



maxsquare

## MSQ-1200CP

3G-SDI Capture Box over USB 3.1 with SDI Loopout



MADE IN TAIWAN

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## 1. Introduction

The MSQ-1200CP 3G-SDI Capture Box over USB 3.1 with SDI Loopout is a professional solution to capture 3G/HD/SD-SDI signals. It adopts USB 3.1 Gen 1 (USB 3.0) interface, enabling high-speed transmission. By using this capture box, users can record 3G/HD/SD-SDI signals. Additionally, the MSQ-1200CP can record and display 3G/HD/SD-SDI in its original, uncompressed form with more accurate color reproduction.

MSQ-1200CP also uses large volume image buffer technology to effectively prevent the video tearing. The high sampling rate and high sampling accuracy ensure that images have high sharpness, rich details, and less color edges.

## 2. Features

- Supports SDI output resolution scaler with audio embedding
- SDI video and audio streams over USB 3.1 Gen 1
- Supports UVC1.0
- Supports USB 3.1 (MJPEG/YUY2) and USB 2.0 (MJPEG)
- Supports SDI loop through
- Input and output resolution up to 1080P@60Hz
- Auto-detection on video format to ensure plug-play operations
- Recording Video Format: H.264 (Software Compression)
- Low Latency
- Works on Windows 7/8.1/10, Mac and Linux OS
- Compatible with most 3rd party software such as OBS Studio and AMCap
- System Requirements (Recommended)
  - Windows® 7(SP1) / Windows 8.1 / Windows 10
  - 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

1. Video quality is apparently related to the capability of computer and software setting.
2. Please use the included USB 3.0 cable in the box to protect the device and avoid further compatible issues.

## 3. Package Contents

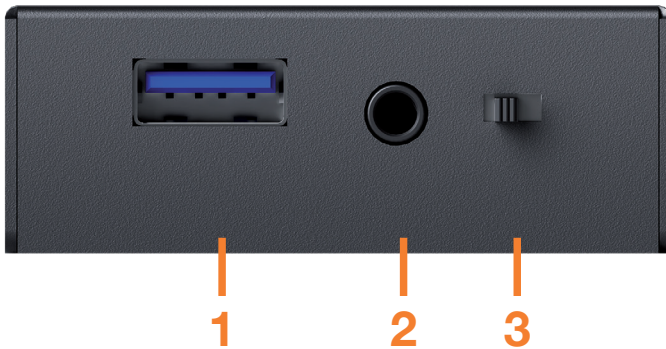
- 1x MSQ-1200CP
- 1x USB 3.0 A to A Cable (host to device)
- 1x User Manual

## 4. Specifications

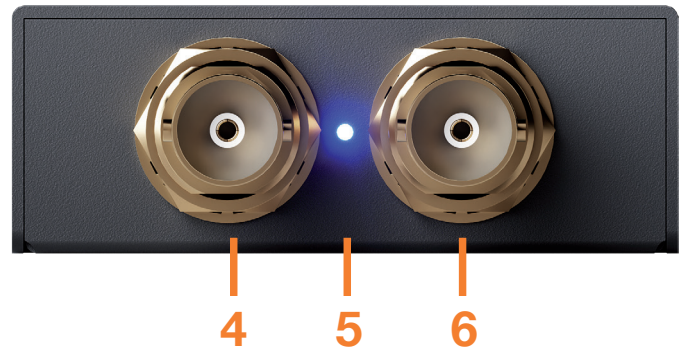
Technical	
Role of usage	Video Capture Device
Input Video bandwidth	2.970 Gbit/s, 2.970/1.001 Gbit/s
Output Video bandwidth	Up to 350MBps (USB)
Video support	Up to 1080p60
Audio Input	SDI Embedded Audio & Stereo audio Input
Audio Format	2 Channel, 44.1 and 48KHz sample rate, up to 16bit PCM
Recording Mode	Software Compression
Recording Video Format	YUY2 (USB3.1 Gen 1), MJPG (USB2.0/3.1 Gen 1)
ESD protection	Human body model — $\pm 15\text{kV}$ [air-gap discharge] & $\pm 8\text{kV}$ [contact discharge]
PCB stack-up	6-layer board [impedance control — differential 100 $\Omega$ ; single 50 $\Omega$ ]
Firmware update	Feasible via USB Port
Input	1x SDI + 1x 3.5mm
Output	1x USB + 1x SDI (Loopout)
BNC connector	3G 75 $\Omega$ inter-locked socket
USB connector	USB 3.1 Type A (SuperSpeed USB)
Software compatibility (not complete list)	OBS Studio (Windows, Linux), AMCap (Windows), Potplayer (Windows), Skype (Windows, OS X), Hangout (Windows), TeamViewer (Windows)
OS Support	Windows 7 /8.1 /10, Mac and Linux OS
Mechanical	
Housing	Metal enclosure
Power supply	Via USB
Power consumption	4 Watt [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

