

BG-4KCHA

USB-C 4K60 Video Capture Card Box with Scaler, HDMI 2.0 Loop Out, Audio & HDR10 to SDR Conversion Support

User Manual





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Statement

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

Safety Precaution

- 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

The BG-4KCHA is an advanced USB-C 4K video capture device with a scaler, HDMI 2.0 loopout, audio, and HDR10 to SDR conversion, designed for professional HDMI video signal capturing. It uses a USB 3.1 Type-C Gen 1 (USB 3.0) interface, allowing for high-speed transmission. Additionally, the HDMI input and loopout can support up to 4K2K@60, enabling users to connect the BG-4KCHA to a 4K@60 source and capture Ultra HD (4K2K@30) video. With the capability to capture and display uncompressed HDMI video, the BG-4KCHA provides more realistic color renditions. Moreover, the BG-4KCHA employs large volume image buffer technology to effectively avoid video tearing, while the high sampling rate and accuracy result in captured videos with high sharpness, rich details, and fewer color edges.

Furthermore, the HDR10 to SDR conversion allows Playstation and Xbox players to enjoy 4K2K@60 HDR games on a 4K TV through the loopout HDMI port and record real-time 4K2K@30/1080P@120 video streams with SDR quality through the USB 3.0 port simultaneously. With its versatility and features, the BG-4KCHA is a highly capable and professional-grade HDMI video capture device for demanding applications.

* PS5 & Xbox Series X also support 1080P120

Features

- HDMI video and audio streams over USB 3.1 Type-C Gen 1
- UVC1.0/1.1/1.5
- Video resolution up to 4K2K@30/1080P@120 (Video stream over USB-C)*
- HDMI input & loopout up to 4K2K@60
- Deinterlacer & scaler**
- Mic in mix with HDMI audio
- HDMI audio extraction
- HDR10 to SDR conversion***
- Play 4K@60 HDR on the HDMI out while streaming/capturing gameplay at 4K2K@30/1080P@120 with SDR colors
- Volume control knobs to adjust the MIC/Headphone volume
- Auto-detection of video format to ensure plug-play operations
- Supported operating systems: Windows 7/8.1/10/11, Mac, & Linux OS
- Compatible with most 3rd party software such as OBS Studio and AMCap
- Supports USB 3.1 Gen 1 (RGB/YUY2/NV12) (capture up to 4K2K@30) and USB 2.0 (YUY2/NV12) (capture up to 720P@30)
- Low Latency (3~4ms at 1080P)

Note: Please use the included USB 3.0 cable in the box to protect the device and avoid further compatible issues. Video resolution change may require users to restart software.

* ONLY NV12 supports 4K2K@30/1080P@120

** Scale-up supports up to 1080P@120

*** NOT supports HDR10 plus, HLG, and Dolby Vision to SDR conversion

Packing List

- 1x BG-4KCHA
- 1x USB 3.0 A to C Cable (host to device)
- 1x User Manual

Specifications

Model	Name	BG-4KCHA				
Technical						
Role of usage		Video Capture Device				
Input Video bandw	vidth	600MHz				
Output bandwidth		Up to 350Mbps (USB-C)				
Video support(USE	3-C)	Up to 4K2K@30/1080P@120				
Video support(Loo	pout)	Up to 4K2K@60				
Audio Input		HDMI Embedded Audio & Stereo audio Input				
Audio Format		2CH 16 bit PCM				
Recording Video Format		RGB/YUY2/NV12 (USB3.1 Gen 1), YUY2/NV12 (USB2.0)				
ESD protection		Human body model — ± 15 kV [air-gap discharge] & ± 8 kV [contact discharge]				
PCB stack-up		4-layer board [impedance control – differential 100Ω ; single 50Ω]				
Firmware update		Feasible via USB-C Port				
Input		1x HDMI+ 1x 3.5mm				
Output		1x USB-C + 1x HDMI + 1x 3.5mm				
HDMI connector		Type A [19-pin female]				
USB connector		USB 3.1 Type C (SuperSpeed USB)				
Software compatib (not complete list)	bility	OBS Studio (Windows, Linux, MAC), AMCap (Windows), Potplayer (Windows), VLC (OS X, Linux), XSplit Broadcast (Windows), Skype (Windows, OS X), Zoom (Windows), Hangout (Windows), TeamViewer (Windows)				
OS Support		Windows 7 /8.1 /10, Mac and Linux OS				
Mechanical						
Housing		Metal enclosure				
	Model	116 x 63 x 23mm [4.6" x 2.5" x 0.9"]				
Dimensions [L x W x H]	Package	230 x 95 x 41mm [9" x 3.7" x 1.6"]				
	Carton	500 x 477 x 241mm [1.4' x 1.5' x 9.4"]				
Weight	-	286g[10 oz]				
Power supply		Via USB-C				
Power consumptio	n	Watts [max]				
Operation tempera	iture	0~40°C [32~104°F]				
Storage temperatu	re	-20~60°C [-4~140°F]				
Relative humidity		20~90% RH [no condensation]				

