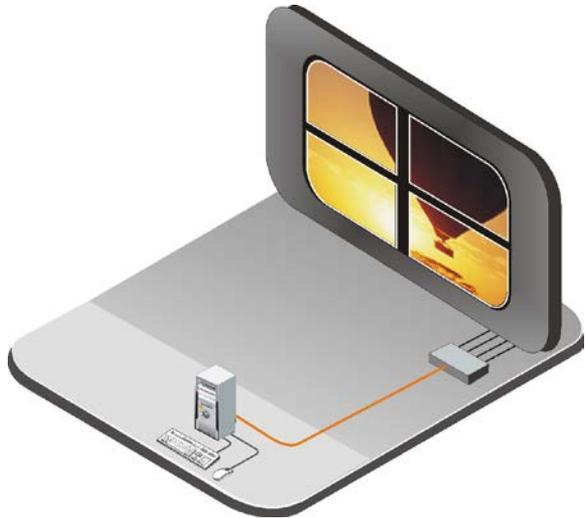


## INSTALLATION AND OPERATIONS MANUAL



VWL-B122FD & VWL-B133FD



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Rose Electronics Part # MAN-UV-LC2/E122

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| Part Name  | Toxic or Hazardous Substances and Elements |              |              |                              |                                |                                       |
|--|--|--------------|--------------|------------------------------|--------------------------------|---------------------------------------|
|  | Lead (Pb)                                  | Mercury (Hg) | Cadmium (Cd) | Hexavalent Chromium (CR(VI)) | Polybrominated Biphenyls (PBB) | Polybrominated Diphenyl Ethers (PBDE) |
| Housing  | X  | O            | O            | O                            | O                              | X                                     |
| Display  | X  | O            | O            | O                            | O                              | X                                     |
| Printer Circuit Boards   | X  | O            | O            | O                            | O                              | X                                     |
| Metal Fasteners  | X  | O            | O            | O                            | O                              | O                                     |
| Cable Assembly   | X  | O            | O            | O                            | O                              | X                                     |
| Fan Assembly   | X  | O            | O            | O                            | O                              | X                                     |
| Power Supply Assemblies  | X  | O            | O            | O                            | O                              | X                                     |
| Battery  | O  | O            | O            | O                            | O                              | O                                     |
| <p>O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in SJ/T11363-2006</p> <p>X: This toxic or hazardous substance is contained in at least one of the homogeneous material for this part is above the limit requirement in SJ/T11363-2006</p> |  |              |              |                              |                                |                                       |

Table 1. China RoHS Compliance

# TABLE of CONTENTS

| <b>Contents</b>                               | <b>Page #</b> |
|---|---------------|
| Disclaimer .....                              | 1             |
| System Introduction .....                     | 1             |
| Features .....                                | 2             |
| Package Contents .....                        | 2             |
| Rose Electronics web site .....               | 3             |
| Product Registration .....                    | 3             |
| System Overview .....                         | 4             |
| Front Panel Indicators / Controls .....       | 5             |
| Rear Panel Connectors .....                   | 6             |
| UltraVista LC II Installation .....           | 7             |
| Installing the LCD Displays .....             | 8             |
| Bezel compensation value calculation .....    | 9             |
| Mounting the UltraVista LC II unit .....      | 11            |
| Connecting the cables .....                   | 11            |
| Using the built-in OSD features .....         | 12            |
| OSD Buttons .....                             | 12            |
| OSD Lock .....                                | 12            |
| OSD Menu Structure .....                      | 13            |
| Display Menu .....                            | 14            |
| Mask Control .....                            | 16            |
| System Menu .....                             | 17            |
| Information .....                             | 18            |
| Miscellaneous .....                           | 19            |
| OSD Configuration .....                       | 20            |
| Remote controller .....                       | 21            |
| Troubleshooting on the UltraVista LC II ..... | 22            |
| No image on one monitor .....                 | 22            |
| No image on two or three monitors .....       | 22            |
| No image on any monitor .....                 | 22            |
| Safety .....                                  | 23            |
| Service Information .....                     | 24            |
| Maintenance and Repair .....                  | 24            |
| Technical Support .....                       | 24            |

| <b>Figures</b>                                   | <b>Page #</b> |
|--|---------------|
| Figure 1. UltraVista LC II VWL-B122FD .....      | 4             |
| Figure 2. UltraVista LC II VWL-B133FD .....      | 4             |
| Figure 3. Front Panel Controls .....             | 5             |
| Figure 4. Rear Panel Controls .....              | 6             |
| Figure 5. 2 x 2 Installation.....                | 8             |
| Figure 6. 3 x 3 Installation.....                | 8             |
| Figure 7. Bezel calculation for VWL-B133FD.....  | 9             |
| Figure 8. Bezel Calculation for VWL-B122FD ..... | 10            |
| Figure 9. Mounting Brackets.....                 | 11            |
| Figure 10. Display Menu.....                     | 14            |
| Figure 11. Mask Control menu .....               | 16            |
| Figure 12. System Menu.....                      | 17            |
| Figure 13. Information Menu .....                | 18            |
| Figure 14. Miscellaneous menu.....               | 19            |
| Figure 15. OSD Configuration menu .....          | 20            |
| Figure 16. 2 x 2 array for VWL-B-122FD.....      | 28            |
| Figure 17. 4 x 4 array for VWL-B122FD.....       | 29            |
| Figure 18. 2x 2 array for VWL-B133FD.....        | 30            |
| Figure 19. 2 x 3 array for VWL-B133FD.....       | 31            |
| Figure 20. 3 x 2 array for VWL-B133FD.....       | 32            |
| Figure 21. 3 x 3 array for VWL-B133FD.....       | 33            |

| <b>Tables</b>                               | <b>Page #</b> |
|---|---------------|
| Table 1. China RoHS Compliance.....         | ii            |
| Table 2. OSD Menu Structure .....           | 13            |
| Table 3. Display modes .....                | 15            |
| Table 4. Specifications for VWL-B122FD..... | 25            |
| Table 5. Specifications for VWL-B133FD..... | 26            |

| <b>Appendices</b>                            | <b>Page #</b> |
|--|---------------|
| Appendix A- General Specifications .....     | 25            |
| Appendix B – Part Numbers .....              | 27            |
| Appendix C – Video wall configurations ..... | 28            |

# INTRODUCTION

## Disclaimer

While every precaution has been taken in the preparation of this manual, the manufacturer assumes no responsibility for errors or omissions. Neither does the manufacturer assume any liability for damages resulting from the use of the information contained herein. The manufacturer reserves the right to change the specifications, functions, or circuitry of the product without notice.

