

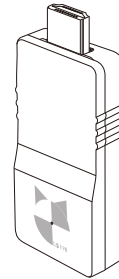


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DDMALL H.265 H.264 Mini HDMI Video Decoder

Model: HDD-20W



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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-20W 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 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 decoding multiple types of video streams wirelessly.
- 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 2.5W.
- 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	2.5W
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	0.7oz
Dimensions	3.0×1.2×0.5 inches

Video

Video Output	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	AAC/G711u

System

Supported Stream Protocols	SRT,RTSP,ONVIF,UDP
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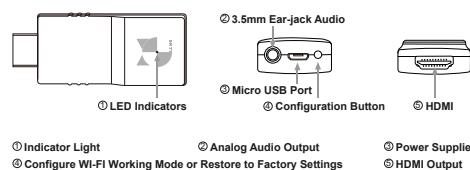
Network Protocols	Static IP/ DHCP
Wireless Standard	802.11a/n/ac 5G, 802.11b/g/n 2.4G
Control Method	Login-protected Web UI Control
Factory Default	Web UI: Username: admin Password: admin
	IP Address in AP mode: 192.168.2.250

Note: Specifications are subject to change without notice.

3. Package Contents

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

4. Hardware Description



4.1 Indicator Lights

- The red light is on to indicate that the HDD-20W is powered on normally.
- The yellow light blinks to indicate HDD-20W works in AP Wi-Fi Mode.

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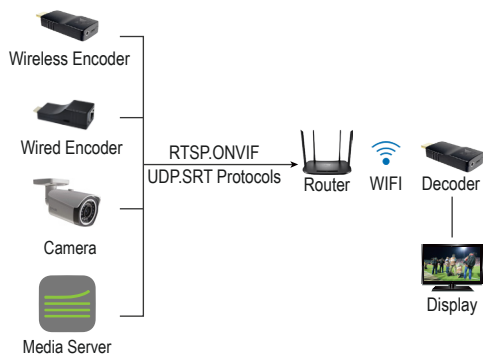
- The green light keeps on to indicate that Client mode is connected to WIFI network and blinks rapidly to indicate decoding video.
- The red and green lights flash alternately several times to indicate the factory settings are being restored.

4.2 Configuration Button

WiFi Working Mode Switch: Hold down the Set button for about 3s to switch the WiFi working mode between AP and Client. The yellow light blinks to indicate that the device is in AP mode; while the green light keeps on means Client mode.

Factory Reset: Press the Set button about 12s till the red light and green light flash alternately, then HDD-20W will restore the factory settings. All parameters will become the factory default parameters. The default IP address of the HDD-20W in AP mode is 192.168.2.250.

5. Typical Application



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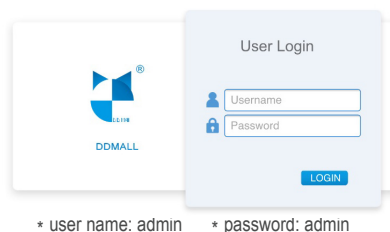
6. Connection Configuration

HDD-20W has two working modes which are AP Mode (Access Point) and Client Mode. For the first use, you need to use a mobile device to connect and access HDD-20W in AP mode. You can add wireless router information to HDD-20W, and then switch into Client Mode, HDD-20W can connect to the wireless router and decoding video stream. Please find the specific instructions below.

Step1: Open your wireless networking utility on your laptop or mobile devices to search SSID called "HDD-20W" and access to it by the password "12345678". This step is only required in AP WiFi mode.

Step2: Then open a web browser and enter the IP address for HDD-20W wireless network connection. In AP mode, the default IP address is "192.168.2.250".

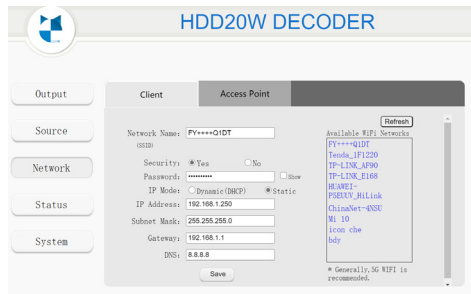
Step3: Login to the interface with the default user name and password as "admin".



