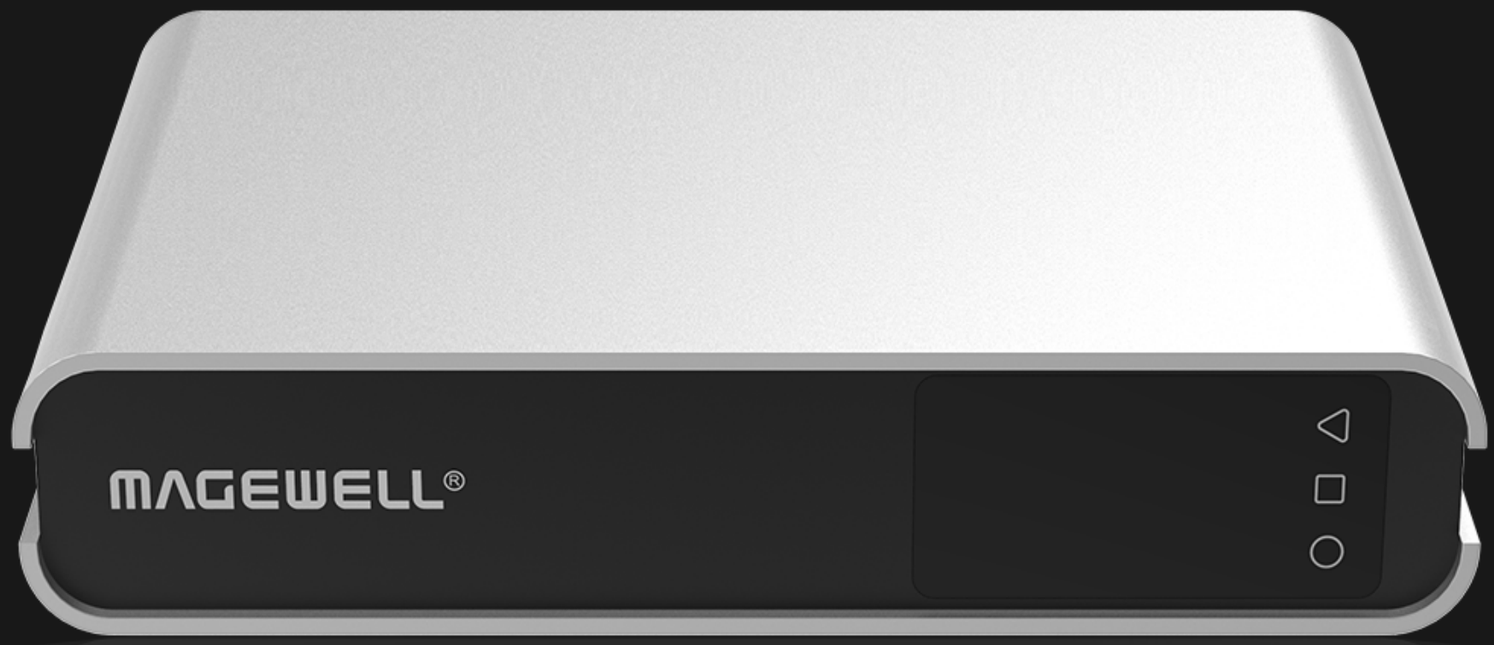
MAGEWELL®



Xmit LAN AIO

User Manual, Reference and FAQs

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Getting Started

Overview

Xmit LAN AIO is a standalone converter that converts one channel SDI or HDMI, up to 4Kp60, to and from IP streams, including the popular NDI HX or Magewell's Multiview stream. Featured by its extremely low point-to-point latency down to 17ms via Magewell's codec and around 50ms in a multivew mode. The device is configurable to be either an encoder or decoder. Value-added features for live production applications include a 1/4"-20 thread for standard camera-mounting accessories. The units can be powered by the included AC adapter or via Power over Ethernet (PoE) for further deployment simplicity.

Key Features

- Supports up to 4Kp60 at 4:4:4 color space encoding or decoding over 1Gbps Ethernet or SFP port.
- NDI® HX and Magewell's High Quality, Multiview stream can be encoded or decoded simultaneously.
- Input or output audio via 3.5mm Line in or Line out.
- HTTP based APIs for extra features and integration, such as dynamic overlay and multiview.
- Support for plug-and-play.
- Support for web-based UI remote control.

System Requirements

Network

- Gigabit Ethernet

Supported Web Browser for the Web UI

- Google Chrome version 49 and above
- Microsoft Internet Explorer 11
- Microsoft Edge
- Mozilla Firefox version 61 and above
- Apple Safari 11.1 and above
- Opera 55.0.2994.44 and above

Xmit

Magewell has launched the following Xmit product, and there are more products to be released. For the latest listed converters, please visit our official website to find the Xmit Family.

- Xmit LAN AIO

Installation

Safety Information

Electrical Safety

- Make sure that follow the SFP module instructionds before using.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that you are using the correct power adapter for the local voltage. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power adapter is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer for help.

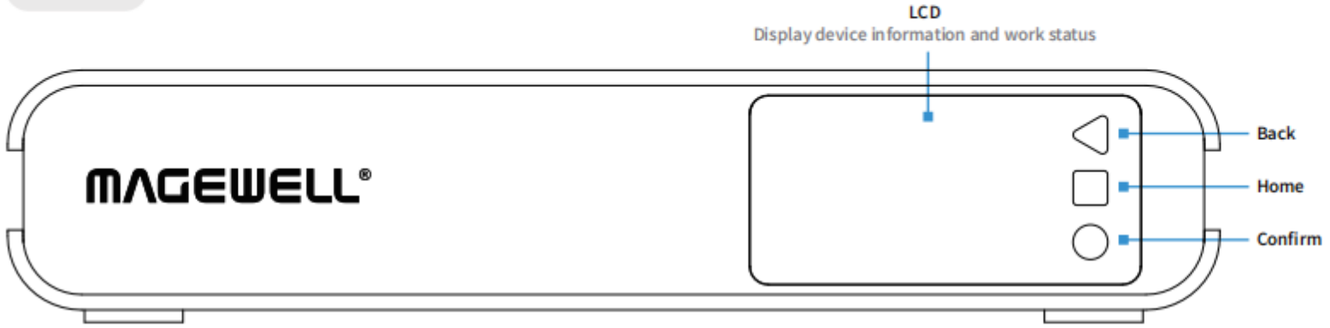
Operation Safety

- Make sure that follow the SFP module instructionds before using.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you notice any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact your dealer or the Magewell Support Team via support@magewell.net.

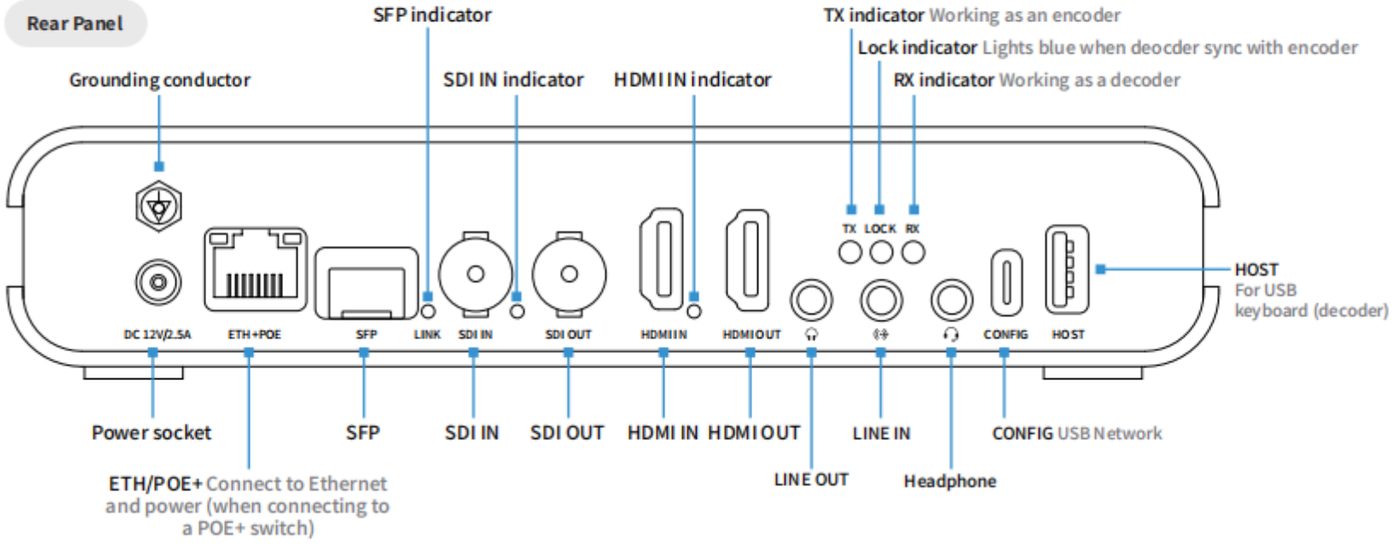
Interfaces & Indicators

Xmit LAN AIO

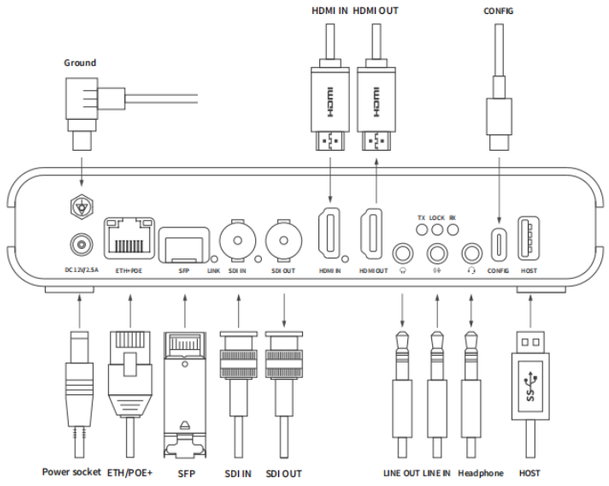
Front Panel



Rear Panel



Connections



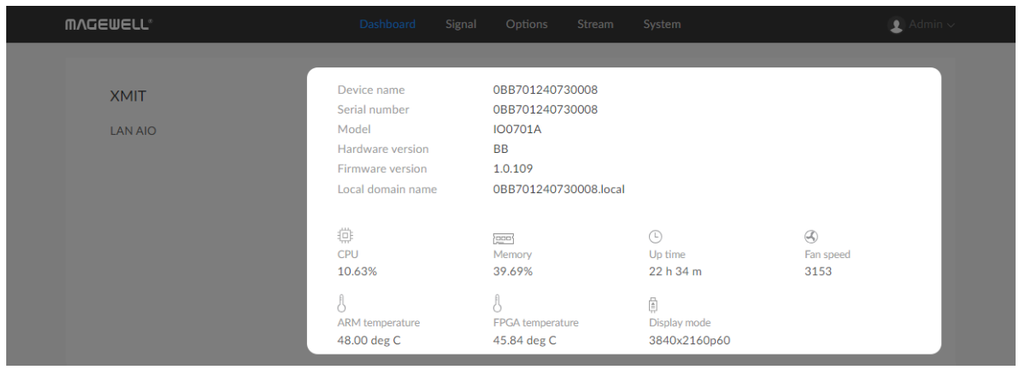
1. Connect power.
   - To power Xmit LAN AIO, connect the supplied power adapter to the unit and a power source, or connect the Ethernet cable to a POE+ switch
2. Connect audio/video.
   - Xmit LAN AIO provides SDI IN/OUT, HDMI IN/OUT, LINE IN, LINE OUT, Headphone ports. Connect your video and audio devices to these ports as needed. IP sources can also be used after connecting to a network.
3. Connect network.
   - Xmit LAN AIO must be connected to a network first for data sending and receiving. You can plug in an Ethernet cable and/or an SFP module.
4. Start exploring
   - When everything above is ready. You need to go to "Options > DEVICE MODE > Mode" to specify the unit as a decoder or an encoder, pair your decoder with an encoder, and set other parameters.

Encoder Configurations

Click and enter **Options** tab to set your Xmit as **Encoder**.

Dashboard

The Dashboard tab in the web UI can show the real-time status and parameters of the Xmit device. Click and enter the **Dashboard** tab to check the device status.



Checking Basic Information

- **Device name** shows the name of your Xmit unit.
  Only the Administrator can modify the device name in the System > General tab. For detailed information, refer to Setting Device Name.
- **Serial number** shows the serial number of your unit, which is also marked on your device.
- **Model** shows the model of your unit.
- **Hardware version** shows the hardware version of your unit.
- **Firmware version** shows the current firmware version that's installed in your unit. Only the Administrator can update the firmware, via the Firmware tab. For detailed information, refer to Updating the Firmware.
- **Local domain name** shows the current Local domain name of your unit. Only the Administrator can change it in the "System > General > Device name" part. For detailed information, refer to device name. Enter the "Local domain name" on the web browser within the same VLAN as the device, to access the Web UI login page.
- **CPU** shows the current CPU usage (the load on the processor, shown as a percentage) of the Xmit device.

- **Memory** shows current memory usage.
- **Up Time** shows the elapsed time since your device's last boot-up.
- **Fan Speed** shows the current speed of fan, which automatically changes according to temperature.
- **ARM Temperature** shows the current temperature of the ARM.
  Keeping the device free from dust and avoiding a high-temperature work environment may help to avoid overheating of the device. If the core temperature is approaching 90℃, please try to lower the temperature by ensuring a supply of cooler air.
- **FPGA Temperature** shows the current temperature of the FPGA.
  Keeping the device free from dust and avoiding a high-temperature work environment may help to avoid overheating of the device. If the core temperature is approaching 90℃, please try to lower the temperature by ensuring a supply of cooler air.

