

User Manual

N DOR



1. Precautions before installation

Describes basic precautions that users should be aware of when installing and using the product in case of a situation that may cause bodily harm. Therefore, before installing or using the product, be sure to familiarize yourself with the information described here.

General precautions

During and after installation of the product, the area around the product must be kept clean and dust-free.

Do not leave tools, cables, etc. in the aisle, as this may result in personal injury.

When installing the product, avoid wearing loose-fitting clothes, neckties, scarves, or sleeves that may get caught in the product.

Do not take any action that could cause damage to persons or equipment.

If you need to open the cover of the product to extend the product's performance or repair a malfunction, be sure to contact the place of purchase for professional help.

Power Precautions

When connecting power to the product, first check that the wiring is not overloaded.

When connecting the power to the product, do not wear jewelry such as rings, necklaces, or watches. If these accessories are connected to a power source or ground, there is a risk of burning the parts.

Always check the work area for potential hazards. Be sure to check for wet floors, ungrounded power extension cables, frayed internal power cords, and floors that do not have a safety grounding facility.

There must be an outlet near the appliance and the outlet must be easily accessible.

Install by service personnel and install the appliance so that it is connected to a socket-outlet with a protective earth wire



Before proceeding with hardware installation, turn off the power of the system to be installed, and then touch a grounded surface such as the metal side of the power supply to discharge static electricity from the body.

The manufacturer assumes no liability for direct or indirect damage resulting from the use of improper parts by unauthorized service personnel.

If power is supplied during installation, it may cause damage to system components and body.

Power

The power cord and power outlet act as the main power disconnect device in case of an emergency such as a fire, so do not stack or block objects in front of the power outlet so that you can unplug the power cord from the power outlet at any time.



FCC Compliance Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.



CE Marking is the symbol as shown on the left of this page. The letters "CE" are the abbreviation of French phrase "Conformité Européene" which literally means "European Conformity". The term initially used was "EC Mark" and it was officially replaced by "CE Marking" in the Directive 93/68/EEC in 1993. "CE Marking" is now used in all EU official documents.



1. INTRODUCTION

NDOR is an H.264/HEVC encoder, streamer, and recorder capable of NDI HX2/3, SRT, RTMP streaming, and lightweight MP4 recording. By selecting a device with these capabilities, you can efficiently manage and stream two simultaneous video streams from HDMI and SDI inputs, ensure high-quality output, record in MP4 format, and share recordings via SAMBA, facilitating easy access and collaboration over the network.

2.7" LCD	Displaying the real-time encoding screen allows for the most intuitive monitoring of any video or audio issues during broadcasting. Being able to visually confirm whether recording, streaming, or encoding is in progress taps into a basic human instinct.
4K 30P Encoding	To encode H.264/HEVC video and AAC audio at up to 4K resolution from HDMI and SDI inputs, specialized equipment is needed. These encoders are essential in various fields such as broadcasting, streaming, and video production.
Dual Stream Capability	Supports various streaming protocols like RTMP, SRT and NDI HX2/3, allowing for live streaming to platforms such as YouTube, Facebook. Capable of streaming to two different platforms simultaneously.
Auto Lip-Sync	Have you experienced audio and video lip-sync issues during long streaming sessions? During 3-4 days of streaming, if lip-sync issues occur, our algorithm automatically re-syncs the audio and video to correct the problem.
Recording	NDOR supports HDMI FHD up to 1080P 120fps, recording MP4 and TS files. These can be saved to USB, SD, or network storage and shared via SAMBA for easy access and backup across the local network.
Professional Audio Standard	Balanced audio cables reduce the noise picked up over long cable runs and can run cables over much longer distances without significant degradation of the audio signal. The use of balanced audio ensures higher quality, more reliable, and noise-resistant audio transmission, making it ideal for professional and high-fidelity applications.
Co-developed H.264/HEVC + NPU RISC-V Based SOC	Inside, there is a RISC V-based H.264/HEVC encoder/decoder and an NPU chip, co-developed in Korea. This chip, equipped with 8 cores, enables fast computations and encodes video quality up to 4K30P.
WEB SERVER	The Sharon Finder APP is designed to simplify the management of NDI devices by retrieving their current IP addresses and enabling remote control and monitoring via a web server. Provides a centralized interface for managing the settings and monitoring the performance.

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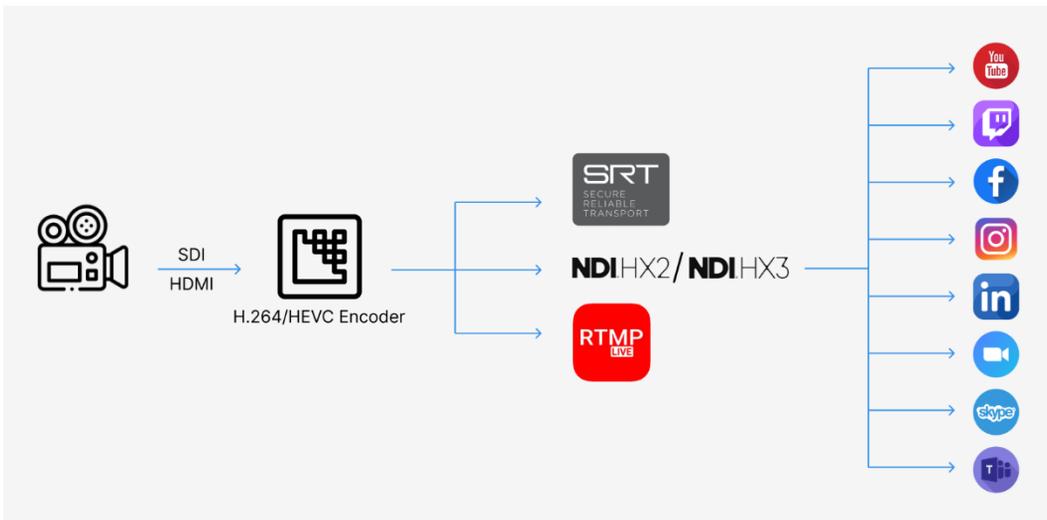
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1. Product Introduction

N DOR can encode video up to 4K 30p via HDMI input or up to 1080P60 via 3G-SDI input into multi-protocols such as NDI HX3/NDI HX2/SRT/RTMP, for remote transmission and live streaming or recording. A 2.7-inch LCD is mounted on the front, providing output video, audio Level Meter, and input/output resolution information.

• Product Features

- ① 2.7inch TFT LCD Display
- ② Balanced Audio input
- ③ External TALLY control (3.5mm Phone Jack)
- ④ Output resolution and scaling function
- ⑤ USB, SD Card supports recording
- ⑥ Features a ¼ Inch female thread to mount device on to the camera body



2. Interface

< FRONT VIEW >



① Recording Port

② 2.7in LCD Display

Menu Button

① USB

- Recording MP4 to USB storage.

