MAGEWELL®

ULTRA STREAM™

User Manual

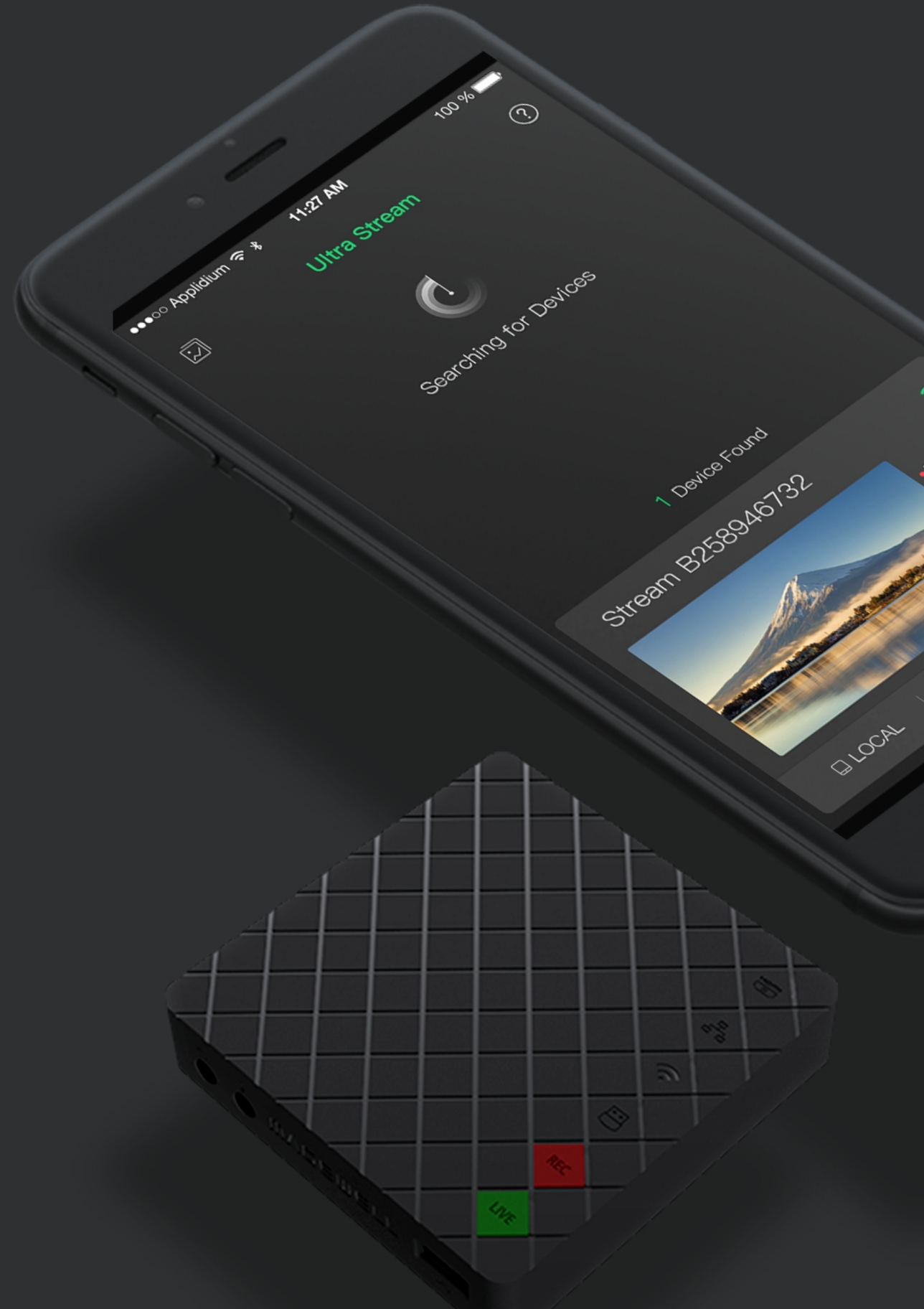


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Getting Started



Overview

Ultra Stream encoder makes live streaming remarkably simple even for non-professional users, enabling them to record or stream high-quality video with one click using on-device buttons or an intuitive smartphone app. Designed for users who want to stream but may have minimal technical knowledge, the encoder is ideal for everyone from church volunteers and educators to corporate communicators and live event organizers.

Users can stream to popular services including YouTube, Facebook Live or Twitch or to a custom-specified server. Streams can be output to a third-party service and custom server simultaneously, while real-time video preview in the app allows easy monitoring. In addition to outputting live streams, Ultra Stream can record video as files to a directly-connected USB drive, embedded storage or the associated smartphone.

Key Features

- Streaming to Facebook, Twitch and YouTube platforms
- Streaming to up to 2 servers simultaneously
- Recording to USB flash drive
- Recording to mobile device
- Recording to local storage
- Device configuration using Web UI or application
- Registration with Magewell cloud platform for centralized management

System Requirements

Network

- 10/100/1000Mbps Ethernet
- IEEE 802.11 a/b/g/n/ac

Supported Mobile Clients

- Android 5.0 and above
- iOS 9.0 and above
  - iPhone 6s and above
  - iPod Touch 7 and above

Supported Web Browser

- Microsoft Internet Explorer 11
- Microsoft Edge
- Mozilla Firefox version 61 and above
- Google Chrome version 49 and above
- Apple Safari 11.1 and above
- Opera 55.0.2994.44 and above

⚠ To register with Magewell cloud platform for centralized management, you should use Web UI.

Application

- For Android 5.0 and above, search **Ultra Stream** or **Magewell** in the **Google Play** or scan the QR code to download the **Ultra Stream** app.
- For iOS 9.0 and above, search **Ultra Stream** or **Magewell** in the **App Store** to download the **Ultra Stream** app.

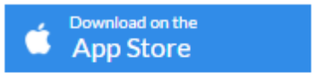
⚠ Ultra Stream App has in-app help. You can obtain the PDF version from Magewell website User Manual for Ultra Stream Family.

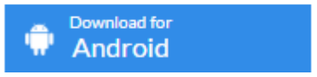
⚠ To join a Wi-Fi network, you need to install Ultra Stream application.



Ultra Stream







Installation

Safety Information

Electrical Safety

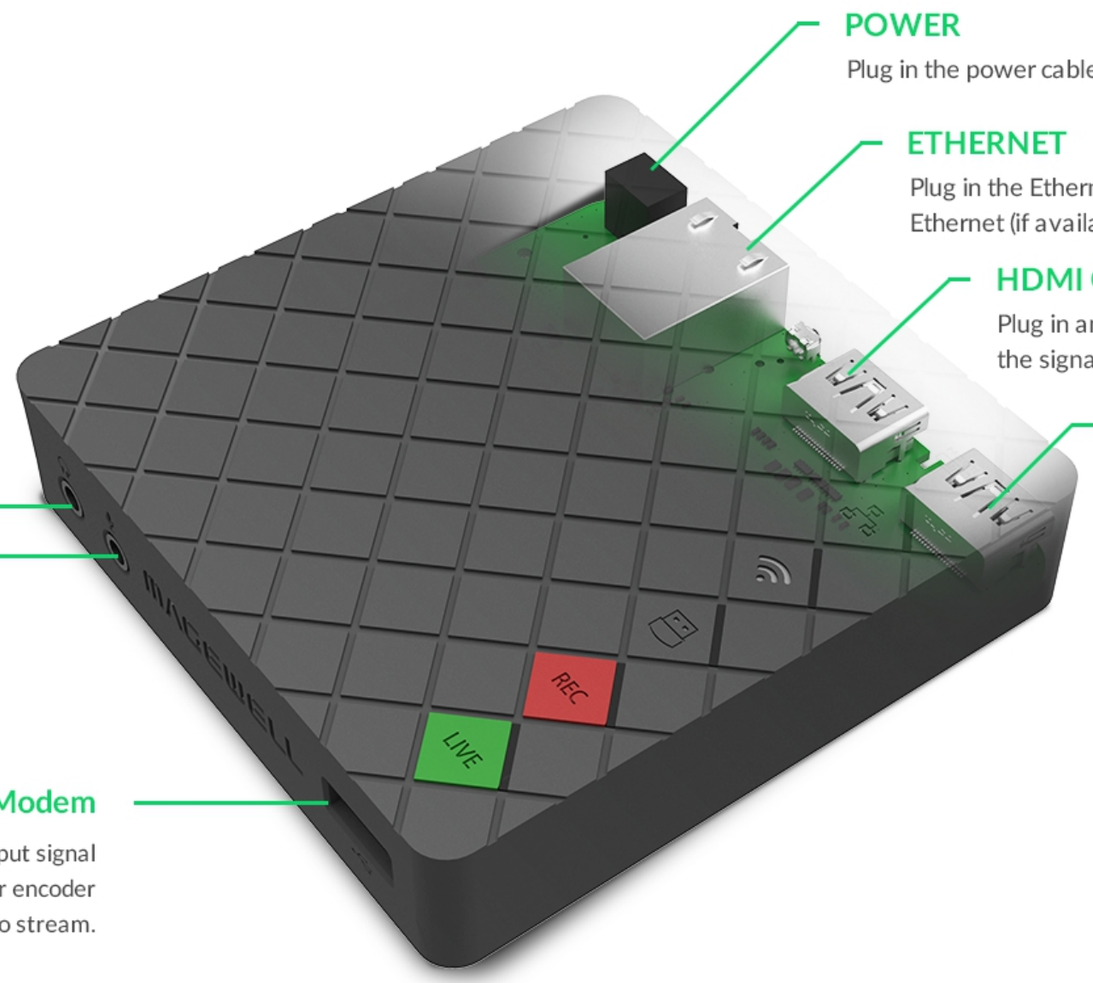
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that you are using the correct power adapter for the local voltage. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power adapter is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer for help.

Operation Safety

- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you notice any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- If you encounter technical problems with the product, contact your dealer or the Magewell Support Team via support@magewell.net.

Interfaces & Indicators

Ultra Stream HDMI



POWER
Plug in the power cable for power supply.

ETHERNET
Plug in the Ethernet cable to connect to the Ethernet (if available).

HDMI OUT
Plug in another HDMI cable to loopthrough the signal (if needed).

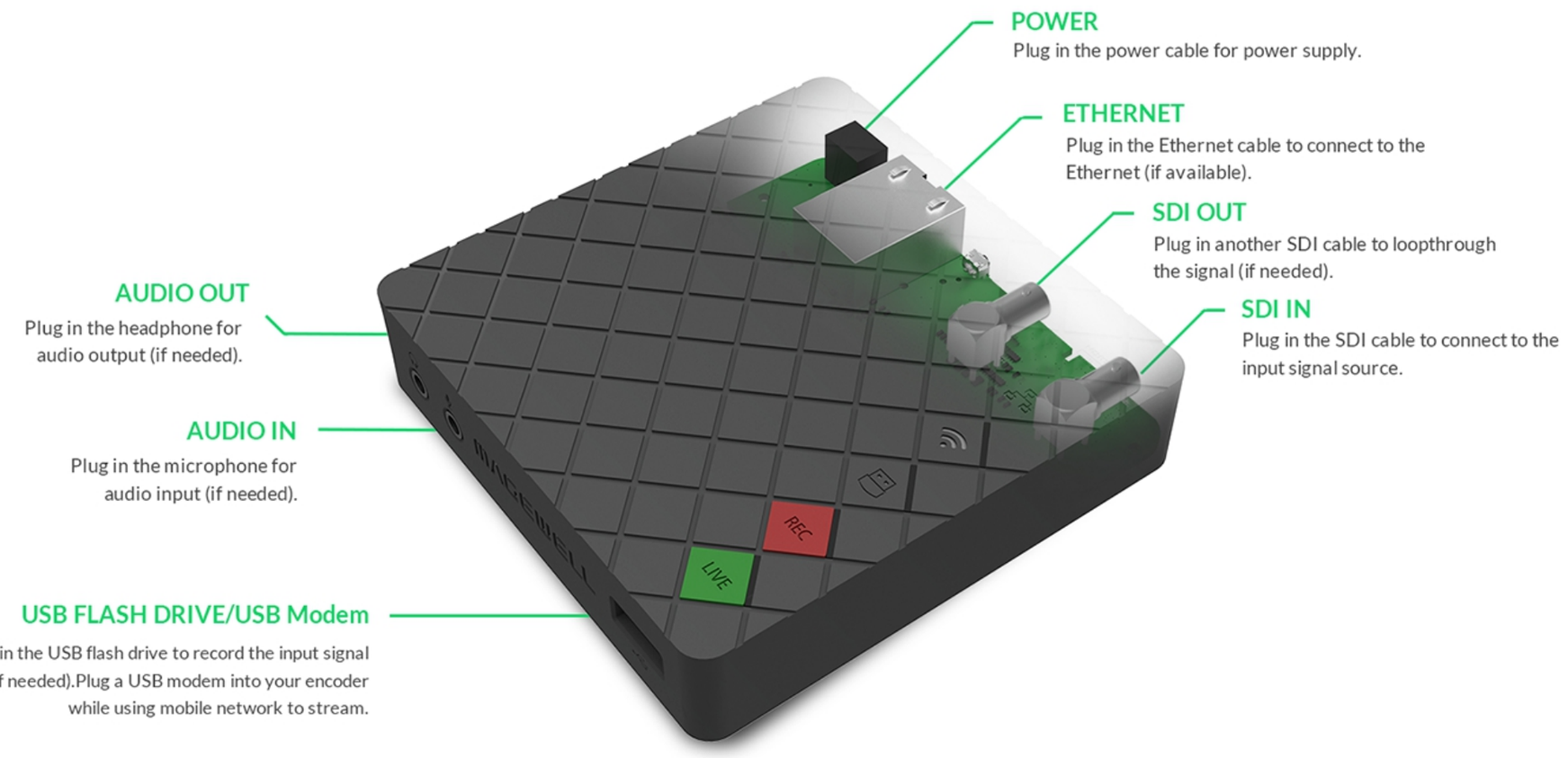
HDMI IN
Plug in the HDMI cable to connect to the input signal source.

AUDIO OUT
Plug in the headphone for audio output (if needed).

AUDIO IN
Plug in the microphone for audio input (if needed).

USB FLASH DRIVE / USB Modem
Plug in the USB flash drive to record the input signal (if needed).Plug a USB modem into your encoder while using mobile network to stream.

Ultra Stream SDI



Indicators

Descriptions of indicators status are as follows. The indicators are located on the device panel as shown in Interfaces.

HDMI/SDI IN

- On: input signal is detected.
- Pulsing slow: input signal is not detected.

Ethernet

- On: Ethernet is connected.
- Pulsing slow: Ethernet is disconnected.

Wi-Fi

- On: network is detected.
- Pulsing slow: network is not detected.
- Flashing: the encoder is connecting to Wi-Fi.

USB

- On: USB is available.
- Pulsing slow: USB is unavailable.
- Flashing: there is insufficient storage on the USB.

REC

- On: the encoder is under recording.
- Pulsing slow: input signal is not detected.
- Off: the USB flash drive is unavailable.
- Flash once and then restore to its former state: recording failed.

LIVE

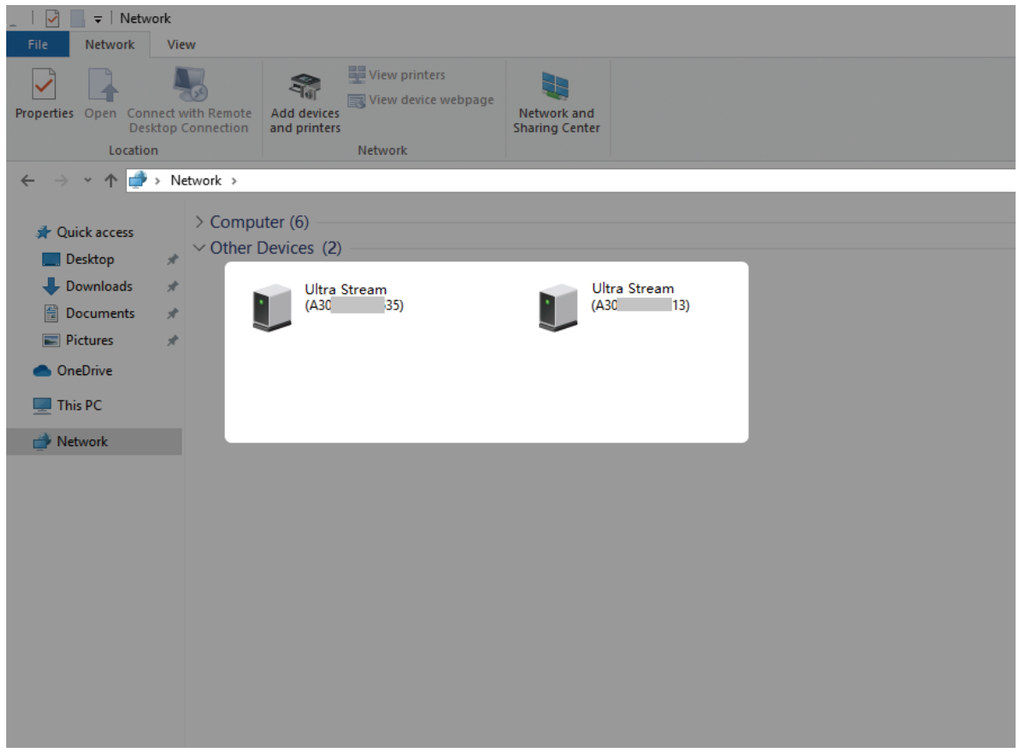
- On: the encoder is streaming to at least one streaming address.
- Pulsing slow: at least one streaming server is configured.
- Flashing: the encoder is connecting to at least one streaming address.
- Off: neither of the stream servers are configured.
- Flashes once and then restore to its former state: live streaming failed to start.

Descriptions of multiple indicators status are as follows.

- The indicator lights flash in turn from HDMI/SDI IN to LIVE: system is booting up.
- The indicator lights flash in turn from LIVE to HDMI/SDI IN: firmware is updating.
- All indicator lights flash once simultaneously and then flash in turn from HDMI/SDI to LIVE: the encoder is rebooting.
- All indicator lights flash once simultaneously and then restore to their former state: in the device list of Ultra Stream app, choose an encoder and tap the device status icon at the upper right corner, and all the indicators on that encoder will light.

⚠ If any other status appear, please try to unplug and re-plug in the power cable to your encoder.

Configuration



Accessing the Web UI

If you know your device's IP address, type it into your web browser to Web UI. Alternatively, you can access the Web UI via wired Ethernet or Wi-Fi.

1. Connect your device to your LAN and power it up.

   > ⚠ To ensure a smooth video, you are recommended to connect to a wired network.

2. Open Web UI:

   - Via File Explorer on Windows 7/8/8.1/10

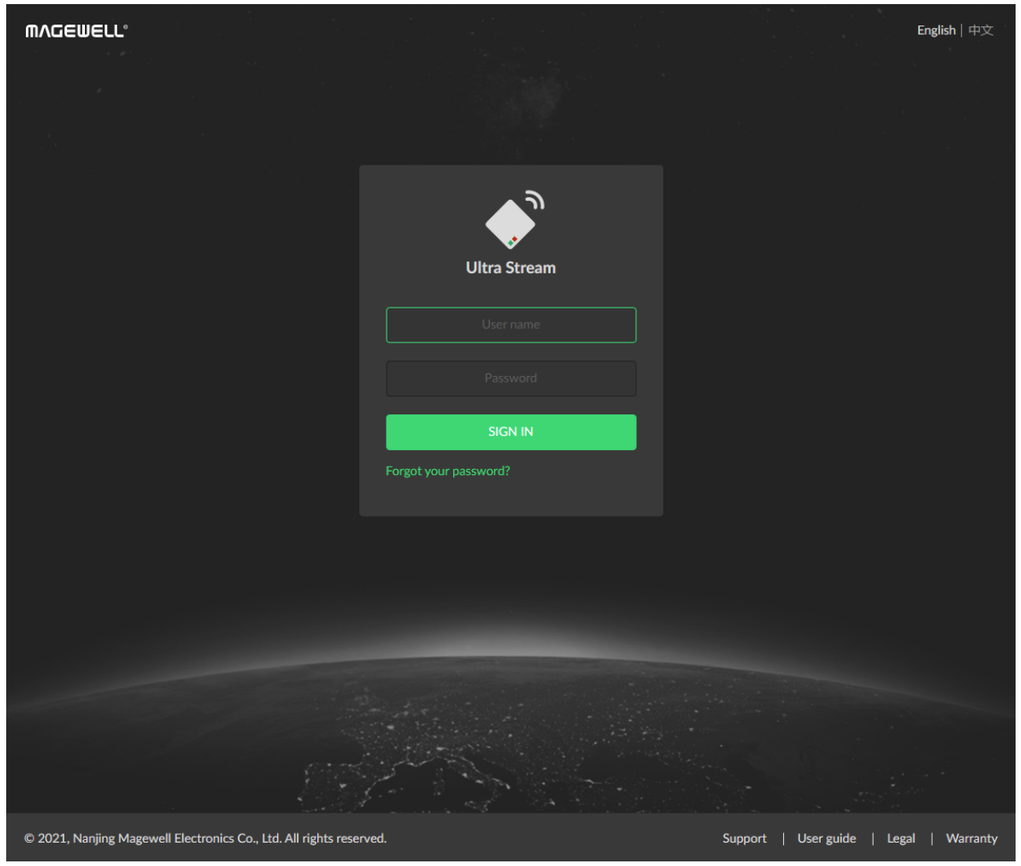
     i. Open File Explorer in your PC, then locate your device in**Network > Other Devices**.

     ii. Double click the device icon to open the sign page of Web GUI.

