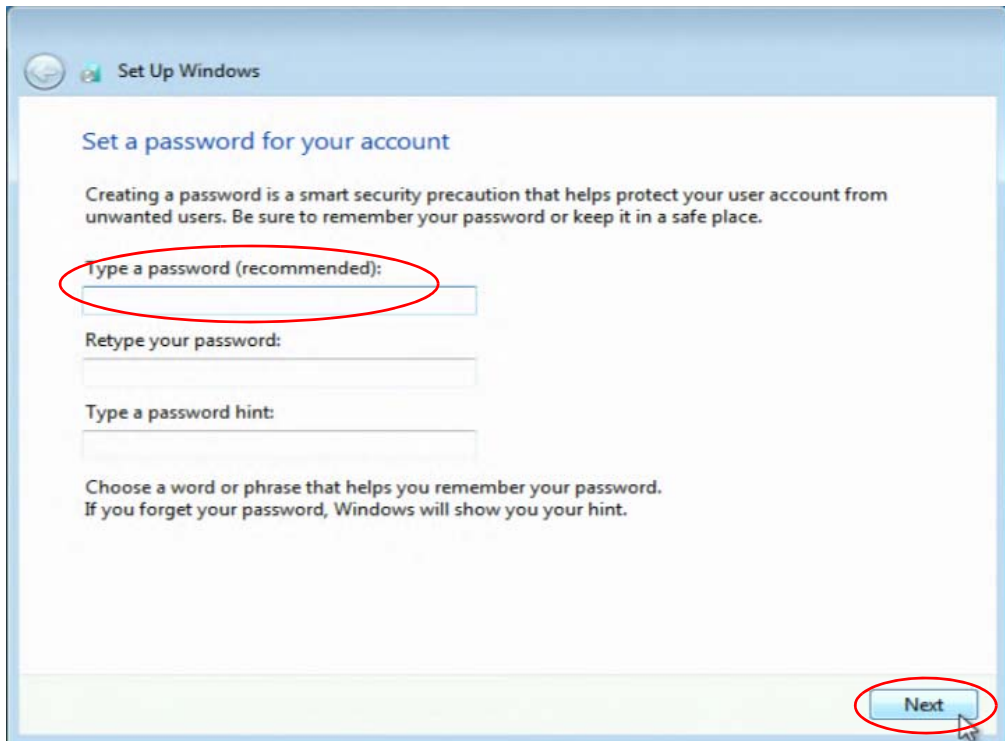
- Enter Product Key and click **Next**. The Product Key is located on the Operating System CD case in the supplied Accessories pack.

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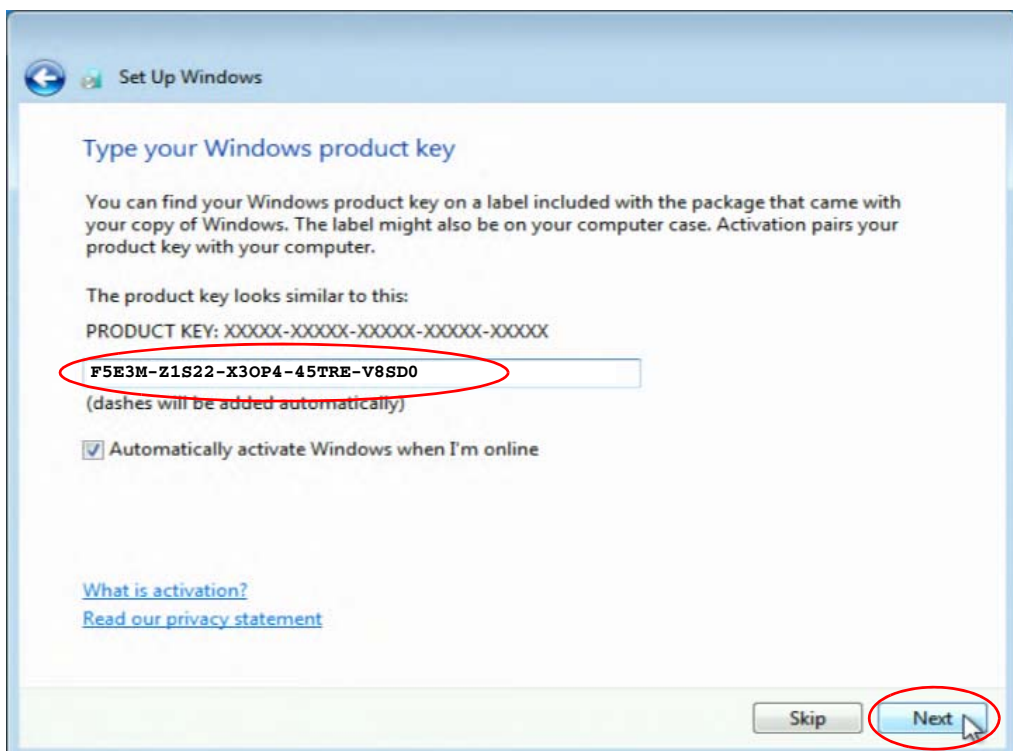
- Select "I accept the license terms" and click **Next** to continue
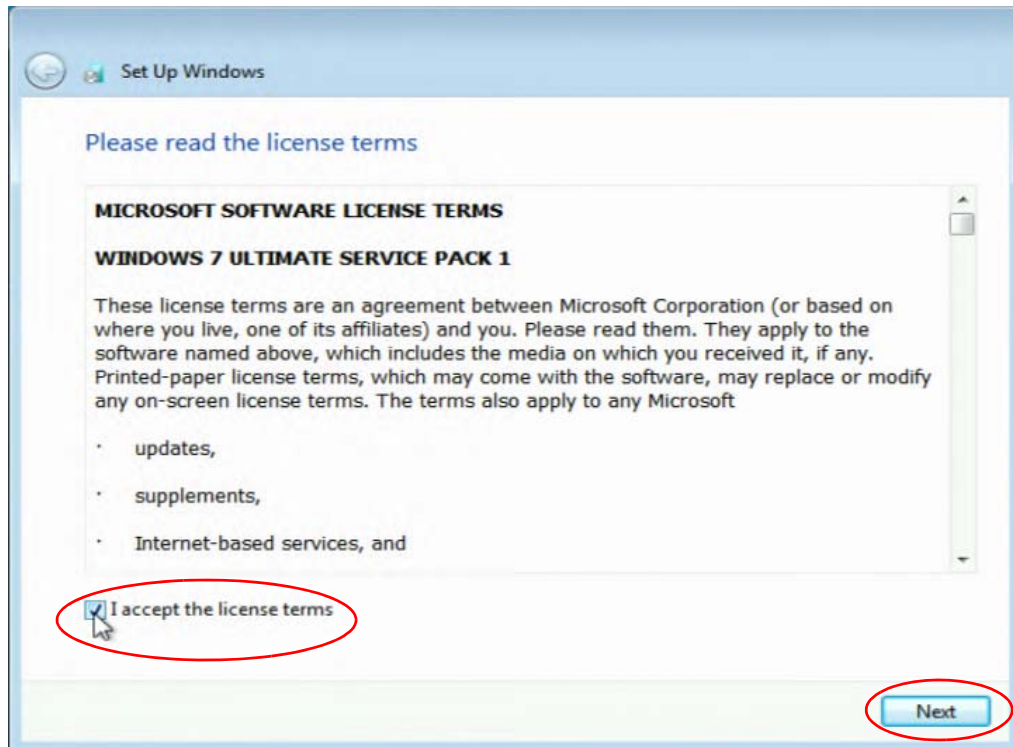
- Click on "Use recommended settings"

