

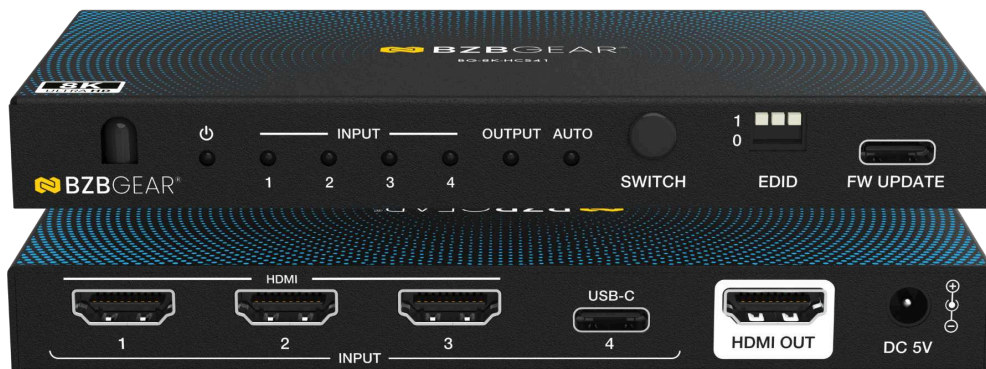


# BG-8K-HCS41

Direktronik Art 20124235

**8K UHD 4×1 HDMI/USB-C Switcher – HDMI 2.1, 48Gbps,  
8K60/4K120, HDR, EDID Management, Auto Switching, CEC  
Control**

## User Manual





***DIREKTRONIK***

Direktronik AB tel. 08-52 400 700 [www.direktronik.se](http://www.direktronik.se)



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## Statement

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Please read these instructions carefully before connecting, operating, or configuring this product. Please save this manual for future reference.

## Safety Precaution

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- To prevent damaging this product, avoid heavy pressure, strong vibration, or immersion during transportation, storage, and installation.
- The housing of this product is made of organic materials. Do not expose to any liquid, gas, or solids which may corrode the shell.
- Do not expose the product to rain or moisture.
- To prevent the risk of electric shock, do not open the case. Installation and maintenance should only be carried out by qualified technicians.
- Do not use the product beyond the specified temperature, humidity, or power supply specifications.
- This product does not contain parts that can be maintained or repaired by users. Damage caused by dismantling the product without authorization from BZBGear is not covered under the warranty policy.
- Installation and use of this product must strictly comply with local electrical safety standards.



## Introduction

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The BG-8K-HCS41 is an ultra-thin 4×1 switcher designed for high-performance AV applications. It features three HDMI 2.1 inputs, one USB-C input, and one HDMI output, supporting resolutions up to 8K@60Hz 4:2:0 12-bit (HDMI) and 8K@30Hz 4:2:2 10-bit (USB-C). This switcher is fully compliant with DP 1.4 and HDCP 2.3, and supports advanced video technologies including HDR10, HDR10+, Dolby Vision, and HLG pass-through. With support for HDMI 2.1 features such as VRR, ALLM, QMS, QFT, and SBTM, along with multichannel audio pass-through for Dolby Atmos, DTS:X, and LPCM 7.1CH, it delivers an immersive audio-visual experience.

The BG-8K-HCS41 offers easy control via front-panel buttons, IR remote, and supports both manual and auto-switching between active inputs. Built-in EDID management can be configured using a 3-pin DIP switch on the front panel, with EDID status displayed on the connected monitor. Additional features include CEC control for simplified TV-to-source communication and firmware updates through the service port, making this switcher a versatile solution for home theater, gaming, and professional AV installations.

