LIVE:AIR ACTION REFERENCE GUIDE

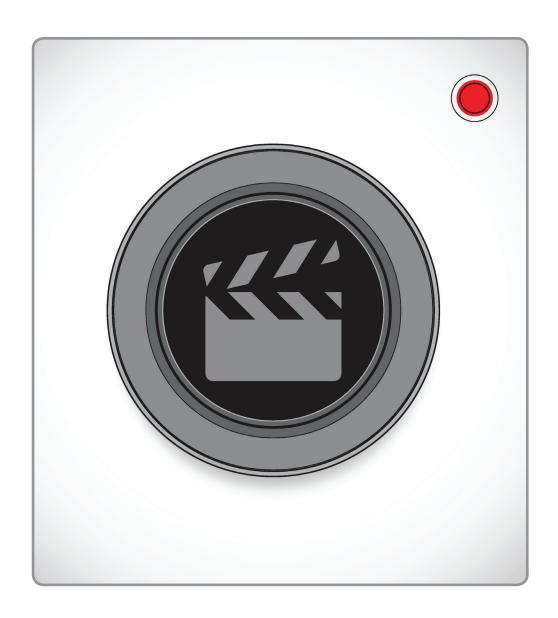




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INTRODUCTION

Thank you for downloading Teradek's Live:Air Action video production suite for iOS. This user guide details the operation and key functions of Live:Air Action. Live:Air Action can receive multiple camera feeds from any WiFi-enabled Teradek encoder for real-time video mixing, switching and even transitions. Live:Air Action allows you to preview and monitor each video source and audio input, track on-air uptime, and start/stop broadcast from an intuitive touchscreen interface. Live:Air Action features native integration with some of the most popular video platforms, offering a seamless streaming experience. Use this guide to enhance your usage and knowledge of Live:Air Action.

Support Resources

In addition to this reference guide, there are a number of resources available for more information on Live:Air Action'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.

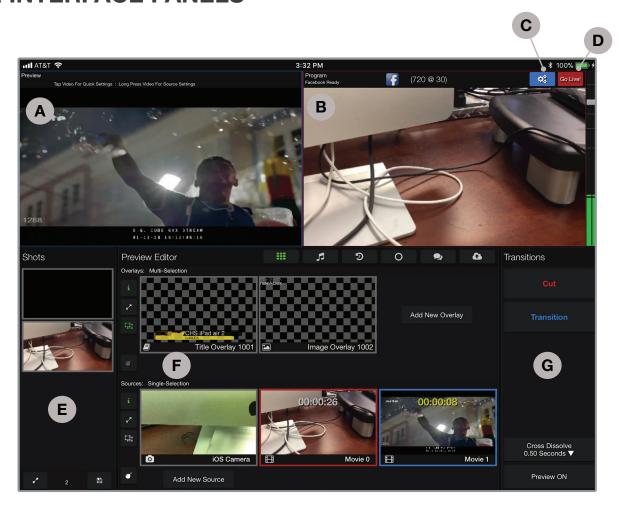
Disclaimer

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 Teradek cannot be held responsible for inaccuracies, typographical errors, or out-of-date information contained within this manual.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

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

USER INTERFACE PANELS



A: Preview Panel

B: Program Panel

C: Settings Menu

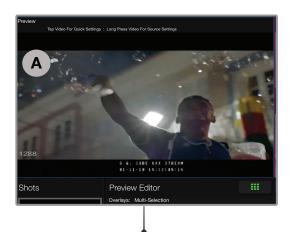
D: Go Live/Record Button

E: Shots Panel

F: Source Editor Panel

G: Transitions Panel

PANEL DESCRIPTIONS



PREVIEW PANEL

Displays footage for editing before it is transitioned into the Program Window.



PROGRAM PANEL

Displays the live output video.

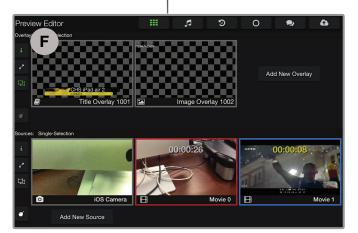
SHOTS PANEL

Composite footage, images, or text to create assets for your stream.



SOURCE EDITOR PANEL

Add text, integrate a still image, or add a new video source to your broadcast. You can also access the **Audio, Record, Replay, Input, and Output** interfaces.