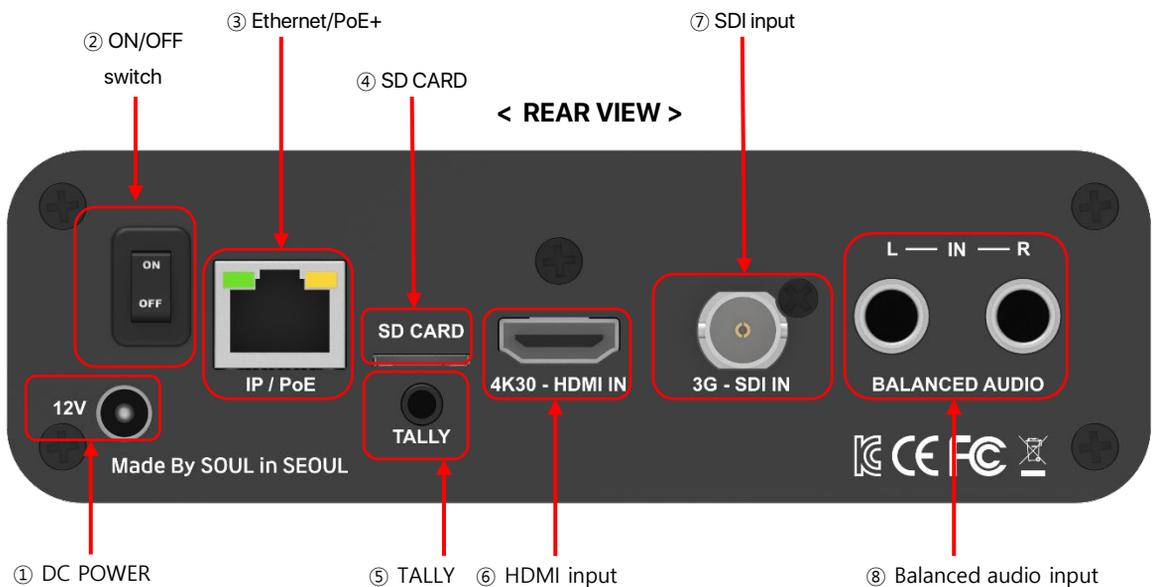
② 2.7-inch LCD Display

- Displays output video, HDMI/SDI input modes, input resolution, output resolution, and displays audio level meter and recording status.

③ One-Click Setting Button

- Used for IP configuration, output resolution settings, encoding settings, and audio settings.

< REAR VIEW >



① DC POWER

⑤ TALLY

⑥ HDMI input

⑧ Balanced audio input

② ON/OFF switch

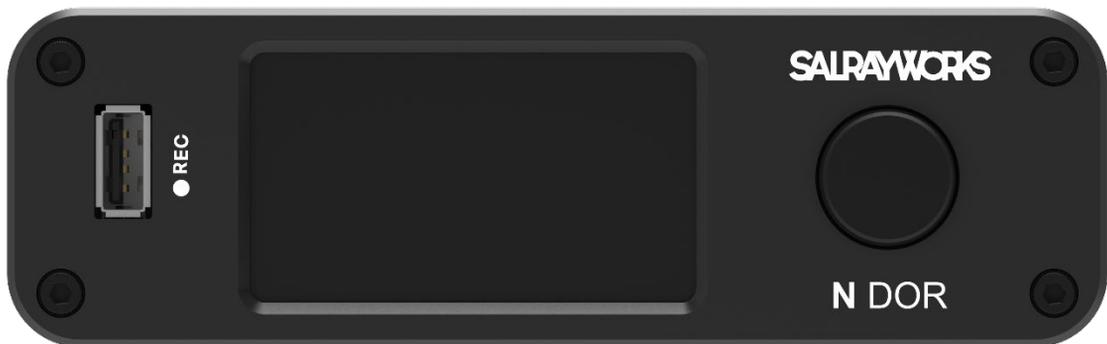
③ Ethernet/PoE+

④ SD CARD

⑦ SDI input

- ① DC POWER : DC Power input (DC +7 to +18V)
- ② ON/OFF Switch : DC Power ON/OFF switch
- ③ Ethernet : Ethernet Gigabyte Port (RJ-45 Connector)/PoE+
- ④ SD CARD : Micro SD Recording (Micro SD Connector)
- ⑤ TALLY : External TALLY control signal (3.5mm Phone Jack)
- ⑥ HDMI Input : HDMI video input Port (HDMI Connector)
- ⑦ SDI Input : SDI video input Port (BNC Connector)
- ⑧ Audio Input : Balanced audio Input L/R 2 Port (1/4" Stereo Jack)

3. Components



① N DOR



② AC to DC Adapter



KC



CE



UK



UL

③ An AC Plug per each country above.

4. Dimensions

Video Input

HDMI Input : (HDMI) x 1

- HD : 1080p30/1080p29.97/1080p25/1080p24/1080p23.98/
1080i60/1080i59.94/1080i50/720p60/720p59.94/720p50
- Full HD : 1080p60/1080p59.94/1080p50
- UHD : 2160p30

SDI Input : (BNC 75Ω) x 1

- HD : 1080p30/1080p29.97/1080p25/1080p24/1080p23.98/
1080i60/1080i59.94/1080i50/720p60/720p59.94/720p50
- Full HD : 1080p60/1080p59.94/1080p50

Audio Input

- 2x Balanced Audio (1/4" Stereo Jack)

Video Output

Encoding

- H.264, H.265(HEVC)

Stream

- NDI HX2, NDI HX3, SRT, RTMP

Ethernet : (Gigabit) x 1

- 10M/100M/1000M RJ45 (PoE supported 802.3af)

Recoding

USB PORT : 1x USB 2.0 Type A

SD CARD : 1x Micro SD

Display

2.7" TFT-LCD Display

Electrical

Power Input: DC +7 to +18V

Power Consumption: 6W(max.)

