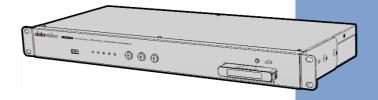
datavideo



4 CHANNEL STREAMING

ENCODER/RECODER

NVS-40

Instruction Manual

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Disclaimer of Product & Services

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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.
- 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 beings 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.



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.

Chapter 1 Product Overview

The Datavideo NVS-40 is a 4 Channel Streaming Encoder/Recorder which features streaming and recording features in a single device to help producers or users to record and stream high quality videos simultaneously by setting different video formats and bitrates according to different applications and internet bandwidths.

The Datavideo NVS-40 supports SDI x 1 and HDMI x 4 video inputs (Channel 1 source can be either SDI or HDMI). The NVS-40 allows up to 4 1080P signal sources to be encoded to 8 streamings in different bitrates simultaneously. The NVS-40 records up to 4 inputs and 1 output channel video signals to hard disk or live-streams those videos to up to 10 different streaming platforms at the same time.

Moreover, The NVS-40 also allows external XLR balanced audio and RCA unbalanced audio input sources. It can also be an ISO recorder to record backup files for each input channel. The NVS-40 can be a Video IP switcher to switch between different videos via internet connection which is suitable to control remotely.

Furthermore, the 2.5" HDD/SSD inserted into the NVS-40 front panel can be formatted in NTFS, FAT and exFAT formats which allow users to record single video file that the file size exceeds 4GB.

1.1 Big Five Features

- Four Input Channels for Video Encoding/Capturing/Streaming
- H.264 Streaming and Recording Simultaneously
- Video IP Switcher
- ISO Recorder for 4 Input Channels and 1 Program Output.
- Quad View/PIP/POP/Full Screen/PBP Screen Layouts.

1.2 Features

- Four Channel for Video Capturing/Encoding/Streaming
- H.264/AVC High Profile Level
- Configurable Bit Rate up to 30Mbps per Channel
- Independent Encoder Settings for Simultaneously Streaming and Recording
- Built-in de-interlacer
- Built-in Video Scaler: Resized Resolution Range from 160 x120 to 1920 x1080
- Isolated/PIP/PBP (Picture By Picture) Video Processing Modes.

- Dynamic Parameter Settings Adjustment: GOP Size, Frame Rate, Bit Rate.
- Multi-language Web UI including English, Simplified Chinese, Japanese and Traditional Chinese (Will be Available Soon)
- Dual Color LED Indicator Showing the status or detections. (About LED indicator related sections, please refer to Appendix1 and Appendix2).

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
- 576i at 50 fps
- 480i at 59.94 fps

Web UI supported operating systems and web browsers

- Operating systems
 - Microsoft Windows 8.1 (64-bit)
 - Microsoft Windows 10 (64-bit)
- Web browsers
 - Microsoft Internet Explorer
 - Google Chrome

Streaming

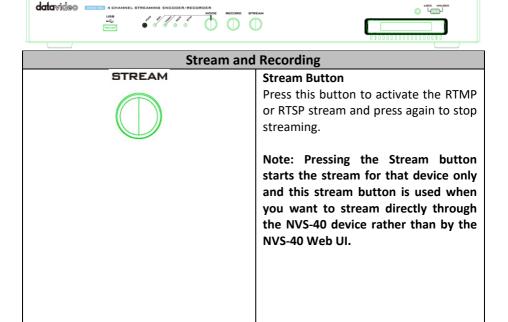
- RTSP, RTMP, TS and HLS streaming protocols for use on:
 - Adobe Media Server, Wowza Media Server
 - Software video players such as QuickTime and VLC
 - Content Delivery Networks (CDNs) such as YouTube Live, Ustream and etc.

Recording

- Recording format
 - MOV,MP4 and TS file formats on a FAT, NTFS or exFAT file system

Chapter 2 Connections and Controls

2.1 Front Panel



RECORD



Record Button

Press the Record button to start recording your input source to the 2.5" SSD or HDD inserted into the front panel of the NVS-40. Press the Record button again to stop the recording.

Note: Pressing the Record button starts recording for that device only and this record button is used when you want to record directly through the NVS-40 device rather than by the NVS-40 Web UI.

Note: If you want to start/stop streaming and recording at the same time, press and hold the Stream and Record buttons and then release them at the same time. Please pay attention to the LED indicator status after pressing the buttons.



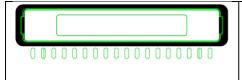
Mode Button

Due to that the first channel of the video inputs on the rear panel of the NVS-40 can either be SDI or HDMI, Press the Mode button to switch between the SDI and HDMI Mode.

LED Indicator

O Printe	Power LED The Power LED Indicates the Power status. Red LED is On: system reboot/program initialization Red LED is Blinking: Error Green LED is On: system is ready.
(D)	SDI LED The SDI LED indicates the status of the first input channel. The first input channel of the NVS-40 allows either SDI or HDMI source. If the input for the first channel is SDI source, this SDI LED will be lit. Red LED is Blinking: Error Green LED is On: Input source is OK.
P. C. L.	HDMI LED The HDMI LED indicates the status of the first input channel. The first input channel of the NVS-40 allows either SDI or HDMI source. If the input for the first channel is HDMI source, this HDMI LED will be lit. Red LED is Blinking: Error Green LED is On: Input sources are OK.

æec ⊕	Record LED The Record LED indicates whether current status is in Record Mode or not. If the NVS-40 operates in Record Mode, then this Record LED will be lit. Red LED is Blinking: Error Green LED is On: Recording is started.
© Trans	Stream LED The Stream LED indicates whether current status is in Stream Mode or not. If the NVS-40 operates in Stream Mode, then this Stream LED will be lit. Red LED is Blinking: Error Green LED is On: Streaming is started.
USE	Port
USB	USB Port The USB port on the front panel of the NVS-40 is used for firmware update. Note: The USB port on the front panel of the NVS-40 is used for firmware update. The backup recording of the NVS-40 will be saved in the HDD or SSD inserted into the right side of the front panel.