TRANSITIONS PANEL

Transition between sources and shots during live broadcast.



GETTING STARTED

Live:Air Action allows you to preview, monitor, and edit multiple video sources before broadcasting to one of many integrated platforms. Use the following instructions to configure video sources and streaming destinations, then begin live streaming.

CONFIGURE A VIDEO SOURCE

- 1. Download the Live:Air Action iOS app from the App Store.
- 2. Connect your iPad and video source(s) to the same Wi-Fi network.
- Tap Add New Source in the source editor panel, then select a Teradek Device (Fig. 2-1).
- 4. Tap on a thumbnail to view it in the Preview panel (Fig. 2-2).

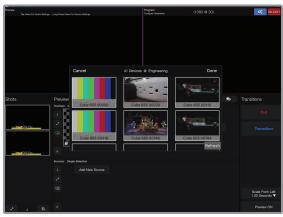


Fig. 2-1

SELECT A STREAMING DESTINATION

- 5. Tap the st button on the upper right-hand corner.
- 6. Navigate to **Broadcasting Destinations>Manage Destinations>Add Destination**, then select a
 platform (Fig. 2-3). After entering your credentials,
 the platform will be added to the list of available
 destinations under **Broadcast Destination**.
 Multiple destinations can be added, but you can
 only stream to one destination at a time.



Fig. 2-2

BEGIN LIVE STREAMING

- 7. Tap the **Go Live!** button on the upper right-hand corner.
- 8. Tap either the **Cut** or **Transition** button to transfer the video over to the **Program** panel (Disabling the Preview panel will transfer the video directly to the Program panel from the Source panel).
- 9. To switch to a different destination, tap **Broadcast Destination**, then select a different platform.



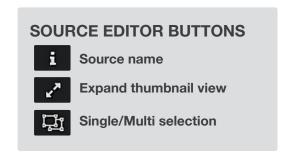
Fig. 2-3

SOURCE CONTENT EDITOR

Once you have configured a video source, you can add text, images, and additional video sources to your broadcast. Use the following section to get acquainted with the **Editor**, **Audio**, **Instant Replay**, **Record**, **Live Chat**, and **Stream Output** panels, and how to use them properly.

EDITOR

The Editor panel consists of two sections; the **Source** panel and the **Overlay** panel. With the Source panel, you can configure any compatible Teradek encoder, video files, supported external streams*, audio files, or one of the iPad's built-in cameras to your stream. The Overlay Panel allows you to overlay custom text, a scoreboard, replay tag, or an image on your video footage.



Adding Sources

- Tap "Add New Source" in the source editor panel.
- 2. Select a source option(s) (Fig 3-1). The selected source(s) will be displayed as thumbnails.
- 3. Tap on a thumbnail to view it in the Preview panel (Fig 3-2).
- 4. To switch a different source, tap on a thumbnail to view it in the Preview.



Fig. 3-1



Fig. 3-2

SOURCE OPTIONS

Teradek Device - Add a compatible Teradek encoder stream

Video Files - Select a saved video files from the iPad's Photo Library.

iOS Camera - Utilize the iPad's camera as a source.

Core Devices - Select a device from your Core account

External Stream - Add a supported RTSP or MPEG-TS feed from an encoder, IP camera or software not manufactured by Teradek.

Audio Files - Select an Audio file as a source

Add Image Overlay

- 1. Select one of the preset images, or import images from your iPad's Photo Library (Fig. 3-3).
- 2. Long press the image's thumbnail to modify the appearance and placement of the image.
- 3. Tap either the **Cut** or **Transition** button to transfer the video over to the **Program** panel.



Fig. 3-3

Add Custom Text, Scoreboard, or Title Overlay

- 1. Select a text overlay option.
- 2. After selecting a text option, you will be prompted to modify, or change the placement, size, color, and font of the text (Fig. 3-4).
- 3. To apply your text selection, tap on the corresponding thumbnail. Tap on the thumbnail again to remove or replace your text selection from the Preview window.
- 4. Tap either the **Cut** or **Transition** button to transfer the video over to the **Program** panel.

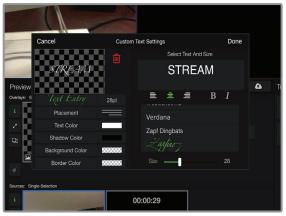


Fig 3-4

OVERLAY OPTIONS

Image - Add, modify, or change the placement and size of an image overlay.

