

AV OVER IP · MULTIVIEWER

BLU-MHD-MV42

Four sources, two screens, any layout.

A 4K60 4x2 seamless UHD multiviewer that accepts four HDMI sources and combines them independently onto two UHD or HD displays. Eight multiview layouts (Single, PIP, PBP, Triple, Quad), per-output scaling, and independent audio de-embed — controlled from the front panel, IR, OSD menu, Controller software or RS-232.



4 × 2 MULTIVIEWER	18Gbps VIDEO BANDWIDTH	4K60 4:4:4 MAX RESOLUTION	8 layouts SINGLE-QUAD	Seamless SWITCHING
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SPECIFICATION SUMMARY

Type	4x2 seamless multiviewer
HDMI Compliance	HDMI 2.0b
HDCP	HDCP 2.2 / 1.x
Video Bandwidth	18Gbps
Max Resolution	4K2K@60 4:4:4
Display modes	8: Single, PIP, PBPx2, Triplexx2, Quadx2
Audio de-embed	Analog L/R + Optical, per output
Control	Panel, IR, OSD, Software, RS-232
Power	DC 12V/2.5A, 15.72W

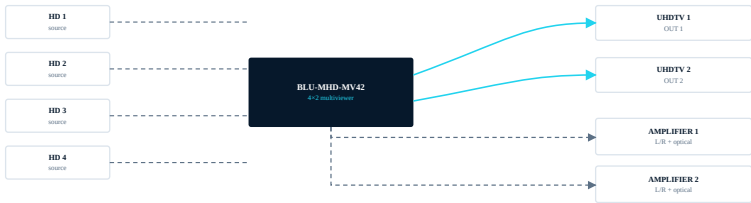
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KEY FEATURES

- HDMI 2.0b, HDCP 2.2/1.x compliant, 18Gbps
- Combine 4 sources on 2 UHD TVs independently
- Seamless switching; per-output scaler
- Panel, IR, OSD, Controller software, RS-232

Any input, any layout, either screen. Each output independently shows any of the four sources in Single, PIP, PBP, Triple or Quad layout, with its own scaler, EDID and de-embedded audio.



4 sources combined independently on 2 screens - 8 multiview modes - audio de-embed

4 SOURCES COMBINED INDEPENDENTLY ON 2 SCREENS, WITH AUDIO DE-EMBED

01 Overview

What the multiviewer does, and what's in the box.

This **4x2 Multiviewer Seamless UHD Video Matrix Switcher** was developed to support higher output resolution (4K@60) for multiple sources on two screens. It accepts four HDMI input digital sources and combines four video signals onto two HDMI UHD or HD monitors independently. Users can manage each input, create combinations of the four inputs on two displays, and adjust the position of any input. The product supports **8 display modes**, and within that range users can freely switch 4-channel HD input signals — realizing both single-screen display and multiview display on a single screen. Full-range input resolutions up to 4K@60 (RB) are supported, with audio RCA/Optical de-embedding for external audio distribution systems. Control is via front panel buttons, IR remote, OSD menu navigation, Controller software, and RS-232 commands.

FEATURES

- HDMI 2.0b, HDCP 2.2 and HDCP 1.x compliant
- 18Gbps uncompressed bandwidth; input/output up to 4K2K@60 4:4:4
- HDMI audio: LPCM, DD+, DTS, Dolby TrueHD, DTS HD-Master pass-through
- Seamless switching between input channels
- Combined multiple images with independent layouts on two UHD TVs
- Up to 8 display modes: Single, PIP, PBP(1), PBP(2), Triple(1), Triple(2), Quad(1), Quad(2)
- Audio de-embedding via analog and optical fiber audio ports
- Control via panel, IR remote, OSD menu, Controller software, RS-232
- Each output port supports independent scaler function
- Independent audio selection per output
- Advanced EDID management
- Compact design for easy and flexible installation

AT A GLANCE

Ports 4 in / 2 out

HDMI 2.0b

HDCP 2.2/1.x

BW 18Gbps

Max 4K60 4:4:4

Modes 8

Audio L/R + Optical

EDID 19 modes

PACKAGE CONTENTS

①	1 × 4K60 4x2 Multiviewer Seamless UHD Video Matrix Switcher
②	1 × IR Remote
③	1 × 3pin-3.81mm Phoenix Connector (male)
④	1 × 38KHz IR Wideband Receiver Cable (1.5m)
⑤	2 × Mounting Ears
⑥	4 × Machine Screws (KM3*4)
⑦	1 × 12V/2.5A Locking Power Adapter
⑧	1 × User Manual

02 Specifications

Technical, connection, mechanical and environmental figures.

