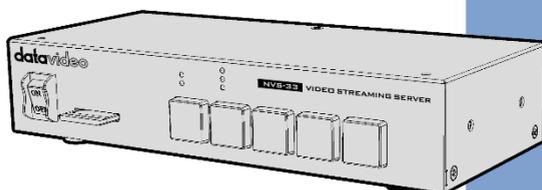


datavideo



VIDEO STREAMING SERVER **NVS-33**

Instruction Manual

www.datavideo.com

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Disclaimer of Product & Services

The information offered in this instruction manual is intended as a guide only. At all times, Datavideo Technologies will try to give correct, complete and suitable information. However, Datavideo Technologies cannot exclude that some information in this manual, from time to time, may not be correct or may be incomplete. This manual may contain typing errors, omissions or incorrect information. Datavideo Technologies always recommend that you double check the information in this document for accuracy before making any purchase decision or using the product. Datavideo Technologies is not responsible for any omissions or errors, or for any subsequent loss or damage caused by using the information contained within this manual. Further advice on the content of this manual or on the product can be obtained by contacting your local Datavideo Office or dealer.

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.

Warnings and Precautions



1. Read all of these warnings and save them for later reference.
2. Follow all warnings and instructions marked on this unit.
3. Unplug this unit from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this unit in or near water.
5. Do not place this unit on an unstable cart, stand, or table. The unit may fall, causing serious damage.
6. Slots and openings on the cabinet top, back, and bottom are provided for ventilation. To ensure safe and reliable operation of this unit, and to protect it from overheating, do not block or cover these openings. Do not place this unit on a bed, sofa, rug, or similar surface, as the ventilation openings on the bottom of the cabinet will be blocked. This unit should never be placed near or over a heat register or radiator. This unit should not be placed in a built-in installation unless proper ventilation is provided.
7. This product should only be operated from the type of power source indicated on the marking label of the AC adapter. If you are not sure of the type of power available, consult your Datavideo dealer or your local power company.
8. Do not allow anything to rest on the power cord. Do not locate this unit where the power cord will be walked on, rolled over, or otherwise stressed.
9. If an extension cord must be used with this unit, make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord rating.
10. Make sure that the total amperes of all the units that are plugged into a single wall outlet do not exceed 15 amperes.
11. Never push objects of any kind into this unit through the cabinet ventilation slots, as they may touch dangerous voltage points or short out parts that could

result in risk of fire or electric shock. Never spill liquid of any kind onto or into this unit.

12. Except as specifically explained elsewhere in this manual, do not attempt to service this product yourself. Opening or removing covers that are marked “Do Not Remove” may expose you to dangerous voltage points or other risks, and will void your warranty. Refer all service issues to qualified service personnel.
13. Unplug this product from the wall outlet and refer to qualified service personnel under the following conditions:
 - a. When the power cord is damaged or frayed;
 - b. When liquid has spilled into the unit;
 - c. When the product has been exposed to rain or water;
 - d. When the product does not operate normally under normal operating conditions. Adjust only those controls that are covered by the operating instructions in this manual; improper adjustment of other controls may result in damage to the unit and may often require extensive work by a qualified technician to restore the unit to normal operation;
 - e. When the product has been dropped or the cabinet has been damaged;
 - f. When the product exhibits a distinct change in performance, indicating a need for service.

Warranty

Standard Warranty

- Datavideo equipment are guaranteed against any manufacturing defects for one year from the date of purchase.
- The original purchase invoice or other documentary evidence should be supplied at the time of any request for repair under warranty.
- The product warranty period begins on the purchase date. If the purchase date is unknown, the product warranty period begins on the thirtieth day after shipment from a Datavideo office.
- All non-Datavideo manufactured products (product without Datavideo logo) have only one year warranty from the date of purchase.
- Damage caused by accident, misuse, unauthorized repairs, sand, grit or water is not covered under warranty.
- Viruses and malware infections on the computer systems are not covered under warranty.

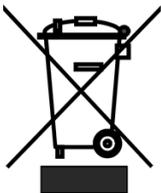
- Any errors that are caused by unauthorized third-party software installations, which are not required by our computer systems, are not covered under warranty.
- All mail or transportation costs including insurance are at the expense of the owner.
- All other claims of any nature are not covered.
- All accessories including headphones, cables, and batteries are not covered under warranty.
- Warranty only valid in the country or region of purchase.
- Your statutory rights are not affected.

Three Year Warranty

- All Datavideo products purchased after July 1st, 2017 are qualified for a free two years extension to the standard warranty, providing the product is registered with Datavideo within 30 days of purchase.
- Certain parts with limited lifetime expectancy such as LCD panels, DVD drives, Hard Drive, Solid State Drive, SD Card, USB Thumb Drive, Lighting, Camera module, PCIe Card are covered for 1 year.
- The three-year warranty must be registered on Datavideo's official website or with your local Datavideo office or one of its authorized distributors within 30 days of purchase.



Disposal



For EU Customers only - WEEE Marking

This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

1 Introduction

The Datavideo NVS-33 is a video streaming server designed for various network environments, offering you multiple bitrate settings as well as the flexibility of streaming and recording either individually or simultaneously.

From any SDI/HDMI input sources, the Datavideo's video streaming server generates an H.264 encoded stream that is compliant with RTSP or RTMP(S) protocols. Additionally, you can also connect an external RCA Unbalanced Audio source to the NVS-33.

While encoding the video at bitrates appropriate for live streaming, the Datavideo NVS-33 concurrently records a high-quality MP4 file to an SD card formatted to NTFS or FAT32 file system.

1.1 Features

Major Five Features

- Simultaneous H.264 video streaming and recording at multiple bitrates
- Supports FAT32 and NTFS file format for continuous footage recording
- Selectable audio sources such as SDI/HDMI embedded audio, external RCA unbalanced audio and both
- Supports multilingual web based control interface (English, Traditional Chinese and Simplified Chinese)
- Bicolor LEDs for status indication

Supported Input Formats

- 1080p at 23.98/24/25/29.97/30/50/59.94/60 fps
- 1080i at 50/59.94/60 fps
- 720p at 50/59.94/60 fps
- 480i at 59.94 fps
- 576i at 50 fps

Operating System and Web Browser for the Web UI

- Operating Systems
 - Microsoft Windows 8.1 (64-bit)
 - Microsoft Windows 10 (64-bit)
- Web Browsers
 - Microsoft Internet Explorer
 - Microsoft Edge

- Google Chrome

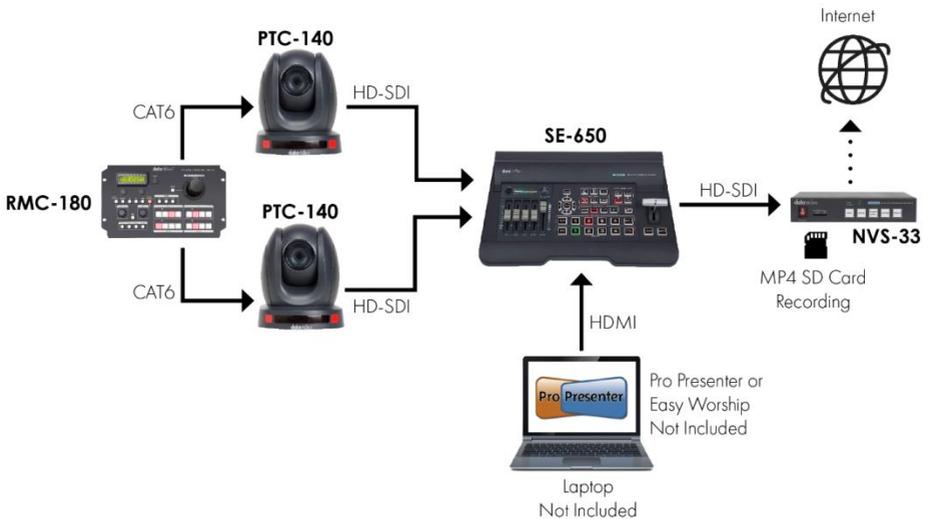
Streaming

- Video streaming protocols are RTSP, RTMP, RTMPS, TS, HLS and SRT supported by the following:
 - Adobe Media Server and Wowza Media Server.
 - Video Players such as QuickTime and VLC.
 - Content Delivery Networks such as Youtube Live and Ustream.

Recording

- Records MP4 or TS file to an SD card formatted to NTFS or FAT32 file system (TS file is currently not supported)

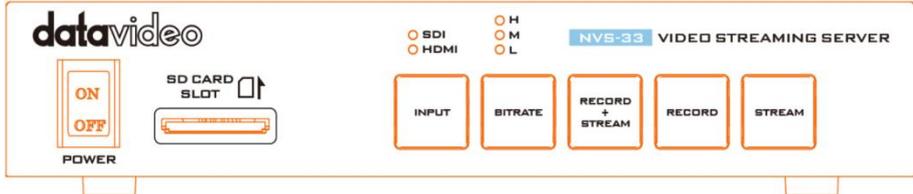
1.2 System Diagram



2 Connections and Control

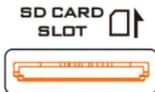
In this section, we will show you how you can operate the device as well as the device setup.

2.1 Front Panel



Power Switch

Turn on/off the device.



SD Card Slot

The SD Card Slot allows insertion of an SD Card for video recording.



INPUT Button

Press the **INPUT** button to select between SDI and HDMI input sources. The button is always in solid white.

The activated input source will be indicated by the corresponding LED.



- **Green:** Input source activated
- **Off:** Input source deactivated

Note: The Input button is disabled while streaming or recording is in progress.



BITRATE Button

Switch the stream/record bitrate mode using the **BITRATE** button; follow the steps outlined below:

- Press and hold one of the **RECORD+STREAM** button, the **RECORD** button and the **STREAM** button until the pressed button starts blinking red.
- Continue holding down one of the **RECORD+STREAM** button, the **RECORD** button, and the **STREAM** button while pressing the **BITRATE** button to switch bitrate mode (H, M or L).

Note: The system will return to the previous setting if the BITRATE button push is not sensed. The default bitrate is M.

H/M/L LED Indicators

ON (Green): Bitrate mode enabled

OFF: Bitrate mode disabled



RECORD+STREAM Button

The **RECORD+STREAM** button activates and deactivates simultaneous recording and streaming; follow the steps outlined below:

Start recording/streaming simultaneously

- When idle, the **RECORD+STREAM** button is solid white.
- Press and hold the **RECORD+STREAM** button for approximately 2 seconds (**Note: the previously activated mode will be disabled**).
- When the record and stream functions are activating simultaneously, the **RECORD+STREAM** button turns from solid white, then blinking red and finally to solid red.
- When the **RECORD+STREAM** button turns solid red, this indicates that the record and stream functions have been successfully activated.

Stop recording/streaming simultaneously

- While recording and streaming simultaneously, the **RECORD+STREAM** button is solid red.
- Press and hold the **RECORD+STREAM** button for approximately 2 seconds.
- When the record and stream functions are terminating, the **RECORD+STREAM** button turns from solid red, then blinking red and finally to solid white.
- When the **RECORD+STREAM** button turns solid white, this indicates that the record and stream functions have been successfully terminated.