   - Via device Wi-Fi AP, IP Address: 192.168.48.1

     i. In your smartphone/pad/laptop, turn on WLAN, search for and join the device AP named **Ultra Stream + (Serial number)**.
     The AP names after your gear's **Serial number**, and the password is the last 8-number of the serial number by default. For example, a serial number C301110101001 indicates the initial AP password is 10101001.
     We recommend that the distance between the Web UI and the encoder should be within 10m.

     ii. In your web browser, enter 192.168.48.1 to open the Web UI.



Signing In/Out

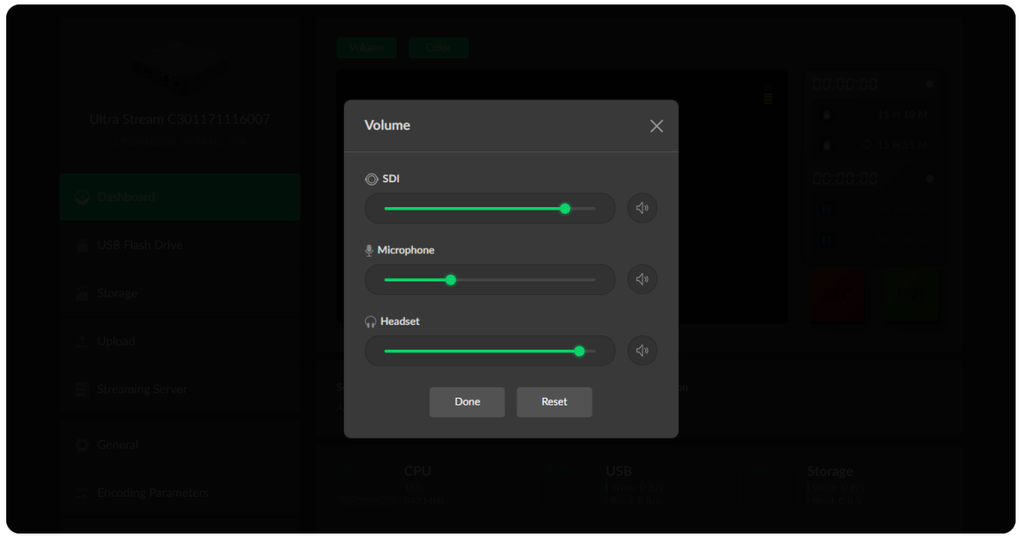
The Web UI allows multiple users to have read/write access to make configuration settings at the same time after logging-in. However, to avoid configuration conflicts, we do not recommend you to operate one device simultaneously.

1. Sign In: enter your account and password in the**SIGN IN** page.
   - The default administrator name and password both are Admin.
   - We recommend you to modify the admin password after initial logging-in.
2. Sign Out: click the drop-list icon behind the logging-in username at the top-right of the Web UI, and select **Sign out**.

Dashboard

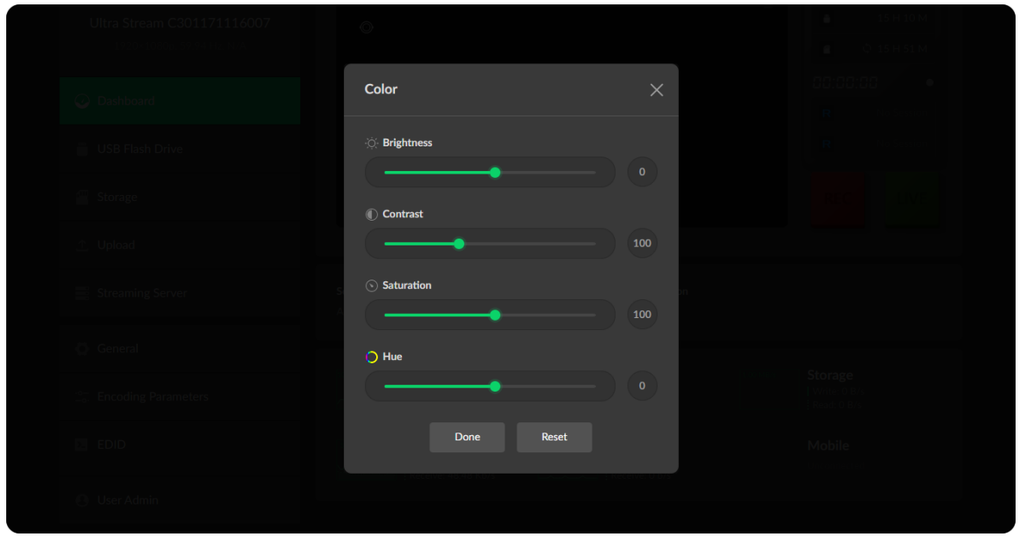
On **Dashboard** page, you can:

- preview the thumbnail of the encoded video
- check device hardware information
- check system performance status
- set global volume and color



Setting Volume

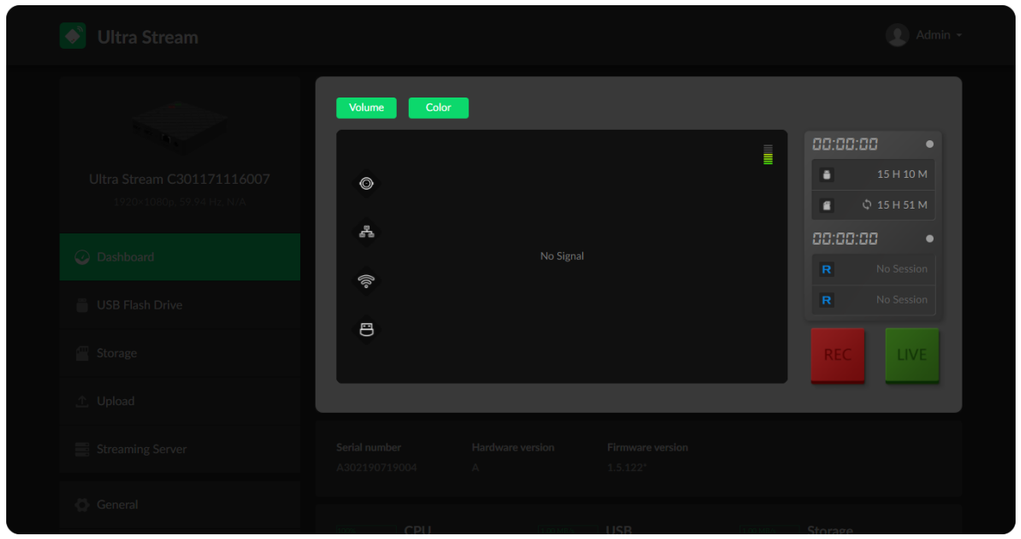
- **HDMI/SDI:** adjust input signal volume.
- **Microphone:** adjust the audio connected to the LINE IN.
- **Headset:** adjust the output audio which is embedded in input signal.
- : click to mute current channel.
- : restore current channel to default value.
- **Reset:** restore all settings of the volume to default settings.
- **Done:** click to save your configuration.



Setting Color

Set color format of preview and stream video.

- **Brightness:** range from -100 to 100, the default value is 0.
- **Contrast:** range from 50 to 200, the default value is 100.
- **Saturation:** range from 0 to 200, the default value is 100.
- **Hue:** range from -90 to 90, the default value is 0.
- **Reset:** restore all settings of the color to default settings.
- **Done:** save your configuration.



Previewing Thumbnails

Thumbnails give you a quick snapshot of your video as they're browsing on the target video platform and recording.

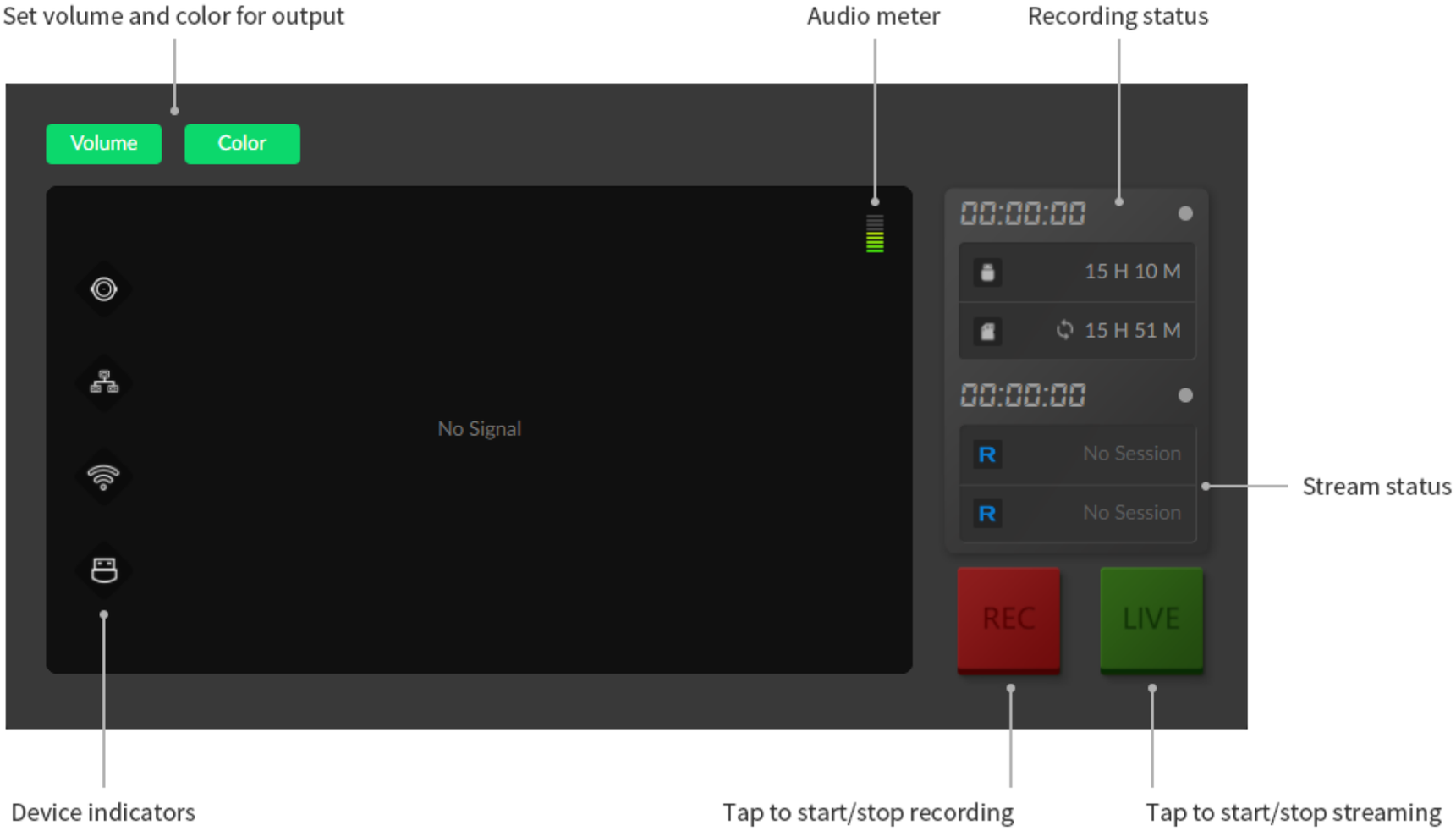
Descriptions of encoder indicators are as follows.

- HDMI/SDI IN: Light being on indicates input signal is detected; pulsing slowly indicates input signal is not detected.
- Ethernet: Light being on indicates Ethernet is connected; pulsing slowly indicates Ethernet is disconnected.
- Wi-Fi: Light being on indicates network is detected; pulsing slowly indicates network is not detected.
- USB: Light being on indicates USB is available; pulsing slowly indicates there is insufficient storage on the USB.

Descriptions of stream status are as follows.

- Resolving DNS: Indicates that domain name resolution is being performed on the live streaming address.

- Connecting: Indicates that the encoder is connecting to the live streaming server
- Waiting: Indicates the previous connection to the streaming server failed, and the encoder is trying to reconnect.
- Authenticating: Indicates the encoder has connected to the live streaming server and live authentication is in progress.
- Authentication Failed: If you connect the encoder to an RTMP server, make sure your authentication settings are correct; if you connect the encoder to a live streaming video platform, you can log out and re-log in.


Set volume and color for output
Audio meter
Recording status
Volume
Color
No Signal
00:00:00
15 H 10 M
15 H 51 M
00:00:00
No Session
No Session
Stream status
REC
LIVE
Device indicators
Tap to start/stop recording
Tap to start/stop streaming

Starting/stopping Recording

> ⚠ Plug in a USB flash drive in your encoder before recording to USB.

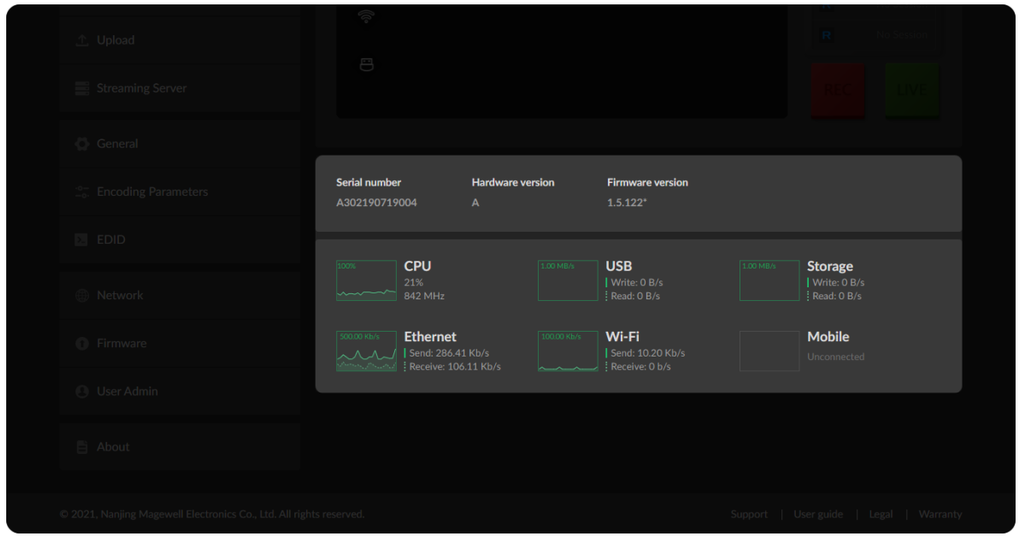
You can modify the recording policy in **General > Recording**.

1. Do any of the following to start/stop recording.
   - Go to **Dashboard** page, and click the REC button .
   - Press the red REC button  located on the top panel of the device.
2. Check the recording status on the right side of the thumbnail, such as record mode and duration.

Starting/stopping Streaming

Make sure you have set the streaming servers before start streaming. To ensure smooth live streaming experience, connecting to a wired Ethernet network is recommended.

1. Do any of the following to start/stop streaming.
   - Go to **Dashboard** page, and click the green **LIVE** button .
   - Press the green **LIVE** button  located on the top panel of the encoder.
2. Check streaming status in the right side of the thumbnail preview.



Checking Hardware Information

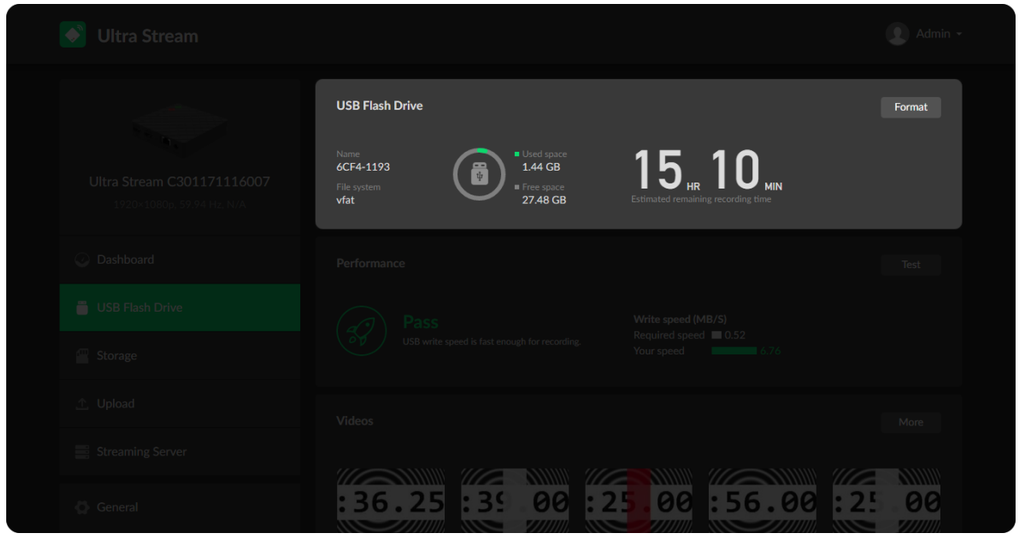
- **Serial number:** serial number of your unit, which is also marked on your device.
- **Hardware version:** hardware version of your unit.
- **Firmware version:** current firmware version that is installed in your unit. You can update the firmware, via the **System >** **Firmware** tab.

Checking System Performance

- Gives you an overview of your system CPU, memory usage, network usage in real-time in order to evaluate the device performance & health.

USB Flash Drive

Manage the USB and files stored in the**USB Flash Drive** page.



- Check USB Info, such as **File system**, **Free space**, and **Estimated remaining recording time**.

  It is recommended that you use a USB with FAT32/VFAT file system.

- Format USB

  Click to start **Format**. When prompted, click **YES**.

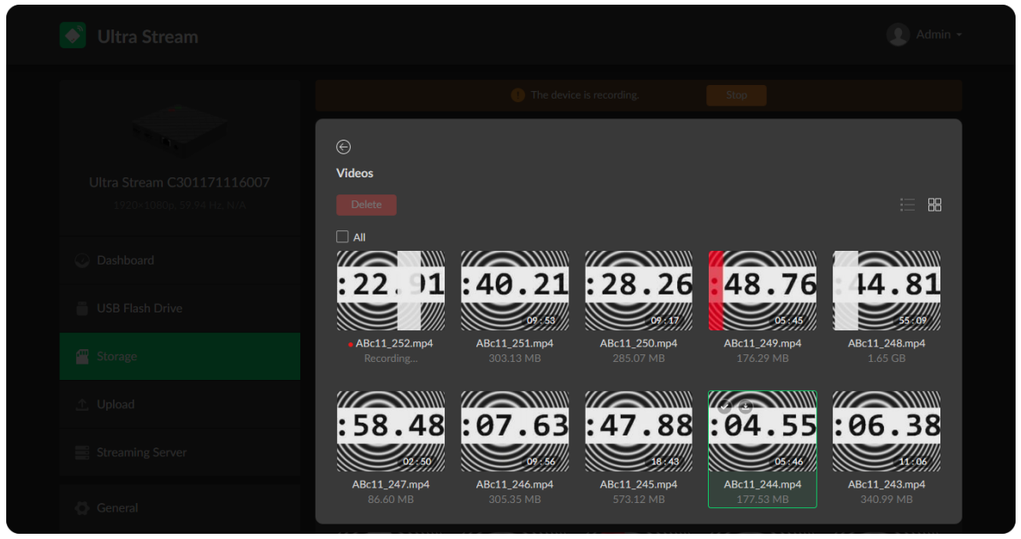
  The USB Flash Drive data cannot be recovered after formatting. Please be cautious.

  After formatting, the file system of USB will be changed to VFAT.

- Test USB Performance

  Click to start **Performance Test**.

  Test whether the write speed of USB flash drive meets the requirements before recording. If the USB fails the test, please change another one, or the recording may stop automatically.

