BZB GEAR®
Solutions to Amplify Your World™

BG-CSA

1080P Full HD USB 3.1 3G-SDI Capture Device with Scaler and Audio Embedding

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 Precautions

- 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.
- Disconnect power cord by connector only. Do not pull on the cable portion.
- Do not place or drop heavy or sharp-edged objects on the power cord. A damaged cord can cause fire or electrical shock hazards. Regularly check power cord for excessive wear or damage to avoid possible fire / electrical hazards.
- Ensure the unit is always properly grounded to prevent electrical shock hazard.
- Do not operate units in hazardous or potentially explosive atmospheres. Doing so could result in fire, explosion, or other dangerous results.
- Handle with care to avoid shocks in transit. Shocks may cause malfunction. When you need to transport the unit, use the original packing materials, or alternate adequate packing.
- Turn off the unit if an abnormality or malfunction occurs. Disconnect everything before moving the unit.

Note: due to constant efforts to improve products and product features, specifications may change without notice.

Introduction

The BG-CSA is a USB 3.1 3G-SDI capture device with scaler and audio embedding that allows for capture of 3G/HD/SD-SDI signals. It utilizes a USB 3.1 interface to achieve high speed data transmission to capture and display original uncompressed 3G/HD/SD-SDI signals with realistic colors. The BG-CSA also uses large volume image buffer technology to effectively eliminate video tearing. The high sampling rate and sampling accuracy assure images have a crisp sharpness and rich detail allowing for high quality captures.

Features

- SDI output resolution scaler with audio embedding
- SDI video and audio streams over USB 3.1
- UVC 1.0
- Input and output video resolution up to 1080p 60Hz
- SDI loop out and auto-detection for video format to ensure plug & play operations
- Recording Video Format: H.264 (Software Compression)
- Works on multiple operating system platforms
- Compatible with most 3rd party software such as OBS Studio, Stream Labs, AMCap
- Supports USB 3.1 (MJPG/YUY2) and USB 2.0 (MJPG)
- Low Latency

1. Video quality is affected by the capability of computer and software settings.
2. Use the included USB 3.1 cable in the box to help avoid compatible issues.

Packing List

- 1x BG-CSA USB 3.1 3G-SDI Capture Device
- 1x USB 3.1 A to A Cable (host to device)
- 1x User Manual
- 1x Quick Start Guide

Technical Specifications

Technical		
Max. Data Rate		350 Mbps
UAC Video Output Resolution		SMPTE 424M-2.97 Gbps 3G-SDI: 1080p at 50/59.94/60 Hz (4:2:2) SMPTE 274M-1.485 Gbps HD-SDI: 1080p at 23.98, 24, 25, 29.97, 30 Hz, 1080i at 50, 59.94, 60 Hz SMPTE 292M-1.485 Gbps HD-SDI: 1080i at 30 Hz, 720p at 60 Hz SMPTE 296M-1.485 Gbps HD-SDI: 720p at 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 Hz SMPTE 259M-270 Mbps SD-SDI: NTSC 525 at 59.94 Hz, PAL 625 at 50 Hz
UAC Audio Output Format		Stereo / 16-bit / 48000Hz
Recording Video Format		YUY2 (USB3.1 Gen 1), MJPG (USB2.0/3.1 Gen 1)
Audio Input		SDI Embedded Audio 3.5mm Analog Stereo Audio
Operating System Compatibility		Windows 7, 8, 10, 11 Mac OS X 10.9 or above, Linux
3rd-Party Software Compatibility		OBS Studio (Windows, Linux, OS X)/ AMCap (Windows) Potplayer (Windows)/ Skype (Windows, OS X) Hangout (Windows)/ TeamViewer (Windows)
Hardware Requirements		Desktop: Intel Core i5-3400+NVIDIA GTX660 or higher Notebook: Intel Core i7-4810MQ+NVIDIA GTX870M or higher+4GB RAM or higher
ESD Protection		8 KV - Contact Discharge 15KV - Air Discharge
Mechanical		
Housing Design		Aluminum
Dimensions [L x W x H]	Model	102 x 57 x 21mm [4" x 2.2" x 0.8"]
	Package	165 x 111 x 42mm [6.4" x 4.4" x 1.7"]
	Carton	490 x 426 x 352mm [1'6" x 1'4" x 13.8"]
Casing Style		Portable
Power Connection		Micro-USB Port
Power Supply		5V DC, 1A
Power Consumption		4 watts (Max)
Operating Humidity		20-90% RH (no condensation)
Operation temperature		32~104°F / 0~40°C
Product Weight		0.3 lbs [135g]
Package Weight		0.6 lbs [270g]
Certifications		CE, FCC, RoHS

Operation Controls and Functions

1. **USB OUT:** Connect to a USB host computer
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

