



**BK-401A**

**8K 4x1 HDMI Switcher  
with ARC/eARC**

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**USER MANUAL**

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## **Thank you for purchasing this product**

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.

# Registration Page

Please Activate your warranty by registering our product through the link below - [www.orei.com/register](http://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.

### **OREI Live Technical Support Hours**

US team (US/Canada/Mexico): Monday-Friday, 9 a.m. - 6 p.m. Central Time

**Support Email** - [info@orei.com](mailto:info@orei.com) | **Support Number** - 877-290-5530

Or

### **Chat Live on [www.orei.com](http://www.orei.com)**

Send us an instant message now. Our Technical Support Team will respond momentarily. Available during live support hours.

# Introduction

The BK-401A HDMI Switch can take up to 4 media sources and allow you to connect them to a single display and switch between them with ease. The device supports video resolutions up to 8K@60Hz 4:2:0 12bit and 4K@120Hz 4:4:4 12bit. The device supports CEC control and eARC features. You can connect an eARC Soundbar to IN-1 and an eARC TV to the output to be able to extract audio from the TV's internal apps. CEC allows you to control the connected soundbar and input devices through the TV's remote. Also featured are 2 separate audio outputs for audio extraction if you do not have an eARC Soundbar. The BK-401A is the perfect device for a modern-day home theatre setup.



# Features & Package Contents

1. HDMI 2.1 & HDCP 2.3 Compliant
2. 48Gbps FRL & 18Gbps TMDS video Bandwidth
3. Video resolution up to 8K@60Hz 4:2:0 12bit and 4K@120hz 4:4:4 12bit
4. HDR/10/10+, Dolby Vision and HLG pass-through
5. VRR, ALLM, QMS, QFT and SBTM support
6. CEC Control: Control the soundbar and input devices through the TV remote.
7. Advanced EDID Management
8. Plug and play setup

## Package Contents

1.	BK-401A Switch	1 pcs
2.	IR Remote	1 pcs
3.	5V/1A Power Adapter	1 pcs
4.	User Manual	1 pcs

# Specifications

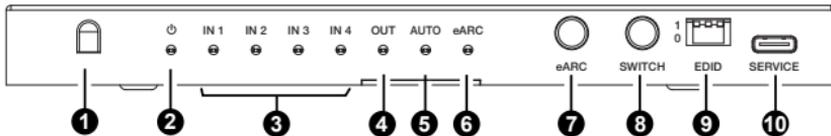
Technical	
HDMI Compliance	HDMI 2.1
HDCP Compliance	HDCP 2.3
Video Bandwidth	48Gbps FRL and 18Gbps TMDS
Audio Latency	No Latency
Video Latency	No Latency
Video Resolution	Up to 8K@60Hz 4:2:0 12bit, 8K@30Hz 4:4:4 12bit, 4K@120Hz 4:4:4 12bit
Color Space	RGB_4:4:4, YCbCr_4:4:4, YCbCr_4:2:2, YCbCr_4:2:0
Color Depth	8/10/12bit
Audio Formats	<b>HDMI Input/Output:</b> 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 <b>eARC Audio Out:</b> 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 <b>Audio De-embedded Output:</b> Optical: LPCM 2.0CH/Dolby/DTS 5.1CH Analog: LPCM 2.0CH
HDR	HDR, HDR10, HDR10+, Dolby Vision, HLG
ESD Protection	IEC 61000-4-2: ±8kV (Air-gap discharge) & ±4kV (Contact discharge)

# Specifications

<b>Connection</b>				
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]			
<b>Mechanical</b>				
Housing	Metal Enclosure			
Color	Black			
Dimensions	L: 176mm / 6.92in W: 68mm / 2.67in H: 18mm / 0.7in			
Weight	315g / 11.11oz			
Power Supply	Input: AC100-240V 50/60Hz, Output: DC 5V/1A (US/EU standards, CE/FCC/UL certified)			
Power Consumption	2.5W (Max)			
Operating Temperature	0°C - 40°C / 32°F - 104°F			
Storage Temperature	-20°C - 60°C / -4°F - 140°F			
<b>Recommended HDMI Cable</b>				
<b>Video Resolution</b>	8K	4K60	4K24	1080P
<b>HDMI Cable Length</b> (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.				