## Features

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- **UHD USB-C Quality:** Supports resolutions up to 8K@30Hz (4:2:2, 10-bit) and 4K@120Hz (4:2:2, 10-bit) via USB-C
- **UHD HDMI Quality:** Supports resolutions up to 8K@60Hz (4:2:0, 12-bit), 8K@30Hz (4:4:4, 12-bit), and 4K@120Hz (4:4:4, 12-bit)
- **Input Switching Options:** Supports automatic and manual input switching, controllable via front panel buttons and IR remote
- **CEC Control Functionality:** Enables CEC pass-through control from the display (output) to the source device (input)
- **Audio Pass-Through:** Supports LPCM 7.1CH, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio, and DTS:X audio formats
- **HDR Pass-Through:** Passes through HDR formats, including HDR, HDR10, HDR10+, Dolby Vision, and HLG
- **Advanced HDMI 2.1 Features:** Supports VRR (Variable Refresh Rate), ALLM (Auto Low Latency Mode), QMS (Quick Media Switching), QFT (Quick Frame Transport), and SBTM (Source-Based Tone Mapping)
- **Flexible Input & Output Configuration:** Features 3 × HDMI inputs and 1 × USB-C input, routed to a single HDMI output
- **Advanced EDID Management:** Includes customizable EDID settings for flexible compatibility with various displays and sources
- **Industry Compliance:** Compliant with DisplayPort 1.4 and HDCP 2.3 standards



## Packing List

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- 1× BG-8K-HCS41 Switcher
- 1× IR Remote
- 1× 5V/1A Power Supply
- 1× User Manual



## Specifications

Technical Specifications	
HDMI Compliance	HDMI 2.1
HDCP Compliance	HDCP 2.3
DP Compliance	DP 1.4
Video Bandwidth	HDMI: Up to 48Gbps FRL and 18Gbps TMDS USB-C: Up to 32Gbps
Video Resolution	HDMI: Up to 8K@60Hz 4:2:0 12-bit, 4K@120Hz 4:4:4 12-bit USB-C: Up to 8K@30Hz 4:2:2 10-bit, 4K@120Hz 4:2:2 10-bit
Color Depth	8-bit, 10-bit, 12-bit
Color Space	RGB 4:4:4, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0
HDMI Audio Formats	LPCM, Dolby Digital/Plus/EX, Dolby TrueHD, Dolby Atmos, DTS, DTS-EX, DTS 96/24, DTS High-Res, DTS-HD Master Audio, DSD
ESD Protection	IEC 61000-4-2: ±8kV (Air-gap discharge), ±4kV (Contact discharge)
Input Ports	3 × HDMI Type A (19-pin female) 1 × USB Type-C (24-pin female)
Output Ports	1 × HDMI Type A (19-pin female)
Control Ports	1 × USB Type-C (Service/update port) 1 × IR Receiver window
Mechanical Specifications	
Housing	Metal
Color	Black
Dimensions	5.7in × 2.7in × 0.71in / 145mm (W) × 68mm (D) × 18mm (H)
Weight	0.57 lbs [258g]
Power Supply	Input: AC 100~240V 50/60Hz Output: DC 5V/1A (US/EU standards, CE/FCC/UL certified)
Power Consumption	2.25W (Max)
Operating Temperature	32°F ~ 104°F / 0°C ~ 40°C
Storage Temperature	-4°F ~ 140°F / -20°C ~ 60°C
Relative Humidity	20% ~ 90% RH (non-condensing)



Recommended HDMI Cable	The use of a “Premium High Speed HDMI” cable is highly recommended.
HDMI Cable Length	<ul style="list-style-type: none"><li>• 8K: 2m / 6.6ft (Ultra HDMI 2.1)</li><li>• 4K60: 8m / 26ft</li><li>• 4K24: 12m / 39ft</li><li>• 1080P: 15m / 49ft</li></ul>

