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4KMV41

4x1 4K HDMI Multi-viewer

User Manual

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Contact Us

Business inquiry: **services@avaccess.com**

Technical problems: **support@avaccess.com**

Important Safety Instructions

- Do not expose this device to rain, moisture, dripping or splashing. No objects filled with liquids, such as vases, shall be placed on the device.

- Do not install or place this unit in a bookcase, built-in cabinet, or in another confined space. Ensure the unit is well ventilated.

- To prevent risk of electric shock or fire hazard due to overheating, do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, or similar items.

- Do not install near any heat sources such as radiators, heat registers, stoves, or other device (including amplifiers) that produce heat.

- Do not place sources of naked flames, such as lighted candles, on the unit.

- Clean this device only with dry cloth.

- Unplug this device during lightning storms or when unused for long periods of time.

- Protect the power cord from being walked on or pinched, particularly at plugs.

- Only use attachments / accessories specified by the manufacturer.

- Refer all servicing to qualified service personnel

Table of Contents

Introduction

Overview

4KMV41 is a multi-screen video processor which supports 4K input and output. It features up to 4 channels of 4K/UHD video signals to be simultaneously displayed on one 4K/UHD display. It also supports seamless switching between 4 input signals, and supports multiple screen layouts such as Original, Dual-view and Quad to meet different image display needs. It can be controlled by multiple methods including front panel buttons, IR remote and RS232.

Features

- 4 HDMI Inputs and 1 HDMI Output.
- HDMI inputs and HDMI output support resolutions up to 4K@30Hz 4:4:4 8bit.
- All HDMI inputs and output support HDCP 1.4.
- Supports multiple-view function, multiple inputs can be displayed on one display.
- Supports multiple screen layout modes, including Original, Dual-view, Master mode, PIP mode and Quad mode.
- Supports seamless switching of four inputs in the same layout.
- Supports audio switching function through front panel button in Dual-view, Master mode, PIP mode and Quad mode.
- Rich control options, including IR Remote, front panel buttons and RS232 control.
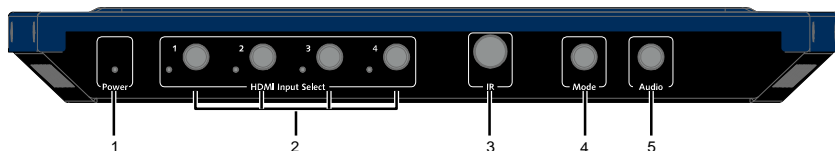
Package Contents

Before you start the installation of the product, please check the package contents:

- Video Processor x 1
- Power Adapter (DC 12V, 2A) with US Pins x 1
- IR Remote x 1
- IR Receiver x 1
- Phoenix Male Connector (3.5mm, 3-Pin) x 1
- Rubber Feet x 4
- User Manual x 1

Panel

Front Panel

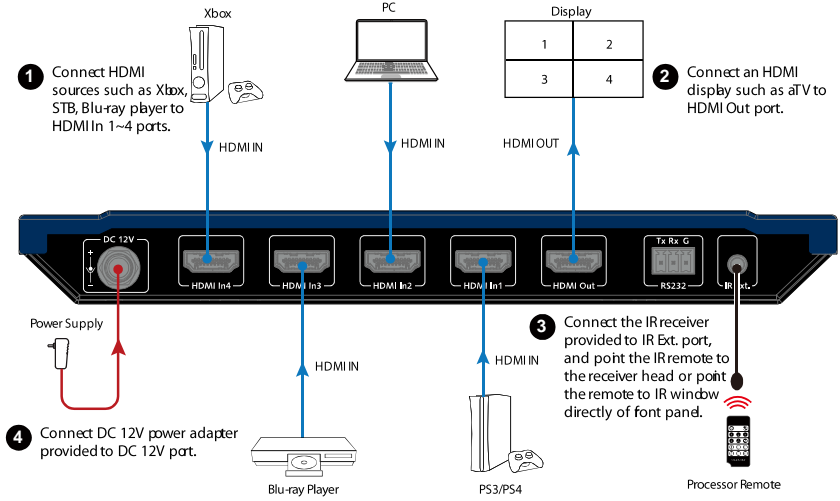| No.	Name	Description
1	Power LED	- **On:** The device is powered on. - **Off:** The device is powered off.
2	HDMI Input Select	**1~4 buttons:** Press the button to enter the Original mode and switch to the corresponding HDMI In source. **LED:** LED is located on the left of the button. - **On:** The HDMI source is connected to the corresponding HDMI In port. - **Off:** The HDMI source is not connected to the

No.	Name	Description
		corresponding HDMI In port.
3	IR window	Receive IR signals.
4	Mode	Press the button continuously to cycle among the five layout modes and the selected source or combinations of sources in each mode. (More detail information, please refer to "Front Panel Operation" section).
5	Audio	Short press to switch audio channel in some layout modes. Hold press the button for about 5s to mute the audio in current mode. (More detail information, please refer to "Front Panel Operation" section).