2.5" SSD/HDD Enclosure and 2.5" SSD/HDD Tray

This 2.5" SSD/HDD enclosure is used for users to install the 2.5" SSD or HDD.

The Steps for installing the SSD/HDD

- 1. Remove the top cover of the SSD/HDD enclosure.
- 2. Please place your SSD or HDD into the enclosure. Please pay attention that the side with the SATA connector should be placed toward the direction of the rear panel of the SSD/HDD enclosure.
- 3. Please cover the top lid of the SSD/HDD enclosure.
- 4. Please screw the 4 screws into both sides of the SSD/HDD enclosure again.
- 5. Please insert the SSD/HDD enclosure into the SSD/HDD tray again to finish the SSD/HDD installation procedure.



Lock/Unlock Switch and the LED Indicator

When the enclosure is inserted, slides the switch to the Lock side will lock the enclosure. The enclosure can be pulled out when the switch slides to the side of Unlock.

The LED indicator shows the Lock/Unlock status of the SSD/HDD enclosure. When the SATA interface is connected correctly and the Lock/Unlock switch is pushed to the lock side, the SSD/HDD LED indicator will be lit.

Green LED is On: The installation is finished/The SSD/HDD is ready Green LED is Blinking: In the recording LED is Off: SSD/HDD is removed/Error

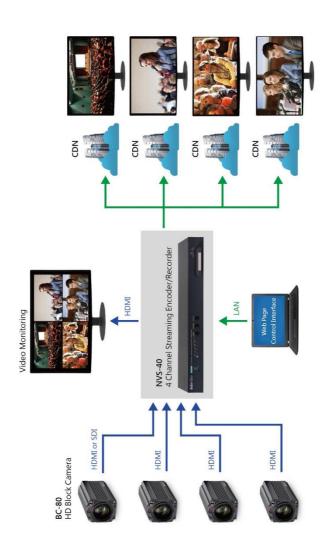
2.2 Rear Panel



	Audio Input		
L P	RCA Unbalanced Audio Input Allows you to input an unbalanced stereo analog audio source for streaming and recording.		
PUSH CH PUSH CH 2	XLR Balanced Audio Inputs Allows you to input up to two XLR balanced analog audio sources (CH1 & CH2) for streaming and recording.		
Video Input			
HDMI 1	SDI/HDMI Input (for Channel 1 Video Input Only) Connect an SDI or HDMI video source to this SDI/HDMI video input interface. Note: The video input source for the NVS-40 Channel 1 video input can be either SDI or HDMI source. However, the HDMI video input source is the only format that can be accepted by the video inputs of Channel 2, Channel 3 and Channel 4. HDCP mode is not supported by HDMI interface.		
HDMI 2	HDMI 2 Connect an HDMI video source to this HDMI video input interface. HDCP mode is not supported by HDMI interface.		
HDMI 3	HDMI 3 Connect an HDMI video source to this HDMI video input interface. HDCP mode is not supported by HDMI interface.		

HDMI 4	HDMI 4 Connect an HDMI video source to this HDMI video input interface. HDCP mode is not supported by HDMI interface.
	SDI Loop
SDI	Connect an SDI cable from this connector to a monitor or projector with the SDI interface to output the SDI input source
	Others
LAN	LAN The LAN port is an auto-negotiation 10/100/1000 Base- T Ethernet port which connects the NVS-40 to an Ethernet network through a standard RJ-45 Ethernet cable.
DE IN 12V	DC IN 12V Power Connector Power the NVS-40 device by connecting the device to an AC outlet through a power cord and a power adapter. To power off the NVS-40, simply disconnect the device from the power source and any logged errors will be cleared. All current settings are kept even after the device is powered off.
I	Power Switch You can switch this power switch for powering-on or powering-off the NVS-40.
<u> </u>	This is the Ground.

Chapter 3 System Diagram



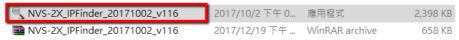
Chapter 4 Quick Start Guide-Connection and Setting

Before you start to use the NVS-40, it is very important that you have to connect all necessary cables and to complete the network and HDD settings. Due to the fact that the NVS-40 can only be controlled by the Web UI, the Web UI must be set after all hardware connections and settings are done.

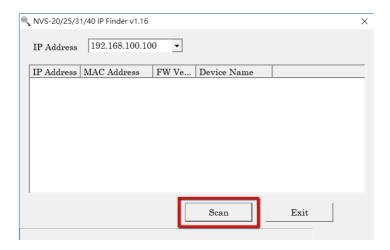
4.1 Quick Start Guide

Please follow following steps for quick connection and setting guidance of the NVS-40.

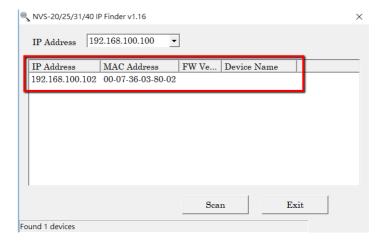
- Step 1. Please connect a DC 12V power cord connected with an AC-DC adapter from the NVS-40 DC 12V connector to the AC outlet.
- Step 2. Please turn on the power switch of the NVS-40.
- Step 3. Please connect four HDMI video input sources or one SDI and three HDMI video input signals from the external connected block cameras to the HDMI and SDI video input connectors on the rear panel of the NVS-40.
- Step 4. Please connect the public network to the WAN port of the router via an RJ-45 Ethernet cable.
- Step 5. Please connect another RJ-45 Ethernet cable from the LAN port on the rear panel of the NVS-40 to the router.
- Step 6. Please connect an RJ-45 Ethernet cable from the LAN port for the router to your PC/Laptop.
- Step 7. Please set your PC/laptop in DHCP mode.
- Step 8. Please download Datavideo IP Finder utility software "NVS-2X_IPFinder" on the Datavideo official website www.datavideo.com or by scanning the QR code.
- Step 9. Please unzip the zip file and Install the IP Finder utility software after downloading.