Custom Text - Add, modify, or change the placement, size, and font of text on your footage (only one line of text). **Scoreboard -** Add a scoreboard to your footage if you are broadcasting a sporting event. You can also modify the appearance of your scoreboard

Title - Add, modify, or change the placement and themes of titles and subtitles (up to two lines of text). **Replay Tag -** Add a Replay indicator to your video

AUDIO MIXER

The Audio Mixer supports audio from various sources along with the Program audio output. All audio inputs are visibly represented by a source fader, which corresponds to the number of audio-enabled sources that have been configured in Live:Air Action.

Use the Audio Mixer (Fig. 3-5) to adjust audio levels for each of your input sources (live cameras, videos, or the iPad's built in microphone) and choose how the source audio is mixed into your



Fig 3-5

MIXER OPTIONS

Audio Sliders - Increase or decrease the volume from a specific audio source.

On/Off - Enable or disable your audio source(s).

Mute - Disable the source's audio.

Monitor - Monitor a specific audio source during Preview and/or Program. Only one source can be monitored at a time.

Always On/On if Live - Select whether the audio source is constantly enabled (**Always On)** or enabled only when the source is visible in the Program window (**On If Live**).

Reset dB- Restore to default settings.

INSTANT REPLAY

Instant Replay is an in-app purchase (Fig. 3-6) that allows you to save and play back footage from any Teradek encoder. Replay footage can be used as an additional source.

INSTANT REPLAY OPTIONS

Live Source: Allows you to save instant replay footage from a specific source (Replay function must first be enabled). Replay Buffer: Allows you to review and edit replay speed. Enable Replay: Enables replay function. Once enabled, replay stats such as resolution and bitrate will be displayed and the Capture feature is enabled in the Editor panel. To use the Capture feature from the Editor panel:

- a) Tap the button on the top right corner.
- b) Navigate to the Replay panel, then tap Replay
 History (Footage is displayed according to the
 time it was captured)

Capture All Replays: Simultaneously save replay footage from all enabled sources.

Replay Controls **3:** Return to the Instant Replay home panel.

Replay History : Replay files are saved in folders corresponding to their device and the number of files in each folder corresponds to the number of times the Capture button is tapped.

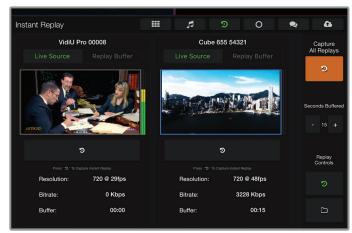


Fig. 3-6

RECORDING*

Live:Air Action allows you to record MP4 files of your program output that can be exported to your iPad's camera roll, used as additional video sources, or deleted (Fig. 3-7).

RECORDING OPTIONS

Copy To Photos - Export videos to your iPad's Camera Roll

Delete Recording - Delete the recorded file Recording Quality - Select a High, Standard, or Low quality recording

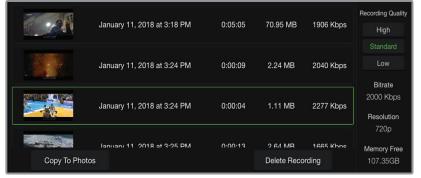


Fig. 3-7

^{*} In-app purchase

SOURCE STATS

The Source Stats panel (Fig. 3-8) displays the source's output statistics such as resolution, framerate, and codec type. You can also sync your sources' audio and video delay.

AUTO SYNC

The Auto Sync feature allows you to automatically adjust the audio/video delay to account for varying latency between different sources. When enabled, Auto Sync determines the delay needed to sync two or more sources. To sync your sources:

- a) Tap the Sync checkbox under each source you want to sync.
- b) Tap the **Start Auto Sync** button, then select **Yes**.
- c) Ensure the audio sources are within listening range, then make a quick, loud noise (clap) to sync your audio sources.
- d) When prompted, apply sync.

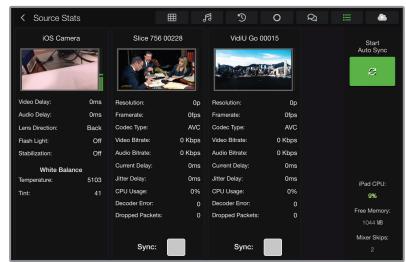


Fig. 3-8

STREAM OUTPUT

The Stream Output panel (Fig. 3-9) contains output statistics such as output bitrate, resolution, and framerate. You can also enable or disable Local Streaming.

