



HDS-404MV

**4K@30Hz 4x4 HDMI™ Seamless
Matrix w/ Multi Viewer (Audio Extract)**

USER MANUAL

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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.

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the service life of your equipment.

Please activate your warranty by registering our product through the link below - **www.orei.com/register**

Technical Support

Need Help?

Our experienced Technical Support Team is here for you to answer your questions, give technical advice or help troubleshoot your project to get you installed on time and on budget. Call, email or chat with us now.

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Or

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Introduction

The HDMI™ 4x4 Quad Multi-Viewer with Seamless Switcher is a high performance 4 by 4 Quad Multi-Viewer with seamless matrix switcher. It supports four HDMI™ input sources to be displayed on one screen with three multi-view modes. As a switcher, it can also seamlessly switch the four HDMI™ input freely. The product can be controlled by various ways, through the front panel button, IR control and RS232 control etc.



Features & Package Contents

1. HDCP 1.4 compliant
2. Video resolutions up to 4K@30Hz
3. Video bandwidth up to 10.2Gbps
4. Features an Optical and a Stereo 3.5mm output for audio extraction
5. Supports LPCM, AC3, and DTS audio formats
6. Power-off memory function
7. Built-in scaler
8. Seamless switching
9. PIP window location management
10. RS-232 control

Package Contents

1.	HDS-404MV	1pcs
2.	Remote	1pcs
3.	Power Adapter	1pcs
4.	User Manual	1pcs

Specifications

Technical	
HDMI Compliance	HDMI 1.4
HDCP Compliance	HDCP 1.4
Video Bandwidth	10.2Gbps
Video Resolution	480i,576i,1080i 480p,576p,720p,1080p,4K@24/25/30
Color Depth	Support 8/10/12 bits color depth
Color Space	RGB/YCbCr444/YCbCr422
Audio Formats	LPCM/AC3/DTS
ESD Protection	contact discharge ($\pm 4\text{KV}$), air discharge ($\pm 8\text{kv}$), Implementation of the standard: IEC61000-4-2

Connections	
Input	4 x HDMI [Type A, 19-pin female] 1 x Upgrade [Micro-USB] 1 x DC 5V [Power Input]
Output	4 x HDMI [Type A, 19-pin female] 1 x Stereo L/R [3.5MM Jack] 1 x TOSLNIK [S/PDIF]

Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	L: 269.5mm / 10.61in W: 110mm / 4.33in H: 19mm / 0.748in
Weight	539g / 19.01oz
Power Supply	Input: AC 100-240V 50/60Hz, Output: DC 5V/2A (US/EU standards, CE/FCC/UL certified)
Power Consumption	≤ 6W
Operating Temperature	Operating Temperature: 0°C to 70°C
Storage Temperature	Storage Temperature: -10°C-80°C
Relative Humidity	5~90% RH (non-condensing)

Ports and Interfaces

Remote Control



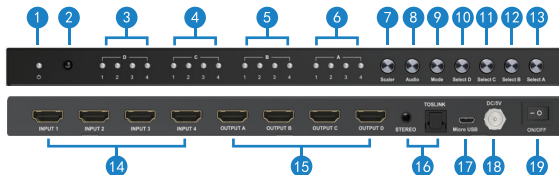
Remote Control Size: 51.5 x 124 x 9.5mm

No.	Name	Function Description
1.	POWER	Press to turn the unit on/off.
2.	MUTE	Press the button to mute the audio or switch between 2.0CH & 5.1CH mode.
3.	OUTPUT A	Press IN1 ~ IN4 button will select the corresponding channel to output A as a seamless switcher.