Operation Temperature: 0~45°C

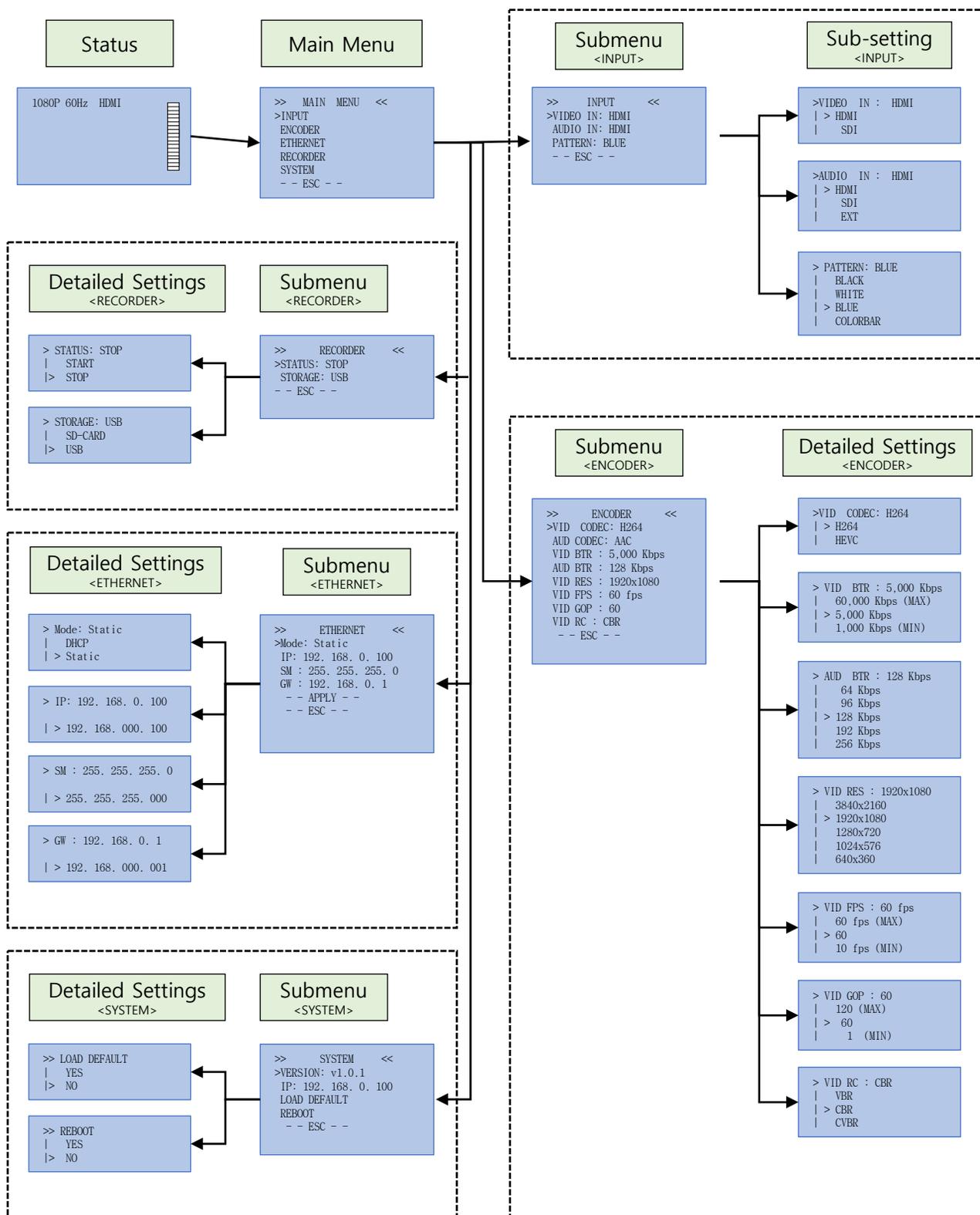
PoE+

Physical

Dimension: 44(H) X 143.4(W) X 89.9(D), include connector

Weight: 0.42 kg (typ.)

5. Configuration Structure

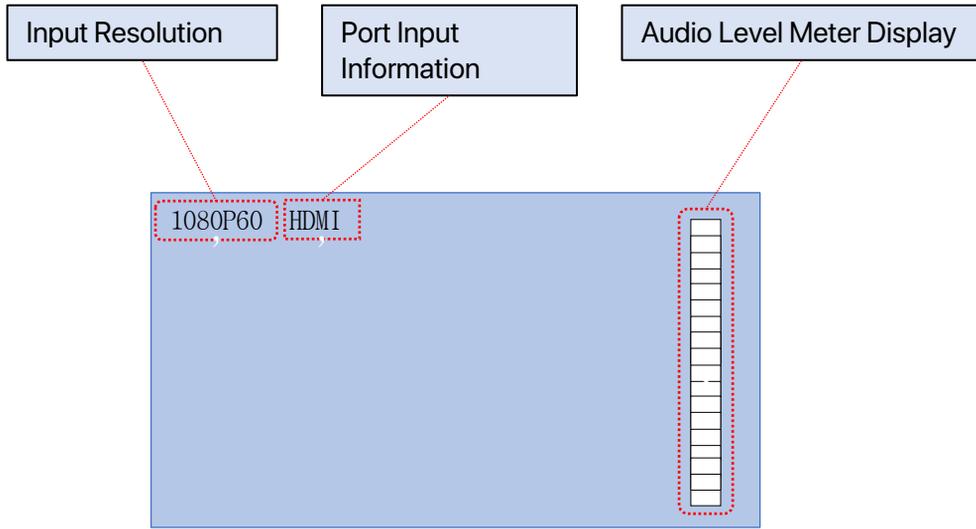


6. Configuration Overview

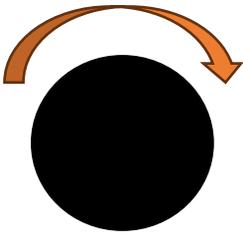
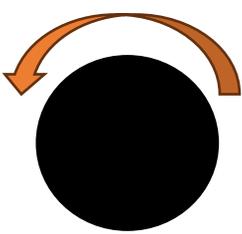
Submenu	Settings	Options	Function
INPUT	VIDEO IN	HDMI SDI	Select video input port (*When selected, the audio input port is automatically converted to the appropriate input port.)
	AUDIO IN	HDMI SDI EXT	Select audio input port
	PATTERN	BLACK WHITE BLUE COLORBAR	Select a color/pattern to be displayed when there is no input.
ENCODER	VID CODEC	H264 HEVC	Select video output codec method.
	VID BTR	1,000 kbps ~ 60,000 kbps	Video Output bitrate settings.
	AUD BTR	64 Kbps 96 Kbps 128 Kbps 192 Kbps 256 Kbps	Audio Output bitrate settings.
	VID RES	3840x2160 1920x1080 1280x720 1024x576 640x360	Video output resolution settings.
	VID FPS	10 fps ~ 60 fps	Video output frame rate set
	VID GOP	1 ~ 120	Set output video key interval.
	VID RC	VBR CBR CVBR	Set output video control rate.
RECORDER	STATUS	START STOP	Select "START" to record. Select "STOP" to stop recording.
	STORAGE	SD CARD USB	Select storage location.
ETHERNET	MODE	DHCP Static	Set IP mode.
	IP	000.000.000.000	IP address setting, 0 ~ 255 (Can be set in Static mode)
	SM	000.000.000.000	Set subnet mask address, 0 ~ 255 (Can be set in Static mode)
	GW	000.000.000.000	Set gateway address, 0 ~ 255 (Can be set in Static mode)
SYSTEM	LOAD DEFAULT	YES NO	Factory reset will proceed if YES is selected.
	REBOOT	YES NO	Reboot proceeds when YES is selected.

