

**VW-PIP-4P**  
**4x4 DVI/HDMI Quad Multi Video Wall Processor**  
INSTRUCTION MANUAL





## SAFETY INFORMATION



1. To ensure the best results from this product, please read this manual and all other documentation before operating your equipment. Retain all documentation for future reference.
2. Follow all instructions printed on unit chassis for proper operation.
3. To reduce the risk of fire, do not spill water or other liquids into or on the unit, or operate the unit while standing in liquid. Keep unit protected from rain, water and excessive moisture.
4. Make sure power outlets conform to the power requirements listed on the back of the unit before connecting.
5. Do not attempt to clean the unit with chemical solvents or aerosol cleaners, as this may damage the unit. Dust with a clean dry cloth.
6. Do not use the unit if the electrical power cord is frayed or broken. The power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.
7. Do not force switched or external connections in any way. They should all connect easily, without needing to be forced.
8. Always operate the unit with the AC ground wire connected to the electrical system ground. Precautions should be taken so that the means of grounding of a piece of equipment is not defeated.
9. AC voltage must be correct and the same as that printed on the rear of the unit. Damage caused by connection to improper AC voltage is not covered by any warranty.
10. Turn power off and disconnect unit from AC current before making connections.
11. Never hold a power switch in the "ON" position.
12. This unit should be installed in a cool dry place, away from sources of excessive heat, vibration, dust, moisture and cold. Do not use the unit near stoves, heat registers, radiators, or other heat producing devices.
13. Do not block fan intake or exhaust ports. Do not operate equipment on a surface or in an environment which may impede the normal flow of air around the unit, such as a bed, rug, carpet, or completely enclosed rack. If the unit is used in an extremely dusty or smoky environment, the unit should be periodically "blown free" of foreign dust and matter.
14. To reduce the risk of electric shock, do not remove the cover. There are no user serviceable parts inside. Refer all servicing to qualified service personnel.
15. When moving the unit, disconnect input ports first, then remove the power cable; finally, disconnect the interconnecting cables to other devices.
16. Do not drive the inputs with a signal level greater than that required to drive equipment to full output.
17. The equipment power cord should be unplugged from the outlet when left unused for a long period of time.
18. Save the carton and packing material even if the equipment has arrived in good condition. Should you ever need to ship the unit, use only the original factory packing.
19. Service Information Equipment should be serviced by qualified service personnel when:
  - A. The power supply cord or the plug has been damaged.
  - B. Objects have fallen, or liquid has been spilled into the equipment.
  - C. The equipment has been exposed to rain
  - D. The equipment does not appear to operate normally, or exhibits a marked change in performance
  - E. The equipment has been dropped, or the enclosure damaged.

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## Dear Customer

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

## SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply. Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

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Version 1.1 Aug 2013

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# INTRODUCTION & PACKAGE CONTENTS

## INTRODUCTION

VW-PIP-4P is a powerful, universal and user-friendly image analyzing processor with 4 DVI input ports and 4 output ports. It is not only a 4x4 matrix switcher, but also a Multi-viewer video wall processor that supports PiP (Picture in a Picture), PoP (Picture outside a Picture) and split screen display. Using the provided GUI interface, the location of the PIP and POP can be placed anywhere on the display simply by drag-n-drop the image.

As a video wall processor, VW-PIP-4P is able to zoom in on one input image three or four times per output. The VW-PIP-4P can mix inputs with any combination into one image, and then display that to any or all the outputs. It also supports output resolution change, contrast & brightness adjusting, H&V zooming and moving, and bezel adjustment.

VW-PIP-4P provides with various ways for system control through its RS-232 serial port, USB interface, and the TCP/IP network port. It can be controlled easily by using the included control software **VW-PIP-4PGUI.exe**.

Applications include TV broadcasting, meeting room, network operations center, medical institutions, command & control center etc.

## PACKAGE CONTENTS

- VW-PIP-4P
- RS-232 cable (1.35m in length)
- Power Cord (North American)
- 4x Plastic Feet (for desktop use)
- User Manual

# SPECIFICATIONS

## SPECIFICATIONS

Video Input		Video Output	
Input	4 DVI	Output	4 DVI
Input Connector	Female DB24+5	Output Connector	Female DB24+5
Input Level	T.M.D.S. 2.9V/3.3V	Output Level	T.M.D.S. 2.9V/3.3V
Input Impedance	50Ω	Output Impedance	50Ω
Video General			
Video Signal	DVI (or T.M.D.S)	Switching Speed	200ns (Max.)
Bandwidth	340 MHz (6.75 Gbit/s)	Transport Delay	5nS (±1nS)
Crosstalk	<-50dB@5MHz		
Control Parts			
Control	Front Panel Buttons, RS-232, TCP/IP, USB	RS-232 Pin Configurations	2 = TX, 3 = RX, 5 = GND
Control Software	VW-PIP-4PGUI.exe	Trough USB , RS-232 or TCP/IP	
General			
Power Supply	Internal: 100VAC ~ 240VAC, 50/60Hz	Temperature	-20 ~ +158 ° F (-20 ~ +70 ° C)
Power Cord Type	North American	18AWG Power Cord	NEMA 5-15P to IEC-320-C13
Humidity	10% ~ 90%	Power Consumption	25W
Case Dimension (WxHxD)	19 x 1.75 x 9.25 in (483 x 44 x 235mm)	Product Weight	11.5 lbs / (5.2Kg)

# REAR PANEL AND CONNECTION

## REAR PANEL INTRODUCTION

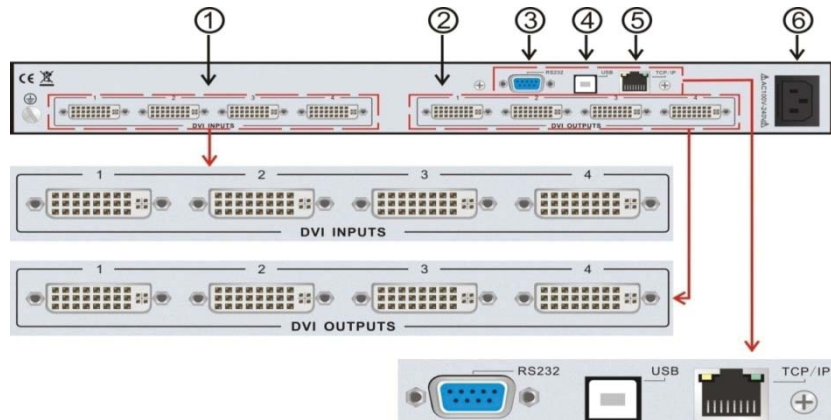
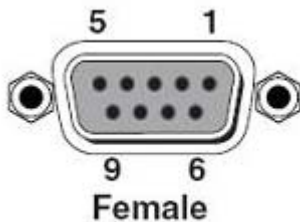


Figure 1: VW-PIP-4P Interface Introduction

No.	Name	Description
1	DVI INPUTS	DVI-I connector, 4 input ports.
2	DVI OUTPUTS	DVI-I connector, 4 output ports.
3	RS-232	9-pin female connector, for serial control.
4	USB	USB interface, type B, for USB control and firmware update.
5	TCP/IP	TCP/IP network port. User control VW-PIP-4P with control software VW-PIP-4PGUI software or direct commands.
6	AC100V~240V	Dah!

## CONNECTION WITH RS-232 COMMUNICATION PORT

With the RS-232 port, the processing switchers can be control by the control software VW-PIP-4PGUI. This RS-232 communication port is a female 9-pin D connector. The definition of its pins is as the table below.



No	Pin	Function
1	N/u	Unused
2	Tx	Transmit
3	Rx	Receive
4	N/u	Unused
5	Gnd	Ground
6	N/u	Unused
7	N/u	Unused
8	N/u	Unused
9	N/u	Unused

Figure 2: 9HDF

# REAR PANEL AND CONNECTION

Please connect reference to the following contents.