No.	Name	Function Description
4.	OUTPUT B	Press IN1 ~ IN4 button will select the corresponding channel to output B as a normal switcher.
5.	OUTPUT C	Press IN1 ~ IN4 button will select the corresponding channel to output C as a normal switcher.
6.	OUTPUT D	Press IN1 ~ IN4 button will select the corresponding channel to output D as a normal switcher.
7.	MODE	Press the button to change 2x2 four equal picture-IN1/IN2 left/right picture - IN1/IN2 up/down picture- one big three small up/down picture mode
	PIP MODE	In the PIP mode: press button to change PIP small picture location (cycle from right lower corner > left lower corner > left upper corner > right upper corner of the screen).
	COPY	Press the button to copy the Output A display mode to Output B/C/D at the same time
	AUDIO	press the button will select the corresponding audio output from IN1-IN4. long press the audio button for 3s to change the default audio mode between the 2.1CH and 5.1CH mode Scaler button: press the button switch 1080p, 2560x1600p and 4K@30Hz

No.	Name	Function Description
8.	Scaler button	press the button switch 1080p, 2560x1600p and 4K@30Hz
	MODIFY	Press this button to switch between different sources in the current display mode.
	FULL SCREEN	Press to select full screen mode or keep the original ratio.
	OSD	Press to show the OSD content and disappear for 3s later.

Ports and Interfaces



No.	Name	Function Description
1.	Power	Power LED Indicator
2.	IR	IR Receiver
3.	D 1-4	Input1-4 LED Indicator for OUTPUT D
4.	C 1-4	Input1-4 LED Indicator for OUTPUT C
5.	B 1-4	Input1-4 LED Indicator for OUTPUT B
6.	A 1-4	Input1-4 LED Indicator for OUTPUT A
7.	Scaler	HDMI output resolution 1080p/1600P/4K@30Hz switch button
8.	Audio	Audio channel output select button
9.	MODE	Press the button to change display mode as 2x2 four equal picture-IN1/IN2 left/right picture - IN1/IN2 up/down picture-one big three small up/down picture mode-PIP(one big one small picture)
10.	OUTPUT D	Press IN1 ~ IN4 button will select the corresponding channel to output D as a normal switcher.

No.	Name	Function Description
11.	OUTPUT C	Press IN1 ~ IN4 button will select the corresponding channel to output D as a normal switcher.
12.	OUTPUT B	Press IN1 ~ IN4 button will select the corresponding channel to output D as a normal switcher.
13.	OUTPUT A	Press IN1 ~ IN4 button will select the corresponding channel to output D as a normal switcher.
14.	INPUT 1-4	HDMI Input1-4 port
15.	OUTPUT A-B-C-D	HDMI Output A/B/C/D port
16.	STEREO	Stereo Audio Output
	TOSLINK	Toslink Digital Audio Output
17.	Micro USB	Firmware Update port for factory only and Combo the RS232 Serial Control Function
18.	DC/5V	DC/5V: DC 5V IN
19.	ON/OFF	Power on/off button

Special Function

Description

1. For 2x2 four equal picture mode, the four HDMI input sources are displayed in 2x2 on one screen, press mode key once and it will be displayed with the below in default:

IN1	IN2
IN3	IN4

Press  (modify key) + numerical key N (N=1, 2, 3, 4), these different numbers means different mode (The user can choose the mode he desires within 5s after pressing the 'modify' key, if no operation was made after 5s, the program will restore in default).

Note: If in current mode, customer only need to press  (modify key) + numerical key N (N=1, 2, 3, 4), and save pressing one key to change different mode. If the current mode is in other display mode, customers need press mode button to change to 2x2 four equal picture mode firstly and press key combinations as below.

Press  (modify key) + numerical key 1, then the output pictures will be:

IN1	IN2
IN3	IN4

Special Function Description

Press  (modify key) + numerical key 2, then the output pictures will be:

IN2	IN1
IN4	IN3

Press  (modify key) + numerical key 3, then the output pictures will be:

IN3	IN4
IN1	IN2

Press  (modify key) + numerical key 4, then the output pictures will be:

IN4	IN3
IN2	IN1

2. For left /right picture mode, press the mode key twice and it will display the below picture in default:

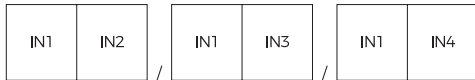
IN1	IN2
-----	-----

Special Function Description

Press  (modify key) + numerical key N (N=1, 2, 3, 4) + numerical key M (N=1, 2, 3, 4, N≠M), these different numbers means different input source, N means to choose the left output picture input source, M means to choose the right output picture input source (The user can choose the mode he desires within 5s after pressing the 'modify' key, if no operation was made after 5s, the program will restore in default).

