

SLICE

SLICE ENCODER AND DECODER REFERENCE GUIDE



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Thank you for purchasing Slice, the ultimate streaming solution designed for professional workflows. Slice encodes incoming uncompressed SDI or HDMI video to H.264 or H.265 compressed video over any IP network. Wireless-enabled Slices can connect directly to laptops, Slice decoders, mobile devices, or join an existing wireless network to stream over a LAN or WAN. Slice features native integration with some of the most popular video platforms for turn-key live Internet streaming and content distribution. Use this reference guide to help get the most out of your Slice.

Support Resources

In addition to this reference guide, there are a number of resources available for more information on Slice's features and operation. For tips, information, and all the latest available firmware and software updates, visit Teradek's support forum at <https://support.teradek.com>. If you are unable to find what you are looking for online, please contact Teradek's support staff at support@teradek.com | Phone: (888) 941-2111 Ext. 2 (available M-F 5am-6pm PST).

Disclaimer

This manual is intended for user information only. Every effort has been made to ensure that the contents within are accurate at the time of printing, and that updates are made in a timely manner. Teradek cannot be held responsible for inaccuracies, typographical errors, or out-of-date information contained within this manual.

Warning

Teradek Slice products contain no user serviceable parts. Disassembly, modification, or removal of any of the device's components may void your warranty. Please visit <http://store.teradek.com/pages/warranty-information> for up-to-date warranty terms and conditions.

PHYSICAL PROPERTIES



A. Power button
B. USB ports
C. Reset button
D. Front panel
E. Stream/Menu control dial

F. A/C input
G. SD/HD/3G-SDI input/output
H. HDMI input/output
I. 10/100/1000 Ethernet
J. Reset button

K. Headphone/IFB audio input
L. Mic/Line stereo input/output
M. RP-SMA connectors

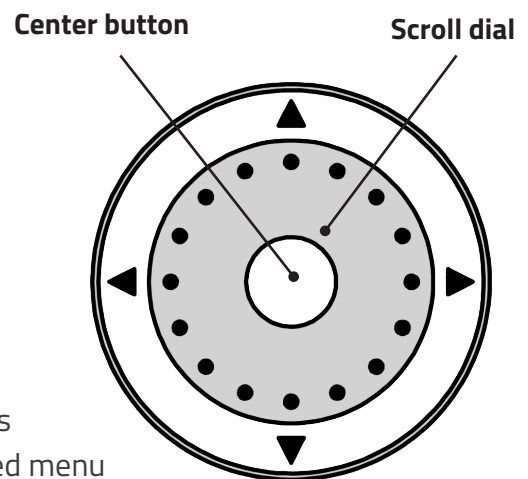
STREAM/MENU CONTROL DIAL

Use the Stream/Menu Control Dial to navigate the front panel interface.

- ▲ : Go live, start/stop stream, start/stop recordings, cycle through characters
- ◀ : Back, move to previous menu level
- ▼ : Display IP address
- ▶ : Forward, move to next menu level

Scroll dial: Display IP address, display resolution, navigate menus

Center button: Confirm selection, enter main menu, open selected menu



GETTING STARTED

There are three key steps to getting started with Slice:

1. Power your device.
2. Connect to a network.
3. Choose your application.

POWER YOUR DEVICE

1. To power Slice, connect the A/C cable to the A/C input (Fig. 2-1), then press the power button. Slice begins to boot as soon as power is turned on.
2. Turn on your video source, then connect it to Slice using either an SDI or HDMI cable (Fig. 2-2).
3. Attach antennas to the threaded RP-SMA connectors if using Wi-Fi.
4. Once Slice has booted, the front panel will indicate that it's "**Ready**" (Fig. 2-3).

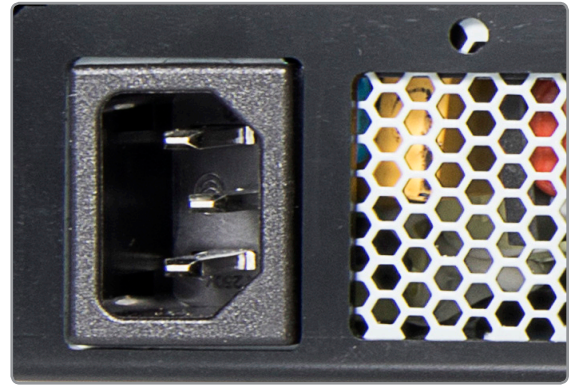


Fig. 2-1



Fig. 2-2



Fig. 2-3

CONNECT TO A NETWORK

Slice allows you to connect to a network using Wi-Fi, an Ethernet connection, or a USB modem. Use the front panel or web user interface (web UI) to connect Slice to a network.

Connect to an Ethernet network (Wired)

1. Plug an Ethernet cable into Slice's Ethernet port and connect it to an Ethernet switch or router.
2. Once Slice is connected to the network, the front panel interface will indicate that it's "Ready" (Fig. 2-4).



Fig. 2-4

Connect via wireless (Wi-Fi)

1. Using the control dial, navigate to the **Network Setup** menu, then select **WiFi**.
2. Press the center button to enter the WiFi mode menu, then select a mode:
 - a. **Access Point (AP) Mode** - **AP Mode** is automatically enabled by default. Connect your computer to Slice's AP network: Slice-676-XXXXX (Slice-776-XXXXX if using an HEVC encoder).
 - b. **Infrastructure Mode** - Select **Infrastructure Mode**, then **Scan for Networks**. Select a Wi-Fi network (Fig. 2-5), then enter your



Fig. 2-5

Access the Web UI

1. From the main display, turn the Scroll dial to reveal either the Ethernet or WiFi IP address.
2. Open a web browser and enter the network's IP address in the navigation bar (Fig. 2-6).

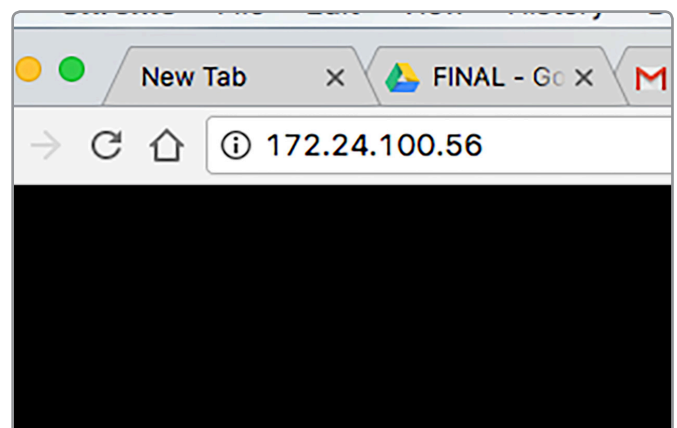


Fig. 2-6

CHOOSE YOUR APPLICATION

Slice can be used for a variety of applications, such as live production and monitoring on Teradek's iOS apps, streaming to the internet, or transmitting to a decoder.

Connect and Broadcast using Live:Air Action

1. Connect your iPad to the same network as Slice.

Live:Air Action or Live:Air Solo

Live:Air Action is compatible with iPad Air 1 and newer. Live:Air Solo is compatible with both iPad and iPhone. Both apps are available in the iTunes App Store.



2. Launch the Live:Air Action app.
3. Tap the **Add New Source** button on the Preview Editor's bottom panel, then tap the **Teradek Device** button. Select a device (Fig. 2-7), then tap **Done**.
4. To configure a streaming destination, tap the  button in the upper right-hand corner, enter the **Broadcasting Destinations** page, then navigate to **Manage Destinations>Add a Destination** (Fig. 2-8). Select a platform, then enter your credentials (if applicable).
5. To begin live streaming, tap the '**Go Live!**' button in the upper right-hand corner.

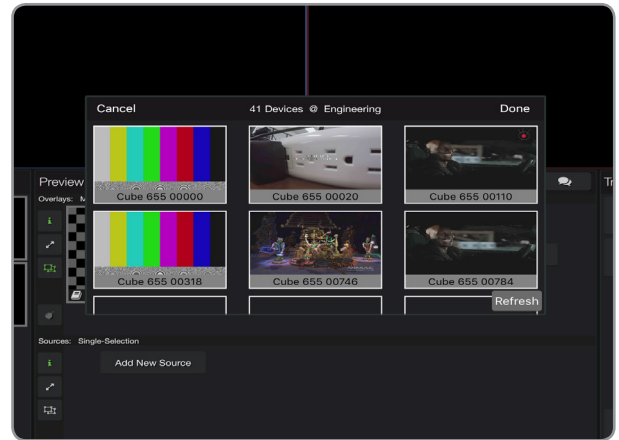


Fig. 2-7

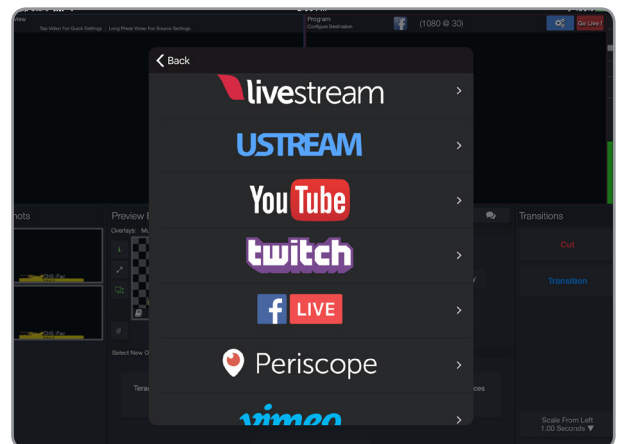


Fig. 2-8

Monitor using VUER

1. Set your stream mode to **Live:Air**.
2. Connect your iPad to the same network as Slice.
3. Launch the VUER app.
4. From the VUER app, tap the **CAMERA** button in the upper left-hand corner (Fig. 2-9), select your device(s), then tap **Done**.



Fig. 2-9

Stream to an Internet Platform

1. From the **Video Stream Output** menu, select **Internet Streaming** as your stream mode (Fig. 2-10).
2. Select a streaming platform provider (Fig. 2-11) and enter your credentials, or follow the on-screen prompts to authorize Slice.
3. Select a channel or event to stream to.
4. After configuring your device, navigate back to the main display.
5. Press ▲ on the control dial (see page 4) or tap the **Broadcast** button to go live.

BROADCAST BUTTON:



Slice is ready to broadcast



Broadcast is in session



Slice is not ready to broadcast

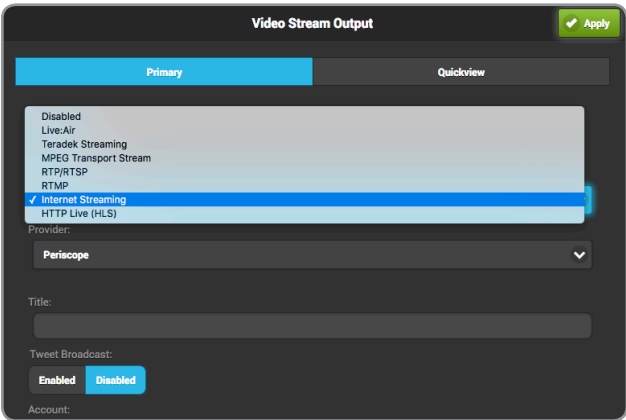


Fig. 2-10

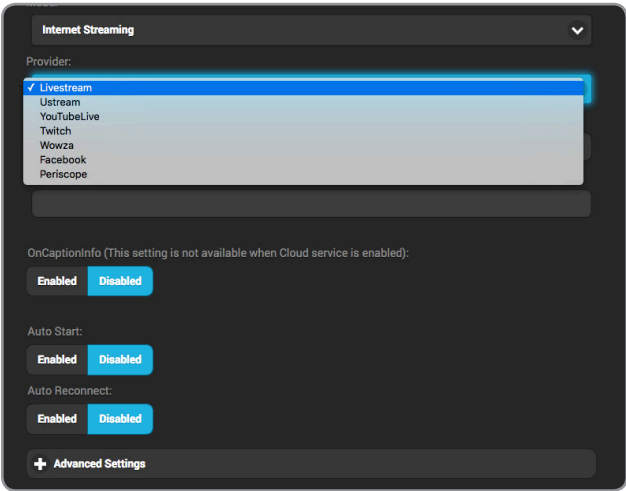


Fig. 2-11

Transmitting to a Decoder

Use the following steps to pair the encoder with a decoder on the same network. To stream to a decoder over the internet, refer to page 17 for instructions on how to set up a Core account.

1. From the encoder's front panel, navigate to the **Streaming Setup** menu, then select **Primary Stream**. If using the web UI, navigate to the **Video Stream Output** menu, then select **Primary** (see page 9).
2. From the decoder's front panel, navigate to the **Decoder Setup** menu. If using the web UI, navigate to the **Video Stream Source** menu (Fig. 2-12).
3. Ensure that both the Slice encoder and decoder are on the same network. Set the streaming mode to **MPEG Transport Stream** (Fig. 2-13).
4. Select TCP or UDP as the protocol, enter the decoder's IP address in the encoder's Host field, then enter the port. Click **Apply**.
5. Match the decoder's protocol and port values to the ones configured on the encoder's interface, then click **Apply**.

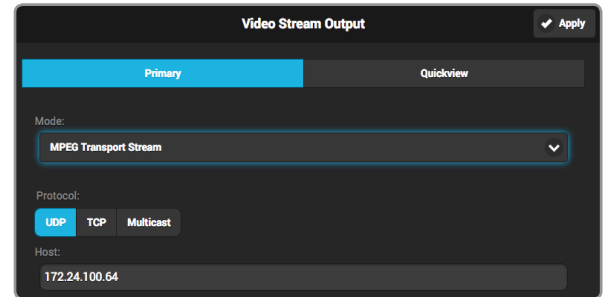


Fig. 2-12

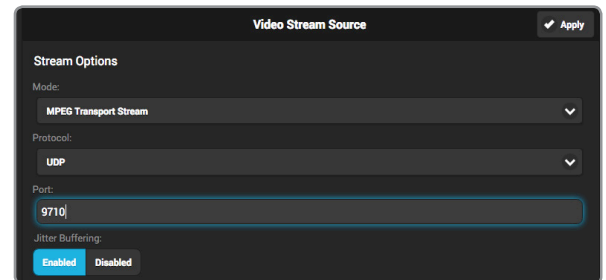


Fig. 2-13

CHOOSE A STREAMING MODE

Slice encodes and streams video using a variety of stream modes. Use the following steps to view, modify, or select a streaming mode to best suit your application.

