Aleta S1

User Guide

Version 2.8

Introduction

This manual is for the users who attempt to use Aleta S1 360 degree camera and the Aleta Viewer on mobile device.

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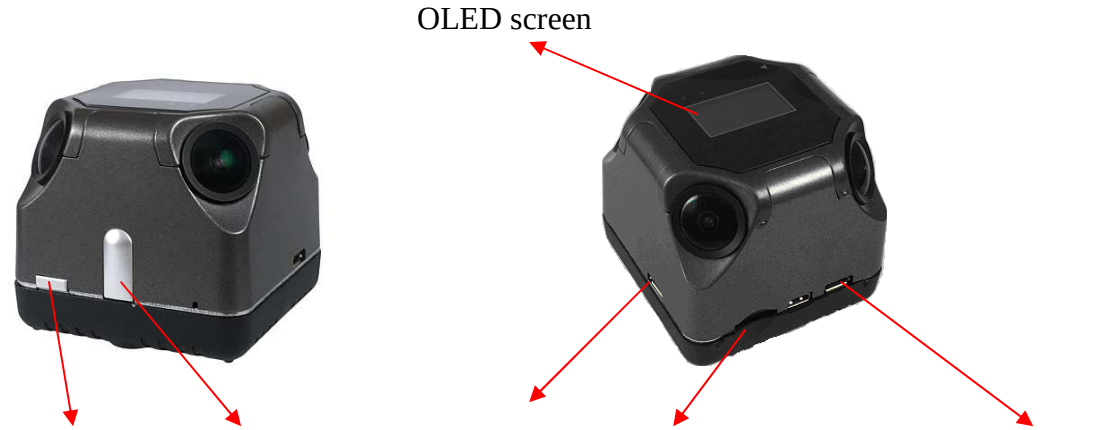
Chapter 1 Connectors and Buttons



1.1 Power Button

- Press power button to power on the camera.
- Press power button to enter sleep mode when camera is on.
- Press power button again to exit sleep mode.
- Hold power button for 2 seconds to turn off camera. The OLED screen will show "Shutting down"
- Hold power button for 4 seconds to hard shut down the camera.

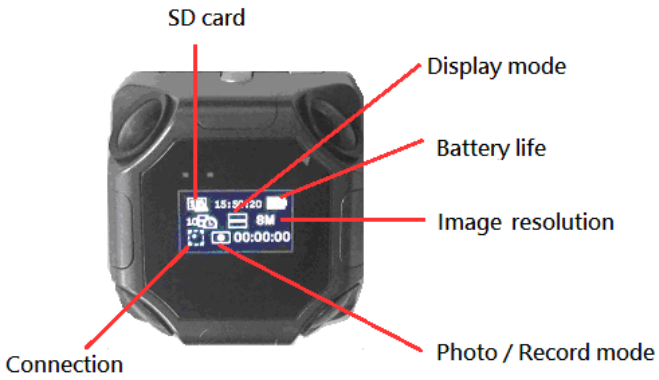
1.2 Shot Button

- Press shot button to take picture in Photo mode.
- Press shot button to start / stop recording in Record mode.
- Hold shot button to switch Photo / Record mode.
- Hold shot button and tilt the camera to enter motion setting mode.

Rotate camera to move the options and click shot button to select.
First row: Photo / Recording / Burst mode / Time-lapse mode
Second row: Display mode
Third row: Resolution

1.3 OLED screen

The icons on the OLED screen would show camera information:



1.4 LED indicators

Yellow LED: Power and recording
Blue LED: Wi-Fi data transferring

1.5 Connectors

- USB port: Connect to extension devices.
- SD Slot: Insert Micro SD card for storage. The camera supports 8GB~128GB SD cards, but only in FAT32 format. Note that most 128GB SD cards exFAT so please use the camera to format it.
- Power USB: Connect to USB power to charge the battery.

※ **The camera is built in with antenna and must be installed to provide a separation distance of at least 20 cm from all persons.**

Chapter 2 Connect to Aleta S1 to Mobile Device

2.1 Install Aleta Viewer

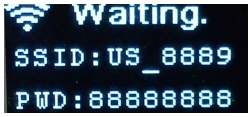
Install Aleta Viewer from APP Store or Google Play on your mobile device. The icon

will show on your app list.

2.2 Power on Camera

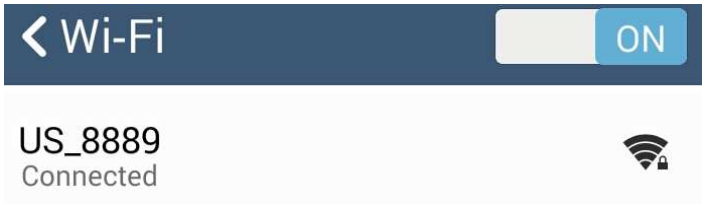
Click the power button to power on the camera.