Note: If in current mode, customer only need to press  (modify key) + numerical key N (N=1, 2, 3, 4) + numerical key M (N=1, 2, 3, 4, N≠M), and save pressing one key to change different mode. If the current mode is in other display mode, customers need press mode button to change to left /right picture mode firstly and press key combinations as below.

Press  (modify key) + numerical key 1+ numerical key 2/3/4, then the output pictures will be:



Special Function Description

Press  (modify key) + numerical key 2+ numerical key 1/3/4, then the output pictures will be:

IN2	IN1	/	IN2	IN3	/	IN2	IN4
-----	-----	---	-----	-----	---	-----	-----

Press  (modify key) + numerical key 3+ numerical key 1/2/4, then the output pictures will be:

IN3	IN1	/	IN3	IN2	/	IN3	IN4
-----	-----	---	-----	-----	---	-----	-----

Press  (modify key) + numerical key 4+ numerical key 1/2/3, then the output pictures will be:

IN4	IN1	/	IN4	IN2	/	IN4	IN3
-----	-----	---	-----	-----	---	-----	-----

3. For up /down picture mode, press the mode key three times and it will display the below picture in default:

IN1
IN2

Special Function Description

Press  (modify key) + numerical key N+ numerical key M (N, M=1, 2, 3, 4, N≠M), these different numbers means different input source, N means to choose the up output picture input source, M means to choose the down output picture input source (The user can choose the mode he desires within 5s after pressing the 'modify' key, if no operation was made after 5s, the program will restore in default).

If in current mode, customer only need to press  (modify key) + numerical key N (N=1, 2, 3, 4) + numerical key M (N=1, 2, 3, 4, N≠M), and save pressing one key to change different mode. If the current mode is in other display mode, customers need press mode button to change to up /down picture mode firstly and press key combinations as below.

Press  (modify key) + numerical key 1 and numerical key 2/3/4, then the output pictures will be:

IN1	IN1	IN1
IN2	IN3	IN4

Special Function Description

Press  (modify key) + numerical key 2 and numerical key 1/3/4, then the output pictures will be:

IN2	IN2	IN2
IN1	IN3	IN4

Press  (modify key) + numerical key 3 and numerical key 1/2/4, then the output pictures will be:

IN3	IN3	IN3
IN1	IN2	IN4

Press  (modify key) + numerical key 4 and numerical key 1/2/3, then the output pictures will be:

IN4	IN4	IN4
IN1	IN2	IN3

4. For one big three small up/down picture mode, the mode key four times and it will be displayed with the below in default:

IN1		
IN2	IN3	IN4

Special Function

Description

Press  (modify key) + numerical key N (N=1, 2, 3, 4), these different numbers means different mode, N means to choose the up output picture, M means to choose the down output picture (The user can choose the mode he desires within 5s after pressing the 'modify' key, if no operation was made after 5s, the program will restore in default).

Note: If in current mode, customer only need to press  (modify key) + numerical key N (N=1, 2, 3, 4), and save pressing one key to change different mode. If the current mode is in other display mode, customers need press mode button to change to one big three small up /down picture mode firstly and press key combinations as below.

Press  (modify key) + numerical key 1, the output picture will be:

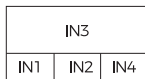
IN1		
IN2	IN3	IN4

Press  (modify key) + numerical key 2, the output picture will be:

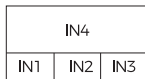
IN2		
IN1	IN3	IN4

Special Function Description

Press  (modify key) + numerical key 3, the output picture will be:



Press  (modify key) + numerical key 4, the output picture will be:



5. For PIP mode, press PIP and it will be displayed with the below pictures in default:



Press PIP+  (modify key) + numerical key N+ numerical key M (N, M=1, 2, 3, 4, N≠M), these different numbers means different input source, N means to choose the main output picture input source, M means to choose the small output picture input source (The user can choose the mode he desires within 5s after pressing the 'modify' key, if no operation was made after 5s, the program will restore in default).

Special Function Description

Note: If in current mode, customer only need to press  (modify key) + numerical key N (N=1, 2, 3, 4) + numerical key M (N=1, 2, 3, 4, N≠M), and save pressing one key to change different mode. If the current mode is in other display mode customers need press full key button combination as below.

