



Note: This document reflects the current feature-set which may change without notice. We will attempt to keep all users up to date on any such changes.

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Introduction

Streambox Halo is a video receiver for delivery to professional color grading monitors. In addition, it benefits from the Streambox 4:4:4, 12-bit codec and video transport via cloud servers worldwide. Streambox Halo is for artists who desire to preserve the best signal quality and color fidelity possible. Both Streambox 12-bit codec and HDR10 are key components for color precise and friction free review sessions.

Unlike common file-based solutions, Streambox Halo allows for review, where color or editorial decisions are needed in real-time, over the internet.

Halo is ideal for colorist output (4:4:4, 10 or 12-bit, HDR) from software solutions like DaVinci Resolve¹, Baselight², or Autodesk Flame³ via Streambox Chroma Encoders. Streambox Halo units receive live streams from Streambox Cloud Services (AWS) allowing directors and producers to review color precise, encrypted, video streams in real-time on connected TV's that support Dolby Vision.

Getting Started

What's Needed

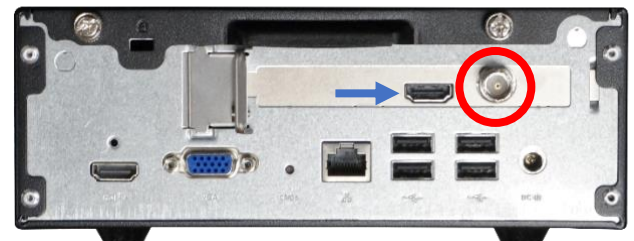
To take full advantage of what Halo can offer, you will need to connect the DeckLink card via SDI (see red circle) to a professional color grading monitor. Support for HDMI monitors is also provided in the Standard model.

Initial Connections

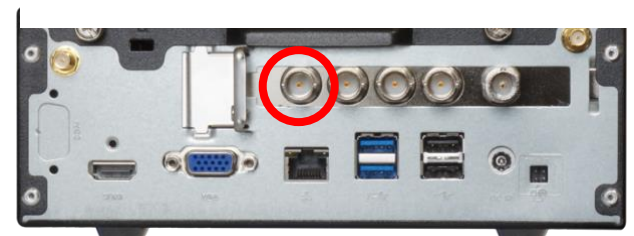
Plug in the power cord, connect the unit via an appropriate SDI cable to a monitor, turn on the monitor and the Halo unit. See SDI (BNC) connection (red circle). For HDMI TV's, connect with an appropriate rated (4K, 8K) HDMI cable (blue arrow).

Initial Setup

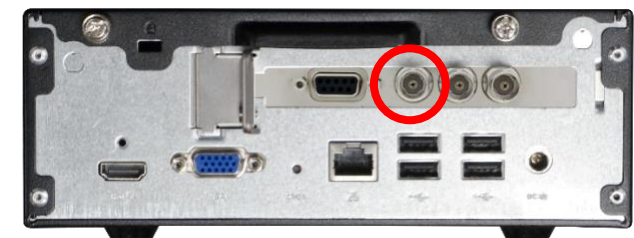
The units IP address will be displayed on the attached monitor. Using an Internet browser on the same network,



[Standard Model with DeckLink Mini Monitor 4K, see Specifications](#)



[Pro Model with DeckLink 8K Pro 12G-SDI, see Specifications](#)



[Standard Model with DeckLink 4K 6G-SDI, see Specifications](#)

¹ <https://www.blackmagicdesign.com/products/davinciresolve/>

² https://www.filmlight.ltd.uk/products/baselight/overview_bl.php

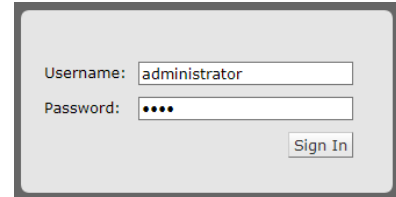
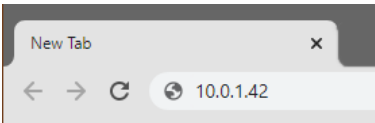
³ <https://www.autodesk.com/products/flame/overview>

enter the units IP address into the browser's address field (see image, with example IP, 10.0.1.42).