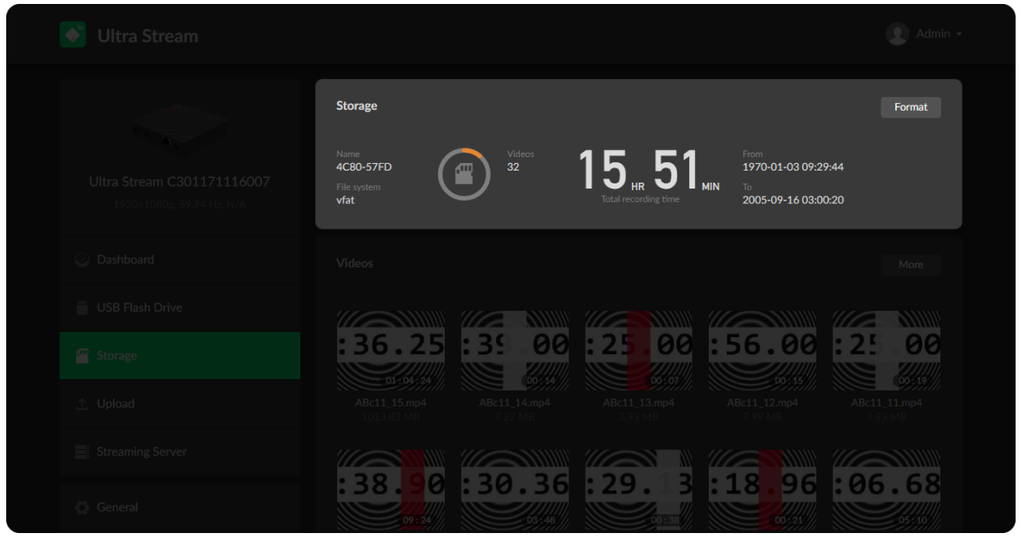


Managing Video Clips in USB

1. To download: move the cursor to a specified clip and click the icon to download the chosen one.
2. To choose a specific video: move the cursur to a video and click to download the clip.
3. To check all videos: click **More** to enter **Videos** page and check all recorded clips.
4. To delete videos: click **More** to enter **Videos** page and choose one or more, or all clips to delete.

Storage

Manage the local storage and files stored in the**Storage** page.



Managing Local Storage

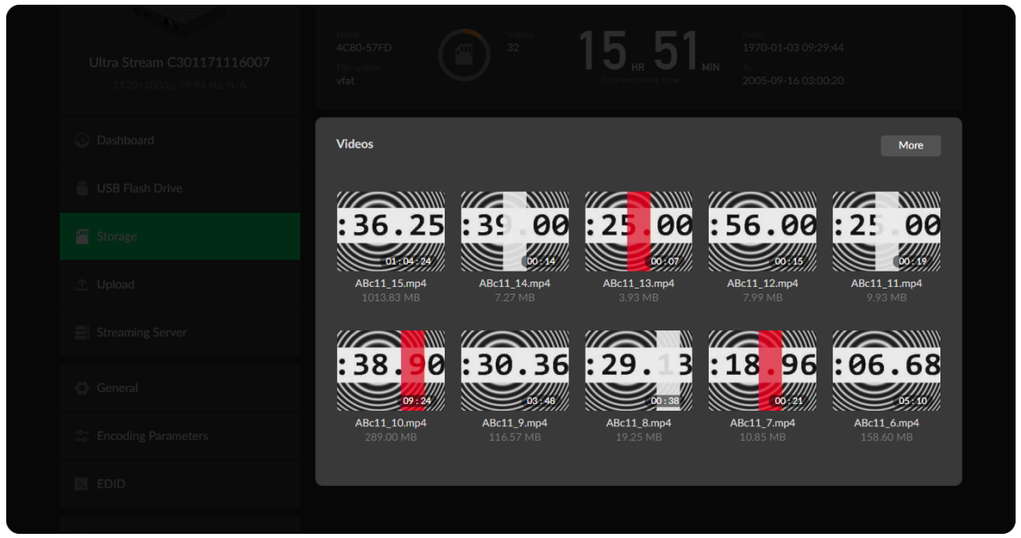
- Check local storage, such as **File system**, **Free space**, and **Estimated remaining recording time**.

  Check remaining time for normal recording, and total recording time for loop recording.

- Format storage

  Click to start **Format**.

  After formatting, the file system of USB will be changed to VFAT.

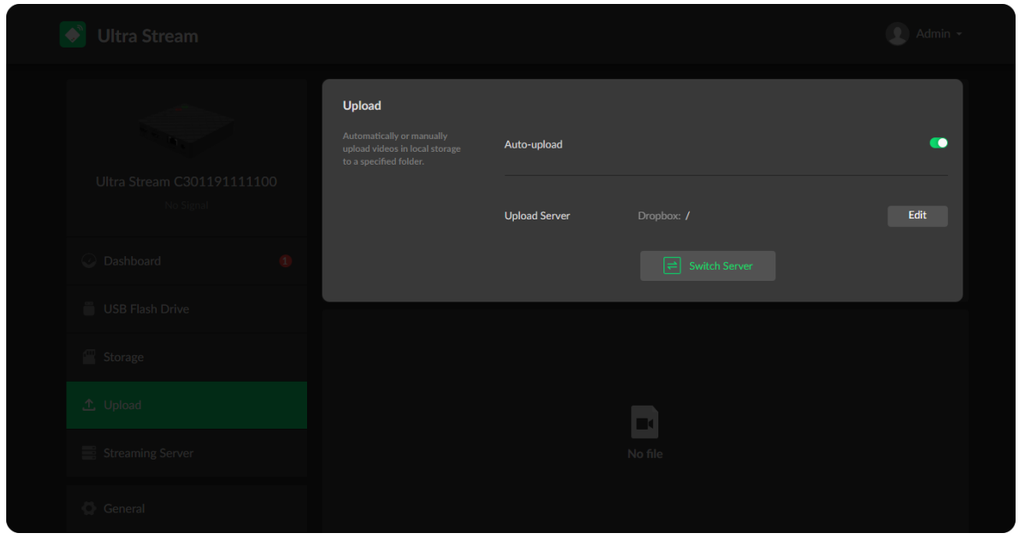


Managing Video Clips in Local Storage

1. To download: move the cursor to a specified clip and click the icon to download the chosen one.
2. To choose a specific video: move the cursur to a video clip and click .
3. To check all videos: click **More** to enter **Videos** page and check all recorded clips.
4. To delete videos: click **More** to enter **Videos** page and choose one or more, or all clips to delete.
5. To upload videos: click **More** to enter **Videos** page. Then you can move the cursur to a video clip and click the icon. Or you can select several or all video clips to upload. Upload settings refer to chapter Upload.

Upload

Configure file upload session in**Upload** page, then you can upload video clips in local storage to a specified server.

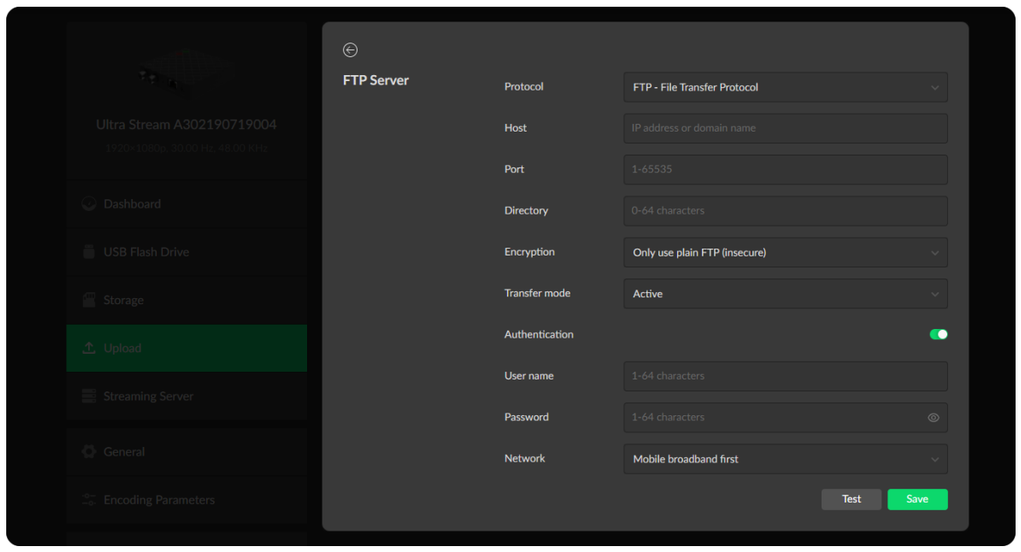


Auto-upload

Turn on the switch, the device will send videos saved in local storage, which are recorded after auto-upload is enabled, to a specified server folder. And you can check upload status in the following list. What's more, you can manually upload videos in the **Storage** page.

Upload Server shows the upload destination.

- Click **Edit** to modify current destination server settings.
- Click **Switch Server** to choose a destination from FTP Server, Google Drive, OneDrive, and Dropbox. The parameters of each server are as follows.

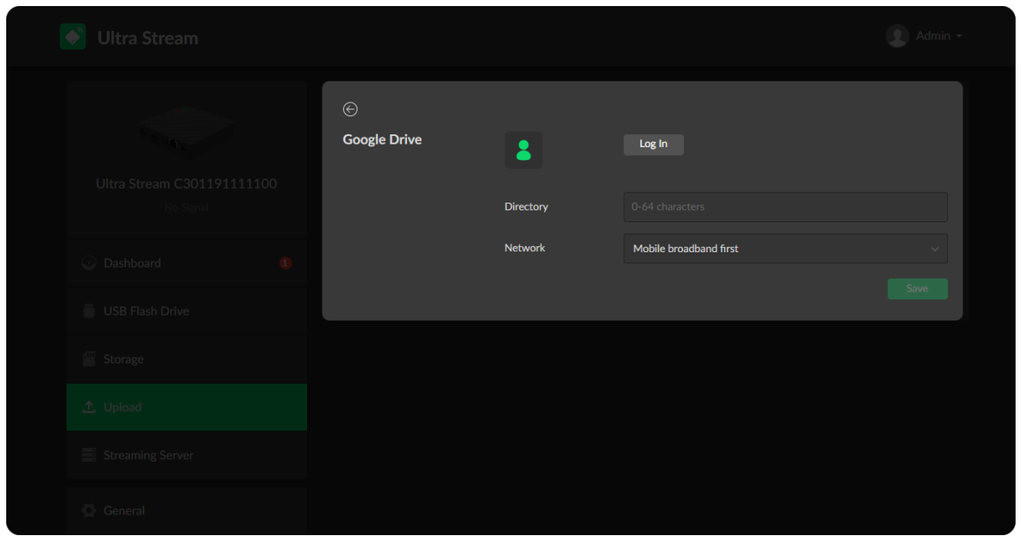


Uploading to an FTP Server

- **Protocol:** choose FTP - File Transfer Protocol or SFTP - SSH File Transfer Protocol to transfer files according to the requirement of your destination server.
- **Host:** enter IP address or domain name of destination server.
  To ensure the file upload, the server must be pinged by Ultra Stream.
- **Port:** enter upload port number according to the requirement of your destination server. Port rang is 1 to 65535.
- **Directory:** specify a folder name for saving files uploaded. The range is from 0 to 64 characters excluding \:*?"<>|. If it is empty, the uploaded files will be saved in the share folders under "root" directory.
- **Encryption**: choose a FTP encryption according to the requirement of your destination server. Options are only use plain FTP(insecure), explicit FTP over

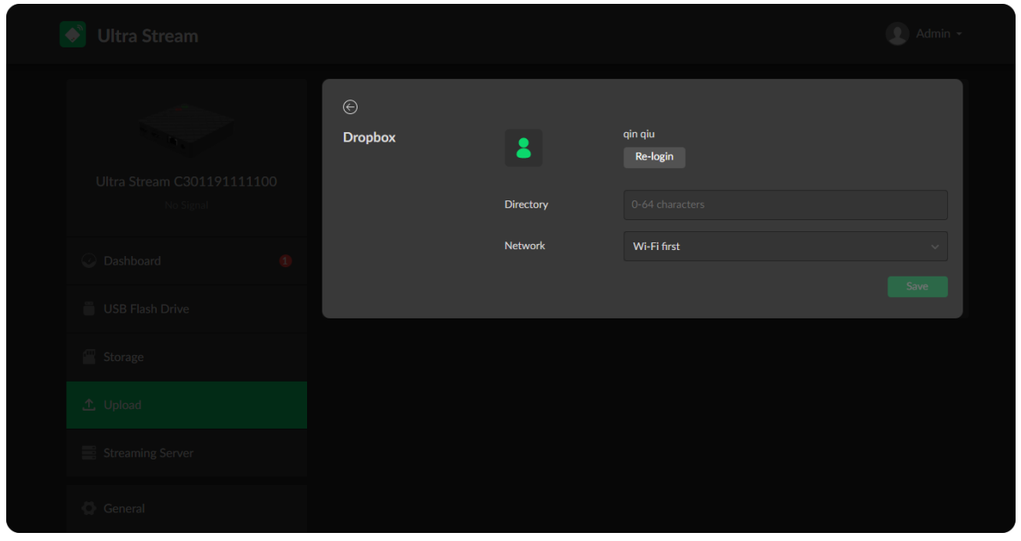
TLS, and implicit FTP over TLS.

- **Transfer mode:** Options are active and passive. Active mode means the client issues a PORT command to the server signaling that it will “actively” provide an IP and port number to open the data connection back to the client. Passive mode means the client will wait “passively” for the server to supply an IP and port number, after which the client will create a data connection to the server.
- **Authentication:** turn on if the destination service provider requires. Obtain the User Name and Password from your service provider.
- **Network:** the device scans for the available network according to the connection priority and connect to it. If the current network is disconnected, the unit automatically re-scans according to the priority.
  By default, the network connection priority is: Mobile Broadband > Ethernet > Wi-Fi.
  Plug a USB modem into your encoder while using mobile network.
- **Test:** click to check the connection between the server and encoder.
- **Save:** click to save current configurations.



Uploading to Your Google Drive

- Click Google Drive, then follow the on-screen instructions to go to Google Drive, enter the code displayed on the prompted window, and log in. Then trust and connect the device to your Google account. Your username and avatar will be displayed on the configuration tab after connecting successfully.
- **Directory:** input a name for the folder which saves the uploaded files, then a new folder with the specified name will appear in the server. The range is from 0 to 64 characters including A-Z, a-z, 0-9, spaces, ._-+'[](). The uploaded files will be saved in the root directory if this parameter is left empty.
- **Network:** the device scans for the available network according to the connection



priority and connect to it. If the current network is disconnected, the unit automatically re-scans according to the priority.

By default, the network connection priority is: Mobile Broadband > Ethernet > Wi-Fi.

Plug a USB modem into your encoder while using mobile network.

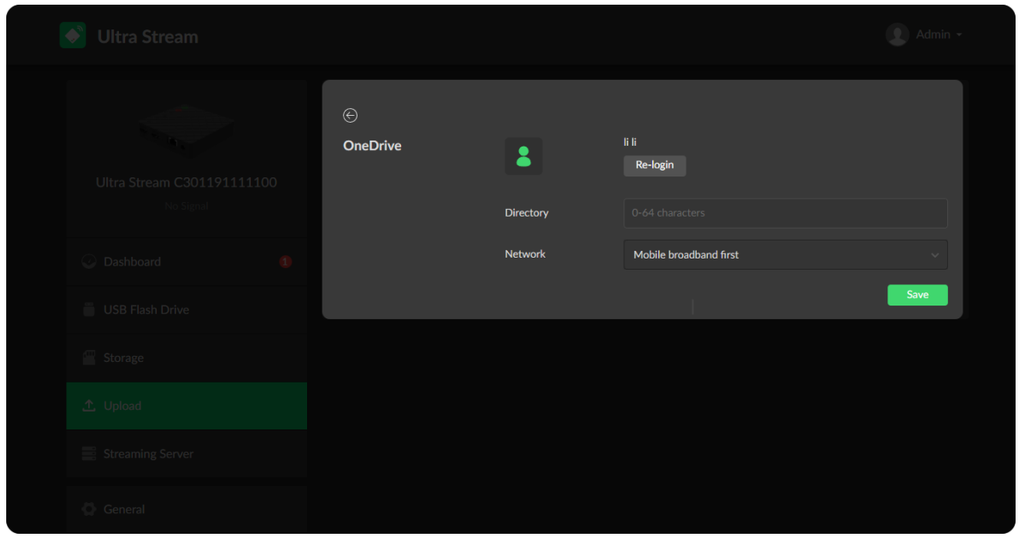
- **Test:** click to check the connection between the server and encoder.
- **Save:** click to save current configurations.

Uploading to Dropbox

- Click Dropbox, then follow the on-screen instructions to log in on the prompted window. Your account will be displayed on the configuration tab after logging in successfully.
- **Directory:** input a name for the folder which saves the uploaded files, then a new folder with the specified name will appear in the server. The range is from 0 to 64 characters excluding \:*?"<>|. The uploaded files will be saved in the root directory if this parameter is left empty.
- **Network:** the device scans for the available network according to the connection priority and connect to it. If the current network is disconnected, the unit automatically re-scans according to the priority.

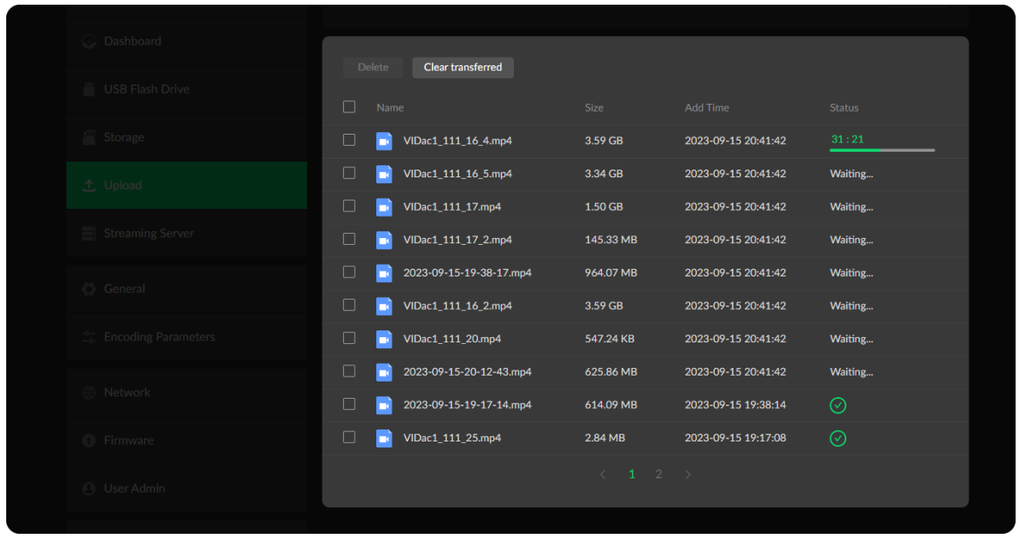
  By default, the network connection priority is: Mobile Broadband > Ethernet > Wi-Fi.

  Plug a USB modem into your encoder while using mobile network.
- **Test:** click to check the connection between the server and encoder.
- **Save:** click to save current configurations.



Uploading to Your OneDrive

- Click OneDrive, then follow the on-screen instructions to go to OneDrive, enter the code displayed on the prompted window, and log in. Your username and avatar will be displayed on the configuration tab after connecting successfully.
- **Directory:** input a name for the folder which saves the uploaded files, then a new folder with the specified name will appear in the server. The range is from 0 to 64 characters excluding \:*?"<>|. The uploaded files will be saved in the root directory if this parameter is left empty.
- **Network:** the device scans for the available network according to the connection priority and connect to it. If the current network is disconnected, the unit automatically re-scans according to the priority.
  By default, the network connection priority is: Mobile Broadband > Ethernet > Wi-Fi.
  Plug a USB modem into your encoder while using mobile network.
- **Test:** click to check the connection between the server and encoder.
- **Save:** click to save current configurations.