RECORD Button

The **RECORD** button activates and deactivates the **RECORD Only** mode; follow the steps outlined below:

Start recording

- When idle, the **RECORD** button is solid white.
- Press and hold the **RECORD** button for approximately 2 seconds.
- When the record function is activating, the **RECORD** button turns from solid white, then blinking red and finally to solid red.
- When the **RECORD** button turns solid red, this indicates that the record function has been successfully activated.

Stop recording

- While recording, the **RECORD** button is solid red.
- Press and hold the **RECORD** button for approximately 2 seconds.
- When the record function is terminating, the **RECORD** button turns from solid red, then blinking red and finally to solid white.
- When the **RECORD** button turns solid white, this indicates that the record function has been successfully terminated.

Note: The RECORD button is disabled in Stream Only mode.



STREAM Button

The **STREAM** button activates and deactivates the **STREAM Only** mode; follow the steps outlined below:

Start streaming

- When idle, the **STREAM** button is solid white.
- Press and hold the **STREAM** button for approximately 2 seconds.
- When the stream function is activating, the **STREAM** button turns from solid white, then blinking red and finally to solid red.
- When the **STREAM** button turns solid red, this indicates that the record function has been successfully activated.

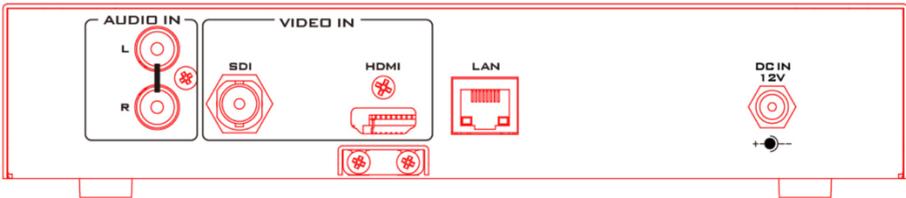
Stop streaming

- While streaming, the **STREAM** button is solid red.

- Press and hold the **STREAM** button for approximately 2 seconds.
- When the stream function is terminating, the **STREAM** button turns from solid red, then blinking red and finally to solid white.
- When the **STREAM** button turns solid white, this indicates that the stream function has been successfully terminated.

Note: The STREAM button is disabled in Record Only mode.

2.2 Rear Panel



Audio Input



RCA Unbalanced Audio Input

Connect an unbalanced stereo audio source for streaming and recording.

Video Input

HDMI



HDMI Input

Connect an HDMI video source.

SDI

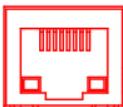


SDI Input

Connect an SDI video source.

Network

LAN



LAN

The LAN port connects the device to the Internet via an Ethernet cable.

Power



DC IN 12V

DC in socket connects the supplied 12V PSU. The connection can be secured by screwing the outer fastening ring of the DC In plug to the socket.

3 Video Streaming

In this section, we will show you ways to set up and start your video streams.

3.1 Streaming Network Connection and Device Search

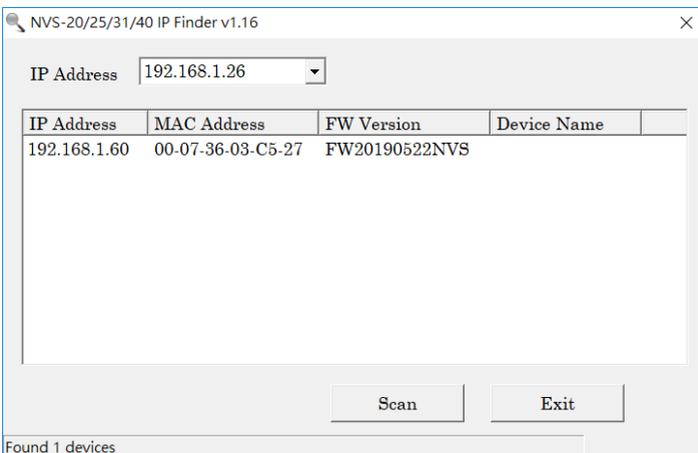
Let's first detail how to connect the NVS-33 to a network with or without a DHCP server, and describes how to acquire the NVS-33's IP address.

Connecting to a DHCP Network (DHCP Mode)

Follow the procedure below to scan your DHCP network for connected NVS-33 devices.

Note: The NVS-33 will be automatically assigned an IP address upon connection to the DHCP network.

1. Connect the NVS-33's LAN port to the network via an Ethernet cable.
2. Turn on the NVS-33's power, and the NVS-33 will also be turned ON in the DHCP mode by default.
3. Connect the laptop to the same network that the NVS-33 is connected to and download the free IP Finder utility program from the product page <https://www.datavideo.com/tw/product/NVS-33>.
4. Double click the IP Finder utility program icon to open the IP Finder interface.
5. Click the **SCAN** button to start searching for connected devices.



Connecting to a NON-DHCP Network (Static IP)

Upon connection to a non-DHCP network, the NVS-33 will not be assigned of any IP addresses. As such it is recommended that you manually assign a fixed IP address to the device or use the default IP address (**192.168.1.60**).

Default Fixed IP

Default Fixed IP is primarily used in point-to-point connection, such as connecting the PC to the NVS-33 directly. In a non-DHCP environment, the NVS-33 works in fixed IP mode only. To configure the NVS-33 to the **default IP**, please follow the steps outlined below:

1. Connect the NVS-33's LAN port to the network via an Ethernet cable.
2. Turn on the NVS-33's power and the NVS-33 will also be turned ON in the DHCP mode by default.
3. Search for the NVS-33 device according to the method as detailed in the previous DHCP section. Once found, log into the user interface on the web browser.
4. Enter the system page by clicking the "System" tab on the home of the user interface.
5. In the "Network Setting", disable the DHCP mode.
6. You will then be allowed to manually enter the static IP address once the DHCP mode is disabled. The static IP is 192.168.1.60 by default. The subnet mask and default gateway are 255.255.255.0 and 192.168.1.254 respectively.



Tip: If you forget or lose the IP address, do the following to reset the network settings.

- Please restart the power of the NVS-33 and all buttons will be shown in solid white at this time.
- Please wait for about 30 seconds. After that, all buttons will be shown in red and then go back to solid white.
- Please press the **RECORD** and **STREAM** buttons at the same time.
- When buttons are shown in blinking red for about 5 seconds, please release the pressed buttons. At this time, all buttons will go back to solid white.
- Please reboot your PC.
- The IP address should be the default IP which is **192.168.1.60**.

Troubleshooting the Network Connection

Connect the NVS-33 to the network and open the IP Finder utility program. Scan for the device. If not found, it is possible that your network is not assigning IP addresses. Reasons of this are outlined as follows:

- Router or DHCP server is not connected to the network.
- New devices are blocked by the network administrator.
- Anti-virus software or the firewall blocks the communication.

Solve the problem by attempting the following:

- Turn off the router, wait for 10 seconds then turn on the router again.
- Reset the NVS-33 to the factory default:
 - Please restart the power of the NVS-33 and all buttons will be shown in solid white at this time
 - Please wait for about 30 seconds. After that, all buttons will be shown in red and then go back to solid white.
 - Please press the **RECORD** and **STREAM** buttons at the same time.
 - When buttons are shown in blinking red for about 5 seconds, please release the pressed buttons. At this time, all buttons will go back to solid white.
 - Please reboot your PC.

If the problem still persists, try the following ways:

- Temporarily shut down the anti-virus software or firewall.
- Make sure no other devices are connected to the LAN (wired or wireless) because this may result in IP conflicts.

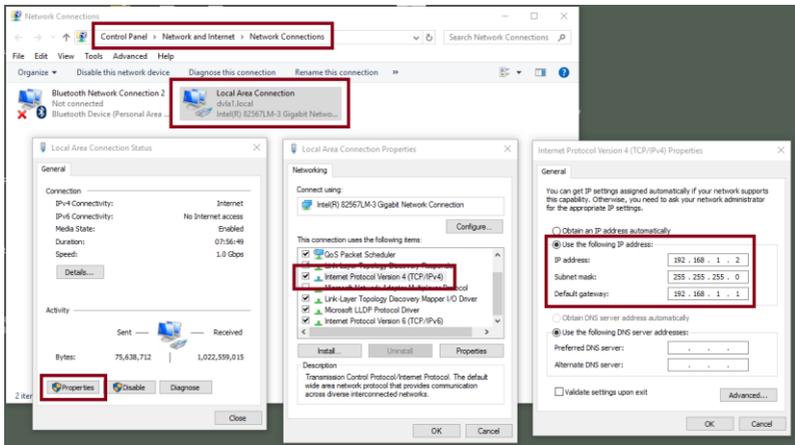
After trying all methods and if the problem is still not solved, the NVS-33 video streaming server offers the fixed IP feature that allows you to establish direct connection to the NVS-33. The default IP address is 192.168.1.60.

This method allows you to configure the NVS device to the IP range of your network so that you do not need a DHCP server to gain access to the NVS device.

- Connect your PC to the NVS device directly using an Ethernet cable (not necessarily a crossover cable).

Next, change the network settings of your Windows7 or Windows 10 PC or laptop.

- Click **START** located at the bottom left corner of your screen.
- On the text bar, enter **Network Connections** then click the icon that appears.
- Double click the network adapter that connects your PC or laptop to the network.
- Click the **“Properties”** button.
- Select **“Internet Protocol Version 4 (TCP/IPv4)”** option and click the **“Properties”** button.
- Check the **“Obtain an IP address automatically”** option.
- Enter IPv4 settings:
 - IP Address: 192.168.1.2
 - Subnet Mask: 255.255.255.0 (System default is 255.255.255.0)
 - Default Gateway: Not required for one-to-one connection.

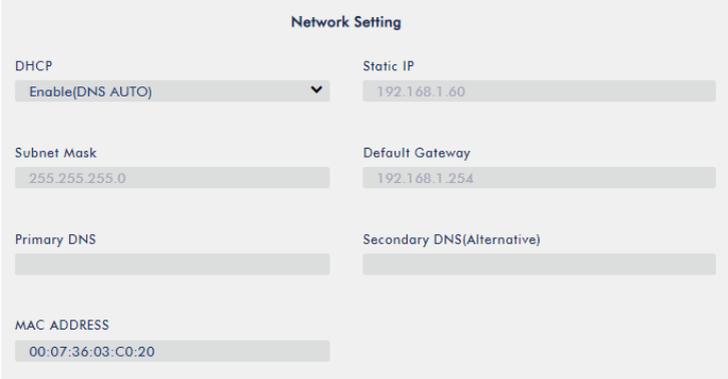


Note: Please write down the IPv4 address previously entered as it may be needed after you are done with streaming or recording.

- The NVS-33 should now be connected with an IP address of 192.168.1.60. If the NVS-33 still cannot connect, simply restore the NVS-33 to the factory defaults.
 - Please restart the power of the NVS-33 and all buttons will be shown in solid white at this time.
 - Please wait for about 30 seconds. After that, all buttons will be shown in red and then go back to solid white.
 - Please press the **RECORD** and **STREAM** buttons at the same time.