The manufacturer cannot accept liability for damages due to misuse of the product or other circumstances outside the manufacturer's control. The manufacturer will not be responsible for any loss, damage, or injury arising directly or indirectly from the use of this product.

## System Introduction

The UltraVista LC II is the product of choice for those who have the need to produce a high quality, inexpensive video wall. Two video wall models are available: a 2x2 and a 3x3. The 2x2 unit can be cascaded with other 2x2 units to support a 4x4 configuration; while the 3x3 can be cascaded to support a 9x9 array.

The UltraVista LC II can be automatically configured to produce three output modes; video wall mode, clone mode and replication mode. These modes are automatically configured based on the input resolution received from the video source. The video wall mode accurately splits the input image over the display mode. The clone mode displays the same image on all monitors. The replication mode shows the same image on each row of monitors.



Video Wall  
Mode

Clone  
Mode

Replication  
Mode

The UltraVista LC II requires a single-link DVI video input signal. This input is split directly over the display array; image scaling is accomplished automatically.

Configuring the UltraVista LC II can be done from a built-in OSD menu system, a computer connected to the RS-232 serial port, or using the remote control unit.

## Features

---

- Supports single-link DVI video input
- Single-link DVI video outputs
- Models:
  - 2x2 – 1 single-link DVI input / 4 single-link DVI outputs
  - 3x3 – 1 single-link DVI-input / 9 single-link DVI outputs
- Supports video input resolutions up to 1920 x 1200
- Output resolutions up to 1920 x 1200
- Easy adjustments for bezel compensation
- Expand a 2x2 model easily to a 4x4 display array; a 3x3 model to a 6x6 or a 9x9 display array
- Adjustments and control can be performed using a remote control or serial commands from a connected computer
- Compatible with most monitors that support DVI input. Displays can be LCD, HD Plasma, DLP, Projectors, or others.

## Package Contents

---

The package contents consist of the following:

- 1 UltraVista LC II unit
- 1 Single-link DVI cable
- 1 Power cord
- Power adapter
- 1 Remote control
- 1 Mounting brackets and hardware
- 1 Installation and operations manual CD
- 1 Serial cable

## Rose Electronics web site

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Visit our web site at [www.rose.com](http://www.rose.com) for additional information on UltraVista LC II and other products offered by Rose Electronics that are designed for data center applications, classroom environments, and many other access and switching applications.

## Product Registration

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Take advantage of the following when you register your Rose Electronics products online at <http://www.rose.com/htm/online-registrationform.htm>:

- Rose Standard Warranty *Plus...*
- Free Lifetime Firmware Updates
- Free Lifetime Technical Support
- 30 Day Money Back Guarantee
- Priority “First-in-Line” Status for Tech Support

## System Overview

The UltraVista LC II system will take a single high-resolution digital video input and split it correctly over the output display array. The UltraVista LC II can be controlled from the built-in On Screen Display, a computer connected directly to the RS232 port on the unit, or by using the included remote control. Figures 1 and 2 show the front and rear of the two models; the functions of the buttons and connectors on the front and rear panels for both units are outlined in Figures 3 and 4.



Figure 1. UltraVista LC II VWL-B122FD



Figure 2. UltraVista LC II VWL-B133FD

# Front Panel Indicators / Controls

|   |  |
|---|--|
|    | <p><b>Video Out Indicators</b><br/>LEDs indicate which DVI output port has a video signal.</p> |
|    | <p>OSD menu controls<br/>(See OSD section for Menu and menu selections)</p>                    |
|    | <p><b>Video In Indicator</b><br/>LED indicates a valid input video signal is present</p>       |
|    | <p><b>Power Indicator</b><br/>LED indicates that power is applied to the unit</p>              |
|    | <p><b>Menu select button</b><br/>Displays the OSD, Selects items and sets new item values</p>  |
|    | <p><b>Up arrow button</b><br/>Moves the selection up</p>                                       |
|    | <p><b>Down arrow button</b><br/>Moves the selection down</p>                                   |
|   | <p><b>Left arrow button</b><br/>Moves the selection left</p>                                   |
|  | <p><b>Right arrow button</b><br/>Moves the selection right</p>                                 |
|  | <p><b>Enter button</b><br/>Selects the highlighted selection</p>                               |

Figure 3. Front Panel Controls

## Rear Panel Connectors

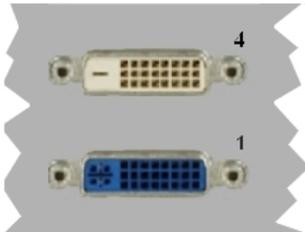
|   |   |
|---|---|
|   | <p><b>Power On / Off switch</b><br/><b>DC IN</b> – 12V DC<br/><b>Sync In / Sync Out</b> – Connects from and to additional units<br/><b>Serial DB9F connector</b> – Connects to an external computer's serial port for external configuration and control.</p> |
|  | <p><b>TOP</b> – DVI-D video out connector<br/><b>BOTTOM</b> – DVI-I video out connector</p> <p>NOTE: DVI-I connector supports both digital and analog signals.</p>  |
|  | <p>DVI-D video in connector</p>   |

Figure 4. Rear Panel Controls

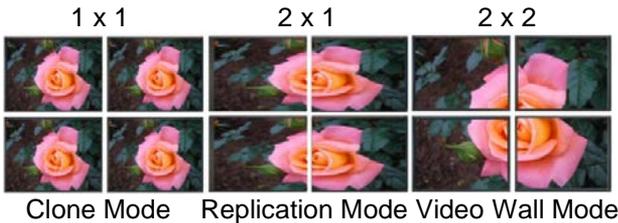
# INSTALLATION

## UltraVista LC II Installation

Installation of the UltraVista LC II is an easy process, and consists of the following:

- Install the display panels
- Mount, if necessary, the video wall controller
- Connect DVI cables, video input cable and power adapter to the video wall controller
- Adjust the screen resolution output settings
- Select a screen mode to display output
- Adjust the video wall mask settings to align images

The 2x2 model can be set up to display three modes. The 1x1, or clone mode, displays the full image on each output monitor. The 2x1, or replication mode, displays the input image across each row of monitors. The 2x2, or video wall mode, displays the input image across all monitors. Additionally, while in 2x2 mode, it is possible to simulate a Picture In Picture (PIP) look by having a complete image of the source in one of the four quadrants.



The 3x3 model can be set up to support the following video wall configurations: 2x2, 2x3, 3x2 and 3x3. With these configurations, two modes of operation are possible: clone mode and video wall mode.



These modes, including PIP, are selected by using the buttons on the front of the unit, or by using the remote IR controller.

