

# CAP-50CI-4K-PLUS

USB-C 4K120 Video Capture Box with Scaler, HDMI 2.1 loopout, Audio & HcDR10 to SDR Conversion

User Manual



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rev: 230424  
Made in Taiwan

## INTRODUCTION

The **CAP-50CI-4K-PLUS USB-C 4K120 Video Capture Box with Scaler, HDMI 2.1 loopout, Audio & HDR10 to SDR Conversion** provides a professional way to capture HDMI video signals. It adopts USB 3.1 Type-C Gen 1 (USB 3.0) interface, which can realize high-speed transmission. In addition, the HDMI input and loopout can support up to 4K2K 120Hz. Users can connect to 4K2K 120Hz source and capture Ultra HD(4K2K@30) video by this capture device. Besides, CAP-50CI-4K-PLUS can capture and display original uncompressed HDMI video with more realistic color rendition. CAP-50CI-4K-PLUS also uses large volume image buffer technology which effectively avoids the video tearing. The high sampling rate and high sampling accuracy assure images with high sharpness, rich details, and less color edges. Also, with HDR10 to SDR conversion, PS5/Xbox\* players can enjoy 4K2K@120 HDR games on 4K TV and record the real-time 4K2K@30/1080P@120 video streams with SDR quality through USB 3.0 at the same time.



\* PS5 & Xbox Series X also support 1080P120

## PACKAGE CONTENTS

- 1x CAP-50CI-4K-PLUS
- 1x 5V power adapter
- 1x USB 3.0 A to C Cable (host to device)
- 1x User Manual

## FEATURES

- HDMI video and audio streams over USB 3.1 Type-C Gen 1
- Supports UVC1.0/1.1/1.5
- Supports video resolution up to 4K2K@30/1080P@120<sup>1</sup>(Video stream over USB-C)
- HDMI 2.1 compliant
- Supports HDMI input & output up to 4K2K 120Hz 4:4:4/4:2:2/4:2:0
- Supports HDR, which is 4K2K@60 4:2:0 10bits/12bits
- HDCP 2.3 and 1.4 compliant
- Allows any output to view any HDMI source at any time
- Supports deinterlace & scaler<sup>2</sup>
- Supports mic-in mix with HDMI audio
- Supports HDMI audio extraction
- Supports HDR10 to SDR conversion<sup>3</sup>
- Supports playing 4K120 HDR on HDMI out while streaming perfect 4K2K@30/1080P@120 with SDR colors for gameplay capture.
- Volume control knob to adjust the MIC/Headphone volume.
- Auto-detection on video format to ensure plug-play operations
- Recording Video Format: Software Compression
- Works on multiple operating system platforms (Windows 7/8.1/10/11, Mac and Linux OS)
- Compatible with most 3<sup>rd</sup> party software such as OBS Studio and AMCap
- Supports USB 3.1 Gen 1 (RGB/YUY2/NV12/P010)<sup>4</sup> (capture up to 4K2K@30) and USB 2.0 (YUY2/NV12) (capture up to 1080@15)
- Low Latency (3~4ms at 1080P)
- USB-C reversible
- System Requirements (Recommended)
  - Windows® 7(SP1) / Windows 8.1 / Windows 10 / Windows 11
  - PC: Intel® Core™ i5-4440 3.10GHz + NVIDIA® GeForce® GTX 660 or higher
  - Laptop: Intel® Core i7-4810MQ + NVIDIA GeForce GTX 870M or higher
  - 4GB RAM or higher



\*Video quality is apparently related to the capability of computer and software setting.  
\*\*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 to restart software.  
\*\*\*\*Video output format is related to the software limitation. For example, the AMCap software does not support NV12 format.