Operation Descriptions by Location

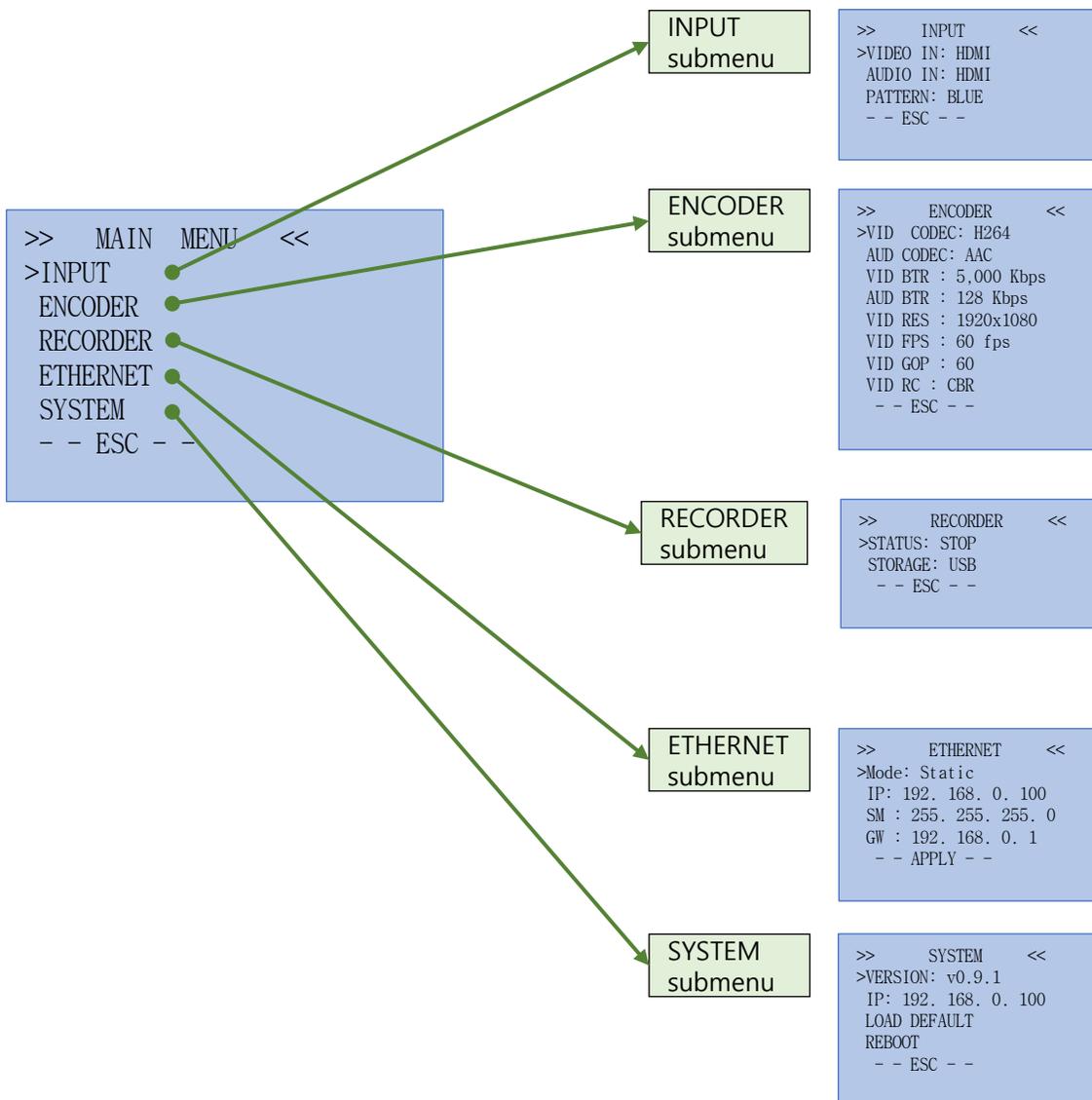
7.1 Operation Status



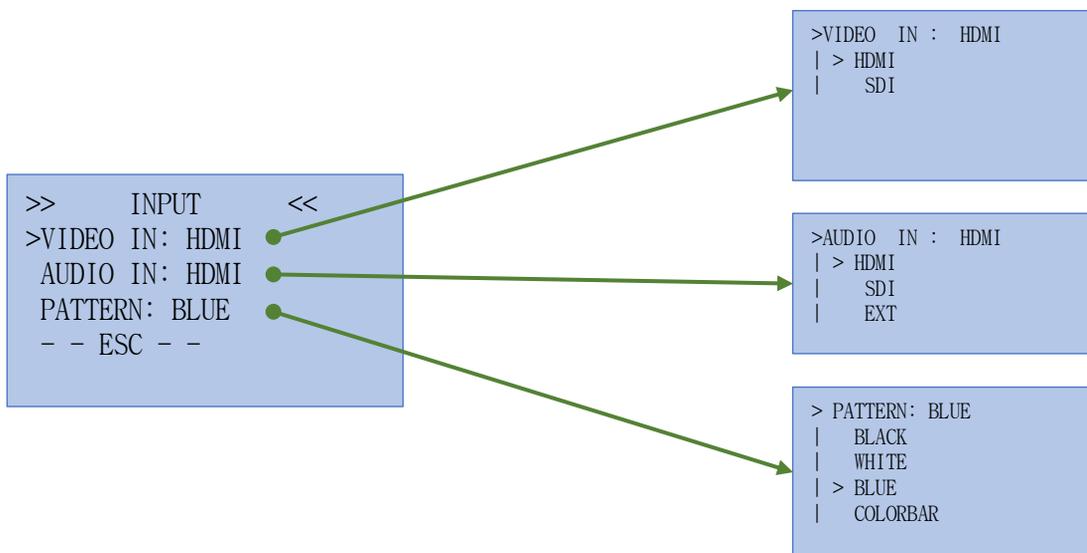
Front Dial Operation

<p>Turn to the right</p> 	<p>Turn to the left</p> 	<p>Press for less than 2 seconds</p> 	<p>Press for longer than 2 seconds</p> 
<p>Turning the knob allows you to scroll through the list of options/selection (from top to bottom)</p>	<p>Turning the knob allows you to scroll through the list of options/selection (From bottom to top)</p>	<p>Select option</p>	<p>ESC</p>

