Quick Start Guide

(H.265 Encoder/Decoder)

Default IP:192.168.1.120, user: admin, password: 12345

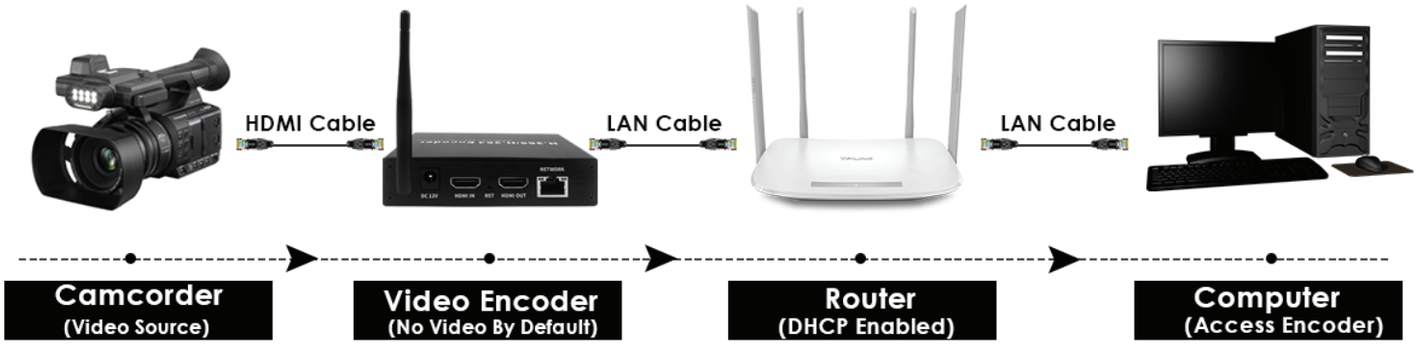
Sacn to get Search Tool

Sacn to get QIG

Index

1. Connection Diagram

- Power on encoder/decoder and connect it to router via ethernet cable.