1. 4K2K@30/1080P@120 ONLY support on NV12 format
2. Scale-up supports up to 1080P@120
3. NOT supports HDR10 plus, HLG, and Dolby Vision to SDR conversion
4. (1) It is recommended to select P010 format to record HDR videos  
(2) P010 format only support scale down

## SPECIFICATIONS

Model Name		CAP-50CI-4K-PLUS
<b>Technical</b>		
Role of usage	Video Capture Device	
Input Video bandwidth	Up to FRL 5 (40G)	
Output bandwidth(USB-C)	Up to 5 Gbps (USB-C)	
Output bandwidth(HDMI)	Up to FRL 5 (40G)	
Video support(USB-C)	Up to 4K2K@30/1080P@120	
Video support(HDMI)	Up to 4K2K 120Hz 4:4:4/4:2:2/4:2:0	
Audio Input	HDMI Embedded Audio & Stereo audio Input	
Audio Support	HDMI output up to 7.1ch, Toslink up to 5.1ch, Stereo audio up to 2ch	
Recording Mode	Software Compression	
Recording Video Format	RGB/YUY2/NV12/P010 (USB3.1 Gen 1), YUY2/NV12 (USB2.0)	
ESD protection	Human body model — ±15kV [air-gap discharge] & ±8kV [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 + 1x TOSLINK	
HDMI connector	Type A [19-pin female]	
USB connector	USB 3.1 Type C (SuperSpeed USB)	
Software compatibility (not complete list)	OBS Studio (Windows, Linux, MAC), AMCap (Windows), Potplayer (Windows), VLC (OS X, Linux), XSplit Broadcaster (Windows), Skype (Windows, OS X), Zoom (Windows), Hangout (Windows), TeamViewer (Windows)	
OS Support	Windows 7 /8.1 /10/11, Mac and Linux OS	
<b>Mechanical</b>		
Housing	Metal enclosure	
Dimensions [L x W x H]	Model	177 x 81 x 22mm [7" x 3.2" x 0.9"]
	Package	198 x 137 x 74mm [7.8" x 5.4" x 2.9"]
	Carton	420 x 400 x 300mm [1'4"x 1'3" x 11.8"]
Weight	Model	165g[5.8 oz]
	Package	445g[1 lbs]
Power supply	Via USB-C	
Power consumption	4.5 Watts [max]	
Operation temperature	0~40°C [32~104°F]	
Storage temperature	-20~60°C [-4~140°F]	
Relative humidity	20~90% RH [no condensation]	