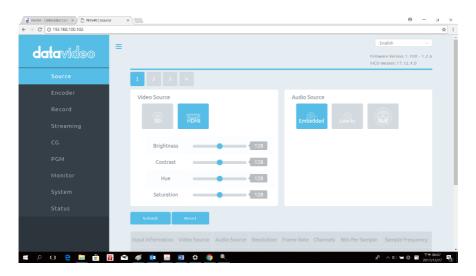
Step 10. Open the IP Finder utility software and then the connected NVS-40 IP address will be shown automatically. If the IP address does not show automatically, users can click the **Scan** button to find the IP address of all connected NVS-40 devices.



Step. 11. After the connected NVS-40 IP address is shown, please enter the IP address into the address bar of the web browser.



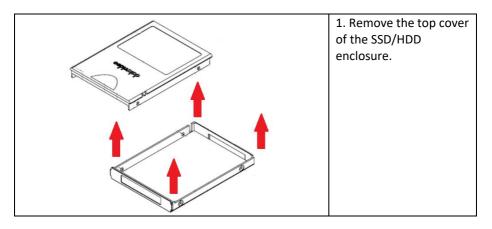
Step 12. The NVS-40 Web Control UI will be shown and then it is ready for you to control and set the NVS-40 through the Web Control UI.

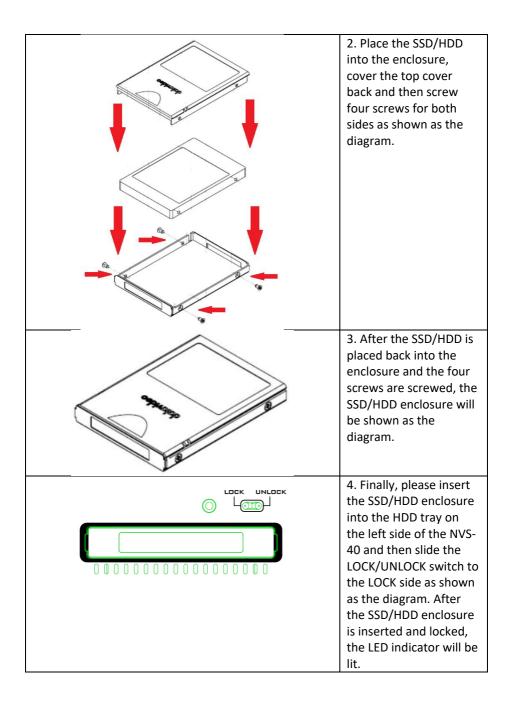


Note: The 2.5" SSD/HDD must be installed in the enclosure and inserted into the HDD tray on the front panel of the NVS-40 to start recording.

4.2 How to Install 2.5" SSD/Removable HDD

How to Assemble 2.5" SSD/HDD in Removable Enclosure.





Chapter 5 NVS-40 Web Control User Interface

After connecting the NVS-40 to the public network by following the steps of the quick start guide in the previous chapter, users can control the NVS-40 by the Web Control User Interface now. Please refer to following chapters for details of the setting and control of the NVS-40 Web Control User Interface.

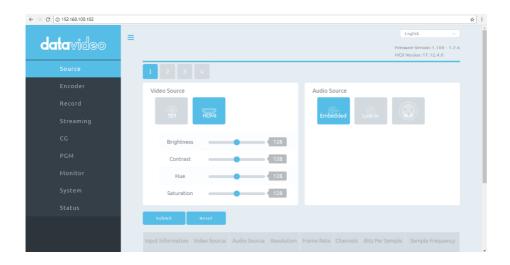
5.1 Main Control Interface

After the IP address of the NVS-40 is detected by the IP Finder utility software, users can enter the detected IP address into the address bar of the web browser, and then the NVS-40 Web Control User Interface will be shown as follows. In this example, the detected IP address is "192.168.100.102".

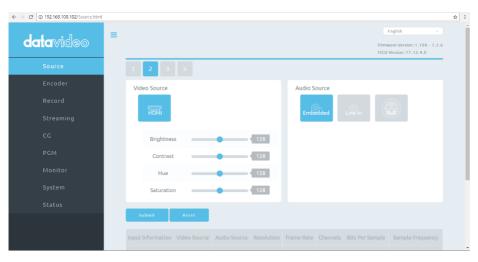
The main setting options of the web control UI include **Source**, **Encoder**, **Record**, **Streaming**, **CG**, **PGM**, **Monitor**, **System** and **Status** will be shown on the left column.

5.2 Source

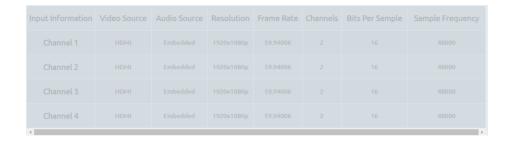
Tag 1, 2, 3 and 4 represent the control interfaces for Channel 1 to Channel 4 video and audio input sources. Because the video input source can be either SDI or HDMI. So, users can see SDI and HDMI tags for Channel 1 as shown as follows. User can click SDI or HDMI tag in the left block to adjust the brightness, contrast, hue and saturation values by the sliders. After adjustment is completed, users can press the submit button to apply and save the setting. If user want to restore to factory default value, just press the Reset button. In the right block, types for audio input sources including Embedded, Line-in and XLR will be shown. The video and audio tags with color represent the current input status.



For the video and audio input sources from Channel 2 to Channel 4, the interface will be shown as follows.

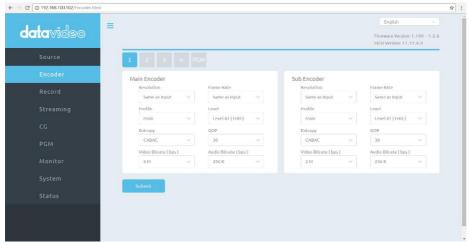


On the bottom of the source page, information for those input sources will be shown as follows.



