

# UltraVista 4K60

UHD Video Wall Controller • 4K60

## Installation and Operation Manual



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# LIMITED WARRANTY

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Rose Electronics® warrants the UltraVista 4K60 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.

Limited Warranty service may be obtained by delivering this unit during the one-year warranty period to Rose Electronics or an authorized repair center providing a proof of purchase date. If this Unit is delivered by mail, you agree to insure the Unit or assume the risk of loss or damage in transit, to prepay shipping charges to the warranty service location, and to use the original shipping container or its equivalent. You must call for a return authorization number first. Under no circumstances will a unit be accepted without a return authorization number. Contact an authorized repair center or Rose Electronics for further information.

ALL EXPRESS AND IMPLIED WARRANTIES FOR THIS PRODUCT INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO A PERIOD OF ONE YEAR FROM THE DATE OF PURCHASE, AND NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THIS PERIOD. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

IF THIS PRODUCT IS NOT IN GOOD WORKING ORDER AS WARRANTIED ABOVE, YOUR SOLE REMEDY SHALL BE REPLACEMENT OR REPAIR AS PROVIDED ABOVE. IN NO EVENT WILL ROSE ELECTRONICS BE LIABLE TO YOU FOR ANY DAMAGES INCLUDING ANY LOST PROFITS, LOST SAVINGS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF OR THE INABILITY TO USE SUCH PRODUCT, EVEN IF ROSE ELECTRONICS OR AN AUTHORIZED DEALER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BY ANY OTHER PARTY.

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## **DECLARATIONS OF CONFORMITY**

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This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Subpart J of 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 is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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# INTRODUCTION

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## Disclaimer

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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, circuitry of the product, and manual content at any time 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. (See limited warranty.)

## System Introduction

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Thank you for choosing the UltraVista 4K60. The UltraVista 4K60 is the result of Rose Electronics commitment to providing state-of-the-art solutions for today's demanding workplace. The UltraVista 4K60 Video Wall Processor functions as a tool to create and manage real-time multiple screen video displays.

The UltraVista 4K60 is a comprehensive video wall processor. An HDMI or DVI input signal is flexibly displayed output to four HDMI or DVI displays. The input image can be cropped or zoomed to show any part of it on an output display. Each display output can also be individually rotated to generate a mix of portrait and landscape oriented displays.

The UltraVista 4K60 accepts HDMI or DVI signals. The use of 4K HDMI video input helps ensure crystal-clear high definition video across the output displays.

## Features

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- Supports HDMI input from 640x480 to 4K2K@60HZ, or by adapter, DVI input to 1920x1200@60Hz
- Four Full HD DVI video outputs with resolutions to 1920 x 1200 @ 60 Hz
- Each display output can be individually rotated, for a mix of portrait and landscape oriented displays
- Windows based software allows easy configuration via IP or USB connection
- Stereo analog audio output to external speakers or digital output to speaker equipped HDMI displays
- EDID can be sourced from four internal default selections, from the remote displays, or from file
- IR remote control allows on the fly modification of output layout and audio volume
- Image parameters and layout are automatically saved in flash memory for recall

## Package Contents

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The package contents consist of the following:

- The UltraVista 4K60
- 1U rack-mounting ear set
- 12V 2A Power Supply
- Video Wall 4K60 software
- Manual

If the package contents are not correct, contact Rose Electronics or your reseller so the problem can be quickly resolved.