### Front Panel



### Rear Panel



1. **USB OUT:** Connect to a USB host (PC, NB, MAC...)
2. **STEREO AUDIO IN:** Connect to analog stereo audio source
3. **AUDIO SWITCH:** [left] Audio from stereo audio in, [right] Audio from SDI
4. **SDI IN:** Connect to a 3G/HD/SD-SDI source
5. **LED INDICATOR:** Input signal indicator LED
6. **SDI LOOPOUT:** Connect to a 3G/HD/SD-SDI display

## 6. Connection Diagram



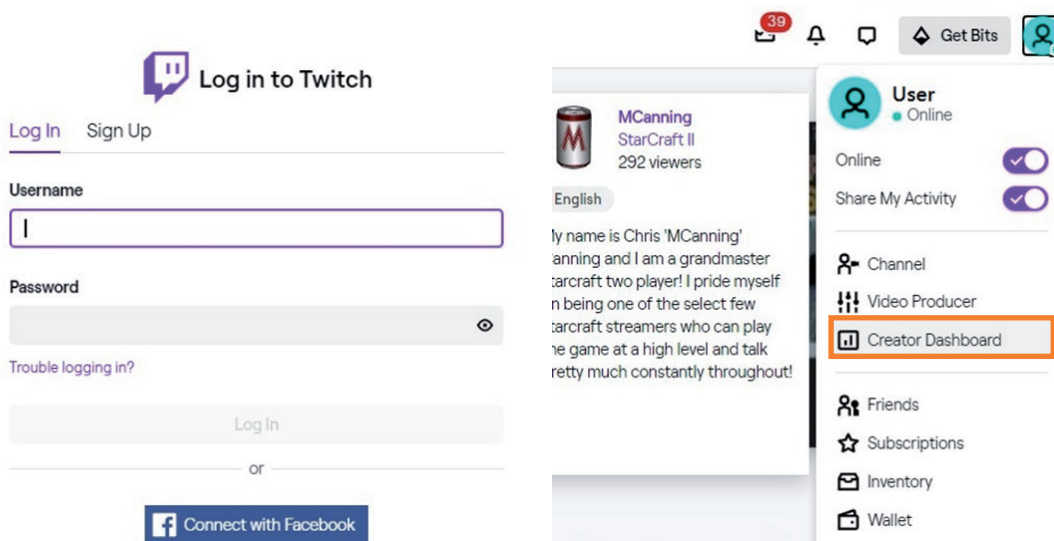
## 7. Video Streaming

### 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.

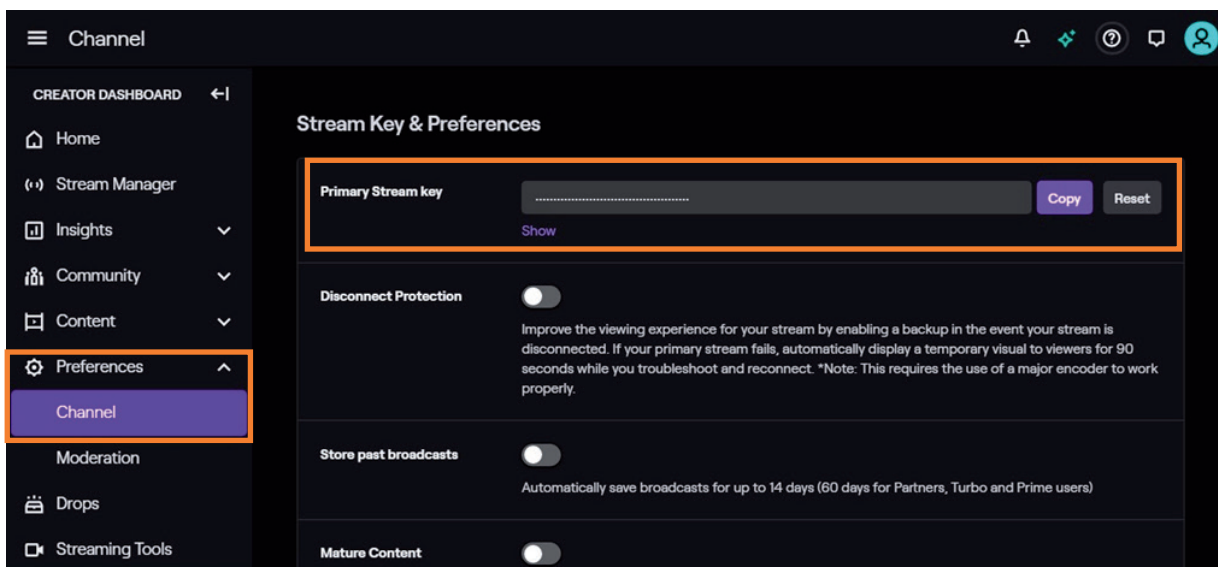
- **Twitch**

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.