1. Use a RS-232 cable to connect the COM port of the computer to the RS-232 connector of VW-PIP-4P.



**Figure 3: Connect with PC**

2. Run the control software and select RS-232 connection.
3. If connection is OK, then we can control the VW-PIP-4P.

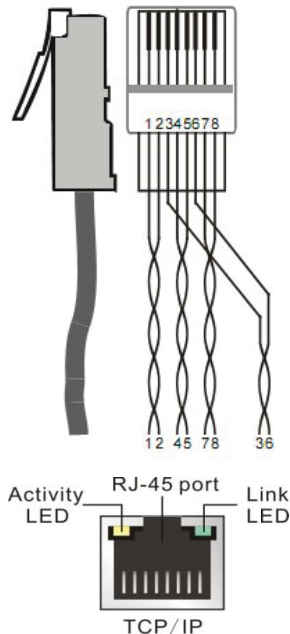
## CONNECTION WITH USB INTERFACE

By connecting the USB interface between the switcher and a computer, user can control VW-PIP-4P through its USB interface. Before controlling, please install the USB driver by first installing control software VW-PIP-4PGUI (as shown in Operations of the Software). Plug and play and hot plug function are supported by the USB interface of VW-PIP-4P.

## TWIST PAIR CONNECTION

VW-PIP-4P provides with TCP/IP communication port, user can control it by using the related communication software.

- **Activity LED:** The yellow LED always blinks when the network works normally.
- **Link LED:** The green LED keeps on when the network linked.
- **RJ-45 port:** RJ-45 communication port.



TIA/EIA T568A		TIA/EIA T568B	
PIN	CABLE COLOR	PIN	CABLE COLOR
1	green white	1	orange white
2	green	2	orange
3	orange white	3	green white
4	blue	4	blue
5	blue white	5	blue white
6	orange	6	green
7	brown white	7	brown white
8	brown	8	brown
<b>Pairing</b>			
1st	4--5	1st	4--5
2nd	3--6	2nd	1--2
3rd	1--2	3rd	3--6
4th	7--8	4th	7--8

**Notice:** Cable connectors can use T568A or T568B standard, but must be the same on both ends of one cable

# OPERATIONS OF THE FRONT CONTROL PANEL

## FRONT PANEL INTRODUCTION

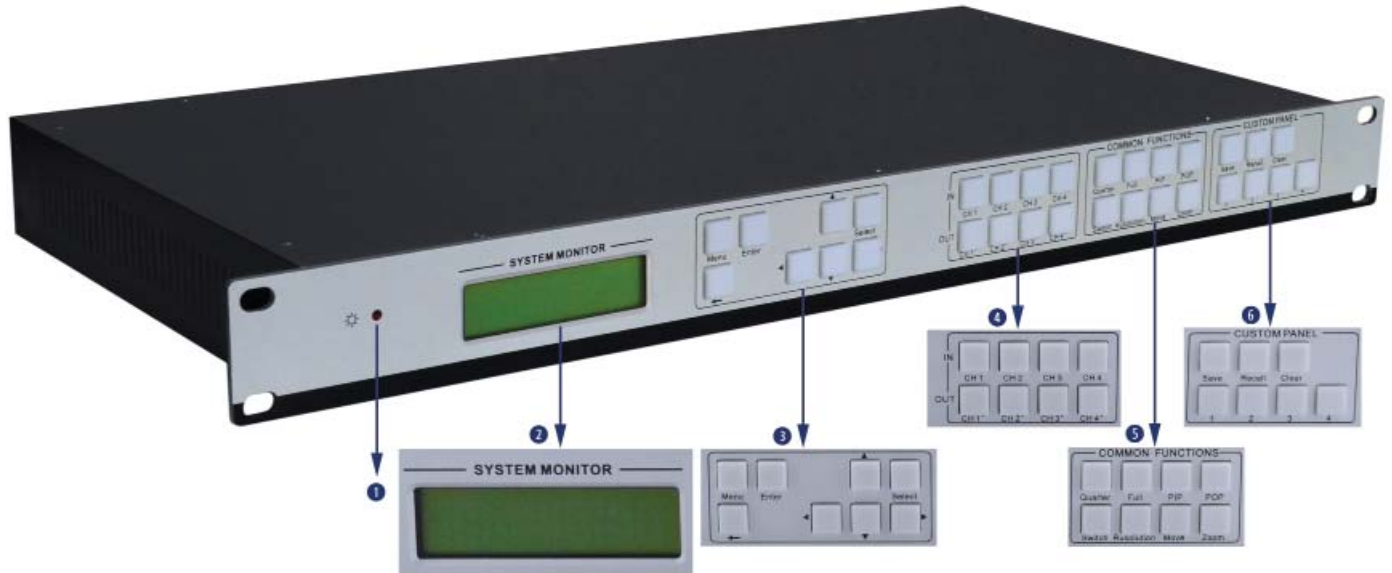


Figure 4: Front Panel Introduction

No.	Name	Description
①	Power indicator	Turns on when power on. (There is no power switch)
②	LCD	System monitor, to indicate the operation and real-time running state.
③	Menu Function Panel	Choose the functional button required and confirm.
④	Input/Output Channels	4 input channels and 4 output channels.
⑤	Function Pattern Panel	Common functions for output image displaying effects.
⑥	Custom panel	Used for saving or recovering a customized setting.

**Note:** Part ④, ⑤ and ⑥ are the operation areas for shortcut.

1. For the non-numeric buttons, you can use the menu buttons after you press any numeric buttons, or use the numeric buttons directly.

**Example:**

Press the button move to enter into the menu of HP/VP settings.

Press the button resolution, it will show the corresponding menu.

Press the numeric button 1 directly, and then the resolution will be set to 1080p (Without having to confirm entry).

2. For the numeric buttons (Including the Input/output Selection Buttons), it will show the corresponding menu when you depress any of them, also without having to confirm entry.







3. The priority of the buttons of different menu levels is showed in **Menu Levels Introduction**.

On the next page are the detailed introductions for every button.





# OPERATIONS OF THE FRONT CONTROL PANEL

## OPERATIONS OF THE MENU BUTTONS

Buttons	Operation Description
	Cycle thru the menu items in the same level. For example, in the first level of the menu between Quarter, Full, PIP, POP, Factory set, SAVE, RECALL and CLEAR.
	Return to the previous level of the menu.
	Enter to the sub-level of the menu. For example, to enter to the second level of the menu <b>Resolution</b> from the first level of the menu <b>Full</b> .
	Execute the selected operation.
	To move the on-screen cursor or adjust the position of the image.
	Increase or decrease the value of the parameter, such as channel or resolution etc.









## OPERATIONS OF THE INPUT/OUTPUT SELECTION BUTTONS

Buttons	Operation Description
	Select the corresponding input channel.
	Select the corresponding output channel.





- Note:**
1. While it is in 4x full screen zoom-in and 3x zoom-in function menu, selection of the input or the output channels is disabled, except to set the resolution of the 4 output channels as a whole.
  2. While in POP and PIP menu, the ability to select a single input channel or a single output channel is disabled.

# OPERATIONS OF THE FRONT CONTROL PANEL

## OPERATIONS OF THE FUNCTION BUTTONS

Buttons	Function Description
	4x full zoom-in function and 3x zoom-in function, (default display modes).
	Matrix switching displaying or distribution displaying, five default modes in total.
	Picture in picture (PIP) displaying (3 default modes in total).
	Picture outside picture (POP) displaying (5 default modes in total.)
	Select the input channels or the output channels, it is available together with the input channel buttons or the output channel buttons.
	Set the output resolution; supports 1080p, 720p, WUXGA, UXGA, SXGA, and XGA.
	Adjust the position of the image, used in conjunction with the direction buttons (up, down, left and right).
	Set the focus of the image to scale the image, used in conjunction with the direction buttons (up, down, left and right).

## OPERATIONS OF THE CUSTOMIZED BUTTONS AND THE NUMERIC KEYS

Buttons	Function Description
	Customize shortcut buttons of different menu levels and save the settings.
	Customized menu recall button.
	Shortcut button, to clear the customized menu.
	Numeric buttons, to set the corresponding shortcut buttons of different menu levels.

**Note:** In the operational area of the shortcut buttons, when you depress any button it will show the detailed information on the present menu of the LCD screen.

# OPERATIONS OF THE FRONT CONTROL PANEL

## MENU LEVELS INTRODUCTION

**First Level includes:** Quarter, full, PIP, POP, Factory set, SAVE, RECALL, and CLEAR.

**Second Level includes:** resolution, set position, adjust windows, overlay, board, display, and channel Switch.

**Third Level includes:** brightness, contrast and CH'.

The relationship of each level of the menu is showed as below.