# SYSTEM OVERVIEW

## Sample Application

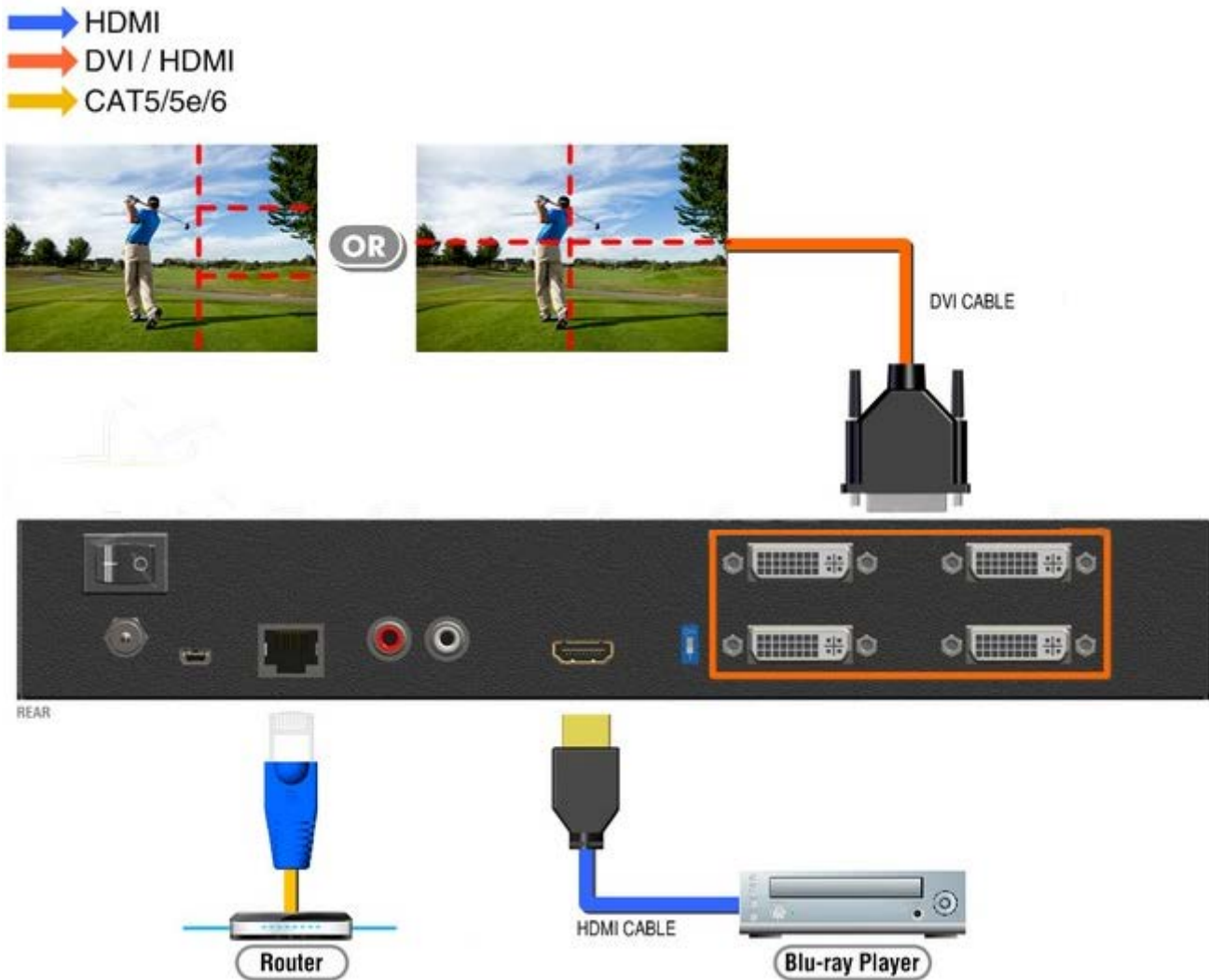


Figure 1. UltraVista 4K60 –Video Wall displaying 1920x1080 on all monitors

## Video Resolutions Supported

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Input Resolution	Output Resolution
720x480@30Hz	640x480@60Hz
720x480@60Hz	720x480@60Hz
720x576@30Hz	720x576@60Hz
720x576@60Hz	800x600@60Hz
1280x720@60Hz	1024x768@60Hz
1920x1080@30Hz	1280x720@60Hz
1920x1080@60Hz	1280x768@60Hz
4K2K@30Hz	1280x960@60Hz
4K2K@60Hz (4:2:0 10bits)	1280x1024@60Hz
4K2K@60Hz (4:2:2 10 bits)	1366x768@60Hz
4K2K@60Hz (4:4:4 8bits)	1440x900@60Hz
	1680x1050@60Hz
	1920x1080@60Hz
	1920x1200@60Hz
	1600x1200@60Hz

Table 1. Supported Video Resolutions



# MODEL

## UltraVista 4K60 Model

The UltraVista 4K60 is available in a single model as shown below.

### Model View



Figure 2. UltraVista 4K60

### Front View



Figure 3. Front View

- IR Sensor
- Power indicator
- Control buttons:
  - 2x2 4K2K UHD layout
  - Recall custom layout (3 layout sets)
  - Recall original layout
  - Toggle between 1x1 and 2x2 layout
  - Toggle between 3x1 with  $-90^\circ$  rotation and 3x1 with  $+90^\circ$  rotation
  - Toggle between 4x1 with  $-90^\circ$  rotation and 4x1 with  $+90^\circ$  rotation

## Rear View



Figure 4. Rear View

- **Switch:** Power ON/OFF
- **12VDC:** power adapter jack
- **PROG:** USB for firmware update and software configuration
- **Ethernet:** Ethernet port for software configuration
- **Audio L:** left channel analog audio
- **Audio R:** right channel analog audio
- **HDMI IN:** video input
- **Normal F/W:** dip switch for updating firmware; default position=1 (off)
- **DVI OUT 1 - 4:** video output

# INSTALLATION AND OPERATION

## Installation

Installation of the UltraVista 4K60 is very simple. First make the necessary connections, and then install the Video Wall 4K60 software on a Windows based PC, laptop, or tablet.

### Connections to the UltraVista 4K60

Connect the video source to the HDMI IN connector. If the source output is DVI, use a DVI to HDMI cable. Connect the displays to the four DVI OUT connectors. If the displays require HDMI input, use DVI to HDMI cables. Connect the +12VDC power supply to the power jack. Apply power to the unit.

**NOTE:** When power is removed from the unit, wait 10 seconds before reapplying it once again, so as to allow the power capacitors to fully discharge.

### Software Installation

Install the Video Wall 4K60 software on a computer running Microsoft Windows 98, 2000, XP, 7, or 8. The software can communicate with the UltraVista 4K60 through a USB connection or through an Ethernet connection. For a TCP/IP control interface, connect an Ethernet router or a crossover Ethernet cable between configuration PC and the RJ45 connector of the UltraVista 4K60. Alternatively connect the configuration PC to the UltraVista 4K60 mini USB PROG connector.

**Note:** Be sure to make the USB or Ethernet connection before running the software.

The first dialog pop-up displayed by the program allows the selection of either USB or Ethernet connections.