TECHNICAL

HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2 / 1.x
Video Bandwidth	18Gbps
Video Resolution	Up to 4K2K@60 4:4:4
IR Level	5Vp-p
IR Frequency	38KHz
Color Space	RGB, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0
Color Depth	8/10/12-bit
Audio Formats	HDMI: PCM 2.0/5.1/7.1CH, Dolby Digital/Plus/EX, Dolby TrueHD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio Analog [3.5mm L/R]: PCM 2.0 Optical: PCM 2.0/5.1/7.1CH, Dolby Digital/Plus, DTS 5.1
ESD Protection	Human-body Model: ±8kV (Air-gap), ±4kV (Contact)

CONNECTION

Input Ports	4 × HDMI IN [Type A, 19-pin female]
Output Ports	2 × HDMI OUT [Type A, 19-pin female] 2 × L/R OUTPUT [RCA] 2 × OPTICAL OUTPUT [S/PDIF]
Control Ports	1 × RS-232 [3-pin 3.81mm Phoenix] 1 × IR EXT [3.5mm Stereo Mini-jack]

MECHANICAL

Housing	Metal Enclosure
Color	Black
Dimensions	270mm (W) × 130mm (D) × 30mm (H)
Weight	906 g

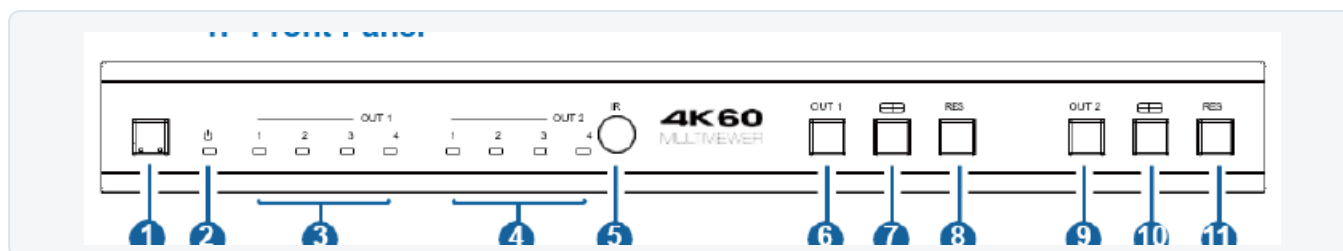
POWER & ENVIRONMENT

Power Supply	Input: AC 100–240V 50/60Hz Output: DC 12V/2.5A (US/EU, CE/FCC/UL)
Power Consumption	15.72W (Max)
Operating Temp.	32°F–104°F / 0°C–40°C
Storage Temp.	-4°F–140°F / -20°C–60°C
Relative Humidity	20–90% RH (no-condensing)

03 Front & rear panel

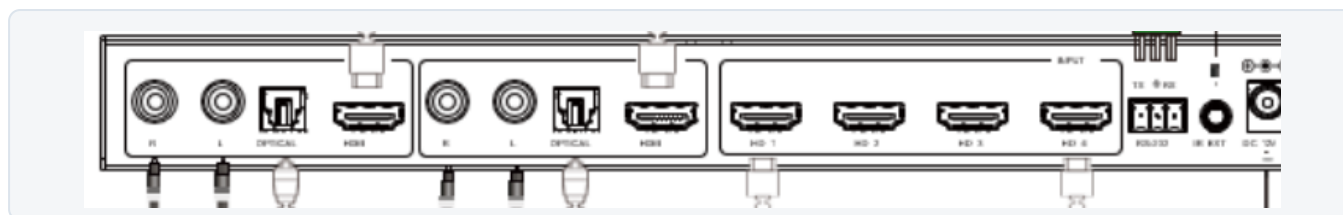
Every control and connector on the unit.

