



8K HDMI 4x1 Switcher with ARC/eARC Function

VLSP-41H21A



User Manual

VER 1.0

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 life of your equipment.

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1. Introduction

This 8K HDMI 4x1 Switcher can switch any of the four HDMI source signals to one HDMI display, with video resolution up to 8K@60Hz 4:2:0. It supports advanced EDID management, CEC control, ARC/eARC and audio de-embedded function (Output through the optical and analog audio port). Furthermore, firmware upgrade via USB Type C port is supported.

This multi-functional product can be widely applied in scenarios of demonstration, video conference, multimedia teaching and other occasions requiring for big-screen demonstration.

2. Features

- ☆ HDMI 2.1 and HDCP 2.3 compliant
- ☆ Support 48Gbps FRL and 18Gbps TMDS video bandwidth
- ☆ Video resolution is up to 8K@60Hz 4:2:0 12bit, 8K@30Hz 4:4:4 12bit, 4K@120Hz 4:4:4 12bit
- ☆ HDMI 2.1 protocol: VRR, ALLM, QMS, QFT, SBTM are supported
- ☆ Support HDR, HDR10, HDR10+, Dolby Vision, HLG pass-through
- ☆ Support HDMI audio formats: LPCM 7.1CH, Dolby TrueHD, Atmos and DTS-HD Master, DTS:X Audio pass-through
- ☆ Features 4 x HDMI inputs routed to 1 x HDMI output
- ☆ Support HDMI input and TV eARC audio de-embedded to SPDIF and L/R audio output
- ☆ Support HDMI input and TV eARC audio to output to SONOS ARC & Beam or any eARC soundbar
- ☆ Support CEC control from TV at output to source at input
- ☆ Support CEC volume control from TV to any eARC sound system
- ☆ Support advanced EDID management

3. Package Contents

- ① 1 × 8K HDMI 4x1 Switcher
- ② 1 × 5V/1A Multinational Power Supply
- ③ 1 × IR Remote
- ④ 1 × User Manual

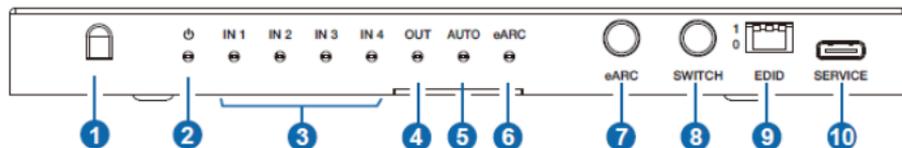
4. Specifications

Technical	
HDMI Compliance	HDMI 2.1
HDCP Compliance	HDCP 2.3
Video Bandwidth	48Gbps FRL and 18Gbps TMDS
Video Resolution	Up to 8K@60Hz 4:2:0 10bit, 8K@30Hz 4:4:4 10bit, 4K@120Hz 4:4:4 10bit
Audio/ Video Latency	No Latency
Color Depth	8/10/12bit
Color Space	RGB_4:4:4, YCbCr_4:4:4, YCbCr_4:2:2, YCbCr_4:2:0
Audio Formats	HDMI Input/Output: LPCM, Dolby Digital/Plus/EX, Dolby True HD, Dolby Atmos, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DTS:X, DSD eARC Audio Out: LPCM, Dolby Digital/Plus/EX, Dolby True HD, Dolby Atmos, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DTS:X, DSD Audio De-embedded Output: Optical: LPCM 2.0CH/Dolby/DTS 5.1CH Analog: LPCM 2.0CH
ESD Protection	Human body model — ±8kV (Air-gap discharge) & ±4kV (Contact discharge)

Connection				
Input	4 × HDMI IN [Type A, 19-pin female]			
Output	1 × HDMI OUT [Type A, 19-pin female] 1 × OPTICAL [S/PDIF] 1 × L/R [3.5mm Stereo Mini-jack]			
Control	1 × SERVICE [USB Type C, Update port]			
Mechanical				
Housing	Metal Enclosure			
Color	Black			
Dimensions	176mm (W) × 68mm (D) × 18mm (H)			
Weight	315g			
Power Supply	Input: AC100-240V 50/60Hz, Output: DC 5V/1A (US/EU standards, CE/FCC/UL certified)			
Power Consumption	2.5W (Max)			
Operation Temperature	0°C ~ 40°C / 32°F ~ 104°F			
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F			
Relative Humidity	20~90% RH (non-condensing)			
Recommended HDMI Cable				
Video Resolution	8K	4K60	4K24	1080P
HDMI Cable Length (HDMI IN / OUT)	2m/6.6ft (Ultra HDMI 2.1)	8m/26ft	12m/39ft	15m/49ft
The use of "Premium High Speed HDMI" cable is highly recommended.				