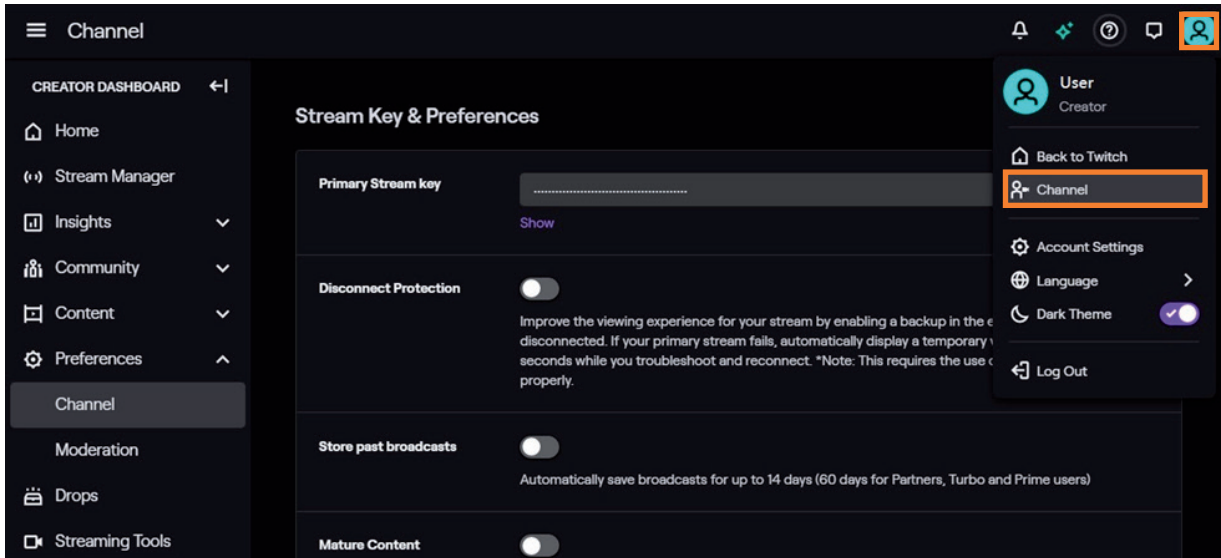


2. Find **“Preferences”** in the left menu, and click **“Channel”**, then you will see **“Primary Steam key”** on the screen. Copy the **“Primary Steam key”** and paste it into the **“Stream Key”** field in the OBS, then click **“Start Streaming”** in the software.

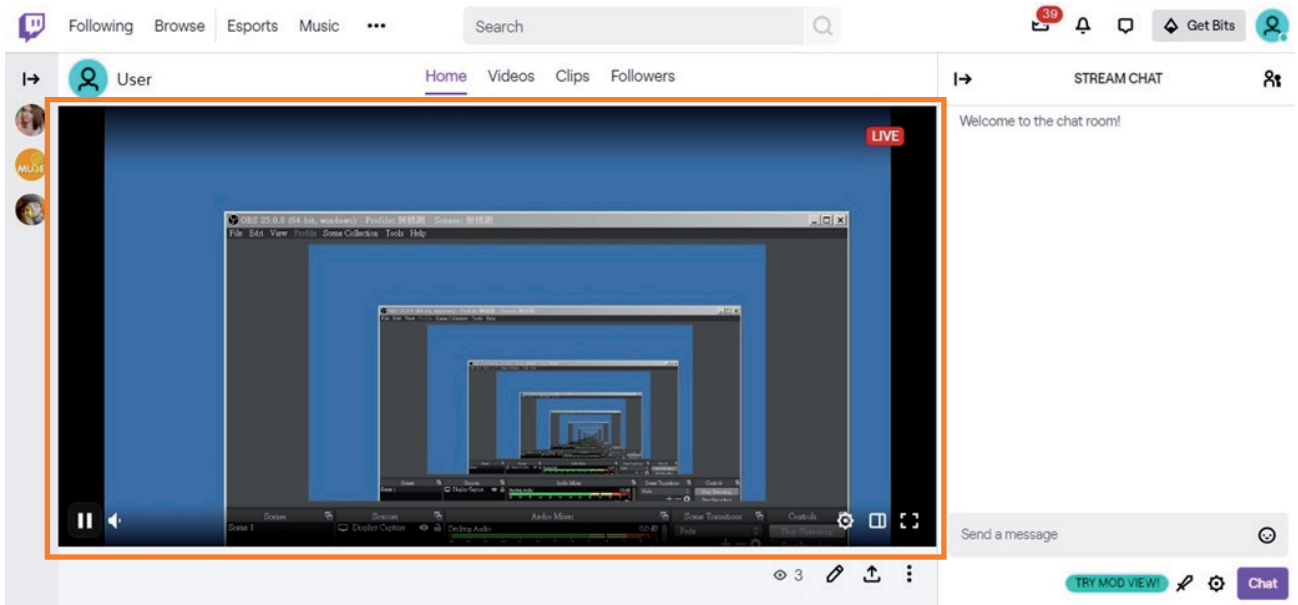
\*Please refer to steps 4-6 of the OBS software control program.



