

HDD-10 User Manual

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1. Introduction

HDD-10 is a mini and professional high-definition HDMI video decoder with H.264/H.265 compression, supporting the decoding of network streams of various mainstream protocols such as Onvif, RTSP, UDP, TCP, and SRT. It can decode and convert the signals from network cameras, encoders, NVRs, network video sources, etc. into HDMI high-definition audio and video signal for output.

2. Product Features

- ① Mini size and lightweight, easy to carry.
- ② Low power consumption, directly powered by USB without AC power adapter.
- ③ HDMI Type-A male design. It can be directly plugged into the HDMI port of the display without HDMI cable.
- ④ Support to decode 4K/2K HEVC/AVC encoding contents in high bitrate.
- ⑤ Support up to 2K@60Hz HDMI output with clear and smooth video quality.
- ⑥ Support SRT protocol. Secure your video decoding in reliable, and low-latency manner.
- ⑦ Support multiple stream protocols including Onvif, RTSP, UDP, TCP, SRT, etc.
- ⑧ Support to decode networks streams from network cameras or NVR devices from various brands and convert the IP streams to HDMI signals for output. 9. Latency is as low as 80ms paired with DDMALL encoder.
- ⑨ Online upgrade is supported.

3. Parameters

3.1 General

Power Supply	5V/1A （USB-powered）
Power Consumption	2W
Operating Temperature	-10~50℃ （-14~122°F）

Storage Temperature	-20~85℃ （-4~185°F）
Operating Humidity	10%-90%RH (Non-condensing)
Weight	35g
Dimensions	75*32*22mm
MTBF	30,000h

Table 1

3.2 Video Parameters

Video Output Standard	HDMI 1.4
Output Resolution	1920×1080P@60/50/30/25/24Hz 1920×1080i@60/50Hz 1280×720P@60/50
Video Decoding Compression Format	H.264/AVC 、 H.265/HEVC
Video Input Resolution	3840×2160P@60/30Hz 1920×1080P@60/30Hz 1280×720P@60/30Hz

Table 2

3.3 Audio Parameters

Audio Output Format	HDMI audio Analog Audio (3.5mm Jack)
Audio Decoding Format	G.711u, AAC

Table 1

3.4 System Parameters

Supported Stream Protocol	SRT, RTSP, ONVIF, UDP, TCP
Network Protocol	Static IP/ DHCP
Control Method	Web-UI Control
Factory Default	Web-UI log in User Name: admin

	Password: admin
	IP Address: 192.168.1.250

Table 2

Note: Specifications are subject to change without notice.

4. Packing List



Figure 1

5. Product Overview

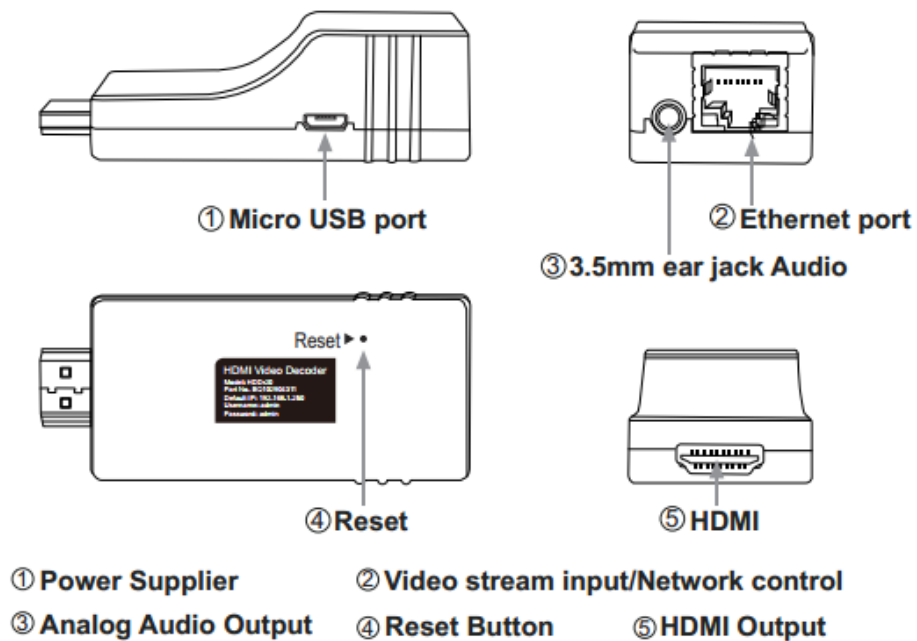


Figure 2

5.1 Indicator Status

Status	Green Light	Orange Light
OFF	No Power	No network connectivity
Solid On	Power Normal	/
Flash Slowly	Resetting factory settings	Have connected network successfully
Flash Rapidly	/	Playing video source

Table 3

5.2 Set Button

Reset factory settings: Press the set button with a pin for about 3-5s till the green light flashes, then HDD-10 is reset to factory settings. All parameters will become the factory default parameters (The factory default IP address of HDD-10 is 192.168.1.250).

6. Typical Applications

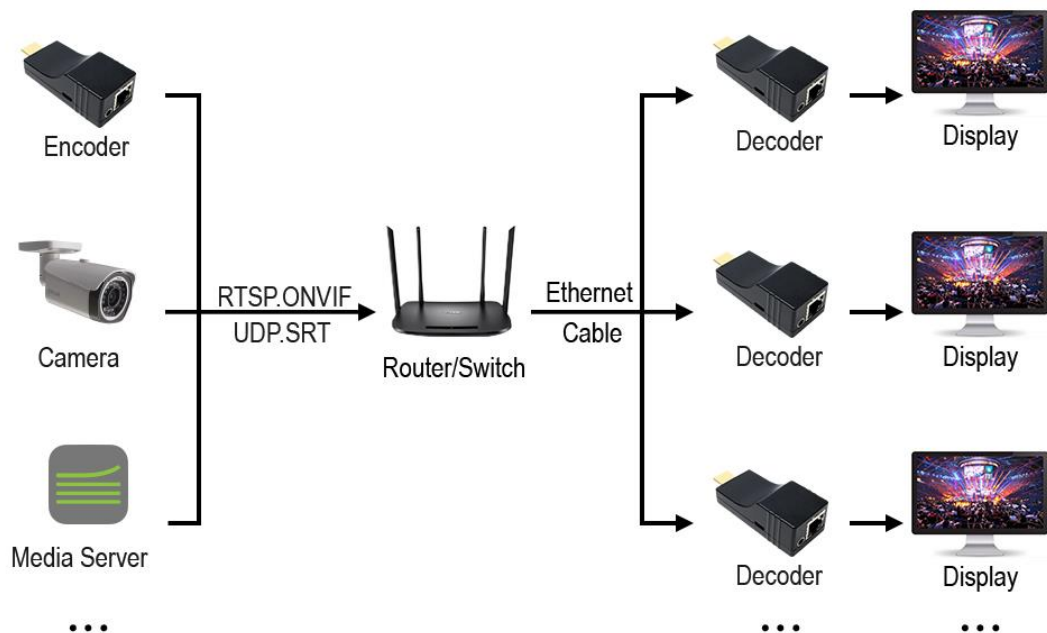


Figure 3

7. Hardware Installation

1. Connect the HDD-10 HDMI output to the display device.
2. Connect the HDD-10 to the switch or router LAN port through a network cable.
3. Power the HDD-10 with USB cable (Power supply: USB 5V/1A).
4. The control terminal must be on the same LAN with the HDD-10, and the IP address of the control terminal on the same network segment with the HDD-10 (The factory default IP address of HDD-10 is 192.168.1.250).
5. The general network connection diagram of HDD-10 is as follows:

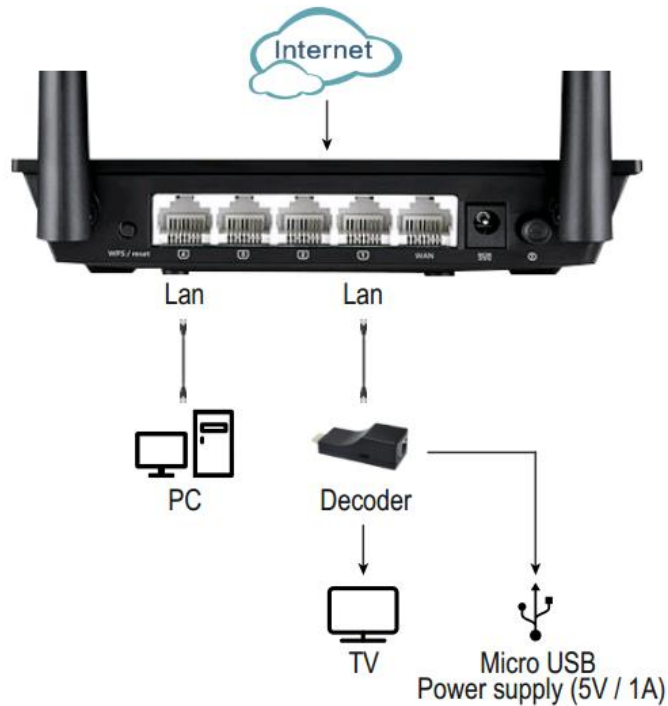


Figure 4

8. Network Settings

8.1 Modify the IP Address of the Control Terminal

By default, the HDD-10 IP address is 192.168.1.250. Please make sure the control PC is on the same LAN and IP address is on the same network segment as the HDD-10. For the first use, please change the IP address of the PC to 192.168.1.xxx (xxx can be any number ranging from 0 to 255 except 250). The following are the instructions to change the IP address on a Windows PC:

1. Turn on the windows PC, press and hold  + R on the keyboard.
2. Enter "ncpa.cpl" in the operation column, and click "OK" to direct to the network connection page.
3. On the network connection page, you can see the current network connection status. Double-click the connected network (The network on the same LAN as the decoder) to enter the corresponding network configuration page.
4. Select "Properties" and double-click "Internet Protocol Version 4 (TCP/IPv4)"
5. Select "Use the following IP address", enter the IP address with "192.168.1.xxx"

(xxx can be any number ranging from 0 to 255 except 250), and the subnet mask with "255.255.255.0" , then click " OK" twice to save the configuration.

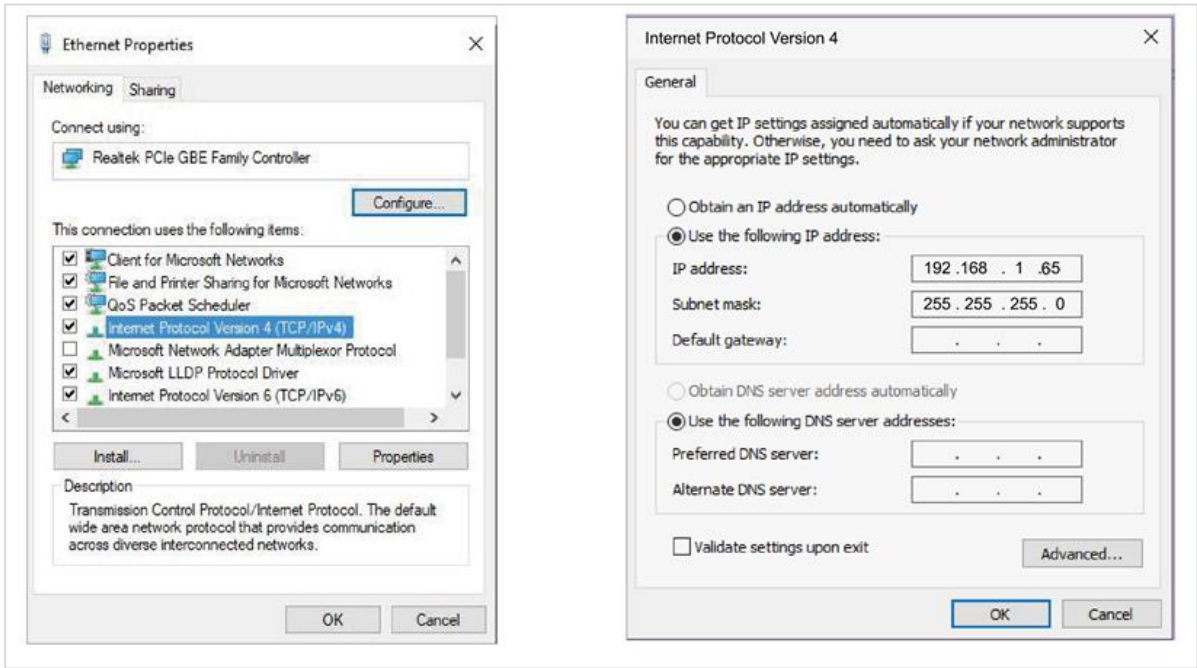


Figure 5

8.2 The Decoder Web UI Login

1. Enter the default IP address“192.168.1.250”in your PC browser to load the HDD-10 Web UI page, log in with the default username and password(by default, the username and password is admin/admin).