# Operation Controls and Functions

## Front Panel

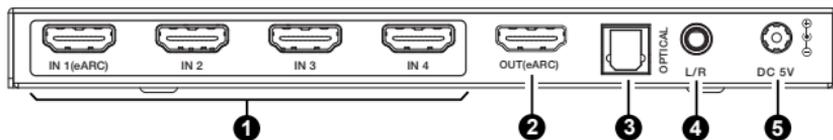


No.	Name	Function Description
1.	IR window	IR signal receiving window.
2.	Power LED	The Red LED will light up when the device is powered on.
3.	IN 1/2/3/4 LED	The corresponding Green LED will light up when the respective input source is selected.
4.	OUT LED	The Green LED will light up when a display device is connected.
5.	AUTO LED	The Green LED will light up when the Auto switching function is turned on.
6.	eARC LED	<ul style="list-style-type: none"> <li>▪ <b>On:</b> The ARC/eARC function is turned on. CEC communication and ARC/eARC is working properly.</li> <li>▪ <b>Flashing:</b> The ARC/eARC function is turned on. CEC communication and ARC/eARC is not working properly.</li> <li>▪ <b>Off:</b> The ARC/eARC function is turned off.</li> </ul>
7.	eARC switch	Press the button to turn on/off ARC/eARC function.
8.	SWITCH button	<p>Used to switch between the connected media sources</p> <ul style="list-style-type: none"> <li>▪ Short press this button to circularly switch between the connected media sources.</li> <li>▪ Long press for 3 seconds to turn on/off the auto switching function.</li> </ul>

# Operation Controls and Functions

No.	Name	Function Description
9.	EDID DIP switch	Use the DIP switch to set EDID. 111 - Copy OUT port sink EDID (as default) 110 - Video EDID copy sink EDID, Audio EDID Copy soundbar EDID 101 - FRL 12G_8K_HDR, Audio 2ch PCM 100 - FRL 12G_8K_HDR, Audio 5.1ch PCM/DTS/DOLBY 011 - FRL 12G_8K_HDR, Audio 7.1ch PCM/DTS/DOLBY/HD 010 - FRL 10G_8K_HDR, Audio 2ch PCM 001 - FRL 10G_8K_HDR, Audio 5.1ch PCM/DTS/DOLBY 000 - FRL 10G_8K_HDR, Audio 7.1ch PCM/DTS/DOLBY/HD
10.	SERVICE	Firmware update and debug port.

## Rear Panel



No.	Name	Function Description
1.	IN 1/2/3/4	Connect a media device such as a DVD Player, Streaming device. <b>Note:</b> 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 " <b>Application Example</b> " for more details.

# Operation Controls and Functions & IR Remote

No.	Name	Function Description
2.	OUT (eARC)	Connect a HDMI display device such as a TV, Projector, etc.
3.	OPTICAL	Optical fiber audio output port.
4.	L/R	Analog audio output port.
5.	DC 5V	Connect the included power adapter

## IR Remote



### **eARC:**

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

### **Auto:**

Press this button to enable or disable auto switching.

### **1/2/3/4:**

Press 1/2/3/4 button to select the corresponding signal input source.

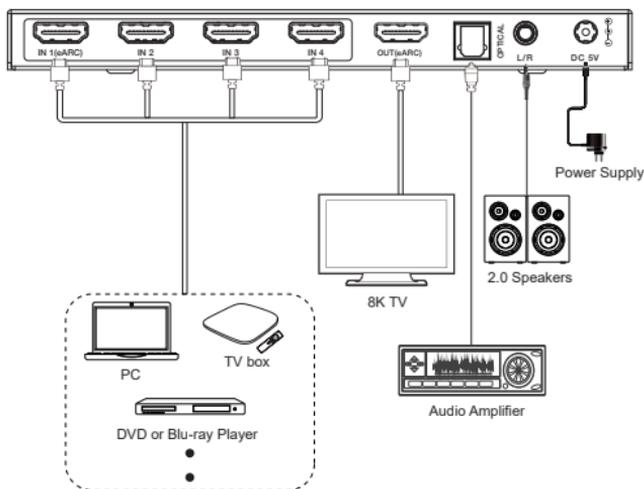
### **↻:**

Press this button to circularly switch between the connected media sources.