## PANEL DESCRIPTIONS

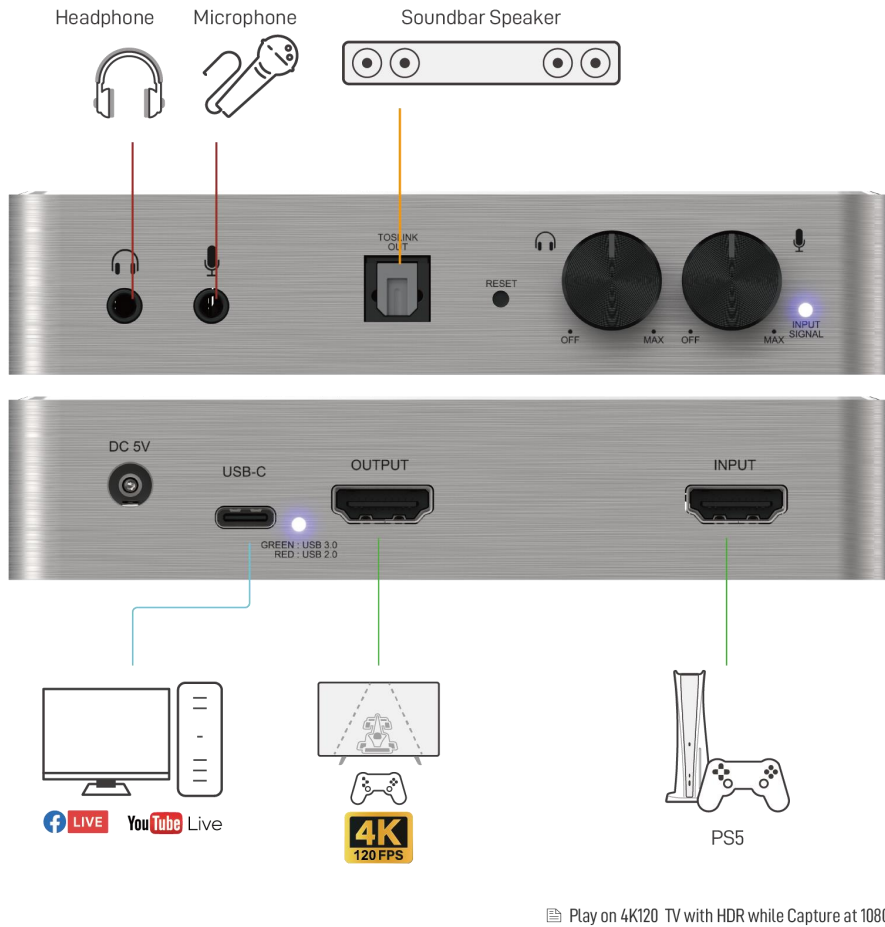


- 1. STEREO AUDIO OUT:** Audio extracts from HDMI input
- 2. STEREO AUDIO IN:** Connect to analog stereo audio source
- 3. S/PDIF OUT:** Audio extracts from HDMI input
- 4. RESET BUTTON:** Reset the device
- 5. STEREO AUDIO OUT VOLUME KNOB:** to adjust the stereo audio out sound level
- 6. STEREO AUDIO IN VOLUME KNOB:** to adjust the stereo audio in sound level
- 7. LED INDICATOR:** Power & input signal indicator LED  
[Blue] Device power on (no input signal)  
[Green] Input detects HDMI signal  
[Red]<sup>1</sup> Input source is HDCP protected
- 8. POWER JACK:** Connect to the +5V DC power supply unit
- 9. USB-C OUT:** Connect to a USB host (PC, NB, MAC...)
- 10. LED INDICATOR:** USB-C indicator LED  
[Red]<sup>2</sup> Connect the device to the USB 2.0 port on the host  
[Green] Connect the device to the USB 3.0 port on the host
- 11. HDMI OUT:** Connect to a HDMI display
- 12. HDMI IN:** Connect to a HDMI source



- When the input source is HDCP protected, LED will become red to indicate the content is legally encrypted and can NOT be captured.
- If you plug the capture device into the USB 3.0 port on the host, but the LED indicator lights up red, it means that the device is working according to the USB 2.0 specification. It could be an issue with the USB cable or USB Port.