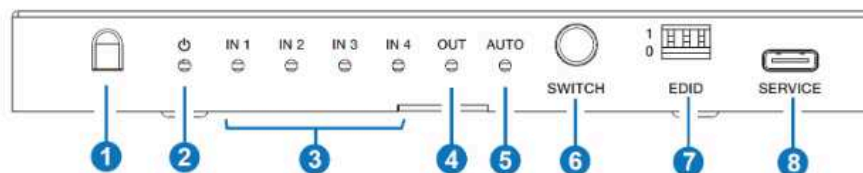




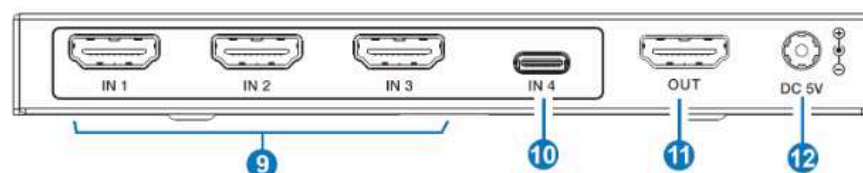
## Operation Controls and Functions

### Front and Rear Panel

Front Panel



Rear Panel



No.	Name	Function Description
1	IR Window	Receives IR signals from the remote control.
2	Power LED	Illuminates red when the device is powered on.
3	IN 1/2/3/4 LED	The corresponding green LED lights up when IN 1/2/3/4 is selected as the active input source.
4	OUT LED	Lights up green when a TV or display is connected to the OUT port.
5	AUTO LED	Lights up green when auto-switching mode is enabled.
6	SWITCH Button	Used to switch input signals. <ul style="list-style-type: none"> <li>• Short press: Switch to the next input port.</li> <li>• Long press (3 seconds): Disable auto-switching mode.</li> </ul>
7	EDID DIP Switch	Used to configure EDID settings: <ul style="list-style-type: none"> <li>• 111 – Copy EDID from the OUT port (factory default)</li> <li>• 110 – 4K@60Hz 4:4:4, Audio: 2ch PCM</li> <li>• 101 – FRL 12G 8K HDR, Audio: 2ch PCM</li> <li>• 100 – FRL 12G 8K HDR, Audio: 5.1ch PCM/DTS/Dolby</li> <li>• 011 – FRL 12G 8K HDR, Audio: 7.1ch PCM/DTS/Dolby/HD</li> <li>• 010 – FRL 10G 8K HDR, Audio: 2ch PCM</li> <li>• 001 – FRL 10G 8K HDR, Audio: 5.1ch PCM/DTS/Dolby</li> <li>• 000 – FRL 10G 8K HDR, Audio: 7.1ch PCM/DTS/Dolby/HD</li> </ul>
8	SERVICE	Used to update the MCU firmware.



9	IN 1/2/3	HDMI signal input ports. Connect HDMI source devices such as a DVD player or PS5 using HDMI cables.
10	IN 4	USB-C signal input port. Connect a USB-C source device.
11	OUT Port	HDMI signal output port. Connect to an HDMI display device such as a TV or monitor using an HDMI cable.
12	DC 5V	DC 5V/1A power input port.

## IR Remote



### **AUTO:**

Press to enable or disable auto-switching between input signal sources.