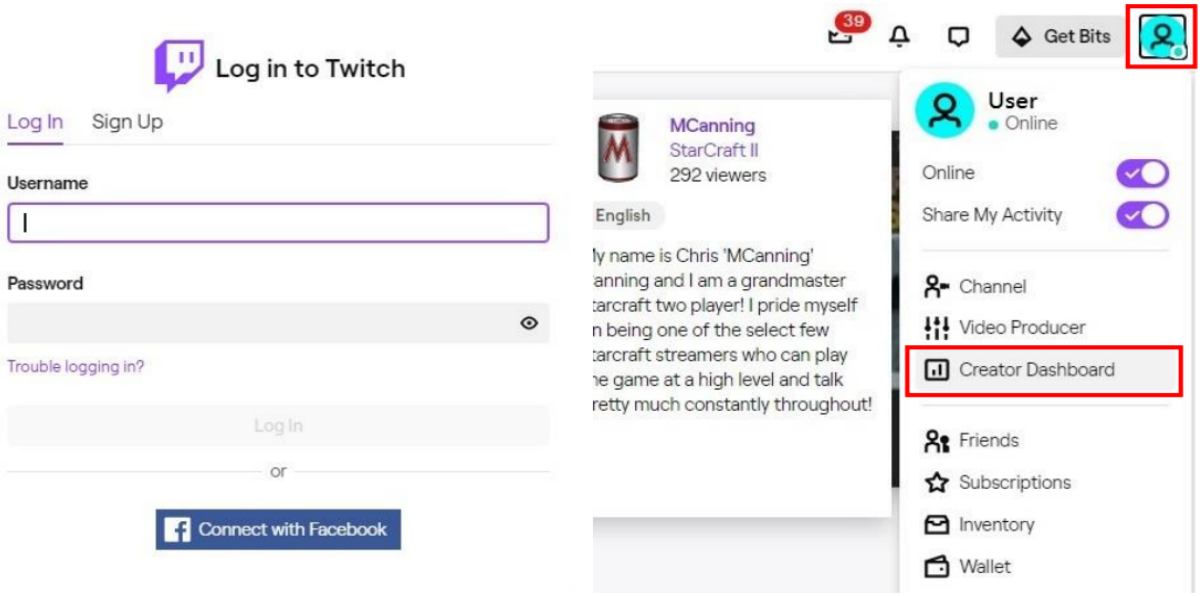
Video Streaming

Create a Video Stream

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

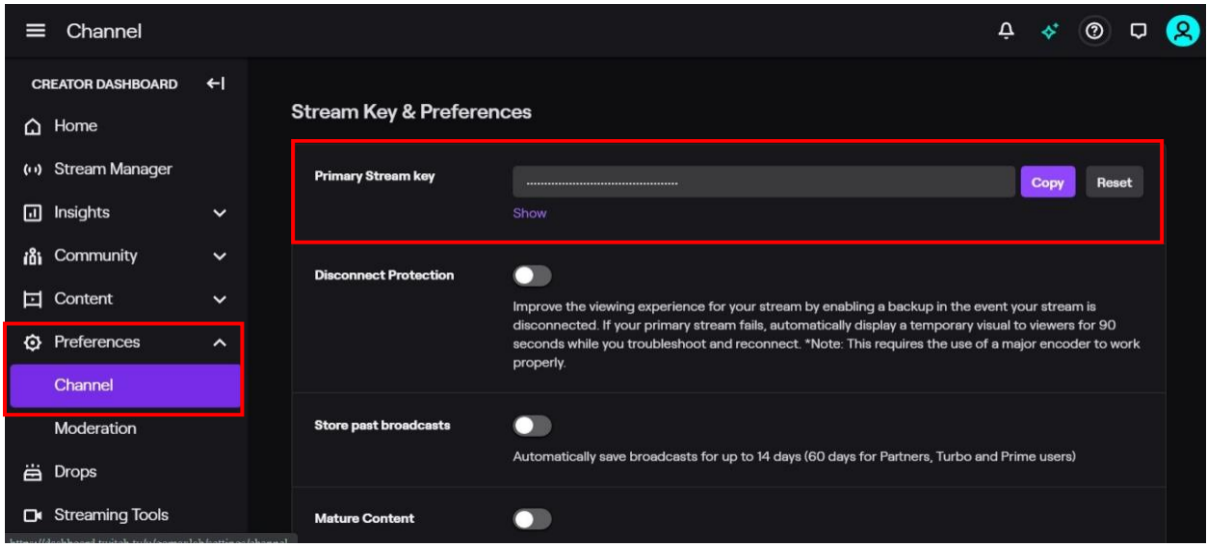
Twitch

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.

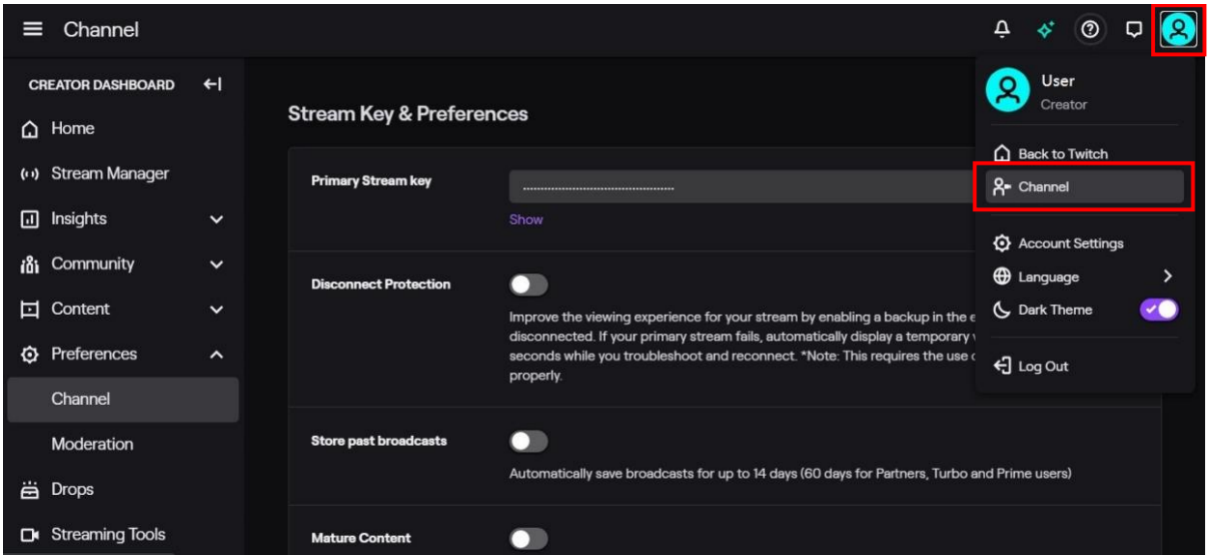


2. Find "**Preferences**" in the left menu, and click "**Channel**", then you will see "**Primary Steam key**" on the screen. Copy the "**Primary Steam key**" and paste it into the "**Stream Key**" field in the OBS, then click "**Start Streaming**" in the software.