## CONNECTION DIAGRAM



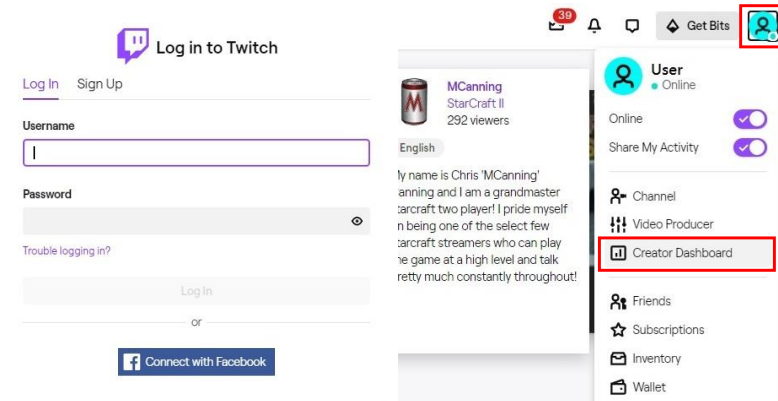
## VIDEO STREAMING

### Create a Video Streaming

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

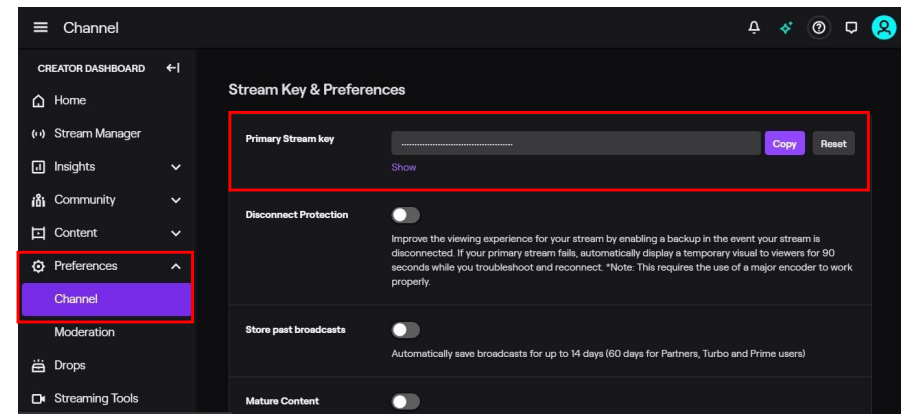
#### Twitch

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

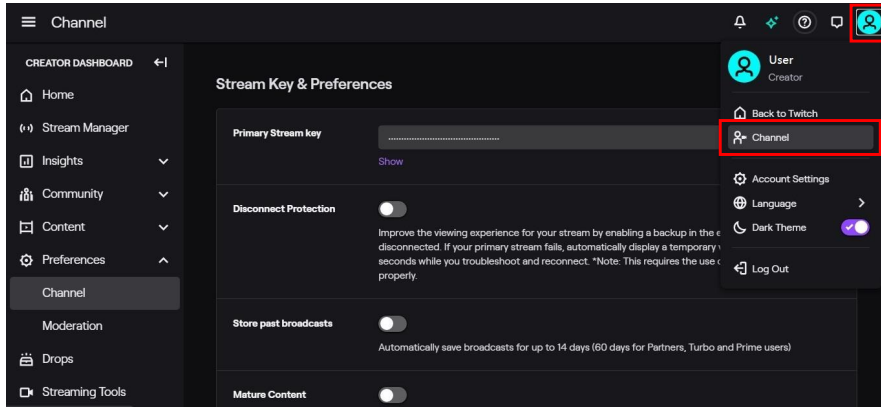


2. Find **"Preferences"** in the left menu, and click **"Channel"**, then you will see **"Primary Steam key"** on the screen. Copy the **"Primary Steam key"** and paste it into the **"Stream Key"** field in the OBS, then click **"Start Streaming"** in the software.

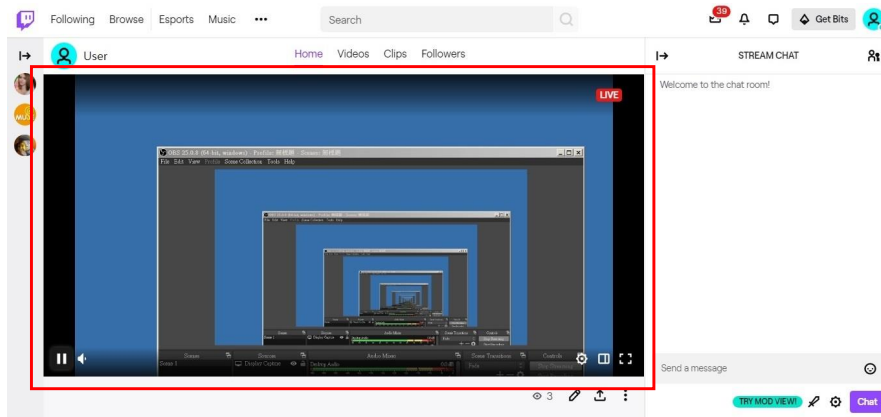
\* Please refer to steps 4-6 of the OBS software control program.



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



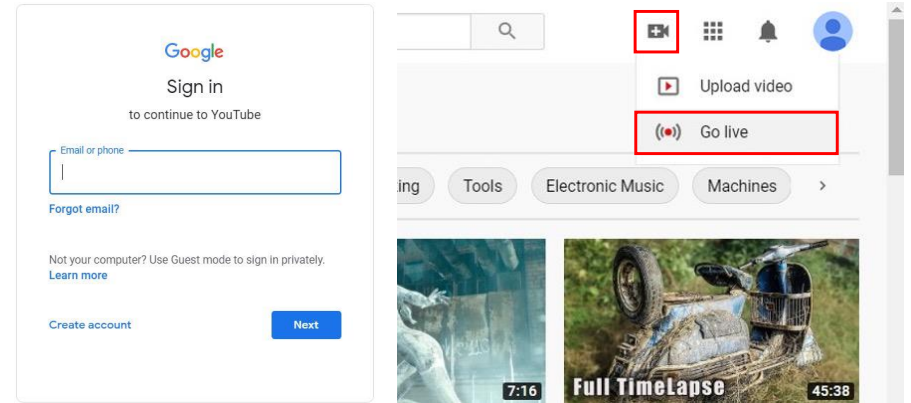
4. At this point, you will see the player start live streaming.



