



# VIDEO PROCESSOR **USER MANUAL**



## **QVP VW49H4**

Seamless Matrix Switcher

4 Window Multiviewer

LCD and LED Video Wall Controller

## CONTENT

|                                                                                          |    |
|------------------------------------------------------------------------------------------|----|
| 1. System description .....                                                              | 3  |
| 1.1. Introduction.....                                                                   | 3  |
| 1.2. Features.....                                                                       | 3  |
| 2. Panel Layout.....                                                                     | 3  |
| 2.1 Front view .....                                                                     | 3  |
| 2.2 Rear view .....                                                                      | 4  |
| 3. Typical application cases.....                                                        | 4  |
| 4. Output resolution list.....                                                           | 5  |
| 5. PC Tool user guide.....                                                               | 5  |
| 5.1 Connect tab.....                                                                     | 5  |
| 5.2 Matrix switch tab.....                                                               | 7  |
| 5.3 Signal config tab.....                                                               | 8  |
| 5.4 TV wall tab.....                                                                     | 8  |
| 5.5 Multiview tab.....                                                                   | 9  |
| 5.6 System tab.....                                                                      | 9  |
| 6. How to set pixel to pixel display with LED panel/sender card .....                    | 10 |
| 7. How to fit with a LED wall with different physical size panel units -MultiPanel ..... | 10 |
| 8. Specification .....                                                                   | 11 |
| 9. Package Contents .....                                                                | 11 |



### WARNING

- Do not expose this device to Rain, Moisture, and Dripping
- Only use accessories specified by the manufacture
- Unplug this device during Lightning Storms
- The manual is for reference only, maybe updated without further notice

# 1. System description

## 1.1 Introduction

The Video Processor is a high-performance HDMI 2.0 video signal processor. It can be used as a video wall splicing processor or as a seamless switching matrix switcher with 4 inputs and 9 outputs.

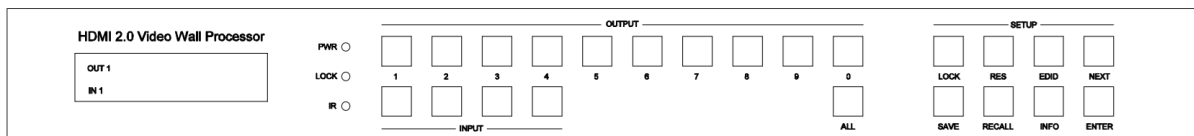
All outputs can work on multiview mode with a maximum of 4 windows.

## 1.2 Features

1. Support seamless switching between different input source
2. Comprehensive splicing display function with bezel compensation
3. Support two synchronization mode for all output ports: General synchronization mode and Sync delay mode
4. Supports 180° rotation
5. Free multiview up to 4 windows with all outputs
6. 4 Inputs and 9 Outputs HDMI 2.0, up to 3840x2160/4096x2160@60Hz resolution
7. Support Auto and User Define output resolution, can be flexibly applied to the display of LED wall
8. Support one break away audio extractor and switcher
9. Provide multiple control ports: front panel buttons, remote control, RS232, network and WebGui control