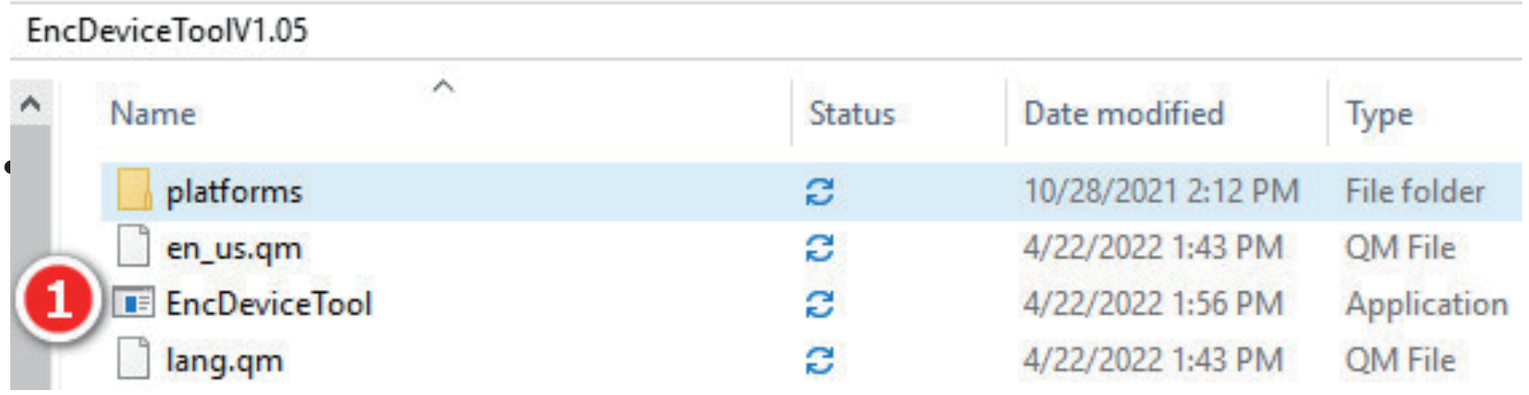


2. Download & Run Device Manager

2.1 Download Device Manager from below link:
http://download.level1.com/level1/tools/EncDeviceToolV1.05.zip

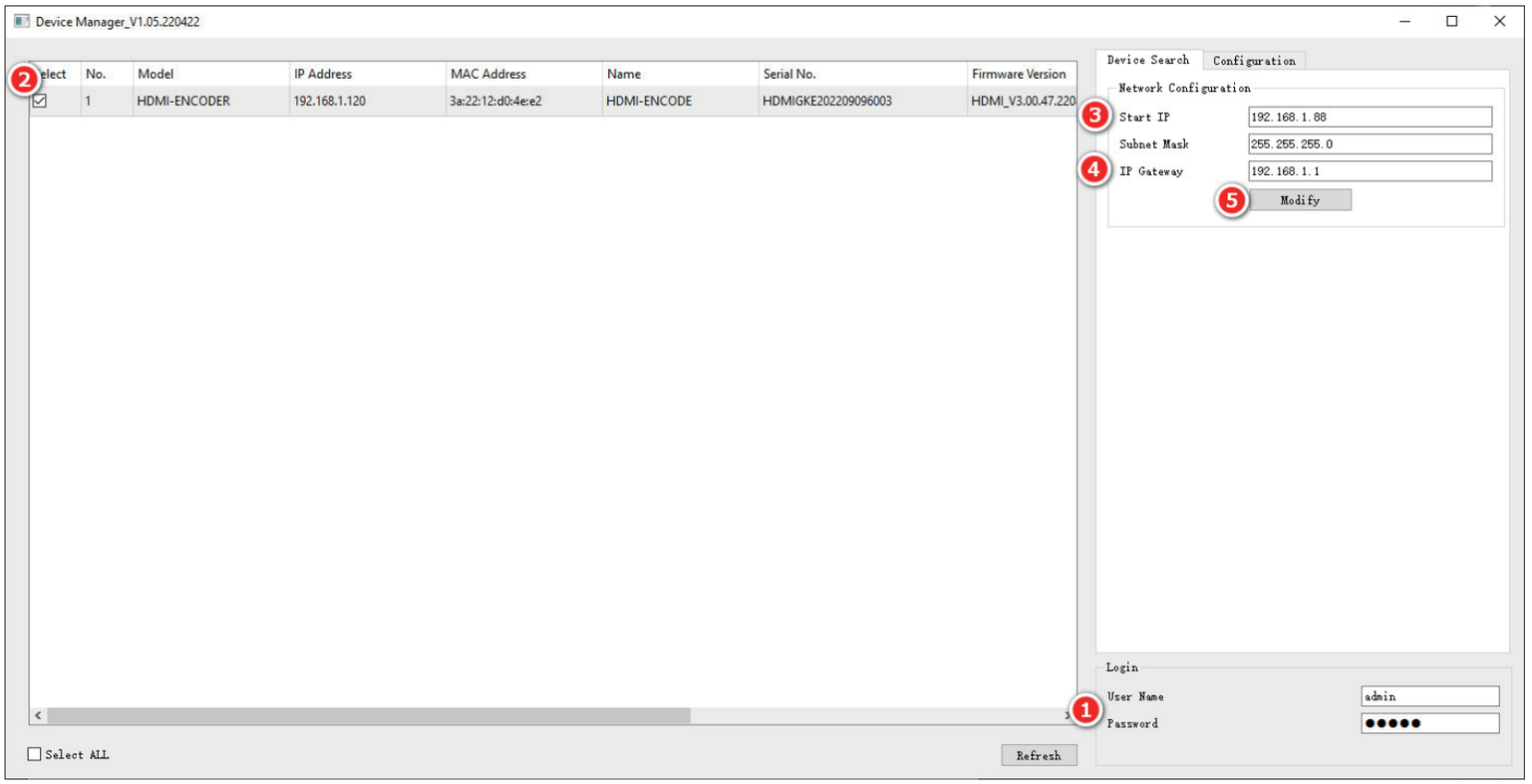
2.2 Run IPCManager

- **Unzip** the file you downloaded from the above link
- **Double click** "EncDeviceTool.exe" and then it will work



3. Configure IP address of Encoder/Decoder via Device Manager

- Run **Device Manager** (Double Click “EncDeviceTool.exe”)
- Enter **username** & **password** (admin & 12345 by default)
- Select the encoder/decoder you would like to access and set
- Enter IP like 192.168.**X**.120 if not on the same network segment
- Enter Gateway like 192.168.**X**.1 and Click “Modify”



NOTE: Before entering the IP address, please go to **WIN+R**->**CMD**->**ipconfig/all** ->Scroll down to Ethernet Adapter and check the IP address like 192.168.**X**.97 of your **PC**, then it'll be okay to enter the IP like 192.168.**X**.96 for the encoder/ decoder and click "Modify", generally it's on the **same network segment** and okay to access the encoder/decoder.

4. Access Encoder/Decoder from a Browser

4.1 Start a browser like Chrome, Firefox(Chrome Recommended).
4.2 Enter username (admin) and password (12345 by deffault).
4.3 Enter the IP address you configured above via Device Manager.
4.4 Click "Login" and the Preview page opens in your browser.

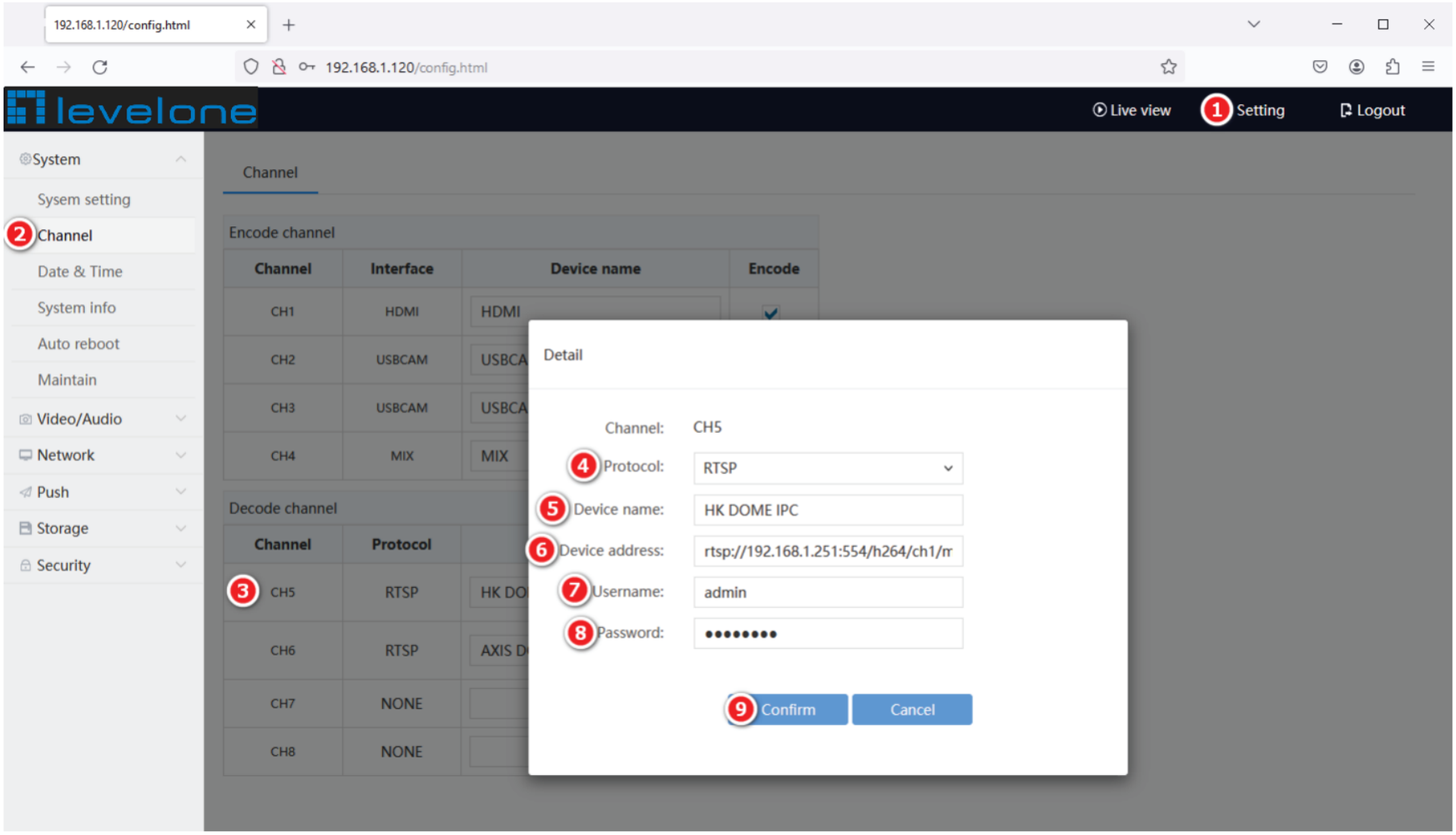
5. Add Decoding Channel (Only Available for Video Codec)

