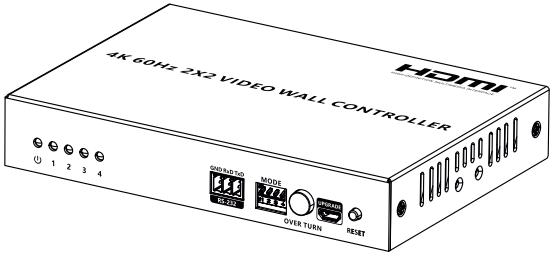
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User Manual

4K@60Hz 2x2 VIDEO WALL CONTROLLER



HIGH-DEFINITION MULTIMEDIA INTERFACE

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• Important Safety Instructions

1. To prevent electric shock, please ensure that all devices are properly grounded.
2. Do not place this device near or over a radiator or heat register, or where it is exposed to direct sunlight.
3. Do not expose this device to rain or place it near water. Any liquid that goes into the device may cause a failure, fire, or electric shock.
4. Do not place the device on an uneven or unstable surface. The device may fall resulting in a malfunction.
5. Never insert anything metallic into the open parts of this device. This may cause a danger of electric shock.
6. If a third-party power supply is used, please ensure that the power supply specifications meet the product requirements.

• Introduction

This product is a 4K@60Hz 1-in-4-out video wall controller, supports one HDMI source input and four HDMI outputs. Supports 1x1/1x2/1x3/1x4/2x1/3x1/4x1/2x2 splicing modes, which can be set by RS-232 or dip switch. The product can flexibly adapt to different installation requirements, which can be widely used in security monitoring, rail transit, broadcasting, smart cities, home theatre, training and other fields.

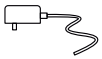
• Features

1. Supports 1 HDMI signal input and 4 HDMI signal output.
2. Supports up to 4096x2160@60Hz resolution, downwards compatible.
3. Supports a variety of splicing modes, such as 1x1/1x2/1x3/1x4/2x1/3x1/4x1/2x2, etc.
4. Supports dip switch switching splicing mode.

5. Supports RS-232 control instruction to set splicing mode.
6. Supports 3.5mm left/right channel audio output.
7. Supports 180-degree rotation of HDMI1/2 display image in 2x1/2x2 mode (when the upper displays installed upside down).
8. Firmware upgrading via micro USB port.
9. Lightning protection, surge protection, ESD protection.
10. Plug and play, no need to install drivers.

• Package Contents


Controller x1


Power Adapter 12V/2A x1


User manual x1

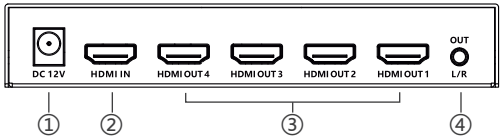

Mounting ear x2

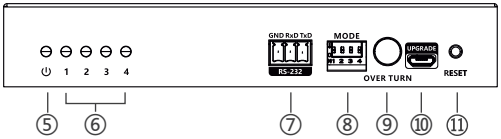

Screw x6


Grounding screw x1


Terminal Block x1

• Panel Description

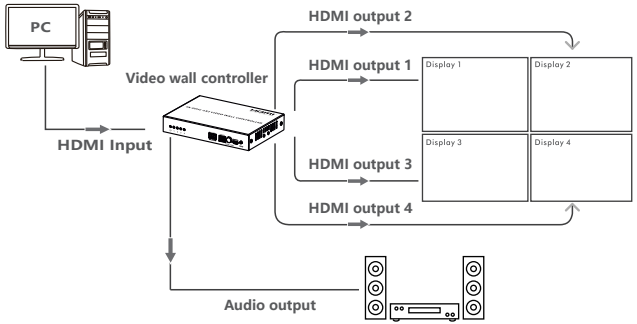




①	DC12V Power input	Connect with DC 12V/2A power adapter
②	HDMI signal input	Connect HDMI signal source
③	HDMI signal output x4	Connect with HDMI splicing display devices
④	L/R audio output	Separate output of HDMI signal source audio
⑤	Power light	1) Steady on: The power is on, and stable signal input 2) Slow flash: No HDMI signal transmission 3) Quick flash: The factory settings have been restored
⑥	HDMI signal light x4	Corresponding to 4 HDMI outputs respectively, the indicator light of normal signal transmission is always on
⑦	RS-232	Connect the computer for command control Baud rate: 9600, Only when the dip switch is set to '1111', the mode can be switched through RS-232
⑧	Mode switch	Switch splicing mode
⑨	Over turn button	Image rotation in 2x1/2x2 mode. Controlled by a button; press once to flip, then again to restore, control cycling with memory function.
⑩	Micro-USB port	Used for device firmware upgrading
⑪	Reset	1) Press to restart the video wall controller; 2) Press and hold for 5 seconds to restore factory settings (wait until the power indicator is quick flashing to release)

