

CINETREAK *CAP205H*

HDMI & 3G-SDI To USB 3.0
Video Capture Card



1、 Introduction

1.1 Brief

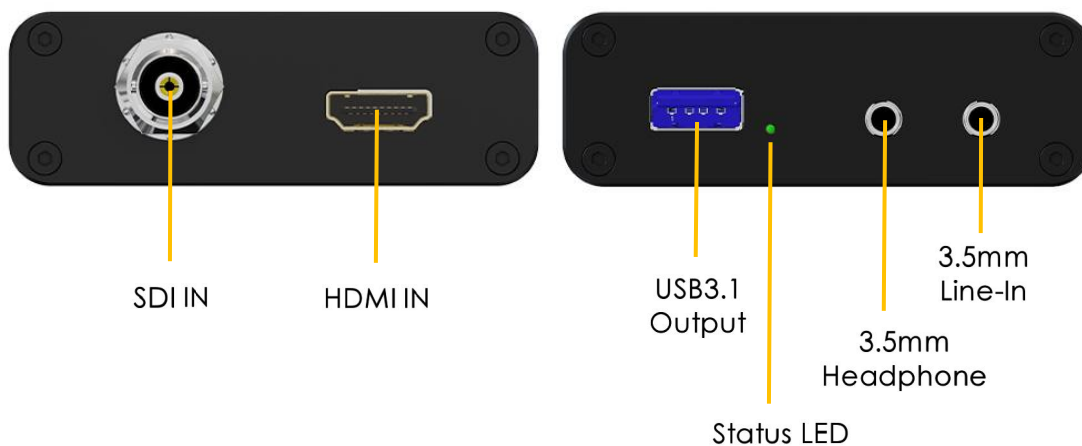
The CAP20SH audio&video capture supports one SDI and one HDMI inputs, which is driver free and easy-to-use. CAP20SH has built-in PIP, PBP, MIX, CUT, FTB, chroma key, 3D LUT functions. In addition to being used as a daily USB capture, CAP20SH can also be flexibly and conveniently used as a dual channel video switcher to meet users' broadcasting and streaming requirements.

1.2 Features

- Support 3G SDI, HDMI input
- Support UVC and UAC
- USB3.0 supports YUV2 up to 1920x1080@P60
- USB2.0 supports MJPG up to 1920x1080@P50
- SDI input supports SD/HD/3G LevelA/LevelB DL/DS
- SDI supports ST 2048 cinematography
- HDMI input supports up to 1920x1080@P60
- 3.5mm Line-In Audio
- 3.5mm headphone
- Support source selection and layout such as PIP and PBP
- Support Mix ,cut transition, and FTB
- Support chroma key with selectable key source, background, keying color and mask
- Support 17 points 3D-LUT and up to 16 files
- Video Inputs: 1xHDMI,1xSDI
- Video Output: 1xUSB 3.1
- Audio In: 1x3.5mm Line-In
- Audio Out: 1x3.5mm Headphone
- Power Supply: USB TYPE-A
- Power and Status LED
- Support Ultra Control Utility
- Image horizontal and vertical flipping

2、 Interfaces

2.1 Interfaces Description



3、Configuration

Interfaces

Video Input	HDMI TypeA ×1,3G SDI*1
Video Output	USB3.1 Gen1 (USB3.0) (Type-A)
Audio Input	LINE(3.5mm stereo)*1
Audio Output	LINE(3.5mm stereo)*1

Function

PIP	Arbitrary size and position
Layout	Single, PIP,PBP
Transitions	MIX,CUT,FTB
Chroma Key	Seletable ,Key Source,Background, Keying,Color
Mask	Settable mask
3D LUT	Support 17 points 3D-LUT and up to 16 files
Audio	Line-In Audio and 3 channel Audio mix
Image Flipping	Horizontal,Vertical,Horizontal&Vertical

Format

SDI Input	SD-SDI/HD-SDI/3G-SDI Level A/B-DL/B-DS
HDMI Input	2048*1080P 60/59.94/50/30/29.97/25/24/23.98 1080P 60/59.94/50/30/29.97/25/24/23.98 1080i50/1080i60 720P 60/59.94/50/30/29.97/25/24/23.98 576i/480i/576P/480P
USB3.1	YUV/MJPEG Up to 1080p60

