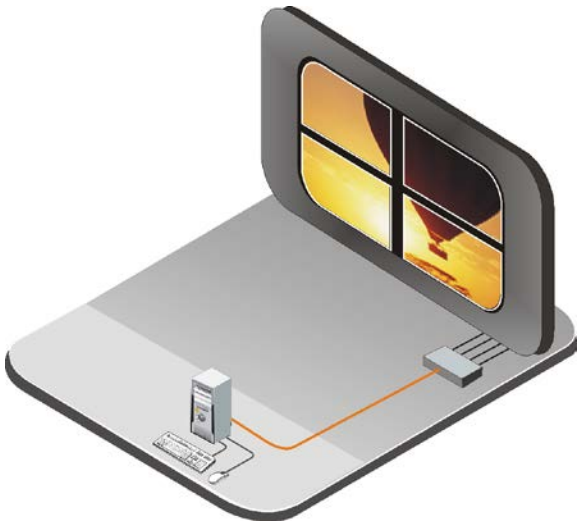
UltraVista LC II HDMI

2x2 HDMI Video Controller/Splitter

ROSE.COM

INSTALLATION AND OPERATIONS MANUAL

VWL-B122/FH



ROSE ELECTRONICS

10707 Stancliff Road
Houston, Texas 77099

Phone: (281) 933-7673
WWW.ROSE.COM

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Rose Electronics warrants the UltraVista LC II HDMI to be in good working order for one year from the date of purchase from Rose Electronics or an authorized dealer. Should this product fail to be in good working order at any time during this one-year warranty period, Rose Electronics will, at its option, repair or replace the Unit as set forth below. Repair parts and replacement units will be either reconditioned or new. All replaced parts become the property of Rose Electronics. This limited warranty does not include service to repair damage to the Unit resulting from accident, disaster, abuse, or unauthorized modification of the Unit, including static discharge and power surges.

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Rose Electronics Part # MAN-UV-LC2-HDMI
Printed In the United States of America – Revision 1.2

HAZARDOUS MATERIAL DISCLOSURE

The details provided below are to ensure that the product is compliant with the Peoples Republic of China RoHS standards. The table below acknowledges the presence of small quantities of certain materials in the product, and is applicable to China RoHS only.

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

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

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

Table 1. China RoHS Compliance

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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 HDMI is the product of choice for those who have the need to produce a high quality, inexpensive video wall. The video wall is available in a 2x2 model. It can be cascaded with other 2x2 units to support a 4x4 configuration.

The UltraVista LC II HDMI 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 HDMI requires an HDMI video input signal. This input is split directly over the display array; image scaling is accomplished automatically.

Configuring the UltraVista LC II HDMI 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 HDMI video input
- HDMI video outputs
- 2x2 Models: 1 single-link HDMI input / 4 single-link HDMI 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
- Adjustments and control can be performed using a remote control or serial commands from a connected computer
- Compatible with most monitors that support HDMI input. Displays can be LCD, HD Plasma, DLP, Projectors, or others.

Package Contents

The package contents consist of the following:

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

Rose Electronics Web Site

Visit our web site at www.rose.com for additional information on UltraVista LC II HDMI 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

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 HDMI system will take a single high-resolution digital video input and split it correctly over the output display array. The UltraVista LC II HDMI 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. Figure 1 shows the front and rear of the unit; the functions of the buttons and connectors on the front and rear panels are outlined in Figures 2 and 3.

Figure 1. UltraVista LC II HDMI VWL-B122/FH

Front Panel Indicators / Controls

	**Video Out Indicators** LEDs indicate which DVI output port has a video signal.
	**OSD menu controls** (See OSD section for Menu and menu selections)

	**Video In Indicator** LED indicates a valid input video signal is present
	**Power Indicator** LED indicates that power is applied to the unit
	**Menu Select and Enter button** ▪ When OSD is not displayed, displays the OSD, selects items and sets new item values. ▪ When OSD is displayed, selects the highlighted selection.
	**Up arrow button** Moves the selection up
	**Down arrow button** Moves the selection down
	**Left arrow button** Moves the selection left
	**Right arrow button** Moves the selection right
	**Exit button** Exits from any menu