5.3 Encoder

Users can see Encoder control page by clicking the Encoder option on the left column of the page. There are five tags for the Encoder page include tag 1, 2, 3, 4 and PGM. Each of the tag provides users to set parameters of two Encoders including Main Encoder and Sub Encoder. Users can set 8 parameters for the Main Encoder and the Sub Encoder including Resolution, Frame Rate, Profile, Level, Entropy, GOP, Video Bitrate (bps) and Audio Bitrate (bps) independently. The Main Encoder and Sub Encoder settings are available for Channel 1, Channel 2, Channel 3, Channel 4 and PGM signals. That means users can set 10 set of parameters in the Encoder page as shown as follows. After adjustment is completed, users can press the submit button to apply and save the setting.



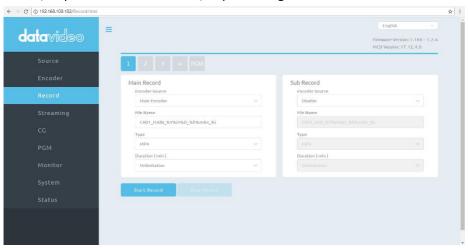
Parameters for each drop-down menu of the Encoder page are shown as follows.

Resolution	Resolution
Same as Input 1920 * 1080 1280 * 720 720 * 576 720 * 480 640 * 480 320 * 240 160 * 120	The Resolution drop-down menu shows different encoded resolution options that can be selected by the user
Frame Rate Same as Input 60.00 50.00 30.00 25.00 20.00 15.00 12.50 10.00 5.00 1.00	Frame Rate The Frame Rate drop-down menu shows different frame rate options that can be selected by the user
Profile Main High Main Baseline	Profile Users can select different profiles include High, Main and Baseline.
Level Level 41 (FHD) Level 40 Level 40 Level 32 (HD) Level 31 Level 30 Level 22 (SD) Level 21 Level 20 Level 13 Level 14 Level 10 Level 10 Level 10	Level Users can select different Levels as shown as the diagram.

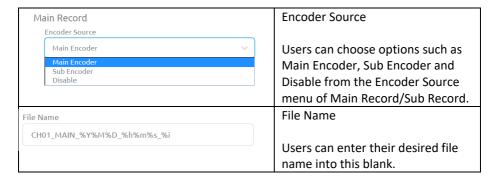
GOP	GOP
30	
255	Users can select different GOP sizes
240	through this drop down many
200	through this drop-down menu.
120	
100	
60	
50 30	
25	
20	
15	
10	
5	
3	
2	
1	
Video Bitrate (bps)	Video Bitrate (bps)
6 M	(1)
6 M	
32 M	Users can select different video bitrates
24 M	from this drop-down menu.
16 M	nom this drop-down mend.
12 M	
8 M	
6 M	
4 M	
2 M	
1 M	
512 K	
256 K	
Audio Bitrate (bps)	Audio Bitrate (bps)
256 K	Users can select different audio bitrates
384 K	
256 K	from this drop-down menu.
128 K	
64 K	
32 K	
Entropy	Entropy
CABAC	Hanna and add different For
CAVLC	Users can select different Entropy
	coding algorithms including CAVLC and
CABAC	CABAC.

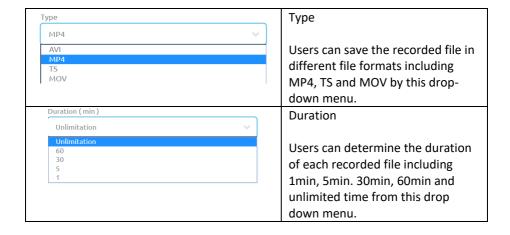
5.4 Record

After clicking the Record option on the left column of the web control UI, uses can see the Record option control page. There are five tags in this page include tag 1, tag 2, tag 3, tag 4 and PGM. Each of the tag has two sets of record settings in it including Main Record and Sub Record. So, that means there are 10 sets of record settings totally and users can record 10 video sources in different codings and file formats simultaneously. After adjustment is completed, users can press the Start Record/Stop Record buttons to start/stop recording.



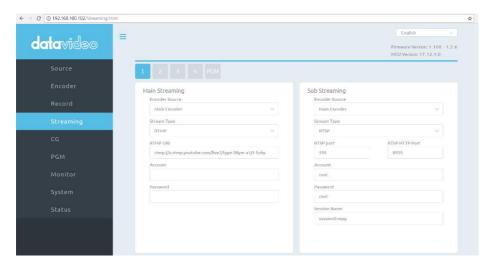
Parameters for each drop-down menu of the Record page are shown as follows.





5.5 Streaming

After clicking the Streaming option on the left column of the web control UI, uses can see the Streaming option control page. There are five tags in this page include tag 1, tag 2, tag 3, tag 4 and PGM. Each of the tag has two sets of streaming settings in it including Main Streaming and Sub Streaming. So, that means there are 10 sets of streaming settings totally and users can stream 10 video sources in different codings and file formats simultaneously. After the streaming setting is completed, users can press the Start Stream/Stop Stream buttons to start/stop streaming.



Parameters for each drop-down menu of the Streaming page are shown as follows.

Main Streaming	Encoder Source
Encoder Source	
Main Encoder V	Users can choose options such as
Main Encoder Sub Encoder	Main Encoder, Sub Encoder and
Disable	Disable from the Encoder Source
	menu of Main Streaming/Sub
	O ,
Stream Type	Streaming.
RTMP	Stream Type
RTSP	1 . 1:66
RTMP TS	Users can select different stream
HLS	types including RTSP, RTMP, TS
	and HLS from this drop-down
	menu.
RTMP URL	RTMP URL
rtmp://a.rtmp.youtube.com/live2/tyye-08ym-a1j9-5uhy	
	Before the RTMP streaming, users
	must get the stream server
	address and the stream token
	from desired stream platform such
	•
	as Youtube and Facebook. After
	that, please enter the stream
	server address and the stream
	token in following format:
	Stream server address/stream
	token
	Finally, click the Start Stream/Stop
	Stream buttons to start/stop
	stream.
RTSP port RTSP HTTP Port	RTSP Port and RTSP HTTP Port
554 8554	KISI TOTCUIR KISI IIIII TOTC
	These two blanks shows the RTSP
	port No. and the RTSP Http Port
	No.
	Default RTSP port No. range is
	554~562
	Default RTSP http port No. range is
	8555~8563

Account	Account and Password
Password	These two blanks is used for users to enter the RTSP account and password. Default account and password are shown as follows. Account: root Password: root
Session Name session0.mpg	Session Name Default RTSP session name is "session0.mpg".

