mini-ultra

Elevating Content Creation to 4K Excellence





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Product Overview

Building on the legacy of the mini series, the mini-ultra marks a leap from FHD to UHD, empowering content creators to effortlessly transition into 4K production and elevate their work to new heights.

The mini-ultra's 4K journey begins with versatile input options, including 2 x HDMI 2.0 inputs, 1 x 4K NDI|HX3 input, 1 × 4K UVC or media input. Seamless content integration is achieved via USB drives or the TAO cloud, offering access to graphics and media assets. Creators can design and customize two live canvas windows, blending media and backgrounds into presets that can be seamlessly switched to Program Outputs.

The output capabilities are equally robust, featuring 2 x HDMI 2.0, 1 x NDI, RTMP(s) for live streaming, 1 x USB 3.X for capture, and 1 x USB 3.0 for recording.

For audio, the mini-ultra offers advanced onboard management with support for 4 digital embedded audio channels and 1 analog input. It includes a professional-grade equalizer, echo effects, fusion processing, and mixing tools for precise sound control. Outputs can be customized with features like AFV (Audio Follow Video) or mute.

The mini-ultra also excels in PTZ camera remote control, particularly with 4K UHD PTZ cameras. Whether capturing content via HDMI 2.0 or 4K NDI, the mini-ultra delivers unparalleled flexibility and performance for content creators looking to push their craft to the next level.

Key Features

● Mini and convenient to carry

● 4-inch TFT touch screen for icon menu control, preview, and working status display

● USB 3.0 4K recording capability, maximum recording bitrate is 16 Mbps

● 2-CH HDMI 2.0 input, maximum resolution 4K@60, HDCP 2.0 support

● 1-CH 4K NDI / HX3 input and output

● USB 3.0 recording which is USB and UAC devices compatible (for example, AI mini wireless microphone)

● Materials imported via U disk and API protocol can be used as independent background layers

● USB 3. X supports RGB24 / YUY2 / NV12 / I420 / P010 / MJPEG formats, which can be recognized as a camera for live streaming by computers or mobile phones

● Support 4K streaming via RTMP(s) and 4K NDI|HX3

● 1-CH HDMI 2.0 main output and 1-CH HDMI 1.3 for preview

● 2-CH HDMI and NDI support embedded audio and 1-CH external audio mixing

● Independent control of PTZ, zoom, and focus of multiple PTZ cameras; fast view saving and view recall.

● Overlay of logo

● Chroma key support, green and blue real-time keying support

● T-bar supports seamless transition between background, 2-CH HDMI 2.0, 1-CH NDI, 1-CH UVC, 2-CH video signals, and multiple background layers; up to 15 transition effects.

● Luma key support

● Cut mode and preview transition mode support

● TAO cloud control, compatible with mobile phones and computers

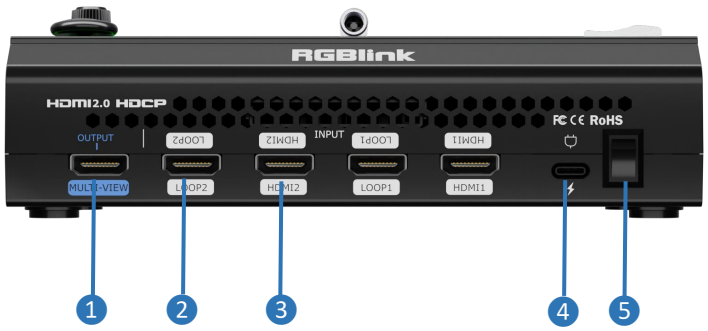
Front Panel

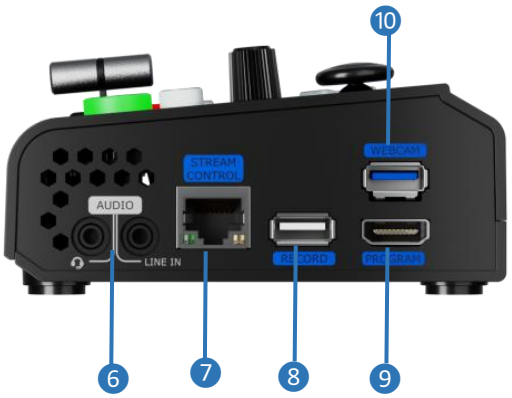


No.	Item	Description
❶	**Zoom in/out**	● Function as focus adjustment and zoom in/out when a PTZ device is being controlled. ● Adjust the layer size when a layer is selected.
❷	**4-inch Touch Screen**	● Ten preview windows by default. ● Tap the screen to start the MENU interface.
❸	**Effect**	**Shortcuts for：** **MIX** **WIPE** **PIP(picture in picture)** **KEY**
❹	①	● Button definition ○ Input signal source 2 ● Color definition ○ Button unlit: No input source. ○ Button lit white: layer contained. ○ Button lit red: layer output on the Program output window.
❺	**T-bar**	● Switch manually between the preview and program outputs according to the selected switching effect.
❻	②	● Button definition ○ Input signal source 2 ● Color definition

		○ Button unit: No input source. ○ Button lit green: Layer output on the preview window. ○ Button lit white: No input source.
❼	**Menu**	● Button definition ○ Menu ○ Return
❽	**ENTER**	● Button definition ○ Select ○ Confirm
❾	**5-direction joystick**	● Move the joystick up, down, left and right ○ Adjust the direction of a PTZ when it is being controlled. ○ Adjust the layer position when a layer is being controlled. Tap to enable the layer scaling and tap again to reset the layer size to full screen and another tap can reset the layer to the previous size.

Interface Panel





No.	Interface	Description
❶	**MULTI-VIEW OUTPUT**	Default to a multi-screen preview output
❷	**LOOP1** **LOOP2**	Loop out the original HDMI1 and HDMI2 signals

❸	**HDMI1 Input** **HDMI2 Input**	Connect to HD camera, computers or other input sources.
❹	**USB-C Power Connector**	PD protocol support, 12V/3.3A
❺	**Power Switch**	Boat-shaped switch; press downward to power on.
❻	**Headphone Set** **Line-in**	● 3.5mm mini-jack for audio monitoring. ● Active audio input to connect to a cell phone, computer or audio console.
❼	**Ethernet Port**	Achieve network connection and camera connection for streaming and remote control.
❽	**RECORD**	Insert a SSD or U disk to record the audio and vide o on PGM
❾	**PROGRAM Output**	Output real-time scene by default and can be set as Multi-view Preview or Test Pattern.
❿	**WEBCAM**	USB Push Streaming Interface: Capture the screen through the third-party streaming software and stream it to the live broadcasting platform for live broadcasting.

