

# iStream 402

## 4x2 Streaming Switcher

*User Manual V1.0*



## CONTENTS

|                                           |           |
|-------------------------------------------|-----------|
| <b>SAFETY .....</b>                       | <b>4</b>  |
| <b>1. OVERVIEW.....</b>                   | <b>4</b>  |
| <b>2. FEATURES .....</b>                  | <b>5</b>  |
| <b>3. FUNCTIONS.....</b>                  | <b>5</b>  |
| <b>4. DIMENSION .....</b>                 | <b>7</b>  |
| <b>5. SPECIFICATION .....</b>             | <b>8</b>  |
| <b>6. PORTS.....</b>                      | <b>9</b>  |
| 6.1 LEFT SIDE .....                       | 9         |
| 6.2 RIGHT SIDE.....                       | 9         |
| 6.3 UPPER & DOWN SIDE .....               | 10        |
| <b>7. SCREEN .....</b>                    | <b>11</b> |
| 7.1 INPUTS .....                          | 11        |
| 7.2 PREVIEW (PVW) AND PROGRAM (PGM) ..... | 12        |
| 7.2.1 PGM and PVW output signal.....      | 12        |
| 7.2.2 PGM and PVW source switching .....  | 12        |
| 7.2.3 BAR.....                            | 13        |
| 7.3 OSD MENU .....                        | 13        |
| 7.3.1 System Settings .....               | 13        |
| 7.3.2 Record Settings .....               | 14        |
| 7.3.3 Device Info.....                    | 14        |
| 7.3.4 Exit .....                          | 15        |
| 7.4 INFORMATION.....                      | 15        |
| <b>8. CONTROL.....</b>                    | <b>16</b> |
| 8.1 DESCRIPTION .....                     | 16        |
| 8.2 FUNCTION BUTTONS .....                | 17        |
| 8.3 AUDIO CONTROL .....                   | 17        |
| 8.3.1 Audio Flow.....                     | 17        |
| 8.3.2 Audio mix .....                     | 18        |
| 8.3.3 Volume adjustment.....              | 19        |
| 8.4 FTB .....                             | 19        |
| 8.5 RESO .....                            | 20        |
| 8.6 RATE .....                            | 20        |
| 8.7 PIP.....                              | 20        |
| 8.7 POP (F2) .....                        | 21        |
| 8.8 KEY .....                             | 22        |
| 8.9 STILL .....                           | 22        |
| 8.10 TRANSITION.....                      | 23        |
| 8.11 CUT/ AUTO/ T-BAR.....                | 24        |
| 8.11.1 CUT.....                           | 24        |
| 8.11.2 AUTO.....                          | 24        |
| 8.11.3 T-BAR.....                         | 25        |
| 8.12 LUMA KEY .....                       | 26        |
| 8.13 CHROMA KEY .....                     | 27        |
| <b>9. STREAMING &amp; WEB GUI.....</b>    | <b>29</b> |

|                                  |           |
|----------------------------------|-----------|
| 9.1 CHECK IP .....               | 29        |
| 9.2 LOGIN WEB GUI .....          | 29        |
| 9.3 IP ADDRESS SETTING.....      | 30        |
| 9.4 RTMP RATE.....               | 30        |
| 9.5 RTMP SETTING.....            | 30        |
| 9.6 WEB GUI NOTES .....          | 31        |
| <b>10. SOFTWARE CONTROL.....</b> | <b>32</b> |
| 10.1 DOWNLOAD AND INSTALL.....   | 32        |
| 10.2 CONNECTION .....            | 32        |
| 10.3 SETTINGS .....              | 33        |
| 10.4 ADD PICTURE .....           | 34        |
| 10.5 LOGO MENU .....             | 36        |
| 10.6 RECORD CONTROL .....        | 37        |
| 10.7 AUDIO CONTROL .....         | 37        |
| 10.8 AUDIO CONFIG .....          | 37        |
| 10.9 RESOLUTION.....             | 38        |
| 10.10 FTB.....                   | 38        |
| 10.11 TRANSITION TYPE .....      | 38        |
| 10.12 FUNCTION.....              | 39        |
| 10.13 PVW AND PGM .....          | 40        |
| 10.14 RATE .....                 | 40        |
| 10.15 CUT AND AUTO .....         | 40        |
| 10.16 T-BAR .....                | 41        |
| 10.17 SYNC AND EXIT .....        | 41        |

## SAFETY

- During transportation, handling, and installation of switchboard equipment, avoid collisions between the switchgear equipment and doors, walls, shelves, etc.
- When the equipment is unpacked and transported, it is strictly forbidden to put it down and drag it gently to avoid damage to the switchboard equipment.
- Do not place the switcher equipment in a flammable, explosive atmosphere or smoke environment. Do not perform any operation in this environment.
- Operating equipment should be kept away from water and moisture. The water in the switchgear or moisture will cause damage to the circuit of the switchgear equipment.
- A certain amount of heat will be generated during the operation of the switcher. Ensure that the switchgear equipment is ventilated and the switcher device can operate normally.
- It is a fatal hazard that indirect contact with the power supply by wet objects is prohibited. Unregulated, incorrect high-voltage operation can cause accidents such as fire or electric shock.
- It is forbidden to install and remove the switchgear equipment and power cord. When the power cord is in contact with the conductor, an arc or spark may be generated, which may result in fire or electric shock.

## 1. OVERVIEW

The **iStream 402** HD video streaming switcher adopts portable integrated design, adopts portable integrated design, metal shell, small size and light weight, suitable for small outdoor scenes video effects switching requirements. The device integrates multiview processor, special effect generator, audio processor, control keyboard and other switcher functions.

The **iStream 402** supports 4-CH HDMI inputs. 1 channel of Multiview output, which can be connected to the display to pre-monitor the current screen, external preview signals can be output synchronously, which is convenient for users to expand.

It supports HDMI embedded audio and external analog audio inputs. After mixing, it can be embedded into the output HDMI signal or output from the analog port.

The resolution of all input signals is automatically adapted, and the resolution of output signals can be selected according to requirements, which is quite flexible.

The **iStream 402** switcher is suitable for live performances, course recording and studio broadcasting, etc. The switcher has a variety of functions, such as and input resolution adaptive, analog audio input and output, audio embedding and de-embedding, audio mixing, Luma/Chroma key, PIP/POP, TF card recording, USB 3.0 streaming, RJ45 network port streaming, with remote upgrade capability.



## 2. FEATURES

It is a multi-functional switcher that requires no professional knowledge and can perform video switching and audio mixing with simple operations. This unit can be used in live broadcasting, church and various event venues.

- Portable all-in-one design, metal case, high strength and light weight.
- Support PGM and MultiView outputs.
- Support 4x HDMI inputs.
- Support 2x MIC inputs, 1 LINE IN input.
- Support 1x LINE OUT output.
- Support network streaming (RTMP).
- Support audio follow and mix function.
- Support HDMI audio de-embedding.
- Support effects switching, such as MIX/FADE.
- Support 4K signal input.
- Support FTB and color bar output.
- Supports overlay of images, text, and logo.
- Support USB3.0 UVC out.
- Support screen freeze function.
- Support POP/PIP function.
- Support luma and chroma key.
- Support PC remote control and DCB control.
- Support external expansion Tally system.
- Support wireless tally light.
- Support CUT and AUTO switching effects.
- Built-in chassis temperature detection and intelligent fan control system.
- Support software online upgrade.
- More than one hundred special effect wipes such as circle, rhombus, fan, plum blossom, shutter, etc.
- A separate PATTERN KEY can be used to set various anomalies patterns, the position, size, and quantity of images can be adjusted.

## 3. FUNCTIONS

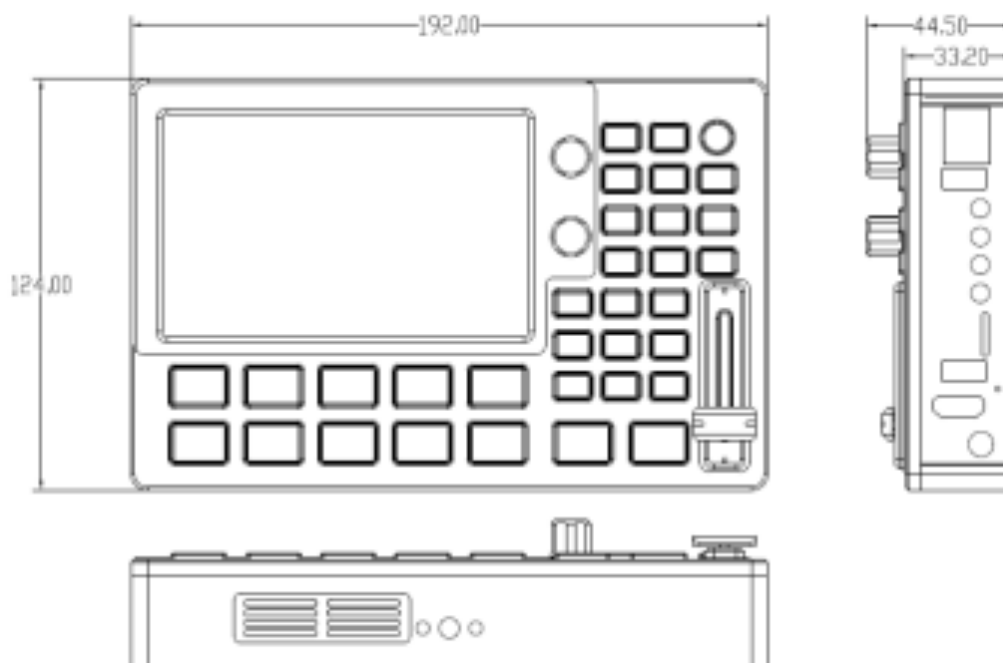
|                   |                        |
|-------------------|------------------------|
| Model             | iStream 402            |
| Name              | 4x2 Streaming Switcher |
| <b>Interfaces</b> |                        |
| Inputs            | 4x HDMI Inputs         |
| PGM               | 1x HDMI FHD Output     |
| Multiview         | 1x HDMI FHD Output     |
| DCB2 control      | √                      |

