

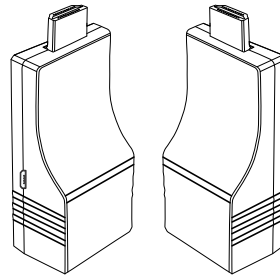


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## DDMALL H.265 H.264 Mini HDMI Video Decoder

Model: HDD-20



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Dear Customer,

Thank you for purchasing the DDMALL products. For optimum performance and safety, please read these instructions carefully before operating. Please keep this manual for future reference.

### 1. Features

The HDD-20 is a compact, yet professional video and audio decoder which supports H.264/H.265 video compression format. It can decode multiple types of network video streams and output to HDMI 4K Ultra HD video and audio signals without a computer. It supports multi-brand video encoders and set-top boxes as well as IP camera decoding.

- Ultra-compact Size.
- Supports HDMI2.0 output, the output resolution is up to 3840×2160@60Hz, and can down scale 4K/UHD signals to 2K/HD resolution output.
- Supports H.265/HEVC and H.264/AVC video decoding.
- Supports up to 3840x2160@60Hz UHD video stream decoding.
- Supports multiple stream protocols, including SRT, RTSP, ONVIF, and UDP.
- Audio decoding supports AAC or G711u format.
- Control Method: Via Login-protected web user interface.
- Ultra low power consumption of only 2W.
- Powered by USB. No AC power adapter needed.
- Stable and effective, support 7x24h working time.

## 2. Technical Specifications

### General

Power Supply	5V/1A (USB-Powered)
Power Consumption	2W
Operating Temperature	-10°~55°C (14°F~149°F)
Storage Temperature	-20°~85°C (-4°F~185°F)
Operating Humidity	10%- 90%RH (Non-condensing)
Weight	0.06KG
Dimensions	22mm×31mm×75mm

### Video

Video Input	HDMI 2.0
Video Output Resolution	3840×2160P@60/50/30/25/24Hz 1920×1080P@60/50/30/25/24Hz 1920×1080i@60/50Hz 1280×720P@60/50Hz
Video Decoding Compression	H.264/AVC & H.265/HEVC
Video Input Streaming Resolution	3840×2160@60/30Hz 1920×1080@60/30Hz 1280×720P@60/30Hz

### Audio

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

### System

Supported Stream Protocols	SRT, RTSP, ONVIF, UDP
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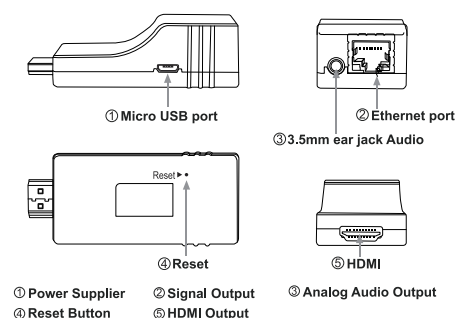
Network Protocols	Static IP/ DHCP
Control Method	Login-protected Web UI Control
Factory Default	Web UI: Username: admin Password: admin
	IP Address: 192.168.1.250

Note: Specifications are subject to change without notice.

## 3. Package Contents

- 1× HDD-20 Video Decoder
- 1× HDMI Male to Female cable
- 1× Micro USB Power Cable
- 1× User Manual
- 1× Pin

## 4. Hardware Description



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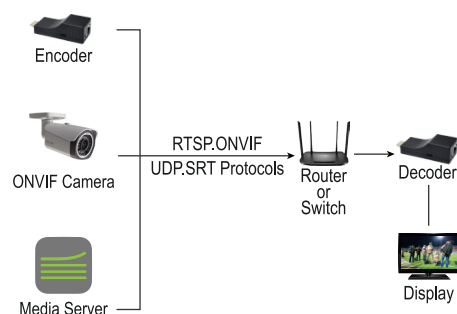
### 4.1 Indicator Lights

	Green Light	Orange Light
Off	No power	Network cable unconnected
Keeps On	Power Normal	/
Flash slowly	Restoring the factory settings	Network cable connected
Flash rapidly	/	Decoding video

### 4.2 Configuration Button

Factory Reset: Press the Reset button using the pin about 3-5s till the green light flash alternately, then HDD-20 will restore to the factory settings. All parameters will become the factory default parameters. The default IP address of the HDD-20 is 192.168.1.250.

