



maxsquare

## MSQ-1050CP

HDMI 2.1 USB-C 10Gbps 4K@144Hz Video Gaming Capture Box



MADE IN TAIWAN

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## 1. Introduction

The MSQ-1050CP HDMI 2.1 USB-C 10Gbps 4K@144Hz Video Gaming Capture Box is a professional HDMI video capture device engineered for high-speed transmission and exceptional video capture performance. Equipped with a USB 3.2 Gen 2 Type-C 10Gbps interface, this device seamlessly connects to high-quality 4K2K@144Hz sources, enabling users to capture Ultra HD (4K2K@60Hz) video with efficiency and precision.

Featuring HDMI input and loopout support at resolutions of up to 4K2K@144Hz, the MSQ-1050CP provides users with a seamless and efficient video capture experience. Its standout features include the ability to capture and display original uncompressed HDMI video, enhancing color rendition for more realistic visuals. Through large volume image buffer technology, video tearing becomes a thing of the past, ensuring smooth and uninterrupted video capture.

The MSQ-1050CP excels in delivering high-quality images with its high sampling rate and accuracy, resulting in sharp and detailed visuals with minimal color edges. Additionally, it offers HDR10 to SDR conversion, enabling gamers to enjoy HDR games at 4K2K@144Hz on compatible 4K TVs. Concurrently, users can record real-time video streams at 4K2K@60Hz/1080P@240Hz or 2560x1440@120Hz with SDR quality via USB 3.2, providing a comprehensive recording solution for gaming enthusiasts.

Experience the future of HDMI video capture with the MSQ-1050CP, where cutting-edge technology meets uncompromising performance, revolutionizing your video capture experience.



\* PlayStation5 and Xbox Series X also support 1080P@120Hz.

## 2. Package Contents

- 1x MSQ-1050CP
- 1x USB 3.2 C to C Cable (host to device)
- 1x User Manual

### 3. Features

- HDMI 2.1 compliant
- HDCP 2.2 and 1.4 compliant
- Supports UVC1.0/1.1/1.5
- Supports video resolution up to 4K2K@60Hz/ 1080P@240Hz/ 2560x1440@120Hz/ 4K2K@30Hz HDR<sup>1</sup> (Video stream over USB-C)
- Supports HDMI input and output up to 4K2K@144Hz<sup>2</sup> (without DSC)
- Supports HDR, 4K2K@120Hz 4:4:4 10bits, 4:2:2 12bits, 4:2:0 10bits/12bits
- Supports playing 4K@120Hz HDR on HDMI out while streaming perfect 4K2K@60Hz, 1080P@240Hz/120Hz, or 2560x1440@120Hz with SDR colors for gameplay capture
- HDMI video and audio streams over USB 3.2 Gen 2 Type-C
- Supports scaler
- Supports mic-in mix with HDMI audio
- Supports HDMI audio extraction
- Supports HDR10 to SDR conversion<sup>3</sup>
- Volume control knob to adjust the MIC/Headphone volume.
- Auto-detection on video format to ensure plug-play operations
- Recording Video Format: Software Compression
- Wide Range of operating systems (Windows 7 / 8.1 / 10 /11, Mac and Linux OS)
- Compatible with Mainstream streaming media softwares and live platforms such as OBS Studio, PotPlayer and Youtube Live
- Supports USB 3.2 Gen 2 (RGB/YUY2/NV12/I420/P010/MJPEG)<sup>4</sup>, Capture up to 4K2K@60Hz
- Supports USB 2.0 (YUY2/NV12/I420/MJPEG), Capture up to 1080@60Hz
- Supports VRR (Variable Refresh Rate)<sup>5</sup>
- Low Latency (5~6 frame at 4K60)
- USB-C reversible
- Allows any output to view any HDMI source at any time
- System Requirements (Recommended)
  - PC or Notebook Basic Interface Requirements: USB 3.2 Gen 2x1 Type C or Type A; HDMI 2.0
  - Windows Operating System: Windows® 10 x64 or above<sup>6</sup>
    - 1) USB must support UVC protocol, meet 4Kp30 protocol requirements; HDMI must support 4Kp60 HDR
    - 2) Intel® Core™ i3-8XXX or above
    - 3) Either NVIDIA® GeForce® GTX 1060 or Radeon™ RX560 or above
    - 4) 16 GB RAM (\*dual-channel)

- Mac Operating System: MacOS High Sierra 10.13 or above
  - 1) USB must support UVC protocol, meet 4Kp30 protocol requirements; HDMI must support 4Kp60 HDR
  - 2) iMac:
    - a) 3.6GHz Quad-Core Intel Core i7
    - b) Radeon Pro 555 (2GB of VRAM)
    - c) 16GB 2400MHz DDR4 Memory
  - 3) MacBook Pro:
    - a) 2.8GHz Quad-Core Intel Core i7
    - b) Radeon Pro 555X (2GB GDDR5 Memory)
    - c) 16GB 2400MHz DDR4 Memory



- \* Video quality may be impacted by the capabilities of your computer and software settings.
- \*\* To avoid compatibility issues and protect your device, we recommend using the USB 3.2 cable that is included in the box.
- \*\*\* Changes to video resolution may require restarting the software for the changes to take effect.
- \*\*\*\* Please note that video output format may be limited by the software being used. For example, the AMCap software does not support the NV12 format.

1. 2560x1440@120Hz ONLY support on NV12/I420/MJPEG format; 4K2K@60Hz ONLY support on NV12/I420/MJPEG format.
2. HDMI display must support FRL 48Gbps to output 4K2K@144Hz.
3. This device does not support the conversion of HDR10 plus, HLG, and Dolby Vision to SDR.
4. We recommend selecting the P010 format when recording HDR videos.
5. To use VRR pass-through, the connected devices must support HDMI 2.1.
6. If the computer's CPU (Multi Core) scores lower than 270 pts (CINEBENCH 2024) or 5000 pts (CINEBENCH R23) or 2600 pts (CPU-Z), it is recommended to add a discrete graphics card (either NVIDIA® GeForce® GTX 1060 or Radeon™ RX560 or above).

