

Videstra® V-Streamer™
V4
With VestraView Essentials™



Installation & Operations Manual

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The V-Streamer and/or its component have the following marks:



The V-Streamer is CE compliant and carries the following certifications:

LVD 2014/35/EU	EN 62368-1-2014
EMC 2014/30/EU	EN 55032-2015
RoHS 2 2011/65/EU	EN 55024:2010+A1:2015

NOTE: For the following approvals, it is stated that the V-Streamer is assembled from tested components - Complete system not tested



Internal Power Supply, Motherboard, Video I/O card are UL Recognized Components



Internal Power Supply, Motherboard, Video I/O card is FCC Part 15 Compliant:

The devices comply 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

Other approvals may apply and/or may be pending.

System & Design

System BOM

The V-Streamer is a 1 RU system with the following measurements:

- Width: 19"
- Height: 1.75" (1RU)
- Depth: 10" (excluding front handles)
- Weight: 9 lbs. 11 oz | 4.3 Kg

Components

Power Supply: SPI Model SPI300F4BB (80 Plus RoHS Compliant) 300 Watt Switching PS

Input Range 90 ~ 264 VAC (RMS)

Line Frequency: 47~63 Hz

Input Current: Max 6A (RMS) @ 115 VAC, 3A (RMS @ 230 VAC)

More Doc: <http://www.videstra.com/download/doc/SPI300F4BB.pdf>

Motherboard: SuperMicro X10SLV (SN 134xxx)/SuperMicro X11SSV-Q (SN 1413xxx)

Processor: I7-4790 – 8MB Cache (SN 134xxx) /I7-7700 – 8 MB Cache (SN 1413xxx)

RAM: 8 GB DDR3 Non-ECC 1600MHz (SN 134xxx)/8 GB DDR4 2400 MHz (SN1413xxx)

Hard Drive: 120 GB SSD – Samsung EVO 850/SK Hynix 120 GB SSD

More Doc: http://www.videstra.com/download/doc/V-Streamer_mobo.pdf

http://www.videstra.com/download/doc/V-Streamer_mobo2.pdf

Video I/O: AJA Corvid 44-BNC (Under OEM License)

PCIe Riser: Adex Electronics PCIe Gen2 Flexible Riser 2" Shielded



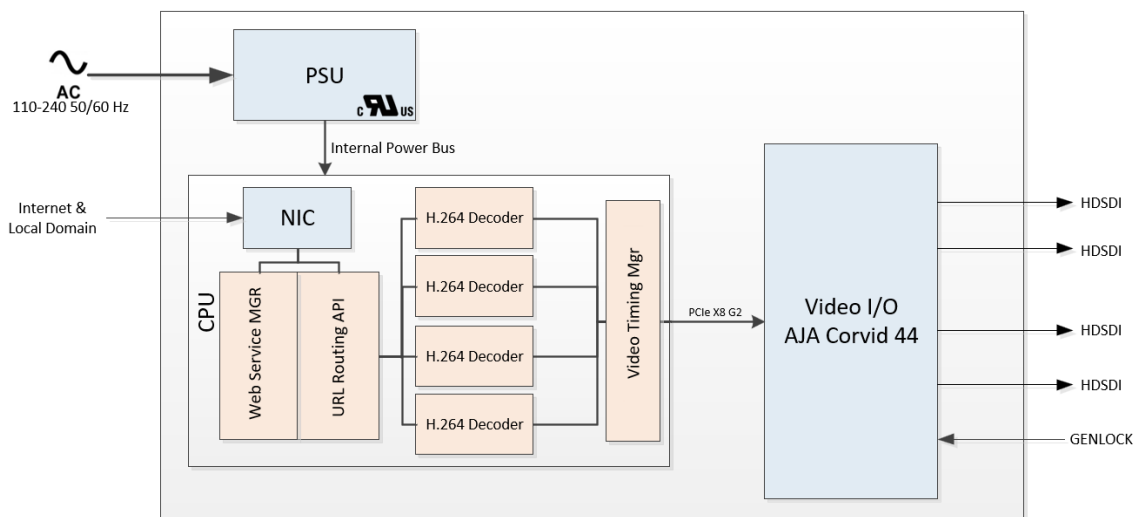
Operating System: Ubuntu Linux 18.04 LTS

Supported Protocols – MPEG4, h.264, h.265 via rtsp, rtmp, udp, sdp, rtmp, hls, srt

Audio Codecs: G.711 (PCM), AAC, AAC-LC

Still Image to Video - .jpg, .jpeg and .png

System Design



Installation

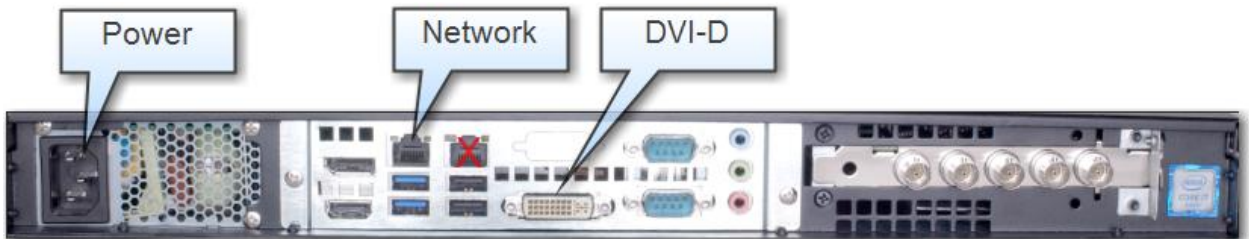
Connecting the V-Streamer

The V-Streamer has 4 SD/HD SDI outputs and one Analog GENLOCK input.



Genlock (or House Sync) can be either Tri-Level or Bi-Level (Blackburst).

Power/Monitor/Network



The V-Streamer Power Input uses 1 Standard IEC14 Connection

Power Consumption

Sample Measured Nominal Power Consumption (May be higher at startup)	
Volts	120
Line Frequency	60
Watts	43
VA	46
Amp	.39

Power Cycle



To physically power down, power cycle or power reset the V-Streamer use the front panel power or reset button.

Network

1 Gb Ethernet (Dual Ports). See illustration – use **eno1** first (RJ Port closest to the Power connection). The secondary ethernet port can be set up for accessing a secondary network (Different subnet only).

Monitor

Supports HDMI, DVI-I (Digital or VGA - with adapter)

Network Considerations (QOS)

The V-Streamer connects to one or more rtsp streams located within it's own subnet directly, or through your facilities Internet Gateway when connecting to an rtsp stream at a public IP Address. A quality rtsp stream can range from .5 Mb up to 10 Mb. Nominally 1.5 to 4 Mb will suffice.

Since the V-Streamer can connect to 4 rtsp streams simultaneously, it is important that the bandwidth capability of the Internet connection to the V-Streamer is sufficient for the aggregate bandwidth usage.

For example – If the V-Streamer is connected to 4 rtsp streams, each generating the following bandwidth requirements:

Connection 1	1.5 Mb
Connection 2	2.1 Mb
Connection 3	3 Mb
Connection 4	4 Mb
Aggregate Required Bandwidth	10.6 Mb

The table shows that the V-Streamer will consume 10.6 Mb from your available Internet connection. Planning for the bandwidth needed should consider your nominal usage and/or the potential aggregation of the *four highest* bandwidth rtsp sources you will be using. In order to make sure the V-Streamer always has sufficient bandwidth it is a good idea to set up **QOS (Quality of Service)** for the V-Streamer. **QOS** makes sure a device can get a minimum amount of bandwidth necessary, however it does not *reserve* that bandwidth in a way that denies other devices on the same network any bandwidth not currently being used by the V-Streamer. **QOS** will allow others to use any bandwidth not currently in use by the V-Streamer. If you are familiar with **QOS**, it is highly recommended that you set the V-Streamer for a minimum of 10 to 15 Mb. If you are unfamiliar with **QOS** please discuss this recommendation with your IT division.

Network IP Address

The first time you turn on a V-Streamer it will use DHCP, and it will be assigned an IP Address by your DHCP server. While you can get the IP Address using Linux commands from the console of the V-Streamer it will be easier to use the V-Streamer IP Utility to 'discover' the IP Address assigned to the V-Streamer. Initially, the current IP Assignment should also be visible on the HD-SDI output on Channel 1.