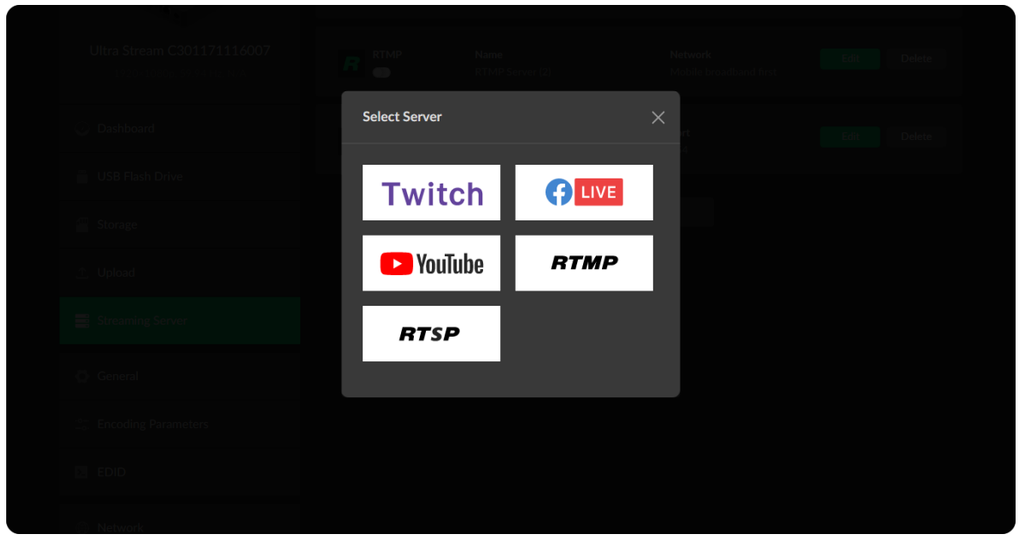


Managing Upload List

- Videos will list in the page below which are saved after auto-upload is enabled.
- Videos will list in the page below after they are manually selected to upload in **Storage** page.
- **Delete**: check the tick box to select files and click**Delete** to remove files from the upload list. This opration will not delete files in the local storage.
- **Clear transferred**: Click the button to remove uploaded files from the list but not from the local storage.
- **Name**: display files to upload.
- **Size**: display file size.
- **Add Time**: display the time when the file is added to upload list.
- **Status**: display file upload status.
- **Time left**: indicate the upload remaining time.
- **Waiting...**: indicate file is waiting to upload
- : indicate the file is uploaded successfully.

Streaming Server

Configure streaming sessions to meet your work in**Streaming Server** page.



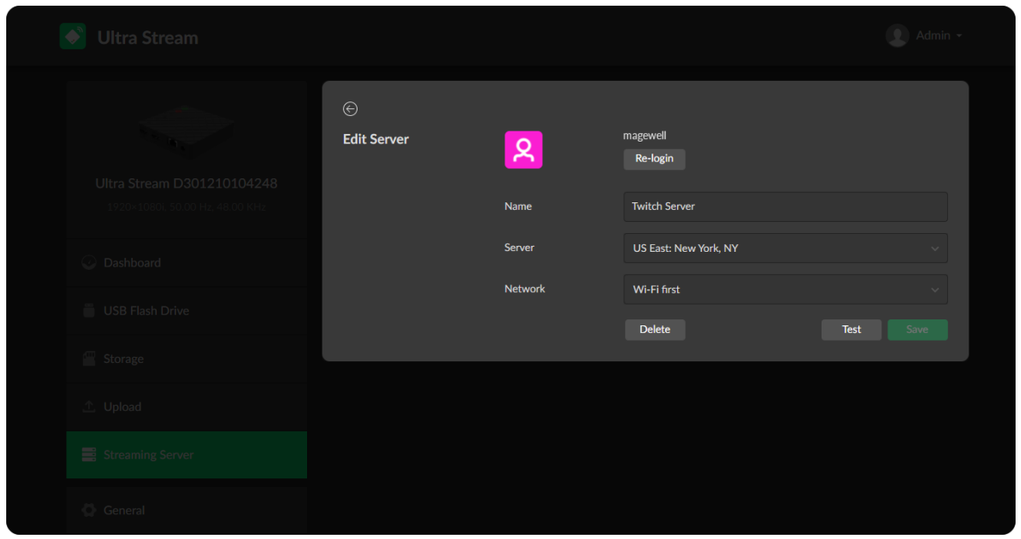
Managing Streaming Sessions

You can manually added, modify, or delete any of streaming sessions listed in **Streaming Server** tab.

- Click **Edit** to modify the parameters of the stream.
- Click **Delete** to remove the source from the list.
- Turn on/off the switch to start/stop streaming.
- Click **Add** and select a RTMP, RTMPS or RTSP server to stream to.

Notes

- Supported streaming protocols - RTMP, RTMPS, RTSP.
- Broadcasting one RTSP data as the main and sub stream is supported at a time, while you can not stream other data simultaneously. Both streams support 2 clients simultaneously.
- Allow simultaneous 2 sessions of RTMP and RTMPS using the same code stream.
- Allow to stream via a different network connection for each session.

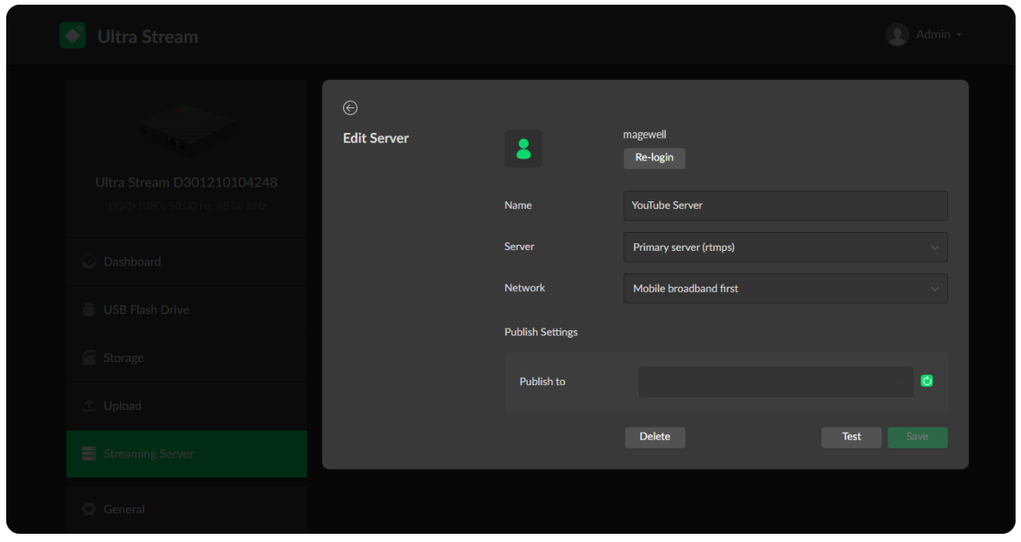


Live Streaming to Twitch

You can stream to Twitch if you have a Twitch account.

> ⚠ To ensure smooth live streaming experience, connecting to a wired Ethernet network is recommended.

1. Click **+ Add Server**, select Twitch , follow the on-screen instructions to login and select server.
   Your username and identification icon will be displayed after login.
2. Choose the prime network for streaming.
   By default, the network connection priority is: Mobile Broadband > Ethernet > Wi-Fi.
   The device scans the available network according to the order and connect to it for streaming. If the current network is disconnected, the unit automatically re-scans according to the priority.
   Plug a USB modem into your encoder while using mobile network to stream.
3. Click **Test** to check the connection between the server and encoder.
4. when prompted, click **OK**.
5. (Optional) To add other Twitch accounts, repeat step 3 to 5.
6. (Optional) Choose where you want to post your live broadcast.
   You can stream simultaneously to 2 accounts at most.
7. (Optional) To delete a server: choose a server and click **Delete**. When prompted, click **Confirm**.



Live Streaming to YouTube

You can stream to YouTube if you have a YouTube account, and you have enabled the Live streaming feature of your channel at least 24 hours before your stream.

> ⚠ To ensure smooth live streaming experience, connecting to a wired Ethernet network is recommended.

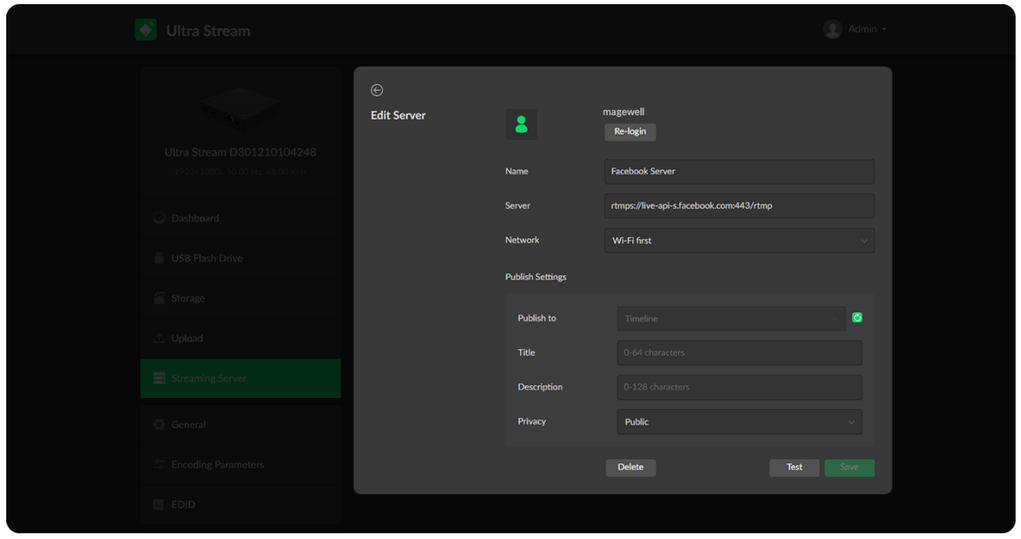
> ⚠ To enable the Live streaming feature, refer to YouTube Help.

1. Click **+ Add Server**, select YouTube , enter the "Stream Name", follow the on-screen instructions to login and select a server.
2. Click **Log In**. Follow the on-screen instructions to open YouTube, enter the code displayed on your device, and log in.
   Your username and identification icon will be displayed after login.
3. Choose a YouTube ingestion server.
4. Choose the prime network for streaming.
   By default, the network connection priority is: Mobile Broadband > Ethernet > Wi-Fi.
   The device scans the available network according to the order and connect to it for streaming. If the current network is disconnected, the unit automatically re-scans according to the priority.
   Plug a USB modem into your encoder while using mobile network to stream.
5. Click "Publish to" and select a channel or event for your session.
   Choose "Add a new stream" and enter title, description and privacy. Then a new live event would be added to your log-in account automatically. And you can stream to YouTube using streamer without clicking on "go live" in YouTube Studio.

Choose an existed channel or event. Then clicking on "go live" in YouTube studio is recommended to ensure a successfully live broadcasting.

6. Click **Test** to check the connection between the server and encoder.
7. when prompted, click **OK**.
8. (Optional) To add other YouTube accounts, repeat step 3 to 5.
9. (Optional) Choose where you want to post your live broadcast.
   You can stream simultaneously to 2 accounts at most.
10. (Optional) To revoke access to your YouTube account: enter a YouTube session, and click "Revoke" to cancel Ultra Stream's access to your YouTube account and delete the session at the same time.
    Stop live streaming session before you revoke the access.

    You can also revoke the access of Ultra Stream app from Google account security setting.
11. (Optional) To delete a server: choose a server and click **Delete** When prompted, click **Confirm**.



Live Streaming to Facebook Live

You can live broadcast to Facebook if you have a Facebook account.

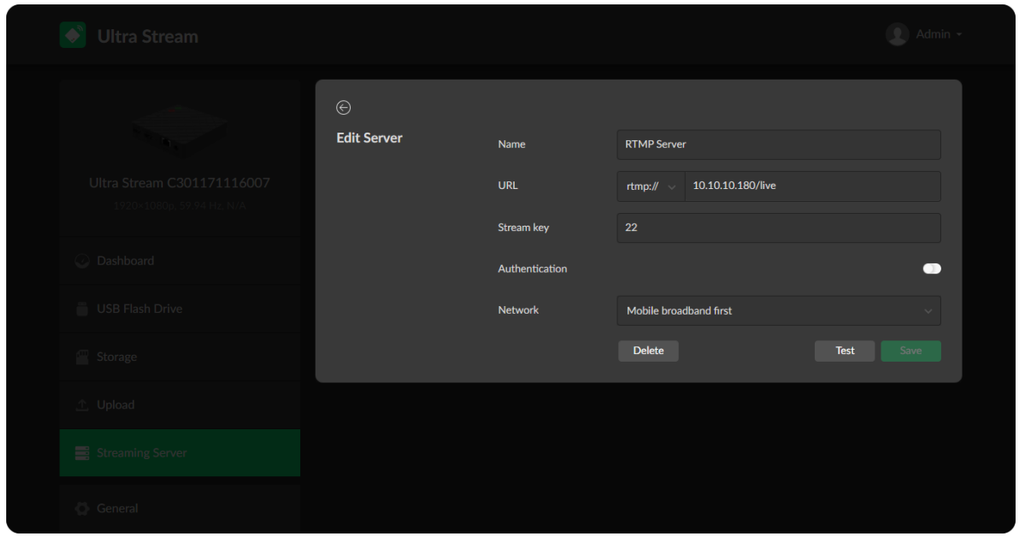
> ⚠ To ensure smooth live streaming experience, connecting to a wired Ethernet network is recommended.

From the navigator pane, click to enter the **Streaming Server** interface to start setting up your stream according to where you want to post your live broadcast.

1. Click **+ Add Server**, select LIVE , enter the **Stream Name**.
2. Click **Log In**. Follow the on-screen instructions to open Facebook, enter the code displayed on your device, and log in.

⚠ Your username and profile image will be displayed after logging in.

3. Choose the prime network for streaming.
   By default, the network connection priority is: Mobile Broadband > Ethernet > Wi-Fi.
   The device scans the available network according to the order and connect to it for streaming. If the current network is disconnected, the unit automatically re-scans according to the priority.
   Plug a USB modem into your encoder while using mobile network to stream.
4. Specify **Publish to**, **Title**, **Description** and **Privacy** for your broadcast.
   Stricter restriction works when the privacy here differs from that of the Facebook setting. Publishing to your page requires public privacy.
5. Click **Test** to check the network connection.
6. After pass the test, click **OK**.
7. Back to **Streaming Server** page, turn on the added server.
   You can stream simultaneously to 2 accounts at most.
8. (Optional) To delete a session: choose a session and click **Delete**.
   When the prompt window shows up, click **Confirm**.

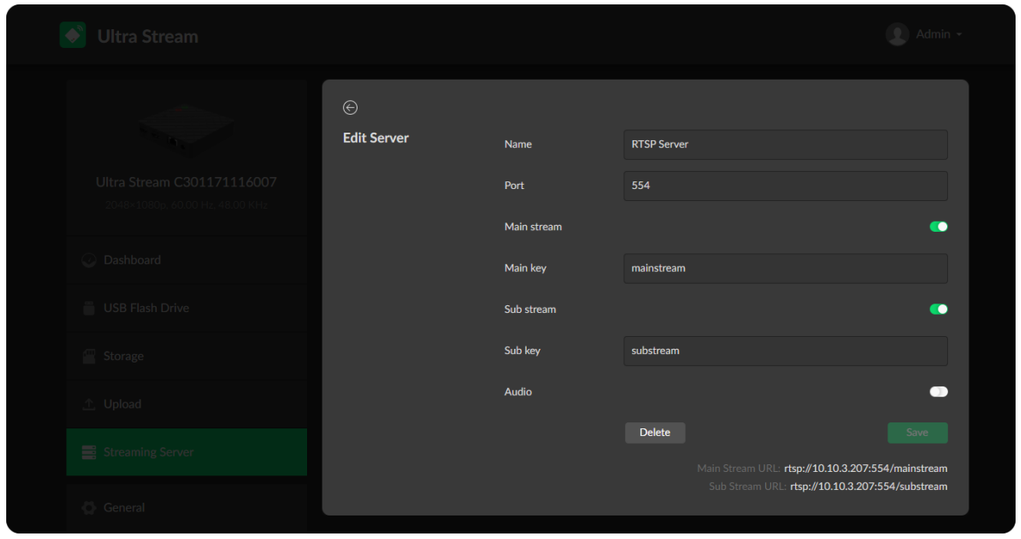


RTMP/RTMPS

- **Name:** specify a name, 1 to 30 charactors, for current task to facilitate server management, which will be displayed in the server list.
- **URL:** enter the RTMP URL address, or an RTMP address you have obtained from the live stream platform. The RTMP URL format is rtmp(s)://host[:port]/app[/playpath]. Full address example:**rtmp(s)://192.168.1.136:1935/live**. Choose rtmp or rtmps by the destination server. The port number ranges from 1 to 65535.
- **Stream key:** enter the stream key obtained from the live stream platform.
- **Authentication:** turn on if your live streaming service provider requires. Obtain the User Name and Password from your live streaming service provider.
- **Network:** The device scans for the available network according to the connection priority and connect to it for streaming. If the current network is disconnected, the unit automatically re-scans according to the priority.

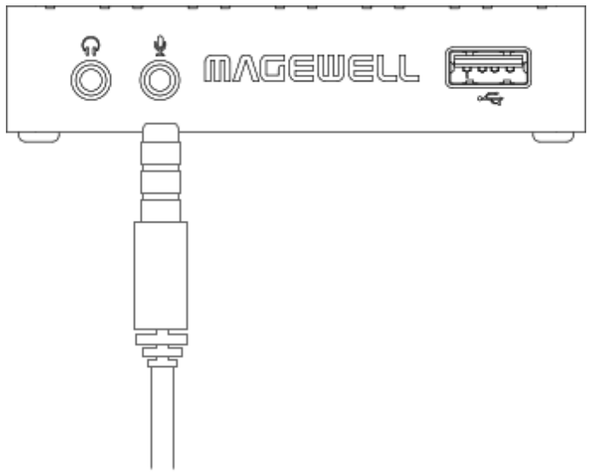
  By default, the network connection priority is: Mobile Broadband > Ethernet > Wi-Fi.

  Plug a USB modem into your encoder while using mobile network to stream.
- **Test:** check the connection between the server and encoder.
- **Save:** save current configuration.



RTSP

- **Name:** specify a name, 1 to 30 charactors for current task to facilitate server management, which will be displayed in server list.
- **Port:** specify RTSP stream port, ranging from 554, 10000 to 65535. The default port is 554.
- **Main stream:** turn on to push main stream. Specify parameters inEncoding Parameters tab.
- **Main key:** specify key for main stream. The main key should be different from sub key.
- **Sub stream:** turn on to push sub stream. Specify parameters inEncoding Parameters tab.
- **Sub key:** specify key for sub stream. The sub key should be different from main key.
- **Audio:** turn on to stream audio signal, otherwise audio will not be delivered. The audio signal consists of audio embedded in input signal and LINE IN.
- **Save:** save current configuration.
- Only 1 RTSP streaming session can be started each time, but you can add multiple servers to the streaming server list.
- After configuration, the stream URLs display at the end of the page.



Add Voice Comment during Streaming

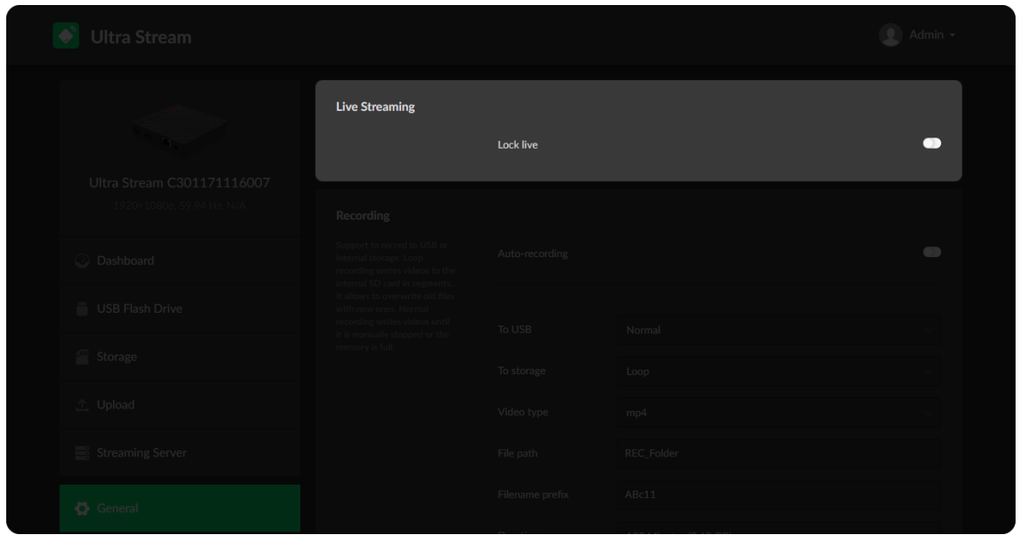
Plug in a microphone to your encoder audio jack , then you can stream and record your narration and comments.

Starting/stopping Streaming

Make sure you have set the streaming servers before start streaming. To ensure smooth live streaming experience, connecting to a wired Ethernet network is recommended.