## 4. Specifications

### MSQ-1050CP

Technical	
Role of usage	Video Capture Device
Input Video bandwidth	Up to FRL 6 (48G)
Output bandwidth(USB-C)	Up to 10 Gbps (USB-C)
Output bandwidth(HDMI)	Up to FRL 6 (48G)
Video support(USB-C)	Up to 4K2K@60Hz/ 1080P@240Hz/ 2560x1440@120Hz/ 4K2K@30Hz HDR
Video support(HDMI)	Up to 4K2K@144Hz 4:4:4/4:2:2/4:2:0
Audio Input	HDMI Embedded Audio & Mono mic input audio
Audio Support	HDMI output up to 7.1ch, Stereo audio up to 2ch
Recording Mode	Software Compression
Recording Video Format	RGB/YUY2/NV12/I420/P010/ MJPEG (USB3.2 Gen 2) MJPEG/YUY2/NV12/I420 (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
HDMI connector	Type A [19-pin female]
USB connector	USB 3.2 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 10 x64 or above; MacOS High Sierra 10.13 or above; Linux OS
Mechanical	
Housing	Metal enclosure
Power supply	Via USB-C
Power consumption	3 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]

## 5. Panel Description



1. **STEREO AUDIO OUT:** Audio extracts from HDMI input
2. **MONO AUDIO IN:** Connect to microphone
3. **MAC OS:** Press this button when HDMI input connect to Apple product(mac OS)
4. **STEREO AUDIO OUT VOLUME KNOB:** to adjust the stereo audio out sound level
5. **MONO AUDIO IN VOLUME KNOB:** to adjust the mono audio in sound level
6. **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
7. **USB-C OUT:** Connect to a USB host (PC, NB, Mac...)
8. **LED INDICATOR:** USB-C indicator LED  
 [Red]<sup>2</sup> Connect the device to the USB 2.0 port on the host  
 [Blue] Connect the device to the USB 3.1 port on the host  
 [Green] Connect the device to the USB 3.2 port on the host
9. **HDMI LOOPOUT:** Connect to a HDMI display
10. **HDMI IN:** Connect to a HDMI source



1. If the input source is HDCP protected, the LED will turn red, indicating that the content is legally encrypted and cannot be captured.
2. If the LED indicator turns red when you plug the capture device into a USB 3.0 port on the host, it may be working according to the USB 2.0 specification due to an issue with the USB cable or port.

## 6. Connection Diagram



## 7. Video Streaming

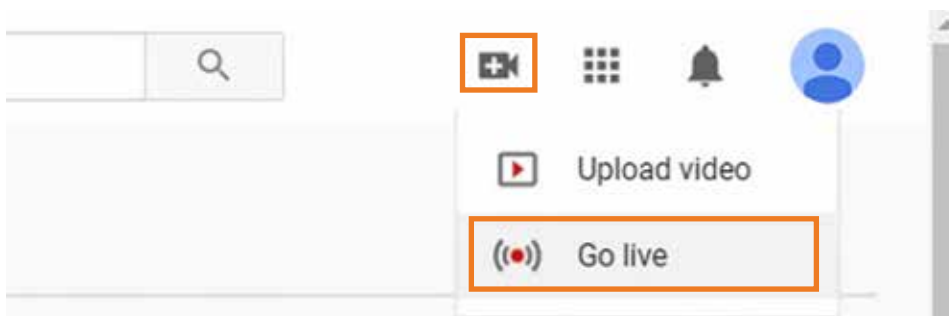
### Creating a Video Stream

Users can easily create video streams on our streaming service platform. The following steps will guide you through the process of configuring your video stream settings for YouTube and Twitch.

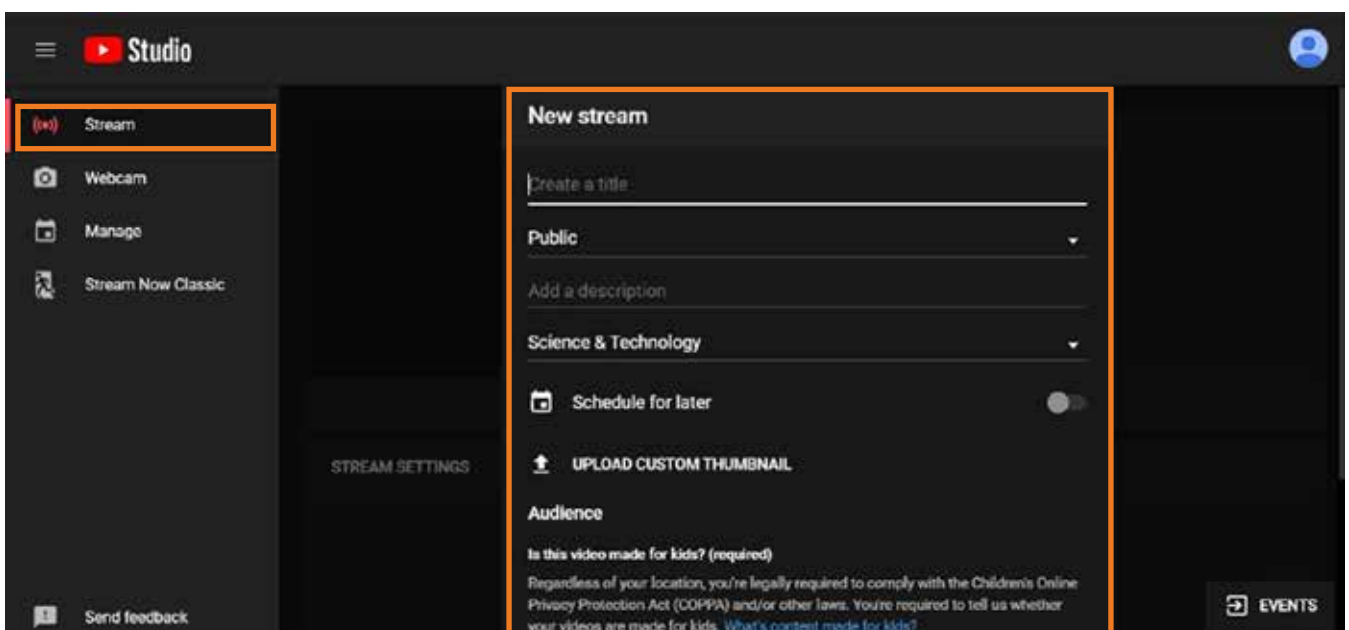
- **YouTube**

1. Go to the YouTube website (<https://www.youtube.com/>) and log in to your account. Click the **“Create”** icon menu at the top right of the screen and select **“Go live.”**

*\*If you're using YouTube for the first time to create a video stream, you may need to wait up to 24 hours for the function to be enabled.*

