Streambox®

Rackmount (1RU)

HD, 2K ● 4:4:4 Color, 10-bit HDR

Multi-Channel Encoder/Decoder

Quick Start Guide

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.
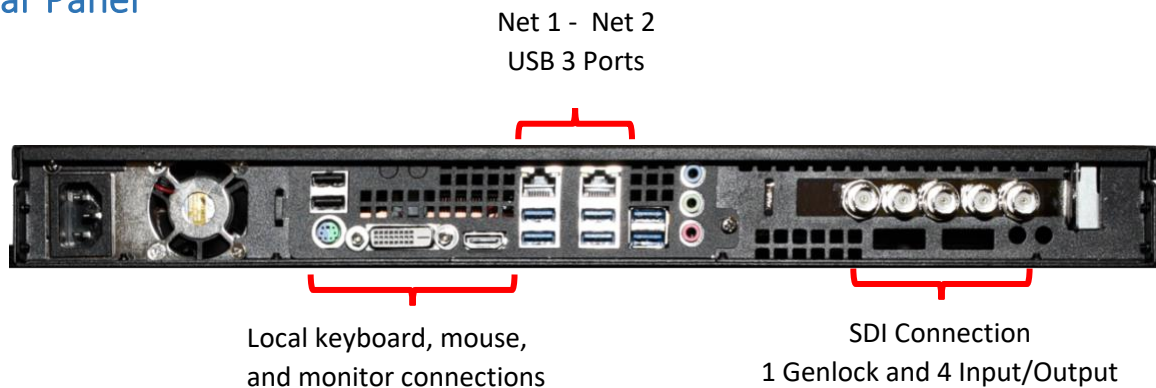
Introduction

The Streambox® HD/2K 4-Channel Rackmount Encoder/Decoder provides the ideal vehicle for secure, low latency, video transport that is required for studio and post-production workflows. The Encoder/Decoder software run on a Linux operating system and supports AES 128-bit encryption[1], LDMP multipath transport, and ACT-L3/L5[2] Advanced Profile compression, all together providing a secure, low latency, color stable, high quality video transport. This unit provides 4 independent encoder or decoder channels for multi-stream capability.
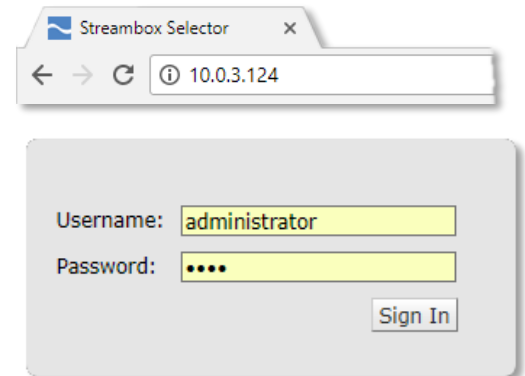
Front Panel

LCD display with Up/Down,
Esc/Enter navigation

USB 2 ports, Off/On button
(other items reserved for future use)

Rear Panel

Net 1 - Net 2
USB 3 Ports

Local keyboard, mouse,
and monitor connections

SDI Connection
1 Genlock and 4 Input/Output

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[1] AES 192-bit. 256-bit is available as an ad-on option (with Federal restrictions). All implementations are based on NIST specifications (http://csrc.nist.gov/groups/STM/cavp/documents/aes/aesval.html).

[2] All Streambox products are powered by our proprietary codec, Advanced Compression Technology (ACT). Streambox ACT-L3/L5 compression allows for faster encoding with lower latency and is optimized for video transmission over any IP connection. Our proprietary codec can compress high motion, complex video at lower data rates using the new advanced motion search feature.

Getting Started:

Log onto Encoder

- See Appendix A to determine local IP address of unit
- Open browser in system on the same network
- Enter unit's IP address
- This will open the Streambox Selector (image below)
- Enter Trial Username / Password:
  administrator / demo (see image on right)
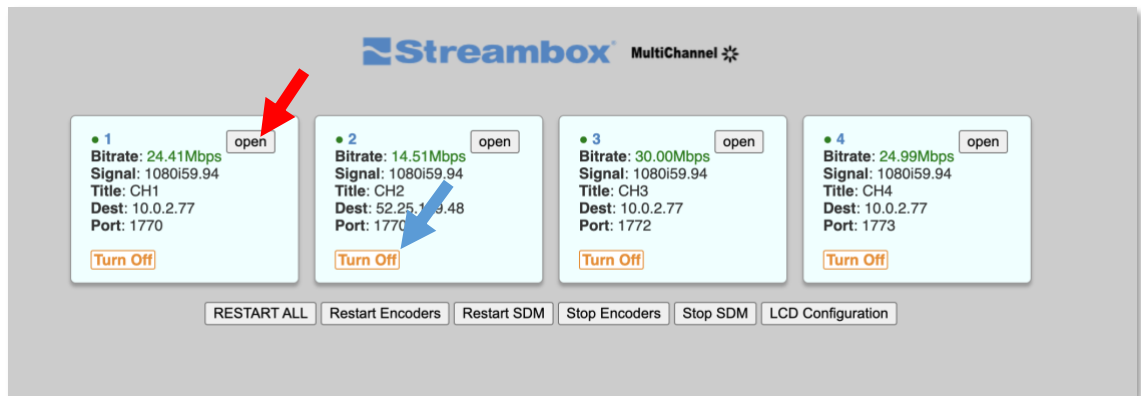- You may have to Activate features. See Feature Activation in Appendix