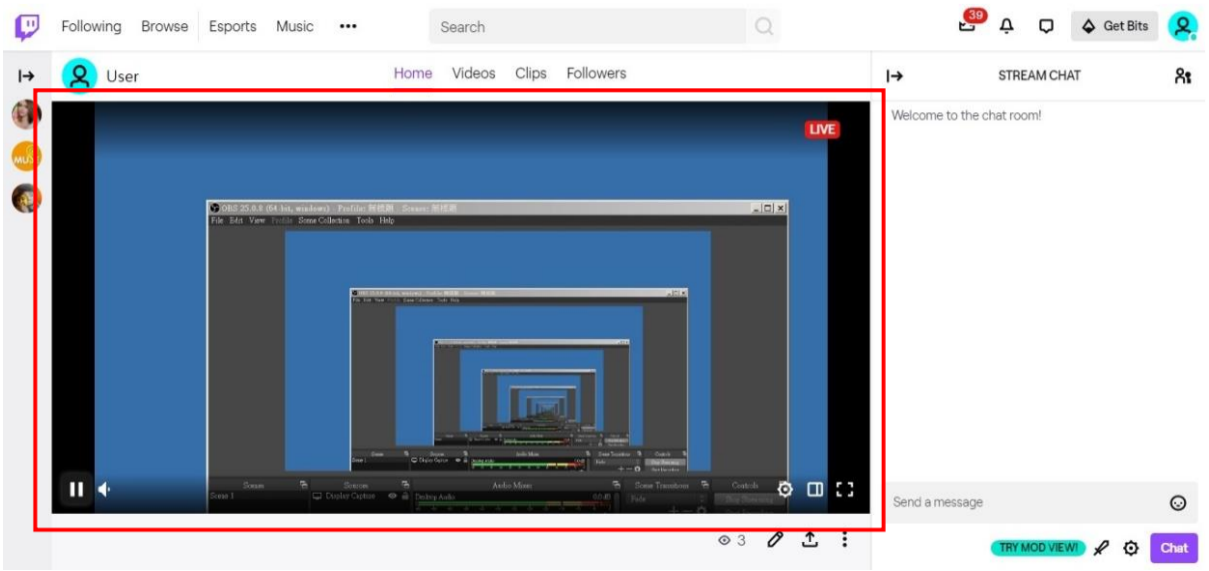
   * Please refer to steps 4-6 of the OBS software control program.



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



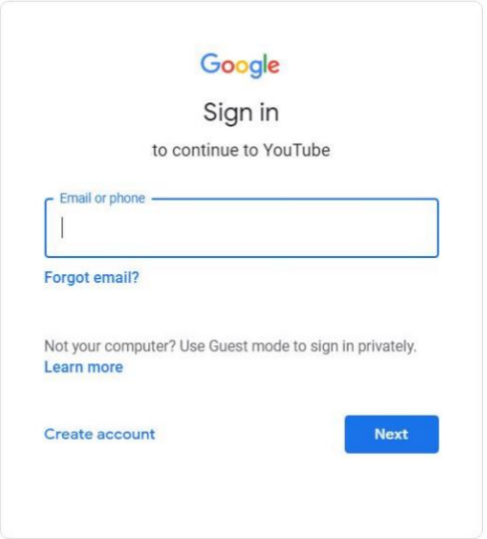
4. At this point, you will see the player start live streaming.

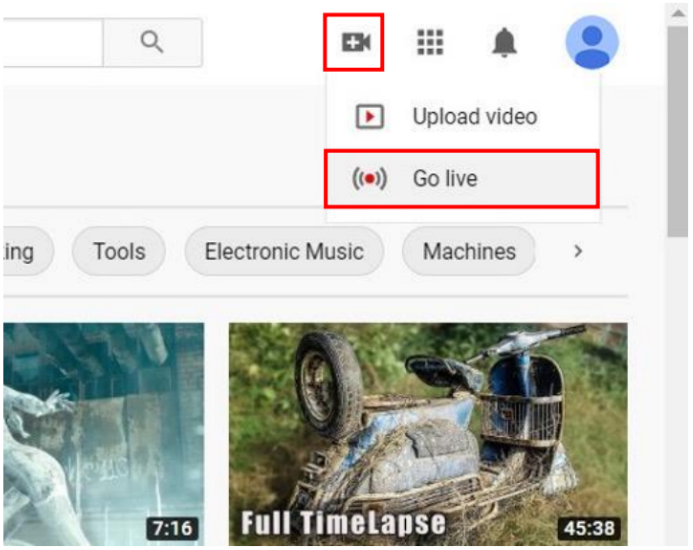


YouTube

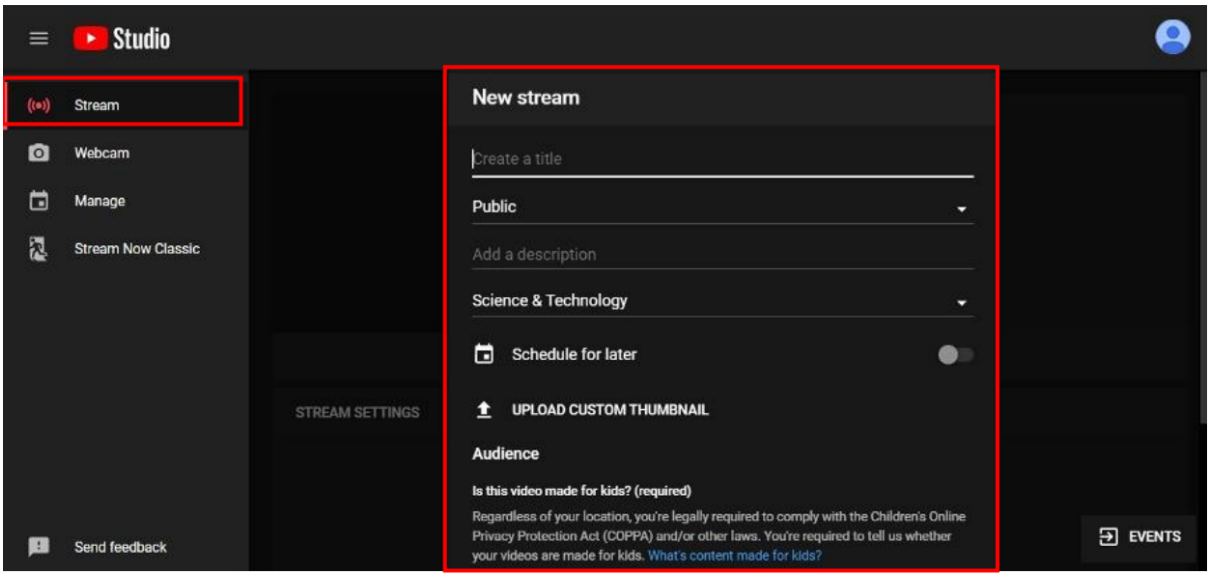
1. Browse the YouTube website (*https://www.youtube.com/*) and log in, then click "**Go live**" from the "**Create**" icon menu at the top right of the screen.