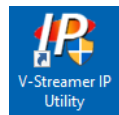
Using the V-Streamer IP Utility

The V-Streamer IP Utility is installed on the V-Manager, or you can download an installer for it using the following link:

<http://www.videstra.com/download/VSIPUtilitySetup.exe>

Note: You must have administrator privileges on the computer to use the above installer.

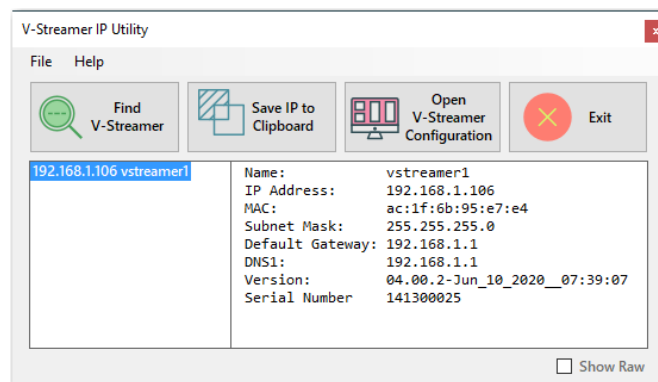
Install the **VSIPUtility** onto a PC running Windows Vista, 7, 8 or 10. Once installed a shortcut should appear on your desktop that looks like this



Note: The shield means this program must be run as an administrator.

You can start the **VSIPUtility** by double clicking on the icon.

If you have connected one or more V-Streamers to your network and have turned them on then the **VSIPUtility** should be able to find them provided the V-Streamers and your PC are on the same subnet.



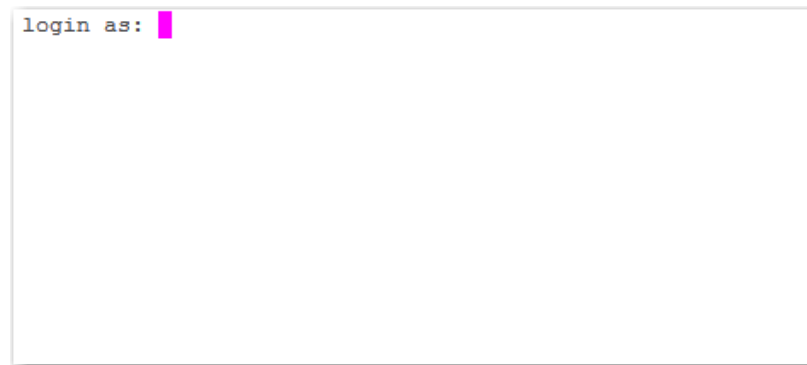
Example of the VSIPUtility locating two V-Streamers

To locate your V-Streamer(s) simply click on the Find V-Streamers button... It will take a few seconds to poll for V-Streamers on your network.

Note: If your subnet uses managed switches that are configured to disallow UDP broadcasts, the VSIPUtility will not be able to locate your V-Streamers. Instead you will need to use the Linux console method described below.

Using the V-Streamer Linux Console

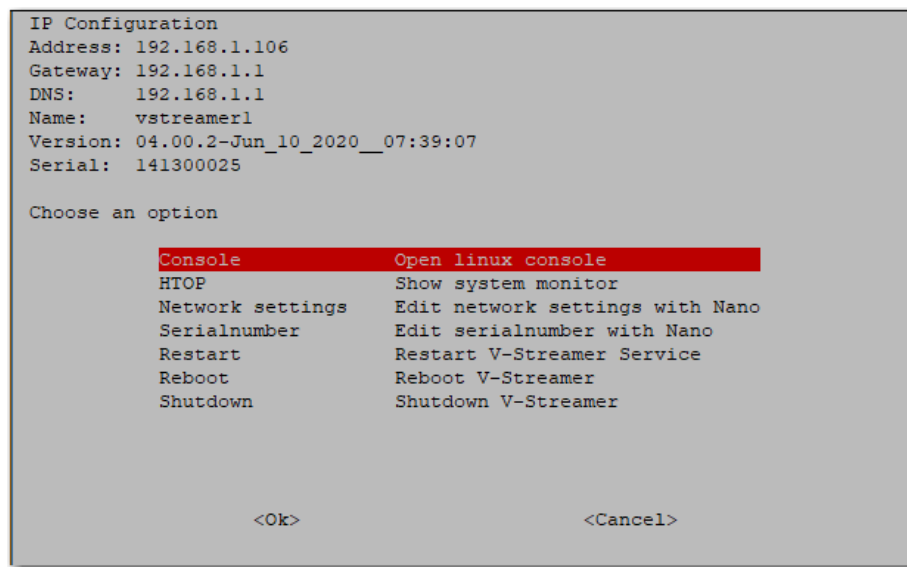
To access the console you will need to plug both a monitor and a keyboard into the V-Streamer (no mouse is necessary). When you access the console it will look like this:



The default credentials to log into your V-Streamer console are:

Username: videstra

Password: baxter



Version 4.00.0+ offers an updated front-end menu for the V-Streamer. The first menu option is for the Linux Console mode. From the Linux console you can get the necessary IP information by entering the command "ifconfig"

The command will return many pieces of networking information – including the IP Address and HW Address.

Note: *You do NOT need to log on to the V-Streamer for Vestraview to work. The V-Streamer service runs as a root application and does not need any further authorization (e.g. sudo).*

```
videstra@vstreamer1:~$ ifconfig
em1      Link encap:Ethernet  HWaddr 0c:c4:7a:55:7c:38
        inet addr:192.168.1.136  Bcast:192.168.1.255  Mask:255.255.255.0
        inet6 addr: fe80::ec4:7aff:fe55:7c38/64 Scope:Link
        UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
        RX packets:33787200 errors:0 dropped:119 overruns:0 frame:0
        TX packets:182656 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:1000
        RX bytes:37296856222 (37.2 GB)  TX bytes:54950040 (54.9 MB)
        Interrupt:20 Memory:f7900000-f7920000

lo        Link encap:Local Loopback
        inet addr:127.0.0.1  Mask:255.0.0.0
        inet6 addr: ::1/128 Scope:Host
        UP LOOPBACK RUNNING  MTU:65536  Metric:1
        RX packets:2 errors:0 dropped:0 overruns:0 frame:0
        TX packets:2 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:0
        RX bytes:176 (176.0 B)  TX bytes:176 (176.0 B)

videstra@vstreamer1:~$
```

Amongst all the gobbledygook returned from the ifconfig command is the actual IP Address (shown in the red box above) that was assigned to your V-Streamer by your DHCP server, and the physical Hardware (MAC) Address of your V-Streamer (shown in the green box). In this case the IP Address is: **192.168.1.136**

Note: A DHCP Assigned IP Address should be considered as temporary!

The Hardware Address will never change. In the illustration above the Hardware (MAC) address is: **0c:c4:7a:55:7c:38**

The V-Streamer will need to be given a fixed IP address, or one must be reserved for it by your IT department. Please work with your IT department to make sure that the V-Streamer always receives the same IP Address. This can be done in one of two ways:

Method	Considerations
Fixed IP Address	The V-Streamer is given an IP Address outside the range of IP Addresses managed by your DHCP Server
Reserved DHCP Assignment	The DHCP Server must be given the V-Streamers MAC address in order to reserve a fixed IP Address for it. You will need to provide the V-Streamers Hardware (MAC) address to your IT Dept.

Either method is fine and your IT department will likely have a preference for one over the other. If the V-Streamer does not get a fixed IP address then connections from the VManager and the VestraView clients will eventually fail.

Note: Once you have the temporary IP address you no longer need access to the V-Streamer console – however maintaining the ability to get to this console may prove important in the future.

When your IT Dept. gives you your fixed IP address you will be able to set it up via the V-Streamer Web Configuration Pages. See Operations section of this manual.

Other Console Menu Items

On the Front-End menu there are a few other menu items. The table below outlines their function and use.