	First Level	Second Level	Third Level
<b>MENU</b>	Quarter		
	Type 1		
<b>MENU</b>		resolution	
		1 1920X1080	
<b>MENU</b>		Color	
<b>MENU</b>		OUT 1	brightness 0512
			contrast 100
<b>MENU</b>	FULL	Channel Switch	
	Type 1	IN 1 OUT 1	
<b>MENU</b>		resolution	
		1 1920X1080	
<b>MENU</b>		adjust windows	Fine tuning.
<b>MENU</b>		Channel 1	1HP
			1HW
<b>MENU</b>			1VP
			1VW
<b>MENU</b>		Color	
<b>MENU</b>		OUT 1	brightness 0512
			contrast 100
<b>MENU</b>	PIP	Channel Switch	
	Type 1	IN 1 OUT 1	
<b>MENU</b>		resolution	
		1 1920X1080	
<b>MENU</b>		Set Position	Position setting.
<b>MENU</b>		Channel 1	1HP 0001
			1VP 0001
<b>MENU</b>			1HW 0001
			1VW 0001
<b>MENU</b>		adjust windows	Fine tuning.
<b>MENU</b>		Channel 1	1HP
			1HW
<b>MENU</b>			1VP
			1VW
<b>MENU</b>		Overlay	
<b>MENU</b>		OUT 1	CH1 CH2 CH3 CH4
			1 2 3 4
<b>MENU</b>		board	

# OPERATIONS OF THE FRONT CONTROL PANEL

	First Level	Second Level	Third Level
<b>MENU</b>		OUT ALL	CH1 CH2 CH3 CH4
			OFF OFF OFF OFF
<b>MENU</b>		display	
<b>MENU</b>		OUT 1	CH1 CH2 CH3 CH4
			ON ON ON ON
<b>MENU</b>		Color	
<b>MENU</b>		OUT 1	brightness 0512
			contrast 100
<b>MENU</b>	POP	Channel Switch	
	Type 1	IN 1 OUT 1	
<b>MENU</b>		resolution	
		1 1920X1080	
<b>MENU</b>		Set Position	Position setting.
<b>MENU</b>		Channel 1	1HP 0001
			1HP 0001
<b>MENU</b>			1HW 0001
			1VW 0001
<b>MENU</b>		adjust windows	Fine tuning.
<b>MENU</b>		Channel 1	1HP
			1HW
<b>MENU</b>			1VP
			1VW
<b>MENU</b>		Overlay	
<b>MENU</b>		OUT 1	CH1 CH2 CH3 CH4
			1 2 3 4
<b>MENU</b>		board	
<b>MENU</b>		OUT ALL	CH1 CH2 CH3 CH4
			OFF OFF OFF OFF
<b>MENU</b>		display	
<b>MENU</b>		OUT 1	CH1 CH2 CH3 CH4
			ON ON ON ON
<b>MENU</b>		Color	
<b>MENU</b>		OUT 1	brightness 0512
			contrast 100
<b>MENU</b>	Factory set		
<b>MENU</b>	SAVE 1		
<b>MENU</b>	RECLL 1		
<b>MENU</b>	CLEAR 1		

**Note:** In the first column, MENU (in **DARK BLUE**) is showed in the first row of the display, and MENU (in **GREY**) is showed in the second row.

# OPERATION OF THE SOFTWARE

## INTRODUCTION OF THE SOFTWARE

### INSTALLATION

VW-PIP-4P can be controlled by using the included software VW-PIP-4PGUI.

- **Installation:** Copy the software files to the controlling computer. To run the executable program, double click on the icon (or file name) VW-PIP-4P GUI (showed in **Figure 5**).
- **Uninstall:** Delete all the software files.



**Figure 5: VW-PIP-4P Control Software**

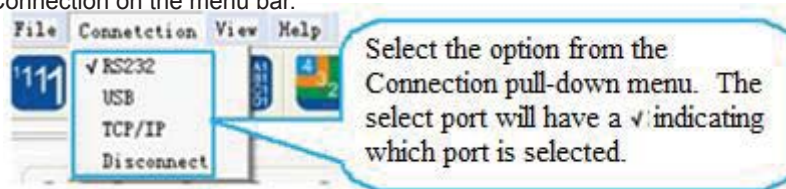
**Note:** VW-PIP-4P\_v1.1.30.exe is only used in its own given path.

### CONTROL CONNECTION

**Ways for Software Control:** VW-PIP-4P provides three ways to connect to the VW-PIP-4P, includes RS-232 serial port, USB interface and TCP/IP network port.

**Software Activation:** You can control the VW-PIP-4P if any of the connections are valid.

**Operation:** Click the button Connection on the menu bar.



**Figure 6: Popup menu for Connection**

- **RS-232**  
If connected successfully, the message window in the lower right corner of the main interface will show the message Connection Successful. If not, a popup window will appear with the message can't open com.
- **USB**  
If not connected, a popup window will appear with the message can't Find USB. If connected, the message window will show the message Connection Success.
- **TCP/IP**  
Use the network port and enter its IP address. The default IP address is 192.168.0.178, and the port number is 4001. The message window will show the message Connect NET Success. This IP address can be changed if necessary, for more details please check the user manual of ANI-NET.
- **Disconnect**  
To disconnect the current connection **Figure 7** shows the main interface and the available settings. The settings mentioned below (**Main Function Settings to Shortcut Button Customization**) are referenced on the next page.

# OPERATION OF THE SOFTWARE

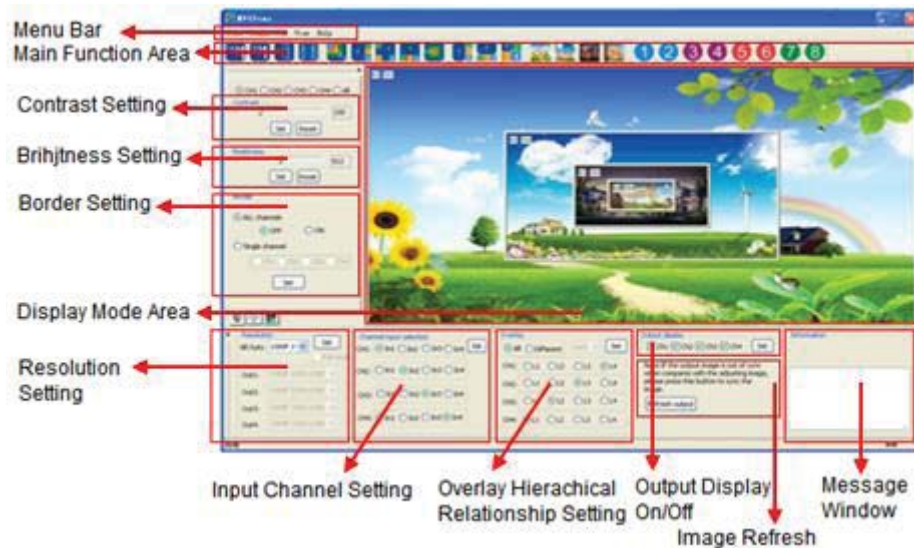


Figure 7: Main Interface

## MENU BAR FUNCTION SETTINGS

### FILE BUTTON

**Function:** To open a saved image display mode file, or to save a new one, or to save the current display mode file to another path.

**Detailed operations:** Run the control software and click on the menu button **File**. The sub menu item **Open** is to open a saved image display mode file, and **Save** is to save the current image display mode file, and **Save as** is to save the current image display mode file to another path. As shown in **Figure 8**.

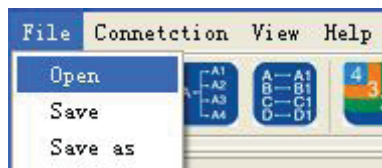


Figure 8: File Menu

### CONNECTION BUTTON

**Function:** Select a connection method.

**Detailed operations:** As mentioned in **Control connection**.

### VIEW BUTTON

**Function:** To set the display modes and to reset the software.

**Detailed operations:** Click on the menu button **View**, the sub menu item **Mode Setting** is to show the current display mode, more details please check part **Shortcut Button Customization**.

