datavideo®

H.264 Network Video Streaming Server

NVS-20

Quick Start Guide

Contents

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's 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 is 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.
- Damage caused by accident, misuse, unauthorized repairs, sand, grit or water is not covered by this warranty.
- All mail or transportation costs including insurance are at the expense of the owner.
- All other claims of any nature are not covered.
- Cables & batteries are not covered under warranty.
- Warranty only valid within the country or region of purchase.
- Your statutory rights are not affected.

Two Year Warranty

- All Datavideo products purchased after 01-Oct.-2008 qualify for a free one year extension to the standard Warranty, providing the product is registered with Datavideo within 30 days of purchase. For information on how to register please visit www.datavideo.com or contact your local Datavideo office or authorized Distributors
- Certain parts with limited lifetime expectancy such as LCD Panels, DVD Drives, Hard Drives are only covered for the first 10,000 hours, or 1 year (whichever comes first).

Any second year warranty claims must be made to your local Datavideo office or one of its authorized Distributors before the extended warranty expires.

Disposal
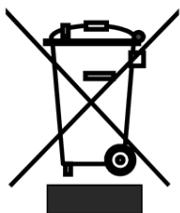
For EU Customers only - WEEE Marking

This symbol on the product indicates that it will not be treated as household waste. It must be handed over to the applicable take back scheme for the recycling of electrical and electronic equipment. For more detailed information about the recycling of this product, please contact your local Datavideo office.

Packing List

The following items should be included in the box. If any items are missing please contact your supplier.

1	x	Accessory Note
1	x	Quick Start Guide

Introduction

NVS-20 is a broadcast quality H.264 HD video streaming server. You get live program production and broadcast encoding for the Internet to have a good solution. Flexible mechanism design for desktop application or 1U rack mount application.

Feature

Internet Broadcasting - While you make video program, NVS-20 can generate H.264 HD video files and broadcast. Nice integration with video switcher to have a good program and real time transition. Good for education, wedding party, church applications.

H.264 encoding - The demand on video streaming is more and more. H.264 encoder provides a good quality and efficiency video to live on internet.

Input source - NVS-20 can accept SDI / HDMI / CVBS source input.

Flexible source input - Analog audio input for 2 channels (This analog audio input supports audio source selection e.g not only for CVBS analog audio, but also accept SDI or HDMI audio such as when you use PTC-100 to take video, the audio must come from somewhere). SDI and HDMI can also select embedded audio.

Network feature - Support DHCP Client, TS over IP(UDP), RTP, RTSP, RTP over HTTP. Windows base server or Apple MAC base server can be worked well with NVS-20.

Storage by USB- Streaming and recording into USB device simultaneously.

Web UI for system configuration and firmware upgrade.

Note:

- If customers change different resolutions in same input, you need to restart streaming
- You need to apply one button behavior first to enable function

Functions

Front Panel
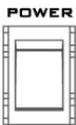
Power On/Off Switch

Switches the power On / Off

USB

USB interface for storage (FAT32 file system)
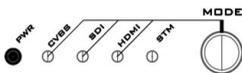
Mode Select

Mode Button - Select Input source between CVBS / SDI / HDMI.

STM - Display the stream server status

PWR - Display the power status

Rear Panel
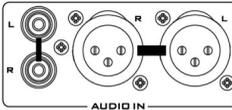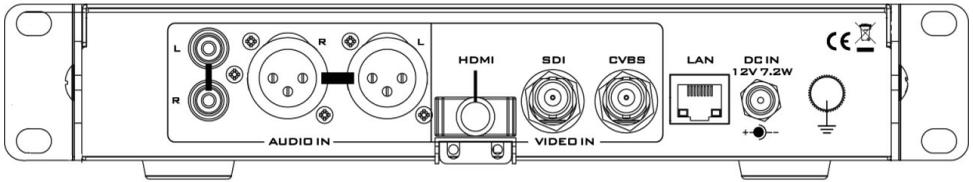
AUDIO IN (XLR)
Supports two channels XLR Balanced Audio Input.