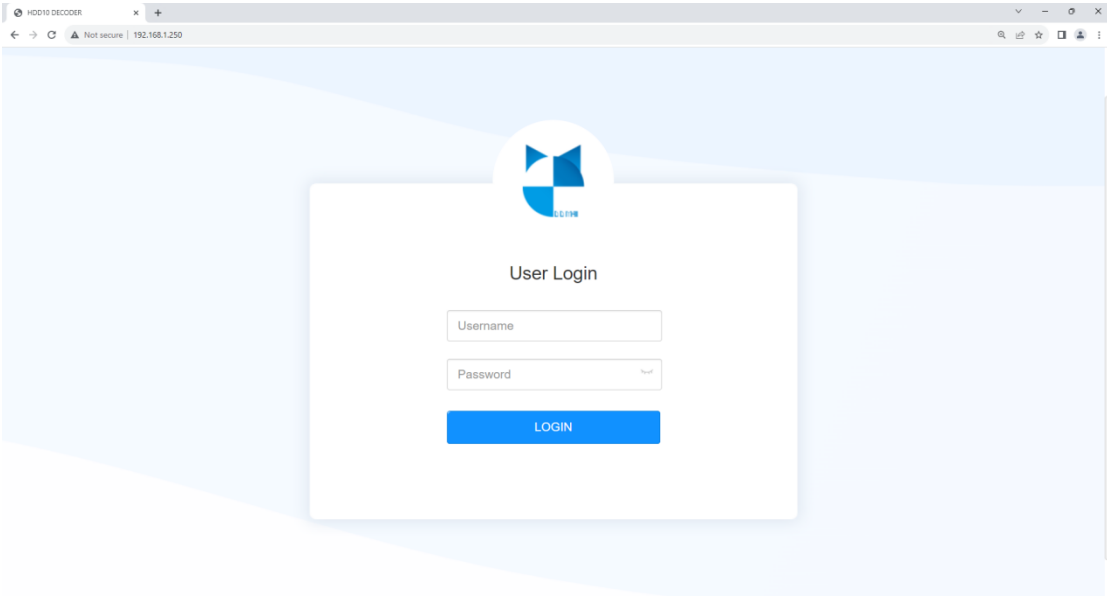


Figure 6

2. Click "Network" icon on the left menu to enter the Network setting page to set the IP address of HDD-10.

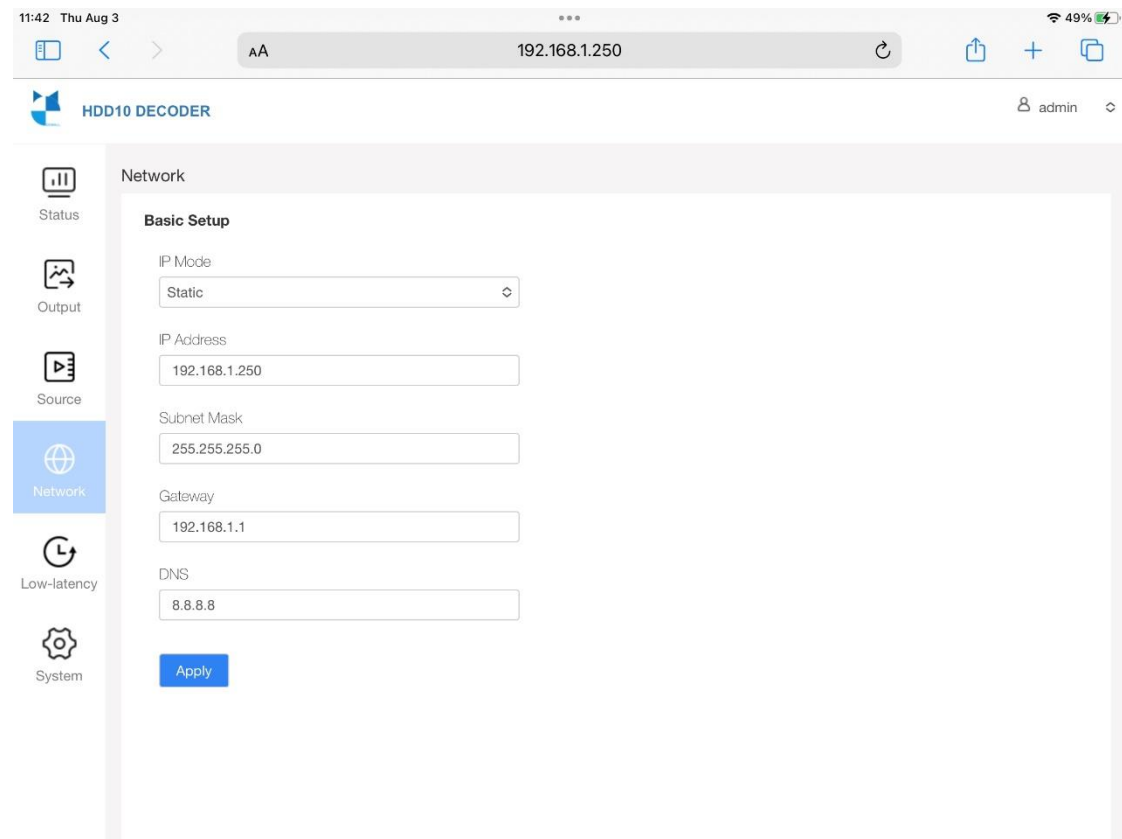


Figure 7

IP Mode: DHCP or Static are available

- If DHCP is selected, the IP of HDD-10 is dynamic, and the IP Address/Subnet Mask/Gateway/DNS of the HDD-10 is automatically assigned by the DHCP server on the same LAN (for example, the router that the HDD-10 connects). You can log in to the router web UI to view the IP address assigned.
- If Static is selected, the IP of the HDD-10 is fixed, and IP Address/Subnet Mask/Gateway/DNS needs to be manually set.
- Click Apply to take effect after completing the configuration. Please log in to the HDD-10 web UI again with the new IP address to set parameters (Note that the control PC needs to be on the same network segment with the HDD-10 new IP

address).

9. Decoding Parameter Setting

9.1 The HDD-10 Web UI Login

1. Please refer to **8. Network Settings** to log in to the HDD-10 web UI, and modify the HDD-10 IP address according to the actual network environment.
2. Open the browser of the control terminal such as mobile phone/tablet/laptop connected to the same LAN with the HDD-10. Enter the IP address of the HDD-10 to load the login page, then log in to web UI with the default username and password (admin/admin). You can configure the Output, Source (add network streams), Network, Low-latency, System and other parameters of the device here.

Note: The control terminal such as mobile phone/tablet/laptop needs to be on the same LAN and the IP address should be on the same network segment with the HDD-10.

9.2 Status Introduction

Click Status icon on the left menu to redirect to the Status interface, where you can view the decoder current status including which network stream is being decoded, the connection status of the network stream, and the output resolution of the decoder, etc.

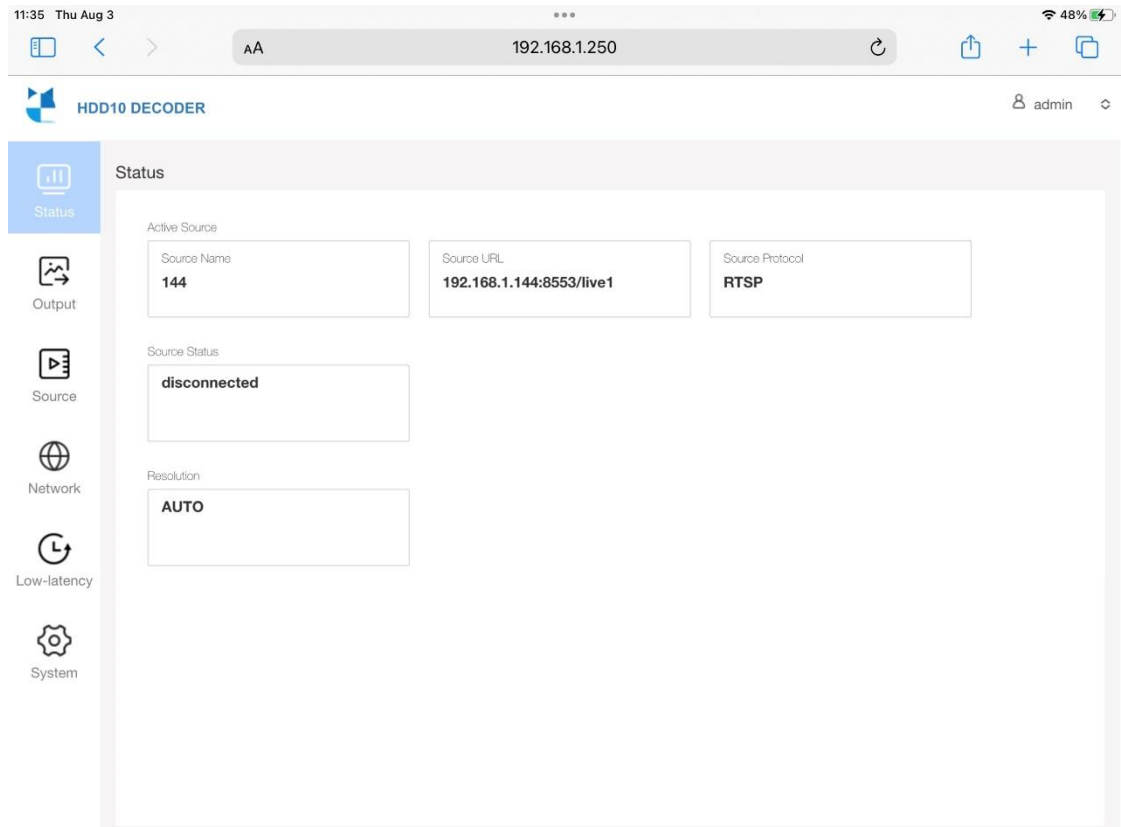


Figure 8

1. Active Source

- 1) Source Name: The name of the network stream currently being decoded.
- 2) Source URL: URL address of the network stream currently being decoded.
- 3) Source Protocol: The protocol of the network stream currently being used for decoding and playing.

Note: No content will be displayed in the Source Name, Source URL and Source Protocol box if no network stream is being decoded.

2. Source Status

- 1) Connected: The decoder is successfully connected to the network stream server.
- 2) Disconnected: The decoder is not connected to the network stream server, please check:

①Whether the IP camera/encoder/network stream server is on the same LAN with the HDD-10, and the IP address is on the same network segment with the HDD-10.

②Whether the Source setting of the HDD-10 is correct, such as protocol, URL address,

port, etc.

3. Resolution

The output resolution of the HDD-10. When it is set to Auto, the HDD-10 will automatically adjust the output resolution according to the resolution of the connected display device.

9.3 Output Setting

Click the Output icon on the left menu of the web UI to redirect to Output interface, where you can modify the HDD-10 decoder output resolution and volume.