LOCAL STREAMING

Live:Air Action allows you to stream to multiple users on the same network with **Local Streaming**. Once enabled, Local Streaming provides access to Live:Air Action's stream output by simply entering the IP address into VLC or any other compatible multimedia player.

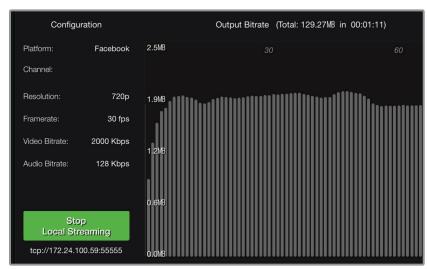


Fig. 3-9

SHOTS

Use the Shots panel to quickly access frequently used video/image/text combinations. Shots may also consist of replay footage, recordings, and live video (Fig. 3-10). Multiple shots can be added.

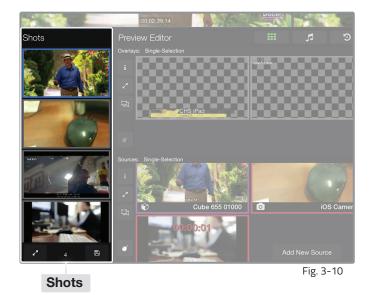
SHOTS CONTROLS



Expand shot view - Increase the size of your Shot thumbnails



Save shot - Save any footage in the Preview



TRANSITIONS

The Transitions panel (Fig. 3-11) allows you to add or modify transitions between different video sources and shots.

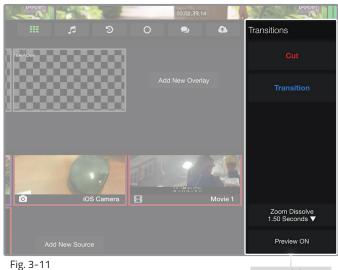
TRANSITIONS CONTROLS

Transitions Button- Gradually switch from one shot to the next.

Cut - Instantly replace one shot with the next shot. Transition Behavior - Tap to adjust the duration of the transition (Transition Speed), or select from one of the following Transition Types:

- Cross Dissolve
- Zoom Dissolve
- Slide from Left
- Rotate Zoom Dissolve
- Scale from Left

Preview Button - Enable/disable Preview panel (Sources will be displayed in the Program panel.

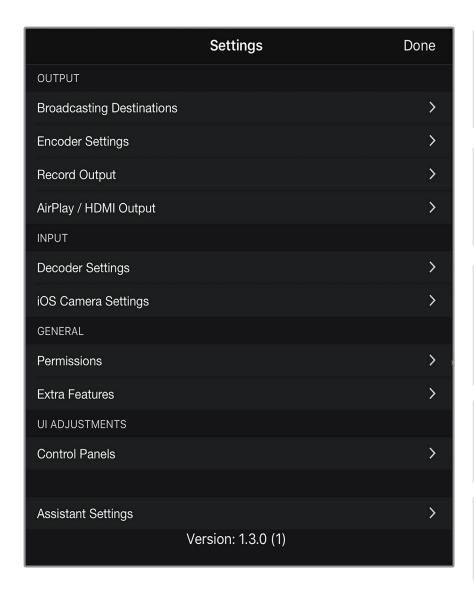


Transitions

SETTINGS OVERVIEW

NAVIGATING THE SETTINGS MENU

The Settings menu allows you to customize and control the stream settings, as well as review general information about the Live:Air Action app. Tap the stream in the upper-right corner to access the Settings menu.



OUTPUT

Contains options for configuring a broadcast destination, video and recording outputs, and quality.

INPUT

Contains options for configuring the decoder an iOS camera settings.

GENERAL

Check permissions and purchase additional features or add-ons to optimize the operation of Live:Air Action.