AUDIO IN (RCA)
RCA stereo for a line level auxiliary analog audio source, such as a CD player or tape deck. If you are using more than two sources via an external audio mixer, connect the audio mixer's line level output to this unbalanced Audio input.
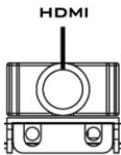
HDMI IN
HDMI digital signal input connecter.
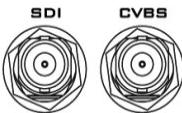
CVBS IN
Composite video input: takes a BNC connector from the composite output of a VCR, camera, DVD player, etc.

SDI IN
BNC connector for SDI input.

Ethernet Port (RJ-45)
100/10M base Ethernet Network interface

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

How to find NVS-20 by IP Finder

A. Make sure your computer and NVS-20 are in the same Local Area Network.

B. Execute NVS-20_IP_Finder.exe.

1. If the network is available, local IP Address shows as followed.
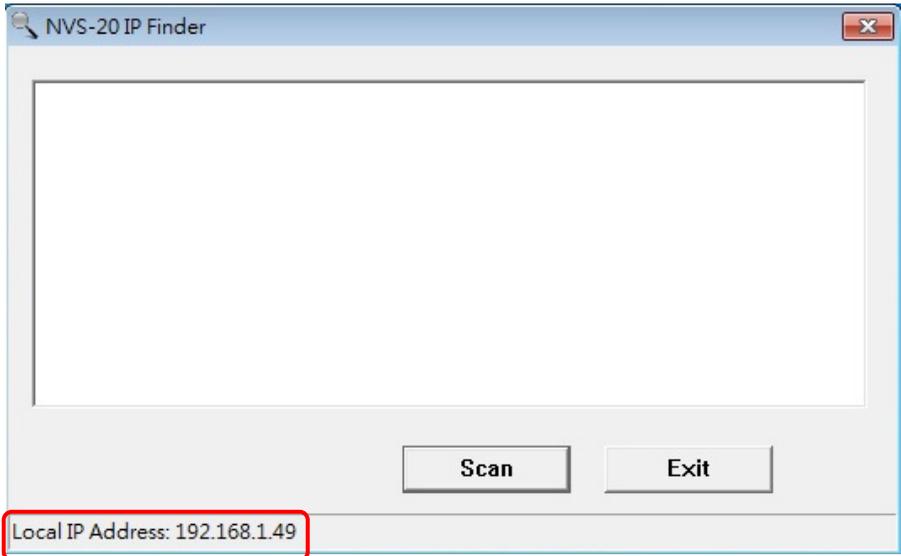
2. If the network is NOT available, shows as followed.
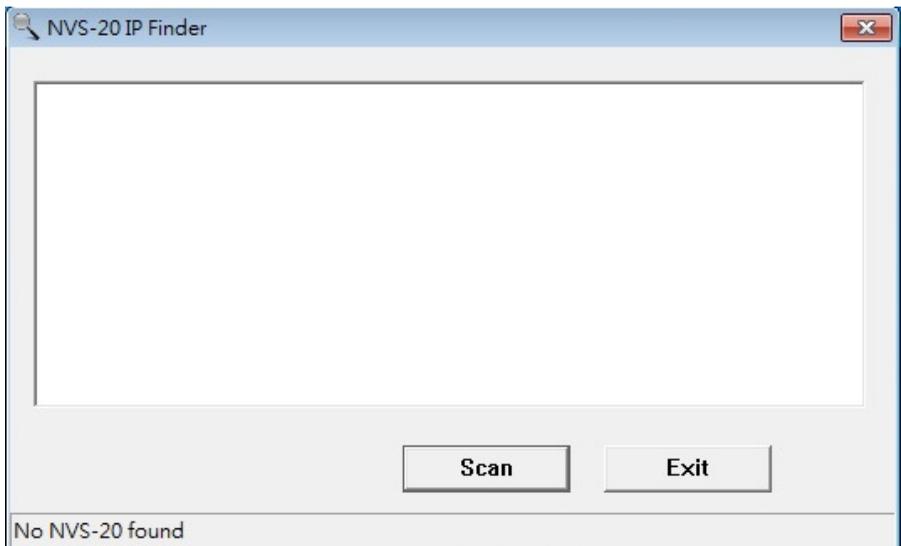
C. Click "Scan"