## 5. Typical Application



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## 6. Connection Configuration

The basic operation steps are as follows. For more specific instructions, please refer to 6.1 - 6.2 and 6.3.

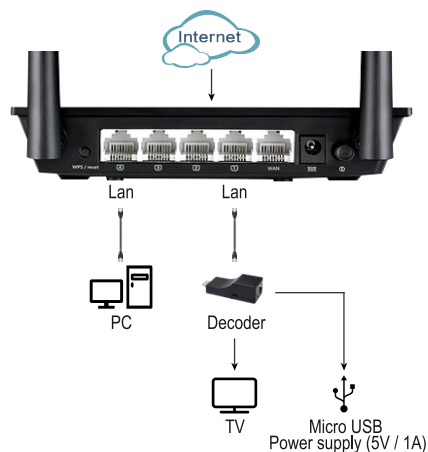
**Step1:** Connect the decoder to the LAN port of the router or switch.

**Step2:** Connect HDMI output port of the decoder to TV, and power the decoder with USB cables.

**Step3:** Change the IP address of the computer.

**Step4:** Login to the HDD-20's Web administrator page to set parameters.

### 6.1 Network Connection Diagram



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## 6.2 Change the IP Address of PC

The default IP address of the HDD-20 is 192.168.1.250. In order to connect to HDD-20, please change the IP Address of PC to the same network segment as the decoder. The specific instructions are as follows.

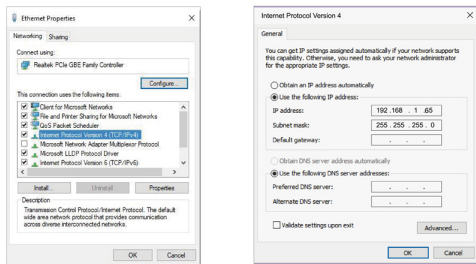
→ On a Windows PC: Press the **Win**+**R** on your keyboard.

→ Enter "control netconnections" in the run box and press "Enter".

→ You should see at least two types of network connections: Ethernet and WI-FI. Double-click the active network connection.

→ Select "Properties" and double click "Internet Protocol Version 4 (TCP/IPv4)".

→ Select Use the following IP address option and enter the IP address with 192.168.1.xxx (0-255 except 250) and Subnet mask 255.255.255.0. Press "OK" twice to save the configuration.



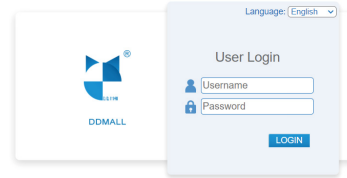
Note: Your computer's IP must be 192.168.1.xxx for connecting with HDD-20. "xxx" can be any number ranging from 0 to 255 except 250. Please make sure HDD-20 decoder should be in the same Network environment as your LAN IP.

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## 6.3 Login for Configuration

Enter "192.168.1.250" in your browser to open the HDD-20's Web administrator page. Login with the default user name and password as "admin". The default language for web control is English, and other languages can be supported at the same time, please choose according to your needs.

192.168.1.250

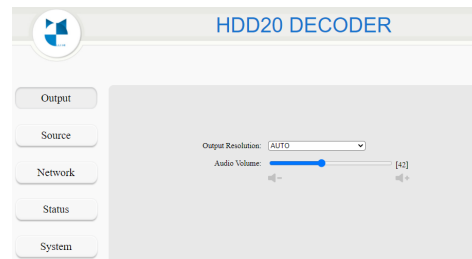


\* user name: admin \* password: admin

## 7. Decoding Configuration

### 7.1 Output Configuration

Step: Click "Output" → configure your settings



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**Output Resolution:** To set up output resolution of video decoder. The default is Auto, Auto will adjust the output resolution of the decoder according to the best resolution of the display device connected.

**Audio Volume:** To adjust the output volume of decoder. Includes HDMI audio and analog audio.

### 7.2 Source Configuration

HDD-20 supports stream protocols SRT, RTSP, ONVIF and UDP. You can customize and add your video signal.



#### 7.2.1 RTSP Source Addition

Click the "Custom Add" button, the browser will pop up the resource adding window.