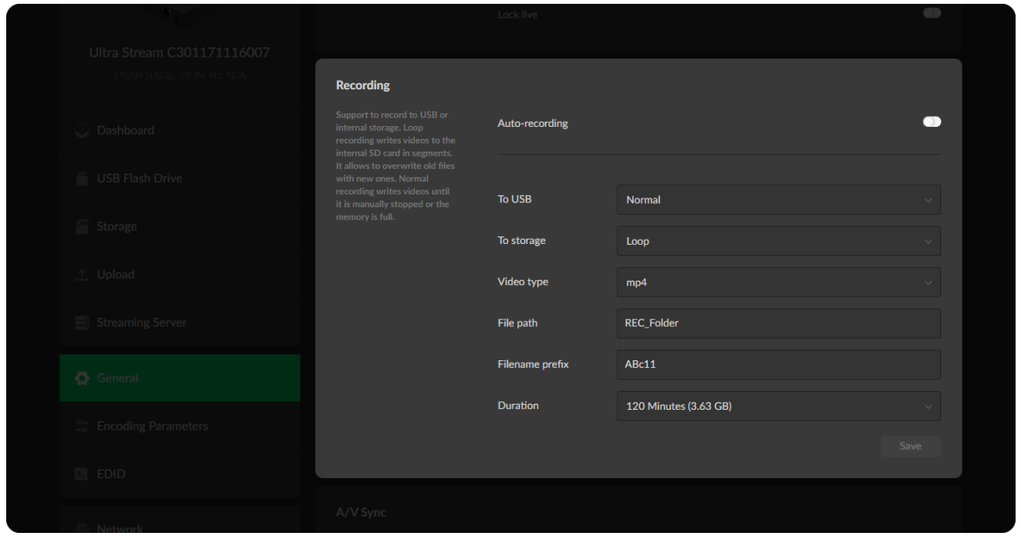
1. Do any of the following to start/stop streaming.
   - From the navigator pane, click to enter the **Dashboard** page, then click the green **LIVE** button .
   - Press the green **LIVE** button located on the top panel of the encoder.
2. Check streaming status in the right side of the **REMOTE** interface.

General



Live Streaming

Turn on **Lock live**, and the device will start streaming automatically. However, the live task would not be stopped unless you turn off the switch.



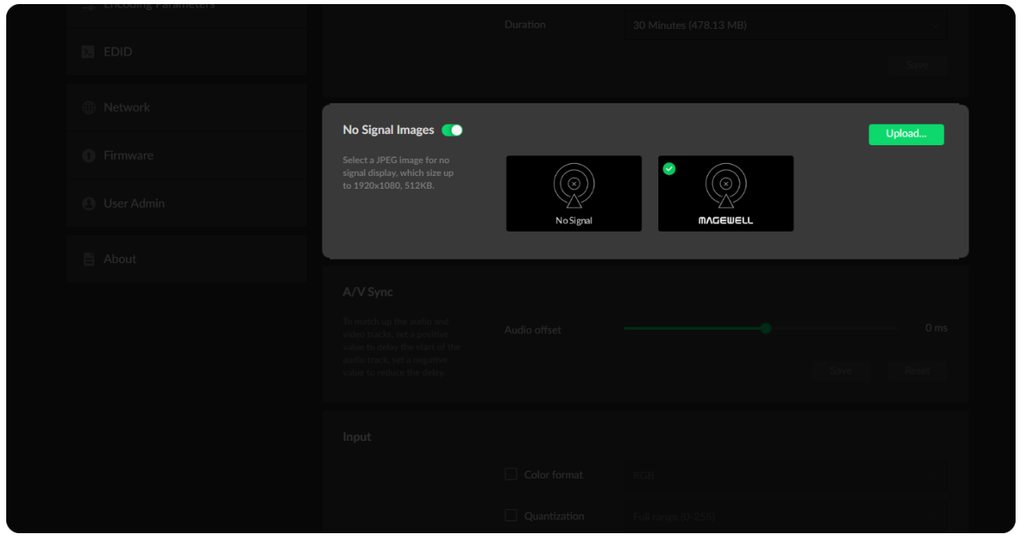
Recording

Click **Save** after modifications.

- **Auto-recording:** turn on the switch, then when a stable input signal is detected by the device, the unit will automatically record to the USB and/or storage according to the configuration. By default, it is disabled.
- **To USB:** options are disabled and normal. In normal recording mode, recording will stop automatically when the storage space is full. By default, it is normal.
- **To storage:** options are normal, loop and disabled. By defaut, loop recording is used. It means that the saved file will be overwritten with the newly generated one automatically.
- **Video type:** options are mp4 and mov. The default value is mp4.
- **File path:** range from 1 to 255 charactors, and the default value is REC_Folder.
- **Filename:** options are custom prefix or creation time. You can specify a name

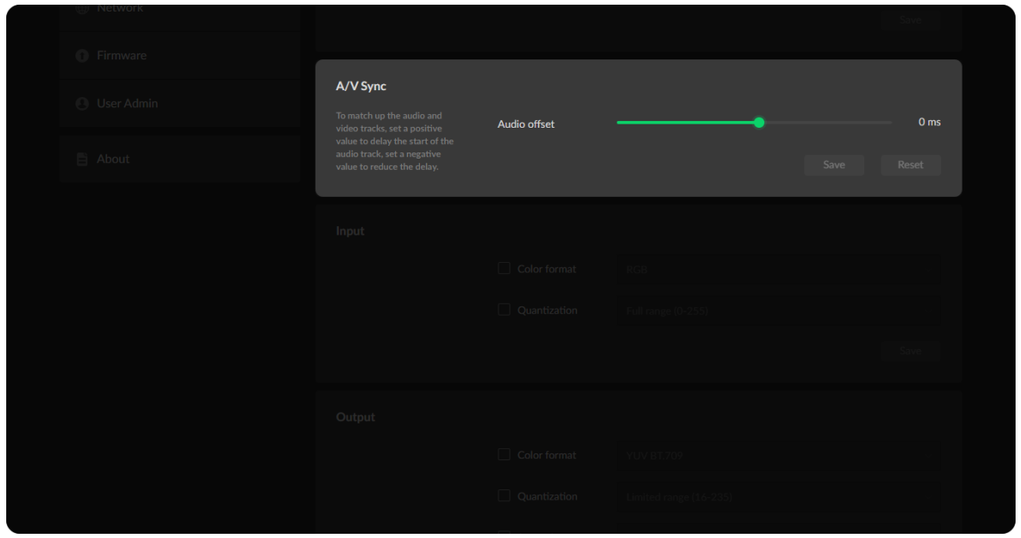
ranging from 1 to 32 charactors when using the default custom prefix.

- **Duration:** specify how long a video clip is, ranging from 5 to 120min. The default duration is 120min.
- In normal recording mode, recording will stop automatically when the storage space is full. In the loop recording mode, the saved file is automatically overwritten with the newly generated one when the storage space is full.
- Loop recording is supported when recording **To Storage**.
- Note that a 4G or larger file is not allowed for an individual video clip.



No Signal Images

Turn on the switch, then you can select a JPEG image for no signal display, which size up to 1920x1080, 512KB. You can upload 2 more JPEG photos. The device provided 2 pictures can not be deleted.



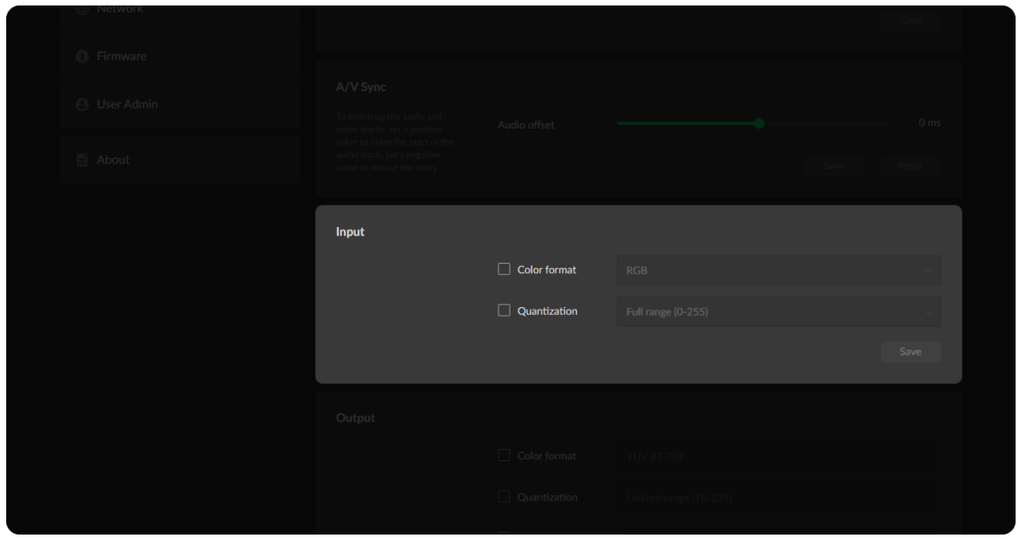
A/V Sync

- **Audio offset** ranges from -200 to 200ms.

  To match up the audio and video tracks, set a positive value to delay the start of the audio track, or set a negative value to reduce the delay.

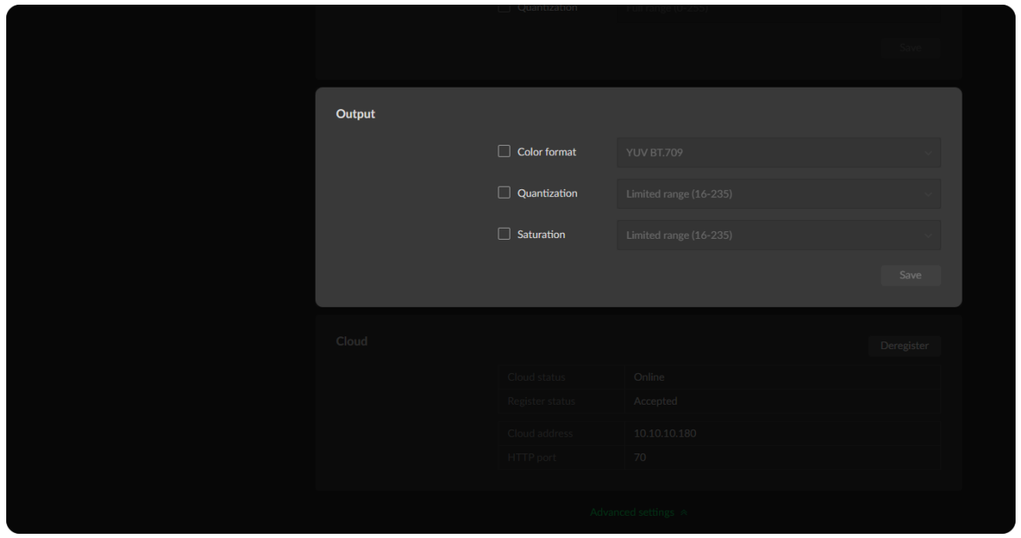
  We recommend that you start your live after this configuration to enjoy the A/V sync adjustment.

- Click **Save** after modifications.
- Click **Reset** to restore to default.



Input

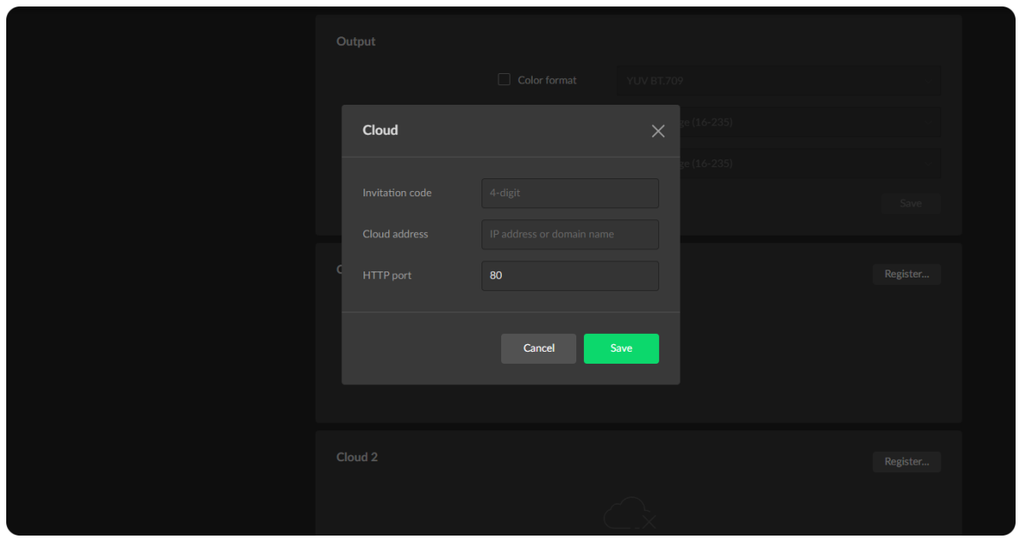
- **Color format:** input video color format. Check the box to select other options, including RGB, YUV BT.601, YUV BT.709, YUV BT.2020.
- **Quantization:** input quantization range. Check the box to select other options, including Full range(0-255), Limited range(16-235).
  - Click **Save** after modifications.



Output

Click **Save** after modifications.

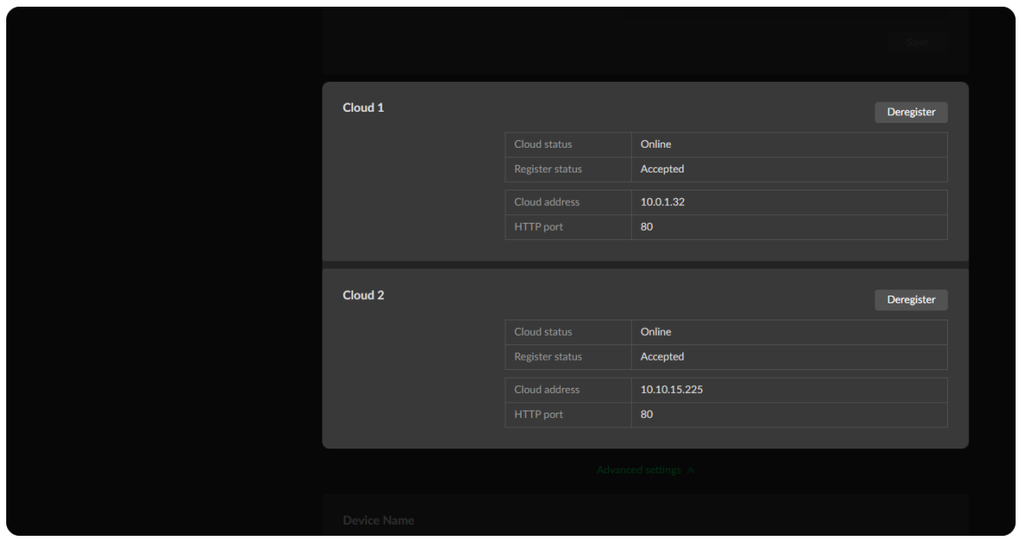
- **Color format:** check the box to select other options, including YUV BT.601, YUV BT.709.
- **Quantization:** check the box to select other options, including Full range(0-255), Limited range(16-235).
- **Saturation:** check the box to select other options, including Full range(0-255), Limited range(16-235), Extended GAMUT range(1-254).



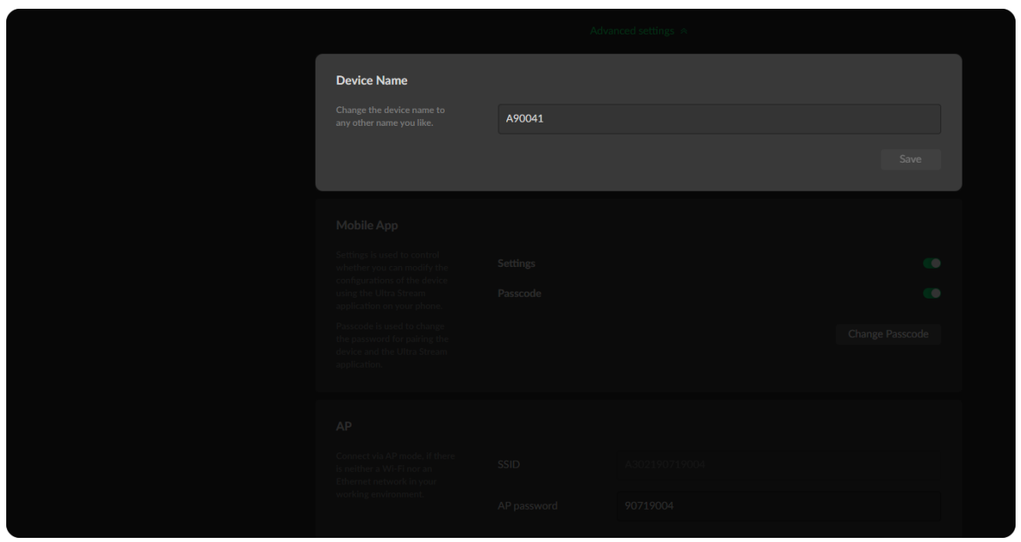
Cloud

You can register with 2 cloud platforms for remote control.

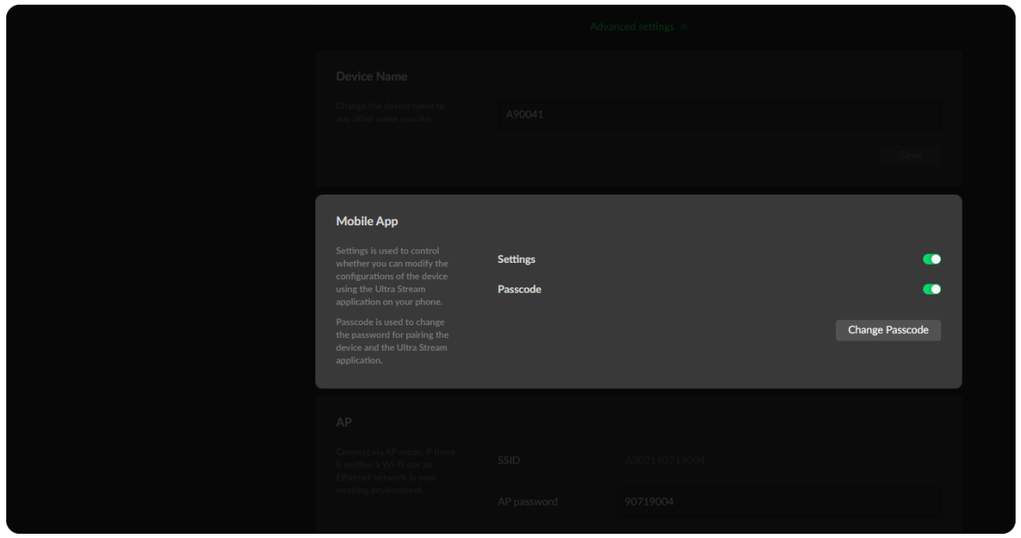
- Click **Register...:** and input parameters in the prompted window. And save after configuration.
  - **Invitation code:** a 4-digital numbers security code obtained from cloud platform. If not leave it empty.
  - **Cloud address:** input IP address or domian name of cloud.
  - **HTTP port:** input HTTP port number, which should be consist with that of cloud.



- Check parameters related to cloud management.
  - **Cloud status: Online** or **Offline**. Online indicates that the communication between device and cloud platform goes well. On the other hand, Offline indicates the communication is interrupted.
  - **Register status:** shows current status of cloud-join permission, including
    - Incorrect invitation code: you need to change your registration with correct code.
    - Waiting: registration is successfully submitted to cloud plarform.
    - Approved: registration is approved. This device can be remotely controlled.
    - Rejected: Registration is denied.
  - **Cloud address:** shows IP address or domian name of cloud.
  - **HTTP port:** shows the HTTP port of device used to communicate with cloud.

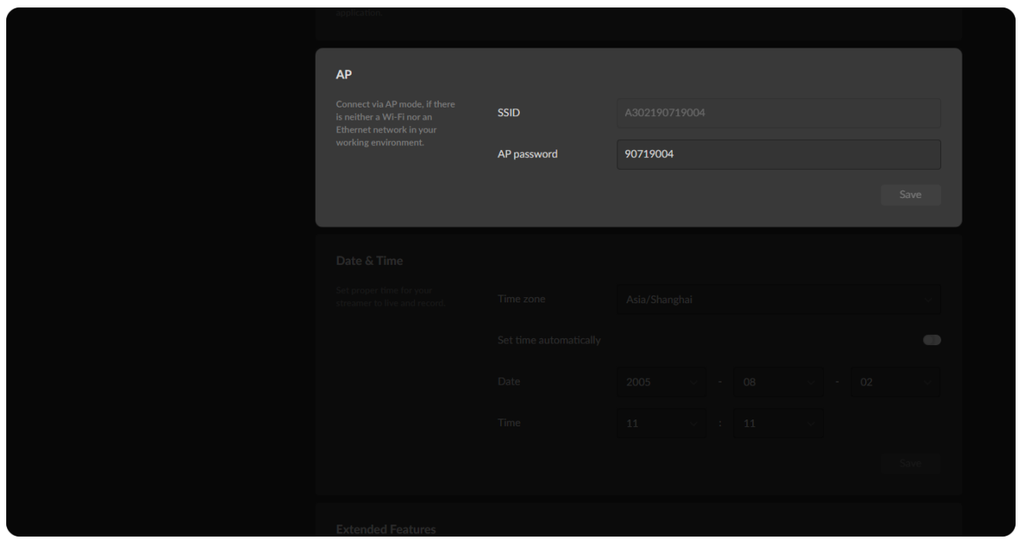


- **Device Name:** range from 1 to 32 characters, including A-Z, a-z, 0-9, space ._- + ' [ ] ( ) and cannot begin or end with a space.