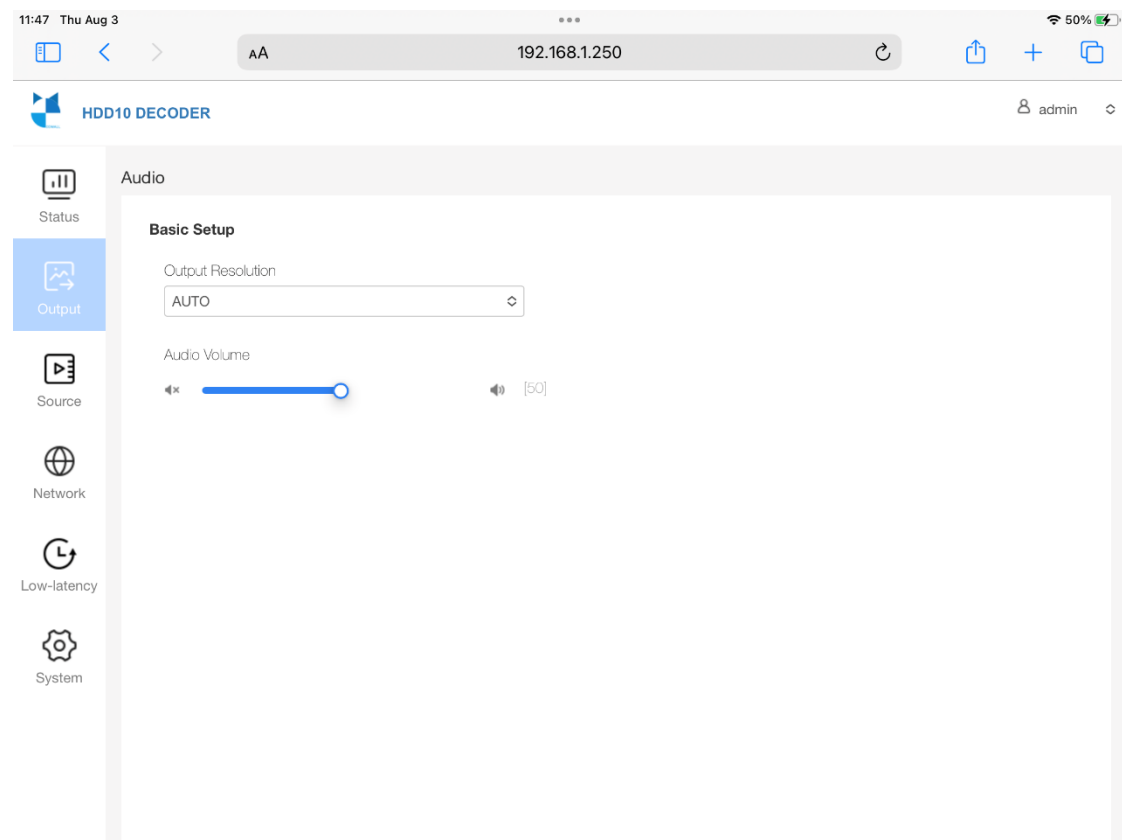


Figure 9

1. Output Resolution

By default, it is Auto. The HDD-10 will adjust the output resolution according to the resolution of the display device connected. You can adjust the output resolution according to the actual needs, 1920×1080P@60/50/30/ 25/24Hz, 1920×1080i@60/50Hz and 1280×720P@60/50 outputs are all supported.

2. Audio Volume

Adjust the volume of the HDD-10, as well as the HDMI output volume and analog audio output volume.

9.4 Source Setting

Click the Source icon on the left menu of the web UI to enter the Source interface, where you can add the decoding network stream sources accordingly. The HDD-10 supports to decode the network streams with RTSP, ONVIF, UDP and SRT protocol. You can add 30 channels of network stream sources at most.

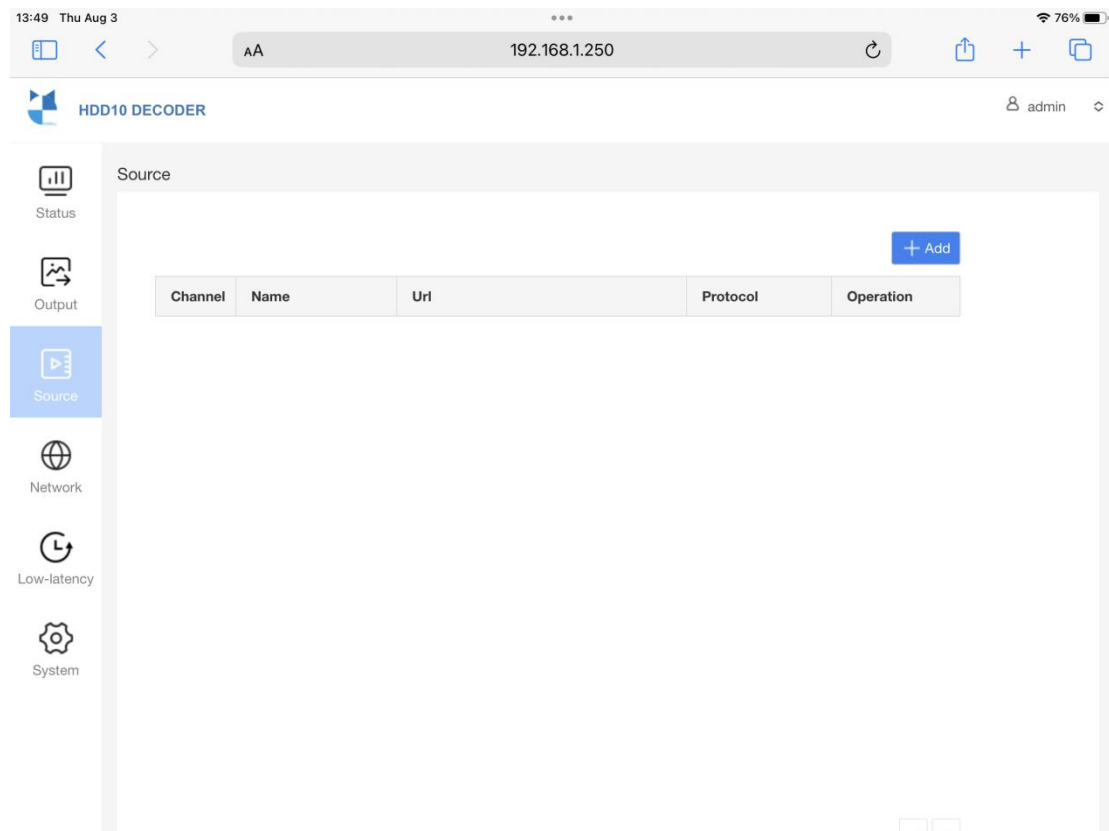


Figure 10

9.4.1 Add RTSP stream

1. Click "Add", and the source adding window will pop up.
2. Stream Protocol: choose RTSP.
3. Channel: The channel of decoding network stream, which is automatically assigned in

the order of adding.

4. Name: Customize the name of the added network stream. For illustration, we name it Encoder-RTSP.

5. URL: Enter the URL address of the RTSP stream to be decoded. Here for example, we decode the RTSP stream of the DDMALL encoder HEV-4K, and the entered URL address is "rtsp://192.168.1.251:8554/live0".

6. RTSP Connection: Select RTSP Over TCP or RTSP Over UDP according to the RTSP stream to be decoded.

7. Security: If your video source is encrypted, please select "Yes", and then enter the username and password. If not, please select "No".

8. After all the parameters are configured, click "Add", the web page will prompt that the configurations have been modified successfully, and then close or exit the source adding window.

Add Source

Stream Protocol

RTSP

Channel(1-30)

1

Name

Encoder-RTSP

URL:

rtsp://192.168.1.251:8554/live0

RTSP Connexion

RTSP over TCP

Security

☐ Yes
☒ No

User Name

Password

Exit

Add

Figure 11

9. Back to the Source page and you can see the newly added network stream. Now you can control the network stream through the icon buttons under Operation.

- ✓ Click , the HDD-10 will decode the network stream on this channel, and output high-definition HDMI audio and video to the display device for playback.
- ✓ Click , the HDD-10 will stop decoding and playing video.
- ✓ Click , to modify the network stream source of the current channel.
- ✓ Click , to delete the network stream source of the current channel.

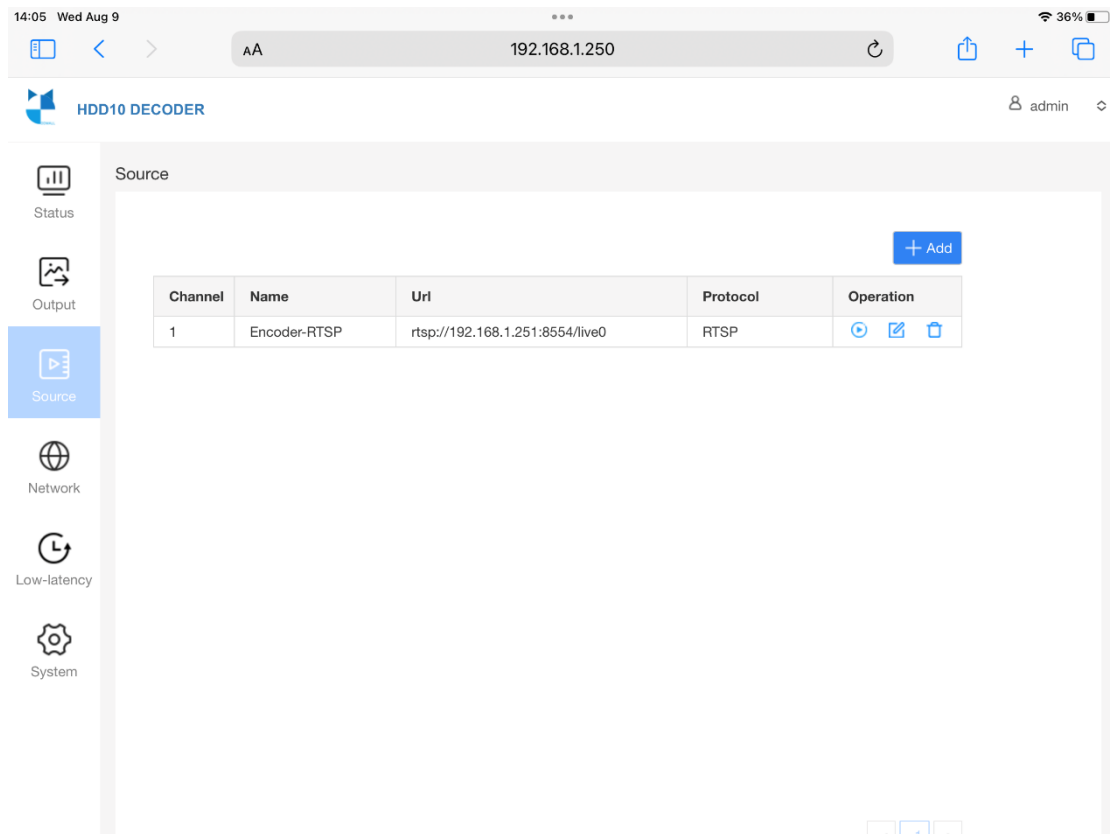
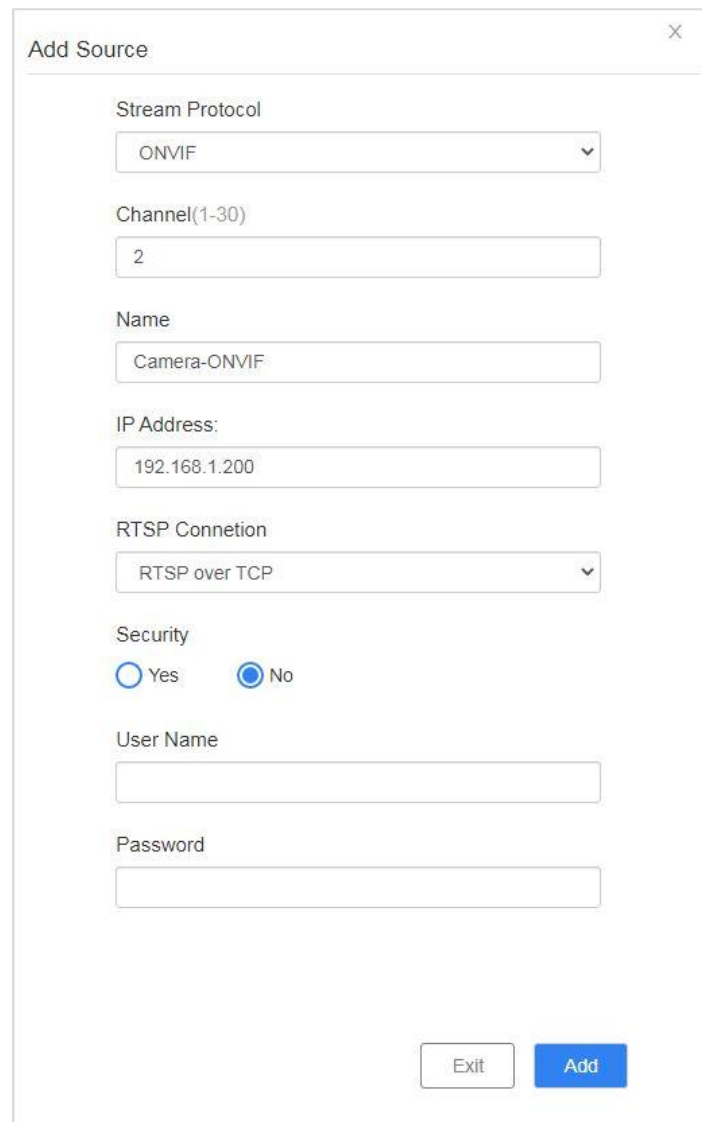


Figure 12

9.4.2 Add ONVIF Stream

1. Click "Add", and the source adding window will pop up.
2. Stream Protocol: choose ONVIF.
3. Channel: The channel of decoding network stream, which is automatically assigned in the order of adding.
4. Name: Customize the name of the added network stream, for example we named it Camera-ONVIF.
5. IP Address: Enter the IP address of the ONVIF stream. Here for illustration we use an IP camera with the IP address "192.168.1.200".
6. RTSP Connection: Select RTSP Over TCP or RTSP Over UDP according to the ONVIF stream to be decoded.
7. Security: If your video source is encrypted, please select "Yes", and then enter the use name and password. If not, select "No".
8. After all the parameters are configured, click "Add", the web page will prompt that the

configurations have been modified successfully, and then close or exit the source adding window.