   * 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.



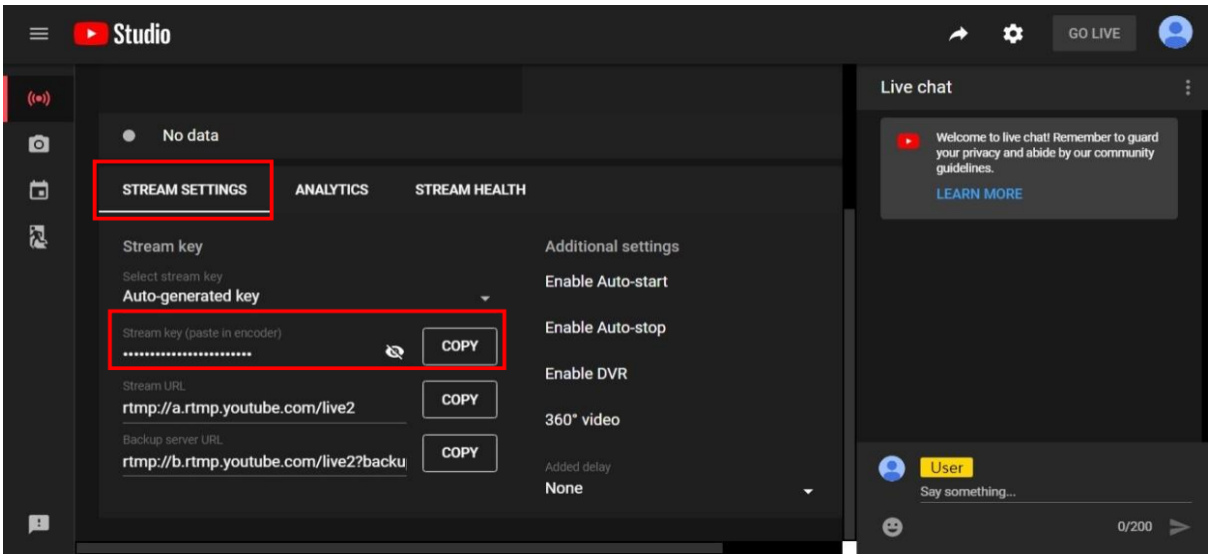


2. Click "**Stream**" in the left menu, and fill in the relevant information of the live video to create a new stream.

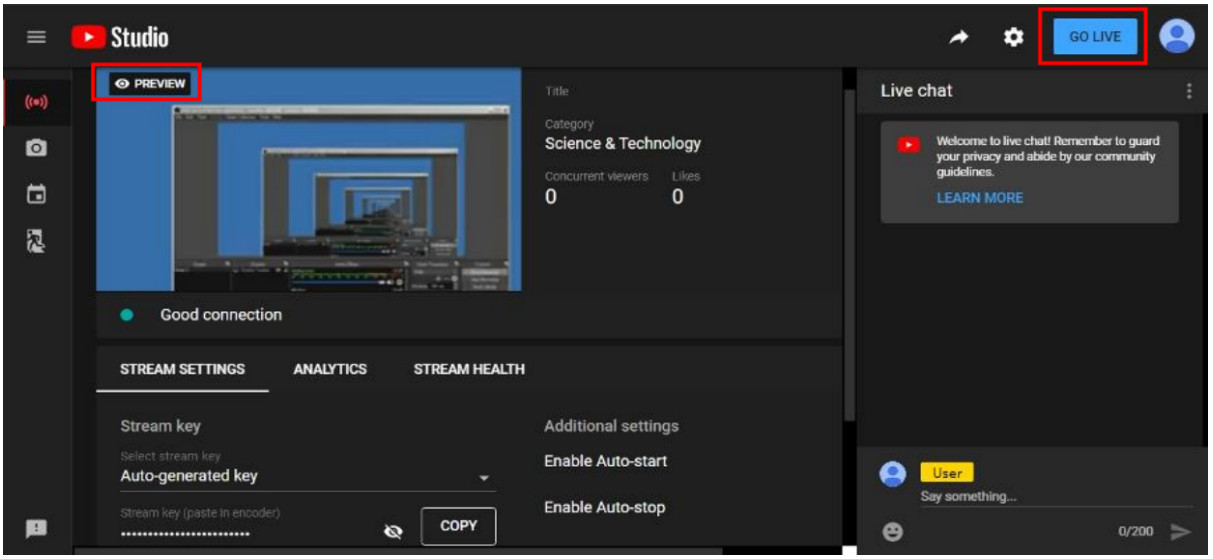


3. You will see "**Stream key**" from the "**STREAM SETTINGS**" below. Copy the "**Stream key**" and paste it into the "**Stream Key**" field in the OBS, then click "**Start Streaming**" in the software.