Mobile App

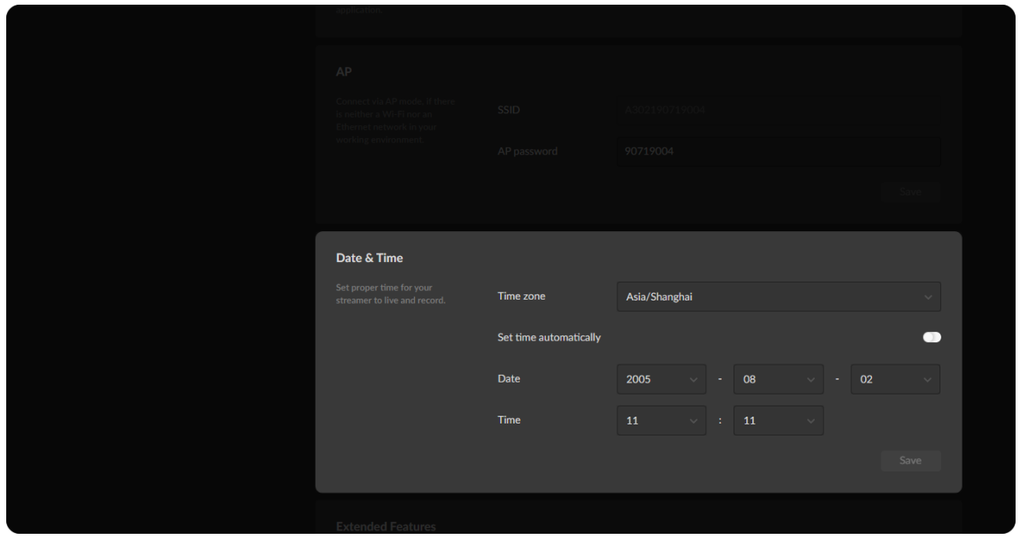
- **Settings** is used to control whether you can modify the configurations of the device using the Ultra Stream application on your phone.
- **Passcode** change the 4-digital password for pairing the device and the Ultra Stream application.



Set AP

You device can work as an AP to be joined to for remote web control. Click **Save** after configuration.

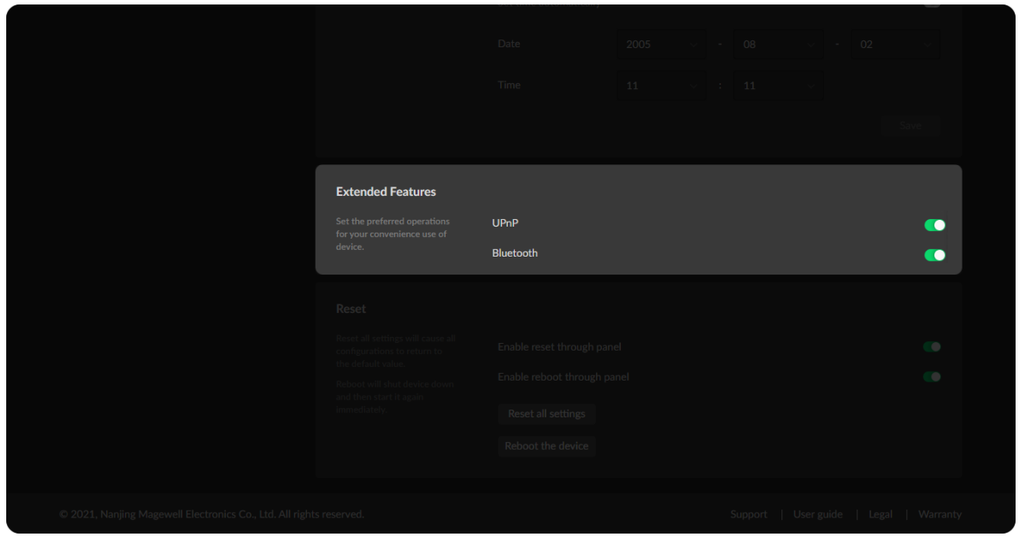
- **SSID:** by default, it is named after the device serial number.
- **AP password:** the default AP password is the last 8-number of the serial number. For example, a serial number C301110101001 indicates the initial AP password is 10101001. It ranges from 8 to 16 characters including A-Z, a-z, 0-9, space ._-+'[]() and cannot begin or end with a space



Date & Time

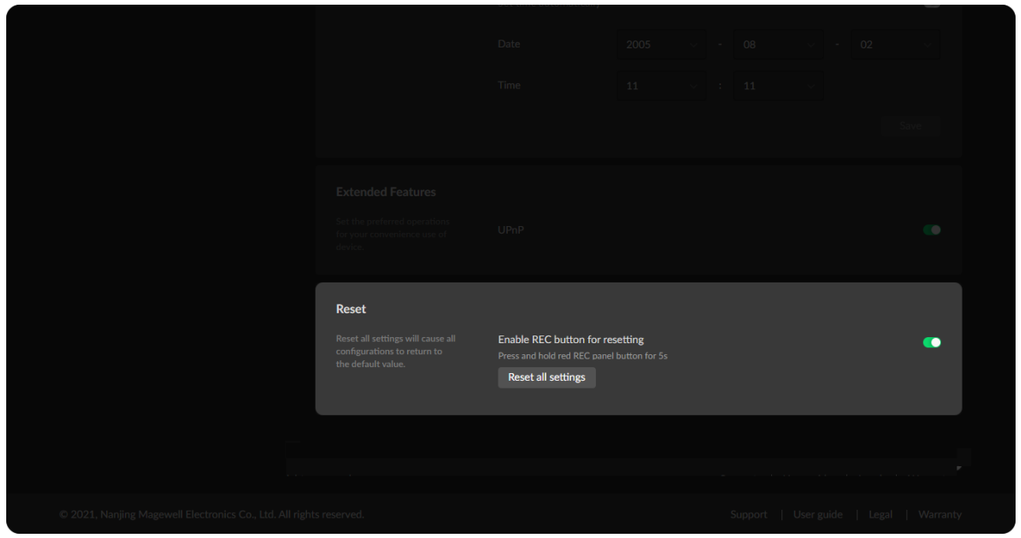
Click **Save** after configuration.

- **Time zone:** specify a time zone for your device.
- **Set time automatically:** turn on **Set Time Automatically**. Then the device's time will synchronized to the world-time servers depending on the timezone you set. Otherwise, you can set time manually.



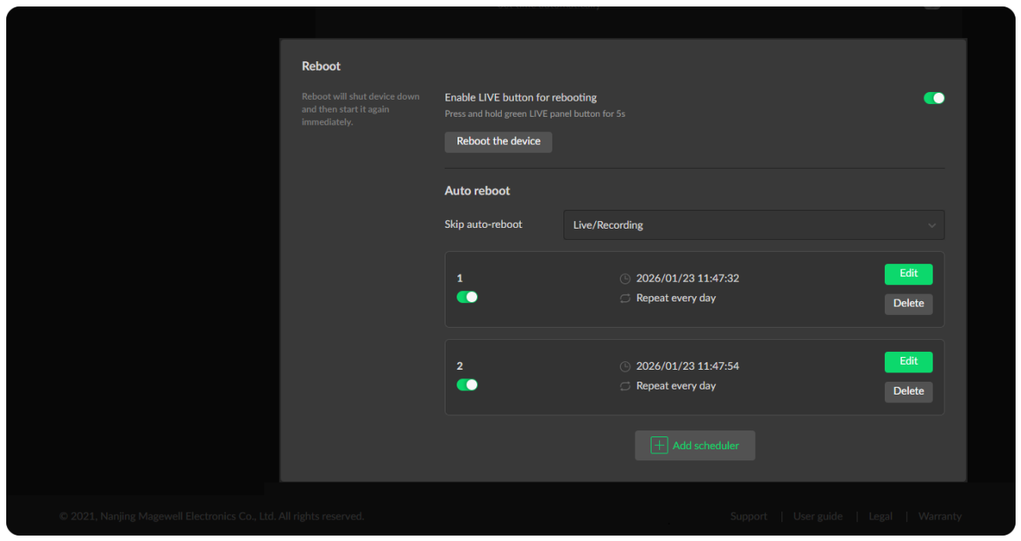
Extended Features

- **UPnP:** by default, it is on. This feature allows the unit be found by network discovery.
- **Bluetooth:** enabled by default, allowing the device to be discoverable via Bluetooth. When disabled, the device cannot be connected to via Bluetooth. For ease of device management, it is recommended to keep this feature enabled.



Reset

- **Enable reset through panel:** you can press and hold REC button on the front panel to reset all settings by default. Otherwise, you can not reset through panel button.
- **Enable reboot through panel:** you can press and hold LIVE button on the front panel to reboot by default. Otherwise, you can not reboot through panel button.
- **Reset all settings:** be cautious that resetting your device would restore configurations to defaults.



Reboot

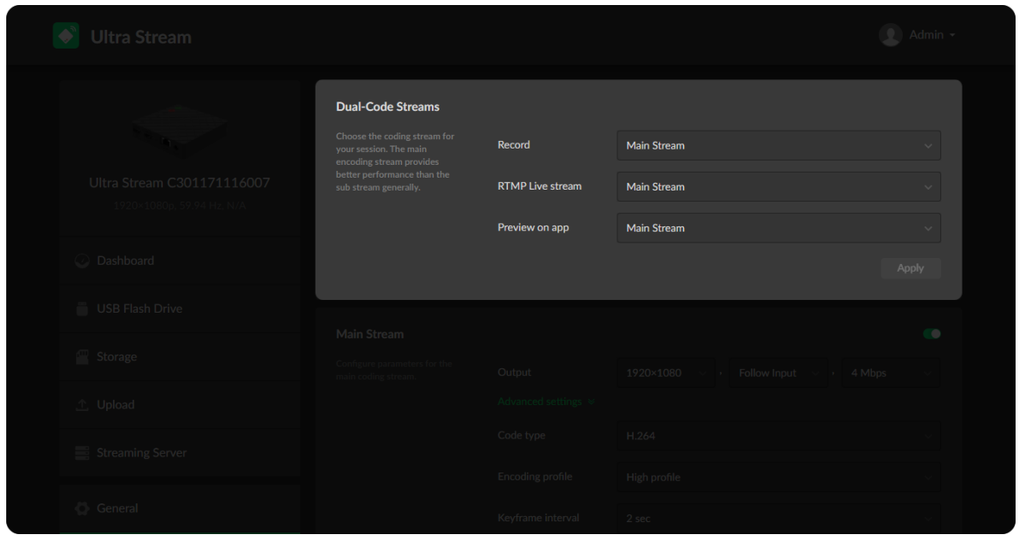
Reboot will shut device down and then start it again immediately.

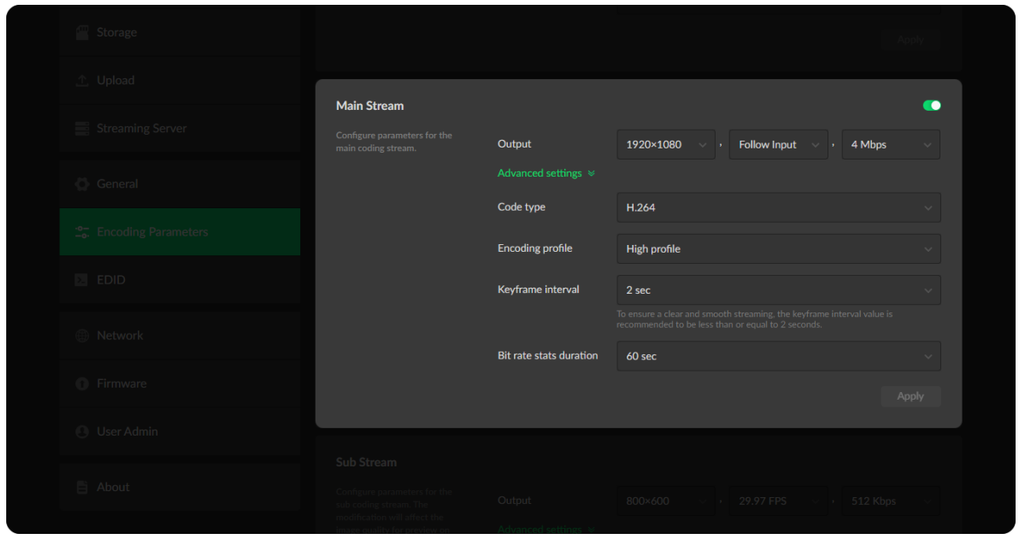
- **“Enable LIVE button for rebooting”：** By default, the device can be restarted by pressing and holding the green LIVE panel button for 5 seconds. When this function is disabled, the restart via this method will be unavailable.
- **Reboot the device:** power off the device and restart it when it does not work.
- **Auto reboot:** off by default. Turn it on to set Reboot time (YYYY-MM-DD HH-MM-SS), Reboot time, and click Save.
  - **“Skip auto-reboot”：** When the Live Streaming, Recording, or the combined Live Streaming & Recording switch of the designated device is turned on, the device will continue the original task without interruption even if the pre-set auto-restart conditions are met. Conversely, if the switch is set to None, the device will terminate all current tasks immediately and execute the auto-restart once the conditions are satisfied.

If the Skip Auto-Restart switch is enabled, a manual restart (e.g., tapping the Restart Device button or long-pressing the LIVE button to restart the device) will still take effect as normal.

- **“Add scheduler”:**
  - **Description**: specify current event name including 1 to 63 character(s).
  - **Reboot time**: specify the first reboot time.
  - **Repeat event**: Support no-repeat (default), daily, weekly, monthly, yearly. After the device triggers the aforementioned restart time, it will restart in accordance with the repeat rules specified below. In the following text, all N denote non-zero positive integers.
    - **Daily**: The repeat mode can be repeated every N days, or every workday.
    - **Weekly**: The repeat mode can be Repeat every 1 week next days: multiple choices are available.
    - **Monthly**: The repeating pattern may be repeat N days every N month, or on weekday every N month.
    - **Yearly**: The repeating pattern can be every N day N month, or on N weekday of N month.

Encoding Parameters





Dual-Code Streams

Specify code stream for your session. The main encoding stream provides better performance than the sub stream generally. Click **Apply** after configuration.

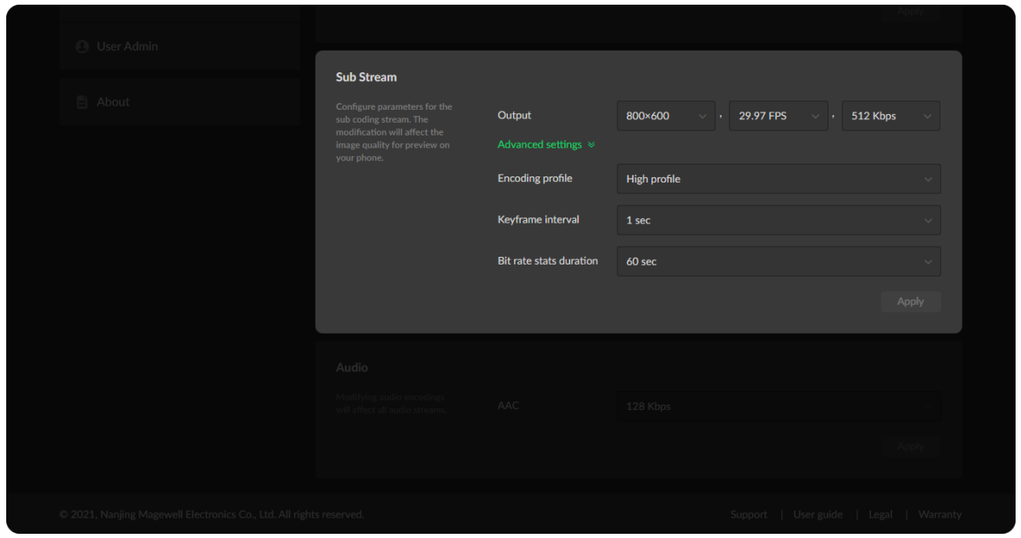
- **Record:** main and sub stream are supported. Main stream is used by default.
- **RTMP Live stream:** main and sub stream are supported. Sub stream is used by default.
- **Preview on app:** main and sub stream are supported. Sub stream is used by default.

Main Stream

Turn on the switch to custom settings for the main stream, and click**Apply** after configuration.

- **Output:** by default, it follows input resolution, frame rate, bitrate. However, when the pixel rate of the input signal reaches 170MHz, 4:4:4/4:2:2, the horizontal and vertical resolutions will both go down to half of the original values.
- **Code type:** options are H.264 and H.265(HEVC) encoders.
- **Encoding profile:** for H.264 encoder, the profiles can be High/Main profile/Baseline. For H.265 (HEVC), it can be Main profile.
- **Keyframe interval:** options are 1, 2, 5, 10, 30, 60sec. A smaller number will result in a larger file size and less buffer time for seeing the first frame. To ensure a clear and smooth streaming, the keyframe interval value is recommended to be less than or equal to 2 seconds.

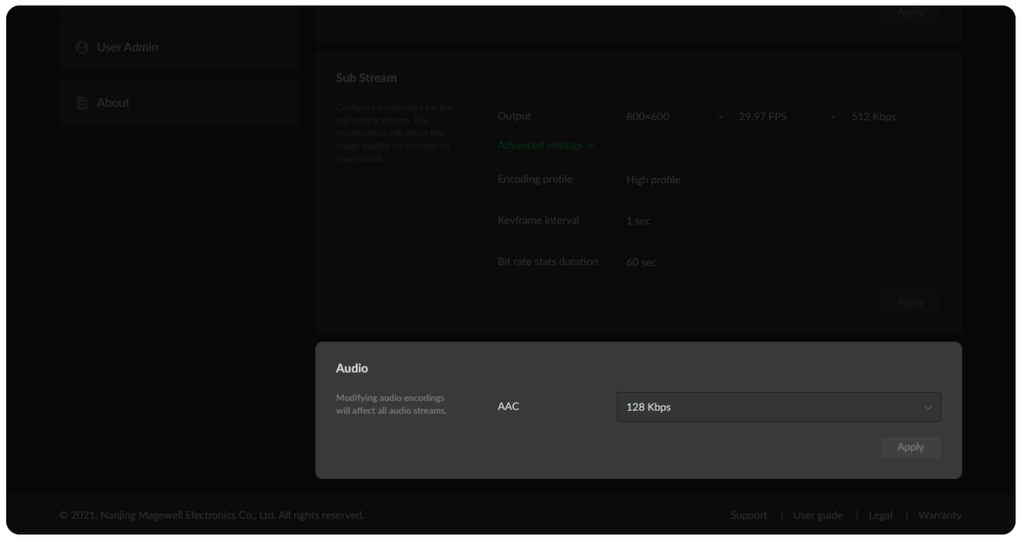
- **Bit rate stats duration:** adjust bit rate by image complexity to ensure the stability of the code stream within the set period. options are 1, 5, 10, 30, 60sec. The default 60s is recommended. A smaller value means more information may need to be discarded when the image data bursts.



Sub Stream

Click **Apply** after configuration.

- **Output:** by default, it is 1280x720p30 at 1Mbps.
- **Encoding profile:** sub stream uses H.264 encoder. The profiles can be High profile, Main profile and Baseline.
- **Quantization range:** options are Full range(0-255), Limited range(16-235)
- **Keyframe interval:** options are 1, 2, 5, 10, 30, 60sec. A less number will result in a larger file size and less buffer time for seeing the first frame.
- **Bit rate stats duration:** adjust bit rate by image complexity to ensure the stability of the code stream within the set period. The default value is recommended. A smaller value means more information may need to be discarded when the image data bursts.



