



Vidui X

Live Streaming Encoder

Reference Guide

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INTRODUCTION

Thank you for purchasing Teradek's Vidiu X, the ultimate entry-level live streaming solution for HDMI video sources. Vidiu X delivers high definition live streaming video with the quality and reliability expected in traditional HD broadcasts. More powerful than the previous Vidiu Pro, Vidiu X supports 1080p resolutions, RTMPS streaming, higher encoding bitrates, and also includes native integration with some of the most popular video platforms.

Support Resources

In addition to this reference guide, there are a number of resources available for more information on Vidiu X's features and operation. For tips, information, or to submit help requests to Teradek's support team, visit <https://teradek.com/pages/contact>. For all the latest firmware and software updates, visit <https://teradek.com/pages/downloads>.

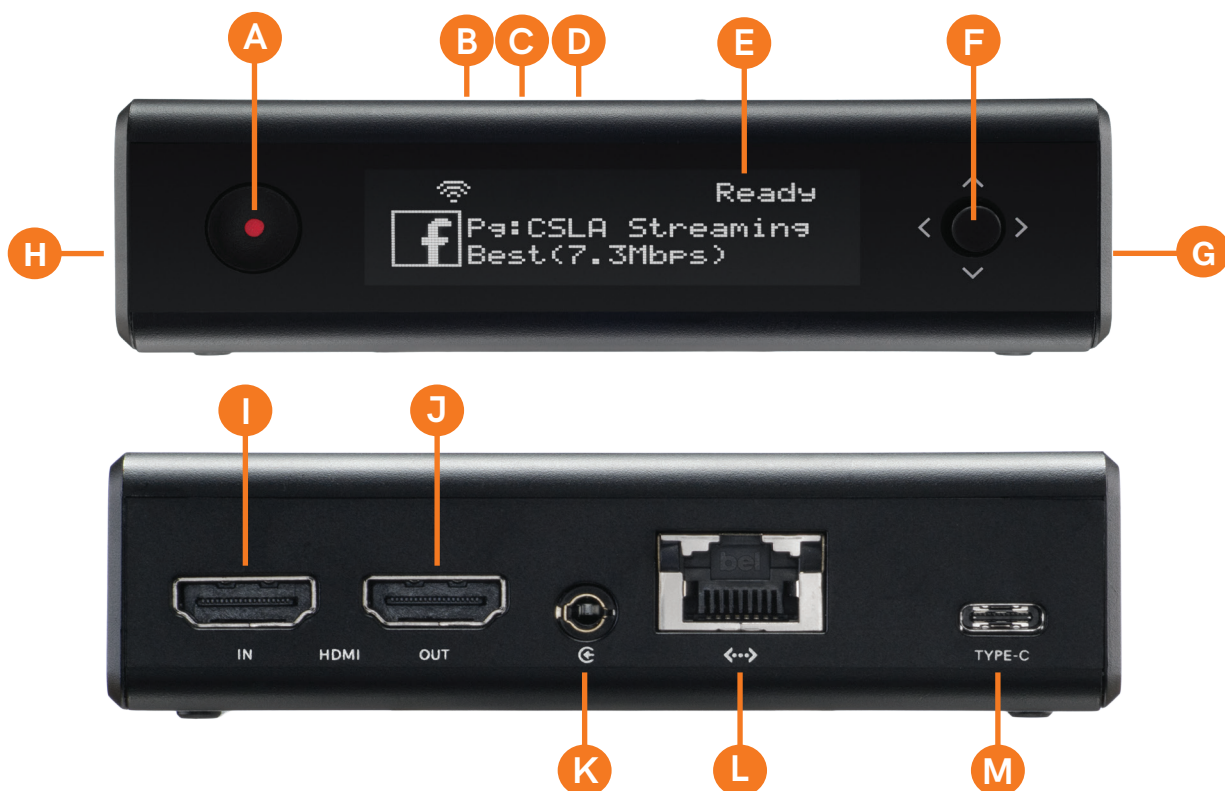
Disclaimer

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 Teradek cannot be held responsible for inaccuracies, typographical errors, or out-of-date information contained within this manual.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 Vidiu products contain no user serviceable parts. Disassembly, modification, or removal of any of the device's components may void your warranty. Please visit <https://teradek.com/pages/warranty-information> for up-to-date warranty terms and conditions.

PHYSICAL PROPERTIES



A: Broadcast button

B: Video status indicator

C: Network status indicator

D: Broadcast status indicator

E: OLED display

F: Menu joystick

G: USB modem port

H: SD card slot

I: HDMI input

J: HDMI output

K: Mic/Line stereo input

L: Ethernet port

M: USB-C power input

BUTTON/JOYSTICK OPERATION

Use the Menu Joystick to navigate the front panel interface.



Broadcast/Record Button
Start/stop broadcast or recording.



Menu Joystick

Use the arrow buttons to navigate through the menus. Press the joystick to confirm or open selection.

GETTING STARTED

There are three key steps to going live with Vidui X:

1. Power your device
2. Connect Vidui X to a network
3. Choose your streaming platform

POWER AND CONNECT

1. Connect the USB-C A/C adapter to the USB-C port (Fig. 2-1) located on the back of the device. Vidui X begins to boot as soon as the power is connected. **NOTE: Leave sufficient clearance underneath the unit to allow airflow.**
2. Turn on your video source then connect it to Vidui X's HDMI input (Fig. 2-2).
3. Use a hot shoe mount and a 1/4"-20 screw to mount Vidui X to your camera, tripod mount, or other accessory mount, if desired.
4. Once Vidui X has booted, verify that the Video status indicator is illuminated (Fig. 2-3). This indicates a video source has been successfully detected and the encoder is running.