1. In scanning.

```
NVS-20 IP Finder                                              ✕

┌──────────────────────────────────────────────────────────┐
│                                                            │
│                                                            │
│                                                            │
│                                                            │
│                                                            │
│                                                            │
│                                                            │
│                                                            │
└──────────────────────────────────────────────────────────┘
                        [   Scan   ]       [   Exit   ]

scanning 5 seconds ... 158/255
```

2. Scan completed.

```
NVS-20 IP Finder                                              ✕

┌──────────────────────────────────────────────────────────┐
│ IP Address: 192.168.1.140      MAC Address:00-04-00-00-18-05
│                                                            │
│                                                            │
│                                                            │
│                                                            │
│                                                            │
│                                                            │
└──────────────────────────────────────────────────────────┘
                        [   Scan   ]       [   Exit   ]

Found 1 NVS-20
```
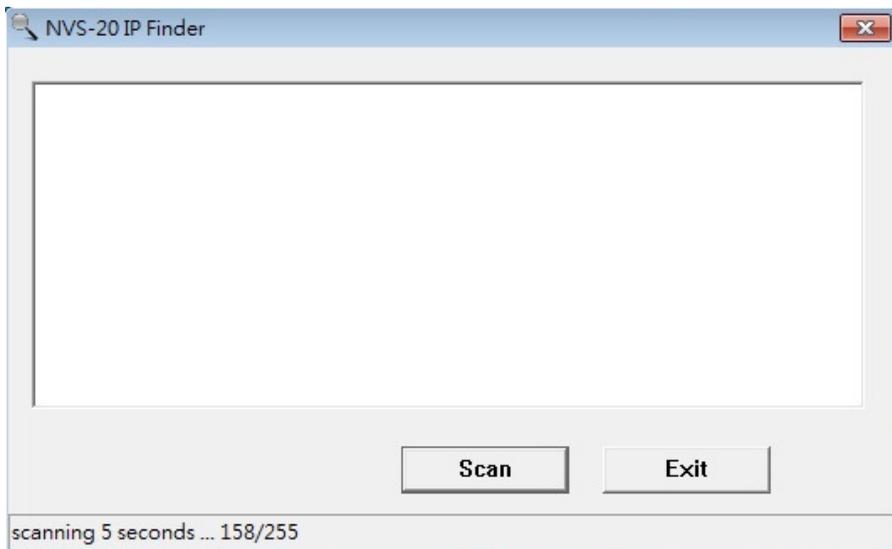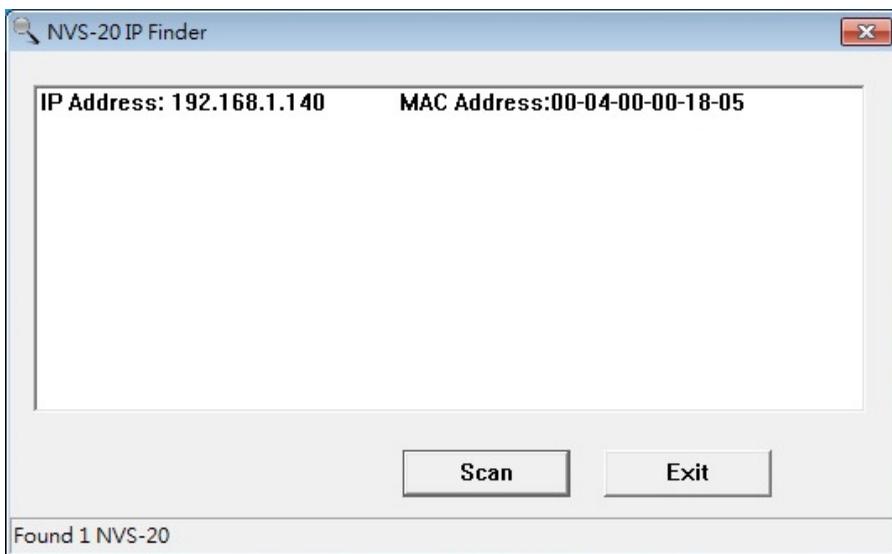
NVS-20 default IP Address mode is **DHCP**, you can change to static IP Address on Web Server.