Installing mini-ultra



Connecting HDMI inputs

Use HDMI cables to connect computers, laptops, HD cameras, or DVDs to the HDMI IN/LOOP IN connectors.



Connecting HDMI outputs

Use HDMI cables to connect the monitor with HDMI interface to the MULTI-VIEW and PROGRAM ports.





Connecting a Microphone or External Monitoring Devices

mini-ultra features two audio inputs, allowing the user to connect the microphone to the LINE IN port and connect the speaker or earphone to the audio monitoring port.



Connecting a USB for Streaming

Connect the laptop to mini-ultra's USB port labeled as WEBCAM via a USB cable, and mini-ultra will be captured as a webcam source.



Inserting a USB for recording

Insert a USB disk or SSD for recording the content of the live-broadcasting.

Notes: please format the U disk or SSD before the recording.

Connecting the LAN for Streaming

Using the LAN port, users can perform live streaming directly to the live broadcasting platform.





Plugging in Power

Connect mini-ultra to power plug by a power cable.

Turning on mini-ultra

Push the power switch downward, and the device will show the logo of mini-ultra and then enter the operation interface.



Using mini-ultra

MENU Introduction

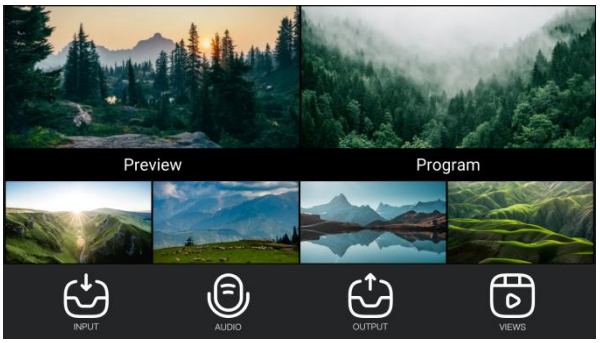


Start the Journey from the MENU

Tap the “M” Button and the 4-inch LCD screen will show the MENU Interface.

MENU Introduction

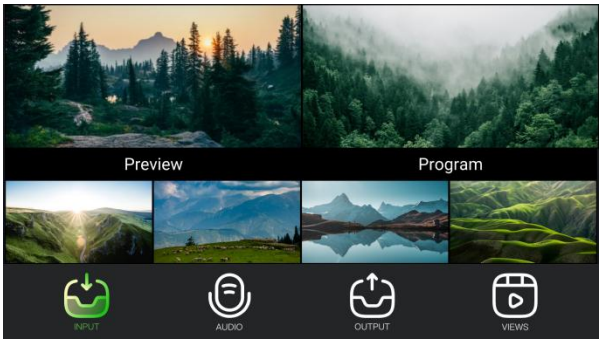
Tap an icon to enter the corresponding function management interface. Swipe from right to left to switch the MENU list.

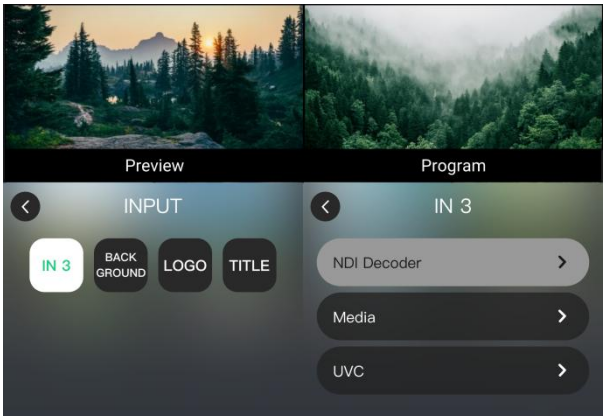


Input Setting

Entering Input Setting

Press  to enter input sources setting.



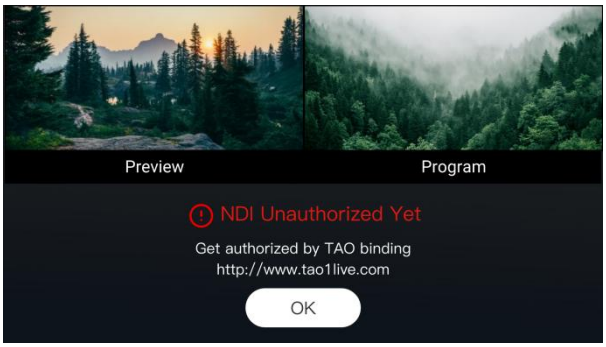


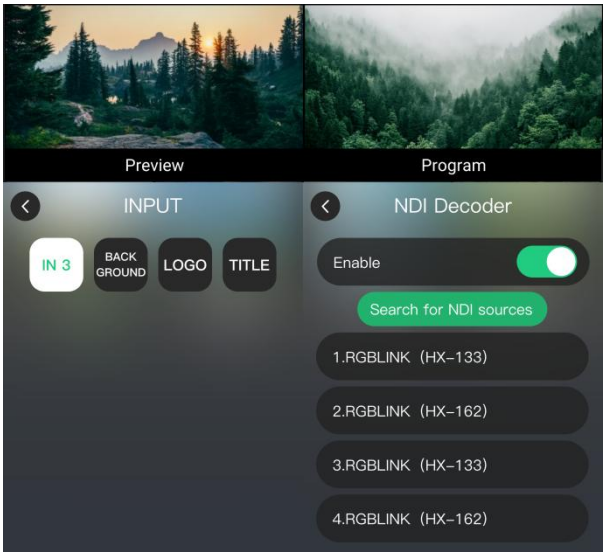
Select Input Sources

For IN3, there are NDI, Media and UVC to select.