If the interface provides a choice to select Encoder or Decoder, select Decoder (see image to right, below).

Login

The factory-set Username is 'administrator' and 'demo' for Password. After you have completed the setup, we recommend that you change the login username and password.

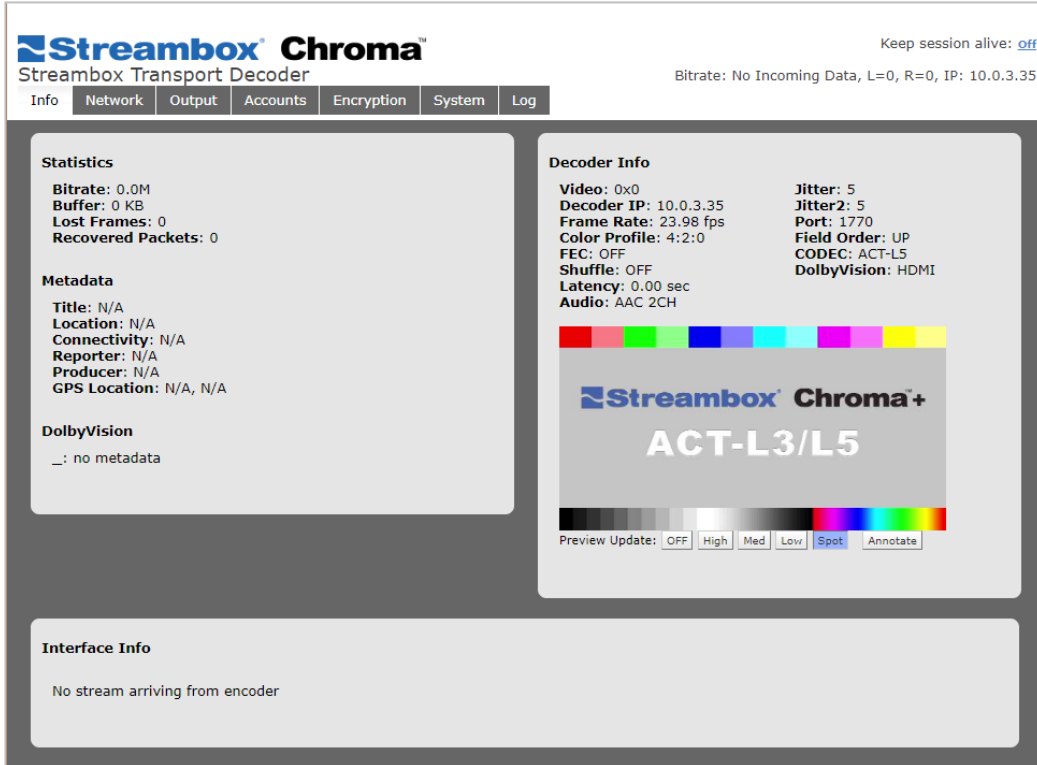


Web Interface

The web interface provides full status reporting and remote control of the Halo unit.

Info (tab)

The Info page is essentially the status report of the incoming video stream plus any embedded metadata: Title, Location, Reporter, Producer, and GPS Location. Basic Decoder Information is displayed along with a preview window.



Network (tab)

The Network page is where standard network settings are managed. Most importantly, this is where you set the incoming port number should you need to change the default UDP port, 1770. This may be needed for port-forwarding and firewall compatibility.

Pull Stream

Pull Stream allows a stream or Session to be pulled from the Streambox Cloud. Note: the properties below are divided into Sever mode and Sessions where applicable.

- IPv4 address

Server: use the IP address of the closest server from the table below

Sessions: use the IP address from the table below based on first letter of the Session ID; e.g., If the Session ID starts with \$B, then from the table below, the IP address would be 54.83.19.155.