Add Source

Stream Protocol
ONVIF

Channel(1-30)
2

Name
Camera-ONVIF

IP Address:
192.168.1.200

RTSP Connection
RTSP over TCP

Security
☐ Yes ☒ No

User Name

Password

Exit Add

Figure 13

9. Back to the Source page and you can see the new network stream added. Now you can control the stream by the icon buttons under Operation.

- ✓ Click , the HDD-10 will decode the network stream on this channel, and output high-definition HDMI audio and video to the display device for playback.
- ✓ Click , the HDD-10 will stop decoding and playing video.
- ✓ Click , to modify the network stream source of the current channel.

✓ Click  , to delete the network stream resource of the current channel.

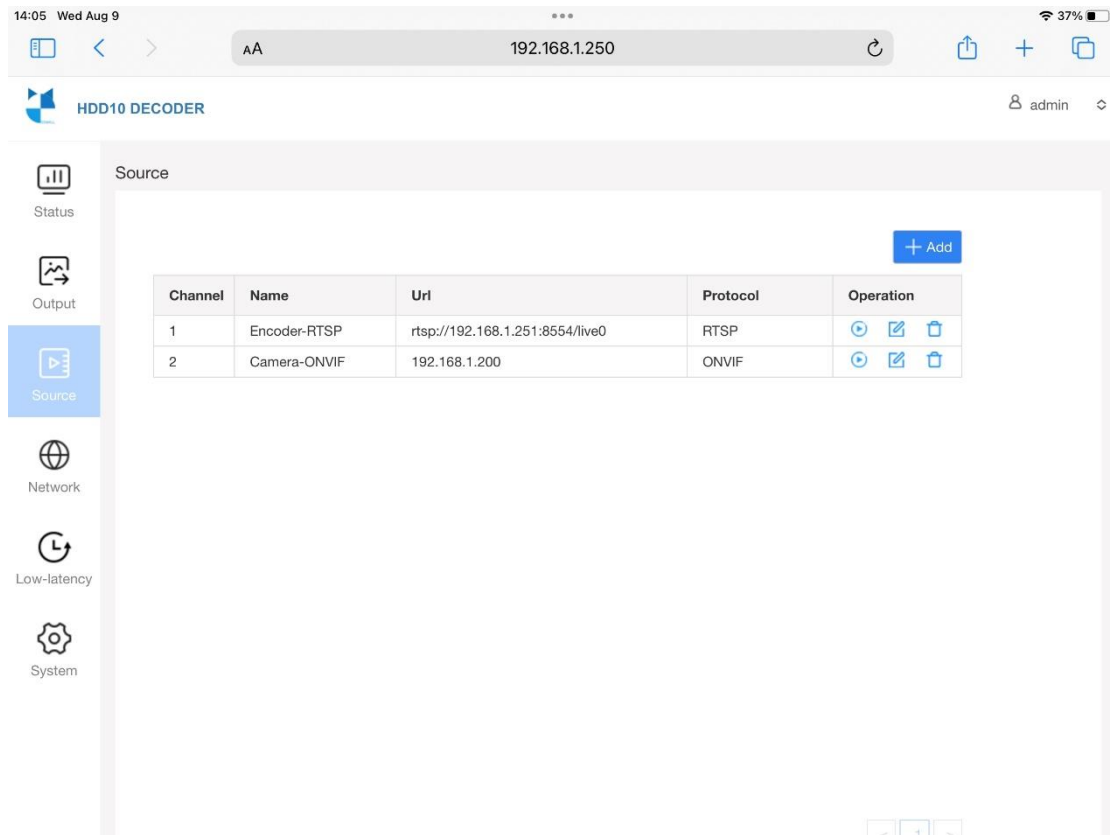


Figure 14

9.4.3 Add UDP Stream

In this part, we use the DDMALL HEV-4K encoder as an example for demonstration, if you are using other encoders or encoding software, you can refer the methods as well:

UDP Multicast Mode

1. Log in to the web UI of the HEV-4K and set UDP Multicast on the Misc Stream Interface. For example, Destination IP is set to 239.255.17.19 (The multicast IP address ranges from 224.0.0.0 to 239.255.255.255), the port is set to 21000 (ranges from 21000 to 22000) and the TTL is set to 64(ranges from 2 to 255). Click Start for video stream transmission after configuration.

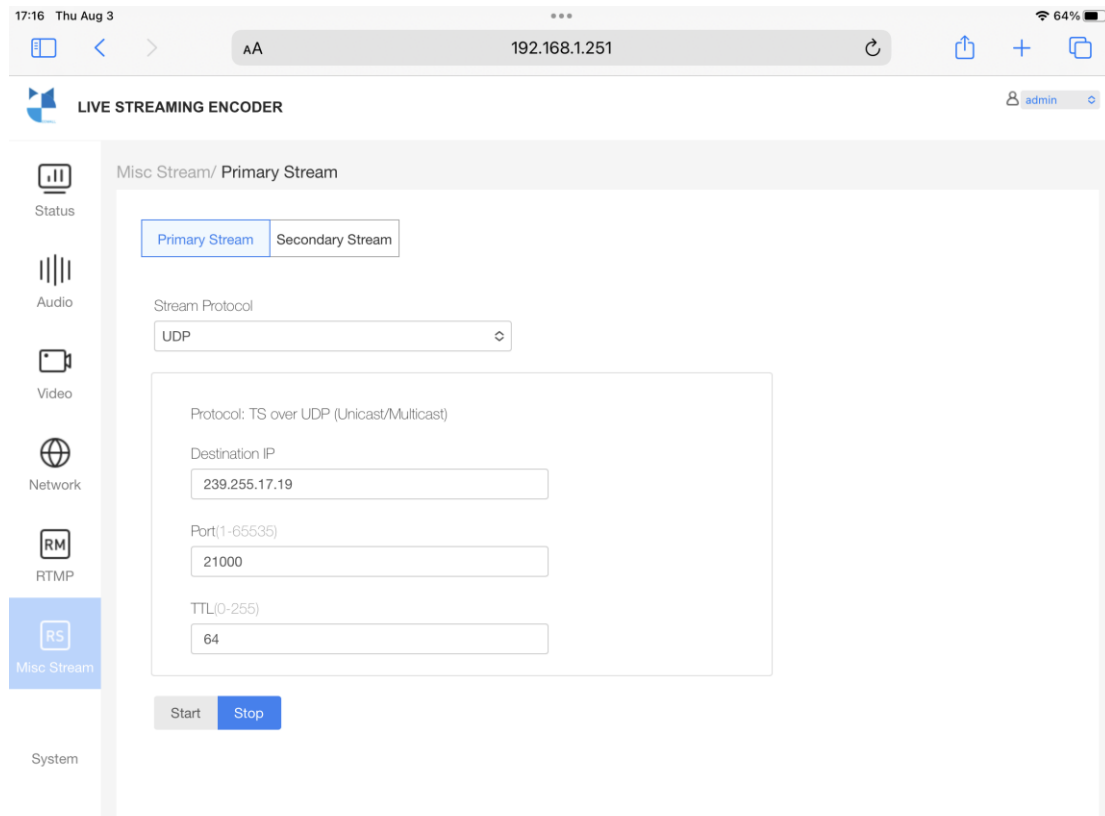
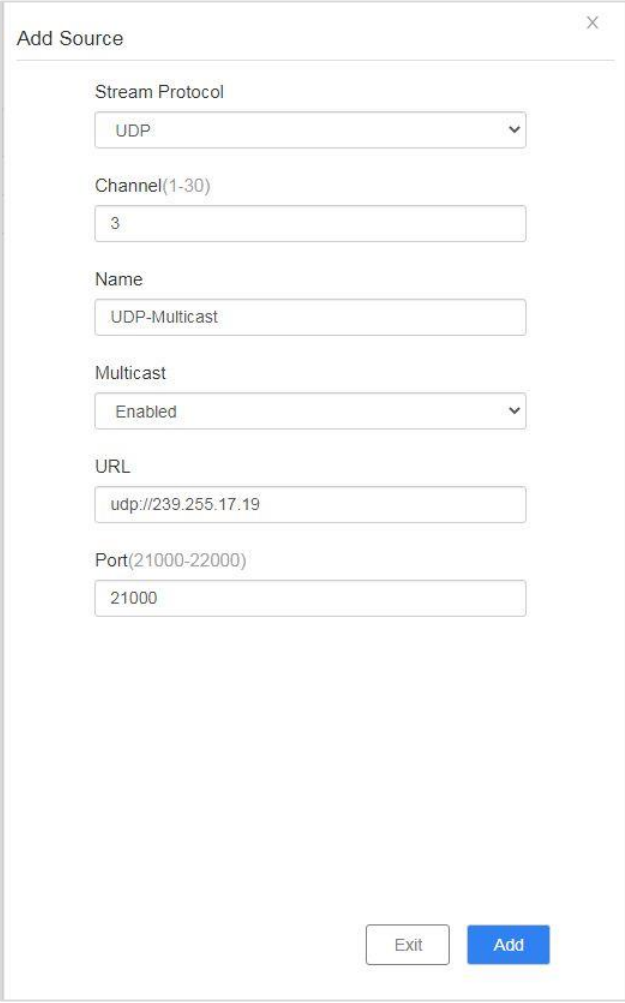


Figure 15

2. Back to Source page of the HDD-10 and click "Add", the source adding window will pop up.
3. Stream Protocol: choose UDP.
4. Channel: The channel of decoding network stream, which is automatically assigned in the order of adding.
5. Name: Customize the name of the added network stream, here for example we named it UDP-Multicast.
6. Multicast: enable or disable UDP multicast. As we need set the HEV-4K to UDP multicast, so here we need to enable UDP multicast.
7. URL: udp://encoder multicast address. The multicast address of the HEV-4K is 239.255.17.19, so we fill in udp://239.255.17.19 here.
8. Port: Enter the same port as your encoder, here we fill in 21000.
9. After all the parameters are configured, click "Add", the web page will prompt that the configurations have been modified successfully, and then close or exit the source adding

window.

A screenshot of a software window titled "Add Source" with a close button (X) in the top right corner. The window contains several input fields and dropdown menus. The "Stream Protocol" dropdown is set to "UDP". The "Channel(1-30)" text box contains the number "3". The "Name" text box contains "UDP-Multicast". The "Multicast" dropdown is set to "Enabled". The "URL" text box contains "udp://239.255.17.19". The "Port(21000-22000)" text box contains "21000". At the bottom right, there are two buttons: "Exit" and "Add".

Add Source

Stream Protocol

UDP

Channel(1-30)

3

Name

UDP-Multicast

Multicast

Enabled

URL

udp://239.255.17.19

Port(21000-22000)

21000

Exit Add

Figure 16

10. Back to the Source page and you can see the new network stream added. Now you can control the stream by the icon buttons under Operation.

- ✓ Click  , the HDD-10 will decode the network stream on this channel, and output high-definition HDMI audio and video to the display device for playback.
- ✓ Click  , the HDD-10 will stop decoding and playing video.
- ✓ Click  , to modify the network stream source of the current channel.
- ✓ Click  , to delete the network stream source of the current channel.