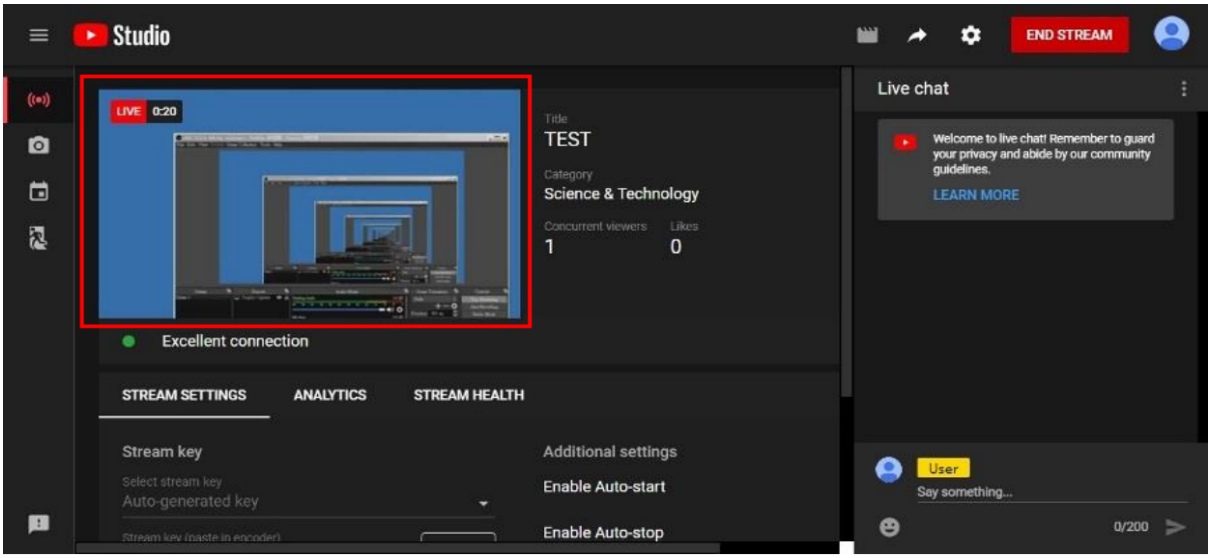
   * Please refer to steps 4-6 of the OBS software control program.



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.



5. The player on YouTube will start live streaming.



Stream and Record Videos with OBS

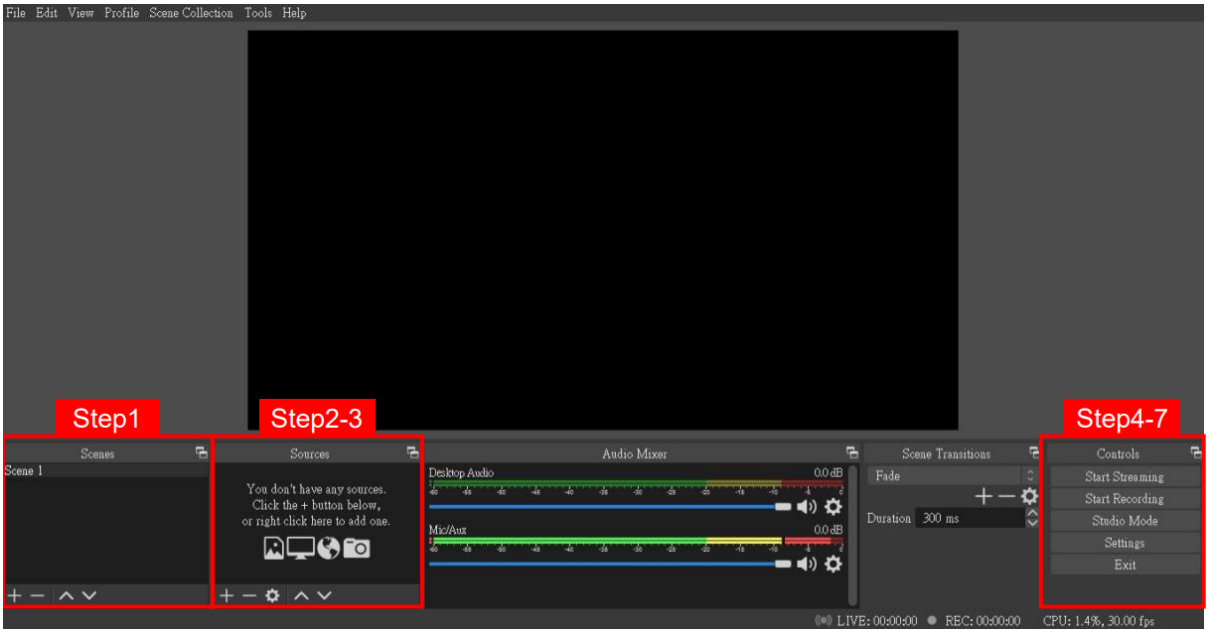
OBS is a popular USB capture freeware and has excellent compatibility. Please start with OBS if users are not familiar with USB capture devices.

Download the software

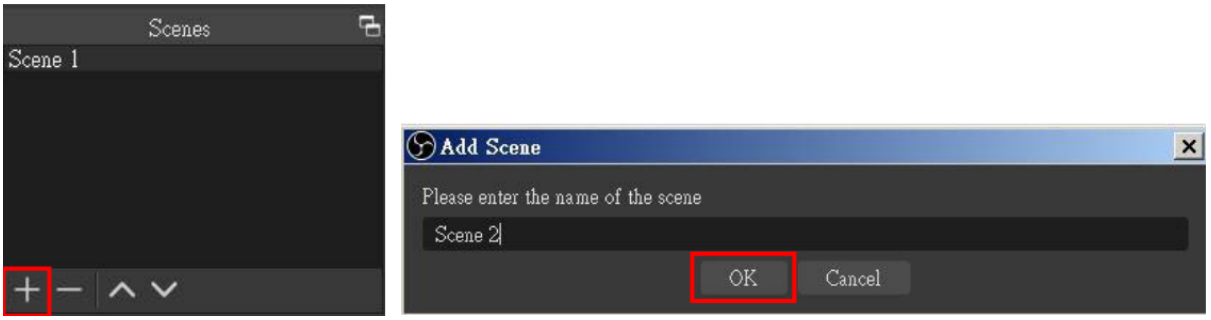
Browse the download page of the OBS official website (*https://obsproject.com/download*), then select the suitable computer operating system and start downloading.

