TA-MV41PRO

4x1 4K@60Hz HDMI Multi Viewer with IP control

User Manual

VER 1.1

FEATURES

MV0401-H2H4K60 is a multi-view video processor that supports 4K@60Hz input and output. Up to 4 channels of 4K/UHD video signals can be simultaneously displayed on one 4K/UHD display. MV0401-H2H4K60 supports seamless switching between 4 input signals, and supports multiple screen layouts such as Original mode, Dual-view mode, H mode, PIP mode and Quad mode to meet different image display needs. Support multiple control methods such as button, IR remote, RS232 and IP (Web GUI/Telnet).

- **TRUE 4K@60HZ/UHD VIDEO:** Both HDMI input and HDMI output compliant HDMI 2.0b specification up to 4K@60Hz 4:4:4 8bit.
- **RICH LAYOUT MODE：** Support multiple screen layouts, such as Original, Dual-view, Master mode, H mode, PIP mode and Quad mode.
- **SEAMLESS SWITCHING：** Supports seamless switching under the same layout.
- **CASCADE FUNCTION:** more inputs are displayed on the same display.

SEAMLESS SWITCH

Supports seamless switching under the same layout. For example, in Original mode, seamlessly switch from input 1 to any other input.

PANEL (PORT, LED AND BUTTON)

LAYOUT

The video processor supports 6 layout modes on the connected display, including Original, Dual-view, PIP mode, Master mode and Quad mode and Pyramid mode.

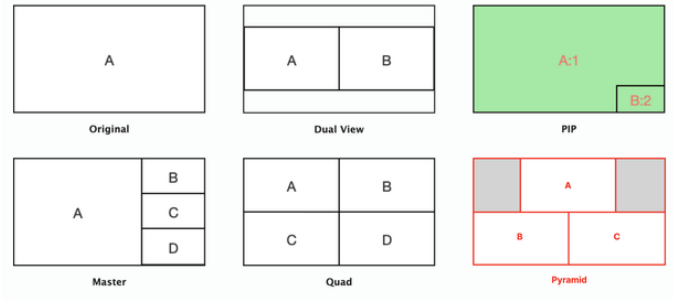

IMAGE STRECH

- By default, when switching screen layout to Dual-view mode or Master mode, the image on the display is shown in normal aspect ratio in order to keep it undistorted, as shown in Figure 1 below. If users want to set the image to stretch to fill the entire display screen, as shown in Figure 2, users can use the following three methods to switch:
- 1. Send API command.
- 2. Long press the “LAYOUT” button 3S on the front panel.
- 3. Long press the “MASTER” layout button 3S on the remote.

- Original mode: Display one original input signal without image processing, support maximum 4K@60Hz resolution.
- Dual-view mode: Simultaneously display 2 input signals. This mode support image stretching or fixed aspect ratio;
- PIP mode: A main screen is displayed, and another input screen is superimposed on the bottom right corner; The whole screen is composed of window 1 and window 2. When the size of the whole screen is 3840*2160, the size of window 2 is 1/16 of it, which is 960*540 by default (Other resolutions can be adjusted according to actual needs later). Window 2 can be selected via API command between bottom right (default), top right, top left and bottom left positions.
- Master mode: Simultaneously display a master screen and three slave screens. The customer can select any input as the master. This mode supports image stretching or fixed aspect ratio;
- Quad mode: Simultaneously display 4 pictures of the same size;
- Pyramid mode: One window on the top and two windows at bottom.

AUDIO

At the same time, HDMI output can only contain one audio signal of input source, but it can be switched by Button/API/Remote. For example, in QUAD mode, the audio can be cyclically switched between “1->2->3>-4->MUTE->1”.

Note: Audio can only be switched between the input channel (displayed in the current layout) and MUTE.

Note: The audio of the AUDIO OUTPUT port is the same as the HDMI output audio.