Step4: Navigate to Network configuration interface, and choose the WiFi Mode as Client. Then enter or select an existing router's SSID for HDD-20W to connect to. Select the router you want to connect to in the "Available WiFi Networks" list, if it does not

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appear in the list, please press the "Refresh" button. If the SSID of your router is not visible, please fill it in manually. And if the router WiFi you are connected to is encrypted, please check Security and then enter the WiFi password.



Step5: Set IP Mode. You can enable either DHCP or Static. Note that this is the IP address in Client mode, when the decoder works in Client mode, please enter this address to login to the Web UI. It is recommended to enable DHCP, the router will automatically assign an IP Address for your HDD-20W; Or you can select Static IP, please note that the static address and the router connected to the decoder should be in the same network segment (This manual uses the 192.168.1.XXX network segment as an example.) Click "Save" and reboot the decoder or press the Set button for 3s to switch to Client mode. Then wait for the decoder to connect to the router, green light keeps on when HDD-20W is successfully connected to the network.

Note: There are two ways to reboot the decoder. One is to click the Reboot button on the System settings of the decoder, the other is to unplug the USB power cable and plug it again.

Step6: Open your wireless networking utility on your laptop or mobile devices to search SSID of the router that connects to the decoder and access to it. Then open a web browser and enter the Client IP address (the static address that you have set or the dynamic IP address that the router assigns to the HDD-20W). Login to the interface with the default user name and password as "admin".

Note: If the IP address of the Client mode is set to dynamic DHCP, you need to check what IP address the router assigned to the decoder. Two ways are as below.

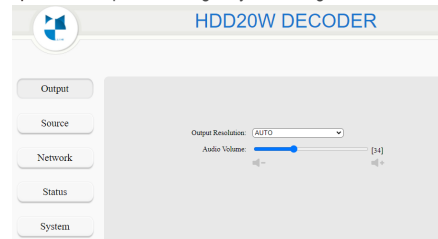
A. Hold down the Set button about 3s to let the decoder switch back to AP mode, use a mobile device to search SSID called "HDD-20W" and access to it, then access the decoder's webpage, navigate to the Network configuration interface and choose the WiFi Mode as Client, then check what IP the encoder is assigned to in the Network interface.

B. Use the device to access the management interface of the router, find the decoder in the client list of the management interface, and see what IP address the decoder is assigned to.

7. Decoding Configuration

7.1 Output Configuration

Step: Click "Output" → configure your settings



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-20W 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.

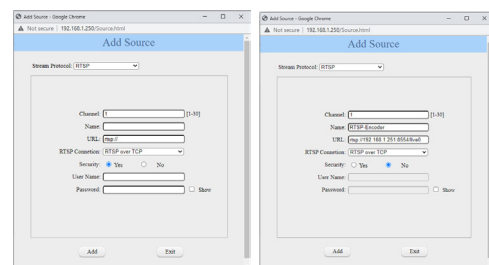
Name: Set the name for the video resource you will add, here we named it Encoder-RTSP.

URL: The URL of the encoder. We use the DDMALL encoder HEV-4K as an example. 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.

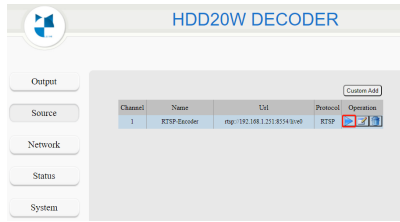
RTSP Connection: Choose the RTSP connection method. You can choose TCP or UDP according to your needs. Here we choose the default TCP method.

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.



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

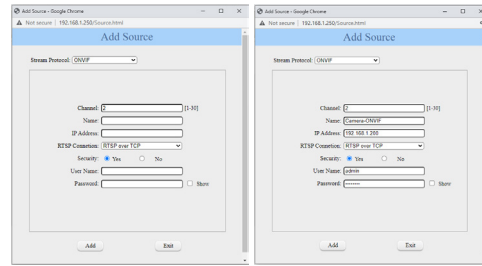
IP Address: Fill in the IP address of the ONVIF video resource provider, here we are using an IP camera, and its IP is 192.168.1.200.