1. Navigate to the **Streaming Setup** menu using the control dial, then select **Primary Stream**. If using the web UI, navigate to the **Video Stream Output** menu, then select **Primary** (Fig. 2-14).
2. Select one of the following Stream Modes:
 - **LIVE:AIR**
 - **TERADEK STREAM (TDS)**
 - **SRT**
 - **MPEG TRANSPORT STREAM (LICENSE REQUIRED)**
 - **INTERNET STREAMING**
 - **RTMP**
 - **RTP/RTSP**
 - **HLS (HTTP LIVE)**

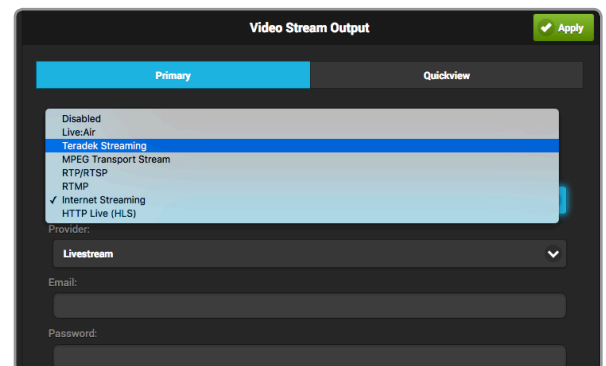


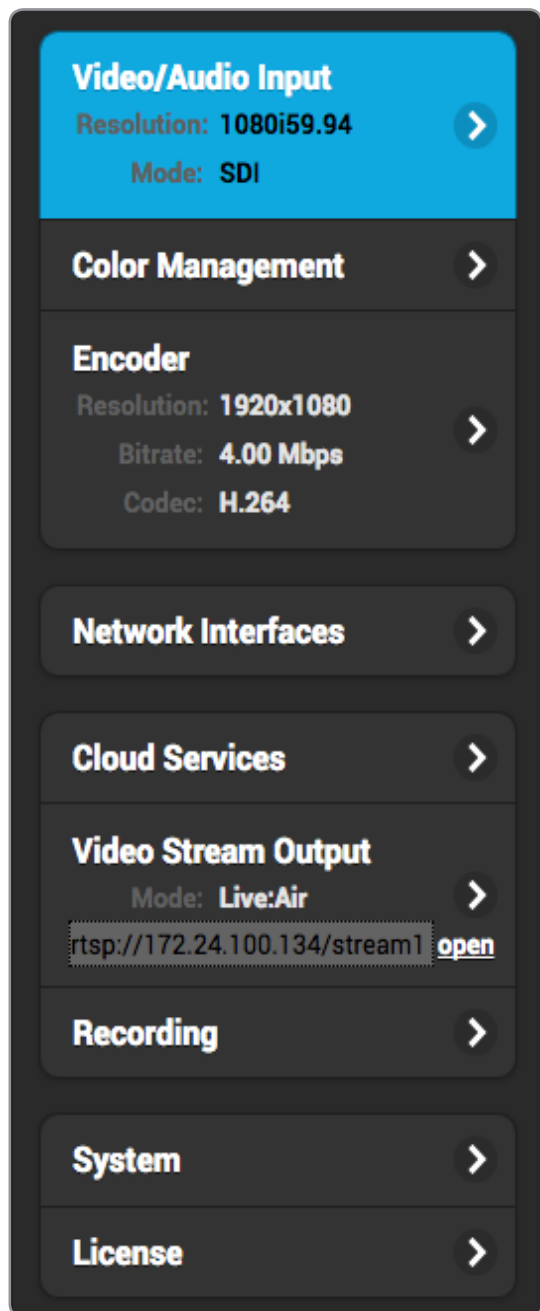
Fig. 2-14

See page 18 for Stream Mode descriptions and applications.

ENCODER CONFIGURATION

NAVIGATING THE SETTINGS MENU

The Settings menu allows you to customize and control Slice's broadcast, audio/video, and network settings. Use the web UI or the front panel interface to access and modify the settings. **NOTE:** This section illustrates the settings as they are available on the web UI. These settings can also be configured from Slice's front panel interface (see page 11).



VIDEO/AUDIO INPUT: Contains options for configuring your video/audio input, Test Pattern, and Deinterlacer preferences.

COLOR MANAGEMENT: Allows you to select 3D LUT and CDL files stored on your computer to apply to your video output.

ENCODER: Adjust the codec, bitrate, resolution, frame rate, and other key features related to your **Primary** or **Quickview** stream. Options include:

- Codec
- Resolution
- Key Frame Interval
- Bitrate
- Frame Rate
- Advanced Options
- Audio Bitrate
- Max Frame Rate
- Overlay

NETWORK INTERFACES: Contains options for configuring Ethernet, Wi-Fi, and USB modem interfaces.

CLOUD SERVICES: Allows you to access and manage Core, Teradek's cloud service management service.

VIDEO STREAM OUTPUT: Select and configure a streaming mode and broadcast destination. Options include:

- Live:Air
- MPEG-TS (license required)
- Internet Streaming
- Teradek Streaming
- RTP/RTSP
- HTTP Live (HLS)
- SRT
- RTMP

RECORDING: Enable or disable recording and select a media storage option.

SYSTEM: Perform factory reset, firmware upgrade, system diagnostics, and other essential functions.

LICENSE: Add, import, or export license files for additional functionality.

FRONT PANEL INTERFACE SETTINGS

STREAMING
SETUP

Primary Stream
Quickview Stream

RECORDING
SETUP

Recording
Media
Trigger

VIDEO SETUP

Input
Resolution
Codec (700 series)
Frame Rate
Max Frame Rate
Bitrate
Deinterlacer
Profile
Overlay

AUDIO SETUP

Analog
Embedded

3D LUT SETUP

Mode
Preset

NETWORK
SETUP

Wired
WiFi
USB Modem

CLOUD
SETUP

None
Sputnik
Core

SYSTEM
SETUP

Check Firmware Update
Factory Reset
Display Settings
Debug Settings

STREAMING SETUP: Configure a streaming mode option and/or broadcast destination for the **Primary** stream, or enable the **Quickview** stream. Primary stream options include:

- Live:Air
- MPEG-TS (license required)
- Internet Streaming
- Teradek Streaming
- RTP/RTSP
- HTTP Live (HLS)
- SRT
- RTMP

RECORDING SETUP: Enable or disable the recording feature, and select a recording trigger and media storage option.

VIDEO SETUP: Adjust the codec (700 series only), bitrate, resolution, frame rate, and other key features related to your stream. Options include:

- Input
- Resolution
- Codec (Slice 700)
- Frame Rate
- Max Frame Rate
- Bitrate
- Deinterlacer
- Profile
- Overlay

AUDIO SETUP: Allows you to configure an audio input source.

3D LUT SETUP: Enable or disable a look preset, or display a split screen view.

NETWORK SETUP: Contains options for configuring Ethernet, Wi-Fi, and USB modem interfaces.

CLOUD SERVICES: Allows you to enable Core, Teradek's cloud service management service.

SYSTEM: Perform factory reset, firmware upgrade, and modify your display settings.

VIDEO/AUDIO INPUT

The Video/Audio Input menu contains several input source configuration and video overlay options.

Video Input Source - Video Input Source lets you select the type of signal providing the video source.

Deinterlacer - The Deinterlacer converts interlaced video into progressive video before streaming, improving the appearance of video that has been scaled down from the original input resolution. In addition to supporting scaled down interlaced video, deinterlacing is also useful when streaming to the internet or mobile devices instead of a decoder.

1080p 50/60 Handling (600 series encoders only) - Select whether to convert your video input to progressive video (Half Framerate) or interlaced video (Interlacer).

Progressive (50/60) Output (700 series encoders only) - With the Deinterlacer enabled, select whether your your stream is transmitted in 1080p60 (Enabled), or 1080p30 (Disabled).

SDI Ancillary Data (600 series encoders only) - Extract Timecode or Closed Captions data from the SDI input and embed it into your stream.

Test Pattern Broadcast a test image when no video is connected. Setting Force to Enabled allows the encoder to stream a test pattern (Fig. 3-1, 3-2) regardless of the video connection.

Audio Input Source - Configure the audio input source. Selecting Embedded (HDMI) allows you to enable or disable L/R audio channels. Selecting Analog allows you to manually adjust the volume. Selecting Disabled produces a silent stream.

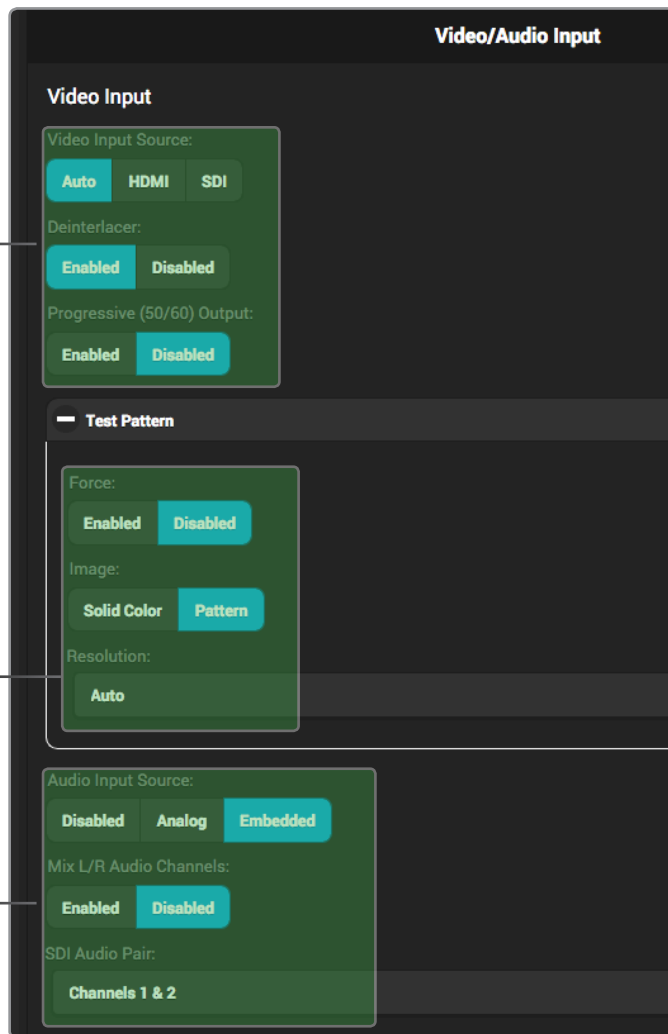


Fig. 3-1: Test pattern - solid color image



Fig. 3-2: Test pattern - pattern image

COLOR MANAGEMENT

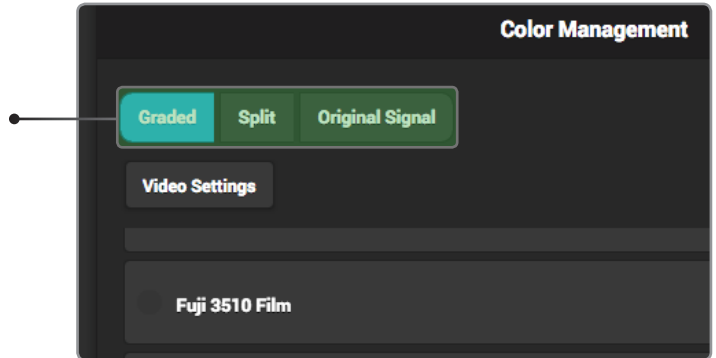
The Color Management menu contains options for adding specific looks from your computer and saving them to Slice's interface. These looks can either be 3D LUT files, CDL preset files, or files composed of both formats. Use this menu or the front panel interface to apply presets to the video output. Up to 32 looks can be stored on the device.

Color Management options

Graded - Enable a look preset

Split - Display a split screen view of the original image and any selected preset

Original Signal - Transmit the input source's original look without a look preset



Creating a Look

Look presets can be created from a 3D LUT and either an ASC CDL file or 1D LUT + Saturation files.

1. Select **Add a new Look**.
2. Enter a name for your look under the name field. If a name is not entered, the look will use the same name as the 3D LUT filename. Names can be up to 32 characters long.
3. Select whether you would like to load a CDL file (Fig. 3-3), or a 1D LUT file + Saturation file, then click **Choose File** to select the file(s) from your computer.
4. Select **Choose File** under the 3D LUT section and pick the 3D LUT file you wish to use.

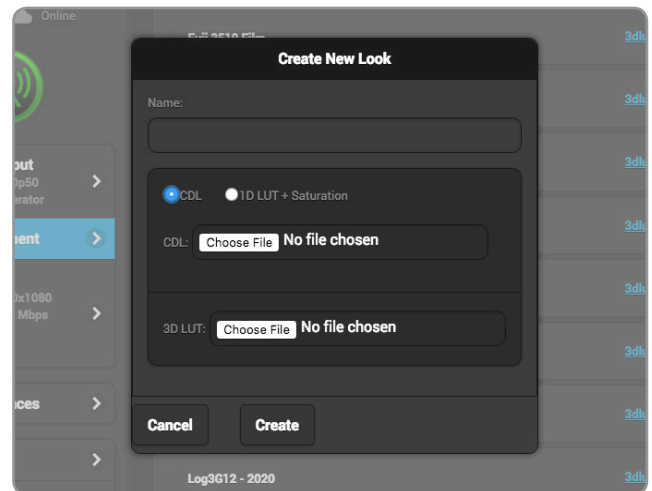


Fig. 3-3

Organizing look presets (Fig. 3-4)

Arrange look presets either by dragging the desired preset up and down on the list or clicking the **↑** or **↓** icons.

Deleting looks

Look presets can be deleted by clicking the **X** button located in the look's listing.

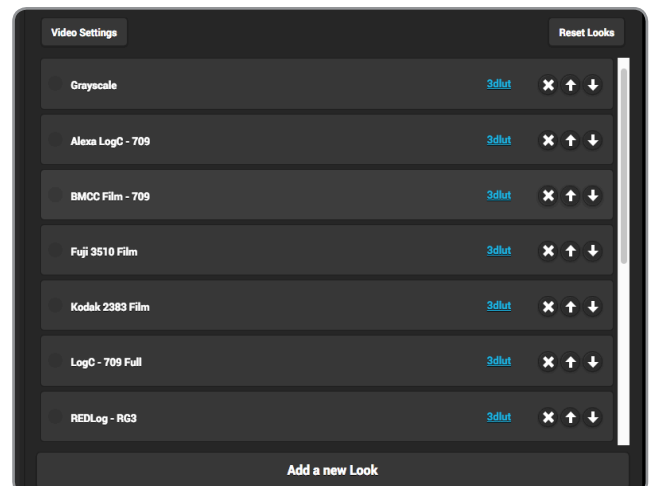


Fig. 3-4

ENCODER

With Slice, you can control various characteristics of the network video stream, such as bitrate, frame rate, and resolution. Use this section to help you adjust the video stream to best suit your streaming environment. The **Primary** stream offers a complete set of options that are fully configurable; a subset of those options are available for the **Quickview** stream.