|                                                     |                |
|-----------------------------------------------------|----------------|
| TF card record                                      | √              |
| External USB record                                 | √              |
| Ext. SSD record                                     | √              |
| Network RTMP stream                                 | √              |
| Ethernet port (control/upgrade)                     | √              |
| USB3.0 (UVC)                                        | √              |
| Control method                                      | Button         |
| LCD size                                            | 5"             |
| Dimension                                           | 192*124*33.2mm |
| 2-CH MIC inputs                                     | √              |
| 1-CH LINE input                                     | √              |
| 1-CH LINE output                                    | √              |
| T-bar                                               | √              |
| 2 groups audio control faders                       | √              |
| <b>Effects</b>                                      |                |
| Chroma Key                                          | √              |
| Luma Key                                            | √              |
| Color bar output                                    | √              |
| FTB                                                 | √              |
| Color gamut                                         | RGB            |
| Audio follow                                        | √              |
| Audio mix                                           | √              |
| Hundreds of special effect wipes                    | √              |
| STILL                                               | √              |
| Fan intelligent temperature control rate adjustment | √              |

|                                     |       |
|-------------------------------------|-------|
| PC software control (network port)  | √     |
| MIX /FADE special effect transition | √     |
| 3 Transition Rate Adjustments       | √     |
| POP/PIP                             | √     |
| Highest resolution                  | 1080P |
| Input Resolution Adaptive           | √     |
| Adjustable output resolution        | √     |
| <b>Extensions</b>                   |       |
| Wireless TALLY                      | √     |
| Equipment cascading                 | √     |
| Synchronous control                 | √     |
| External keyboard                   | √     |

## 4. DIMENSION

Dimension: mm



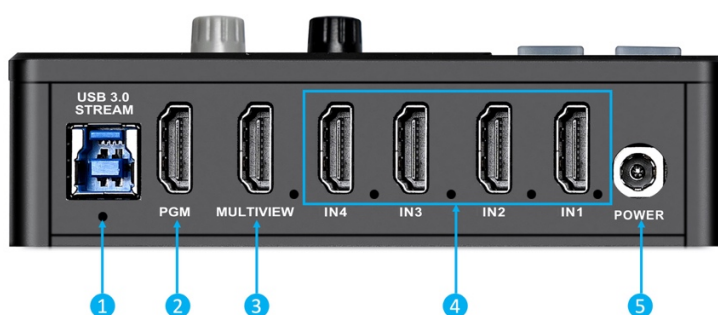
## 5. SPECIFICATION

|                           |                                                                                                                                                                    |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model                     | iStream 402                                                                                                                                                        |
| Name                      | 4x2 Streaming Switcher                                                                                                                                             |
| <b>Inputs</b>             |                                                                                                                                                                    |
| Input signal              | HDMI video signal                                                                                                                                                  |
| Rate                      | 270Mbps~6Gbps                                                                                                                                                      |
| Connector                 | HDMI A Female                                                                                                                                                      |
| Reflection loss           | >15dB 5MHz~3GHz                                                                                                                                                    |
| Signal amplitude          | 800mV±10% (HDMI)                                                                                                                                                   |
| Impedance                 | 100Ω (HDMI)                                                                                                                                                        |
| Balance                   | Adaptive                                                                                                                                                           |
| DVD input HD support      | 480i, 576i, 480p, 576p, 720p, 1080i, 1080p, 2160p                                                                                                                  |
| Computer HD input support | 3840x2160, 1920x1080, 1680x1050, 1600x900, 1440x1050, 1366x768, 1360x768, 1280x1024, 1280x960, 1280x800, 1280x768, 1280x720, 1280x600, 1152x864, 1024x768, 800x600 |
| <b>Output</b>             |                                                                                                                                                                    |
| Output signal             | HDMI video signal                                                                                                                                                  |
| Rate                      | 1.5Gbps~3Gbps                                                                                                                                                      |
| Connector                 | HDMI A Female                                                                                                                                                      |
| Signal amplitude          | 800mV±10% (HDMI)                                                                                                                                                   |
| Impedance                 | 100Ω (HDMI)                                                                                                                                                        |
| Clock recovery            | Optional                                                                                                                                                           |
| <b>Control</b>            |                                                                                                                                                                    |
| Control protocol          | CAN bus                                                                                                                                                            |
| Network control           | RJ45, 100M                                                                                                                                                         |
| <b>Others</b>             |                                                                                                                                                                    |
| Power supply              | DC 12V                                                                                                                                                             |
| Power                     | >20W                                                                                                                                                               |
| Control panel             | Support live production, integrate a variety of buttons                                                                                                            |

|                       |                           |
|-----------------------|---------------------------|
| Operating temperature | 0°C~50°C No condensation  |
| Storage temperature   | -20°C~75°C                |
| Working humidity      | 20%~70%RH                 |
| Storage humidity      | 0%~90%RH, No condensation |

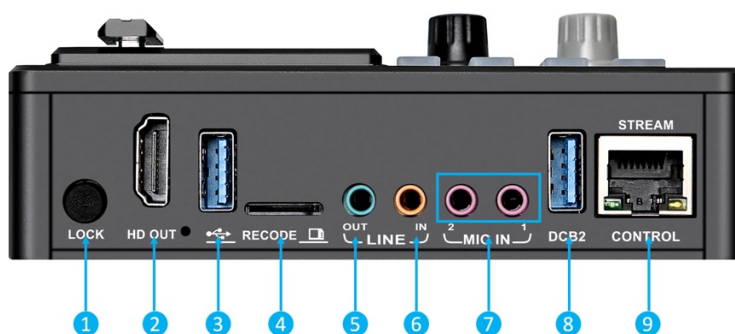
## 6. PORTS

### 6.1 LEFT SIDE



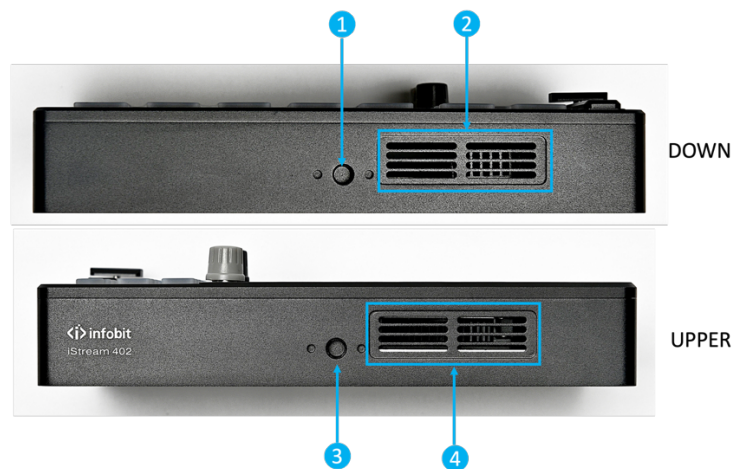
| No. | Definition    | Description                     |
|-----|---------------|---------------------------------|
| 1   | STREAM OUT    | USB-B 3.0 Interface, UVC Output |
| 2   | PGM Output    | 1x PGM Live Output              |
| 3   | Multiview Out | HDMI Multiview Output           |
| 4   | HDMI IN 1-4   | 4x HDMI Inputs                  |
| 5   | Power         | DC 12V Power Supply             |

### 6.2 RIGHT SIDE



| No. | Definition   | Description                                                       |
|-----|--------------|-------------------------------------------------------------------|
| 1   | LOCK         | Standby Switch                                                    |
| 1   | HD OUT       | HDMI Output                                                       |
| 2   | EXT HDD      | USB-A port, External Hard Drive Storage                           |
| 3   | TF Card Slot | TF Card Storage                                                   |
| 4   | LINE OUT     | Stereo Audio Output                                               |
| 5   | LINE IN      | Stereo Audio Input                                                |
| 6   | MIC IN       | 2x MIC Inputs                                                     |
| 7   | DCB2         | DCB control (device cascade / wireless tally / external keyboard) |
| 8   | RJ45         | Streaming/ upgrade/ remote control                                |

## 6.3 UPPER & DOWN SIDE



| NO. | Function           | NO. | Function           |
|-----|--------------------|-----|--------------------|
| 1   | Screw Hole         | 3   | Screw Hole         |
| 2   | Heat Emission Hole | 4   | Heat Emission Hole |

## 7. SCREEN



The iStream 402 is designed with a 5" LCD screen (NOT touch) to display **Preview**, **Program**, **Menu**, **Inputs**, and more **Information**.

| NO. | Function      | NO. | Function           |
|-----|---------------|-----|--------------------|
| 1   | Inputs 1-4    | 4   | OSD Menu           |
| 2   | PVW (Preview) | 5   | Transition Effects |
| 3   | PGM (Program) | 6   | Information        |

### 7.1 INPUTS



| NO. | Function            | NO. | Function           |
|-----|---------------------|-----|--------------------|
| 1   | PVW (Preview image) | 5   | 1-4 inputs for PVW |
| 2   | PGM (Program image) | 6   | BAR for PGM        |
| 3   | 1-4 Inputs preview  | 7   | BAR for PVW        |
| 4   | 1-4 inputs for PGM  |     |                    |

There are 4 windows below corresponding to the input sources, corresponds to buttons 1-4 (means the HDMI INPUT 1-4) on the control panel of the switcher.