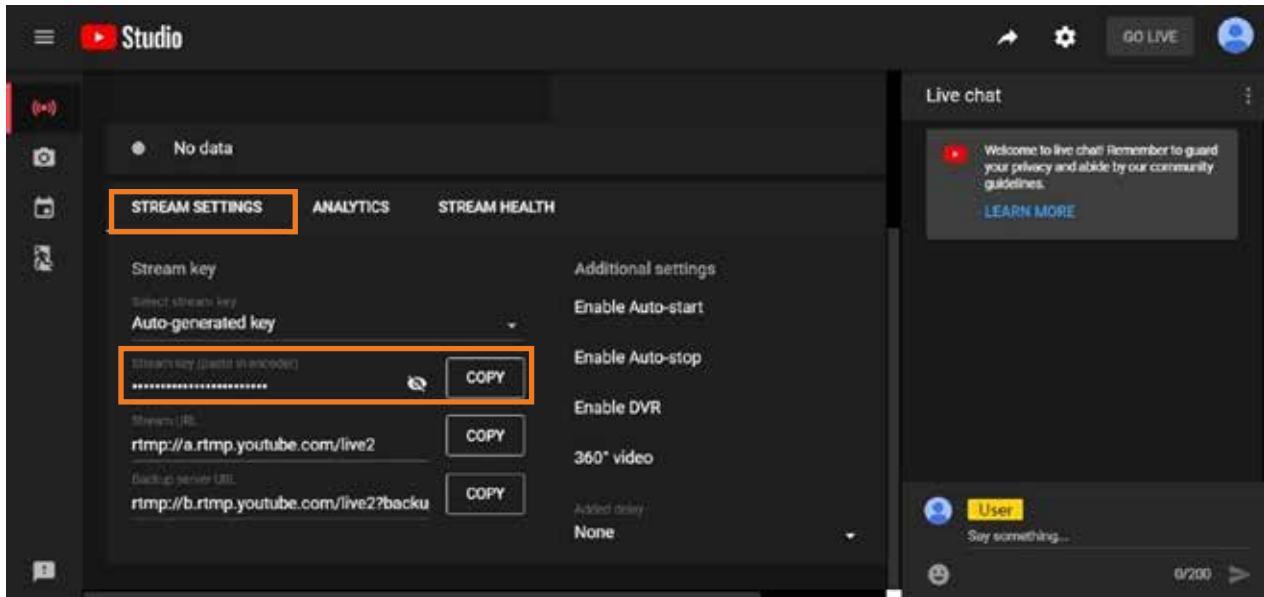


2. In the left menu, click on **“Stream”** and enter the relevant information for the live video to create a new stream.

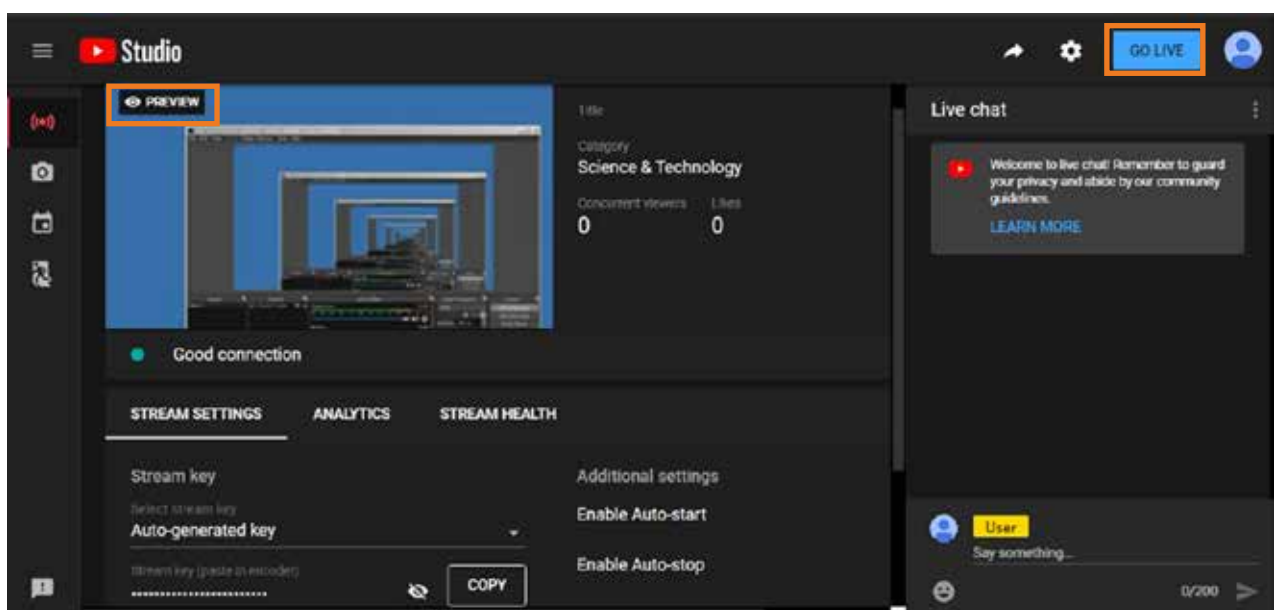


- Under the **"STREAM SETTINGS"** section, you will find the **"Stream key."** Copy the stream key and paste it into the corresponding **"Stream Key"** field in the OBS software. Then, click **"Start Streaming"** in the software.