FRONT PANEL



- | | | |
|----|------------------------|--|
| 1 | Power button | Short press to power on. Long press for 1 second to enter standby mode. |
| 2 | Power LED | Green when powered on, red when on standby. |
| 3 | OUT 1 input LEDs (1-4) | Signal source indicator for HDMI OUT 1. In single-screen mode the LED for the active source lights green; in multiview mode all light green. |
| 4 | OUT 2 input LEDs (1-4) | Signal source indicator for HDMI OUT 2, same behaviour as OUT 1. |
| 5 | IR window | IR signal receiving window. |
| 6 | OUT 1 button | Input source switching for HDMI OUT 1 (single-screen display mode only). |
| 7 | OUT 1 Multiview button | Short press cycles Single → PIP → PBP(1) → PBP(2) → Triple(1) → Triple(2) → Quad(1) → Quad(2) → Single. Long press 3s switches aspect ratio (16:9/Full) for PBP/Triple/Quad modes. |
| 8 | OUT 1 RES button | Short press shows the current output resolution on OSD; press again before it disappears to cycle resolution. Long press 3s sets 720P60. |
| 9 | OUT 2 button | Input source switching for HDMI OUT 2 (single-screen display mode only). |
| 10 | OUT 2 Multiview button | Same cycling behaviour as OUT 1 Multiview button, for HDMI OUT 2. |
| 11 | OUT 2 RES button | Same behaviour as OUT 1 RES button, for HDMI OUT 2. |

REAR PANEL



- | | | |
|----|--------------------|---|
| 1 | L/R OUT 1 | PCM 2.0 analog audio output port for HDMI OUT 1. |
| 2 | OPTICAL OUT 1 | Optical fibre digital audio output port for HDMI OUT 1. |
| 3 | HDMI OUT 1 | HDMI signal output; connect to a TV or monitor. |
| 4 | L/R OUT 2 | PCM 2.0 analog audio output port for HDMI OUT 2. |
| 5 | OPTICAL OUT 2 | Optical fibre digital audio output port for HDMI OUT 2. |
| 6 | HDMI OUT 2 | HDMI signal output; connect to a TV or monitor. |
| 7 | HD 1-4 INPUT ports | HDMI signal inputs; connect to source devices such as a DVD player or set-top box. |
| 8 | RS-232 port | 3-pin Phoenix connector for a PC or control system; serial upgrade or RS-232 command control. |
| 9 | IR EXT port | Connect a 38KHz IR receiver cable here if the front IR window is blocked or out of line of sight. |
| 10 | DC 12V | DC 12V/2.5A power input port. |

04 IR remote

Full remote control operation.

- **Power** — power on the switcher or set it to standby mode.
- **OUT 1 / OUT 2 buttons** — press HD 1/2/3/4 to select an input source in single-screen mode (the front-panel LED lights green); use the step buttons to cycle to the last/next source; the multiview button cycles Single–PIP–PBP(1)–PBP(2)–Triple(1)–Triple(2)–Quad(1)–Quad(2).
- **16:9** — switch the aspect ratio (16:9/Full) for PBP/Triple/Quad display modes.
- **A-IN** — open the audio-channel selection OSD, then choose the output audio channel (follows the video source by default).
- **Mute** — mute / unmute the audio.
- **RES** — short press cycles the output resolution of HDMI OUT 1/2; long press 3s sets 720P60.
- **Out 1 / Out 2** — enter the OSD menu for that output; navigate with the arrow keys and OK.
- **Exit** — exit the OSD settings, layer by layer.

EDID SETTINGS

19 EDID modes, selectable via RS-232 commands, OSD menu navigation or Controller software.

Mode	EDID Description	Mode	EDID Description
1	4K2K60_444, Stereo Audio 2.0	11	1680x1050, Stereo Audio 2.0
2	4K2K60_444, Dolby/DTS 5.1	12	1600x1200, Stereo Audio 2.0
3	4K2K60_444, HD Audio 7.1	13	1440x900, Stereo Audio 2.0
4	4K2K30_444, Stereo Audio 2.0	14	1360x768, Stereo Audio 2.0
5	4K2K30_444, Dolby/DTS 5.1	15	1280x1024, Stereo Audio 2.0
6	4K2K30_444, HD Audio 7.1	16	1024x768, Stereo Audio 2.0
7	1080P, Stereo Audio 2.0	17	720p, Stereo Audio 2.0
8	1080P, Dolby/DTS 5.1	18	AUTO
9	1080P, HD Audio 7.1	19	USER1
10	1920x1200, Stereo Audio 2.0		

05 Video, audio & multiview

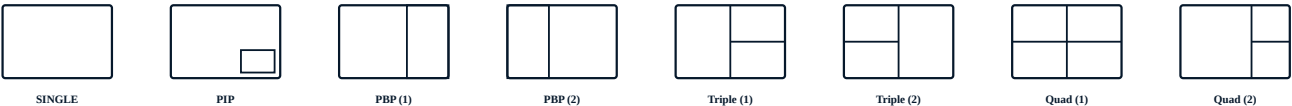
Output resolutions, and the 8 multiview layouts.