• Installation Procedures

1. Connection Diagrams



2. Connection Instructions

1) Connect the controller with the signal source and splicing screen through HDMI cable.
2) According to the number of splicing screens, the matching splicing mode can be selected by dip switch.
3) When using RS-232, the dialing code should be set to ‘1111’, and different splicing modes can be switched through the serial port instruction.
4) If you need to output signal source audio independently, please connect the speaker or power amplifier with a 3.5mm audio cable.
5) Connect the power supply, and the product starts to work.

3. RS-232 control

Insert the terminal into the controller and connect it to external equipment. The three pins are GND/RXD/TXD, and the splicing mode can be set by RS-232 instruction. The default is as follows:

Baud rate: 9600

Date bits: 8

Stop bits: 1

Parity: None

Control command	Functional description
ES XX On\n	‘XX’ indicates the corresponding HDMI port, which can be turned on or off. From right to left, the HDMI ports are: HDMI: 01,02,03,04 All means all HDMI ports
ES XX Off\n	
ES XXXX\n	‘XXXX’ means splicing mode 0000——1x1; 0001——2x1; 0010——1x2; 0011——3x1; 0100——1x3; 0101——4x1; 0110——2x2; 0111——1x4; 1000----1x1(expect 3940x2160 input)/ 2x2(3840x2160 input); 1001----1x1(Splitter Mode: Support up to 4096x2160@60Hz)
Reset\n	Reset, device restart
Recover\n	Restore the factory settings and read the current dialing status by default (The unused dipswitch status defaults to 0000 mode)
Status\n	Status information printing Status: Baud 9600 ES 03 FAIL ES 01 OK ES 04 FAIL ES 02 OK ES 001 OK
Baud XX\n	‘XX’ represents the baud rate value 9600（default）,19200, 38400,57600,115200
Example	
Control command 1	**ES 04 On\n**

Functional details	Open the '04' HDMI port	
Return value	Received successfully	ES 04 On OK
	Received unsuccessful	ES 04 On FAIL
Control command 2	**ES All Off\n**	
Functional details	Close all HDMI ports	
Return value	Received successfully	ES All Off OK
	Received unsuccessful	ES All Off FAIL
Control command 3	**ES 0001\n**	
Functional details	Select 2 x 1 splicing mode	
Return value	Received successfully	ES 0001 OK
	Received unsuccessful	ES 0001 FAIL
Control command 4	**Reset\n**	
Functional details	Reset device restart	
Return value	Received successfully	Reset OK
	Received unsuccessful	Reset FAIL
Control command 5	**Baud 19200\n**	
Functional details	Baud 19200 OK	
Return value	Received successfully	Baud 19200 OK
	Received unsuccessful	Baud 19200 FAIL

Remarks:

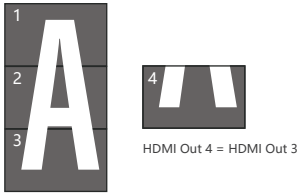
1) '\n' Newline character.
2) The splicing mode can be switched by RS-232 or dip switch. Only when the dip switch is set to '1111', switching splicing mode via RS-232 instruction.
3) 2x2 Display Rotation Modes:
   ①When the dip switch is in position "0110", enter the control command ES201\n to realize 180-degree rotation of HDMI1/HDMI2 display image , and then enter the control command ES 200\n to resume;
   ② When the dip switch is in position "1111", enter the control command ES 0110\n to switch to 2x2 mode, then input the control command ES 201\n to realize 180-degree rotation of HDMI1/HDMI2 display image, and enter the control command ES 200\n to resume;
4) 2x1 Display Rotation Modes:
   ① When the dip switch is in position "0001", enter the control command ES201\n to realize 180-degree rotation of HDMI1/HDMI2 display image , and then enter the control command ES 200\n to resume;
   ② When the dip switch is in position "1111", enter the control command ES 0001\n to switch to 2x1 mode, then input the control command ES 201\n to realize 180-degree rotation of HDMI1 display image, and enter the control command ES 200\n to resume;
5) When the dip switch is in position '1111', the display shows the picture in the splicing mode determined by RS-232 control; otherwise, the display shows the image in the mode set by the dip switch. The unused dipswitch defaults to position '0000'; when the dip switch is in position '1111', the last serial command setting mode is shown with the memory function following the serial command setting.