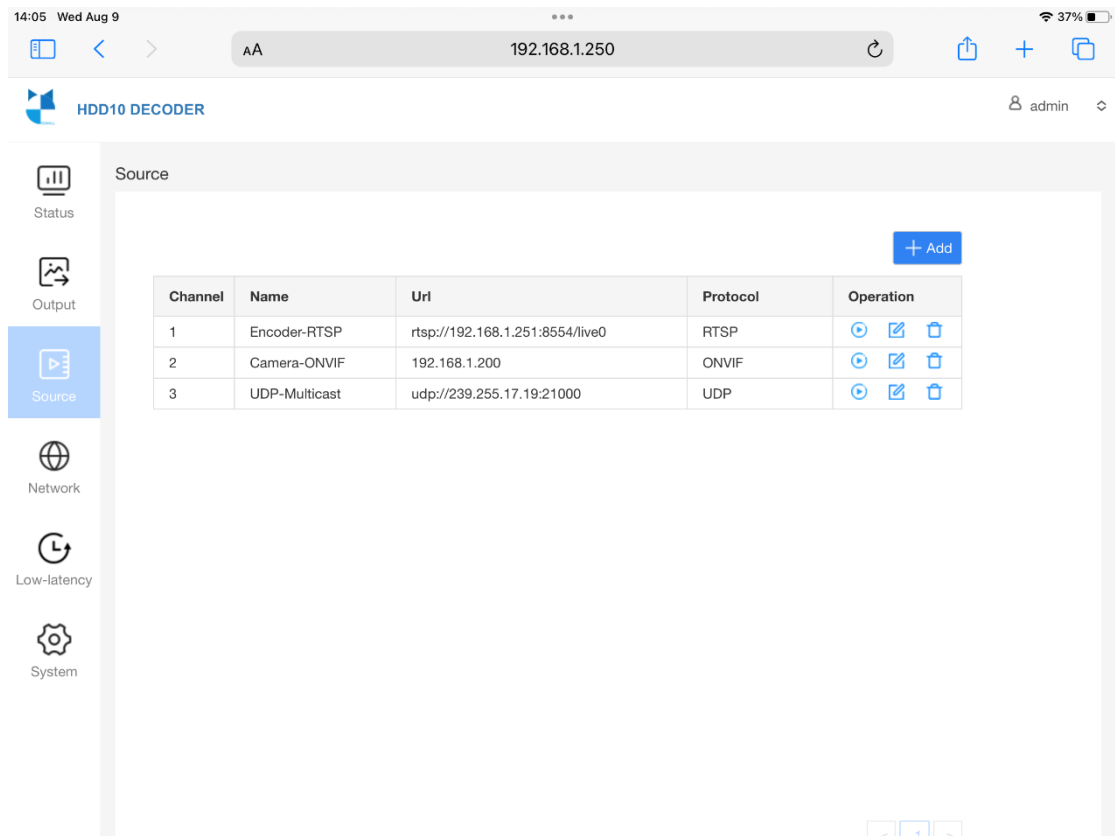


Figure 17

UDP Unicast Mode

1. Log in to web UI of the HEV-4K and set Unicast on the Misc Stream interface. For example, Destination IP is set to 192.168.1.250 (the IP address of HDD-10), the port is set to 21000 (ranges from 21000 to 22000) and the TTL is set to 64(ranges from 2 to 255). Click Start for video stream transmission after configuration.

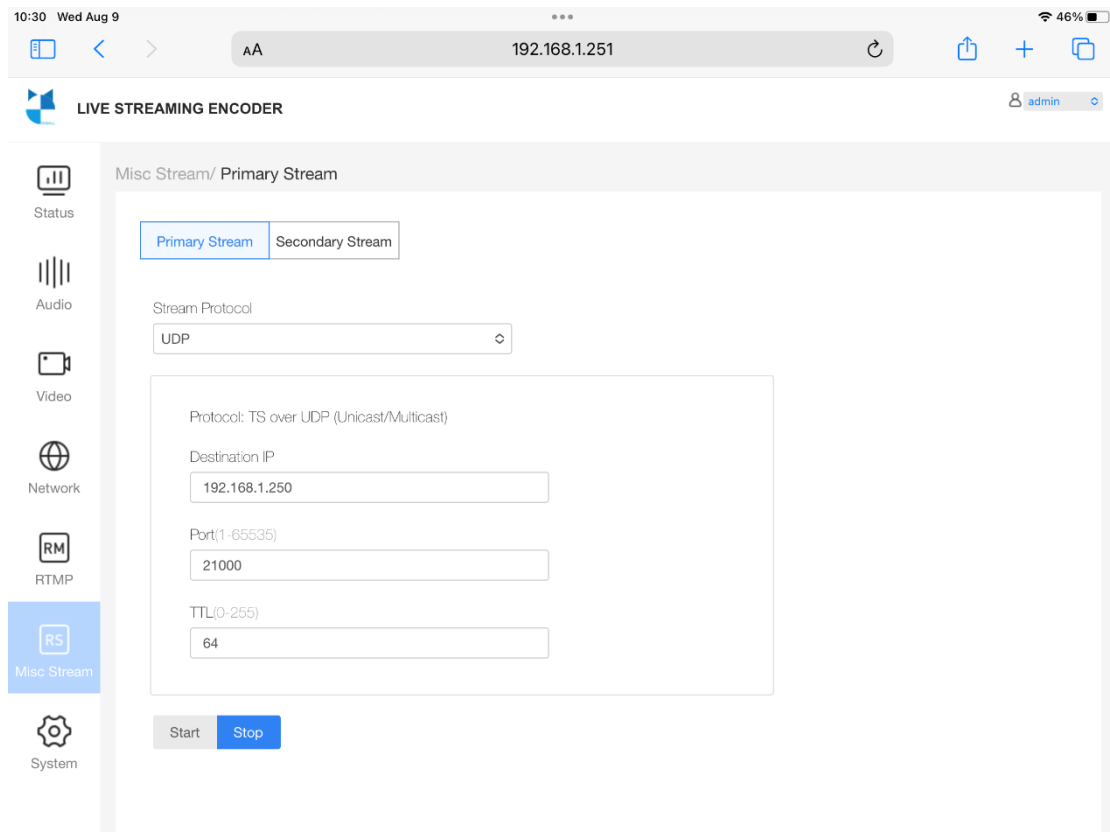


Figure 18

2. Back to Source page of the HDD-10 and click "Add", the source adding window will pop up.
3. Stream Protocol: choose UDP.
4. Channel: The channel of decoding network stream, which is automatically assigned in the order of adding.
5. Name: Customize the name of the added network stream, here for example we name it UDP-Unicast.
6. Multicast: enable or disable UDP multicast. The HEV-4K need be set to UDP Unicast, so here we choose Disabled.
7. Port: Enter the same port as your encoder, here we fill in 21000.
8. After all the parameters are configured, click "Add", the web page will prompt that the configurations have been modified successfully, and then close or exit the source adding window.

A screenshot of a software dialog box titled "Add Source" with a close button (X) in the top right corner. The dialog contains several input fields and dropdown menus. The "Stream Protocol" dropdown is set to "UDP". The "Channel(1-30)" text box contains the number "4". The "Name" text box contains "UDP-Unicast". The "Multicast" dropdown is set to "Disabled". The "Port(21000-22000)" text box contains "21000". At the bottom right, there are two buttons: "Exit" and "Add".

Add Source

Stream Protocol

UDP

Channel(1-30)

4

Name

UDP-Unicast

Multicast

Disabled

Port(21000-22000)

21000

Exit Add

Figure 19

9. Back to the Source page and you can see the new network stream added. Now you can control the stream by the icon buttons under Operation.

- ✓ Click , the HDD-10 will decode the network stream on this channel, and output high-definition HDMI audio and video to the display device for playback.
- ✓ Click , the HDD-10 will stop decoding and playing video.
- ✓ Click , to modify the network stream source of the current channel.
- ✓ Click , to delete the network stream source of the current channel.

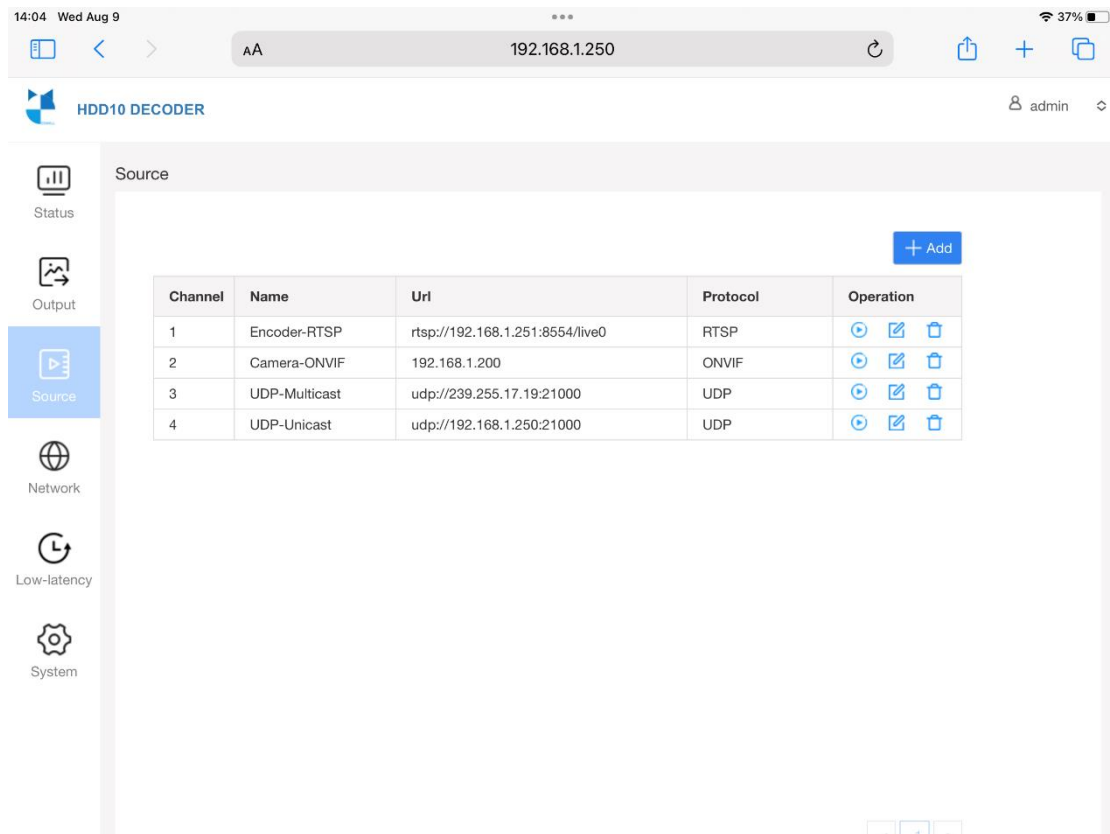


Figure 20

9.4.4 Add SRT Stream

SRT includes 3 modes. They are Caller, Listener and Rendezvous. You can establish SRT connection for video transmission through the three modes. Here we use the DDMALL HDD-10 decoder and the HEV-4K encoder to illustrate the related settings of SRT.

- When the encoder is set to Listener mode, the decoder needs to be set to Caller mode. At this time, the decoder is the one to initiate the SRT session.
- When the encoder is set to Caller mode, the decoder needs to be set to Listener mode. At this time, the encoder is the one to initiate the SRT session.
- When the encoder is set to Rendezvous mode, the decoder needs to be set to Rendezvous mode too. At this time, the encoder and the decoder establish SRT session through same port.

SRT Mode	How does it work
caller	Set the source or destination device as the caller of the SRT session. The caller device must know the IP address of the listener device and its port number.
listener	Set the device to wait for a SRT session request from the caller device. The listener device only needs to know the specific port for SRT session.
rendezvous	Allow the encoder and decoder to start SRT session with the same port. Both source and destination devices should be in rendezvous mode.

Table 6

Set the Decoder to SRT Caller Mode

1. Click the Add button on the HDD-10 Source page, then the browser will pop up the source adding window.
2. Stream Protocol: choose SRT.
3. Channel: The channel of decoding network stream, which is automatically assigned in the order of adding.
4. Name: Customize the name of the added network stream, here for illustration we name it SRT-Caller.
5. Mode: choose Caller.
6. Destination Address: srt://IP address of the listener device. When the decoder is set to Caller mode, the encoder needs to be set to Listener mode. Here we fill in the address of the encoder. For example, our encoder IP address is 192.168.1251, so here we fill in srt://192.168.1.251.
7. Destination Port: Consistent with the Source Port of the listener, here we set it to 4201.

8. Source Port: Inconsistent with the Destination Port value, here we set it to 4202.
9. Latency (ms): Set the buffer delay time, the default value is 120ms, modification ranges from 0~5000 but the default value is recommended.
10. Encryption: Encryption settings for SRT transmission, support AES-128, AES-192, AES-256 encryption, password setting is required if you choose encryption, the encoder needs to be set in the same encryption format and same password to transmit video. Choose None if no encryption is needed, here we choose None.
11. Bandwidth Overhead: The default value of 25% is recommended; the larger the ratio, the more stable the SRT streaming, but the higher the network bandwidth will be.
12. Payload Size: Mainly affects the efficiency of SRT streaming. The default value of 1316 is recommended, and it can be adjusted if necessary. The bigger the value, the higher efficiency of SRT streaming is.
13. After the configurations are completed, click the Add button. Then a conversation box pops up saying that you have successfully added your source, click Exit button to exit the setting page.

The image displays two side-by-side screenshots of the 'Add Source' configuration window. The left window shows the 'Stream Protocol' set to 'SRT' and 'Channel' set to '5'. The right window shows the 'Mode' set to 'caller' and 'Destination Address' set to 'srt://192.168.1.251'.