- Setup the time zone and adjust the clock. Click **Next** to continue.
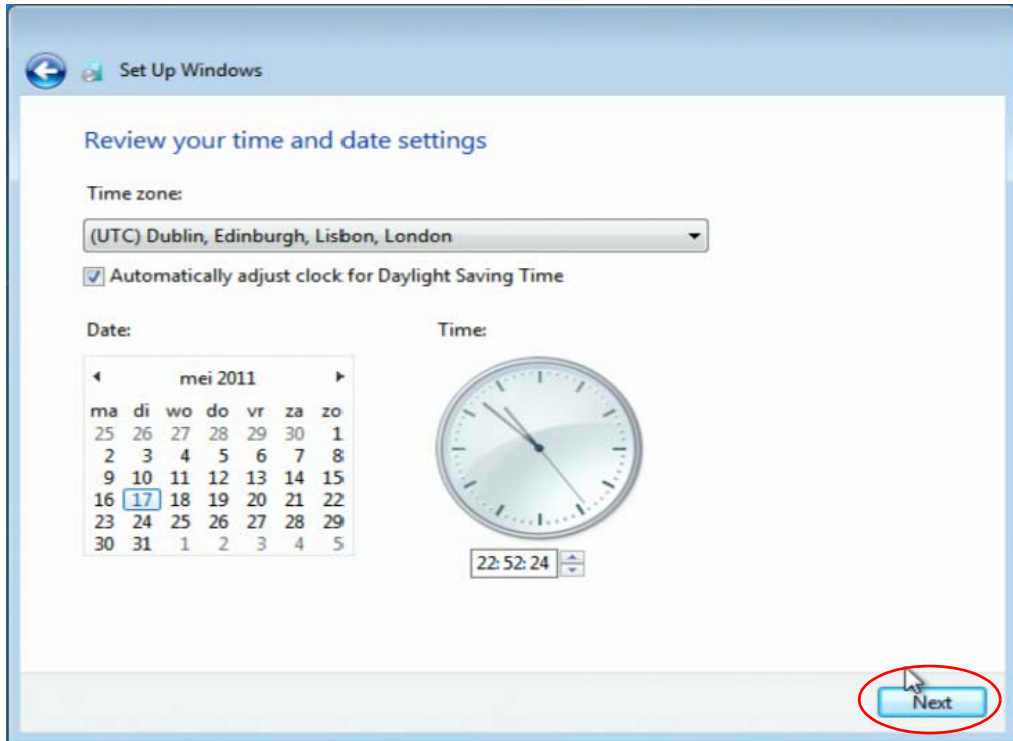
- To activate Windows, click **Activate now**.

7   Table of contents

7.1   List of figures

End of document

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