The switcher supports multiple resolution video input up to 3840x2160@60, and multiple audio formats (PCM 2.0/5.1/7.1CH, Dolby Digital/Plus/EX, Dolby TrueHD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio) pass-through via HDMI. A powerful scaling engine supports the following output resolutions:

No.	Output Resolution	No.	Output Resolution
1	4096x2160p 60Hz	8	1920x1080p 60Hz
2	4096x2160p 50Hz	9	1920x1080p 50Hz
3	3840x2160p 60Hz	10	1360x768p 60Hz
4	3840x2160p 50Hz	11	1280x800p 60Hz
5	3840x2160p 30Hz	12	1280x720p 60Hz
6	3840x2160p 25Hz	13	1280x720p 50Hz
7	1920x1200p 60Hz RB	14	1024x768 60Hz

MULTIVIEW

The switcher supports **8 categories of multiview display modes**: SINGLE, PIP, PBP(1), PBP(2), Triple(1), Triple(2), Quad(1), Quad(2). Users select different operations per mode: SINGLE (input selection); PIP (input selection, sub-window size and position); PBP/Triple/Quad (input selection, display mode selection, display aspect selection). Modes are selected via RS-232 commands, OSD menu navigation, or Controller software.



MULTIVIEW WINDOW DISTRIBUTIONS – 8 SELECTABLE LAYOUTS PER OUTPUT

06 RS-232 control command

Serial control over a 3-pin Phoenix connection.

The product supports RS-232 command control. Connect the RS-232 port of the product to a PC with a 3-pin Phoenix connector cable, then open a Serial Command tool on the PC to send ASCII commands.

Baud rate	115200 (default)
Data bits	8 bit
Stop bits	1
Check bit	0
Syntax	x = Parameter 1, y = Parameter 2, ! = Delimiter

The ASCII command list follows: system setup, output setting, EDID, audio, single-screen mode, and multi-viewer mode (including PIP/PBP/Triple layout, window select, border and colour).

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT
System Setting				
help!	List all commands	help!		
r type!	Get device model	r type!	4x2 HDMI Multiviewer	
r fw version!	Get Firmware version	r fw version!	MCU FW version x.xx.xx SCALER FW version x.xx.xx	
power z!	Power on/off the device, z=0~1 (z=0 power off, z=1 power on)	power 1!	Power on System Initializing... Initialization Finished! MCU FW version x.xx.xx SCALER FW version x.xx.xx	power on
r power!	Get current power state	r power!	power on/power off	
reboot!	Reboot the device	reboot!	Reboot... System Initializing... Initialization Finished!	
reset!	Reset to factory defaults	reset!	Reset to factory defaults System Initializing... Initialization Finished!	
Output Setting				
s output y res x!	Set output y resolution, y=1~2, x=1~14. 1: 4096x2160p60 / 2: 4096x2160p50 / 3: 3840x2160p60 / 4: 3840x2160p50 / 5: 3840x2160p30 / 6: 3840x2160p25 / 7: 1920x1200p60RB / 8: 1920x1080p60 / 9: 1920x1080p50 / 10: 1360x768p60 / 11: 1280x800p60 / 12: 1280x720p60 / 13: 1280x720p50 / 14: 1024x768p60	s output 1 res 3!	output 1 resolution: 3840x2160p60	3840x2160p60
r output y res!	Get output y resolution (y=1~2)	r output 1 res!	output 1 resolution: 3840x2160p60	
s output hdcp x!	Set output HDCP, y=1~2, x=1~3 (1=HDCP1.4, 2=HDCP2.2, 3=OFF)	s output 1 hdcp 2!	output 1 HDCP: HDCP 1.4	HDCP 1.4
r output y hdcp!	Get output y HDCP status (y=1~2)	r output 1 hdcp!	output 1 HDCP: HDCP 1.4	