Dashboard:

The Dashboard is the first thing presented upon a successful logon. It contains status tiles of each encoder. From here you can open the desired encoder. You can also use the Dashboard to Start/Restart/Stop all Chroma applications. Let's open Encoder 1 (red arrow).

Note 1: Each channel can be turned ON or OFF (see blue arrow) separately.

Note 2: You can switch from Encoder to Decoder mode (and back) from the System page of any channel.
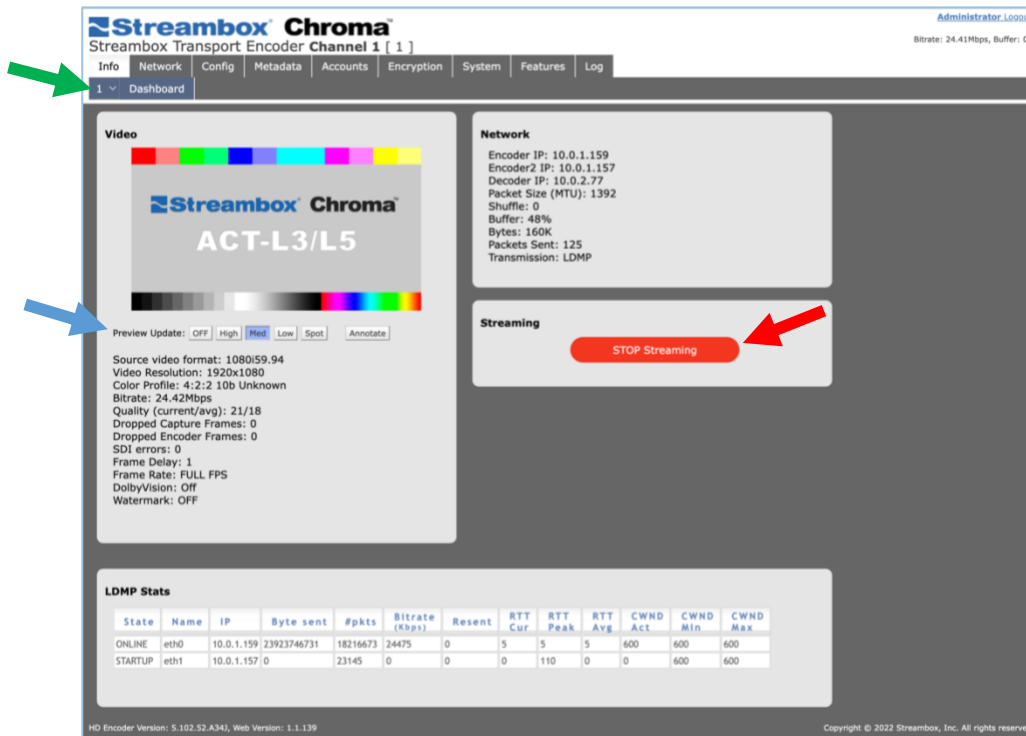
Encoder

The Encoder can stream to a Streambox Server or Session for distributed collaboration or point-to-point for discreet collaboration. All streams can be encrypted end-to-end.

Quick Setup

- Review the user interface layout (tabs) below
- Setup SDI input on a channel (see labels on back of case for correct SDI connection)
- If you are using Sessions, you can enter the Session DRM (Encoder DRM) on the System tab
- Enter the destination IP or Streambox Server on the Network tab
- Select a preset from the Presets tab or manually apply the appropriate settings
- Remember to always 'Apply' (button) any changes before you leave a page
- You are now ready to START Streaming from the Info tab

Encoder – the 9 Tabs:

- **Info**: The Info page is essentially the status report of both the incoming video source and outgoing video stream. A preview of the source video is provided with a frame rate option of OFF, High (up to 30/sec), Medium (5/sec), Low (1/sec), and Spot check (1/10sec) – see blue arrow. A START/STOP Streaming button is located here – see red arrow. You can select other encoders or return to the Dashboard – see green arrow.

- **Network**: The Network page is where you set the Destination IP, Target Bitrate, and other values related to the video stream. Depending on the network bandwidth, Target Bitrates from 1.5 to 100Mbps have been tested. The Destination IP can be any Streambox Decoder, Streambox Media Player or Streambox Cloud Server.