**Window Adjustment:** is to auto adjust the window of software to fit control computer.

**Factory Reset:** is to clear the stored system information and it will display in 4x full screen zoom-in mode.

# OPERATION OF THE SOFTWARE

## HELP BUTTON

**Function:** Check the version of the software and the firmware of VW-PIP-4P.

**Detailed operations:** Click the sub menu About Soft Version to check the version of the software or the firmware. As shown in **Figure 9**.



Figure 9: Check the Software Version

## MAIN FUNCTION SETTINGS

The main function area of the control software includes 4x full screen zoom-in, 3x zoom-in, matrix switching, PIP (picture in picture), POP (picture outside picture), output image switching function and customizable shortcut button. The detailed information is showed in **Figure 10**.



Figure 10: Main Functional Area

**Note:** When in any one of the five modes (4x full screen zoom-in mode, 3x zoom-in mode, matrix switching mode, PIP mode, and POP mode), please note the following.

1. When in distribution display mode or in matrix switching display mode, you can set the resolution of any single output by checking the option box full mode, and also set as total resolution. The ability to make these changes is disabled in the other four modes.
2. It is not able to set the correspondences between the inputs (Channel input switch) and the four outputs.
3. It is not able to set the overlay hierarchical relationship of a single input channel or to set the hierarchical relationship of all input channels.
4. When in PIP display mode or in POP display mode, it is able to set the output display state. The ability to make these changes is disabled in the other four modes.
5. It is not able to move the image on currently displayed image area on the software interface.

## 4X ZOOM-IN FUNCTION (VIDEO WALL)

**Function:** To split a single input signal to four displays (Video Wall function) The input image is magnified by 4 times, as shown in **Figure 11**.

**Detailed Operations:** While the software is running, click on the button , the display mode area on the software interface will show


the output display mode of any one of the input channels. The four images on the menu make up a whole image same to the input image.


The buttons  are used for selecting the image of any one input channel.

# OPERATION OF THE SOFTWARE


## 3X ZOOM-IN FUNCTION (VERTICAL VIDEO WALL)


**Function:** To split a single input signal to three displays, the image is rotated 90 degrees, and then to display on the displayed side-by-side (Video Wall). Generally there will be no output image on the first output channel the VW-PIP-4P shows a blue screen), and the images on the second, third and fourth display are rotated 90 degrees make up a whole image. As shown in **Figure 12**.


**Detailed Operations:** While the software is running, click on the button , the display mode area on the software interface will show the output display mode of any one of the input channels. The four images on the menu make up a whole image same to the input image.

The buttons  are used for selecting the image of any one input channel.

## MATRIX SWITCHING FUNCTION


**Function:** To choose one or all the input images of the available four input channels and then output to the four output displays. As shown in **Figure 13**. The icon that invokes this mode is .

**Detailed Operations:** Click on the button , the display mode area on the software interface will show the output display mode of any one of the input channels. The image of each display is the same as the corresponding input image.


And click on the button , the display mode area on the software interface will show the output display mode of only one of the input channels. The output images are the same for each display as shown in **Figure 14**.

## PICTURE IN PICTURE (PIP)

**Function:** VW-PIP-4P is able to present all the input images of the four available sources on a single screen. It means that while the screen is showing the main video, any of the other three input images can also be showed on displayed. While there are pre-sets for the image location, you are free to locate ANY image to ANY location buy simply dragging one image to a new location. When you release the mouse button, the VW-PIP-4P will update the image location.

 the display mode area on the software interface will show the display effect of

all the four in (are complete) on any one display are made by the four input images.

The buttons  are used for select the output image of any one channel. The display effects are

showed in **Figure 15 to 19**.