5.1 Go to **Setting**->**System**->**Channel**->**Decode Channel**

5.2 Add CH5->Click"Modify"->Select **Protocol** (SQ, RTSP, RTMP, TS[TS, HLS])

5.3 Enter Device Name->Address(Like **RTSP URL**)->Username->Password

5.4 Click"Confirm" and then **CH5** is already added successfully.

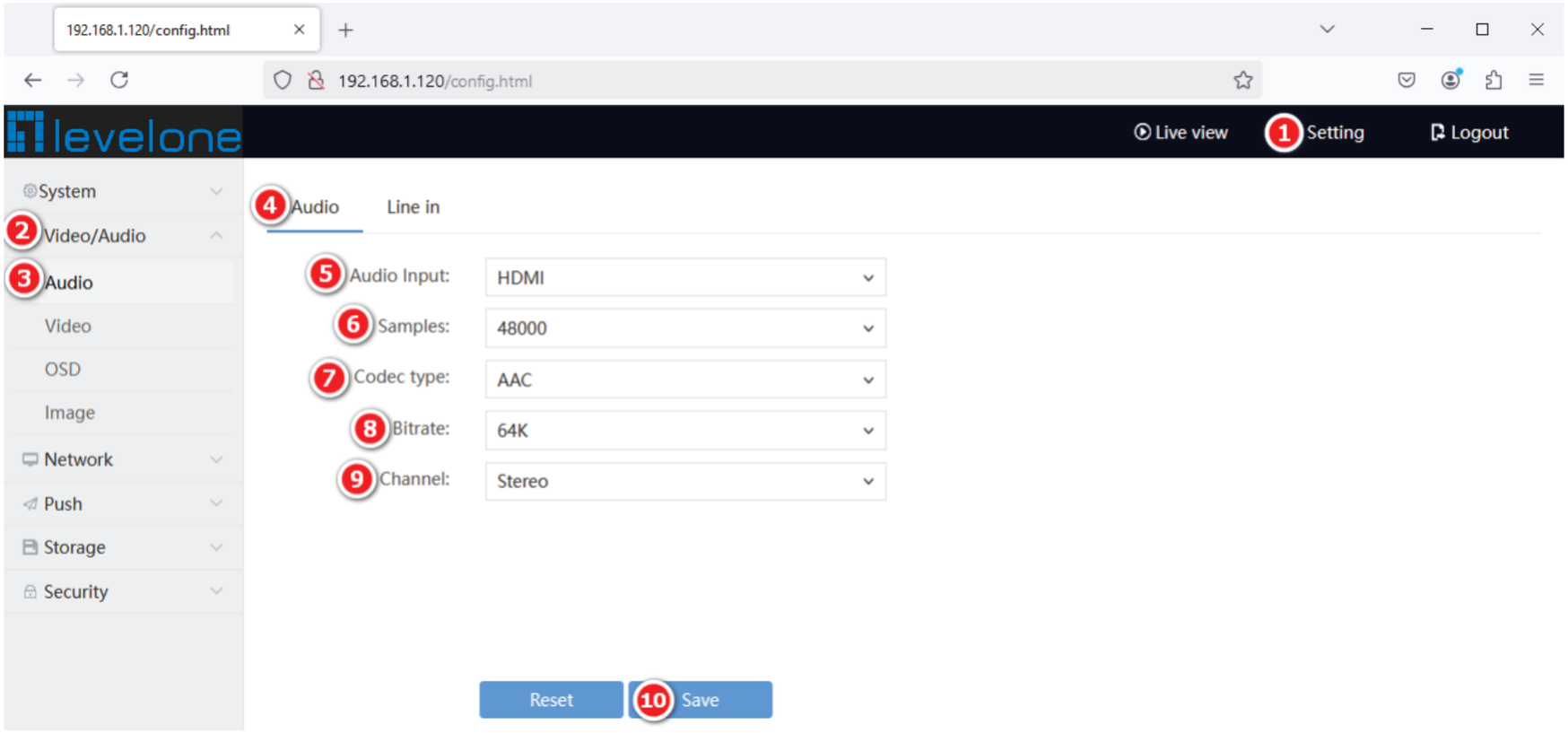


NOTES: If you are unsure of the exact **URL of the RTSP stream**, we recommend first checking how to pull the RTSP stream from your device using the **VLC** media player, or consulting with the manufacturer for assistance, as the URL may vary depending on the manufacturer.