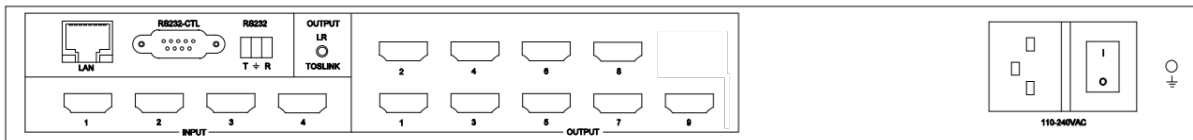
# 2. PanelLayout

## 2.1 Front view



1. LCM display screen: displays the routing status of each channel in the matrix. Used together with front buttons, it can set and view some parameters
2. OUT SELECT : 1, 2...9, ALL
3. IN SELECT : 1, 2, 3, 4  
Press OUTPUT m +INPUT n +ENTER, switch input n to output m
4. ALL button: Press ALL + INPUT n +ENTER, switch input n to all output ports
5. Lock button : Hold this button more than 3 seconds, all the fronts buttons will be locked and will not work. Hold it more than 3 seconds again, unlock
6. Press buttons RES + OUTPUT m + NEXT + ENTER with guide of front LCM screen display, to change output resolution of OUTPUT m
7. Press buttons EDID + INPUT n + NEXT + ENTER with guide of front LCM screen display, to change the EDID mode of INPUT n
8. SAVE button : Press SAVE+ OUTPUT m +ENTER, save current routing and screen layout to scene m
9. RECALL button: Press RECALL+ OUTPUT m +ENTER, load scene m for current displaying
10. INFO button: Continuously press INFO button, front LCD panel will loop display IR ON/OFF,RS232 Baud Rate and IP parameters etc.,
11. IR: IR receiver, can be disabled by RS232 command

## 2.2 Rear view



1. LAN control (TCP/IP or Web Control)  
IP address: 192.168.0.247, Submask: 255.255.255.0, Gateway: 192.168.0.1, Baud Rate: 9600, NetPort: 23  
Web login account : admin, password : admin
2. RS232-CTL  
Baud Rate: 9600
3. RS232-Phoenix:  
Baud Rate: 9600  
T: Main Unit -> PC, G: Ground, R: Main Unit <- PC
4. Inputs and outputs  
4 HDMI inputs, 9 HDMI outputs, 1 LR/Toslink (Spdif-Optical) audio output  
**NOTE:** The audio output can be switched among IN1, IN2, IN3, IN4 via RS232 command or PC Tool

## 3. Typical application cases

1. General Seamless Matrix Switcher, 4 inputs, 9 outputs. Users can also set multiview output as needed



2. One View video Wall processor: 2x3, 3x3, etc.



3. Two or more Video Wall processor and standalone outputs



### PLEASE NOTE:

If one of output 1,2,3,4 or 5,6,7,8 is configured as multiview mode, then other three output will copy this output

## 4. Output resolution list

| Hex Index | Output Resolution | Hex Index | Output Resolution |
|-----------|-------------------|-----------|-------------------|
| 00        | 4096x2160p 60Hz   | 0C        | 1920x1080p30 Hz   |
| 01        | 4096x2160p 50Hz   | 0D        | 1680x1050p60 Hz   |
| 02        | 3840x2160p 60Hz   | 0E        | 1600x1200p60 Hz   |
| 03        | 3840x2160p 50Hz   | 0F        | 1360x768p60 Hz    |
| 04        | 3840x2160p 30Hz   | 10        | 1280x1024p60 Hz   |
| 05        | 3840x2160p 25Hz   | 11        | 1280x768p60 Hz    |
| 06        | 3440x1440p 60Hz   | 12        | 1280x720p60 Hz    |
| 07        | 2560x1600p 60Hz   | 13        | 1280x720p50 Hz    |
| 08        | 2560x1440p 60Hz   | 14        | 1024x768p60 Hz    |
| 09        | 1920x1200p 60Hz   | 15        | USER              |
| 0A        | 1920x1080p 60Hz   | 16        | AUTO              |
| 0B        | 1920x1080p 50Hz   |           |                   |

## 5. PC Tool user guide

This PC tool is an installation free control software. It is divided into seven tabs according to different functions: Connect, Matrix, Signal, TV wall, System, and Multiview

The initial login password is: 111111

### 5.1 Connect tab

Please note:

1. Use serial cable (straight line) or Ethernet cable
2. When using a serial port connection, the network port connection must be disconnected, and vice versa
3. When connecting through the network port, you must first search for and select the device before connecting