NDI Decoder

The NDI decorder is not available by default. If the NDI source is needed for IN3, users need to bind mini-ultra to TAO Cloud in advance.



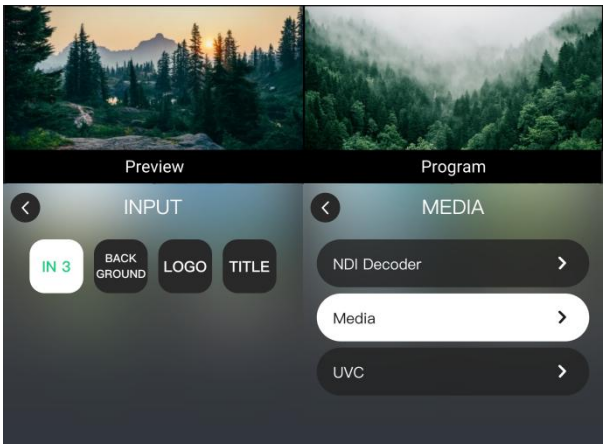


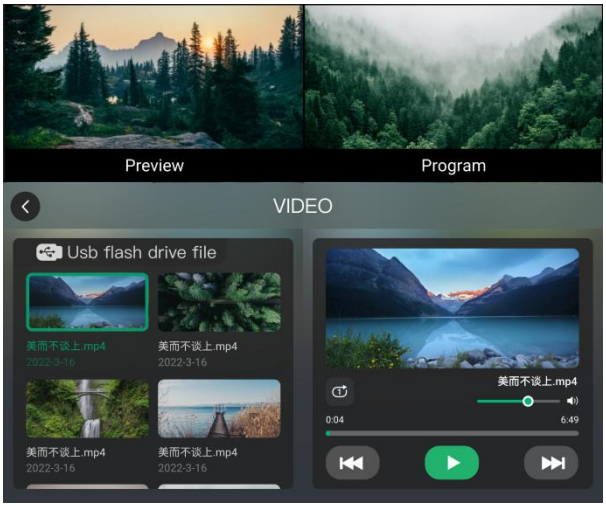
NDI enable

When NDI is enabled, tap “Search for NDI sources” for selecting NDI sources.

Media

Tap “Media” and a prompt interface will appear to inform you insert a U disk.

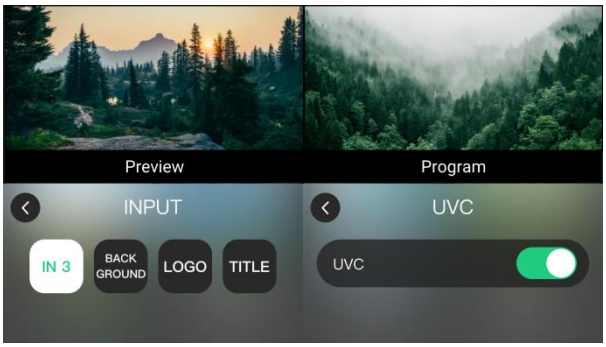


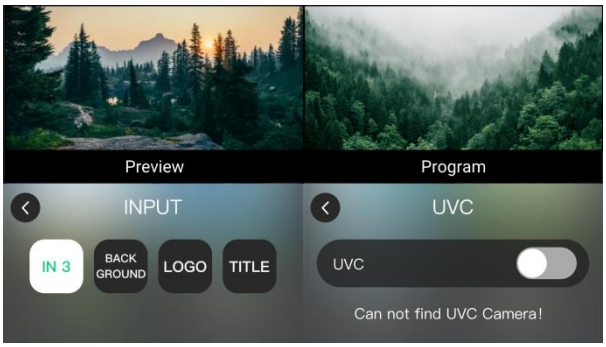


With the USB inserted, users can preview the videos on the U disk and add media materials to the device.

UVC

Press the UVC button to enable UVC and the system will recognize the UVC camera automatically.

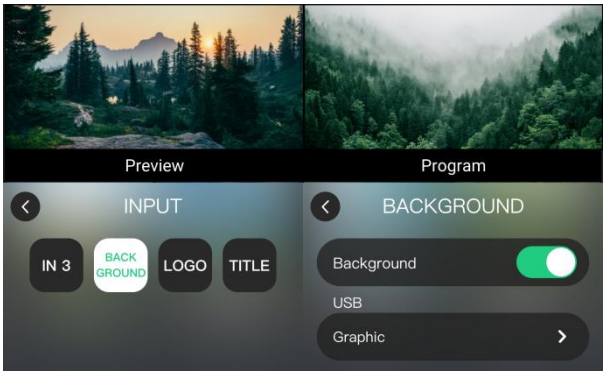


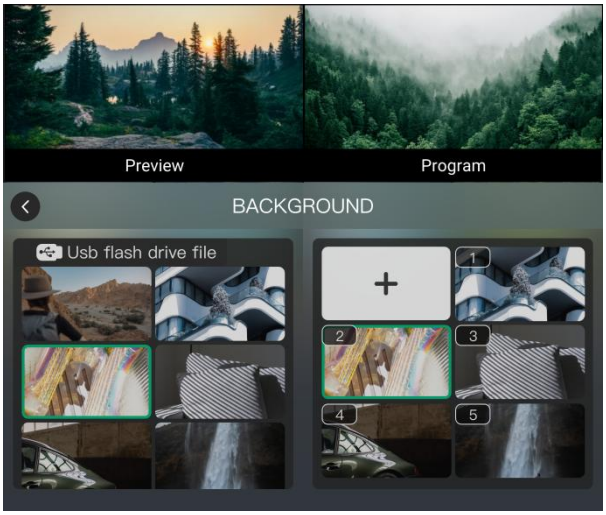


If the UVC camera cannot be found, the interface will show a prompt to the user.

Background

Enable the background and then enter the USB disk.