5.5.1 Streaming-RTSP

NVS-40 provides users to stream by various streaming protocols such as RTMP, RTSP, TS and HLS. Please see following paragraphs for the streaming methods by using different streaming methods.

- 1. Please use an RJ-45 Ethernet cable to connect the public network and the WAN port of a router.
- 2. Please use another RJ-45 Ethernet cable to connect from the LAN port on the rear panel of the NVS-40 to the LAN port of the router.
- 3. Please use another RJ-45 Ethernet cable to connect from the LAN port of a PC/Laptop to the LAN port of the router.
- 4. Please open the Datavideo IP Finder utility software and then press the Scan button to find the IP address of the NVS-40. (Please refer to Chapter 4. Quick Start Guide-Connection and Setting).
- 5. Please enter the IP address of the NVS-40 into the address bar of the web browser to open the NVS-40 Web control UI.
- 6. Please press the Streaming option on the left column of the web control UI to open the Streaming control interface.

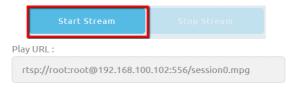
7. Please select Main Encoder or Sub Encoder from the Encoder Source drop-down menu.



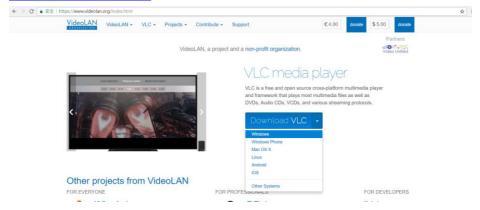
8. Please select RTSP from the Streaming Type drop-down menu for the Main Streaming or Sub Streaming.



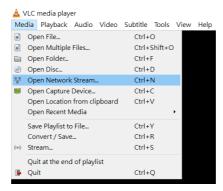
9. Please press the Start Stream button to generate a RTSP streaming address.



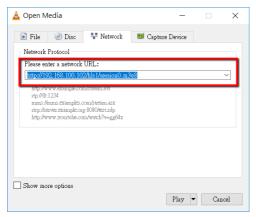
10. Please download VLC media player from the VLC website https://www.videolan.org and then install the software.



11. Open the VLC media player, select **Media** drop-down menu and then tap **Open Network Stream**.



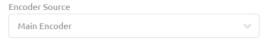
12. Please enter the streaming address that is generated by the NVS-40 into the "please enter a network URL" blank and then press the Play button for streaming playing.



5.5.2 Streaming-TS

1. Please use an RJ-45 Ethernet cable to connect the public network and the WAN port of a router.

- 2. Please use another RJ-45 Ethernet cable to connect from the LAN port on the rear panel of the NVS-40 to the LAN port of the router.
- 3. Please use another RJ-45 Ethernet cable to connect from the LAN port of a PC/Laptop to the LAN port of the router.
- 4. Please open the Datavideo IP Finder utility software and then press the Scan button to find the IP address of the NVS-40. (Please refer to Chapter 4. Quick Start Guide-Connection and Setting).
- 5. Please enter the IP address of the NVS-40 into the address bar of the web browser to open the NVS-40 Web control UI.
- 6. Please press the Streaming option on the left column of the web control UI to open the Streaming control interface.
- 7. Please select Main Encoder or Sub Encoder from the Encoder Source drop-down menu.



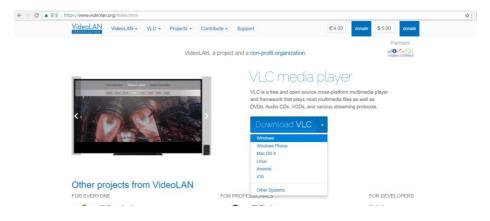
8. Select TS from the Stream Type drop-down menu for Main Streaming or Sub streaming.



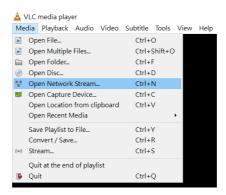
9. Please enter the IP address of your PC/Laptop that is shown on the IP Finder utility software into the TS URL blank by following format. Take 192.168.100.100 as an example, the address will be udp://192.168.100.100:1000



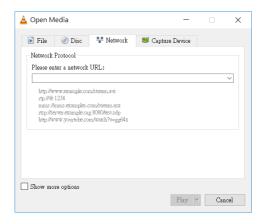
- 10. Please press the Start Stream button and then NVS-40 will generate a TS streaming address automatically.
- 11. Please download VLC media player from the VLC website https://www.videolan.org and then install the software.



12. Open the VLC media player, select **Media** drop-down menu and then tap **Open Network Stream**.



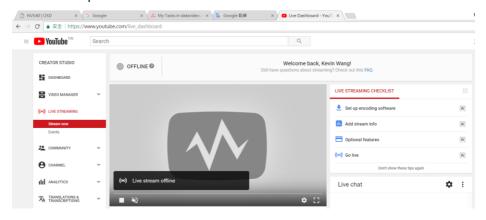
13. Please enter the streaming address that is generated by the NVS-40 into the "please enter a network URL" blank and then press the Play button for streaming playing. In this example, the streaming address will be udp://192.168.100.100:1000



5.5.3 Streaming-RTMP (Take Youtube as an example)

- 1. Please use an RJ-45 Ethernet cable to connect the public network and the WAN port of a router.
- 2. Please use another RJ-45 Ethernet cable to connect from the LAN port on the rear panel of the NVS-40 to the LAN port of the router.
- 3. Please use another RJ-45 Ethernet cable to connect from the LAN port of a PC/Laptop to the LAN port of the router.