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



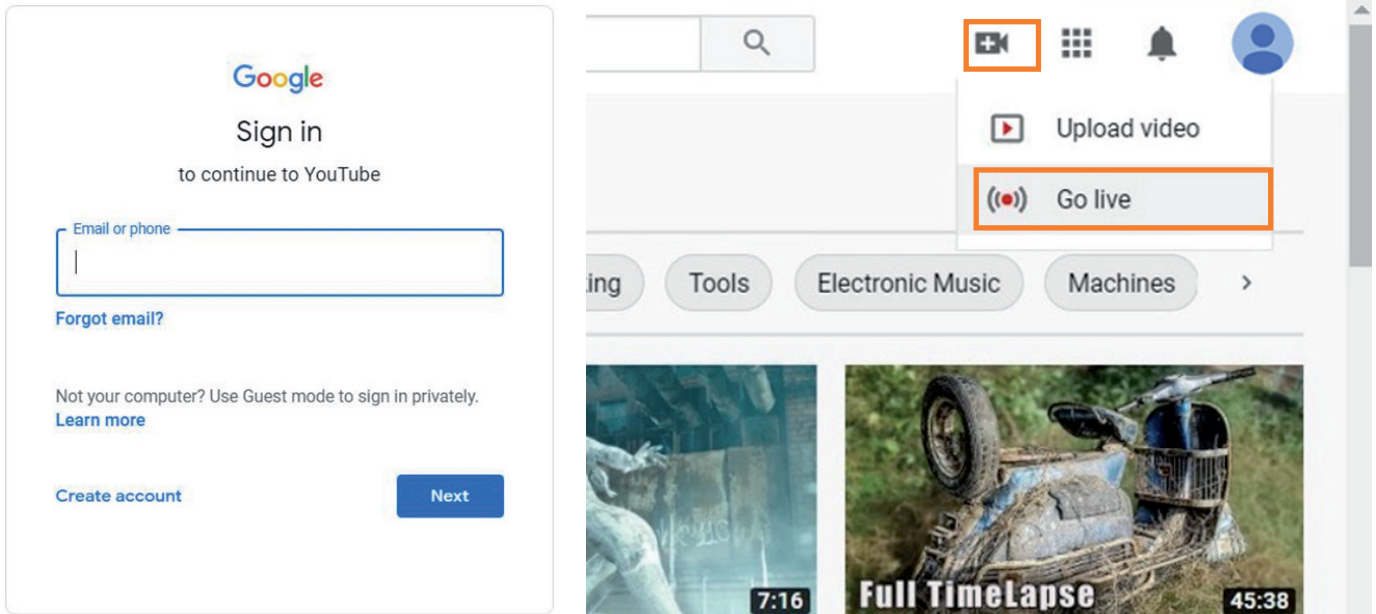
4. At this point, you will see the player start live streaming.