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

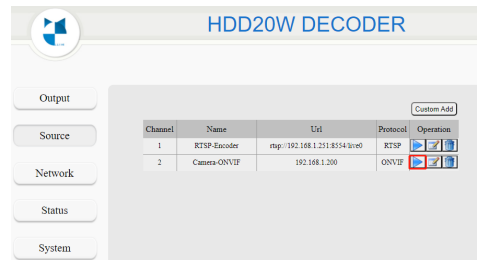
Security: If your video resources are encrypted, please check YES and fill in the account password so that the decoder can decode your video resources.

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.



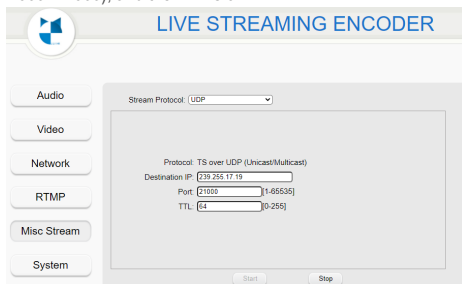
7.2.3 UDP Source Addition

In this part, we 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-20W 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

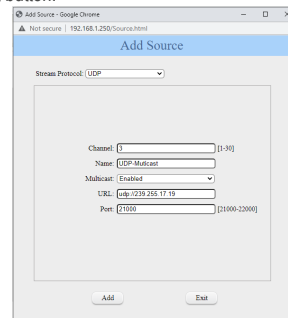
Multicast: Since the encoder we use is set to multicast, the multicast is enabled in the decoder as well.

URL: The Destination IP of our encoder is 239.255.17.19, so we fill in udp://239.255.17.19 here. Note that the format is udp://xxx.xxx.xxx.xxx, xxx.xxx.xxx.xxx is the Destination IP of the encoder.

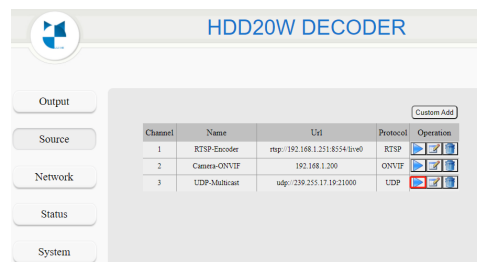
Port: Fill in the port consistent with the UDP setting of the encoder, here we fill in 21000.

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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.



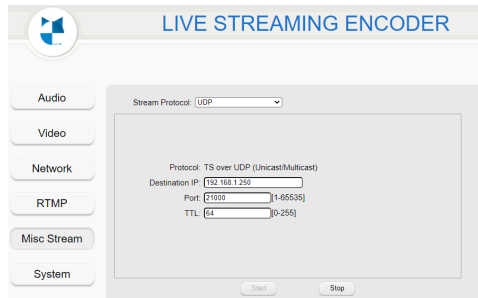
Back to the Source interface, you can see that a video resource has been added. Click the play button in Operation, then your decoder will output the video to the monitor. Please make sure that your encoder is connected to the monitor or TV. You can also edit and delete this video resource through the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



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UDP Unicast 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-20W 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.

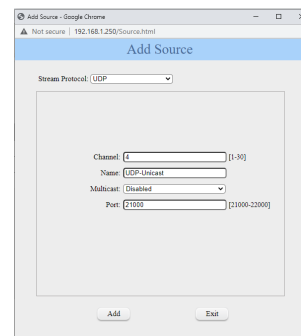
Name: Set the name for the video resource you will add, here we named it UDP-Unicast

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

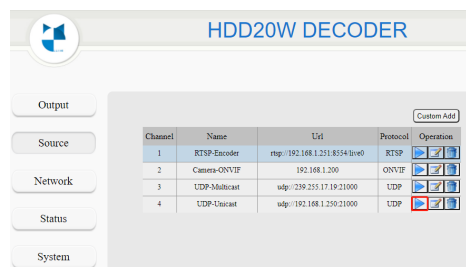
Port: Fill in the port consistent with the UDP setting of the encoder, here we fill in 21000.

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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-20W 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

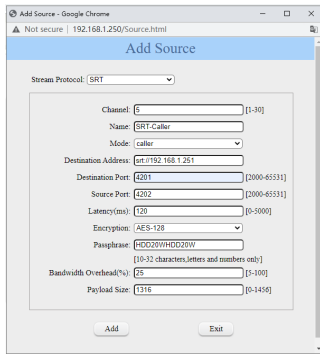
Passphrase: If you choose encryption, please set the passphrase and write it down. Here we set the passphrase to "HDD20WHDD20W". If you do not choose encryption, you do not need to fill in the passphrase.