## 7.2 PREVIEW (PVW) AND PROGRAM (PGM)

### 7.2.1 PGM AND PVW OUTPUT SIGNAL



After the device is connected to the video signal source, press 2 (PGM) and 1 (PVW) on the key panel, the live and preview signal sources in the output multiview are 2 (PGM) and 1 (PVW) respectively, the signal sources are HDMI IN2 and HDMI IN1 respectively. The effect diagram is as left.

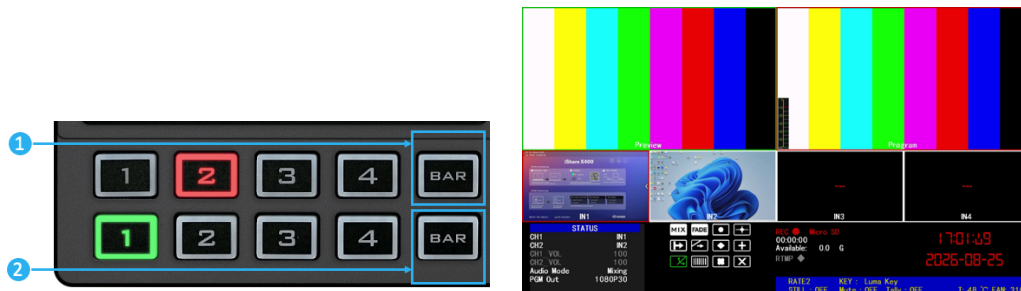
### 7.2.2 PGM AND PVW SOURCE SWITCHING

If you want to switch between live and preview sources in multiview (PGM  $\rightleftharpoons$  PVW)

Suppose you want to convert the live signal source 1 (PGM) and the preview signal source 2 (PVW) into 2 (PGM) and 1 (PVW) in the multi-screen, just click the PGM and PVW in the small window, and then click **AUTO** or **CUT** switch. The live PGM signal sources 1-4 can be switched arbitrarily with the preview PVW signal source.



## 7.2.3 BAR



After pressing the **BAR** button, the screen will output color bars.

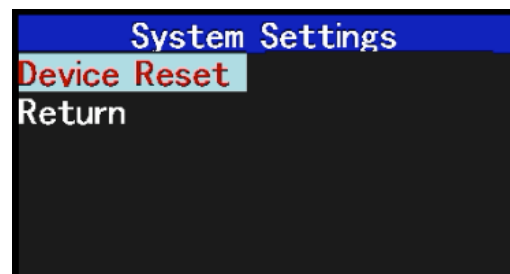
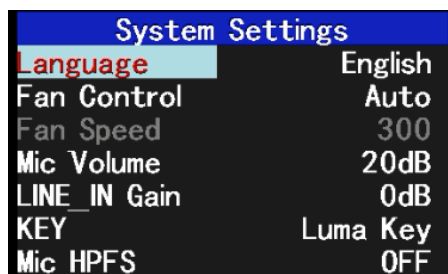
- **1 BAR:** to show color bars for PGM.
- **2 BAR:** to show color bars for PVW.

## 7.3 OSD MENU



Press the Menu button (white knob), the OSD menu will appear **System Settings**, **Record Settings**, **Device Info**, and **Exit**.

### 7.3.1 SYSTEM SETTINGS

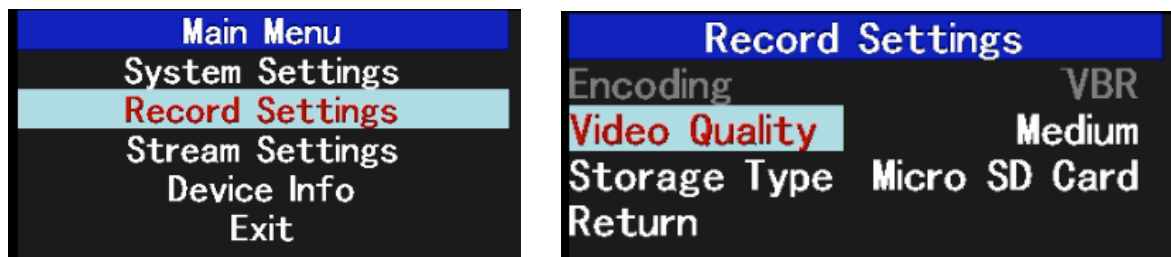


Turn the white knob to System Settings (in red color), then user can setup more details:

- **Language:** Including **English** and **Chinese**
- **Fan Control:** **Auto** or **Custom**
- **Fan Speed:** When **Custom** is enabled, user can setup fan speed from range **150-500**.  
(*Note: low speed will cause hardware temperature getting high, but fan noise is lower*)

- **Mic Volume:** Setup mic volume level from **-18 to 32dB**.
- **LINE\_IN Gain:** Setup line in gain level from **0dB to 24dB**.
- **KEY:** Select **Luma Key** or **Chroma Key**.
- **Mic HPFS:** **OFF, 16Hz, 30Hz, 60Hz, 90Hz, 120Hz, 243Hz, 495Hz**
- **Device Reset:** to reset the iStream 402.
- **Return:** Return current menu and back to previous menu.

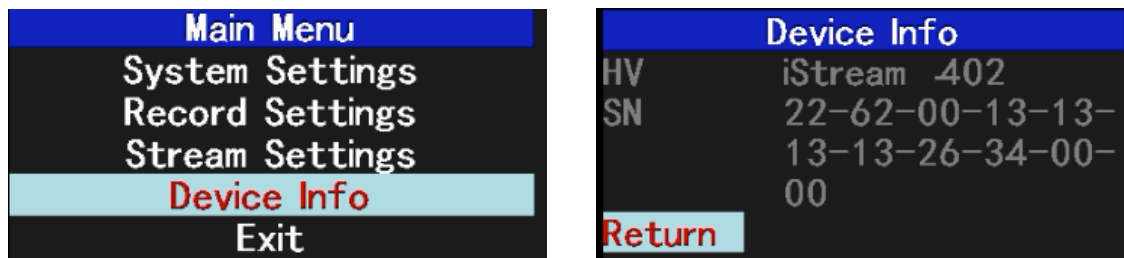
### 7.3.2 RECORD SETTINGS



Turn the white knob to Record Settings (in red color), then user can setup more details:

- **Encoding:** VBR
- **Video Quality:** Low, Medium, High, Ultra High
- **Storage:** Micro SD Card, USB Disk, Hard Disk (HDD),
- **Return:** Return current menu and back to previous menu.

### 7.3.3 DEVICE INFO



Turn the white knob to Device Info (in red color), then user can check more details:

- **HV (Hardware Version):** iStream 402
- **SN (Serial Number):** To check the serial number.
- **Return:** Return current menu and back to previous menu.

### 7.3.4 EXIT



Turn the white knob to Exit (in red color), then press the knob to exit the main menu.

### 7.4 INFORMATION



The Information Area shows some detailed information: Rec (Recording Storage, status, timing, connection.), Available storage, RTMP, Data and Time.

On the below blue color: It shows the current operation status.

## 8. CONTROL

### 8.1 DESCRIPTION



| No. | Function Areas             | Buttons                                                                                                        |
|-----|----------------------------|----------------------------------------------------------------------------------------------------------------|
| 1   | Function area              | Menu Knob, F1, F2, F3, F4, ON/OFF, REC, PAUSE, MUTE                                                            |
| 2   | Audio control area         | Mainly set the audio follow, audio mix and control the audio volume. Including Audio Knob, CH1, CH2, AFV, MIX. |
| 3   | Comprehensive control area | FTB, RESO, RATE                                                                                                |
| 4   | PIP/POP area               | PIP, KEY, STILL                                                                                                |
| 5   | Transition control area    | MIX, FADE, WIPE                                                                                                |
| 6   | Shortcut control area      | CUT, AUTO: Select transition effects                                                                           |
| 7   | T-bar                      | Transition effect                                                                                              |
| 8   | PGM inputs                 | Select inputs 1-4 or Bar for PGM                                                                               |
| 9   | PVW inputs                 | Select inputs 1-4 or Bar for PVW                                                                               |

## 8.2 FUNCTION BUTTONS



**White Knob:** Menu button

**ON/OFF:** Switch ON/ OFF the device.

**F1:** enables **streaming**

**F2:** enables **POP** function

**F3:** enables **PATTERN KAY**

**F4:** enables **LOGO**

**REC:** The video can be recorded by pressing REC.

**PAUSE:** To pause/ resume the video recording.

**MUTE:** Press the button to switch to silent mode.

## 8.3 AUDIO CONTROL



**Black knob:** Control the volume.

**CH1:** Select audio channel 1

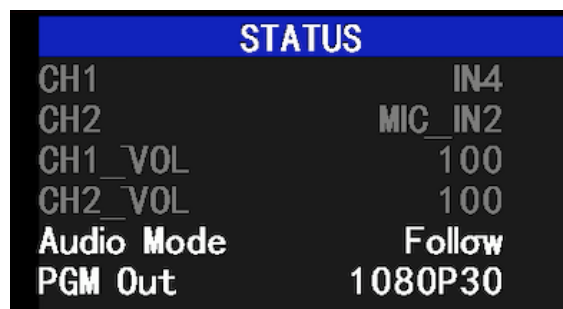
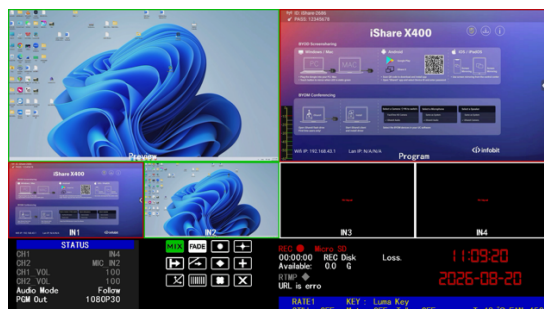
**CH2:** Select audio channel 2

**AFV:** Audio Flow Video mode.

**MIX:** Mix audio.

### 8.3.1 AUDIO FLOW

1. Press the **AFV** (Audio Follow Video) button, it will light up green, the menu corresponding to the multi-screen will also display the current audio status, and the Audio Mode in the menu will display Follow, indicating that the audio is in follow mode.