Encoder Options

Codec (700 series encoders only) - Select either HEVC or H.264 compression format.

Bitrate and Audio Bitrate - Select your stream's target bitrate. Lower bitrates require less bandwidth and may allow for a more stable stream, while higher bitrates offer better video quality, but require more network bandwidth.

Resolution - Scale down the encoder's input resolution or maintain the input's native resolution.

Frame Rate - Set the encoder frame rate to full frame rate or a fraction of the input frame rate.

Max Frame Rate (700 series encoders only) - Manually enter your stream's target frame rate.

Key Frame Interval - Adjust the amount of time between full picture refreshes. By default, the encoder generates one key frame every two seconds.

Advanced Options

Caching* - This value can be left at its default (300 ms) in most cases. Decreasing the value reduces overall latency, but video quality and stability may deteriorate. Increase this value if your video stream stability is affected by a poor or challenging network environment.

Audio Sample Rate* - Set the encoder audio sample rate.

Aspect Ratio* - Select the encoder aspect ratio -- Either Auto, 4:3, or 16:9.

Use Square Pixels* - This feature can be left enabled unless used with a decoder that requires non-square pixels. When enabled, the horizontal resolution is adjusted to set the picture aspect ratio (1:1 pixel aspect ratio). If disabled, the pixel aspect ratio varies to determine the picture aspect ratio.

Compression Profile - High profile encoding typically gives the best image quality at a given bitrate. Main and Baseline profiles utilize slightly different features, and may be more compatible with some decoders.

Frame Structure* - Select Macroblock-adaptive frame-field (MBAFF), frame, or field coding for interlaced video encoding.

SEI Timing* - Enable or disable SEI timing. This should be left enabled unless required for a particular stream application.

Overlay

Mode - Overlay a **title**, imported **images**, or a **scoreboard*** onto your video stream, then adjust the appearance and location of text.

Rate Control*

Mode - Select **Auto**, **Manual**, or **Debug**. Additional options are present when set to Manual or Debug mode.

Static Scene Detection - Prevents bitrate spikes during static-to-dynamic scene transitions when enabled. Improves video quality in mostly static scenes when disabled.

Complexity Detection - Allows the encoder to adapt more quickly to very complex content and scene changes.

Zero Padding - The stream is held at the configured bitrate. Extra data is added to the stream to "pad" the bitrate if it would otherwise drop below the configured value, preventing the bitrate from exceeding the configured value.

Low Bitrate Mode - Select **Auto**, **Enable** or **Disable**.

** 600 series encoders only*

Encoder Settings Considerations

- Encoder settings will vary based on the bandwidth available and the platform used.
- Always select a video bitrate that is less than 70% of the total upload bandwidth available on the Internet connection (i.e. if 5 Mbps is available, set the video to 3.5 Mbps or lower).
- Some platforms (i.e. YouTube) will automatically generate lower quality streams from a high quality input(transcoding), so the highest possible quality can be used. If the streaming platform does not transcode the video, consider that your viewers must have the available download bandwidth to view the stream.

NETWORK INTERFACES

Slice allows you to connect and stream to the Internet by utilizing one of several network interfaces.

Wired

A wired Ethernet connection is typically the most reliable means for connecting to a network, as you don't have to deal with the instability of a Wi-Fi or cellular connection. To configure the Ethernet interface, select **Wired** from the **Network Interfaces** page, then click **Modify** (Fig. 3-5).

IP Address Modes

Dynamic (DHCP) - The connected router generates an IP address, allowing Slice to be automatically configured.

Static - Manually configure the IP address settings if a DHCP server is not available, or if applications require a fixed address.

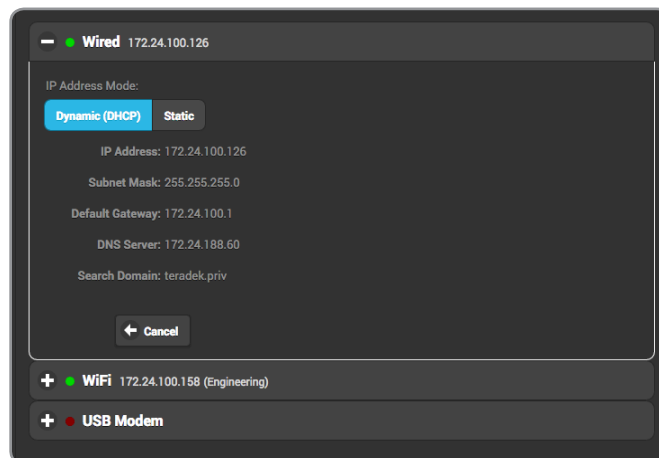


Fig. 3-5

Wireless (Wi-Fi)

Although an Ethernet connection is the most reliable method of connecting to a network, a Wi-Fi connection may be more convenient, especially if an Ethernet connection is unavailable. There are two Wi-Fi modes available; **Access Point (AP)** Mode and **Client (Infrastructure)** Mode (Fig. 3-6).

Wi-Fi Modes

Access Point (AP) Mode - Slice acts as its own dual band access point, allowing you to connect your device directly to Slice's AP network.

Client (Infrastructure) Mode - Slice and your device connect to the same local wireless network. Access Client Mode, then click **Browse** to scan for available networks (Fig. 3-7), or **Saved Networks** to connect to a previously saved network, then enter your credentials.

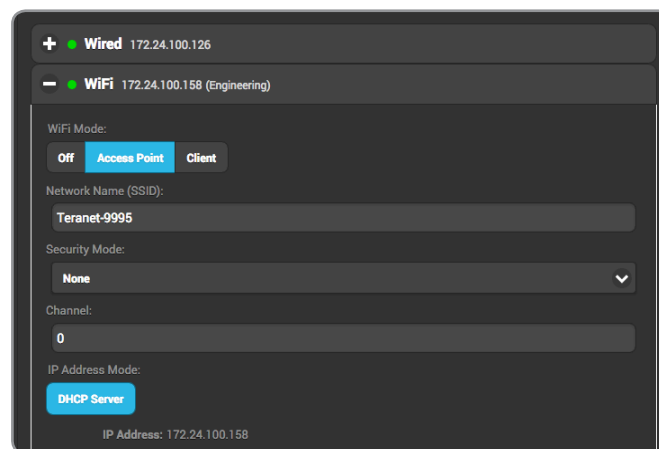


Fig. 3-6

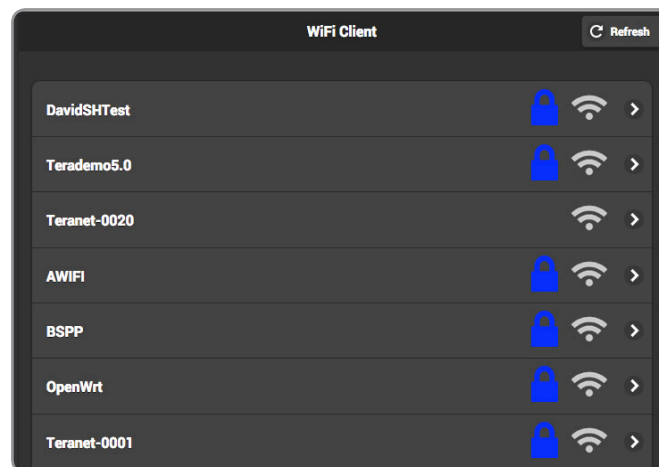


Fig. 3-7

NETWORK INTERFACES (CONT.)

USB Modem

A USB modem allows you to broadcast wherever a cell connection is available. Slice automatically detects and supports many modems using the **Auto** setting. If you need to configure a modem, connect to Slice (see page 17) and insert the USB Modem into one of the two USB ports (Fig. 3-8). From the **Network Interfaces** page, select **USB Modem**, then select a configuration mode.

Configuration Modes

Auto (default): The modem is automatically detected and configured. Slice supports many modems worldwide using this setting.

Preset: Contains configurations for modems that are supported but cannot be auto detected. User credentials are required if the modem account is password protected.

Custom: Allows you to manually configure a modem if it's not automatically detected. Available configuration modes are **GSM**, **CDMA**, **Composite**, and **Ethernet**. Modes will vary based on the modem model and mobile network provider.



Fig. 3-8

In addition to the above configuration modes, you can also select from several supported modem configurations (Fig. 3-9). Visit <http://support.teradek.com> for more information about specific modem models.

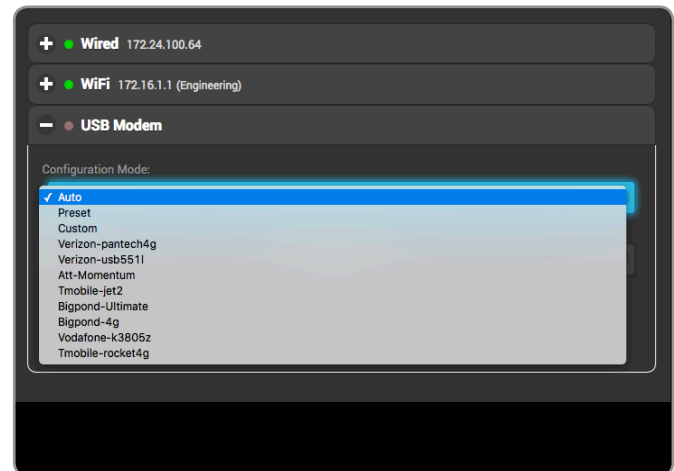


Fig. 3-9

CLOUD SERVICES

Slice encoders and decoders can be remotely accessed, configured, and controlled using Teradek's CORE Cloud management and routing service.

CORE

CORE Cloud Service

CORE is a professional cloud-based solution for managing, archiving, and routing Teradek encoders and decoders.



With CORE, you can:

- Bond multiple Internet connections, increasing your broadcast's bandwidth and reliability
- Remotely control Slice encoders and decoders from anywhere in the world
- Route live video feeds to multiple destinations and streaming platforms using a simple drag-and-drop web UI
- Easily connect encoders and decoders through firewalls
- Record streams from encoders and archive them to the "cloud" in real time

To get started, select CORE, then click **Apply** in the upper right-hand corner:

1. Sign up for CORE, then log in from the web UI (Fig. 3-10).
2. Select an account (company), then click "**Not Configured...**" to select a Sputnik server. If one isn't available, open the CORE dashboard and navigate to **Inventory>Sputniks**, then select **Add Sputnik** to configure a Sputnik server.
3. After selecting a Sputnik (Fig. 3-11), click **Apply** in the upper right-hand corner. Return to the web UI and select Refresh to display the Sputnik server.
4. Once a connection is established, you can configure and control Slice from the CORE dashboard (Fig. 3-12).

Visit <http://core.teradek.com> to learn more and to create an account.

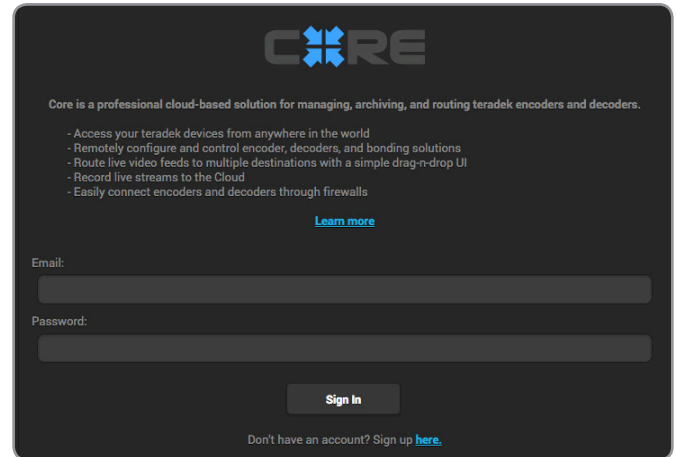


Fig. 3-10

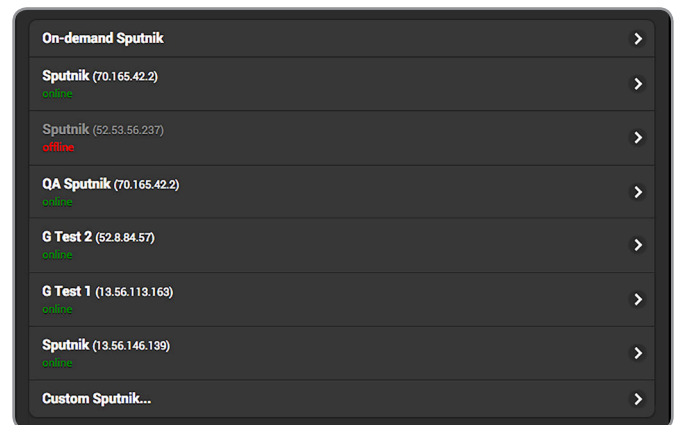


Fig. 3-11

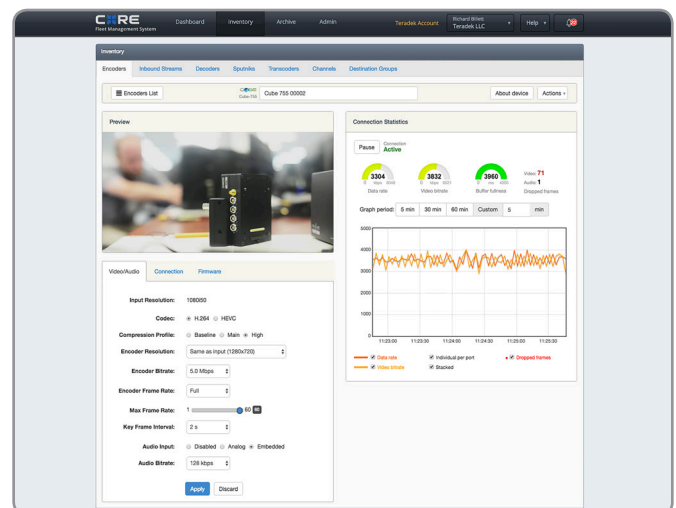


Fig. 3-12

VIDEO STREAM OUTPUT

Depending on the video's destination, you can pick from a variety of different stream modes, each with it's own set of configurable settings described here.

LIVE:AIR

Live:Air Action is a video production suite that can receive feeds from any Slice encoder for real-time video mixing, switching and even transitions. Once you've configured Slice to stream in Live:Air mode, you can manage it from the Live:Air Action (see page 7) or VUER apps (see page 8).

TERADEK STREAMING (TDS)

TDS is specifically optimized for local streaming with minimum latency between Teradek devices. Configure TDS by entering the IP address and destination port of a Teradek decoder.