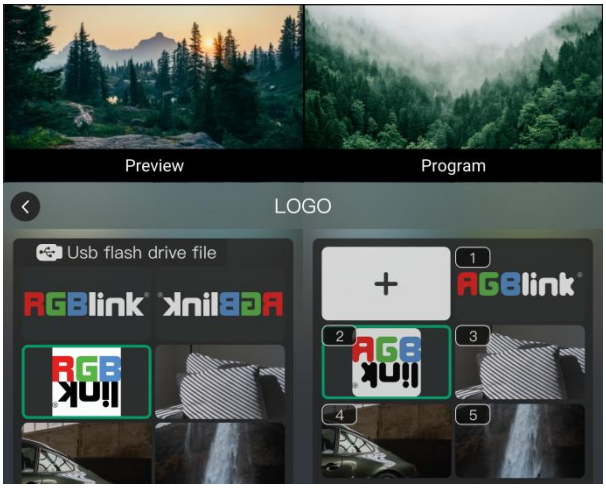


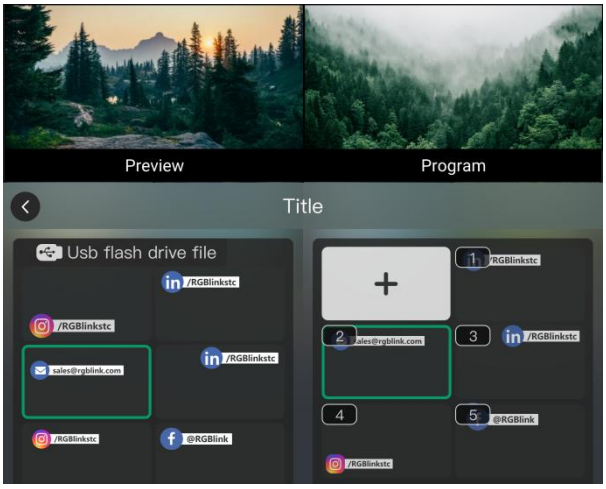


Press “+” to add the background you want.

Logo

Enable the logo and then enter the USB disk. Press “+” to add the logo you want.





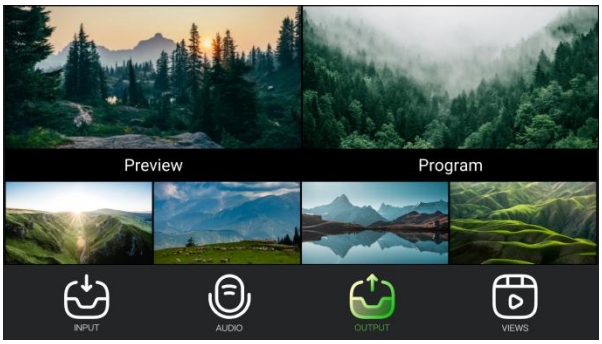
Title

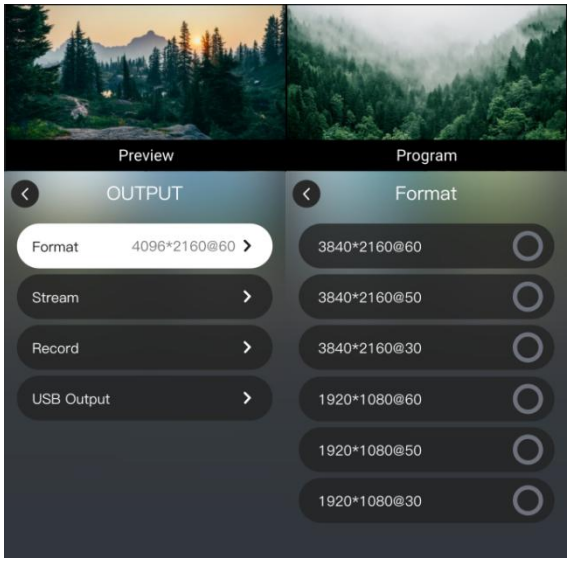
Enable the title and then enter the USB disk. Press “+” to add the title you want.

Output Setting

Entering Output Setting

Press to enter output sources setting.





Setting the Output Format

Set output resolution for PGM HDMI OUT.

Enabling streaming

Stream: ON/OFF

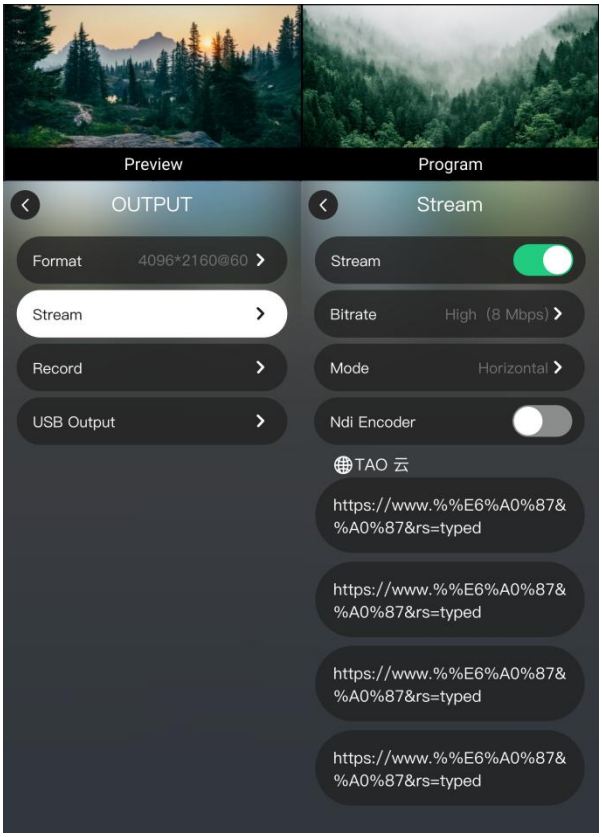
Bitrate: The higher the bitrate is, the better the image will be, but it depends on the network support.