Checking the Current Working Status

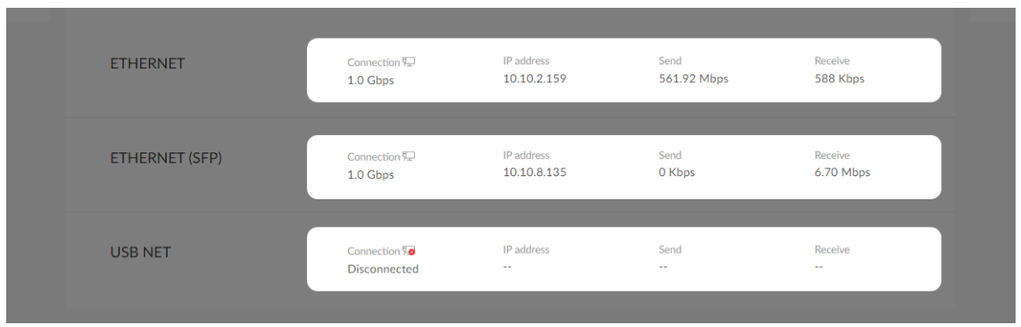
When working as an encoder, this section shows the information of encoded streams and current input.

Signal (HDMI/SDI)

- **Resolution** shows the input video pixel resolution & frame rate.
- **Aspect ratio** shows the input video aspect ratio.
- **Audio** shows the audio format of the input signal.

HQ/NDI/Multiview/Preview

- **Format** shows the video coding type.
- **Resolution** shows the encoded resolution.
- **Bitrate** shows the current bitrate.



Checking Ethernet Status

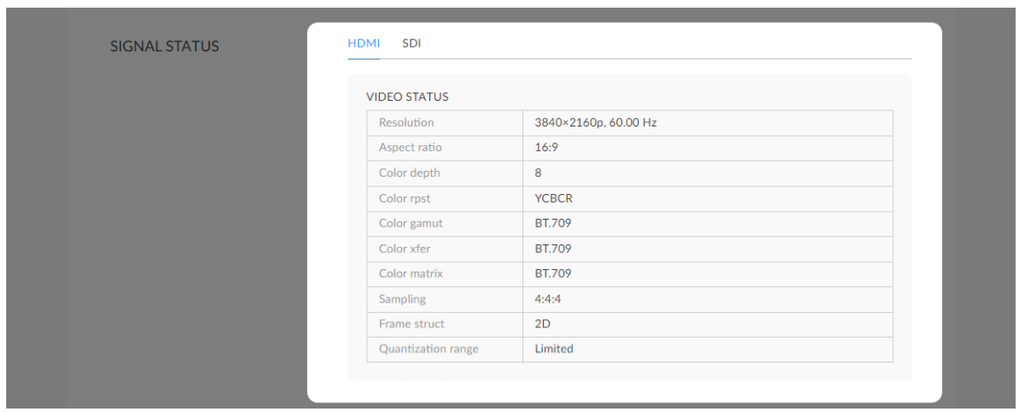
An RJ45 port, an SFP port, and an USB-C port (for USB NET) are provided for data sending and receiving.

- **Connection** shows current connection status.
- **IP Address** shows the IP Address of current connection. You can manually change it in the **System** > **Network** tab with administrative rights.
- **Send** shows the current transmission speed. Observing this value will help to guide you in determining how many streams your LAN can handle.
- **Receive** shows the current receive speed.

Signal

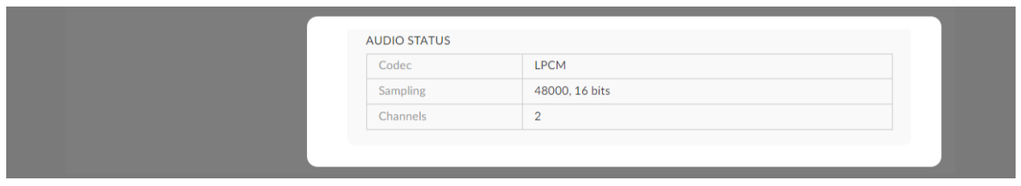
Click and enter the **Signal** tab to :

- preview the thumbnail of the input video which you can change in the "Options > DEVICE MODE > Input".
- check the input HDMI/SDI signal. The parameters vary with input signal source.



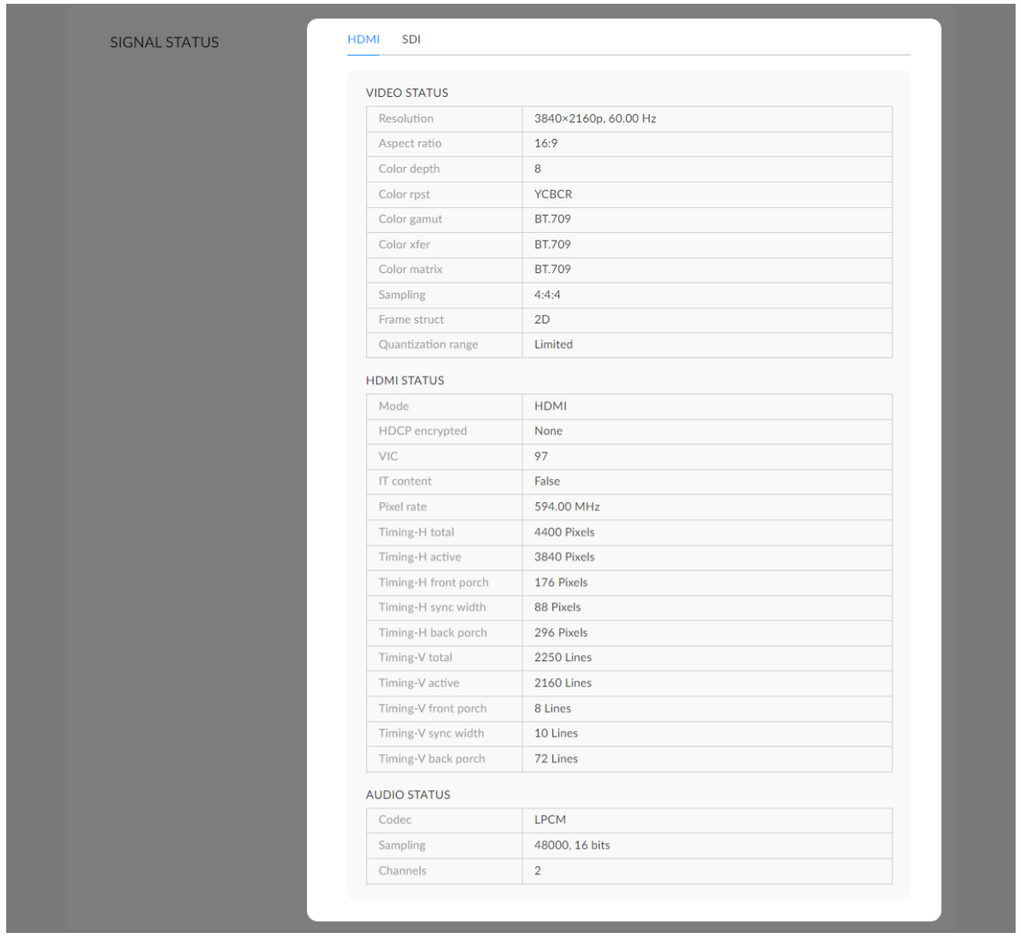
Checking VIDEO STATUS

- **Resolution** shows the input video pixel resolution & frame rate.
- **Aspect ratio** shows the input video aspect ratio.
- **Color depth** shows the input video color depth, in bits.
- **Color rpst** shows the input video color representation.
- **Color gamut** shows the input video color gamut.
- **Color xfer** shows the input video color transfer.
- **Color matrix** shows the input video color matrix.
- **Sampling** shows the input video color sampling format.
- **Frame struct** shows the input video frame type, 2D or 3D.
- **Quantization range** shows the quantization range, Full or Limited.



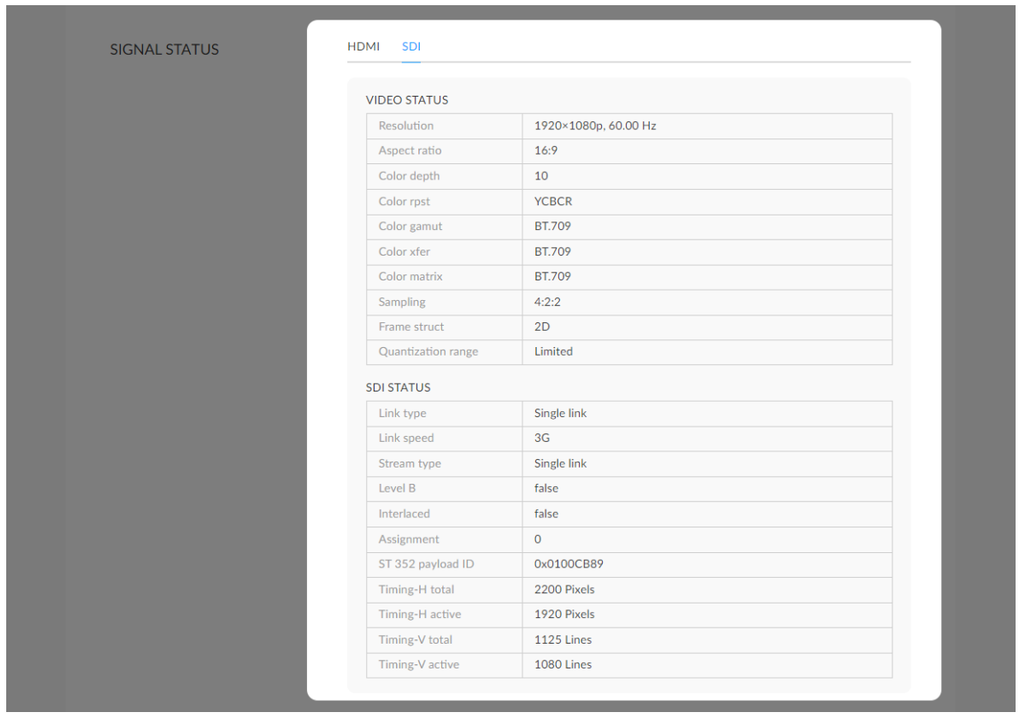
Checking AUDIO STATUS

- **Codec** shows the input embedded audio codec.
- **Sampling** shows the input embedded audio sampling rate and bit depth.
- **Channels** shows the number of input embedded audio channels detected.



Checking HDMI STATUS

- **Mode** shows the signal type (which is always HDMI).
- **HDCP encrypted** shows whether the signal source is HDCP encrypted. In accordance with the related laws and regulations, the device doesn't process HDCP encrypted signals, so the value is None.
- **VIC** Video Identification Code, which is defined for CEA formats.
- **IT content** shows whether the transmission package is content.
- **3D struct** shows the layout of the two views within a video frame for stereoscopic 3D video. This parameter is only available when inputting 3D signal.
- **3D sub sampling** shows the method for subsampling 3D video. This parameter is only available when inputting 3D signal.
- **Pixel rate** shows the maximum number of pixels the unit could possibly write to the local memory in one second.
- **Timing-H total** shows the total number of pixels, horizontally.
- **Timing-H active** shows the number of active pixels, horizontally.
- **Timing-H front porch** shows the Front Porch width in pixels.
- **Timing-H sync width** shows the Sync Pulse width in pixels.
- **Timing-H back porch** shows Back Porch width in pixels.
- **Timing-V total** shows the total number of pixels, vertically.
- **Timing-V active** shows the number of active pixels, vertically.
- **Timing-V front porch** shows the size of the vertical Front Porch in pixels.



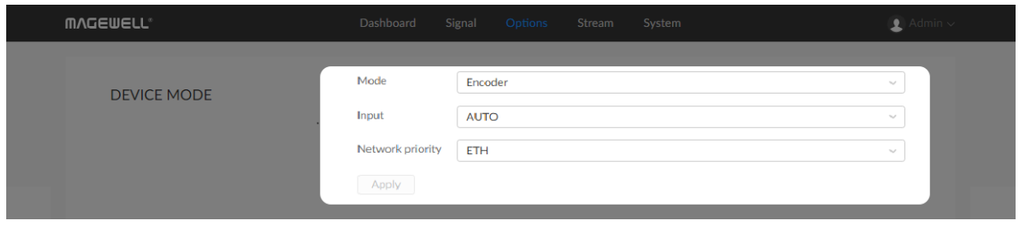
- **Timing-V sync width** shows the width of the vertical Sync Pulse in pixels.
- **Timing-V back porch** shows the size of the vertical Back Porch in pixels.

Checking SDI STATUS

- **Link type** shows link type of input SDI signal, including single link, dual link, quad link.
- **Link speed** shows the current data speed.
- **Stream type** shows the number of streams that is contained in the data source.
- **Level B** shows whether the input signal is level B format.
- **Interlaced** shows whether the input signal is interlaced.
- **Assignment** shows the link number, especially when be fed into a source of multi-link interfaces.
- **ST 352 payload ID** shows the SMPTE ST 352 video payload identification code for SDI.
- **Timing-H total** shows the total number of pixels, horizontally.
- **Timing-V total** shows the total number of pixels, vertically.
- **Timing-H active** shows the number of active pixels, horizontally.
- **Timing-V active** shows the number of active pixels, vertically.