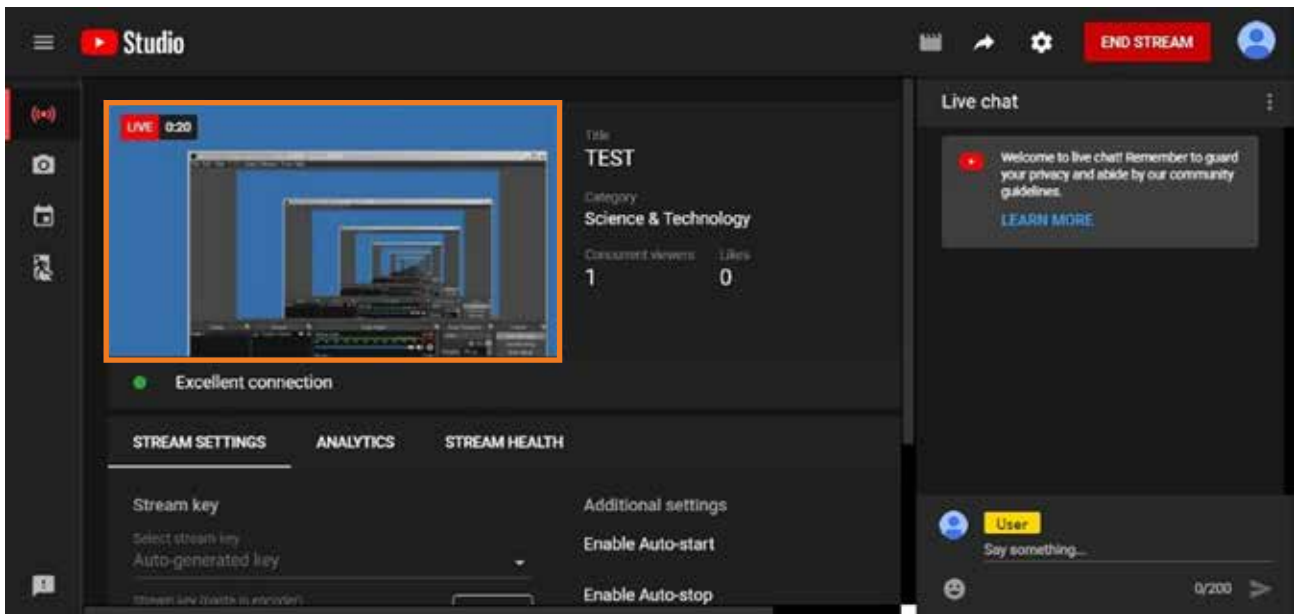
\* For more information, please refer to steps 4-6 in the OBS software control program.



- After pasting the stream key into OBS and clicking **"Start Streaming,"** return to YouTube and wait for 30-60 seconds for the live preview to display on the player. Once the preview is available, the **"GO LIVE"** button at the top right of the screen will turn blue. Click the button to start the stream.

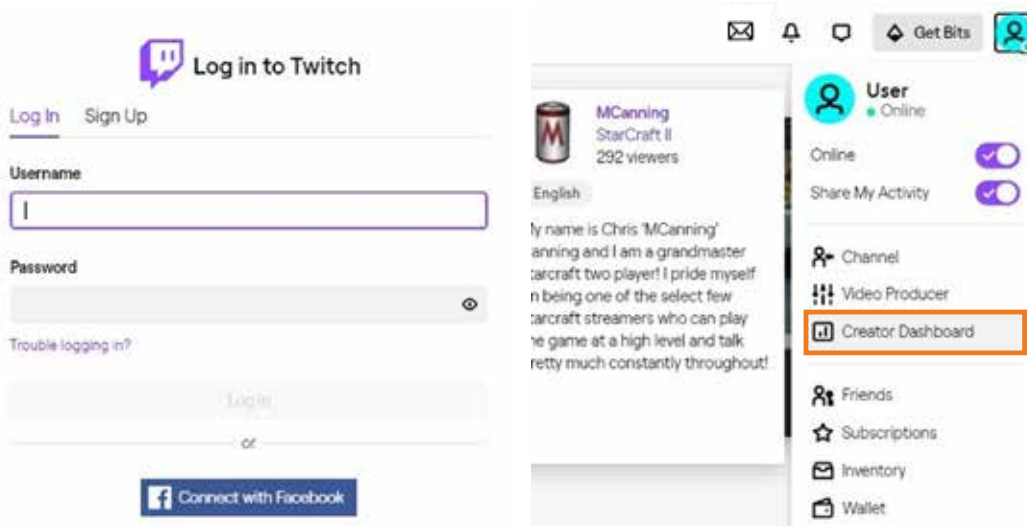


5. The YouTube player will start streaming the live video.



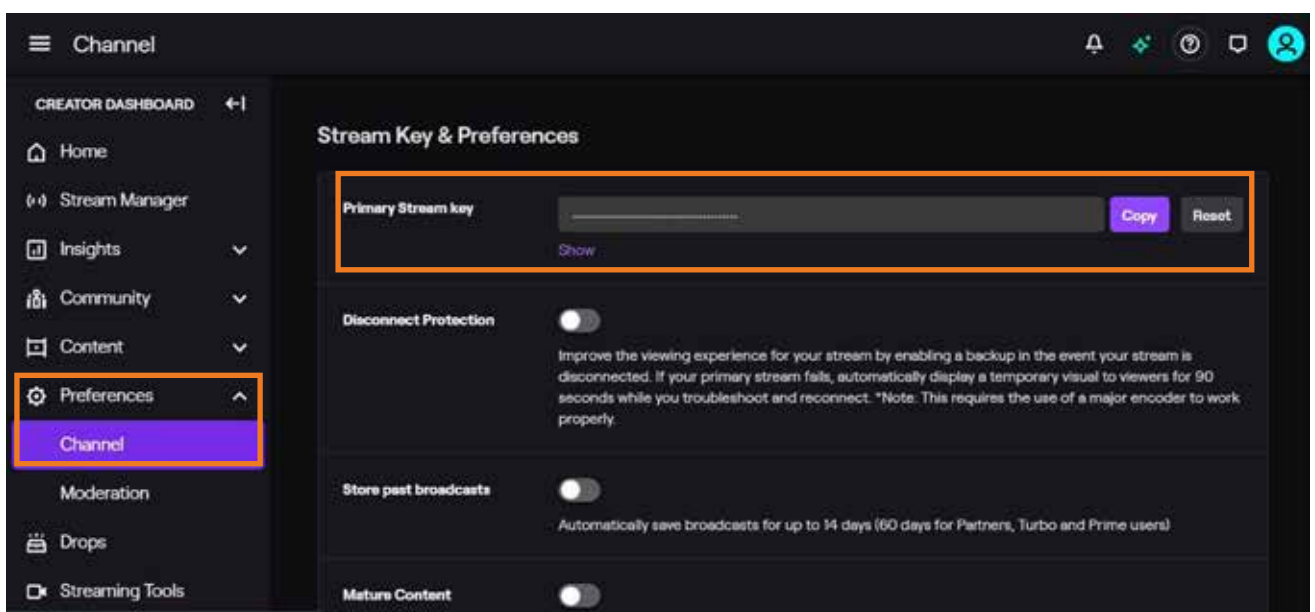
• **Twitch**

1. To begin creating a video stream on Twitch, visit the Twitch website (<https://www.twitch.tv/>) and log in to your account. From the drop-down menu located at the top right of the screen, select **“Creator Dashboard”**.