7.3 Main Menu Configuration Items

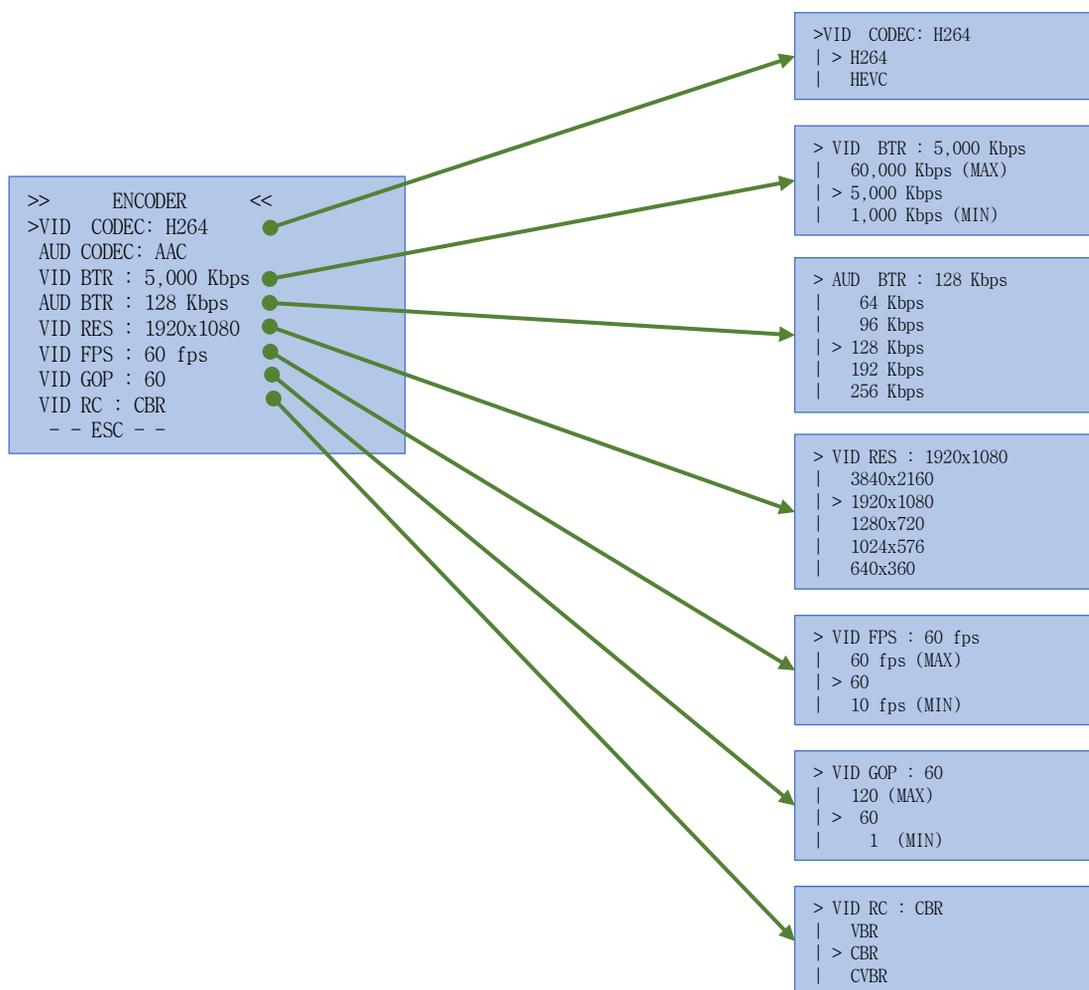


7.4 INPUT Submenu and Settings



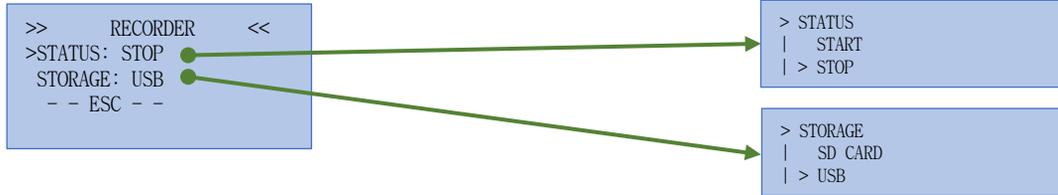
Settings	Function
VIDEO IN	-HDMI: HDMI audio input -SDI: SDI video input
AUDIO IN	-HDMI: HDMI Embedded audio input -SDI: SDI Embedded audio input -EXT: External audio input (1/4" Stereo Jack)
PATTERN	-BLACK: Displays BLACK screen when there are no video inputs. -WHITE: Displays WHITE screen when there are no video inputs. -BLUE: Displays BLUE screen when there are no video inputs. -COLORBAR: Displays COLORBAR when there are no video inputs.

7.5 ENCODER Submenu and Settings



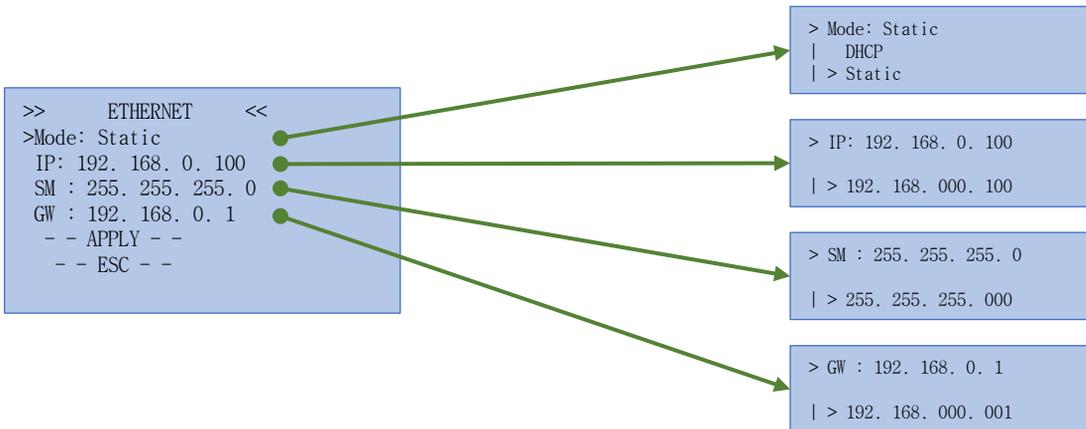
Settings	Functions
VID CODEC	Sets the output video codec value
VID CODEC	Displays output video codec value information (fixed as "AAC")
VID BTR	Sets the output video bitrate value
AUD BTR	Sets the output audio bitrate value
VID RES	Sets the output video resolution
VID FPS	Sets the output video frame rate
VID GOP	Sets output video keyframe interval
VID RC	Sets output video rate control settings

7.6 RECORDER Submenu and Settings



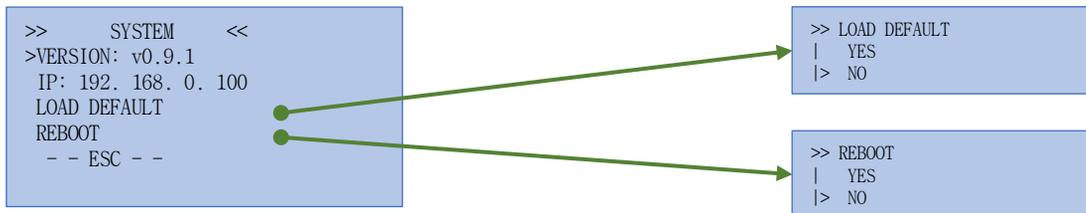
Settings	Functions
STATUS	Select START/STOP.
STORAGE	Select Storage location.

7.7 ETHERNET Submenu and Settings



Settings	Functions
Mode	Select IP setting method. Static: Use static IP DHCP: Use automatic IP
IP	IP address settings. (Only used in Static mode)
SM	Subnet mask address setting. (Only used in Static mode)
GW	Gateway address settings. (Only used in Static mode)

7.8 SYSTEM Submenu and Settings



Settings	Functions
VERSION	Displays Firmware information
IP	Displays IP information
LOAD DEFAULT	Factory reset settings (Factory reset will proceed if YES is selected.)
REBOOT	Reboots system (Reboot will proceed if YES is selected.)

SHARON FINDER

SHARON Finder allows you to discover Salrayworks NDI devices on the same network and find their IP addresses, MAC addresses, change their hostname or IP settings, and restart the devices. It also enables resetting the web server password. By clicking on the IP address, you can access the web server.

Devices ↻			
HOST	IP	MAC	ACTION
N DOR 1	192.168.0.219 ✓	e8:eb:1b:37:dd:11	  
N DOR 1	192.168.0.108 ✓	d8:47:8f:91:16:27	  

Rows per page: 10 1-2 of 2 < >

SHARON Finder Download

<p>WINDOW Version http://www.salrayworks.com/eng/bbs/board.php?bo_table=download&wr_id=108</p> 	<p>MAC Version http://www.salrayworks.com/eng/bbs/board.php?bo_table=download&wr_id=107&page=2</p> 
--	---