MPEG TRANSPORT STREAM (MPEG-TS)

To stream over MPEG Transport Stream, you'll first need to purchase the license from Teradek. In MPEG Transport Stream Mode, Slice sends video via a TCP or UDP protocol to a specified unicast or multicast address. TCP is recommended when streaming over the internet, while UDP is recommended when streaming over a local network to avoid the additional network overhead of TCP. Select the protocol best suited for your application needs, and ensure the Slice encoder is configured to stream to the Slice decoder's corresponding IP address and port.

SRT

SRT is used to transmit high quality, low-latency video over unreliable networks. SRT has two Server modes: **Enabled** or **Disabled**. When server mode is **Enabled** the encoder waits for one or more clients to connect and pull the stream from it. When server mode is **Disabled**, the encoder pushes video to a single destination IP address on a specific port. For either mode, a port number is needed, and a passphrase (if one is set). For a direct connection (Server mode disabled), enter the correct destination IP address.

CONFIGURABLE SETTINGS

- Advanced Settings
 - *Buffer* - *Max Clients*

-
- Host
 - Port
 - Advanced Settings
 - *Mode** - *Target**
 - *Buffer* - *Packet Size*
 - *Protocol* - *DSCP*

-
- Protocol (*UDP/TCP/Multicast*)
 - Host
 - Port
 - MPEG-TS Server Mode
 - Advanced Settings
 - *Audio Codec* - *PSI Period*
 - *Packet Size* - *DSCP*
 - *PCR Period*
 - Constant Bitrate
 - Adaptive Bitrate (*TCP only*)
 - Transport Stream Info

-
- Server Mode
 - Passphrase
 - Encryption Key Size
 - Latency
 - Adaptive Bitrate

* 600 series encoders only

RTP/RTSP

Slice is configured to stream via RTSP by default. RTSP is used for local streaming to computers and Slice decoders. When RTP/RTSP mode is enabled, the decoder communicates whether to use the TCP or UDP protocol for the stream. Ensure you have the correct port and stream name (*stream1* is the default). To view your stream on VLC, copy the link displayed under Video Stream Output panel in the Settings Menu. To view an RTSP stream, launch VLC and navigate to **File>Open Network**. Paste the link in the URL field, then click **Open**.

RTMP

RTMP mode allows Slice to stream to other video platforms, CDNs, and streaming servers that are not one of the available Internet Streaming platforms (see below). RTMP is supported by most video streaming platforms, but you must first obtain a URL and stream key/name from the service you choose to stream to. Log into your account's settings and retrieve the URL and stream key/name.

HTTP LIVE (HLS)

HTTP Live streaming (HLS) is supported natively by iOS-based devices and desktop computers (Mac OS X). Due to unreliable network conditions, local streaming to a browser or iOS device will have a higher degree of latency. For low latency streaming to iOS devices, use Live:Air mode with Teradek's Live:Air Action, VUER, or TeraView apps.

RTP PUSH (600 series encoders only)

RTP Push streaming allows you to stream to a server or client, and generates an SDP file containing the stream description. SDP files can be stored on a streaming server, or opened by video players like VLC. The RTP Push license is provided by request, free of charge

CONFIGURABLE SETTINGS

- Stream
- Port
- RTSP Authentication
- Adaptive Bitrate*
- Multicast*
- Advanced Settings*
 - *Max Clients* - *Audio Only*
 - *SSRC* - *Enable RTCP*
 - *RTP over HTTP*

- RTMP Server URL
- Stream
- OnCaptionInfo (*700 series only*)
- Auto Start
- Auto Reconnect
- Advanced Settings
 - *Backup URL* - *Password*
 - *User Agent* - *DSCP*
 - *Username*

- Profile*

- IP Address
- Video Port
- Streaming Interface
- TTL

* 600 series encoders only

VIDEO STREAM OUTPUT (CONT.)

INTERNET STREAMING

Slice features native integration with some of the most popular streaming platforms. Select a provider (platform), then enter your credentials and/or destination information.

Integrated Platforms

Livestream (pg. 20)

Ustream (pg. 21)

YouTube Live (pg. 22)

Twitch (pg. 23)

Wowza (pg. 23)

Facebook (pg. 24)

Periscope (pg. 25)

CONFIGURABLE SETTINGS

- Provider
- Username
- Password
- OnCaptionInfo
- Auto Start
- Auto reconnect
- Advanced Settings
 - DSCP

Livestream:

1. Select **Livestream** and enter your credentials (Fig. 3-13).
2. Select the event you wish to stream to (Fig. 3-14), or create a new event at <https://livestream.com>.
3. After selecting an event, you will be redirected to the **Video Stream Output** page. Select **Apply** on the upper right corner.
4. Tap the **Broadcast** button to go live, then select whether or not to notify your followers (Fig. 3-15).

Notify Followers

If broadcasting from Slice's web UI, you can notify your account's followers by toggling the '**Notify Followers**' switch to **On** before tapping the broadcast button.

5. When ending the broadcast, select whether to **Post**, **Save**, or **Delete** the video from the event (Fig. 3-16).

Post, Save, or Delete

During your broadcast, you can select whether to **Post** the recorded video immediately, **Save** it for posting later, or **Delete** it from the event.

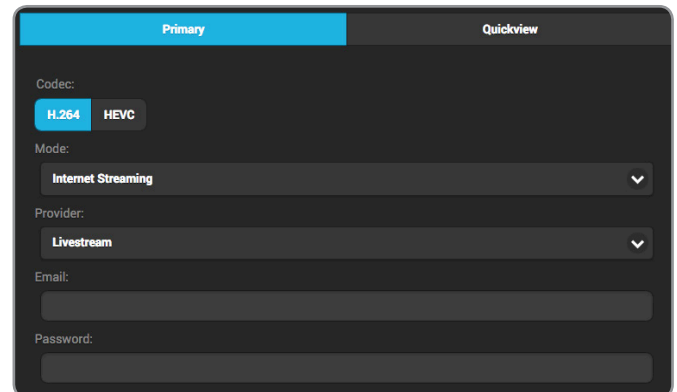


Fig. 3-13

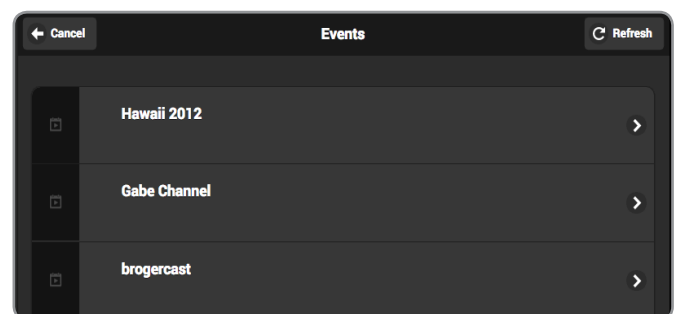


Fig. 3-14

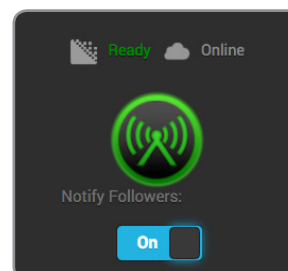


Fig. 3-15

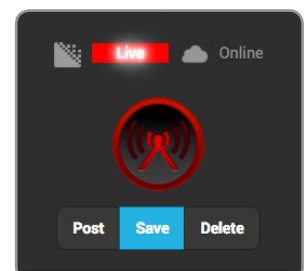


Fig. 3-16

Ustream:

1. Select **Ustream**, enter your credentials, then select **Apply** in the upper-right corner (Fig. 3-17).
2. Select an available channel to stream to from the Channels List (Fig. 3-18), or create a new channel at <https://www.ustream.tv>.
3. After selecting a channel, you will be redirected to the **Video Stream Output** page. Tap the **Broadcast** button to go live.

Auto Record and recorded files

Depending on your Ustream account level, broadcasts to your channel may be automatically recorded for viewing later. Enabling the '**Auto-Record**' setting (Fig. 3-19) triggers these recordings. Access permissions for the recorded files can be configured on your Ustream account.

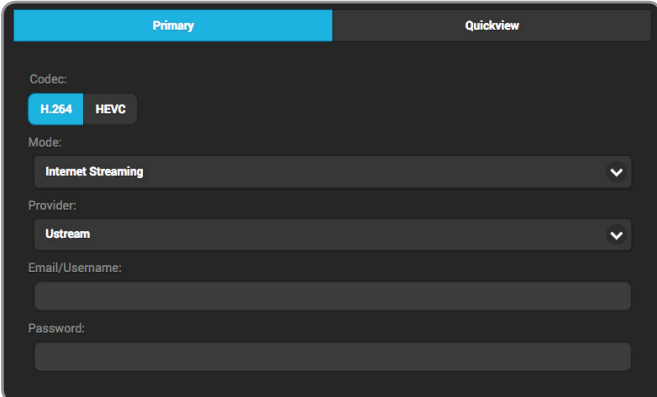
The image shows a mobile application screen titled 'Primary' with a 'Quickview' tab. It contains a 'Codec' section with 'H.264' selected and 'HEVC' as an option. Below is a 'Mode' dropdown menu set to 'Internet Streaming'. The 'Provider' dropdown menu is set to 'Ustream'. There are input fields for 'Email/Username' and 'Password'.

Fig. 3-17

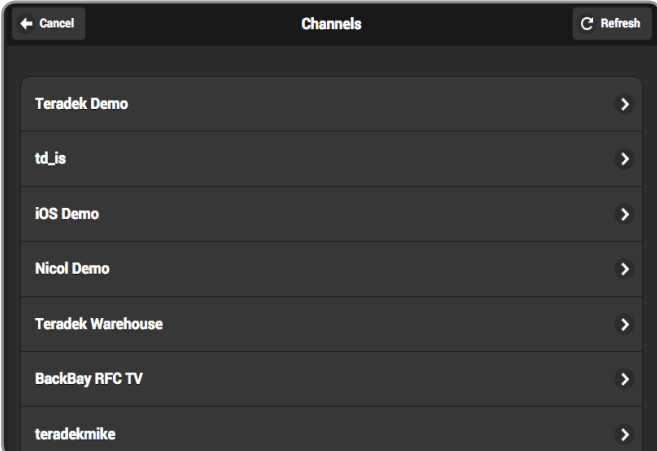
The image shows a mobile application screen titled 'Channels' with 'Cancel' and 'Refresh' buttons. It displays a list of channels with right-pointing chevrons: 'Teradek Demo', 'td_js', 'iOS Demo', 'Nicol Demo', 'Teradek Warehouse', 'BackBay RFC TV', and 'teradekmike'.

Fig. 3-18

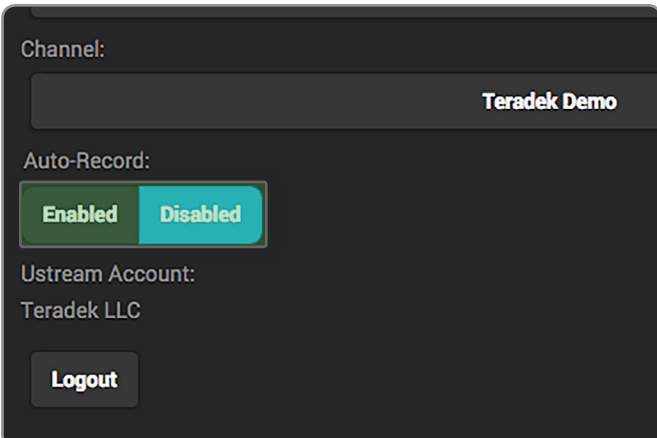
The image shows a mobile application screen for channel settings. It has a 'Channel:' label and a dropdown menu showing 'Teradek Demo'. Below is an 'Auto-Record:' section with 'Enabled' and 'Disabled' toggle buttons. The 'Ustream Account:' is listed as 'Teradek LLC'. At the bottom is a 'Logout' button.

Fig. 3-19

YouTube Live:

1. Select **YouTube Live**, then click **Authorize Your Device** (Fig. 3-20).
2. Copy the authentication code generated for your device, go to <http://www.google.com/device>, then enter your credentials (Fig. 3-21). Enter the code, then allow Slice to access your account.
3. Select an event, create a new event, or select "Stream Now".

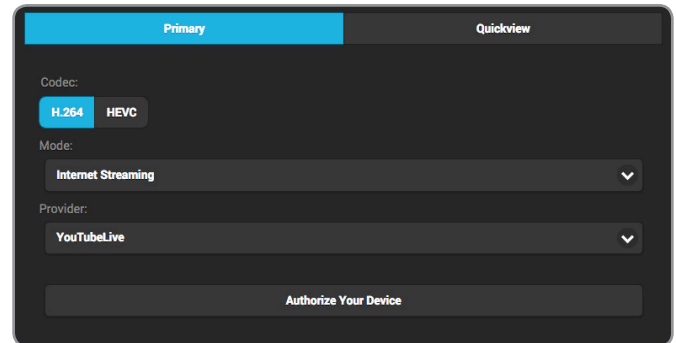


Fig. 3-20

Two types of Broadcast destinations

- a. The 'Stream Now' destination is a continuously accessible public channel with a permanent URL. Streaming to the 'Stream Now' page is as simple as start and stop.
- b. 'Event' destinations can be created, scheduled, started, and stopped. Every event comes with its own page URL, and once an event is finished it cannot be started again. After finishing an event, it is saved on its own page. Selecting an Event destination allows you to preview your broadcast.

4. After selecting a destination, begin your broadcast by selecting **Go Live**. If you selected an Event, you will have the option to **Preview** your broadcast (Fig. 3-22).
5. When ending the broadcast, select either **Stop** or **Complete Event** (Fig. 3-23).

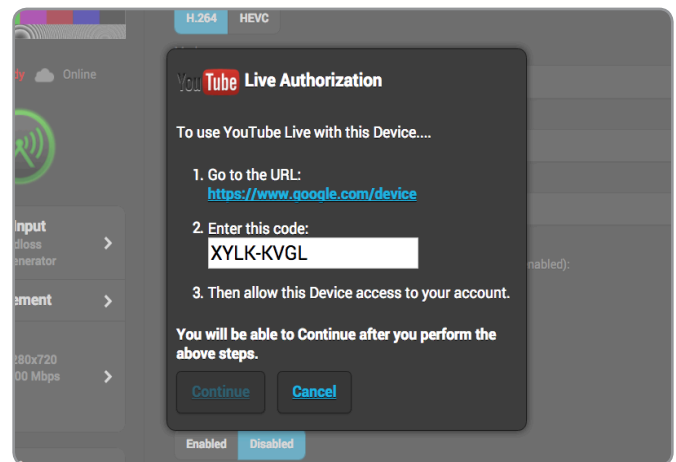


Fig. 3-21

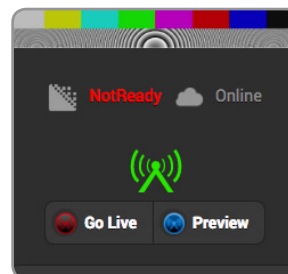


Fig. 3-22

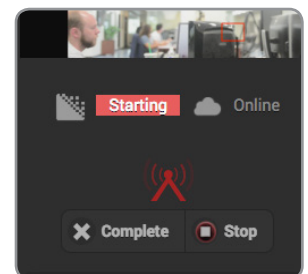


Fig. 3-23

Four key stages in the life cycle of a broadcast

To **start** Broadcast:

Preview - Preview the video you intend to broadcast. Videos in preview state are visible on the event's Live Control Room page.