Menu Item	Function	Use
Console	Display the V-Streamer Linux Command Prompt	Expert usage only <i>Deus de machina</i>
HTOP	Displays a live running process and memory monitor	Debugging only
Network Settings	To make manual edits to the V-Streamer network interface. You should be familiar with NANO to use this.	Initial setup if no DHCP service is available
Serialnumber	Edits the serialnumber of the V-Streamer. Uses the Linux NANO editor.	Must match the tag on the top of the V-Streamer
Restart	Restarts the V-Streamer service <i>without</i> rebooting the machine	Mostly for use by Videstra support, but can be used if HTOP reports high memory use (over 1.5 GB)
Reboot	Reboots the V-Streamer	*
Shutdown	Shuts down the V-Streamer. V-Streamer must then be manually powered up	*

There are no day-to-day functions that require access to the V-Streamer console.

The V-Streamer can be managed using the built-in Web Configuration Page located at the V-Streamers IP Address. To access the V-Streamers Web Configuration Page you can use most any web browser. The V-Streamer Web Configuration Page has been tested to work with Microsoft Internet Explorer, Google Chrome and Mozilla Firefox. Simply enter the IP Address of the V-Streamer into the navigation bar of the web browser.

The V-Streamer Web Configuration Page is designed as a maintenance tool only – regular operation of the V-Streamer from the Web Configuration Page is not recommended, nor is it supported.

Default Login

When you connect to the V-Streamer Web Configuration Page you must enter a username and password. The username is always **admin** and the default password is **admin**. You can change the password on the Security Page as described later in this document.

Channels Page

The screenshot shows the V-Streamer web interface. The sidebar on the left contains the following navigation links: Channels, Video configuration, Network, Security, Schedule, System, Restart / Shutdown, Status, and About. The main area is titled 'Channels' and displays four channel configuration sections. Each section includes a 'Channel X URL' input field, an 'Enable overlay' checkbox, an 'Enable cropping' checkbox, a '25% Max' slider, a 'center' button, and an 'Apply' button. Channel 1 is configured with the URL 'rtsp://rootbaxter@192.168.1.175:554/axis-media/media.1'. Channels 2, 3, and 4 are set to 'none'. Each channel has a 'Playing' status indicator (green dot) and a 'testpattern' dropdown menu. A 'Reload page' button is located at the bottom left of the sidebar.

On the left side of the page are the page tabs that let you access the individual pages with options you can control with the V-Streamer. The initial page (Channels) shows you the current output settings for the V-Streamer HD/SD SDI channels. Each channel can be connected to a URL (rtsp://...) (see Supported Streaming Protocols), or set to output a simple black raster or test pattern. Optionally a channel can output the IP Settings of the box. Each channel of the V-Streamer has a unique test pattern that identifies the channel. This is done for clarity and the convenience of the video broadcast engineering team.

URL, Testpattern, IP, Black

The output of any V-Streamer channel can be set to one of 4 options. Normally it will be set to URL – meaning it is set to decode streaming video from a specific URL (URI). You may also set the output of the channel to display a test pattern (see Pattern File section later in this document), Black or the current IP Settings of the V-Streamer. As shipped Channel 1 on the V-Streamer will be set to IP. Since the V-Streamer is shipped as DHCP and expects an assignment from a DHCP server – one way to “discover” the assigned IP Address is to look at the HDSDI output of Channel 1.



HDSDI output set to "IP"

UDP -vs- TCP

When a V-Streamer channel is connected to a URL it is possible to specify the transport protocol for RTSP network packets. The following two settings are supported:

- **UDP** – The V-Streamer will only attempt a UDP connection to the URL.
- **TCP** – The V-Streamer will only attempt a TCP connection to the URL.

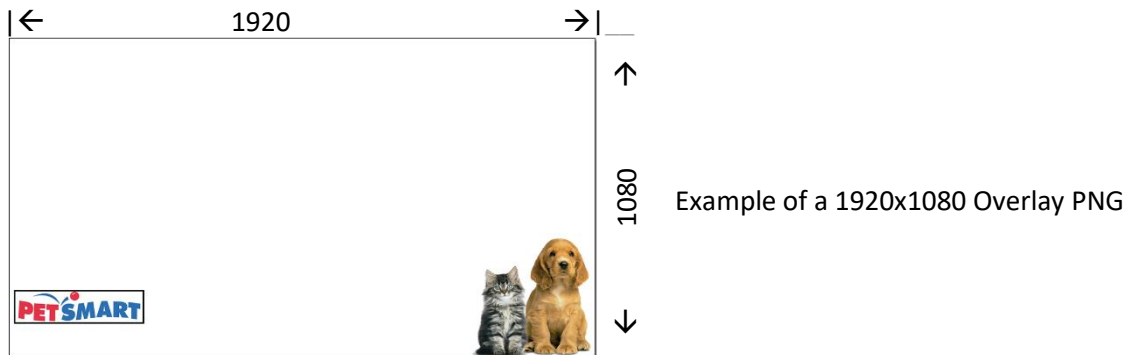
For most connections, TCP is the best choice, and is the default. Sometimes, however a UDP connection may be successful, but network issues may prevent it from being reliable. Since UDP is, by its very nature a non-guaranteed transmission protocol it is usually successful only over the cleanest of networks and one which allows UDP datagrams. If you have a very clean network connection to a streaming source, UDP is the best option because it uses the least bandwidth with the lowest possible latency.

If UDP does not provide a clean connection and you notice smearing video, dropped frames or video that frequently freezes then you can force the V-Streamer to use a TCP only connection to the rtsp URL. While this increases the network overhead, the Internet and it's many routers and switches are typically better prepared to deliver TCP packets to their destination than with UDP packets.

When in doubt, or if you think the network may not be optimal, set the transport to TCP.

Enable Overlay/Enable Cropping

The V-Streamer supports independent overlays for each channel. Overlays can be uploaded to the V-Streamer on the System page or through the VManager Overlay Manager. Overlays must be PNG files with transparency. The overlay file should be sized to the raster you are using (e.g. 1920x1080) with the image positioned onto the canvas where you want it to appear. Semi-transparency is supported in Version 3.02+.



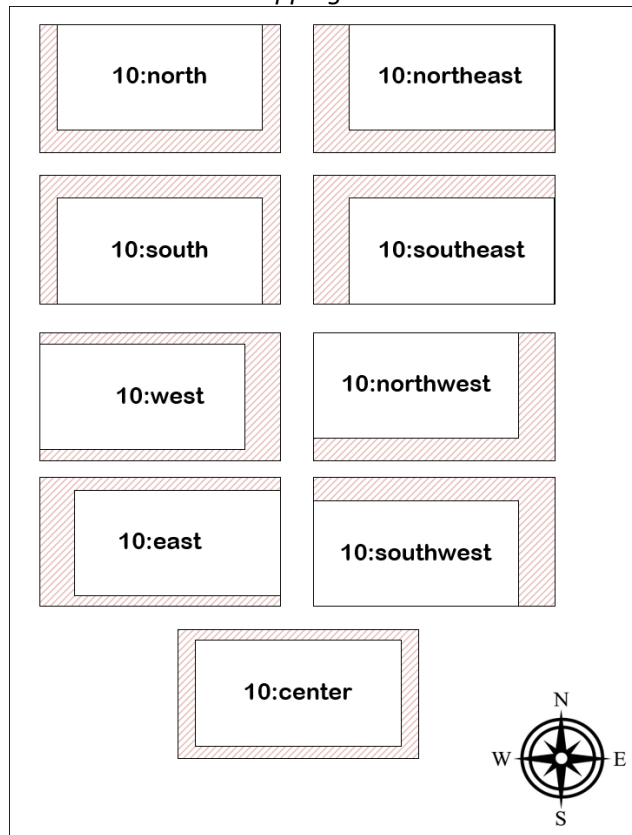
Cropping a live image can be done by specifying a percentage of crop and a crop position. Some live cameras may have overlays or text that you do not wish to show on-air. By specifying a crop and crop position you can only show the part of the live image you want. The example shows a 10% crop with a “south” position.

Enable cropping:	<input checked="" type="checkbox"/>	10	%	25% Max	south	▼
------------------	-------------------------------------	----	---	------------	-------	---

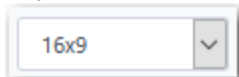


The cropping positions are based on a simple compass setting. The resulting cropped image remains in a 16x9 ratio. A maximum crop of 25% may be specified.