Specifications

Technical	
Input Connectors	4x HDMI in, 1x RS232, 1x DC 12V, 1x Power led, 4x inputs led, 4x inputs button, 1x LAN.
Output Connectors	1x HDMI out;
Supported Input	VIDEO HDMI in: VESA: 800 x 6008, 1024 x 7688, 1280 x 7688, 1280 x 8008, 1280 x 9608, 1280 x 10248, 1360 x 7688, 1366 x 7688, 1440 x 9008, 1600 x 9008, 1600 x 12008, 1680 x 10508, 1920 x 12008, 2048 x 11528, 3840 x 21602,3,5,6,8, 4096 x 21602,3,5,6,8 SMPTE: 1280 x 720P6,7,8, 1920 x 1080P6,7,8,9 1 = at 23.98 Hz, 2 = at 24 Hz, 3 = at 25 Hz, 4 = at 29.97 Hz, 5 = at 30 Hz, 6 = at 50 Hz, 7 = at 59.94 Hz, 8 = at 60 Hz, 9 = at 120 Hz;
Supported Output	VIDEO HDMI out: VESA: 800 x 6008, 1024 x 7688, 1280 x 7688, 1280 x 8008, 1280 x 9608, 1280 x 10248, 1360 x 7688, 1366 x 7688, 1440 x 9008, 1600 x 9008, 1600 x 12008, 1680 x 10508, 1920 x 12008, 2048 x 11528, 3840 x 21602,3,5,6,8, 4096 x 21602,3,5,6,8 SMPTE: 1280 x 720P6,7,8, 1920 x 1080P6,7,8,9 1 = at 23.98 Hz, 2 = at 24 Hz, 3 = at 25 Hz, 4 = at 29.97 Hz, 5 = at 30 Hz, 6 = at 50 Hz, 7 = at 59.94 Hz, 8 = at 60 Hz, 9 = at 120 Hz; Note: HDMI output automatically selects the maximum resolution according to the connected display, and the forced output resolution can be set through API command.
Data Rate	18Gbps;
Control	Button, IR remote, RS232 (API), Web GUI and Telnet.
EDID Setting	Copy EDID;
Function Details	See above for detail;
Firmware update	FW update by Web UI.

FUNCTION TABLE

- Note *: In Master mode, it indicates the sequence of switching the main screen. The order of the three small screens on the right is 1-2-3-4 from top to bottom.
- Note **: The above audio switch (audio loop selection) is limited to the case of using the remote and button. For API and web, can directly select the corresponding audio channel without switching in sequence.

IR REMOTE

Users can switch among the four inputs and 6 modes for the output display by pointing the processor IR remote directly to the IR window on front panel or point to the IR receiver head connected to the rear panel.

IP Control

- Built-in simple Web GUI for device configuration and control.
- Support Telnet API for control.
- Supported API commands:
- FW Update
- Layout switch
- Source selects/switch
- Video/Audio mute/unmute
- Image stretch on/off (Fit and Stretch)
- Input/output HDCP configuration
- Forced scaling output (4K@60, 4K@30, 1080@P60)

Video Input Sources & Video Output

1. HDMI in and out

- 4x HDMI inputs and 1x HDMI output;
- HDMI in/out supports HDMI 2.0 up to 4K@60Hz 4:4:4 8-bit and HDCP 2.2;

2. Audio:

- HDMI audio: supports all audio format in HDMI 2.0 spec.
- Audio de-embedding: Stereo only.
- Audio Mute: The button and the remote simultaneously mute the audio from the HDMI OUT and AUDIO OUTPUT port. API can be mute separately.

RS232:

- Support API commands via RS232 port; including but not limited to:

1. Switch layout.
2. Switch input.
3. Switch audio.
4. Mute/Unmute video/audio.
5. Turn on/off the output (CEC).
6. Turn on/off HDCP.

IR:

- Support local IR window and IR remote control extended receiving function.

Button:

- 4x INPUT indicate button.
- 1x SOURCE button.
- 1x LAYOUT button.
- 1x Audio button.

LED:

- 1x POWER led, yellow-green;
- 4x INPUT indicate leds, yellow-green;

Power:

- 1x DC 12V power in with locking；

Application Example

System Connection Diagram – HDMI Multi-Viewer Setup

This diagram illustrates a central HDMI Multi-Viewer system that allows multiple video sources to be connected, viewed simultaneously, and managed through a single display with audio and network control support.