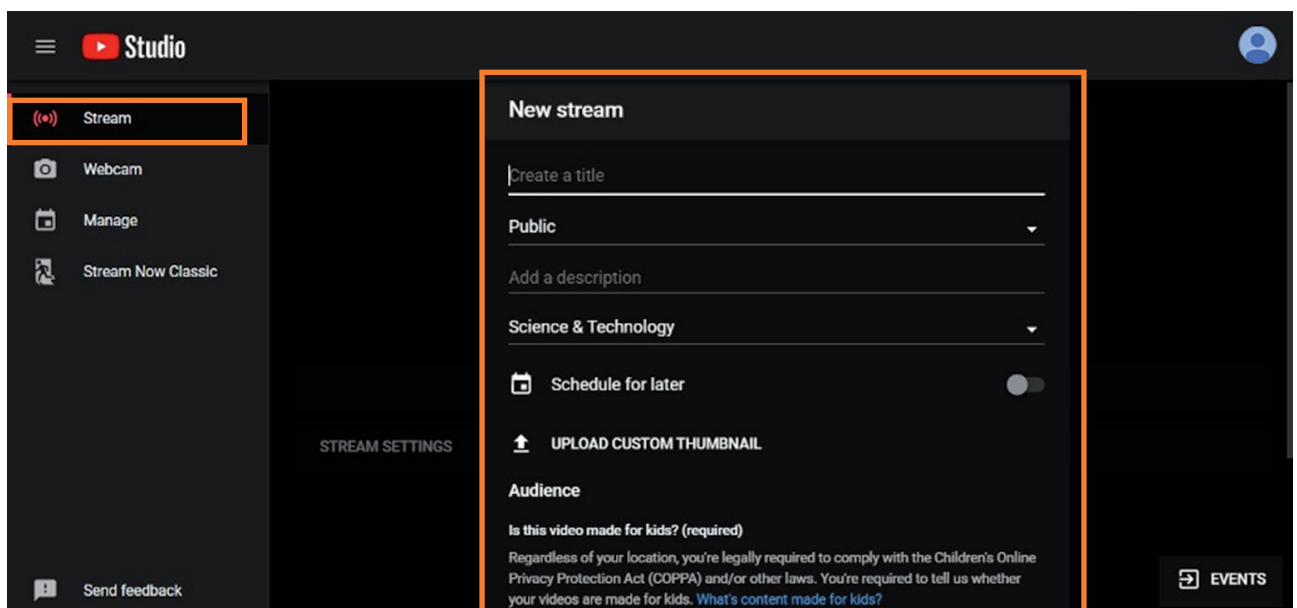
• **YouTube**

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.

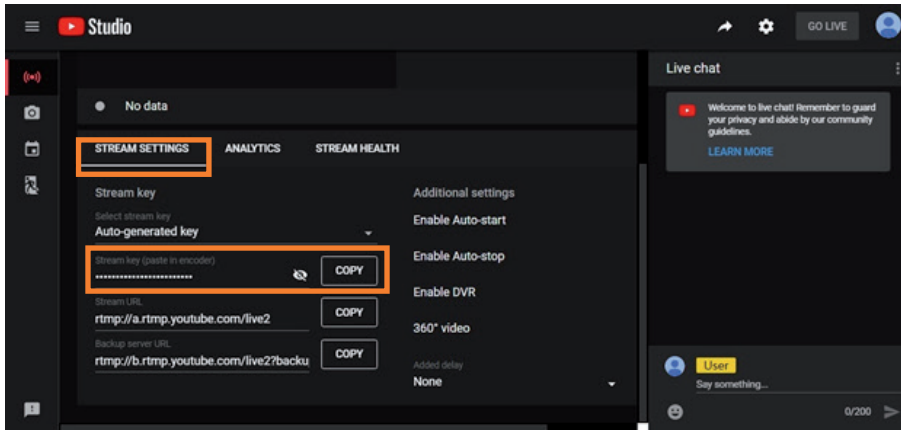


2. Click **“Stream”** in the left menu, and fill in the relevant information of the live video to create a new stream.

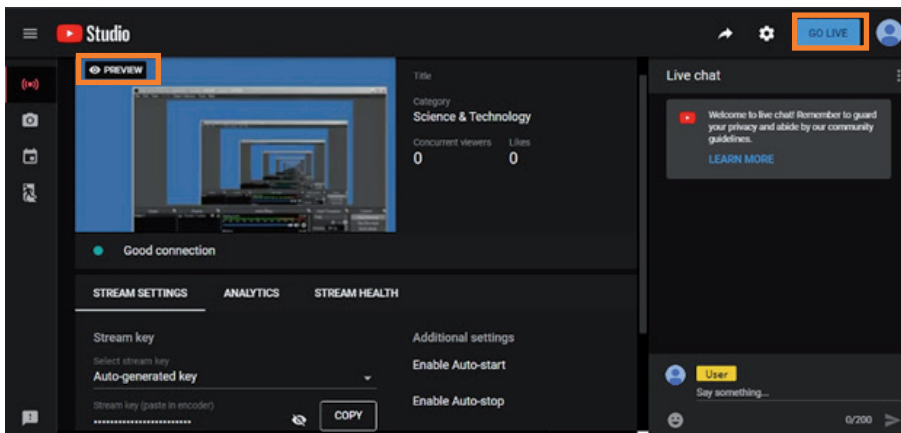


- You will see **"Stream key"** from the **"STREAM SETTINGS"** below. Copy the **"Stream key"** and paste it into the **"Stream Key"** field in the OBS, then click **"Start Streaming"** in the software.

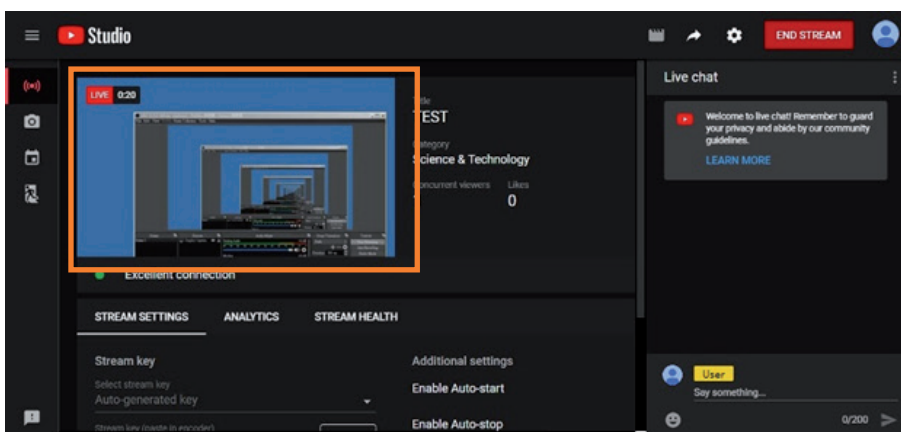
\*Please refer to steps 4-6 of the OBS software control program.