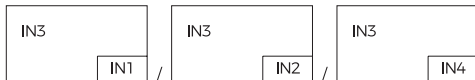
Press PIP+  (modify key) + numerical key 1+ number 2/3/4, the output picture will be:



Press PIP+  (modify key) + numerical key 2+ number 1/3/4, the output picture will be:

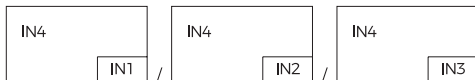


Press PIP +  (modify key) + numerical key 3+ number 1/2/4, the output picture will be:

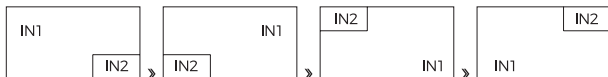


Special Function Description

Press PIP +  (modify key) + numerical key 4+ number 1/2/3, the output picture will be:



Note: Press the key PIP to cycle control the location of the PIP small windows shown as below:



When the PIP small picture location is changed, the modify input function is remain working as upon combination key control.

RS-232 Connection Protocol

Baud Rate = 57,600 bits per second as default

Data Bits = 8

Stop Bits = 1

Parity = None

Flow Control = None

Notes:

1. Carriage Return is required at end of each string
2. Commands are not case-sensitive spaces are shown for clarity : commands should NOT have any spaces
3. After a new command is received , a prompt should be sent back
4. HDMI Input selections via front button , IR remote, USB service port, or RS-232 respond with the following message x = the currently selected input (1-4)
5. The response terminates with a carriage return followed by a line feed

RS-232 Connection Protocol

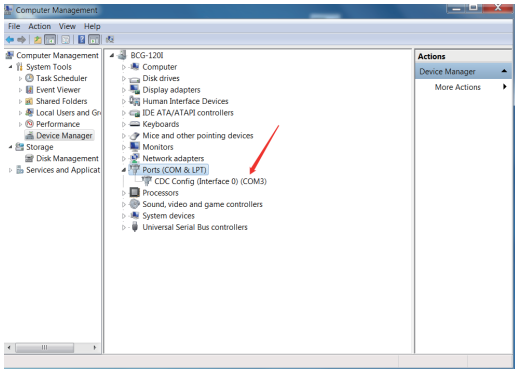
Micro USB port used for configuration and control from third-party control terminals

Used for firmware updates

Supports USB driver for Windows 8.1/10/11 , Mac OS 10.10 above Will register as CDC Config Series Port in Device Manager. If the operation system of the PC is too old, the costumes need to install the driver for CDC manually

Can be used as RS-232 control port

Baud rate is 57600



RS-232 Connection Protocol

Help Command (H) . Returns entire API in readable format :

4PET0404QMS> H

Systems HELP

```
-- 4PET0404QMS                                     F/W Version : 1.00 --
--
-- H: Help                                           --
-- PF: Power Off                                     --
-- PN: Power ON                                     --
-- STA: Show Global System Status                  --
--
-- Video Output Setup Commands: yy = [01-04,U,D], x = [A, B, C, D]
-- SPO x SI yy: Set Output x to Video Input yy
-- SPO SI yy: Set Output A/B/C/D to Video Input yy
-- SPO ON/OFF: Set Output ON/OFF
-- Set the Four Same Size Picture Mode for Four Combinations,
-- x=[1,2,3,4]
-- SPOA 2x2 x: Set Output A to Four Video Input 2x2 mode x
-- Set the Two Picture Left/right Mode to x for Left Picture and y
-- for Right Picture; x=[1,2,3,4], y=[1,2,3,4]
-- SPOA 2PLR x y: Set Output A to two Video Input Left x/right y mode
-- Set the Two Picture Up/down Mode to x for Up Picture and y for Down
-- Picture; x=[1,2,3,4], y=[1,2,3,4]
-- SPOA 2PUD x y: Set Output A to two Video Input Up x/down y mode
-- Set the One Big Up Three Small Down Picture Mode for Four
-- Combinations, x=[1,2,3,4]
-- SPOA 1B3S x : Set Output A to Four Video Input 1B3S mode x
-- Set the Two Picture PIP Mode to x for Main Picture and y for Small
-- Picture; x=[1,2,3,4], y=[1,2,3,4]
-- SPOA PIP x y: Set Output A to two Video Input Main x/small y PIP
-- mode
-- SPOA PIP ROTATE: Set the PIP Mode Small Picture Location from Right
-- Down Corner-Left Down corner- Left Up Corner-Right Up Corner
```