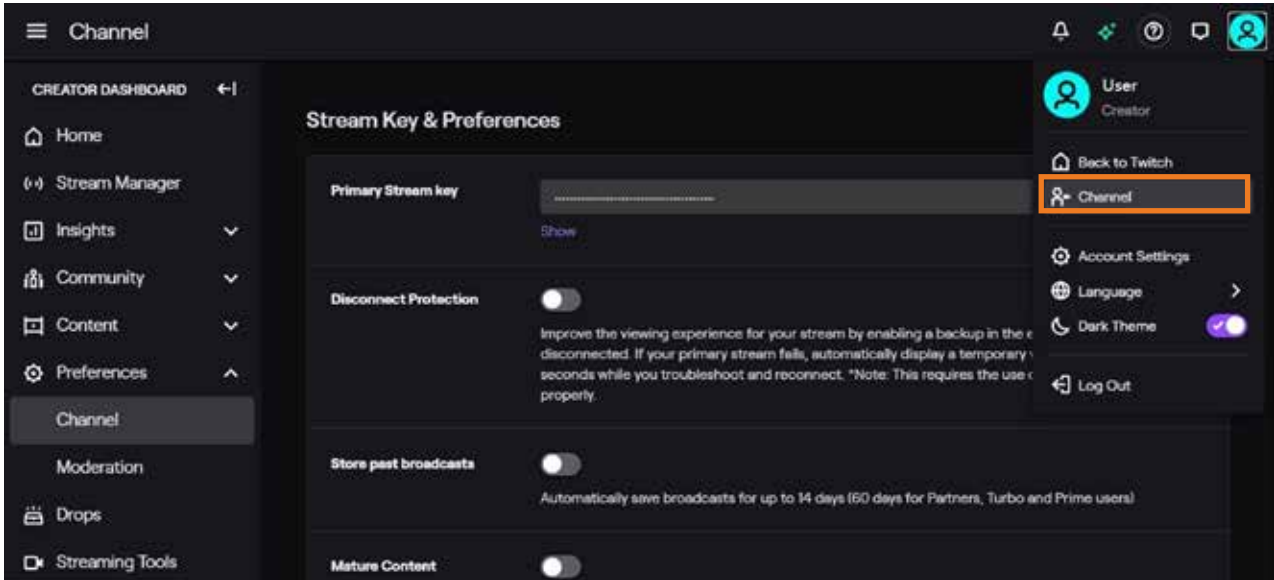


2. In the left-hand menu, click on **“Preferences”** and then **“Channel”** to access the **“Primary Stream key.”** Copy the **“Primary Stream key”** and paste it into the **“Stream Key”** field in OBS. Then, click **“Start Streaming”** in the software. Please refer to steps 4-6 in the OBS software control program.

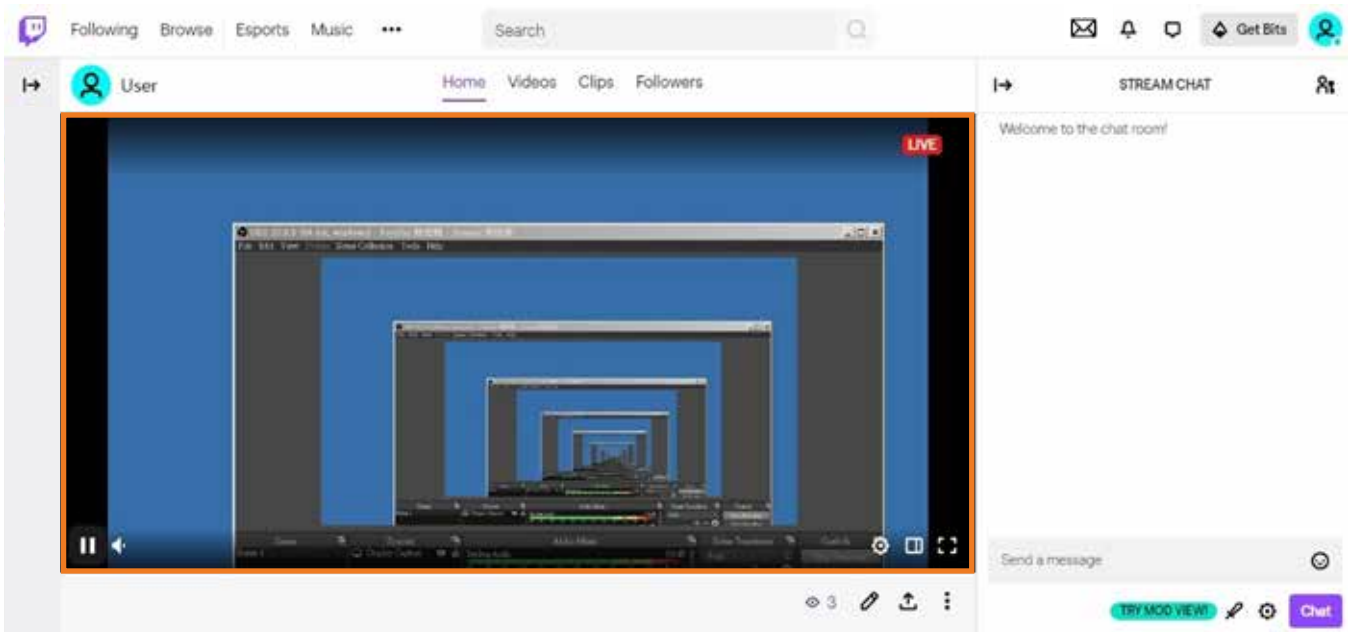
\*Please refer to steps 4-6 of the OBS software control program.



3. Return to Twitch and click on **“Channel”** from the account drop-down menu.



4. You will be able to see the player start live streaming on your Twitch channel at this point.



## How to Stream and Record Videos with OBS

OBS is a popular USB capture freeware that offers excellent compatibility. It's a great option for users who are not familiar with USB capture devices. Here's how to get started.