- 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.

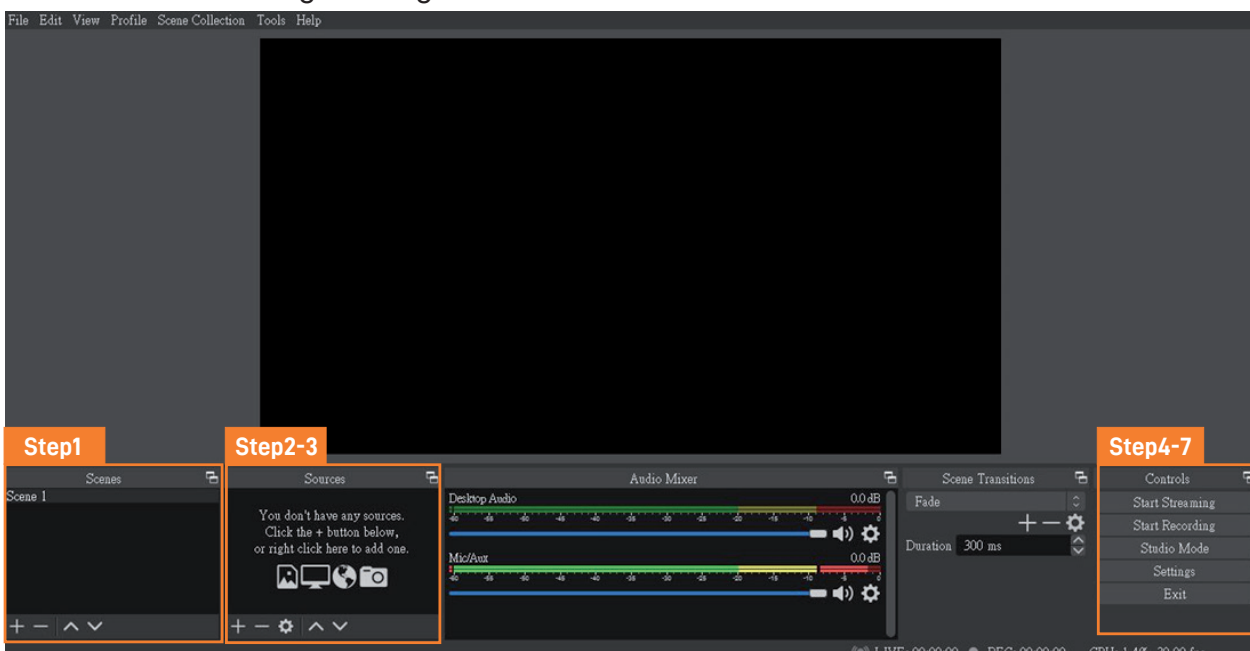
- **Download the software**

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

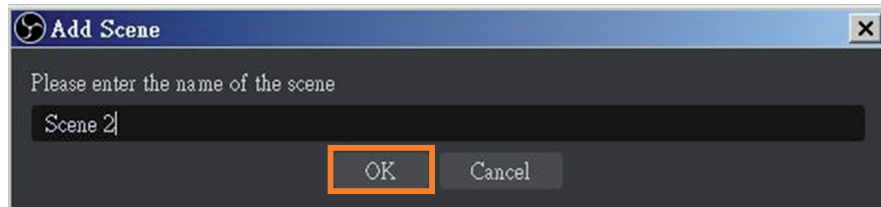
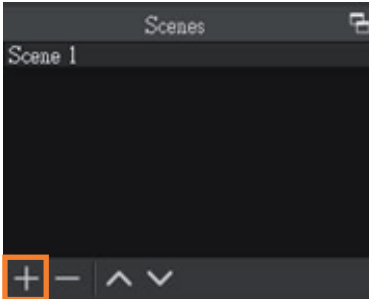