Start the software control program

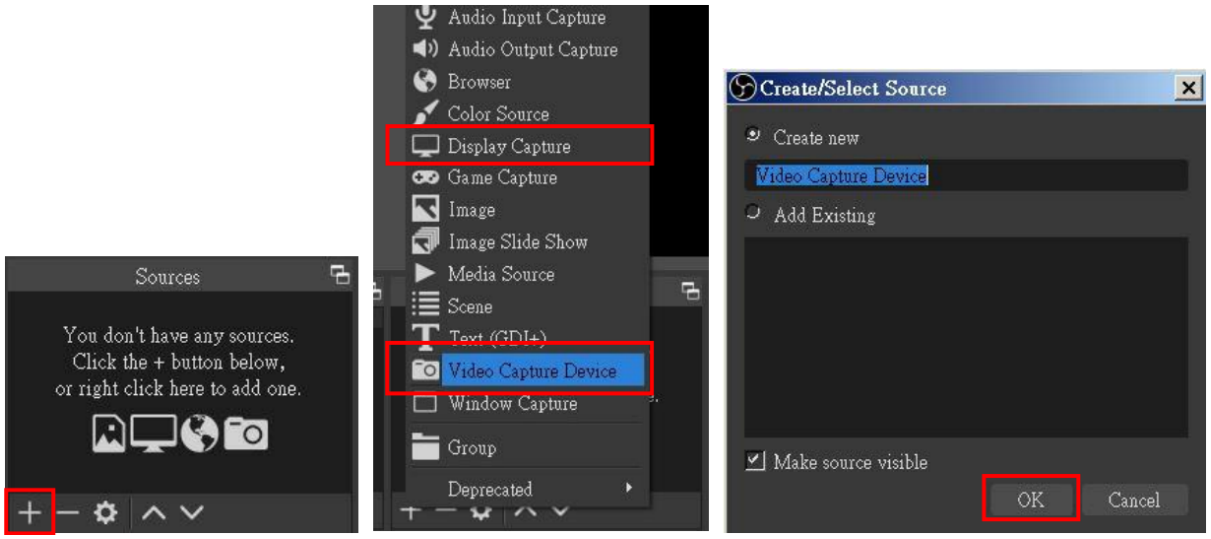
After downloading the software, please open it and follow the below steps to complete the video streaming settings.



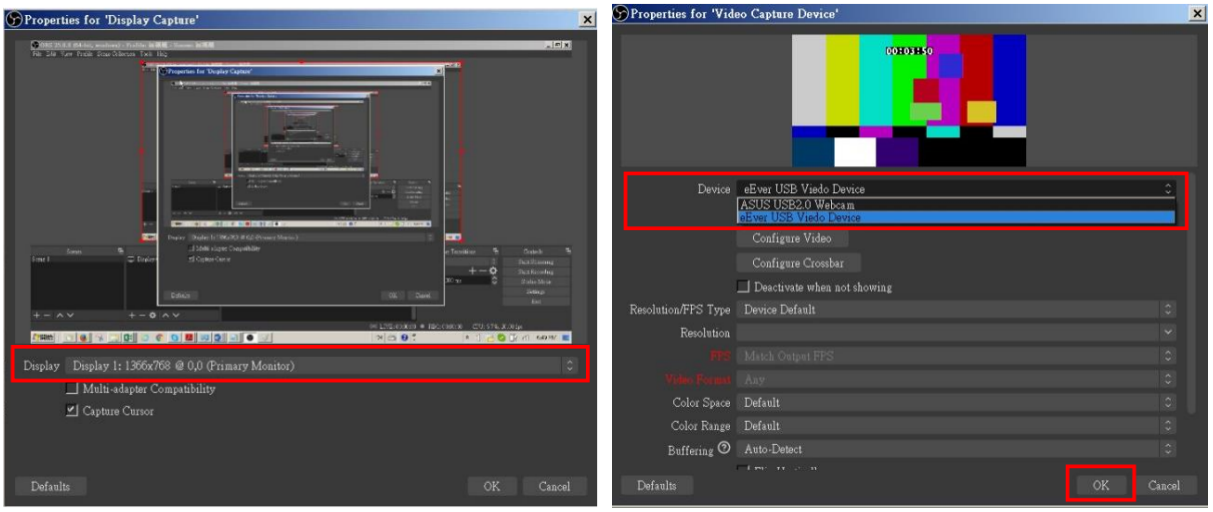
1. First, find the "**Scenes**" window, click "**+**" in the lower left corner, and then enter the name of the scene to create a new scene.