During the booting processing, a set of SSID and Password will show up on the OLED screen.



2.3 Connect to Wi-Fi

Connect to the Wi-Fi SSID and input the password shown on camera by your mobile device.



※If you missed the Wi-Fi SSID and password information, click power button to enter sleep mode, and click it again to wake up the camera. The Wi-Fi information will show up again.

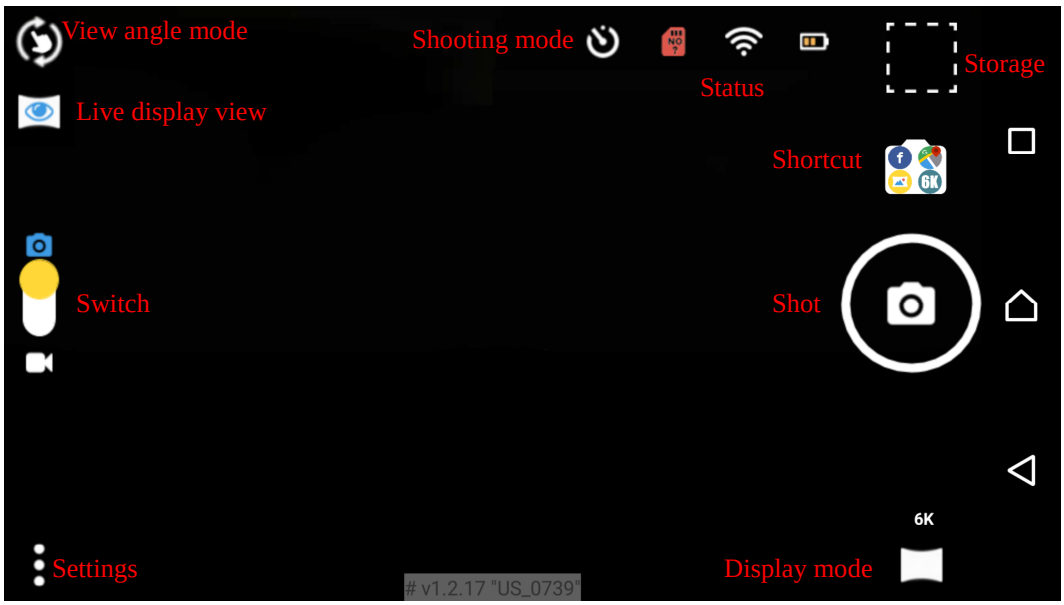
2.4 Run Aleta Viewer

Click the

icon to run the Viewer. If the Wi-Fi is connected correctly it will show live image immediately.

Chapter 3 Live View Function

3.1 Live View



※There is a minimum distance of 65 cm that can be stitched. For more detail about stitching please see "3.9. Stitching"

The live image should be displayed in Global mode while you first access to Viewer.

3.2 Switch button

Slide the button to switch photo and recording modes. Note that 6K resolution is only available in photo mode.

3.3 Shot button

In photo mode, click the button to take pictures. In recording mode, click the button to start recording, and click it again to stop. Recording time will show up during recording. The maximum size of the recoded file is 1GB, and the maximum time is 25 minutes. Once one of the thresholds is reached, camera will save current file and start a new file automatically.

*For audio recording, if the APP is running during recording, audio will be recorded by the cell-phone. If the camera has connected a USB microphone, audio will be recorded by the microphone no matter APP is running or not. Without APP or microphone there would be no audio recording.

3.4 View angle mode

There are 3 modes to control the view angle:

- Normal mode: Slide on the screen to change the view angel.
- Auto mode: The view angel will keep moving after sliding.
- Compass mode: Rotate your mobile device to change the view angel.

Note: The view angle cannot be changed in standard global view.

3.5 Live display view

In Global display mode, live view can be displayed in different views. (To change display mode, please see **Chapter 4: Display Mode**).

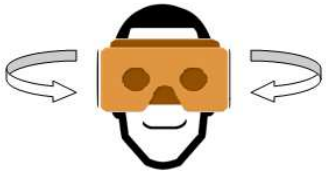
Standard global view: Display full image. The view angle cannot be changed in this mode.

Front view: Display 90 degrees of image and the view angle can be freely controlled.

Little planet view: Display 360 image in a circle.

VR view: Display side-by-side image. Please use a cardboard to view the immersive 360 degree image.