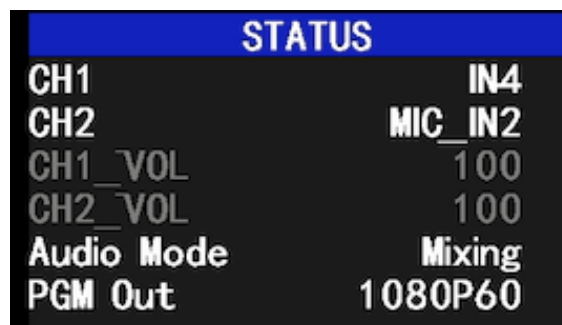


2. The channels in audio follow mode include IN1, IN2, IN3, IN4, and the corresponding buttons on the operation panel (at this time, 2 of PGM in the button panel lights up, indicating that the IN2 signal source is being operated) as shown in the figure below



3. Turn the white knob to select menu you want to control, press this knob to confirm selection. Turn the black knob to adjust the volume.

### 8.3.2 AUDIO MIX



1. Press the **MIX** button beside CH2 and MUTE, the button will light up green at this time, and the menu corresponding to the multi-screen will also display the current audio status.

The **Audio Mode** in the menu displays **Mixing**.

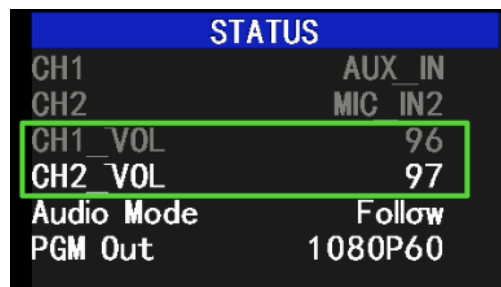


2. The channels assigned for mixing include IN1, IN2, IN3, IN4, AUX\_IN, MIC\_IN1, MIC\_IN2. User can select the desired audio channel by toggle the buttons **CH1** or **CH2**. In the mixing assignment mode, there are two more audio embedding functions; The AUX\_IN represents a 3.5 audio interface, and MIC\_IN represents a 3.5 microphone audio interface; the PGM live output can arbitrarily mix two audio channels at the same time, and the volume levels of the two audio channels can also be adjusted separately via the **black knob**.

### 8.3.3 VOLUME ADJUSTMENT

1. Press the **black knob**, and the light bar of **CH1\_VOL** will light up in the menu, indicating that the volume of channel 1 is being operated; when you press the black knob again, the light bar will jump to **CH2\_VOL**, which is the volume of channel 2.

Turning it **counterclockwise** decreases the volume, and turning it **clockwise** increases the audio volume.



### 8.4 FTB



#### FTB (Fade to black)

The **FTB** button is defined as the output of the emergency black scene. Press the button, the red-light flashes, and the FTB black scene output function is turned on; when the button is pressed, the red light goes out, and the FTB emergency black scene function is turned off.

It is a dedicated master output function that smoothly fades the main program feed (both video and, optionally, audio) to complete black.

#### How FTB Works?

In a video switcher signal path, FTB sits at the **very end of the processing chain**. This means when you press the FTB button:

- It overrides all active video sources, lower-third graphics, on-screen logos, and multi-layer keys simultaneously, fading everything down together uniformly.
- The underlying switcher layout remains untouched in the background. Un-triggering FTB brings your exact scene back up without having to manually turn off individual graphic overlays.

#### Why Use It?

- **Clean Show Starts and Ends:** Provides a smooth, professional opening and closing transition to a live event, broadcast, or presentation instead of a harsh hard cut.
- **Commercial Breaks & Scene Changes:** Used to cleanly transition out of a live show segment into commercials or to signify a major shift in time/location.

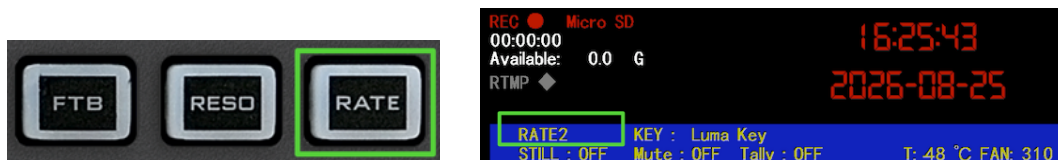
- **Emergency Override ("Panic Button"):** If something goes wrong on stage or a camera feeds graphic/unwanted content, FTB acts as an instant kill switch to clear the screen instantly without needing to figure out which input is currently live.
- **Simultaneous Layer Control:** Without FTB, fading out a scene with three active overlay keys (like titles, logos, and a side-by-side box) requires manually clearing each key or setting up a complex macro. FTB handles all of it in a single button press.

## 8.5 RESO



**RESO (Resolution):** To select PGM resolution, including 1080p24/ p25/ p30/ p50/ p60, 1080i50/ i60.

## 8.6 RATE



**RATE:** Select rate 1/2/3 levels.

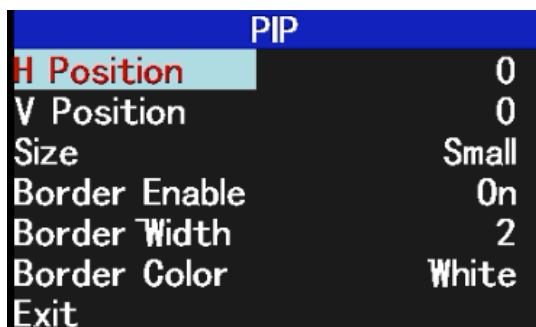
## 8.7 PIP



**PIP** (Picture-in-Picture) effect: press this button (green light is displayed after pressing), then click **AUTO** or **CUT** to switch.



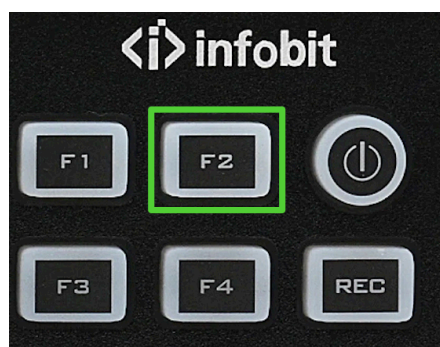
At this time, the information on the LCD screen will be switched to the PIP picture-in-picture setting, and you can set it according to your needs after pressing the menu button. As shown:



Use the menu button (**White knob**) to set the parameters of PIP, the situation is as follows (the horizontal position/vertical position size is based on the smallest display image as an example).

- **H Position** (Horizontal): The value from the upper left end to the upper right end is 0-1440, and the value increases or decreases by 10 each time when the knob is turned.
- **V Position** (Vertical): The value from the upper left end to the lower left end is 0-810, and the value increases or decreases by 10 each time when the knob is turned.
- **Size**: Small, Medium or Large settings can be selected.
- **Border Enable**: On/Off settings can be selected.
- **Border width**: The border width can be selected from 2-7 thickness, and the value increases or decreases by 1 each time when the knob is turned.
- **Border color**: You can choose white, red or green.

## 8.7 POP (F2)



**POP** (Picture-Out-Picture) Special Effect: press **F2** on the control panel (green light is displayed after pressing), then click **AUTO** or **CUT** to switch.

At this time, the information on the LCD screen will be switched to the POP setting, and you can set it according to your needs after pressing the menu button (white knob). As shown below:



| POP           |       |
|---------------|-------|
| Window        | 2     |
| H Position    | 960   |
| V Position    | 270   |
| Size          | Large |
| Border Enable | On    |
| Border Width  | 2     |
| Border Color  | White |

You can use the **white knob** to set the parameters of the POP.

- **Window:** You can choose 1/2 pictures.
- **H Position (Horizontal position):** the value from the upper left end to the upper right end is 0-960, and the value increases or decreases by 10 every time when the knob is turned.
- **V Position (Vertical position):** The value from the upper left end to the lower left end is 0-540, and the value increases or decreases by 10 every time when the knob is turned.
- **Border Enable:** You can choose the On/ Off setting.
- **Border width:** The border width can be selected from 2-7 thickness borders, and the value will increase/decrease by 1 every time when the knob is turned.
- **Border color:** You can choose white, red, blue or green.
- **Exit:** Press to exit the current menu.