- UDP Port: **1770** (may be changed if needed to support port-forwarding or firewall compatibility)

- Login

Server: use Streambox Cloud account username

Sessions: defaultsession

- Password

Server: use Streambox Cloud account password

Sessions: defaultsession

- Group/DRM

Server: Enter the account Group (DRM) name

Sessions: enter the Session ID provided by the session host. Make sure it starts with \$

- Reporter

Server: enter the exact characters of the Reporter value from the Encoder metadata

Sessions: <leave blank>

- Click 'Exec Pull-mode' (the pull should start in about 1 minute)

The screenshot shows the 'Streambox Chroma' web interface. At the top, there's a navigation bar with tabs: Info, Network, Output, Accounts, Encryption, System, and Log. The 'Network' tab is selected. Below the navigation bar, there's a status bar showing 'Keep session alive: off' and 'Bitrate: No Incoming Data, L=0, R=0, IP: 10.0.3.35'.

The main content area is divided into two sections:

- Network Settings:** This section contains several configuration options:
 - IP Mode:** A dropdown menu set to 'IP'.
 - Auto Jitter:** A toggle switch set to 'Off'.
 - Timeout:** A text input field set to '10' with the unit 'Second(s)'.
 - Jitter:** A dropdown menu set to '5 Packets'.
 - Jitter 2:** A dropdown menu set to '5 Packets'.
 - Port:** A text input field set to '1770' with the unit 'UDP (default: 1770)'.
 - An 'Apply Changes' button at the bottom.
- Pull Stream:** This section contains several configuration options:
 - IPv4:** A text input field set to '52.8.239.106' with a small icon to its right.
 - Port:** A text input field set to '1770'.
 - Login:** A text input field set to 'defaultsession'.
 - Password:** A text input field with masked characters and a 'show' link to its right.
 - Group/DRM:** A text input field set to '\$B77777'.
 - Reporter:** An empty text input field.
 - At the bottom, there are two buttons: 'Exec Pull-mode' and 'Set to Normal-mode'.

On the right side of the 'Network Settings' section, there's a 'Port Selector' table:

Name	Port
Default	1770

Below the table is an 'Edit' button.

Cloud Server IP Addresses

Use this link to get the most current list of Streambox Cloud Server IP Addresses.

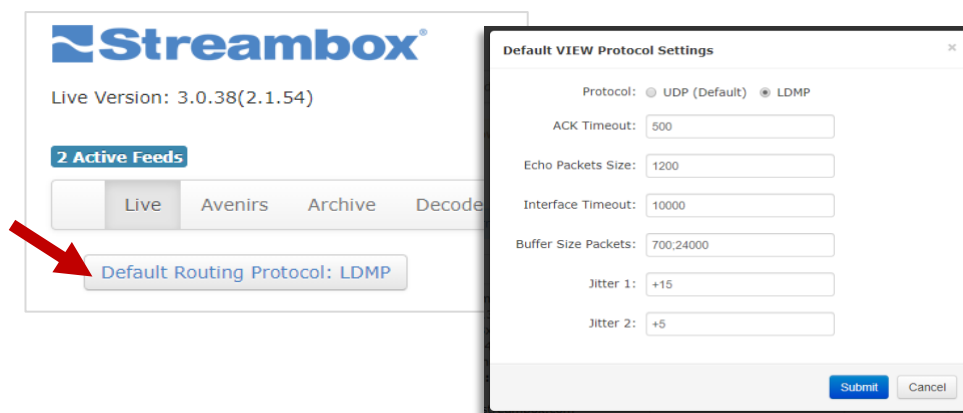
<https://streambox.force.com/support/s/article/streambox-cloud-server-ip-addresses>

Live Server	Code \$	IP Address	Region
LiveUS.streambox.com	A	52.25.129.48	USA (Oregon)
LivePost.streambox.com	P	52.8.239.106	USA (N. California)
LiveUSEast.streambox.com	B	54.83.19.155	USA (N. Virginia)
LiveDE.streambox.com	E	54.93.179.19	Europe (Frankfurt)
LiveEU.streambox.com	F	54.247.100.52	Europe (Ireland)
LiveJP.streambox.com	G	52.69.71.156	Asia Pacific (Tokyo)
LiveSG.streambox.com	I	52.76.243.157	Asia Pacific (Singapore)
LiveAU.streambox.com	C	52.62.2.246	Asia Pacific (Sydney)
LiveIN.streambox.com	J	52.66.83.26	Central Asia (India)
LiveSA.streambox.com	H	54.233.86.10	South America (Sao Paulo)

