V L E R REFERENCE GUIDE

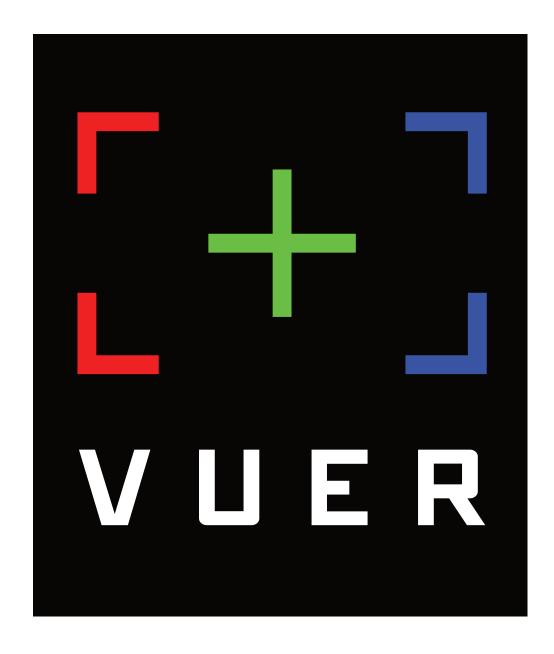




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Thank you for downloading Teradek's VUER monitoring app. VUER allows you to monitor and analyze up to four Teradek encoder video feeds in real-time, all in 1080p HD. With a built-in histogram, false color, focus peaking, waveform monitor and vectorscope, digging into the details of your video streams has never been easier. This user guide details the operation and key functions of VUER.

Support Resources

In addition to this reference guide, there are a number of resources available for more information on VUER'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).

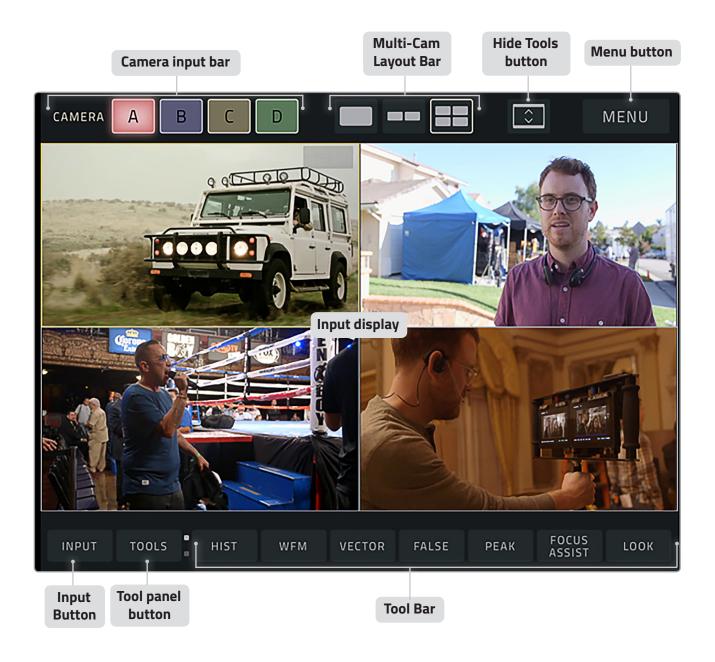
Disclaimer

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 Teradek cannot be held responsible for inaccuracies, typographical errors, or out-of-date information contained within this manual.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

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

USER INTERFACE

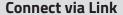


GETTING STARTED

VUER allows you to monitor and analyze up to four Teradek encoder feeds, each with its own independent set of tools to help you and your crew gain insights into your footage. Use the following instructions to configure your video sources.

CONFIGURE A VIDEO SOURCE

- 1. Download the VUER app from the **iTunes App Store** (iOS devices), or from the **Google Play Store** (Android devices).
- 2. Connect your device to the encoder's Wi-Fi network (AP Mode). If the Teradek encoder has already been configured to connect to another network (Infrastructure), connect to that instead.



Link (Fig. 2-1) is a ruggedized dual band Wi-Fi router designed specifically for broadcast and cinema applications. For fixed locations, Link is recommended for optimal wireless performance, range, and reliability. Once a compatible Teradek encoder and your device connect to Link's Wi-Fi network, VUER will automatically detect the incoming video feeds, allowing you to view up to four separate streams at one time.