View angle control:



Rotate head to change view angle

Note: The live display view is used for preview in different modes. The image recorded will be standard global format.

3.6 Status

The status icons will show in upper-right.

- SD card status. “OK” means SD card is in slot and ready for image saving. “No” means there is no SD card in slot. “100%” means the SD card is full, and “ERR” means the card is broken or still in detection. Click this icon can view full SD card status.
- Wi-Fi signal status. “!” mark means the signal is weak or disconnected that image could be lag or lost. Click this icon could select available Wi-Fi. (Android only)
- Battery life indication. Click this icon can view full battery status.
- / Shooting mode. Photo mode includes continuous shooting and self timer. Recording mode includes time-lapse. Click this icon can change the setup.

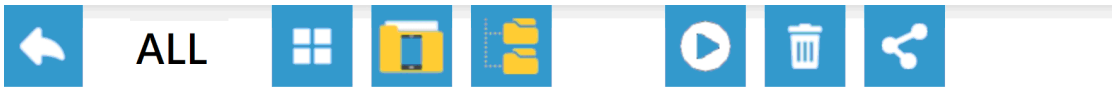
3.7 Shortcut

Click the button can enter the shortcut menu. It offers some default settings for different applications. You can set the shot mode, display mode, resolution, and time-lapse just in one click.

3.8 Storage

Click the upper-right button to access the storage menu.

Tool Bar:



- All / Photo / Video: Select the type of file to be shown.
- Change the amount of displayed files.
- / Switch to Atelta SD card / Mobile device storage.
- View file folders (Android) / Album (iOS) in the cell phone

Play selected file. Only downloaded files can be played. To play a file in SD

card will trigger download first. Files recorded in 360 or Global mode can be displayed in different formats. Click the button on lower-right to select the format.

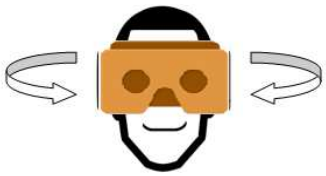
Standard global view: Display full image. The view angle cannot be changed in this mode.

Front view: Display 90 degrees of image and the view angle can be freely controlled.

Little planet view: Display 360 image in a circle.

VR view: Display side-by-side image. Please use a cardboard to view the immersive 360 degree image.

View angle control:



Rotate head to change view angle

- **Screenshot**: To snapshot or record current screen while playback.

- **Picture editting**: To add a button logo or mirror image for a picture

- See file information

- Download file from SD card to mobile device.

- Upload selected file. Only downloaded files can be uploaded. To play a file in SD card will trigger download first. During uploading the camera will shut the Wi-Fi connection so that the cell phone can access internet through other connection.

- Delete file

The color of frame means different status:

- Green: Selected
- Gray: Downloaded
- Red: Resume (download unfinished)

The color of file name tag means different file location:

- Green: In camera SD card
- Blue: In cell phone local storage
- Yellow: In cell phone SD card

Chapter 4 Display Mode

Click the display button in the bottom right to setup display mode and video quality. First click the mode icon, and then click the resolution number to finish the setting. The live view display, captured picture, and recorded video will all follow the setting.

4.1 Global

Global mode is the standard panorama mode including full sky view which is capable for Google and YouTube image format. 6K is for photo only.

Video frame rate:

- 4K(1920s): 10fps
- 3K(1536s): 24fps

* Global mode can be played in different views in live display.

4.2 360

This mode displays 360 degree image without full sky. The horizontal view angel can be moved by view angle control. 6K is photo only and the video frame for 3K (1536s) is 24.

Note: The actual pixel size would be different between video and picture in 360 and global mode since video would have addition filler image to blind spots for better looking and capacity. The actual size:

	Picture	Video
360-6K	6144 x 1152	N/A
360-3K	3072 x 576	3072 x 1536
Global-6K	6144 x 1792	N/A
Global-4K	3840 x 1120	3840 x 1920
Global-3K	3072 x 896	3072 x 1536

4.3 Front

90° view with free view angle moving. Recording frame rate is 30 fps for both 1080p and 720p resolution. Note that this mode offers better quality but the view angle cannot be changed after recording.

4.4 180

This mode displays a combination of two 180° view without full sky. The horizontal view angel can be moved by view angle control.

Video frame rate for 180 mode:

- 4K(2160p): 10fps
- Full-HD (1080P): 30fps
- HD (720p): 30fps

4.5 Quad

This mode is 4-screen split mode with free view angle moving.