## Installing the LCD Displays

Mount the monitors as shown in figures 5 and 6. All displays should be identical in size and resolution capabilities. When mounting the displays, keep the horizontal and vertical gaps between displays consistent.



Figure 5. 2 x 2 Installation

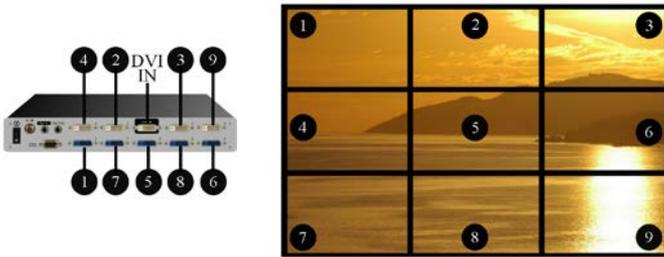


Figure 6. 3 x 3 Installation

## Bezel compensation value calculation

When all the displays have been mounted, measure the bezel width and height, and the viewable width and height as shown in figures 7 and 8. These values will be entered into the OSD to set the gap compensation which will produce a smooth transition from one display to the next.

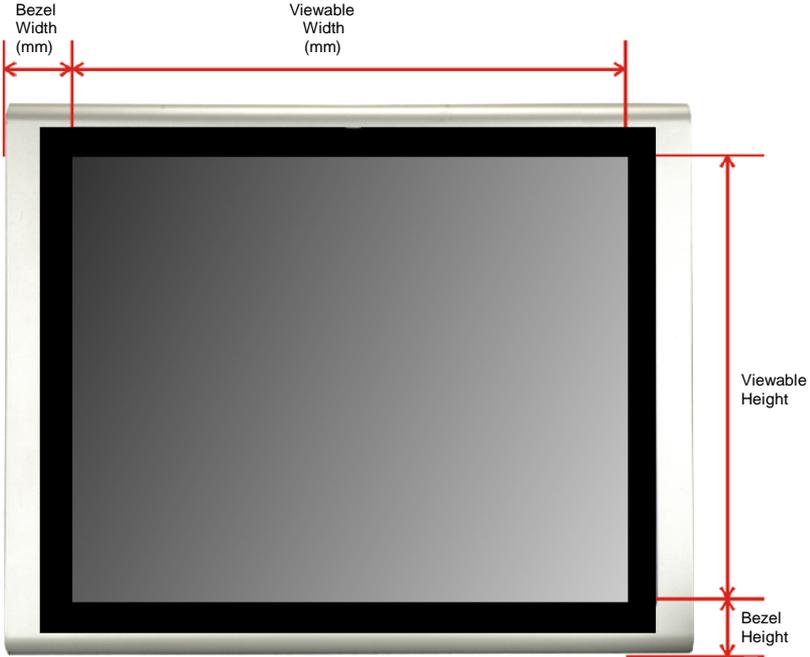
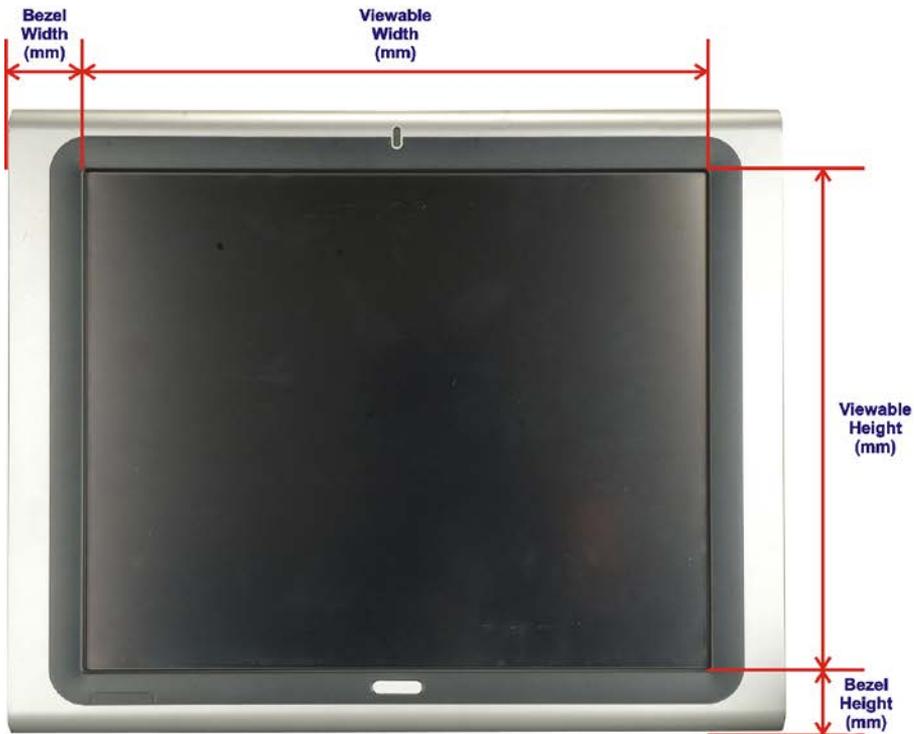


Figure 7. Bezel calculation for VWL-B133FD



#### 4-Panel Setup

$$\text{HMask Setting} = \frac{\text{Bezel Width (mm)}}{\text{Viewable Width (mm)}} \times 50$$

$$\text{VMask Setting} = \frac{\text{Bezel Height (mm)}}{\text{Viewable Height (mm)}} \times 50$$

#### 16-Panel Setup (on main video box)

$$\text{HMask Setting} = \frac{\text{Bezel Width (mm)}}{\text{Viewable Width (mm)}} \times 25$$

$$\text{VMask Setting} = \frac{\text{Bezel Height (mm)}}{\text{Viewable Height (mm)}} \times 25$$

Figure 8. Bezel Calculation for VWL-B122FD

## Mounting the UltraVista LC II unit

---

The UltraVista LC II unit can be placed on a desk, or mounted on a horizontal or vertical surface using the included mounting brackets. To mount the unit using the mounting brackets, remove the four rubber feet and secure the mounting brackets to the unit using the same holes and screws as shown below.