## 8.8 KEY



**KEY:** Press to turn the KEY function. For more details, refer to 8.12 LUMA KEY and 8.13 CHROMA KEY.

## 8.9 STILL



**STILL** (Screen freezing) effect: Press the STILL button (the green light will be displayed after pressing), and the output PGM video animation will enter the freezing phenomenon. Press the button again to unfreeze the screen.

## 8.10 TRANSITION



**Buttons**



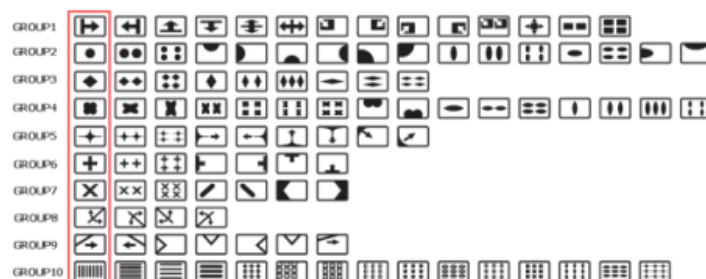
**OSD Menu**

There are three transition modes: **MIX**, **FADE**, and **WIPE**.

- **MIX**: Press this button, then push the T-bar to effect.
- **FADE**: Press this button, then push the T-bar to effect.
- **WIPE**: Toggle this button to select type and use the white knob to select more sub types. Then push the T-bar to effect.

**Note:** The **WIPE** transitions include up, down, left and right.

The iStream 402 is built-in with 100+ transition patterns.



Special effect style selection, select the special effect style by rotating the **white knob**, press the button to confirm or flash 2 second automatic confirmation.

When switching signal sources, the "**CUT**" button can immediately perform hard switching operations. You can manually control the video special effects transition using a **T-bar** push rod or press the **AUTO** button to perform automatic transition.

## 8.11 CUT/ AUTO/ T-BAR



**CUT:** To switch the PGM and PVW inputs immediately without any transition effects.

**AUTO/ T-Bar:** To switch the PGM and PVW inputs immediately with selected transition effects.

### 8.11.1 CUT

**CUT** and **AUTO** are the two primary transition execution controls on an AV switcher. They dictate *how* the switcher switches from your active live feed (**Program**) to your staged upcoming feed (**Preview**).

#### **CUT (Instant Transition)**

Pressing **CUT** performs an immediate, zero-frame hard switch from the Program source to the Preview source.

- **How it works:** The instant you press it, source A disappears and source B appears on screen. There is no blend, fade, or visual effect in between.
- **When to use it:**
  - Live camera switching during fast-paced events, talk shows, or panel discussions.
  - Rhythm-based switching (cutting on a beat or when a speaker starts talking).
  - Most default video edits in standard broadcasts.

### 8.11.2 AUTO

#### **AUTO (Timed Transition)**

Pressing **AUTO** executes a smooth, timed transition effect (such as a mix/dissolve, wipe, or sting) over a pre-set duration (e.g., 1.0 second).

- **How it works:** When pressed, the switcher automatically performs the selected transition type at a uniform speed without needing you to manually slide a physical T-bar.

- **Transition types controlled by AUTO:**
  - **Mix:** Cross-fades gradually between the two sources.
  - **Wipe:** A geometric shape or line slides across the screen to reveal the next shot.
  - **Fade:** An animated fade in/out effect transitions the video feeds.
- **When to use it:**
  - Softening a transition during slow, emotional, or high-production moments.
  - Transitioning into video roll-ins, graphics, or slide decks using wipes or dissolves.
  - Executing branded graphic stingers during sports replays or segment changes.

| Quick Comparison       |                          |                                                  |
|------------------------|--------------------------|--------------------------------------------------|
| Feature                | CUT                      | AUTO                                             |
| Speed                  | Instantaneous (0 frames) | Timed duration (e.g., 0.5s to 2.0s)              |
| Visual Style           | Direct hard cut          | Smooth effect (Fade, Wipe, Mix)                  |
| Manual Control Needed? | No                       | No (uses preset rate; replaces manual T-bar use) |
| Primary Feel           | Direct, clean, immediate | Stylized, gradual, fluid                         |

### 8.11.3 T-BAR

#### T-Bar vs. AUTO: How They Differ

##### 1. Tactile vs. Machine Timing

- **AUTO:** Uses an internal timer (e.g., exactly 1.0 second). The transition starts, progresses, and ends at a perfectly linear speed from start to finish.
- **T-Bar:** Maps the transition progress directly to the physical position of the lever. Move it fast, and the transition moves fast; move it slowly, and the dissolve lingers.

##### 2. Speed Adjustability On-the-Fly

- **AUTO:** Cannot change speed mid-transition.
- **T-Bar:** Allows you to change pace mid-travel—feathering into a slow fade, speeding up, or matching the physical tempo of a live performer or music cue.

##### 3. Mid-Transition Pause ("Superimposition")

- **AUTO:** Runs automatically until completion.
- **T-Bar:** Can be stopped halfway (at 50% travel). This holds a **50/50 mix** on air indefinitely, allowing you to manually blend two camera shots together—such as overlaying a close-up of a musician's hands on a piano over a wide stage shot.

#### T-Bar Operational Details

- **Bi-Directional Functionality:** Moving the T-bar from bottom-to-top executes a transition. Once it reaches the top, the next transition is executed by pulling it back down from top-to-bottom. The direction doesn't matter; full travel always equals 100% transition.
- **Auto-Sync:** If you press AUTO while the T-bar is sitting halfway through a stroke, the AUTO button will keep ON and can NOT press again, you must move the T-bar all the way to one end to re-engage manual control.

| Direct Comparison   |                                                  |                                              |
|---------------------|--------------------------------------------------|----------------------------------------------|
| Aspect              | Physical T-Bar                                   | AUTO Button                                  |
| Pacing              | Dynamic, manual, expressive                      | Fixed, consistent, preset duration           |
| Mid-Transition Hold | Yes (stop the bar halfway)                       | No (runs 0% to 100% automatically)           |
| Best For            | Live music, sports, dramatic beats, manual mixes | News, corporate streams, repetitive graphics |
| Operator Skill      | Requires steady hand control                     | One-touch operation                          |

## 8.12 LUMA KEY

### Luma Key (Luminance-Based Keying)

Luma key isolates and removes **pixels based on brightness levels** (luminance)—specifically targeting **pure black** or **pure white** areas—regardless of color.

**How it works:** You set a brightness threshold on the switcher. Anything darker (or brighter) than that threshold becomes transparent, allowing the background video to show through.

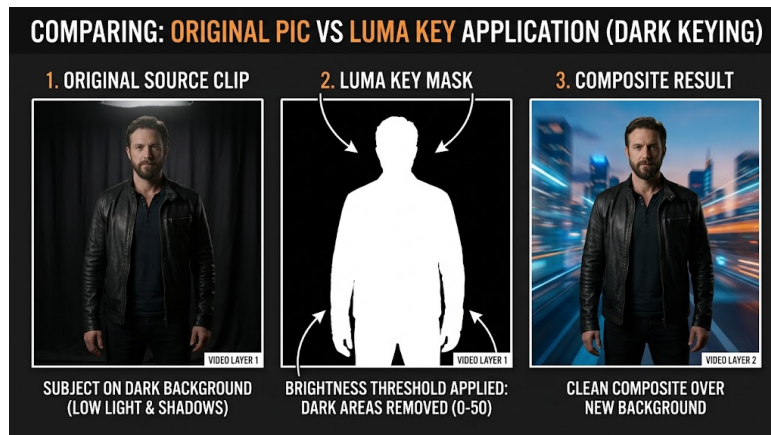
### Best Used For:

- Lower-third text graphics, titles, and lower-third overlays designed on a solid black background.
- On-screen logos or watermarks created over white or black canvas.
- High-contrast physical elements like silhouetted figures or white particle effects (dust, fire sparks) over dark backgrounds.

Turning on this function will **deduct the black part** of the key source. Then it overlaps with the background image to achieve the purpose of keying and **overlaying the background**. This function is generally used for superimposing **subtitles** in virtual studios.

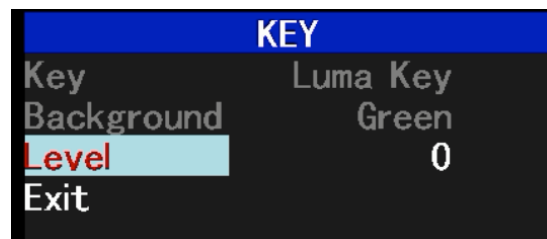
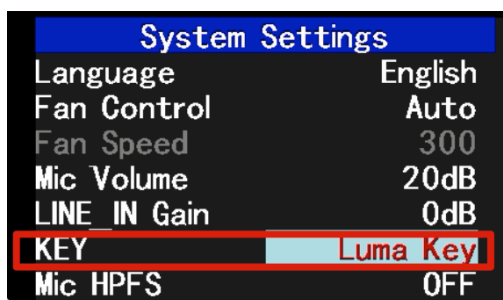
Switch the **white font video or picture** with a black background to the **PVW preview window** and enable the brightness key function of KEY1. At this time, a brightness key parameter setting interface will appear on the LCD. Then use CUT/AUTO/T-Bar to switch to superimpose the characters on the screen. PGM, keying color gamut settings:

After pressing KEY, the display menu will display the current Luma KEY information, as shown below.



Introduction: How luma key work?

Press the **White Knob** menu button→**System Settings**→**Key**→ **Luma Key** to enable.