Figure 2. Front Panel Controls

Rear Panel Connectors

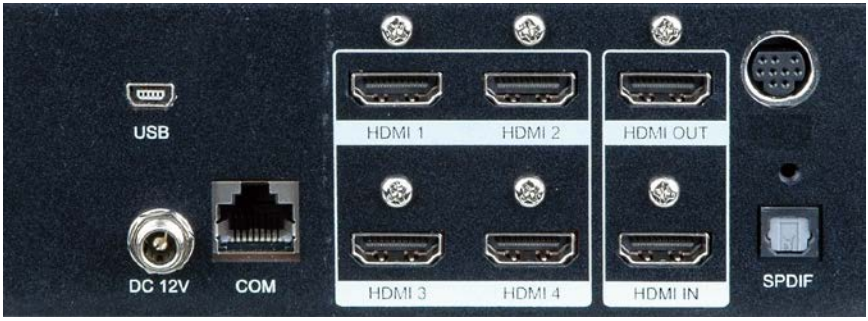


Figure 3. Rear Panel Connectors

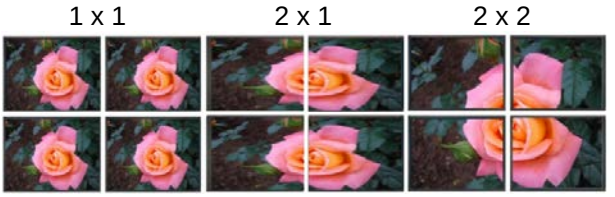
INSTALLATION

UltraVista LC II HDMI Installation

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

- Install the display panels
- Mount, if necessary, the video wall controller
- Connect HDMI 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 unit 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.



Clone Mode Replication Mode 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 remote controller.

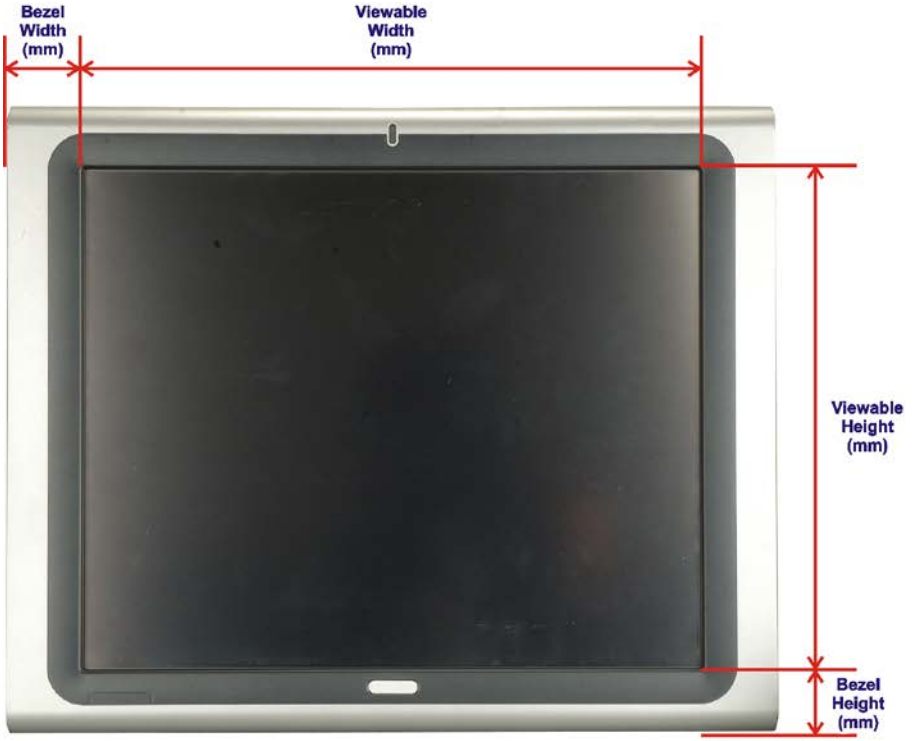
Installing the LCD Displays

Mount the monitors as shown in figure 4. All displays should be identical in size and resolution capabilities. When mounting the displays, keep the horizontal and vertical gaps between displays consistent.

Figure 4. 2 x 2 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 figure 5. 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.



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 5. Bezel Calculation for VWL-B122/FH

Mounting the UltraVista LC II HDMI unit

The UltraVista LC II HDMI 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.

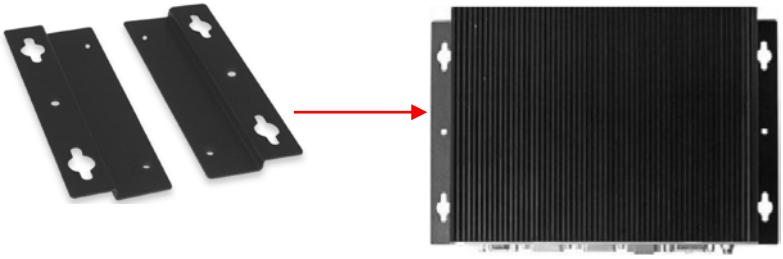


Figure 6. Mounting Brackets

The installation location must meet the following conditions.

- 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 HDMI 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.