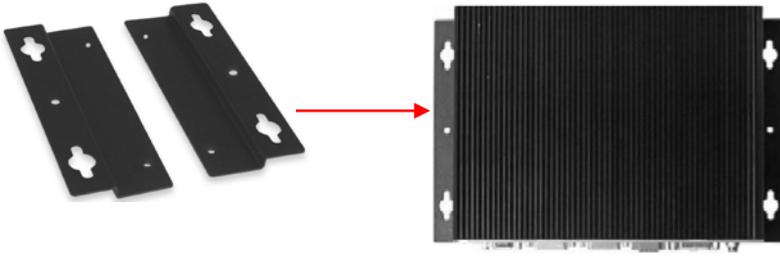


Figure 9. Mounting Brackets

The installation location must be:

- Centrally located so all cables can connect to the unit\*
- Out of direct sunlight
- No items placed on top of the unit
- On a firm surface or secured with the mounting brackets
- Away from any moisture or liquids
- Observe proper cable strain relief techniques

\* If longer distances are needed from the UltraVista LC II to the video source or to the display monitors, Rose Electronics' video extender line can support distances up to 400 feet using CATx cabling or 6 miles over fiber cabling.

## Connecting the cables

---

Refer to Appendix C for cabling options for the different video wall configurations.

# OPERATION

## Using the built-in OSD features

---

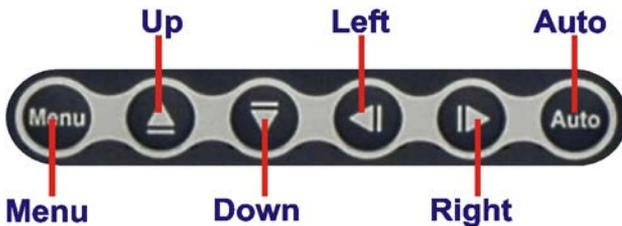
To invoke the built-in OSD, press the MENU button on the front panel. The OSD will display on the monitor connected to the DVI output port #1.

(Note: All cable connections and power must be applied.)

## OSD Buttons

---

There are several On Screen Display (OSD) control buttons located on the right side of the front panel. The figure below shows the arrangement of OSD controls.



- Power – Turns the video box On or Off.
- Menu / Enter – Enters the OSD, selects items and sets the new values entered.
- Left – Moves the selection left.
- Right – Moves the selection right.
- Up – Moves the selection up
- Down – Moves the selection down.
- Auto / Exit – Exits from any menu.

## OSD Lock

---

The OSD front panel buttons can be locked using the OSD Lock function. To turn the OSD lock On and Off, push the *Right* and *Auto / Exit* buttons simultaneously for a few seconds. The OSD display shows the current status as locked or unlocked.

## OSD Menu Structure

| Menu          | Options / Submenu | Options         |           |
|---------------|-------------------|-----------------|-----------|
| Display       | Output            |                 |           |
|               | Display Mode      |                 |           |
|               | Mask ->           | Horizontal Mask |           |
|               |                   | Vertical Mask   |           |
| Mask On / Off |                   |                 |           |
| System        | Factory           |                 |           |
|               | Information       |                 |           |
|               | Input->           | DVI             |           |
|               |                   | Component       |           |
|               | Miscellaneous->   | OSD->           | OSD Timer |
| OSD Rotation  |                   |                 |           |
|               | Identify          |                 |           |

Table 2. OSD Menu Structure

## Display Menu

---

Figure 10 shows the Display menu options, which are described below.



Figure 10. Display Menu

### Output Resolution

The Output Resolution setting shows the resolution of the video image output. The display output resolution setting options are shown below.

### Display Mode

The display mode configures how the image is displayed on the screen. The display modes are outlined in Table 3.

|               |  |
|---------------|--|
| <b>1 x 1</b>  | This is the default mode. The video input is cloned on all the monitors.         |
| <b>2 x 1</b>  | The video input is shown on the top two panels and repeated on the bottom two. * |
| <b>2 x 2</b>  | The video input is tiled over all the panels.                                    |
| <b>2 x 3</b>  | The video input is split across a six-panel array in a 2 x 3 setup. **           |
| <b>3 x 2</b>  | The video input is split across a six-panel array in a 3 x 2 setup. **           |
| <b>3 x 3</b>  | The video input is split across a nine-panel array in a 3 x 3 setup. **          |
| <b>Mode 1</b> | Same as 2 x 2, but the top left panel shows the full image. *                    |
| <b>Mode 2</b> | Same as 2 x 2, but the top right panel shows the full image. *                   |
| <b>Mode 3</b> | Same as 2 x 2, but the bottom left panel shows the full image. *                 |
| <b>Mode 4</b> | Same as 2 x 2, but the bottom right panel shows the full image. *                |
|               | * VWL-B122FD only<br>** VWL-B133FD only  |

Table 3. Display modes

## Mask Control

The mask control compensates for the spaces between monitors and bezel width in the video wall array. The mask control menu (Figure 11) shows for adjustment of the mask. The mask control options are shown and described below.

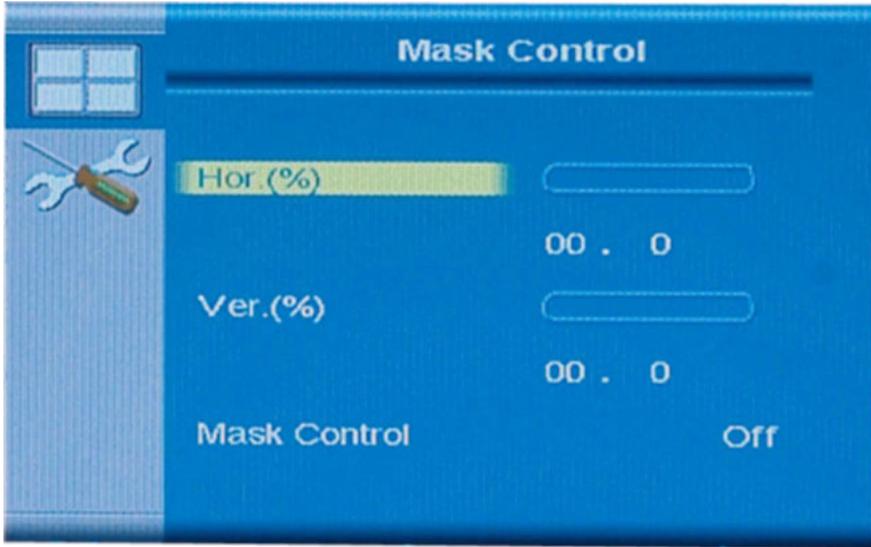


Figure 11. Mask Control menu

### Horizontal Mask

Sets the horizontal mask according to the formulas shown in Figures 7 and 8.

### Vertical Mask

Sets the vertical mask according to the formulas shown in Figures 7 and 8.

### Mask Control

The Mask Control option turns the Mask Control On or Off.

- Off** The video wall controller doesn't compensate for the gap between monitors. This is the default state.
- On** The video wall controller compensates for the gap between monitors.