## 8.13 CHROMA KEY

Both **luma key** and **chroma key** are visual effects techniques used in AV switchers to isolate a part of one video signal (the "keyer") and overlay it on top of another background video feed. The difference lies in what attribute the switcher uses to remove the background.

### Chroma Key (Color-Based Keying)

Chroma key isolates and removes a **specific color value** (chrominance) from an image, replacing that color with a background video source.

Chroma key keying supports dynamic video source image and static source keying. The switch will cut out the **blue** or **green** part of the key source, keep other colors, and then overlap with the background image to achieve the purpose of keying and overlaying the background. This function It is generally used for superimposing subtitles in virtual studios, etc.





*Introduction: how chroma key works.*

**How it works:** The switcher isolates a **specific hue**—most commonly **pure green** or **blue**—and makes every pixel matching that color range transparent.

**Why Green/Blue?** Human skin tones contain very little green or blue hue, making it easy to composite human presenters without cutting out parts of their skin or hair.

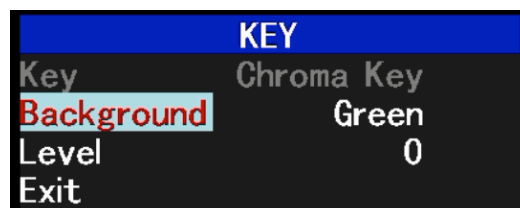
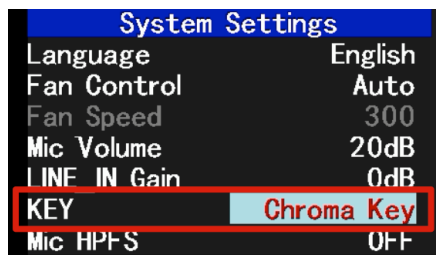
#### Best Used For:

- Live weather broadcasts with presenters standing in front of map graphics.
- Virtual news studios and live stage set replacement.
- Gaming streams overlaying a camera feed on top of gameplay.

Switch the **blue background** or **green background** to the **PVW window** and then enable the **Chroma KEY** function. At this point, a Chroma key parameter setting interface will appear on the LCD screen. Use the knob to select the background of your keying. After selecting, you can use CUT/AUTO/T-bar to achieve keying. At this time, the image you want to superimpose will appear on the PGM on the screen.

When pressing the KEY, the display menu will display the current Chroma Key information, as shown below.

(Press the **White Knob** menu button→**System Settings**→**Key**→ **Chroma Key** to enable.)



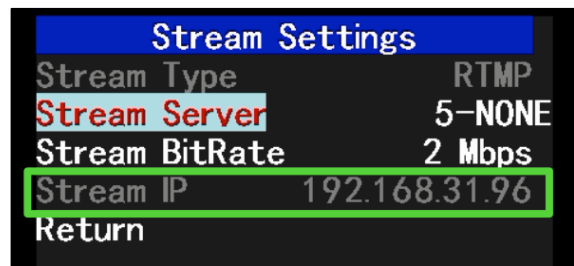
## 9. STREAMING & WEB GUI

The switcher is a hardware streaming device that must be connected to the local area network (LAN) via the STREAM ports (Type-C and RJ45) on the side of the unit. Next, access the **Streaming Settings** in the device menu and locate the **Stream IP** option to find its assigned IP address, which is automatically acquired upon connecting to the LAN. Use this IP address to access the web interface.

### 9.1 CHECK IP

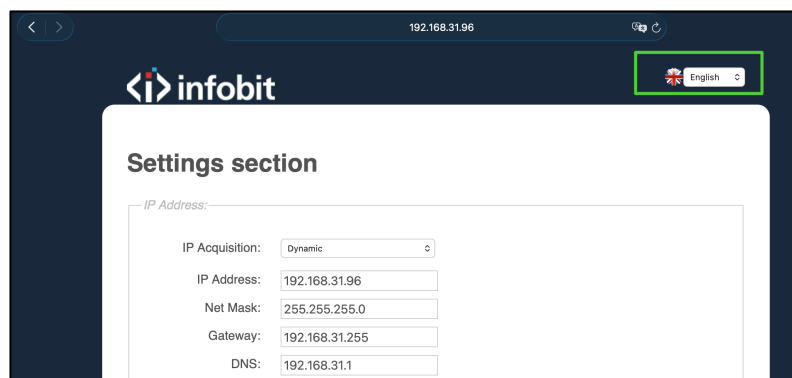
Connect the **iStream 402** to your **LAN** (network switch or WiFi router with **DHCP** enabled).

Press the menu button (**White Knob**) to enter **Main Menu**, turn the knob to **Stream Settings**, as below: (here as 192.168.31.96 as example)



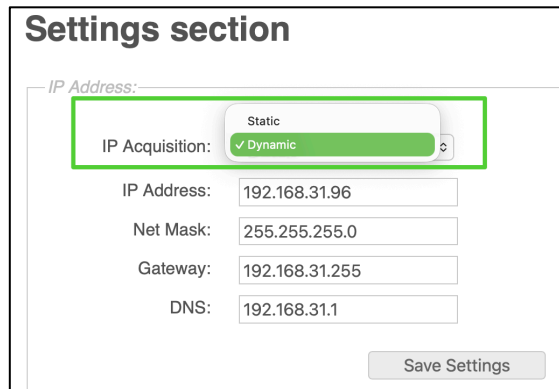
### 9.2 LOGIN WEB GUI

Write the iStream 402 **Stream IP** (for example here 192.168.31.96) to web browser and enter the web GUI. Then select English or Chinese language at the top-right corner.



## 9.3 IP ADDRESS SETTING

After login the web GUI, select **Dynamic** or **Static IP** address setting from the drop-down list:



**Settings section**

IP Address:

IP Acquisition: Static ✓ Dynamic

IP Address: 192.168.31.96

Net Mask: 255.255.255.0

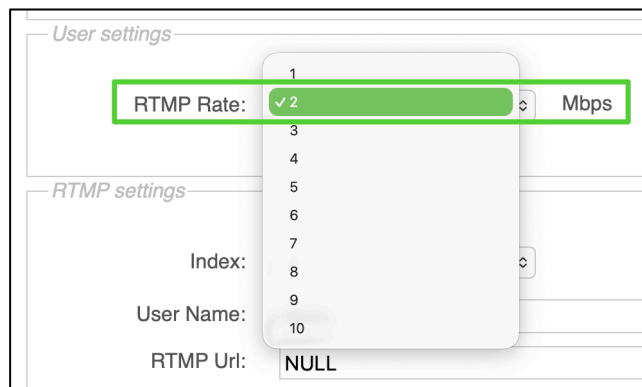
Gateway: 192.168.31.255

DNS: 192.168.31.1

Save Settings

## 9.4 RTMP RATE

There are **1-to-10 Mbps** levels selection from the drop-down list:



User settings

RTMP Rate: 1 ✓ 2 3 4 5 6 7 8 9 10 Mbps

RTMP settings

Index:

User Name:

RTMP Url: NULL

## 9.5 RTMP SETTING

Select Index, input **User Name**, and **TRMP URL** address, then click **Streaming ON**.

After enable streaming, the button will turn to be **Streaming OFF** which can be disable streaming.



RTMP settings

Index: 5

User Name: INFOBIT

RTMP Url: NULL

Load Save **Streaming ON**



RTMP settings

Index: 5

User Name: INFOBIT

RTMP Url:

Load Save **Streaming OFF**

- **User Name:** It allows you to custom-name each set of streaming addresses, using letters and numbers only. The streaming names saved via the web interface can be viewed under **Streaming Settings** in the device menu.
- **Index:** 1-8 options, means it can save up to 8x streaming in the device.

## 9.6 WEB GUI NOTES

1. When the **recording** function is enabled, features on the WEB interface—such as frame rotation and recording bitrate—are locked and cannot be adjusted. Please configure these parameters before starting recording.
2. While the **streaming** function is active, you can adjust the streaming bitrate and frame rotation at any time.
3. Changing the frame rotation setting applies to both **recording and streaming** simultaneously, meaning all recorded and streamed video will feature the rotated image. Please confirm your desired parameters before adjusting.
4. If you change the streaming bitrate or recording quality directly on the device, the WEB interface status will not update automatically. You will need to press F5 on your keyboard to manually refresh the page.
5. Once connected to the WEB interface, you can change the IP address. If you forget the WEB interface IP address later, you can check it under **Streaming Settings** in the device menu.
6. Any changes made to the IP address or streaming settings must be saved under the **Parameter Settings** module.
7. The index within **Streaming Settings** can store up to 8 streaming profiles. The username supports letters and numbers only, and the streaming address refers to your live streaming platform's RTMP/URL address.
8. You can connect to the device via the WEB interface beforehand to pre-save your live streaming platform addresses. When on-site, you can select any of the saved platforms to start streaming immediately.
9. On the WEB interface, the **Read Settings** option under **Streaming Settings** allows you to retrieve saved stream addresses from the device. Select the index number and click **Read** to display the stored configuration.
10. The frame rotation setting for recording and streaming will not be saved after the device is powered off.