LDMP Settings

Sessions use the default LDMP routing settings of the account used to create the session. It is important that these properties are properly set. 1) Log onto a Live Server (e.g., Live.Streambox.com) using the same account under which the Session was created. 2) From the 'Live' tab of the Streambox Live Server page, click on the 'Default Routing Protocol' button (see red arrow below) to open the 'Default VIEW Protocol Settings' page (see image below). 3) The values on the example here are generally a good starting point and will work with most Sessions. For more information on LDMP settings see:

<https://streambox.force.com/support/s/article/Cloud-Decoder-LDMP-Settings>



Output (tab)

The Output page is where general output settings like number of audio channels, show audio meters and timer on the display, and output format are found. It is also where the Genlock settings are located.

Streambox Chroma™
Streambox Transport Decoder

Info Network **Output** Accounts Encryption System Log

General Settings

Standby Video: ☒ ON ☐ OFF

Standby Delay: 10 seconds ▾

Latency Control (recommended): ☒ ON ☐ OFF

Show Audio: ☒ ON ☐ OFF

Show Timer: ☒ ON ☐ OFF

* = These settings require the decoder to restart and will cause a brief interruption in your video.

Video Settings

SDI output*: Single Link SDI ▾

Output bit depth*: 10 bit ▾

Force RGB output*: ☒ OFF ☐ ON

Genlock Settings

Genlock: ☒ Free Run ☐ Reference ☐ Input 1

HDMI Out settings

HDMI Output: ☐ SDR ☒ HDR10

Show No Meta*: ☒ OFF ☐ ON

D/C 4K to UHD*: ☒ OFF ☐ ON

HDR10 Meta data settings

Color Space*: Rec.2020 ▾

Video Levels*: Full Range ▾

OETF*: PQ SMPTE-2084 ▾

Min/Avg/Max nits: 0.01 100 1000

Master Min/Max: 0.005 2000

General Settings

- **Standby Video:** Enables the 'colorbars' output when Halo is not receiving a stream. If disabled, it shows a freeze-frame of the last processed frame, or a blue screen.
- **Standby Delay:** Sets how long the decoded will be without a signal before displaying the standby video image (as above).
- **Latency Control:** If disabled, the decoder is allowed unlimited time to decode the stream. This option may be used for testing purposes to isolate frame loss and sync issues in relation to decoder CPU usage. Disabling latency control is not recommended for any Streambox system in production.
- **Show Audio:** N/A
- **Show Timer:** N/A

Video Settings⁴

- **SDI Output:** Select from Single Link SDI, Dual Link SDI, or Quad Link SDI
- **Output bit depth:** Select from 8-bit, 10-bit, or 12-bit
- **Forced RGB:** Output Enable this to force the output to RGB even if the incoming stream was sent in 4:2:2 component format. Please note that color profile, video levels, and gamma will be used per Static Metadata settings.
- Genlock Settings: N/A.

HDMI Out Settings

- **HDMI Output:** Switch between SDR and HDR10 (For HDMI in HDR10 mode, set bit depth to 10 bit, since most TV will not support HDR10 in 12-bit mode)
- **Show No Meta:** Show no metadata
- **D/C 4K to UHD:** Down convert 4K Cinema to UHD (3840x2160)

HDR10 Metadata Settings

- **Color Space:** Select desired standard color space (Rec.709, Rec.2020, P3 D65)
- **Video Levels**
Full Range: Used for film/video production, computer graphics, and video graphics
Video Level: Standard SMPTE levels for consumer electronics
- **OETF** (Opto-electronic Transfer Function): SDR CTA.861, HDR CTA.861, PQ SMPTE-2084
- **Min/Avg/Max (nits):** HDR level-1 metadata – brightness in nits
- **Master Min/Max:** brightness in nits

Accounts (tab)

The Accounts page is only displayed for account administrators and is where accounts are created or modified.

Encryption (tab)

The Encryption page is where you set the Decryption Key, if applicable. The key must be an identical match to the encryption key used on the encoder. If the keys do not match, you will see an 'ENCRYPTED ERROR' on the Info page.