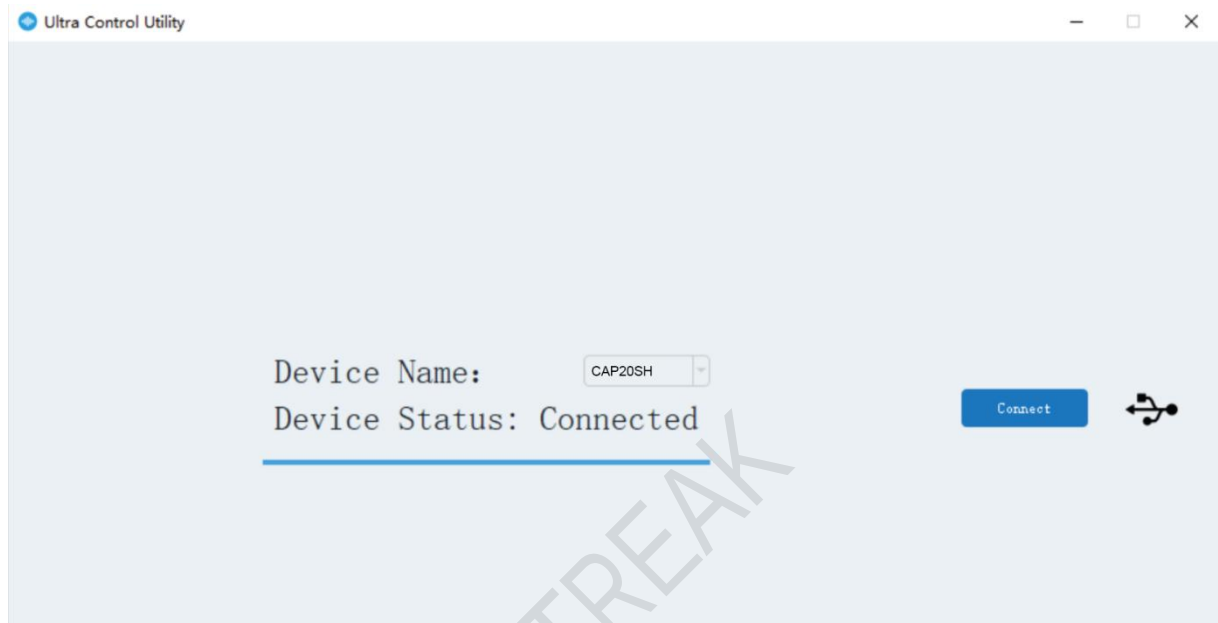
Others

Power Supply	5V(USB TYPE-A)
Size(LDW)	104*76*25mm
Weight	188g
Temperature	Working:0°C~50°C, Storage: -30°C~70°C
Accessory	USB3.0 Cable×1

4、Operation

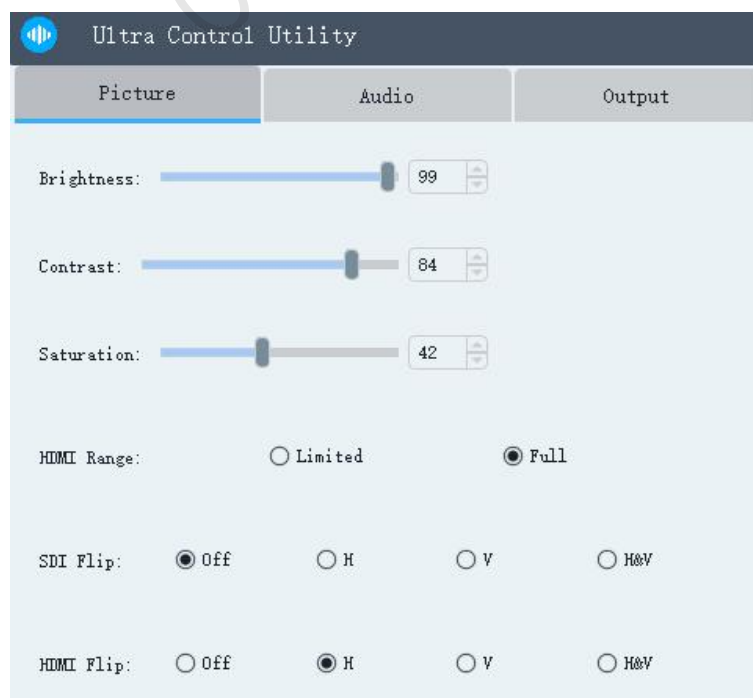
4.1 Link Ultra_Control_Utility

Connect the CAP20SH to the PC with a USB3.0 cable. Open the ultra_control_utility.exe. Select the device name to CAP20SH and click connect button.



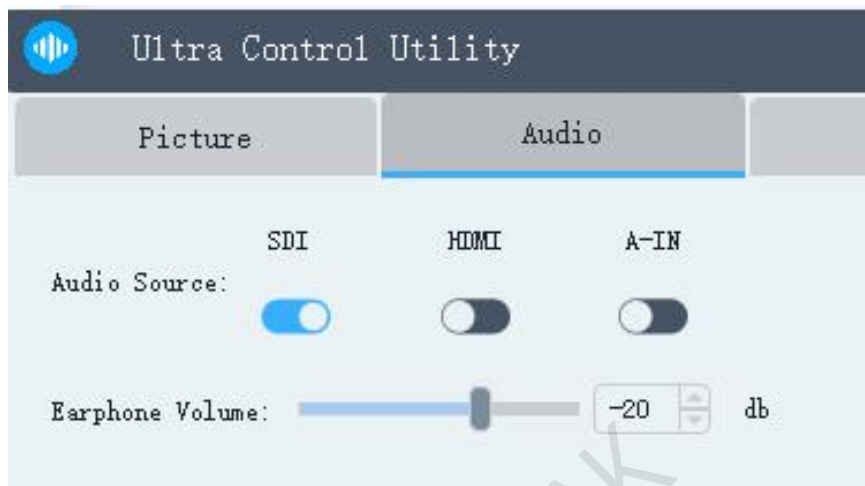
4.2 Picture Adjust

In Picture interface, brightness, contrast, and saturation of the output video can be adjust. Range setting for hdmi, Picture flipping for hdmi and sdi source.