- a. Connect your device to one of Link's Wi-Fi networks: Link-XXXXX or Link-XXXXX 5g (XXXXX represents the last five digits of the device's serial number).
- **b**. Enter the default password (link050XXXXX).
- **c**. Connect your Teradek encoder(s) to one of Link's Wi-Fi networks.
- 3. There are three ways to open the video source menu (Fig. 2-2):
 - Tap the **CAMERA** Button
 - Tap any of the four camera feed buttons (A, B, C, or D).
 - Tap the **INPUT** button

Connect to Serv Pro

Serv Pro (Fig. 2-3) is a wireless video transmitter made specifically to be used with the VUER application. Perfect for script supervisors, hair & makeup, classrooms, and documentary shoots, Serv Pro offers a compelling monitoring alternative to zero delay wireless video systems.



Fig. 2-1



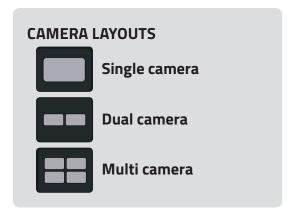
Fig. 2-2



Fig. 2-3

The available video feeds will be displayed as thumbnails in the camera feed menu (Fig. 2-4).

- 4. Tap on the camera source(s) you want to monitor. Ensure your source is streaming in Live:Air mode, otherwise VUER will prompt you to switch your stream mode to Live:Air.
- 5. After selecting your camera source, tap **Done** to return to the main display (Fig. 2-5).
- 6. Select a camera layout mode.



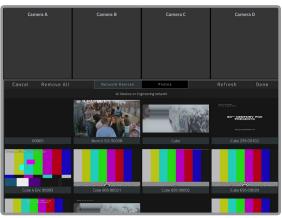


Fig. 2-4



Fig. 2-5

TOOLS

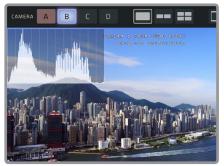
VUER contains a number of tools similar to those found in professional on-set monitors, which can be configured independently (i.e. one camera view displays the histogram scope, while another camera view displays the vectorscope), or simultaneously for all video streams. Tap any of the tool buttons to enable or disable the tool, or long press to configure the tool settings.

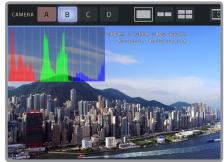
EXPOSURE TOOLS

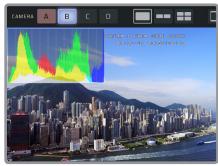
The Exposure tools provide several different methods to help analyze your video's exposure, color, and luminance. These tools help when evaluating lighting setups and camera settings.

Histogram

The Histogram tool provides a graphic representation of the video's color and luminance distribution. There are three different types of histogram displays: **Luma**, **RGB Parade**, and **RGB Overlay**. The histogram's X axis represents the magnitude of the Luma, red, green, or blue components, while the Y axis graphs how much that component appears in the image. Histograms are useful for determining the overall exposure and color balance of an image.







na RGB Parade

RGB Overlay

To display the histogram's configuration menu, long press the **HIST** button in the tool bar.



Histogram Options

DISPLAY MODE - Select how the histogram is displayed within the frame.

TYPE - Select one of three types of histograms (Luma, RGB Parade, or RGB Overlay).

OPACITY - Adjust the opacity of the histogram.

POSITION (Overlay mode only) - Select where the histogram is displayed within the frame.

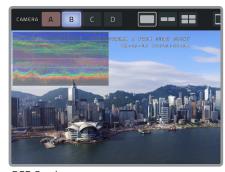
OVERLAY SIZE (Overlay mode only) - Select the size of the histogram.

Waveform

Similar to the Histogram, Waveforms are helpful for evaluating exposure and color balance in different areas of a frame. Rather than left to right, Waveform displays luminance from top to bottom. The bottom represents the least amount of saturation or intensity of any of the color values associated with the video (Red, Green, Blue, or Luma), while the top represents maximum saturation or intensity of those same values. Values are plotted left to right in the same place as they appear in the video.







Luma

RGB Parade

RGB Overlay

To display the waveform's configuration menu, long-press the **WFM** button in the tool bar.



Waveform Options

DISPLAY MODE - Select how the waveform is displayed within the frame.

TYPE - Select one of three types of waveforms (Luma, RGB Parade, or RGB Overlay).