Connect

Matrix

Signal Config

TV Wall

System

Multiview

English

RS232

Uart:COM3

Baudrate:9600

DataBit:8

Parity:None

StopBit:1

FlowControl:None

Connect

Network

Network:TCP-Server

IP:192.168.0.247

Port:23

SubMask:255.255.255.0

Gateway:192.168.0.1

Disconnect

Status

Sync Output-1 Message.  
Sync Output-2 Message.  
Sync Output-3 Message.  
Sync Output-4 Message.  
Sync Output-5 Message.  
Sync Output-6 Message.  
Sync Output-7 Message.  
Sync Output-8 Message.  
Sync Output-9 Message.  
Sync Output-10 Message.  
Sync Output-11 Message.  
Sync Output-12 Message.  
Sync TV Wall Message.

Clear

Search List

| Number | Device Name | IP            | MAC               | Version |
|--------|-------------|---------------|-------------------|---------|
| 1      | LQSX_N8     | 192.168.0.247 | 50-0A-00-34-00-62 | 24      |

Search Device

PC IP:

PC Network Info  
192.168.0.108<WLAN>



5.2 Matrix switch tab

Connect

Matrix

Signal Config

TV Wall

System

Multiview

Switch

| Output\Input |   | Input1 | Input2 | Input3 | Input4 |
|--------------|---|--------|--------|--------|--------|
| Output1      | 1 |        |        |        |        |
| Output2      | 2 |        |        |        |        |
| Output3      | 3 |        |        |        |        |
| Output4      | 4 |        |        |        |        |
| Output5      | 5 |        |        |        |        |
| Output6      | 6 |        |        |        |        |
| ⋮            |   |        |        |        |        |

Audio Switch

| Output/Input | Input1 | Input2 | Input3 | Input4 |
|--------------|--------|--------|--------|--------|
| LR/TOSLINK   |        |        |        |        |

A

A,B can be renamed

B

Standalone Audio Switch

Allset: Input1

Save/Load

EDID

Save/Load

Save: Layout-1

Load: Layout-1

EDID

Read Output Port: 1

Write Input Port: 1

4K60

00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F

## 5.3 Signal config tab

The Signal Config tab is divided into two main sections: Input and Output.

**Input Section:**

| Port | Input Type | Input Format | Output Format | Audio Select | Bind |
|------|------------|--------------|---------------|--------------|------|
| 1    | HDMI       | 3840x2160p30 | 3840x2160p30  | Embedded     | Read |
| 2    | HDMI       | No-Signal    | No-Signal     | Embedded     | Read |
| 3    | HDMI       | No-Signal    | No-Signal     | Embedded     | Read |
| 4    | HDMI       | No-Signal    | No-Signal     | Embedded     | Read |

**Output Section:**

| Port | Output Type | Input Format | Output Format | Mute | Freeze |
|------|-------------|--------------|---------------|------|--------|
| 1    | HDMI        | 3840x2160p30 | 3840x2160p60  |      | Read   |
| 2    | HDMI        | No-Signal    | 3840x2160p60  |      | Read   |
| 3    | HDMI        | No-Signal    | 3840x2160p60  |      | Read   |
| 4    | HDMI        | No-Signal    | 3840x2160p60  |      | Read   |
| 5    | HDMI        | No-Signal    | 3840x2160p60  |      | Read   |
| 6    | HDMI        | No-Signal    | 3840x2160p60  |      | Read   |

**Additional Configuration Options:**

- No Signal, Input's Mode:** Black Screen
- No Signal, Output's Mode:** Black Screen
- Output Rotate:** 0, 180°
- Multiview Config:** Normal, Multiview
- User Define Resolution:** Port, H Width, V Height

**Annotations:**

- Read All Input / Read All Output:** Buttons to refresh the configuration.
- More:** Button to expand configuration options.
- Video Keep Alive mode when no signal input:** 1. BlackScreen 2. Bluescreen 3. No output
- Rotate selection for one output:** 1. 0° 2. 180°
- Config the output mode for the first output port of one multiview group:** 1. Normal 2. Multiview
- To define one user-define output resolution for one output port:** Points to the User Define Resolution section.