Options

Click and enter **Options** tab to set your Xmit as Encoder. By clicking **Reset to Default** in the bottom right corner of the page, you can cancel your modified settings.



Setting Device Mode

- **Mode**

  Select Encoder or Decoder by your needs.

- **Input**

  Specify the input signal to AUTO (default), HDMI, or SDI when Mode is Encoder.

- **Network priority**

  Specify the Network priority to ETH (default), ETH(SFP).

- Click **Apply** to save your changes.

Setting HQ STREAM

- **Enable**

  Turn it on to encode a high-quality stream that matches the input format.

- **Bitrate**

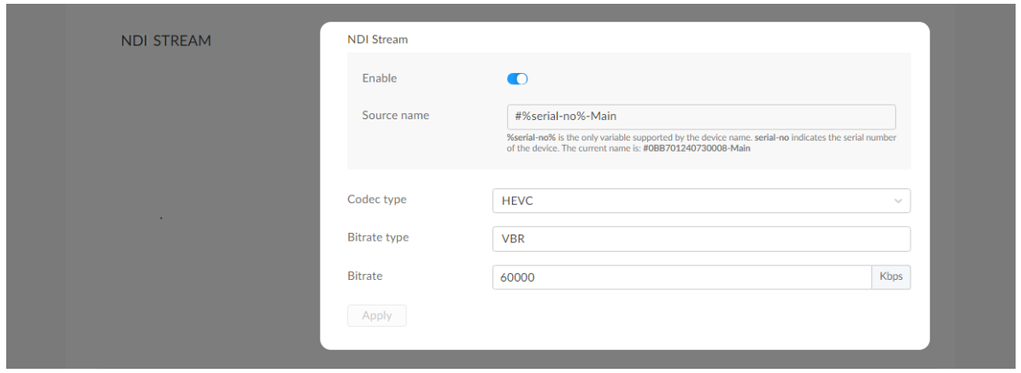
  500000Kbps by default, value range is from 100000 to 800000Kbps.

- **Session IP**

  Specify the multicast IP address or destination IP address (recommended).

- **Session port**

  Specify the port to send HQ stream, the default port is 5070. Value range is from 1 to 65535.



- Click **Apply** to save your changes.

Setting NDI Stream

- **NDI Stream**

  Enable

  Turn it on to encode an NDI stream that matches the input format.

- **Source name** shows the NDI source name used for your device.

  - By default, the source name is **#%serial-no%-Main**.
  - **serial-no** indicates the unit's serial number, as per the barcode label.
  - **%serial-no%** is the only supported variable.
  - You can change the Source Name to a string with maximum of 30 characters, containing A-Z, a-z, numbers and _-#()[].%.
  - If no text is entered for the Source Name, it will take the default value **#%serial-no%-Main** automatically after clicking **Apply**.

- **Codec type**

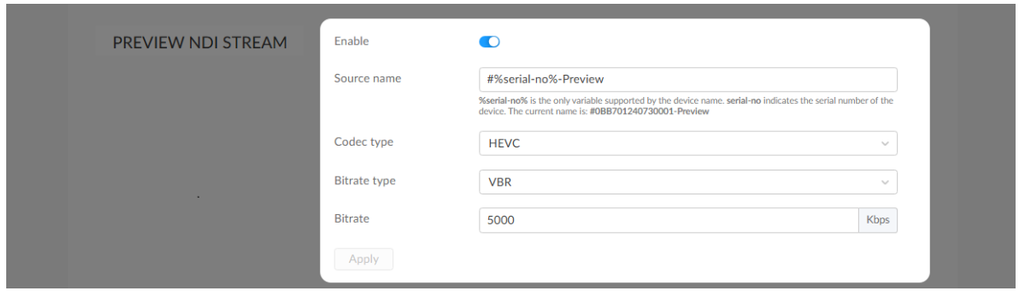
  Select HEVC (default) or H264 by your needs.

- **Bitrate type**

  options are CBR and VBR (default). Choose CBR (Constant Bitrate) for bandwidth stability, and VBR (Variable Bitrate) files vary the amount of output data per time segment.

- **Bitrate**

  40000Kbps by default, value ranges from 128 to 128000Kbps.



- Click **Apply** to save your changes.

Setting Preview NDI Stream

- **Enable**

  Enable the encoding of a 720x480p30 NDI stream as the preview stream. It is disabled by default.

- **Source name** shows the NDI source name used for your device.
- By default, the source name is **#%serial-no%-Preview**.
  - **serial-no** indicates the unit's serial number, as per the barcode label.
  - **%serial-no%** is the only supported variable.
  - You can change the Source Name to a string with maximum of 30 characters, containing A-Z, a-z, numbers and _-#()[].%.
  - If no text is entered for the Source Name, it will take the default value **#%serial-no%-Preview** automatically after clicking **Apply**.
- **Codec type**

  Select HEVC (default) or H264 by your needs.

- **Bitrate type**

  options are CBR and VBR (default). Choose CBR (Constant Bitrate) for bandwidth stability, and VBR (Variable Bitrate) files vary the amount of output data per time segment.

- **Bitrate**

  5000Kbps by default, value ranges from 128 to 5000Kbps.

- Click **Apply** to save your changes.

Setting Multiview Stream

- **Enable**

  Enable encoding to match the input format for a 2K signal, and for signals with a resolution greater than 2048x1080, maintain the input frame rate while scaling the width and height to 50% of the original.

- **Session IP**

  Specify the multicast IP address or destination IP address.

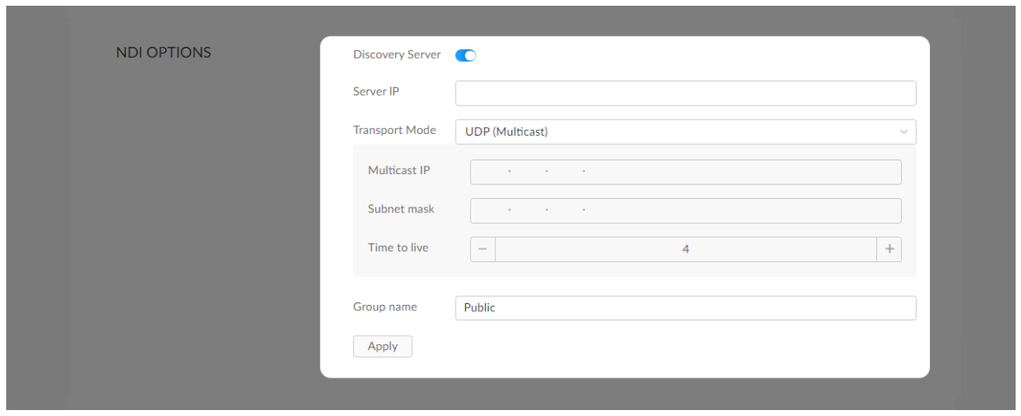
- **Session port**

  Specify the port to send the multiview stream, the default port is 5061. Value range is from 1 to 65535.

- **Bitrate**

  20000Kbps by default, value ranges from 128 to 30000Kbps.

- Click **Apply** to save your changes.



Setting NDI OPTIONS

- **Discovery Server:** turn on the switch to auto-detect a source sender in different network segment and ping the sender. And the **Server IP** should be the IP address of the server running discovery server software. By default, the switch is off. Multiple IP addresses are supported, which should be comma-separated.

- Transport Mode

  - **UDP (Unicast)** indicates that the encoder sends streams via UDP unicast.

It is used where lower latency matters. And multiple simultaneous streams will work independently for multiple receivers.

- **UDP (Multicast)** indicates that the encoder sends streams via UDP multicast. It is used for one-to-many broadcast for lower CPU utilization. Parameters in a multicast configuration include:
  - **Multicast IP** ranges from 224.0.0.0 to 239.255.255.255.
  - **Subnet Mask** can be legitimate value ranging from 255.0.0.0 to 255.255.255.252.
  - **Time To Live** ranges from 1 to 255. The default value is 4.
- **RUDP (Unicast)** indicates that the encoder sends streams via a reliable UDP unicast.
- **TCP (Uni-connection)** indicates that the encoder sends streams via TCP uni-connection.
  - **TCP (Multi-connection)** indicates that the encoder sends streams via TCP multi-connection.
- **Group name:** specify the group which the source belongs to. 1 to 63 characters are supported. It is case-insensitive, and should be a combination of A to Z, a to z, 0 to 9 and special characters like _-. Multiple groups are supported, which should be comma-separated. By default, it is Public.

Setting LINE AUDIO

Input gain

Adjust the gain from -96.0dB to 56.0dB as needed. Or you can mute it. By default, it is 0.

Output gain

Adjust the gain from -50.0dB to 18.0dB as needed. Or you can mute it. By default, it is 0.

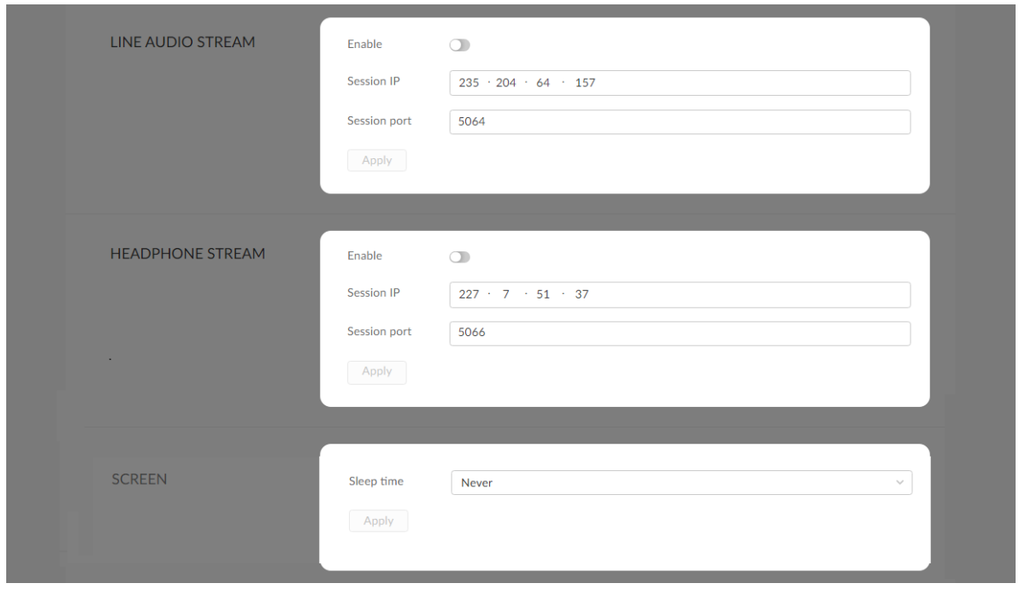
Setting HEADPHONE

Input gain

Adjust the gain from -30.0dB to 56.0dB as needed. Or you can mute it. By default, it is 0.

Output gain

Adjust the gain from -50.0dB to 18.0dB as needed. Or you can mute it. By default, it is 0.



Setting LINE AUDIO STREAM

- **Enable**

  Turn it on to encode the line-in audio into a 2-Channel PCM audio stream. It is on by default.

- **Session IP**

  Specify the multicast IP address or the destination IP address.

- **Session port**

  5064 by default, specify the port from 1 to 65535 to send the audio stream.

- Click **Apply** to save your changes.

Setting HEADPHONE STREAM

- **Enable**

  Turn it on to encode the mic audio from the headphone into a 2-Channel PCM audio stream. It is on by default.

- **Session IP**

  Specify the multicast IP address or the destination IP address.

- **Session port**

  5066 by default, specify the port from 1 to 65535 to send the audio stream.

- Click **Apply** to save your changes.

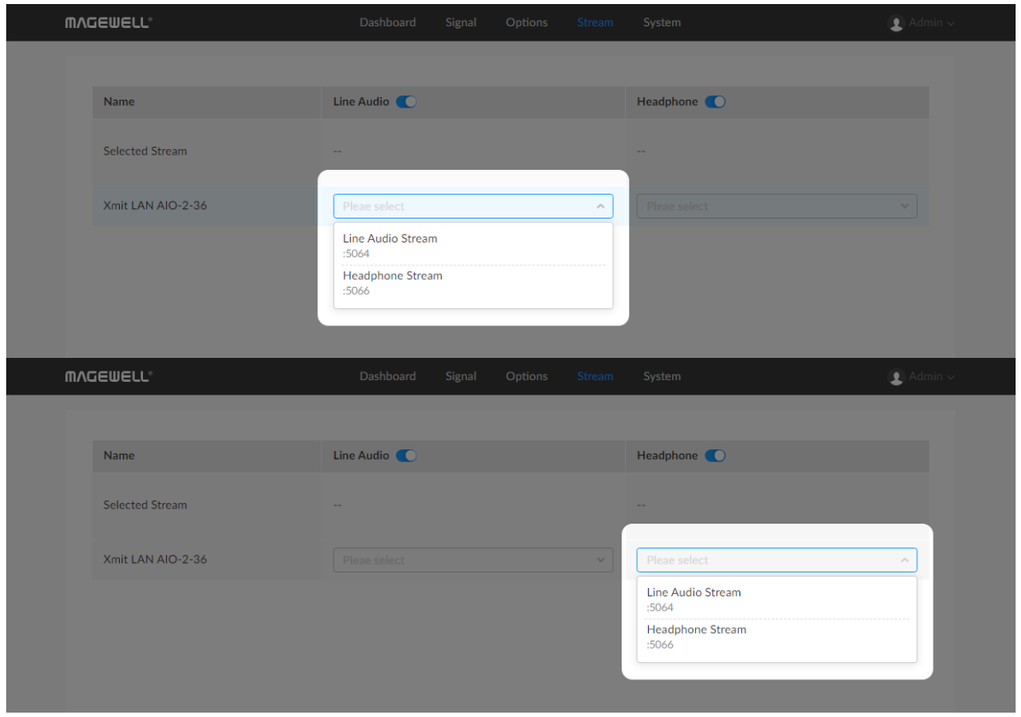
Setting Screen Time

- **Sleep time**

  Options are Never, 15 minutes, 30 minutes, 1 hour. It is Never by default.