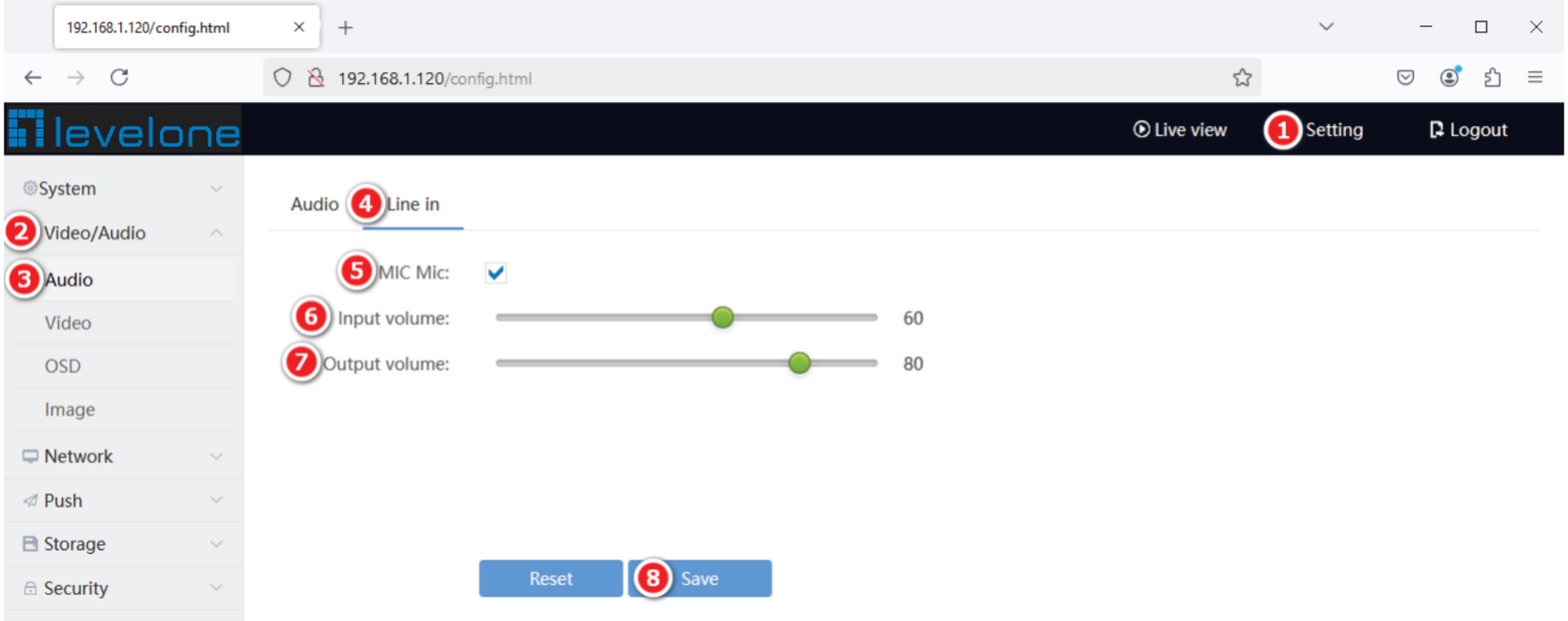
6. Configure Parameters of Audio

6.1 Go to **Setting**-->**Video/Audio**-->**Audio**->Set Audio Input as **HDMI** or **Line-in**

6.2 Set Codec type as **AAC** as it's required by **YouTube** and Click "Save"



6.3 Tab Line-In (if audio input by Line-IN)->**Adjust Input/Output Volume**

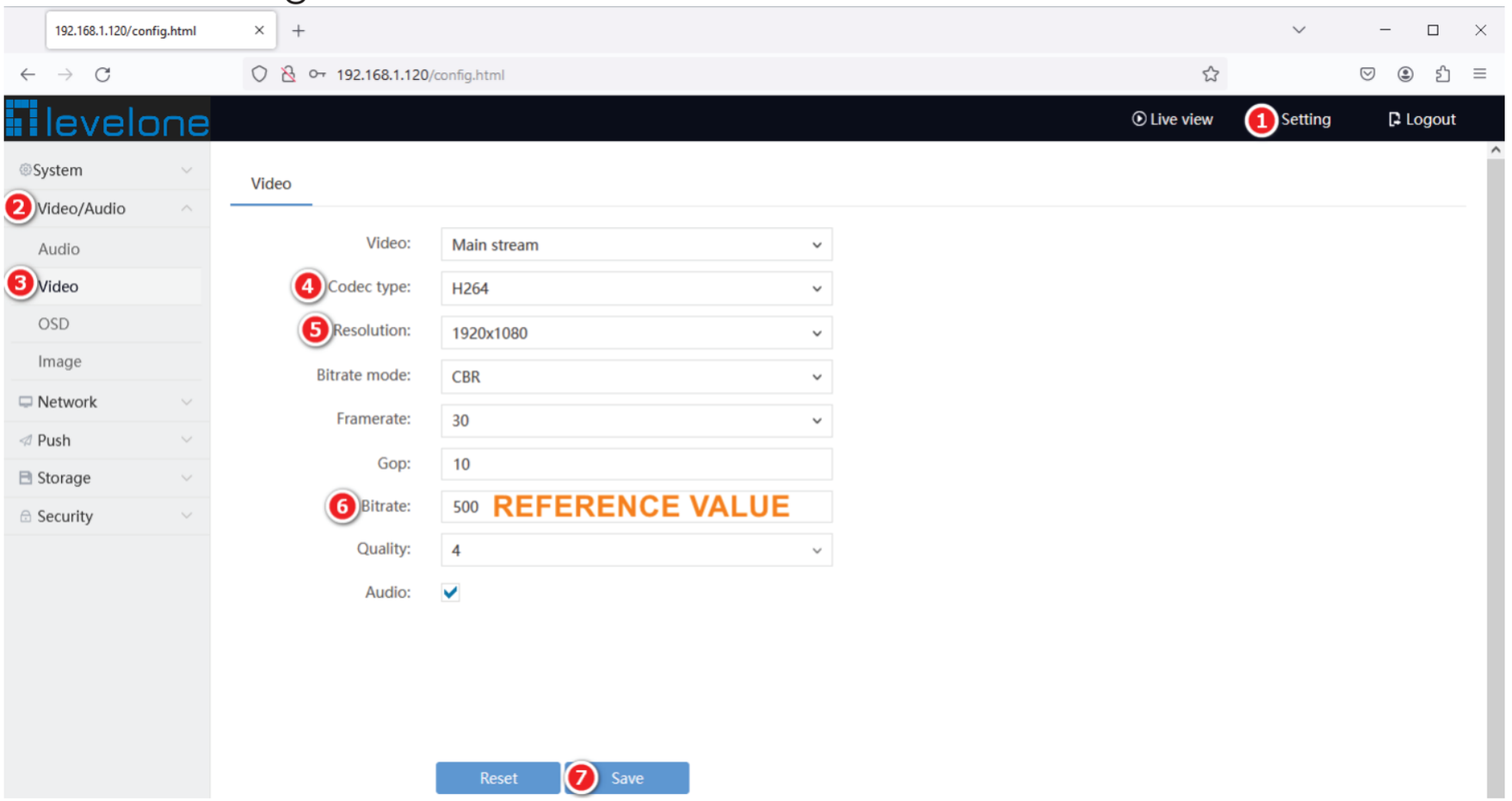


7. Configure Parameters for Video

7.1 Go to **Setting**-->**Video/Audio**-->**Video**-->Set **GOP** as **10**(Reference Value)

7.2 Set **Bitrate** as **500** initially as uploading bandwidth will be occupied

7.3 Don't forget to check the checkbox of Audio.