Rear Panel
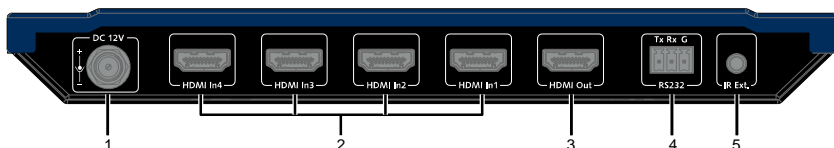
No.	Name	Description
1	DC 12V	Connect to the DC 12V power adapter provided.
2	HDMI In 1~4	Connect to HDMI sources such as Xbox, PS3, STB.
3	HDMI Out	Connect to an HDMI display.
4	RS232	Connect to a RS232 control device for API control (including firmware upgrade).
5	IR Ext.	Connect to the IR receiver cable provided.

Application

Xbox

PC

Display

1	2
3	4

1 Connect HDMI sources such as Xbox, STB, Blu-ray player to HDMI In 1~4 ports.

2 Connect an HDMI display such as a TV to HDMI Out port.

HDMI IN

HDMI IN

HDMI OUT

Power Supply

HDMI In4 HDMI In3 HDMI In2 HDMI In1 HDMI Out RS232 IR Ext.

3 Connect the IR receiver provided to IR Ext. port, and point the IR remote to the receiver head or point the remote to IR window directly of font panel.

HDMI IN

HDMI IN

4 Connect DC 12V power adapter provided to DC 12V port.

Blu-ray Player

PS3/PS4

Processor Remote

Layout Modes Switching

Layout Modes Introduction

The processor supports 5 layout modes on the connected display, including Original mode, Dual-view mode, Quad mode, PIP mode and Master mode.

(1) Original mode: Only one original input signal source without image processing is selected to be shown on the connected display. In this mode, the processor supports seamless switching (See Figure 1).

(2) Dual-view mode: Two input signals are selected simultaneously to be shown as two screens in same size on the connected display (See Figure 2). It supports switching between HDMI In1, 2, and HDMI In 3, 4.

(3) Quad mode: The four HDMI input sources is shown as 4 screens in same size simultaneously on the connected display (See Figure 3).

(4) PIP mode: Two input signals are selected simultaneously to be shown as two screens on the connected display. The smaller screen covers on the lower left corner above the larger one (See Figure 4), it supports switching between HDMI In 1, 2, and HDMI In 3, 4.

(5) Master mode: The four HDMI input sources is shown as 4 screens simultaneously on the connected display (See Figure 5). The master input can be selected from HDMI In 1~4, and the slave screens are in same size.
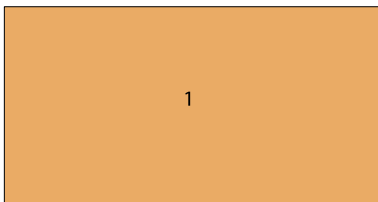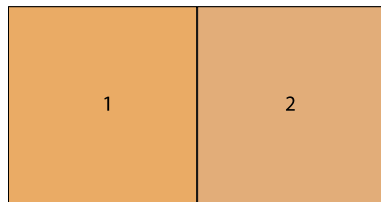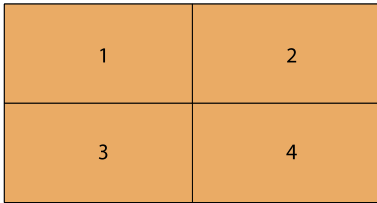

Figure 1

Figure 2
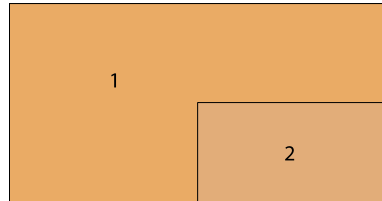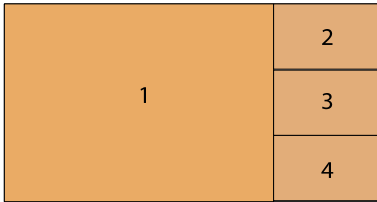
Figure 3

Figure 4

Figure 5

Users can switch among the four inputs and five modes through processor remote, front panel buttons and RS232 (API commands).