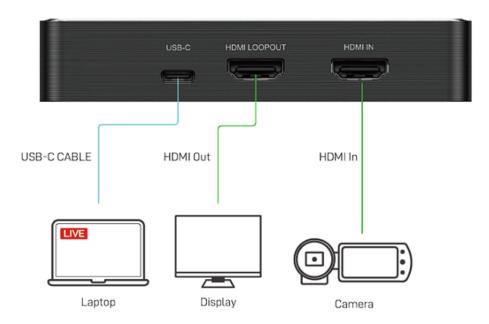
Operation Controls and Functions

Front and Rear Panel



No.	Name	Function Description
1	STEREO AUDIO IN	Connect to an analog stereo audio source
2	STEREO AUDIO OUT	Extract audio from the HDMI input
3	LED INDICATOR	USB-C signal indicator LED [Red] Connected to a USB 2.0 port on the host [Blue] Connected to a USB 3.0 port on the host
4	LED INDICATOR	HDMI input signal indicator LED
5	STEREO AUDIO IN VOLUME KNOB	To adjust the stereo audio in sound level
6	STEREO AUDIO OUT VOLUME KNOB	To adjust the stereo audio out sound level
7	USB-C OUT	Connect to a USB host (PC, NB, MAC)
8	HDMI OUT	Connect to a HDMI display
9	HDMI IN	Connect to a HDMI source





Video Streaming

Create a Video Streaming

Users can create video streams on their streaming service platform. The steps below show how to complete video streaming settings from Twitch and YouTube.

Twitch

1. Browse to the Twitch website (<u>https://www.twitch.tv/</u>) and log in. Next, select "Creator Dashboard" from your account drop-down menu at the top right of the screen.

Log in to Twitch		. <mark></mark>	🗘 📮 💠 Get Bits 🙎
Log In Sign Up Username		MCanning StarCraft II 292 viewers	Online Vser
		English	Share My Activity
Password		ly name is Chris 'MCanning' anning and I am a grandmaster tarcraft two player! I pride myself	A- Channel
	۲	n being one of the select few	Video Producer
Trouble logging in?		arcraft streamers who can play be game at a high level and talk retty much constantly throughout!	Creator Dashboard
		retty much constantly throughout:	R Friends
or			☆ Subscriptions
Connect with Facebook			P Inventory
			🔂 Wallet

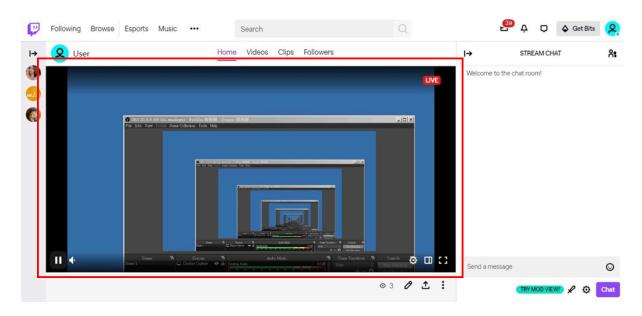
 Find "Preferences" in the left menu, and click "Channel", then you will see "Primary Steam key" on the screen. Copy the "Primary Steam key" and paste it into the "Stream Key" field in the OBS, then click "Start Streaming" in the software.
 * Please refer to steps 4-6 of the OBS software control program.