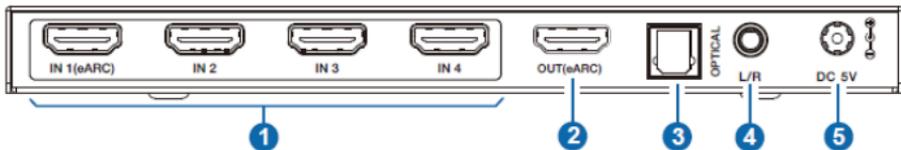
5. Operation Controls and Functions

5.1 Front Panel



No.	Name	Function Description
1	IR Window	IR input signal receiving window.
2	POWER LED	The red LED is on when the device is powered on.
3	IN LED (1~4)	When the HDMI IN 1/2/3/4 port is selected as the signal source input channel, the corresponding green LED will be on.
4	OUT LED	When the HDMI OUT port connects a display device, the green LED will be on.
5	AUTO LED	When the auto switching function (switch to the corresponding signal input channel when the signal source is connected.) is turned on, the green AUTO LED will be on.
6	eARC LED	<ul style="list-style-type: none"> ▪ On: The ARC/eARC function is turned on. CEC communication ARC/eARC is working properly. ▪ Flashing: The ARC/eARC function is turned on. CEC communication and ARC/eARC is not working properly. ▪ Off: The ARC/eARC function is turned off.
7	eARC switch	Press the button to turn on/off ARC/eARC function.
8	SWITCH button	<p>Used to select signal source for OUT port.</p> <ul style="list-style-type: none"> ▪ Short press this button to circularly switch HDMI input signal to the OUT port. ▪ Long press for 3 seconds to turn on/off the auto switching function.
9	EDID DIP switch	<p>Use the DIP switch to set EDID.</p> <p>111 - Copy OUT port sink EDID (as default)</p> <p>110- Video EDID copy sink EDID, Audio EDID Copy soundbar EDID</p> <p>101- FRL 12G_8K_HDR, Audio 2ch PCM</p> <p>100- FRL 12G_8K_HDR, Audio 5.1ch PCM/DTS/DOLBY</p> <p>011- FRL 12G_8K_HDR, Audio 7.1ch PCM/DTS/DOLBY/HD</p> <p>010- FRL 10G_8K_HDR, Audio 2ch PCM</p> <p>001- FRL 10G_8K_HDR, Audio 5.1ch PCM/DTS/DOLBY</p> <p>000- FRL 10G_8K_HDR, Audio 7.1ch PCM/DTS/DOLBY/HD</p>
10	SERVICE	Firmware update and debug port.

5.2 Rear Panel



No.	Name	Function Description
1	IN 1/2/3/4	HDMI input ports, connected to HDMI source device such as DVD, PS4 or Set-top Box with HDMI cable. Note: When the ARC/eARC function is turned off, connect the “IN 1(eARC)” port to HDMI source device to work as a signal input port; When the ARC/eARC function is turned on, connect the “IN 1(eARC)” port to a Soundbar or amplifier with ARC/eARC function to output the audio signal from other HDMI source, or the audio returned from the TV connected to the “OUT(eARC)” port. Please refer to “7. Application Example” for details.
2	OUT (eARC)	HDMI output port, connect to HDMI display device such as HDTV or Projector with HDMI cable.
3	OPTICAL	Optical fiber audio output port.
4	L/R	Analog audio output port.
5	DC 5V	DC 5V/1A power input port.

6. IR Remote



eARC :

Press this button to turn on/off ARC/eARC function.

Auto:

Press this button to turn on/off the auto switching function.

1/2/3/4:

Press 1/2/3/4 button to select HDMI signal source IN 1/2/3/4 to output.

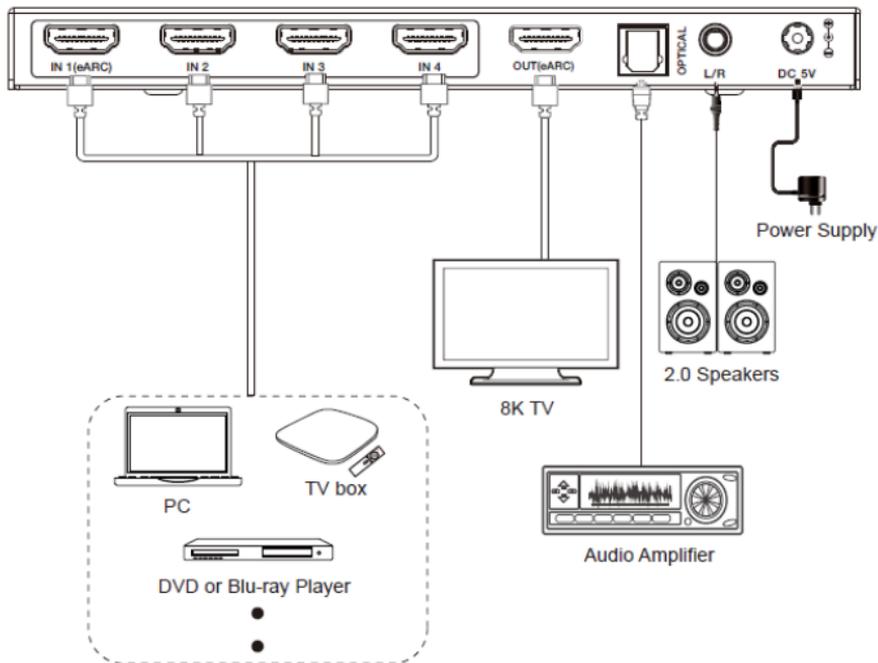


Press this button to select the next HDMI signal source circularly.