- **Start the software control program**

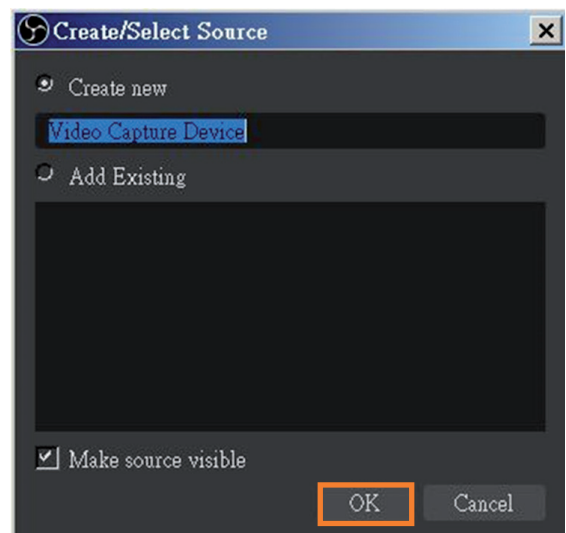
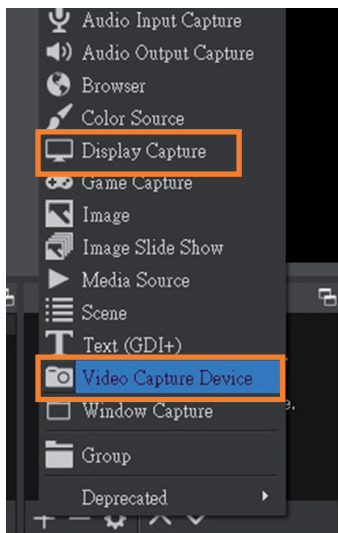
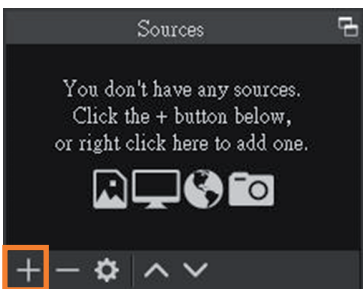
After downloading the software, please open it and follow the below steps to complete the video streaming settings.



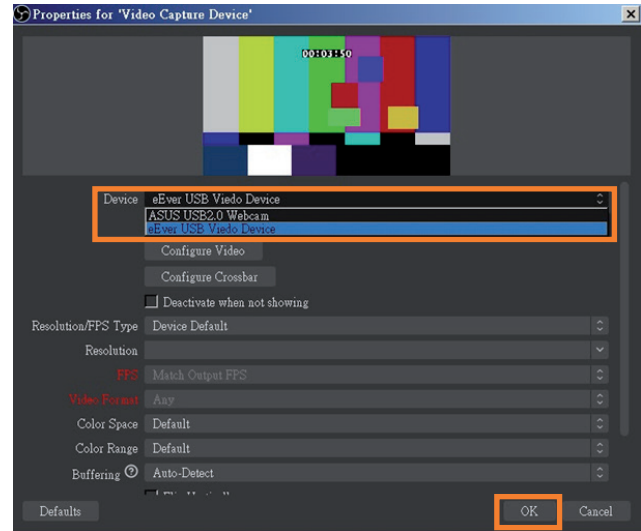
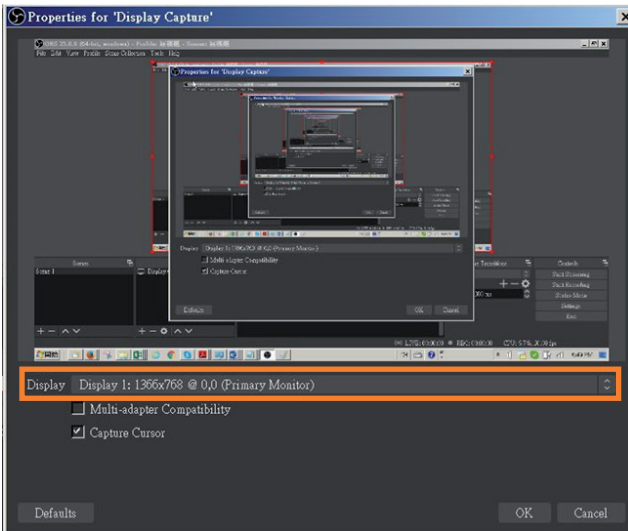
1. First, find the **"Scenes"** window, click **"+"** in the lower left corner, and then enter the name of the scene to create a new scene.



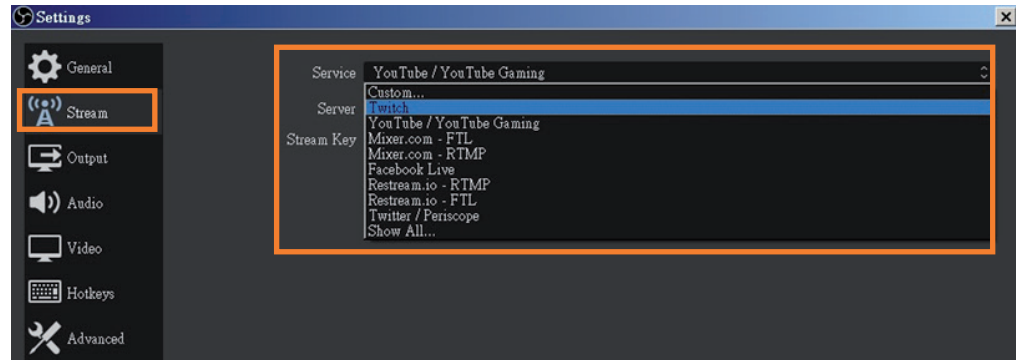
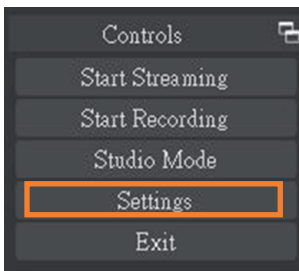
2. Find the **"Source"** window, click **"+"** in the lower left corner, and then select **"Display Capture"** or **"Video Capture Device"** to create a new source.