## System Menu

---

The System Menu options are shown in Figure 12 and described in subsections below.



Figure 12. System Menu

### **Factory Reset**

Factory Reset returns all the setting to the factory default settings.

### **Information**

Shows video wall controller version information.

### **Misc.**

Misc. allows other OSD features to be adjusted.

### **Identify Monitors**

Identify Monitors displays the monitor's ID within the monitor array.

## Information

---

The information screen, shown in Figure 13, displays some basic information about the video wall controller and monitors.

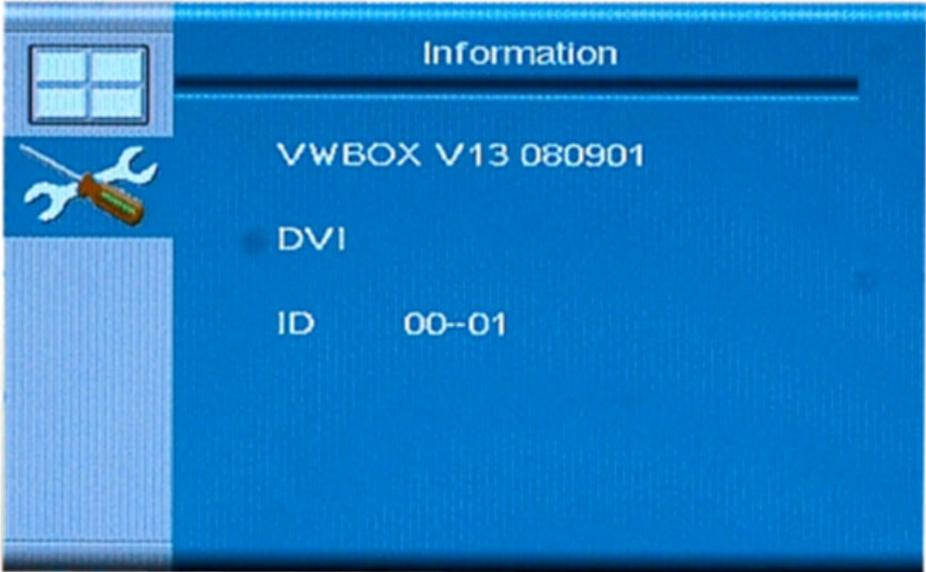


Figure 13. Information Menu

- Model name, firmware version and date
- Input type
- Video box ID (defines the current video wall controller in a larger array of video wall controllers)

## Miscellaneous

---

The Miscellaneous menu, shown in Figure 14, provides the option to go to the OSD setup menu.

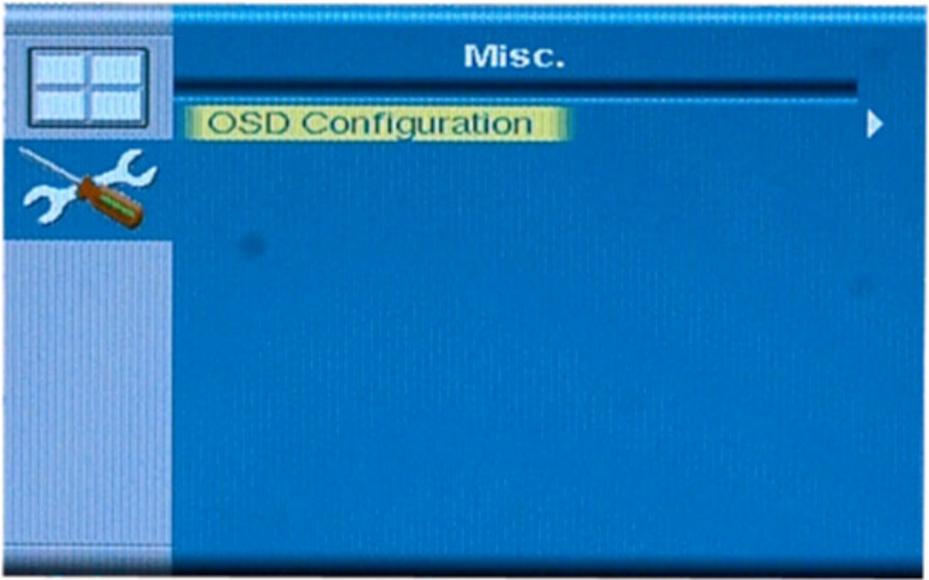


Figure 14. Miscellaneous menu

## OSD Configuration

---

OSD Configuration adjusts the display settings for the OSD Display. The OSD Configuration menu adjusts the rotation of the OSD, and the length and time the OSD remains on the screen. See Figure 15.



Figure 15. OSD Configuration menu

### **OSD Timer**

The OSD Timer sets how long the OSD screen stays on after the last button press.

### **OSD Rotation**

OSD Rotation allows the OSD menu to be rotated. This setting is for monitors that are oriented in a portrait layout.

## Remote controller

---

All UltraVista LC II models are supplied with a remote control. The remote control provides the same functions as the front panel push-buttons.



- Power: Turns the UltraVista LC II unit On or Off.
- Menu: Displays the OSD menu on monitor #1, selects items, and sets new values
- Left: Moves the selection left
- Right: Moves the selection right
- Up: Moves the selection up
- Down: Moves the selection down
- Enter: Exits from any menu

## Troubleshooting on the UltraVista LC II

---

### No image on one monitor

---

If there is no image on one monitor, follow these steps to fix the problem.

#### Check monitor power

**Step 1:** Check that the monitor is turned on.

**Step 2:** Check that the power source for the monitor is turned on.

**Step 3:** Check that the power source has the correct power rating (check panel specifications for details).

**Step 4:** Make sure that the LCD panel power cables are securely fastened to the monitor and to the power source.

#### Check Video Panel Connection

Check to see that the video cable is fitted correctly,

**Step 1:** Check that the monitor is connected to the video wall controller.

**Step 2:** Securely attach the video cable to the panel and to the video wall controller.

**Step 3:** Fasten the video cable at both ends and tighten the video cable screws.

### No image on two or three monitors

---

If there is no image on more than one of the panels, repeat the steps in “No image on one monitor” for all of the monitors in the array.

### No image on any monitor

---

If no image displays on any monitor, repeat the steps in “No image on one monitor” for all of the monitors in the array, then try the following steps.

#### Check video wall controller power

Make sure that the video wall controller is powered on.

**Step 1:** Check the power supply is connected to the power source.

**Step 2:** Check that the video wall controller is connected to the power supply.

#### Check source video connection

Check that the source video cable is securely connected to the video wall controller.