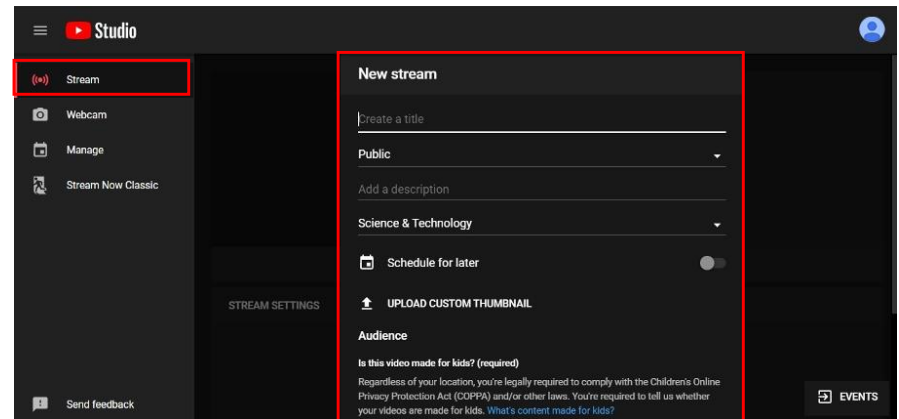
## YouTube

1. Browse the YouTube website (<https://www.youtube.com/>) and log in, then lick **"Go live"** from the **"Create"** icon menu at the top right of the screen.

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

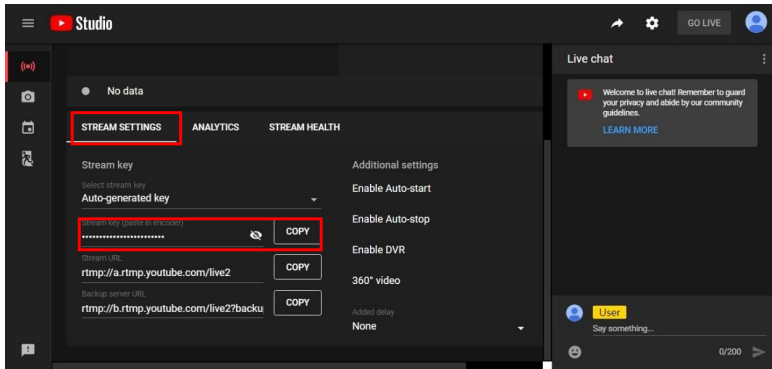


2. Click **"Stream"** in the left menu, and fill in the relevant information of the live video to create a new stream.

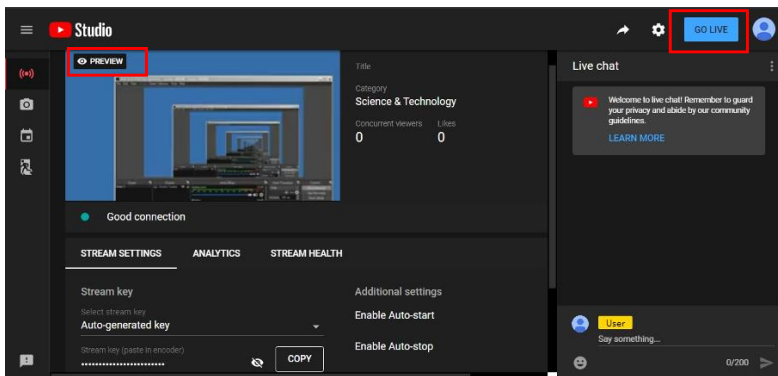


- You will see "Stream key" from the "STREAM SETTINGS" below. Copy the "Stream key" and paste it into the "Stream Key" field in the OBS, then click "Start Streaming" in the software.