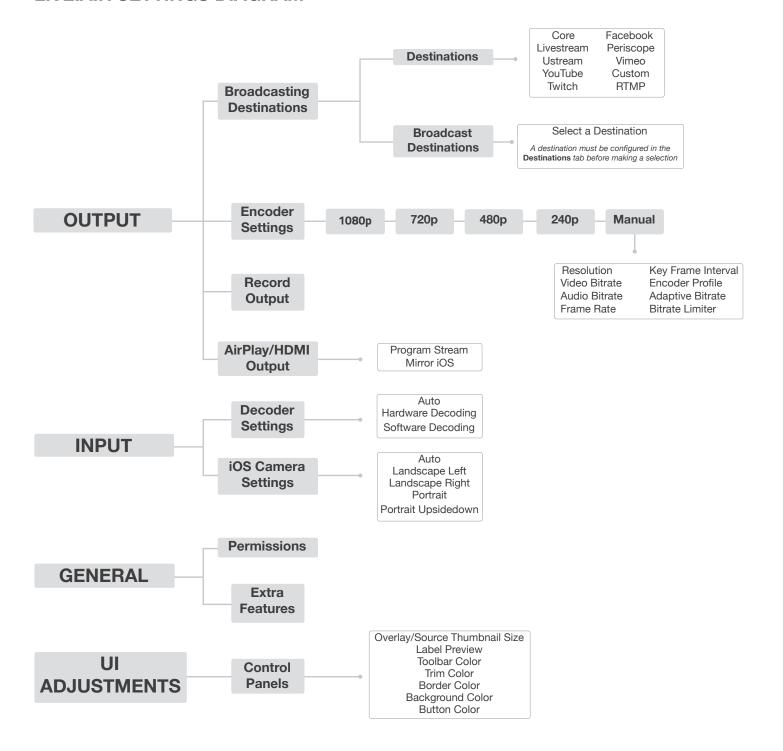
UI ADJUSTMENTS

Modify the color and appearance of the control panels.

ASSISTANT SETTINGS

Enable or disable assistant discovery

LIVE:AIR SETTINGS DIAGRAM



OUTPUT

BROADCASTING DESTINATIONS

Live: Air Action features native integration with some of the most popular streaming platforms. Select one of several integrated platforms, then enter your credentials and/or destination information.

INTEGRATED PLATFORMS

- Livestream (pg. 15)
- **Ustream** (pg. 16)
- YouTube Live (pg. 16)
- **Twitch** (pg. 17)
- Facebook (pg. 18)
- **CORE** (pg. 18)
- Periscope (pg. 19)
- **Vimeo** (pg. 19)
- Custom RTMP (pg. 20)
- **Sputnik** (pg. 20)

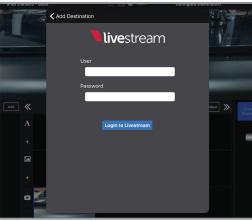


Fig. 4-1

Livestream

- 1. Select **Livestream** and enter your credentials (Fig. 4-1).
- 2. Select the event you wish to stream to (Fig. 4-2), or create a new event at https://livestream.com.
- 3. After selecting an event, tap **Settings**, then select **Done** on the upper right corner.
- 4. Tap the **Go Live** button, then choose whether or not to notify your followers (Fig. 4-3).

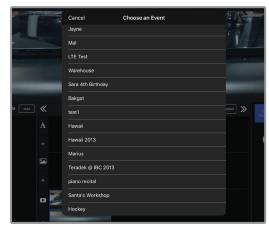


Fig. 4-2

NOTIFY FOLLOWERS

You will be prompted to select whether or not to notify your followers once you tap the **Go Live** button.

5. When ending the broadcast, choose whether to **Post**, **Save**, or **Delete** the video from the event (Fig. 4-4).



Fig. 4-3

POST, SAVE, OR DELETE

When ending your broadcast, you will be prompted to select whether to **Post** the recorded video immediately, **Save** it for posting later, or **Delete** it from the event.

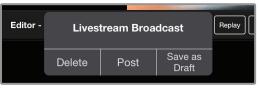


Fig. 4-4

Ustream

- 1. Select **Ustream** and enter your credentials (Fig. 4-5).
- 2. Select a channel to stream to (Fig. 4-6), or create a new channel at https://www.ustream.tv.

CHANNEL LIST

The Ustream Channels list (Fig. 4-6) indicates which channels are available to stream to. Once you have entered your credentials, you will be prompted to select one of the available channels.

- 3. After selecting a channel, tap **Settings**, then select **Done** on the upper right corner.
- 4. Tap the **Go Live** button to begin streaming.