Video frame rate for Quad mode:

- 4K(2160p): 10fps
- Full-HD (1080P): 30fps
- HD (720p): 30fps

Note: Image saved in Global mode can be displayed in standard 360 displayers such as YouTube 360 and the view angle can be changed freely. Other modes can change view angle in live display but the saved image will remain the same view angle as live and cannot be changed in playback.

Chapter 5 Setup

Click the bottom-left button for Aleta S1 setup.

5.1 EV

Change image target brightness by selecting the EV value. Note that the target is adjusted by ISO and shutter speed. If both ISO and shutter speed are set to fixed values, this function would not work.

5.2 Stitching

The stitching function changes the stitching gap between lenses.

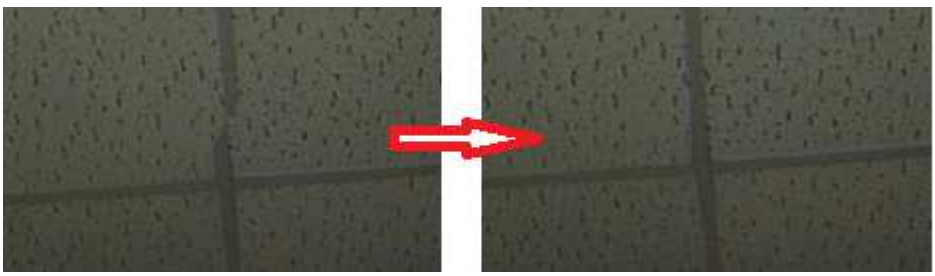
Manual: Manually change distance.

One Time: Auto stitching one time and then keep the setting.

Loop: Auto stitching continuously.

For Manually mode, slide the bar to find the best stitching gap for the target. The exact focus distance will show on the bar.

- Stitching gap for the image on top.
- Stitching gap for surrounding image.



5.3 ISO

Change image gain value. Larger gain brings more brightness, but also more

noise. If ISO is set to auto, camera will adjust it based on EV.

5.4 Shutter Speed

Change the shutter speed. Fast (short) shutter speed can get clear image for moving objects, but the brightness would become low. If shutter speed is set to auto, camera will adjust it based on EV.

※ EV target adjustment is based on ISO and shutter speed, so it only works when at least one of them is set to “Auto”.

5.5 Sharpness

Change the sharpness of the image.

5.6 White Balance

Change the white balance of the environment:

- Auto detection
- Lamp
- Fluorescent
- Daylight
- Cloudy

5.7 Setting

Camera

- **Photo Mode:** It includes continuous shooting mode and selfie countdown. Set burst to capture 3 / 5 / 10 shots by one click and 2 / 10 seconds countdown time for self shooting.

- **Time Lapse Mode:** Setup the time between each frame for time lapse mode. The recorded video would be played in 30 fps. The time-lapse video would be faster

than normal video and need more time to record.
0.1 sec: 3 times faster.
1 sec: 30 times faster
2 sec: 60 times faster
5 sec: 150 times faster
10 sec: 300 times faster
30 sec: 900 times faster
60 sec: 1800 times faster

- **Light Frequency:** Select the frequency of the light source and electric equipments to avoid flicker.

System

- **Format SD:** Format the SD card in camera (all files will be erased).

- **Sleep:** Set the idle time that triggers sleep mode. Click the power button can wake up the camera. Note if the camera is in sleep mode for over 10 minutes, it will shut down automatically.
  Auto: Auto speed control by temperature detection.

- **Restore to Factory Default:** Reset all settings to default.

- **About:** Check Firmware version, System Time, Battery power, and SD card status.

Advanced

- **Power Saving**: On: Live view image on the viewer is all 6 fps.
  Off: Live view image on the viewer is up to 30 fps.
  Choose Normal for power saving and Performance for smoother image.

- **Wi-Fi Channel**: Select the Wi-Fi channel to avoid interference.

- **SSID / Password**: Change the SSID and password of the camera Wi-Fi.

- **Fan Control:** Select fan speed or turn it off.

- **Live Stream Codec:** H.264 is more compressed but need more CPU power to decode. MJPEG is easier to decode but need more bandwidth so that the frame

rate is lower. Note that if your cell phone doesn't support 4K H.264 decoding, you can only use MJPEG to view 3K / 4K / 6K live image.

- **Color Control:** Color control on will make color stitching more accurate, but will cause unstable cooler shifting while camera is moving. Set it on, off or auto for the best performance in different conditions.

- **Ethernet Setting**: Set camera IP for Ethernet IP connection.

***For Ethernet connection, please refer to Appendix 1.**

- **HDMI Display Chart:** Show / Hide the lumen chart in HDMI display.

- **Camera Version Update Tip:** Turn on / off the notice of camera firmware update.