- When buttons are shown in blinking red for about 5 seconds, please release the pressed buttons. At this time, all buttons will go back to solid white.
- Please reboot your PC.
- Make sure no other devices are connected to the LAN (wired or wireless) because this may result in IP conflicts.
- Login the NVS-33 via a web browser.
 - Default user name is **admin**
 - Default password is **000000**
- Click the **“System”** tab then on the system page, enter network settings such as static IP and default gateway. Make sure that the default gateway matches your connected network and no device shares the same IP as the NVS-33.

For example, if your router’s default gateway IP is 10.10.1.1, then in the default gateway field, you should also enter 10.10.1.1. Then set the IP address of the NVS-33 to 10.10.1.X, which can range from 10.10.1.2 to 10.10.1.255. Pick an unused IP address.



Network Setting

<p>DHCP</p> <p>Enable(DNS AUTO) ▼</p>	<p>Static IP</p> <p>192.168.1.60</p>
<p>Subnet Mask</p> <p>255.255.255.0</p>	<p>Default Gateway</p> <p>192.168.1.254</p>
<p>Primary DNS</p> <p></p>	<p>Secondary DNS(Alternative)</p> <p></p>
<p>MAC ADDRESS</p> <p>00:07:36:03:C0:20</p>	

- DHCP: Disable
- Static IP: X.X.X.Y; the first three decimal numbers must be the same as your router or switch. The number Y must be a number not used by any devices connected to the network.
- Subnet Mask: 255.255.255.0
- Default Gateway: Z.Z.Z.Z; same as the gateway IP of your router or switch.

Note: Some router may require special gateway IP setting; instead of the standard 192.168.1.1. Therefore, you should check the network properties on the PC before switching to the fixed IP mode.

For example, some routers have a gateway IP of 192.168.1.254 and as a result, the default gateway and primary DNS fields on the NVS-33 must also be configured to 192.168.1.254.

- Primary DNS: Same as the default gateway IP, which, if causing issues, can be changed to 8.8.8.8 or 8.8.4.4 (Public DNS provided by Google).
- Click the “**Submit**” button to save the network settings.
- Reconnect the PC and the NVS-33 to the network.
- Restore the PC’s original network settings.
- Shut down the NVS-33; wait for approximately five seconds before turning the NVS-33 back ON.
- You should be able to access the NVS-33 through the fixed IP address.

Advanced Troubleshooting

If you still are unable to connect, please try the following:

- Use the ARP table to search for the encoder’s MAC address; the device’s MAC address is on the print label at the bottom of your NVS-33.
- MAC address starts with **00:07:36:03:xx:xx**.
- On the command prompt (terminal on MAC OS), enter “**arp -a**” then press enter key to display an ARP list. See if the NVS-33 is successfully connected to the network.
- Execute **services.msc**, and on the right column of the “**Services**” window, locate “**DHCP Client**” then click “**Restart**”.
- On the command prompt, enter **ipconfig/flushdns** followed by **ipconfig/release** and **ipconfig/renew**.

3.2 Web User Interface

By now, we have obtained the IP addresses of the PC and the NVS-33. Enter the NVS-33’s IP address into the address bar of a browser then hit the **ENTER** button. Login by entering the user name as well as the password into a pop-up dialogue box as shown below.



Username: admin

Password: 000000

Click **OK** to login. Once logged in, the first page that appears will be the **Status** page.

Status

You will see the **Status** page immediately after logging into the NVS-33 web UI. On the Status page, you will be able to view the **Operation Mode, Video Resolution, Stream Settings, Record Settings, Record Media** and **Messages**.



Note: The NVS-33 web UI does not update automatically so to learn the latest device status, please refresh the page manually.

While monitoring streaming and recording, please update the page periodically regardless of how you operate the device (using the device’s physical buttons only or using the device’s physical buttons along with the web UI). This ensures the page is always displaying the most up-to-date information.

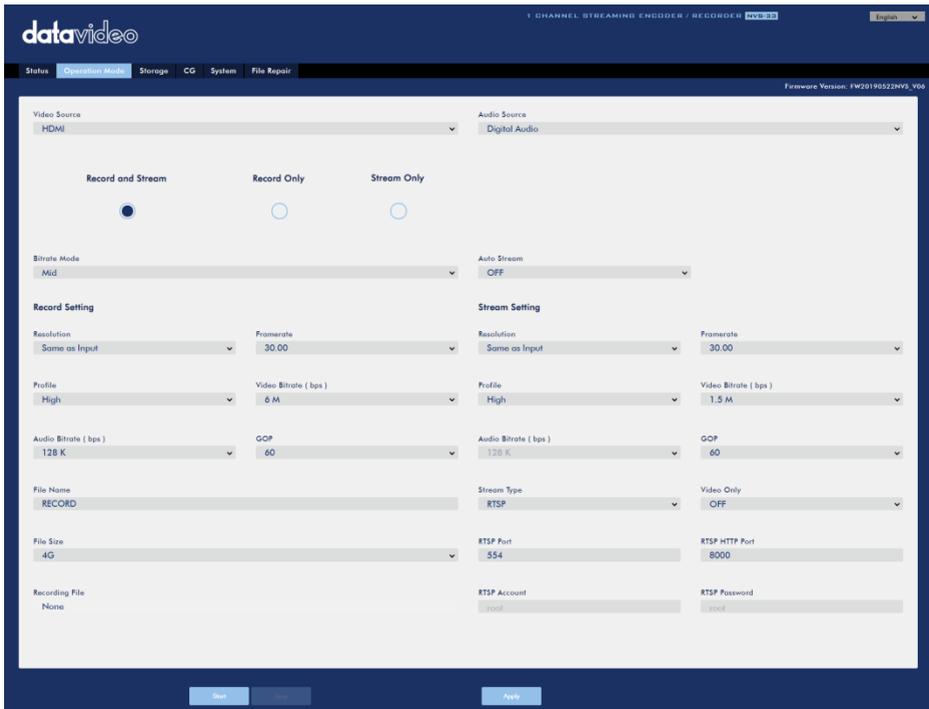
“**Messages**” should display the error code if an error occurs. The device’s error codes are listed in the table below.

Error Messages	Descriptions	Error Code
STR_UP_ETH_LINK_DOWN	Ethernet Link Down	133
STR_UP_ETH_LINK_RESTORE	Ethernet Link Up from Down	134
STR_UP_ETH_CONN_ERR	RTMP Cannot Publish (Retrying)	140
STR_UP_ENC_START_ERR	Encoder Start Failed	129
STR_UP_ENC_BUFF_ERR	Encoder Buffer Error	130
STR_RUN_ETH_LINK_DOWN	Ethernet Link Down (Dropped)	133
STR_RUN_ETH_CONN_ERR	RTMP Drop Connection (Retrying)	140
STR_RUN_ENC_BUFF_ERR	Encoder Buffer Error	130
STR_RUN_PROG_BUFF_ERR	Streamer Buffer Error	137

STR_RUN_PROG_SOCKET_ERR	Streamer Socket Error	140
STR_STOP_PROG_EXIT_ERR	Streamer Stop Failed	141
REC_UP_DISK_ERR	Disk Bad Sectors/Read Only/File System Error	148
REC_UP_DISK_EMPTY	No Disk	144
REC_UP_ENC_START_ERR	Encoder Start Failed	129
REC_UP_ENC_BUFF_ERR	Encoder Buffer Error	130
REC_UP_PROG_START_ERR	Recorder Start Failed	148
REC_UP_PROG_BUFF_ERR	Recorder Buffer Error	154
REC_RUN_DISK_FULL	Disk Full	151
REC_RUN_ENC_BUFF_ERR	Encoder Buffer Error	130
REC_RUN_PROG_WRITE_ERR	Recorder Write Failed	153
REC_RUN_PROG_BUFF_ERR	Recorder Buffer Error	137
REC_STOP_DISK_EXIT_ERR	Unmount Disk Failed	156
REC_STOP_PROG_EXIT_ERR	Recorder Stop Failed	157

Operation Mode

Click the ***Operation Mode*** tab on the tool bar to open the operation mode configuration page.

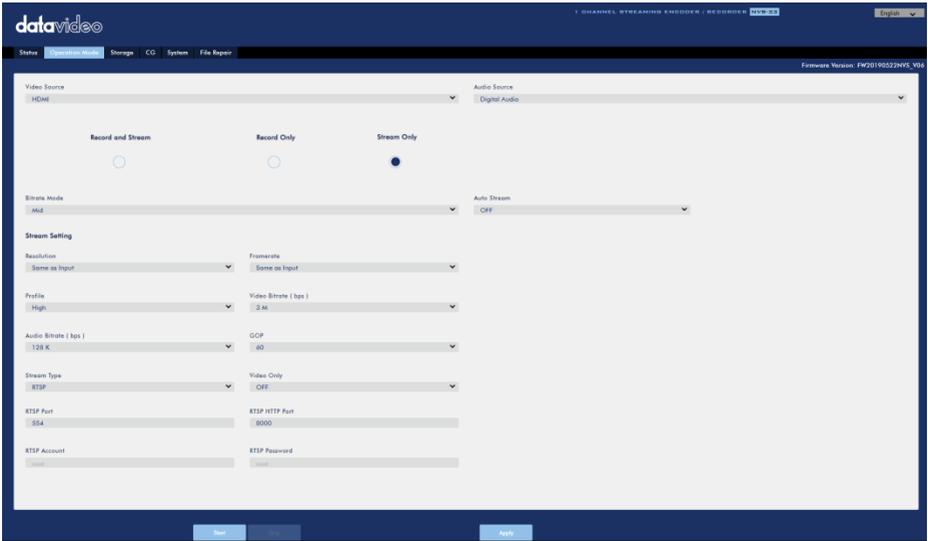


The NVS-33 offers the following operation modes:

- **Record and Stream:** Streaming and recording functions are enabled at the same time.
- **Stream Only:** Only streaming mode is enabled.
- **Record Only:** Only recording mode is enabled.

In each mode, the user will be allowed to customize various stream and record settings.

In the Stream Only mode, user can set various parameters including **Video Source**, **Audio Source**, **Bitrate Mode**, **Auto Stream**, **Resolution**, **Framerate**, **Profile**, **Video Bitrate (bps)**, **Audio Bitrates (bps)** , **GOP** and **Stream Type**.