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

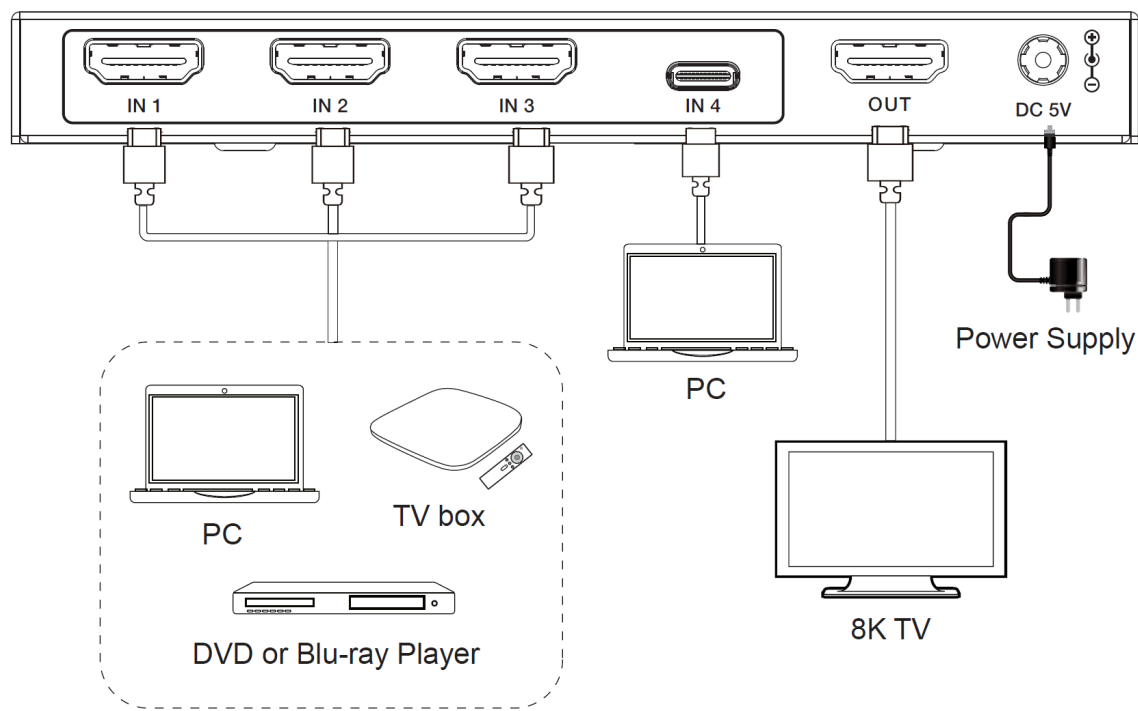
Press the corresponding button to manually select the desired input channel.

### **⌚ (Switch):**

Press to cycle through the HDMI input sources and output the selected signal to the OUT port.



# Connection Diagram





## Troubleshooting

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Problems	Causes	Solutions
No Power / All LED off	Power supply not connected, connected fully, or wrong power supply.	Check if the power supply is connected correctly and the output voltage value is within recommended specifications.
No sound or sound issues	The HDMI connection is faulty, the audio format is not supported by the displays, or the source player is set to another port for audio output	Check if the HDMI cables are connected correctly. Check if the audio format is supported by the display and that a user has not changed the supported audio format on the player's audio output. Ensure output settings from the HDMI source device as set correctly.
No picture or picture flickers	The HDMI cable may be faulty or the category cable quality is faulty.	Check if the HDMI and category cable connections are correct and undamaged. Change to another good working HDMI cable or category cable (CAT6 or better cable is recommended).



## Tech Support

Have technical questions? We may have answered them already!

Please visit BZBGear's support page ([bzbgear.com/support](https://bzbgear.com/support)) for helpful information and tips regarding our products. Here you will find our Knowledge Base ([bzbgear.com/knowledge-base](https://bzbgear.com/knowledge-base)) with detailed tutorials, quick start guides, and step-by-step troubleshooting instructions. Or explore our YouTube channel, BZB TV ([youtube.com/c/BZBTVchannel](https://youtube.com/c/BZBTVchannel)), for help setting up, configuring, and other helpful how-to videos about our gear.

Need more in-depth support? Connect with one of our technical specialists directly:

### Phone

1.888.499.9906

### Email

[support@bzbgear.com](mailto:support@bzbgear.com)

### Live Chat

[bzbgear.com](https://bzbgear.com)



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## Limited Product Warranty Terms

Pro Line: 5-year warranty from the date of purchase for AV/Broadcasting products bought on or after August 1, 2024.

Essential Line: 3-year warranty from the date of purchase for AV/Broadcasting products bought on or after August 1, 2024.

Cables: Lifetime Limited Product Warranty.

For complete warranty information, please visit [bzbgear.com/warranty](https://bzbgear.com/warranty).

For questions, please call 1.888.499.9906 or email [support@bzbgear.com](mailto:support@bzbgear.com).



## Mission Statement

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BZBGear is a breakthrough manufacturer of high-quality, innovative audiovisual equipment ranging from AVoIP, professional broadcasting, conferencing, home theater, to live streaming solutions. We pride ourselves on unparalleled customer support and services. Our team offers system design consultation, and highly reviewed technical support for all the products in our catalog. BZBGear delivers quality products designed with users in mind.

## Copyright

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