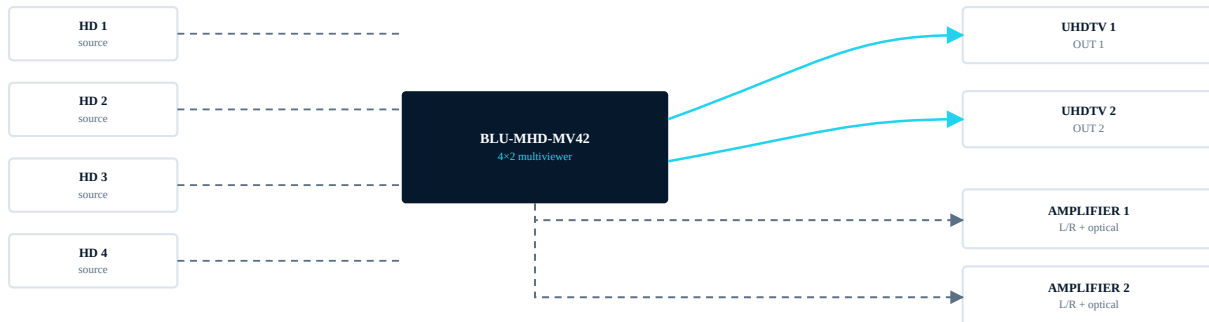
COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT
s output y vka x!	Set output video-keep-active pattern, y=1~2, x=1~2 (1=black, 2=blue screen)	s output 1 vka 1!	output 1 VKA pattern: black screen	black screen
r output y vka!	Get output y VKA pattern (y=1~2)	r output 1 vka!	output 1 VKA pattern: black screen	
s output y itc x!	Set output video mode, y=1~2, x=1~2 (1=video mode, 2=PC mode)	s output 1 itc 1!	output 1 ITC: video mode	video mode
r output y itc!	Get output video mode (y=1~2)	r output 1 itc!	output 1 ITC: video mode	
EDID Setting				
s input EDID x!	Set HDMI input EDID mode, x=1~19. 1: 4K2K60_444,Stereo Audio 2.0 / 2: 4K2K60_444,Dolby/DTS 5.1 / 3: 4K2K60_444,HD Audio 7.1 / 4: 4K2K30_444,Stereo Audio 2.0 / 5: 4K2K30_444,Dolby/DTS 5.1 / 6: 4K2K30_444,HD Audio 7.1 / 7: 1080P,Stereo Audio 2.0 / 8: 1080P,Dolby/DTS 5.1 / 9: 1080P,HD Audio 7.1 / 10: 1920x1200,Stereo Audio 2.0 / 11: 1680x1050,Stereo Audio 2.0 / 12: 1600x1200,Stereo Audio 2.0 / 13: 1440x900,Stereo Audio 2.0 / 14: 1360x768,Stereo Audio 2.0 / 15: 1280x1024,Stereo Audio 2.0 / 16: 1024x768,Stereo Audio 2.0 / 17: 720p,Stereo Audio 2.0 / 18: AUTO / 19: USER1	s input EDID 1!	input EDID: 4K2K60_444,Stereo Audio 2.0	
r input EDID!	Get input EDID mode	r input EDID!	input EDID: 4K2K60_444,Stereo Audio 2.0	
s edid user1 00 FF FF ...!	Set USER1 EDID data	s edid user1 00 FF FF FF ...!	user1 EDID data: 00 FF FF	
r edid user1!	Get USER1 EDID data	r edid user1!	user1 EDID data: 00 FF FF FF FF FF FF 00	
Audio Setting				
s output y audio x!	Set output y audio source, y=1~2, x=0~4 (0=follow window 1, 1~4=HDMI 1~4 input audio)	s output 1 audio 0!	output 1 audio: follow window 1 video source	follow window 1 selected source
r output y audio!	Get output y audio source (y=1~2)	r output 1 audio!	output 1 audio: follow window 1 video source	
s output y audio mute x!	Set output audio mute on/off, y=1~2, x=0~1	s output 1 audio mute 0!	output 1 audio mute off	mute off