# Application Example

## Situation 1

When the ARC/eARC function is turned off, the connection is as following. In this situation, the Optical and L/R audio outputs will output audio from the selected media device.

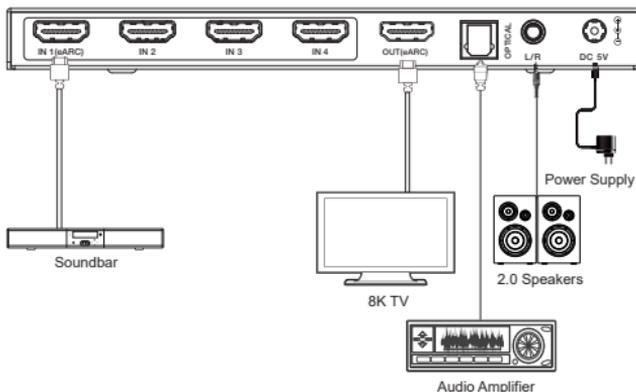


## Situation 2

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 apps, the Switcher will pass-through TV eARC/ARC audio to the Soundbar.)

# Application Example

In this situation, the Optical and L/R audio outputs will output audio from the TV.



## Note:

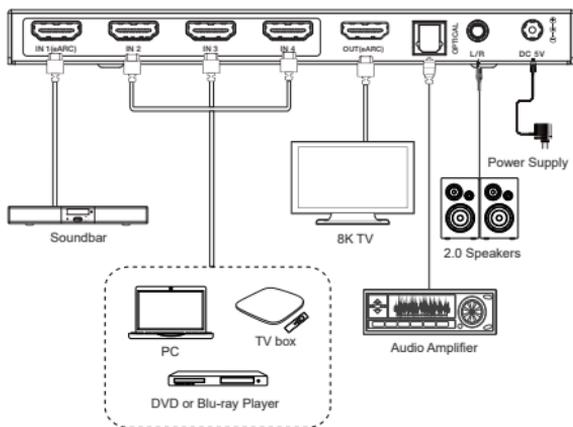
1. If the 8K TV supports ARC/eARC function, the Soundbar will receive the audio signal returned from the TV, and then emit the sound; otherwise it will not emit sound.
2. The IN 1 channel will be locked when it is selected as the input source. At this moment, other input channels will not be identified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

# Application Example

## 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 you connect the "IN 1(eARC)" port to a Soundbar now, it will output the audio signal from the selected input channel.

In this situation, the Optical and L/R audio outputs will output audio 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.

**HDMI™**  
HIGH-DEFINITION MULTIMEDIA INTERFACE

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# FAQs & Troubleshooting

## 1. What is the maximum length of the HDMI outputs?

We recommend using High Quality HDMI cables under 30 feet.

## 2. Can I use a Capture Card to record games from my PlayStation or Xbox?

Our devices are HDCP compliant and will not work with capture cards.

## 3. Can I display both game consoles at the same time on my TV, side by side?

No, you can only display one source at a time.

## 4. Does the Power Supply support 220V Input?

Our devices come with Dual Voltage(110-220V) power supplies, so they will work anywhere in the world.

## 5. I am not getting HDMI output

Try the steps below:

1. Change the HDMI cable
2. Change the resolution from the source
3. Change the EDID settings on the BK-21A (Refer Page 09)

## 6. VRR and Other HDMI 2.1 Features not working

Please check if your display supports VRR, ALLM and FVA. Confirm that VRR works when connecting the source directly to the display. Confirm if you are using high quality HDMI 2.1 cables.

## 7. Audio outputs not working

Please check the audio output format from the source. The audio format from the source should match the capabilities of the audio outputs. (Refer Page 06)

### ***Still have some questions?***

Please feel free to contact us at: [info@orei.com](mailto: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.

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