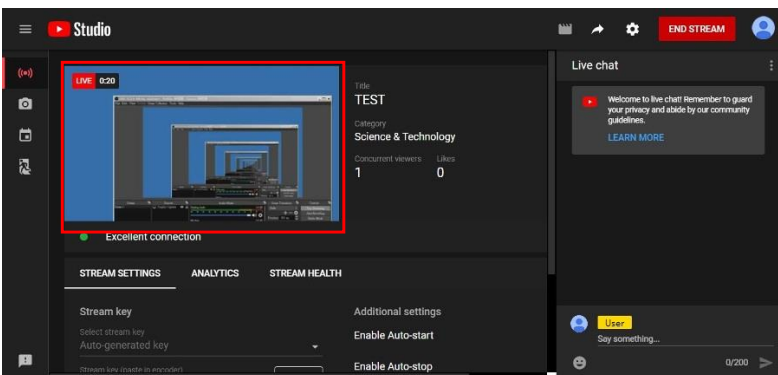
\* Please refer to steps 4-6 of the OBS software control program.



- 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.



- The player on YouTube will start live streaming.



## Stream and record videos with OBS

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

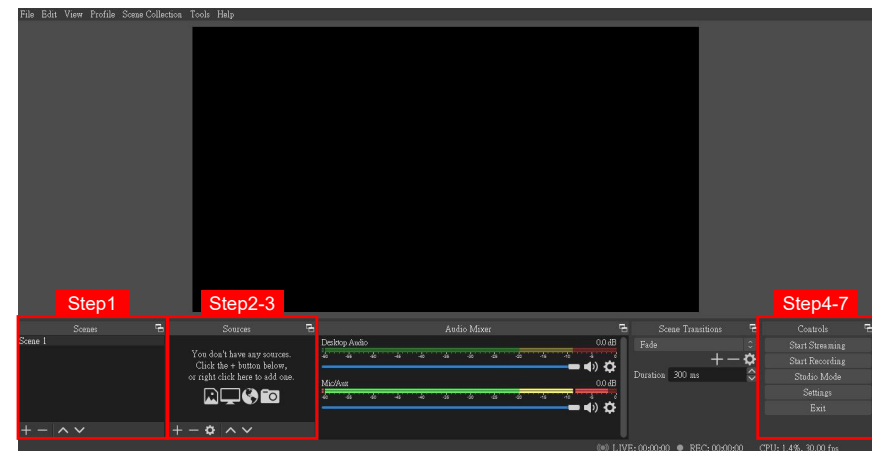
### Download the software

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

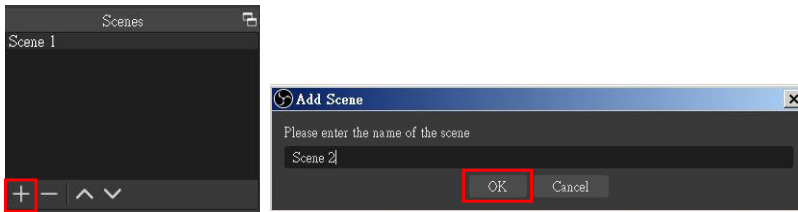


### Start the software control program

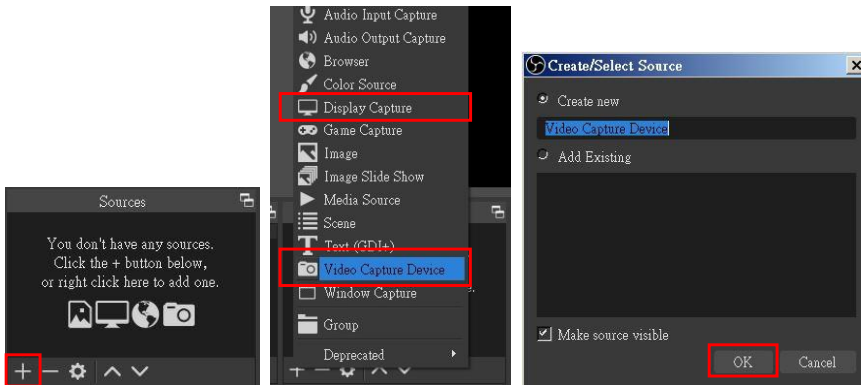
After downloading the software, please open it and follow the below steps to complete the video streaming settings.