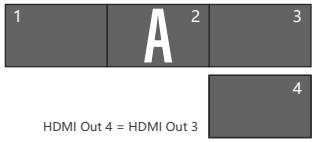
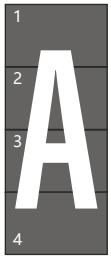
4. DIP Switch

Built-in 8 splicing mode can be switched by dip switch, and the default is '0000' .


Switch UP : use the Arabic numeral "1" to represent


Switch DOWN : use the Arabic numeral "0" to represent

Dip switch state				Splicing mode	
1	2	3	4		
0	0	0	0	1x1	
0	0	0	1	2x1 vertically	
0	0	1	0	1x2 horizontally	
0	0	1	1	3x1 vertically	 HDMI Out 4 = HDMI Out 3

0	1	0	0	1x3 horizontally	 HDMI Out 4 = HDMI Out 3
0	1	0	1	4x1 vertically	
0	1	1	0	2x2 vertically	
0	1	1	1	1x4 horizontally	

Note:

1. When the dip switch is set to "1000" mode, if the input is 3840x2160 signal, the output will be the original screen with 1080P resolution (in 2x2 mode);
2. When the dip switch is set to "1000" mode, if the input is expect 3840x2160 signal, the output resolution will be 4K/1080P (in 1x1 mode);
3. The unused dipswitch status defaults to 0000 mode.

• FAQ

Q: Picture quality is not fluent and stable?

A: 1) Please check and make sure all HDMI cables are connected well.
2) Try to connect the source device to display device directly, or change to another source device for a try to see the picture quality.

Q: Monitor does not show image, black screen?

A: 1) Please check whether the signal source output resolution is the supported by the product.
2) Please check whether the HDMI cable is firmly connected and plug the HDMI cable again.
3) Please check whether the HDMI output is turned off by using RS-232 command.

Q: NO response when using RS-232 control to send instructions to switch splicing modes?

A: 1) Only when the dip switch is set to '1111' can it be switched by RS-232 instruction.
2) Confirm whether the baud rate of the product is consistent with the settings of the serial port tool, the default baud rate of the product is 9600.

• Specification

Items		Description
Video signal	HDMI Input	1x HDMI
	HDMI Output	4x HDMI
	Compatibility	HDMI 2.0
		HDCP 1.4/HDCP 2.0
	Resolutions	Spliter Mode input: 4096x2160@24/25/30/50/60Hz, 3840x2160@24/25/30/50/60Hz, 3840x1440@60Hz, 3440x1440@60Hz, 2560x1600@60Hz, 2560x1440@60Hz, 2560x1080@60Hz, 1080P@24/25/30/50/60Hz, 720P@60/50Hz, 1920x1200@60Hz, 1680x1050@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1440x900@60Hz, 1400x1050@60Hz, 1366x768@60Hz, 1360x768@60Hz, 1280x1024@60Hz, 1280x960@60Hz, 1280x800@60Hz, 1280x768@60Hz, 1024x768@60Hz Users can customise resolutions that comply with the HDMI 2.0 standard: 3840x720@60Hz, 4096x768@60Hz, 3216x1920@60Hz, etc
		Output: When the input resolution is lower than or equal to 1920x1080, the output is 1920x1080 with the frame rate unchanged. When the input resolution is higher than 1920x1080, the output is 3840x2160 with the frame rate unchanged.
Video signal	3.5mm Output	LPCM 2.0
	HDMI Output	Dolby Digital 5.1CH /DTS 5.1CH/LPCM 2.0

Splice Settings	Mode	1x1/1x2/1x3/1x4/2x1/3x1/4x1/2x2
	DIP Switch	
	RS-232 (GND/ RxD/TxD)	Default baud rate: 9600 Only when the dip switch is set to '1111' can the splicing mode be switched by RS-232 instruction
Splitter Settings	Splitter Mode	Dip switch state 1001,1 in 4 out, Support up to 4096x2160@60Hz
Power	Power Supply	DC12V/2A
	Power Consumption	< 9W
Operating Environment	Working temperature	-20℃~60℃
	Storage temperature	-30℃~70℃
	Humidity	0~90%RH（No condensation）
Physical Properties	Housing	Iron
	Weight	507g
	Color	Black
	Dimensions	148.5(L)*103.0(W)*25.0(H)mm
Protection	ESD protection 1a Contact discharge level 2 (±4KV) 1b Air discharge level 3 (±8KV) Implementation of the standard: IEC61000-4-2	
	Lightning protection, Surge protection	