- **Connect camera to Wi-Fi:** Select Wi-Fi SSID and input password to connect the camera to the Wi-Fi AP. The OLED of camera will show "connecting". If connection succeeds, the OLED will show Wi-Fi SSID and camera IP. If connection fails the OLED will show normal information; please check the password is correct and try again. After successful connection, the camera's own Wi-Fi will disconnect. If you want to use the viewer to check the camera, please connect your mobile device to the same AP and use RTSP connection and input IP to connect the camera. For more detail operation please see Appendix 1.

- **Live Streaming:** Turn on live streaming and input the address and key to do live streaming. For 360 live streaming on YouTube and Facebook, it is suggested to use web page to do this command since it can only be started on PC. For more detail about 360 live streaming please see Appendix 2.

- **Camera Position:** There are 3 position modes: Auto, Flat, and Ceiling. Select the mode according to the way you install your camera, or use Auto mode for auto position detection.

Chapter 6 Firmware Upgrade

- Put the upgrade file (.zip) to the root of the SD card and make sure that there is no other zip file in the same root.

- Insert the SD card into the camera.
- Turn on the camera and while the SD card status is “OK”, the camera will start to upgrade.
- After finishing upgrading, the camera will reboot.
- The upgrade file will be remembered so the camera will not keep upgrading by the same file.
- If the zip file is not recognized successfully, the camera will stop upgrading and show “aborted” on the OLED screen. Please press power button to shut down the camera and check the file again.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

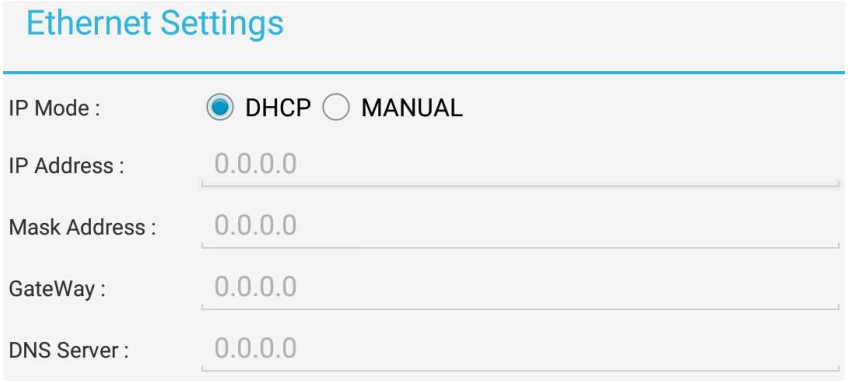
Appendix 1: Aleta S1 Network streaming display guide

※You need a Micro USB to RJ45 adaptor for wire connection.

1. IP setting

DHCP: No need setting.

Static IP: Connect to Aleta S1 by Aleta Viewer and go to Ethernet Settings.



2. Connect camera to network

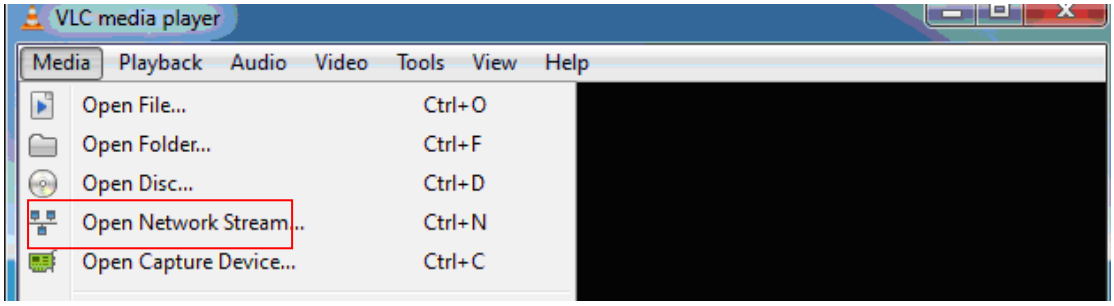
For wire connection, connect Aleta S1 to the Hub through a USB to RJ45 adaptor.

For wireless connection, use the "**Connect camera to Wi-Fi"** function (see 5.7 Setting) of Aleta Viewer.

After connection, the OLED screen will show the IP.

3. Play by VLC player

3-1. Connect your PC to the hub and run VLC Player and click open “Network Streaming”.