Cropping Guide



Aspect Ratio Settings



The default for all streams is 16x9. You can force other aspect ratios if necessary. Here is an explanation of the available options:

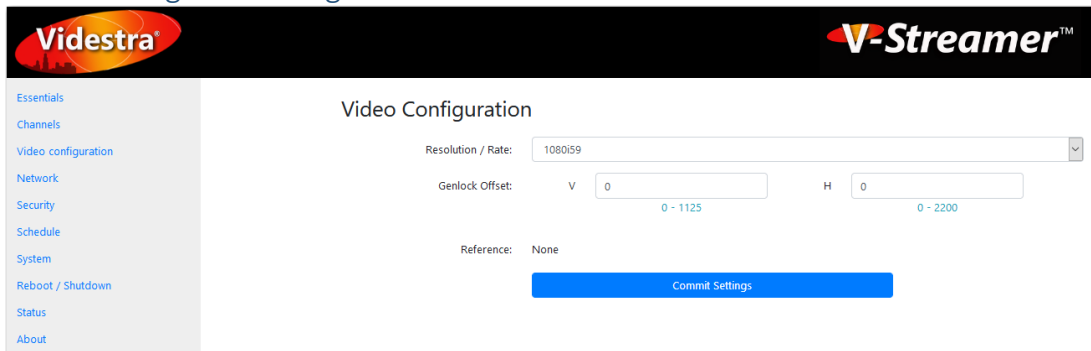
16x9: The standard HD aspect ratio for 1080i/p and 720p. This is the default setting.

14x9: This is a “trick” aspect ratio designed for upscaling Standard Definition streams (480i/525i) to something that looks like HD but doesn’t stretch the image too much. Many viewers will complain about SD signals being stretched to full (exaggerated looking) 16x9 but will not complain about signals being stretched to 14x9 as the exaggeration is more subtle. This will be in letterbox format with small black zones above and below the image area.

4x3: This is the classic Standard Definition aspect ratio. Use this only for standard definition streams you do not want to be stretched to 14x9 or 16x9.

AutoZoom: This will maintain the original streams aspect ration but scale it to fill either the vertical or horizontal plane. Black zones will be generated top/bottom or left/right depending upon the original aspect ratio. This is a good choice if you will be accessing streams of various aspect ratios. It will leave streams originating as 16x9 the same so you may set this as your default if desired.

Video Configuration Page



The screenshot shows the 'Video Configuration' page of the V-Streamer interface. On the left is a sidebar with navigation links: Essentials, Channels, Video configuration (highlighted), Network, Security, Schedule, System, Reboot / Shutdown, Status, and About. The main content area is titled 'Video Configuration' and contains the following settings:

- Resolution / Rate:** A dropdown menu currently showing '1080i59'.
- Genlock Offset:** Two input fields labeled 'V' and 'H'. The 'V' field contains '0' with a range of '0 - 1125' below it. The 'H' field contains '0' with a range of '0 - 2200' below it.
- Reference:** A dropdown menu currently showing 'None'.
- Commit Settings:** A blue button at the bottom right of the configuration area.

The Video Configuration page is designed to set the broadcast standard for your facility. The supported standards are:

- 1080i/59.94
- 1080p/59.94 (3G Level A)
- 1080i/50
- 1080p/50 (3G Level A)
- 720p/59.94
- 720p/50

If you wish to connect house-sync (GENLOCK) to the V-Streamer you may also set an offset to house-sync if necessary. The offset is specified in Vertical *lines* and Horizontal *pixels*. Valid settings will vary depending upon the resolution/rate that has been set.

At the bottom of the Video Configuration Page the current sync connected to the Genlock input is displayed. The V-Streamer supports analog sync as either tri-level or bi-level (black burst) signals.

Network Page

Videstra **V-Streamer™**

Essentials
Channels
Video configuration
Network
Security
Schedule
System
Reboot / Shutdown
Status
About

Network

Hostname: vstreamer Update hostname

eno1

Use DHCP: ☒

IP Address: 192.168.1.167

Net Mask: 255.255.255.0

Gateway: 192.168.1.1

DNS: 8.8.8.8 4.4.4.4

MAC: ac:1f:6b:20:11:30

Commit Settings

eno2

Use DHCP: ☐

IP Address:

Net Mask:

Gateway:

DNS: eno2

MAC: ac:1f:6b:20:11:31

Commit Settings

Reload page

When you first install the V-Streamer it is assigned a network address by DHCP (See Network Address section earlier in this document for determining the IP Address assigned by DHCP). In daily use, however, the physical network address of the V-Streamer should never change. You can make sure the address never changes by assigning it a fixed IP address. Giving the V-Streamer a fixed IP address can be done two ways:

- Using the MAC address (displayed on the bottom of the Network Page) have your IT department reserve a fixed IP Address to the V-Streamers MAC address in your facilities DHCP server. In this case, you will leave “Use DHCP” checked
- Set the fixed address manually on this (the Network Page) of the V-Streamer.

Note: If you set a fixed IP Address, your IT Department still needs to be aware of the fixed IP Address so they either remove it from the table of assignable IP Addresses, or they give you an IP Address outside the range in which the DHCP server assigns addresses.

Once you have made any changes on the Network Page the V-Streamer will reboot.

Important: *If you change the IP Address (or it changes under DHCP) then you must enter the new IP Address to connect to the V-Streamer Web Configuration Page. In addition, if you have set up the VManager to connect to the V-Streamer, you will need to change the V-Streamer IP Setting in the VManager for the system to continue operating.*

Second IP Address

The V-Streamer has two NICs. Both can be used. The primary NIC is the one physically closest to the power supply on the back of the unit.

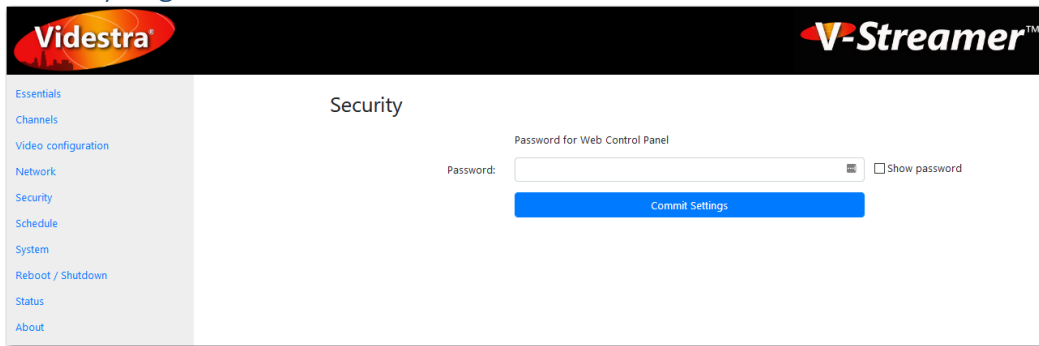
- You may setup the second NIC on the network page, but it must be for a separate subnet.
- Use of a gateway on the second NIC may confuse the system and it is not recommended.

Second DNS

You may enter more than one DNS by separating the DNS IP Addresses with a single space.

DNS:	<input type="text" value="8.8.8.8 4.4.4.4"/>
------	----------------------------------------------

Security Page

The screenshot shows the V-Streamer web interface. At the top, there is a black header bar with the 'Videstra' logo on the left and the 'V-Streamer' logo on the right. Below the header, a left sidebar contains a list of menu items: Essentials, Channels, Video configuration, Network, Security (which is highlighted), Schedule, System, Reboot / Shutdown, Status, and About. The main content area is titled 'Security'. It features a section for 'Password for Web Control Panel' with a 'Password:' label, a text input field, a password icon, and a 'Show password' checkbox. Below the input field is a blue 'Commit Settings' button.