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.

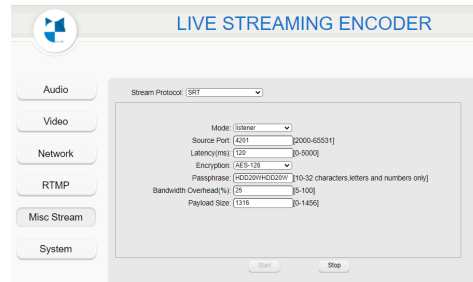
Passphrase: Fill in the Passphrase "HDD20WHDD20W" same as the decoder.

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

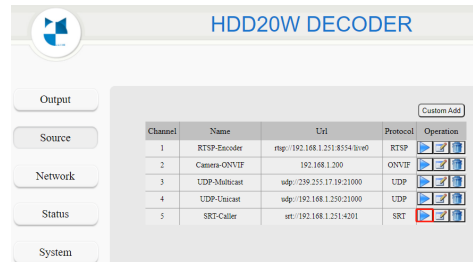
Payload Size: Set to the default value of 1316 like the decoder.

Click Start after setting the encoder.

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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-20W 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.

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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.

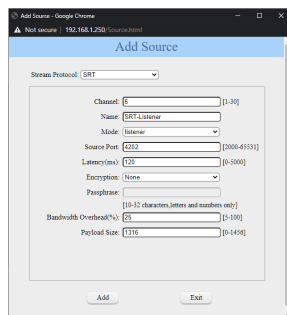
Encryption: You can choose to encrypt or not to encrypt.

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.



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

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.

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.

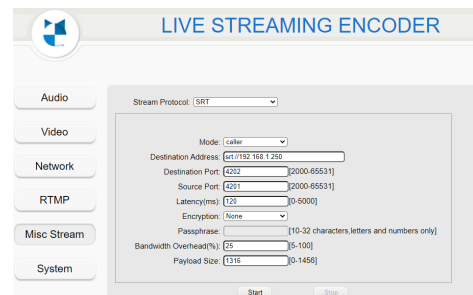
Source Port: The port of the encoder, here is the default value of 4201.

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

Encryption: No encryption like the decoder.

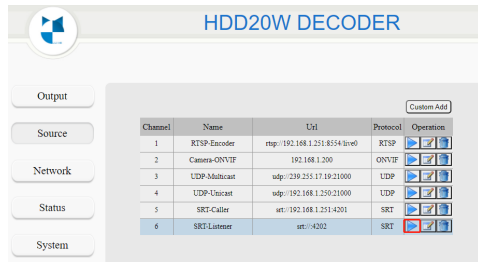
Bandwidth Overhead: Use the default value of 25%.

Payload Size: Use the default value of 1316.



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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-20W 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.

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

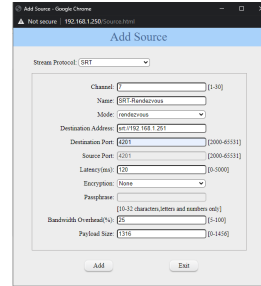
Encryption: You can choose to encrypt or not to encrypt.

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 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.

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.

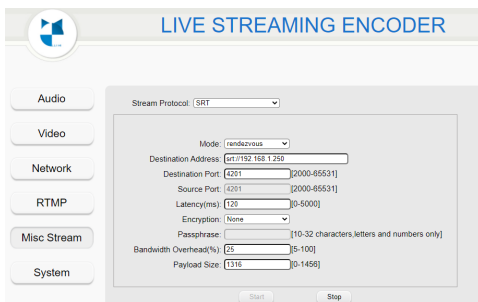
Source Port: In rendezvous mode, the source port is automatically the same as the destination port.

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

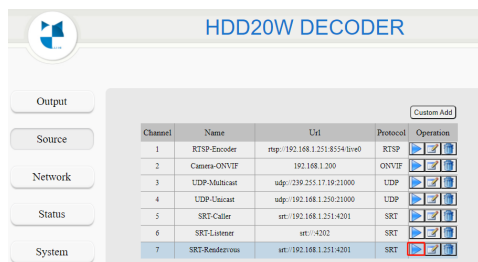
Encryption: No encryption like the decoder.