≡ Channel			Ċ	\$	0	₽	8
CREATOR DASHBOARD ←I	Stream Key & Prefere	ences					
০ে) Stream Manager না Insights 🗸 🗸	Primary Stream key	Show		Сору	Rese	ət	
iåi Community → □ Content →	Disconnect Protection	Improve the viewing experience for your stream by enabling a backup in the disconnected. If your primary stream fails, automatically display a temporary					
Preferences Channel		seconds while you troubleshoot and reconnect. *Note: This requires the use property.	of a majo	r encoc	ler to wo	ork	
Moderation	Store past broadcasts	Automatically save broadcasts for up to 14 days (60 days for Partners, Turbo	ind Prime	e users)			
Streaming Tools	Mature Content						

3. Go back to Twitch and select "Channel" from your account drop-down menu.

≡ Channel			4 🛠 💿 🗘 😣
CREATOR DASHBOARD ←I	Stream Key & Prefere	nces	User Creator
(1) Stream Manager	Primary Stream key	·	Back to Twitch
Insights V			O Account Settings
iåi Community →	Disconnect Protection		⊕ Language >
Preferences		Improve the viewing experience for your stream by enabling a backup in the e disconnected. If your primary stream fails, automatically display a temporary v seconds while you troubleshoot and reconnect. *Note: This requires the use e	€] Log Out
Channel		property.	
Moderation	Store past broadcasts	•	
🛱 Drops		Automatically save broadcasts for up to 14 days (60 days for Partners, Turbo and	nd Prime users)
Streaming Tools	Mature Content		

At this point, you will see the players live stream..

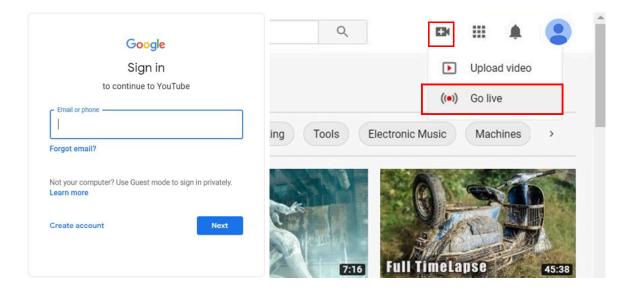




YouTube

1. Browse to the YouTube website (https://www.youtube.com/) and log in. Next, click "Go live" from the "Create" icon menu at the top right of the screen.

* If you are using YouTube for the first time to create a video stream, you need to wait 24 hours to enable the function.



2. Click "Stream" in the left menu, and fill in the relevant information for the live video to create a new stream.

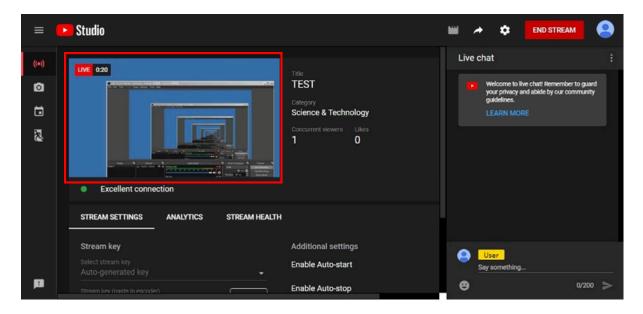
≡	🕨 Studio			9
((•))	Stream	1	New stream	
٥	Webcam		Create a title	
Ö	Manage		Public -	
R	Stream Now Classic		Add a description	
			Science & Technology +	
			Schedule for later	
		STREAM SETTINGS	UPLOAD CUSTOM THUMBNAIL	
			Audience	
			Is this video made for kids? (required)	
j El	Send feedback		Regardless of your location, you're legally required to comply with the Children's Online Privacy Protection Act (COPPA) and/or other laws. You're required to tell us whether your videos are made for kids. What's content made for kids?	→ events

- 3. You will see the "Stream key" from the "STREAM SETTINGS" below. Copy the "Stream key" and paste it into the "Stream Key" field in the OBS, then click "Start Streaming" in the software.
- Studio ٠ * Live chat ((=)) No data Welcome to live chat! Remember your privacy and abide by our com quidelines • Ø ۵ STREAM SETTINGS ANALYTICS STREAM HEALTH 2 Stream key Additional settings Enable Auto-start Auto-generated key Enable Auto-stop COPY 8 Enable DVR COPY rtmp://a.rtmp.youtube.com/live2 360° video COPY rtmp://b.rtmp.youtube.com/live2?backu None H e
- * Please refer to steps 4-6 of the OBS software control program.