**Stream Protocol:** Here we choose RTSP

**Channel:** The channel of the video signal, the default starts from 1. You can also modify it yourself, the range is 1-30.

**Name:** Set the name for the video resource you will add, here we named it Encoder-RTSP.

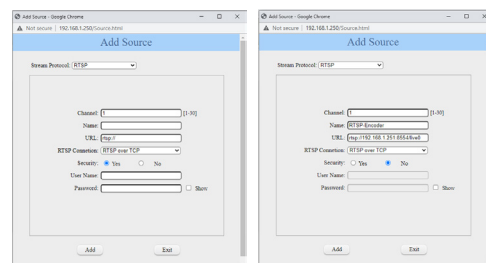
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**URL:** The URL of the encoder. We use the DDMALL encoder HEV-4K. The URL it provides is rtsp://192.168.1.251:8554/live0, so we fill it in here. If you are using an encoder or encoder software of another brand, please fill in the correct URL provided by them.

**RTSP Connection:** Choose the RTSP connection method. You can choose TCP or UDP according to your needs. Here we choose the default TCP method.

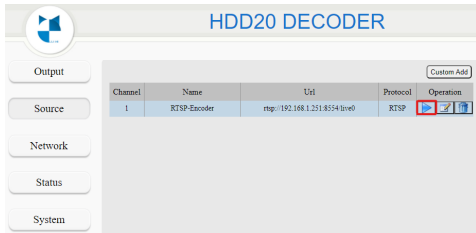
**Security:** If your video resources are encrypted, please tick YES and fill in the account password so that the decoder can decode your video resources. Our encoder is not encrypted, here we choose NO.

After the setting is complete, click the Add button. After a dialog pops up saying that you have successfully added your source, press Exit button.



Back to the Source interface, you can see that a video resource has been added. Click the play button in Operation, then your decoder will output the video to the monitor. Please make sure that your encoder is connected to the monitor or TV. You can also edit and delete this video resource through the other two buttons.

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### 7.2.2 ONVIF Source Addition

Click the Custom Add button, the browser will pop up the resource adding window.

**Stream Protocol:** Here we choose ONVIF

**Channel:** The channel of the video signal will start from 2. You can also modify it yourself, but please do not conflict with the channel of the added resources.

**Name:** Set the name for the video resource you will add, here we named it Camera-ONVIF

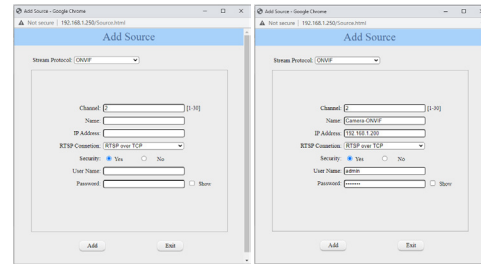
**IP Address:** Fill in the IP address of the ONVIF video resource provider, here we are using an IP camera, and its IP is 192.168.1.200.

**RTSP Connection:** Choose the RTSP connection method. You can choose TCP or UDP according to your needs. Here we choose the default TCP method.

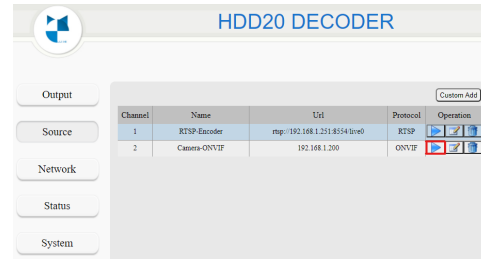
**Security:** If your video resources are encrypted, please check YES and fill in the account password so that the decoder can decode your video resources.

After the setting is complete, click the Add button. After a dialog pops up saying that you have successfully added your source, press Exit button.

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Back to the Source interface, you can see that a video resource has been added. Click the play button in Operation, then your decoder will output the video to the monitor. Please make sure that your encoder is connected to the monitor or TV. You can also edit and delete this video resource through the other two buttons.