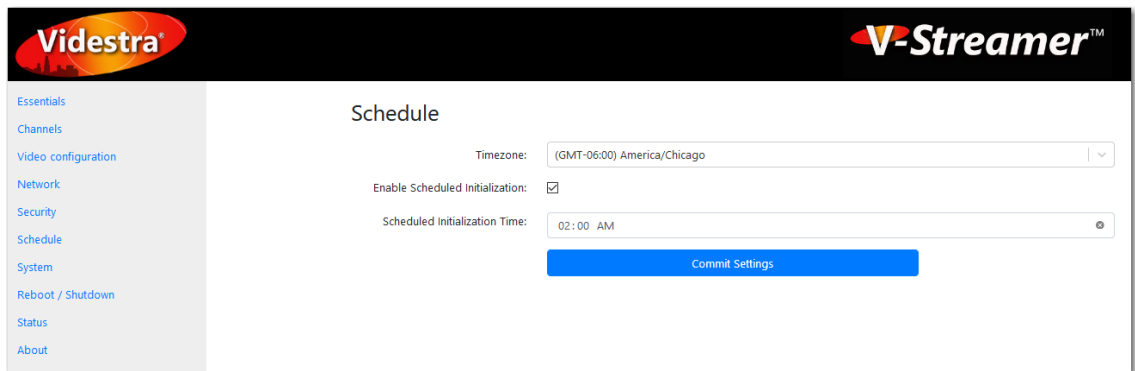
When you first logged onto the V-Streamer you used the defaults of “admin” for the username and “admin” as the password – which you will likely want to change. The **username** for the Web Configuration Page is always “admin” and cannot be changed.

You can change the password on the Security Page of the V-Streamer. Once you change the password you will immediately be asked to login again.

The username and password set here are for access to the Web Configuration Pages only. This does not change the username and password for logging on to the Ubuntu Linux operating system from the V-Streamer console. Refer to the Management Console section for more information on the V-Streamer Management console.

Schedule

The Schedule page allows you to set the Timezone for the V-Streamer and an optional time of day for the V-Streamer to restart the internal application suite (not a reboot). System time is maintained by an internet connection to pool.ntp.org. This can only be changed at the command prompt of the system (accessible through Putty). The system reset is turned on by default and will restart each morning at 2 AM. The restart takes approximately 3 seconds. Any connections will automatically be reconnected and should begin streaming within a few seconds of the restart. During the restart the V-Streamer will output black.



The screenshot shows the V-Streamer web interface. The top header has the Videstra logo on the left and the V-Streamer logo on the right. A left sidebar contains a menu with the following items: Essentials, Channels, Video configuration, Network, Security, Schedule (highlighted), System, Reboot / Shutdown, Status, and About. The main content area is titled 'Schedule' and contains the following settings:

- Timezone: A dropdown menu showing '(GMT-06:00) America/Chicago'.
- Enable Scheduled Initialization: A checkbox that is checked.
- Scheduled Initialization Time: A text input field showing '02:00 AM'.
- A blue button labeled 'Commit Settings'.

When the schedule is active an entry is made in the Linux system under **/etc/cron.d** in a **vstreamer_init** file.

```
00 02 * * * root PATH=/usr/bin:/usr/sbin:$PATH service vstreamer restart
```

If inactive (unchecked) the restart is commented out.

System Page

Videstra®

V-Streamer™

Essentials

Channels

Video configuration

Network

Security

Schedule

System

Reboot / Shutdown

Status

About

System

Firmware

Update Firmware: No file selected.

Firmware: 04.00.0-Dec_3_2019__12:58:59

Test Pattern

Pattern File: No file selected.

Overlay Image

Image File: No file selected.

Still Image Refresh

Refresh every seconds

Value of 0 will disable refreshing

Essentials Configuration

Backup Configuration File:

Restore Configuration File: No file selected.

License

License: No file selected.

Machine ID: d825a4b21a754bc6f6acde44892456c8

Regular License

Status: valid

Expires: Permanent

Essentials License

Status: valid

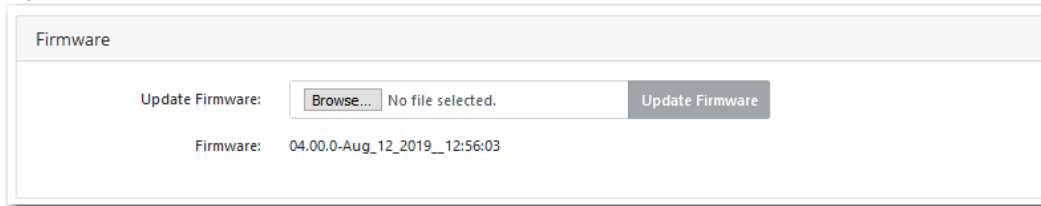
Expires: Permanent

Panels: 6

System Log

The System page is for managing the version of firmware currently running on the V-Streamer, the test patterns available on the V-Streamer, new overlays can be uploaded to the V-Streamer (but the Videstra VManager is designed to manage all overlays on the system), the license for the V-Streamer and for accessing the system log file when necessary.

Update Firmware Section



The screenshot shows a web interface titled "Firmware". It contains an "Update Firmware:" label followed by a "Browse..." button and the text "No file selected.". To the right of this is an "Update Firmware" button. Below these elements, it displays "Firmware: 04.00.0-Aug_12_2019__12:56:03".

This section shows you the current version of the firmware. In the example this shows version 02.00.1-Sep_17_2018_09:28:31.

Note: Firmware can be upgraded or downgraded as desired.

Before you change the firmware, you should write down the current output resolution and rate (e.g. 1080i, 59.94) as well as any GENLOCK offsets from the Video Configuration page. Although you should not need to set these again, it is best to make sure you have the information just in case...

To change the firmware on the V-Streamer use the **Browse...** button to locate a V-Streamer firmware file (they will always have the file extension of ".run"). Once you browse to, and select a firmware file you can click on the **Update Firmware** button to install it. Updating the firmware will automatically reboot the V-Streamer and will typically take less than a couple of minutes. On rare occasions, you may need to do a manual reboot by physically power cycling the V-Streamer (which means you need direct access to the unit).

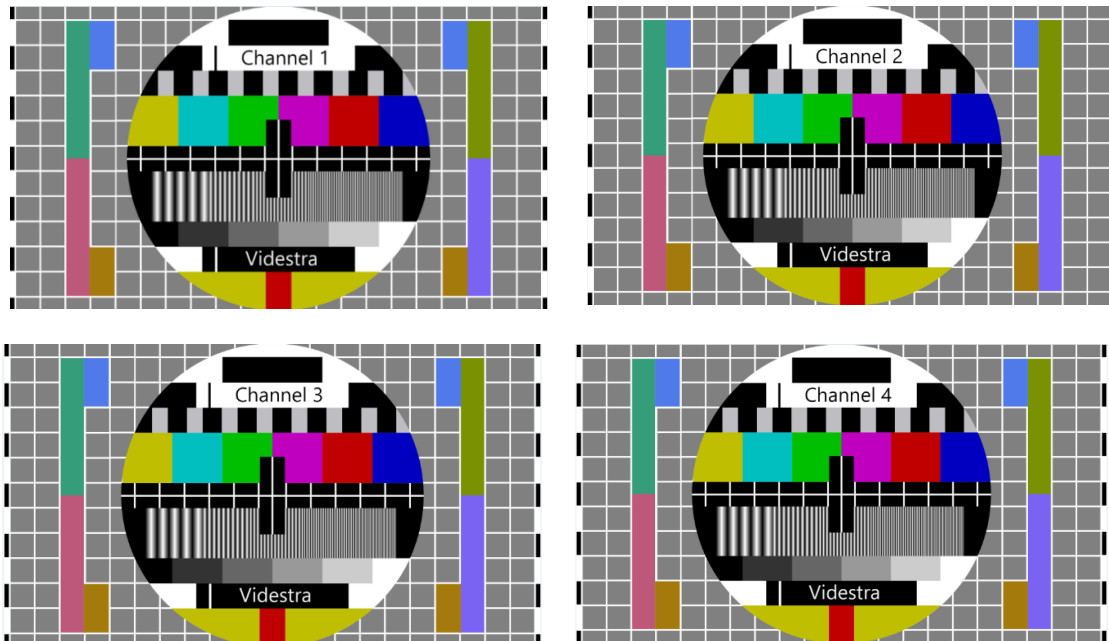
Once the V-Streamer is updated it will have all default settings and the output of each video channel will be a black raster. The video standard should remain as it was originally set (1080 or 720), but it is wise to double check that along with any GENLOCK offsets you may have set previously.