# OPERATION OF THE SOFTWARE

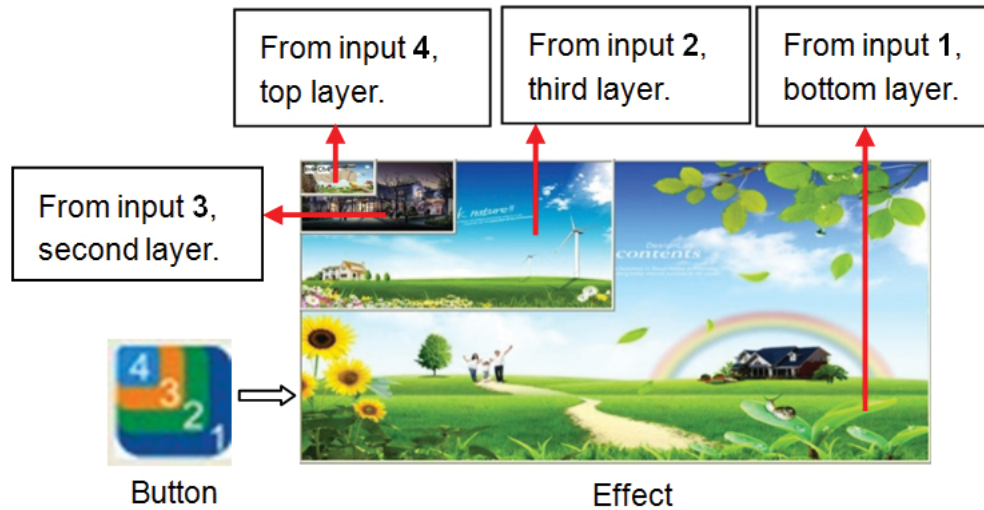


Figure 15: First PIP Display Option

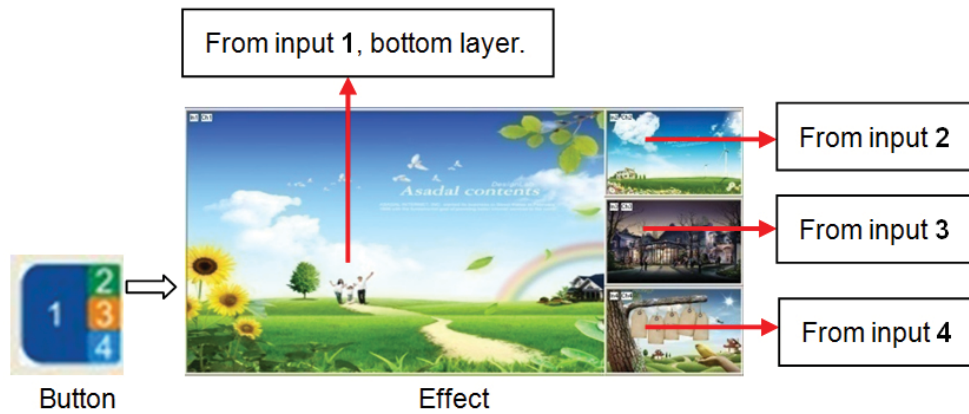


Figure 16: Second PIP Display Option

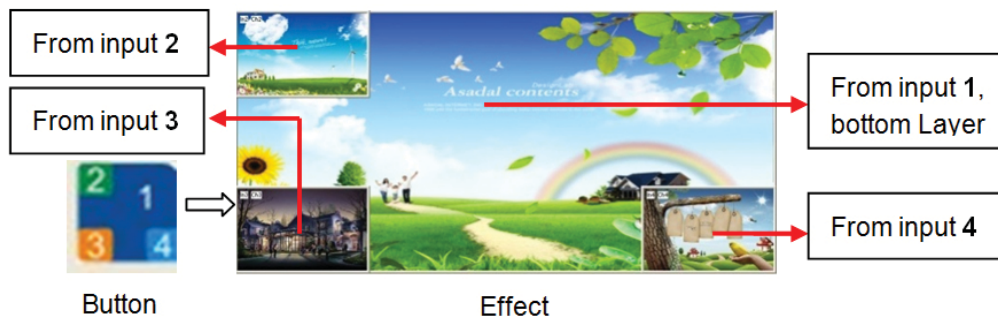


Figure 17: Third PIP Display Option

# OPERATION OF THE SOFTWARE

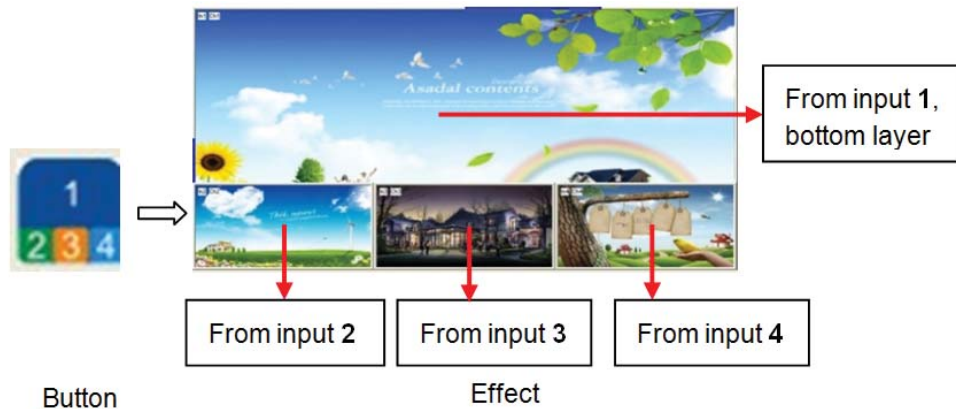


Figure 18: First PIP Display Option

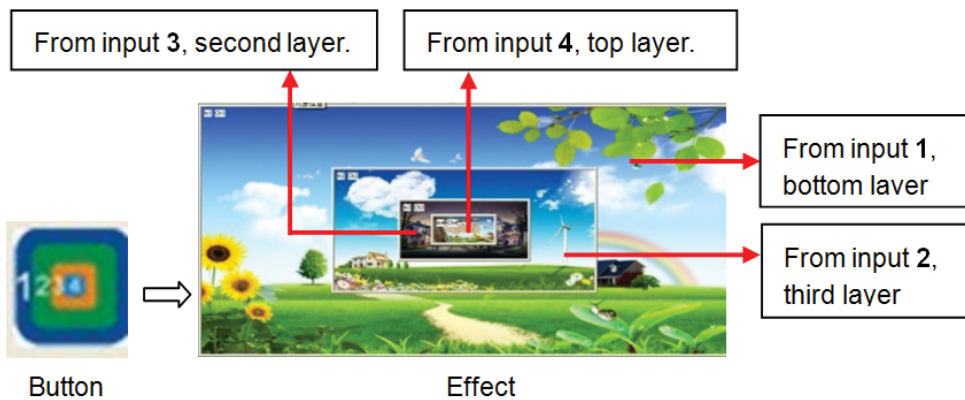



Figure 19: Second PIP Display Option

## PICTURE OUTSIDE PICTURE (POP) DISPLAYING

**Function:** To show the output images of different channels on a single screen. It means that while the screen is showing the frame of the main video, any of the other three input images can also be shown on this screen, but located beside the main image.

**Detailed Operations:** Click on the button  ,  or  the display mode area on the software interface will show the

effect of all four input channels. The images on any output channels are made by the four input images.

The buttons  are used for checking the output image of any one channel. The effects are showed

in Figure 20 to 22.

# OPERATION OF THE SOFTWARE



Figure 20: First POP Display Option

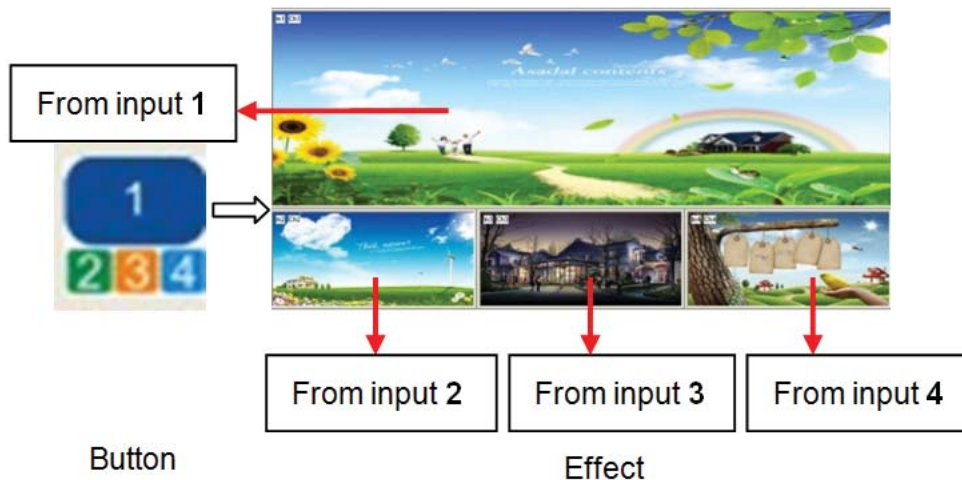


Figure 21: Second POP Display Option

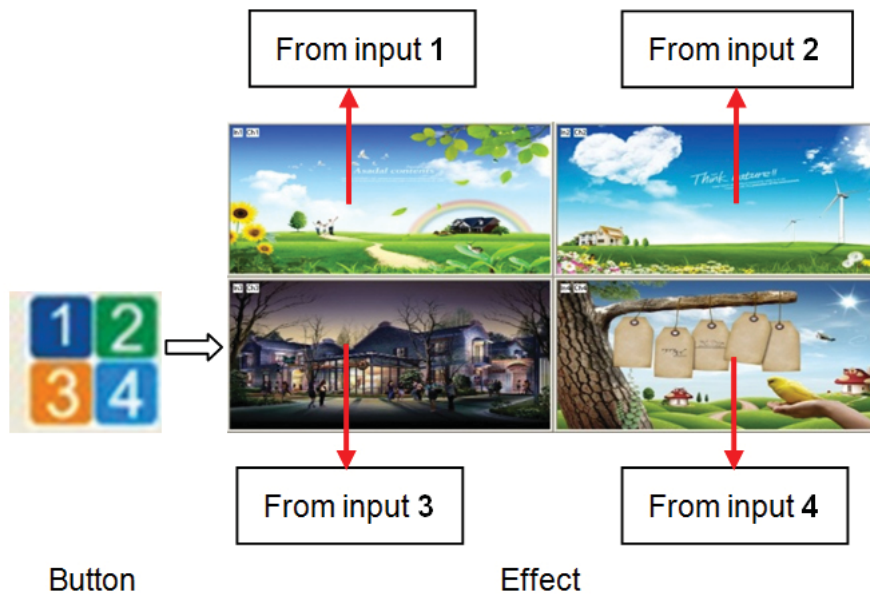


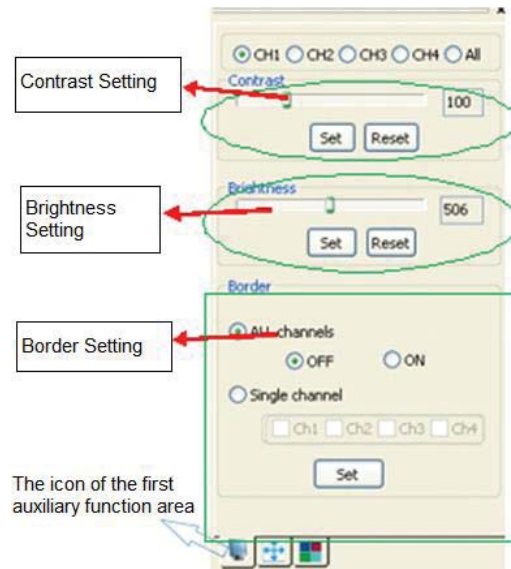
Figure 22: Third POP Display Option

# OPERATION OF THE SOFTWARE

## ADDITIONAL FUNCTION SETTINGS

### SETTINGS IN THE AUXILIARY FUNCTION AREA

**First Auxiliary Function Area:** In this area, users can set the contrast, the brightness, add or remove the border of the output images. As shown in **Figure 23**.