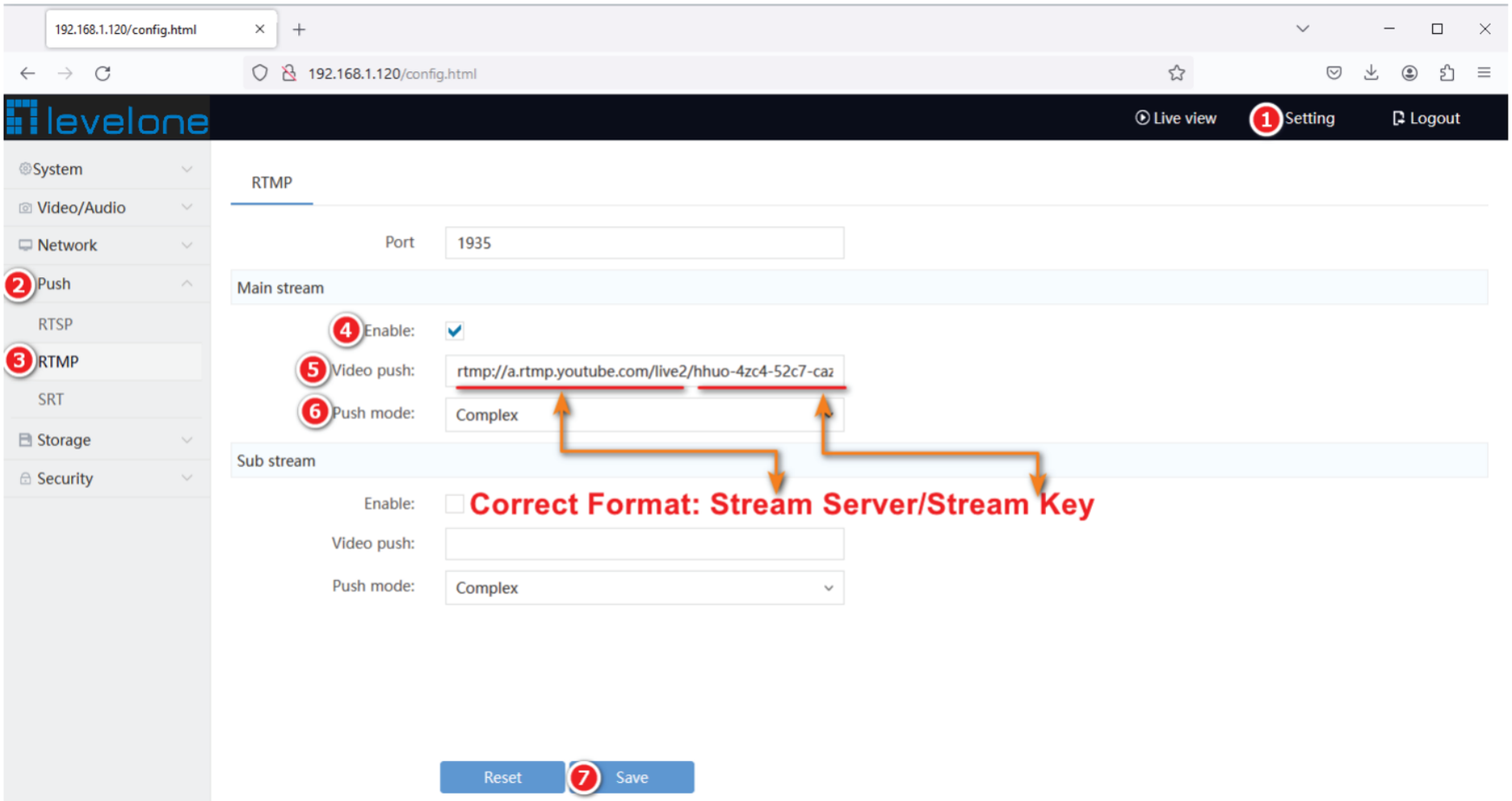


8. Configure RTMP Address (Take YouTube As Example)

8.1 Go to **Setting**-->**Push**-->**RTMP**-->**Enable**

8.2 Enter Push URL: copy **Stream URL** and **Stream Key** from YouTube Studio into column of Push URL below:

NOTES: If two lines for PUSH URL, the correct format is Line1/Line2 with "/" seperated between Line 1 and Line 2, please see below example:



9. Configure Wireless Connection(Only Available for WiFi Encoder/Decoder)

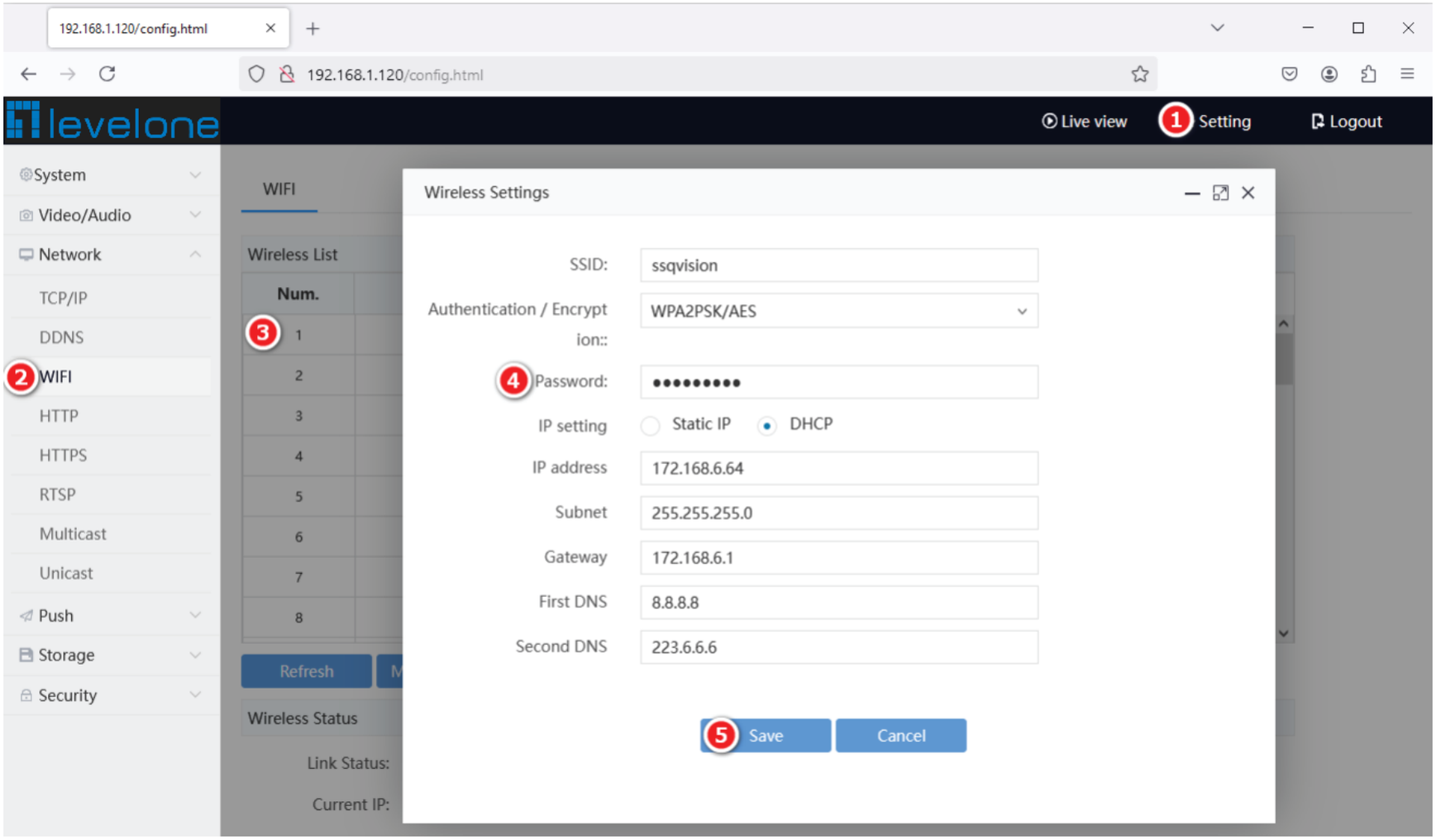
9.1 Go to **Setting**-->**Network**-->**WiFi**-->Double Click **Trusted SSID**