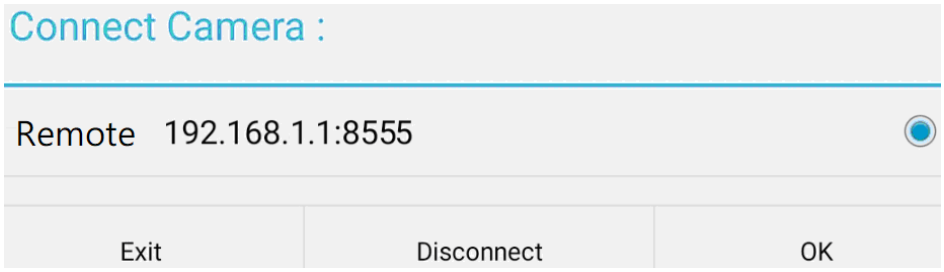
3-2. Input: rtsp://(IP):8554/us360.264

*The default account and password of RTSP streaming are admin / admin and the default RTSP port is 8554.

4. Play by the Viewer on a mobile device

4-1. Connect your mobile device to the same network of the camera and run the Aleta Viewer.

4-2. Click the Wi-Fi icon on upper-right and select remote connection. (For iOS version, run the APP without connecting to an Aleta S1 Wi-Fi, the remote connection window will show up.) The default remote port is 8555.

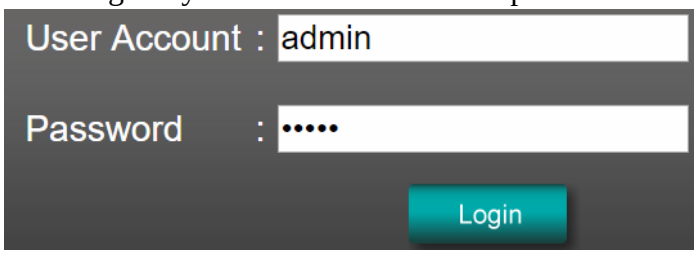


4-3. Input the IP and port to connect to the camera in the network.

5. Display by the web browser.

5-1. Input the IP with port 8080 on your web browser.
Ex: http://192.168.0.2:8080

5-2. Log in by the default account and password: admin / admin



5-3. On the Streaming page, the live image will show up (need enable Flash player on your browser).

5-4. If the streaming doesn't show up. Please go to RTMP configuration and make sure the live streaming is "On" and URL is "rtmp://localhost/live/stream"

※ In the case of using a notebook / mobile device to connect to the Wi-Fi of Aleta S1, the IP of the camera will be 192.168.43.1.

Appendix 2: 360 Live streaming guide

- For 360 live streaming, please set the display mode to Global 3K or 4K.
- The frame rate of 3K is 24, and 4K is 10.
- The total bandwidth of 4K is lower than 3K (due to the low fps).
- Now it needs a PC to setup 360 live streaming.

1. Connections:

(1) RJ45 connection

Pros: Easy setup and stable connection.
Cons: Need USB to LAN adaptor and cable.

(2) Wireless connection

Pros: Only need a Wi-Fi AP.
Cons: More steps to setup and Wi-Fi is not as stable as cable.

2-1. RJ45 Connection

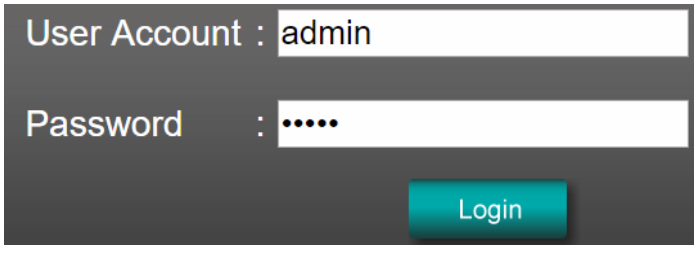
(1) Boot up the camera and connect it to a network hub with internet connection.

(2) After connection the OLED will show local IP for a short time.

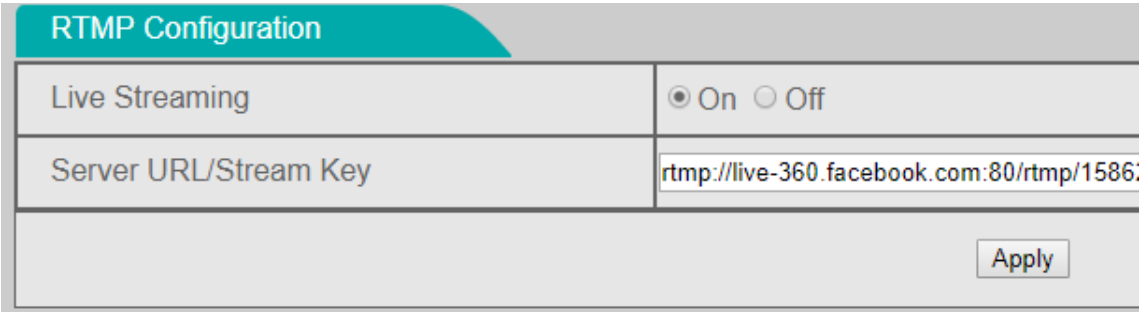
(3) Go to the live streaming page by the browser of PC, check the “This is 360 video” box and get the server URL and streaming name / key. (For more details please see chapter 3 and 4)