4. Next, go back to YouTube, and then wait for 30-60 seconds, the player will display the live preview. At the same time, the **"GO LIVE"** button at the top right will turn blue, please press this button.

=	Studio				* \$		
(=))				Live	chat		
٥			Science & Technology Concurrent viewers Likes			at! Remember to guard side by our community	
() ()			0 0		LEARN MORE		
(a)							
	Good connection						
	STREAM SETTINGS ANAL	LYTICS STREAM HEALTH					
	Stream key		Additional settings				
	Select stream key Auto-generated key		Enable Auto-start		User		
1 20	Stream key (paste in encoder)	© СОРУ	Enable Auto-stop	e	Say something	0/200 🍃	

5. The player on YouTube will start live streaming.



Stream and record videos with OBS

OBS is a popular USB capture freeware and has excellent compatibility. Please start with OBS if users are not familiar with USB capture devices.

Download the software

Browse to the download page of the OBS official website (https://obsproject.com/download), then select the suitable computer operating system and start downloading.





Start the software control program

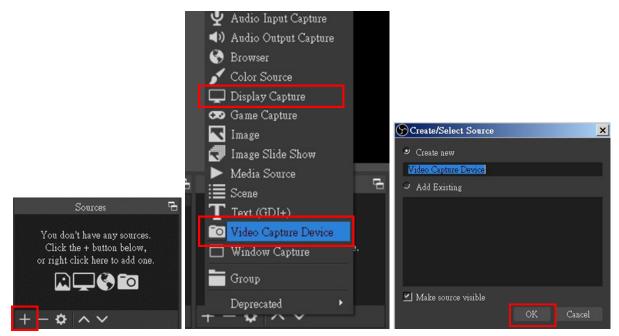
After downloading the software, please open it and follow the below steps to complete the video streaming settings.

File Edit View Profile Scene Colle	ction Tools Help		
Scenes 🗟 Scene 1	Sources	🗟 Audio Mixer 🔁 Scene Transitions 🗟	Controls 9
Scelle 1	You don't have any sources.	Desitop Audio 00.08 Fade + - •	Start Streaming Start Recording
	Click the + button below, or right click here to add one.		Studio Mode
	⋒⋤ु⊜ॄ		Settings
			Exit
+ - ^ ~	+-\$ ^~		
		(*) LIVE: 00:00:00 • REC: 00:00:00 CPU	: 1.4%, 30.00 fps

1. First, find the **"Scenes"** window, click **"+"** in the lower left corner, and then enter the name of the scene to create a new scene.

	Scenes	2			
Scene 1					
		S Add Scene			×
		Please enter the name of the sce	ne		
		Scene 2			
+ - ^	~		OK	Cancel	

2. Find the **"Source"** window, click **"+"** in the lower left corner, and then select **"Display Capture"** or **"Video Capture Device"** to create a new source.



Next, you can set display capture properties. If you select "Display Capture" in step 2, you can select the primary monitor or other extended monitor as the display source. If you select "Video Capture Device" in step 2, you can select a USB video device as the display source. After all settings are completed, click "OK".

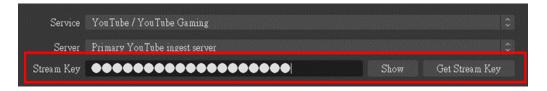
Child 2043 (Markey and Andre 1943), Standard (Markey Stan			<u>, 19</u> X
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Display Display 1: 1366x768 @ 0,0 (Primary Monitor)			
MININ-adapter Companionity			
Capture Cursor			

Properties for 'Vid	eo Capture Device'	×
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	Configure Video Configure Crossbar	
Resolution/FPS Type	Device Default	0
Resolution		-
FPS		٥
Video Format		٢
Color Space	Default	
Color Range	Default	\$
Buffering 🕐	Auto-Detect	0
Defaults	OK	Cancel

4. Click **"Settings"** and then select **"Stream"** to perform streaming settings. Users can choose service providers, including Twitch, YouTube, etc.