9.2 Enter **correct password** to SSID and Click "Save"

9.3 Refresh and Link Status will be shown "Connected" below which means it's already connected to WiFi. If disconnected, please try it again or check whether MAC of encoder/decoder is in the whitelist of your router.

9.4 **Power off** the encoder/decoder and **unplug the ethernet cable** to allow the device to connect to the WiFi network.

NOTE: Ensure that the **SSID** (WiFi network name) consists of a combination of **alphabets in English and numbers only**. And it's required to unplug the LAN cable and power off the encoder/decoder to reboot to make WiFi valid.

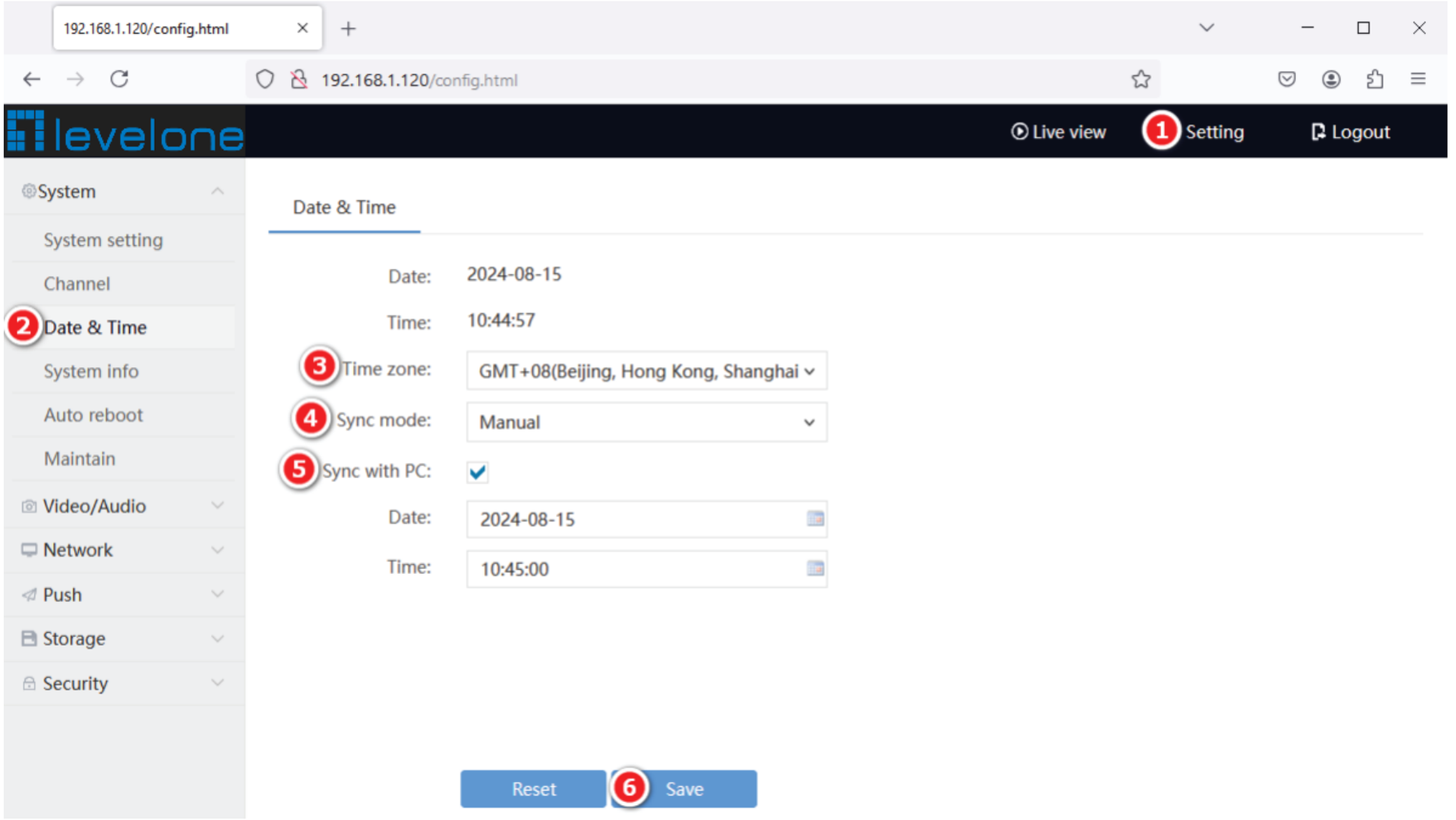


10. Record and View Video(Only Required for Local Recording)

10.1 Set date & time correctly from **Setting**-->**System**-->**Date & Time**

- **Select the Time Zone**: select your time zone from the dropdown list
- **Set Sync Mode**: Change the Sync Mode to **Manual**
- **Enable Sync with PC**: Synchronize encoder/decoder's time with your PC
- **Save Your Settings**: Click the **Save** button to apply all of your changes
- **Restore Factory Settings**: If necessary, restore the unit to default factory settings for a clean configuration
- **Verify NTP Functionality**: Ensure NTP (Network Time Protocol) is functioning by selecting the time zone again, clicking Save, and then refreshing the page to verify that the time displayed is correct

NOTE: it's critical for recordings to be valid and searched.