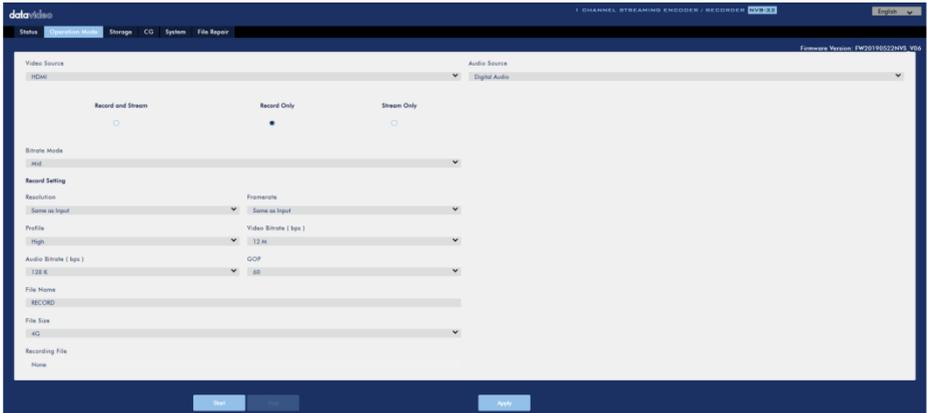


Five stream types are available on the NVS-33 and they are **RTSP**, **RTMP**, **TS**, **HLS** and **SRT**. See [Section 3.3](#) for details.



Click the **“Apply”** button to apply the new stream settings. Click the **“Start”** button to open the stream and the **“Stop”** button to end the stream.

As for recording, the settings are **Video Source**, **Audio Source**, **Bitrate Mode**, **Resolution**, **Framerate**, **Profile**, **Video Bitrate(bps)**, **Audio Bitrate(bps)**, **GOP**, **File Name** and **File Size**.

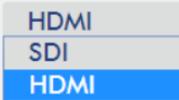


Click the **“Apply”** button to apply the new record settings. Click the **“Start”** button to start recording and the **“Stop”** button to stop recording.



Stream and Record Settings

In the section, you will be introduced various setting options of stream and record functions.

Common Setting Items for Streaming and Recording	
<p>Video Source</p> 	<p>Video Source Select SDI or HDMI as the video input source from this drop-down menu.</p>
<p>Audio Source</p> 	<p>Audio Source This drop-down menu allows users to select the audio source of your video stream. The options are embedded audio (Digital Audio), external audio (RCA Analog Audio) and mixed audio (Audio Mixer).</p>

Bitrate Mode

Mid
High
Mid
Low

Bitrate Mode

The bitrate mode sets the video bitrate mode for your video stream. The available modes are high, mid and low.

Note: You can also switch between different bitrate modes by pressing the Bitrate button on the front panel. See [Section 2.1](#) for details.

Stream Encoder Settings

Resolution

Same as Input
Same as Input
1920 × 1080
1280 × 720
960 × 540
720 × 576
720 × 480
640 × 480
320 × 240
160 × 128

Resolution

The first step of encoder setup is to adjust the image size. It is best to either match your original video source or scale it down. For example, capture at HD 720 and stream at HD 720. Or capture at HD 720 and stream at 540 (high).

You should never be scaling up and streaming at a higher resolution than your original video source. For example, it does not make sense to capture at 720 and stream at 1080. Note that you will also have no gain in quality and you are using more bandwidth than is necessary for your viewers.

You should also be aware that higher resolutions require greater processing power to encode the stream. Attempting too high of a resolution on too little processing power can result in degraded image quality and corrupted or interrupted streams or recordings.

<p>Framerate</p> <ul style="list-style-type: none"> Same as Input <li style="background-color: #0070C0; color: white;">Same as Input 60.00 50.00 30.00 25.00 20.00 15.00 10.00 5.00 1.00 	<p>Frame Rate</p> <p>Select a frame rate from the drop-down menu for video streaming. Note that frame rates should always match the frame rate of the video source.</p>
<p>Auto Stream</p> <ul style="list-style-type: none"> OFF <li style="background-color: #0070C0; color: white;">OFF ON 	<p>Auto Stream</p> <p>If the Auto Stream is enabled, in the event of power outage, the stream will be automatically restored after the switcher is powered ON again.</p>
<p>Profile</p> <ul style="list-style-type: none"> High <li style="background-color: #0070C0; color: white;">High Main Baseline 	<p>Profile</p> <p>Profile sets the H.264 encoding profile for your stream. The available options are Baseline, Main, and High. Typically, High profile provides the best image quality and is suitable in most instances. However, depending on the decoder used when viewing the stream, such as with mobiles devices, a Main or Baseline profile may be required.</p>

Video Bitrate (bps)

1.5 M
8 M
7 M
6 M
5 M
4 M
3 M
2.5 M
2 M
1.5 M
1 M
512 K
256 K

Video Bitrate (bps)

The bitrate of the video specifies the amount of information stored in the video. The higher the bitrate is, the clearer the video is. However, when choosing your encoding settings for streaming, you should first check your available upload bandwidth. A good rule of thumb is for the bitrate of your stream to use no more than 50% of your available upload bandwidth capacity on a **DEDICATED** line. For example, if the result you get from a speed test shows that you have 2Mbps of upload speed available, your combined audio and video bitrate should not exceed 1Mbps.

Usually high bitrate means good image quality; however, there are also exceptions. For example, SD video may appear acceptable at 1000 Kbps (1M) but HD video is unacceptable at 1000 Kbps. Therefore we recommend the following settings for your video bitrate:

- When NVS-33 is in record-only mode, the recommended video bitrate is 15 Mbps.
- When NVS-33 is in stream-only mode, the recommended video bitrate is 10 Mbps.
- When NVS-33 streams and records simultaneously, sum of the stream and record video bitrates should not exceed 12Mbps.

Audio Bitrate (bps)

128 K	▼
384 K	
256 K	
128 K	
64 K	
32 K	

Audio Bitrate (bps)

The NVS-33 offers the user the following audio bitrates at which you may want to stream the audio. It is recommended to select 128Kbps or higher.

GOP

- 60
- 180
- 160
- 140
- 120
- 100
- 60**
- 50
- 30
- 25
- 20
- 15
- 10
- 5
- 3
- 2
- 1

GOP

GOP pattern with longer GOP length encodes video very efficiently. Shorter GOP lengths usually work better with video that has quick movements, but they do not compress the data rate as much. Depending on your applications, the NVS-33 offers the user 16 GOP sizes ranging from 1 to 180.

Stream Settings

Stream Type

- RTSP
- RTMP**
- RTMP
- TS
- HLS
- SRT

Stream Type

The NVS-33 offers the user five stream types. There are **RTSP, RTMP, TS, HLS** and **SRT**.

Please note that when streaming, the NVS-33 converts video into data, which are sent across an IP network. High bitrates consume more bandwidth across the IP network. In a gigabit office LAN, high bitrate may not be a concern and Speed/Bandwidth is therefore not the limitation in a NVS-33 application environment.

If your available bandwidth is limited, you should reduce both your resolution and your bitrate accordingly. A good rule of thumb is for the bitrate of your stream to use no more than 50% of your available upload bandwidth capacity on a dedicated line. For example, if the result you get from a speed test shows that you have 2Mbps of upload speed

	available, your combined audio and video bitrate should not exceed 1Mbps.
--	---

Stream Type – RTSP

RTSP Port 554	RTSP Port RTSP Port is 554 by default.
-------------------------	--

RTSP HTTP Port 8000	RTSP HTTP Port RTSP HTTP port is 8000 by default.
-------------------------------	---

Video Only OFF	Video Only Enable this option if you just want to stream the video without the audio.
--------------------------	---

RTSP Username/Password
The account and password are **root** by default.

RTSP Account root	RTSP Password root
-----------------------------	------------------------------

Stream Type – RTMP

RTMP URL <input type="text"/>	RTMP URL Enter the RTMP/RTMPS URL obtained from any live streaming platform such as Ustream.
---	--

StreamName <input type="text"/>	Stream Name Enter the stream name or key from any live streaming platform.
---	--

<p>Account</p> <input type="text"/>	<p>Account Enter your RTMP/RTMPS account name.</p>
<p>Password</p> <input type="password"/>	<p>Password Enter the password of your RTMP/RTMPS account.</p>
<p>Audio Only</p> <p>OFF</p> <p>OFF</p> <p>Video Only</p> <p>Audio Only</p>	<p>Audio Only In this option, the user is allowed to choose to stream Audio Only or Video Only. If disabled, video and audio streams will be delivered simultaneously.</p>
Stream Type – TS	
<p>TS Port</p> <input type="text" value="12345"/>	<p>TS Port The TS port number is 12345 by default.</p>
<p>TS IP</p> <input type="text" value="239.100.100.100"/>	<p>TS IP The TS IP address is 239.100.100.100 by default.</p>
<p>Video Only</p> <p>OFF</p> <p>OFF</p> <p>ON</p>	<p>Video Only Enable this option if you just want to stream the video without the audio.</p>
Stream Type – SRT	
<p>SRT Port</p> <input type="text" value="9001"/>	<p>SRT Port The SRT port is 9001 by default.</p>
<p>Play URL</p> <input type="text" value="srt://192.168.2.5:9001"/>	<p>Play URL A stream URL will be generated after the Start Stream button is clicked.</p>

Record Encoder Settings

Resolution

Same as Input

Same as Input

1920 × 1080

1280 × 720

960 × 540

720 × 576

720 × 480

640 × 480

320 × 240

160 × 128

Resolution

Recording resolution is the number of pixels (dots) used to create an image. Higher resolutions use more pixels to create an image. This means that greater amounts of detail can be expressed in the image, but larger file sizes and a greater amount of storage (i.e. hard drive space) are required to save the images or video.

Framerate

Same as Input

Same as Input

60.00

50.00

30.00

25.00

20.00

15.00

10.00

5.00

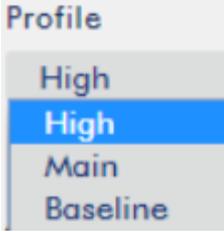
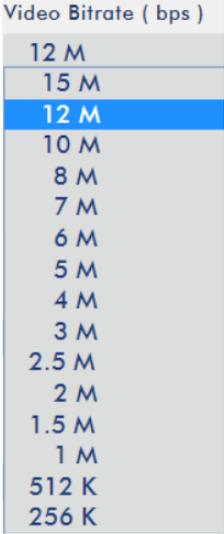
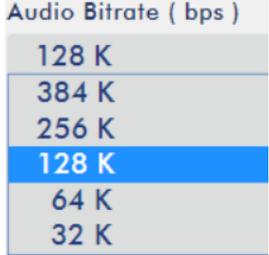
1.00

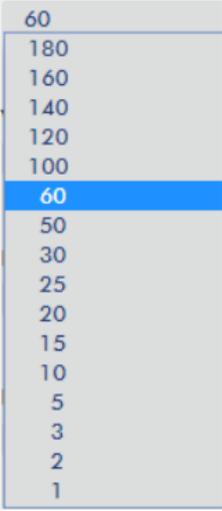
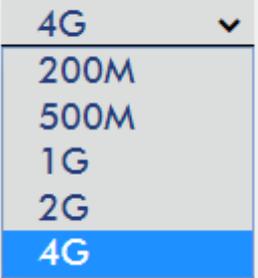
Frame Rate

Frame rate greatly impacts the style and viewing experience of a video. Different frame rates yield different viewing experiences, and choosing a frame rate often means choosing between things such as how realistic you want your video to look, or whether or not you plan to use techniques such as slow motion or motion blur effects.