- Click **Apply** to save your changes.

Stream



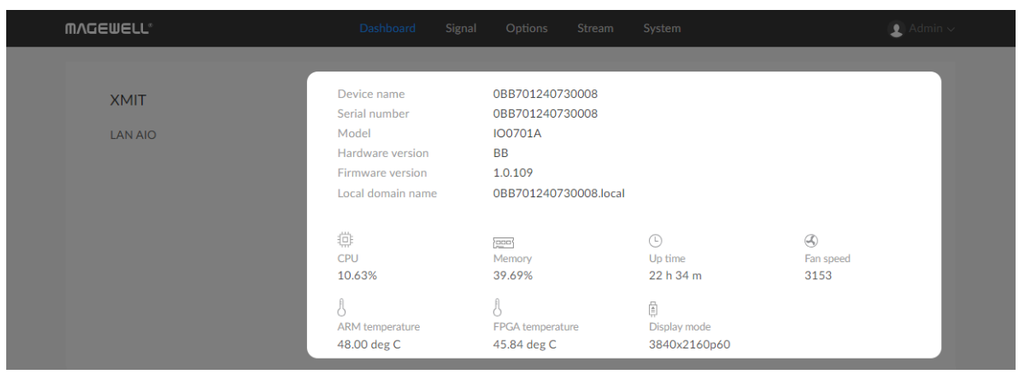
This page lists audios received within the same LAN with your unit.

- **Line Audio** Turn it on to decode an audio stream for Line out. It is on by default.
- **Headphone** Turn it on to decode an audio stream for headphone. It is on by default.
- **Selected Stream** shows selected audio stream for the Line and headphone output.

Decoder Configurations

Dashboard

The Dashboard tab in the web UI can show the real-time status and parameters of the Xmit device. Click and enter the **Dashboard** tab to check the device status.

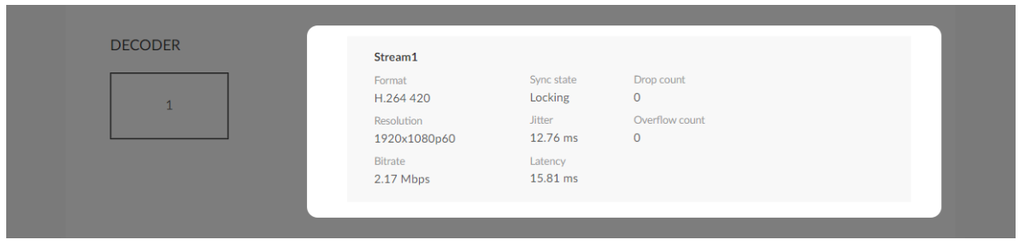


Checking Basic Information

- **Device name** shows the name of your Xmit unit.
  Only the Administrator can modify the device name in the System > General tab. For detailed information, refer to Setting Device Name.
- **Serial number** shows the serial number of your unit, which is also marked on your device.
- **Model** shows the model of your unit.
- **Hardware version** shows the hardware version of your unit.
- **Firmware version** shows the current firmware version that's installed in your unit. Only the Administrator can update the firmware, via the Firmware tab. For detailed information, refer to Updating the Firmware.
- **Local domain name** shows the current Local domain name of your unit. Only the Administrator can change it in the "System > General > Device name" part. For detailed information, refer to device name.
- **CPU** shows the current CPU usage (the load on the processor, shown as a percentage) of the Xmit device.
- **Memory** shows current memory usage.
- **Up Time** shows the elapsed time since your device's last boot-up.
- **Fan Speed** shows the current speed of fan, which automatically changes

according to temperature.

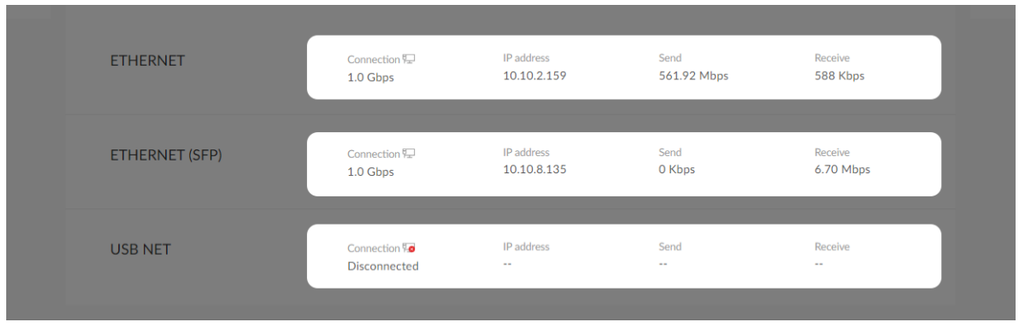
- **ARM Temperature** shows the current temperature of the ARM. Keeping the device free from dust and avoiding a high-temperature work environment may help to avoid overheating of the device. If the core temperature is approaching 90℃, please try to lower the temperature by ensuring a supply of cooler air.
- **FPGA Temperature** shows the current temperature of the FPGA. Keeping the device free from dust and avoiding a high-temperature work environment may help to avoid overheating of the device. If the core temperature is approaching 90℃, please try to lower the temperature by ensuring a supply of cooler air.
- **Display mode** shows the current resolution and frame rate for HDMI OUT signal for the decoder only. Decoder can modify the mode in the "Options > DISPLAY > HDMI out mode" part.



Checking the Current Working Status

When working as a decoder, this section shows the information of decoding streams and the layout mode which can be changed in the STREAM and VIEW tab.

- **Format** shows the current video codec.
- **Resolution** shows the decoded video resolution.
- **Bitrate** shows the decoded bitrate.
- **Sync state** shows the sync state of the decoded stream with its source. It may show free run (device running independently), locking or locked.
- **Jitter** shows inconsistency in packet arrival times during data transmission.



- **Latency** shows time delay for a packet to reach its destination.
- **Drop count** shows the total number of current video packets dropped during the current decoding process.
- **Overflow count** shows the total number of packets dropped or discarded due to overflow conditions during the current decoding process.

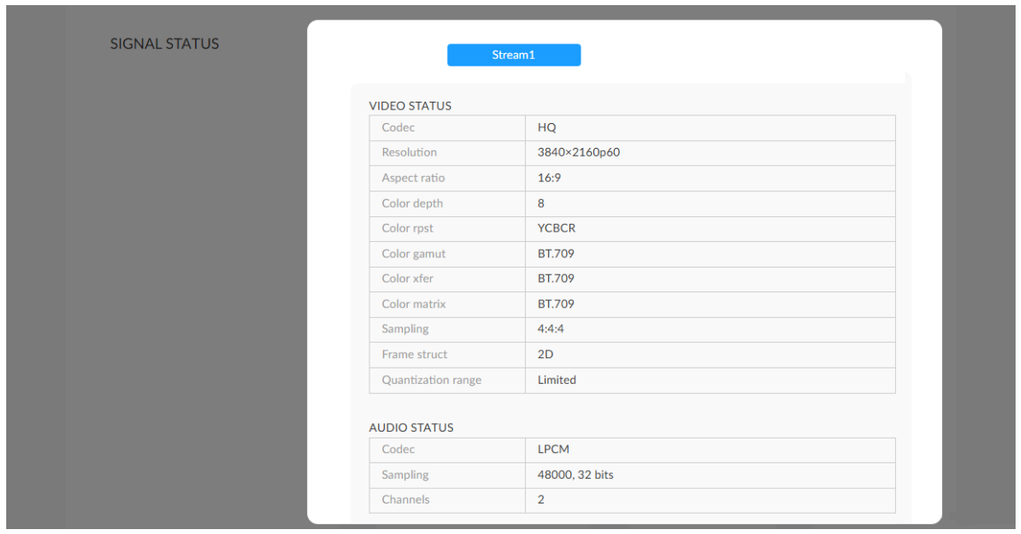
Checking Ethernet Status

An RJ45 port, an SFP port, and an USB-C port (for USB NET) are provided for data sending and receiving.

- **Connection** shows current connection status.
- **IP Address** shows the IP Address of current connection. You can manually change it in the **System** > **Network** tab with administrative rights.
- **Send** shows the current transmission speed. Observing this value will help to guide you in determining how many streams your LAN can handle.
- **Receive** shows the current receive speed.

Signal

- Verify the received stream information in this page.
- If multiple streams are detected, only the video status will be displayed.
- If a single stream is received, both video and audio status will be provided.



Checking Video Status

- **Codec** shows the stream type.
- **Resolution** shows the input video pixel resolution & frame rate.
- **Aspect ratio** shows the input video aspect ratio.
- **Color depth** shows the input video color depth, in bits.
- **Color rpst** shows the input video color representation.
- **Color gamut** shows the input video color gamut.
- **Color xfer** shows the input video color transfer.
- **Color matrix** shows the input video color matrix.
- **Sampling** shows the input video color sampling format.
- **Frame struct** shows the input video frame type, 2D or 3D.
- **Quantization range** shows the quantization range, Full or Limited.

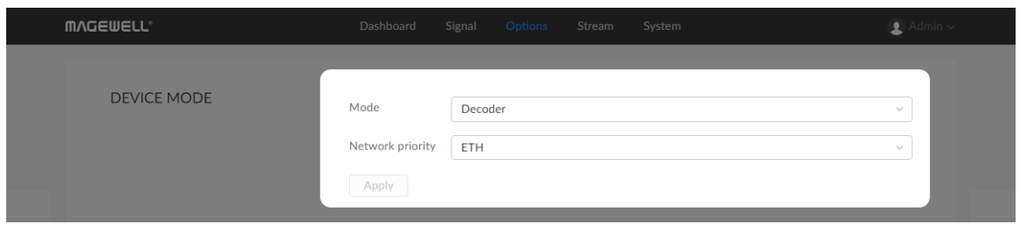
Checking Audio Status

Audio status shows when only one stream is being decoded.

- **Codec** shows the input embedded audio codec.
- **Sampling** shows the input embedded audio sampling rate and bit depth.
- **Channels** shows the number of input embedded audio channels detected.

Options

Click and enter **Options** tab to set your Xmit as an Encoder or a Decoder to meet your needs. By clicking **Reset to Default** in the bottom right corner of the page, you can cancel your modified settings.



Setting Device Mode

- **Mode**

  Select Encoder or Decoder by your needs.

- **Network priority**

  Specify the Network priority to ETH (default), ETH(SFP).

- Click **Apply** to save your changes.

Setting Device Display

HDMI

- **HDMI out mode**

  options are: 1280x720p25;

  1280x720p29.97;

  1280x720p30;

  1280x720p50;

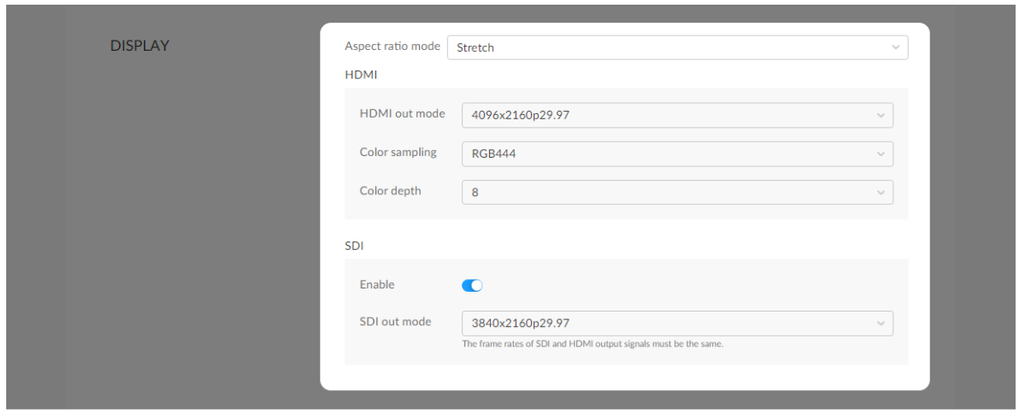
  1280x720p59.94;

  1280x720p60;

  1920x1080p24;

  1920x1080p25;

  1920x1080p29.97;



1920x1080p30;
1920x1080p50;
1920x1080p59.94;
1920x1080p60;
3840x2160p24;
3840x2160p25;
3840x2160p29.97;
3840x2160p30;
3840x2160p50;
3840x2160p59.94;
3840x2160p60;
4096x2160p24;
4096x2160p25;
4096x2160p29.97;
4096x2160p30;
4096x2160p50;
4096x2160p59.94;
4096x2160p60.

We recommend that the frame rate matches that of the decoding stream, which should also align with the input signal of the paired encoder. Additionally, it is advisable to use the optimal resolution for the display device.

- **Color sampling**

  options are RGB 444 (default), YUV444, or YUV 422.

  ⚠ RGB 444 is recommended for better compatibility with the display monitor.

- **Color space**
  options are YUV BT.601, YUV BT.709, YUV BT.2020.