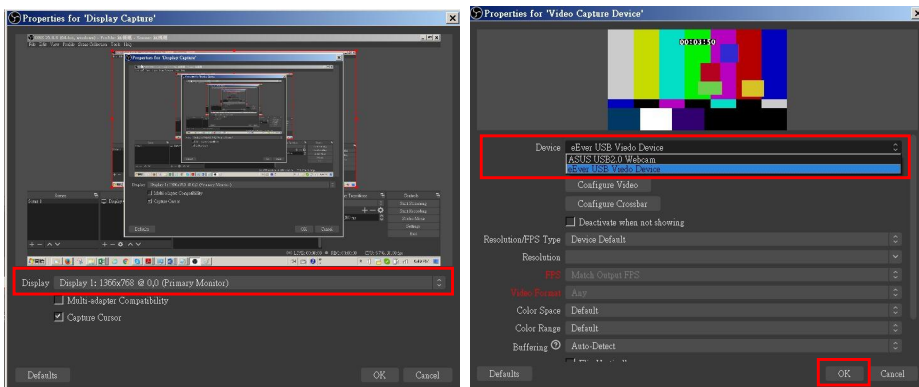
1. First, find the **"Scenes"** window, click **"+"** in the lower left corner, and then enter the name of the scene to create a new scene.



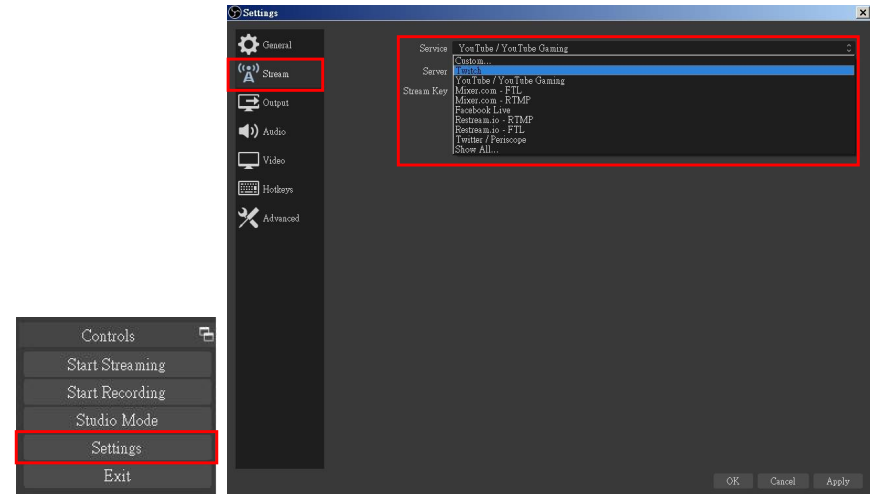
2. Find the **"Source"** window, click **"+"** in the lower left corner, and then select **"Display Capture"** or **"Video Capture Device"** to create a new source.



3. 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 USB video device as the display source. After all settings are completed, click **"OK"**.



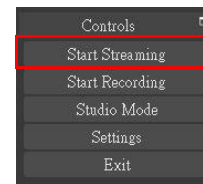
4. Click **"Settings"** and then select **"Stream"** to perform streaming settings. Users can choose service providers, including Twitch, YouTube, etc.