**Step 1:** Securely attach video cable from the video source to the video wall controller.

**Step 2:** Fasten the video cable at both ends and tighten the video cable screws.

## Safety

---

The UltraVista LC II has been tested for conformance to safety regulations and requirements, and has been certified for international use. Like all electronic equipment, the UltraVista LC II should be used with care. To protect yourself from possible injury and to minimize the risk of damage to the Unit, read and follow these safety instructions.

Follow all instructions and warnings marked on this Unit.

Except where explained in this manual, do not attempt to service this Unit yourself.

Do not use this Unit near water.

Assure that the placement of this Unit is on a stable surface.

Provide proper ventilation and air circulation.

Keep connection cables clear of obstructions that might cause damage to them.

Use only power cords, power adapter and connection cables designed for this Unit.

Keep objects that might damage this Unit and liquids that may spill, clear from this Unit. Liquids and foreign objects might come in contact with voltage points that could create a risk of fire or electrical shock.

Do not use liquid or aerosol cleaners to clean this Unit. Always unplug this Unit from its electrical outlet before cleaning.

Unplug this Unit and refer servicing to a qualified service center if any of the following conditions occur:

- The connection cables are damaged or frayed.
- The Unit has been exposed to any liquids.
- The Unit does not operate normally when all operating instructions have been followed.
- The Unit has been dropped or the case has been damaged.
- The Unit exhibits a distinct change in performance, indicating a need for service.

## Service Information

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### Maintenance and Repair

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This Unit does not contain any internal user-serviceable parts. In the event a Unit needs repair or maintenance, you must first obtain a Return Authorization (RA) number from Rose Electronics or an authorized repair center. This Return Authorization number must appear on the outside of the shipping container.

See Limited Warranty for more information.

When returning a Unit, it should be double-packed in the original container or equivalent, insured and shipped to:

Rose Electronics  
Attn: RA \_\_\_\_\_  
10707 Stancliff Road  
Houston, Texas 77099 USA

### Technical Support

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If you are experiencing problems, or need assistance in setting up, configuring or operating your UltraVista LC II, consult the appropriate sections of this manual. If, however, you require additional information or assistance, please contact the Rose Electronics Technical Support Department at:

Phone: (281) 933-7673  
E-Mail: [TechSupport@rose.com](mailto:TechSupport@rose.com)  
Web: [www.rose.com](http://www.rose.com)

Technical Support hours are from: 8:00 am to 6:00 pm CST (USA), Monday through Friday.

Please report any malfunctions in the operation of this Unit or any discrepancies in this manual to the Rose Electronics Technical Support Department.

## Appendix A- General Specifications

| Specification                 | Detail  |
|-------------------------------|---|
| <b>Model Name</b>             | VWL-B122FD  |
| <b>Main Features</b>          | <ol style="list-style-type: none"><li>1. Multiple Viewing Modes</li><li>2. Software OSD</li><li>3. Remote Control</li><li>4. Auto-scaling of the image to match output resolution</li></ol> |
| <b>Inputs</b>                 | DVI-D   |
| <b>Outputs</b>                | 4 x DVI-D   |
| <b>Dimensions (W x D x H)</b> | 9 in x 7 in x 1.9 in /<br>229.5 mm x 178.2 mm x 47 mm   |
| <b>Input Resolution</b>       | 720x350, 640x400, 720x400, 640x480,<br>800x 600, 832x624, 1024x768, 1152x864,<br>1152x 870, 1152x900, 1280x768, 1280x960,<br>1280x 1024, 1600x1200, 1680x1050,<br>1920x1200                 |
| <b>Output Resolution</b>      | 1024x768, 1360x768, 1280x1024, 1400x 1050,<br>1680x1050, 1600x1200, 1920x1200   |
| <b>Power Adapter Input</b>    | 90 VAC to 264 VAC / 47 Hz to 63 Hz  |
| <b>Power Adapter Output</b>   | 25 W  |
| <b>Safety and Emission</b>    | CE, FCC   |
| <b>Temperature</b>            | 32 °F – 104 °F / 0 °C to 40 °C  |
| <b>Power Consumption</b>      | 20 W  |

Table 4. Specifications for VWL-B122FD

| Specification                 | Detail  |
|-------------------------------|---|
| <b>Model Name</b>             | VWL-B133FD  |
| <b>Main Features</b>          | <ol style="list-style-type: none"> <li>1. Multiple Viewing Modes</li> <li>2. Software OSD</li> <li>3. Remote Control</li> <li>4. Bezel masking</li> </ol> |
| <b>Inputs</b>                 | One DVI-D single-link   |
| <b>Outputs</b>                | Nine DVI-D single-link  |
| <b>Dimensions (W x D x H)</b> | 11.6 in x 7.5 in x 2.6 in (2.8 in with rubber feet) / 295 mm x 190 mm x 65 mm (71.4 mm with rubber feet)  |
| <b>Cooling</b>                | System fan  |
| <b>Input Resolution</b>       | 800x600, 1024x768, 1152x864, 1280x768, 1280x960, 1280x1024, 1600x1200, 1680x1050, 1920x1200   |
| <b>Output Resolution</b>      | 1024x768, 1360x768, 1280x1024, 1400x1500, 1680x1050, 1600x1200, 1920x1200, 1366x768, 1920 x 1080  |
| <b>Power Adapter Input</b>    | 90 VAC to 264 VAC   |
| <b>Power Adapter Output</b>   | 40 W  |
| <b>Safety and Emission</b>    | CCC, CE, FCC  |
| <b>Temperature</b>            | 32 °F – 104 °F / 0 °C to 40 °C  |
| <b>Power Consumption</b>      | 35 W  |

Table 5. Specifications for VWL-B133FD

## Appendix B – Part Numbers

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| Part Number | Description              |
|-------------|--------------------------|
| VWL-B122D   | 2 x 2 Video wall display |
| VWL-B133D   | 3 x 3 Video wall display |

## Appendix C – Video wall configurations

The UltraVista LC II can be set up to support various display arrays; figures 16 through 21 illustrate the more common array setups.