## 10. SOFTWARE CONTROL

### 10.1 DOWNLOAD AND INSTALL

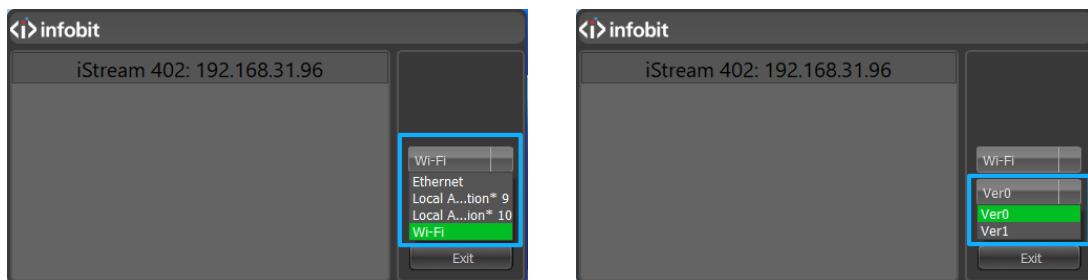
The **iStream 402** supports Windows PC software control, visit [www.infobitav.com/istream-402](http://www.infobitav.com/istream-402) to download software.

| Name                                                                                   | Date modified     | Type        | Size      |
|----------------------------------------------------------------------------------------|-------------------|-------------|-----------|
|  DSCC | 7/28/2026 5:54 PM | Application | 21,999 KB |

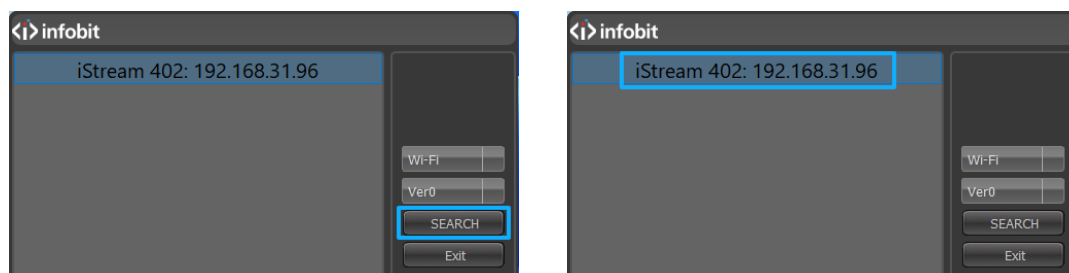
Double click and install the software **DSCC.exe**.

### 10.2 CONNECTION

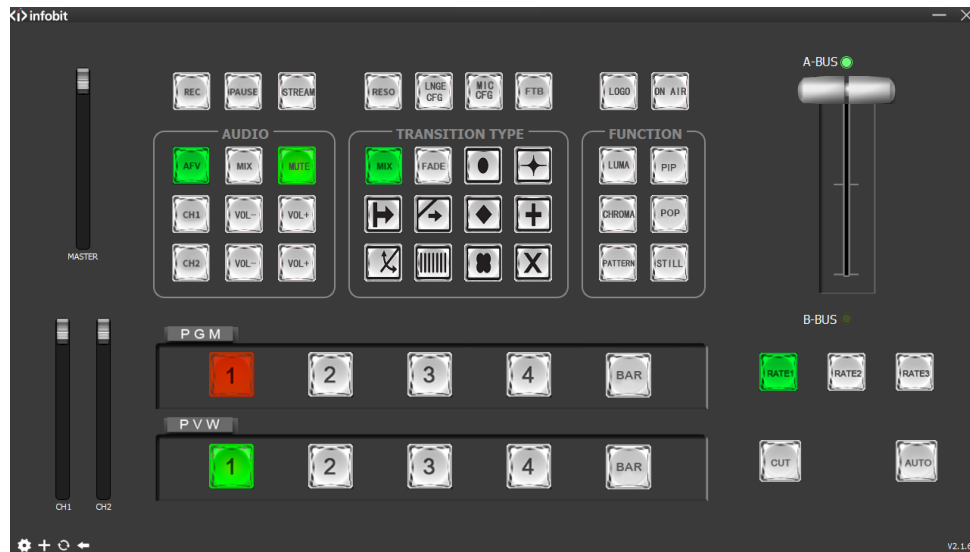
Before use software control, make sure the **iStream 402** and your PC are under the same IP address segment through same LAN.



Select your LAN connection and version. Then the connected iStream 402 will be auto detected. Or click Search to find, see below. Then double click the found device to open the software control page.

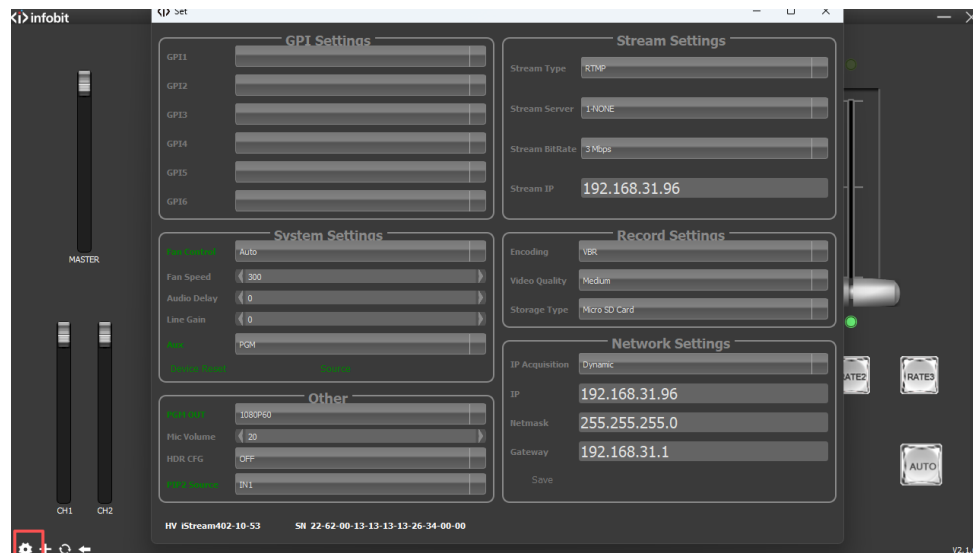


Software interface is shown as below:



## 10.3 SETTINGS

Click the **settings** icon to setup more configurations: GPI settings, System Settings, Other, Stream Settings, Record Settings, Network Settings.



**GPI settings:** Setup GPI 1-6.

**System Settings:** Fan Control, Fan Speed, Audio Delay, Line Gain, AUX types, Device Reset and Sources.

**Other:** PGM OUT, Mic Volume, HDR CFG, PIP2 Source.

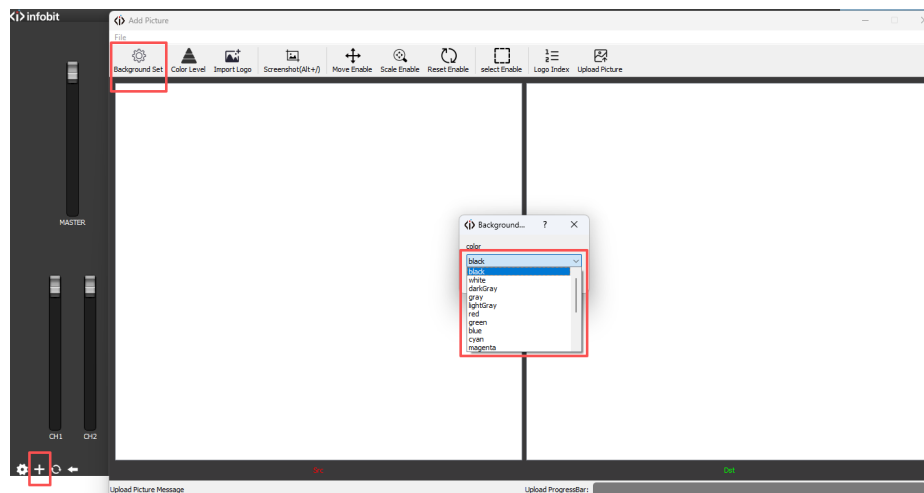
**Stream Settings:** Stream Type, Stream Server, Stream BitRate, Stream IP.

**Record Settings:** Encoding type, Video Quality, Storage Type.

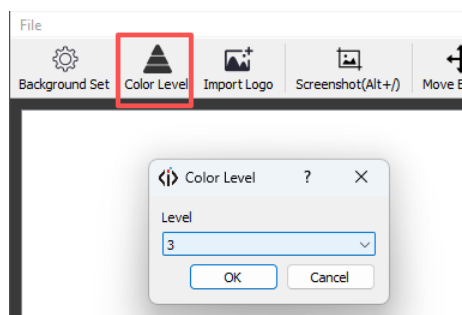
**Network Settings:** IP Acquisition, IP, Mask, Gateway.

## 10.4 ADD PICTURE

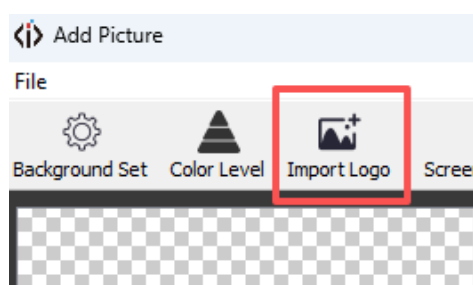
Click the + icon to add picture.



**Background Set:** Select background colors like black, white, darkGary, gary, LightGary, red, green, blue, cyan, magenta, yellow, darkRed, darkGreen, darkBlue, darkCyan, darkMagenta, darkYellow, or transparent. If you do not select it, the default is black background. Then click Import Logo to add the Logo image, select the image you want to upload, and wait for the image to be displayed in the software.