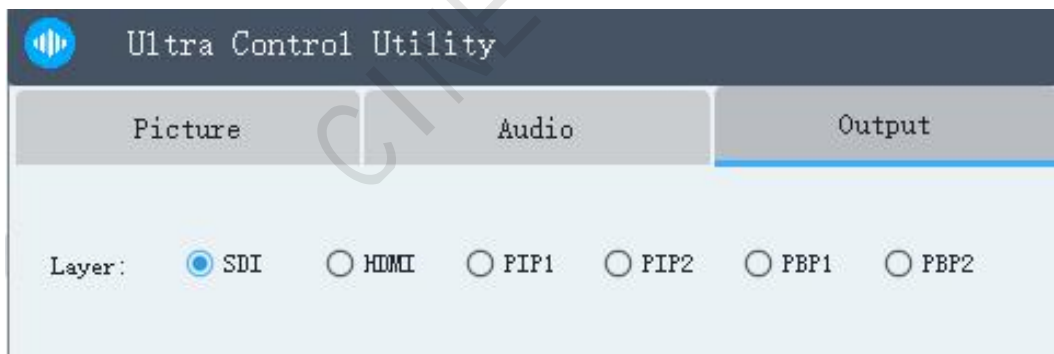
4.3 Audio Setting

In Audio interface, users can click the switch button of the audio source. When the button is blue, the source will be enabled and when it's gray, the source is disabled. When there is more than one source enabled, the sources will be mixed. Users can also set the volume of the headphone.



