VSP-H8K-1201

8K 1×2 HDMI Splitter

Operation Manual

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SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply. Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.
- Please completely disconnect the power when the unit is not in use to avoid wasting electricity.

VERSION HISTORY

REV.	DATE	SUMMARY OF CHANGE
RDV1	2022/12/02	Preliminary release

CONTENTS

1. INTRODUCTION

This new generation 8K 1 by 2 HDMI Splitter with HDCP 2.3 is an advanced solution for splitting a single HDMI source to two HDMI outputs. It facilitates high performance audio and video distribution with support for up to 8K@30Hz or 8K@60Hz (4:2:0) HDR video as well as advanced multichannel HD Bitstream or LPCM audio along with other standard features defined by the HDMI 2.1 specification. The front panel contains a collection of status LEDs to inform you of the current operational state of the unit. A simple but effective EDID management system is provided and can be controlled via a front panel switch.

2. APPLICATIONS

- Classroom and Lecture Hall Presentations
- Showrooms and Demo Rooms
- Hotel Lobby information Displays
- Public Commercial Displays

3. PACKAGE CONTENTS

- 1× 8K 1×2 HDMI Splitter
- 1× 5V/2.6A DC Power Adapter
- 1× Shockproof Feet (Set of 4)
- 1× Operation Manual

4. SYSTEM REQUIREMENTS

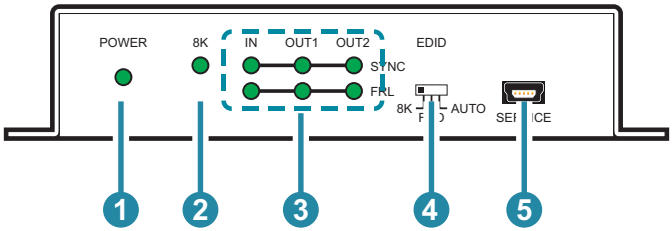
- HDMI source equipment such as media players, video game consoles, or set-top boxes.
- HDMI receiving equipment such as HDTVs, monitors, or audio amplifiers.
- The use of Premium High Speed HDMI cables is highly recommended for 4K@60Hz or lower signals. Ultra High Speed HDMI cables are required for high bandwidth HDMI 2.1 signals such as 4K@120Hz or 8K@30Hz.

5. FEATURES

- HDMI 2.1 and DVI 1.0 compatible
- HDCP 2.3 and HDCP 1.x compliant
- 1 HDMI input and 2 HDMI outputs
- Supports up to 8K UHD (48Gbps, 8K@30Hz 4:4:4, 10-bit) video signals
- Supports current 10-bit and 12-bit HDR (High Dynamic Range) formats
- Supports pass-through of 8 channel LPCM, Bitstream and advanced HD Bitstream audio formats
- High quality DAC provides analog stereo breakout audio output via a 3.5mm port (LPCM 2.0 sources only, Bitstream sources will be muted)
- Simple to use EDID management options
- EDID settings controllable via front-panel switch

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Transmitter's Front Panel



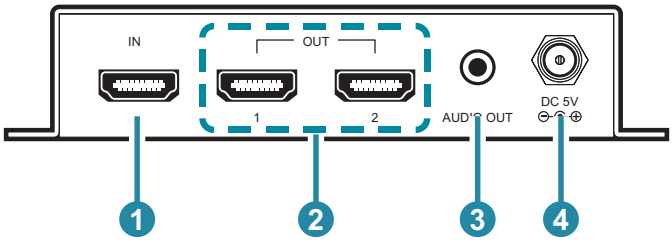
1. **POWER LED:** This LED will illuminate to indicate the unit is on and receiving power.
2. **8K LED:** This LED illuminates when the source signal is 8K.
3. **Signal LED Block:** These LEDs indicate the current signal status of the input port and output ports. SYNC indicates the presence of a live video signal, FRL indicates that FRL transmission mode is active in order to support HDMI 2.1 defined high bandwidth signals, such as 4K@120Hz or 8K@30Hz.
4. **EDID Switch:** This switch selects the EDID that is provided to the input.

   8K: Provides an EDID supporting 8K@30Hz and multichannel audio.

   FHD: Provides an EDID supporting 1080p@60Hz and stereo audio.

   AUTO: The unit will attempt to automatically generate an EDID combining the common capabilities of the connected displays.
5. **SERVICE Port:** This is reserved for firmware update use only.