Field	Value
Stream Protocol	SRT
Channel(1-30)	5
Name	SRT-Caller
Mode	caller
Destination Address	srt://192.168.1.251
Destination Port(2000-65531)	4201
Source Port(2000-65531)	4202
Latency(ms)(0-5000)	120
Encryption	None
Passphrase(10-32 characters, letters and numbers only)	
Bandwidth Overhead(5-100)	25
Payload Size(0-1456)	1316

Figure 21

14. Set the encoder HEV-4K to SRT Listener mode on the Misc Stream page of the encoder. The parameters are set as follows:

1) Stream Protocol: Select SRT.

2) Mode: set to listener.

3) Source Port: Set it to 4201, which is the same value as the Destination Port value of the decoder.

4) Latency: Set it to 120, which is the same value of the Latency of the decoder.

5) Encryption: Set to None, the HDD-10 is not encrypted, so it is not encrypted here (if the decoder is encrypted, the encoder should also be set to the same encryption format, and the passwords at both ends need to be set to the same value).

6) Bandwidth Overhead: Set it to 25%, which is the same value of the decoder.

7) Payload Size: set to 1316, the same value of the decoder.

8) After the setting is completed, click the Start button for video stream transmission.

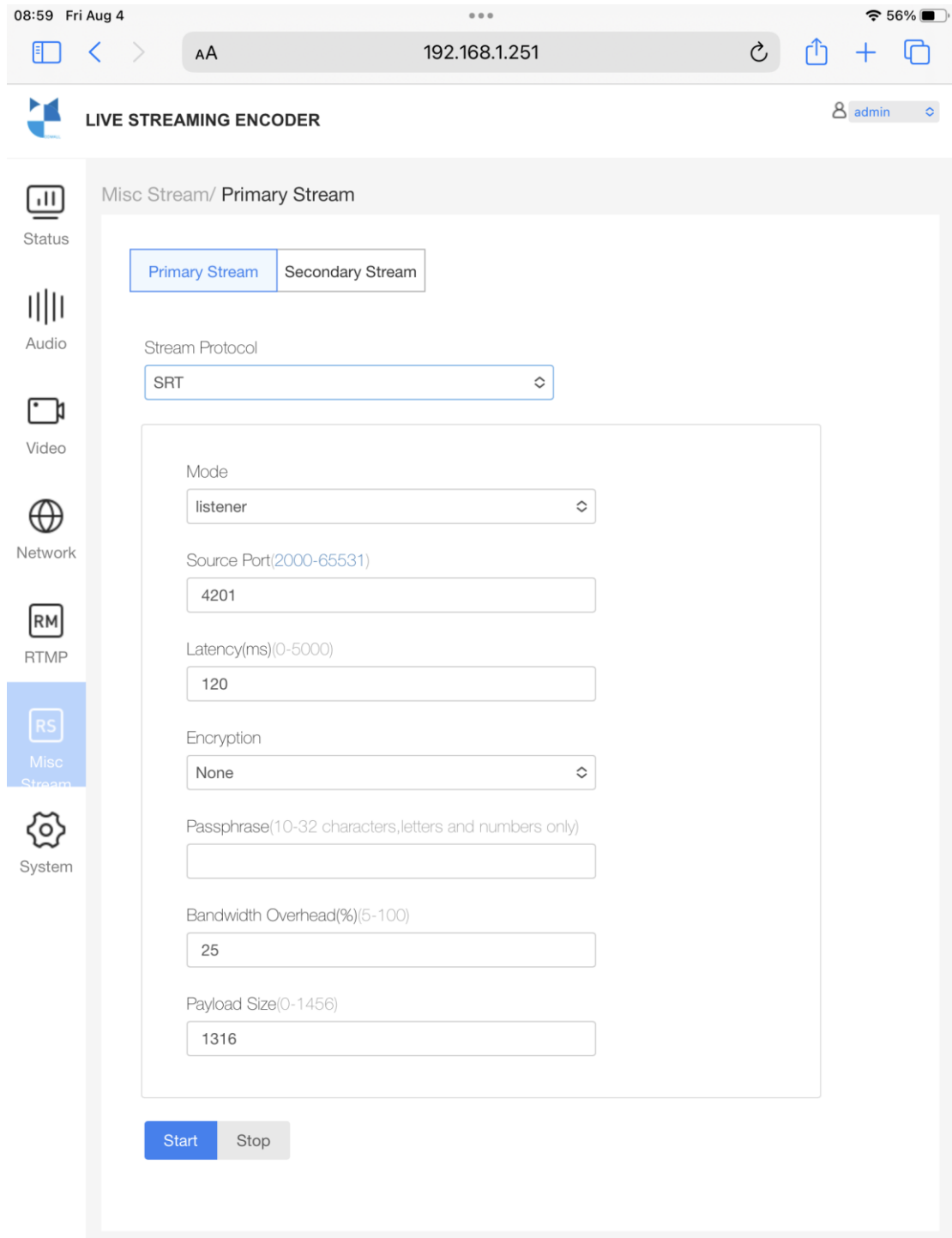


Figure 22

15. Back to the Source page of decoder HDD-10 and you can see the new network stream SRT-Caller added. Now you can control the stream by the icon buttons under Operation

✓ Click , the HDD-10 will decode the network stream on this channel, and output high-

definition HDMI audio and video to the display device for playback.

- ✓ Click , the HDD-10 will stop decoding and playing video.
- ✓ Click , to modify the network stream source of the current channel.
- ✓ Click , to delete the network stream source of the current channel.

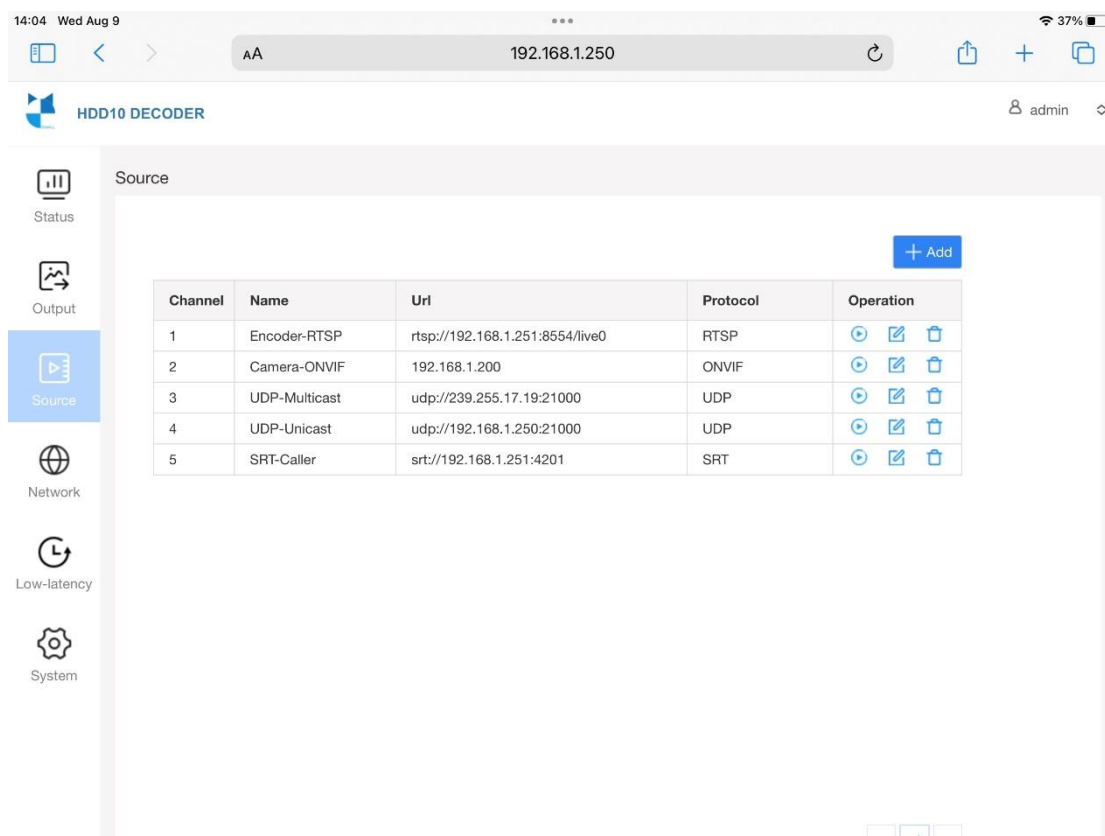


Figure 23

Set the Decoder to SRT Listener Mode

1. Click the Add button on the HDD-10 Source page, then the browser will pop up the source adding window.
2. Stream Protocol: choose SRT.
3. Channel: The channel of decoding network stream, which is automatically assigned in the order of adding.
4. Name: Customize the name of the added network stream, here for example we name

it SRT-Caller.

5. Mode: choose Listener.

6. Source Port: Consistent with the Destination port value of the Caller device, here we set it to 4201.

7. Latency (ms): Set the buffer delay time, the default value is 120ms, the modification range is 0~5000, the default value is recommended.

8. Encryption: Encryption settings for SRT transmission, support AES-128, AES-192, AES-256 encryption, password setting is required if you choose encryption, and the encoder needs to be set in the same encryption format and same password to transmit video. Choose None if no encryption is needed, here we choose None.

9. Bandwidth Overhead: The default value of 25% is recommended; the larger the ratio, the more stable the SRT transmission, but the higher the network bandwidth is.

10. Payload Size: Mainly affects the transmission efficiency of SRT. The default value of 1316 is recommended, which can be adjusted if necessary. The bigger the value, the higher transmission efficiency of SRT is.

11. After the setting is completed, click the Add button. Then a conversation box pops up saying that you have successfully added your source, press Exit button.

Add Source

Stream Protocol
SRT

Channel(1-30)
6

Name
SRT-Listener

Mode
listener

Source Port(2000-65531)
4201

Latency(ms)(0-5000)
120

Encryption
None

Passphrase(10-32 characters, letters and numbers only)

Bandwidth Overhead(%) (5-100)
25

Payload Size(0-1456)
1316

Exit Add

Figure 24

12. Set the encoder HEV-4K to SRT Caller mode on the Misc Stream page of the encoder. The parameters are set as follows:

- 1) Stream Protocol: Select SRT.
- 2) Mode: set to caller.
- 3) Destination Address: Set as srt://192.168.1.250 (192.168.1.250 is the IP address of decoder HDD-10)
- 4) Destination Port: Set it to 4201, which is the same as the Source Port value of the decoder.

- 5) Source Port: Set it to 4202, it must not be the same value of the Destination Port.
- 6) Latency: Set it to 120, which is the same value of the Latency of the decoder.
- 7) Encryption: Set to None, the HDD-10 is not encrypted, so it is not encrypted here (if the decoder is encrypted, the encoder should also be set to the same encryption format, and the password at both ends need to be set to the same value).
- 8) Bandwidth Overhead: Set it to 25%, which is the same of the value of the decoder.
- 9) Payload Size: set it to 1316, the same value of the decoder.
- 10) After the setting is completed, click the Start button for the video stream transmission.

The screenshot shows a web browser interface for a 'LIVE STREAMING ENCODER'. The browser's address bar shows the URL '192.168.1.251'. The page has a sidebar on the left with icons for Status, Audio, Video, Network, RTMP, Misc Stream (highlighted), and System. The main content area is titled 'Primary Stream' and 'Secondary Stream'. Under 'Stream Protocol', 'SRT' is selected. The 'Mode' is set to 'caller'. The 'Destination Address' is 'srt://192.168.1.250'. The 'Destination Port(2000-65531)' is '4201'. The 'Source Port(2000-65531)' is '4202'. The 'Latency(ms)(0-5000)' is '120'. The 'Encryption' is set to 'None'. The 'Passphrase(10-32 characters, letters and numbers only)' field is empty. The 'Bandwidth Overhead(5-100)' is '25'. The 'Payload Size(0-1456)' is '1316'.

Field	Value
Stream Protocol	SRT
Mode	caller
Destination Address	srt://192.168.1.250
Destination Port(2000-65531)	4201
Source Port(2000-65531)	4202
Latency(ms)(0-5000)	120
Encryption	None
Passphrase(10-32 characters, letters and numbers only)	
Bandwidth Overhead(5-100)	25
Payload Size(0-1456)	1316

Figure 25

12. Back to the Source page of decoder HDD-10 and you can see the new network stream SRT-Listener added. Now you can control the stream by the icon buttons under Operation

- ✓ Click , the HDD-10 will decode the network stream on this channel, and output high-definition HDMI audio and video to the display device for playback.
- ✓ Click , the HDD-10 will stop decoding and playing video.
- ✓ Click , to modify the network stream source of the current channel.
- ✓ Click , to delete the network stream source of the current channel.