Login NVS-20 Web Server

A.   After find the IP address, login from WEB Browser

Username: admin   Password: 000000
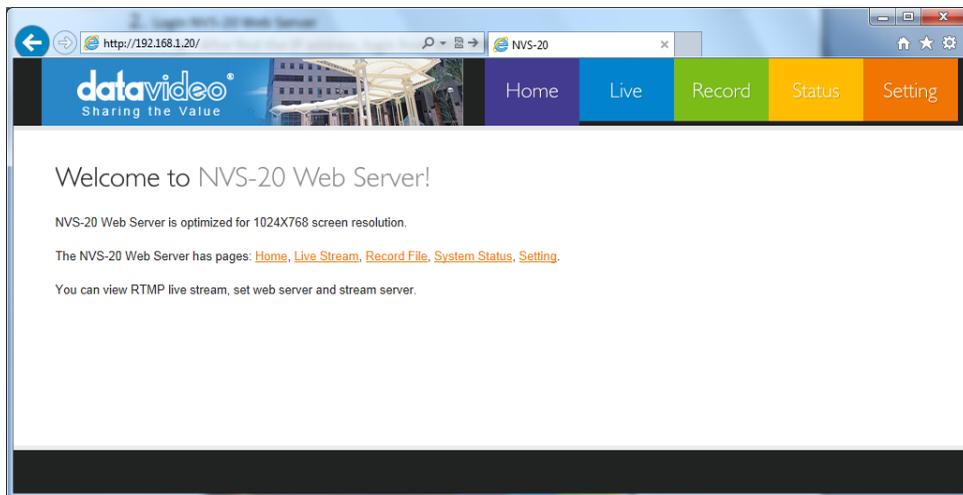
B.   If you are using Windows Internet Explorer 9, you have to enable capability view. Google Chrome, Firefox and iDevice Safari don't need.
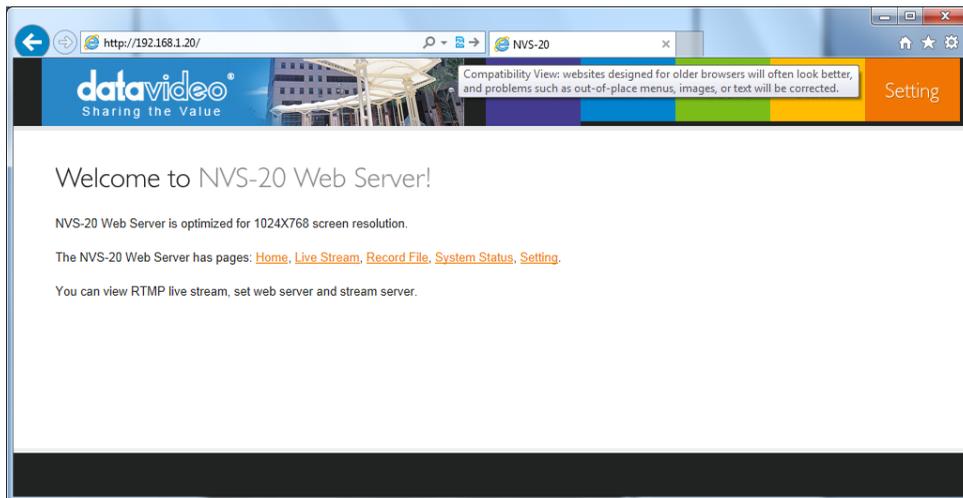
Network Setup

Login Web Server and select Setting → Network Setup, as followed.