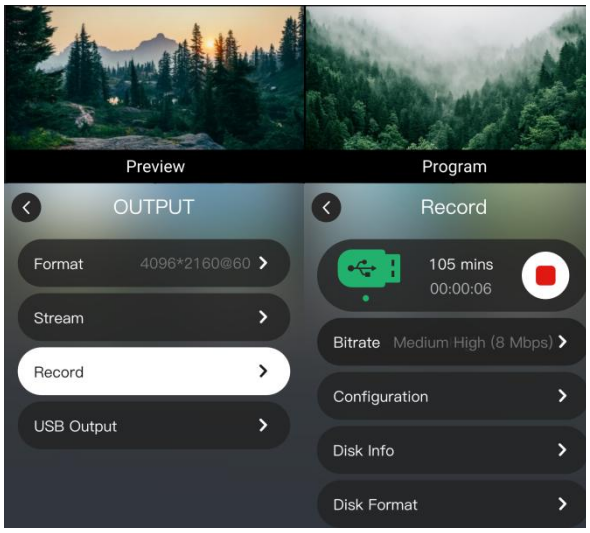
Mode: horizontal screen/vertical screen

NDI Encoder: ON/OFF

Notes:

NDI encoder is not available by default. Users need to bind mini-ultra to TAO Cloud in advance.





Recording

Bitrate: the bitrate is 8 Mbps by default and other bitrates are configurable

Configuration:

Rec Audio: ON/OFF

Quality: low, medium and high

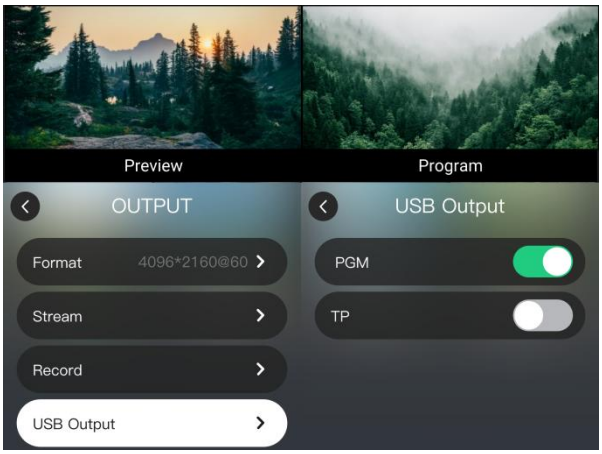
Disk information: storage used rate info

Disk Format: format the inserted U disk

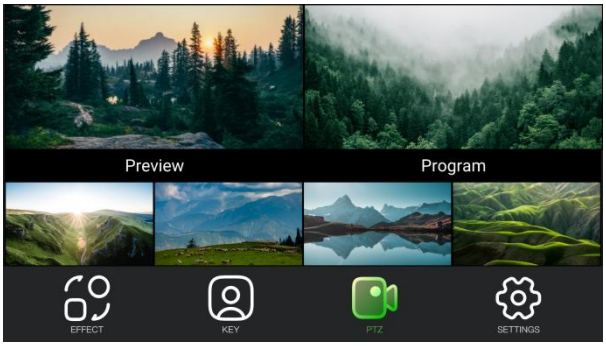
USB Output

PGM: Select PGM main content as webcam output

TP: Select the Test Pattern as webcam output



Controlling PTZ Cameras

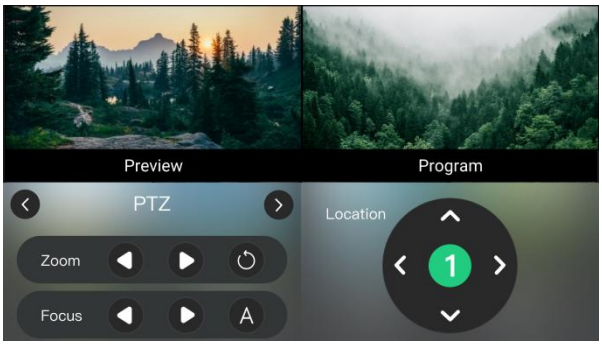


Controlling PTZ Cameras

Press  to enter the PTZ control interface.

Adjusting Parameters

Users can zoom in/out or adjust the focus by tapping the icons on the screen.
On the right side of the interface, users can adjust the position.



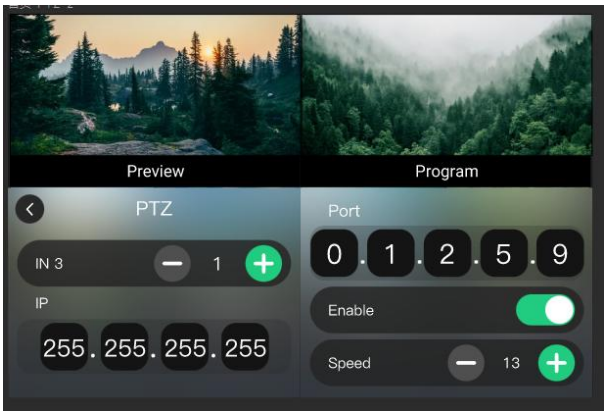


On the front panel, users can also use the toggle to zoom in/out and five-way joystick to adjust the position.

Setting IP Address

The IP address of mini-ultra and the camera being controlled should be in the same LAN.

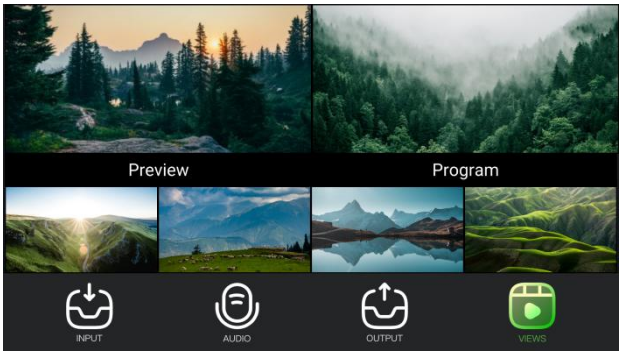
When setting the IP address, tap the touch screen to select different IP segments. Then use the ENTER knob to adjust the value and press the ENTER to confirm.

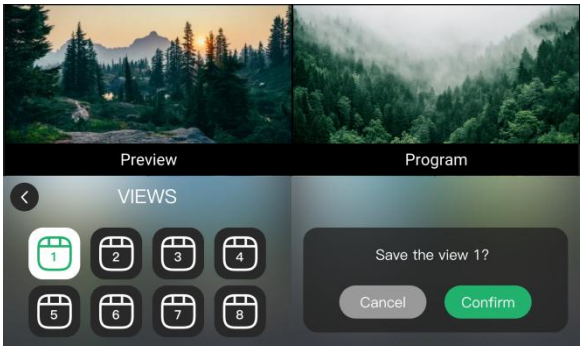


Saving Views

Entering View Interface

Press **MENU** button to enter menu interface. Tap the  icon to enter the view setting interface.