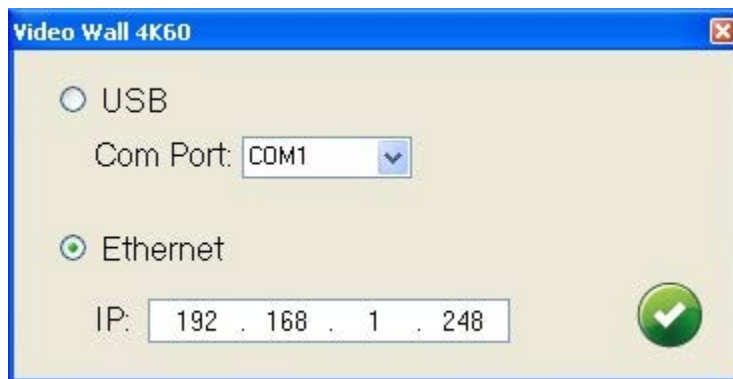


Figure 5. Connection Dialog Box

Select the appropriate connection type and details and click the green check mark. If the attempt to connect is unsuccessful, an appropriate notification will be displayed.



Figure 6. Connection Failure

When the connection is successful, the main control interface will be displayed. This is described in the Operation section below.

## Operation

This section deals with how the Video Wall 4K60 software is used to set up and configure the display outputs that make up the video wall.

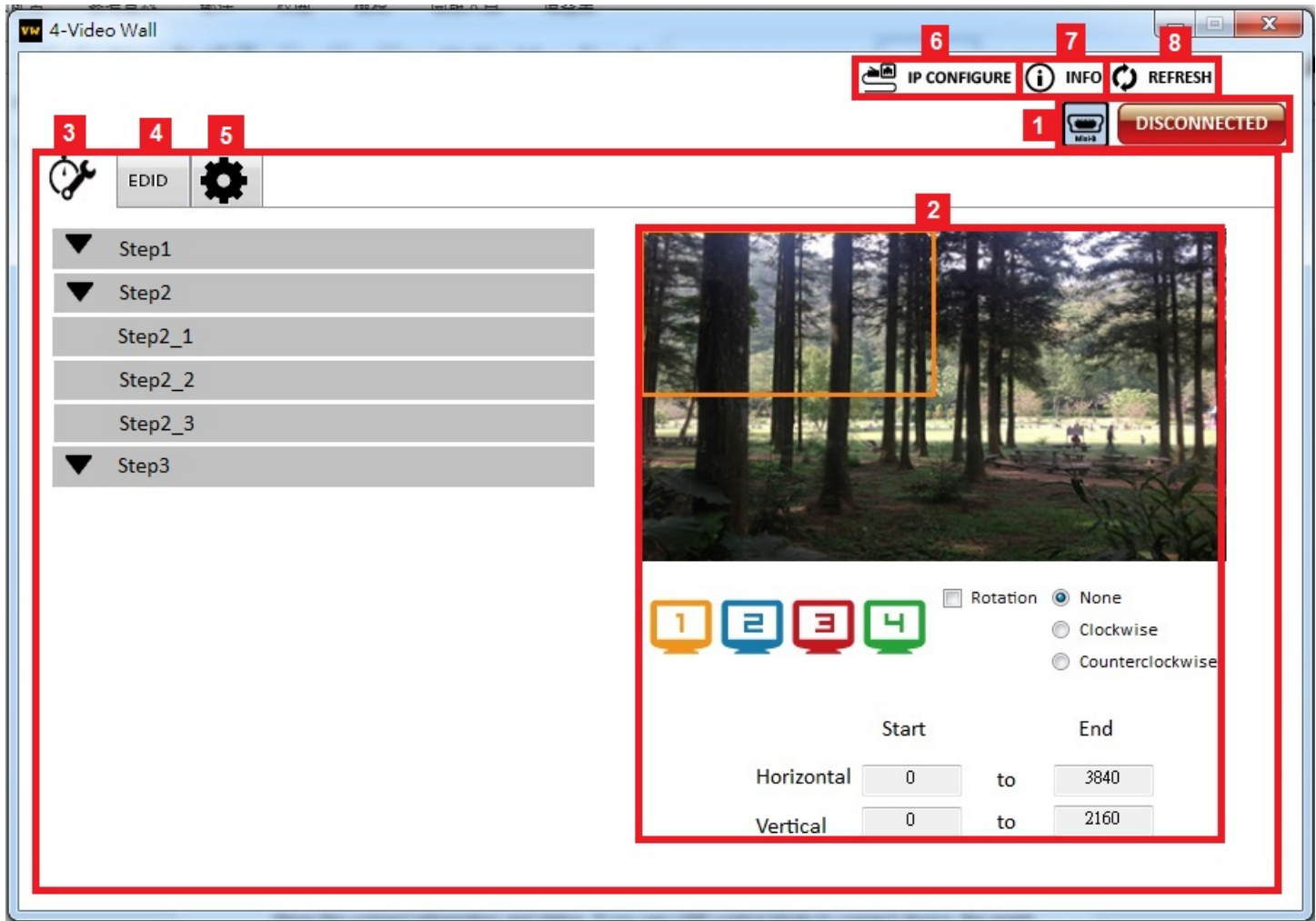




Figure 7. Video Wall 4K60 Control Interface

### Control Interface Components

- Connection Status:** Indicates the current connection type and status,  for USB,  for Ethernet
- Quick Selection:** Use this menu to set up screen resolution, coordinates, and screen layout. Click one of the four colored display icons and drag within the image. The frame color within the image will match the color of the icon clicked. The window coordinates will be displayed in the *Horizontal* and *Vertical* *Start* and *End* boxes.
- Rotation (only at 720p or 1080p output resolution):** Rotate the selected frame 90°, clockwise or counterclockwise.