  > ⚠ The color space is available when **Color sampling** is not RGB 444.

- **Color depth**
  options are 8 (default)-bit, or 10-bit.

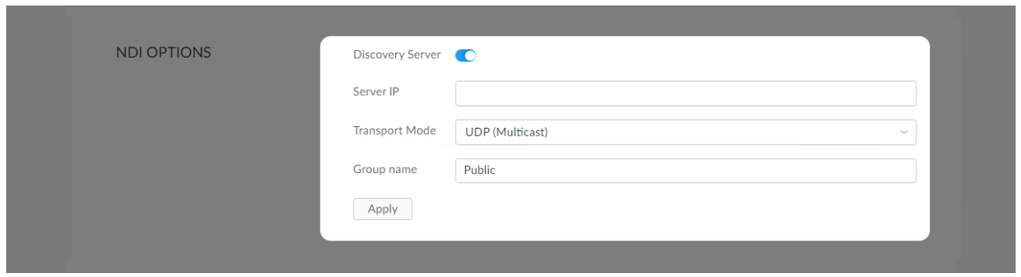
  > ⚠ When output resolutions is above 4Kp30, the color depth is limited to 8-bit.

  > ⚠ The color depth is available when **Color sampling** is not YUV422.

SDI

- **Enable**
  turn it on to output an SDI signal through SDI OUT.
- **SDI out mode**
  options are 1280x720, 1920x1080, 3840x2160 and the frame rate is consistent with the **HDMI out mode**.

Click **Apply** to save your changes.



Setting NDI Options

- **Discovery Server:** turn on the switch to auto-detect a source sender in different network segment and ping the sender. And the **Server IP** should be the IP address of the server running discovery server software. By default, the switch is off. Multiple IP addresses are supported, which should be comma-separated.
- Transport Mode
  - **UDP (Unicast)** indicates that the decoder receives streams via UDP unicast. It is used where lower latency matters. And multiple simultaneous streams will work independently for multiple receivers.
  - **UDP (Multicast)** indicates that the decoder receives streams via UDP multicast. It is used for one-to-many broadcast for lower CPU utilization.
  - **RUDP (Unicast)** indicates that the decoder receives streams via a reliable UDP unicast.
  - **TCP (Uni-connection)** indicates that the decoder receives streams via TCP uni-connection.
  - **TCP (Multi-connection)** indicates that the decoder receives streams via TCP multi-connection.
- **Group name:** specify the group which the source belongs to. 1 to 63 characters are supported. It is case-insensitive, and should be a combination of A to Z, a to z, 0 to 9 and special characters like _-. Multiple groups are supported, which should be comma-separated. By default, it is Public.

Setting Line Audio

Input gain

Adjust the gain from -96.0dB to 56.0dB as needed. Or you can mute it. By default, it is 0.

Output gain

Adjust the gain from -50.0dB to 18.0dB as needed. Or you can mute it. By default, it is 0.

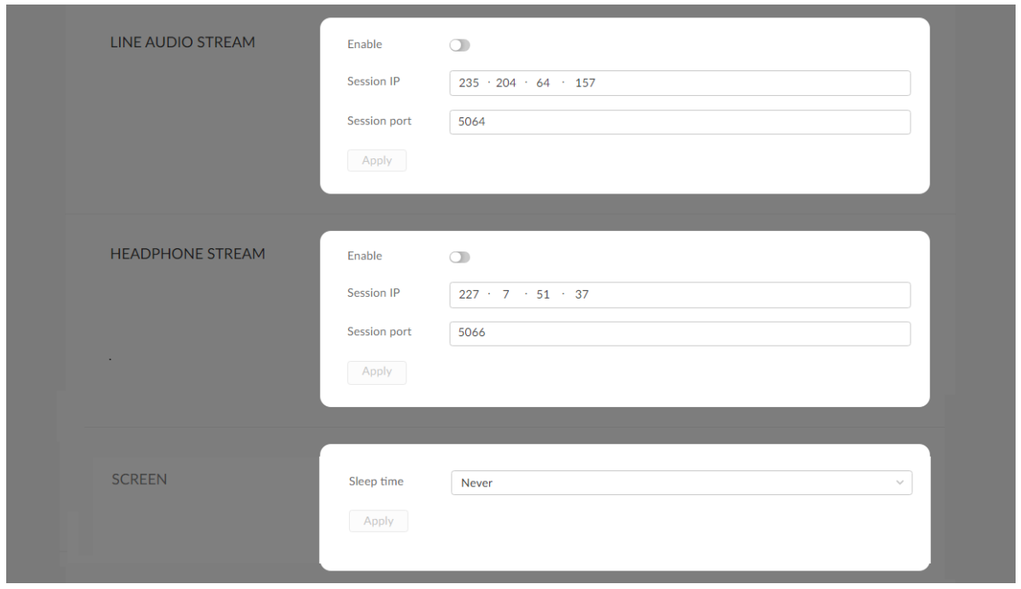
HEADPHONE

Input gain

Adjust the gain from -30.0dB to 56.0dB as needed. Or you can mute it. By default, it is 0.

Output gain

Adjust the gain from -50.0dB to 18.0dB as needed. Or you can mute it. By default, it is 0.



Setting Line Audio Stream

- **Enable**

  Turn it on to encode a 2-Channel PCM audio stream. It is on by default.

- **Session IP**

  Specify the multicast IP address or the destination IP address.

- **Session port**

  5064 by default, specify the port from 1 to 65535 to send the audio stream.

- Click **Apply** to save your changes.

Setting Headphone Stream

- **Enable**

  Turn it on to encode a 2-Channel PCM audio stream. It is on by default.

- **Session IP**

  Specify the multicast IP address or the destination IP address.

- **Session port**

  5066 by default, specify the port from 1 to 65535 to send the audio stream.

- Click **Apply** to save your changes.

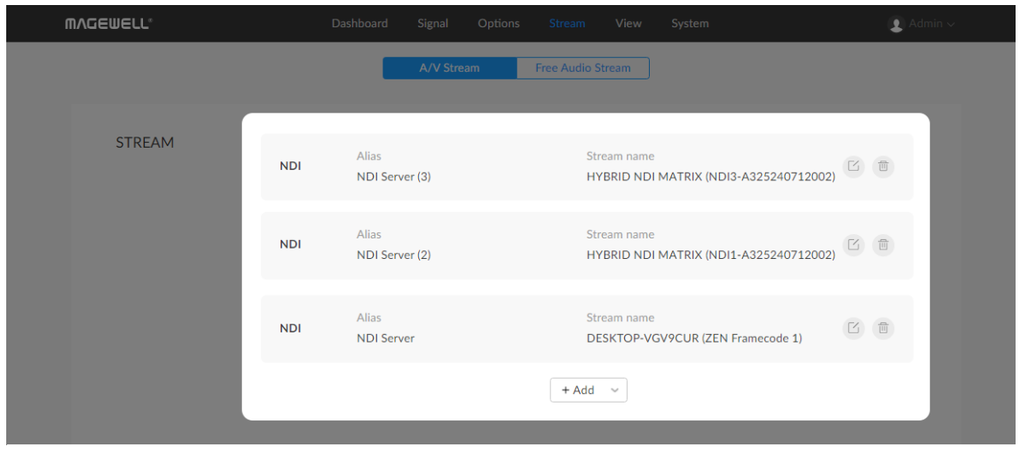
Setting Screen Time

- **Sleep time**

  Options are Never, 15 minutes, 30 minutes, 1 hour. It is Never by default.

- Click **Apply** to save your changes.

Stream

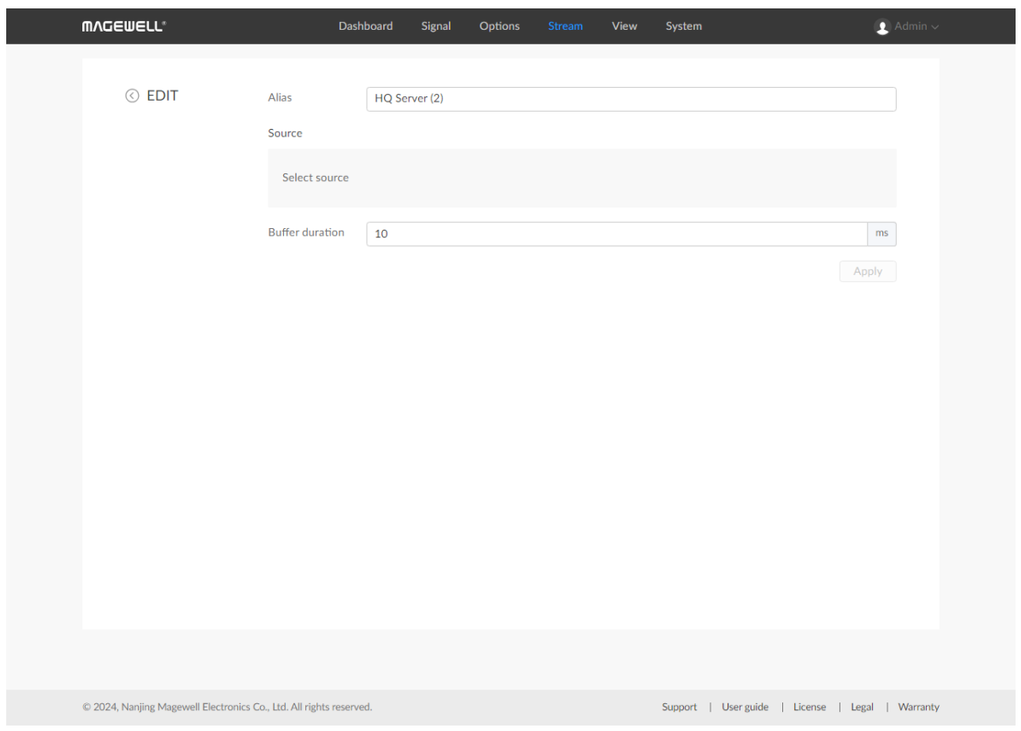


STREAM shows saved stream sources adding manually.

- Click **Edit** to modify the parameters of the stream.
- Click **Delete** to remove the source from the list.
- Click **Add** to add a stream session.

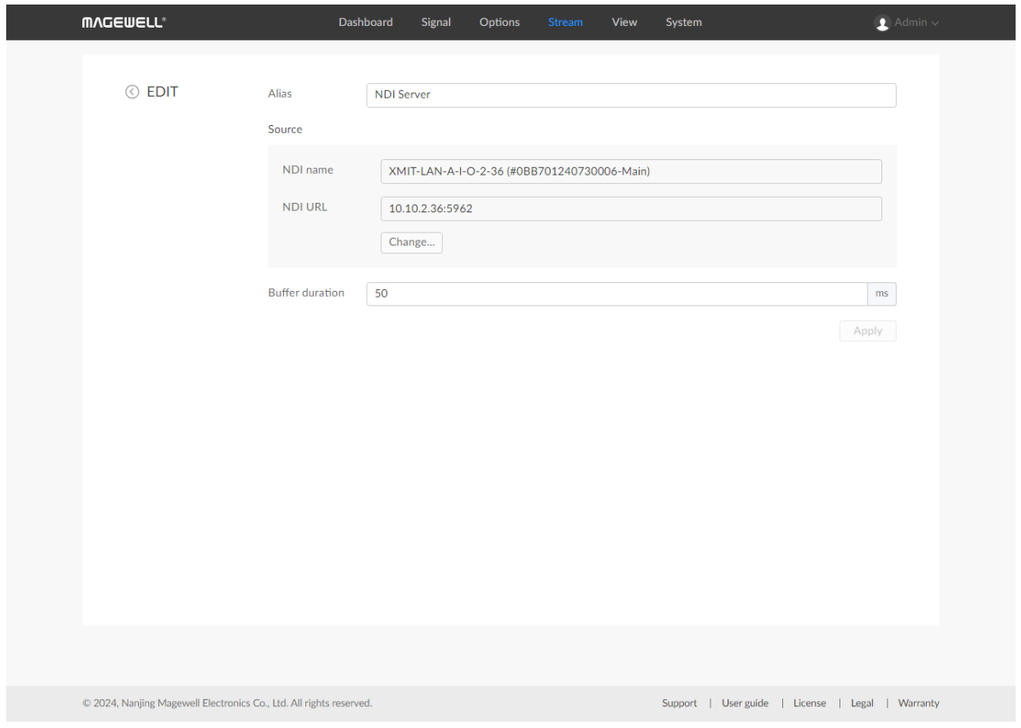
Notes

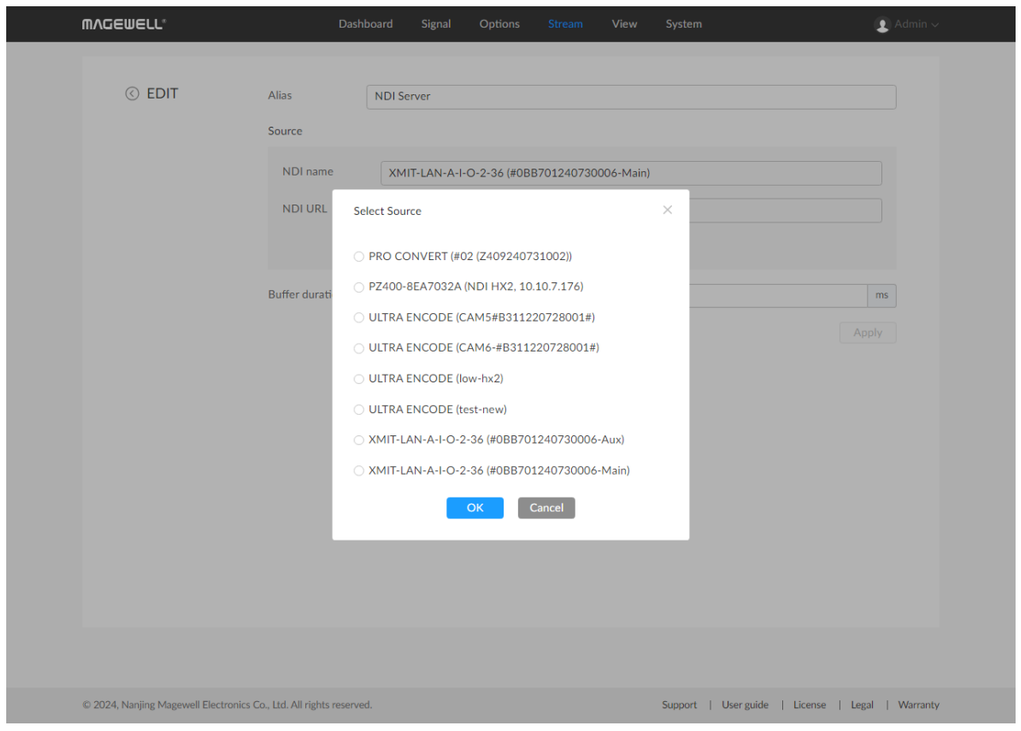
- The alias name of each stream on the page should be unique.
- NDI® sources that can not be auto-detected but can be pinged by the NDI® decoder, can be added to the stream list.