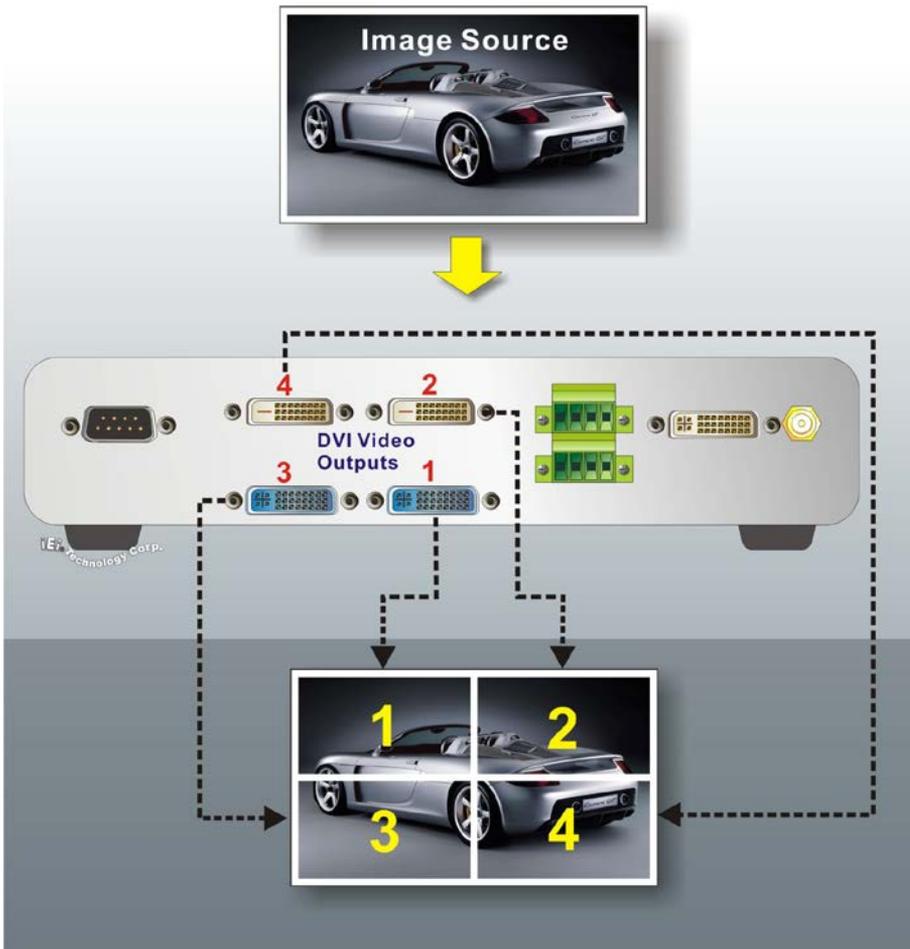


Figure 16. 2 x 2 array for VWL-B-122FD

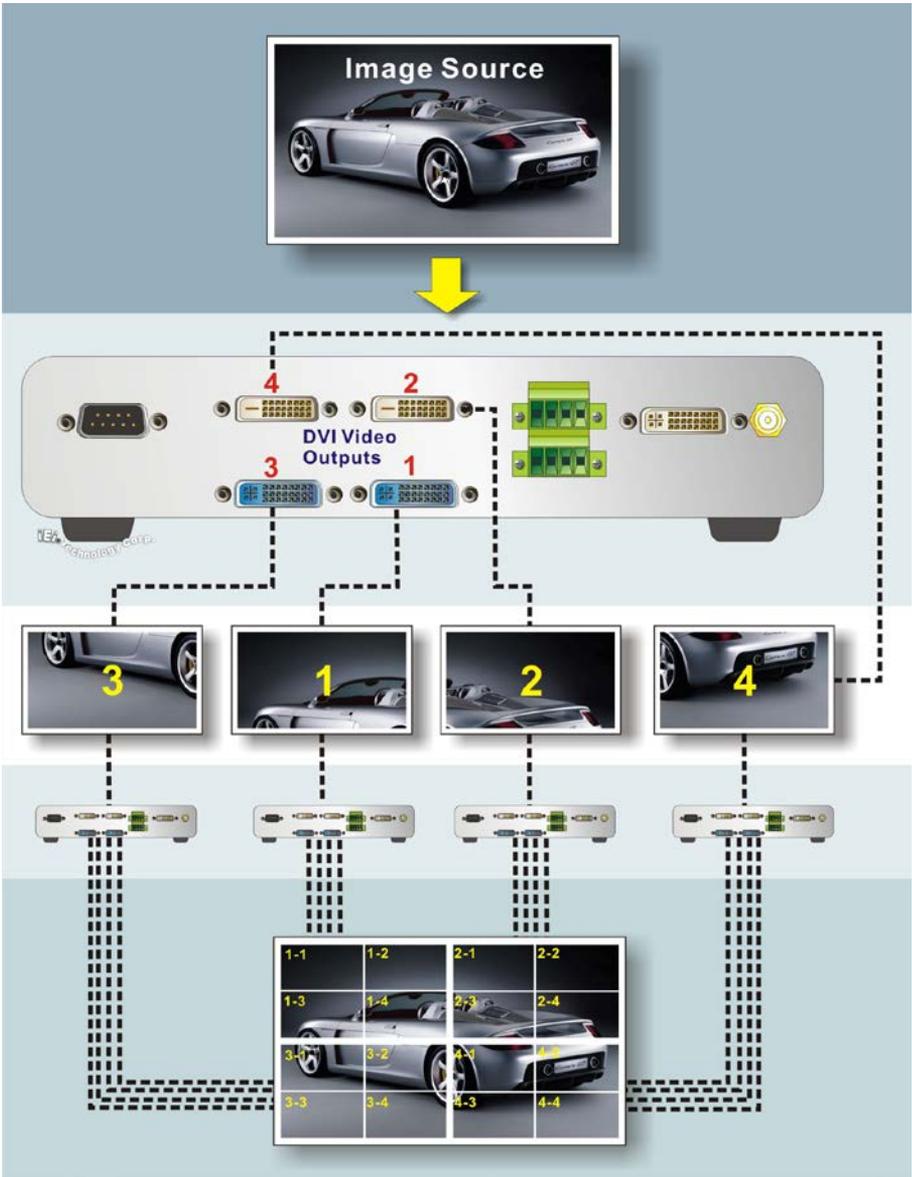


Figure 17. 4 x 4 array for VWL-B122FD

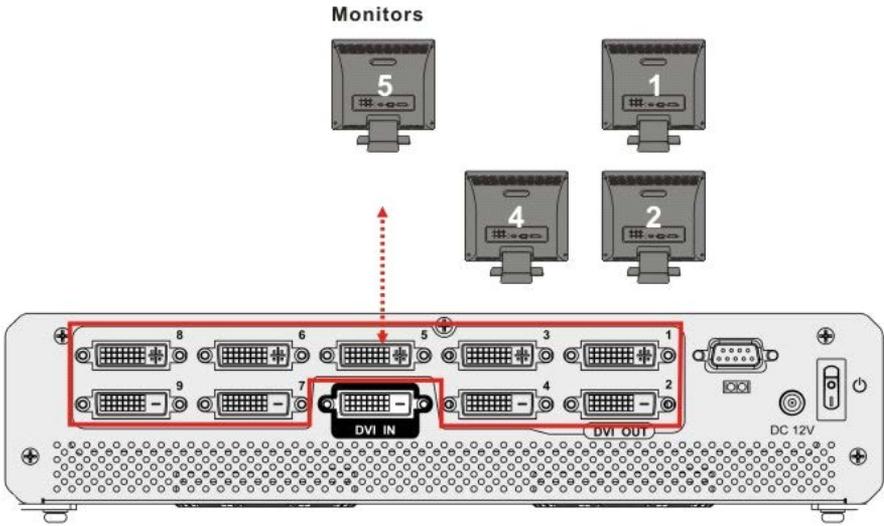


Figure 18. 2x2 array for VWL-B133FD

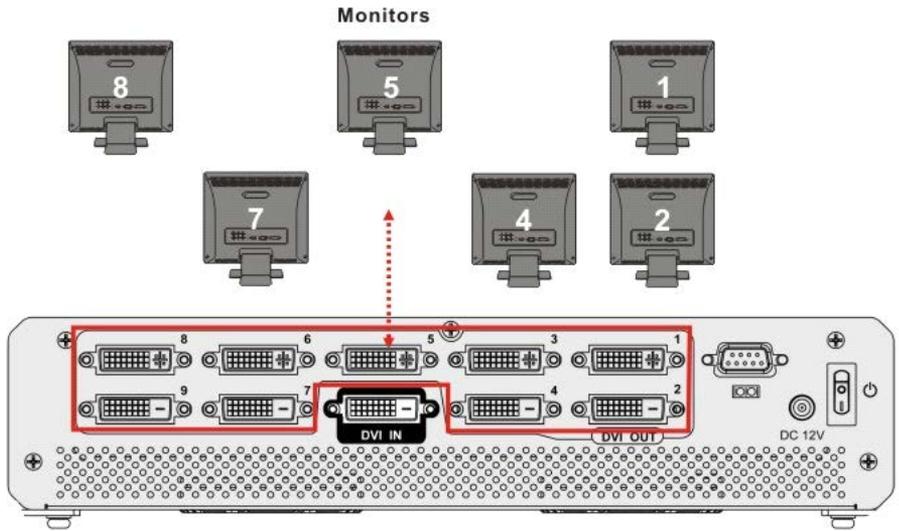


Figure 19. 2 x 3 array for VLW-B133FD