Login

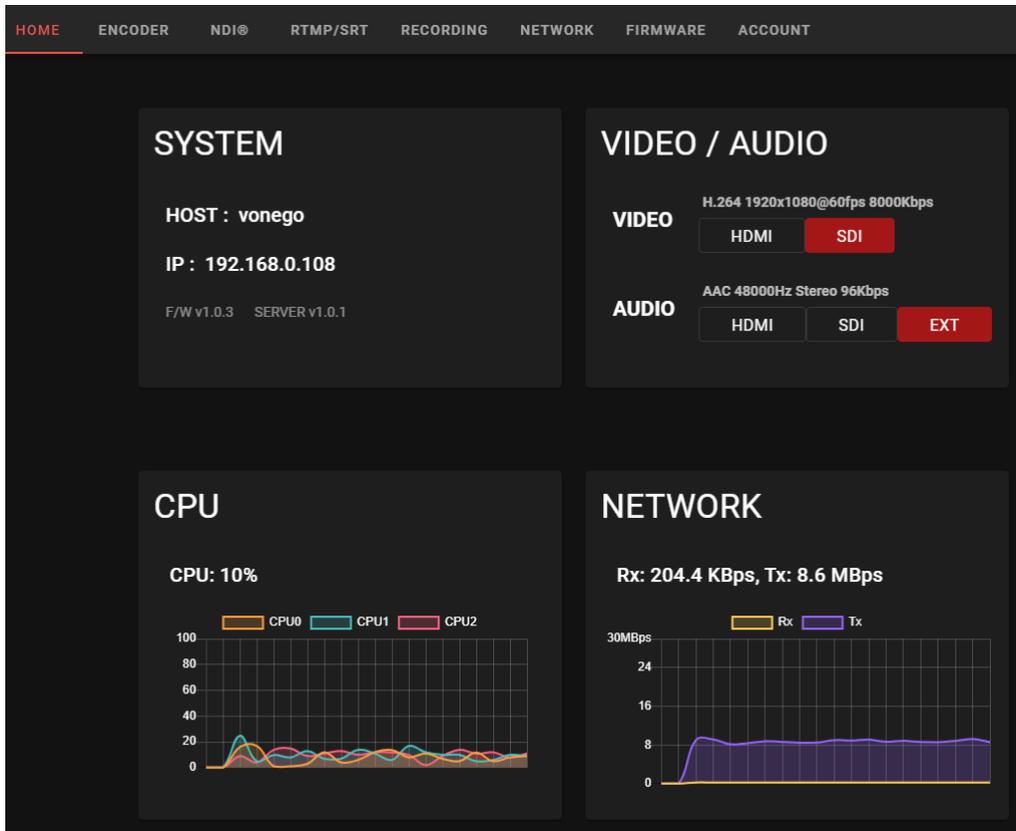
ID _____

Please enter password _____

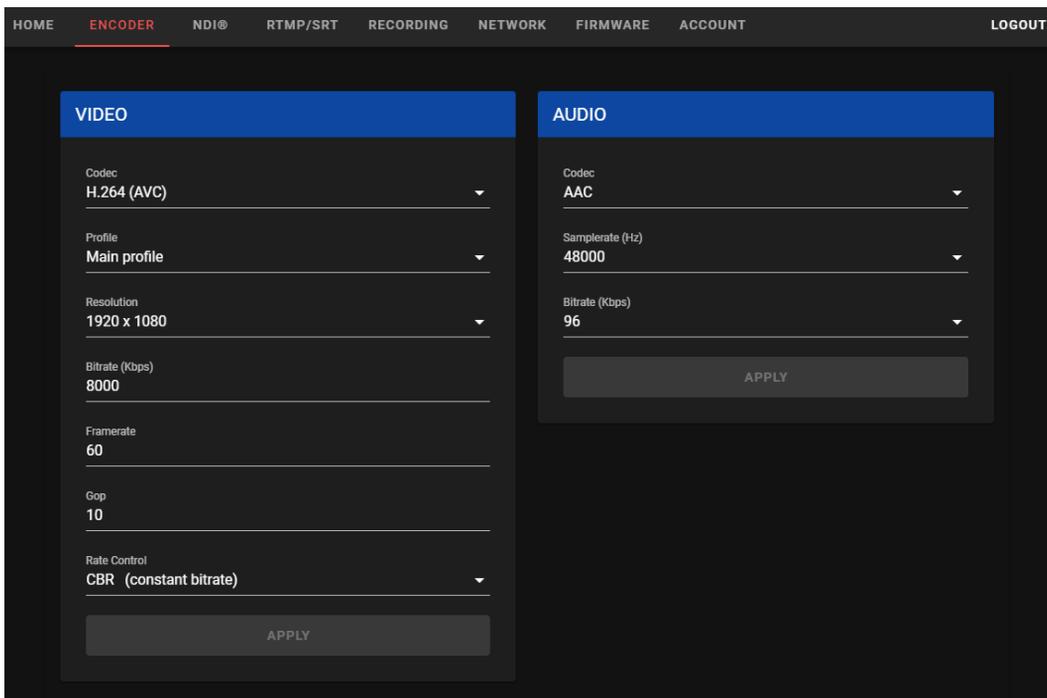
OK
CANCEL

The default password is fixed as ID: admin and PW: admin

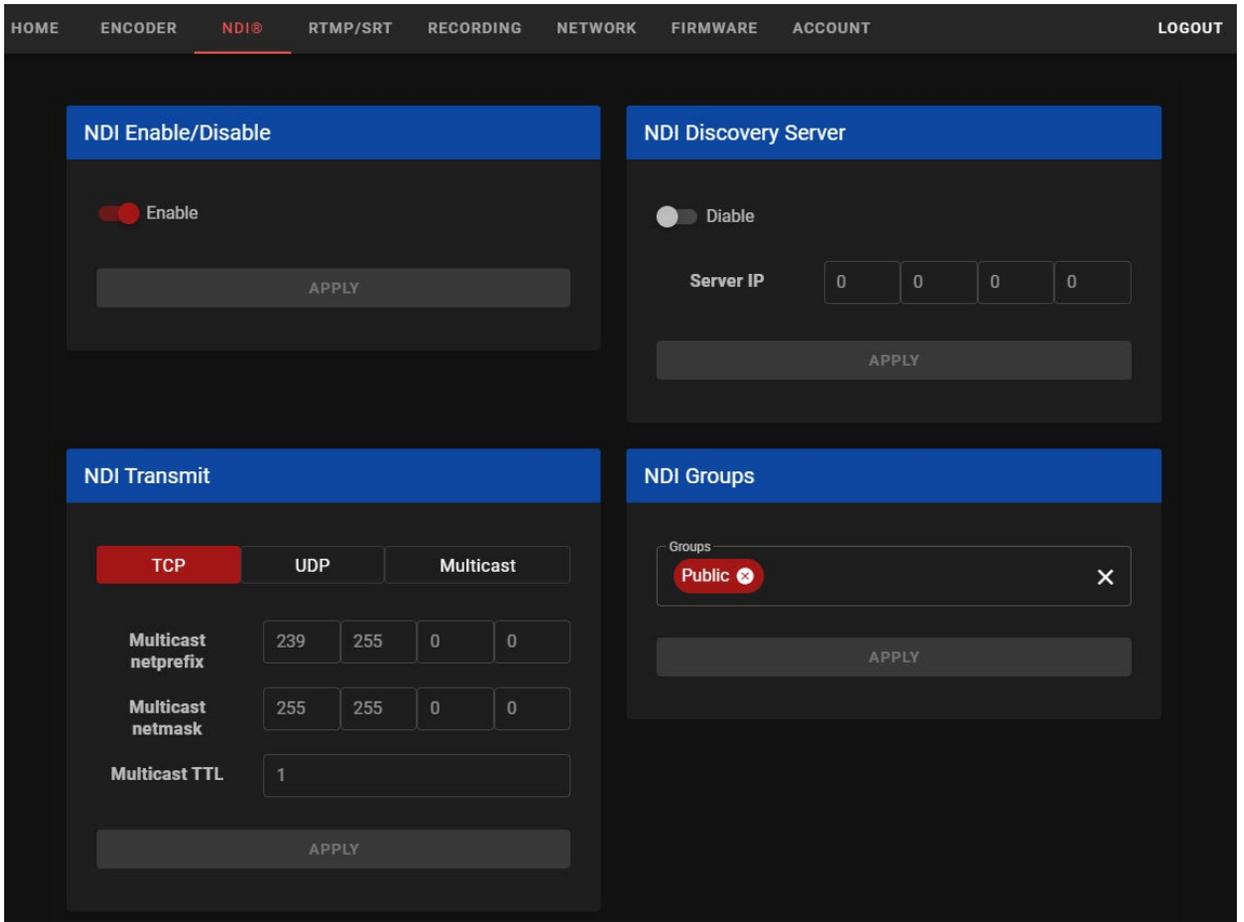
You can monitor the status of NDOR and adjust the video or audio inputs