Output Selection and Resolution:

- a. *Step1*: View the current input resolution, and click a display icon to select the output port and set its resolution. Changing an output's resolution will change the coordinates displayed for that output.

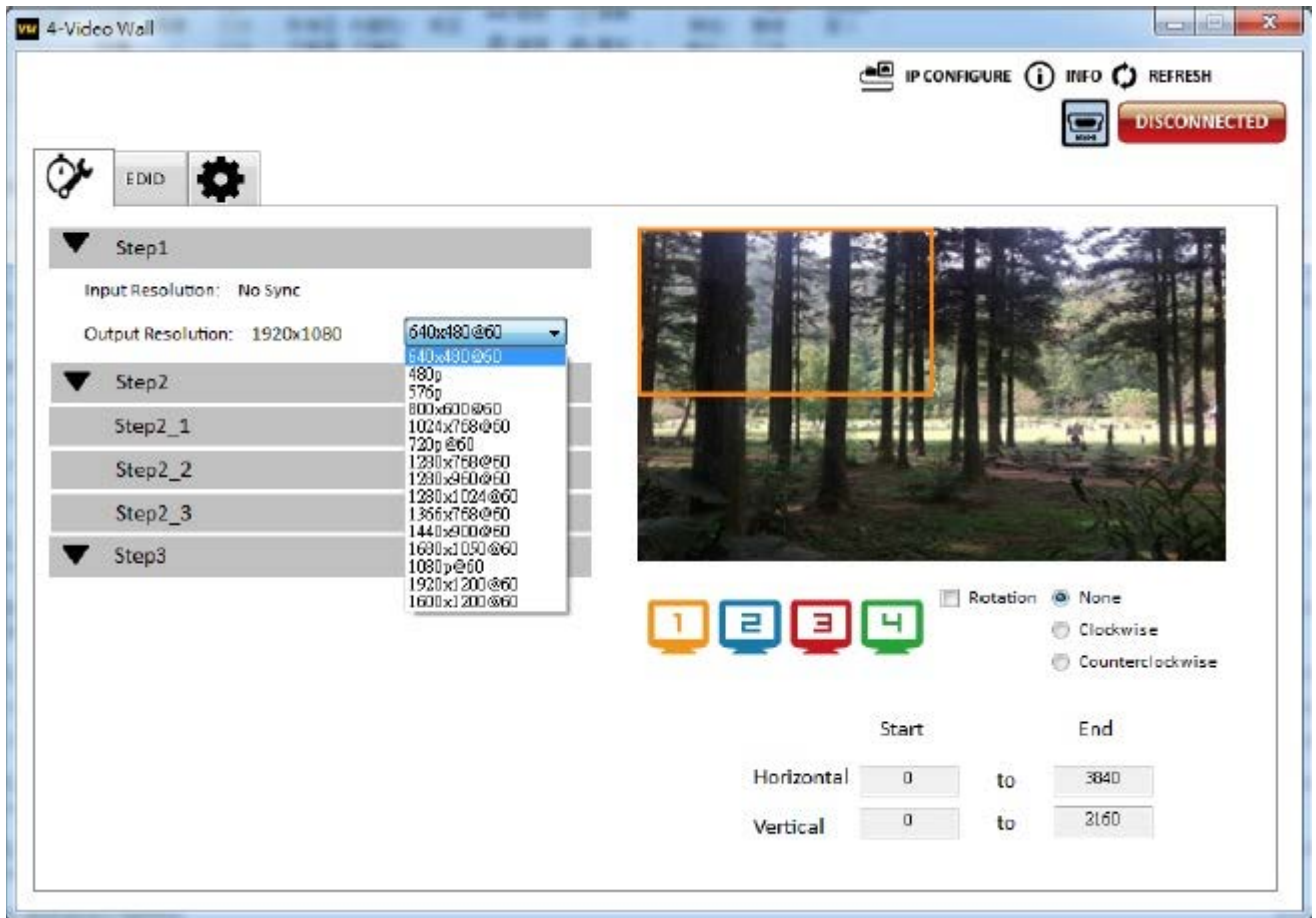


Figure 8. Output Resolution Step 1

- b. *Step2*: Output settings can be selected through Quick Selection, from a file, or by a custom definition. These corresponds to steps *Step2\_1*, *Step2\_2* and *Step2\_3* respectively, as described below.

- i. *Step2-1 (Output Settings through Quick Selection)*: Click the *Step2-1* button and the *Quick Selection* menu will be displayed. Select the screen splitting mode and rotation (rotation requires 720p or 1080p output resolution). The 3x1 mode will divide the output into 3 parts, with rotation; and the 4x1 mode divides it into 4 parts, also with rotation. When either of these modes are selected, a white circle will be displayed on the output image. Sliding the circle resizes the output screen. The screen size can also be specified by entering the numerical coordinates.