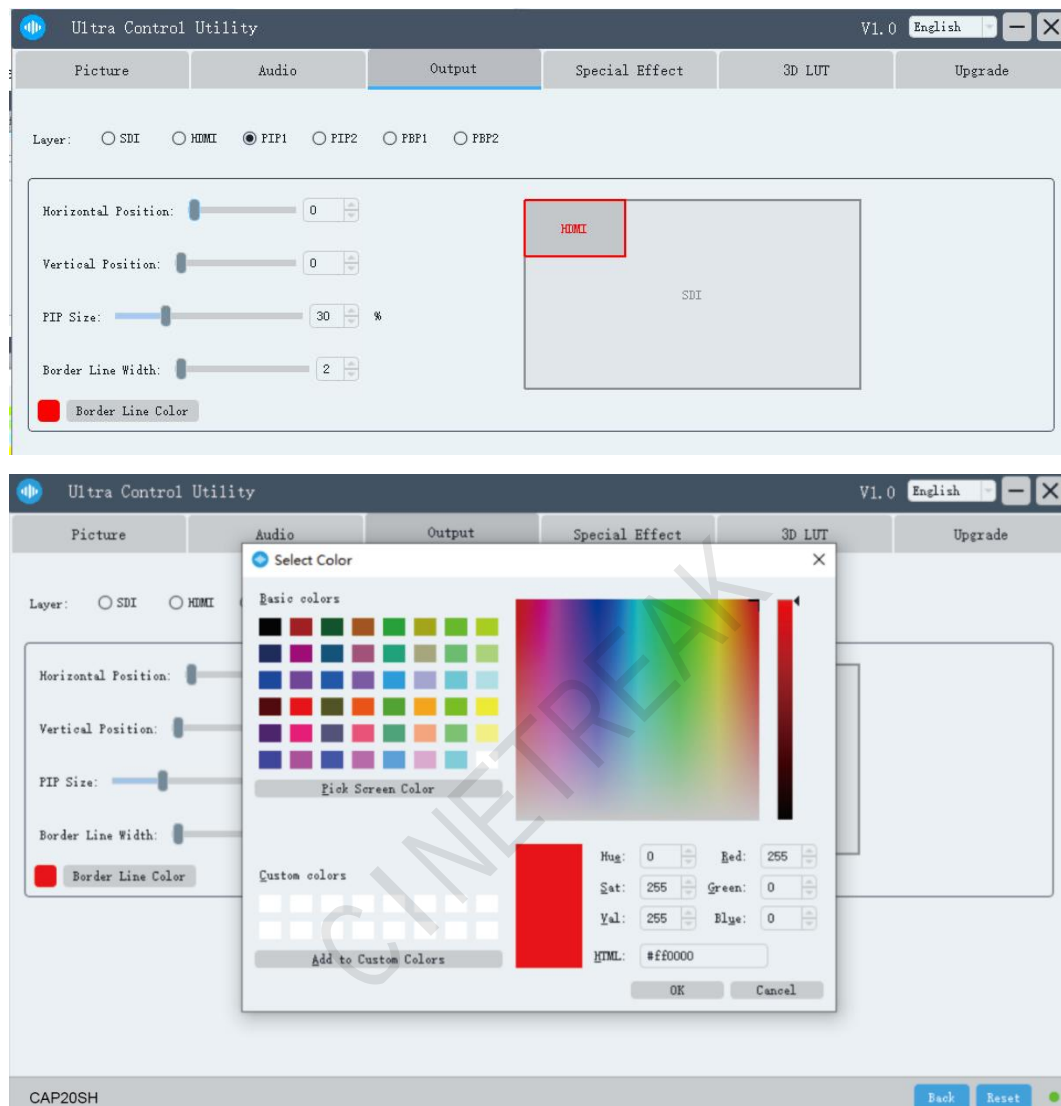
4.4 Output

In the output interface, users can select the layout of the output video. The layout supports single, PIP and PBP.



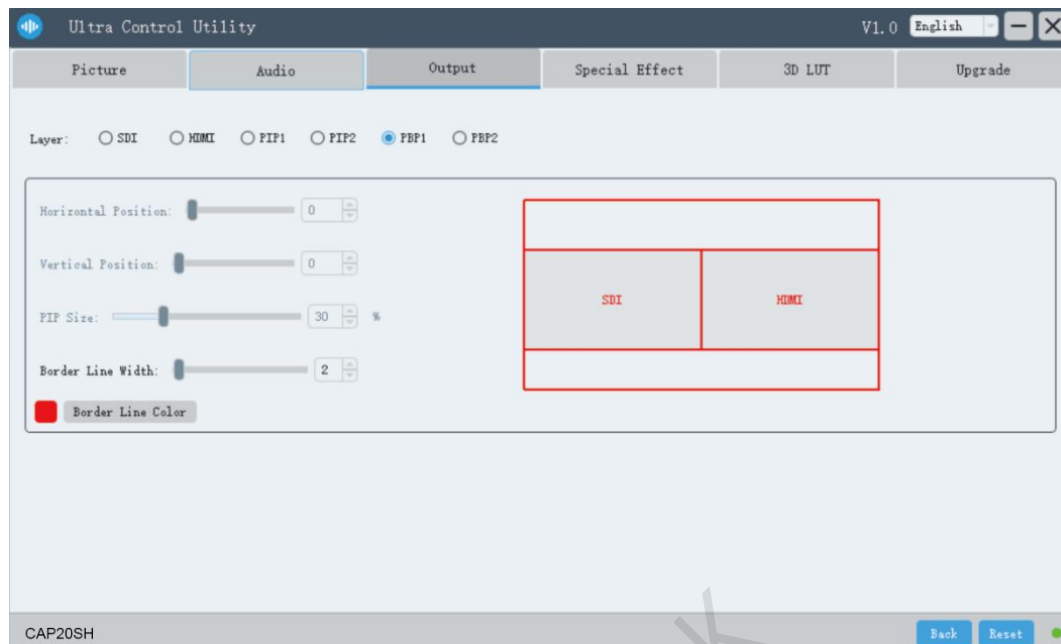
4.4.1 PIP1/PIP2 Setting

Users can set the position, size, line width and color of the PIP window for PIP1/PIP2.



4.4.2 PBP1/PBP2 Setting

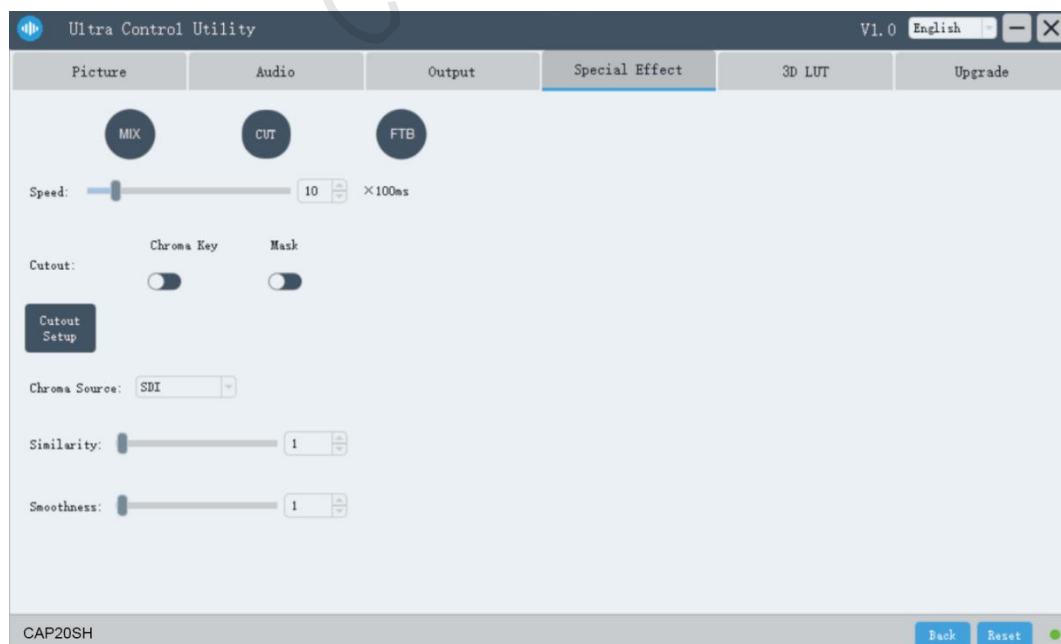
Users can set the line width and color for PBP1/PBP2.