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



Fig. 4-5

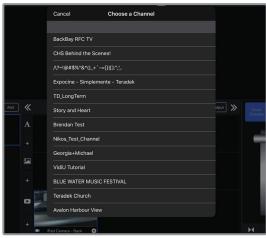


Fig. 4-6

YouTube Live

- 1. Select YouTube Live.
- 2. Tap the **Sign in with Google** button, then enter your Google account credentials (Fig. 4-7).
- Select an event, create a new event, or select
 Stream Now (Fig. 4-8), tap Settings, then select
 Done to apply your settings



Fig. 4-7

4. Tap the Go Live button, then select whether to **Preview** the broadcast or to go Live, or Cancel (Fig. 4-9).

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.
- 5. When ending the broadcast, choose either **Stop** or Complete Event (Fig. 4-10).

FOUR KEY STAGES IN THE LIFE CYCLE OF A **BROADCAST**

Once you start Broadcast:

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

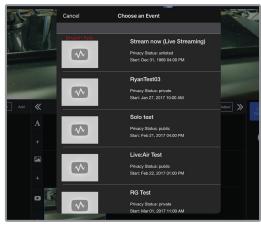
Go Live - Makes your event visible on its own channel page. An event can not return to preview once it has gone live. Once you end Broadcast:

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. 4-11), then select a server location.
- 2. After selecting a server location, tap **Settings**, then select **Done** on the upper right corner. Tap the **Go Live** button to begin streaming.



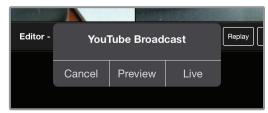


Fig. 4-9

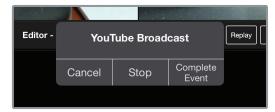


Fig. 4-10

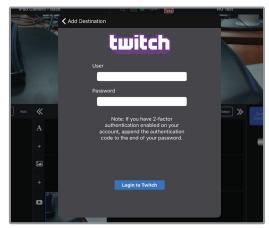
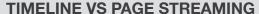


Fig. 4-11

Facebook

- 1. Select Facebook.
- Copy the authentication code generated for your device, go to https://www.facebook.com/device, then enter your credentials (Fig. 4-12). Enter the code, then allow Live:Air Action (Teradek Encoder) to access your account.
- Choose whether to stream to your timeline or to a specific page (Fig. 4-13), tap **Settings**, then select **Done** to apply your settings. You can also create a page to stream to from your Facebook account.



Timeline - Broadcast the video to your personal timeline or wall. **Page** - Broadcast the video to a page you manage.

To create a page:

- a. Go to https://www.facebook.com/pages/create.
- b. Select a Page category.
- c. Enter the required information, click **Get Started**, then follow the on-screen instructions.
- 4. Tap the **Go Live** button to begin streaming.

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 the VidiU to All. The post will be visible to friends).
- Posts to Facebook pages are always public.

Core

- 1. Select **Core**, enter your credentials, then select or create a Sputnik destination. (Fig. 4-14).
- After selecting a Sputnik, tap Settings, then select Done to apply your settings. Tap the Go Live button to begin streaming.



Fig. 4-12



Fig. 4-13

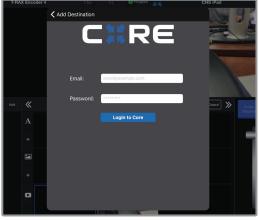


Fig. 4-14

Periscope

- 1. Select **Periscope**.
- Copy the authentication code generated for your device, go to https://www.periscope.tv/auth, then enter your credentials (Fig. 4-15). Enter the code, then allow Periscope to access your account.

PERSICOPE AND TWITTER

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

- 3. Choose whether or not to tweet out a link to your live stream (Fig. 4-16), then select **Done** to apply your settings.
- 4. Tap the **Go Live** button to begin streaming.

Vimeo

- 1. Select **Vimeo**, then enter your login credentials (Fig. 4-17).
- 2. Authorize Vimeo to access your account by clicking Allow.
- 3. Enter a **Broadcast Title** and **Description** (Fig. 4-18).
- 4. Tap the **Go Live** button to begin streaming.



Fig. 4-15

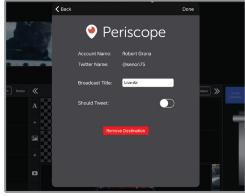


Fig. 4-16



Fig. 4-17



Fig. 4-16

Custom RTMP

- 1. Select Custom RTMP.
- 2. Enter the URL and stream key/name (Fig. 4-19) information provided by the streaming service, then enter your credentials.