RS-232 Connection Protocol

-- SPOA SCALER ROTATE: Set the OutputA Resolution from --
-- 4K30/2560x1600p/1080p circularly --
-- SPOA RATIO ROTATE: Set the OutputA RATIO Between Full Screen and --
-- Keep the Original --
-- SPOB COPY OUTA ON/OFF: Set the OutputB/C/D COPY the OutputA mode --
-- On/Off --
-- --
-- Audio Output Setup Commands: [E=Enable, D=Disable] --
-- SPO A E/D: Enable/Disable External Optical and Analog Audio Output --
-- SPO AM 2.1/5.1: Set the Output Default Audio Mode to 2.1CH/5.1CH --
-- Mode --
-- Set the OutputA Multi Picture Mode Audio Channel Selected Input x, --
-- x=[1,2,3,4] --
-- SPOA A x: Set the OutputA Audio Channel to Input x --
-- --
-- System Control Setup Commands: --
-- SHOW OSD: Show the OSD Information and Disappear after 5s --
-- SPC FB E/D: Enable/Disable Front Panel Buttons --
-- SPC RSB z: Set RS232 Baud Rate to z bps, z=[0-4] --
-- [0:57600, 1:38400, 2:19200, 3:9600, 4:4800] --
-- SPC DF: Reset to Factory Defaults --

RS-232 Connection Protocol

Status Command (STA). Returns unit status and settings in readable format:

#if HDMI input 2 is disconnected.

4PET0404QMS> STA

```
-----  
                                Systems STATUS                                --  
-----  
- 4PET0404QMS,                               Device Name: 4PET0404QMS_0001 --  
-- F/W Version: 1.00                               --  
-- Power: ON                                       --  
-- Front Panel Button : Enabled                   --  
-- RS232: Baud Rate=57600bps, Data=8bit, Parity=None, Stop=1bit --  
--                                                --  
-- Video Input 01: LINK = ON                       --  
-- Video Input 02: LINK = OFF                      --  
-- Video Input 03: LINK = ON                       --  
-- Video Input 04: LINK = OFF                      --  
--                                                --  
-- Video Output; Output = ON ,DBG = OFF           --  
-- Output A Video Mode: 2x2 1 , RES = 4K30        --  
-- Output B Video Mode: 2x2 1 , RES = 4K30 , COPY OUTA MODE = ON --  
-- Output C Video Mode: 2x2 1 , RES = 4K30 , COPY OUTA MODE = ON --  
-- Output D Video Mode: 2x2 1 , RES = 4K30 , COPY OUTA MODE = ON --  
--                                                --  
-- Audio Output: Enabled                           --  
-- Audio Mode: 2.1CH                               --  
-- Audio Input Channel: Input 1                    --  
-----
```

Connection Diagram



FAQs & Trouble-shooting

1. Power light is off and product is not working; Signal light is off and no picture output, black screen.

1. Is the power adapter properly connected and the power on/off button is on turn on state? Maybe the input and output is connected in the wrong way; or the HDMI cable quality issue cause the HDMI signal can't transmit to the product or output display normally
2. Please check if the power adapter is connected properly and turn on the power on/off button; Please connect the player, product, and display devices according to the instructions; if not, please replace the input and output connections with new HDMI cables

2. Screen splash or pink screen

1. HDMI cable may not be good quality or the cable is too long
2. Please use the standard HDMI cable, the input/output cable length at 1080p can't exceed 10M to 10M, 4K@30Hz can't exceed 5M to 5M

Still have some questions?

Please feel free to contact us at: info@orei.com. OR Fill out the form on the 'Contact Us' page on the website.

Our team will be more than happy to help you.

OREI Live Technical Support Hours

US team (US/Canada/Mexico): Monday-Friday, 9 a.m. - 5 p.m.

Central Time **Support Email** - info@orei.com | **Support Number** - 877-290-5530



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Matrix w/ Multi Viewer (Audio Extract)**

HDS-404MV

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