10.2 Record Video

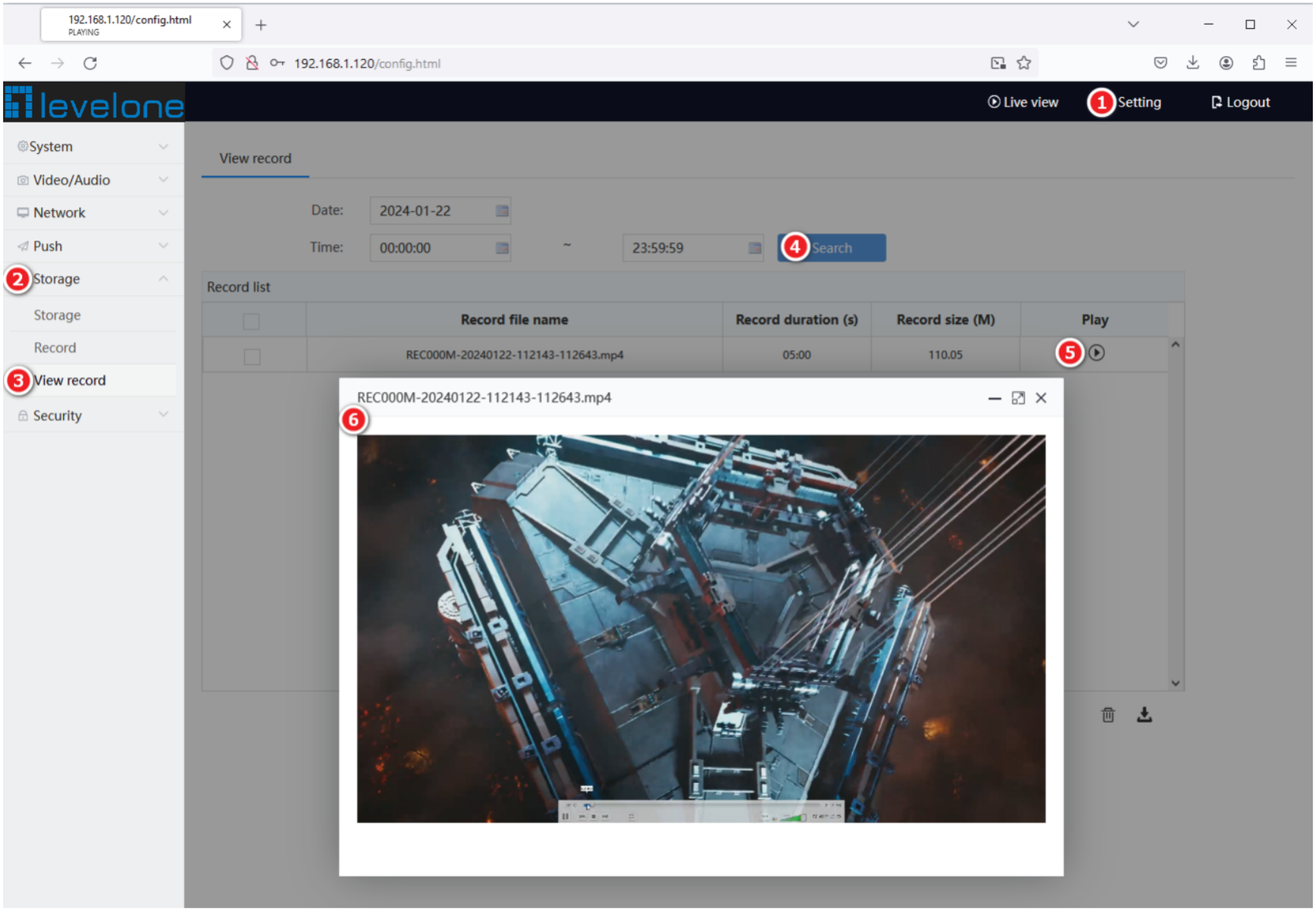
- Go to **Setting**-->**Storage**-->Click "Storage"-->Insert SD Card/USB Flash Drive
- Refresh to check if SD card/USB Flash Drive can be detected and format it

- Go to **Record**-->Select **Main** or **Sub** Stream-->**Pack Time**
- Click "**Start Recording**" and it's turn to "Stop Recording"
- Check "**Record Status**" whether it's shown "Recording"

NOTE: As well it'll be easier to press **RES/REC** button for 1 second to start recording or stop recording.

10.3 View Video

- Go to **Setting**-->**Store**-->**View Record**
- Select **Date & Time** -->**Search**-->All recordings will be listed
- Click “Play”-->Video will be played after loading



- Select video-->Click “Download” if you’d like to download it

11. Technical Support

Any question, it's strongly recommended to describe your issue and start a chat or follow the guides to automatically submit a support ticket in our official website (www.level1.com)

- Email: support@level1.com

12. Troubleshooting & Solutions

Q1. How to download firmware for encoder or codec?

A: Downloading the latest firmware for encoder/codec is simple.

1. Start by identifying your **model number** or **serial number**.
2. Next, select the corresponding series from **FAQs: Download Firmware for Encoder or Codec**, and you'll be redirected to the download page.

Q2. What does 1920*1080P@30HZ mean?

A: If it shows 1920*1080P**@30HZ** on GUI, probably it's failed to detect the HDMI signal. Take the following steps if there is a failure to detect an HDMI signal. Ensuring that the HDMI cable is properly connected and meets the necessary requirements, as well as checking and adjusting the output resolution of the HDMI signal, can often resolve detection issues.

Q2. Why can't I access the encoder/codec on the same switch or router?

A: If your computer and the encoder are not on the same network segment, even if connected to the same router or switch, you may need to adjust the encoder's IP address to ensure they are on the same network. Here's how you can do it on a Windows 10 PC:

1. Open Command Prompt:

- Press **Win + R**, type **cmd**, and press **Enter** to open Command Prompt.
- Type **ipconfig /all** and press **Enter** to view the IP configuration of your PC.
- Note down the IP address associated with the Ethernet adapter (e.g., **192.168.X.7**).