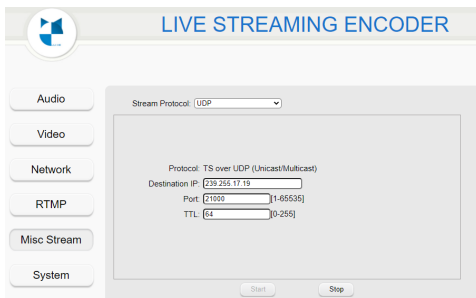
### 7.2.3 UDP Source Addition

In this part, I use DDMALL HEV-4K encoder as the video source for demonstration. If you are using other encoders or encoding software, you can refer to this method.

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### UDP Multicast Mode

On the UDP setting interface of the HEV-4K encoder, the Destination IP is set to 239.255.17.19, which is the multicast address (the range of the multicast address is 224.0.0.0~239.255.255.255), the port is 21000 (range 21000~22000), and the TTL is 64.



Back to the HDD-20 Source page, click the Custom Add button, then the browser will pop up the resource adding window.

**Stream Protocol:** UDP

**Channel:** The channel of the video signal. Please do not conflict with the channel of the added resources.

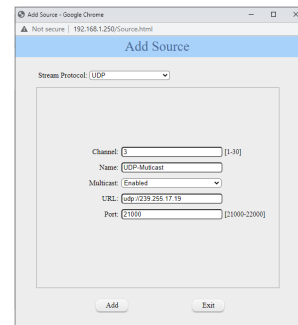
**Name:** Set a name for the video resource you will add, here we named it UDP-Multicast

**Multicast:** Since the encoder we use is set to multicast, the multicast is enabled in the decoder as well.

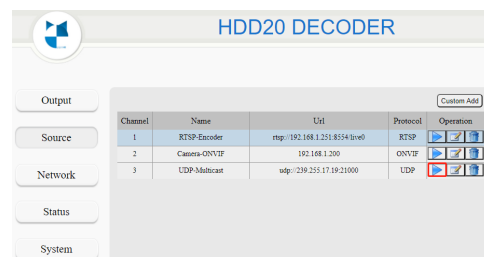
**Port:** Fill in the port consistent with the UDP setting of the encoder, here we fill in 21000.

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After the setting is complete, click the Add button. After a dialog pops up saying that you have successfully added your source, press Exit button.



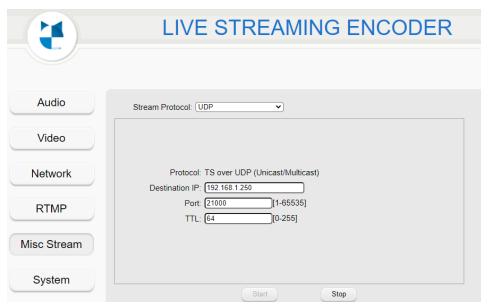
Back to the Source interface, you can see that a video resource has been added. Click the play button in Operation, then your decoder will output the video to the monitor. Please make sure that your encoder is connected to the monitor or TV. You can also edit and delete this video resource through the other two buttons.



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## UDP Multicast Mode

In the UDP setting interface of HEV-4K encoder, the Destination IP is set to the IP address of the decoder. Our decoder IP address is 192.168.1.250, the port is set to 21000 (range 21000~22000) and the TTL is set to 64.



Back to the HDD-20 Source page, click the Custom Add button, then the browser will pop up the resource adding window.

Stream Protocol: UDP

**Channel:** The channel of the video signal. Please do not conflict with the channel of the added resources.

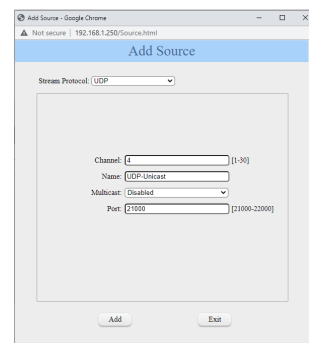
**Name:** Set the name for the video resource you will add, here we named it UDP-Unicast

**Multicast:** The encoder we use is set to unicast, so multicast is disabled here in the decoder.

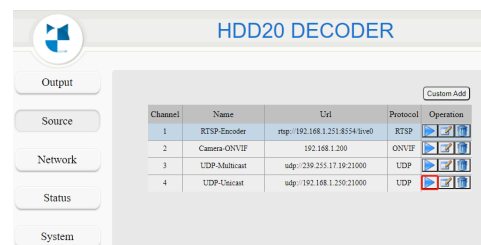
**Port:** Fill in the port consistent with the UDP setting of the encoder, here we fill in 21000.