Pattern File Section

Test Pattern

Pattern File: No file selected.

The V-Streamer has a default test pattern for each video channel. Each pattern uniquely identifies the output channel to aid in locating them in a complex routing environment or facility “fax check.”



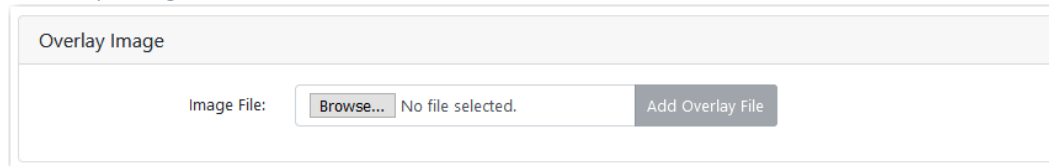
If you wish to change these test patterns you may do so by uploading your own to the V-Streamer. You must upload them as 1920x1080 PNG files using the following names (case sensitive – uses no upper case):

Channel 1: hd_pattern_0.png
Channel 2: hd_pattern_1.png
Channel 3: hd_pattern_2.png
Channel 4: hd_pattern_3.png

Note: The number in the file is indeed one-off from the channel number. It's a programming thing – sorry. The files must also be png files. JPG, TIF, BMP files are not supported.

You may use compressed or uncompressed png test pattern files. To upload your own test patterns, use the **Browse...** button to locate the png files (one at a time) and then click on the **Add Test Pattern** button.

Overlay Image



Overlay Image

Image File: No file selected.

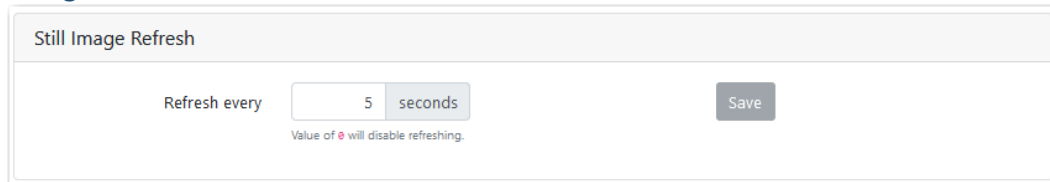
The V-Streamer supports overlay images for each channel (independently). All overlay files must be .png files with transparency. For best quality overlay files should be sized to the exact resolution of your system output.

If your system is	The Overlay png file should be
1080i	1920x1080
720p	1280x720

Overlay images should be all transparent except the logo or image you want overlaid on the output video. The logo or image should be pre-positioned on the canvas where you want it to appear on the output video.

Note: *If an overlay file is not sized the same as your raster it will automatically be scaled – which may reduce the quality to a small degree.*

Still Image Refresh



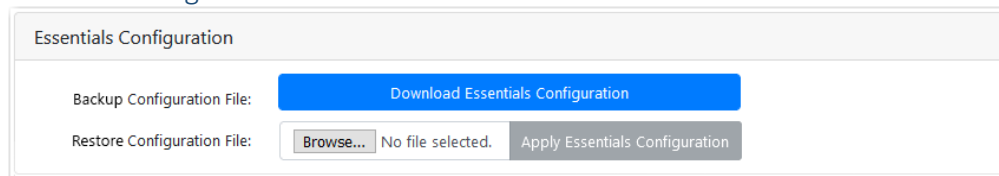
Still Image Refresh

Refresh every seconds

Value of 0 will disable refreshing.

The V-Streamer supports still image URLs via http. Provided the still image is a .jpg, .jpeg or .png file the V-Streamer will create still-frame video from the image. You can specify how often you want this image to update (refresh). The V-Streamer will automatically download and display the image cleanly. If the image on the web site has been updated, then it will get the latest image. You may set this value in seconds with the default being 5 seconds. Setting this to 0 will disable this feature. This is a global setting affecting all channels behavior for still images via http.

Essentials Configuration



Essentials Configuration

Backup Configuration File:

Restore Configuration File: No file selected.

If you have licensed VestraView Essentials™ from Videstra this lets you download a backup copy of the Essentials configuration. Sometimes full recoveries may delete the Essentials configuration and your only option will be to restore the configuration here.

License Section

License

License:

Browse...

No file selected.

Update License

Machine ID:

d825a4b21a754bc6f6acde44892456c8

Regular License

Status:

valid

Expires:

Permanent

Essentials License

Status:

valid

Expires:

Permanent

Panels:

6

The License section shows your Machine ID, that uniquely identifies your V-Streamer hardware. This Machine ID is used to generate your V-Streamer license. This section also shows the license status and expiration. A status of “valid” with an expiration of “Permanent” means the license will never expire.

The **Essentials License** is a separate license offered by Videstra. See the **Essentials** portion of this document.

Your V-Streamer is licensed for your use. Upon initial delivery, the license is good for 90 days, after which the V-Streamer will only output test patterns. Once final payment for the V-Streamer is received by Videstra your license will be converted to permanent status – which means it is set to never expire. If a V-Streamer is leased, loaned or rented the expiration will represent the terms of the lease, loan or rental.

To update the license on your V-Streamer, simply **Browse...** to the license file provided by Videstra, then click on **Update License**. You do not need to reboot once the license is installed.

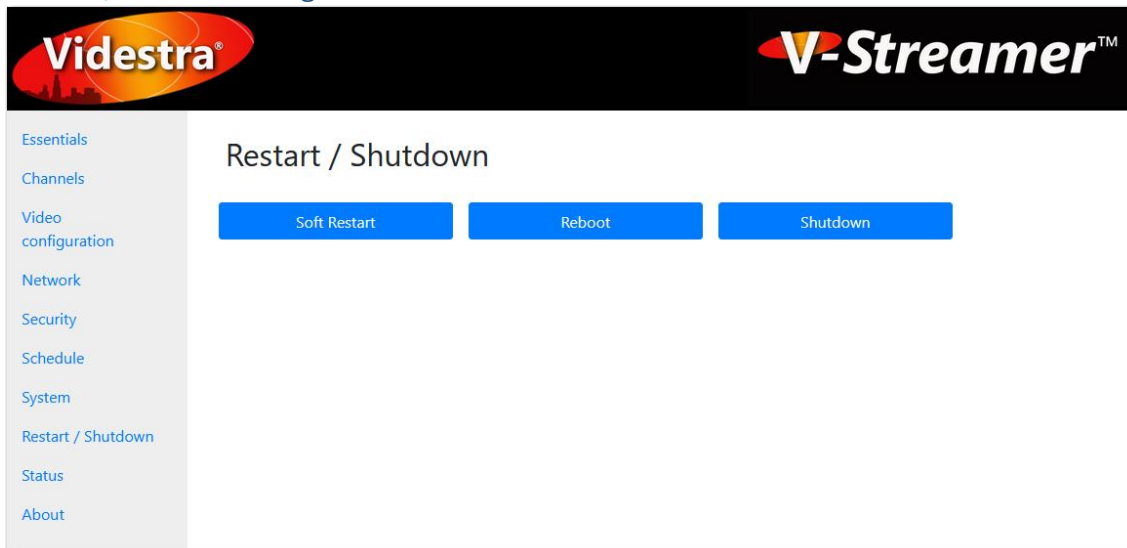
Log File Section

System Log

Download log file

If you run into any issues with the V-Streamer, Videstra support will likely request a copy of the V-Streamer log file to help diagnose the problem. You can download the log file from the System Page on the V-Streamer. The logfile will simply be named: “syslog.” This may be a large file and should probably be compressed (Zipped) prior to emailing.