Go Live - Makes your event visible on its own channel page. An event can not return to preview once it has gone live.

To **stop** Broadcast:

Stopped - Broadcasts can be stopped and restarted at any time while the event is in the preview or Live state.

Complete Event - You will no longer be able to broadcast to the event, but it will be saved on the event page for viewing.

Twitch:

1. Select **Twitch**, enter your credentials (Fig. 3-24), then select **Apply** on the upper-right corner.
2. To begin live streaming, tap the **Broadcast** button.

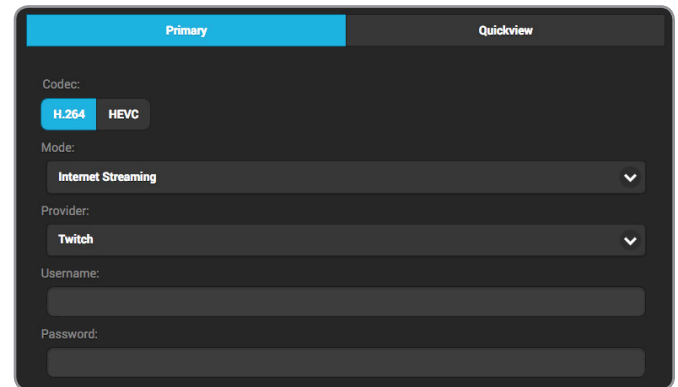
The screenshot shows the 'Primary' tab of a configuration interface. At the top, there are two tabs: 'Primary' (selected) and 'Quickview'. Below the tabs, the 'Codec' section has two buttons: 'H.264' (selected) and 'HEVC'. The 'Mode' section has a dropdown menu with 'Internet Streaming' selected. The 'Provider' section has a dropdown menu with 'Twitch' selected. Below these are two text input fields for 'Username' and 'Password'. At the top right, there is an 'Apply' button.

Fig. 3-24

Wowza:

1. Select **Wowza**.

Server Mode (Fig. 3-25):

- a) Enter the host server URL and stream name provided by the streaming service.
- b) Enter your credentials, select **Apply**, then return to the **Home** screen.

Cloud Mode (Fig. 3-26):

- a) Enter the connection code
- b) Enter your credentials, select **Apply**, then return to the **Home** screen.

2. Tap the **Broadcast** button to go live.

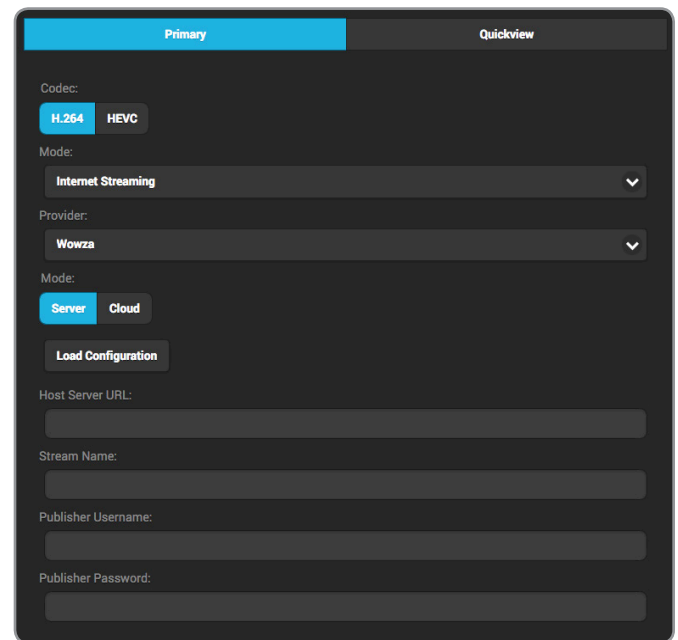
The screenshot shows the 'Primary' tab of a configuration interface. At the top, there are two tabs: 'Primary' (selected) and 'Quickview'. Below the tabs, the 'Codec' section has two buttons: 'H.264' (selected) and 'HEVC'. The 'Mode' section has a dropdown menu with 'Internet Streaming' selected. The 'Provider' section has a dropdown menu with 'Wowza' selected. Below these are two buttons: 'Server' (selected) and 'Cloud'. A 'Load Configuration' button is also present. Below these are four text input fields: 'Host Server URL', 'Stream Name', 'Publisher Username', and 'Publisher Password'. At the top right, there is an 'Apply' button.

Fig. 3-25

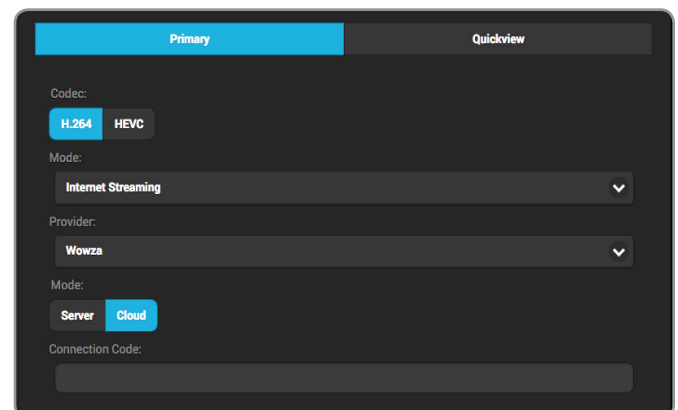
The screenshot shows the 'Primary' tab of a configuration interface. At the top, there are two tabs: 'Primary' (selected) and 'Quickview'. Below the tabs, the 'Codec' section has two buttons: 'H.264' (selected) and 'HEVC'. The 'Mode' section has a dropdown menu with 'Internet Streaming' selected. The 'Provider' section has a dropdown menu with 'Wowza' selected. Below these are two buttons: 'Server' and 'Cloud' (selected). A 'Connection Code' text input field is present. At the top right, there is an 'Apply' button.

Fig. 3-26

Facebook:

1. Select **Facebook**, then click **Authorize Your Device** (Fig. 3-27).
2. Copy the authentication code generated for your device, go to <https://www.facebook.com/device>, then enter your credentials (Fig. 3-28).
3. Enter the authentication code, then allow Slice to access your account.
4. Select whether to stream to your timeline or to a specific page, group, or event (Fig. 3-29), then click **Apply** on the upper left corner.

Streaming Destinations

Timeline – Broadcast the video to your personal timeline or “wall.”

Page – Broadcast the video to a page you manage.

Group – Broadcast the video to a group you manage.

Event – Broadcast the video to an event you created.

Scheduled Broadcasts

You can schedule a broadcast to post at a specific date and time. After creating a post on the page’s timeline, click the  next to **Publish**, select **Schedule**, then enter the date and time you want your post to be broadcast.

Privacy Settings

- Your Timeline privacy setting will be used if a less restrictive privacy option is chosen. (e.g. your timeline is set to Friends, but you set Slice to ‘All.’ The post will be visible to friends).
- Posts to Facebook pages are always public.

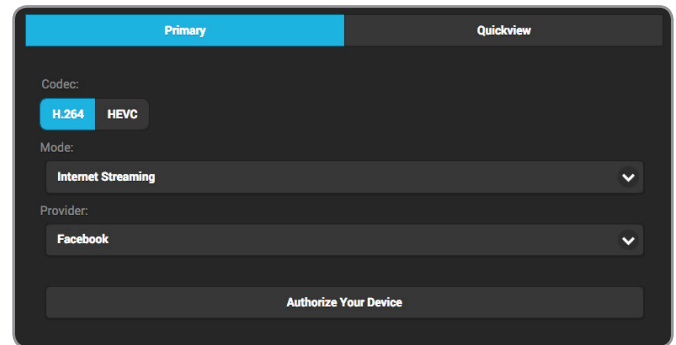


Fig. 3-27

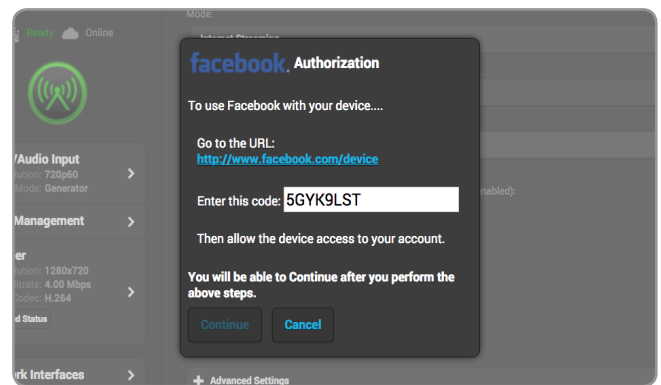


Fig. 3-28

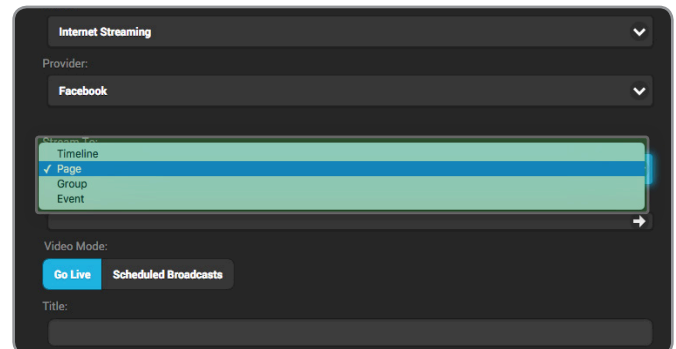


Fig. 3-29

4. Tap the **Broadcast** button to go live (Fig. 3-30).

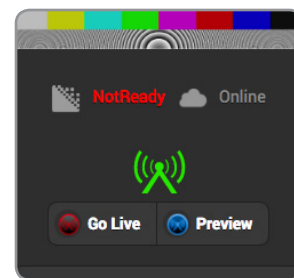


Fig. 3-30

Periscope:

1. Select **Periscope**, then click **Authorize Your Device** (Fig. 3-31).
2. Copy the authentication code generated for your device, go to <https://www.periscope.tv/auth>, then enter your credentials (Fig. 3-32).
3. Enter the authentication code, then allow Slice to access your account.

Persicope and Twitter

Periscope works in conjunction with Twitter. In order to use Persicope, you must ceate an account with your Twitter credentials, or by using your mobile phone number.

4. To post a link to your live stream on Twitter, enable the **Tweet Broadcast** feature.
5. Tap the **Broadcast** button to begin streaming (Fig. 3-33).

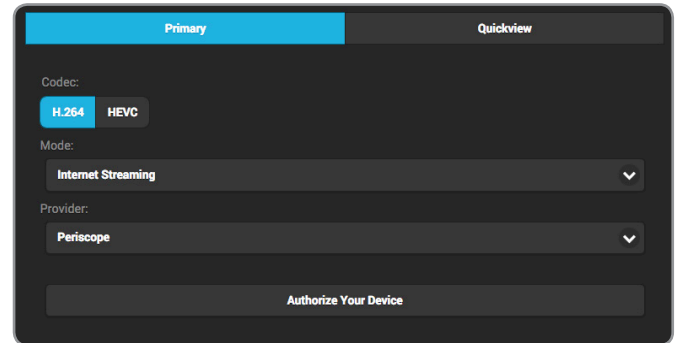


Fig. 3-31

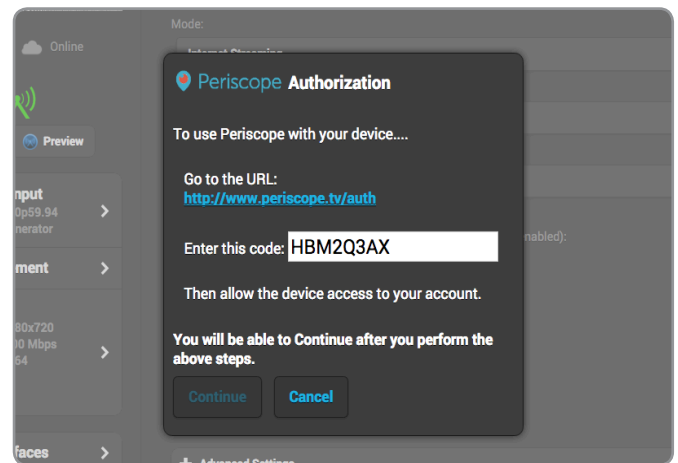


Fig. 3-32

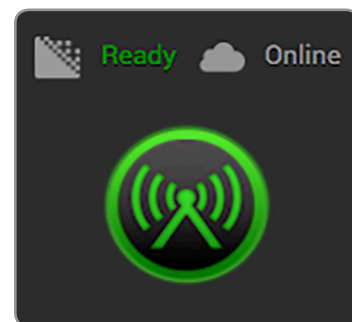


Fig. 3-33

RECORDING

Slice allows you to record your broadcasts directly to an attached USB or network file system (NFS). Each recording is saved with the same resolution and bit rate set on the device.

Enable/Disable Recording - Turns the recording feature on or off.

Media - Select a configured device location to store your recorded footage to.

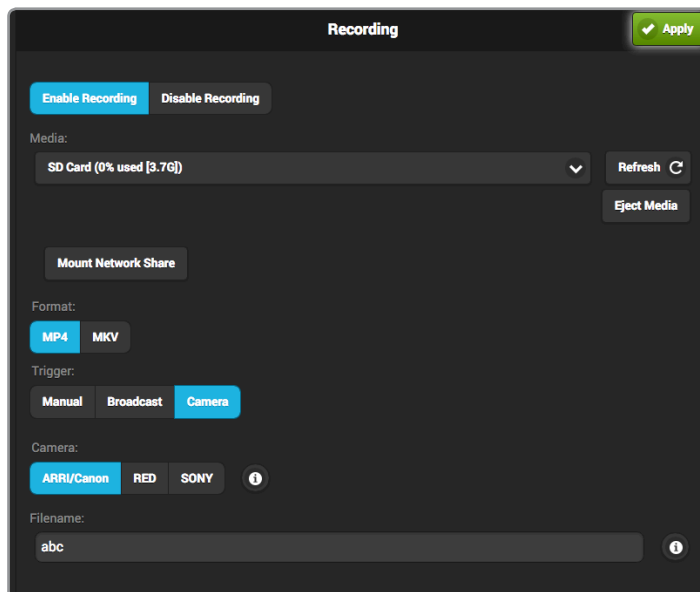
Mount Network Share - Configure an NFS location to store your recorded footage to.