Fig. 2-1



Fig. 2-2



Fig. 2-3

CONNECT TO A NETWORK

You can use the Vidiu app, the Web User Interface (Web UI), or the front panel interface to connect Vidiu X to a network. Select one of the following options.



USING THE VIDIU APP

The Vidiu app allows you to remotely monitor and configure Vidiu X from your iOS or Android device. Download the Vidiu app, then choose one of the following methods to get Vidiu X online.

CONNECT TO A WI-FI NETWORK

Vidiu X supports two wireless (Wi-Fi) modes; **Access Point (AP) Mode** and **Client Mode**. In AP Mode, Vidiu X generates a Wi-Fi network for your phone or laptop to connect to. To use Wi-Fi as your Internet connection, you'll need to connect Vidiu X to another network using Client mode.

From the Vidiu app:

1. Connect your cellular device to Vidiu X's Access Point network (**AP Mode**), then open the Vidiu App.
2. Tap the **•••** button at the top of the display, select **Network**, then select **Wi-Fi**.
3. Select **Client Mode**, then tap **Wi-Fi scan** (Fig. 2-4).
4. Select a network, then enter your credentials.

From the front panel:

1. Use the Menu Navigation Button to navigate to the **Network Settings** menu, then select **WiFi**.
2. Select **Client Mode**, then select **[Setup]**.
3. Select **Visible Networks** to scan for available networks. Select a Wi-Fi Network, then enter your credentials.
4. Once the device is configured, select **[INFO]** to view the IP address (Fig. 2-5).
5. To access the **Web UI**, enter Vidiu X's IP address in your web browser's navigation bar, then enter the default password "**admin**".

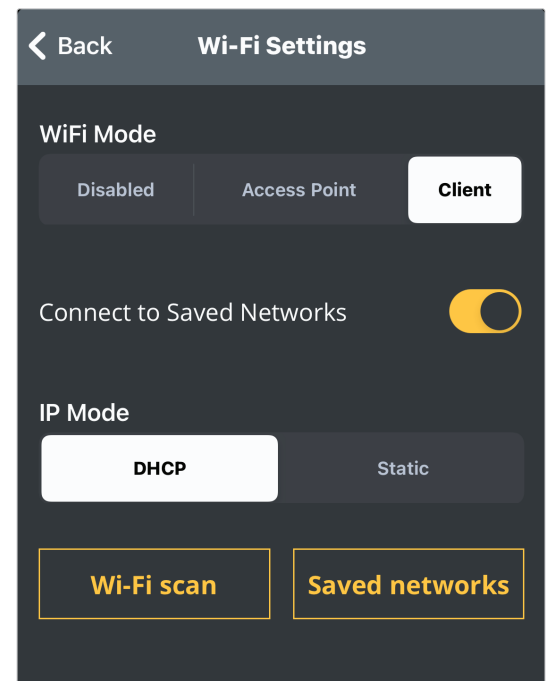


Fig. 2-4



Fig. 2-5

CONNECT TO AN ETHERNET NETWORK


Plug an Ethernet cable from the Vidiu X's Ethernet port to an Ethernet switch or router.



Fig. 2-7

VERIFY ETHERNET CONNECTION

From the front panel:

Verify that the  icon is displayed on the front panel, indicating that Vidiu X is connected to an Ethernet network (Fig. 2-7).

From the Vidiu app:

1. Connect your cellular device to Vidiu X's Access Point (AP) network: **Vidiu-X-XXXXXX** (XXXXXX represents the serial number of the device), then open the Vidiu app
2. Select **Network** and verify the Wired status shows **Connected** and the IP address shown on the Vidiu X is in the expected range for the network (Fig. 2-8).

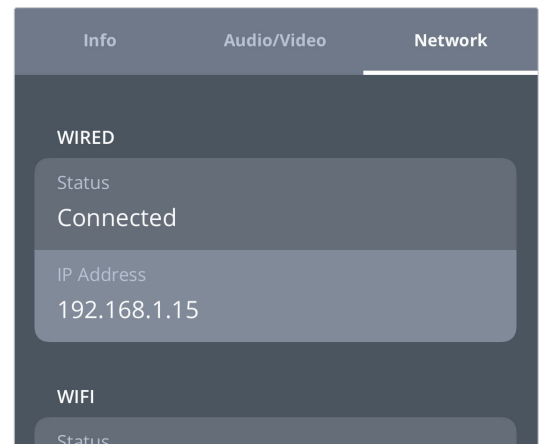


Fig. 2-8

CHOOSE YOUR DESTINATION

Vidiu X offers native integration with many popular video streaming services, making it capable of broadcasting to any compatible online platform. Simply enter your credentials using the Vidiu app, Web UI, or the front panel interface.

CONNECT USING THE VIDIU APP

1. Navigate to **Settings>Streaming**, then select **Configure Destination** (Fig. 2-11).
2. Select a streaming destination (Fig. 2-12), then follow the on-screen prompts to authorize Vidiu X for use with the selected platform (For more detailed set up instructions, go to the **Configure Destination** section on pg.11).
3. Select a channel or event to broadcast to.
4. After configuring your device, select **Apply** on the upper right corner, then navigate back to the home screen and tap the **Go Live** button to begin streaming.