Below is a list of common options for different applications:

- **24fps** – This is the standard for movies and TV shows, and it was determined to be the minimum speed needed to capture video while still maintaining realistic motion.
- **30fps** – Videos with a lot of motion, such as sports, will often benefit from the extra frames per second.
- **60+fps** – Anything higher than 30fps is mainly used to create slow motion video or to record video game footage.

	<p>Profile</p> <p>Profile sets the H.264 encoding profile for your recorder. The available options are Baseline, Main, and High. Typically, High profile provides the best image quality and is suitable in most instances.</p>
	<p>Video Bitrate (bps)</p> <p>The bitrate of the video specifies the amount of information stored in the video. The higher the bitrate is, the clearer the video is.</p> <p>Recommended video bitrate</p> <ul style="list-style-type: none"> ● 720P or lower – 8 – 10 mbps ● 1080P or higher – 15 mbps or higher
	<p>Audio Bitrate (bps)</p> <p>The NVS-33 offers the user the following audio bitrates at which you may want to record the audio. It is recommended to record at 128Kbps or higher.</p>

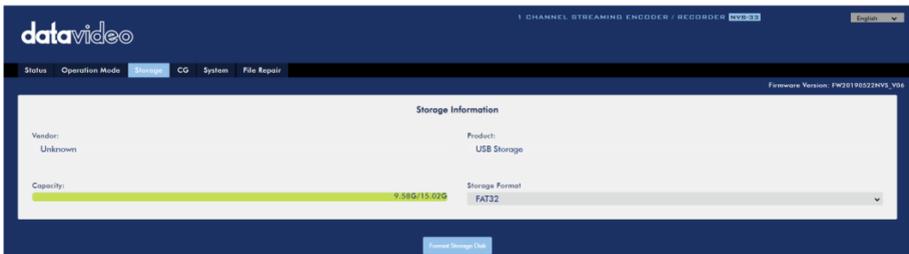
<p>GOP</p> 	<p>GOP</p> <p>GOP pattern with longer GOP length encodes video very efficiently. Shorter GOP lengths usually work better with video that has quick movements, but they do not compress the data rate as much. Depending on your applications, the NVS-33 offers the user 16 GOP sizes ranging from 1 to 180.</p>
Record Settings	
<p>File Name</p> 	<p>File Name</p> <p>Enter the name of the recording file.</p>
<p>File Size</p> 	<p>File Size</p> <p>Select the file size of a single recording file.</p>
<p>Recording File</p> 	<p>Recording File</p> <p>Display the file that is currently being recorded.</p>



Note: The record function is activated after the Start Record button is clicked. The REC indicator will appear as shown on the left. Flashing indicates that the record function is starting. A solid color indicator means the record function has been activated successfully (The indicator flashing three times then turned off indicates an error). The activation time is approximately 2 to 3 seconds.

Storage

The SD card status can be found on the Storage page which is shown in the diagram below.



You should only use Class 10 SD card or above. Below is a list of SD cards recommended by Datavideo.

Recommended SD Cards			
No.	Brand	Model	Pictures
1	Kingston	SDHC C10 16G	
2	SANDISK Extreme	SDXC C10 U3 V30 64GB	

3	SONY	SDXC C10 U1 64GB	
4	SANDISK Extreme PRO	SDXC C10 U3 128GB	 
5	SONY	SDXC C10 U3 64GB	
6	TOSHIBA	SDHC C10 16GB	
7	SANDISK Extreme	SDHC C10 16GB	

8	ADATA Premier Pro	microSDXC I UHS-I U3 Class 10 with SD adapter 64GB	
9	SANDISK ULTRA®	SDHC™/SDXC™ UHS-I 128 GB	

Compatible SD Card for Mobile Cast and NVS-33

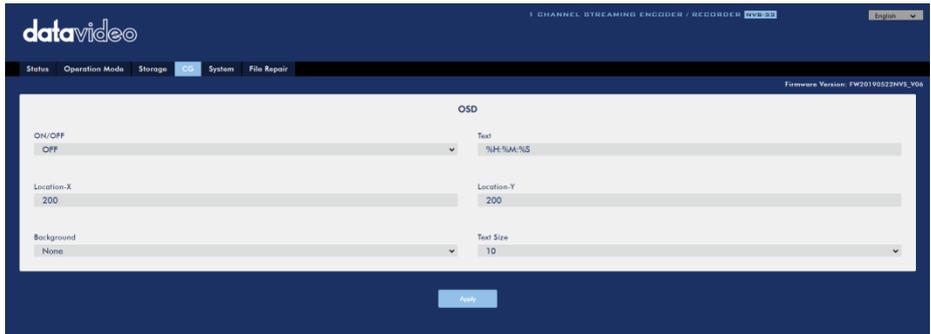
- | | | | |
|---|--|--|---|
| 1. Kingston
SDHC C10
16GB |  | 6. TOSHIBA
SDHC C10
16GB |  |
| 2. SANDISK Extreme
SDXC C10 U3 V30
64GB |  | 7. SANDISK Extreme
SDHC C10
16GB |  |
| 3. SONY
SDXC C10 U1
64GB |  | 8. ADATA Premier Pro
microSDXC UHS-I U3 Class 10
64GB |  |
| 4. SANDISK Extreme PRO
SDXC C10 U3
128GB | 
 | 9. SANDISK
ULTRA SDHC
SDXC UHS-I
128GB |  |
| 5. SONY
SDXC C10 U3
64GB |  | | |

Storage Device Information	
<p>Vendor: Unknown</p>	<p>Vendor Display of the manufacturer's information.</p>

<p>Product:</p> <p>USB Storage</p>	<p>Product</p> <p>Display of the name of the SD card.</p>
<p>Capacity:</p> <p>9.58G/15.02G</p>	<p>Capacity</p> <p>Display of the SD card's total capacity and the remaining capacity.</p>
<p>Storage Format</p> <p>FAT32</p> <p>FAT32</p> <p>EXFAT</p> <p>NTFS</p>	<p>Storage Format</p> <p>Select a storage format before clicking Format Storage Disk to format your SD card.</p> <ul style="list-style-type: none"> FAT32 EXFAT (not available yet) NTFS

CG

The CG function on the HS-3200's built-in video streaming server allows the user to place a textual layer on top of the video. The CG settings on the CG page are shown in the diagram below.



CG Settings	
<p>ON/OFF</p> <p>OFF</p> <p>OFF</p> <p>ON</p>	<p>CG ON/OFF</p> <p>Select ON/OFF from this drop-down menu to enable/disable the CG overlay function.</p>

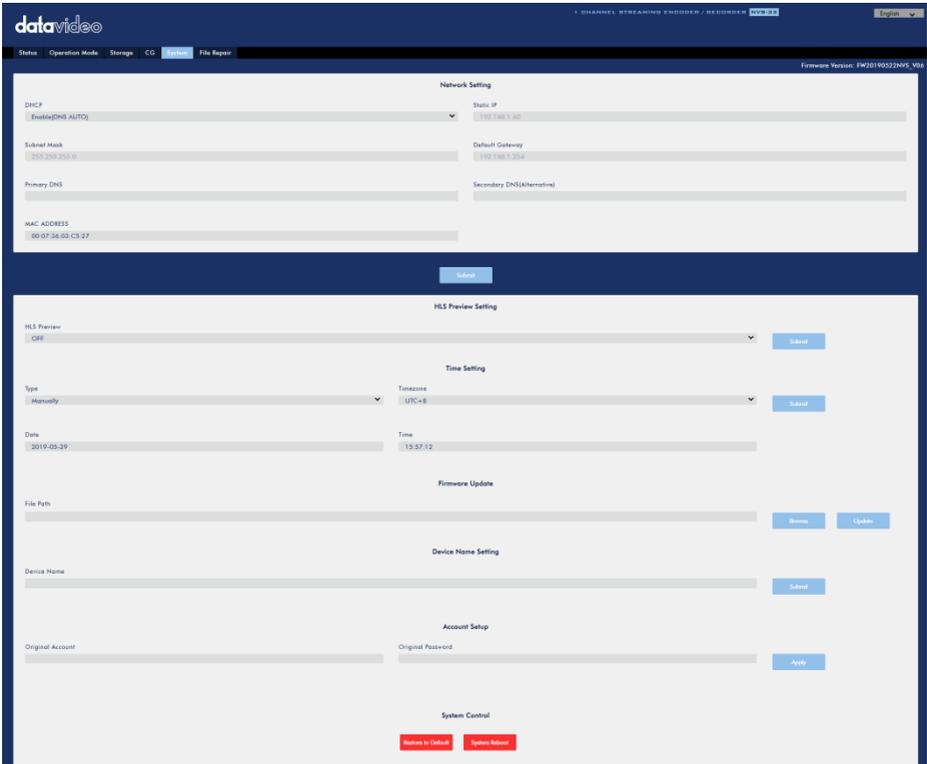
<p>Text</p> <p>%H:%M:%S</p>	<p>Text</p> <p>Enter the text of the CG overlay.</p>
<p>Location-X</p> <p>200</p>	<p>Location-X</p> <p>Enter the x-coordinate of the CG overlay text.</p>
<p>Location-Y</p> <p>200</p>	<p>Location-Y</p> <p>Enter the Y-coordinate of the CG overlay text.</p>
<p>Background</p> <p>None</p> <p>None</p> <p>Black</p>	<p>Background</p> <p>Users can either select a black background or none.</p>
<p>Text Size</p> <p>10</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p>	<p>Text Size</p> <p>Select the font size of your CG overlay text.</p>

System

The system page of the NVS-33 video streaming server allows the user to configure several network and system related settings such as **DHCP enable/disable, static IP address, subnet mask, default gateway, primary and secondary DNS**, and etc.

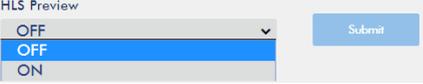
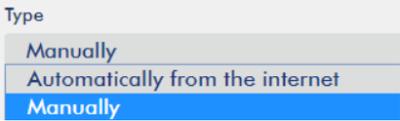
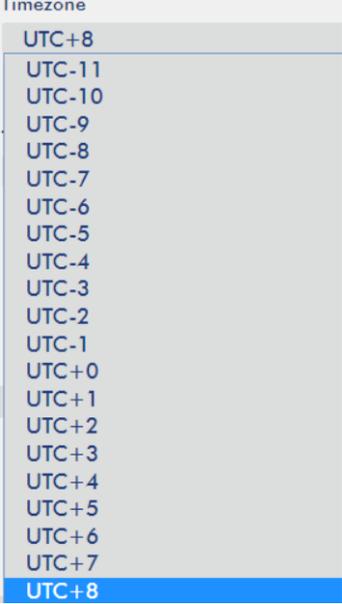
The system settings are **HLS preview enable/disable, time settings, firmware update, device name, and account login information**.

The system page is shown in the diagram below.