4. Connect to Youtube website https://www.youtube.com/live dashboard and click Stream now option on the left column.



5. The server URL and Stream name/key will be shown on the bottom of the page.



- 6. Please open the Datavideo IP Finder utility software and then press the Scan button to find the IP address of the NVS-40. (Please refer to Chapter 4. Quick Start Guide-Connection and Setting).
- 7. Please enter the IP address of the NVS-40 into the address bar of the web browser to open the NVS-40 Web control UI.
- 8. Please press the Streaming option on the left column of the web control UI to open the Streaming control interface.

9. Select desired Encoder from the Encoder Source drop-down menu and then select RTMP from the Stream Type drop-down menu.



10. Please copy the server URL and Stream name/key and then paste them into the RTMP URL blank in the streaming control page. The format of the pasted server URL and stream name/key must be as follows.

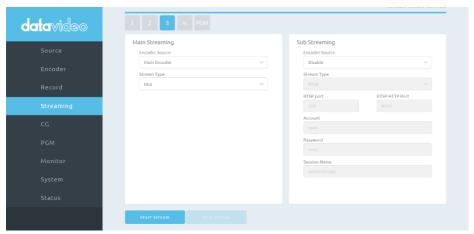
Server URL/Stream name/key



11. Please press the Start Stream button and then the video can be streamed through the Youtube streaming platform.

5.5.4 Streaming-HLS

1. Select the Encoder Source from the streaming page and then select HLS from the Stream Type drop-down menu. After that, please press the Start Stream button.

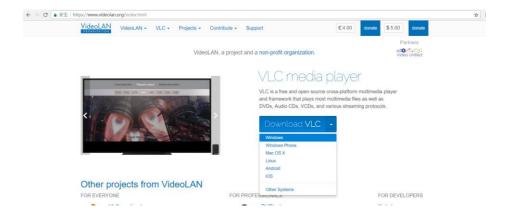


2. NVS-40 will generate an m3u8 streaming address.

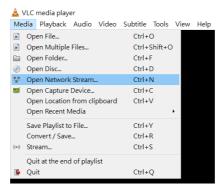
Play URL:

http://192.168.100.102/hls1/session0.m3u8

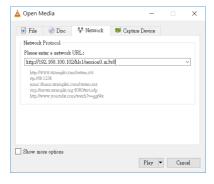
- 3. Please play the m3u8 streaming address by following ways.
- IPhone, iPad and MacBook: Please use Safari web browser to open the m3u8 streaming address.
- Windows 10: Please open the m3u8 streaming address by Microsoft Edge streaming address.
- Non-Windows 10 :
 - 1. Please download VLC media player from the VLC website https://www.videolan.org and then install the software.



2. Open the VLC media player, select **Media** drop-down menu and then tap **Open Network Stream**.

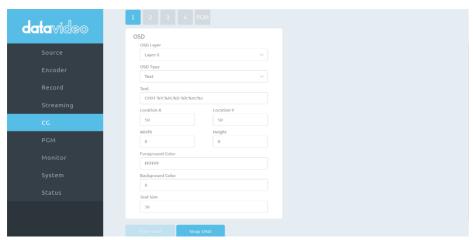


3. Please enter the streaming address generated by the NVS-40 and then press the Play button for streaming playing

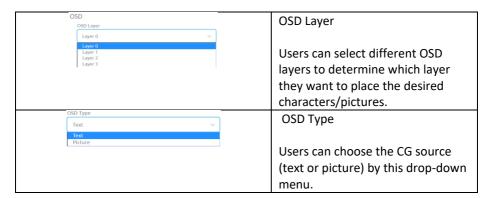


5.6 CG (Character Generator)

After clicking the CG option on the left column of the web control UI, uses can see the CG option control page. There are five tags in this page include tag 1, tag 2, tag 3, tag 4 and PGM for users to set different CG parameters for input channel 1 to input channel 4 and the PGM. After all of the CG parameters are set, users can press the Start OSD/Stop OSD buttons to place/remove desired characters/picture to specific input and PGM sources.



Parameters for each drop-down menu of the CG page are shown as follows.



Text		Text
CH01 %Y.%M.%D %h:%m:	%s	
		Users can enter desired texts in this blank if they choose text as the CG source.
Location-X	Location-Y	Location X/Location Y
50	50	
		Users can enter different values to determine axis-X and axis-Y of the CG source (text/picture).
Width	Height	Width and Height
0	0	
		Users can enter different values to determine width and height of the CG source.
Foreground Color FFFFFF Background Color		Foreground Color/ Background Color
0		Please enter different parameters into those two blanks to determine different foreground and background colors of the CG source.
ext Size		Text Size
36		Please enter different figure to change the text size.
Path		Path
	Browse	If a picture is selected to be the CG

5.6.1 How the Location X & Location Y values Affect CG Source

1. Characters

Users can change the Location X and Location Y values to adjust the location of the characters placed on the screen.

X axis: For X axis, higher Location X value will force the placed characters to move from their original location to more right position.

Y axis: For Y axis, higher Location Y value will force the placed characters to move from their original location to lower side position.

Example: X axis =100, Y axis=100

Location-X	Location-Y	
)
The state of the s		

Example: X axis =900, Y axis=500



2. Pictures

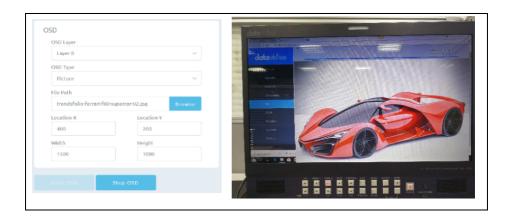
Users can change the Location X and Location Y values to adjust the location of the pictures placed on the screen.

X axis: For X axis, higher Location X value will force the placed pictures to move from their original location to more right position.

Y axis: For Y axis, higher Location Y value will force the placed pictures to move from their original location to lower side position.

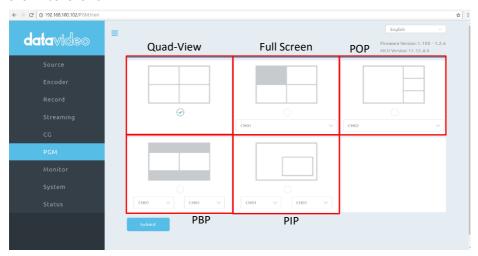
Width and Height: Different values can change width and height of a picture.