URL AND STREAM NAME/KEY

In order to stream to a broadcast platform other than a platform already integrated into Live:Air Action, you must obtain a URL and stream key/name. Log into your account's settings and retrieve the URL and stream key/name.

- 4. Select **Done** to apply your settings,
- 5. Tap the **Go Live** button to begin streaming.

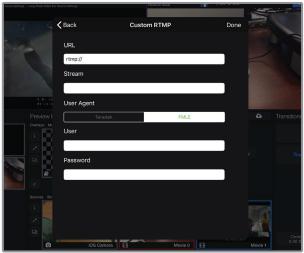


Fig. 4-19

Sputnik

- 1. Select Sputnik.
- 2. Enter the Sputnik's Host IP address in the field provided (Fig. 4-20).
- 3. Select **Done** to apply your settings,
- 4. Tap the **Go Live** button to begin streaming.

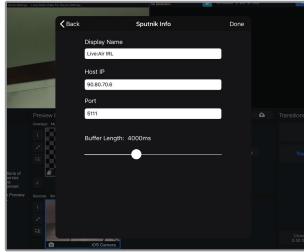


Fig. 4-20

ENCODER SETTINGS

The Encoder Settings menu allows you to select one of several preset encoder modes (labeled according to the resolution) or to manually configure the video resolution, audio/video bitrate, frame rate, profile, and key frame interval (Fig. 4-21).

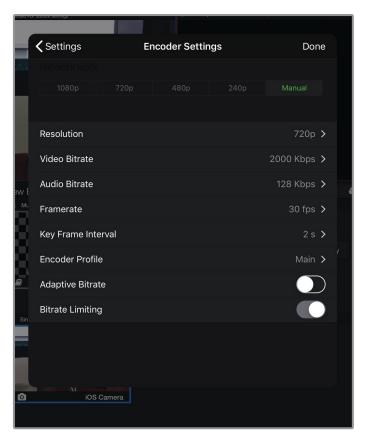


Fig. 4-21

MANUAL CONFIGURATION MODE

Resolution: Adjust your encoder's output resolution. **Video and Audio Bitrate:** Adjust the target video and audio bitrates. Below are the recommended bitrates based on resolutions:

RECOMMENDED

RESOLUTION	MINIMUM BITRATE
1920 x 1080	4.5 mbps
1280 x 720	1.5 mbps
960 x 540	1 mbps
SD (480 x 576)	768 kbps
480 x 270	450 kbps
360 x 240	300 kbps

Framerate: Adjust the frequency at which video frames are displayed.

Key Frame Interval: Adjust the number of frames between full picture refreshes.

Encoder Profile: Select a profile that best suits how your stream is compressed and distributed.

Adaptive Bitrate and Bitrate Limiter: Automatically adjust and stream at the highest quality achievable when bandwidth is limited.

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.

RECORDING

Live:Air can record video displayed in the Program window. Recorded files can be exported to your iOS device and added to the Editor Panel as an additional source, or deleted (Fig. 4-22). Files recorded in the Recording panel can also be viewed in Recording Settings and added in the source editor.

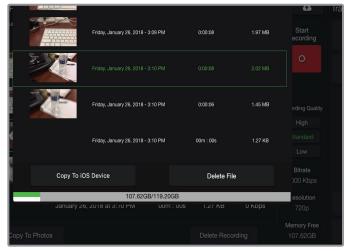


Fig. 4-22

AIRPLAY/HDMI OUTPUT

Live:Air Action's output view can be displayed on any compatible HDMI Monitor or on AppleTV® using AirPlay®. Select **Program Stream** to output only the Program panel (Fig. 4-23) or **Mirror iOS** to duplicate the Live:Air Action display on an external monitor.



Fig. 4-23

INPUT

DECODER SETTINGS

The Decoder Settings menu allows you to select one of several decoding options (Fig. 4-24). **Hardware Decoding** should have better performance when used with Teradek encoders, but **Software Decoding** can be used for better compatibility with third party encoders. Adjust these settings if stream quality issues arise.

IOS CAMERA SETTINGS

The iOS Camera Settings menu allows you to adjust the orientation of your iOS device's camera feed.