Network Settings	
<p>DHCP</p> <p>Enable(DNS AUTO) Enable(DNS AUTO) Enable Disable</p>	<p>DHCP IP Assignment</p> <p>Select an option from this drop-down menu:</p> <ul style="list-style-type: none"> • Enable (DNS AUTO) • Enable • Disable
<p>Static IP</p> <p>192.168.1.60</p>	<p>Static IP Address</p> <p>The static IP field will be activated for the user to manually enter an IP address once the DHCP is disabled. The static IP is 192.168.1.60 by default.</p> <p>Tip: If you do not know the device's IP</p>

	<p>address, you can always use the following method to reset the network settings.</p> <ul style="list-style-type: none"> • Shut down the machine • Turn on the machine while holding down RECORD and STREAM buttons simultaneously. • Approximately after 5 seconds, release the RECORD and STREAM buttons as soon as the button LEDs are turned ON. • Fixed IP address is 192.168.1.60 by default.
<p>Subnet Mask</p> <p>255.255.255.0</p>	<p>Subnet Mask Static IP address mode requires subnet mask, which is 255.255.255.0 by default.</p>
<p>Default Gateway</p> <p>192.168.1.254</p>	<p>Default Gateway Static IP address mode requires default gateway, which is 192.168.1.254 by default.</p>
<p>Primary DNS</p>	<p>Primary DNS (Optional) Primary DNS is required in static IP mode only but optional.</p>
<p>Secondary DNS(Alternative)</p>	<p>Secondary DNS (Optional) Secondary DNS is required in static IP mode only but optional.</p>
<p>MAC ADDRESS</p> <p>00:07:36:03:C5:27</p>	<p>MAC Address Display of NVS-33's MAC address.</p>

	<p>Submit Button</p> <p>After the network settings are configured, click the Submit button to save the new settings.</p>
	<p>HLS Preview</p> <p>Here you will be able to enable/disable HLS preview. Click the Submit button to save the new settings.</p>
<p>Time Setting</p>	
	<p>Type</p> <p>In this drop-down menu, you can either select to allow the device to retrieve the time automatically from the Network Time Protocol (NTP) server or manually select a time zone from the Time Zone drop-down menu.</p>
	<p>Time Zone</p> <p>Click the drop-down menu to select a time zone for your device.</p>

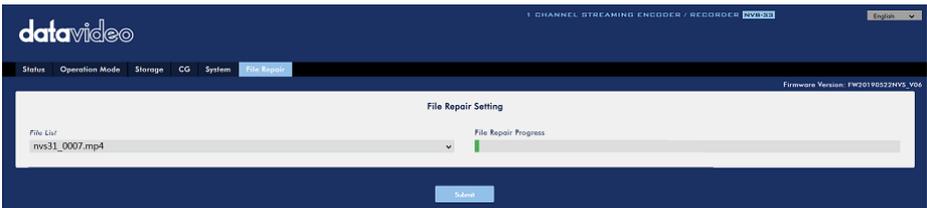
<p>Date</p> <p>2018-12-19</p> <p>Time</p> <p>15:16:38</p>	<p>Date/Time</p> <p>Date and Time fields show the device's system date and time values.</p>
<p style="text-align: center;">Submit</p>	<p>Click the Submit button to save the new settings.</p>
Firmware Update	
<p style="text-align: center;">Firmware Update</p> <p>File Path</p> <p style="text-align: right;">Browse Update</p>	<p>NVS-33 Firmware Update</p> <p>Click the Browse button to search for the latest firmware file saved on the PC's hard disk. Click the Update button after the latest firmware file is uploaded.</p>
Device Name Setting	
<p style="text-align: center;">Device Name Setting</p> <p>Device Name</p> <p style="text-align: right;">Submit</p>	<p>Device Name Setting</p> <p>Enter a name for this device and click the Submit button to write this name into the device.</p>
Account Setup	
<p style="text-align: center;">Account Setup</p> <p>Original Account Original Password</p> <p style="text-align: right;">Apply</p>	<p>Account Setup</p> <p>Enter the NVS-33's account name and password. Click the Apply button to save the new settings.</p>
System Control	
<p style="text-align: center;">Restore to Default System Reboot</p>	<p>Restore to Default</p> <p>Click this button to restore default settings.</p> <p>System Reboot</p> <p>Click this button to reboot the NVS-33.</p>

File Repair

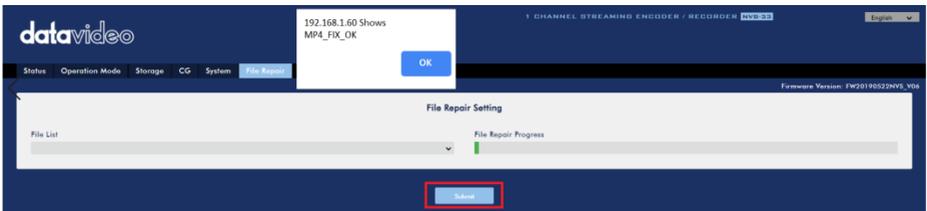
The system may crash while the recording is in progress. If this happens, your record file may be damaged. To repair a damaged file, go the **File Repair** page to run the file repair process.

Note: To use the file repair function, please upgrade your device to firmware version FW20190522NVS_V04 or later.

1. Open the **“File Repair”** page and click the **“File List”** drop-down menu to select the damaged MP4 file.

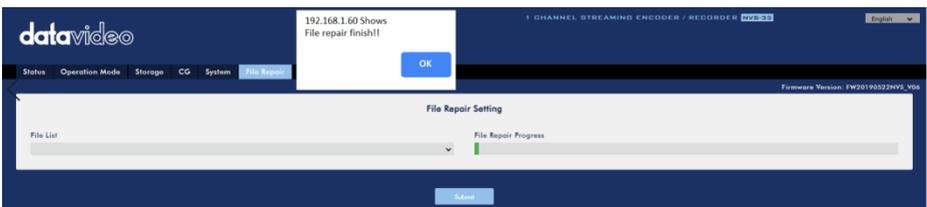


2. If the MP4 file can be repaired, you will see a pop-up dialogue box prompting **“MP4_FIX_OK”**, click **OK** then the **“Submit”** button.

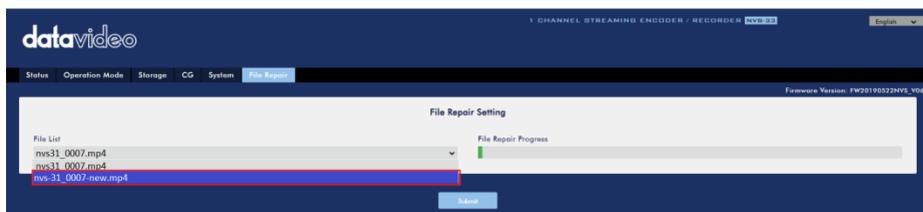


Note: If the selected MP4 file cannot be repaired, a dialogue box prompting **“MP4_FIX_ERROR_MDATA” will pop up.**

3. The file is repaired when you see a dialogue box prompting **“File repair finish!!”**. Click **OK** and reboot the NVS-33.



4. After the NVS-33 successfully reboots, you will see the repaired file with the file name of the damaged file appended of the word “new”.



3.3 Operations

In this section, we will discuss how to customize your operation mode, how you can play the video via different streaming protocols and how to place texts on your video.

Video Streaming

The NVS-33 provides the user with different options for video streaming such as RTSP, TS, RTMP, RTMPS, HLS and SRT.

This section discusses settings of these options and how to stream your video using these methods.

RTSP/TS/HLS/SRT

In the **RTSP/TS/HLS/SRT** modes, the **NVS-33** is a stream server which allows any client device to connect and playback your video stream. However, if you would like to stream to multiple client devices, we recommend using a separate media server to set up your streaming environment.

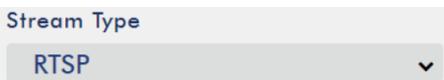


The following operation procedure uses VLC media player to playback video stream. If your PC or laptop does not have VLC media player installed, please visit VideoLAN’s official homepage (<https://www.videolan.org/>) and download the installation file then

install the program.

Please follow the steps below to obtain the **RTSP URL**:

1. Open the stream settings page
2. Select RTSP

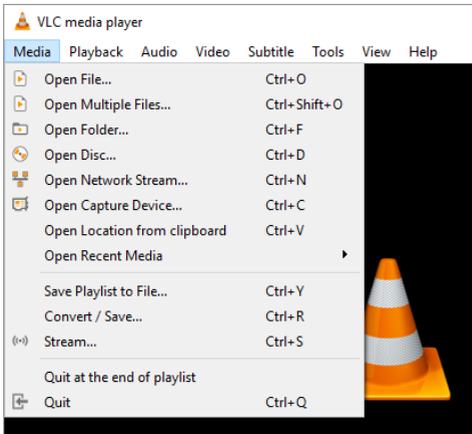


3. Click the **Start** button to generate the RTSP URL.
4. Based on your settings, the device will automatically generate the RTSP URL.

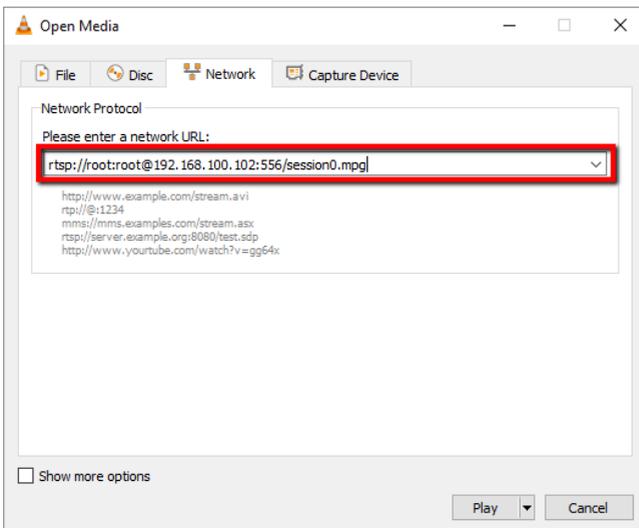
Play URL

`rtsp://192.168.2.5:554/live`

5. Before streaming the video via RTSP, enter the RTSP URL into the client device.
6. Open VLC then click **Open Network Stream** (shown in the diagram below).



7. As shown in the diagram below, enter the stream URL then click **Play** to start streaming.

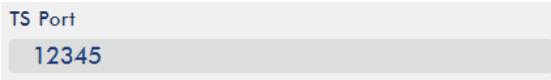


Please follow the steps below to obtain the **TS URL**:

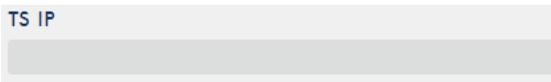
1. Open the stream settings page
2. Select TS.



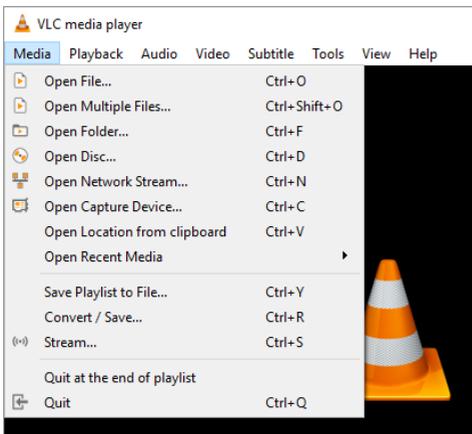
3. Enter the TS port number which is 12345 by default.