**NOTE:** 4K2K60 (YUV 4:4:4) input can only be displayed in a 2x2 output layout, with each output set to 1080p60.

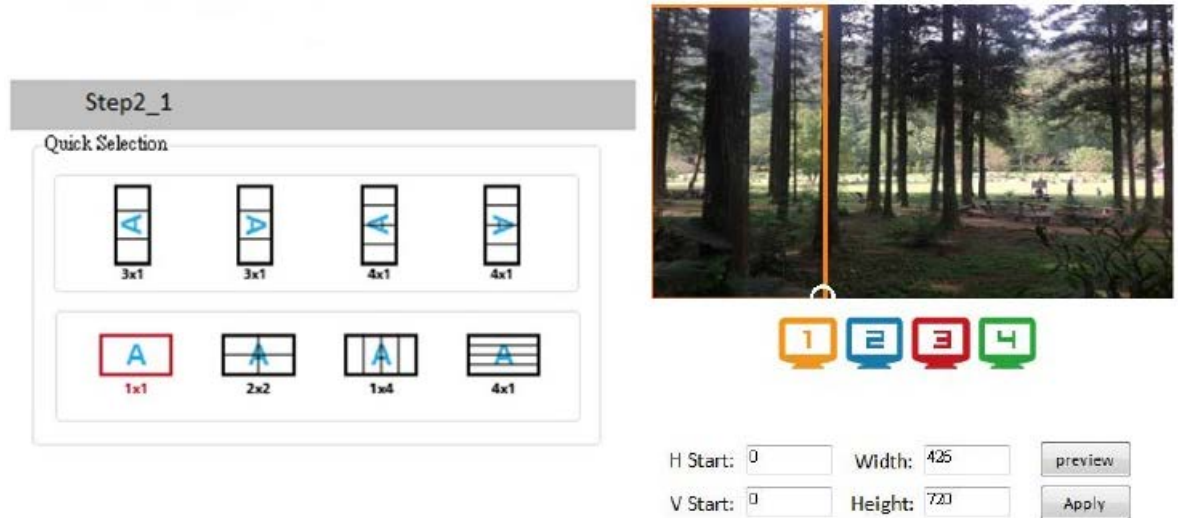


Figure 9. Quick Selection Menu

- ii. *Step2-2 (Output Settings from file)*: If a settings file has been saved on the computer running the software, click the *Step2-2* button to load this file. Click the *Load from File* button to select the desired file, and then click the *Apply* button.

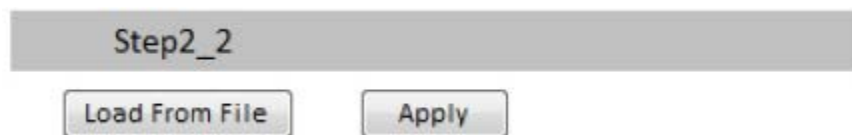


Figure 10. Load from File Menu

- iii. *Step2-3 (Output settings through a custom definition)*: Click the *Step2-3* button to perform a define a customized portion of the input image for display on the output screen. Clicking on the *Grid selection* button will cause a grid to be displayed on the input image, so as to provide an accurate estimation of the output image. Click the *Apply* button to activate the custom setting. Clicking the *Save As* button allows the configuration to be saved as a file on the computer for future loading.







- c. *Step3*: Click the *Step3* button to adjust the image. Clicking the *Zoom In/Out*  and  buttons expand or contract the output image. Each click of the button modifies the image size by one pixel. After adjustment, the rest of the image will be automatically scaled to fit the screen. The image on each output can be shifted in a horizontal direction by clicking the  and  shift buttons, or in a vertical direction by clicking the  and  shift buttons, moving one pixel per button click.



Figure 11. Image Adjustment Menu

**EDID (Extended Display Identification Data):** There are three methods for setting the EDID used for the video input: selecting one of the four options in the table of default values, acquiring the EDID from the output monitors, and reading an EDID from a saved file.