(4) Input “http://(ip):8080” on the browser.
ex: http://192.168.0.2:8080

Log in by the default account and password: admin / admin



(5) Go to RTMP Configuration. Select “on” and input the server URL and streaming name / key and click Apply.



(6) Wait until the live streaming page on PC get the streaming.

2-2. Wireless connection

(1) Boot up the camera and run Aleta Viewer APP on the cell-phone and connect to Aleta S1's Wi-Fi. (SSID:US_XXXX, PW:88888888). Go to setup and select "Client mode (Connect camera to AP)"

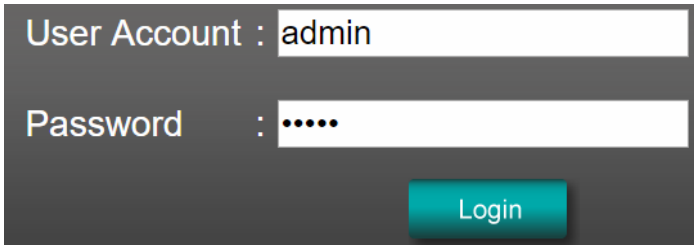
(2) Select the AP SSID with internet connection and input password.

(3) The OLED of camera will show connecting. After connection it will show AP SSID and IP. If connection fails and the OLED show back normal information, please try (1) ~ (2) again. If the camera's Wi-Fi is gone during the process, please reboot the camera.

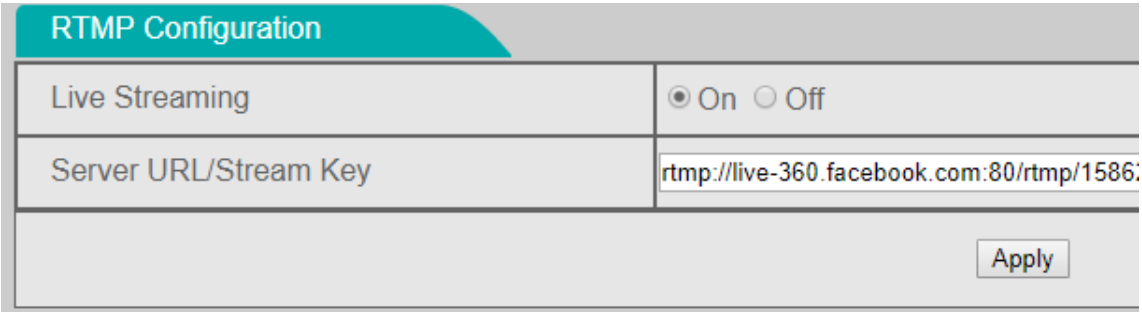
(4) Go to the live streaming page by the browser of PC, check the "This is 360 video" box and get the server URL and streaming name / key. (For more details please see chapter 3 and 4)

(5) Input "http://(ip):8080" on the browser.
ex: http://192.168.0.2:8080/

Log in by the default account and password: admin / admin



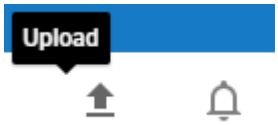
(6) Go to RTMP Configuration. Select "on" and input the server URL and streaming name / key and click Apply.



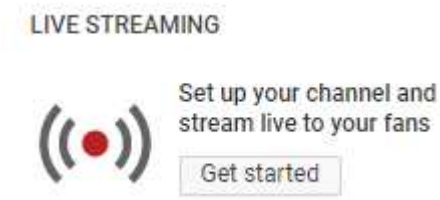
(7) Wait until the live streaming page on PC get the streaming.

3. YouTube 360 live streaming

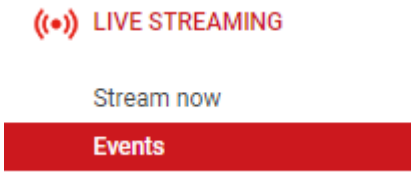
(1) Log in to YouTube by PC and click Upload.



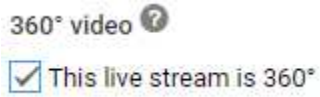
(2) Click “Get started” of live streaming.



(3) Select “Events” and click “Schedule a new event”.