Example: X axis =400, Y axis=200, width=1500, height=1080



5.7 PGM

After clicking the PGM option on the left column of the web control UI, uses can see the PGM option control page. The PGM control page provides five PGM display models including Quad View, PIP, POP, PBP and Full Screen for users which are shown as follows.



1. Quad View: Click the Quad-View icon and then press the submit button to apply.



2. Full Screen: Click the Full Screen icon and select the desired channel to be Full Screen and then press the submit button to apply.



3. POP (Picture Outside Picture): Click the POP icon and select the desired channel to be POP and then press the submit button to apply.



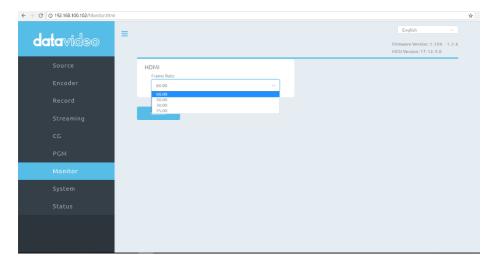
4. PBP (Picture By Picture): Click the PBP icon and select the desired two channels to be PBP and then press the submit button to apply.



5. PIP (Picture In Picture): Click the PIP icon and select the desired two channels to be PIP and then press the submit button to apply.

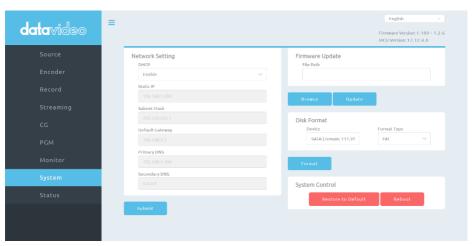
5.8 Monitor

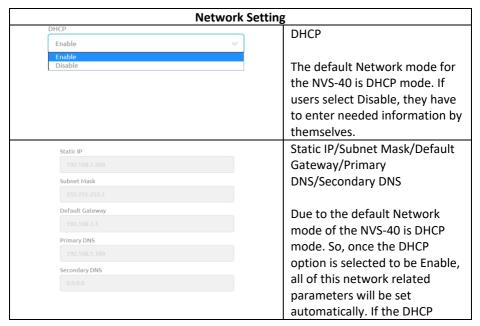
After clicking the Monitor option on the left column of the web control UI, uses can see the Monitor option control page. The Monitor control page provides four HDMI frame rate options for users including 60FPS, 50FPS, 30FPS and 25FPS.

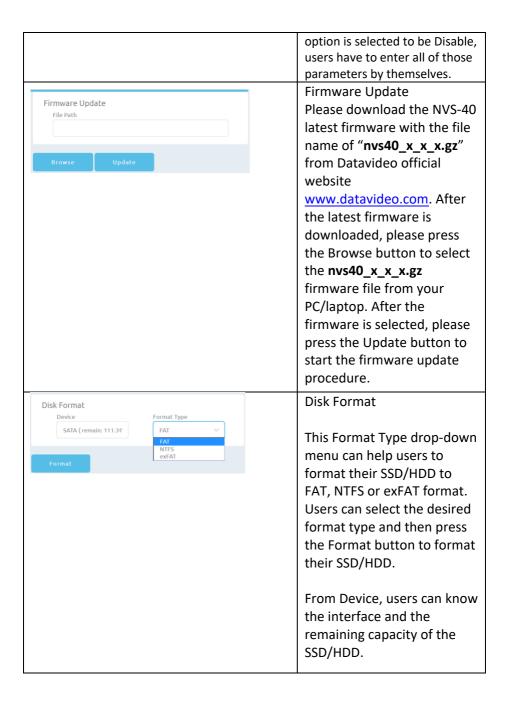


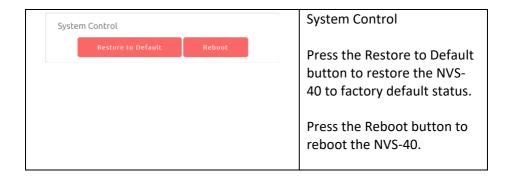
5.9 System

After clicking the System option on the left column of the web control UI, uses can see the System option control page. The System control page provides users to set four system parameters including Network Setting, Firmware Update, Disk Format and System Control. The System control page is shown as follows.





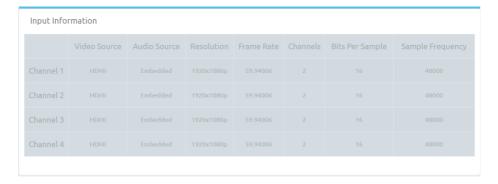




5.10 Status

After clicking the Status option on the left column of the web control UI, uses can see the Status option control page. The Status control page provides details for following items.

Channel 1 to Channel 4 inputs.



• Recording for Channel 1 to Channel 4 and PGM.

Record Status						
		Encoder Source	Resolution	Frame Rate	Video Bitrate (bps)	Audio Bitrate (bps)
Channel 1				NA		NA
		NA	NA	NA	NA	NA
			NA	NA	NA	NA
Channel 3				NA		NA
		NA	NA	NA	NA	NA
Channel 4						NA
				NA	NA	NA
			NA	NA		NA
		NA	NA	NA	NA	NA

• Streaming for Channel 1 to Channel 4 and PGM.

Stream Status

	Encoder Source	Resolution	Frame Rate	Video Bitrate (bps)	Audio Bitrate (bps)
Chanala	NA	NA			NA
Channel 1	NA	NA	NA	NA	NA
	NA			NA	NA
Channet 2	NA	NA	NA	NA	NA
	NA			NA	NA
	NA	NA	NA	NA	NA
Channel 4	NA			NA	NA
Channel 4	NA	NA	NA	NA	NA
PGM	NA	NA		NA	NA
PUM	NA	NA	NA	NA	NA

Chapter 6 Firmware Update

Please follow following steps for the NVS-40 firmware update.