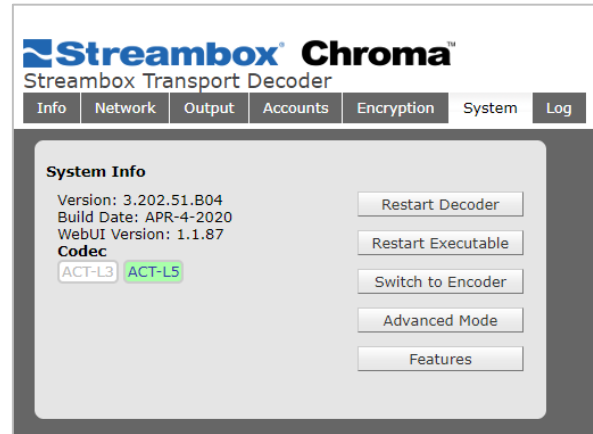
⁴ Dolby Vision currently not supported

System (tab)

The System page provides System Info, ACT-L3/ACT-L5 codec switch and buttons for Decoder restart, Executable restart, Switch to Encoder (not active), and Advanced Mode (for Support). Also, there is a Features button for a list of all activated features and instructions for activating additional features.

Log (tab)

The Log page provides a method to log all decoder activity for diagnostic purposes.



Technical Specifications

Note: The DeskLink SDI 4K model has similar specs to the Standard model but with 1 output SDI, 1 input SDI, and 1 reference SDI (and no HDMI support).

Encoder/Decoder (option model)



Decoder (Standard model)



Halo (8K Pro Model)

Small Form Factor Encoder / Decoder

No HDMI

**SDI x 4 Input or Output
(Single, Dual, Quad Channel)**

3D support

4K DCI - 4096 x 2160

UHD - 3840 x 2160

2K DCI - 2048 x 1080

HD - 1920 x 1080

HD - 1280 x 720

SD - 720 x 480, 720 x 576

Film: 23.98, 24

Video: 25, 29.98, 30, 50, 59.94, 60

PAL, NTSC

720p50, 720p59.94

1080i50, 1080i59.94, 1080p50, 1080p59.94

1080p23.98, 1080p24, 1080p25, 1080p29.97, 1080p30

1080PsF23.98, 1080PsF24, 1080PsF25

2Kp23.98 DCI, 2Kp24 DCI

UHD: 2160p23.98, 2160p24

4K: 4Kp23.98 DCI, 4Kp24 DCI

Halo (Mini-Monitor-4K Model)