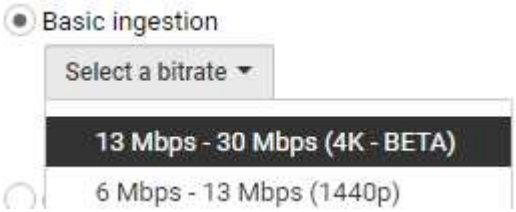


(4) Input a title in Basic info, and check “This live stream is 360°” in “Advanced settings”.

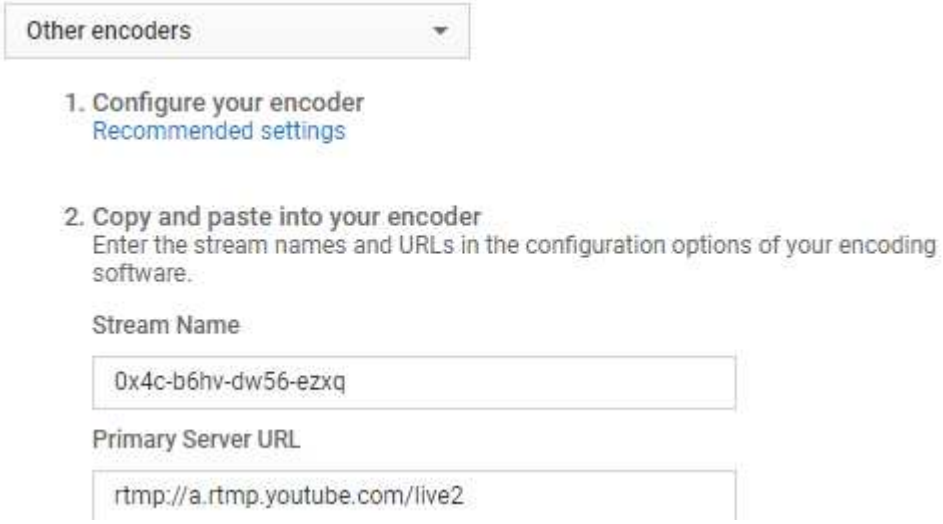


(5) Create event.

(6) Set basic ingestion of main camera.



(7) Select other encoders.



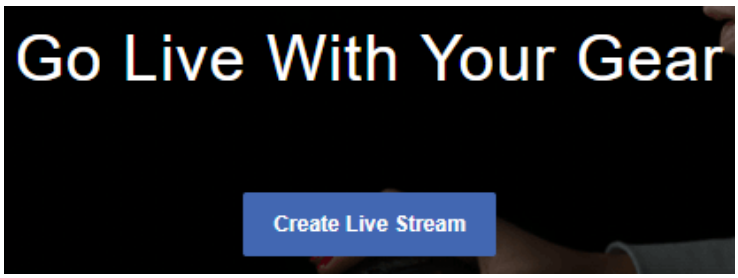
(8) Copy the [Primary Server URL/Streaming Name]
Ex: rtmp://a.rtmp.youtube.com/live2/0x4c-b6hv-dw56-ezqx

(9) Paste / input the [URL/Streaming Name] to the Live Url of Aleta Viewer's live broadcast configure.

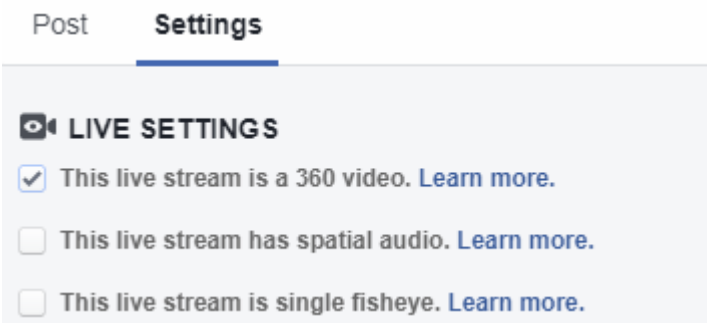
(10) Click"Live control room". After receiving the streaming you can start the streaming.

4. Appendix 2. Facebook 360 live streaming

(1) Go to Facebook Live page on PC to create live streaming
https://www.facebook.com/live/create



(2) On the right side of the page, click “Settings” and check “This live stream is a 360 video”



(3) Copy Server URL and Stream Key

Ex:
rtmp://live-360.facebook.com:80/rtmp/254592958397727?ds=1&s_l=1&a=ATitUSiMB3VwFI4d

(4) Paste the ULR + Key to Url of Aleta Viewer ‘s live broadcast configure.
Wait until the preview shows up and you can start the streaming.