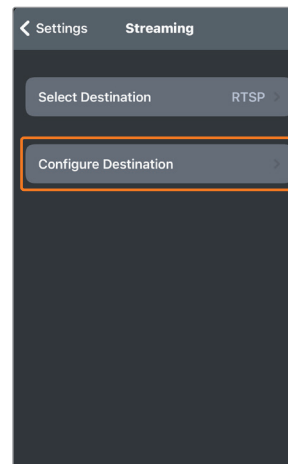


Fig. 2-11

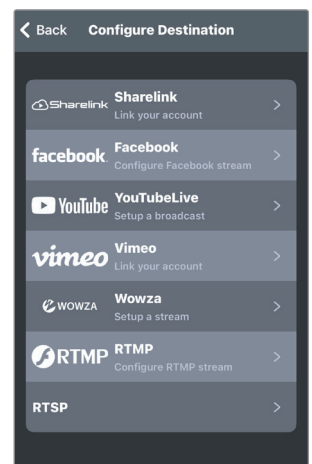


Fig. 2-12

CONNECT USING THE WEB UI

1. Click **Streaming**, then select a stream mode from the drop-down menu (Fig. 2-13).
2. Select a streaming mode, then follow the on-screen prompts to authorize Vidiu X for use with the selected platform (For more detailed instructions, go to the **Configure Destination** section on pg.11).
3. Select a channel or event to broadcast to.
4. After configuring your device, click **Save** on the upper right corner, then navigate back to the home screen and tap the **Go Live** button to begin streaming.

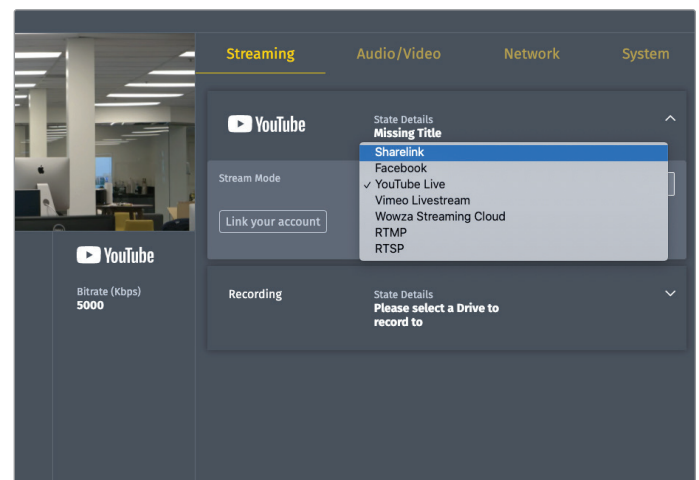


Fig. 2-13

INTERNET STREAMING WITH AIRMIX

Airmix is a live production suite that converts your live stream into a complete multi-camera production. Airmix offers an entire suite of tools such as switching, graphics, lower-thirds, looping in pre-recorded videos and more.


CONNECT AND BROADCAST WITH AIRMIX

1. Connect your iPad to the same network as Vidui X.

Airmix or Airmix Solo

Airmix is compatible with iPad Air 1 and newer. Airmix Solo is compatible with both iPad and iPhone. Both apps are available for download in the iTunes App Store.



2. Launch the Airmix 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. 2-14), 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. 2-15). 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.