There are two IP Address modes, Dynamic (DHCP) and Static (fixed).

Click Apply button after setting, the network configuration won't be saved.

Click Apply & Save, the network configuration will be saved for connection next time.
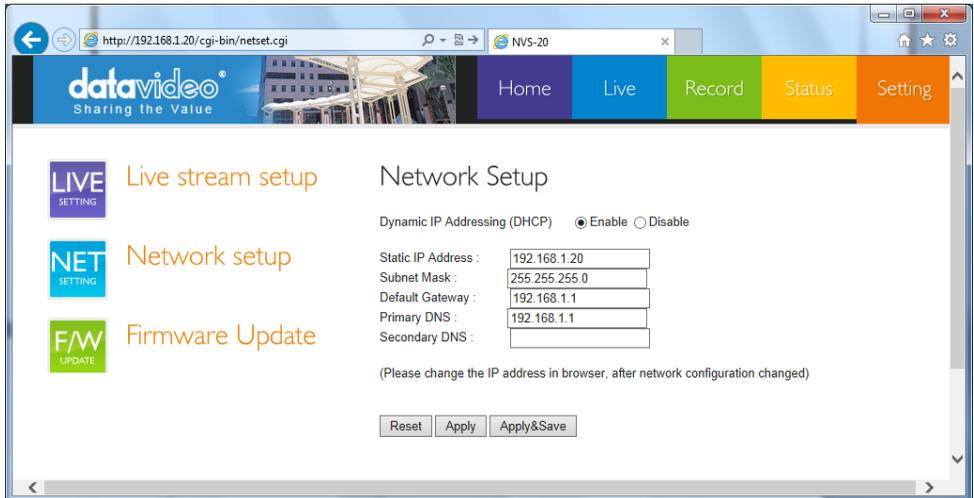
After DHCP Enable, please use IP Finder to get the dynamic IP address to login again.
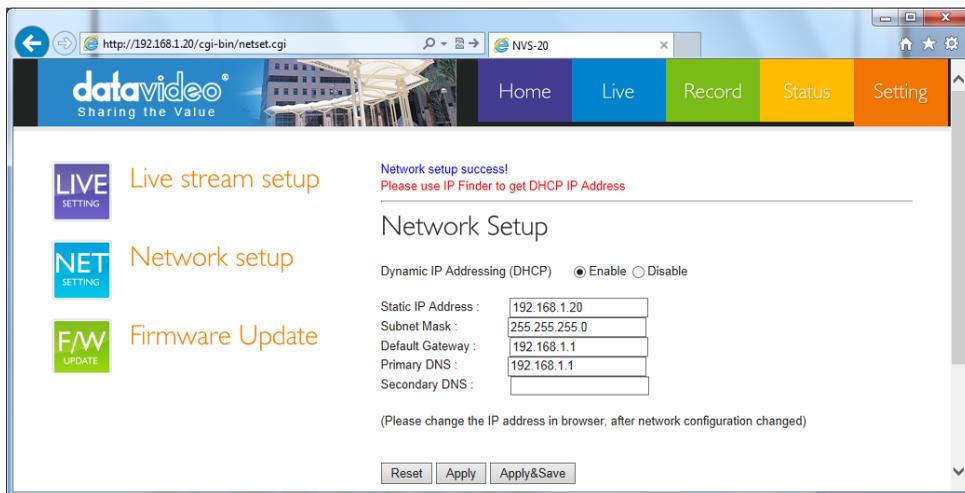
After DHCP Disable, please click the link "here" to login again.
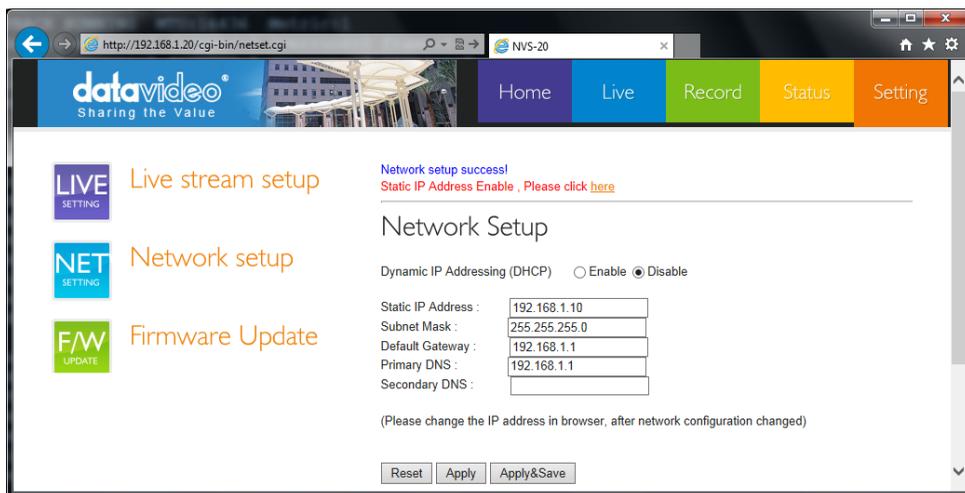
Stream Server