Format - Select a format for your recording.

Trigger - Select how recording is initiated:

- **Manual** - Recording function is controlled manually from either the web UI or the Control dial on the device
- **Broadcast** - Recording function is triggered when you start the broadcast.
- **Camera (600 series encoders only)** - Slice will start recording the stream when a supported camera starts recording.

Filename - Select how the recording is identified.



To begin recording:

1. Insert a compatible USB drive into Slice (Fig. 3-34), then enable recording.
2. Select a **Trigger**, or tap **Start Recording** below the Broadcast button.

To configure and record to an NFS:

1. Select **Mount Network Share**.
2. Enter the host address and port, then click Mount.



Fig. 3-34

Recording Considerations

- Media should be formatted using FAT32.
- Maximum size for each file is 4GB
- New recordings are automatically started after the file size limit is reached.

SYSTEM

Essential system functions, including factory reset and firmware upgrade, can be performed from the **System** menu in the web UI (**System Setup** from the front panel interface).

Factory Reset

Access the **System** menu and select **Factory Reset** (Fig. 3-35). Restore Slice to its original settings by selecting an option (**All**, **Broadcast**, or **Network**) to reset.

Firmware Upgrade

Upgrade Slice's firmware to the latest version.

Perform a Firmware Upgrade from front panel

After turning on Slice, navigate to the System Setup menu to check for new firmware. If an update is available, simply follow the prompts to complete the firmware update.

Perform a Firmware Upgrade from web UI (Fig. 3-36)

- Download the latest firmware version from teradek.com.
- Select **Firmware Upgrade**.
- Upload the file from your computer and select **Upgrade**.

Password

To add, change, or delete your password, select **Password** from the system menu on the web UI, then follow the prompts.

System Time

Select **Manual** mode to manually input the time and date, or select **NTP** to automatically synchronize the time and date.

Reboot

Restart your Slice device by selecting **Reboot**, or simply turn Slice off and on again.

User Settings

Import or export a saved user setting configuration.

System Diagnostics

Generate a diagnostic report specific to your device. Diagnostic reports can be used by Teradek's support team to assist during troubleshooting.

Device Recovery (600 series encoders only)

Recover your previous settings and firmware.

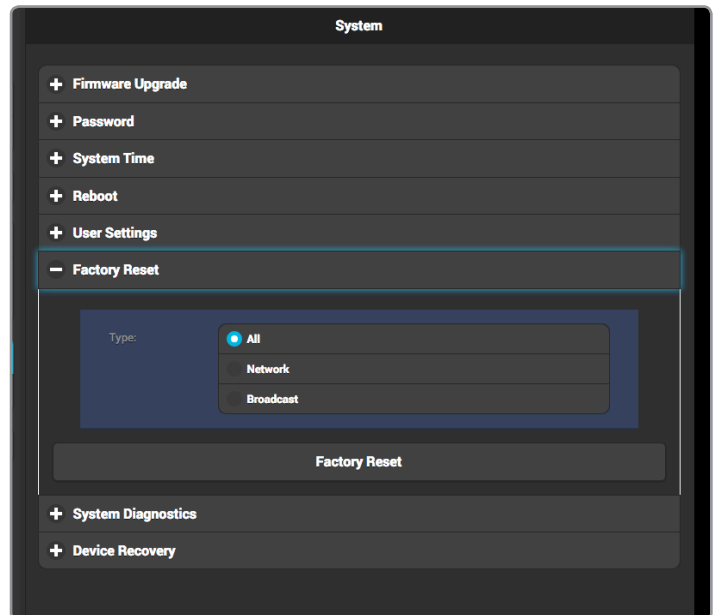


Fig. 3-35 Factory Reset

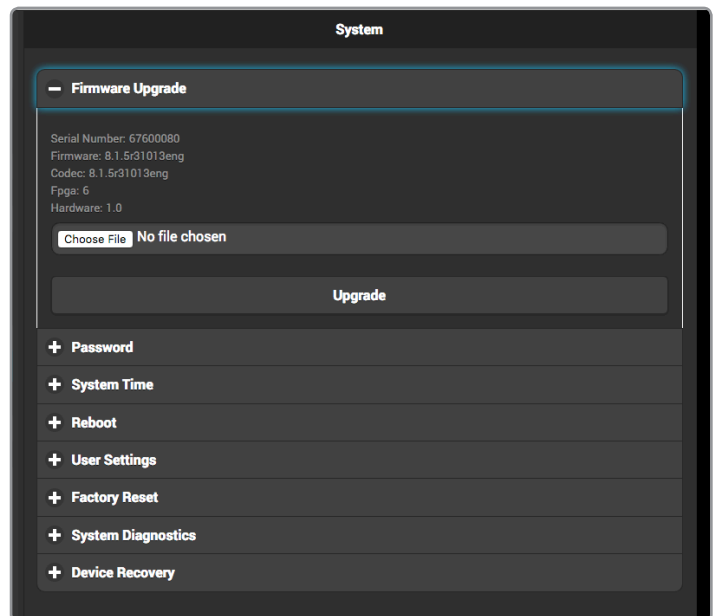


Fig. 3-36 Firmware Upgrade

LICENSES

Slice supports a variety of features that are activatable on a per-device basis. After purchasing a license, you will receive an email from Teradek containing the license key.

To add a License:

1. Copy the license key from the email, then paste it on to the **License Text** field (Fig. 3-37).
2. Click **Add Licenses**.
3. To activate the license, you will be prompted to reboot Slice. Navigate to the **System** menu and select **Reboot**.

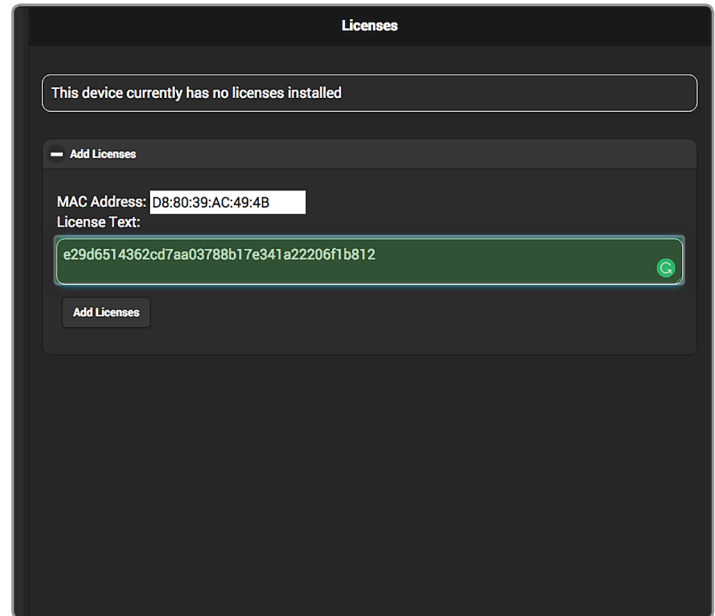
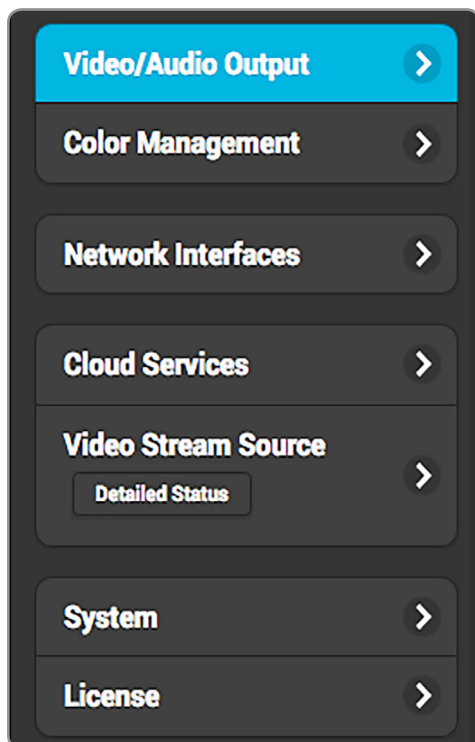


Fig 3-37

DECODER CONFIGURATION

NAVIGATING THE SETTINGS MENU

The Decoder Settings menu allows you to customize and control Slice's audio/video output, and network settings. Use the web UI or the front panel interface to access the Decoder Settings menu. **NOTE:** This section illustrates the settings as they are available on the web UI. These settings can also be configured from Slice's front panel interface (see below).



VIDEO/AUDIO OUTPUT: Contains options for configuring your video/audio output and Test Pattern preferences.

COLOR MANAGEMENT: Select 3D LUT and CDL files stored on your computer to apply to your video output.

NETWORK INTERFACES: Contains options for configuring Ethernet, Wi-Fi, and USB modem interfaces.

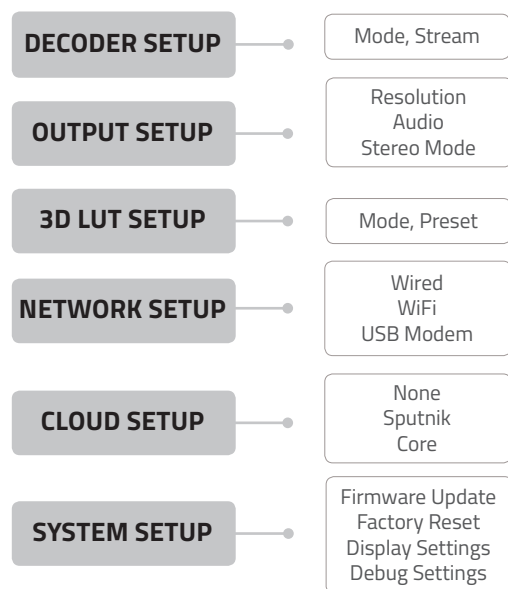
CLOUD SERVICES: Allows you to access and manage Core, Teradek's cloud service management service

VIDEO STREAM SOURCE: Allows you to select and configure a streaming mode and its characteristics.

SYSTEM: Perform factory reset, firmware upgrade, system diagnostics, and other essential system functions.

LICENSE: Add, import, or export license files for additional functionality.

FRONT PANEL INTERFACE SETTINGS



DECODER SETUP: Configure the video stream source and streaming mode option.

OUTPUT SETUP: Allows you to configure the video and audio output.

3D LUT SETUP: Apply specific looks stored on Slice to apply to the video output.

NETWORK SETUP: Contains options for configuring Ethernet, Wi-Fi, and USB modem interfaces.

CLOUD SETUP: Allows you to access and manage Core

SYSTEM SETUP: Perform factory reset, firmware upgrade, and configure your display and debug settings.

VIDEO/AUDIO OUTPUT

The Video/Audio Output menu contains several output source configuration and test pattern options.

Output Resolution

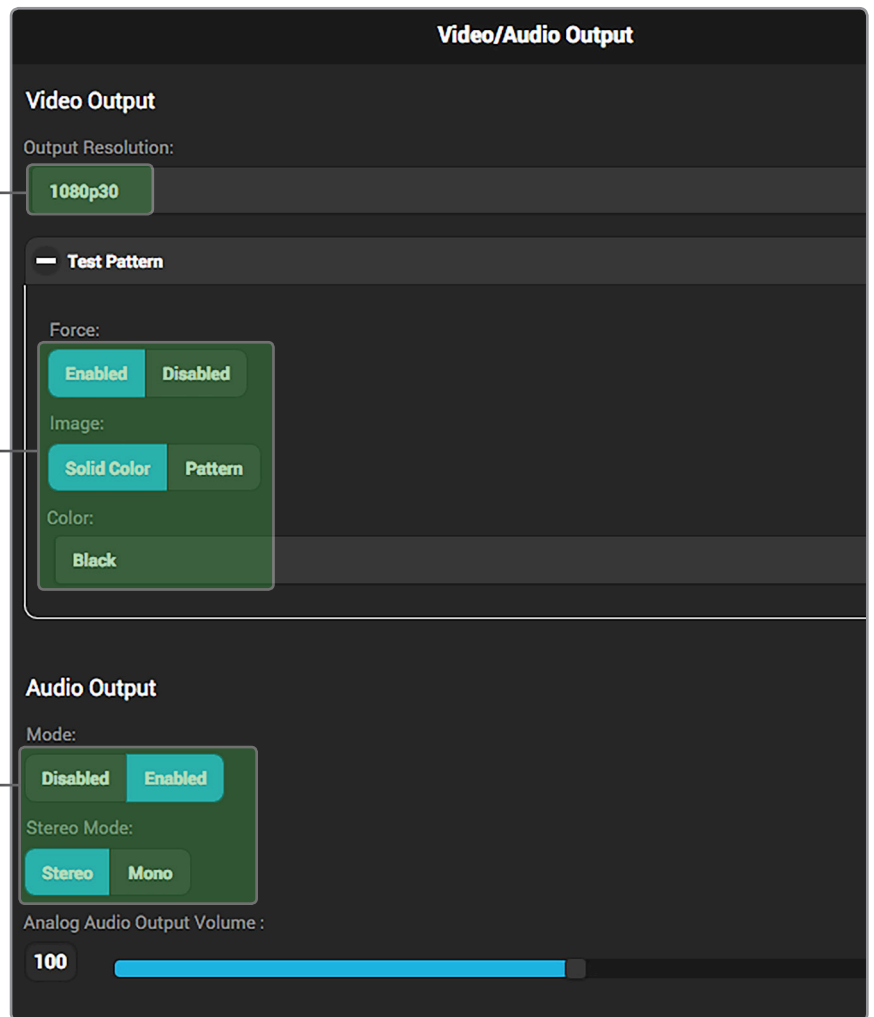
Use this option to configure the video output format. The output resolution can be set independently of the video stream resolution.

Test Pattern

The Test Pattern option allows you to output a test image when no video is connected. Setting Force to Enabled causes the decoder to output a test pattern (Fig. 4-1, Fig. 4-2), regardless of the video connection.

Audio Output

Configure the audio output. Audio can be enabled or disabled, and the output can be set to **Mono** or **Stereo**. When set to Mono, channel 1 (left) audio is output on channels 1 and 2 (left/right).