## 5.4 TV wall tab

This tab set the splicing wall parameters: layout, bezel compensation, input/output settings, etc

The TV Wall tab displays a visual representation of the video wall layout. The left sidebar contains configuration parameters:

- TV Wall Config:** Row (2), Column (2), Available (4), Write, Read.
- Bezel Config(Pixel):** Left Edge, Right Edge, Up Edge, Bottom Edge, Write.

The main area shows a 2x2 grid of screens labeled 1, 2, 3, and 4. A context menu is open over screen 1, showing the following options:

- Screen Splicing
- Cancel Splicing
- 1 - Cancel Splicing
- Input Select
- Output Select
- Sync Delay

**Annotations:**

- Build one video wall:** Points to the top-left corner of the grid.
- Cancel one video wall:** Points to the top-right corner of the grid.
- Remove one screen from the video wall:** Points to the bottom-left corner of the grid.
- Select the input source for the wall:** Points to the 'Input Select' menu item.
- Select the output port which will be displayed on this screen:** Points to the 'Output Select' menu item.
- If the LCD panels of the wall don't support sync (frame) delay, user need enable this feature to make sure these screens are displayed synchronously:** Points to the 'Sync Delay' menu item.

## 5.5 Multiview tab

The screenshot shows the 'Multiview' tab selected in the top navigation bar. Below the navigation bar, there are tabs for 'Connect', 'Matrix', 'Signal Config', 'TV Wall', 'System', and 'Multiview'. The 'Multiview Select' dropdown is set to 'MV-1 [Output-1]'. A red line points to the 'Signal Config' tab with the text: 'Must Config multiview output mode first for one output slot in Signal Config tab More selection'. Below this, a note says: 'Please note the top layer is layer 4, and bottom layer is layer 1'. The main area is titled 'Multiview Display' and shows a 2x2 grid of windows. The top-left window (1) is blue, top-right (2) is purple, bottom-left (3) is cyan, and bottom-right (4) is orange. A context menu is open over window 1, showing options: 'Audio Source -> Window1', 'Window-1', 'Window-2', 'Window-3', 'Window-4', 'Off', 'Input', 'Layer', 'Input1', 'Input2', 'Input3', and 'Input4'. To the right, the 'Multiview Info' panel shows settings for the current window (4): 'Current Window: 4', 'Window Status: On', 'Window Layer: 3', 'Window X: 1920', 'Window Y: 1080', 'Window Width: 1920', 'Window Height: 1080', 'Input Crop H Start(%): 0', 'Input Crop V Start(%): 0', 'Input Crop Width(%): 100', 'Input Crop Height(%): 100', and 'Input Source: Input4'. A 'Write' button is at the bottom of the panel.

## 5.6 System tab

This tab sets network parameters, resets, reads software versions, etc

The screenshot shows the 'System' tab selected in the top navigation bar. Below the navigation bar, there are tabs for 'Connect', 'Matrix', 'Signal Config', 'TV Wall', 'System', and 'Multiview'. The main area is titled 'Network Module'. It contains a 'Search List' table with columns: 'Number', 'Device Name', 'IP', 'MAC', and 'Version'. The table has one row: '1', 'LQX N8', '192.168.0.247', '50-0A-00-34-00-62', '24'. Below the table are buttons: 'Search Device', 'Open Website', and 'Load Default'. To the right of the table is the 'Port Config' section with settings: 'Baud Rate: 9600', 'Baud Rate Param: None', 'Flow Control: None', 'Work Mode: TCP Server', 'Remote IP: 192.168.0.247', 'Remote Port: 23', 'Local Port: 23', 'Server Connect Count: 3', 'TCP Server Style: 0', 'Modbus TCP: None', 'Pack Time: 10', 'Pack Len: 200', and a checkbox for 'Sync Baud Rate'. A 'Write' button is at the bottom of the 'Port Config' section. Below the 'Search List' table is the 'Basic Config' section with settings: 'UPNP Port: 6432', 'HTTP Port: 80', 'Device ID: 1', 'Device ID Type: 0', 'User Name: admin', 'Password: admin', 'Device Name: LQX N8', 'MAC: 50-0A-00-34-00-62', 'IP Type: Static IP', 'Static IP: 192.168.0.247', 'Subnet Mask: 255.255.255.0', and 'Gateway: 192.168.0.1'. A 'Write' button is at the bottom of the 'Basic Config' section. At the bottom of the page, there is a 'Reset' section with a 'Reset' button and a 'Firmware Version' dropdown set to 'Main'.