To enable stream server, as followed

RTSP Server

1. Select Stream Server to **"RTSP"**

2. Select "Live" to copy RTSP Server URL address.
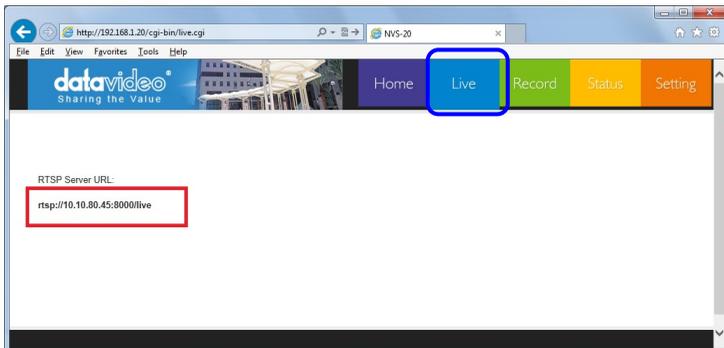
3. Open VLC media player and then past the URL address to play video.

RTMP Server

1. Select Stream Server to **"RTMP"**

2. Select "Live" to view the stream on web server

HLS Server

1. Select Stream Server to **"HLS"**

2. For Apple devices, such as iPad or iPhone, login NVS-20 Web Server by Safari browser.

Record Stream

1. Select Setting to **"Stream OFF"** the Stream Server and then setting the **Video Tuning** & **Encoder**

Note: If you need setting the Video Tuning or Encoder, please turn off Stream Server first

2. Select "**Record**" and then click "**Start Record**" Button
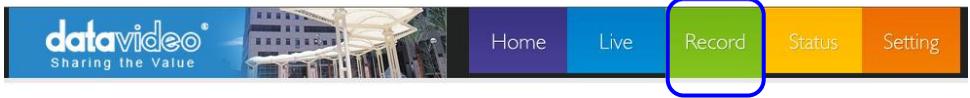
Stream Record

USB Storage Information:

Vendor : Sony
Product : Storage Media
Capacity : 6123/6552 MB

Stream Information:

Input Source : HDMI
Resolution : 1920 x 1080
Framerate : 60 FPS
Brightness : 128
Contrast : 128
Hue : 128
Saturation : 128
Sharpness : 128
H.264 Encode : Main 3.0
Audio Stereo : Yes
Audio Bitrate : 64 kbps
Video Birtate: 1500 kbps
Video Rate Mode : CBR
Analog Audio : No