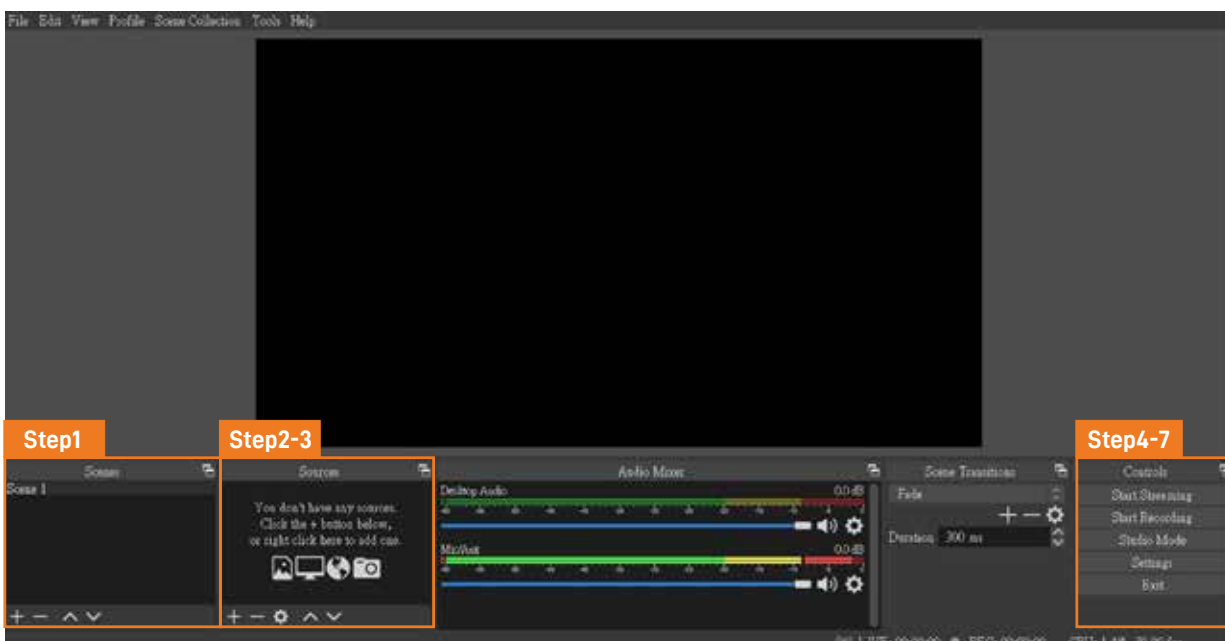
- **Download OBS**

Go to the OBS official website download page(<https://obsproject.com/download>), select the appropriate operating system for your computer, and start downloading.

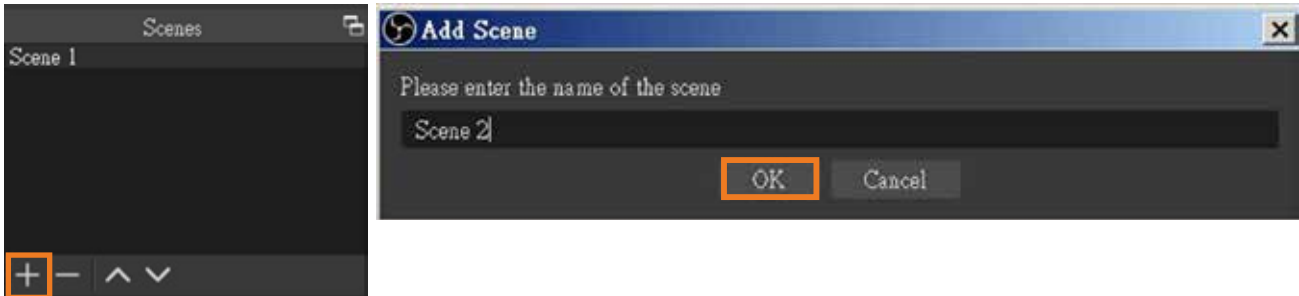


- **Start the software control program**

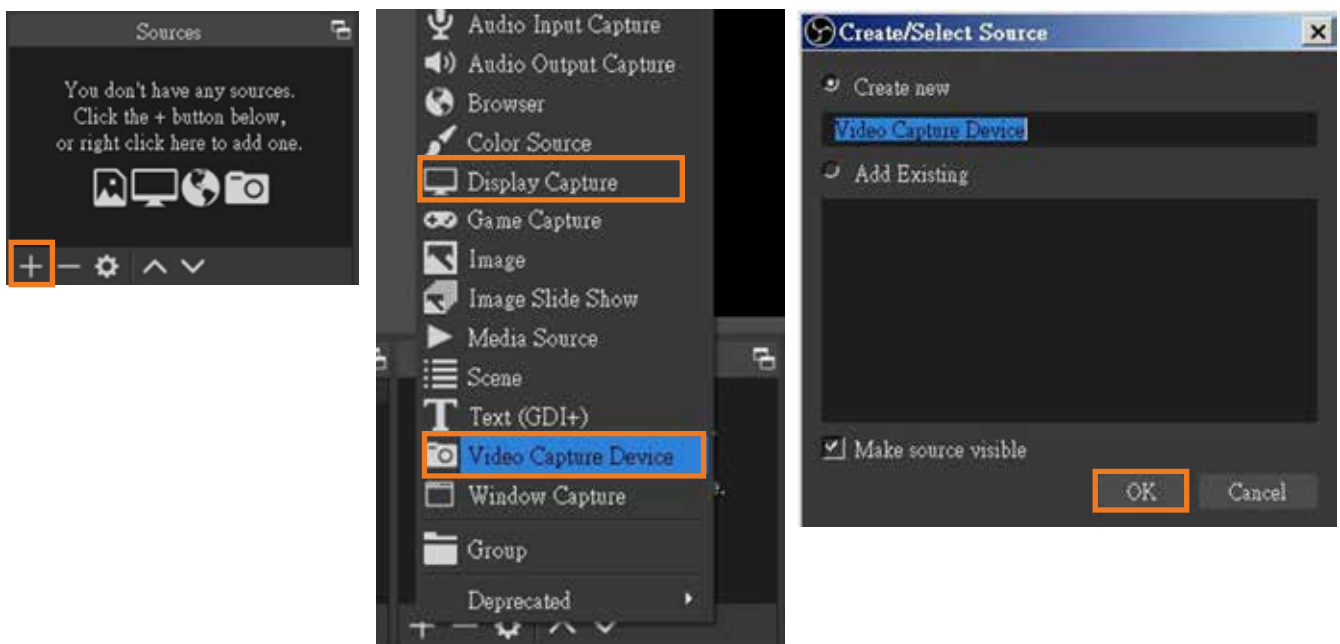
Once you have downloaded OBS, open the software and follow the steps below to complete your video streaming settings.