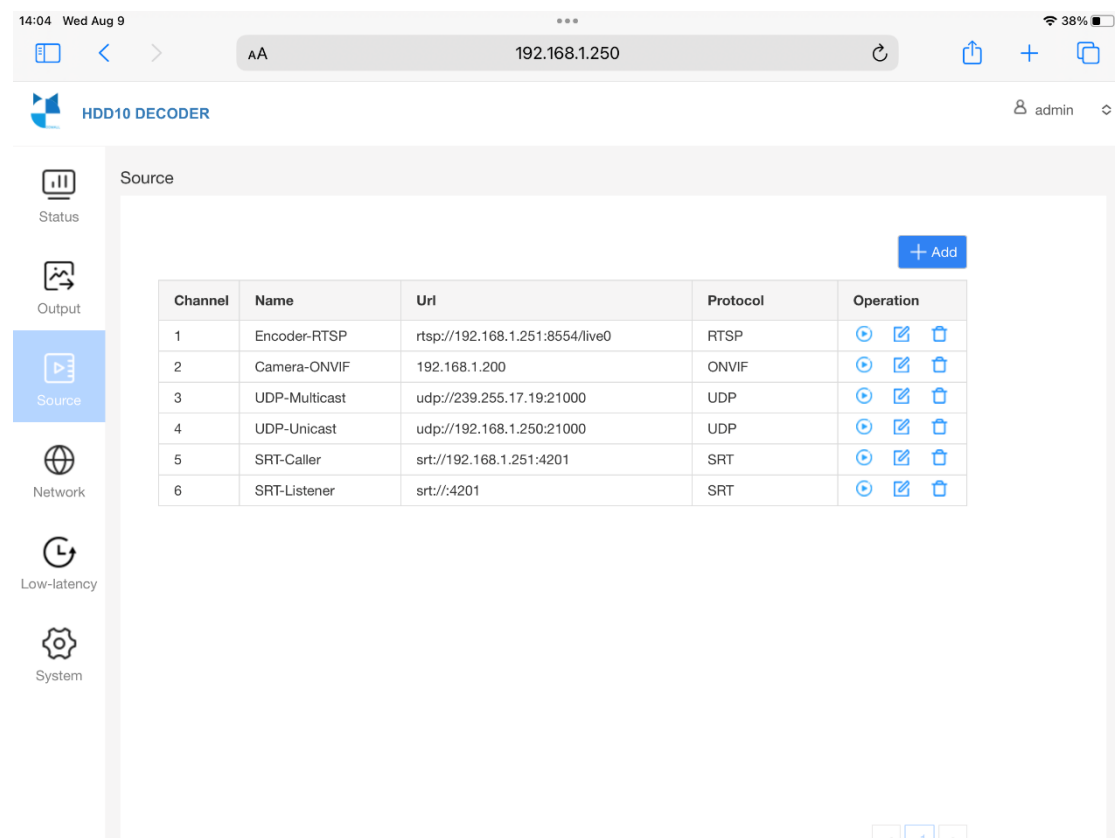


Figure 26

Set the Decoder to SRT Rendezvous Mode

1. Click the Add button on the HDD-10 Source page, then the browser will pop up the source adding window.
2. Stream Protocol: choose SRT.

3. Channel: The channel of decoding network stream, which is automatically assigned in the order of adding.
4. Name: Customize the name of the added network stream, here we name it SRT-Rendezvous.
5. Mode: choose Rendezvous.
6. Destination Address: srt://IP address of decoder. Here we fill in srt://192.168.1.251.
7. Destination Port: the Destination Port value of the decoder and encoder need to be the same in Rendezvous mode, here we set it as 4201.
8. Source Port: No set is needed, it will be the same value of the Destination Port automatically.
9. Latency (ms): Set the buffer delay time, the default value is 120ms, the modification range is 0~5000, the default value is recommended.
10. Encryption: Encryption settings for SRT transmission, support AES-128, AES-192, AES-256 encryption, password setting is required if you choose encryption, and the encoder needs to be set in the same encryption format and same password to transmit video. Choose None if no encryption is needed, here we choose None.
11. Bandwidth Overhead: The default value of 25% is recommended; the larger the ratio, the more stable the SRT transmission, but higher the network bandwidth will be.
12. Payload Size: Mainly affects the transmission efficiency of SRT. The default value of 1316 is recommended, which can be adjusted if necessary. The bigger the value, the higher the transmission efficiency of SRT will be.
13. After all the configurations are completed, click "Add", the web page will prompt that you have added your source successfully, then close or exit the resource adding window.

The image displays two identical 'Add Source' dialog boxes side-by-side. Each dialog box contains the following fields and values:

- Stream Protocol:** SRT (dropdown menu)
- Channel(1-30):** 6 (text input)
- Name:** SRT-Rendezvous (text input)
- Mode:** rendezvous (dropdown menu)
- Destination Address:** srt://192.168.1.251 (text input)
- Destination Port(2000-65531):** 4201 (text input)
- Source Port(2000-65531):** 4201 (text input)
- Latency(ms)(0-5000):** 120 (text input)
- Encryption:** None (dropdown menu)
- Passphrase(10-32 characters, letters and numbers only):** (empty text input)

At the bottom of each dialog box are two buttons: 'Exit' and 'Add'.

Figure 27

14. Set the encoder HEV-4K to SRT Rendezvous mode on the Misc Stream page of the encoder. The parameters are set as follows:
 - 1) Stream Protocol: Select SRT.
 - 2) Mode: set to rendezvous.
 - 3) Destination Address: Set it to srt://192.168.1.250, the IP address of the decoder.
 - 4) Destination Port: Set it to 4201, the same of the Destination Port value of the decoder.
 - 5) Source Port: No setting is needed, it will be the same value of the Destination Port automatically.
 - 6) Latency: Set it to 120, which is the same of the Latency of the decoder.
 - 7) Encryption: Set to None, HDD-10 is not encrypted, so it is not encrypted here (if the decoder is encrypted, the encoder should also be set to the same encryption format, and the passwords at both ends need to be set to the same value).

- 8) Bandwidth Overhead: Set it to 25%, which is the same of the value of the decoder.
- 9) Payload Size: set to 1316, the same value of the decoder.
- 10) After the setting is completed, click the Start button for the video stream transmission.

The screenshot shows a web browser interface for a 'LIVE STREAMING ENCODER'. The browser's address bar shows '192.168.1.251'. The page has a sidebar with icons for Status, Audio, Video, Network, RTMP, Misc Stream (highlighted), and System. The main content area is titled 'Stream Protocol' and shows a dropdown menu set to 'SRT'. Below this, there is a 'Mode' dropdown set to 'rendezvous'. The 'Destination Address' field contains 'srt://192.168.1.250'. The 'Destination Port(2000-65531)' field is set to '4201'. The 'Source Port(2000-65531)' field is also set to '4201'. The 'Latency(ms)(0-5000)' field is set to '120'. The 'Encryption' dropdown is set to 'None'. The 'Passphrase(10-32 characters, letters and numbers only)' field is empty. The 'Bandwidth Overhead(5-100)' field is set to '25'. The 'Payload Size(0-1456)' field is set to '1316'. At the bottom of the configuration area, there are 'Start' and 'Stop' buttons.

Figure 28

15. Back to the Source page of the HDD-10 and you can see the new network stream SRT-Rendezvous added. Now you can control the stream by the icon buttons under Operation.

- ✓ Click  , the HDD-10 will decode the network stream on this channel, and output high-definition HDMI audio and video to the display device for playback.

- ✓ Click  , the HDD-10 will stop decoding and playing video.
- ✓ Click  , to modify the network stream source of the current channel.
- ✓ Click  , to delete the network stream source of the current channel.

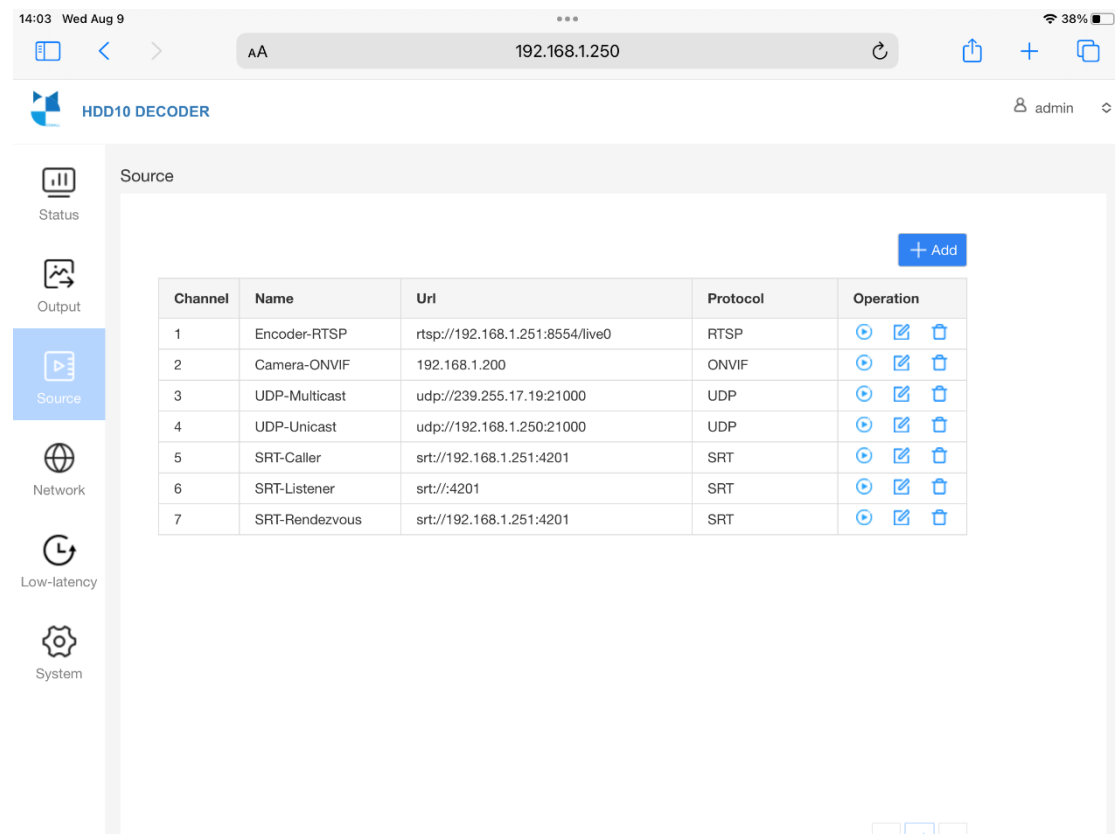


Figure 29

9.5 Low-latency Setting

With built-in DDMALL's proprietary low-latency transmission technology, the latency of the HDD-10 is as low as 80ms when it pair with DDMALL HEV-2K encoder, which is perfect for video streaming applications that require low latency.

1. HDD-10 enables Low-latency mode

Click Low-latency icon on the left menu to enter the Low-latency setting page.

1) Enable DDMALL Low-latency Mode.

2) Fill in the IP address of the paired encoder in Source (encoder) IP, here we enter "192.168.1.251".

3) After the setting is completed, click "Apply", and the web page will prompt "Are you sure to enable DDMALL low-latency mode and reboot the device", click "OK", and the device will automatically reboot to take the setting effect.