Using the Built-In OSD features

To invoke the built-in OSD, press the MENU/ENTER 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.

Figure 7. OSD Buttons

- 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.
- Exit – Exits from any menu.

OSD Menu Structure

Menu	Options / Submenu	Options
Display	Output Resolution	
	Display Mode	
	Mask Control ->	Horizontal %
		Vertical %
		Mask Control
System	Factory Reset	
	Information	
	Miscellaneous->	OSD Configuration
		Brightness
		Contrast
	Identify Monitors	

Table 2. OSD Menu Structure

Display Menu

Figure 8 shows the Display menu options, which are described below.

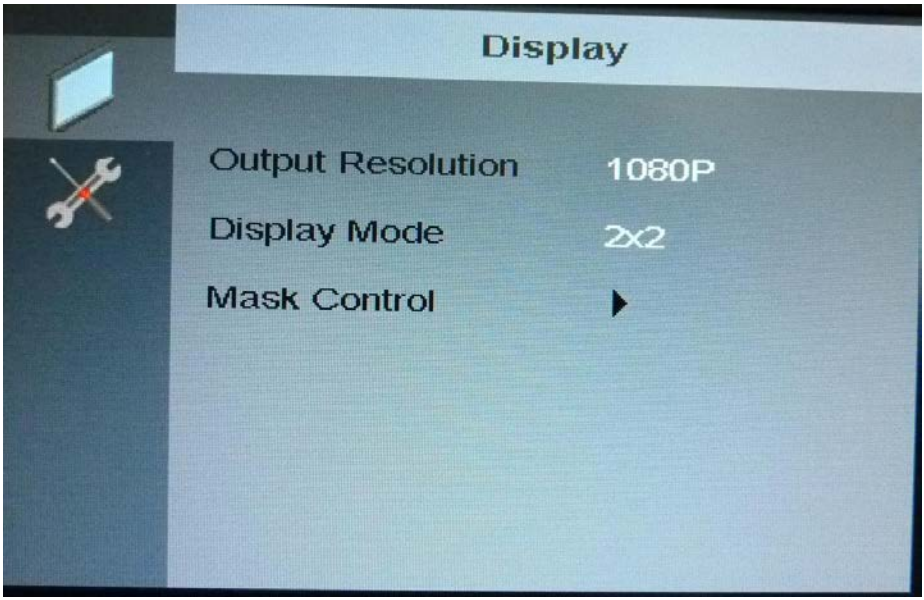


Figure 8. Display Menu

Output Resolution

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

- 720p
- 1080p

Display Mode

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

1 x 1	This is the default mode. The video input is cloned on all the monitors.
2 x 1	The video input is shown on the top two panels and repeated on the bottom two.
2 x 2	The video input is tiled over all the panels.
Mode 1	Same as 2 x 2, but the top left panel shows the full image.
Mode 2	Same as 2 x 2, but the top right panel shows the full image.
Mode 3	Same as 2 x 2, but the bottom left panel shows the full image.
Mode 4	Same as 2 x 2, but the bottom right panel shows the full image.

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 9) allows for adjustment of the mask. The mask control options are shown and described below.

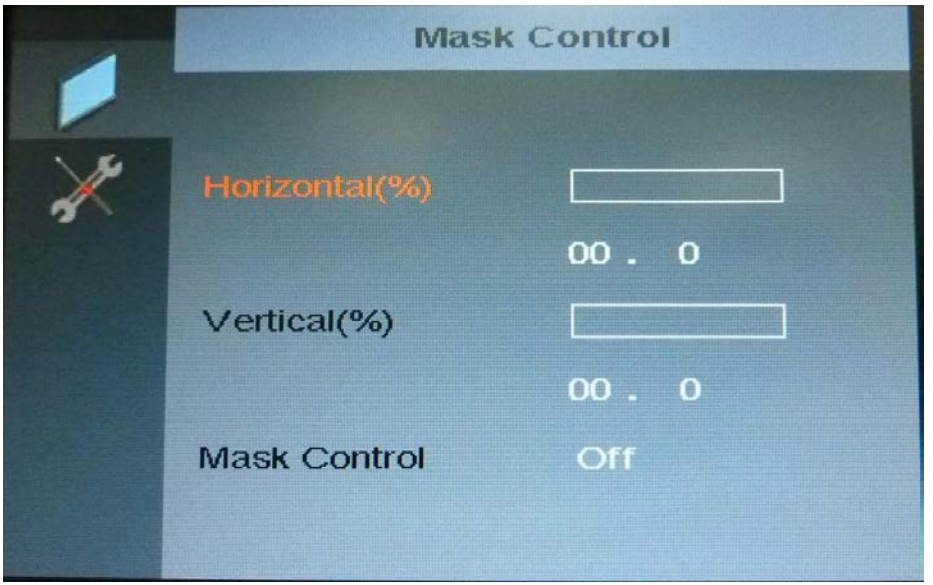


Figure 9. Mask Control menu

Horizontal Mask
Sets the horizontal mask according to the formulas shown in Figure 5.