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT
r output y audio mute!	Get output y audio mute state (y=1~2)	r output 1 audio mute!	output 1 audio mute off	
Single Screen Mode				
s output y auto switch x!	Enable/disable auto switch, y=1~2, x=0~1 (0=disable, 1=enable)	s output 1 auto switch 0!	output 1 auto switch off	auto switch off
r output y auto switch!	Get output y auto-switch state (y=1~2)	r output 1 auto switch!	output 1 auto switch off	
s output y in source x!	Route input x to output y, y=1~2, x=1~4 (HDMI 1~4)	s output 1 in source 1!	output 1 in source: HDMI 1	HDMI 1
r output y in source!	Get output y selected input source (y=1~2)	r output 1 in source!	output 1 in source: HDMI 1	
Multi-viewer Mode				
s output y multiview x!	Set output y multiview display mode, y=1~2, x=1~5 (1=single, 2=PIP, 3=PBP, 4=triple, 5=quad)	s output 1 multiview 1!	output 1 multiview: single screen	single screen
r output y multiview!	Get output y multiview display mode (y=1~2)	r output 1 multiview!	output 1 multiview: single screen	
s output z window x in y!	Select one input y for window x on output z	s output 1 window 1 in 1!	output 1: window 1 select HDMI 1	
r output y window x in!	Get output y window x selected input source	r output 1 window 1 in!	output 1 window 1 select HDMI 1	
s output z window x border y!	Set the border mode of the specified window, y=0~1 (off/on)	s output 1 window 1 border 1!	output 1 window 1 border on	border off
r output y window x border!	Get the border mode of windows (y=1~2)	r output 1 window 1 border!	output 1 window 1 border on	

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT
s output z window x border color y!	Set the border color of the window, y=1~9 (BLACK/RED/GREEN/BLUE/YELLOW/MAGENTA/CYAN/WHITE/GRAY)	s output 1 window 1 border color 1!	output 1 window 1 border color: BLACK	YELLOW
r output y window x border color!	Get the border color of windows (y=1~2)	r output 1 window 1 border color!	output 1 window 1 border color: BLACK	
s output y PIP Hstart Vstart Hsize Vsize!	Set PIP window to user-defined position/size (each 1~100; Hstart+Hsize≤101, Vstart+Vsize≤101)	s output 1 PIP 10 10 20 20!	output 1 PIP 10 10 20 20	
s output y PIP position x!	Set output y PIP window position, x=1~5 (Left Top/Left Bottom/Right Top/Right Bottom/user)	s output 1 PIP position 3!	output 1 PIP on right top	PIP on right top
r output y PIP position!	Get output y PIP window position (y=1~2)	r output 1 PIP position!	output 1 PIP on right top	
s output y PIP size x!	Set output y PIP window size, x=1~4 (small/middle/large/user)	s output 1 PIP size 3!	output 1 PIP size: large	large
r output y PIP size!	Get output y PIP window size (y=1~2)	r output 1 PIP size!	output 1 PIP size large	
s output y PBP mode x!	Set output y PBP windows display mode, x=1~2	s output 1 PBP mode 1!	output 1 PBP mode 1	PBP mode 1
r output y PBP mode!	Get output y PBP windows display mode (y=1~2)	r output 1 PBP mode!	output 1 PBP mode 1	
s output y PBP aspect x!	Set output y PBP display aspect ratio, x=1~2 (Full screen/16:9)	s output 1 PBP aspect 1!	output 1 PBP aspect full screen	full screen
r output y PBP aspect!	Get output y PBP display aspect ratio (y=1~2)	r output 1 PBP aspect!	output 1 PBP aspect full screen	
s output y triple mode x!	Set output y triple windows display mode, x=1~2	s output 1 triple mode 1!	output 1 triple mode 1	triple mode 1
r output y triple mode!	Get output y triple windows display mode (y=1~2)	r output 1 triple mode!	output 1 triple mode 1	

07 Application example

Four sources combined independently on two UHD displays, with audio de-embedded.



4 sources combined independently on 2 screens · 8 multiview modes · audio de-embed

Any layout, either screen. Each output independently shows Single, PIP, PBP, Triple or Quad, drawing from any of the four HDMI sources.

Audio, handled. Each output de-embeds to analog L/R and optical, so a local amplifier gets clean audio matched to whichever source is on screen.

ORDERING

BLU-MHD-MV42

4K60 4x2 Multiviewer Seamless UHD Video Matrix Switcher — HDMI 2.0b, HDCP 2.2/1.x, 18Gbps, 4K2K@60 4:4:4, 8 multiview display modes, per-output scaler, analog + optical audio de-embed, advanced EDID, control via panel / IR / OSD / Controller software / RS-232

bluKnot

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