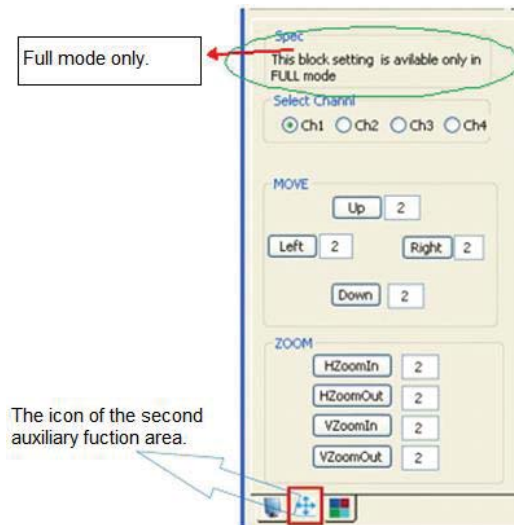


**Figure 23: First Auxiliary Function Area**

**Contrast/Brightness Setting:** To change settings to the image contrast/brightness of a single channel or all channels, select the corresponding radio button and drag the bar to an appropriate position. Then press the **Set** button to confirm. In this area, the **Reset** button is used to set the value of contrast/brightness back to the factory default (Default value of image contrast: 100, brightness: 512).

**Border Setting:** To set the border of an image of a single channel or all channels, select the corresponding check box and press the **Set** button to confirm your operation. The button **OFF/ON** is used to enable or disable the display border of the input images of all channels.

**Second Auxiliary Function Area:** In this area, users can set the image position and zoom. As shown in **Figure 24**.



**Figure 24: Second Auxiliary Function Area**



# OPERATION OF THE SOFTWARE

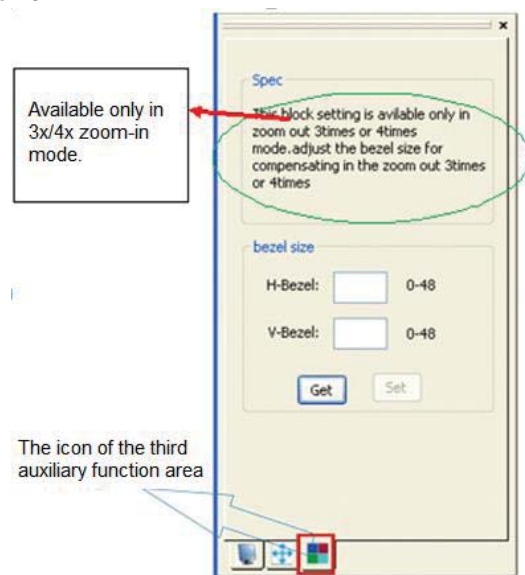
**Image Position Setting:** To move the position of the output image of any single channel, select the corresponding radio button and use the directional buttons **Up**, **Down**, **Left** and **Right** to an appropriate position.

**Image Zoom In/Out:** To zoom in/out in both horizontal direction and vertical direction. The button **HZoomIn** and **HZoomOut** are for adjusting in a horizontal direction. And **VZoomIn** and **VZoomOut** are for adjusting in a vertical direction.

**Note:**  
1. The image begins to zoom in/out from the top left corner, and extends to a fixed maximum size, whenever you drag the mouse or set the values.

2. Image zoom setting is available only in Full Displaying mode.

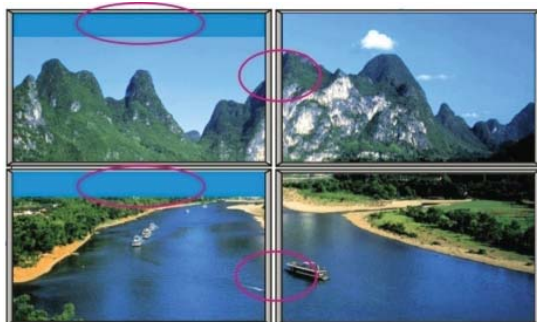
**Third Auxiliary Function Area:** In this area, users can set the bezel size of the adjacent images in zoom-in model, to make the whole image looks coherently. As shown in **Figure 25**.



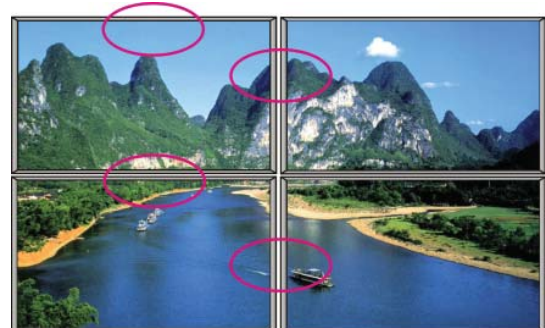
**Figure 25: Third Auxiliary Function Area**

When in 3x zoom-in mode and 4x zoom-in mode, press the button Get to get the bezel information of the image. Enter a new value and press the button Set to confirm. **Figure 26** and **Figure 27** will show you the difference between the original image and the image adjusted.

**Note:**  
1. Bezel size setting is mainly used when there is an offset between the images on the displays.  
2. In **Figure 26**, the position of the images on the left side is lower than the right ones. The place marked with circle shows the effect that the images joined (before & after).



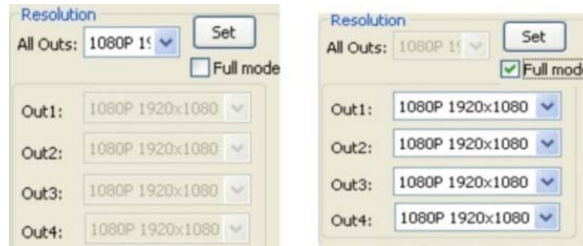
**Figure 26: Original Image**



**Figure 27: Adjusted Image**

# OPERATION OF THE SOFTWARE

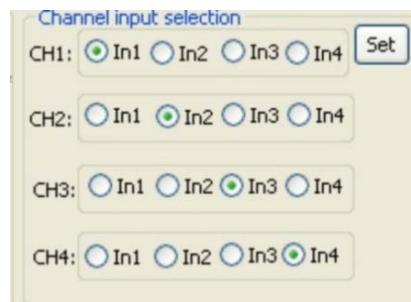
**Resolution Setting:** VW-PIP-4P supports various resolutions, such as 1080p (1920x1080), 720p (1280x720), WUXGA (1900x1200), UXGA (1600x1200), SXGA (1280x1024) and XGA (1024x768). The selection panel is at the left bottom corner of the main interface. As shown in **Figure 28**.



**Figure 28: Resolution Setting**

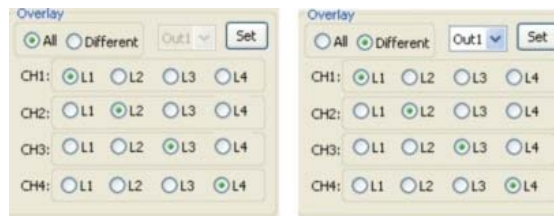
In Full Displaying mode you have the ability to change the output resolution respectively. In other modes, the resolution of all outputs only can be set as a whole. Select the check box **Full mode** to set the resolution of single channel, and deselect this check box to set the resolution of all channels as a whole. And then press the **Set** button to confirm. The default resolution is 1080p (1920x1080).

**Input Channel Setting:** VW-PIP-4P allows for assigning one input image to one output channel (not the physical output interface connected with the display). The selection panel is at the bottom of the main interface, as shown in **Figure 29**.



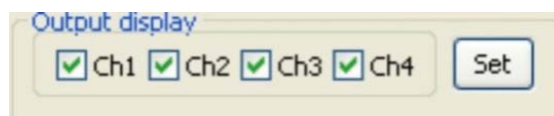
**Figure 29: Channel Input Selection**

**Overlay Hierarchical Relationship Setting:** Overlay Hierarchical setting in VW-PIP-4P is applied for PIP display mode. In the following picture **Figure 30**, L1 (Level 1) is the bottom layer, and L4 (Level 4) is the top layer. The radio button **All** affects all channels and **Different** is for setting on a single channel.



**Figure 30: Overlay Hierarchical Relationship Setting**

**Output Display On/Off:** It is used to display/undisplay the output image of one channel. Select the check boxes and press the button **Set** to confirm. As shown in **Figure 31**.