COLOR MANAGEMENT

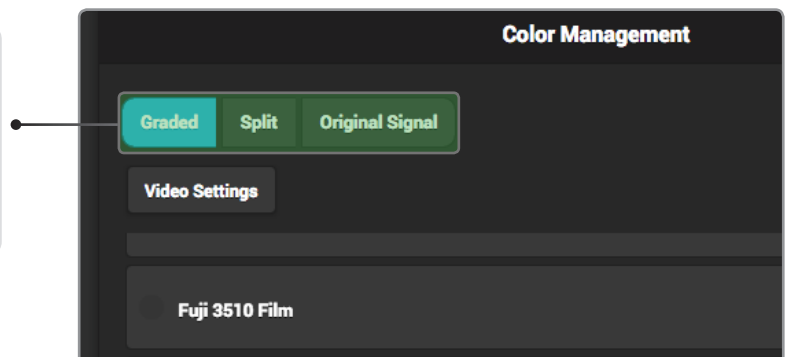
The Color Management menu contains options for adding specific looks from your computer and saving them to Slice's interface. These looks can either be 3D LUT files, CDL preset files, or files composed of both formats. Use this menu or the front panel interface to apply presets to the video output. Up to 32 looks can be stored on the device.

Color Management options

Graded - Enable a look preset.

Split - Display a split screen view of the original image and any selected preset.

Original Signal - Transmit the input source's original look without a look preset.



COLOR MANAGEMENT (CONT.)

Creating a Look:

Look presets can be created from a 3D LUT and either an ASC CDL file or 1D LUT + Saturation files.

1. Select **Add a new Look**.
2. Enter a name for your look under the name field. If a name is not entered, the look will use the same name as the 3D LUT filename. Names can be up to 32 characters long.
3. Select whether you would like to load a CDL file (Fig. 4-1), or a 1D LUT file + Saturation file, then click **Choose File** to select the file(s) from your computer.
4. Select **Choose File** under the 3D LUT section and pick the 3D LUT file you wish to use.

Organizing look presets (Fig. 4-2)

Arrange look presets either by dragging the desired preset up and down on the list or clicking the  or  icons.

Deleting looks

Look presets can be deleted by clicking the **X** button located in the look's listing.

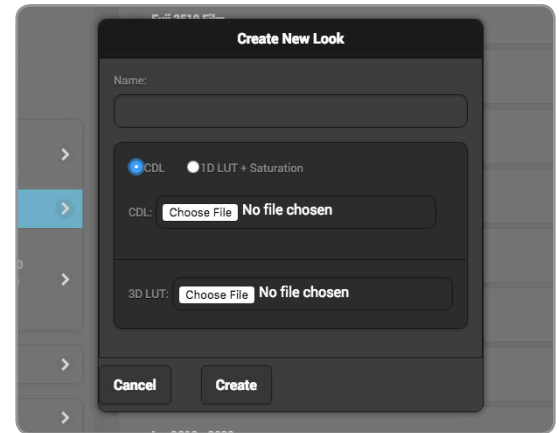


Fig. 4-1

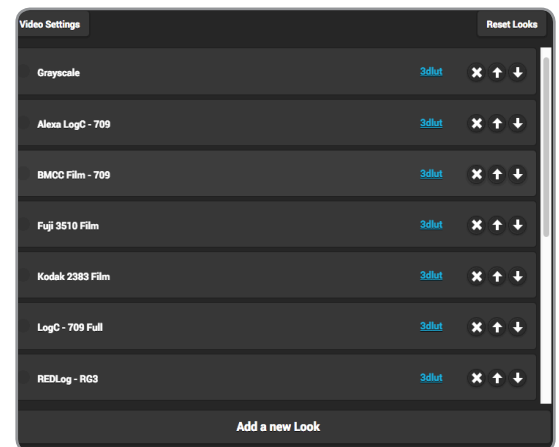


Fig. 4-2

NETWORK INTERFACES

Slice allows you to connect and stream to the Internet by utilizing one of several network interfaces.

Wired

A wired Ethernet connection is typically the most reliable means for connecting to a network, as you don't have to deal with the instability of a Wi-Fi or cellular connection. To configure the Ethernet interface, select Wired from the Network Interfaces page, then click Modify (Fig. 4-3).

IP Address Modes

Dynamic (DHCP) - The connected router generates an IP address, allowing Slice to be automatically configured.

Static - Manually configure the IP address settings if a DHCP server is not available, or if applications require fixed address.

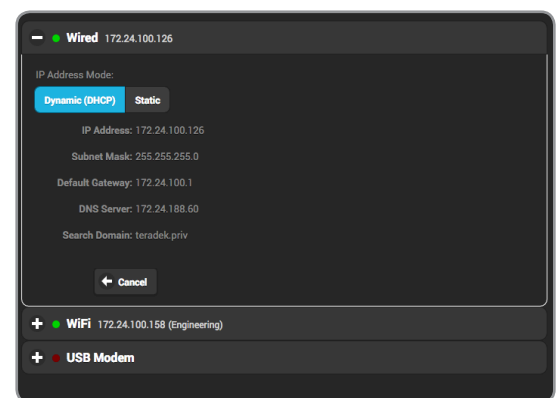


Fig. 4-3

Wireless (Wi-Fi)

Although an Ethernet connection is the most reliable method of connecting to a network, a Wi-Fi connection may be more convenient, especially if an Ethernet connection is unavailable. There are two Wi-Fi modes available (Fig. 4-4); **Access Point (AP)** Mode and **Client (Infrastructure)** Mode.

Wi-Fi Modes

Access Point (AP) Mode - Slice acts as its own dual band access point, allowing you to connect your device directly to Slice's AP network.

Client (Infrastructure) Mode - Slice and your device connect to the same local wireless network. Access Client Mode, then click **Browse** to scan for available networks (Fig. 4-5), or **Saved Networks** to connect to a previously saved network, then enter your credentials.

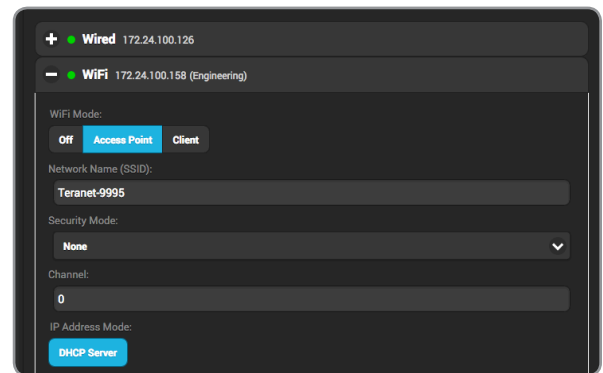


Fig. 4-4



Fig. 4-5



Fig. 4-6

Configuration Modes (Fig. 4-7)

Auto (default): The modem is automatically detected and configured.

Custom: Allows you to manually configure a modem if it's not automatically detected. Available configuration modes are **GSM**, **CDMA**, **Composite**, and **Ethernet**. Modes will vary based on the modem model and mobile network provider.

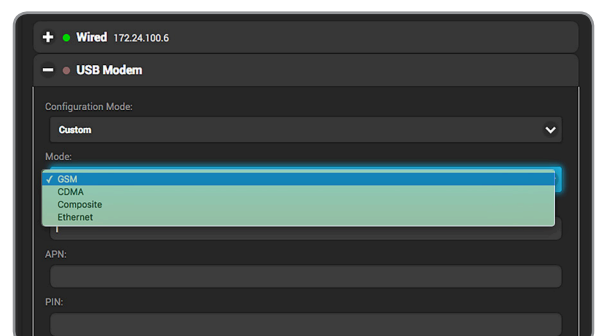


Fig. 4-7

USB Modem

A USB modem allows you to broadcast wherever a cell connection is available. Slice automatically detects and supports many modems using the Auto setting. If you need to configure a modem, connect to Slice using AP mode (see page 17), and insert the USB Modem into one of the two USB ports (Fig. 4-6). From the **Network Interfaces** page, select **USB Modem**, then select a configuration mode.

VIDEO STREAM SOURCE

Select from a variety of different stream types to match your input source from the drop-down menu, or select an available stream to decode.

TERADEK STREAM (TDS)

TDS is specifically optimized for local streaming with minimum latency between Teradek devices. Configure TDS by selecting a protocol (UDP or Multicast) and entering the destination port of the Teradek encoder. Enter the IP address if streaming in Multicast.

RTP/RTSP

When RTP/RTSP mode is enabled, the decoder communicates whether to use the TCP or UDP protocol for the stream. Ensure you have the correct port and stream name (*stream 1* is the default). To view your stream on VLC, copy the IP address from the Host field, launch VLC and open **File>Open Network**. Paste the IP address in the URL field, then click **Open**.

RTP PUSH

RTP Push streaming allows you to direct video to a server or client and generate an SDP file containing the stream description. SDP files can be stored on a streaming server, or opened by video players like VLC. The RTP Push license is provided by request, free of charge.

MPEG TRANSPORT STREAM (MPEG-TS)

To stream over MPEG Transport Stream, you'll first need to purchase the license from Teradek. In MPEG Transport Stream Mode, Slice sends video via a TCP or UDP protocol to a specified unicast or multicast address. TCP is recommended when streaming over the internet, while UDP is recommended when streaming over a local network to avoid the additional network overhead of TCP. Select the protocol best suited for your application needs, and ensure the Slice encoder is configured to stream to the Slice decoder's corresponding IP address and port.

CONFIGURABLE SETTINGS

- Protocol
- Port
- Advanced Settings
 - *Caching*
 - *Audio Sample Rate*

-
- Protocol
 - Host
 - Port
 - Stream name
 - Username
 - Password
 - Client Port
 - Advanced Settings
 - *Caching*
 - *Audio Sample Rate*

-
- Video Port
 - Audio Port
 - Advanced Settings
 - *Caching*
 - *Audio Sample Rate*

-
- Protocol
 - Host
 - Port
 - Jitter Buffering
 - Audio Codec
 - Advanced Settings
 - *Caching*
 - *Audio Sample Rate*

SRT

SRT is used to transmit high quality, low-latency video over unreliable networks. SRT has two connection types: **Pull** or **Listen**. Pull draws the stream from the encoder, while Listen waits for the encoder to initiate the connection. For either mode, a port number will be needed, and a passphrase (if one is set).

LIVE:AIR

Live:Air Action is a video production suite that can receive feeds from any Slice encoder for real-time video mixing, switching and transitions. To configure a decoder to pull from an encoder in Live:Air mode, simply enter the encoder's IP address (host) and port on the front panel or web UI.

AUTOMATIC

Automatic allows you to select a stream to decode from a list of available encoders on your network.

CONFIGURABLE SETTINGS

- Connection type
 - Host (*Pull type only*)
 - Port
 - Passphrase
 - Encryption Key Size
 - Latency
 - Advanced Settings
 - *Caching*
 - *Audio Sample Rate*
-

- Host
 - Port
 - Advanced Settings
 - *Caching*
 - *Audio Sample Rate*
-

- Select stream...
- Advanced Settings
 - *Caching*
 - *Audio Sample Rate*

SYSTEM

Essential system functions, including factory reset and firmware upgrade, can be performed from the **System** menu in the web UI (**System Setup** from the front panel interface).

Factory Reset

Access the **System** menu and select **Factory Reset** (Fig. 4-8). Restore Slice to its original settings by selecting an option (**All**, **Broadcast**, or **Network**) to reset.

Firmware Upgrade

Upgrade Slice's firmware to the latest version.

Perform a Firmware Upgrade from front panel

After turning on Slice, navigate to the System Setup menu to check for new firmware. If an update is available, simply follow the prompts to complete the firmware update.

Perform a Firmware Upgrade from web UI (Fig. 4-9)

- Download the latest firmware version from teradek.com.
- Select **Firmware Upgrade**.
- Upload the file from your computer and select **Upgrade**.

Password

To add, change, or delete your password, select **Password** from the system menu on the web UI, then follow the prompts.

System Time

Select **Manual** mode to manually input the time and date, or select **NTP** to automatically synchronize the time and date.

Reboot

Restart your Slice device by selecting **Reboot**, or simply turn Slice off and on again.

User Settings

Import or export a saved user setting configuration.

System Diagnostics

Generate a diagnostic report specific to your device. Diagnostic reports can be used by Teradek's support team to assist during troubleshooting.

Device Recovery (600 series decoders only)

Recover your previous settings and firmware.

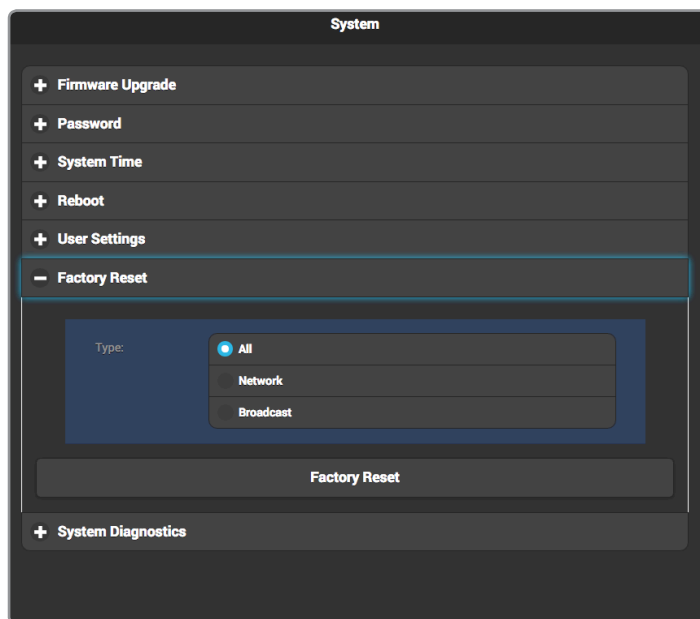


Fig. 4-8 Factory Reset

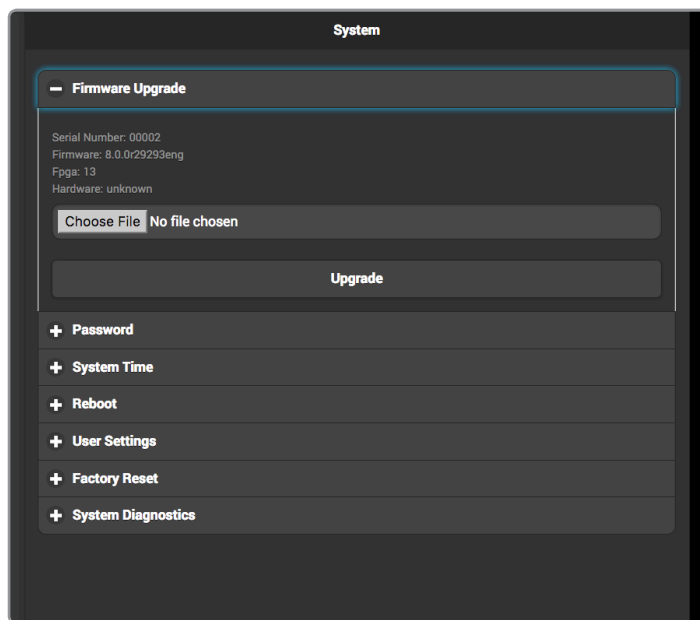


Fig 4-9 Firmware Upgrade

LICENSES

Slice supports a variety of features that are activatable on a per-device basis. After purchasing a license, you will receive an email from Teradek containing the license key.