Start Record

3. Click "The USB Storage icon" to view and download stream file.

Index of /usbstorage - Windows Internet Explorer

http://192.168.1.140/usbstorage/

Index of /usbstorage

Index of /usbstorage

Name	Last modified	Size	Description
Parent Directory		-	
AUTOMOVIE/	14-Mar-2013 14:08	-	
Active-HDL_v9.2/	23-Nov-2012 11:54	-	
BAKFPGA.BIN	01-Jan-2010 00:00	0	
BAKFPTX.BIN	01-Jan-2010 00:00	0	
BAK_MST.BIN	01-Jan-2010 00:00	1.0M	
LOG.TXT	01-Jan-2010 00:00	613	
LOST.DIR/	31-Dec-2009 16:57	-	
MST-UPD-0.1.3.rar	27-Nov-2012 08:45	156K	
MST-UPD.bin	19-Nov-2012 09:53	1.0M	
Theater/	31-Dec-2009 17:14	-	

Stream Record

USB Storage Information:

Vendor : Sony
Product : Storage Media
Capacity : 6123/6552 MB

Stream Information:

Apache/2.0.54 (Unix) Server at 192.168.1.140 Port 80

Firmware update

1. Select Setting to **"Stream OFF"** the Stream Server
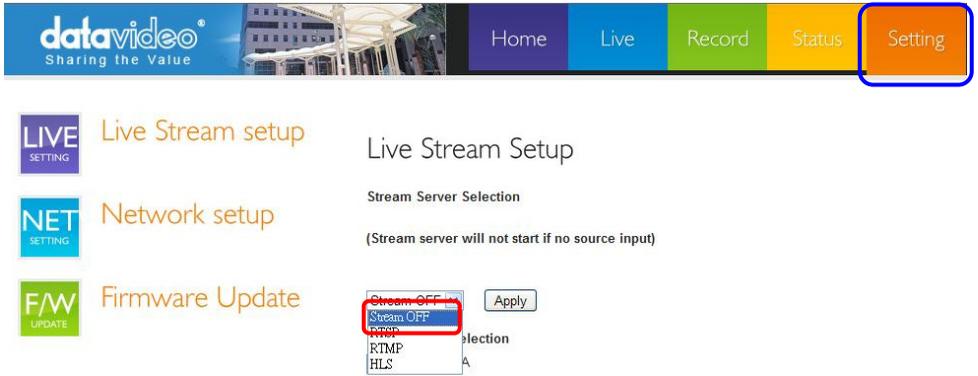
2. Select **Firmware Update** and then **Choose File** to select firmware file.

3. Press **Start** button to upgrade the NVS-20 firmware.
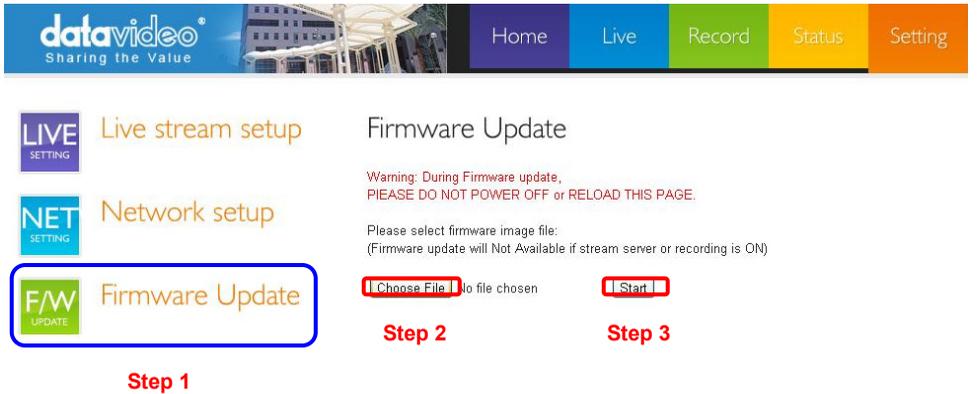
Video Tuning

Value: 0 to 255

Video Tuning is available during streaming and recording.