## 6. How to set pixel to pixel display with LED panel/sender card

**Step 1**, connect input cable between source and one input port of the matrix switcher.

**Step 2**, connect output cable between LED panel/sender card and one output port of the matrix switcher.

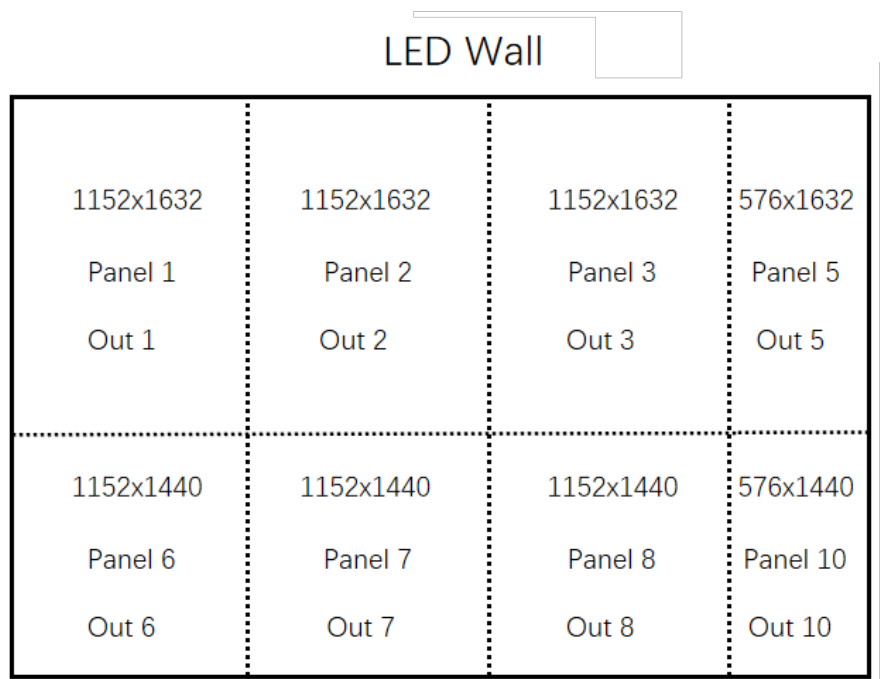
**Step 3**, read the EDID of LED panel/sender card with PC Tool and download this EDID to the input port of the matrix switcher.

**Step 4**, set the output resolution of this output port as USER or AUTO. When set USER, need configure the user define resolution first, and make the user defined resolution to match the physical resolution of the LED panel unit completely.

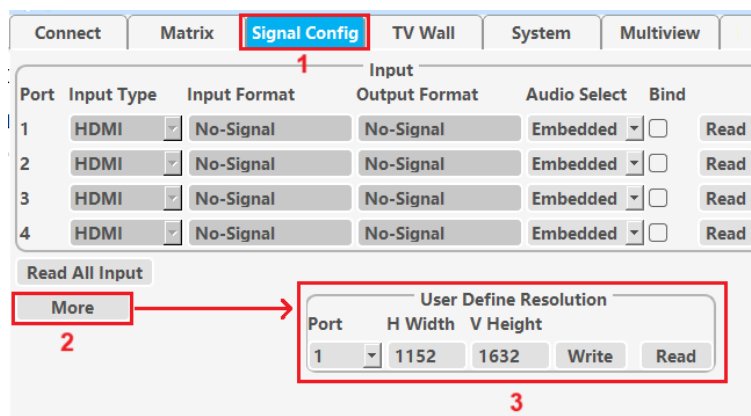
## 7. How to fit with a LED wall with different physical size panel units -MultiPanel

Sometimes we may encounter situations where the width or height of the LED splicing panel units are different.