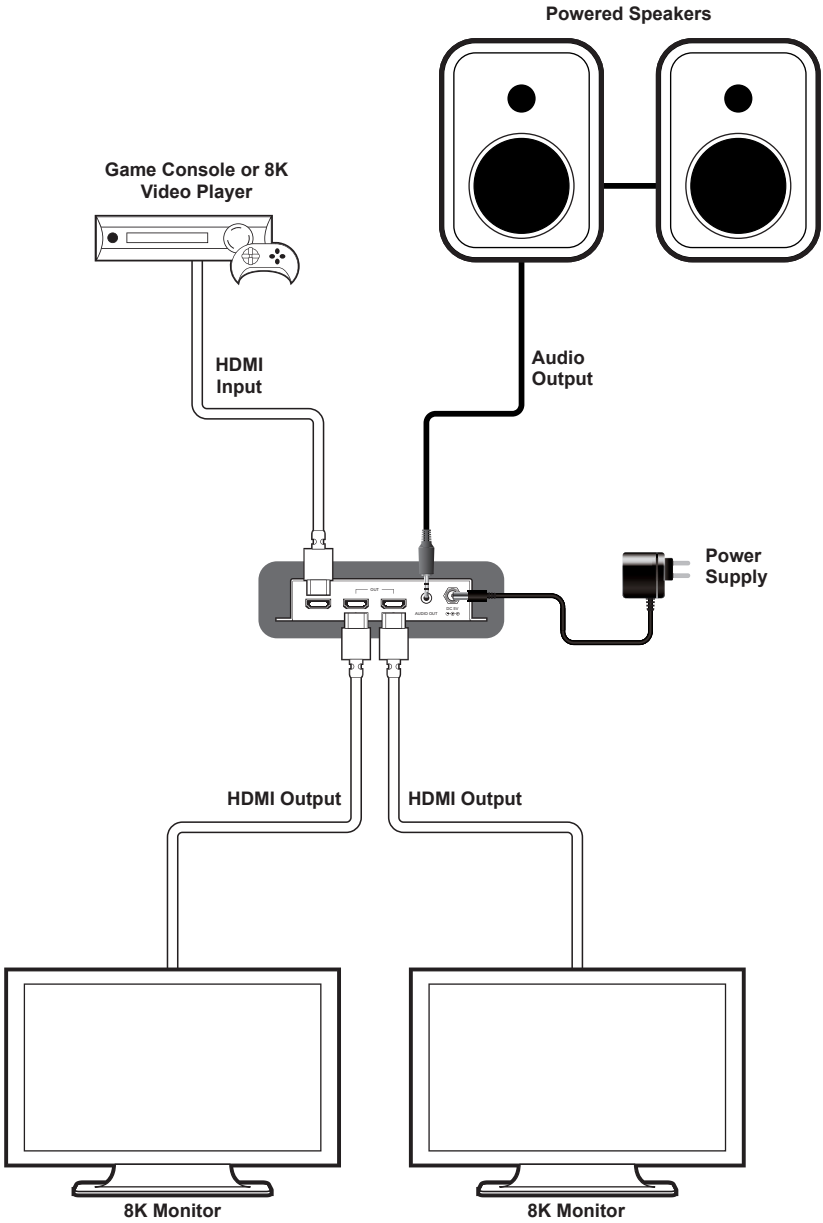
6.2 Transmitter's Rear Panel



1. **IN Port:** Connect to HDMI source equipment such as a media player, game console, or set-top box. DVI sources are supported with the use of an HDMI to DVI adapter.
2. **OUT 1~2 Ports:** Connect to HDMI TVs, monitors, or amplifiers for digital video and audio output.
3. **AUDIO OUT Port:** Connect to powered speakers, headphones, or an amplifier for analog stereo audio output.

   Note: LPCM 2.0 sources only, Bitstream sources will be muted
4. **DC 5V Port:** Plug the 5V DC power adapter into this port and connect it to an AC wall outlet for power.

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

8.1 Technical Specifications

HDMI Bandwidth	48Gbps
DSC Support	No
Input Ports	1×HDMI (Type-A)
Output Ports	2×HDMI (Type-A) 1×Stereo Audio (3.5mm)
Service Port	1×USB 2.0 (Mini-B)
Power Supply	5V/2.6A DC (US/EU standards, CE/FCC/UL certified)
ESD Protection (HBM)	±8kV (Air Discharge) ±4kV (Contact Discharge)
Dimensions (W×H×D)	128mm×25mm×108mm [Case Only] 128mm×30mm×117mm [All Inclusive]
Weight	358g
Chassis Material	Metal (Steel)
Chassis Color	Black
Operating Temperature	0˚C – 50˚C/32˚F – 122˚F
Storage Temperature	-20˚C – 60˚C/-4˚F – 140˚F
Relative Humidity	20 – 90% RH (Non-condensing)
Power Consumption	3W

8.2 Video Specifications

Supported Resolutions (Hz)	Input	Output
	HDMI	HDMI
720×400p@70/85	✓	✓
640×480p@60/72/75/85	✓	✓
720×480i@60	✓	✓
720×480p@60	✓	✓
720×576i@50	✓	✓
720×576p@50	✓	✓
800×600p@56/60/72/75/85	✓	✓
848×480p@60	✓	✓
1024×768p@60/70/75/85	✓	✓
1152×864p@75	✓	✓
1280×720p@50/60	✓	✓
1280×768p@60/75/85	✓	✓
1280×800p@60/75/85	✓	✓
1280×960p@60/85	✓	✓
1280×1024p@60/75/85	✓	✓
1360×768p@60	✓	✓
1366×768p@60	✓	✓
1400×1050p@60	✓	✓
1440×900p@60/75	✓	✓
1600×900p@60RB	✓	✓
1600×1200p@60	✓	✓
1680×1050p@60	✓	✓
1920×1080i@50/60	✓	✓
1920×1080p@24/25/30	✓	✓
1920×1080p@50/60	✓	✓
1920×1200p@60RB	✓	✓