Audio

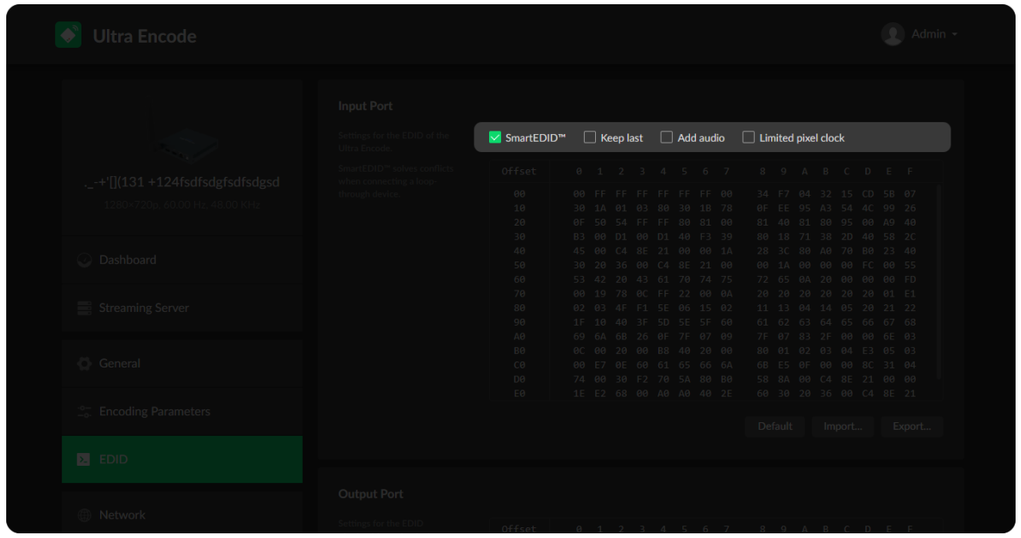
Click **Apply** after configuration.

- **AAC:** all audio streams will be affected by modifying the AAC bitrate. It ranges from 16 to 256 Kbps, and the default value is 128 Kbps.

EDID

Click and enter the **EDID** tab to check the EDID information. By clicking**Default** in the bottom right corner of the page, you can cancel your settings.

This tab is only available for HDMI products.

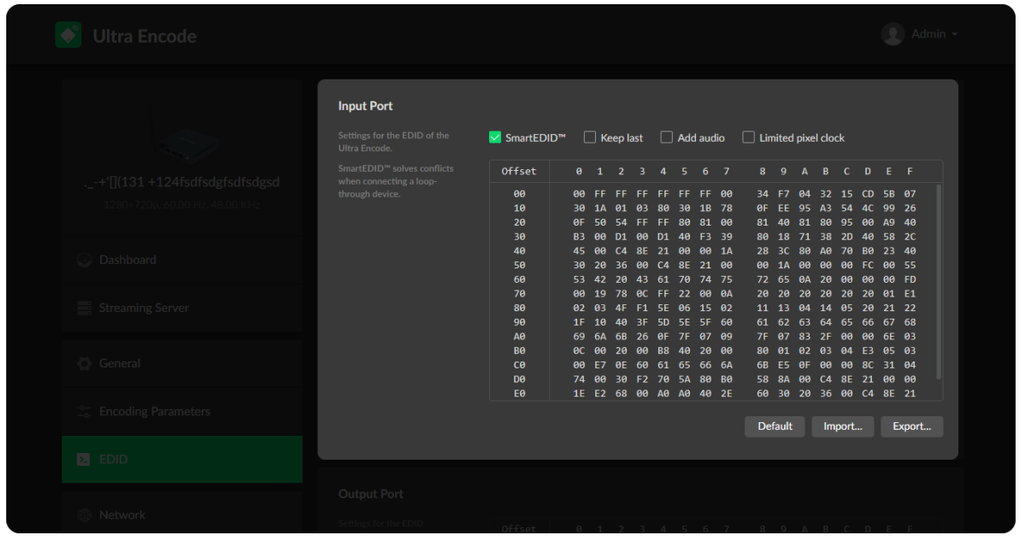


Setting SmartEDID™

NOTE: This function is available for HDMI products.

- **SmartEDID™**
  - SmartEDID™ is enabled by default. When it is disabled, other related functions can not be set.
  - Depending on the input capability of the encoder and that of the device connected to the loop-through interface, the encoder will smartly select to send the EDID to the video source device, to ensure both the encoder and the loop-through device can obtain the signal they support.
- **Keep last**
  - Keep the last EDID value used.
  - This function is disabled by default. To enable it, the SmartEDID function should also be enabled. When Keep Last is enabled and the loop-through device is disconnected, the current EDID will still be used. The encoder will continue receiving signal so the video capture and encoding continues. Otherwise, the encoder will resend its EDID to the source device for it to redetermine what format of signal to send. As a result, there could be an interruption to the source signal for a short time.

- **Add audio**
  - Force the source device to output audio.
  - If users connect a monitor which doesn't support audio to the loop-through output, the source device will decide not to output audio. As a result, the device will not get any audio input. If **Add Audio** is enabled, the device will communicate with the video source device, forcing it to output audio.
- **Limited pixel clock**
  - If enabled, when the pixel resolution of the loop-through device is beyond the capability of the device, a lower pixel resolution will be used in order to avoid the output producing a blank screen.

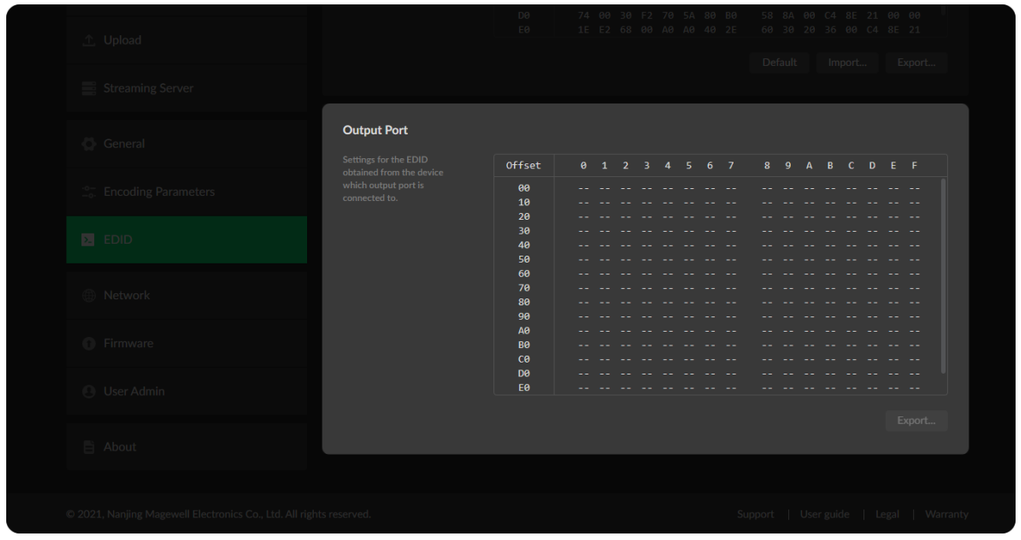


Setting INPUT EDID

Any of the following actions can be performed on the input EDID of the device.

NOTE: This section is available for HDMI products.

- **Default**: Click **Default** to reset the current EDID to default values.
- **Import**: Click and select an EDID file to import a local EDID file.
- **Export**: Click and set the file name to export the current EDID as a .bin file.



Checking OUTPUT EDID

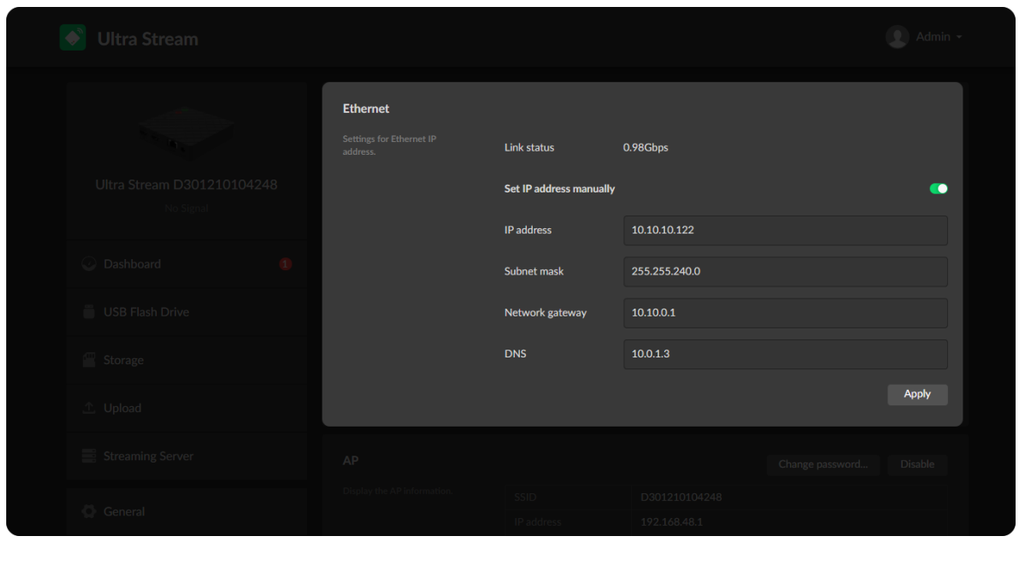
OUTPUT EDID shows the EDID of the connected loop-through device.

NOTE: This section is available for HDMI products.

- **Export**: Click and set the file name to export the current EDID as a .bin file.

Network

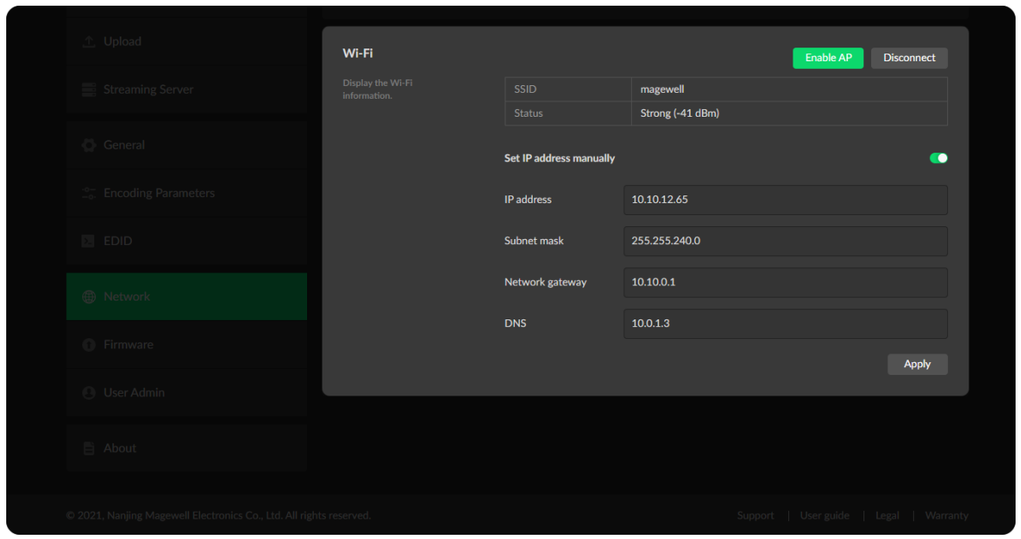
Networking information, including Ethernet, Wi-Fi and AP, can be set in the**Network** tab.



Ethernet

The device automatically detects and connects to the Ethernet when networking to a DHCP-enabled LAN. Then you can check **Link status** for current network speed. Or you can set the IP address manually for a fixed IP address or an auto-networking failure.

- **Set IP address manually:** turn on the switch to modify current network setting or when being connected to a non-DHCP network.
  - **IP address:** device IP address.
  - **Subnet mask:** device subnet mask.
  - **Network gateway:** device gateway.
  - **DNS:** DNS server IP address.
  - **Apply:** make current configuration effective. When prompted, click**Yes**.
  - Verify: input new IP address to open the Web UI.

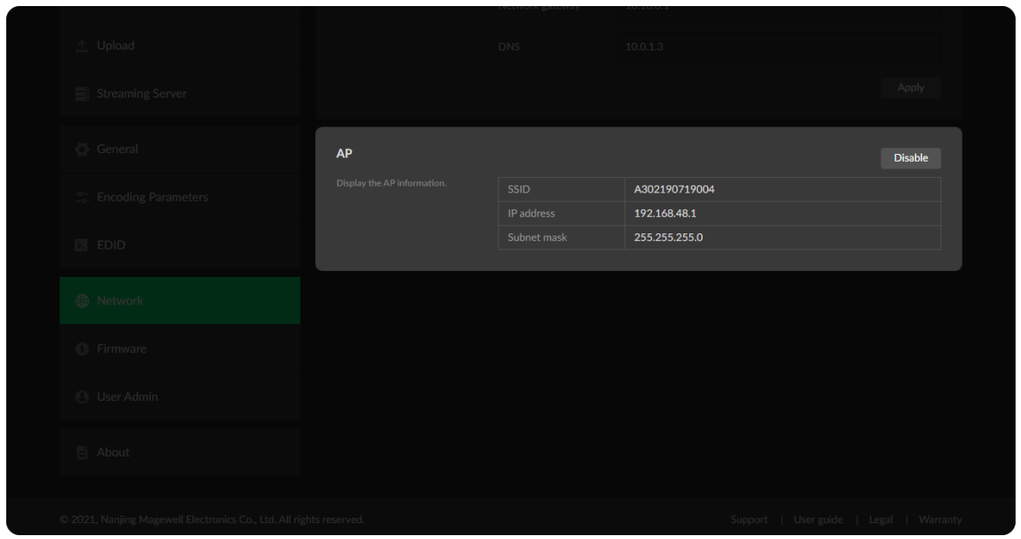


Wi-Fi

- **Enable AP:** click to make your device work as an AP.
- **Disconnect:** click to cut off current Wi-Fi network.
- **SSID:** named after device serial number.
- **Status:** Wi-Fi signal strength.

Set up Wi-Fi manually

1. turn on the switch to join a specific Wi-Fi network.
    - **IP address:** device IP address.
    - **Subnet mask:** device subnet mask.
    - **Network gateway:** device gateway.
    - **DNS:** DNS server IP address.
2. **Apply:** make current configuration effective. When prompted, click **Yes**.
3. Verify: input new IP address to open the Web UI.

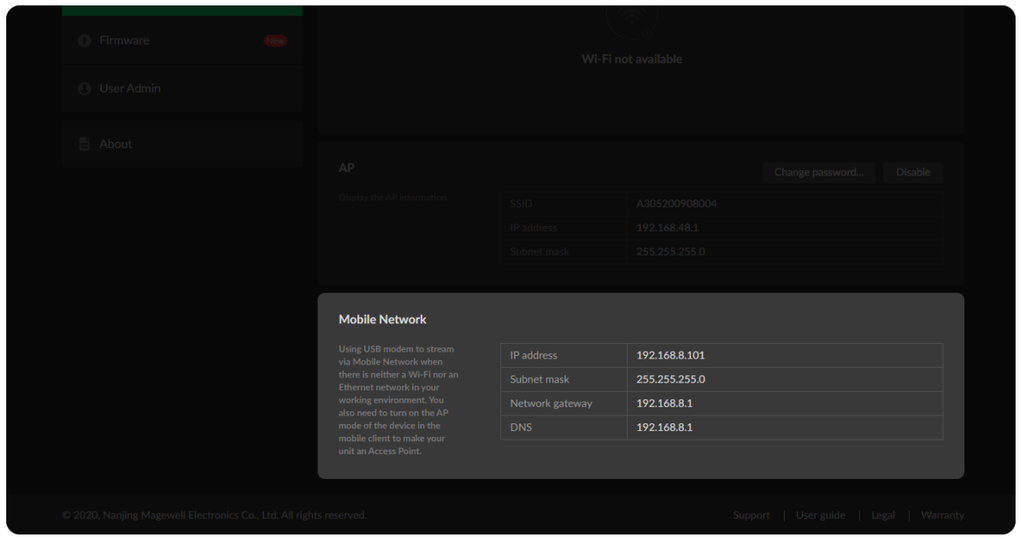


Set AP

The device can work as an AP to be joined to.

- **Disable:** click to turn off AP mode. This renders you unable to manage the device over AP, which is not recommended, especially when you are using wireless network or linux/mac OS.
- **SSID:** by default, it is named after the device serial number.
- **IP address:** fixed as 192.168.48.1.
- **Subnet mask:** fixed as 255.255.255.0.
- **Change password:** click to modify AP password.
    - **AP password:** the default AP password is the last 8-number of the serial

number. For example, a serial number C301110101001 indicates the initial AP password is 10101001. It ranges from 8 to 16 characters including A-Z, a-z, 0-9, space ._-+'[]() and cannot begin or end with a space.



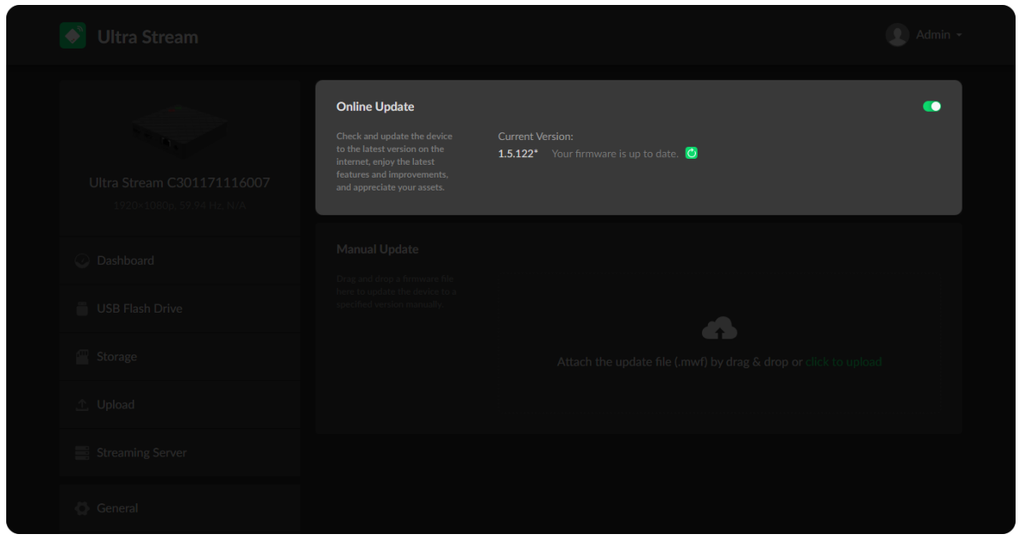
Set Mobile Network

The encoder supports streaming via a USB modem.

- **IP address:** IP address assigned by the USB modem.
- **Subnet mask:** subnet mask.
- **Network gateway:** gateway.
- **DNS:** DNS server IP address.

Firmware

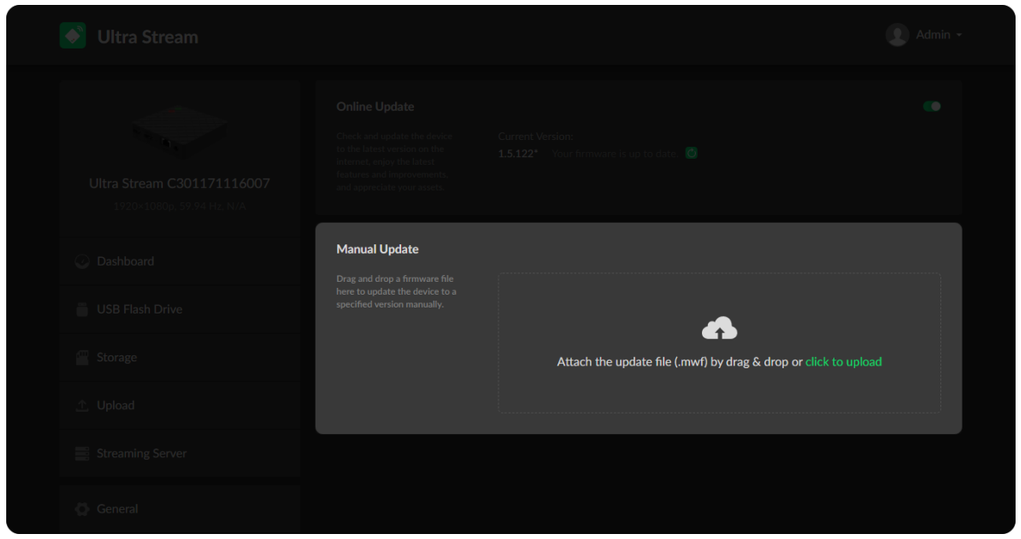
Detect and update firmware to the latest version online, or you can manually add a firmware file to update the unit to specified version.



Online Update

By default, the function is on. When a new version is detected, a New icon will flow on the control pane.

1. Turn on switch, and the online update function is on. The unit would detect the latest released firmware automatically when connecting to the Ethernet.
2. Click icon to check for the latest firmware manually.
3. Click **Update** button to download and install the new version file if any.
   Do not disconnect from the power source or perform any operation while updating the firmware as this could damage your gear.
   After a successful update, the device will restart automatically.
4. Verify: click checking for updates again.
   "Your firmware is up to date." indicates the update is successful.