2. Modify Encoder/Decoder IP Address:

- Go to Device Manager->Search for and select the encoder/decoder.
- Manually enter an IP address for encoder/decoder (e.g., **192.168.X.129**) to match the network segment of your PC.
- Click Modify to change the encoder's IP address.

After making these changes, the encoder should be accessible.

Q4. Why does my encoder fail to detect the HDMI signal from my computer with an output resolution of 1366x768?

A: If the HDMI output resolution of the computer is set to **1366x768**, the encoder typically cannot detect this video resolution. This limitation arises because the encoder's main chip processes video resolutions based on specific mathematical calculations, and **1366 divided by 4 is not an integer**. As a result, the encoder is unable to handle this resolution, making it incompatible with the current hardware and firmware design.

To resolve this issue, it is recommended to adjust the HDMI output resolution to a standard format supported by the encoder, such as **1280x720 (720p)** or **1920x1080 (1080p)**. These resolutions are widely supported and ensure that the video signal can be properly detected and encoded without issues.

Q5. Which USB cameras are compatible with this codec?

A: Our testing has included USB cameras from, **Logistech**, and various other brands. If you encounter any issues with adding a USB camera, please inform us so that we can assist in resolving the problem. The codec is only compatible with USB2.0 cameras, not USB3.0.

Q6. What decoding protocols are supported by this codec?

A: The supported protocols for decoding include SQ, RTSP, RTMP, TS and MP4. The SQ protocol is a privately developed communication protocol by EXVIST, exclusively designed for use with EXVIST's encoder, decoder, IP camera, and other products. It is not open for use with devices from other manufacturers. If you encounter difficulties adding other devices using the SQ protocol, it is advisable to consider using alternative common protocols as a solution.

Q7. Which IP cameras are compatible with this codec?

A: We have conducted extensive testing with **HDMI encoders**,

LevelOne IP cameras, **Hikvision IP cameras**, **AXIS IP camera P3365**, **Dahua IP cameras**, **RaySharp NVRs and IP cameras**, **TVT IP cameras**, **UNV IP cameras**, **Reolink IP cameras**, **TP-LINK IP cameras like the C520WS**, and other devices that support standard protocols. Typically, using the RTSP protocol poses no issues when adding these IP cameras to our codec. However, for other brands, If decoding the RTSP stream of IP cameras from other brands has been unsuccessful, it could necessitate integration efforts. Integration involves developing custom software to interface with the IP cameras from different brands. Collaboration with the camera manufacturer to understand their protocols and developing a solution that can effectively integrate with their products may also be required.

Q8. How can I stream at 50fps or 60fps using an HDMI encoder?

A: If it only gives you 25 or 30fps, then it's necessary to switch the system mode to support 50 or 60fps if available. Go to **Setting**->**System Setting**->Select "**System Mode**" from the dropdown list: 2*1080P@25/30+D1@25/30 to **1*1080P@50/60** and reboot the encoder to make it valid.

NOTES: then main stream ONLY will be available for streaming after switching the system mode.

Q9. Why is the default HDMI output resolution set to 1080P@60Hz on 4K encoder?

A: If the default HDMI output resolution is **4K (3840x2160)**, there might be issues displaying it correctly on most monitors. This is because the default display resolution for most monitors is **1920x1080**. Monitors that do not support resolutions higher than 1080p may not be able to show content properly, potentially causing distortion or loss of clarity.

However, if you wish to display **4K (3840x2160)** content, you can adjust the output resolution by navigating to **System Settings** and selecting **Video Output Format**. This change allows the codec to output **4K** resolution, ensuring that the video displays correctly on monitors that support higher resolutions. It's important to make sure that your monitor can handle 4K resolution to view the content without any issues.

Q10. Can we use H.265 encoding when streaming by RTMP?

A: Negative. RTMP (Real-Time Messaging Protocol) only supports **H.264 encoding** and does not support H.265 encoding. Adobe has announced that there will be no further updates or maintenance for RTMP, which limits its support to H.264 encoding. Therefore, when pushing streams using RTMP, it is important to ensure that the video encoding is set to H.264.

Q11. Why is streaming encoder failed to push live stream to YouTube?

A: It's important to ensure that all the necessary settings and configurations are correctly set up to successfully push a live stream to YouTube. Here are some troubleshooting steps to consider:

- Check the encoder to ensure that it's successfully detecting the **HDMI signal**. This is essential for capturing the video source for the live stream.
- Verify that the audio is enabled and set to use **AAC encoding**, as YouTube requires specific audio formats for live streaming.
- Confirm that the video encoding is set to **H.264,** as RTMP (Real-Time Messaging Protocol) doesn't support H.265 encoding.
- Verify that the **bitrate** is appropriately set. It may be necessary to adjust the bitrate, especially if it's initially set too high, as this can impact the streaming quality and stability.
- Check the default DDNS settings to ensure they are available & functional, especially in the EU. Consider changing the **DNS settings** if needed.
- Verify that there's **sufficient uploading bandwidth** available for the live stream. If bandwidth is limited, adjusting the bitrate to a lower value can help ensure a more stable stream.

By addressing these points, the issues that may prevent the successful pushing of a live stream to YouTube can be identified and resolved.

Q12. Why does YouTube streaming fail when switching audio to Line-in?

A: When you switch the audio input from HDMI to **Line-in**, the encoding algorithm used for streaming is not automatically adjusted, resulting in pending audio. **Rebooting the device after the switch** is necessary to reset the encoding algorithm and ensure that the audio is properly streamed to YouTube. This issue could be related to the audio encoding settings not properly switching when the input source is changed, thereby requiring a reboot to apply the changes.

Q13. Can we upgrade firmware directly through UI?

A: Upgrading firmware directly through the user interface (UI) of an encoder is generally **NOT RECOMMENDED**, due to the potential risks associated with the process. Firmware upgrades can significantly impact the functionality and stability of the device, and improper execution of the upgrade can lead to device instability, malfunctions, or even permanent damage.

Instead, firmware upgrades are typically recommended to be performed using a **Device Manager of Encoder** provided by the EXVIST and under wired connection. For more information, please refer to Upgrade Firmware for Encoder/Codec.

Given the potential implications of firmware upgrades, it's important to carefully follow the manufacturer's guidelines and recommendations when performing this process. If unsure about the correct procedure for upgrading firmware on a particular encoder, it's advisable to reach out to the manufacturer's support team for guidance.

13. Safety Instruction

- **Electricity**: in the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region.
- **Warning**: product contains a button or coin cell battery.