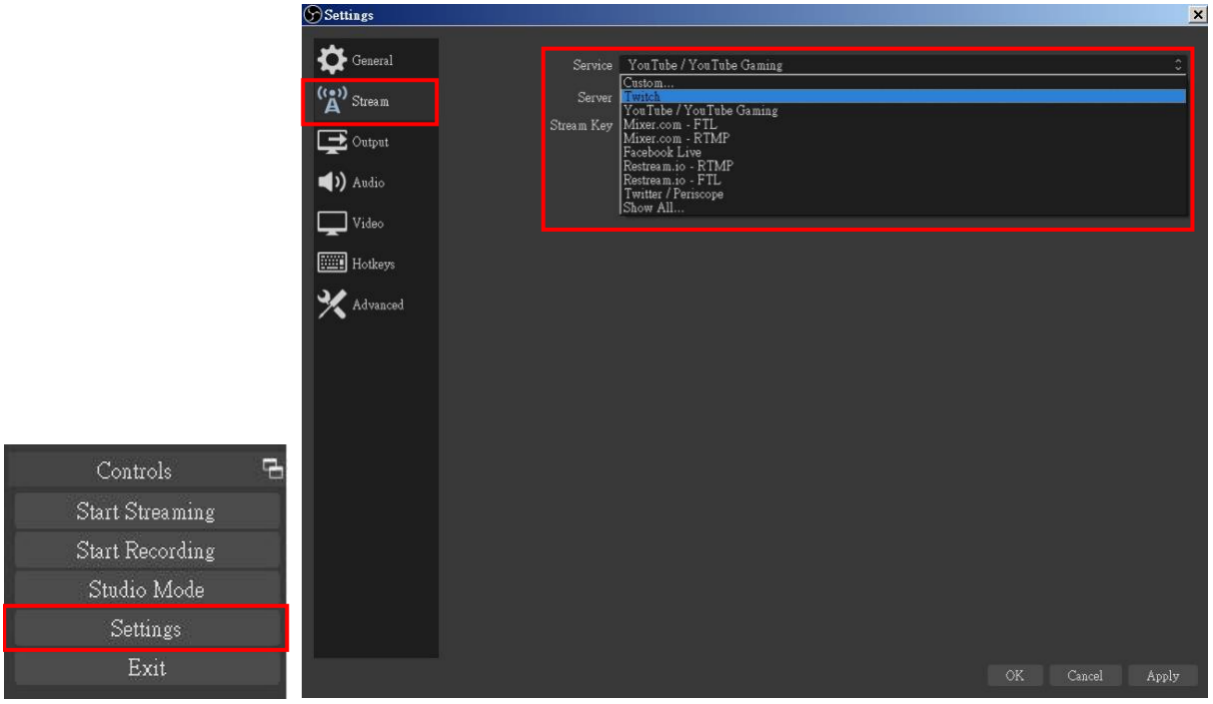
2. Find the "**Source**" window, click "**+**" in the lower left corner, and then select "**Display Capture**" or "**Video Capture Device**" to create a new source.



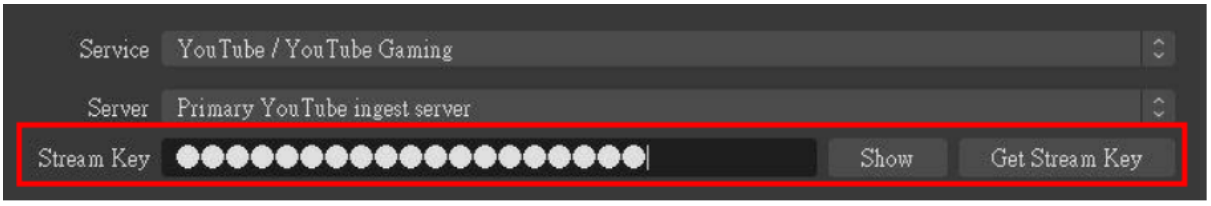
3. Next, you can set display capture properties. If you select "**Display Capture**" in step 2, you can select the primary monitor or other extended monitor as the display source. If you select "**Video Capture Device**" in step 2, you can select USB video device as the display source. After all settings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



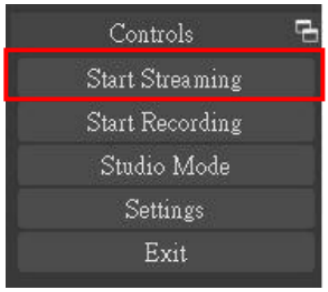
4. Click "**Settings**" and then select "**Stream**" to perform streaming settings. Users can choose service providers, including Twitch, YouTube, etc.



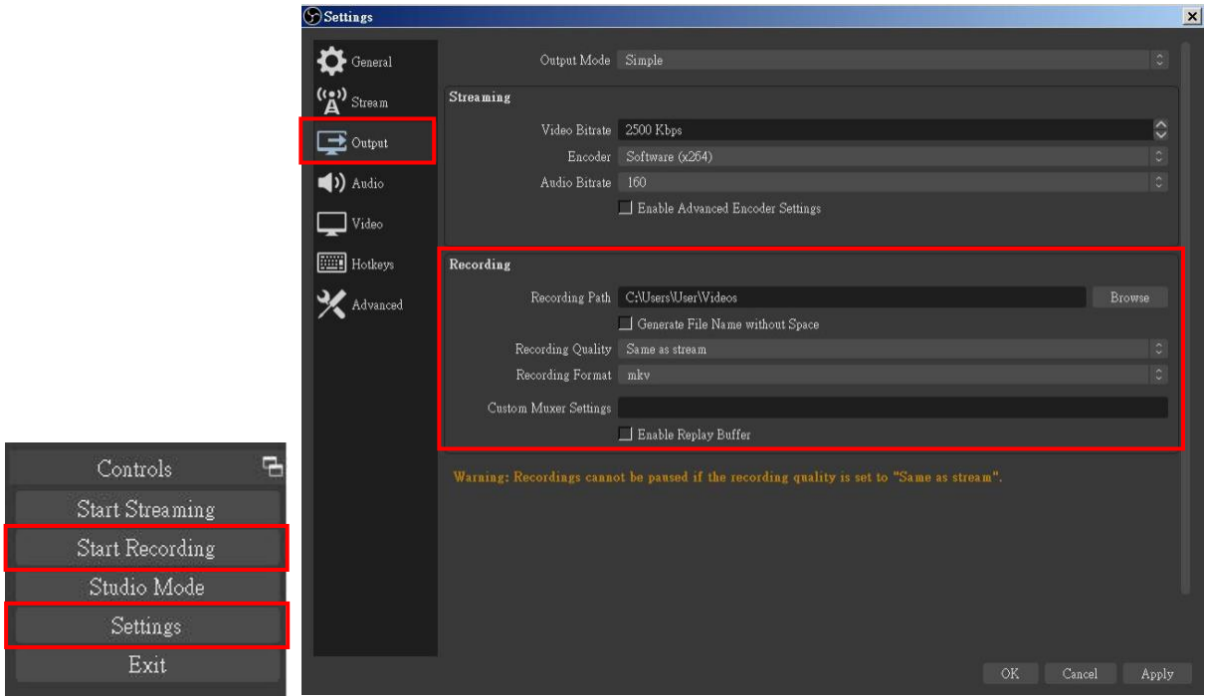
5. Paste the stream key provided by the service provider into the "**Stream Key**" field, then click "**Apply**" and "**OK**" after setting. In addition, users can lick "**Get Stream Key**" at this step to open the service provider website.