Fig. 4-24

GENERAL

PERMISSIONS

Review the permissions granted to Live:Air Action. To change permissions, go to Settings> Live:Air Action and enable/disable permissions.

EXTRA FEATURES

Live:Air Action has several in-app features that can be purchased to enhance the capabilities of Live:Air Action. Download the free version of Live:Air Action and purchase the additional features, or purchase the Live:Air Action Bundle that includes all of the additional features.

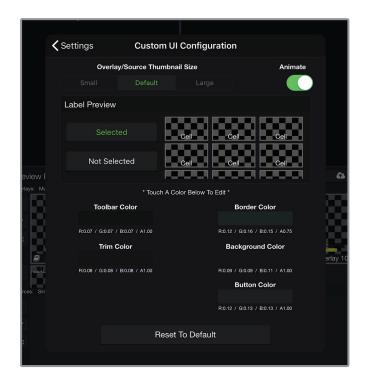
IN-APP PURCHASES

- Source Multi-Selection Enables PiP and group arrangements
- 3-6 Live Sources Ingest additional live video feeds
- Chroma Key Enables chroma key compositing
- Record Program Record your live stream while you broadcast
- Instant Replay Capture a video buffer and play it back at different speeds
- Stream Chat View comments in real time from Facebook, YouTube, and Twitch
- GIF Support Add animated GIF overlays to your stream
- Scoreboard Timer/Clock Create counting timers or display the time
- Program Framerate Limit Enable streaming at up to 60 fps
- Audio File Support Add custom mp3 tracks to your stream
- External Streams Add custom RTSP or MPEG-TS sources
- Local Monitoring View your program stream locally with VUER or VLC.

UI ADJUSTMENTS

CONTROL PANELS

The Control Panels menu contains adjustments for Live: Air Action's user interface (UI). Customize the appearance of the interface by altering the size of the source thumbnails, or by changing the color and appearance of the toolbar, buttons, and background.



TROUBLESHOOTING

THE LIVE:AIR ACTION APP KEEPS CRASHING.

Below are some steps you can try:

- Close all other apps by double tapping the home button and swiping upwards (if you cannot close all other apps, then at the very least close all other Teradek apps).
- Close Live: Air Action by double tapping the home button and swiping up. Reopen the app after.
- Make sure all your input streams are good quality. There should not be constant dropped frames or decoder errors. The frame rate should be 30 fps or less. The Input panel (pg.11) displays information about source quality.
- Try reducing the number of video clips and overlays in your project.
- You can do a full reset by going to the iPad Settings and navigating down to the Live:Air Action settings. Enable the option **Reset Database on Next App Open**. Close the Live:Air Action app by double tapping the Home button and swiping up. Reopen the app after.

THE INPUT STREAM IS STUTTERING AND SKIPPING FRAMES.

Follow the same tips above to avoid crashes. Also, try the following:

- Make sure all wireless connections between the devices and iPad are robust and have adequate bandwidth. We recommend using newer, high quality wireless access points and configuring networks to use the 5GHz WiFi band.
- Lower the resolution and/or bitrate of incoming stream.
- Ensure Teradek device firmware is up to date.
- Check that your iPad has adequate CPU resources to handle your streams. CPU information is visible on the Input page (pg.11). If the CPU load is high, reduce the number of streams or their resolution.

I DO NOT HEAR ANY OUTPUT AUDIO.

Go to the Audio panel (pg.9) and check if the audio levels are too low. If the audio source is set to On If Live, it must be selected for audio to be present in the stream.

THIS APP IS STILL HAVING ISSUES. WHAT INFORMATION CAN I PROVIDE TO HELP ISOLATE THOSE CRASHES/ISSUES?

If you experience any crashes, our developers have requested the following information sent to devios@teradek.com:

- Full iOS version running on the iPad (from the iOS settings)
- iPad model (from the iOS settings)
- Version of the Live: Air Action app (from within the app settings)
- Apple ID used with the iPad
- Specific date/time of the crash or crashes, if known
- Description of how the app was being used when the crash occurred, with as much detail as possible.

If you're having issues that don't result in a crash, please describe them in detail (including steps to reproduce) in an e-mail to devios@teradek.com. Include the following information:

- Full iOS version running on the iPad (from the iOS settings)
- iPad model (from the iOS settings)
- Version of the Live: Air Action app (from within the app settings)