4.5 Special Effect

There are MIX, CUT for transitions. And the FTB can output a black picture. The mix speed is settable.

CAP20SH supports chroma key for virtual studio. Users can select chroma key source. In cutout setup, users can select the key color and key mask. The similarity and smoothness are adjustable for fine tunes.



4.5.1 Mix

Set the Mix speed and click MIX, the mix transition will take effect.

Note: Mix only for single source

4.5.2 CUT

Click CUT and the output will switch to the other source immediately.

Note: CUT only for single source

4.5.3 FTB

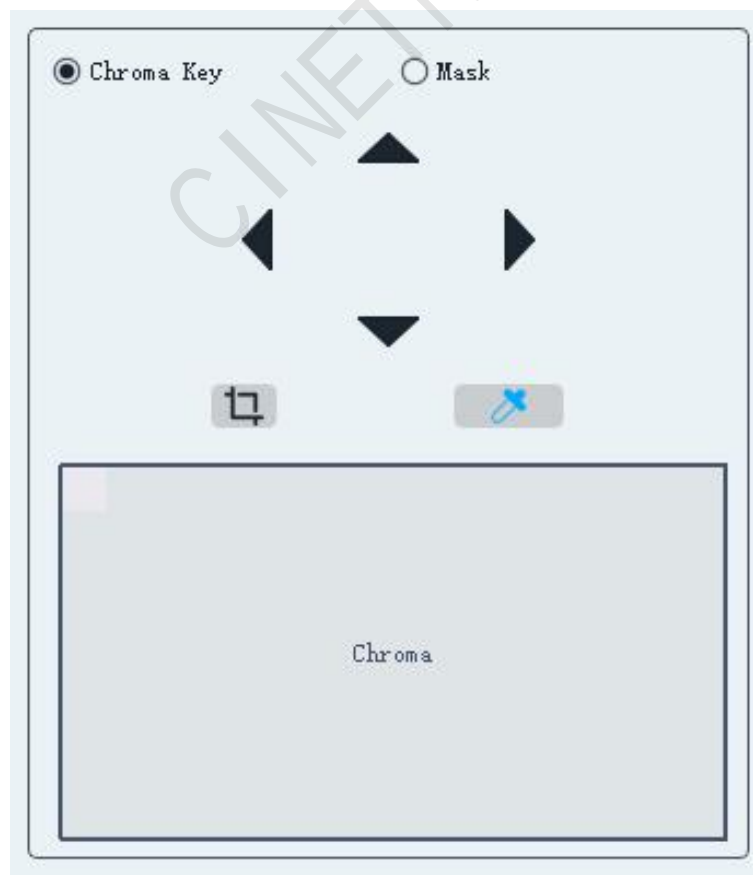
Click FTB and the output will turn to black immediately. The audio also turn off immediately.

4.5.4 Chroma Key

The chroma key can be easily implemented in virtual studio. In Chroma Key, users can select the key source, set the key color to get the foreground. Then blend the foreground over the background. The users can also set the key mask.