INTENSITY - Adjust the intensity of the waveform.

OPACITY - Adjust the opacity of the waveform.

POSITION (Overlay mode only) - Select where the waveform is displayed within the frame.

OVERLAY SIZE (Overlay mode only) - Select the size of the waveform.

Vectorscope

The Vectorscope measures and displays the overall distribution of color in your video. The vectorscope has two modes: chroma components (**Cr/Cb**) and hue and saturation (**H/S**). In Cr/Cb mode, the color is represented by a series of connected points on a graticule, or circular scale. H/S Mode displays hue and saturation, with the center representing zero saturation and the outer ring of the scale representing maximum saturation. The indicators on the scale are positioned according to the hue (red, green, blue, yellow, cyan, and magenta).





Cr/Cb mode

H/S mode

To display the vectorscope's configuration menu, long-press the **VECTOR** button in the tool bar.



Vectorscope Options

DISPLAY MODE - Select how the vectorscope is displayed within the frame.

TYPE - Select one of two types of vectorscopes (Cr/Cb mode, or H/S mode).

INTENSITY - Adjust the intensity of the vectorscope.

OPACITY - Adjust the opacity of the vectorscope.

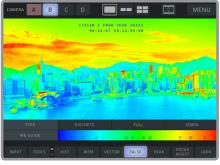
POSITION (Overlay mode only) - Select where the vectorscope is displayed within the frame.

OVERLAY SIZE (Overlay mode only) - Select the size of the vectorscope.

False Color

False Color is used to establish the correct exposure by using an IRE color guide for reference. As the camera aperture is adjusted, elements of the image will change color based on the luminance or brightness values. False color has three modes: **Discrete**, **Full**, and **Zebra**.



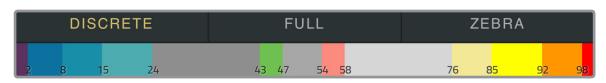




Discrete

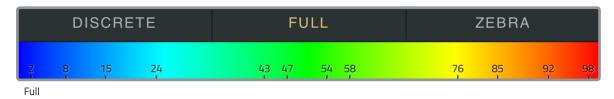
Full

Zebra

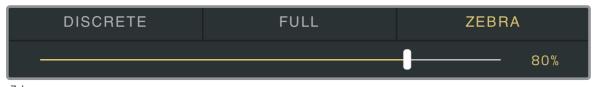


Discrete

Discrete Mode displays several different ranges of brightness. Overexposed elements (above 98 IRE) will appear red, while underexposed elements will appear dark blue (below 8 IRE). Properly exposed video will appear between green (above 43 IRE) and pink (below 58 IRE).



Full Mode displays one continuous range of brightness and is helpful in improving the detection of certain highlights or shadows that are not evident in Discrete Mode's color ranges. Overexposed elements (above 98 IRE) will also appear red, while underexposed elements will appear dark blue (below 2 IRE). Properly exposed video (between 43 and 58 IRE) will appear green.



Zebra

Zebra Mode highlights areas in your video that are overexposed, or "blown out." Adjusting the Zebra threshold percentage dictates which elements of your video are considered overexposed.

FOCUS TOOLS

Focus tools help when focusing an image by highlighting in-focus in the video. Two different focus tools are available; **Peaking** and **Focus Assist**.

Peaking

Peaking highlights the sharpest aspects of the video, indicating which parts of the image are in focus. Adjusting the focus on the camera emphasizes the high contrast, in-focus edges in the video by increasing the saturation at the edges. Increasing the threshold will make more parts of the image appear "in focus."



Peaking disabled



Peaking enabled

Focus Assist

Compared to Peaking, Focus Assist analyzes the video and highlights the edges by applying a color to them. The Focus Assist's color can be changed by long-pressing the **FOCUS ASSIST** button and selecting a color, while the intensity's threshold can be changed by dragging the slider to either side.



Focus Assist disabled



Focus Assist enabled

COLOR TOOLS

VUER has a number of tools available for managing and applying different looks to incoming video signals that either match or simulate how the video will appear after editing. VUER contains several preconfigured CDLs and LUTs, but additional ones can be added or created. You can also control VUER via LiveGrade, or remotely control LiveGrade using VUER.

Look

With the Look tool, you can select from a list of preconfigured CDLs or LUTs to apply to your video, upload a new CDL or LUT, or create a custom CDL by adjusting the offset, power and slope controls in the CDL Editor.