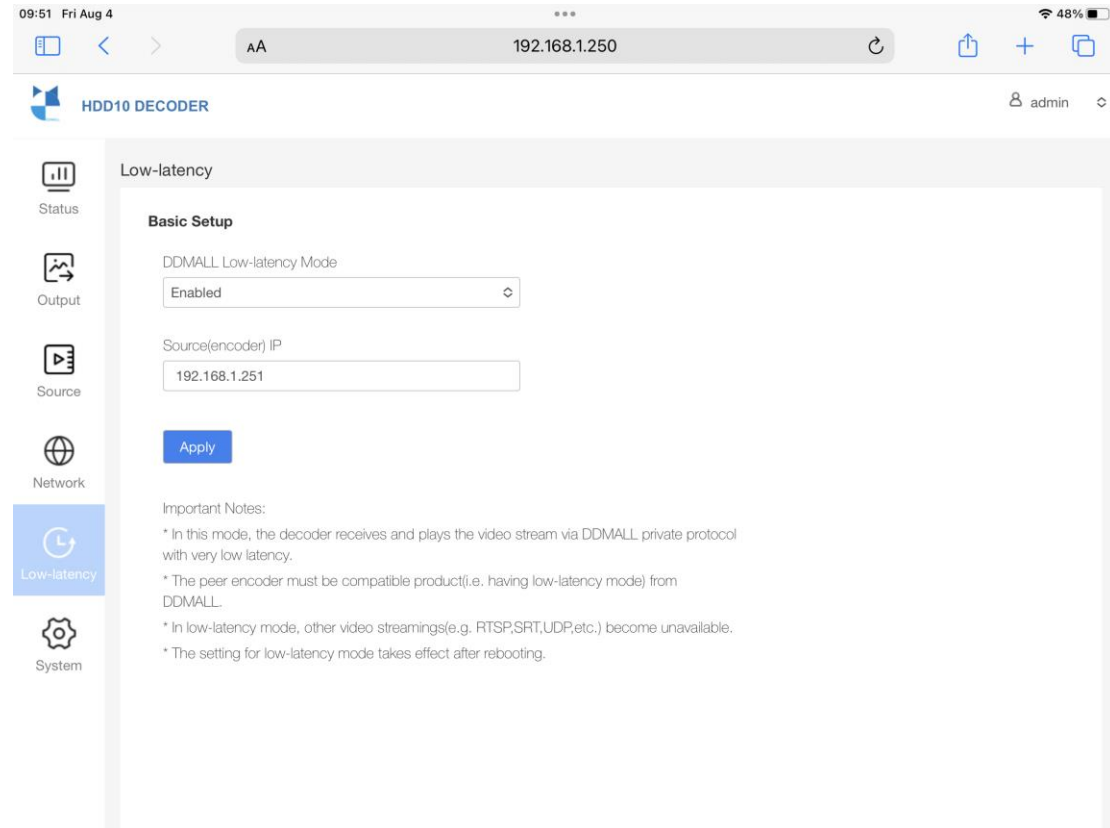


Figure 30

2. Enable Low-latency mode for the encoder HEV-2K

Log in to the web UI of HEV-2K and enter the System/Low-Latency page to enable DDMALL Low-latency Mode, and then click "Apply", the web page prompts "Are you sure to enable DDMALL low-latency mode and reboot the device", click "OK", and the device will reboot automatically to take the setting effect.

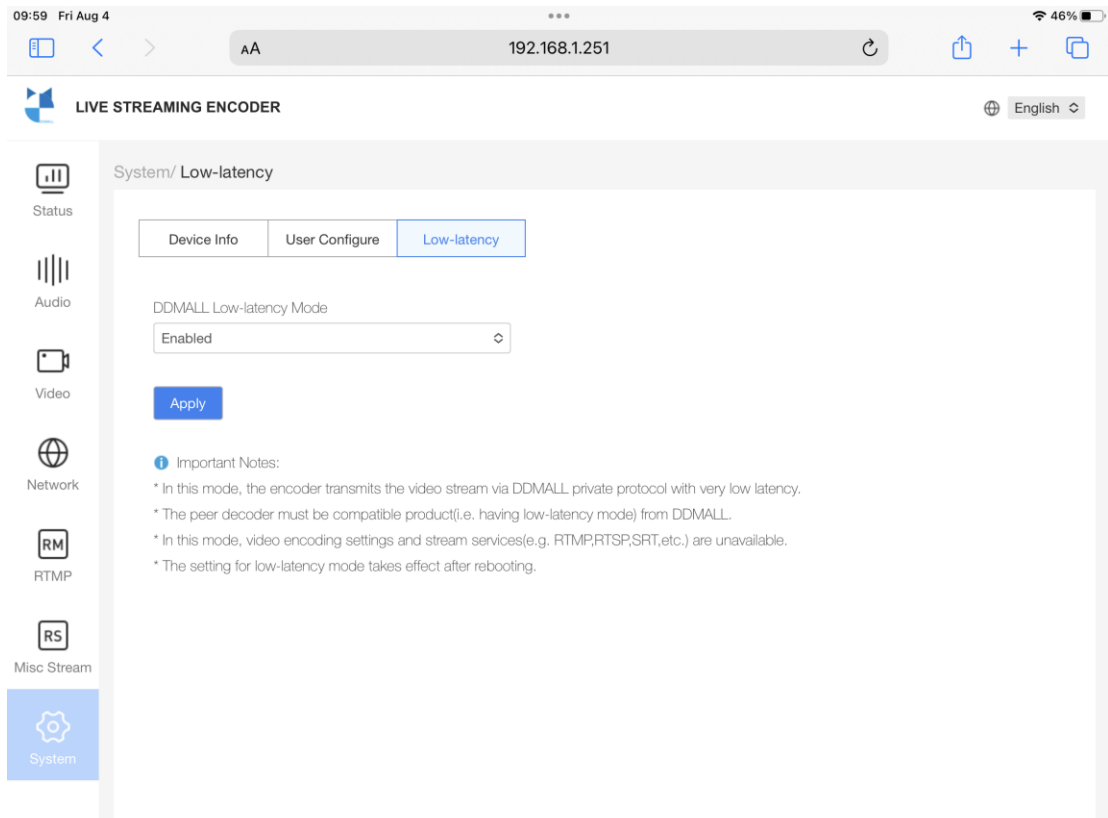


Figure 31

3. After the encoder and decoder reboot successfully, the Low-latency mode will be set for video transmission, and the video with low latency can be viewed on the display device of the decoder.

4. Note:

- 1) Enable Low-latency mode for both the encoder and decoder, and it will take effect only after rebooting the devices.
- 2) The encoder and decoder must be on the same LAN, and the IP must be on the same network segment.
- 3) In Low-latency mode, the video, audio, RTMP, and Misc stream parameters of the encoder cannot be modified.

9.6 System Setting

Click the System icon on the left menu to enter the System Page, you can view the information, modify the name, process online upgrade, reboot, reset, and modify the login info of the HDD-10 etc.

9.6.1 System/Device info

10:01 Fri Aug 4 AA 192.168.1.250 45%

HDD10 DECODER admin

System/ Device Info

Device Info User Configure

Basic Setup

Serial No.: DNB3202Y23W07002

Device Name

Hardware Version: V1

Firmware Version: HDD10 V1.0.0.3

Firmware Upgrade

System Settings

Reboot the device and let the parameters effect immediately.

Restore to factory default settings but keep network settings.

Restore to factory default settings.

Figure 32

Device name: Enter the device name you need to set and click Apply.

Firmware upgrade: Upgrade the device software version.

Reboot: Reboot the device.

Restore: Keep the Network settings, and restore the rest of the settings to factory defaults.

Reset: Reset all parameters to factory default settings.

9.6.2 System/User Configure

The modifications of username and password for login to the HDD-10 web UI are available on the User configure page; It is recommended to modify them in case unauthorized login from others.

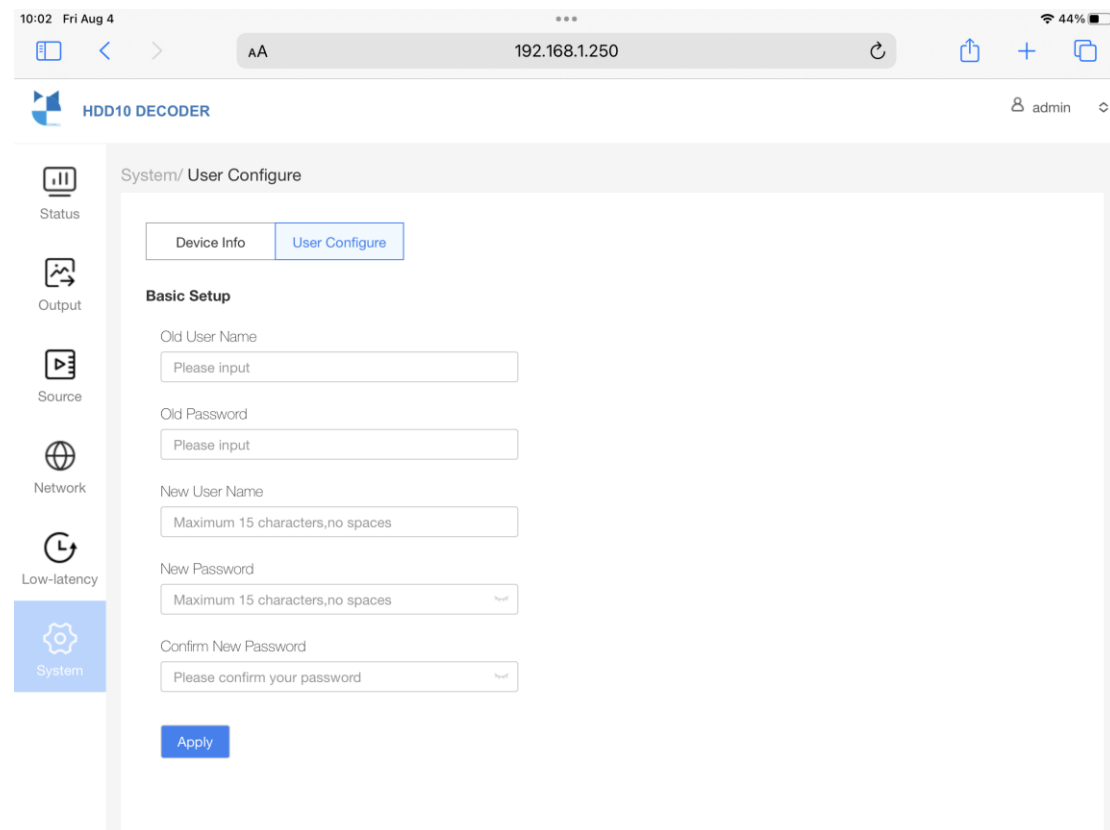


Figure 33

Note: If you forget the new username and password you set, please press and hold reset button for about 5s with the pin in the packing (release it when the indicator light is flashing in green) to reset the device to factory settings, and then use the default user name and password to log in to the web UI.

10. Frequent Asked Questions

10.1 Unable to Log in to the HDD-10 Web UI for the First Use.

1. Make sure that the decoder has been powered on, connected to the router or switch

LAN port through a network cable, and the network port indicator shows properly (Green light is solid on and orange light is flashing).

2. Make sure that the control terminal (PC, laptop, iPad, etc.) is on the same LAN, and the IP address is on the same network segment as the decoder. The default IP address of the HDD-10 is 192.168.1.250, and the IP address of the control terminal needs to be changed to 192.168.1.xxx (xxx can be any number ranging from 0 to 255 except 250).

10.2 Unable to Login in to the HDD-10 Web UI after IP

Modification

1. Make sure that the decoder has been powered on, connected to the router or switch LAN port through a network cable, and the network port indicator shows properly (Green light is solid on and orange light is flashing).

2. Confirm that the control terminal (PC, laptop, iPad, etc.) is on the same LAN, and the IP address is on the same network segment as the decoder.

3. Open the browser of the control terminal and enter the modified IP address of the decoder. If the decoder IP is set to DHCP, please log in to the router management interface to view the IP address assigned to the decoder.

4. If you forget the IP address of the decoder, please reset the decoder to the factory default settings (Press and hold the set button for around 3-5s till the network port indicator flashes in green), then log in to the web UI with the default IP address of the decoder 192.168.1.250, please note that the control terminal IP should be modified back to 192.168.1.xxx (xxx can be any number ranging from 0 to 255 except 250)

10.3 Display Image is “Decoder is ready, waiting to establish a network connection”

1. Confirm that the decoder has been powered on, connected to the router or switch LAN port through a network cable, and the network port indicator shows properly (Green light is solid on and orange light is flashing).

2. Make sure that the encoding end (network camera/encoder/network streaming server, etc.) is on the same LAN, and the IP address is on the same network segment as the decoder.
3. Check the source configuration of the decoder to make sure that the added network stream protocol, URL, port and other information are correct, and the network stream has been clicked to play in the resource list.
4. Check whether the network stream output of the encoding end (network camera/encoder/network streaming server, etc.) is normal, you can use a software decoder such as VLC to perform decoding and playback to see if it is normal. If the decoding software playback is also abnormal, please check the problem at the encoding end.

10.4 the Display That the HDD-10 Connected Shows Nothing

1. Usually there are multiple HDMI interfaces on the monitor and TV. Please control the monitor and TV through the menu button or the remote control, then call out and display the HDMI connected to the HDD-10 on the monitor or TV.
2. Make sure that the HDD-10 is powered on, connected to the router or switch LAN port through a network cable, and the network port indicator shows properly (Green light is solid on and orange light is flashing).
3. Please make sure the HDD-10 and the monitor are connected with the HDMI cable, you can try to re-plug the HDMI cable, if there is still no output, please replace the HDMI cable and confirm whether it is caused by a cable problem.
4. Please confirm whether the output resolution of HDD-10 is supported by the connected monitor. You can log in to the web UI of HDD-10 to view and modify the output resolution on the Output page.