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After the setting is complete, click the Add button. After a dialog pops up saying that you have successfully added your source, press Exit button.



Back to the Source interface, you can see that a video resource has been added. Click the play button in Operation, then your decoder will output the video to the monitor. Please make sure that your encoder is connected to the monitor or TV. You can also edit and delete this video resource through the other two buttons.



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## 7.2.4 SRT Source Addiction

SRT has three modes, namely Caller, Listener, Rendezvous.

- When the encoder is set to Caller mode, the decoder needs to be set to Listener mode. At this time, it is the encoder to call the decoder to establish a connection;

- When the encoder is set to Listener mode, the decoder needs to be set to Caller mode. At this time, it is the decoder to call the encoder to establish a connection;

- When the encoder is set to Rendezvous mode, the decoder needs to be set to Rendezvous mode. At this time, the encoder and the decoder will call each other to establish a connection;

### Decoder set to SRT Caller Mode

On the HDD-20 Source page, click the Custom Add button, then the browser will pop up the resource adding window.

Stream Protocol: Choose SRT

**Channel:** The channel of the video signal. Please do not conflict with the channel of the added resources.

**Name:** Set the name for the video resource you will add, here we named it SRT-Caller

**Mode:** Select mode. Here select Caller.

**Destination Address:** Because the decoder needs to call the encoder, here we fill in the address of the encoder. Our encoder IP address is 192.168.1.251, so we fill in srt://192.168.1.251. Note that the format is srt://xxx.xxx.xxx.xxx, xxx.xxx.xxx.xxx is the IP you need to call.

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**Destination Port:** Now it is the decoder to call the encoder, so we need to fill in the encoder's source port. Please fill in according to your actual encoder. The encoder port used in the example is 4201, so fill in 4201 here.

**Source Port:** The port of the decoder, here is the default value of 4202.

**Latency:** Set the delay buffer time of the video, it is recommended to use the default value of 120

**Encryption:** You can choose to encrypt or not, here we choose the AES-128 encryption method

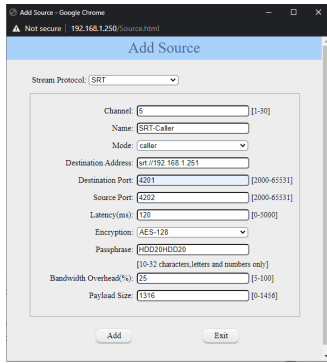
**Passphrase:** If you choose encryption, please set the passphrase and write it down. Here we set the passphrase to "HDD20HDD20". If you do not choose encryption, you do not need to fill in the passphrase.

**Bandwidth Overhead:** It is recommended to set the default value of 25%. The larger the setting, the more stable the transmission effect of SRT, but the larger the bandwidth occupied.

**Payload Size:** This value mainly affects the efficiency of SRT transmission. Generally, it is recommended to set it to the default value of 1316, and you can adjust it if necessary. The larger the value, the higher the transmission efficiency of SRT, the smaller the value, the lower the transmission efficiency.

After the setting is complete, click the Add button. After a dialog pops up saying that you have successfully added your source, press Exit button.

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In the SRT interface of the encoder, select Listener for the mode, and fill in 4201 for the Source Port (the same as the decoder's Destination Port).

Latency: Set to 120 as the decoder

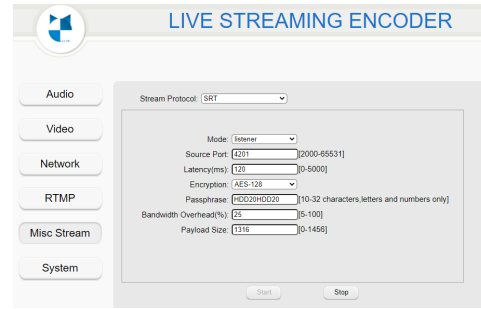
Encryption: Choose the same AES-128 encryption method as the decoder

Passphrase: Fill in the Passphrase "HDD20HDD20" same as the decoder.