Look disabled



Look enabled

To load a CDL or LUT file to VUER:

- 1. Send the file to the e-mail account associated with your device, or save the file on a file sharing service such as Dropbox or Google Drive.
- 2. Open the file, and your device will prompt you to select an app to import the file to (Fig. 3-1). Select **VUER**.

To edit a CDL:

- Open the LOOK options and tap the HIDE/SHOW button.
- 2. Select the CDL you want to edit from the list of CDLs. Adjust the Offset, Power, Slope, and Saturation by dragging the corresponding sliders, or by dragging the center of the color space towards any hue within the sphere (Fig 3-2).
- 3. After making the adjustments, tap "SAVE (name of CDL" to overwrite the current parameters. The file can be accessed from the List of CDLs.

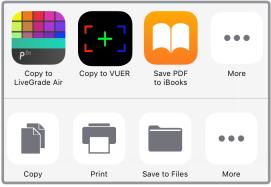


Fig. 3-1

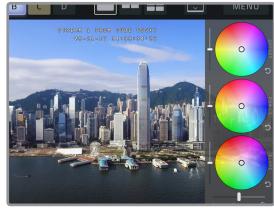


Fig. 3-2

To save a new CDL:

- Open the LOOK options and tap on the HIDE/SHOW button.
- 2. Adjust the Offset, Power, Slope, and Saturation by dragging the corresponding sliders or by dragging the center of the color space towards any hue within the sphere.
- 3. After making the adjustments, tap "SAVE AS" to name the new CDL (Fig. 3-3). The file can be accessed from the List of CDLs.



Fig. 3-3

LiveGrade Integration

LiveGrade is an application developed by Pomfort for on-set look creation and color management. LiveGrade has integrated support for remote control of VUER and vice versa. Use the following instructions to prepare LiveGrade for use with VUER. To use VUER with LiveGrade, you will first need to connect your LiveGrade-equipped computer to VUER via Wi-Fi.

To add VUER to LiveGrade:

- 1. Navigate to the LiveGrade Settings menu (page 19) and enable "LIVEGRADE CONTROL OF VUER."
- 2. From the LiveGrade app, click "**Devices...**" above the Slots Selector (Fig. 3-4).
- 3. Click "Add Device..." under the slot you want to use, and select "Add Teradek Device..."
- 4. Select your device or enter its IP address, then click on the "**Add Device**" button. Once connected, a green indicator will appear next to the device listing (Fig. 3-5).
- 5. Close the Configuration and Devices menus.

To control LiveGrade with VUER:

- 1. Navigate to the LiveGrade Settings menu (page 19) and enable "**VUER CONTROL OF LIVEGRADE**."
- 2. Enter the LiveGrade IP address, password, and slot.

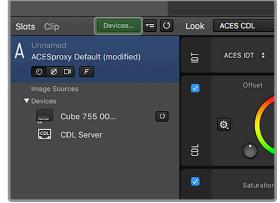


Fig. 3-4

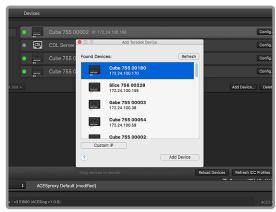


Fig. 3-5

COMPOSITION TOOLS

The Composition tools allow you to compose your video according to specific aspect ratios, compare snapshots of your video output, adjust your video's resolution and bitrate, and magnify certain elements of your video.

Frame Lines

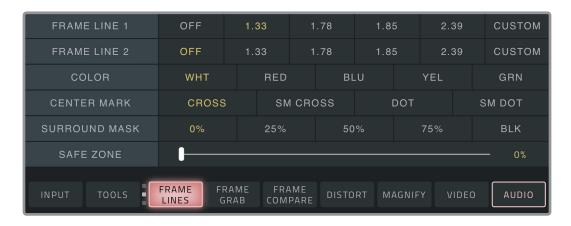
To help compose your shot with potential cropping considerations in mind, the Frame Lines tool allows you to add and customize up to two frame guides according to specific aspect ratios. You can also modify other key aspects like frame color, type of center mark, the opacity of the surrounding space (padding), and adjust the size of the frame (Safe Zone).



1.33 (4:3) Ratio



2.39 (21:9) Ratio



FRAME LINE OPTIONS:

FRAME LINE 1 - Select one of four aspect ratios, or create your own frame line ratio.