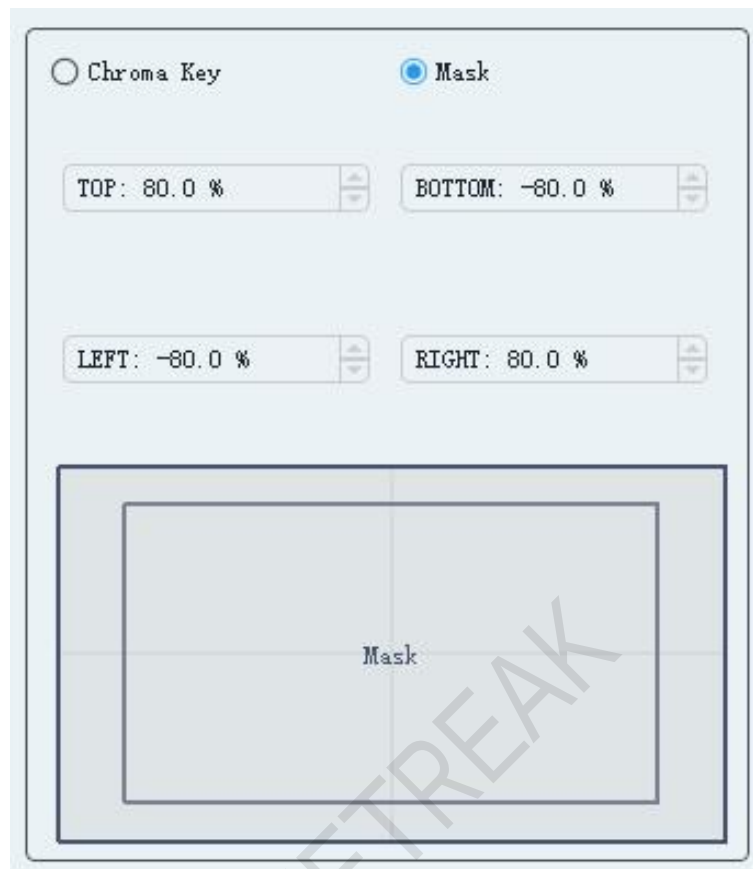
4.5.4.1 Key Setting

Select chroma key, adjust the the fetching area and position to get the color key.



4.5.4.2 Mask

Click the Mask and adjust the size of the mask.



4.5.5 Chroma Source

Select key source in chroma source.

4.5.6 Similarity

Adjust the similarity to adjust the range of key color. The larger value means a wider color range being keyed.

4.5.7 Smoothness

Adjust smoothness to get the better edge. The larger the smoother.

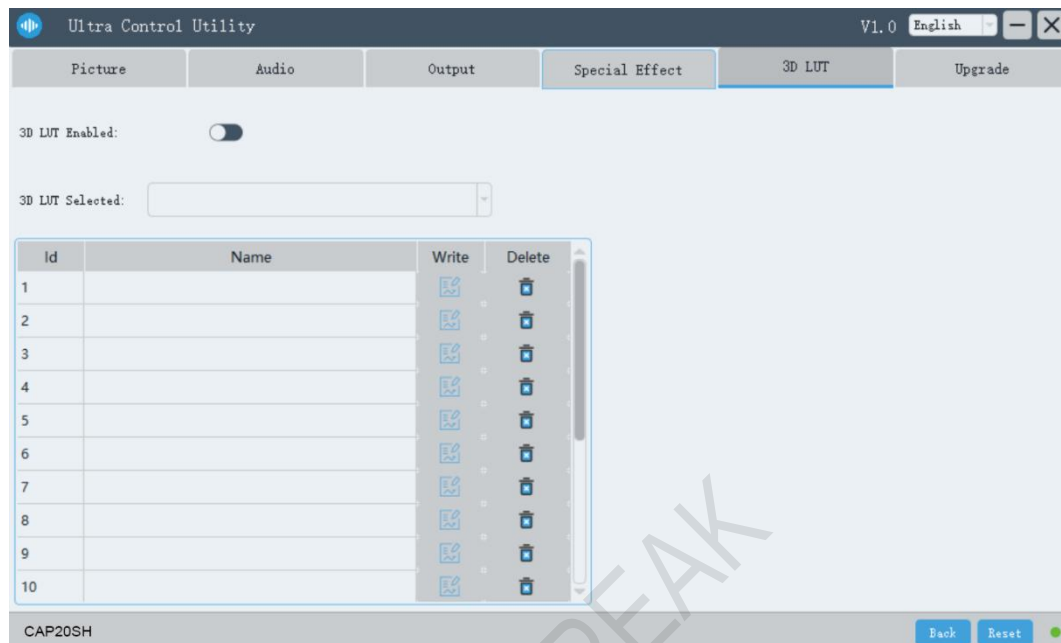
4.5.8 Enable Chroma Key

Click the switch button of Chroma Key. When the button is blue, the chroma key will take effect. Adjust the key color, similarity, smoothness and mask to get a satisfying effect.

Note: The chroma key and layout or transitions are exclusive. When chroma key is enabled, layout and transitions will be disabled. FTB has highest priority and works anytime if it's enabled.

4.6 3D LUT

With built-in 17-point 3D LUT function, CAP20SH can achieve professional color conversion and prefabricated color style. Users can store up to 16 3D LUT files in CAP20SH, and quickly select and apply the required 3D LUT.



4.6.1 Write 3D LUT

In 3D LUT panel, click , select 3D LUT and write it to CAP20SH.

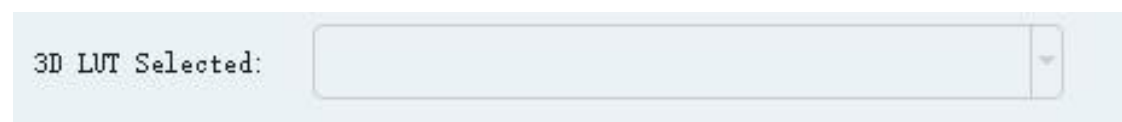
Note: Only 17-point and 33-point 3D LUT file supported

4.6.2 Delete 3D LUT

In 3D LUT panel, click , click Yes button in the pop-up windows to delete the 3D LUT.