Manual Update

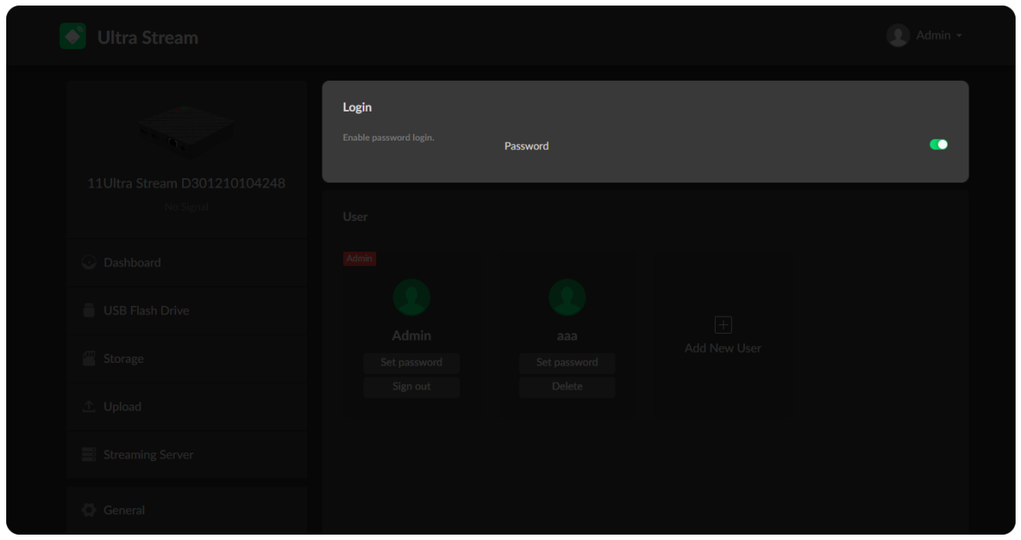
1. Click on **click to update** to select the **.mwf** firmware update file from your local storage, or just drag and drop the file from your computer into the upload zone.
   Dowload firmware file from our official website.
   The device will automatically verify the update file and upload the file after the file verification is passed.
2. Click **Update** to download and install the new version file. Then the device will reboot to complete the update.
   Do not disconnect from the power source or perform any operation while updating the firmware as this could demage your gear.

3. Verify: check the **Firmware version** in **Dashboard** or **Firmware** tab. It should be the same as your target version number.

User Admin

Administrator is allowed to perform the following tasks. The**User Admin** tab is invisible when you log in as a general user.

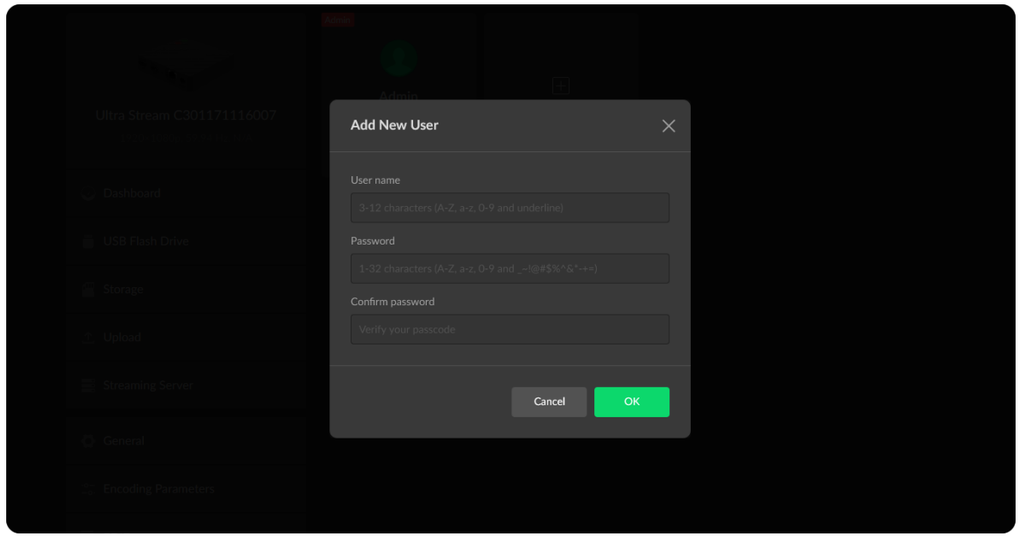
- Create/Remove General User Accounts
- Modify User Password



Turn on/off Password Login

After signing in with administrator account, you may turn on/off password in the Login section.

After turning off, you can get access to WebUI without user account, only the IP address is needed.



Create/Remove General User Accounts

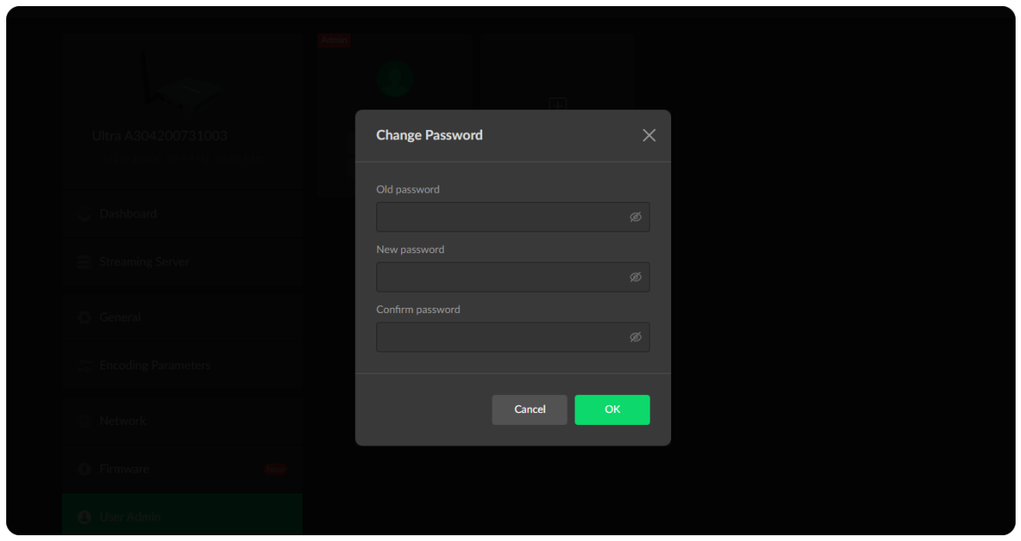
After signing in with default admin account, you may need to add general users to give them permissions to do basic operations, like monitoring the device, or setting some of the parameters.

1. Access the Web UI, and sign in as administrator.
2. Go to **User Admin** tab.
3. Click **Add user**.
4. Enter username, password, and confirm your password.
    - The username is a string of 3 to 12 characters, which contains the letters A-

Z, a-z, numbers 0-9 and underline.

- The password is a string of 1 to 32 characters, which contains the letters A-Z, a-z, numbers 0-9 and special characters _~!@#$%^&*-+=.

5. Click **OK**.
   You can add up to 15 general users.
6. To delete a user: Click **Delete** in the username card. When prompted, click **Yes**.



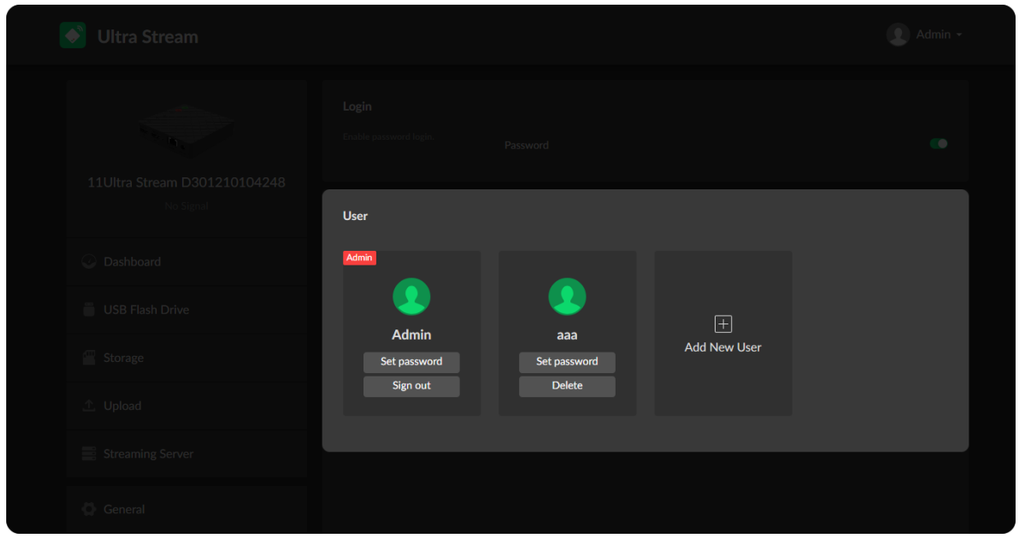
Modify User Password

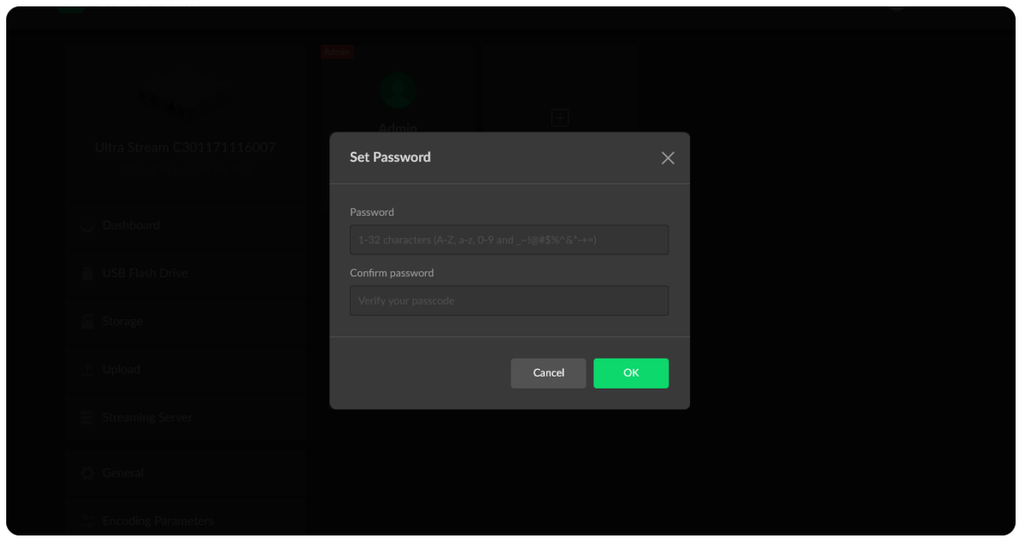
Set Password in the following ways.

1. Modify user password logged-in via drop-list beside your avatar at the top right
2. Modify a specified user password in **User Admin** tab with admin account

Modify current logged-in user password

1. Log in Web UI.
2. Click the drop-list icon beside your avatar icon, and click **Change password**.
3. In the pop up window, type in your old password, the new password, and confirm your new password.
   The password is a string of 1 to 32 characters, which contains letters A-Z, a-z, numbers 0-9 and special characters _~!@#$%^&*-+=.
4. Click **OK**.



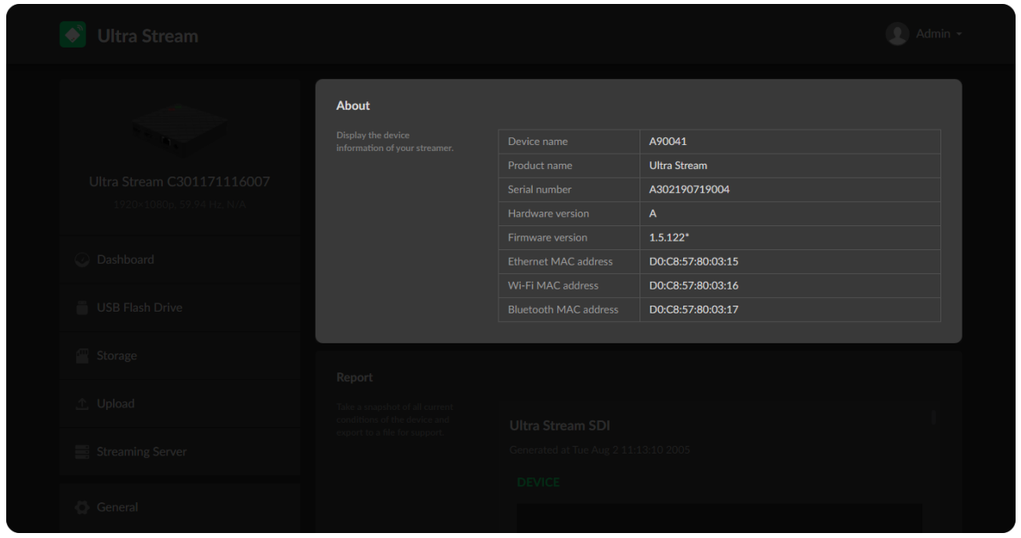


Modify a specified user password

1. Access the Web UI and sign in with the administrator account.
2. Go to **User Admin** tab, then you can change any user's password.
3. Click **Set password**.
4. In the pop up window, type in and confirm your password.
   The password is a string of 1 to 32 characters, which contains letters A-Z, a-z, numbers 0-9 and special characters _~!@#$%^&*-+=.
5. Click **OK**.

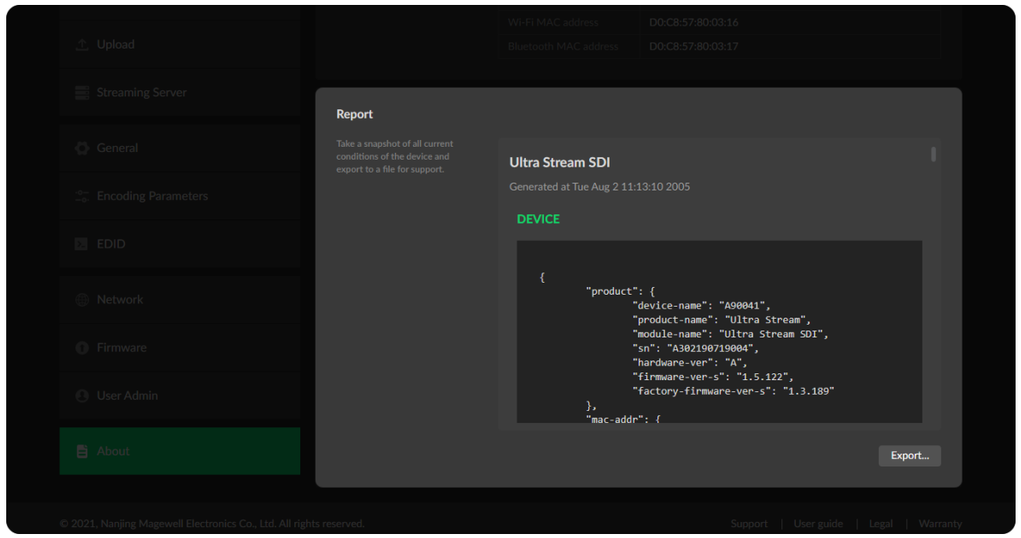
About

Obtain basic data for device maintenance in **About** tab.



Check System Information

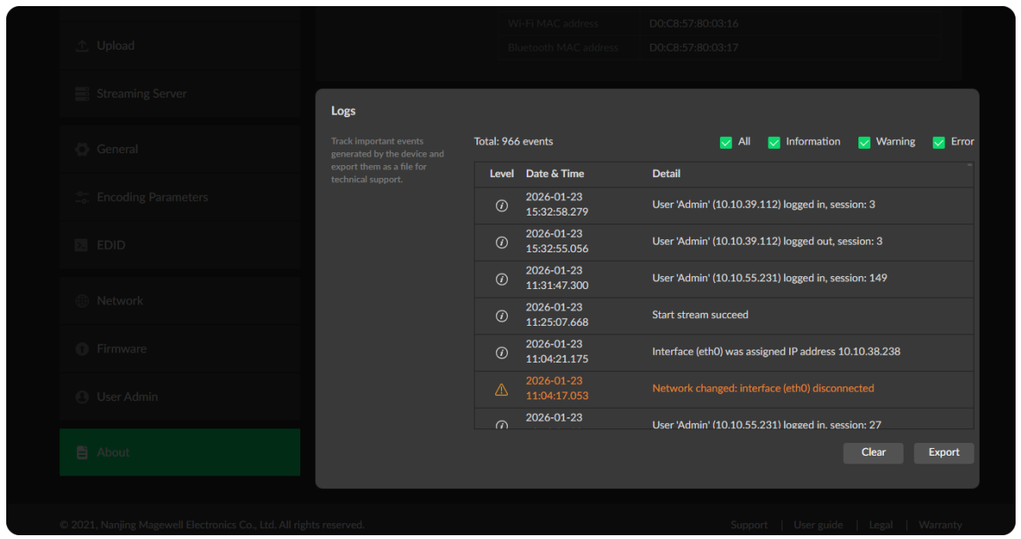
- **Device name:** device name which can be modified in the General > Device name tab.
- **Product name:** device family name.
- **Serial number:** device serial number.
- **Hardware version:** device hardware version.
- **Firmware version:** device firmware version, which can be update in the Firmware tab.
- **Ethernet MAC address:** device Ethernet MAC address.
- **Wi-Fi MAC address:** device Wi-Fi MAC address.



Export Configuration Files

Export reports from your encoder when you want to get help from the Magewell Support team. These files will help our support engineers get a better understanding of your device status and other related information.

1. Go to **About > Report**.
2. Click **Export...** to generate a .html file.
3. When prompted, click **Export**.



Clearing/Exporting All Logs

1. Access the Web UI and sign in.
2. Click and enter the **System** tab, then select **Log**.
3. (Optional) Filter current logs.

   By default, all logs are displayed in the table. Log entries can be categorized as "error", "warning", and "information".

   - **Total** shows the total number of filtered events.
   - **All**: Check to show all logs.

     The device can store up to 1000 local log entries. After 1000 entries have been recorded, the oldest entry will be deleted before a new one can be added.
   - **Information**: Check to show information logs - which record user actions or significant system events, e.g. login and signal locked.
   - **Warning**: Check to show warning logs - which mean something has not worked as it should. e.g. Ethernet is disconnected or signal is unlocked.
   - **Error**: Check to show error logs - which mean some serious error has happened.
4. (Optional) Click **Export...** to get a .html file of all logs.

   When prompted in the window, click **Export**.
5. (Optional) Click **Clear** to delete all logs.

   When prompted in the window, click **Yes**.

Support

Get the Latest Information

If you have any problems using Magewell products or need more technical information, please visit the following.

- Tutorial video: Ultra Stream
- YouTube channel: Magewell Video Capture Device
- Knowledge base: Ultra Stream
- Official website: Ultra Stream

Technical Support

Contact the Magewell Technical Support Team at support@magewell.net.

Warranty

Limited Warranty

Except otherwise set between you and Magewell in advance in a written form, the free limited warranty service starts from the date on your proof of purchase. The proof can be: sales contract, formal sales receipt, invoice or delivery note. The earliest date of these proofs is the starting date of the free limited warranty.

The period of free limited warranty goes as below:

- Ultra Stream: two (2) years;
- The power adapter provided as accessories: one (1) year;

How to get the limited warranty

1. Please contact the Magewell support team by email (support@magewell.net) first, to determine whether your problem can only be solved by returning it to Magewell for repair. Magewell might ask you to take photos of the front and back of the defective products.
2. Magewell will issue an RMA letter to you if it is confirmed that you need to return the faulty product for further examination or repair. Please fill in the RMA with necessary information as required.
   If it is regular repair, you will be responsible for the shipping cost, duties and insurance cost (if applicable); if the product is DOA, Magewell will be responsible for the shipping cost.
3. If some components need to be replaced, Magewell will decide to repair, renovate or replace the components by itself. Magewell may use new or repaired component to repair the product. The repaired product can be expected to work normally and the performance to remain the same. Repaired products can work in a good working condition and at least function the same as the original unit. The original replaced component will become the property of Magewell and components which are replaced for the client will become his/her property.
4. If the product is within warranty, Magewell will repair or replace the faulty units at its own discretion. In circumstances where the faulty unit is replaced by another one, Magewell may use new, repaired or renovated units. The faulty unit will then become the property of Magewell while the replacement unit will become the property of the purchaser.
5. If the warranty expires, Magewell will inform the purchaser whether the products can be repaired and the maintenance costs they need to pay. If purchasers decide to repair, Magewell will repair, renovate, or replace the components after receiving the maintenance costs. If purchasers give up repairing, Magewell will dispose of the faulty unit if the purchaser chooses that option.

6. The repaired or replaced product assumes 1) the remaining term of the Warranty of the replaced unit or faulty unit; 2) ninety (90) days from the date of replacement or repair, whichever provides longer coverage for you. The extended warranty is only valid for repaired/replaced components.
7. The period of service depends on the client’s location (country and area) and the product.

To view the complete warranty policy, please visit www.magewell.com/quality-assurance.

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