FRAME LINE 2- Add a second set of frame lines, or create your own frame line ratio.

COLOR - Select a frame line color.

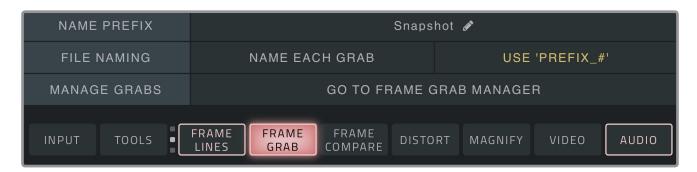
CENTER MARK - Choose a cross or a dot (small or standard size) as the center marker.

SURROUND MASK - Select an opacity percentage for the surrounding padding of the image.

SAFE ZONE - Adjust the dimensions of the safe zone.

Frame Grab and Frame Compare

With the Frame Grab tool, you can take a snapshot of the current video frame by tapping the **FRAME BUTTON** and store it in the Frame Grab Manager. The Frame Grab function works in conjunction with the Frame Compare tool.

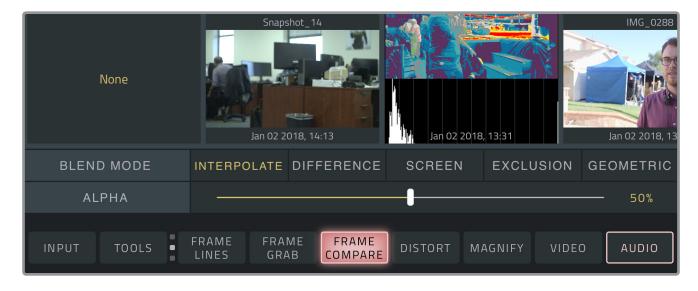


FRAME GRAB OPTIONS:

NAME PREFIX - Create a prefix to identify your frame grabs.

FILE NAMING- Select whether to give each file a unique name, or use the name prefix you created. **MANAGE FRAME GRABS -** Access the Frame Grab Manager (see page 20).

The Frame Compare tool allows you to overlay a saved frame grab over the current video frame to compare quality, composition, and framing. Select a blend mode (Interpolate, Difference, Screen, Exclusion, or Geometric), then drag the Alpha slider to either side to increase or decrease the opacity level.



FRAME COMPARE OPTIONS:

OVERLAY IMAGE - Select a snapshot to compare.

BLEND MODE- Select a blend mode to compare the current video with a previous frame grab. **ALPHA -** Drag the slider in either direction to reveal the current video, or the snapshot it is being compared to.

Distort

The Distort tool allows you to view the live camera footage without the distortion caused by using anamorphic or non-standard lenses. Anamorphic lenses are primarily used to take full advantage of the vertical resolution of a camera's sensor when delivering cinematic widescreen footage.





1.333 Desqueeze

2.0 Desqueeze



DISTORT OPTIONS:

ANAMORPHIC DESQUEEZE - Correct "squeeze" effect.

FLIP X/Y - Flip your image vertically or horizontally.

Magnify

With the Magnify tool, you can zoom in and inspect certain elements of the video. Tap the **MAGNIFY** button, then drag the magnifying window to any position on the screen you want to analyze.







Magnifier enabled



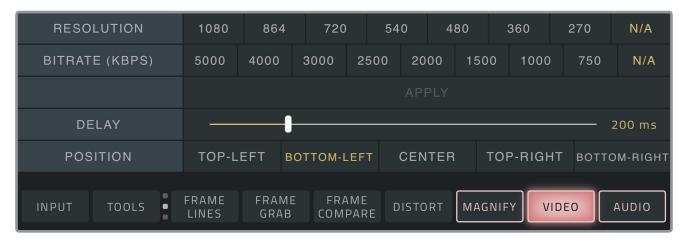
MAGNIFY OPTIONS:

MAGNIFIER SIZE - Select the size of the magnifying window.

OUTLINE COLOR - Select or disable the magnifying window's outline color.

Video and Audio

Tapping the **VIDEO** button displays the video's statistics. You can configure these settings and change how they are displayed by long pressing the **VIDEO** button and accessing the Video menu.