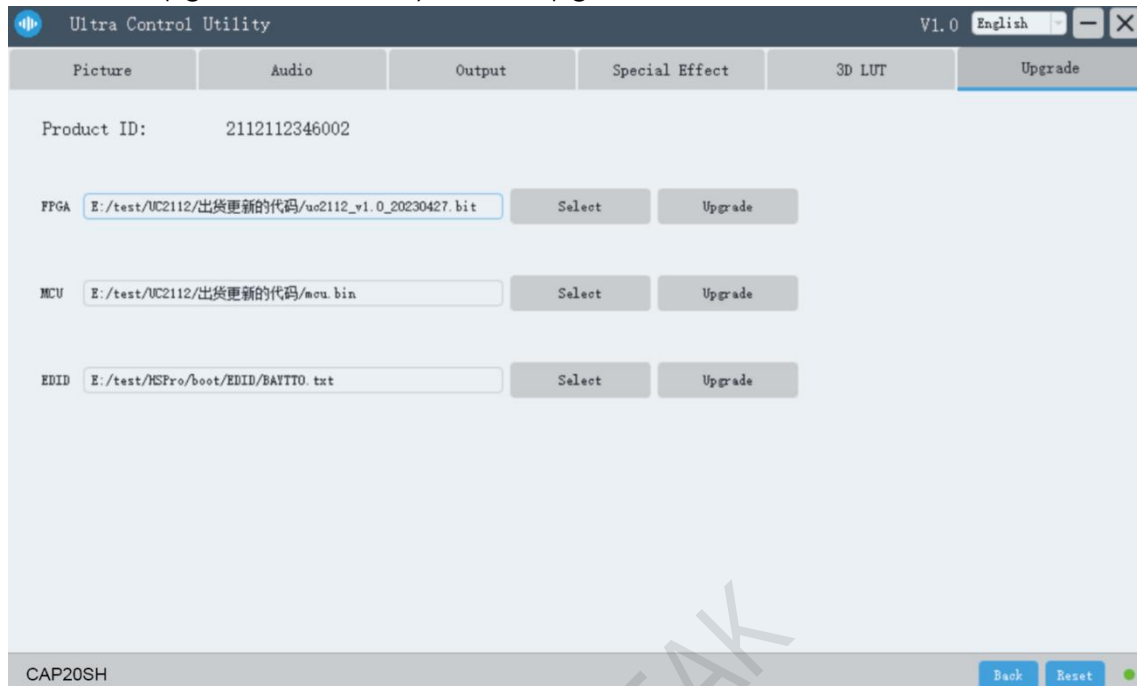
4.6.3 Select 3D LUT

In 3D LUT panel, in the  drop down box, select the 3D LUT. And the selected 3D LUT will be applied to the video.



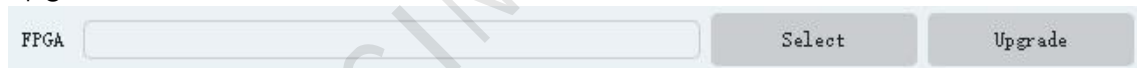
4.7 Upgrade

In the upgrade interface, you can upgrade FPGA and MCU.



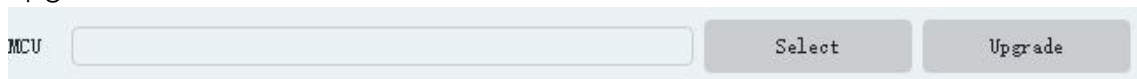
4.7.1 Upgrade FPGA

In the upgrade interface, click the select button of FPGA, select the FPGA bit file, and click the upgrade button. After the progress bar is completed, the upgrade is successful.



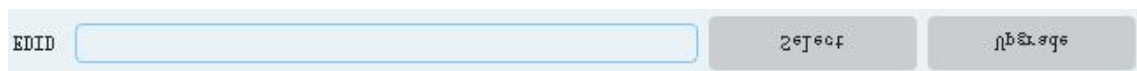
4.7.2 Upgrade MCU

In the upgrade interface, click the select button of MCU, select the MCU bin file, and click the upgrade button. After the progress bar is completed, the upgrade is successful.



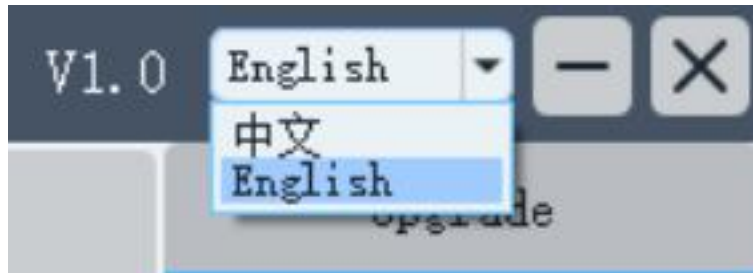
4.7.3 Upgrade EDID

In the upgrade interface, click the select button of EDID, select the EDID file, and click the upgrade button. After the progress bar is completed, the upgrade is successful.