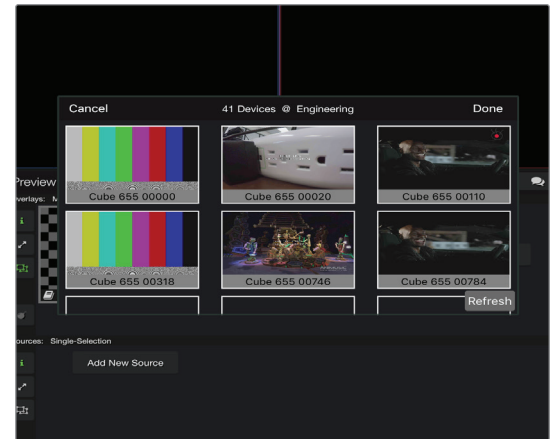


Fig. 2-14

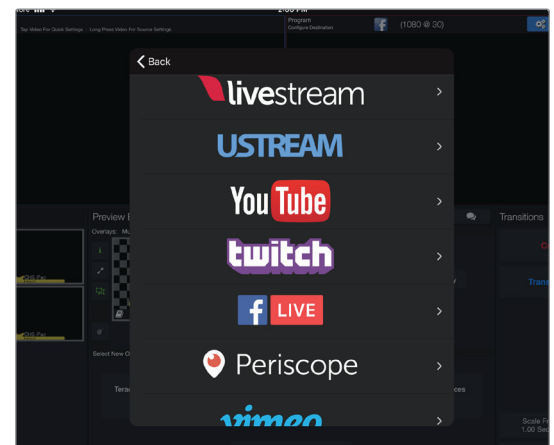
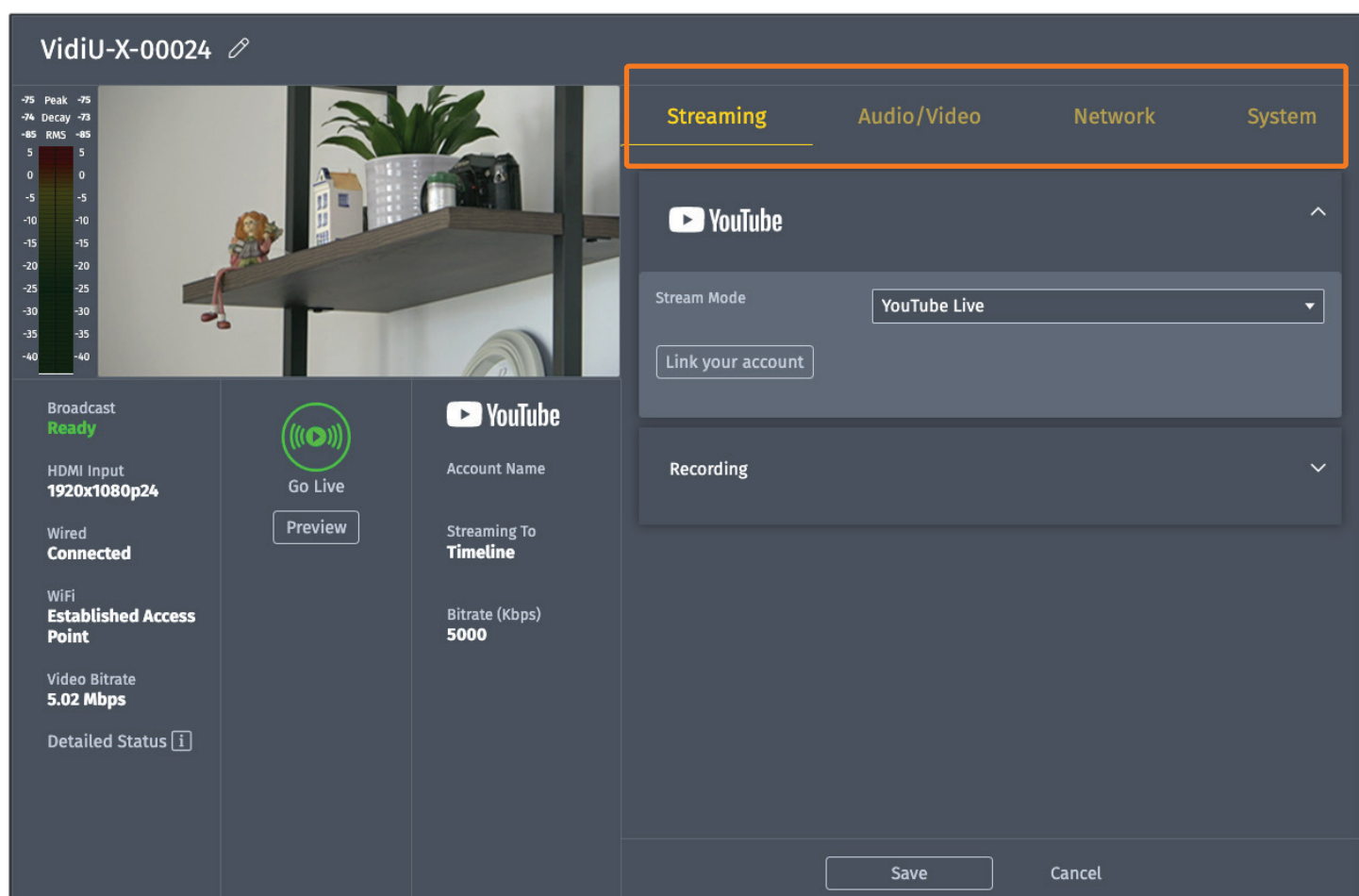


Fig. 2-15

SETTINGS OVERVIEW

NAVIGATING THE SETTINGS MENU

The **Settings** menu allows you to customize and control Vidiu X's streaming, audio/video, and network settings. Use the Vidiu app, Web UI, or the front panel interface to access the **Settings** menu, then select a setting to modify.



MENU OPTIONS

- **STREAMING** - Configure your streaming destinations and enable recording
- **AUDIO/VIDEO** - Adjust the resolution, bitrate, and other Video/Audio input settings
- **NETWORK** - Choose a method of connecting to the Internet
- **SYSTEM** - Perform factory reset, firmware upgrade, and system diagnostics

STREAMING

Vidiu X is capable of streaming video to some of the most popular streaming platforms using a number of different protocols. To view or modify the current streaming mode, enter the **Streaming** menu, then select a Stream Mode. Choose the Stream Mode best suited for your application.

SHARELINK

Sharelink allows you to stream to multiple destinations simultaneously and remotely manage Vidiu X from anywhere in the world. Sharelink also increases your broadcast's bandwidth and reliability by bonding multiple Internet connections. To take advantage of these features, you will need to purchase a Sharelink subscription, activate Sharelink, and authorize Vidiu X.



TO CONNECT TO SHARELINK:

1. Visit <https://sharelink.tv> and log in to your account.
2. From the Vidiu X web UI, navigate to the **Streaming** menu, select **Sharelink**, then **Save** (Fig. 3-1).
3. Tap **Link your account** to display the authorization code.
4. Copy the authorization code generated for your Vidiu X, then click on the link to return to the Sharelink web UI (Fig. 3-2).
5. Select **Add new Vidiu**.
6. Enter the authorization code, then click **Add**.
7. Select a streaming server region then click **Complete & Add** (Fig. 3-3).

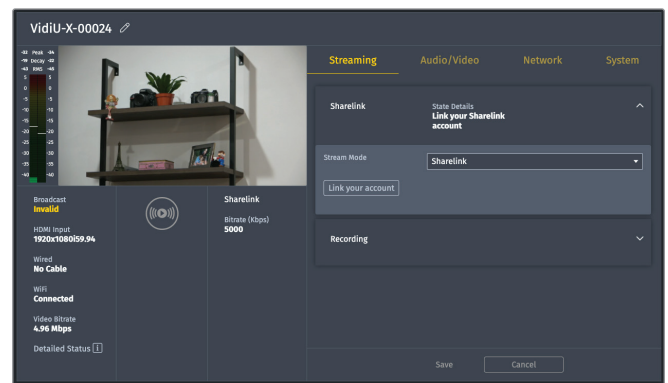


Fig. 3-1

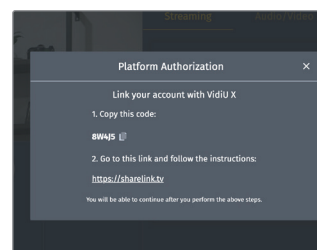


Fig. 3-2

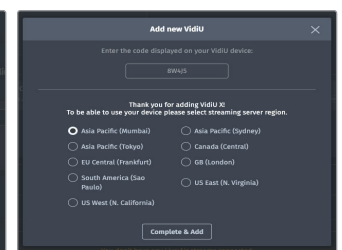


Fig. 3-3

ADD CHANNELS TO SHARELINK:

1. Select **Channels** from the top of the screen, then tap **Add new Channel** at the bottom.
2. Select a platform, then tap **Link your account** to enter your credentials (Fig. 3-4). Repeat this step to pair additional channels (up to five channels).
3. To pair channels that have already been configured, click **Add channel** from the home screen, select the channel(s) you wish to stream to, then click **Add** (Fig. 3-5).