VIDEO OPTIONS:

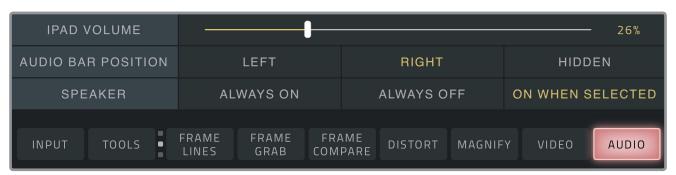
RESOLUTION - Set the encoder's video stream resolution.

BITRATE - Adjust the video bitrate.

DELAY - Adjust the amount of delay to account for varying latency. The Delay can be set to the lowest setting if using a reliable network with no packet loss and low latency, but might also result in choppy video. Adjusting the delay to a higher setting during high motion scenes can help smooth it out.

STATS POSITION - Select where the video stats are displayed on the screen.

Tap the **AUDIO** button to enable/disable the stream's audio, or long press the **AUDIO** button to access the Audio menu.



AUDIO OPTIONS:

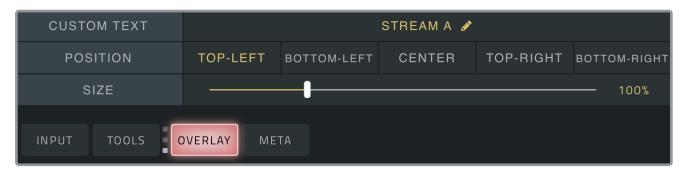
IPAD VOLUME - Increase or decrease your stream's volume.

AUDIO BAR POSITION - Select where the audio bar is displayed.

SPEAKER - Configure the iPad speaker to be Always ON, Always OFF, or ON WHEN SELECTED.

Overlay

Tapping the **OVERLAY** button displays a custom text on to your video. You can configure the text and other settings by long pressing the **OVERLAY** button.



OVERLAY OPTIONS:

CUSTOM TEXT - Enter a custom text for the stream.

POSITION - Select where the custom text is displayed on the screen.

SIZE - Adjust the size of the custom overlay text

Meta

With the **META** tool, you can display timecode or recording information embedded in your video. Tap the Meta button, then select how the information is displayed.



META OPTIONS:

DISPLAY - Select either Timecode or Record Flag.

POSITION - Increase or decrease your stream's volume.

SIZE - Select the size of the

OPACITY - Configure the iPad speaker to be Always ON, Always OFF, or ON when selected.

SETTINGS MENU

NAVIGATING THE SETTINGS MENU

The Settings menu can be opened by long pressing the 'MENU' button in the upper right corner. It allows you to access previously saved projects or frame grabs, customize app settings, review and/or delete preset looks, and view information about the VUER app. Settings are subdivided into four groups; Project Management, User Settings, Look, and FAQ.

PROJECT MANAGEMENT

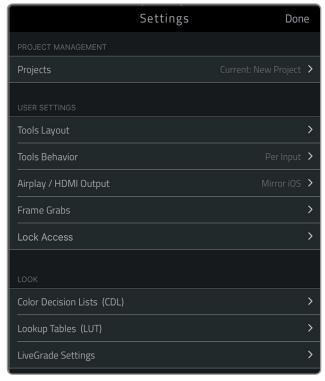
Projects can be created and saved to your device to be opened later, and consist of tools and camera feeds applied from your current workspace. Use the features described below to manage your saved projects.

- **Save** or **Save As...** Save, update, or rename your current project.
- Load Load or delete a previously saved project. To delete a project file, tap Edit, then select Delete.
- Auto Save Settings Modify how often your projects are saved.
- Clear Workspace Delete all saved projects and sources from your workspace.

USER SETTINGS

The User Settings allow you to customize how tools are displayed, configure the stream to a secondary monitor, access frame grabs, and manage access control to VUER's features.

- **Tools Layout Manager** Arrange tools according to your preferences.
- **Tools Behavior** Select whether tool functions are applied to a specific feed or to all feeds.
- Airplay/HDMI Output Choose how your content is displayed on a secondary screen.
- Frame Grabs Access the Frame Grab Manager and review, delete, or rename frame grabs, import images from your device's camera roll, or configure Frame Grab settings.
- Lock Access Block or unlock access to certain settings, tools, and menus.