	Settings		×
	General ('A') Stream Coutput ↓) Audio Video	Service YouTube / YouTube Gaming Custom Server Turkh YouTube / YouTube Gaming Mixer.com - FIL Mixer.com - FIL Mixer.com - RTMP Restream.io - FIL Turtter / Periscope Show All	
	Hotkeys		
Controls Start Streaming Start Recording Studio Mode Settings Exit			OK Cancel Apply

5. Paste the stream key provided by the service provider into the "**Stream Key**" field, then click "**Apply**" and "**OK**" after setting. In addition, users can click "**Get Stream Key**" at this step to open the service provider website.



6. Please click "Start Streaming". At this time, the screen after clicking "Start Streaming" will be displayed in the live video.



 On the other hand, users can also click "Start Recording" to record videos with OBS. Besides, you can click "Settings" and then select "Output" to set "Recording Path" and "Recording Format".

	Settings			×
	General	Output Mode		
	((•)) Stream	Streaming		
	Output	Video Bitrate	2500 Kbps	¢
	<u> </u>			
	Audio	Audio Bitrate		
	Video		Enable Advanced Encoder Settings	
	Hotkeys	Recording		
	Advanced	Recording Path	C:\Users\User\Videos	
			Generate File Name without Space	
		Recording Quality		
		Recording Format	mkv	
		Custom Muxer Settings		
A			🔟 Enable Replay Buffer	
Controls 🔂				
Start Streaming				
Start Recording				
Studio Mode				
Settings				
Exit			OK Cano	

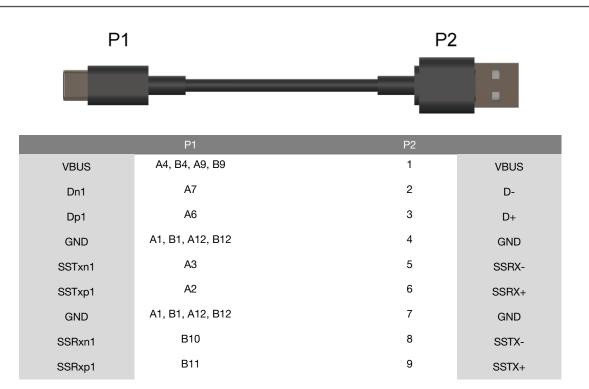
The procedures the manual demonstrates are based on the interface that each website provides at the time when the manual is written. Please note that the above procedures are subject to change due to platform updates.

Troubleshooting

Most of the issues experienced by users are not from the USB capture device itself, but from the sophisticated software and hardware combination of PC or laptop. Please follow the following suggestions if help is required:

- 1. OBS is a popular USB capture freeware and has excellent compatibility. Please download it and start with OBS if users are not familiar with USB capture devices. https://obsproject.com/download
- Due to the complexities of operating systems and computer hardware, different USB ports on the PC or laptop may have different performance or limitations. Please try all USB ports to see if there are any differences.
- 3. Please use the USB cable in the box. We do not guarantee the overall performance when the USB capture box works with some other USB cables.
- 4. HDMI/SDI cable quality may also play an essential role when capturing video. Please be sure that HDMI/SDI cable can do 4K2K@60 HDMI/SDI signal transmission or better. Try different cables when the device is not able to work as expected.
- If audio has noise when using the PotPlayer software, please adjust the audio renderer to WaveOut on the software. The setting path is: PotPlayer→ Audio → Audio Output → Audio Renderer → WaveOut
- If there are problems such as video flipping or wrong direction when using VLC software, please rotate, flip or transpose the video in the VLC software to correct the video. The setting path is:

 $\text{Tool} \rightarrow \text{Effects \& Filters} \rightarrow \text{Video Effects} \rightarrow \text{Geometry} \rightarrow \text{Transform}$



USB Pin Definition



Tech Support

Have technical questions? We may have answered them already!

Please visit BZBGEAR's support page (<u>bzbgear.com/support</u>) for helpful information and tips regarding our products. Here you will find our Knowledge Base (<u>bzbgear.com/knowledge-base</u>) with detailed tutorials, quick start guides, and step-by-step troubleshooting instructions. Or explore our YouTube channel, BZB TV (<u>voutube.com/c/BZBTVchannel</u>), 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:

<u>Phone</u>	<u>Email</u>	Live Chat
1.888.499.9906	support@bzbgear.com	bzbgear.com

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 <u>bzbgear.com/warranty.</u>

For questions, please call 1.888.499.9906 or email support@bzbgear.com.



Mission Statement

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.

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