Saving Views

mini-ultra allows user to save 8 presets in total. Long press to save a view. Different colors represent different states of the views:

White: Selected

Green: Saved

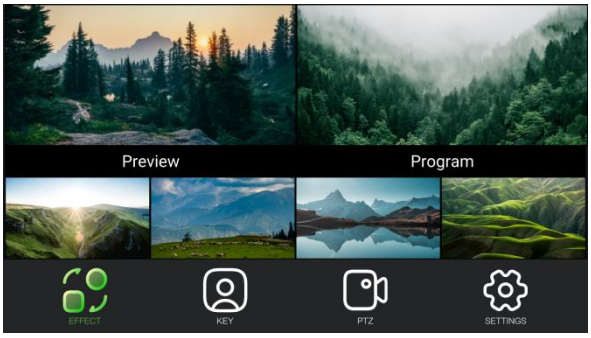
Black: no operation

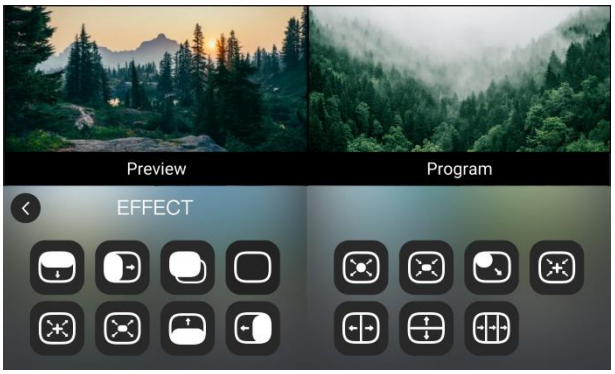
Green border: Pre-selected

Transition Effects

Entering Transition Effect interface

Press  to enter the effect selection interface.





Transition Effects

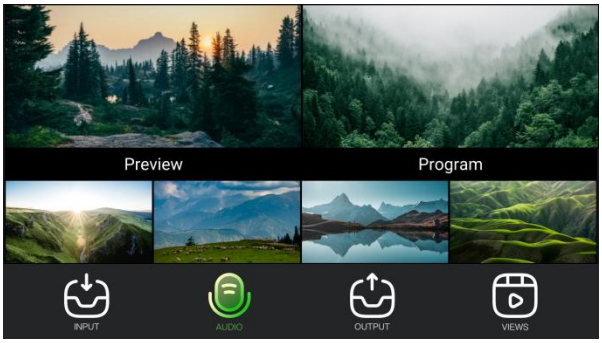
There are 15 effects in total. Different colors represent different states of the effects:

White: selected

Black: no operation

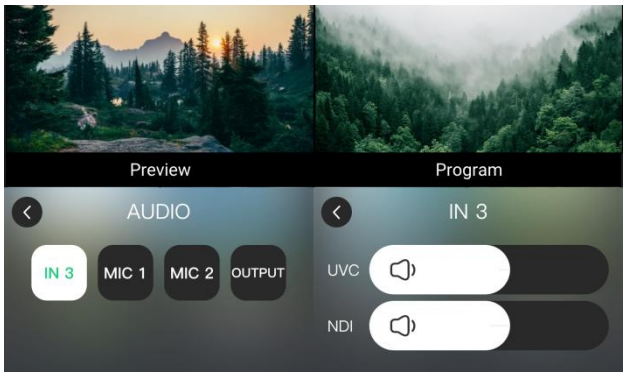
Green border: pre-selected

Audio

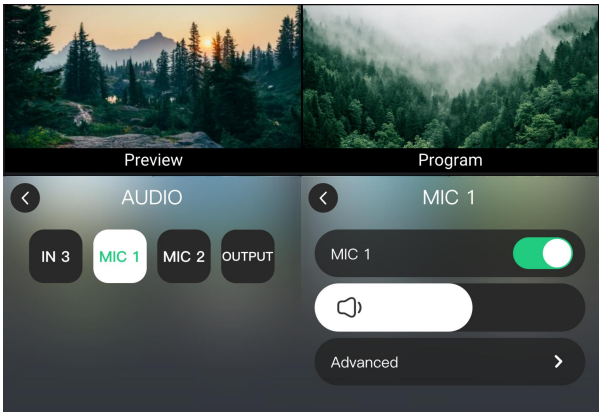


Audio Setting

Tap  to enter the audio setting interface.



Three audio channels are provided. Slide the bar to adjust the volume. Note that the NDI button occurs only when the user get the NDI authorization.

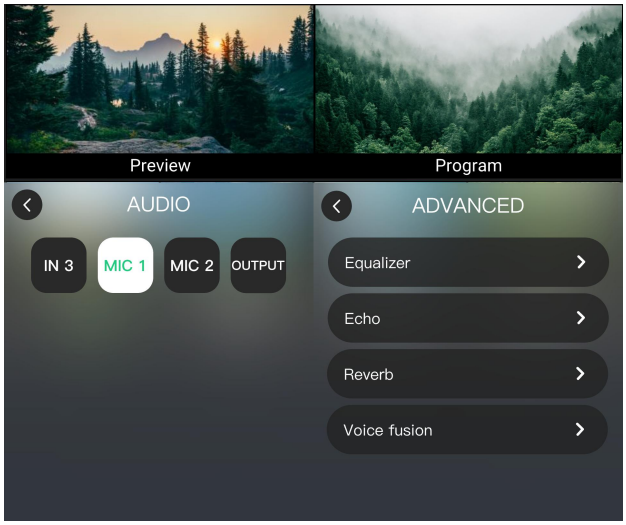


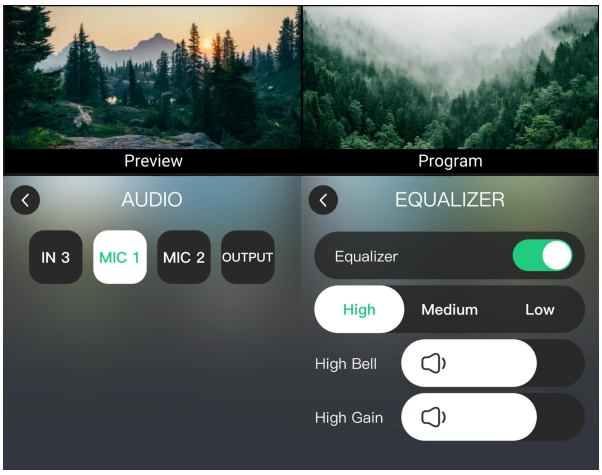
MIC 1

Slide the bar to adjust the volume. Users can also use the Zoom in/out button on the front panel to adjust the volume.