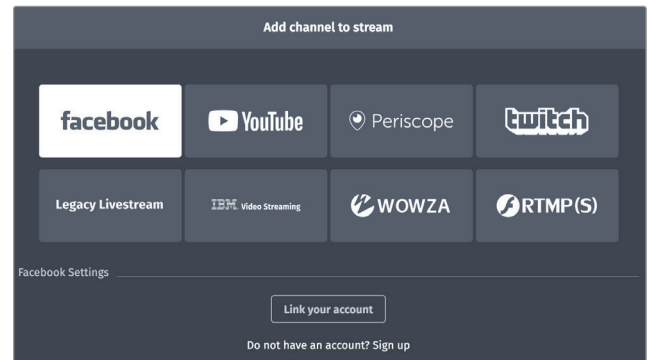


Fig. 3-4

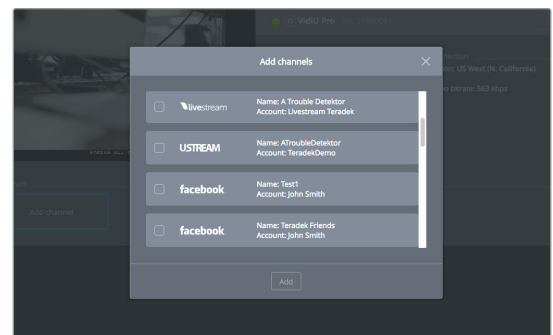


Fig. 3-5

FACEBOOK, YOUTUBE LIVE, AND VIMEO LIVESTREAM

Vidiu X features native integration with some of the most popular streaming platforms. Select a **Stream Mode** (Facebook, YouTube Live, or Vimeo Livestream), then follow the prompts to link your account.

1. Select Facebook, YouTube Live, or Vimeo Livestream, then click **Link your Account**.
2. Copy the authentication code generated for your device, go to the link provided, then follow the instructions to authenticate your account (Fig.3-6).
3. Return to the Vidiu X's web UI and click **Continue**.
4. Enter the title, description and broadcast method, then adjust your privacy settings (if applicable).
5. Click **Save**.

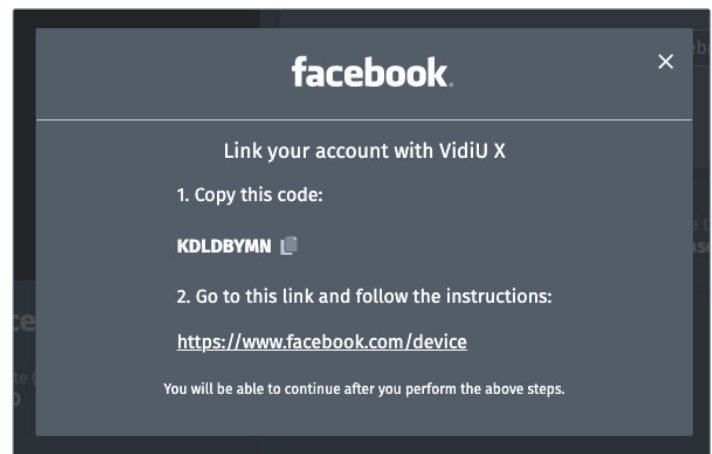


Fig. 3-6

WOWZA STREAMING CLOUD

1. Select **Wowza Streaming Cloud** mode.
2. Enter the connection code from your Wowza Streaming account then click **Connect** (Fig. 3-7).
3. Enter your credentials, then return to the web UI **Home** screen.

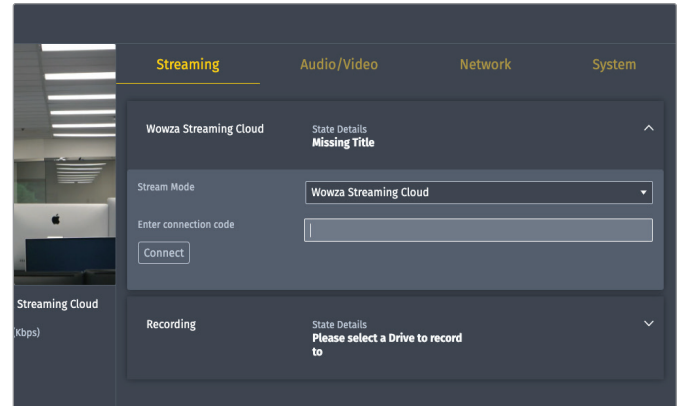


Fig. 3-7

RTMP(S)

Vidui can stream to other video platforms, CDNs, and streaming servers using RTMP mode, which is supported by most video streaming platforms.

URL and Stream Name/Key

To stream to a broadcast platform other than a platform already integrated into Vidui, you must obtain a URL and stream key/name.

1. Select **RTMP**.
2. Enter the URL and stream key/name information provided by the streaming service (Fig. 3-8).
3. Enter your credentials (if applicable) then click **Save**.