Adding a High Quality (HQ) Source

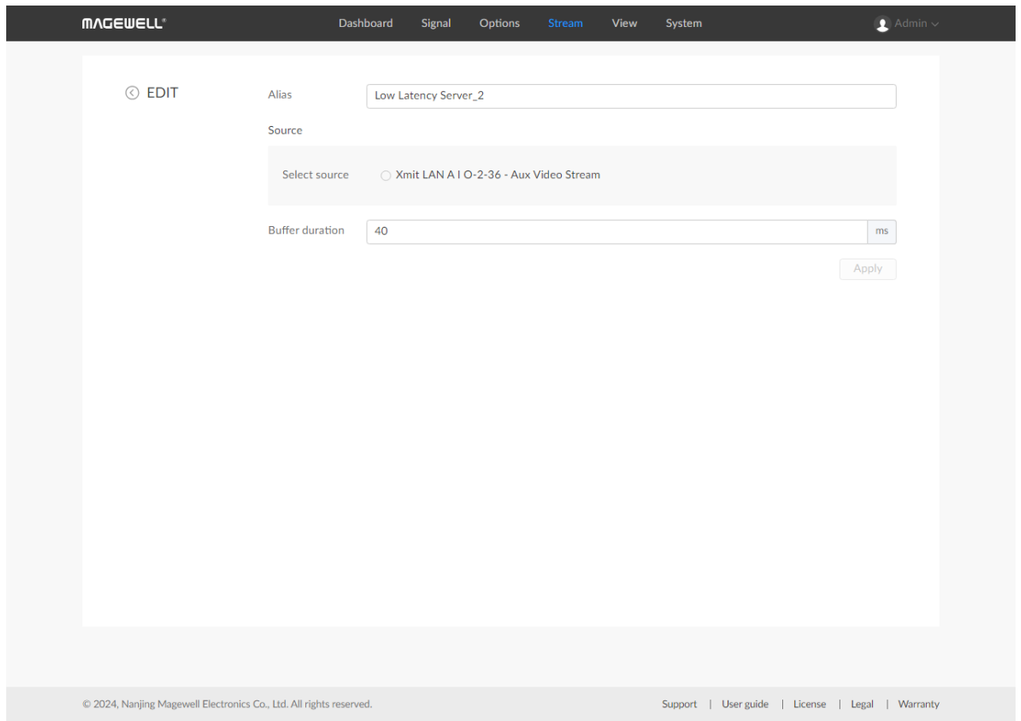
- **Alias:** specify an alias name for current task for your convenience of the task management, containing A-Z, a-z, numbers and _-#()[].%.
- **Source:** list the HQ Streams discovered automatically within the LAN, and selects the one with the encoder's device name, like Xmit LAN AIO-HQ Video Stream. You can find the device name on its "Dashboard" tab.
- **Buffer duration:** Enter a number between 3 and 120, and the default value is 10. The buffer duration is suggested to be greater than the **Jitter** value shown in the **Dashboard** tab for a smoothy video. Shorten it when multiview matters, otherwise the default value is recommended.





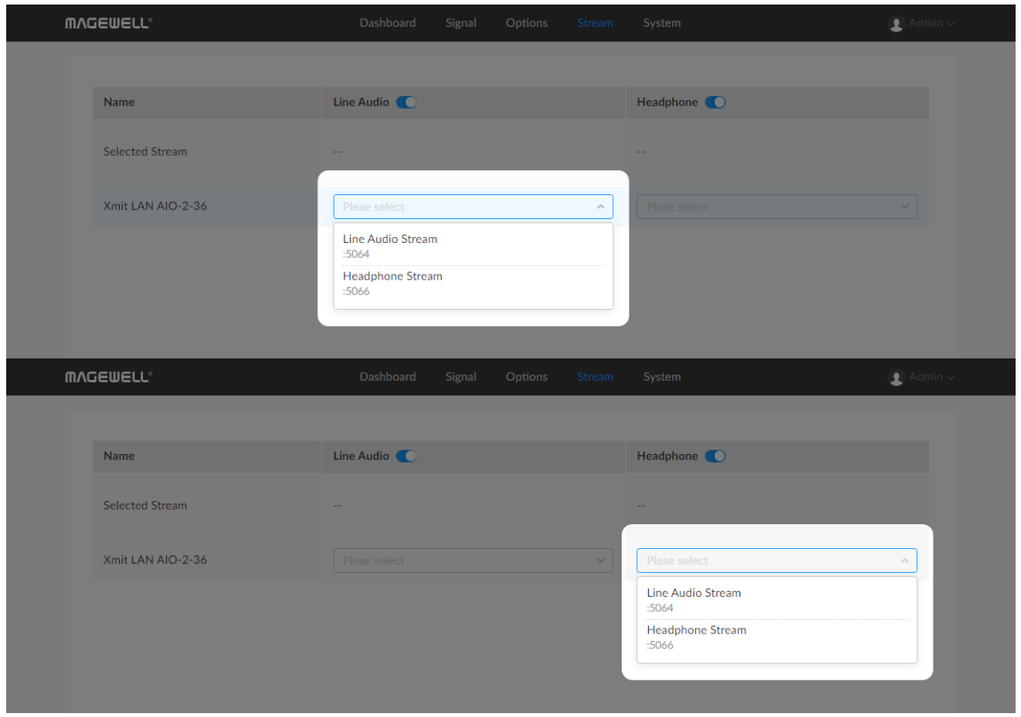
Adding an NDI HX Source

- To add an NDI source discovered by the decoder automatically
  - Click **Change**, and the auto-detected NDI sources are listed in the pop-up window. Select the target stream and click **OK** after specifying an **Alias** name for it.
- To add an NDI source manually
  - **Alias:** Specify an alias name for current preset task for your convenience of the presets management, which will be displayed in the presets.
  - **NDI name:** (Mandatory) Enter the of ndi source name, which is case insensitive.
  - **NDI URL:** (Optional) Enter the steam address of ndi source formed like **ip-address:port**. For example, if you want to add a source named A409200420003 192.168.1.1:5961 to the presets list, fill in the parameter with **192.168.1.1:5961**.
- Either a name or a URL is required when adding a new NDI® source. Ensure that the two properties are those of the same unit when you are filling in them both.
- **Buffer duration:** Enter a number between 40 and 3000ms, and the default value is 40. The buffer duration is suggested to be greater than the **Jitter** value shown in the **Dashboard** tab for a smoothy video. Shorten it when multiview matters, otherwise the default value is recommended.



Adding a Multiview Session

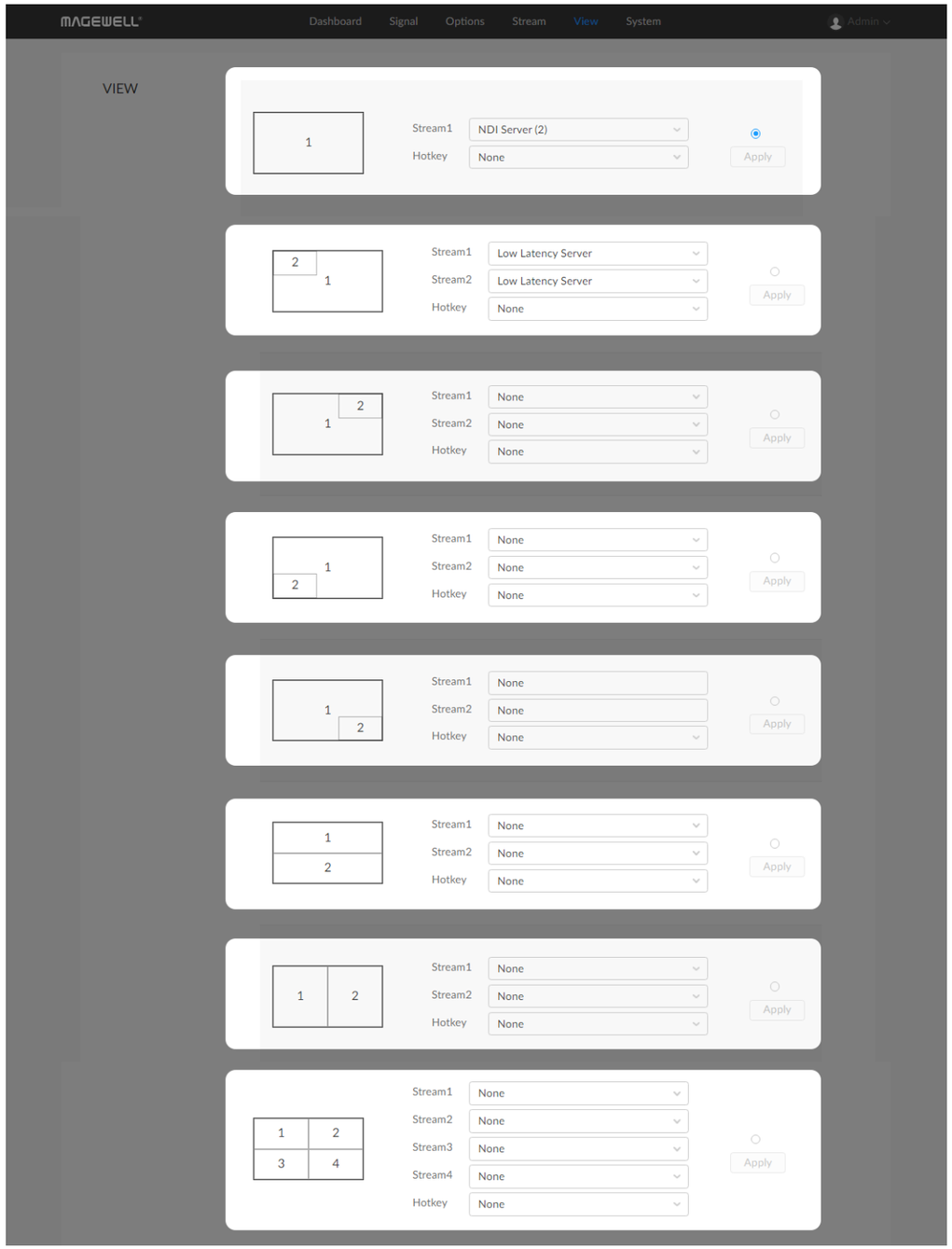
- **Alias:** specify an alias name for current task for your convenience of the task management, containing A-Z, a-z, numbers and _-#()[].%.
- **Source/Select Source:** list the multiview streams discovered automatically within the LAN, and selects the one with the encoder's device name, like 0BB701240730001 - Preview Video Stream. You can find the device name on its "Dashboard" tab.
- **Buffer duration:** Enter a number between 40 and 120ms, and the default value is 40ms. The buffer duration is suggested to be 2 to 3ms greater than the Jitter value shown in the "Dashboard > DECODER" part for a smoothy video. Shorten it when multiview matters, otherwise the default value is recommended.
- **Apply:** click **Apply** to save your changes. The added tasks will be displayed in the A/V Stream list.



Adding Free Audios

This page lists audios received within the same LAN with your unit. , add it in the "Stream > Free Audio Stream" tab.

- **Line Audio** Turn it on to decode an audio stream for Line out. It is on by default.
- **Headphone** Turn it on to decode an audio stream for headphone. It is on by default.
- **Selected Stream** shows selected audio stream for the Line and headphone output.



View

The multiview feature offers the ability to simultaneously display and relish your preferred content across multiple screens. There are eight distinct layout options available within the multiview framework.

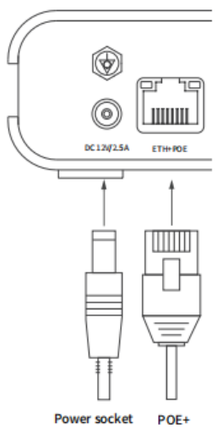
- Choose to watch a single stream from either a multiview, HQ, NDI®|HX2, or NDI®|HX3 feed. Alternatively, you can view two or four multiview streams by adding them under the 'Stream > A/V Stream' tab.
- Hotkeys for swiftly alternating between layout modes are supported, and they can be configured using Ctrl + a number or a letter.
- Click **Apply** to preserve your modifications.