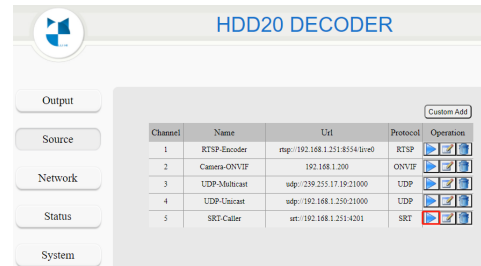
Bandwidth Overhead: Set to the default value of 25% like the decoder

Payload Size: Set to the default value of 1316 like the decoder.

Click Start after setting the encoder



Back to the decoder, click the play button in the newly added SRT-Caller resource to decode the video resource.



### Decoder set to SRT Listener Mode

On the HDD-20 Source page, click the Custom Add button, then the browser will pop up the resource adding window.

Stream Protocol: Choose SRT

Channel: The channel of the video signal. Please do not conflict with the channel of the added resources.

Name: Set the name for the video resource you will add, here we named it SRT-Listener

Mode: Select mode. Select Listener here.

Source Port: The port of the decoder, the default value of 4202 is recommended here.

Latency: Set the delay buffer time of the video, it is recommended to use the default value of 120.

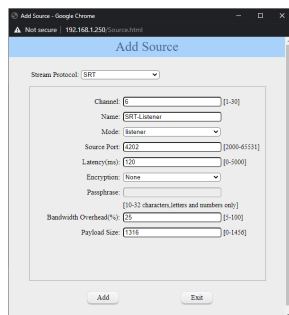
Encryption: You can choose to encrypt or not to encrypt.

Passphrase: If you choose encryption, please set the passphrase and write it down. If you don't choose encryption, you don't need to fill in the passphrase.

Bandwidth Overhead: We recommend to use the default value of 25%

Payload Size: We recommend to use the default value of 1316

After the setting is complete, click the Add button. After a dialog pops up saying that you have successfully added your source, press Exit button.



On the SRT interface of the encoder, select Caller for the mode.

Destination Port: Now it is the encoder to call the decoder, so we need to fill in the decoder's source port, please fill in according to your actual decoder. The decoder's source port is 4202, so fill in 4202 here.

Source Port: The port of the encoder, here is the default value of 4201.

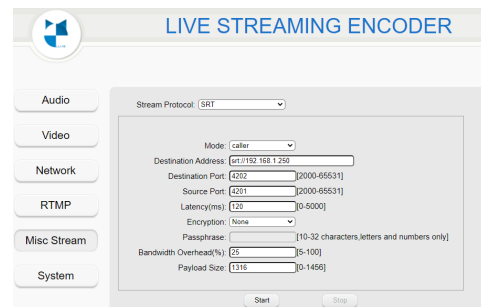
Latency: Set to the default value of 120 like the decoder

Destination Address: The decoder is set to listener, the encoder needs to call the decoder, so we fill in the address of the decoder. Our decoder IP address is 192.168.1.250, so we fill in srt://192.168.1.250. Note that the format is srt:// xxx.xxx.xxx.xxx, xxx.xxx.xxx.xxx is the IP you need to call.

Encryption: No encryption like the decoder.

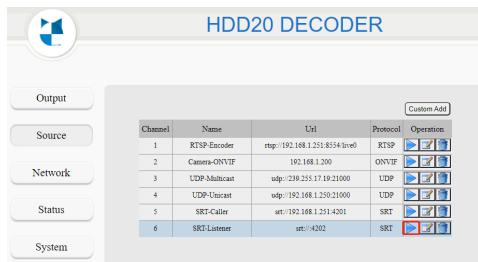
Bandwidth Overhead: Use the default value of 25%.

Payload Size: Use the default value of 1316.





Back to the decoder, click the play button in the newly added SRT-Listener resource to decode the video resource.



### Decoder set to SRT Rendezvous Mode

On the HDD-20 Source page, click the Custom Add button, then the browser will pop up the resource adding window.

Stream Protocol: Choose SRT.

Channel: The channel of the video signal. Please do not conflict with the channel of the added resources.

Name: Set the name for the video resource you will add, here we named it SRT-Rendezvous.

Mode: Select mode. Here select Rendezvous.