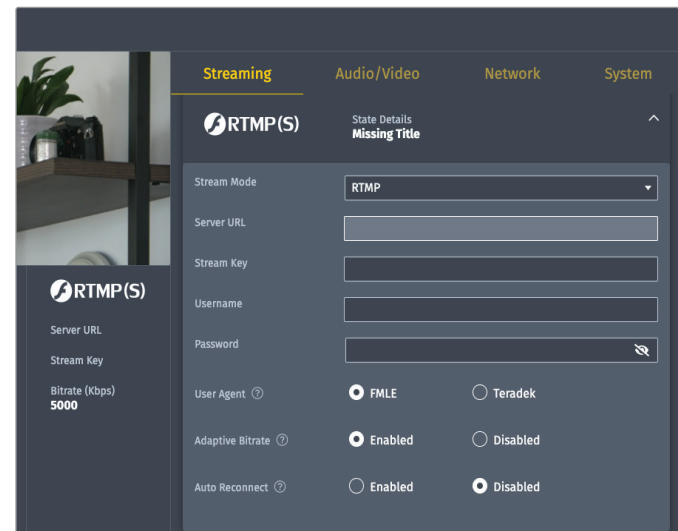


Fig. 3-8

RTSP

RTSP streaming is a convenient way to stream video over a local network. In this mode, Vidiu X acts as the server, and clients can connect to pull the video stream. RTSP can be helpful for testing local network connectivity.

1. Select RTSP.
2. Enter the server port and stream name, then click **Save** (Fig. 3-9).
3. To view the stream on VLC media player, copy the RTSP url under the preview window (Fig. 3-10), launch VLC, then navigate to **File>Open Network**. Paste the url in the url field then click **Open**.

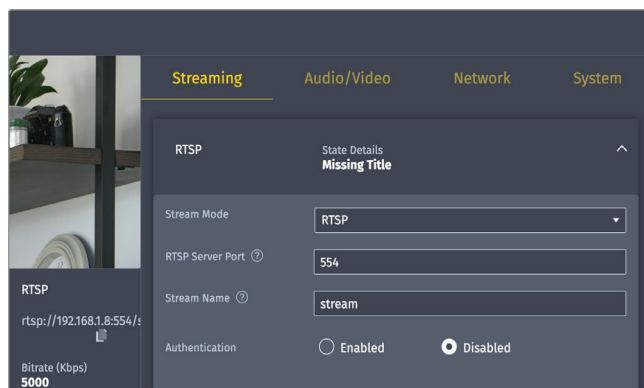


Fig. 3-9

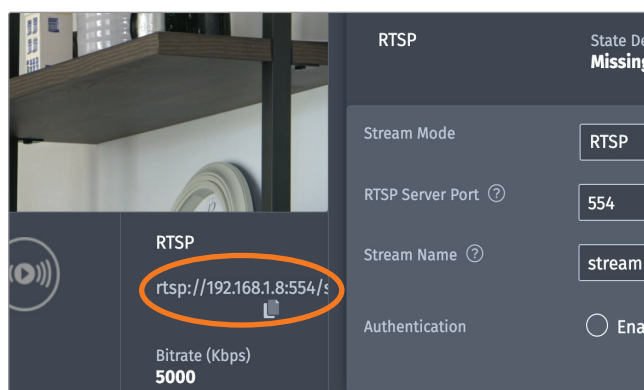


Fig. 3-10

RECORDING

With Vidiu X, you can record your broadcasts directly to a compatible SD card. Each recording is saved with the same resolution and bitrate set on the device. From the front panel interface, Web UI, or the Vidiu app, go to your **Settings**, then select **Recording**.

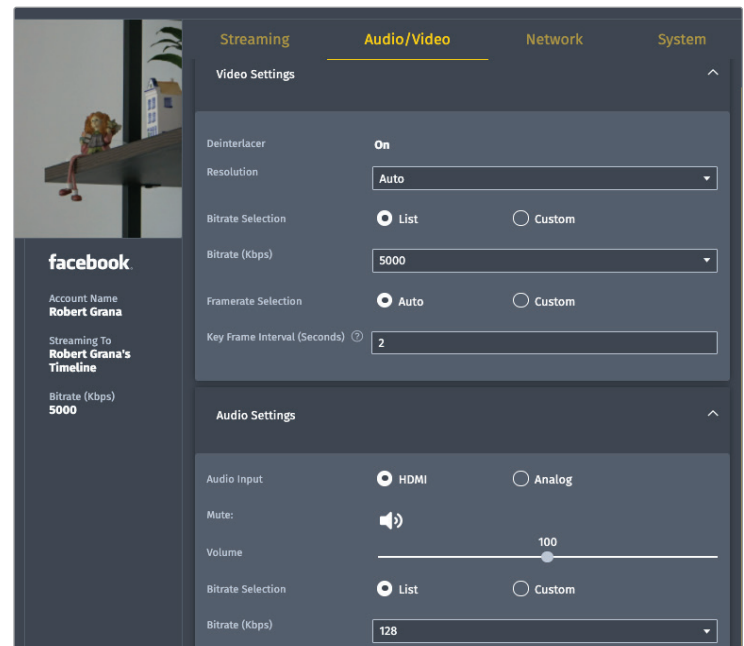
1. Insert a compatible SD card into the device's slot.
2. Toggle the **Enable/Disable Recording** switch to **Enable** (from the front panel interface's **Recording Settings** menu, select **Enable**).

Recording Considerations

- For best results, use Class 6 or higher SD cards.
- Media should be formatted using FAT32 or exFAT.
- File size is limited to 4GB for FAT32 formatted cards.
- New recordings are automatically started after the file size limit is reached.