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.



7.3 Network Configuration

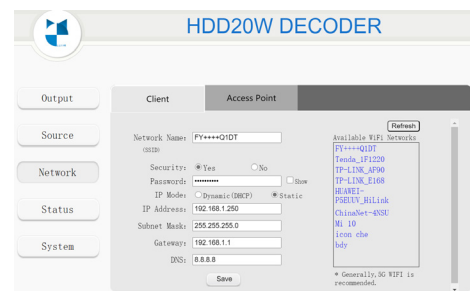
The Client

Network Name (SSID): This field allows you to enter or select an existing router's SSID for HDD-20W to connect to. Select the router you want to connect to in the "Available WIFI Networks" list, if it does not appear in the list, please press the "Refresh" button. If the SSID of your router is not visible, please fill it in manually. And if the router wifi you are connected to is encrypted, please check Security and then enter the wifi password.

IP Mode

- Dynamic (DHCP) – The connected router generates an IP address for HDD20W Client mode. If you set it to DHCP, please login to the router to get the IP address that it assigns to the HDD-20W or switch back to AP mode to see the Client IP assigned in the Network settings of the decoder.

- Static – Manually enter the IP address value for HDD20W Client mode.



The Access Point

Network Name (SSID): The SSID name of the decoder in AP mode can be customized and modified. The default network name is HDD-20W.

Password: The default password is 12345678 in AP mode. You can also change this password.

Wireless Band: Select either 2.4G or 5G.

Channel: Select the WiFi signal channel.

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.

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

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.

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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 Set button about 12s until the red and green lights flash alternately several times to indicate the factory settings are being restored. After restoring the factory default, the default working mode is AP mode. Then please log in the web user interface in AP mode to reset the Network parameters of the Client mode. You may refer to 6.Connection Configuration for the instructions.

8. Important Notes

A. The AP mode of the decoder is mainly used for setup. After setting up in AP mode, please switch the decoder to Client mode and it will connect to the router and work.

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

C. 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-20W and enter the router to view the IP address assigned by the router to the HDD-20W. Or you can switch back to AP mode to see the assigned Client IP in the Network settings of the decoder.

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9. FAQ

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

If you forget IP address, username and password, you can press the Set button for about 12s until the red and green lights flash alternately several times to indicate the factory settings are being restored. After restoring the factory default, the default working mode is AP mode. The default IP address in AP mode of the HDD-20W is 192.168.2.250. And the default user name and password is "admin".

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

2.1 Cannot login to the web user interface in AP mode?

- 1) Confirm that the decoder is powered on.
- 2) Make sure the decoder is in AP mode where the yellow light flashes. If the light is red or green, please press the Set button for 3s to switch the decoder to AP mode.
- 3) Make sure your control devices has accessed to the wifi whose SSID called "HDD-20W" when you enter the IP address "192.168.2.250" to log in to the web user interface.

2.2 Cannot login to the web user interface in Client mode?

- 1) Confirm that the decoder is powered on.
- 2) Make sure that your decoder is in Client mode and has connected to the router (green light keeps on).
- 3) Make sure your control device has connected to the same router with the decoder.
- 4) Whatever you choose "Static IP" or "DHCP" mode, please make sure that HDD-20W, router and your control devices are in the same network segment.

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5) Use the correct Client IP address to log in the web user interface. If you choose DHCP but don't know how to find the assigned Client IP, please refer to 6.Connection Configuration-Step 6 to see the ways of checking your assigned Client IP address.

3. The HDMI display have no image output?

- 1) Make sure the decoder is powered on and is in Client mode where the indicator is green.
- 2) Make sure the encoder and the decoder are connected to the same router with their IP on the same network segment.
- 3) 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.
- 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 properly.

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

For the latest firmware and user manual of the HDD-20W, please visit the DDMALL forum via 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.

REGISTER YOUR DDMALL® PRODUCT

If you have purchased the DDMALL product, you can become a DDMALL member and access exclusive membership benefits by registering your product. Register your DDMALL product is simple, fast and secure.

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