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**".



Note: The procedures the manual demonstrates are based on the interface that each website provides at the time when the manual is written. The most current method of live streaming should be similar to the above procedures but is subject to change by the website interface update by the social media platform.

Troubleshooting

Our USB device has been subjected to rigorous tests before shipping. Most of the incompatibilities we have experienced are not from the USB capture device itself, but from the sophisticated software and hardware combinations of PCs or laptops. Please try the following suggestions

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

https://obsproject.com/download

2. Due to the complexities of OS and computer hardware, different USB ports on PCs or laptops may have different performance or limitations. Please try all USB ports to see if there are any differences.

3. Please use the included USB cable. We do not guarantee the overall performance when the USB capture box is connected with other USB cables.

4. SDI cable quality may also play an essential role when capturing. Please be sure the SDI cable is capable of 1080P@60 SDI signal transmission or better. Try different cables when the device is not able to work as expected.

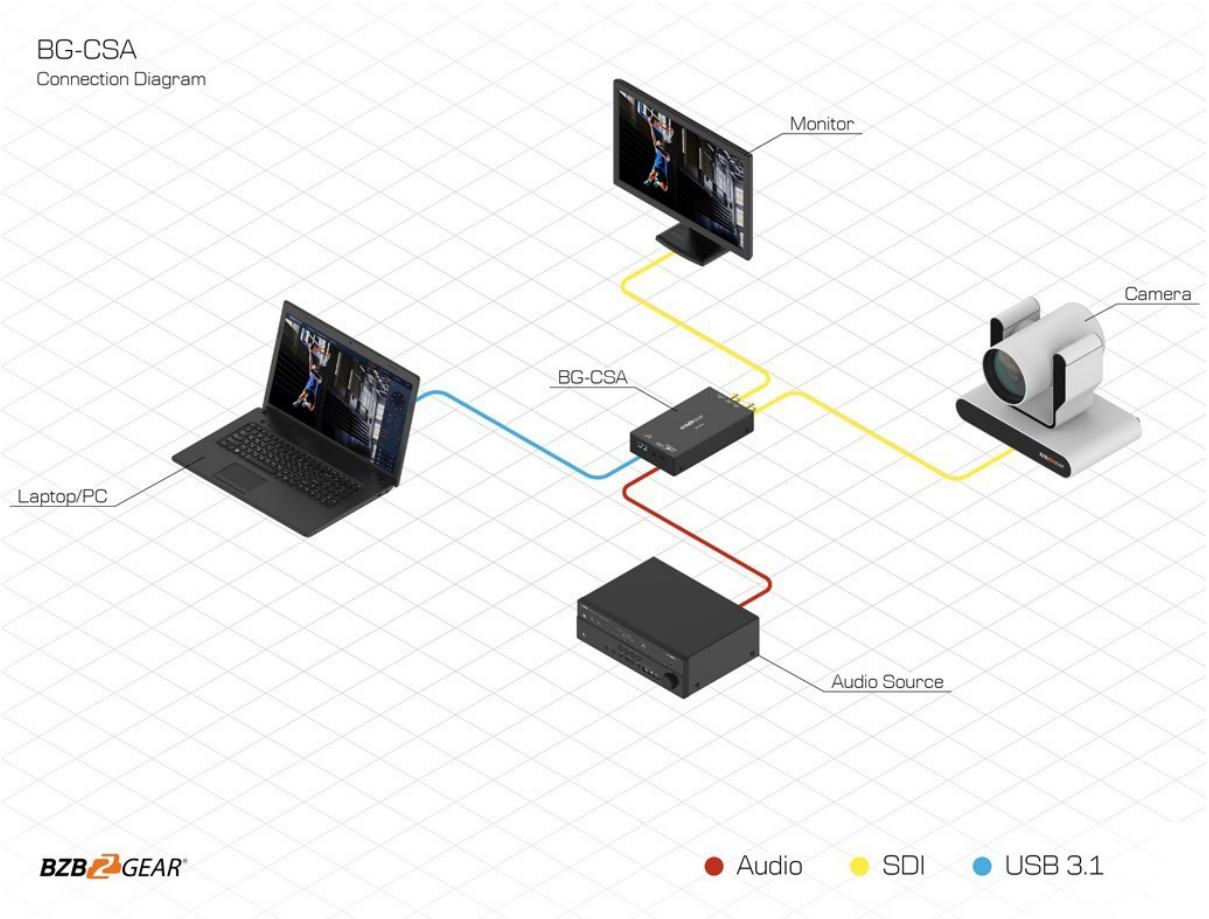
5. If audio has noise, please adjust sampling frequency setting on PC or laptop. If the default sampling rate is 48000 Hz, please select 44100 Hz and vice versa. The path of setting sampling frequency on windows 10 is:

Start → Setting → System → Sound → Device properties → Additional device properties → Advanced

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
SSRX+	9	⟷	9
Shield	SHELL	⟷	SHELL

Application Example



Tech Support

Have technical questions? We may have answered them already!

Please visit BZBGEAR's support page (bzbgear.com/support) for helpful information and tips regarding our products. Here you will find our Knowledge Base (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), 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	**Email**	**Live Chat**
1.888.499.9906	support@bzbgear.com	bzbgear.com

Warranty

BZBGEAR Pro AV products and cameras come with a three-year warranty. An extended two-year warranty is available for our cameras upon registration for a total of five years.

For complete warranty information, please visit bzbgear.com/warranty.

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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