48Gbps 8K 2×4 HDMI Matrix Splitter

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, or lightning strikes. Use of surge protection systems is highly recommended.

1. INTRODUCTION

This 2×4 HDMI matrix splitter features 2 HDMI inputs switching and distributing to 4 HDMI outputs synchronously, with video resolution up to 8K@60Hz 4:2:0 12-bit. Each output port supports independent 8K→4K/2K downscaling and HDR-to-SDR conversion. Audio de-embedding is supported via digital optical and balanced/unbalanced analog outputs with gain adjustment. Auto or manual input switching, advanced EDID management, and a built-in HDMI signal generator are included. Control via front panel buttons, IR remote, RS-232, and API commands.

2. FEATURES

- Routes 2 HDMI 2.1 sources to 4 displays at up to 8K@60Hz 4:2:0 12-bit with 48Gbps bandwidth — auto or manual input switching
- HDCP 2.3 compliant with HDMI 2.1 — supports protected content across all input and output channels
- HDR10, HDR10+, Dolby Vision, HLG pass-through with ALLM and VRR for low-latency gaming and cinematic playback
- Independent 8K→4K/2K downscaling on each output — feed mixed-resolution displays from a single source without manual reconfiguration
- Per-output HDR→SDR conversion preserves contrast and detail on non-HDR legacy displays
- Audio de-embedding via digital optical (up to 5.1CH Dolby/DTS) and balanced/unbalanced analog stereo (L/R) with adjustable gain control
- Built-in HDMI signal generator with 15 resolutions and 13 test patterns for on-site diagnostics and cable verification
- Control via front panel buttons, IR remote, RS-232, and API commands — advanced EDID management with 16 presets, 2 user-defined, and pass-through mode

3. PACKAGE CONTENTS

1× 48Gbps 2×4 HDMI Matrix Splitter • 1× 12V/1A Multinational Locking Power Supply • 1× IR Remote • 1× IR Wideband Receiver (1.5m) • 1× 3pin-3.5mm Phoenix Connector • 1× 5pin-3.5mm Phoenix Connector • 2× Mounting Ears • 4× Machine Screws (KM3×6) • 1× User Manual

4. Specifications

TECHNICAL	
HDMI Compliance	HDMI 2.1
HDCP Compliance	HDCP 2.3
Video Bandwidth	48 Gbps
Video Resolution	Up to 8K@60Hz 4:2:0 12-bit, 8K@30Hz 4:4:4 12-bit, 4K@120Hz 4:4:4 12-bit
Color Depth	8/10/12-bit
Color Space	RGB, YCbCr 4:4:4 / 4:2:2 / 4:2:0
HDR Formats	HDR, HDR10, HDR10+, Dolby Vision, HLG
HDMI Audio (Pass-through)	LPCM, Dolby Digital/Plus/EX, Dolby TrueHD, Dolby Atmos, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DSD
Audio De-embedding	Optical: Up to LPCM/Dolby/DTS 5.1CH L/R Out: LPCM 2CH (balanced/unbalanced)
Analog Audio Output Level	8.2 dBu (2Vrms) balanced • 2.2 dBu (1Vrms) unbalanced
Audio S/N Ratio	99 dB @ 2Vrms, 1 kHz, A-weighted
Audio THD+N	<0.2% @ 0 dBV, 1 kHz
IR Frequency	Wideband 20K–60 KHz
ESD Protection	IEC 61000-4-2: ±8 kV (air-gap) & ±4 kV (contact)

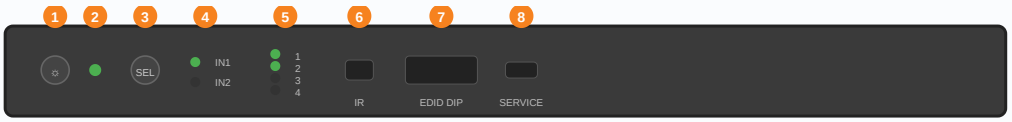
CONNECTION	
Input	2× HDMI Type A [19-pin female]
Output	4× HDMI Type A [19-pin female] 1× Optical [S/PDIF] 1× L/R [5pin-3.5mm Phoenix connector]
Control	1× RS-232 [3pin-3.5mm Phoenix connector] 1× IR CTL [3.5mm stereo mini-jack] 1× SERVICE [USB Type C, firmware upgrade]

MECHANICAL	
Housing	Metal Enclosure, Black
Dimensions	220 mm (W) × 110 mm (D) × 21.5 mm (H)
Weight	620 g
Power Supply	DC 12V/1A
Power Consumption	6.24 W (Max)
Operating Temp	0°C – 40°C / 32°F – 104°F
Storage Temp	−20°C – 60°C / −4°F – 140°F
Humidity	20–80% RH (non-condensing)

CABLE LENGTH	
8K / 4K120	Up to 3 m / 9.8 ft (HDMI Ultra High Speed cable)