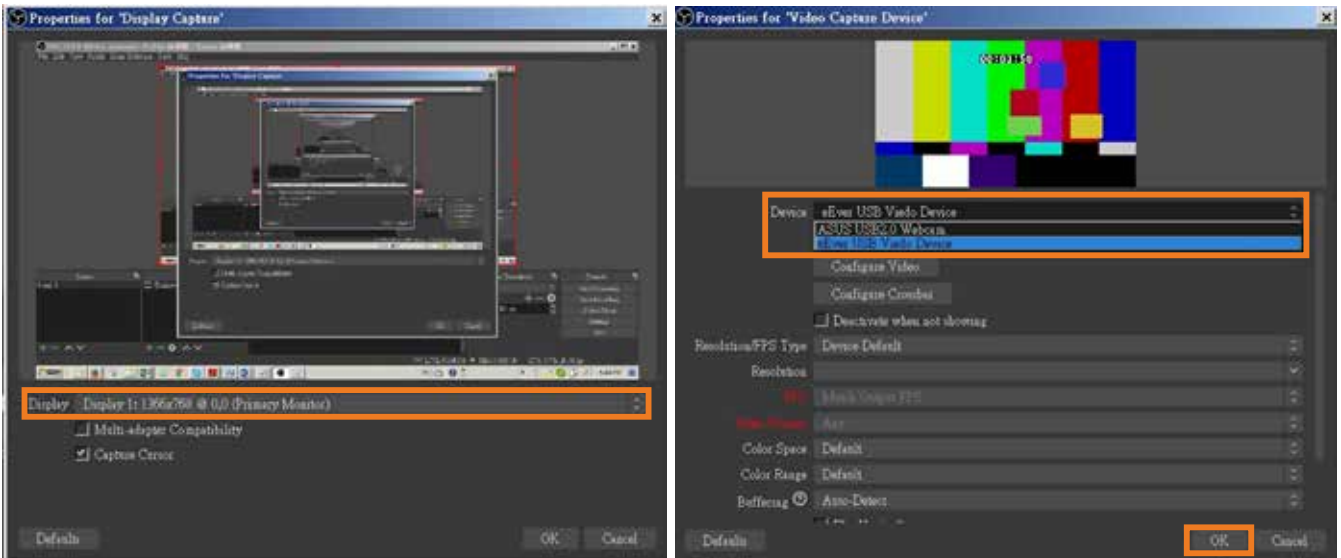
1. To begin, locate the **"Scenes"** window and click on the **"+"** button located in the lower left corner. Enter a name for the scene to create a new one.



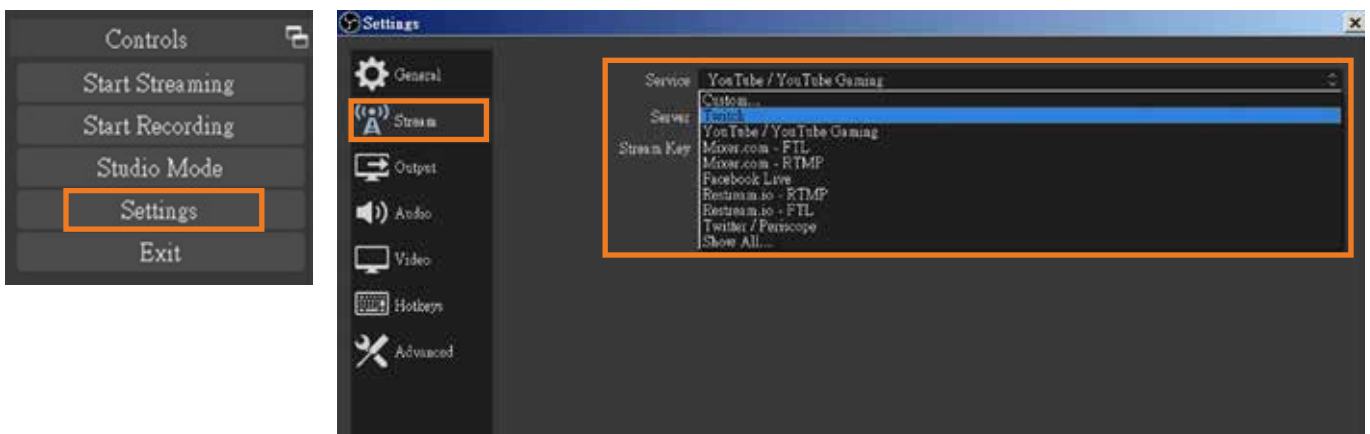
2. Find the **"Sources"** window and click the **"+"** icon located in the lower-left corner. From the drop-down menu, select either **"Display Capture"** or **"Video Capture Device"** to create a new source.



- After selecting either **“Display Capture”** or **“Video Capture Device”** in step 2, you can then proceed to set the properties of your chosen capture source. If you selected **“Display Capture”**, you can choose to capture either your primary or extended monitor as the display source. If you selected **“Video Capture Device”**, you can choose your USB video device as the display source. Once you have finished setting the properties, click **“OK”**.



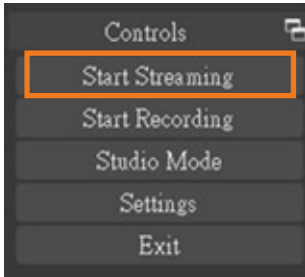
- To perform streaming settings, click on **“Settings”** and then select **“Stream”**. From there, you can choose your preferred service provider such as Twitch or YouTube.