	Brightness	Contrast	Hue	Saturation	Sharpness
HDMI	OK	OK	OK	OK	N/A
SDI	N/A	N/A	N/A	N/A	N/A
CVBS	OK	OK	OK	OK	OK

Encoder Setup

H.264 Encode

Main Profile, Level 3.0 / Main Profile, Level 3.1 / High Profile, Level 4.0

Audio Stereo

Stereo / Mono

Stereo Bitrate

From 64kbps to 384kbps

Mono Bitrate

From 32kbps to 192kbps

Video Bitrate

From 1500kbps to 6000kbps

Video Rate Mode

VBR (Variable Bit Rate) / CBR (Constant Bit Rate)

Analog Audio

HDMI: No / RCA / XLR

SDI: No / RCA / XLR

CVBS: RCA / XLR

LED Status & Button Behavior

LED Status

Function	State	Description
Power LED	a. Off	Power off
	b. Green	system booting up
	c. Red	Program initializing
	d. Green	Ready. with Interface LED
	e. Blinking	Blinking while recording
Stream	a. Off	Stream off
	b. On	Stream on
	c. Blinking	Blinking while stream to start/stop
Interface	a. Off	Program not initialized
	b. On	Source input OK
	c. Blinking	Blinking while no source input
		Blinking while invalid source input

Button Behavior

Function	Behavior	Description	LED
Stream On/Off	Hold for 3 seconds until Stream LED blinking	Start/Stop Stream	Stream LED blinking then starting or stopping
Interface changed while Stream Off	Once press	Change to next (HDMI->SDI->CVBS->)	Interface LED changed
	Twice quickly	Change to one after next.	Interface LED changed
	Thrice quickly	Nothing happened. (change to the same source)	N/A
Interface changed while Stream On	Once press	Stop Stream -> change to next (HDMI->SDI->CVBS->) -> Start Stream	1.Stream LED blinking then Off 2.Interface LED changed 3.Stream LED blinking then ON (If there is a vaild source input)
	Twice quickly	Stop Stream -> change to one after next -> Start Stream	Same as above.
	Thrice quickly	Nothing happened. (change to the same source)	N/A

Specification

Video Input	1 x BNC for HD/SD-SDI(75 ohm)
	1 x BNC for CVBS (75 ohm)
	1 x HDMI (Ver 1.3)
Audio Input	SDI embedded audio (2 channels)
	2 x XLR/RCA for Analog audio (2 channels)
	HDMI embedded audio (2 channels)
Output	1x RJ-45 Female (10/100M Ethernet) 1x USB 2.0 Type A for file output to USB storage
Video Encode	H.264 / AVC video CODEC, up to High Profile Level 4.0 Configurable Bit-rate up to 6Mbps
Supported Video Resolution	1080 @ 50P / 60P (50P/60P input, 25P/30P record/output) 1080 @ 50i / 59.94i / 60i 720 @ 50P / 59.94P / 60P 576@ 50i, 480 @ 59.94i
Audio Encoding	AAC-LC audio CODEC Sample rate:48KHz,16bit Configurable Bit-rate up to 384Kbps
Network Feature	DHCP Client Streaming feature: - HLS/RTSP/RTMP Server (One protocol at a time) - Supports up to 3 clients
Monitoring	5 x LED status indicators (HDMI/SDI/CVBS/Streaming/Power)
Storage	USB 2.0 Mass Storage File system: FAT32
Control	Web UI for system configuration and control
Update	Firmware upgradable by web UI
Power	Input AC 100 ~ 240V Switching Adaptor, output DC 12V / 1 A
Power Consumption	7.2W
Environmental Conditions	Operating temperature.：0～50℃ Storage temperature：-10～60℃

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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