Supported Resolutions (Hz)	Input	Output
	HDMI	HDMI
2560×1440p@60RB	✓	✓
2560×1440p@120	✓	✓
2560×1600p@60RB	✓	✓
2048×1080p@24/25/30	✓	✓
2048×1080p@50/60	✓	✓
3840×2160p@24/25/30	✓	✓
3840×2160p@50/60 (4:2:0)	✓	✓
3840×2160p@24, HDR10	✓	✓
3840×2160p@50/60 (4:2:0), HDR10	✓	✓
3840×2160p@50/60	✓	✓
3840×2160p@120	✓	✓
4096×2160p@24/25/30	✓	✓
4096×2160p@50/60 (4:2:0)	✓	✓
4096×2160p@24, HDR10	✓	✓
4096×2160p@50/60 (4:2:0), HDR10	✓	✓
4096×2160p@50/60	✓	✓
4096×2160p@120	✓	✓
5120×2880p@24/25/30/50/60	✓	✓
5120×2880p@120	×	×
7680×4320p@24/25/30	✓	✓
7680×4320p@50/60 (4:2:0)	✓	✓
7680×4320p@50/60/120	×	×

8.3 Audio Specifications

8.3.1 Digital Audio

HDMI Input / Output	
LPCM	
Max Channels	8 Channels
Sampling Rate (kHz)	32, 44.1, 48, 88.2, 96, 176.4, 192
Bitstream	
Supported Formats	Standard & High-Definition

8.3.2 Analog Audio

Analog Output	
Max Audio Level	1Vrms
THD+N	< −60dB@0dBFS 1kHz (A-wt)
SNR	> 70dB@0dBFS
Frequency Response	< ±3dB@20Hz~20kHz
Crosstalk	< −60dB@10kHz
Impedance	470Ω
Type	Unbalanced

8.4 Cable Specifications

Cable Length	HD	FHD	4K UHD	4K UHD+	8K UHD
High Speed HDMI Cable					
HDMI Input	15m	10m	5m	5m	5m*
HDMI Output	15m	10m	5m	5m	5m*

** Note: HDMI 2.1 signals require the use of Ultra High Speed HDMI cables.*

Bandwidth Category Examples:

- **HD Video**
  - 720p@60Hz
  - HDMI transmission rates lower than 3Gbps
  - HD-SDI (SMPTE 292M, 1.485Gbps)
- **FHD Video**
  - 1080p@60Hz
  - HDMI transmission rates between 3Gbps and 5.3Gbps
  - 3G-SDI (SMPTE 424M, 2.970Gbps)
- **4K UHD Video**
  - 4K@24/25/30Hz (8-bit color) & 4K@50/60Hz (4:2:0, 8-bit color)
  - HDMI transmission rates between 5.3Gbps and 10.2Gbps
  - 6G-SDI (SMPTE ST 2081, 6Gbps)
- **4K UHD+ Video**
  - 1080p@120Hz (10/12-bit HDR)
  - 4K@50/60Hz (4:4:4, 8-bit) & 4K@50/60Hz (4:2:0, 10/12-bit HDR)
  - HDMI transmission rates between 10.2Gbps and 18Gbps
  - 12G-SDI (SMPTE ST 2082, 12Gbps)
- **8K UHD Video**
  - 4K@120Hz (10/12-bit HDR)
  - 8K@24/25/30Hz (10/12-bit HDR) & 8K@50/60Hz (4:2:0, 8-bit color)
  - HDMI transmission rates between 18Gbps and 48Gbps
  - 24G-SDI (SMPTE ST 2083, 24Gbps)

9. ACRONYMS

ACRONYM	COMPLETE TERM
4K UHD	4K Ultra-High-Definition (10.2Gbps max)
4K UHD+	4K Ultra-High-Definition (18Gbps max)
8K UHD	8K Ultra-High-Definition (48Gbps max, without DSC)
8K UHD+	8K Ultra-High-Definition (48Gbps max, with DSC)
CEC	Consumer Electronics Control
DAC	Digital-to-Analog Converter
dB	Decibel
DSC	Display Stream Compression
DVI	Digital Visual Interface
eARC	Enhanced Audio Return Channel
EDID	Extended Display Identification Data
FRL	Fixed Rate Link
Gbps	Gigabits per second
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface
HDR	High Dynamic Range
kHz	Kilohertz
LED	Light-Emitting Diode
LPCM	Linear Pulse-Code Modulation
MHz	Megahertz
SDI	Serial Digital Interface
SNR	Signal-to-Noise Ratio
THD+N	Total Harmonic Distortion plus Noise
TMDS	Transition-Minimized Differential Signaling
USB	Universal Serial Bus
Ω	Ohm

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