Vertical Mask
Sets the vertical mask according to the formulas shown in Figure 5.

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 10 and described in subsections below.

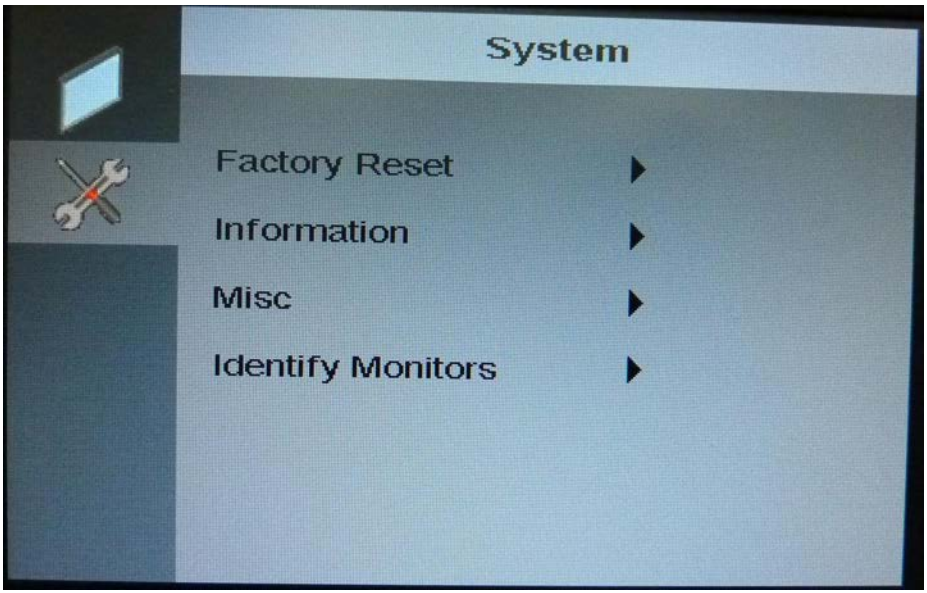


Figure 10. System Menu

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

Information
Shows video wall controller version information. The information details are shown in the next section.

Misc.
Misc. allows OSD features to be adjusted. These settings are shown in the Miscellaneous section below.

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

Information

The information screen, shown in Figure 11, displays some basic information about the video wall controller and monitors.

Figure 11. Information Menu

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

Miscellaneous

The Miscellaneous menu, shown in Figure 12, provides the option to go to the OSD setup menu.

Figure 12. Miscellaneous Menu

OSD Configuration
Adjusts the rotation of the OSD display and the length of the inactivity period before the OSD display closes.

Brightness
Adjusts the display brightness.

Contrast
Adjusts the display contrast.

Remote controller

All UltraVista LC II HDMI 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 HDMI 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

Troubleshooting on the UltraVista LC II HDMI

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.

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.

Safety

The UltraVista LC II HDMI 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 HDMI 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

Service Information

Maintenance and Repair

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

If you are experiencing problems, or need assistance in setting up, configuring or operating your UltraVista LC II HDMI, 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
Web: 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.

APPENDICES

Appendix A – General Specifications

Specification	Detail
Model Name	VWL-B122/FH
Main Features	1. Multiple Viewing Modes 2. Software OSD 3. Remote Control 4. Bezel masking
Inputs	1 x HDMI
Outputs	4 x HDMI
Dimensions (W x D x H)	6.14 in x 6.65 in x 2.36 in / 156 mm x 169 mm x 60 mm
Input Resolution	640x400, 720x400, 640x480, 800x600, 1024x768, 1152x864, 1280x720, 1280x768, 1280x960, 1280x1024, 1360x768, 1366x768, 1600x1200, 1920x1200, 480P, 720P, 1080I/P
Output Resolution	720P, 1080P
Power Adapter Input	90 VAC to 264 VAC / 47 Hz to 63 Hz
Power Adapter Output	12 VDC
Safety and Emission	CE, FCC
Temperature	32 °F – 104 °F / 0 °C to 40 °C
Power Consumption	24 W

Table 4. Specifications for VWL-B122/FH

Appendix B – Part Numbers

Part Number	Description
VWL-B122/FH	2 x 2 HDMI Video wall display

ROSE ELECTRONICS

Server Management

Solutions

10707 Stancliff Road
Houston, Texas 77099

Phone (281) 933-7673
www.rose.com