Destination Address: Fill in the IP address of your encoder, the encoder IP used in the example is 192.168.1.251, so here is srt://192.168.1.251.

Destination Port: In rendezvous mode, the destination port of the decoder and the destination port of the encoder need to be set to the same, here it is recommended to set it to 4201.

Source Port: In rendezvous mode, the source port is automatically the same as the destination port.

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Latency: Set the delay buffer time of the video, it is recommended to use the default value of 120.

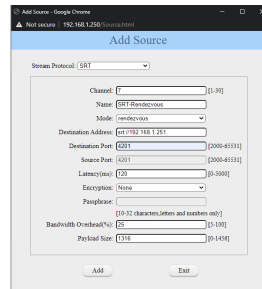
Encryption: You can choose to encrypt or not to encrypt.

Passphrase: If you choose encryption, please set the passphrase and write it down. If you do not choose encryption, you don't need to fill it in.

Bandwidth Overhead: Use the default value of 25%.

Payload Size: Use the default value of 1316.

After the setting is complete, click the Add button. After a dialog pops up saying that you have successfully added your source, press Exit button.



In the SRT interface of the encoder, select Rendezvous as the mode.

Destination Port: In rendezvous mode, the destination port of the decoder and the destination port of the encoder need to be set to the same, here it is recommended to set it to 4201.

Source Port: In rendezvous mode, the source port is automatically the same as the destination port.

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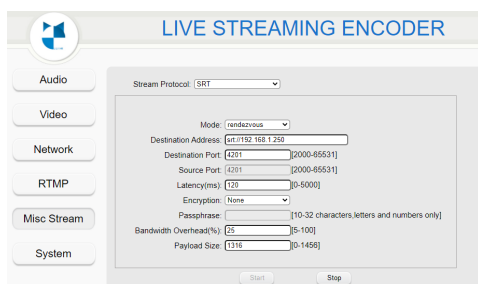
Latency: Set to the default value of 120 like the decoder.

Destination Address: Fill in the address of the decoder. Our decoder IP address is 192.168.1.250, so we fill in srt://192.168.1.250.

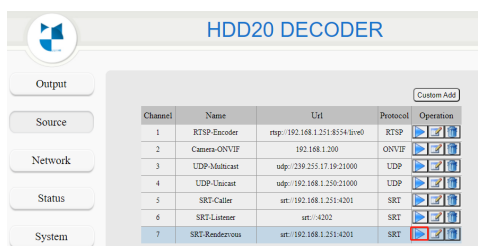
Encryption: No encryption like the decoder.

Bandwidth Overhead: Use the default value of 25%.

Payload Size: Use the default value of 1316.



Back to the decoder, click the play button in the newly added SRT-Rendezvous resource to decode the video resource.



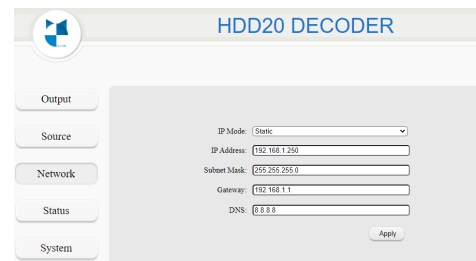
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## 7.3 Network Configuration

If you changed the IP address of HDD-20, please also change the IP address of your control PC to the same network segment as the decoder. Then re-login to the Web UI with this new IP address of HDD-20.

### IP Address Mode:

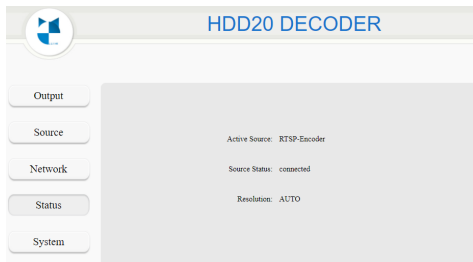
- Dynamic (DHCP) – The connected router generates an IP address for the encoder. If you set it to DHCP, please log in to the router to get the IP address that it assigns to the HDD-20.
- Static – Manually enter the IP address value for HDD-20.
- DNS: Domain Name System. You can use the default 8.8.8.8 or set to the same DNS as the connected router.



## 7.4 Status

Here, you can see the current status of the decoder, including which resource is being decoded, the status of the resource, and the output resolution of the decoder to the display.