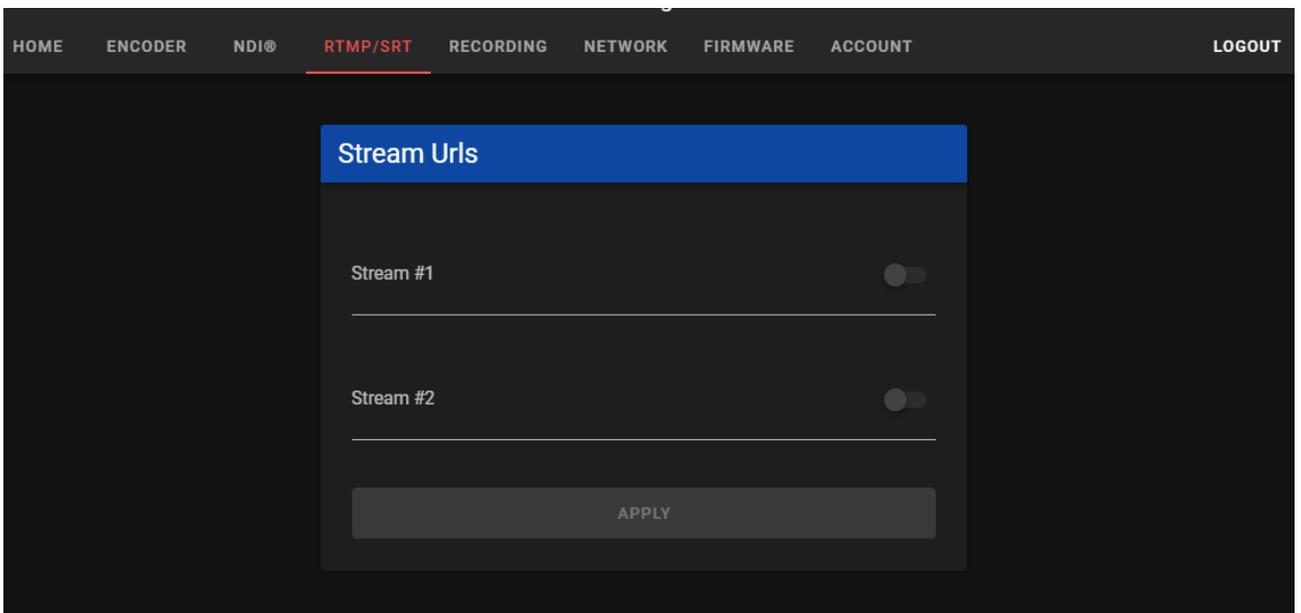
You can select the video and audio encoding settings menus



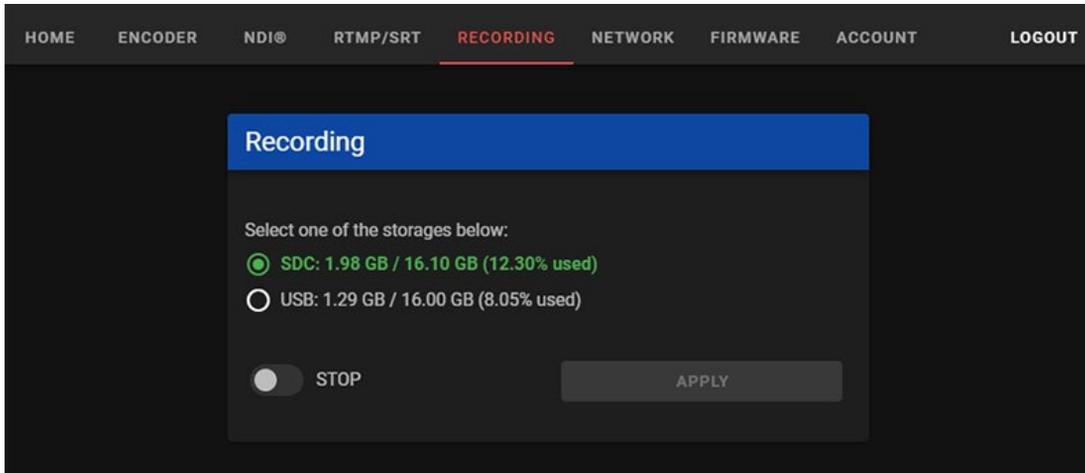
These are the features and settings according to the NDI standards.



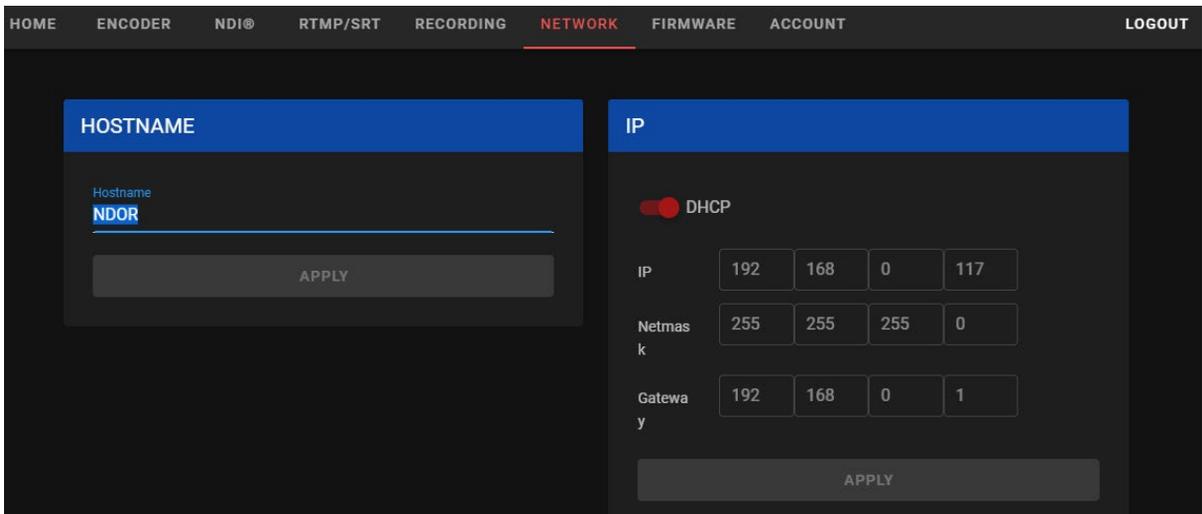
You can start streaming simultaneously by entering up to two streaming addresses, supporting RTMP or SRT streaming