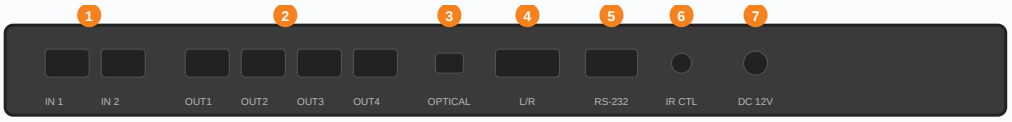
5. Operation Controls

5.1 FRONT PANEL



NO.	NAME	FUNCTION DESCRIPTION
1	**POWER Button**	Press to power on; press and hold to enter standby mode.
2	**POWER LED**	Green when powered on; red on standby.
3	**SELECT Button**	Press to select input source IN 1/IN 2 circularly.
4	**IN LED (1–2)**	When IN 1 or IN 2 is selected as active input, the corresponding green LED is on.
5	**OUT LED (1–4)**	When an OUT port is connected to an active display, the corresponding green LED is on.
6	**IR**	IR signal receiving window.
7	**EDID DIP Switch**	4-position DIP switch for EDID mode selection (16 presets via binary combinations).
8	**SERVICE**	USB-C port for firmware update.

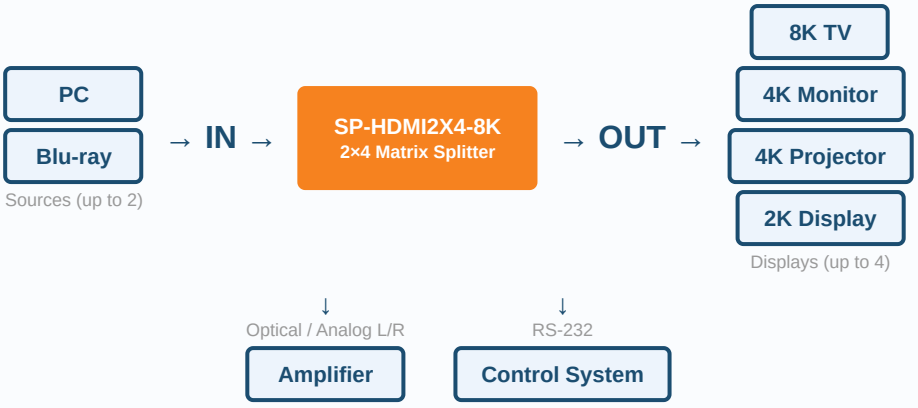
5.2 REAR PANEL



NO.	NAME	FUNCTION DESCRIPTION
1	**IN (1–2)**	HDMI signal input ports. Connect to source devices such as PC, PS5, or Blu-ray player.
2	**OUT (1–4)**	HDMI signal output ports. Connect to display devices such as TV, monitor, or projector.
3	**OPTICAL**	Digital audio output port (S/PDIF). Supports up to 5.1CH Dolby/DTS audio.
4	**L/R (AUDIO OUT)**	Analog audio output (5pin-3.5mm Phoenix). Supports balanced (2Vrms max) and unbalanced (1Vrms max) stereo output.
5	**RS-232**	RS-232 serial port (3pin-3.5mm Phoenix). Connect to a PC or control system for API command control.
6	**IR CTL**	12V IR input port. Connect with the included IR wideband receiver cable.
7	**DC 12V**	DC 12V/1A power input port.

6. Application Example

Multi-Source / Multi-Display with Downscaling & Audio De-embedding



How it works: Connect up to 2 HDMI sources to inputs IN 1–2. Route the selected source to all 4 displays using front panel buttons, IR remote, or RS-232 API commands. Each output passes full 8K video with HDR to the connected display, while independently downscaling 8K→4K or 8K→2K as needed for legacy displays. HDR→SDR conversion is available per output.

Audio: The optical port outputs up to 5.1CH digital audio. The balanced/unbalanced analog L/R output feeds an amplifier or powered speakers with adjustable gain.

Signal Generator: The built-in HDMI signal generator outputs 15 resolutions and 13 test patterns to verify cables and display connections without a source device.

7. TROUBLESHOOTING

Q: No video on one or more displays?
A: Confirm Ultra High Speed HDMI cables are used (max 3m for 8K/4K120). Try setting the EDID DIP switch to match the display's native resolution. If displays have mixed resolutions, use the downscaler command (`set output x downscale 2`) to force 1080p on affected outputs.

Q: No audio from the optical or analog output?
A: Verify the source is outputting audio in a supported format. For optical, ensure the connected device supports LPCM/Dolby/DTS up to 5.1CH. For analog, check the gain setting (`set analog gain`) and ensure balanced wiring (L+, L−, +, R+, R−) or unbalanced wiring (L+, +, R+) is correct.

Q: How do I use the built-in signal generator?
A: Send the API command `set generator x y` where x is the resolution (01=8K30, 09=4K60, 13=1080p60) and y is the pattern (01=Color bar, 07=White, 13=Black). To view the current generator setting, send `get generator`.