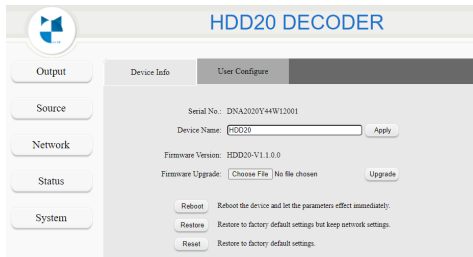
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## 7.5 System

### 7.5.1 Device Information

This interface allows you to set your device name, upgrade the latest firmware, factory reset.



**Device Name:** You can change the device name of your decoder.

**Firmware Upgrade:** For the latest firmware, please visit the DDMALL forum at [forum.ddmalltech.com](http://forum.ddmalltech.com).

**Reboot:** Restart the device and let the parameters take effect immediately.

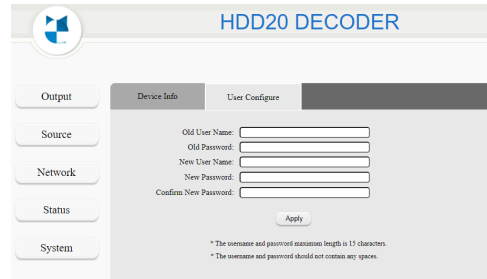
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**Restore:** Restore to factory default settings, but retain the customer's network settings.

**Reset:** To restore all parameters to factory default settings. You can also press the Reset button to restore the decoder.

### 7.5.2 User Configure

This interface allows you to modify the username and password of the login page.



**Note:** It is important to remember your password after you changed it. If you changed a new one but you forget it, you can hold the Reset button about 3-5s to restore value to factory settings so you can log in to WEB UI by the default one "admin".

## 8. Important Notes

**A.** Whatever you choose Static IP or DHCP mode, please make sure that the HDD-20, router, and your devices are in the same network segment.

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**B.** After setting a new static IP address, it will take effect immediately without restarting. From static IP to "DHCP" IP mode, you will need to restart the HDD-20 and enter the router to view the IP address assigned by the router to the HDD-20. The DHCP server will allocate an IP address to the decoder automatically.

**C.** If you have set a new password but you forget it, you can press the Reset button about 3-5s to restore to factory settings.

## 9. FAQ

### 1. How to reset the HDD-20 to the factory default settings?

If you forget IP address, username and password, you can press the Reset button for about 3-5s. The default IP address of the HDD-20 is 192.168.1.250. And the default user name and password is "admin".

### 2. Cannot login to the web user interface of HDD-20 decoder?

- 1) Confirm that the decoder is powered on, connected to the router or switch LAN port through a network cable, and the network port indicators show properly (Green light keeps on, orange light is flashing).
- 2) Confirm that the control computer is connected to the LAN port of the same router or switch, and the external IP of the control computer has been set to the same network segment as the decoder.
- 3) Confirm whether the IP address of the decoder is correct (the factory default IP is 192.168.1.250), if you have modified the IP address of the decoder, please log in with the modified IP address; if the decoder IP is set to DHCP, please log in the router management interface to check the IP address assigned to the decoder.

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4) If you forget the IP address of the decoder, you can restore the decoder to the factory settings and use the default IP 192.168.1.250 to log in to the web page.

### 3. The HDMI display have no image output?

- 1) Confirm that the decoder is powered on, connected to the HDMI port of the TV, and the TV is turned on.
- 2) Check the output resolution set by the decoder to make sure the display supports this resolution. You can set the decoder output resolution to AUTO or modify other output resolutions to try.
- 3) Make sure that the network connection of the decoder is correct. The indicator of the network port shows correctly (green light keeps on, orange light is flashing), and the decoder and the encoder are on the same router or switch with their IP on the same network segment.
- 4) Check whether the network video stream output of the encoder is normal.
- 5) Check the Source settings of the decoder to make sure the parameters are set up properly.

### 4. Where I can download the latest firmware and the updated user manual?

For the latest firmware and user manual of the HDD-20, please visit the DDMALL forum via [forum.ddmalltech.com](http://forum.ddmalltech.com). It is also recommended for you to register your product to get faster tech support, receive helpful information, and opt in for special promotions.

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