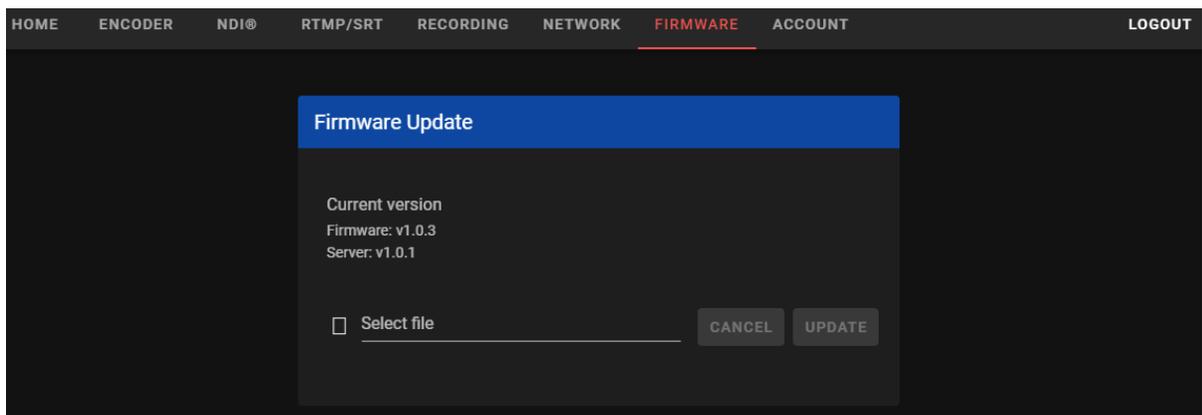
You can record as MP4 video files to the storage space on a USB or SD card and copy the stored files from the USB to your PC over the same network via SAMBA.



You can rename the device or reconfigure its IP address and settings.



You can download and update to the latest firmware.



7.9 Appendix

NDOR HTTP API

The following is a list of HTTP APIs supported by NDOR:

- `getVideoSource`
- `getAudioSource`
- `getVideoEncoding`
- `getAudioEncoding`
- `getRecordingStatus`
- `getStreamingUrls`
- `setVideoSource`
- `setAudioSource`
- `setVideoEncoding`
- `setAudioEncoding`
- `startRecording`
- `stopRecording`
- `setStreamingUrls`
- `reboot`

The HTTP API URL for NDOR is based on the NDOR device's IP address (e.g., 192.168.0.100) and is structured as follows:

`http://192.168.0.100/api/v1/[HTTP-API]`

The HTTP API returns data in JSON format. You can also use JSON-formatted data as input when necessary. The key names in the input JSON format are case-sensitive, so you must use the specified lowercase letters. However, for string values in the JSON input data, case sensitivity is not important.

Detailed Explanation of Each HTTP API:

1. `getVideoSource`

- Retrieves information about the video source.
- Request Method: GET

- Input: None
- Response:

json

```
{  
  "result": Number, // Success: 200  
  "status": "STRING", // Success: "OK"  
  "data": {  
    "sources": "STRING", // "[HDMI|SDI]"  
    "current": "STRING" // Currently selected video source  
  }  
}
```

Example Response:

json

```
{  
  "result": 200,  
  "status": "OK",  
  "data": {  
    "sources": "[HDMI|SDI]",  
    "current": "HDMI"  
  }  
}
```

2. **getAudioSource**

- Retrieves information about the audio source.

- Request Method: GET
- Input: None
- Response:

json

```
{  
  "result": Number, // Success: 200  
  "status": "STRING", // Success: "OK"  
  "data": {  
    "sources": "STRING", // "[HDMI|SDI|EXT]"  
    "current": "STRING" // Currently selected audio source  
  }  
}
```

Example Response:

json

```
{  
  "result": 200,  
  "status": "OK",  
  "data": {  
    "sources": "[HDMI|SDI|EXT]",  
    "current": "HDMI"  
  }  
}
```

3. **getVideoEncoding**

- Retrieves video encoding information.
- Request Method: GET
- Input: None
- Response:

json

```
{
  "result": Number, // Success: 200
  "status": "STRING", // Success: "OK"
  "data": {
    "codec": "STRING", // "H.264" or "H.265"
    "profile": "STRING", // "Baseline", "Main", "High"
    "resolution": "STRING", // "[widthxheight]" format
    "framerate": Number, // Set frame rate
    "bitrate": Number, // Set bitrate, in Kbps
    "gop": Number // Set GOP
  }
}
```

Example Response:

json

```
{
  "result": 200,
  "status": "OK",
  "data": {
```

```
    "codec": "H.264",
    "profile": "Main",
    "resolution": "1920x1080",
    "framerate": 60,
    "bitrate": 2000,
    "gop": 60
  }
}
```

4. **getAudioEncoding**

- Retrieves audio encoding information.
- Request Method: GET
- Input: None
- Response:

json

```
{
  "result": Number, // Success: 200
  "status": "STRING", // Success: "OK"
  "data": {
    "codec": "STRING", // "AAC"
    "samplerate": Number, // 48000
    "channels": Number, // 2
    "bitrate": Number // Set bitrate, in Kbps
  }
}
```

Example Response:

json

```
{
  "result": 200,
  "status": "OK",
  "data": {
    "codec": "AAC",
    "samplerate": 48000,
    "channels": 2,
    "bitrate": 128
  }
}
```

5. **getRecordingStatus**

- Retrieves recording status information.
- Request Method: GET
- Input: None
- Response:

json

```
{
  "result": Number, // Success: 200
  "status": "STRING", // Success: "OK"
  "data": {
    "status": "STRING", // "started" or "idle"
```

```
    "storage": "STRING", // "SD" or "USB"
    "duration": Number // -1 or recording duration, in seconds
  }
}
```

Example Response:

json

```
{
  "result": 200,
  "status": "OK",
  "data": {
    "status": "started",
    "storage": "USB",
    "duration": 360
  }
}
```

6. **getStreamingUrls**

- Retrieves the list of streaming URLs and their activation status.
- Request Method: GET
- Input: None
- Response:

json

```
{
  "result": Number, // Success: 200
```

```
"status": "STRING", // Success: "OK"
"data": [
  {
    "url": "STRING", // rtmp(s), srt URL
    "enable": Boolean // Activation status
  }
]
}
```

Example Response:

json

```
{
  "result": 200,
  "status": "OK",
  "data": [
    {
      "url": "rtmp://1.222.207.7:1935/tinno/test10",
      "enable": true
    },
    {
      "url": "rtmps://live-api-s.facebook.com:443/rtmp/StreamKey",
      "enable": false
    }
  ]
}
```

7. **setVideoSource**

- Sets the video input source.
- Request Method: POST
- Input:

json

```
{  
  "source": "STRING" // [Required] "HDMI" or "SDI"  
}
```

Example Input:

json

```
{  
  "source": "sdi"  
}
```

Response:

json

```
{  
  "result": Number, // Success: 200  
  "status": "STRING" // Success: "OK"  
}
```

Example Response:

json

```
{  
  "result": 200,  
  "status": "OK"  
}
```

8. **setAudioSource**

- Sets the audio input source.
- Request Method: POST
- Input:

json

```
{  
  "source": "STRING" // [Required] One of "HDMI", "SDI", "EXT"  
}
```

Example Input:

json

```
{  
  "source": "sdi"  
}
```

Response:

json

```
{  
  "result": Number, // Success: 200  
  "status": "STRING" // Success: "OK"  
}
```

Example Response:

json

```
{  
  "result": 200,  
  "status": "OK"  
}
```