- **Config**: The Config page is where you set the quality characteristics of the video stream. You can choose from a Preset configuration, create or modify your own Preset, or manually enter the desired values.

- **Metadata**: The metadata page provides text fields for Title, Location, Reporter, and Producer. These text items are embedded in the stream (but are not encrypted).

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

- **Encryption**: The Encryption page is where you enable/disable encryption and set the Encryption Key. When enabled, the receiving decoder must use the identical key as its Decryption Key. If the keys do not match, you will see an 'ENCRYPTED ERROR' notice on the decoder's LCD, Dashboard, and Info tab.

- **System**: The System page provides System Info, the DRM field (for account and/or Session identity), Start and Restart Encoder, Switch Decoder / Encoder (where supported), and Advanced Mode buttons. Advanced mode is used to access more system level features, e.g., Security features. Please feel free to contact support if you need assistance navigating the Advanced features.

- **Features**: The Features page list all features and designates which ones have been activated. It also displays expirations of activated features, if applicable.

- **Log**: The Log page provides a view and download logs of encoder activity for diagnostic purposes.

Decoder

Note: You can switch from Encoder to Decoder mode (and back) from the System page.

The Decoder receive streams via a Streambox Server or Session or point-to-point from a Streambox encoder. All streams can be encrypted end-to-end.

Quick Setup

- Review the user interface layout (tabs) below
- Setup SDI output for a channel (see labels on back of case for correct SDI connection)
- If you are using Sessions, you can enter the Session ID in the Group/DRM field on the Network tab. First, select the matching server for the Mode field then enter the Session ID. If you are pulling from a Streambox server, you need to fill in the login fields as well. If you are receiving point-to-point you need to make sure to click the 'Back to Normal-mode' button first.
- Remember to always 'Apply' (button) any changes before you leave a page

Decoder – the 8 Tabs:

- **Info**: The Info page is essentially the status report of the incoming video stream. A preview of the stream is provided with a frame rate option of OFF, High (up to 30/sec), Medium (5/sec), Low (1/sec), and Spot check (1/10sec) – see blue arrow. You can select other decoders or return to the Dashboard – see green arrow.

- **Network**: The Network page is where you set basic network configuration settings, and enter the source IP, port, and other values to receive the video stream in Pull Mode.

- **Output**: The Output page is where you set how to treat the outgoing SDI signal. Here you can also set up Dolby Vision support.

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

- **Encryption**: The Encryption page is where you provide a decryption key (where needed). When used, the receiving decoder must use the identical key as its Decryption Key. If the keys do not match, you will see an error message on the Dashboard and Info tab.

- **System**: The System page provides System Info, an ACT-L3 / ACT-L5 option switch, and buttons to Restart Decoder, Restart Executable, Switch Decoder / Encoder (where supported), and Advanced Mode buttons. Advanced mode is used to access more system level features, e.g., Security features. Please feel free to contact support if you need assistance navigating the

Advanced features.

- **Log**: The Log page provides a method to view and download logs of all decoder activity for diagnostic purposes.

- **Features**: The Features page list all features and designates which ones have been activated. It also displays expirations of activated features, if applicable.

Appendix

A. Logging onto a Streambox Rackmount

IP Address

It is important to confirm the IP address assigned to this machine for both remote Web access and the destination IP when used as a decoder. This can be done in 2 easy steps: From the Default screen, arrow down to 'INFO', press Enter, then arrow down to 'IP' for assigned IP address (see figure below).

Default screen	1) Arrow down to 3. INFO, Enter	2) Arrow down to 6. IP

B. Feature Activation

You may have to activate new features or re-activate expired features. This is accomplished from the 'Features' tab (see below). If you need an activation key, contact Streambox Sales or Support (whichever is applicable). You will need to provide the Hardware ID which can also be found on the Features tab. Once you receive the Activation code(s), you apply them one at a time. You will see the feature 'checked' once the activation is successful (sometimes you may have to refresh the page to see the update).

Note 1: You only need activate the feature on one channel – it will then be available on all channels.

Note 2: Examples in Feature tab (see blue wedge – image below)

- Hardware ID (red arrow – required to obtain activation code)
- Activation Code field (solid red outline – enter activation code here)
- Activated Feature (green arrow – e.g., see Encoder, UHD)
- Inactive Feature (blue arrow – e.g., see AES 256-bit, requires activation)
- Expired Feature (dashed red outline – e.g., 4:4:4)

Contact Information

+1 206.956.0544 Tel
+1 206.956.0570 Fax

Sales and Information
sales@streambox.com
+1 206.956.0544, Option 1

Technical Support
support@streambox.com
+1 206.956.0544, Option 2
Streambox Knowledge Base

Corporate Headquarters
1801 130th Ave NE, #200
Bellevue, WA 98005

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