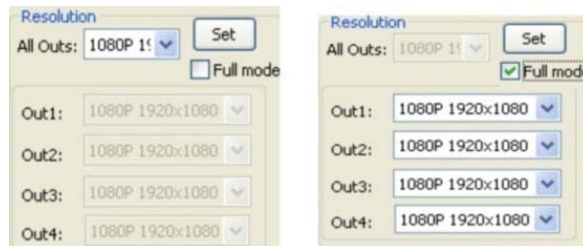


**Figure 31: Output Display On/Off**

# OPERATION OF THE SOFTWARE

## SETTINGS IN THE FUNCTION AREA ON THE MAIN PANEL

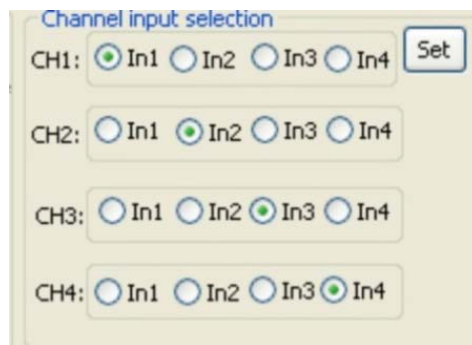
**Resolution Setting:** VW-PIP-4P supports various resolutions, such as 1080p (1920x1080), 720p (1280x720), WUXGA (1900x1200), UXGA (1600x1200), SXGA (1280x1024) and XGA (1024x768). The selection panel is at the left bottom corner of the main interface. As shown in **Figure 28**.



**Figure 28: Resolution Setting**

In Full Displaying mode you have the ability to change the output resolution respectively. In other modes, the resolution of all outputs only can be set as a whole. Select the check box **Full mode** to set the resolution of single channel, and deselect this check box to set the resolution of all channels as a whole. And then press the **Set** button to confirm. The default resolution is 1080p (1920x1080).

**Input Channel Setting:** VW-PIP-4P allows for assigning one input image to one output channel (not the physical output interface connected with the display). The selection panel is at the bottom of the main interface, as shown in **Figure 29**.



**Figure 29: Channel Input Selection**

**Overlay Hierarchical Relationship Setting:** Overlay Hierarchical setting in VW-PIP-4P is applied for PIP display mode. In the following picture **Figure 30**, **L1** (Level 1) is the bottom layer, and **L4** (Level 4) is the top layer. The radio button **All** affects all channels and **Different** is for setting on a single channel.



**Figure 30: Overlay Hierarchical Relationship Setting**

**Output Display On/Off:** It is used to display/undisplay the output image of one channel. Select the check boxes and press the button **Set** to confirm. As shown in **Figure 31**.

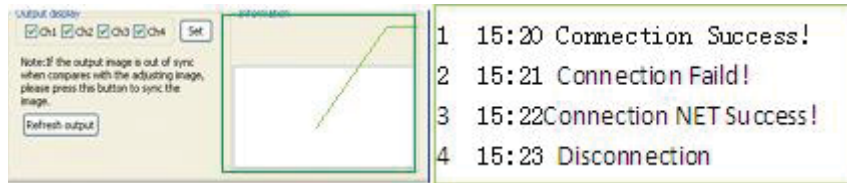


**Figure 31: Output Display On/Off**

# OPERATION OF THE SOFTWARE

**Communication Information:** This area is to check the connection status between the computer and VW-PIP-4P (showed in **Figure 32**) Detailed information is showed on the right side of the box.

**Note:** If the adjusting image does not synchronize with the output images show on the displays, please press the button 

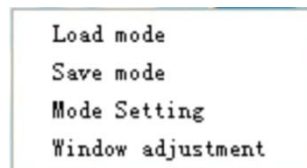


**Figure 32: Additional Function Setting**

## ADVANCED FUNCTION SETTINGS

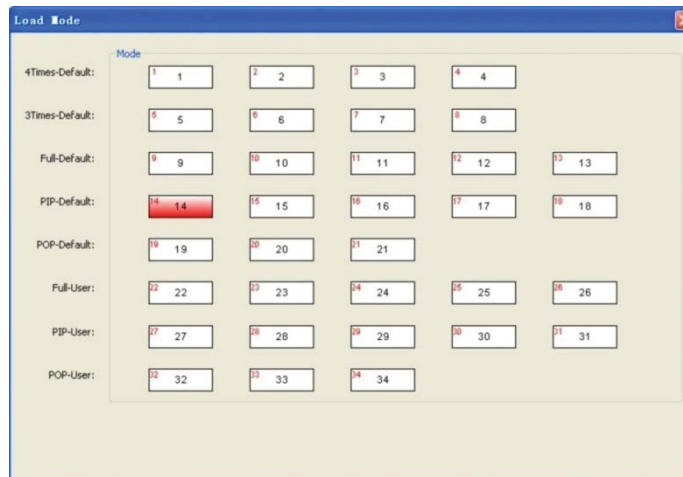
### DISPLAY MODE SETTING

This function allows for saving or loading display modes. Right-click in any area on the main interface (except the menu area) or press View on the main bar, there will be four items about modes showed on the popup menu, **Figure 33**.



**Figure 33: Popup Menu**

Among them, the Load mode is to load a saved or default display mode file (switch to another display mode). Save mode is to save the present mode as a new one, which is modified base on a default mode. **Figure 34** will show you the page of Load mode.



**Figure 34: Page of Lode mode**

The corresponding display mode to each number is shown in the following table.

**Note:** The number is just a code name of corresponding display mode, and it can be modified to a new name, which is easier to remember. Users can change the name in **Mode setting** by press the **Set Name** button to rename it. There is no limitation to the name (Name repetition, long name, and special characters are available).



# OPERATION OF THE SOFTWARE

No.	Description	Function Button
1,2,3,4	Default 4x zoom-in modes, the first one is for outputting the image from input channel 1, and the second one is for channel 2... and so on.	
5,6,7,8	Default 3x zoom-in modes, the first one is for outputting the image from input channel 1, and the second one is for channel 2... and so on.	
9	Default matrix switching mode, one to one pass through.	
10,11,12,13	Default distribution display modes.	
14,15,16,17,18	Default PIP display modes, the first PIP mode to the last PIP mode (from left to right).	
19,20,21	Default POP display mode, the first POP mode to the last POP mode (from left to right).	
22	Used to save the modified matrix switching mode (same as matrix switching mode No.9, but has been modified with additional function settings).	
23,24,25,26	Used to save the modified distribution display mode (same as distribution display modes No.10 - No.13, but has been modified with additional function settings).	
27,28,29,30,31	Used to save the modified PIP mode (same as PIP display mode No.14 - No.18, but has been modified with additional function settings).	
32,33,34	Used to save the modified POP mode (same as POP display mode No.19 - No.21, but has been modified with additional function settings).	

## SHORTCUT BUTTON CUSTOMIZATION

With the shortcut buttons, VW-PIP-4P can switch quickly to a customized display mode. The operation area is showed in **Figure 35**.



**Figure 35: Shortcut Button on the Main Interface**

User can set this in **Mode setting**: select a saved mode and press the button **Set Shortcut Button**, it will pop up a window to set the shortcut button.

# SYSTEM DIAGRAM

VW-PIP-4P can be used in many different situations, such as multi-viewer displaying vertical video wall, square video wall, full matrix routing switching and distribution. The system diagrams of the application occasions are showed as below.

## DIAGRAM OF VIDEO WALL DISPLAY

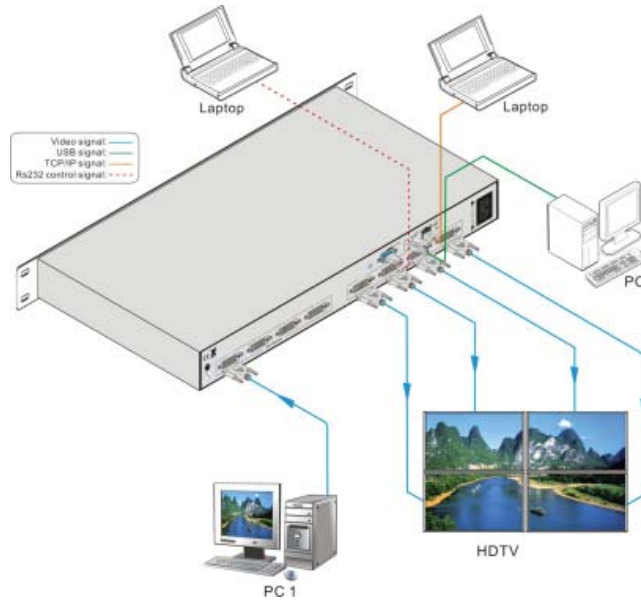


Figure 36: Diagram of 4x Zoom-in Display (Video Wall)

**3x Zoom-in:** There will be no output image on the first output channel (the display shows a blue screen), and the images on the second, third and fourth displays (rotated 90 degrees) make up a whole image same with the input image.