MIC 1 Advanced Functions

Mini-ultra offers four advanced audio functions: equalizer, echo, reverberation, and voice fusion.





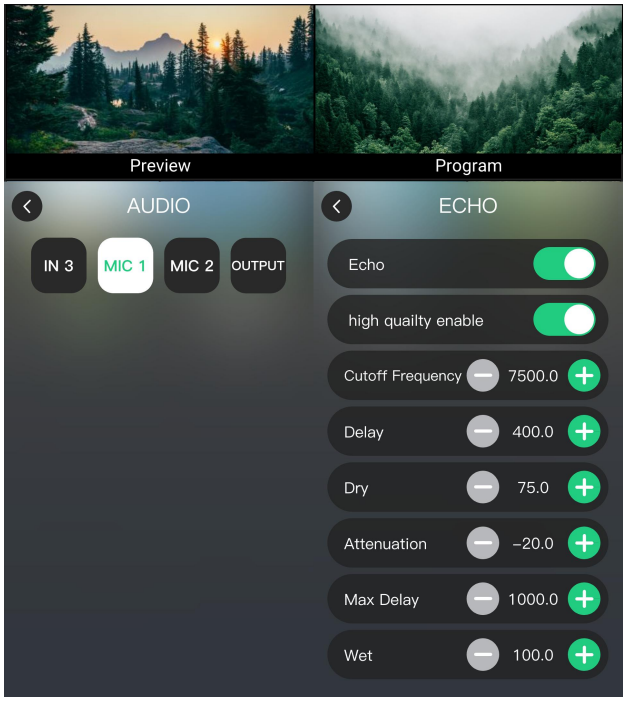
Equalizer

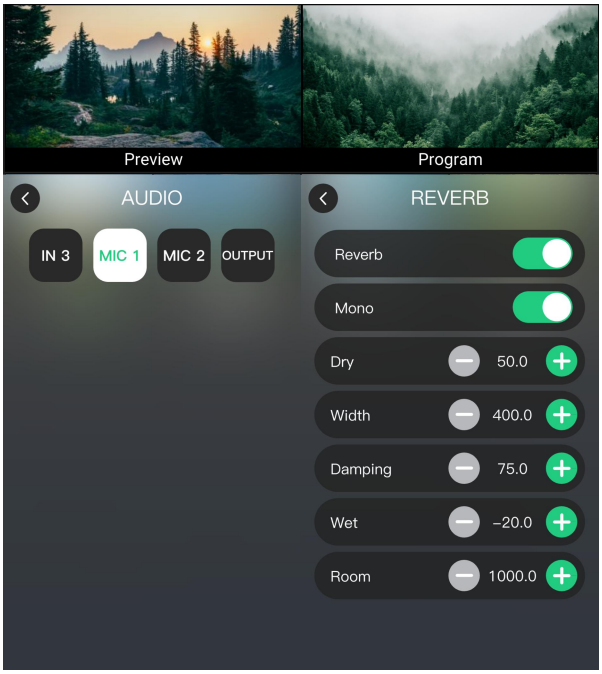
Users can adjust the frequency and gain for audio signals of different frequencies. High frequency (7500.0HZ) corresponds to high gain, medium frequency (400.0HZ) corresponds to medium gain and low frequency (400.0HZ) corresponds to low gain.

Echo

Definition: distinct repetition of the sound.

Mini-ultra support echo cancellation and users can tap “-” or “+” to adjust parameters.





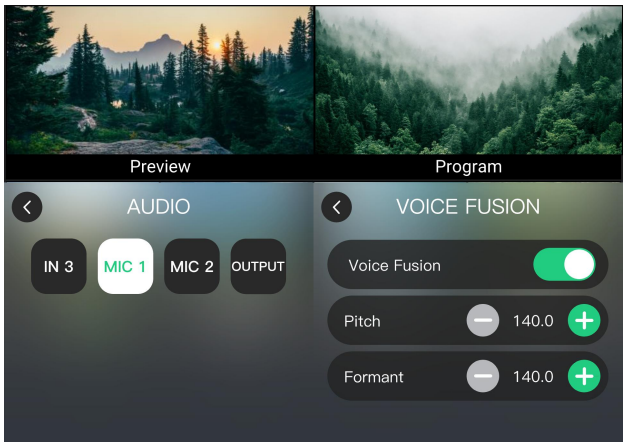
Reverberation

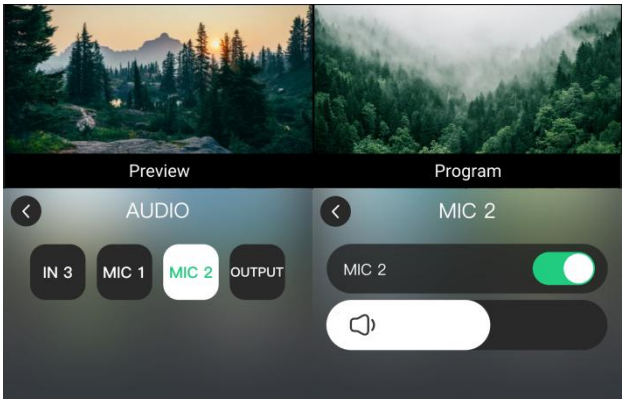
Definition: Blended, continuous sound.

Users can enable the mono processing and tap “-” or “+” to adjust the parameters.

Voice Fusion

Enable the voice fusion and press “-” or “+” to adjust the parameters.