7. Application Diagram

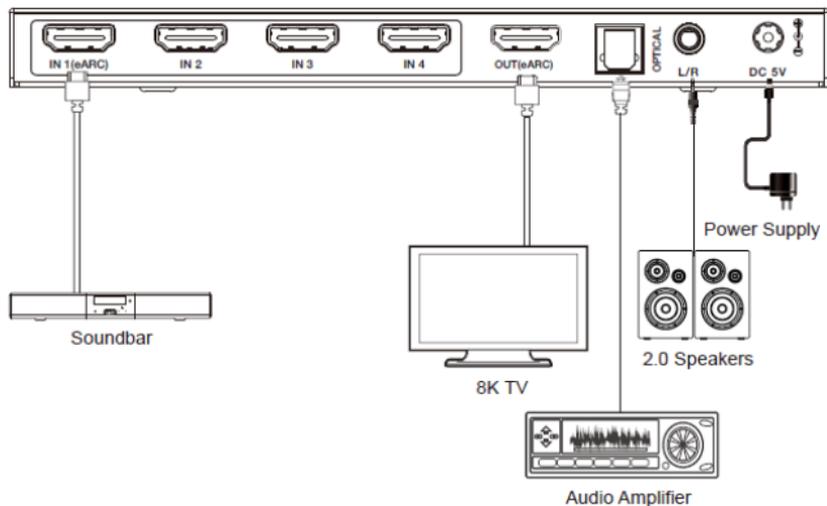
Situation 1

When the ARC/eARC function is turned off, the connection diagram is as following. At this moment, the optical audio or L/R audio is from the selected input channel.



Situation 2

When the ARC/eARC function is turned on, select the input port 1 by pressing the “SWITCH” button on the front panel or the 1 button on the IR remote, then connect the “IN 1(eARC)” port to a Soundbar to output the audio signal returned from the “OUT (eARC)” port, as shown in the figure below. (For example, when the user watches TV APP, the Switcher will pass-through TV eARC/ARC audio to the Soundbar.) At this moment, the optical audio or L/R audio is from the returned audio of the 8K TV connected to OUT(eARC).



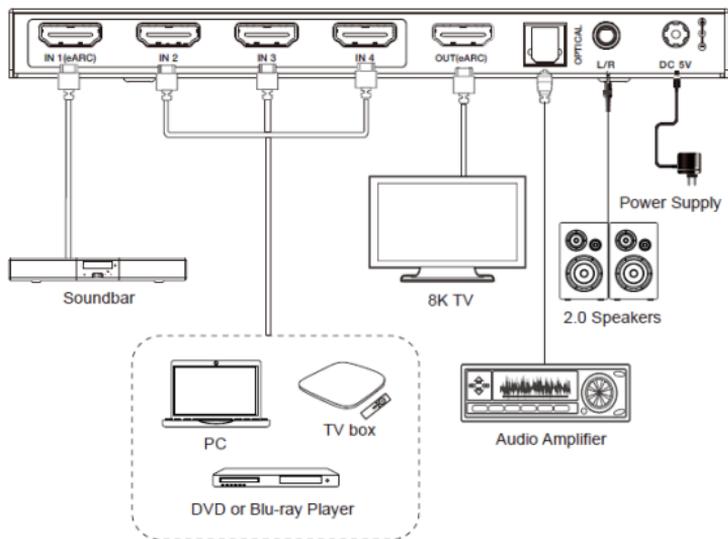
Note:

1. If the 8K TV supports ARC/eARC function, the Soundbar will receive the audio signal returned from the TV, and then emit the sound; otherwise it will not emit sound.
2. The IN 1 channel will be locked when ARC/eARC function is turned on. At this moment, it will not identify the signal source at other input channels automatically even if the Auto Switching is enabled. For example, if the IN 3 is connected to a source device now, and it will not be output as the signal source automatically because the IN 1 is locked.

Situation 3

When the ARC/eARC function is turned on, select the input port 2/3/4 by pressing the “SWITCH” button on the front panel or the buttons on the IR remote. If connect the “IN 1(eARC)” port to a Soundbar now, it will output the audio signal from the selected input channel.

At this moment, the optical audio or L/R audio is also from the selected input channel.



Note:

In this situation, the Soundbar will not output the audio returned from the 8K TV connected to the OUT port, no matter the 8K TV supports ARC/eARC or not.



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