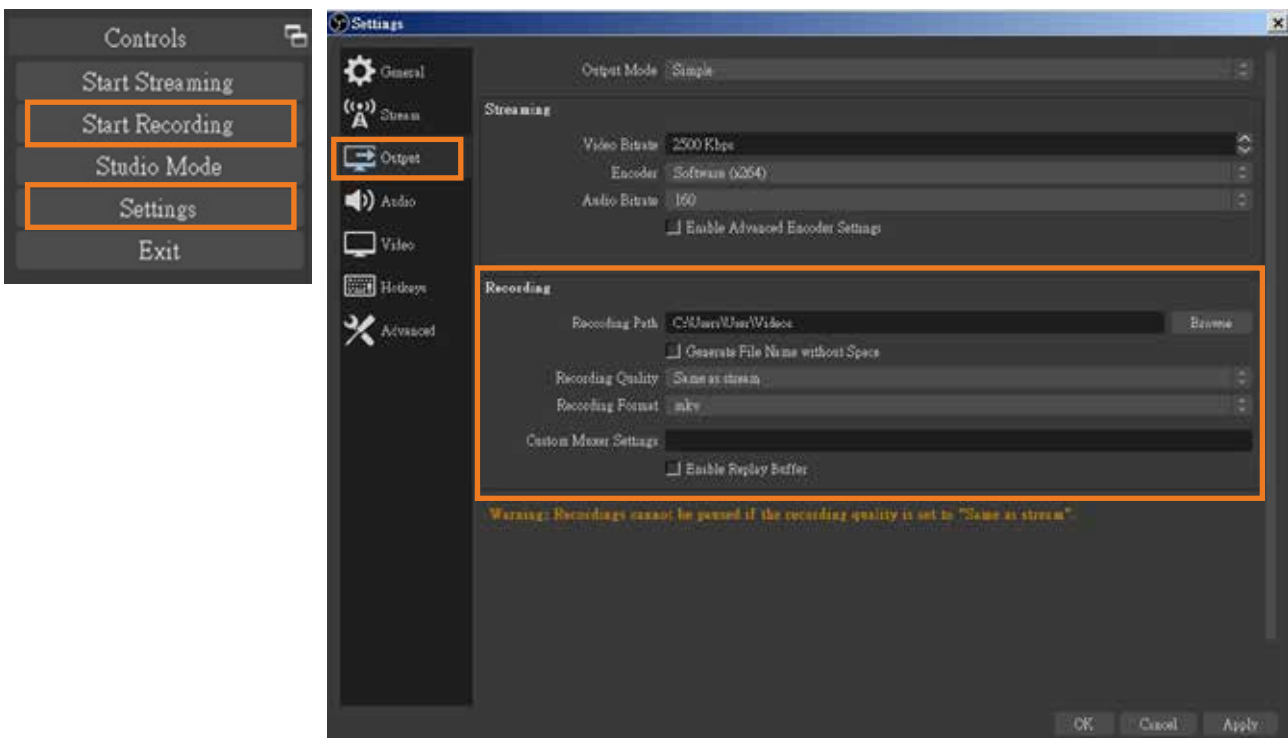
- Paste the stream key provided by the service provider into the **“Stream Key”** field, and then click **“Apply”** and **“OK”** to save the settings. Additionally, users can click on **“Get Stream Key”** to open the service provider’s website.



- Please click **"Start Streaming"**. At this point, the live video will be displayed on the screen after clicking **"Start Streaming"**.



- Additionally, users can also utilize OBS to record videos by clicking on **"Start Recording"**. Moreover, users can set the recording path and format by clicking **"Settings"** and selecting **"Output"**.



Please note that the procedures outlined in this manual are based on the interface that each website provides at the time of writing. While it is very likely that the most recent way to make live streaming happen will follow the above procedures, it is important to note that these procedures are subject to change due to website interface updates from the social media platforms.

## 8. Troubleshooting

We have conducted comprehensive tests on our USB device before shipping it out to ensure its functionality. However, most incompatibilities encountered are not attributed to the USB capture device itself, but rather to the intricate combination of software and hardware on the PC or laptop. We recommend following the suggestions outlined below for troubleshooting assistance.

1. For users who are not familiar with USB capture devices, we recommend downloading and using OBS, a popular and highly compatible USB capture freeware. You can download OBS from their official website at <https://obsproject.com/download>
2. Due to the complexities of different operating systems and computer hardware, not all USB ports on PC or laptop may have the same performance or limitations. If you encounter issues with one USB port, please try another port to see if there are any differences.
3. To ensure optimal performance, it is strongly recommended to use the USB cable provided in the box. The use of other USB cables may result in decreased performance or functionality, and we cannot guarantee the overall performance of the USB capture box when used with alternative cables.
4. HDMI cable quality can also affect the capture performance. Please make sure your HDMI cable can support HDMI 2.1 signal transmission or better. If the device is not working as expected, please try different cables.
5. If you experience audio noise when using the PotPlayer software, we suggest adjusting the audio renderer to WaveOut in the software settings. The setting path is:  
PotPlayer → Audio → Audio Output → Audio Renderer → WaveOut
6. In case of video flipping or incorrect orientation issues when using VLC software, we recommend rotating, flipping, or transposing the video in the VLC software to correct the issue.

The setting path is:

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

## 9. USB Pin Definition



USB TYPE-C PLUG #1			USB TYPE-C PLUG #2	
PIN	SIGNAL NAME		PIN	SIGNAL NAME
A1, B1, A12, B12	GND	↔	A1, B1, A12, B12	GND
A4, B4, A9, B9	VBUS	↔	A4, B4, A9, B9	VBUS
A5	CC	↔	A5	CC
B5	VCONN	↔	B5	VCONN
A6	Dp1	↔	A6	Dp1
A7	Dn1	↔	A7	Dn1
A2	TXp1	↔	B11	RXp1
A3	TXn1	↔	B10	RXn1
B11	RXp1	↔	A2	TXp1
B10	RXn1	↔	A3	TXn1
B2	TXp2	↔	A11	RXp2
B3	TXn2	↔	A10	RXn2
A11	RXp2	↔	B2	TXp2
A10	RXn2	↔	B3	TXn2
A8	SBU1	↔	B8	SBU2
B8	SBU2	↔	A8	SBU1

## 10. Warranty

Maxsquare warrants the MSQ-1050CP HDMI 2.1 USB-C 10Gbps 4K@144Hz Video Gaming Capture Box for one year from the date of purchase from Maxsquare or an authorized dealer from defects in material and workmanship. If this product fails to function properly within the first year of its warranty, Maxsquare may repair or replace it at its discretion, provided that the device has not been subjected to accident, disaster, abuse, or other unauthorized modifications, including static discharge and power surge. Maxsquare provides this warranty to its BUYER solely in the case of a direct transaction. This warranty is void if the warranty seal on the metal housing is broken.

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. These repairs are warranted by a 90-day warranty from the date of reshipment to the buyer. Customers agree to ensure the unit or incur the risk of loss or damage in transit if the unit is delivered by mail. A unit will not be accepted if it does not have 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 purchase may be required to claim the warranty. Customers outside of Taiwan must pay for shipping to and from Maxsquare. Cables and power adapters have a 30-day warranty and must be free of any markings or scratches, as well as neatly coiled.

This manual's material has been carefully reviewed and is believed to be accurate. Maxsquare, on the other hand, takes no responsibility for any inaccuracies or omissions in this manual. Even if advised of the possibility of such losses, Maxsquare will not be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual. Furthermore, the technical information contained in documents on the MSQ-1050CP's features and specifications is subject to change without further notice.