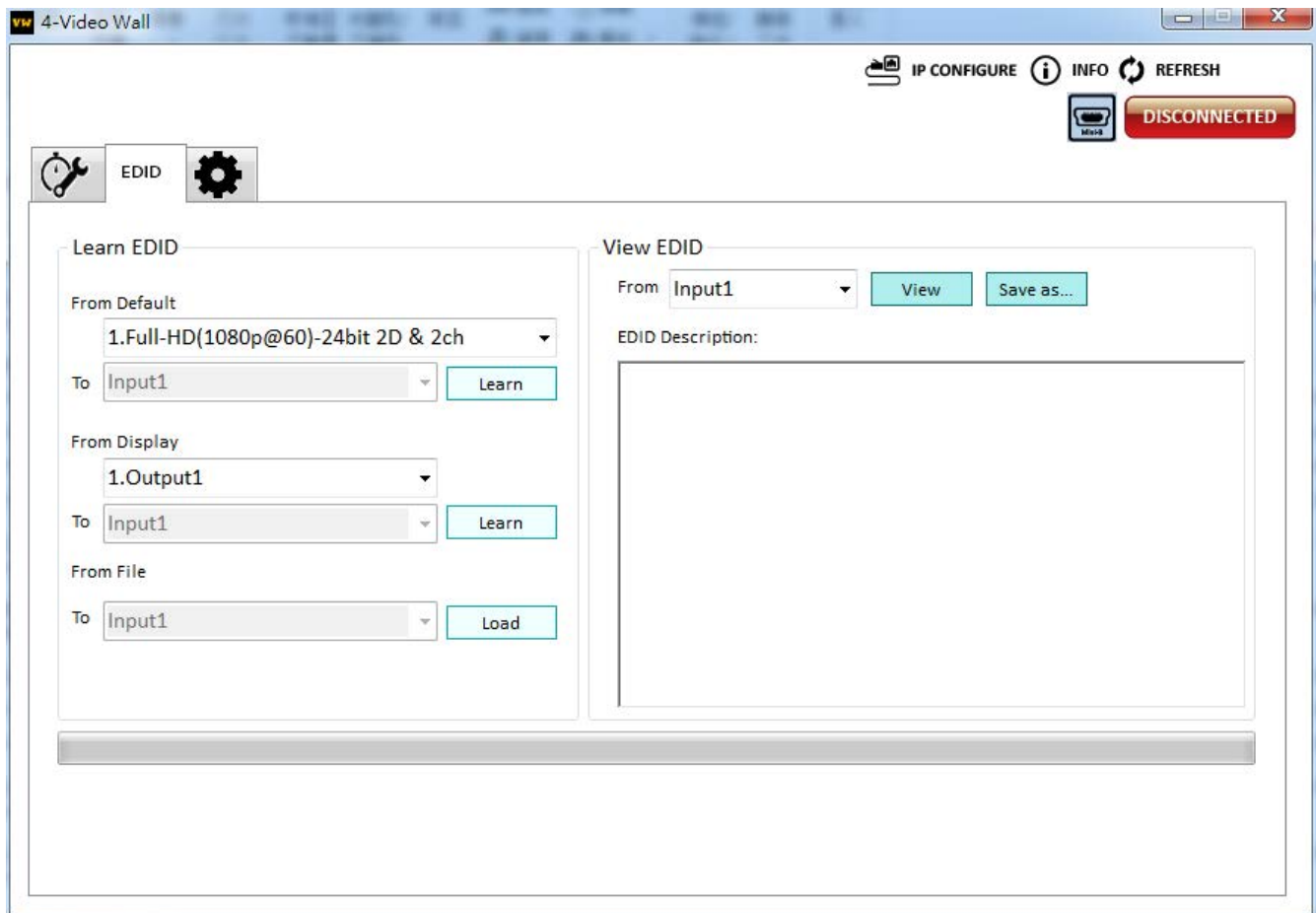


Figure 12. Learn EDID Tab

To use one of the Default data sets, select the desired value from the pull down list and click the *Learn* button. The preferred resolutions of the four default EDID values are:

- Full-HD (1080p@60)-24bit 2D & 2ch
- Full-HD (1080p@60)-24bit 2D & 7.1ch
- 4K2K@60-24bit 2D & 2ch
- 4K2K@60-24bit 2D& 7.1ch

To use an output display EDID, select the display from the pull down list and click the *Learn* button.

To load a data set from file, click the *Load* button to load in a selected file.

To review the specifics of a given EDID, select the source from the pull down menu and click the *View* button.

To save an EDID as a file in the computer the software is running on, click the *Save as...* button.

**NOTE:** If different types of displays are used in the video wall, the best strategy is to learn the EDID of the least capable display, especially when audio capable HDMI devices are part of the video wall.



**Advanced Setting:** Miscellaneous advanced settings such as providing a name for the unit, setting a background splash screen and resetting the unit to factory defaults are performed here.