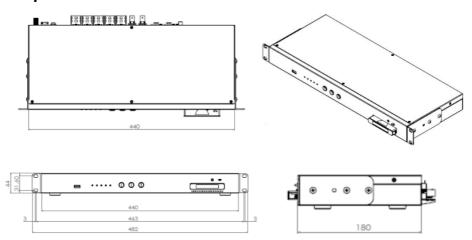
- Step 1. Please download the latest NVS-40 firmware with the file name of "nvs40 \times x x.gz" from Datavideo official website www.datavideo.com
- Step 2. Please connect the public network to the WAN port of the router via an RJ-45 Fthernet cable.
- Step 3. Please connect another RJ-45 Ethernet cable from the LAN port on the rear panel of the NVS-40 to the router.
- Step 4. Please connect an RJ-45 Ethernet cable from the LAN port for the router to your PC/Laptop.
- Step 5. Please set your PC/laptop in DHCP mode.
- Step 6. Please download Datavideo IP Finder utility software "NVS-2X_IPFinder" on the Datavideo official website www.datavideo.com or by scanning the QR code.
- Step 7. Please unzip the zip file and Install the IP Finder utility software after downloading.
- Step 8. Open the IP Finder utility software and then the connected NVS-40 IP address will be shown automatically. If the IP address does not show automatically, users can click the **Scan** button to find the IP address of all connected NVS-40 devices.
- Step 9. After the connected NVS-40 IP address is shown, please enter the IP address into the address bar of the web browser.
- Step 10. The NVS-40 Web Control UI will be shown and then press the System option on the left column.
- Step 11. Please press the Browse button to select the downloaded firmware.
- Step 12. Please press the Update button to start your firmware update.

Chapter 7 Frequently-Asked Questions

This section describes problems that you may encounter while using the NVS-40. If you have questions, please refer to related sections and follow all the suggested solutions. If problem still exists, please contact your distributor or the service center.

er the SSD/HDD enclosure is
led out from the NVS-40, users
connect the SSD/HDD enclosure
heir PC/Laptop directly by this
TA to USB 3.0 Adapter Cable.
ase ensure whether the network
ed and the router are qualified for
10/100/1000M Ethernet speed
ndard.

Chapter 8 Dimensions



All measurements in millimeters (mm)

Chapter 9 Specifications

Interface				
	3G/HD/SD-SDI x1 (BNC 75 ohm)			
Video Input	HDMI 1.4 x4			
	(Channel 1 as SDI/HDMI selectable)			
	XLR Balanced audio x2			
Audio Input	RCA Unbalanced audio x 1 pair			
Addio input	SDI embedded audio			
	HDMI embedded audio			
	3G/HD/SD-SDI loop-through x1			
Video Output	HDMI 1.4 x1(PGM)			
11000000	RJ-45 female x1 (10/100/1000M			
	Ethernet)(Streaming)			
SSD/HDD Interface	SATA(6Gb/s)			
Recording File System	FAT, NTFS, exFAT			
Recording File Format	MP4, MOV and TS			
	General			
Setting & Control	Web UI for system configuration and control			
Firmware Update	Firmware upgradable by Web UI(network)			
	Standard			
Supported Input	1080p60/59.94/50,			
Resolutions	1080p30/29.97/25/24/23.98			
	1080i60/59.94/50			
	720p60/59.94/50			
	480i59.94, 576i50			
Supported Output	Same as input resolution, or scaled down			
Resolutions				
Audio Encoder	AAC-LC			
	Sample rate:48KHz, 16bit			
	Configurable bit rate: 128K or 256K or 384K			
	TS over UDP unicast & multicast			
Network Feature	RTSP over HTTP/TCP/UDP			
	RTMP (Publish)			
	• HLS			
Applications (Stream	Youtube			
Platforms/Stream Media	Live House			
Servers)	Ustream			
,	Akami			
	Facebook			

	Twitch	
	Wowza	
	Adobe Media Server	
Web UI Language	English, Simplified Chinese and Japanese	
Operating Temperature	0°C to 40°C (32°F to 122°F)	
Chassis	1U rack mount	
Power	DC 12V 2A	

Appendix 1 LED indicator Status and Behaviors

Please refer to following table for the LED indictor status and behaviors of the NVS-40 and its SSD/HDD enclosure.

NVS-40

Function	RED	Blinking RED	GREEN
Power LED	System Boot- up/Program Initialization	Error	System Ready
SDI	N/A	Error	Source Input OK
HDMI	N/A	Error	Source Input OK
REC	N/A	Error	Recording
STREAM	N/A	Error	Streaming On

SSD/HDD Enclosure

The LED indicator above the SSD/HDD enclosure will flash in green which means the SSD/HDD is in data accessing. Please refer to following table for the LED indictor status and behavior of the SSD or HDD.

SSD/HDD LED	LED is On	LED is Blinking	LED is OFF
Status			
SSD/HDD	Mounted/Ready	Recording	Unmounted/Driver
Behavior			Error

Appendix 2 NVS-40 Front Panel Buttons Behaviors

There are three buttons on the front panel of the NVS-40 including MODE, RECORD and STREAM, please refer to following table for the NVS-40 front panel buttons behaviors.

Button	Behavior	Description	LED Indicator
			Status
MODE (Stream	Press Once	Stop Stream→	1. Streaming LED
ON)		Change to next	will be OFF
		(HDMI→SDI→)	2. Interface LED
		→ Start Stream	will be changed
			3. Stream LED will
			be ON (if there is
			a valid source
			input.
MODE(Stream	Press Once	Change to next	Interface LED will
OFF)		(HDMI→SDI→)	be changed.
RECORD	Press Once	Start/Stop	Record LED
		Recording	ON/OFF
STM	Hold for 3 seconds	Start/Stop Stream	Stream LED will be
	until the Stream		ON (green)/OFF to
	LED is lit up.		start/stop
			streaming.

Note

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.

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Please visit our website for latest manual update. www.datavideo.com/product/NVS-40



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