IR Remote Operation

Users can switch among the four inputs and five 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.

Button	Function
⏻	Press the button to turn on/off HDMI output of the device.
4K/1080	Press the button to switch output resolution between 4K and 1080P.
1 2 3 4	Press to switch to original mode, and select HDMI In 1 as signal source. (Buttons 2, 3 and 4 are same as Button 1).
♪	Press the button to switch audio channel in current layout mode. a. In Original mode, the audio is set to the channel of the current screen, and can't be switched. b. In Dual-view mode and PIP mode, press the button to switch audio channel between the two sources selected currently. c. In Quad mode and Master mode, press the button to switch among the four screens. The switching sequence is 1-2-3-4.
🔇	Press the button to mute the audio in current layout mode. Press ♪ to switch audio channel to exit mute mode.
☐	Press the button to switch to Original mode, and press continuously to switch among HDMI In 1~4 sources.
⊟⊟	Press the button to switch to Dual-view mode. a. ⊟: Select HDMI In 1 and 2 as current sources.

Button	Function
	b. ⊞: Select HDMI In 3 and 4 as current sources.
⊡	Press the button to switch to PIP mode, and press again to switch to next group sources. a. Group 1: Big screen: HDMI In 1; Small Screen: HDMI In 2. b. Group 2: Big screen: HDMI In 3; Small screen: HDMI In 4.
⊞	Press the button to switch to Quad mode.
⊡	Press the button to switch to Master mode. Press this button continuously to cycle 1-2-3-4 to the Master screen.
System Code Switch	The button is used to switch between the two sets of IR system codes ("00" and "4E") of the provided IR remote. It is used to solve the problem of IR code conflict between IR remote control and other IR devices.

Front Panel Operation

Users can switch among the four inputs and five modes through front panel buttons.

1. Press one HDMI Input button to switch to Original mode and display the selected input source.

    Press one HDMI Input button to enter original mode and display the corresponding source.

2. Press "Mode" button continuously to cycle through among the five layout modes and the selected source or combinations of sources in each mode. Press "Mode" button continuously, the connected display will switch the sources and modes in sequence as follows: □ -> ⊞ … -> ⊞ -> □…

Press "Mode" button continuously to cycle through among
the five layout modes and the selected source or combinations
of sources in each mode.

3. Press "Audio" button to switch audio channel in current layout mode.

    a. In Original mode, the audio is set to the channel of the current screen, and can't be switched.

    b. In Dual-view mode and PIP mode, press the button to switch audio channel between the two sources selected currently.

    c. In Quad mode and Master mode, press the button to switch among the four screens. The switching sequence is 1-2-3-4.

    Hold "Audio" button for about 5s to mute the audio in current layout mode. Press the button again to switch audio channel to exit mute mode.

Short press Audio to switch audio channel in some layout modes.
Long Press the button to mute the audio in current mode.

RS232 Control

Advanced users may need to control the processor through RS232 serial communication. Connect a control PC or control system to the RS232 port of the processor. API command for RS232 control is available in the separate document "API Command Set_4KMV41". A professional RS232 serial interface software (e.g. Serial Assist) may be needed as well.

Before executing the API command through RS232 serial connection, please ensure RS232 interface of the device and the control PC are configured correctly.

Parameters	Value
Baud Rate	115200 bps
Data Bits	8 bits
Parity	None
Stop Bits	1 bit
Flow Control	None

Display Modes Switching

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. If users want to set the image to stretch to fill the entire display screen, as shown in Figure 2, users can send command "*SET DISPLAY MODE FULL<CR><LF>*" to the device through RS232 port.