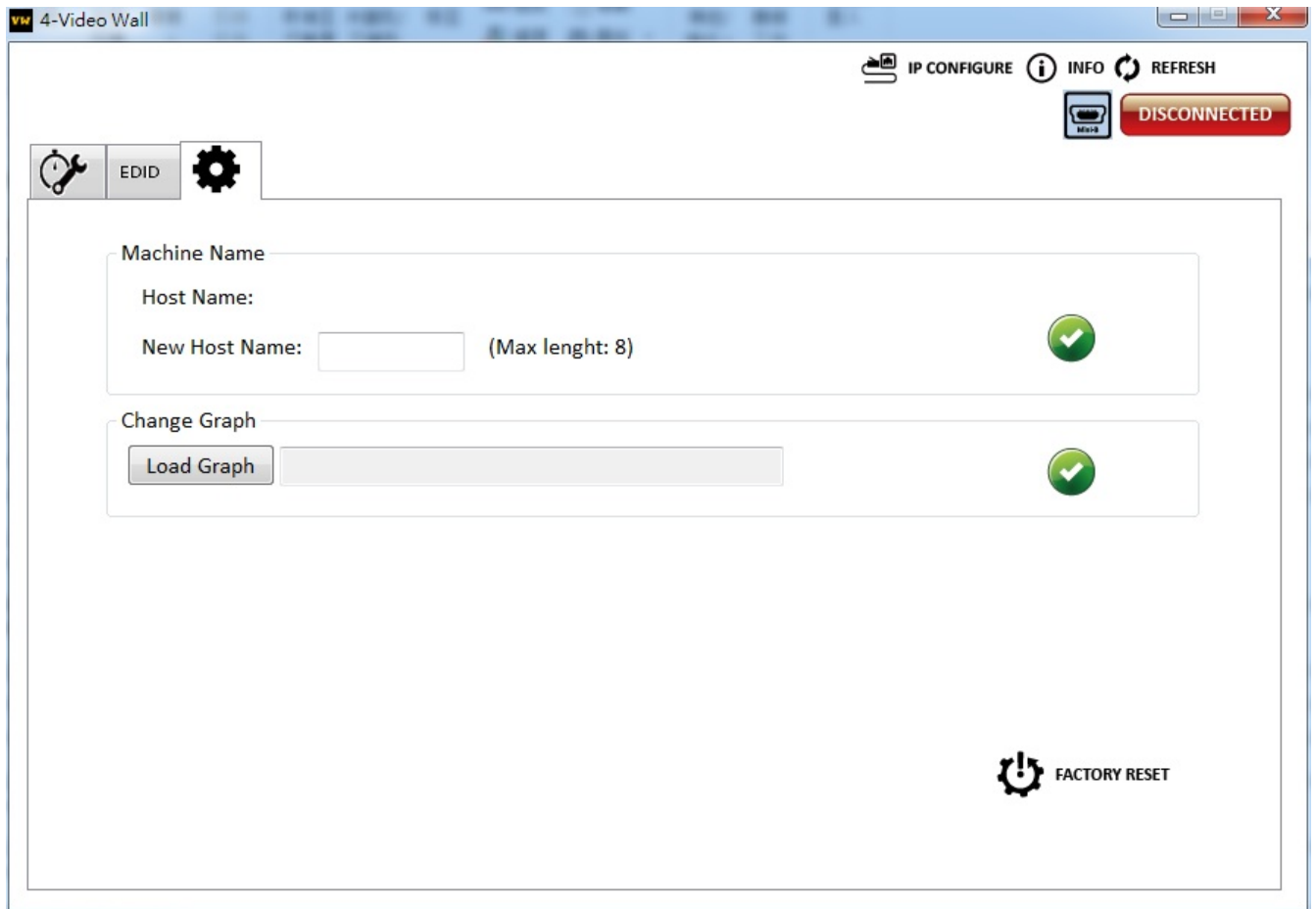


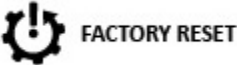


Figure 13. Advanced Settings Tab

To provide a name to the UltraVista 4K60 unit to aid in identifying it, enter up to 8 characters in the *New Host Name* field, and click the  button.

To change the default splash screen used by UltraVista 4K60, click the *Load Graph* button, select the image desired, and click the  button to save the image to the unit.

To reset the UltraVista 4K60 to factory default settings, click the  button. A confirmation pop up will be displayed.

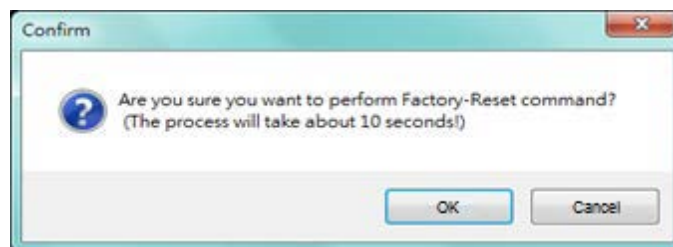


Figure 14. Factory Reset Prompt

**NOTE:** Restart the UltraVista 4K60 when the completion box is displayed.

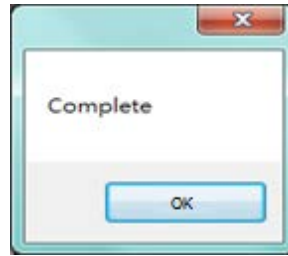


Figure 15. Factory Reset Completion Screen

**IP CONFIGURE:** To change the IP address used by the unit, click the *IP CONFIGURE* button. To read the current device setting, click the *Read from device* button.

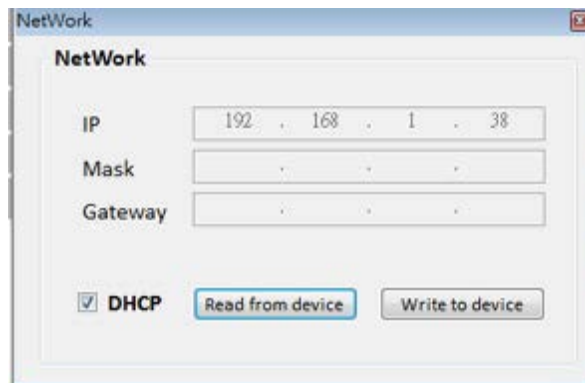


Figure 16. IP Configure Screen

Modify the IP address as desired, and click the *Write to device* button.

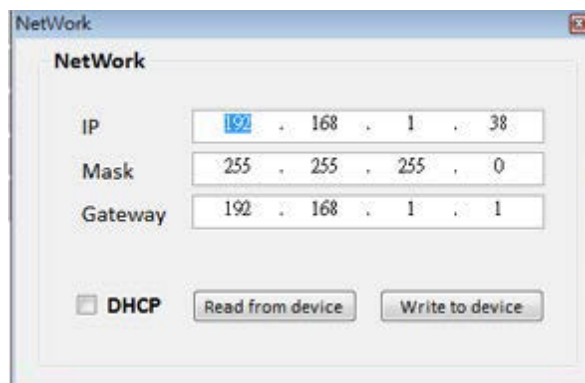


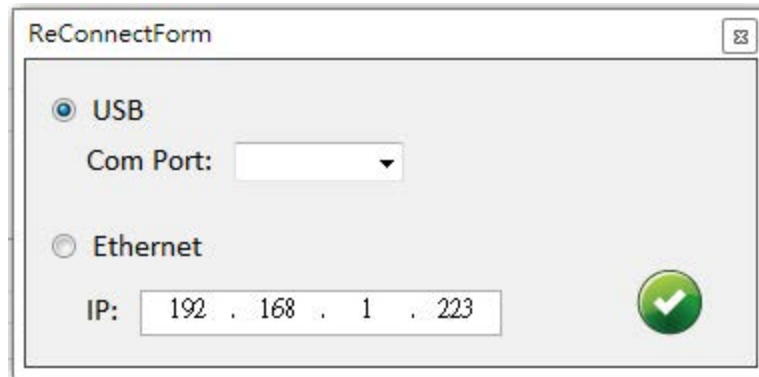
Figure 17. Setting Up a Static IP on the UltraVista 4K60

To have the IP address assigned dynamically by a server, click the **DHCP** box.