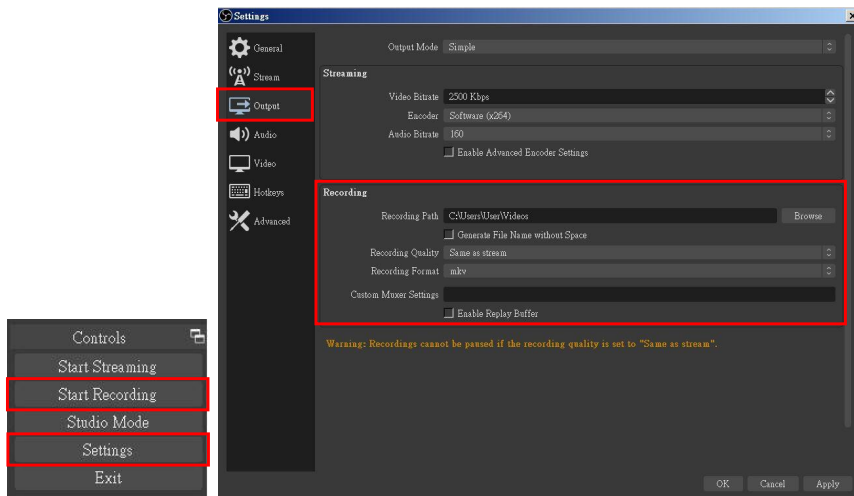
5. Paste the stream key provided by the service provider into the **"Stream Key"** field, then click **"Apply"** and **"OK"** after setting. In addition, users can click **"Get Stream Key"** at this step to open the service provider website.



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"**.



The procedures the manual demonstrates are based on the interface that each website provides at the time when the manual is written. The most recent way to make live streaming happen is supposed to be very likely as the above procedures but subject to change by the website interface update from the social media.

## TROUBLESHOOTING

Our USB device has done comprehensive tests before shipment. Most of the incompatibilities we have experienced 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 to see any helps.

- OBS is popular USB capture freeware and has excellent compatibility. Please download it and start with OBS if users are not familiar with USB capture device.

<https://obsproject.com/download>

- Due to the complexities of OS and computer hardware, different USB ports on PC or laptop may have different performance or limitation. Please try all USB ports to see if there are any differences.
- Please must use the USB cable in box. We do not guarantee the overall performance when the USB capture box works with some other USB cables.
- HDMI cable quality may also play an essential role when capturing. Please be sure of that HDMI cable can do 1080P@60 HDMI 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:

Tool → Effects & Filters → Video Effects → Geometry → Transform



## USB PIN DEFINITION



	P1		P2	
VBUS	A4, B4, A9, B9	↔	1	VBUS
Dn1	A7	↔	2	D-
Dp1	A6	↔	3	D+
GND	A1, B1, A12, B12	↔	4	GND
SSTxn1	A3	↔	5	SSRX-
SSTxp1	A2	↔	6	SSRX+
GND	A1, B1, A12, B12	↔	7	GND
SSRxn1	B10	↔	8	SSTX-
SSRxp1	B11	↔	9	SSTX+

## WARRANTY

The SELLER warrants the **CAP-50CI-4K-PLUS USB-C 4K120 Video Capture Box with Scaler, HDMI 2.1 loopout, Audio & HDR10 to SDR Conversion** to be free from defects in the material and workmanship for 1 year from the date of purchase from the SELLER or an authorized dealer. Should this product fail to be in good working order within 1 year warranty period, The SELLER, at its option, repair or replace the unit, provided that the unit has not been subjected to accident, disaster, abuse or any unauthorized modifications including static discharge and power surges.

Unit that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for 90 days from the day of reshipment to the BUYER. If the unit is delivered by mail, customers agree to insure the unit or assume the risk of loss or damage in transit. Under no circumstances will a unit be accepted without a return authorization number.

The warranty is in lieu of all other warranties expressed or implied, including without limitations, any other implied warranty or fitness or merchantability for any particular purpose, all of which are expressly disclaimed.

Proof of sale may be required in order to claim warranty. Customers outside Taiwan are responsible for shipping charges to and from the SELLER. Cables are limited to a 30 day warranty and cable must be free from any markings, scratches, and neatly coiled.

The content of this manual has been carefully checked and is believed to be accurate. However, The SELLER assumes no responsibility for any inaccuracies that may be contained in this manual. The SELLER will NOT be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. **Also, the technical information contained herein regarding the CAP-50CI-4K-PLUS features and specifications is subject to change without further notice.**