4.8 Language

At the right up corner of the ultra_control_utility, the language can be select in the drop down box. English and Chinese are supported



4.9 Back/Reset

In the ultra_control_utility, at the right down corner, there are Back and Reset buttons. Click Back button and return to the connect interface. Click Reset and set CAP20SH to default.



5、Format Support

5.1 Input

HDMI Input		
Standard	Resolution	Frame Rate
CTA861	720×480	59.94
	720×576	50
	1280×720	23.98,24,25,29.97,30,50,59.94,60
	1920×1080	23.98,24,25,29.97,30,50i,59.94i,60i,50,59.94,60
VESA	1920×1080	60
	1600×1200	60
	1280×720	60
	1280×960	60
	1280×1024	60
	1024×768	60
	800×600	60
	720×480	60
	720×576	60
	640×480	60

SD-SDI

Raster	Sampling
525	YCbCr 422 10bits
625	YCbCr 422 10bits

HD-SDI

Raster	Refresh	Sampling
1280×720	23.98/24/25/29.97/30/50/59.94/60p	YCbCr 422 10bits
1920×1080	23.98/24/25/29.97/30p 23.98/24/25/29.97/30psf 50/59.94/60i	YCbCr 422 10bits
2048×1080	23.98/24/25/29.97/30p 23.98/24/25/29.97/30psf 50/59.94/60i	YCbCr 422 10bits

3G-SDI

Raster	Refresh	Sampling	Level A/B
1280×720	23.98/24/25/29.97/30/50/59.94/60p	GBR 444 10bits GBRA 4444 10bits YCbCr 444 10bits YCbCrA 4444 10bits GBR 444 12bits YCbCr 444 12bits YCbCr 422 12bits	Level A
1280×720	23.98/24/25/29.97/30/50/59.94/60p	YCbCr 422 10bits	Level B-DS
1920×1080	47.95/48/50/59.94/60P	YCbCr 422 10bits	Level A Level B-DL
1920×1080	23.98/24/25/29.97/30p 23.98/24/25/29.97/30psf 50/59.94/60i	GBR 444 10bits GBRA 4444 10bits YCbCr 444 10bits YCbCrA 4444 10bits GBR 444 12bits YCbCr 444 12bits YCbCr 422 12bits	Level A Level B-DL
1920×1080	23.98/24/25/29.97/30p 23.98/24/25/29.97/30psf 47.95/48/50/59.94/60i	YCbCr 422 10bits	Level B-DS
2048×1080	47.95/48/50/59.94/60p	YCbCr 422 10bits	Level A Level B-DL
2048×1080	23.98/24/25/29.97/30p 23.98/24/25/29.97/30psf 50/59.94/60i	GBR 444 10bits GBRA 4444 10bits YCbCr 444 10bits YCbCrA 4444 10bits GBR 444 12bits YCbCr 444 12bits YCbCr 422 12bits	Level A Level B-DL
2048×1080	23.98/24/25/29.97/30p	YCbCr 422 10bits	Level B-DS

5.2 Output

UVC		
Standard	Resolution	Frame Rate
USB3.0	1920×1080	60
	1600×1200	60
	1360×768	60
	1280×720	60
	1280×960	60
	1024×768	60
	800×600	60
	720×480	60
	720×576	60
	640×480	60
USB2.0	1920×1080	50
	1600×1200	50
	1360×768	60
	1280×720	60
	1280×960	60
	1280×1024	60
	800×600	60
	720×480	60
	720×576	60
	640×480	60

6、Appendix

6.1 Appendix A: Accessories

(The picture is for reference only, please refer to the real object):

USB3.0x 1

6.2 Appendix B: Safety And Needs

- Before operating the machine, please read this manual and keep it properly for future reference.

- Do not open the cover by yourself to avoid damaging the machine.

- Please unplug the power when the machine is not used for a long time.

- In order to reduce the risk of fire or electric shock, please do not let the machine be exposed to rain, damp or liquid flow into the machine. The machine is not dust-proof, moisture proof and waterproof.

- Please keep good ventilation of the machine and do not block the ventilation of the machine.

- Please do not put heavy objects on this machine.

- To maintain high-definition audio and video, please use high-quality signal cables and connectors.

- The input voltage range of this product's power supply is 5V, please use the correct power supply.

- The working temperature of this product is 0 °C~50 °C, please use within this temperature range; The storage temperature is - 30 °C~70 °C, please store within this temperature range.

- This product is an electronic product. Please keep away from fire sources, water sources and flammable and explosive dangerous goods.

- If any abnormality is found, please turn off the power switch immediately and contact the dealer. Do not repair the equipment by yourself.



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