**NOTE:** After setting the IP address as desired. restart the UltraView 4K60 for the changes to take effect.

**INFO:** Click the *INFO* button to view the UltraView 4K60 software and the device firmware version numbers.

**REFRESH:** To update the settings information, and to reconnect to the device, click the *REFRESH* button. The *ReConnectForm* window will be displayed, allowing the user to restart the configuration connection.



The image shows a window titled "ReConnectForm" with a close button in the top right corner. Inside the window, there are two radio button options: "USB" (which is selected) and "Ethernet". Below the "USB" option is a "Com Port:" label followed by a dropdown menu. Below the "Ethernet" option is an "IP:" label followed by a text input field containing the IP address "192 . 168 . 1 . 223". A green circular button with a white checkmark is located in the bottom right corner of the form area.

Figure 18. Re-establish Connection to the UltraVista 4K60 After Configuration

# PRODUCT SAFETY

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## Safety

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The UltraVista 4K, like all electronic equipment, 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 the power source before cleaning.

Remove power from the 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 AND MAINTENANCE

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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 product, 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 – Specifications

<b>Physical Dimensions (L x W x H)</b>	
Model	11.3 in x 7 in x 1.7 in / 288 mm x 180 mm x 42 mm
Package	14.8 in x 9.5 in x 4.4 in / 376 mm x 240 mm x 112 mm
Carton	23.2 in x 20.1 in x 16 in (590 mm x 510 mm x 405 mm)
<b>Weight</b>	
Model	3.3 lb / 1.5 kg
Package	4.6 lb / 2.4 kg
<b>Video</b>	
Bandwidth	Input: Single link 600MHz [18Gbps]
	Output: DVI [Single-link 4.95Gbps] / HDMI[2.25G to 6.75Gbps]
Max Resolution	Input: 4K2K@60 (4:2:0 10bits) / 4K2K@60 (4:4:4 8bits)
	Output: 1920x1080@60 / 1920x1200@60
Formats	HDMI, DVI
Input TMDS Signal	1.2 Volts [peak-to-peak]
HDCP	Compliant
<b>Interfaces</b>	
Input	1x HDMI/DVI + 1x USB + 1xRJ45
Output	4x HDMI/DVI + 1x Stereo
Control	IR remote control / Ethernet / USB (virtual com) / Front Panel
<b>Connector Types</b>	
DVI	DVI-D [29-pin female, digital only]
HDMI	Type A [19-pin female]
Mini-USB	Type A
RJ45	WE/SS 8P8C
<b>Power</b>	
Supply	12V 2A DC
Consumption	12W
Rack Mount	1U rack-mount with ears and Wall hanging holes
Audio Support	Yes
<b>ESD</b>	
ESD Protection	Human body model — ±15kV [air-gap discharge] & ±8kV [contact discharge]
PCB Stack-Up	8-layer board [impedance control — differential 100Ω; single 50Ω]
<b>Environmental</b>	
Operating Temperature	32°F to 104°F (0°C to 40°C)
Storage Temperature	-4°F to 140°F (-20°C to 60°C)
Relative Humidity	20% to 90% RH (non-condensing)
Compliance	CE, FCC, RoHS, WEEE

## Appendix B - Part Numbers

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Part Numbers	Description
VWL-T222-4K-DVX	UltraVista 4K60 Video Wall Processor

## Appendix C - IR Remote Control

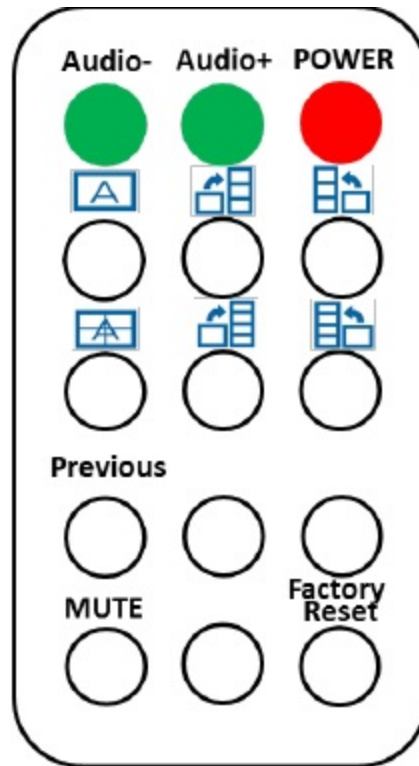


Figure 19. UltraVista 4K60 IR Remote Control

Button	Function
POWER	Power On/Off
Audio+	Increase the audio volume
Audio-	Decrease the audio volume
	Fast switch to 1x1 screen (Full Screen)
	Fast switch to 3x1 screen with -90° rotation
	Fast switch to 3x1 screen with +90 rotation
	Fast switch to 2x2 screen
	Fast switch to 4x1 screen with -90° rotation
	Fast switch to 4x1 screen with +90° rotation
Previous	Previous rotation setting
MUTE	Turn off the stereo audio output
Factory Reset	Reset to factory defaults



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