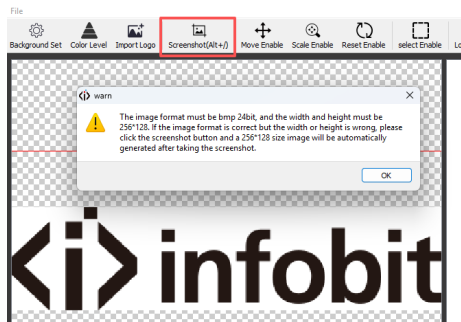


**Color Level:** Select 1 to 5 levels. Set the keying color level. The larger the value, the cleaner the keying will be.

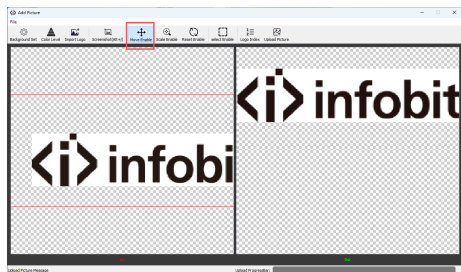


**Import Logo:** upload your logo file, support .bmp 24bit format and size 256\*128px.

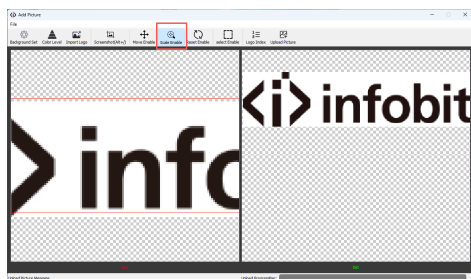




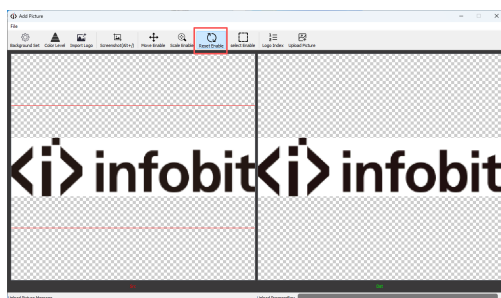
**Screenshot:** If the logo image is .bmp format but the width or height is wrong, you can click screenshot button, and a 256\*128 size image will be automatically generated. If failed to generate, please edit the image manually.



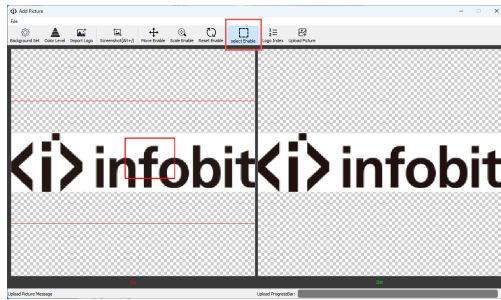
**Move Enable:** To move the picture.



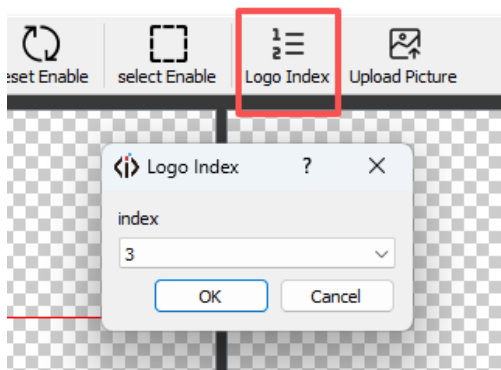
**Scale Enable:** To zoom in the picture.



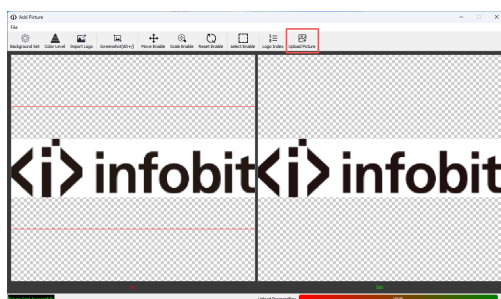
**Reset Enable:** to reset the picture settings.



**Select Enable:** to select area.



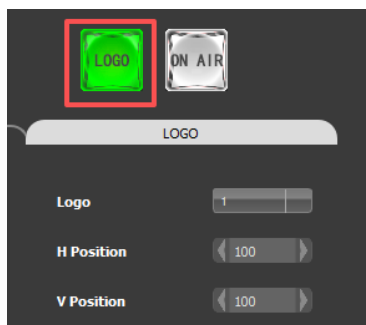
**Logo Index:** Select logo serial number from 1-3.



**Upload Picture:** To update the logo file to iStream 402. The time of uploading the picture depends on the network speed. Users need to wait patiently. Do not operate the switcher during the process of uploading pictures to avoid the device freezing.

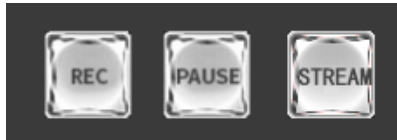
**Note:** Through the PC software, users can import the logo by themselves and then upload the logo to the switcher. The switcher can save a total of 4 logos, and the saved logos can be selected in the Logo menu.

## 10.5 LOGO MENU



Click LOGO button on the software, then select Logo serial number, set the H and V positions.

## 10.6 RECORD CONTROL



Control including **Rec**, **Pause**, **Stream**.

## 10.7 AUDIO CONTROL



Control AFV, MIX, MUTE, CH1, CH2, VOL-, VOL+, and audio bar.

## 10.8 AUDIO CONFIG



To configure the Line Gain details.



To configure the Mic volume details.

## 10.9 RESOLUTION



Change PGM output Resolution

## 10.10 FTB



FTB: Fade to black, refer to 8.4 FTB.

## 10.11 TRANSITION TYPE

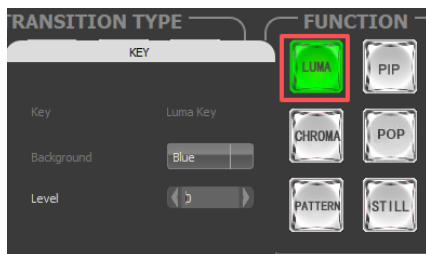


Transition control: see 8.10 Transition.

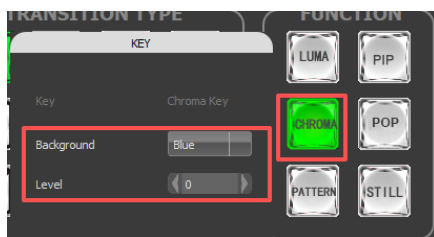
## 10.12 FUNCTION



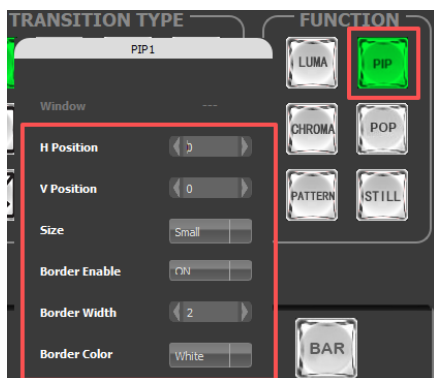
*Including LUMA Key, Chroma Key, Pattern, PIP, POP, STILL control.*



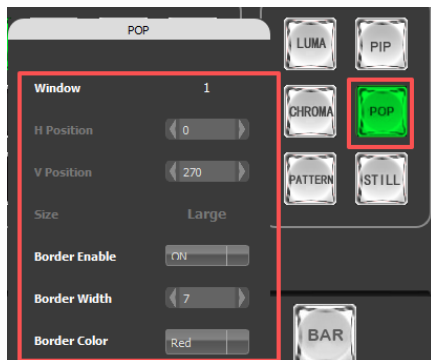
*To setup background color and Luma key levels.*



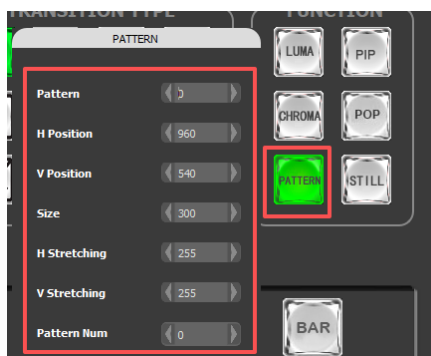
*To setup background color and Chroma key levels.*



*To setup PIP details.*



*To setup POP details.*



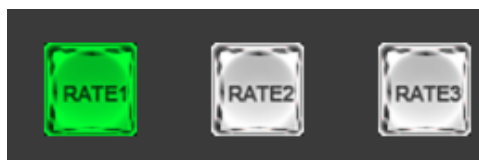
*To setup pattern details.*

## 10.13 PVW AND PGM



*Same as buttons control.*

## 10.14 RATE



*To setup record rate levels.*

## 10.15 CUT AND AUTO



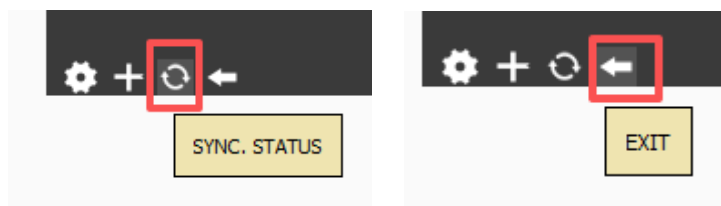
*Same as buttons control.*

## 10.16 T-BAR



*Same as T-bar control.*

## 10.17 SYNC AND EXIT



Click the refresh icon to sync the status of iStream 402 hardware status to the software.

Click the arrow icon to exit the software.