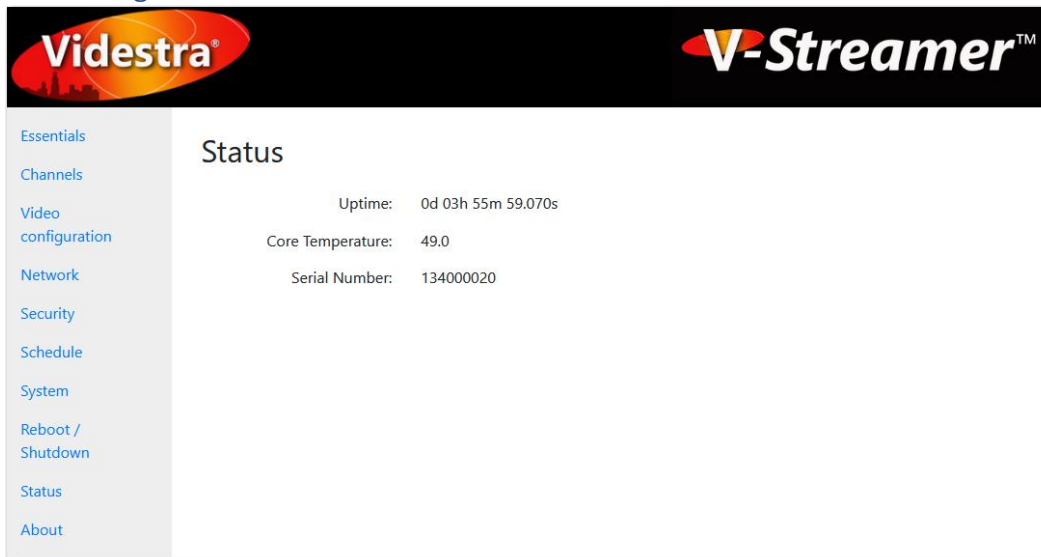
Restart/Shutdown Page



From the Restart / Shutdown Page, you can send a command to the V-Streamer to *Soft Restart*, *Reboot* or to *Shutdown the V-Streamer* (Power Off).

- Soft Restart** Stops and restarts the V-Streamer application only. This only takes a few seconds and is much faster than a reboot. Most issues can be resolved with a soft restart.
- Reboot** Complete reboot of the V-Streamer. This will take up to two minutes to complete.
- Shutdown** Powers down the V-Streamer. You will need to physically turn the unit back on using the power button on the unit itself.

Status Page



The Status page shows the V-Streamer application (not system) uptime, core temperature and system serial number.

Uptime is in Days, Hours, Minutes and Seconds

Core Temperature is in degrees Celsius. Temperatures from 27 to 75 are normal.

Serial Number, if not present, should be set by Videstra Customer Support.

Note: Your V-Streamer serial number can also be found on a small white label on top of the V-Streamer.



About Page

Videstra **V-Streamer™**

Essentials
Channels
Video configuration
Network
Security
Schedule
System
Reboot / Shutdown
Status
About

About

Version 4.00.0

The V-Streamer is licensed technology from Videstra, LLC located in Middleton, Wisconsin 53562.
The V-Streamer is Copyright 2016-2019 Videstra, LLC - All Rights Reserved

Contact Information:

eMail: support@videstra.com
Support Line: 608.999.9003 Hours: 9AM - 5PM M-F message can be left 24x7
Mailing Address: 1407 Willow Tri - Middleton, WI 53562
[Videstra Web Site](#) [Videstra Facebook](#)

The following open-source packages are used in the V-Streamer

- G-Streamer core libraries - Licensed under LGPL and is *unmodified* | Download Site: gststreamer.freedesktop.org/
- G-Streamer SRT Plugin Modified - Source available upon request
- Ubuntu 18.04 LTS *unmodified* | Download Site: releases.ubuntu.com
- AJA Video Systems Corvid SDK V14x (Commercially Licensed)
- SRT (Secure Reliable Transport) is licensed under MPL-2.0 and is *unmodified* | Download Site: github.com/Haivision/srt
- NOTE: Videstra is a member of the [SRT Alliance](#)
- LIGHTTPD - [Revised BSD license](#) Copyright (c) 2004, Jan Kneschke, incremental - All Rights Reserved
- QT *unmodified* GNU Lesser General Public License, V2.1 - Copyright [The Free Software Foundation, Inc](#)
- OpenCV Library - BSD License [OpenCV Information](#)
- USBMount 0.0.24 Modified Source [Download Here](#)

AVC (Advanced Video Codec - H.264) and HEVC (High Efficiency Video Codec - AKA h.265) Codecs are licensed by Videstra through [MPEG LA](#)

Visit us on the Web at www.videstra.com

V-Streamer Software Download

Always download the latest version unless you run into a compatibility issue.

No Updates Available - please contact Videstra Customer Care

V-Streamer Manual Download

Latest Manual [V-Streamer Doc V3x](#) Updated 1 April 2019
V-Streamer Motherboard Manual (SuperMicro)
[For Serial Nr. 1413xxxxxxx](#)
[For Serial Nr. 134xxxxxxx](#)

V-Streamer IP Utility

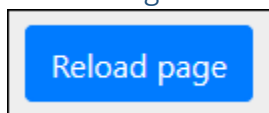
Used to locate one or more V-Streamer(s) on the local subnet

[Reload page](#)

The About page gives you some basic and legal information about the V-Streamer. It is also a place where you can download the latest version of the V-Streamer Firmware, documentation and utilities.

Note: The About page is hosted on the Videstra web site. If your V-Streamer is not connected to the Internet this page will be blank, or report 404-Not Found (or some other disconnected error).

Reload Page



A reload page button *floats* near the bottom-left of the web page. This button lets you refresh the page after making changes such as updating the license or network. It's not always necessary – but is a very handy way to quickly refresh the web page.

Protocols Supported by the V-Streamer

The Videstra V-Streamer supports the following video encoding types

- h.264 (AKA AVC)
 - baseline, main, high profiles
- h.265 (AKA HEVC)
- MPEG4
- JPG, JPEG, PNG (for still images that are hosted via http)

Note: *The V-Streamer does not support MJPEG video*

The V-Streamer supports the following audio encoding types

- AAC
- G711

Note: *Due to bandwidth consumption and the focus of the V-Streamer on high-frame-rate video it does not support MJPEG (Motion JPEG) encoded video.*

The following schemes (delivery envelopes for the above video encodings) are supported:

- rtsp
- rtmp
- hls
- udp (connection to raw ts stream)
- srt*
- sdp

In addition to supporting video streaming the V-Streamer is also capable of rendering a URL link to a still image as output video (still frame). The following image types are supported:

- .jpg
- .jpeg
- .png

An automatic refresh for any still images can be set on the V-Streamer System page with the default being 5 seconds. This means that any channel displaying a link to a still image (.jpg, .jpeg, or .png) will automatically refresh every 5 seconds. You may set this from 1 second to 30 seconds. A setting of 0 (Zero) will disable refreshing of still images entirely.

* Videstra is a member of the SRT Alliance.



See: <https://www.srtalliance.org/members/>

Linux Security Updates

Note: *This section is only for those extremely familiar with Linux (specifically Ubuntu or Debian Linux) and should not be undertaken by anyone else!*

The V-Streamer runs the Ubuntu Linux Operating System. We encourage you to apply security updates, however, not all security updates made available may be applied. Because the main AJA Covid Device Driver requires compiled modifications to the Linux Kernel, security updates that install updated kernel code will cause the V-Streamer to stop working. The process for updating the V-Streamer is as follows:

Note: *Everything described below is to be done from the Linux console.*

Run the command: **sudo apt-get update**

This will update the repositories used by Ubuntu for any new updates

Run the command: **sudo apt-get install unattended-upgrades**

This installs the latest version of the unattended-upgrades program

Remove the possibility of any kernel updates by editing the `/etc/apt/apt.conf.d/50unattended-upgrades` config file. There is a section to blacklist upgrade elements – in this case we will be blacklisting all potential kernel updates.

```
// List of packages to not update (regexp are supported)
Unattended-Upgrade::Package-Blacklist {
    "linux-headers*";
    "linux-image*";
    "linux-generic*";
    "linux-modules*";
//    "vim";
//    "libc6";
//    "libc6-dev";
//    "libc6-i686";
};
```

In the example above the three items added to the file include **linux-headers***, **linux-image***, **linux-generic***, and **linux-modules***. These all end with an asterisk (very important). The syntax is also important or the unattended-upgrade will not run properly. We recommend you use the nano editor to make these changes – it is pre-installed on your V-Streamer.