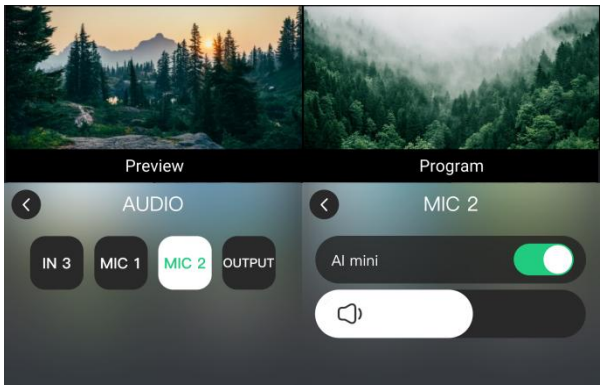


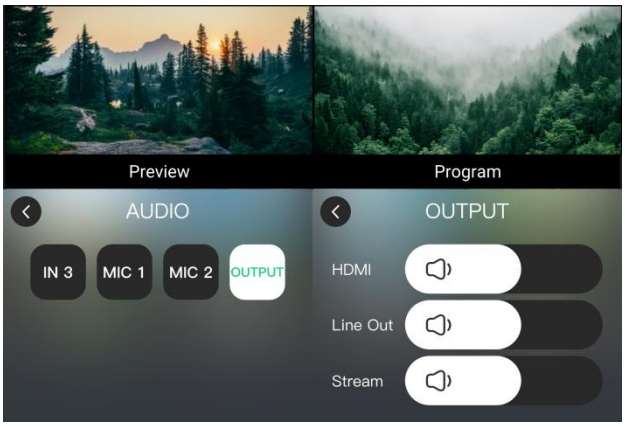
MIC 2

MIC 2 will be displayed when recognizing a camera signal. Slide the bar to adjust the volume.

AI mini Identification

Attach the AI mini receiver to the device, and MIC 2 will display **AI mini**. Slide the bar to adjust the volume.





Output

On this interface, users can adjust the output volume of HDMI, Line out and stream.

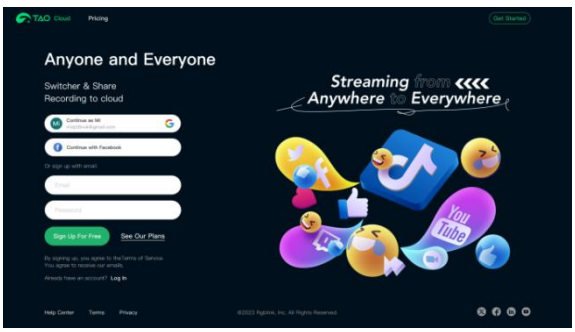
TAO Cloud Device Access

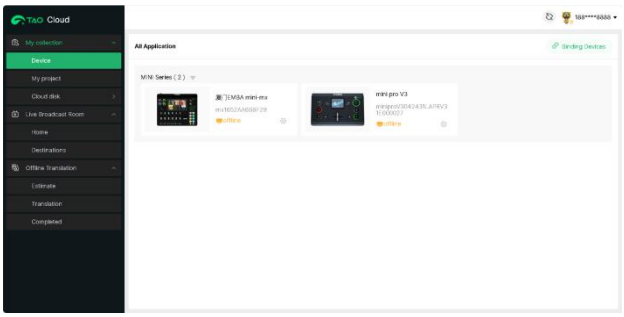
Login

Access the website below to enter TAO Cloud. Enter your email and password, then click “Sign Up For Free”to enter the homepage.

Notes:

TAO Cloud Website：https://www.tao1live.com





Entering the Management Interface

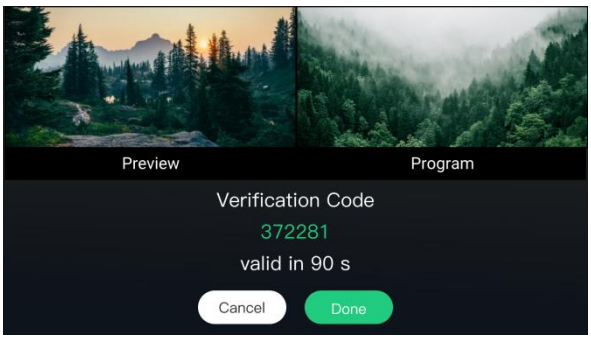
Click“All Appliances”to check devices already connected to the cloud.

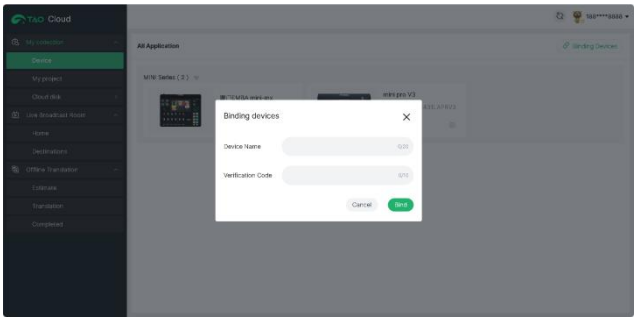
The user can also follow the steps below to bind a new device to the TAO Cloud platform.

Capturing Verification Code

Tap the “M” Button to enter MENU. Tap “SETTINGS” > “TAO Cloud” to enter the interface as shown.

Follow the steps in the box to get the verification code and bind mini-ultra to TAO Cloud.





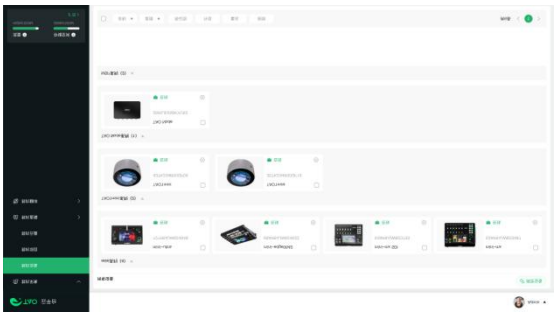
Binding a Device

Enter the TAO Cloud homepage.

Click “All Appliances” > “Binding Devices” to enter the interface shown on the left. Enter the device name and verification code, then click “Bind”to confirm.

Checking Devices

Devices that have been bound will be displayed in this interface.



mini ULTRA

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