AUDIO/VIDEO

The Video/Audio menu contains input source information and audio source configuration options. Navigate to **Settings>Video/Audio** (Video Settings or Audio Settings from the front panel), then tap the **Video/Audio** button to configure the audio or video settings.

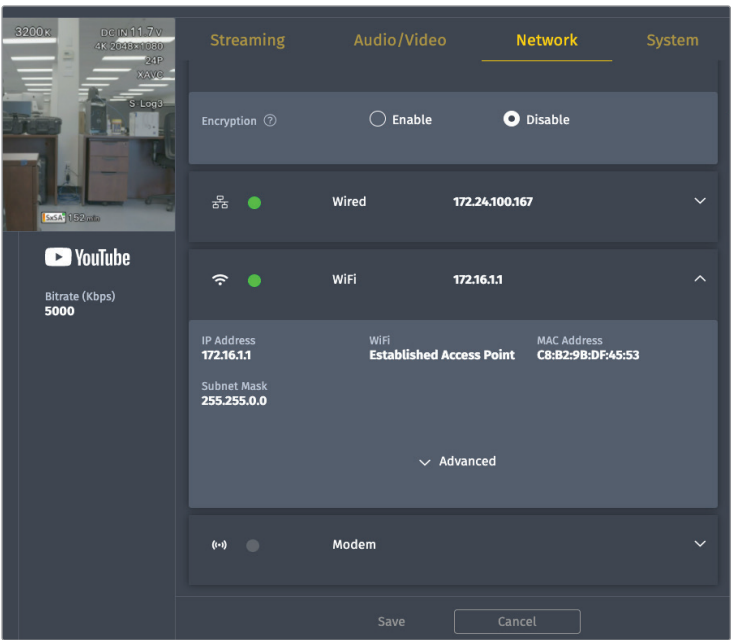


AUDIO/VIDEO SETTINGS

- **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 useful when streaming to the Internet or mobile devices.
- **RESOLUTION** - Maintain the input's native resolution (Auto), or select from a list of resolutions.
- **BITRATE SELECTION** - Select from a list of bitrate figures, or manually enter a custom bitrate.
- **BITRATE (kbps)** - 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.
- **FRAME RATE SELECTION** - Select Auto to maintain the input frame rate, or select Custom to choose a frame rate that matches the exact figure or a fraction of the input frame rate.
- **KEY FRAME INTERVAL** - Adjust the amount of time between full picture refreshes.
- **AUDIO INPUT** - Choose the source used for the audio stream. Select HDMI (Embedded), or Analog audio.
- **MUTE** - Turn off Audio.
- **BITRATE SELECTION** - Select from a list of bitrate figures, or manually enter a custom bitrate.
- **BITRATE (kbps)** - 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.

NETWORK

Vidiu X allows you to connect and stream to the Internet by utilizing one of several network interfaces. Navigate to Settings>Network (Network Settings from the front panel), then make a selection.

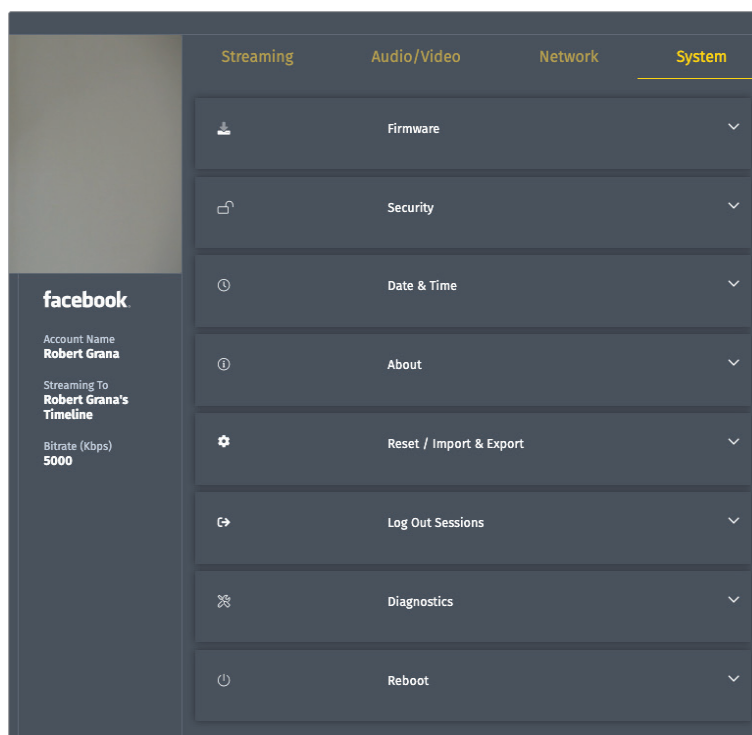


NETWORK SETTINGS

- **SSL/TLS ENCRYPTION**
 - SSL (Secure Sockets Layer), and its successor, TLS (Transport Layer Security), are encryption protocols used to protect the confidentiality and integrity of any data transmitted over the Internet. Use this option to enable or disable SSL/TLS encryption.
- **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. Connect an Ethernet cable to Vidiu X, select Wired, then choose a configuration mode:
 - **Dynamic (DHCP):** When set to DHCP, Vidiu X will request an IP address and network configuration from the network's DHCP server.
 - **Static:** When set to Static, you will need to manually configure the IP address, subnet mask, gateway, and DNS server to connect to the network.
- **WIFI**
 - 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 wireless modes available:
 - **Access Point (AP) Mode:** Vidiu acts as its own dual band access point, allowing you to connect your device directly to Vidiu's AP network.
 - **Client Mode:** Vidiu and your mobile device connect to the same local wireless network. Access Client Mode, scan for available networks or connect to a previously saved network, then enter your credentials.
- **MODEM**
 - A USB modem allows you to broadcast wherever a cell connection is available. Vidiu X automatically detects and supports many modems using **Auto** mode. **Custom** mode allows you to manually configure a modem if it's not automatically detected. Available configuration modes are Composite, and Ethernet.