Finally run the unattended-upgrade program with: **sudo unattended-upgrade**

Afterwards you can see the number of available updates by executing the command: **sudo cat /var/lib/update-notifier/updates-available**

You will see something like:

```
178 packages can be updated.
10 updates are security updates
```

The *package updates* are not necessary for the V-Streamer. The number of security updates listed as available after following the instructions above will be kernel-based and cannot be updated without breaking functionality of the V-Streamer.

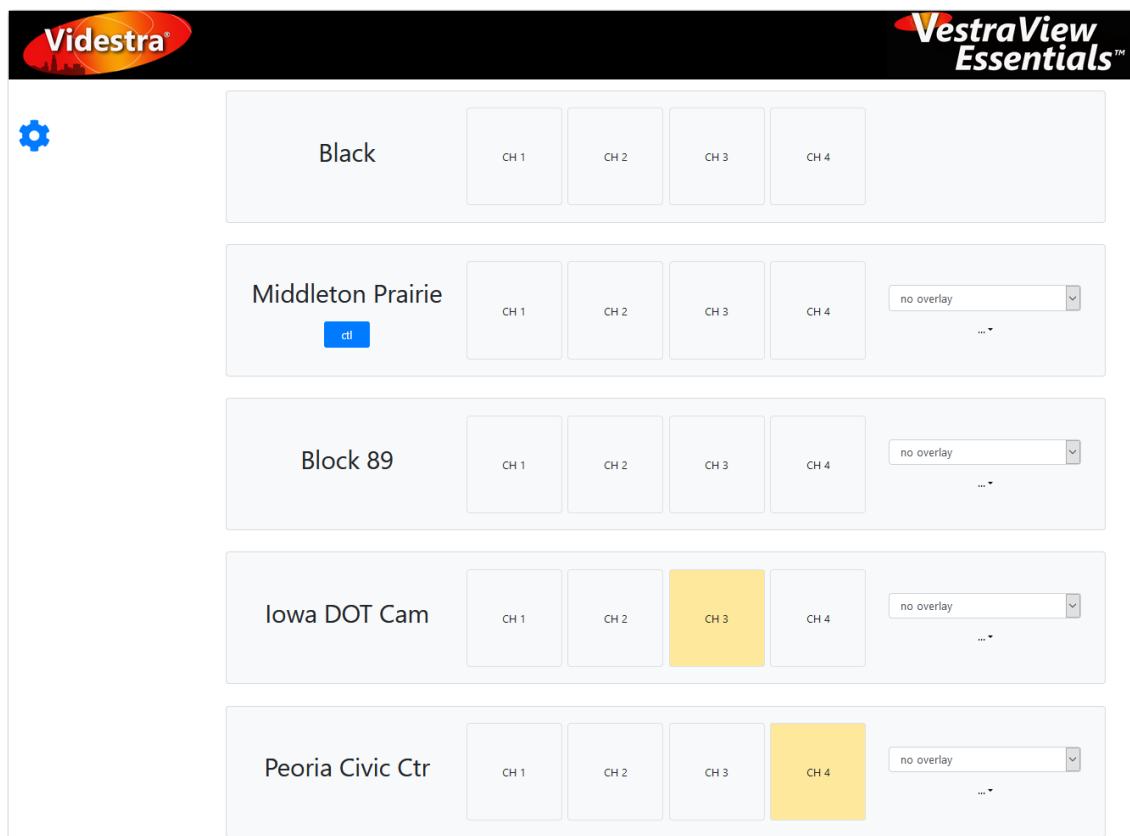
Videstra VestraView Essentials™

Videstra VestraView Essentials™ is a separately licensed capability within the V-Streamer allowing for management and rapid assignment of multiple streaming sources (such as IP Cameras) from a simple dashboard.

From the Essentials page you can predefine multiple streaming sources, then quickly assign a predefined source to any of the V-Streamer channels, Apply an Overlay or even access the Pan/Tilt/Zoom, Presets and Exposure capabilities of certain cameras (not all cameras allow all functions). You may also assign Black to any channel.

The Essentials page also lets you add/delete, enable/disable and move individual panels as required for your workflow.

If you do not have access to VestraView Essentials, please contact Videstra Sales at: sales@videstra.com for a quote.



Using VestraView Essentials

Your Essentials license will determine how many panels you can have. Each panel consists of the following elements



Source Name

You may name a panel anything appropriate. Use a few characters as are necessary. If the name is too long, it may be either truncated to an ellipse (...) or wrap to the next line (or both).

Ctl

If a control page for a source (typically an IP Camera) is defined, then the **ctl** button will appear on the panel. Clicking on this button will open the controls web page for the source giving you access to whatever functionality is available on the page. Typically for a camera this is Pan/Tilt/Zoom, Presets and Exposure controls. It will vary by make/model of camera. When entering a CTL URL make sure you enter the full URL to the source (camera) control page. This is often simply the IP Address of the camera. The Control Page for a source may require a username and password. If a username and password is entered when the panel was added an attempt will automatically be made to apply the username and password. Some sources (cameras) however require that credentials be manually entered. If this is the case, then the user will be prompted for the credentials and they must be entered correctly before they are able to access the control page. It may be possible to not require credentials for a camera control page, but *this is not recommended for cameras on public IP Addresses!*

Channel Assignments

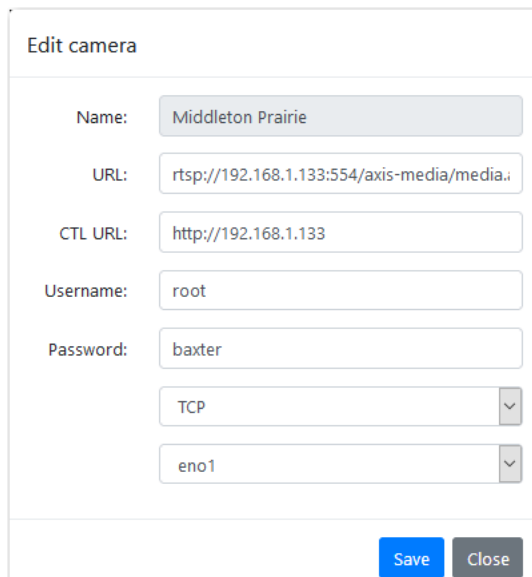
The V-Streamer has 4 channels. You may assign the source to any of the 4 available channels. Channel buttons are labeled CH 1, CH 2, CH 3 and CH4 and represent the four numbered outputs on the rear of the V-Streamer. These names cannot be changed.

Overlay Assignment

If you have placed overlay images on your V-Streamer the name for each overlay will appear in this drop-down box. The default is "no overlay." You may apply any available overlay to the panel and when the panel source is assigned to a channel, the overlay will also appear on the HD-SDI output.

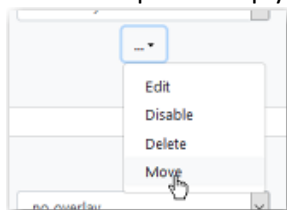
Menu ...

From the ellipse menu you can enable, disable or delete any panel. You can also edit panel settings (except the name).



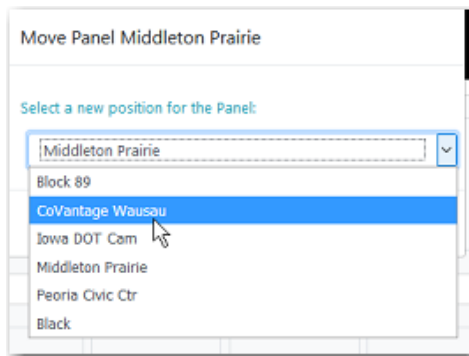
Editing Camera Settings

To move a panel simply select the Move option:



Note: You cannot move the Black (topmost) panel

And then select where within the existing list to where you want to move the panel:



Adding a Panel

Click on the + button that appears after the last panel to add a panel. If the button is not enabled, then you have as many panels as your current license allows.



← if this button is not enabled then you have used all licensed Essentials panels.

My V-Streamer Info...

Please record your V-Streamer Information here

IP-Address: _____

NetMask: _____

Gateway: _____

DNS: _____

Password: _____