- 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”**.



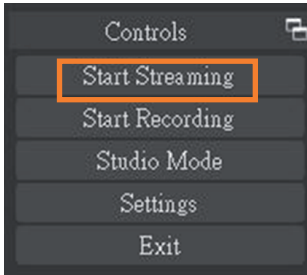
- Click **“Settings”** and then select **“Stream”** to perform streaming settings. Users can choose service providers, including Twitch, YouTube, etc.



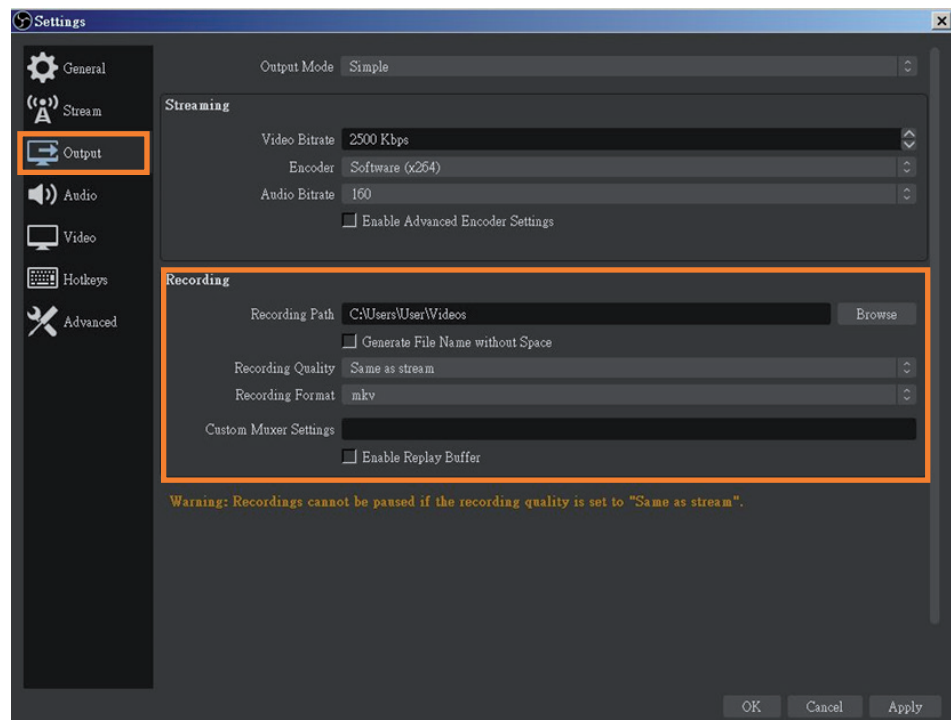
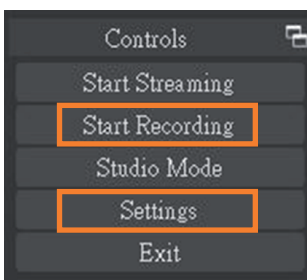
- Paste the stream key provided by the service provider into the **“Stream Key”** field, then click **“Apply”** and **“OK”** after setting. In addition, users can click **“Get Stream Key”** at this step to open the service provider website.



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



7. 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.

## 8. 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.

1. 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>
2. 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.
3. 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.
4. SDI cable quality may also play an essential role when capturing. Please be sure of that SDI cable can do 1080P@60 SDI signal transmission or better. Try different cables when the device is not able to work as expected.
5. If audio has noise, please adjust sampling frequency setting on PC or laptop. If the default sampling rate is 48000 Hz, please select 44100 Hz and vice versa. The path of setting sampling frequency on windows 10 is:  
Start → Setting → System → Sound → Device properties →  
Additional device properties → Advanced

## 9. USB Pin Definition



	P1		P2
VBUS	1	←→	1
D-	2	←→	2
D+	3	←→	3
GND	4	←→	4
SSRX-	5	←→	5
SSRX+	6	←→	6
GND	7	←→	7
SSTX-	8	←→	8
SSTX+	9	←→	9
Shield	SHELL	←→	SHELL

## 10. Warranty

Maxsquare warrants the MSQ-1200CP 3G-SDI Capture Box over USB 3.1 with SDI Loopout for 1 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.

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 insure 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-1200CP's features and specifications is subject to change without further notice.