In this case, in addition to setting up the relevant splicing operations normally firstly, then we also need to make the following configurations

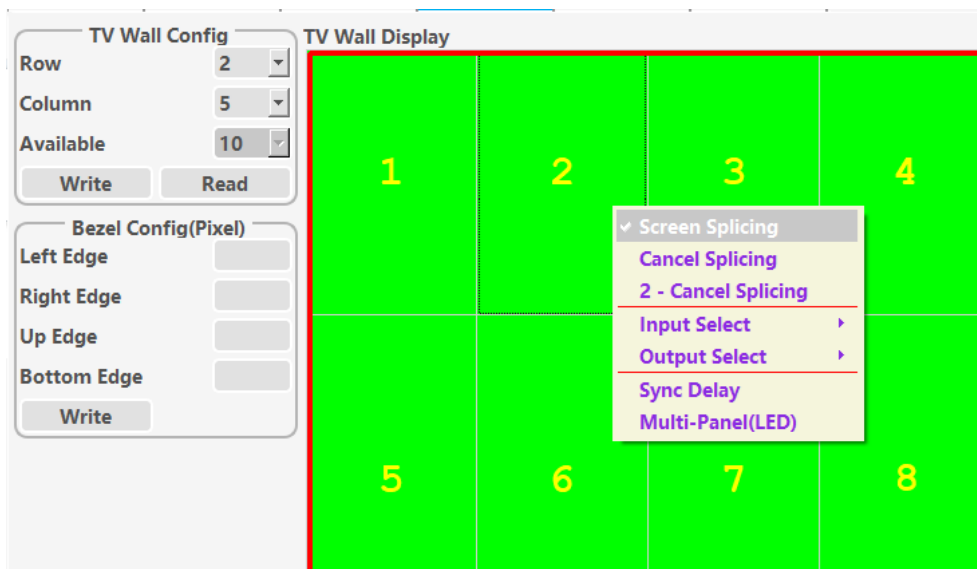


A. Set user define output resolution to the physical display resolution of the corresponding LED panel for each output port which displayed on this LED wall



B. Turn to TV Wall Tab and press alt Q on PC keyboard

C. Press right button of the mouse, then appears the interface as below, and click MultiPanel, then system will automatically fit the different panels



D. If user want to exit MultiPanel function, he need cancel this video wall, then system will automatically exit MultiPanel function

E. Please note MultiPanel function is not included in scene save or recall

## 8. Specification

|                       |                                    |
|-----------------------|------------------------------------|
| Band Width            | 594MHz (18Gbps), HDMI 2.0, HDCP2,2 |
| Audio Format          | LPCM 2.0                           |
| Input ports           | 4 HDMI                             |
| Output ports          | 9 HDMI, 1 Mini Toslink port        |
| Power Supply          | 110-240VAC                         |
| Power Consumption     | 55W Max                            |
| Operating Temperature | 0 to +40°C (+32 to +104 °F)        |
| Operating Humidity    | 10 to 70 % RH (non-condensing)     |
| ESD                   | Air: ± 8KV, Contact: ± 4KV,        |
| Dimensions            | L430 x W220 x H44 mm               |
| Mass                  | 5kg                                |

## 9. Package Contents

| Item               | Quantity |
|--------------------|----------|
| Main Unit          | 1        |
| AC Power Cord      | 1        |
| USB to RS232 cable | 1        |
| 1 meter RJ45 cable | 1        |
| Remoter            | 1        |



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