Example for Hotkey settings:

Specify the Hotkey (Ctrl+1) for View 1  ; (Ctrl+A) for View 2  .

1. Plug a USB keyboard into the device's Host port.
   Ensure the keyboard has dedicated Ctrl, numeric 1 and alphabetic A keys.
2. Switch to View 1 (Ctrl+1) 
   - Press and hold the Ctrl key on the external keyboard, and simultaneously press the number 1 key.
   - The device will immediately switch the output display to View 1.
3. Switch to View 2 (Ctrl+A) 
   - Press and hold Ctrl, and press the letter A key simultaneously.
   - The output will switch to View 2 immediately.

FAQ



How to supply power to the Xmit

There are 2 ways to power your converter as shown in the left figure:

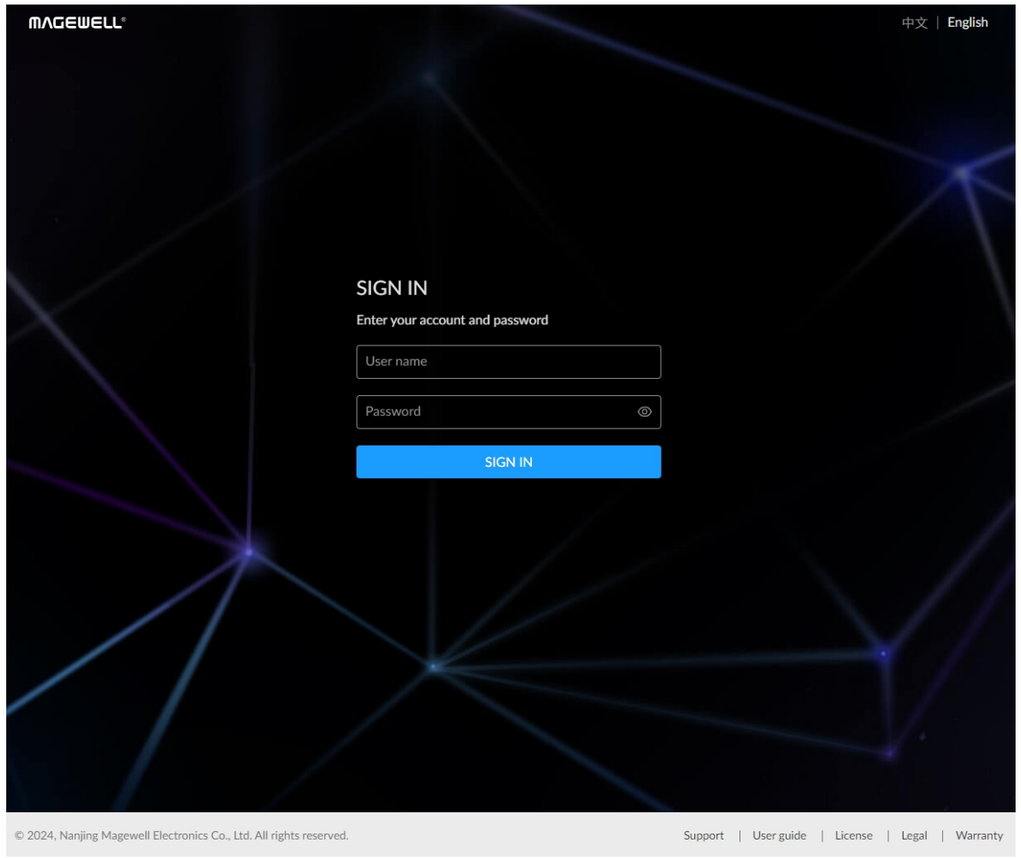
1. Via power socket: plug in the supplied power adapter.
2. Via PoE: plug in an Ethernet cable connected to a PoE switch or a PoE adapter for power and Ethernet connection.

Note:

- Xmit devices require a 12V DC source with a current rating of no less than 2.5A.
- We recommend that you use only the included Magewell accessories.
- If any included accessory is lost or broken, please contact your Magewell authorized local resellers for help.

Which version of NDI® SDK is compatible with Xmit?

NewTek NDI® SDK 5.0 and above are compatible with Xmit.



How to configure Xmit via Web UI

Xmit allows you to set up and control via a web-based user interface as either an administrator or a general user.

You can get access to the Web UI using Windows File Explorer, through your web browser over a USB connection, or with NDI Studio Monitor software.

Here takes the Xmit HDMI 4K Plus as an example.

Make sure that at least one of the following web browsers is installed in your system.

- Google Chrome version 49 and above
- Microsoft Edge
- Mozilla Firefox version 61 and above
- Apple Safari 11.1 and above
- Opera 55.0.2994.44 and above

Figure1. USB NET

Method 1: using USB NET

1. Connet the device to the computer through the USB-C port, open a browser and access 192.168.66.1.
2. Enter the user name Admin and password Admin to log in.

The pop-up web UI of the connected device will be shown in your browser.

Please do not change the IP address unless there is a conflict in your network.

> ⚠ Do not connect more than one converter simultaneously to the same system via USB net.

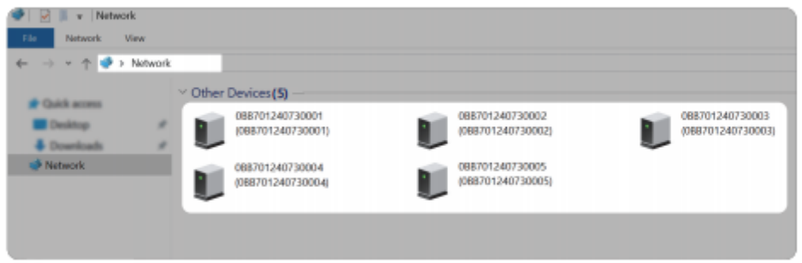


Figure 2 Find your device in the Network > Other Devices section

Method 2: obtain IP address via LCD screen

1. Connect the Ethernet and/or SFP port on the rear panel to the Ethernet based on your specific network requirements.
2. View the IP address on the LCD screen.
3. Enter the IP address on the web browser to access the Web UI login page.
4. Enter the user name Admin and password Admin to log in.

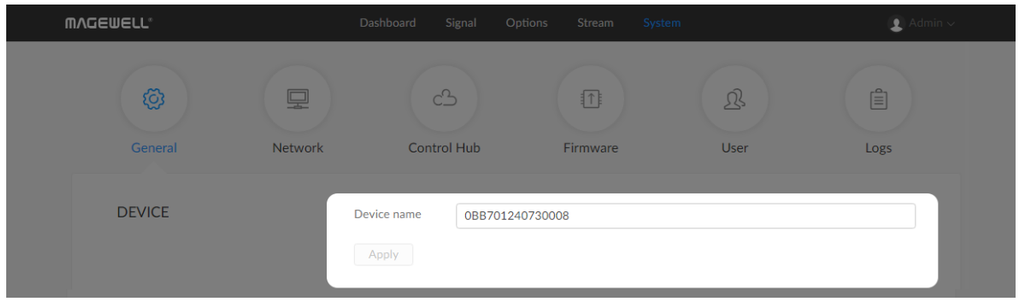
Method 3: using Windows File Explorer

This method is available for Windows7/8/8.1/10 users.

1. Connect your decoder via Ethernet and power it up as shown on the left figure.
2. Open a **File Explorer** window in one of the following ways.
   - Click on the **Start** button and find File Explorer in the Start menu.
   - Press the Windows logo key + E.
   - Select the folder icon on the taskbar.
3. Select the **Network** at the bottom of the list of items on the left side of the File Explorer.
4. (Optional) Turn on the network discovery function if prompted.
5. Find your device in the **Other Devices** section, where it will be shown as "**serial number**".
   - The **serial number** is marked on your device.
1. Double click the device icon to open the Web UI in your web browser.

Method 4: Local domain name

1. Connect the Ethernet and/or SFP port on the rear panel to the Ethernet based on yourspecific network requirements.
2. Enter the "device-name.local" on the web browser within the same VLAN as the device, to access the Web Ul login page. The default **device-name** is the **SN** (serial number) marked on the device surface.
3. Enter the user name Admin and password Admin to log in.

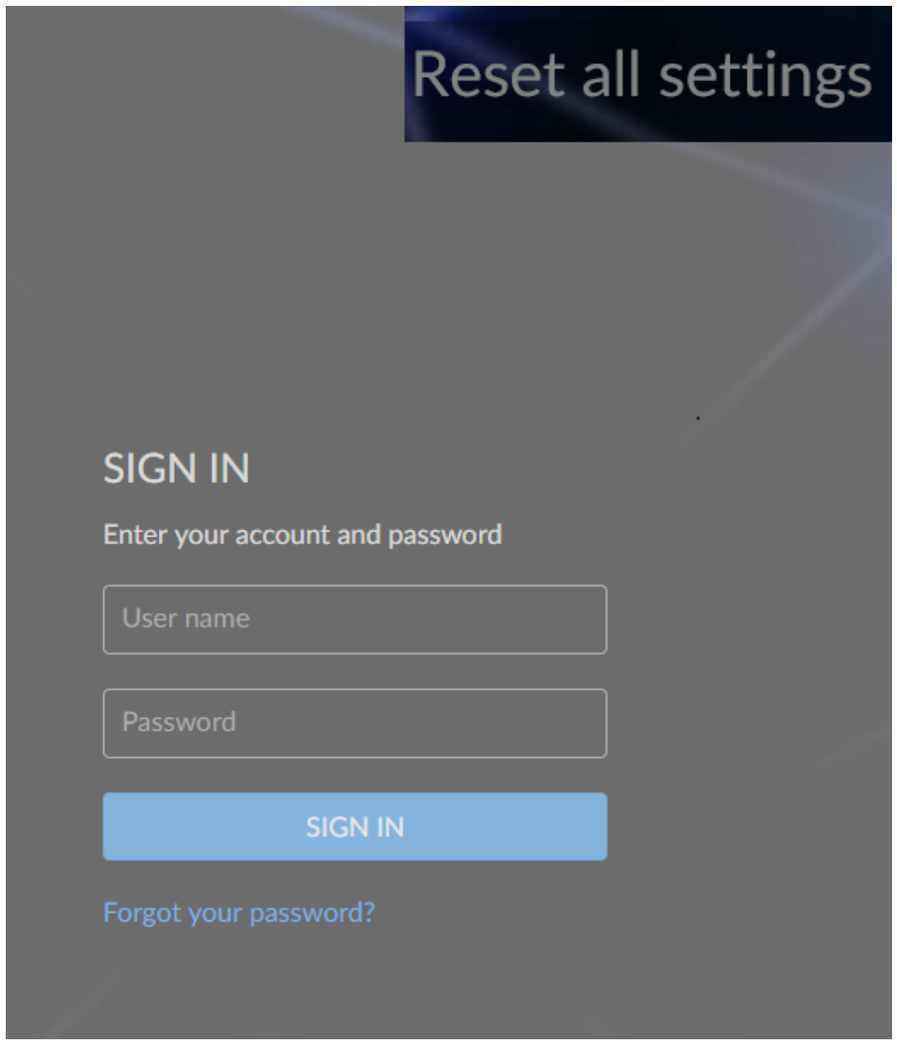


How to change the device name

Xmit allows you to set up and control via a web-based user interface as either an administrator or a general user. Changing the device name requires administrator rights, while changing the source name only requires general user rights.

The following describes the operational steps for changing both parameters via the administrator account. A general user account can only change the video source name, but the steps are the same as those for an administrator.

1. Access the Web UI, and sign in as administrator.
2. Click and enter the **System** > **General** tab.
3. Change the **Device name**.
   The device name is a string of 1 to 30 non-case sensitive characters, containing letters a to z, A to Z, 0-9, spaces and special characters like _-+.
4. Click **Apply** to save your changes, and then click **Yes** when prompted.
   It may take a few minutes for your settings to take effect.



How to reset a Xmit device

⚠ Warning: Resetting your device will lose all your configuration data.

Step 1 Connect your converter to your computer.

Step 2 Launch your web browser, and type in the USB NET address to access the Web UI **SIGN IN** page.

The default address is http://192.168.66.1. Please do not change it unless there is a conflict on your network.

Step 3 Click **Reset all settings** at the top right corner of the **SIGN IN** page.

The reset process may take a few minutes.

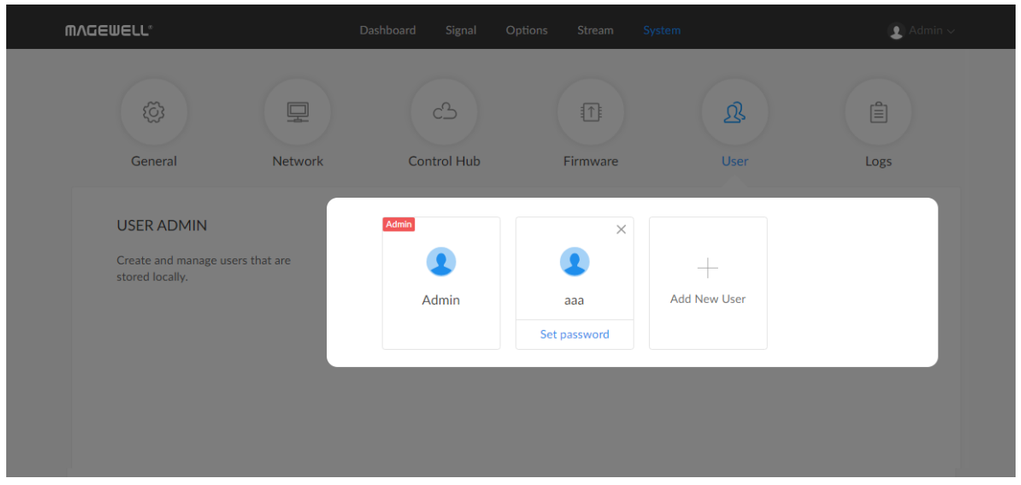


Figure1. Connections

What to do if you forgot the password

If you are a general user, ask your administrator to set a new password for you.