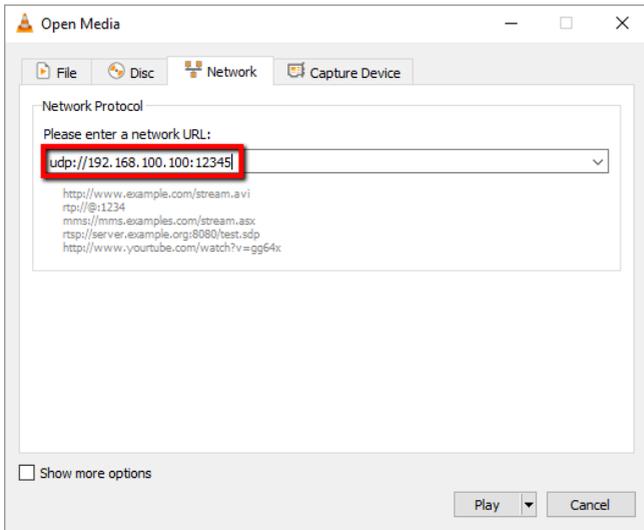
4. In the TS IP field, enter your PC's IP address such as 192.168.100.100.



5. Click the **Start** button to generate the TS URL which, in this example, will be `udp://192.168.100.100:12345`.
6. Before streaming the video via TS, enter the TS URL into the client device.
7. Open VLC then click **Open Network Stream** (shown in the diagram below).



8. As shown in the diagram below, enter the stream URL then click **Play** to start streaming.



Please follow the steps below to obtain the **HLS URL**:

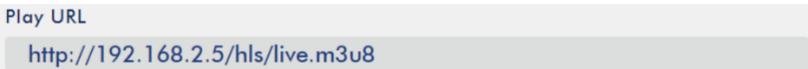
1. Open the stream settings page

2. Select **HLS**



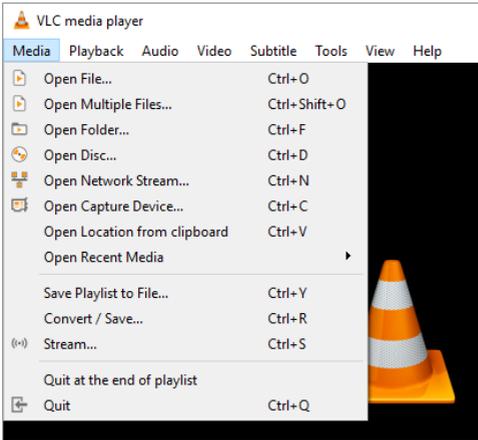
3. Click the **Start** button to generate the HLS URL.

4. Based on your settings, the device will automatically generate a .m3u8 stream URL as shown below.

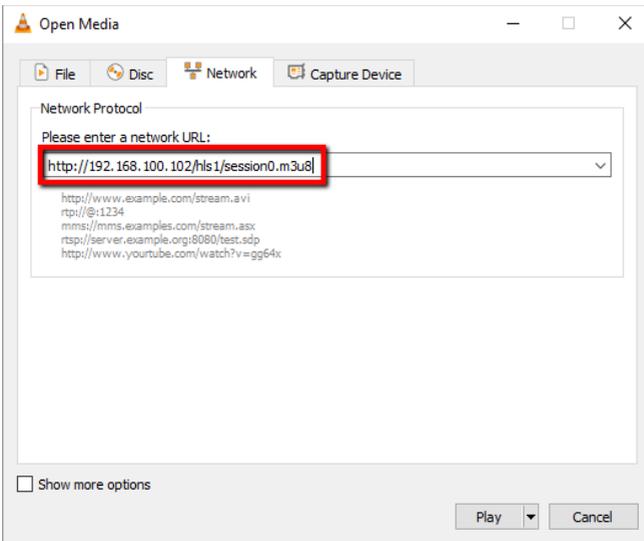


5. Before streaming the video via **HLS**, enter the **HLS URL** into the client device.

6. Open VLC then click **Open Network Stream** (shown in the diagram below).



7. As shown in the diagram below, enter the stream URL then click **Play** to start streaming.



8. You can also play .m3u8 stream URL using the devices listed as follows:
 - iPhone, iPad and MacBook: Use Safari to open the .m3u8 stream URL.
 - Windows 10: Use Microsoft Edge to open the .m3u8 stream URL.

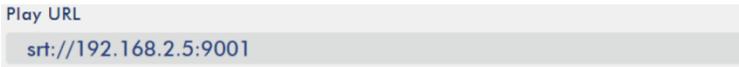
Please follow the steps below to obtain the **SRT URL**:

1. Open the stream settings page

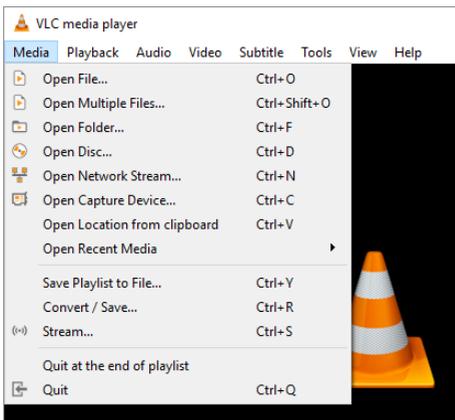
2. Select **SRT** and the **SRT port number** is 9001 by default.



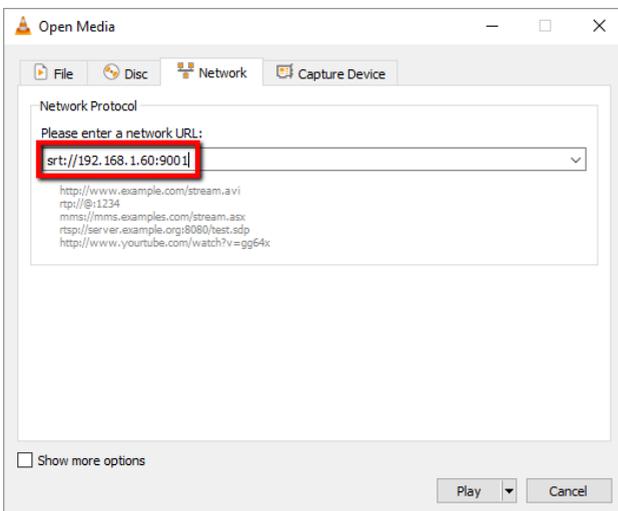
3. Click the **Start** button to generate the SRT URL.



4. Before streaming the video via **SRT**, enter the **SRT URL** into the client device.
5. Open VLC then click **Open Network Stream** (shown in the diagram below).



6. As shown in the diagram below, enter the stream URL then click **Play** to start streaming.

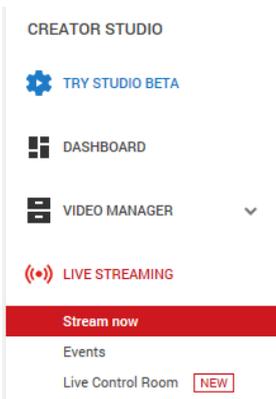


RTMP

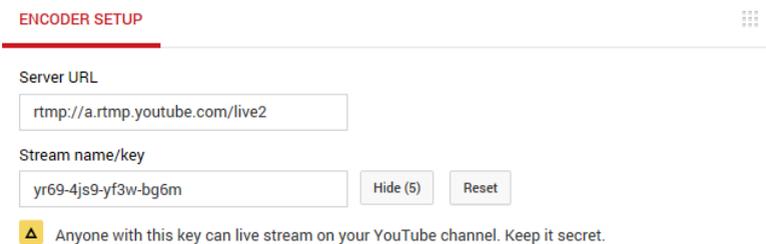
In **RTMP** mode, the NVS-33 can only send one data stream to one CDN or media server that supports the **Real-Time Messaging Protocol (RTMP)**. Examples of the **RTMP** media server are **USTREAM** and **Youtube**.

In this section, we will show you how to set up an **RTMP** stream to **Youtube**. The step-by-step account setup is outlined as follows:

1. First of all, you have to obtain Server URL and Stream name/key from Youtube.
2. Open the Youtube Live Dashboard https://www.youtube.com/live_dashboard
3. On the left column, locate and click “Stream now.”



4. On the right, scroll down to the bottom where you will be able to find **Server URL** and **Stream name/key**.



5. On the NVS-33, open the **Stream Only** operation mode page.
6. Select **RTMP** from the Stream Type drop-down menu.

Stream Type
RTMP

7. Enter the **Server URL** obtained from the **Youtube Live Streaming** page into the **RTMP URL** field.

RTMP URL

8. Enter the **Stream name/key** obtained from the **Youtube Live Streaming** page into the **StreamName** field.

StreamName

9. As required by the live streaming channel, enter your Youtube account name and password into the **Account** and **Password** fields.

Account Password

10. Click the **Start Stream** button to start streaming the live video on the **Youtube Live Streaming** page. You should also see an **RTMP URL** generated.
11. The **RTMP URL** is another alternative that allows you to view the live stream on a web browser. Enter the **RTMP URL** into the web browser's address bar then hit the **Enter** button to open the live video stream.
12. Click the **Stop** button to stop live streaming.



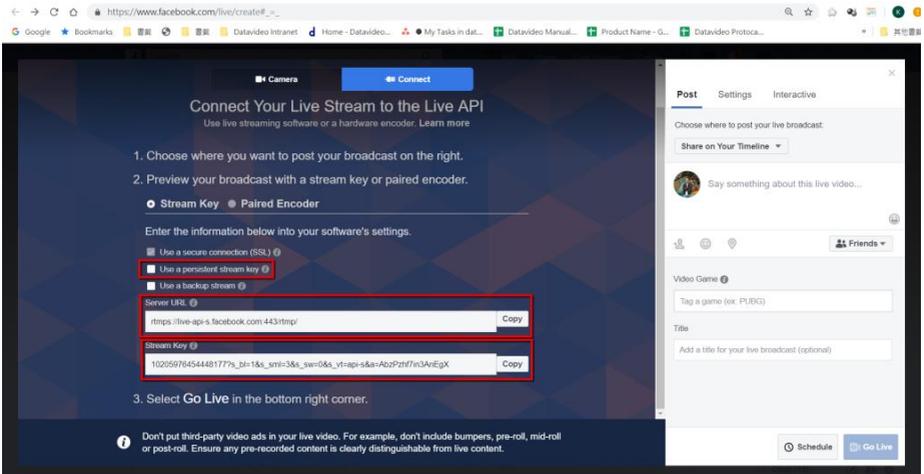
Tip: You are allowed to stream audio or video only.

Next we will show you how to set up an **RTMP** stream to **Facebook**.

1. Visit the website <https://www.facebook.com/live/create> and click the "Create Live Stream" button.

Note: The maximum length of a single video stream on the Facebook is 8 hours.