Tools Layout Manager

With the Tools Layout Manager, you can prioritize some tools while hiding others. Simply drag tools (Fig. 4-1) to any of the spaces provided by the three rows, or drag them to the "**Hidden Tools**" section so that they don't appear when cycling through the tool bar. The tool bar can also be completely hidden by tapping the "Hide all Tools" button. Click **Done** to save your layout, or "**Cancel Changes**" to revert changes.

Accessing the Tool Layout Manager:

- Select "Tools Layout" from the Settings menu.
- Long press the **TOOLS** button.

Tool Bar Operation

- Single tapping a specific tool turns the tool on/off.
- Long pressing any of the tools reveals the complete tool configuration menu.
- Single tapping the **TOOLS** button cycles through the tool bars.
- Long pressing the **TOOLS** button takes you directly to the Tool Layout Manager, where you can configure which tools appear on each row.

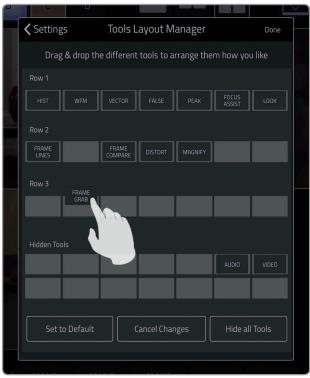


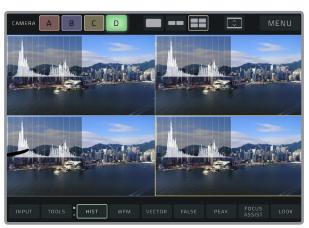
Fig. 4-1

Tools Behavior

Tools can be applied to each video independently or to all video streams simultaneously. From the Tools Behavior menu, select either **Per Input** (tool is applied individually to each feed), or **Global** (tool is applied simultaneously to all feeds).



Per Input



Global

Frame Grab Manager

The Frame Grab Manager stores all your previous frame grabs along with the any looks that have been applied. You can also import images directly from your device (Fig. 4-2). These frame grabs and images can be used in conjunction with the Frame Compare tool (page 15).

Accessing the Frame Grab Manager:

- Select Frame Grabs from the Settings menu
- Long press the FRAME GRAB button, then select "Go to Frame Grab Manager."

LOOK

The LOOK Menu allows you to review or delete looks and configure your LiveGrade settings. Use the features described below to manage your looks.

- Color Decision Lists (CDL) Review and/or delete stored CDL files.
- Lookup Tables (LUT)- Review and/or delete stored LUT files.
- LiveGrade Settings Configure VUER to work with Pomfort's LiveGrade software. You can also configure VUER to either control or be managed by LiveGrade. You must have a valid LiveGrade license to take advantage of this feature (Fig. 4-3).



Fig. 4-2

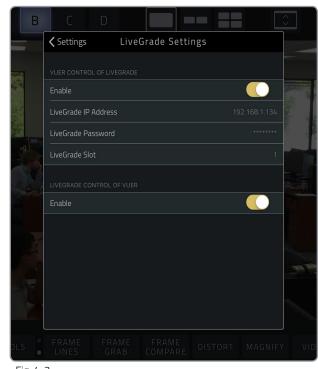


Fig. 4-3

TROUBLESHOOTING

THE VUER APP KEEPS CRASHING.

Below are some steps you can try:

- Close all other apps (if you cannot close all other apps, then at the very least close all other Teradek apps).
- Close the VUER app then reopen it.
- 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.
- Perform a full reset:

iOS- Enter the Settings menu and navigate down to the VUER settings. Enable the option **Reset Database on Next App Open**. Close the VUER app then reopen it.

Android - Enter the Settings menu, select Apps, then select VUER settings. Select **Force Stop.** Close the VUER app then reopen it.

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 or Android device are robust and have adequate bandwidth. We recommend using newer, high quality wireless access points and configuring network to use the 5GHz WiFi band.
- Lower the resolution and/or bitrate of incoming stream.
- Ensure Teradek device firmware is up to date.

I DO NOT HEAR ANY OUTPUT AUDIO.

Tap the Audio tool button (pg.17) and check if the audio levels are too low. If the audio source is set to **On When Selected**, it must be selected for audio to be present.

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 software version running on the iPad (from the iOS settings)or Android device
- iPad or Android device model
- Version of the VUER app (from within the app settings)
- Log in credentials used with the iPad or Android device
- 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 software version running on the iPad (from the iOS settings)or Android device
- iPad or Android device model
- Version of the VUER app (from within the app settings)