If you are the administrator, you need to reset all settings back to default values, then set a new admin password.

1. To reset a general user's password.

1. Access the Web UI, and sign in as administrator.
2. Click and enter the **System** tab.
3. Click the **Set password** link which appears when your mouse hovers over the user name.
4. Type in new password and confirm the new password as prompted in the window.

The password is a string of 1 to 32 case-sensitive characters, which contains A-Z, a-z, 0-9 and special characters _-~!@#$%^&*-+=.

1. Click **OK**.

2. To set a new admin password.

1. Connect the device to a computer with the USB cable.
2. Type in the USB NET address to your web browser.

The default IP address of USB NET is http://192.168.66.1. Please do not modify it unless there is a conflict on your network.

1. Click **Reset all settings** at the top-right corner of the **SIGN IN** page.

The reset process may take a few minutes, and all configuration data will be lost – not just the passwords.

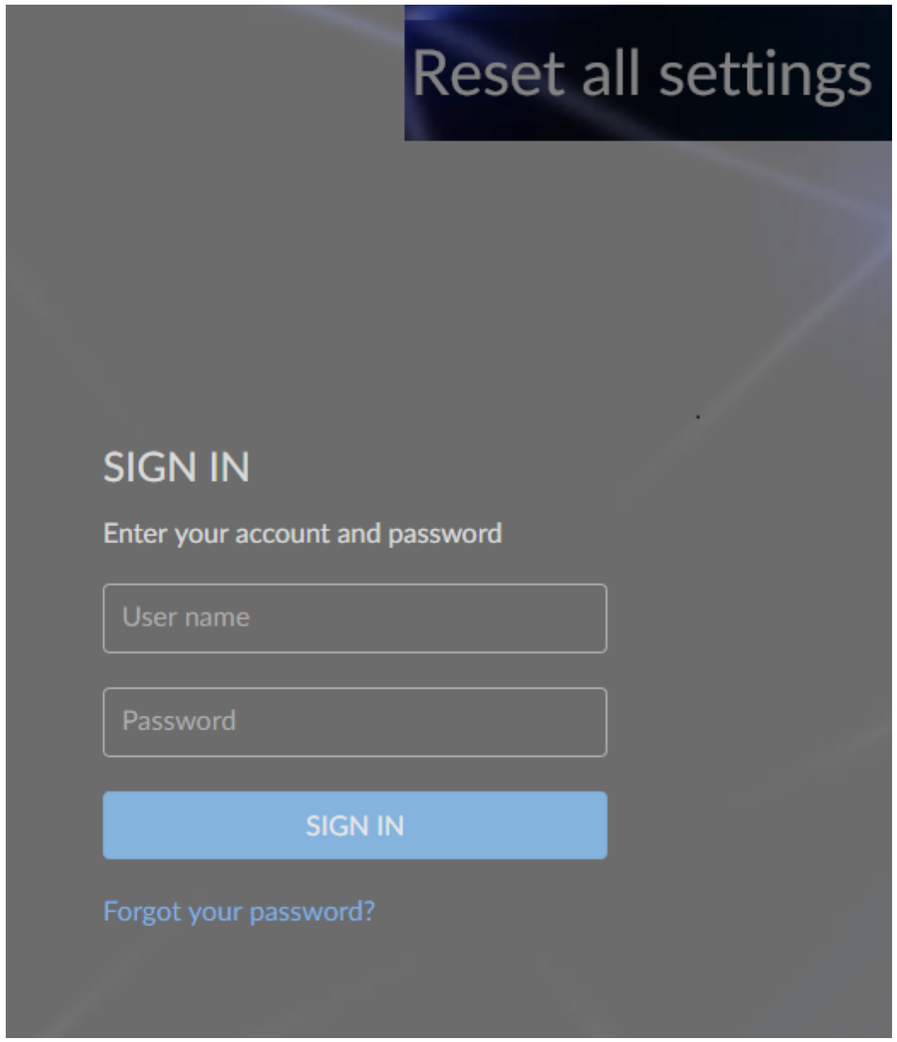


Figure2. Reset all settings

1. Sign in to the Web UI via the default admin account (case-sensitive): Admin, Admin.
2. Click and enter the **System** tab.
3. Click the **Set password** link which appears when your mouse hovers over the user name.
4. Type in new password, and confirm the new password as prompted in the window.

The password is a string of 1 to 32 case-sensitive characters, which contains letters A-Z, a-z, numbers 0-9 and special characters _-~!@#$%^&*-+=.

1. Click **OK**.

Figure1. USB Net connections

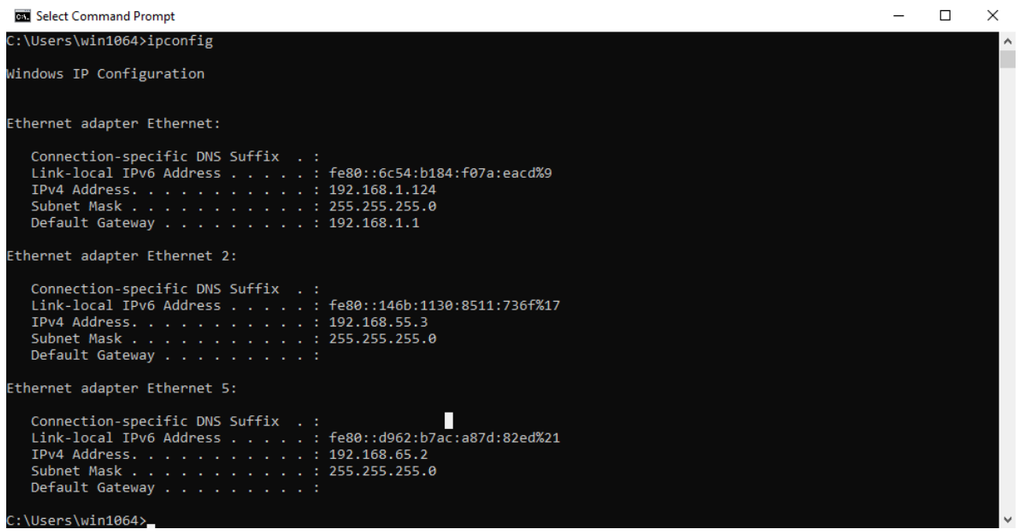


Figure2. Windows Command Line Interpreter

How to retrieve your USB Net IP Address

Step 1 Connect the device and your computer with a USB cable as shown in the left Figure1. Connections.

Step 2 For Windows users, follow the steps bellow.

1. Type **cmd** in the search bar to start the command interpreter.
2. Type in **ipconfig**, and find an IPv4 address of the form 192.168.xxx.2, as shown in Figure2. Windows Command Line Interpreter.

> ⚠ If 192.168.xxx.2 is taken, the IP address would automatically change to another value within the ranges of 192.168.xxx.2 to 192.168.xxx.254.

Step 3 Type in **192.168.xxx.1** in your web browser to access the Web UI.

How to use HQ stream?

To have HQ stream, we need 2 Xmits, one sends HQ stream (encoder) and the other receives HQ stream (decoder) . All essential parameters are listed as below. Specify the parameters by your needs.

1. Power your 2 Xmits and connect them with the same LAN.
2. Connect input signal to the encoder unit.
3. Set up the encoder.
    i. Log in the device, and navigator to the **Options** tab, specify the "DEVICE MODE > Mode" as **Encoder**, click "Apply". Then the **HQ STREAM** settings appear.
    ii. Specify HQ stream perameters as follows.
        - Enable: turn on the switch to enable HQ stream.
        - Bitrate: we recommend that you use the default 500000kbps. Or you can adjust it according to the complexity of your video and your network bandwidth allocation. Generally, videos with higher complexity require a greater bitrate to maintain a specific quality level.
        - Session IP: by default, HQ stream goes multicast, which might consume large amounts of network bandwidth. Here we recommend you specify it as the IP address of the HQ stream receiver, as is the decoder.
        - Session port: the default port is recommended.
        - Apply: click **Apply** to save your changes.
4. Set up the decoder.
    i. Log in the device, and navigator to the **Options** tab, specify the "DEVICE MODE > Mode" as **Decoder**, click "Apply".
    ii. In the **Options** tab, set the **Display** parameters by your needs. **HDMI**
        - HDMI out mode: select the output resolution and frame ratefrom the drop list as your needs.
        - Color sampling: options are RGB 444 (default), YUV444, or YUV 422.

          ⚠ RGB 444 is recommended for better compatibility with the output monitor.

        - Color space: options are YUV BT.601, YUV BT.709, YUV BT.2020.

> ⚠ The color space is available when **Color sampling** is not RGB 444.

- Color depth: options are 8 (default)-bit, or 10-bit.

> ⚠ When output resolutions is above 4Kp30, the color depth is limited to 8-bit.

> ⚠ The color depth is available when **Color sampling** is not YUV422.

SDI

- Enable: turn it on to output an SDI signal through SDI OUT.
- SDI out mode: options are 1280x720, 1920x1080, 3840x2160 and the frame rate is consistent with the **HDMI out mode**.
- Apply: click **Apply** to save your changes.

iii. Go to the **Stream > A/V Stream** tab, click the "+ Add" button below and select **HQ** to add an HQ session.

- Alias: specify an alias name for current task for your convenience of the task management.
- Source/Select Source: list the HQ Streams discovered automatically within the LAN, and selects the one with the encoder's device name, like Xmit LAN AIO-HQ Video Stream. You can find the device name on its "Dashboard" tab.
- Buffer duration: Enter a number between 3 and 120ms, and the default value is 10ms. The buffer duration is suggested to be 2 to 3ms greater than the Jitter value shown in the "Dashboard > DECODER" part for a smoothy video. Shorten it when low latency matters, otherwise the default value is recommended.
- Apply: click **Apply** to save your changes. The added tasks will be displayed in the A/V Stream list.

iv. Go to the **View** tab, specify the **Stream1** as your HQ stream alias added in the previous step for the first display (full screen) mode, and click **Apply**.

5. Connect monitors with HDMI OUT and/or SDI out, and check the output signal.
6. View the Dashboard tab information of Decoder.
   The pair of decoder and encoder achieve optimal synchronization with minimal delay when the "Dashboard > DECODER > Sync state" is Locked.

What kind of streams can be used for multiview?

Multiview requires 2 or 4 Multiview streams simultaneously.

Support

Get the Latest Information

If you have any problems using Magewell products or need more technical information, please visit the following channels.

- Tutorial video: www.magewell.com/tv
- YouTube: Magewell
- Knowledge base: www.magewell.com/kb/pro-convert
- Official website: www.magewell.com/pro-convert

Technical Support

- Submit your questions in the online Ticket System: tickets.magewell.com
- Contact the Magewell Technical Support Team at support@magewell.net

Warranty

Limited Warranty

Except otherwise set between you and Magewell in advance in a written form, the free limited warranty service starts from the date on your proof of purchase. The proof can be: sales contract, formal sales receipt, invoice or delivery note. The earliest date of these proofs is the starting date of the free limited warranty.
The period of free limited warranty goes as below:

- Entire device (except the screen): two (2) years;
- Screen: one (1) year.
- Accessories: one (1) year.

How to get the limited warranty

1. Please contact the Magewell support team by email (support@magewell.net) first, to determine whether your problem can only be solved by returning it to Magewell for repair. Magewell might ask you to take photos of the front and back of the defective products.
2. Magewell will issue an RMA letter to you if it is confirmed that you need to return the faulty product for further examination or repair. Please fill in the RMA with necessary information as required.
   If it is regular repair, you will be responsible for the shipping cost, duties and insurance cost (if applicable); if the product is DOA, Magewell will be responsible for the shipping cost.
3. If some components need to be replaced, Magewell will decide to repair, renovate or replace the components by itself. Magewell may use new or repaired component to repair the product. The repaired product can be expected to work normally and the performance to remain the same. Repaired products can work in a good working condition and at least function the same as the original unit. The original replaced component will become the property of Magewell and components which are replaced for the client will become his/her property.
4. If the product is within warranty, Magewell will repair or replace the faulty units at its own discretion. In circumstances where the faulty unit is replaced by another one, Magewell may use new, repaired or renovated units. The faulty unit will then become the property of Magewell while the replacement unit will become the property of the purchaser.

5. If the warranty expires, Magewell will inform the purchaser whether the products can be repaired and the maintenance costs they need to pay. If purchasers decide to repair, Magewell will repair, renovate, or replace the components after receiving the maintenance costs. If purchasers give up repairing, Magewell will dispose of the faulty unit if the purchaser chooses that option.
6. The repaired or replaced product assumes 1) the remaining term of the Warranty of the replaced unit or faulty unit; 2) ninety (90) days from the date of replacement or repair, whichever provides longer coverage for you. The extended warranty is only valid for repaired/replaced components.
7. The period of service depends on the client's location (country and area) and the product.

To view the complete warranty policy, please visit www.magewell.com/quality-assurance.

Notice

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