Full screen mode and normal aspect ratio mode can be switched through the command "*SET DISPLAY MODE prm<CR><LF>*". Detail information about API commands, please refer to the separate document "API Command Set_4KMV41".
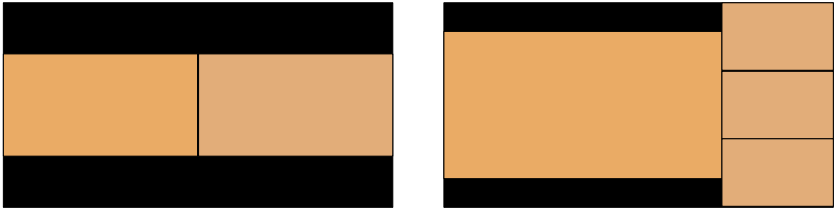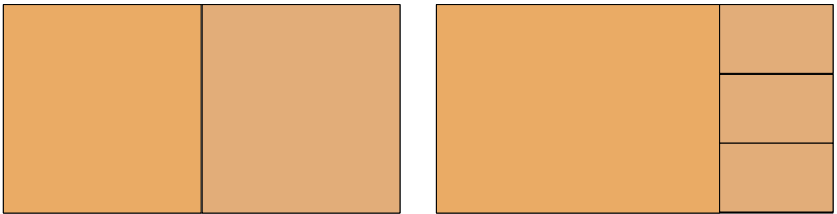
Figure 1

Figure 2

Specifications

Technical	
Input/Output Port	4 x HDMI In, 1 x HDMI Out, 1 x RS232, 1 x IR Ext., 1 x DC 12V IN
Input/Output Signal Type	Input/Output: HDMI with 4K@30Hz 4:4:4 8bit, HDCP 1.4
Input/Output Resolution Supported	VESA: 800x600[8], 1280x960[8], 1280x1024[8],1360x768[8], 1366x768[8], 1600x900[8], 1600x1200[8], 3840x2160[2,3,5] SMPTE: 1280x720P[6], 1920x1080P[1,2,3,4,5,6,7,8], 3840x2160[2,3,5], 1 = at 23.98 Hz, 2 = at 24 Hz, 3 = at 25 Hz, 4 = at 29.97Hz, 5 = at 30 Hz, 6 = at 50 Hz, 7 = at 59.94 Hz, 8 = 60 Hz
Audio Format	Stereo
Maximum Data Rate	10.2 Gbps
Control Method	IR Remote, Front Panel Buttons, RS232 (API Commands)

General	
Operating Temperature	0°C to 45°C (32°F to 113°F)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)
Humidity	10% to 90%, non-condensing
ESD Protection	Human-body Model: ±8kV (Air-gap discharge)/ ±4kV (Contact discharge)
Power Supply	DC 12V 2A
Power Consumption (Max)	8.97W
Device Dimension (W x H x D)	230.03mm x 25mm x 142.6mm/9.06" x 0.98" x 5.61"
Product Weight	0.54kg/1.19lb

Transmission Distance

Cable Type	Range
HDMI	15m/50ft

Trouble Shooting

Steps of Regular Troubleshooting Routine

1 **Power:** Please make sure all devices are powered on. (source, processor, display devices)
2 **Indicator:** Please make sure LED indicators of the device are normal according to user manual.
3 **Devices**: Please make sure picture can be shown normally when connecting source to display devices directly.
4 **Cable**: Plug in and out HDMI cable or try another HDMI cable.
5 **Compatibility:** Please test other source and display devices to determine whether it is a compatibility issue.

FAQ

1 **No Picture**
   The device supports 4K and 1080P output modes, press the "4K/1080P" button on the remote to switch between the two output modes.
2 **No Sound**
   Please check whether the mute function of the device is set to enable (the mute button is pressed), press the "Audio" button on front panel or press button of the remote to switch audio channel to exit mute mode.

Warranty

Products are backed by a limited 3-year parts and labor warranty. For the following cases AV Access Technology Limited shall charge for the service(s) claimed for the product if the product is still remediable and the warranty card becomes unenforceable or inapplicable.

1. The original serial number (specified by AV Access Technology Limited) labeled on the product has been removed, erased, replaced, defaced or is illegible.
2. The warranty has expired.
3. The defects are caused by the fact that the product is repaired, dismantled or altered by anyone that is not from an AV Access Technology Limited authorized service partner. The defects are caused by the fact that the product is used or handled improperly, roughly or not as instructed in the applicable User Guide.
4. The defects are caused by any force majeure including but not limited to accidents, fire, earthquake, lightning, tsunami and war.
5. The service, configuration and gifts promised by salesman only but not covered by normal contract.
6. AV Access Technology Limited preserves the right for interpretation of these cases above and to make changes to them at any time without notice.

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