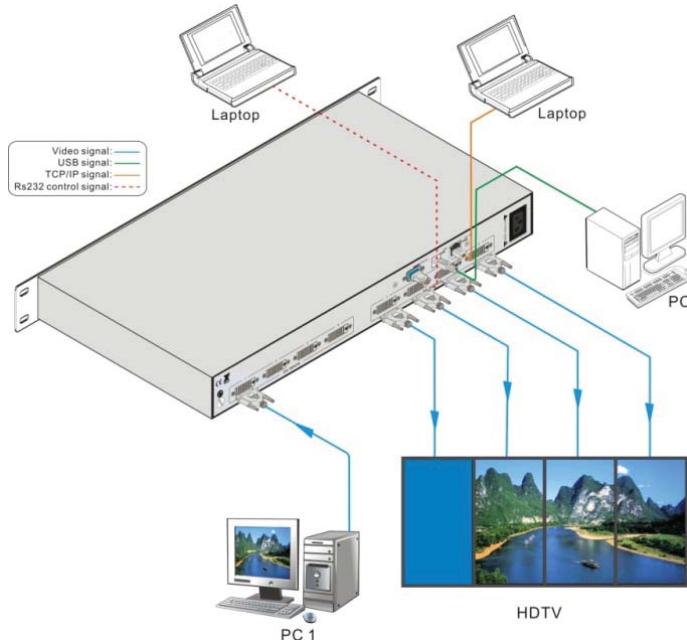


Figure 37: Diagram of 3x Zoom-in Display (Video Wall)

# SYSTEM DIAGRAM

## DIAGRAM OF MULTI-VIEWER DISPLAY

**Multi-Viewer:** It means VW-PIP-4P is able to display multi-channel output images on a single display. Supports several displaying options like as PIP, POP etc.

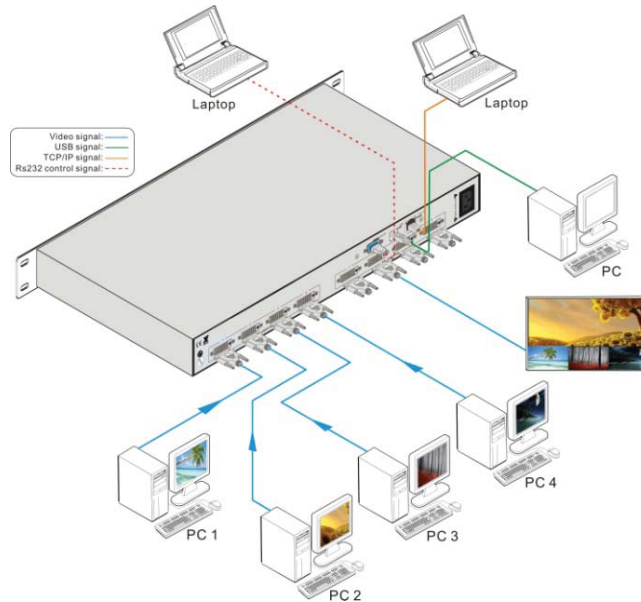


Figure 38: Diagram of Multi-Viewer Display

## DIAGRAM OF MULTI-VIEWER DISPLAY

**Multi Switching:** With four input sources and four output destinations, the VW-PIP-4P is able to display any input to any output or any combination thereof.

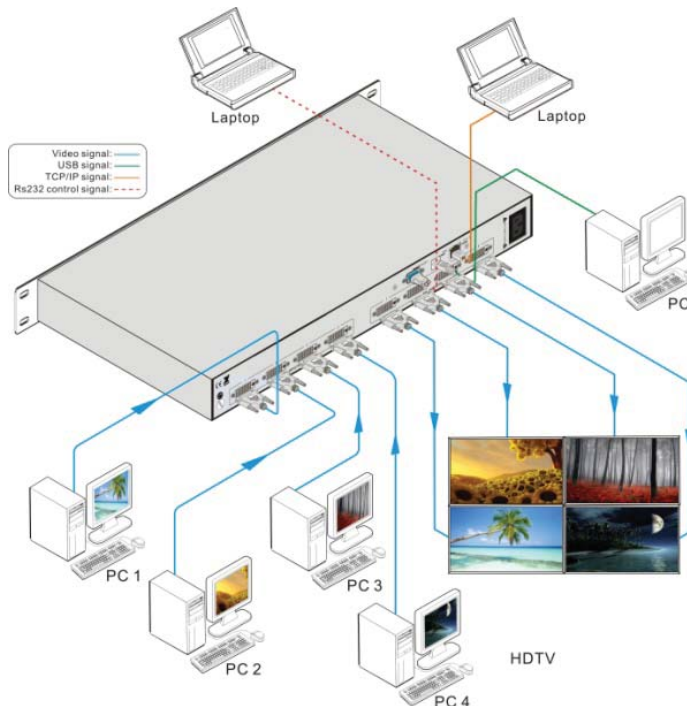
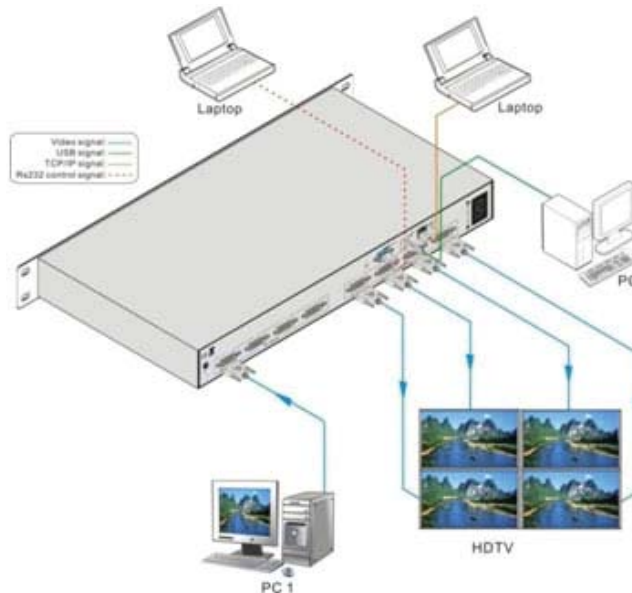


Figure 39: Diagram of Matrix Switching

# SYSTEM DIAGRAM / FIRMWARE UPGRADE

**Distribution Display:** All output images are the same..



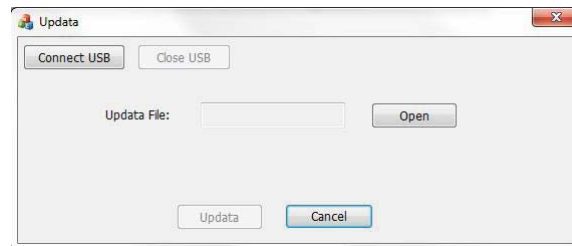
**Figure 40: Diagram of Distribution Display**

## FIRMWARE UPGRADE

The VW-PIP-4P supports firmware field-updating by USB port.

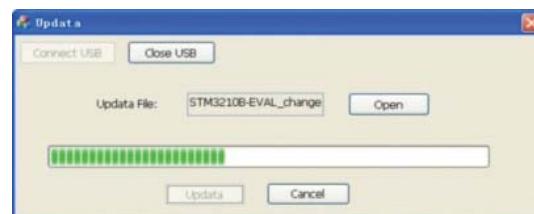
**Note:** the firmware file is provided by A-NeuVideo engineering department and is not available as a public download.

When you need to apply a firmware update, you first copy the provided.exe file and the .bin file to your PC. You start the firmware update by double clicking the program.



**Figure 41: Upgrade Program File**

When the program is running, press the button **Connect USB** on the main interface (showed in **Figure 7**). While it is connected, press the button **Open** and find the BIN file. Click on button **Update** and the process should start automatically.



**Figure 42: Main Interface of the Upgrade Program**

When the update is completed a message window will display update success. Press the button **OK** to confirm and power cycle the VW-PIP-4P for the changes to take effect.

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