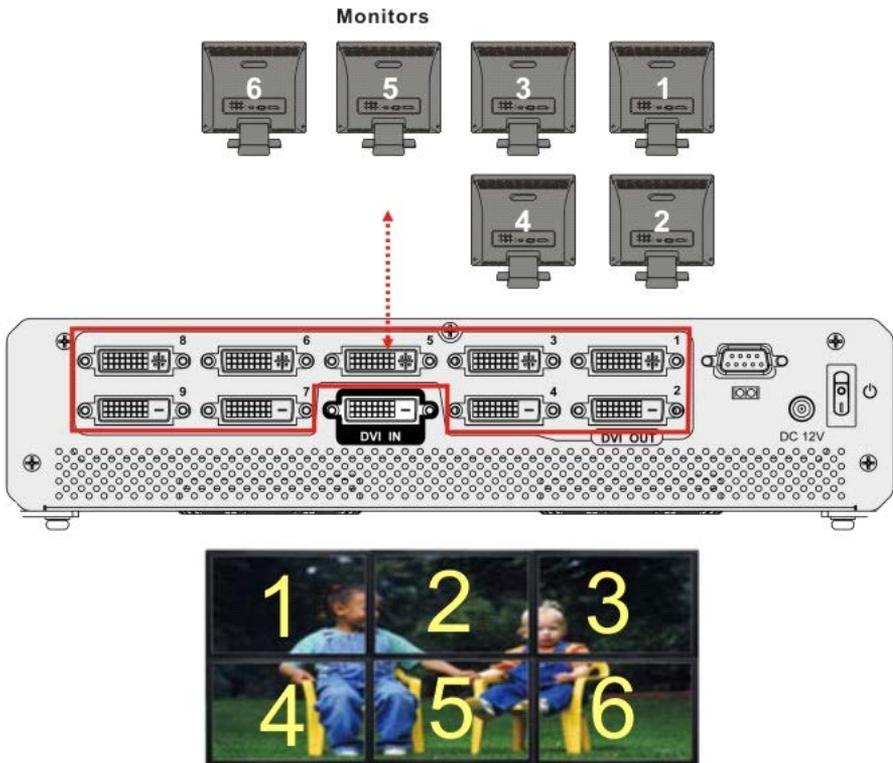


Figure 20. 3 x 2 array for VWL-B133FD

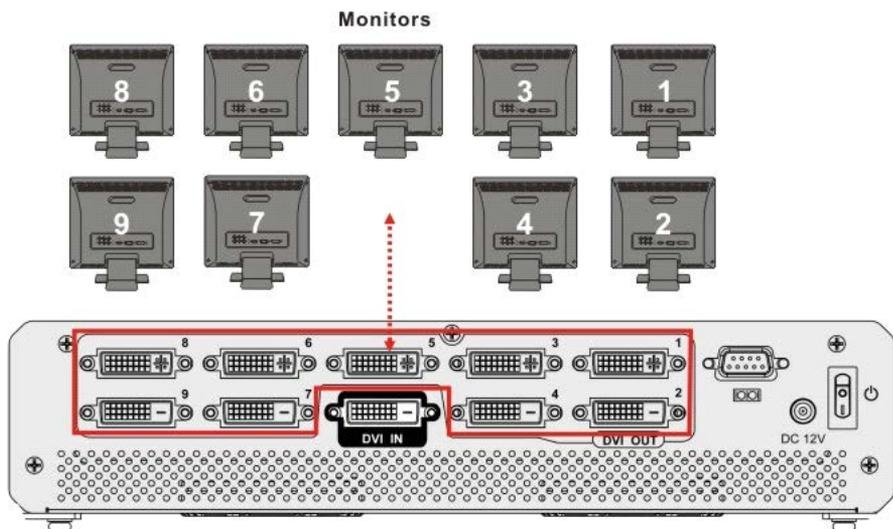


Figure 21. 3 x 3 array for VWL-B133FD



## Server Management



## Solutions

10707 Stancliff Road  
Houston, Texas 77099

Phone (281) 933-7673  
[www.rose.com](http://www.rose.com)