2. On the page that opens, first check the checkbox next to the option "Use a persistent stream key" and then copy the "Server URL" as well as the "Stream Key."

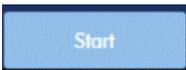


3. Open “Operation Mode” page on your NVS-33’s web UI and select RTMP from the Stream Type drop-down menu.

4. Paste the “Server URL” and “Stream Key” copied at Step 2 into the “RTMP URL” and “StreamName” textboxes respectively.

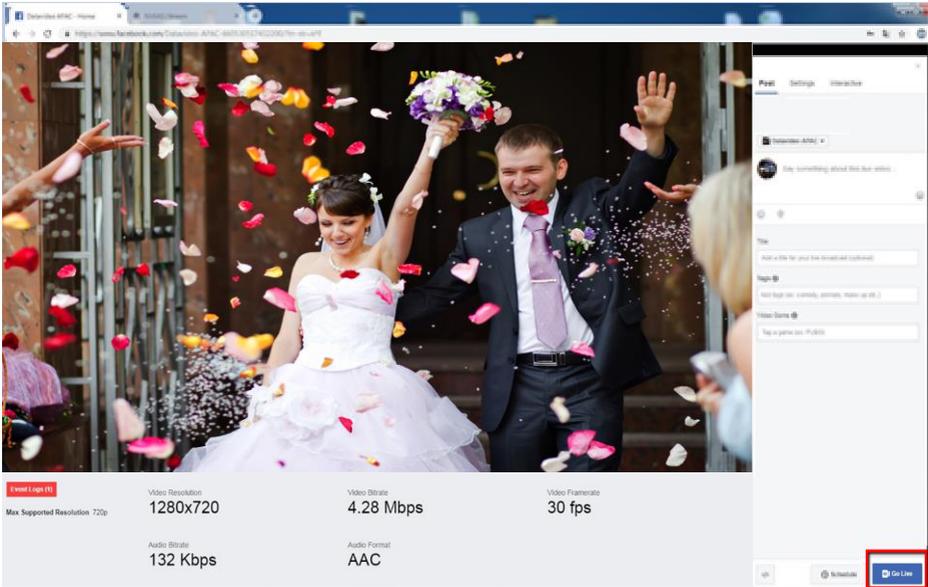
Stream Type RTMP	Audio Only OFF
RTMP URL rtmps://live-api-s.facebook.com:443/rtmp/	StreamName 102059764544481777s_bl=1&s_sml=3&s_sw=0&s_vt=api-s&a=AbzPzh7In3AnEgX
Account 	Password

5. Click the “Start” button.



6. You will be able to preview your video stream on the Facebook’s live stream page. First select the destination of the live broadcast and your audience.

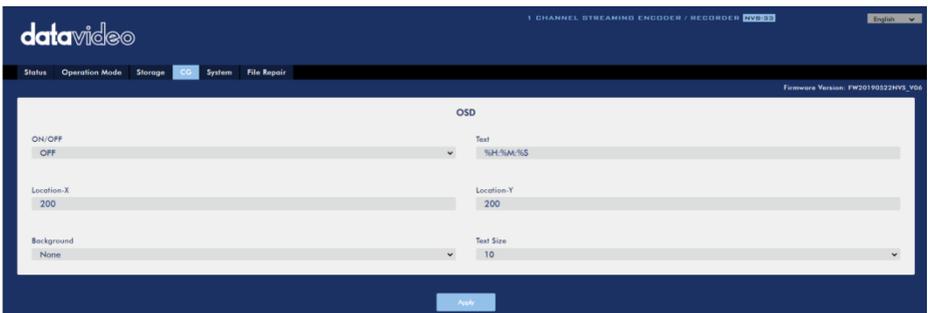
Once everything is all set, simply click the “Go Live” button to start streaming your video on Facebook.



Text Overlay Video

The NVS-33 video streaming server not only allows you to stream and record your program, it also features a CG tool that is capable of overlaying text on the video currently being broadcast.

The CG settings page is shown below:



Follow the steps below to overlay text on the video:

1. Open the CG settings page.

2. Enable the CG function.
3. In the **Text** field, enter the overlay text.
4. Enter the **X and Y coordinates** to set the text position.
5. Click the **Apply** button to save the new settings.

Note: Increasing the X coordinate moves the overlay text to the right and decreasing the X coordinate moves the overlay text to the left; increasing the Y coordinate moves the overlay text up and decreasing the Y coordinate moves the overlay text down.

4 Firmware Upgrade

Datavideo usually releases new firmware containing new features or reported bug fixes from time to time. Customers can either download the NVS-33 firmware as they wish or contact their local dealer or reseller for assistance.

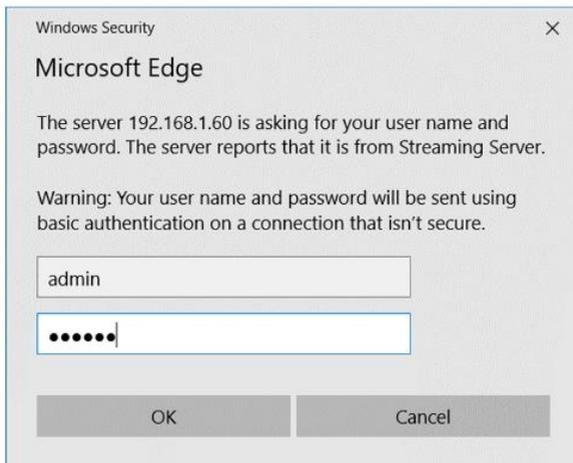
This section outlines the firmware upgrade process which should take **10 minutes to complete**.

The existing NVS-33 settings should persist through the *firmware upgrade process, which should not be interrupted once started* as this could result in a non-responsive unit.

1. Login the NVS-33 web interface with the following credentials:

Username: admin

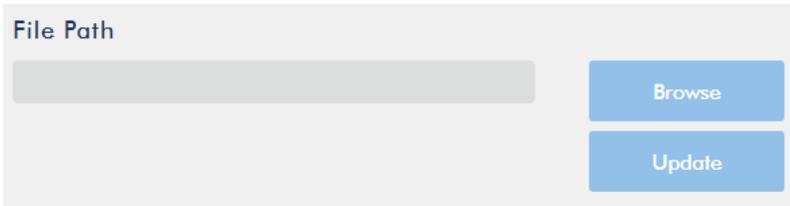
Password: 000000



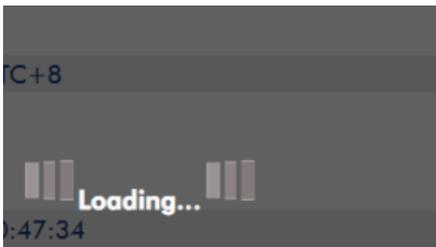
2. Click the **System** tab to open the system configuration page.



3. Scroll down to **Firmware Update** then click the **Browse** button to search for the latest firmware file on the PC's hard disk.



4. After double clicking the firmware file, you will see the loading prompt as shown below, indicating that the file is being uploaded to the NVS-33.



5. After the file has been successfully uploaded, you will see a file upload success message. Click the **Update** button to start the firmware update process.

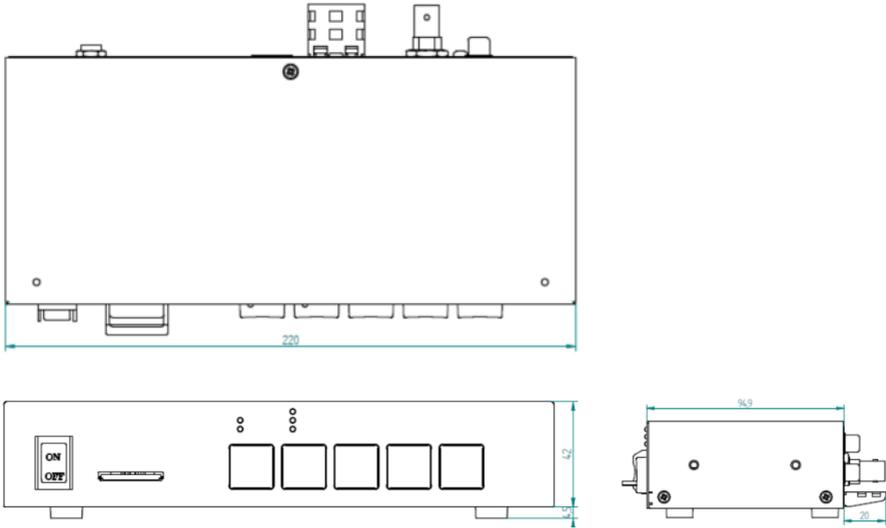


6. The device will reboot itself after it is updated successfully.



Note: If the device is recording or streaming, you must turn them off before initiating the firmware update.

5 Dimensions



All measurements in millimeters (mm)

6 Specifications

Interface	
Video Input	<ul style="list-style-type: none"> • HDMI x 1 • SDI x 1
Audio Input	<ul style="list-style-type: none"> • SDI Embedded Audio x 1 • HDMI Embedded Audio x 1 • 1 RCA Unbalanced audio pair (Audio Level: +10/+12dB ~ -6dB) • Mixed Audio (Embedded + RCA)
Video Encoding	H.264/ AVC , Main / High Profile Configurable bit rate up to 10Mbps
Supported Input Video Resolution	<ul style="list-style-type: none"> • 1080p60/59.94/50 1080p30/29.97/25/24/23.98 • 1080i60/59.94/50 • 720p60/59.94/50 • 480i59.94, 576i50
Video Output	Video downscalable to 128 x 128
Video Encoding Mode and Bitrate	<ul style="list-style-type: none"> • Record&Stream: Up to 10Mbps(1080p25/30) • Record Only: Up to 15Mbps(1080p50/60) • Stream Only: Up to 10Mbps(1080p50/60)
Audio Encoding and Bitrate	AAC-LC, 32Kbps to 384Kbps
Audio Sampling Rate	48KHz, 16bit
Storage Media	SD Card
Storage File System	FAT & NTFS
Supported Stream Platforms	<ul style="list-style-type: none"> • TS over TCP/UDP (unicast & multicast) • RTSP over HTTP/TCP/UDP (RTSP Elementary Stream) • RTMP (Publish) / RTMPS
Recording File Format	MP4 and TS (TS format is currently under development)
Firmware Update	Via Web UI
Others	
Power	DC 12V
Operating Temperature	0°C to 40°C (32°F to 122°F)
Storage Temperature	-10°C to 60°C
Operating Humidity	10 % to 80 % (non-condensing)
Web UI Languages	English / Traditional Chinese / Simplified Chinese / Japanese
Dimensions	220(W) x 115(D) x 45.5(H) mm

Note

Service & Support

It is our goal to make your products ownership a satisfying experience. Our supporting staff is available to assist you in setting up and operating your system. Please refer to our web site www.datavideo.com for answers to common questions, support requests or contact your local office below.



Please visit our website for latest manual update.
<https://www.datavideo.com/product/NVS-33>

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