To add a License:

1. Copy the license key from the email, then paste it on to the **License Text** field (Fig. 4-10).
2. Click **Add Licenses**.
3. To activate the license, you must reboot Slice. Navigate to the **System** menu and select **Reboot**.

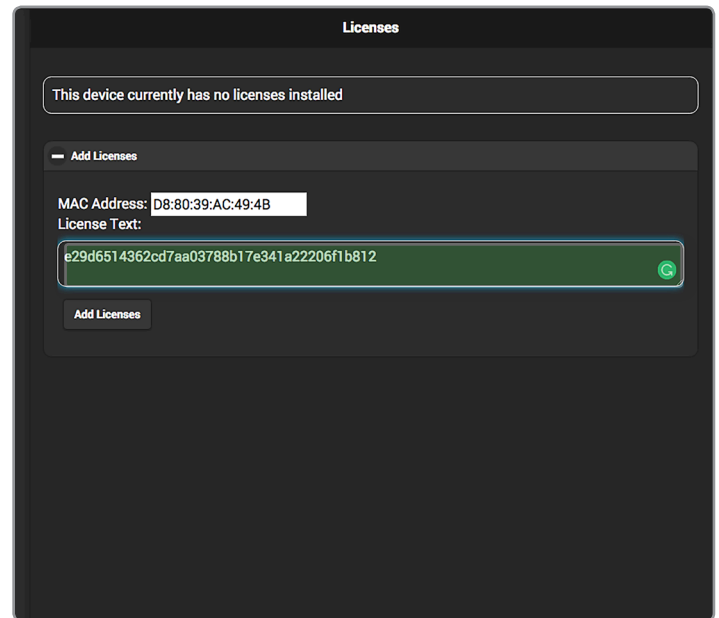


Fig 4-10

TROUBLESHOOTING

POWER/CONNECTION ISSUES

Slice will not power on.

A/C cable may not be connected properly. Ensure that the A/C cable is not damaged and connected securely, then press the power button.

AUDIO/VIDEO STREAMING

Cannot open or view my video stream.

Slice may not be encoding, or the stream URL may be incorrect. Verify that Slice is encoding (the front panel will indicate that it is **"Ready"**).

Video stream keeps breaking up/freezing.

Bitrate/resolution may be set too high for the network's available bandwidth. From the **Encoder** menu, lower the bit rate and/or resolution to avoid lost/late video data. For 600 series Slices, manually adjusting the **Rate Control** settings (see page 14) provides more control over the streaming bandwidth, and may improve performance in challenging or restricted network environments.

VLC video latency is more than a second.

By default, VLC's buffer is set to 1.2 seconds. Decreasing the buffer size will reduce the latency.

Video to iPad is delayed by more than 10 seconds.

HTTP Live mode is enabled. For low latency streaming to iOS devices, download any of Teradek's video streaming iOS apps (Live:Air Action, TeraView, or VUER), then switch to Quickview stream.

My video stream does not have audio.

Either audio is disabled, or Quickview stream is being used. Enable audio (embedded or analog) on the Video/Audio Input menu.

NETWORK/WEB UI

Cannot connect to Slice in Access Point (AP) mode.

The network settings may be incorrect.

- (a) Verify you are connected to Slice's AP network (see page 8). Make sure Slice's Wi-Fi indicator is displayed.
- (b) Verify your computer is set to DHCP or has an IP address in the 172.16.x.x

Cannot connect to Slice in Infrastructure (Client) mode.

Slice may be disconnected from the network, or the network settings may be incorrect. From the front panel interface, navigate to **Network Setup > WiFi**, then select **[Status]** to view the WiFi status menu (see page 6). If you still cannot configure your WiFi connection, connect an Ethernet cable to Slice, access the web UI, and verify that infrastructure SSID, password, and security type are correct.

Cannot log in to web UI.

If you have forgotten the password and wish to reset it, perform a full factory reset by holding down the Reset button (page 4) for 10 seconds.

INTERNET STREAMING

Cannot verify login.

You may have entered incorrect account information, or have no internet connection. Verify your account credentials are correct. If they are correct, verify that your network has an internet connection. Also, verify Slice's **Network Interfaces** menu has valid gateway and name server values.

Cannot start broadcast.

Slice may not have an internet connection, or the Slice encoder may not be started. Verify Slice has an internet connection, and wait for the broadcast status to indicate "**Ready.**"

Broadcast has started, channel shows "LIVE," but only a black screen is shown.

This indicates the bit rate may be set too high for the network's available bandwidth. From the **Encoder** menu, lower the bit rate and/or resolution to avoid lost/late video data.

TECHNICAL SPECIFICATIONS

SLICE ENCODER

	600 SERIES	700 SERIES
VIDEO		
Video Inputs	HDMI 1.4a: Full Size SD/HD/3G-SDI (75 Ω BNC)	HDMI 1.4a: Full Size SD/HD/3G-SDI (75 Ω BNC)
Supported Resolution	1080p 23.98/24/25/29.97/30/50/59.94/60 1080i 50/59.94/60 1080PsF 23/24/25/29/30 720p 50/59.94/60 576i 480i 480p (for HDMI input only) 576p (for HDMI input only)	1080p 23.98/24/25/29.97/30/50/59.94/60 1080i 50/59.94/60 1080PsF 23/24/25/29/30 720p 50/59.94/60 576i 480i 480p (for HDMI input only) 576p (for HDMI input only)
VIDEO PROCESSING		
Video Compression	H.264, baseline, main and high profile	H.264, HEVC, baseline, main and high profile
Supported Video Bitrate	250 Kbps to 15 Mbps (Wired:15 Mbps, WiFi:10 Mbps)	250 Kbps to 30 Mbps
Test Pattern Generator Support	Supports custom test pattern	Supports custom test pattern
Video Format Conversion Support	Built-in video scaler and deinterlacer	Built-in video scaler and deinterlacer
Color Correction	CDL/1024 1D LUT (supports 10-bit color), 33x33x33 3D LUT (supports 10-bit color)	CDL/1024 1D LUT (supports 10-bit color), 33x33x33 3D LUT (supports 10-bit color)
PROTOCOL SUPPORT		
Network Protocols	TCP/IP, UDP, HTTP, DHCP, NTP, SSL, IGMP	TCP/IP, UDP, HTTP, DHCP, NTP, SSL, IGMP
Supported Video Transport Protocols	RTMP, RTP, RTSP, RTSP over HTTP, MPEG-TS (MPEG-TS is an optional paid license)	RTMP, RTP, RTSP, RTSP over HTTP, MPEG-TS (MPEG-TS is an optional paid license)
Bonding	Ethernet, Wi-Fi, USB Modem, TeraLink, accepts Teradek Bond 4-port cellular bonding device	Ethernet, Wi-Fi, USB Modem, TeraLink, accepts Teradek Bond 4-port cellular bonding device
Remote	Teradek Core	Teradek Core
Platform Integration	UStream, YouTube Live, Facebook, Livestream, Twitch, Periscope	UStream, YouTube Live, Facebook, Livestream, Twitch, Periscope
AUDIO		
Audio Compression	AAC-LC, MPEG Layer 2	AAC-LC, MPEG Layer 2
Audio Input	Embedded audio input, analog line or mic in, adjustable gain	Embedded audio input, analog line or mic in, adjustable gain
Audio Output	Headphone output	Headphone output

	600 SERIES	700 SERIES
PHYSICAL		
Dimensions	9.8"W x 17"D x 1.7"H [248.92 x 431.8 x 43.2mm]	9.8"W x 17"D x 1.7"H [248.92 x 431.8 x 43.2mm]
Weight	144oz [4082g]	144oz [4082g]
Construction	Milled Aluminum	Milled Aluminum
Mountability	Mount as industrial rack-mount or placed on a desktop for rugged commercial applications	Mount as industrial rack-mount or placed on a desktop for rugged commercial applications
INTERFACES		
Configuration Interfaces	OLED Display with control dial navigation	OLED Display with control dial navigation
Switches	On/Off and reset buttons	On/Off and reset buttons
Recording/Storage	USB formatted FAT32	USB formatted FAT32
Desktop App	Feature-rich web UI for configuration and control	Feature-rich web UI for configuration and control
Mobile App	VUER, Live:Air Action	VUER, Live:Air Action
USB Interface Functionality	2 x Powered USB 2.0 host port	2 x Powered USB 2.0 host port
NETWORK		
Ethernet	10/100/1000 BASE-T Gigabit	10/100/1000 BASE-T Gigabit
Wireless	2.4/5GHz 802.11 ac/a/b/g/n MiMo	2.4/5GHz 802.11 ac/a/b/g/n MiMo
USB	USB 3G/4G Modem support	USB 3G/4G Modem support
RF Channel	Auto with 3 modes: (2.4 or 5 Ghz), Auto (2.4 GHz only), Auto (5 Ghz only), Configurable to specific channels	Auto with 3 modes: (2.4 or 5 Ghz), Auto (2.4 GHz only), Auto (5 Ghz only), Configurable to specific channels
Encryption	802.1x, 802.11i, WPA2, WPA and WEP 64/128 TKIP, 128bit AES	802.1x, 802.11i, WPA2, WPA and WEP 64/128 TKIP, 128bit AES
POWER		
Power Input	110/240V AC Power Input	110/240V AC Power Input
Nominal Power Consumption	8W, 7W (no WiFi)	6W
Auxiliary Power Input	6-28V DC	6-28V DC

SLICE DECODER

	600 SERIES	700 SERIES
VIDEO		
Video Outputs	HDMI 1.4a: Full Size SD/HD/3G-SDI (75 Ω BNC)	HDMI 1.4a: Full Size SD/HD/3G-SDI (75 Ω BNC)
Supported Resolution	1080p 23.98/24/25/29.97/30/50/59.94/60 1080i 50/59.94/60 1080PsF 23/24/25/29/30 720p 50/59.94/60 576i 480i 480p (for HDMI input only) 576p (for HDMI input only)	1080p 23.98/24/25/29.97/30/50/59.94/60 1080i 50/59.94/60 1080PsF 23/24/25/29/30 720p 50/59.94/60 576i 480i 480p (for HDMI input only) 576p (for HDMI input only)
VIDEO PROCESSING		
Video Decompression	H.264, baseline, main and high profile	HEVC, H.264, baseline, main and high profile
Supported Video Bitrate	250 Kbps to 15 Mbps (Wired:15 Mbps, WiFi:10 Mbps)	250 Kbps to 30 Mbps
Test Pattern Generator Support	Yes	Yes
Video Format Conversion Support	Built-in video scaler and deinterlacer	Built-in video scaler and deinterlacer
Color Correction	CDL/1024 1D LUT (supports 10-bit color), 33x33x33 3D LUT (supports 10-bit color)	CDL/1024 1D LUT (supports 10-bit color), 33x33x33 3D LUT (supports 10-bit color)
PROTOCOL SUPPORT		
Network Protocols	TCP/IP, UDP, HTTP, DHCP, NTP, SSL, IGMP	TCP/IP, UDP, HTTP, DHCP, NTP, SSL, IGMP
Supported Video Transport Protocols	RTP/RTSP: Unicast/TCP, Unicast/UDP, Multicast/UDP streams MPEG Transport Stream: Unicast/TCP (pushed in from an external source, or pulled down from a remote server such as Core), Unicast/UDP, Multicast/UDP Teradek Streaming : Unicast/UDP, Multicast/UDP	RTP/RTSP: Unicast/TCP, Unicast/UDP, Multicast/UDP streams MPEG Transport Stream: Unicast/TCP (pushed in from an external source, or pulled down from a remote server such as Core), Unicast/UDP, Multicast/UDP Teradek Streaming : Unicast/UDP, Multicast/UDP
Remote	Teradek Core	Teradek Core
AUDIO		
Audio Compression	AAC-LC, MPEG Layer 2	AAC-LC, MPEG Layer 2
Audio Output	Embedded audio output, analog line or mic in, adjustable gain, headphone output	Embedded audio output, analog line or mic in, adjustable gain, headphone output

	600 SERIES	700 SERIES
PHYSICAL		
Dimensions	9.8"W x 17"D x 1.7"H (1U) [248.92 x 431.8 x 43.2mm]	9.8"W x 17"D x 1.7"H (1U) [248.92 x 431.8 x 43.2mm]
Weight	144oz [4082g]	144oz [4082g]
Construction	Milled Aluminum	Milled Aluminum
INTERFACES		
Local Device Configuration	OLED Display with control dial navigation	OLED Display with control dial navigation
Switches	On/Off and reset buttons	On/Off and reset buttons
Desktop App	Feature-rich web UI for configuration and control	Feature-rich web UI for configuration and control
Mobile App	VUER, Live:Air Action	VUER, Live:Air Action
USB Interface Functionality	2 x Powered USB 2.0 host port	2 x Powered USB 2.0 host port
NETWORK		
Ethernet	10/100/1000 BASE-T Gigabit	10/100/1000 BASE-T Gigabit
Wireless	2.4/5GHz 802.11 ac/a/b/g/n MiMo	2.4/5GHz 802.11 ac/a/b/g/n MiMo
USB	USB 3G/4G Modem support	USB 3G/4G Modem support
RF Channel	Auto with 3 modes: (2.4 or 5 Ghz), Auto (2.4 GHz only), Auto (5 Ghz only), Configurable to specific channels	Auto with 3 modes: (2.4 or 5 Ghz), Auto (2.4 GHz only), Auto (5 Ghz only), Configurable to specific channels
Encryption	Slice 675 only - 802.1x, 802.11i, WPA2, WPA and WEP 64/128 TKIP, 128bit AES	802.1x, 802.11i, WPA2, WPA and WEP 64/128 TKIP, 128bit AES
POWER		
Power Input	110/240V AC Power Input	110/240V AC Power Input
Nominal Power Consumption	8W, 7W (no WiFi)	8W, 7W (no WiFi)

FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

This device complies with Part 15 of the FCC rules and also with RSS-210 of Industry Canada. 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.

EC DECLARATION OF CONFORMITY



Teradek LLC hereby declares that the Slice encoder and decoder are in compliance with Directive 1999/5/EC. The full text of the EC Declaration of Conformity is available at the following internet address: <https://support.teradek.com/hc/en-us/articles/233429747-EC-Declaration-of-Conformity-for-CE-mark>