Small Form Factor Encoder / Decoder

HDMI Output

SDI x 1 Output

No 3D

4K DCI - 4096 x 2160 *see note 1

UHD - 3840 x 2160

2K DCI - 2048 x 1080 *see note 2

HD - 1920 x 1080

HD - 1280 x 720

SD - 720 x 480, 720 x 576

Film: 23.98, 24

Video: 25, 29.98, 30, 50, 59.94, 60

PAL, NTSC

720p50, 720p59.94

1080i50, 1080i59.94, 1080p50, 1080p59.94

1080p23.98, 1080p24, 1080p25, 1080p29.97, 1080p30

1080PsF23.98, 1080PsF24, 1080PsF25

2Kp23.98 DCI, 2Kp24 DCI

UHD: 2160p23.98, 2160p24

4K: 4Kp23.98 DCI, 4Kp24 DCI

3D: 720p50, 720p59.94, 1080i50, 1080i59.94, 2Kp23.98DCI, 2Kp24DCI	
Encoder/Decoder (option model)	Decoder (Standard model)
P3 D65 in RGB and Y-Cr-Cb (N-CL)	P3 D65 in RGB and Y-Cr-Cb (N-CL)
Rec. 2020 in RGB and Y-Cr-Cb (N-CL)	Rec. 2020 in RGB and Y-Cr-Cb (N-CL)
Rec. 709 in RGB and Y-Cr-Cb	Rec. 709 in RGB and Y-Cr-Cb
XYZ	XYZ
ITP	ITP
SMPTE 2084 (PQ)	SMPTE 2084 (PQ)
Gamma 2.4	Gamma 2.4
Gamma 2.0	Gamma 2.0
Linear (planned support)	Linear (planned support)
4:4:4 12-bit --- option (the performance is limited)	SDI: 4:4:4 12-bit ---HD (up to 1080p60) only
4:4:4 10/8-bit	SDI: 4:4:4 10/8-bit All modes
4:2:2 12/10/8-bit	SDI: 4:2:2 12/10/8-bit All modes
4:2:0 12/10/8-bit	SDI: 4:2:0 12/10/8-bit All modes
	SDI: HDR support
	HDMI: 4:4:4 12-bit
	HDMI: 4:4:4 10/8-bit All modes
	HDMI: 4:2:2 12/10/8-bit All modes
	HDMI: 4:2:0 12/10/8-bit All modes
	SDI: HDR support
Dynamic (support for Davinci Resolve & Autodesk Flame)	Dynamic (support for Davinci Resolve & Autodesk Flame)
User defined (static)	User defined (static)
SDI: 8-ch Std, 16-ch Optional (SDI only)	SDI: 8-ch Std, 16-ch Optional (SDI only)
	2ch Audio via HDMI
	Future 8-ch USB audio breakout
	Future 6/8-ch support via Dolby Digital/Plus
Black-Burst or Tri-Level for Output	n/a
4K, UHD: SDI In or Out x 1 (Single, Dual, Quad) 2K, HD: SDI In or Out x 4 (Independent 4 channels) HDMI: System (not for video out)	HDMI x 1, SDI Output x 1

HDMI x 1 Console	HDMI x 1 maintenance port
Encoder/Decoder (option model)	Decoder (Standard model)
USB3.2G1 x 4, USB2.0 x 4	USB3.2G1 x 4, USB2.0 x 4
LAN 10/100/1000 Mbps x1	LAN 10/100/1000 Mbps x1
WiFi 2.4GBHz, 5GBHz IEEE802.a,b,g,n,ac Dual antennas	WiFi 2.4GBHz, 5GBHz IEEE802.a,b,g,n,ac Dual antennas
AES 128-bit encryption	AES 128-bit encryption
AES 256-bit encryption Option (restricted availability)	AES 256-bit encryption Option (restricted availability)
Up to 50 Mbps bitrate	Up to 80 Mbps bitrate
W200mm x D260mm x H80mm (Antenna length 195mm)	W200mm x D260mm x H80mm (Antenna length 195mm)
DC 12-20V 120W(max)	DC 12-20V 120W(max)
AC Adapter accessory 100-240V 180W	AC Adapter accessory 100-240V 180W
4.6 lbs (2.1kg) (8KPro model)	4.5 lbs (2.0kg) (Monitor-4K model)
WiFi antenna x2	WiFi antenna x2
USB Bluetooth for iPhone control	USB Bluetooth for iPhone control
AC Adapter 180W	AC Adapter 180W
n/a	1. HDMI display dependent, center cut to 3840x2160 (if not supported)
n/a	2. HDMI display dependent, center cut to 1920x1080 (if not supported)
n/a	3. Dolby Vision tunneling native profile is 4:2:2 12-bit
n/a	4. Dolby Vision 12-bit support is available only when the Halo HDMI output is connected directly to the HDMI input of a Dolby Vision compatible TV
Standard 4K Encoder/Decoder	Standard 4K Encoder/Decoder
Standard HD 4CH Encoder/Decoder	Standard HD 4CH Encoder/Decoder
With the other video card? Single 4K, HD or Decoder only are also available	With the other video card? Single 4K, HD or Decoder only are also available
16ch Audio Option	16ch Audio Option
Dolby Option	Dolby Option
4:4:4 Option	4:4:4 Option
256bit Encryption Option* *:Restricted area	256bit Encryption Option* *:Restricted area

3D (HD, 2K) Option	3D (HD, 2K) Option
Encoder/Decoder (option model)	Decoder (Standard model)
Chassis: XH410G (Shuttle, Made in China)	Chassis: XH410G (Shuttle, Made in China)
CPU: i5-10600, RAM-2666 8GBx2	CPU: i5-10600, RAM-2666 8GBx2
AC power consumption: 118V 60Hz Standby 52-54W Encoder HD 1080i5994 80Mbps streaming 77W Decoder HD 1080i5994 80Mbps streaming 72W Encoder 4K, 4:4:4 80Mbps Streaming 114W Decoder 4K, 4:4:4 80Mbps Streaming 103W	

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