SYSTEM

Essential system functions, including factory reset, firmware upgrade, and diagnostics reports can be performed from the System menu in the web UI.



SYSTEM SETTINGS

- | | |
|------------------------------------|--|
| ● FIRMWARE | - Check for new updates and upgrade Vidui X's firmware to the latest version. If an update is available, simply follow the prompts to complete the firmware update. |
| ● SECURITY | - Add, change, or delete your password. |
| ● DATE & TIME | - Enter an NTP link to automatically synchronize the time and date. |
| ● ABOUT | - Display Vidui X's model and serial number. |
| ● RESET/IMPORT & EXPORT | - Factory Reset: Restore Vidui X to its original settings.
Import/Export: Import or export Vidui X user settings to another Vidui X unit. These files can be used by a different Vidui X to replicate the configuration. Additionally, the export settings feature can be used for troubleshooting. |
| ● LOG OUT SESSIONS | - Log out of one or all sessions. |
| ● DIAGNOSTICS | - Generate a diagnostic report for your Vidui X. Diagnostic reports can be used by Teradek's support team to assist during troubleshooting. |
| ● REBOOT | - Restart Vidui X. |

TROUBLESHOOTING

MY FIREWALL/ROUTER IS BLOCKING RTMP STREAMING.

Vidiu X uses a set of ports for RTMP streaming. Make sure the required ports are allowed through your firewall or router. The list can be found at <https://support.teradek.com/hc/en-us/articles/226177168>.

WHAT ARE THE SUPPORTED RESOLUTIONS FOR EACH SOCIAL MEDIA CDN?

Every live streaming platform's specifications are different, and generally change over time. Visit your streaming platform's website to find supported resolutions.

WHY IS MY STREAM SUDDENLY CHOPPING WHILE STREAMING?

Intermittent Wi-Fi connections can cause instability even when streaming over Ethernet. If you encounter issues while streaming over Ethernet, disabling Wi-Fi may help. To fix this:

1. Scroll to Network Settings.
2. Select Wi-Fi.
3. Select Client. Turn Client mode to Off.

WHY DOES YOUTUBE TELL ME MY BITRATE IS TOO LOW?

Vidiu X is preconfigured to use adaptive bitrate which changes according to the user's bandwidth. This means that the bitrates can sometimes jump or dip depending on the stream, prompting a message from YouTube. While this operation is completely normal, it may cause a message to appear on the YouTube event control room page.

CONFIGURING VIDIU X VIA FRONT PANEL IS DIFFICULT.

We recommend using Vidiu X's web interface or the Vidiu app for configuring Vidiu X. It's much faster and simpler. To connect to the app, connect Vidiu and your cellular device to the same wireless network. Vidiu will automatically appear in the app.

To connect using the web interface, find your Vidiu's IP address from the front panel. Type this address into your web browser. You will be connected to your Vidiu and can change settings accordingly.

I'VE PRESSED THE START/STOP BUTTON TO GO LIVE, BUT MY STREAM IS NOT LIVE.

Some streaming networks such as Periscope, YouTube events, and Facebook Pages may require additional steps to publish your stream.. This depends on the CDN's workflow. Remember to go live on both Vidiu and destination page to fully start streaming.

TECHNICAL SPECIFICATIONS

VIDEO

Video Input	1x HDMI Type A receptacle
Video Output	1x HDMI Type A receptacle
Supported Resolutions	1080p 23.98/24/25/29.97/30/50/59.94/60 720p 50/59.94/60
Video Compression	H.264 (AVC) , Main profile
Supported Video Bitrate	250 kbps to 15 Mbps
Preset Bitrates/Resolutions	Max: 12 Mbps + 256 kbps audio 1920x1080 HD+: 8 Mbps + 256 kbps audio 1920x1080 HD: 5 Mbps + 192 kbps 1920x1080 High: 3 Mbps + 192 kbps 1280x720 Medium: 1.5 Mbps + 128 kbps 960x540 Low: 800 kbps + 128 kbps 736x414 Mobile: 500 kbps + 96 kbps 480x270
Video Format Conversion Support	Built-in video scaler

AUDIO

Audio Inputs	Embedded HDMI audio input, 2-Channel Analog line-in or mic-in, 2-Channel
Audio Compression	AAC-LC
Supported Audio Bitrate Details	HD: 256 kbps High: 192 kbps Medium: 128 kbps Low: 96 kbps Mobile: 48 kbps

PHYSICAL ATTRIBUTES

Dimensions	4.1" W x 2.9" D x 1.1" H (105 x 75 x 28 mm)
Weight	5.6oz [160g]
Construction	Machined aluminum and ABS Plastic
Mountability	1x ¼-20 plus 2 x M3 on the bottom plate

ENVIRONMENTAL

Operating Temperature	Operating: 14°F to 104°F (-10°C to 40°C) Storage: -40°F to 194°F (-40°C to 90°C)
Humidity	Operating: 5% to 95% (non-condensing) Storage: Max. 90%

INTERFACES

Configuration Interface	OLED display with navigation joystick, Feature-rich Web UI for configuration and control
Switches	Go Live button
Recording/Storage	Full size SD/SDXC (class 6 and above) formatted exFAT, USB formatted exFAT
Mobile App	Vidui App for iOS or Android devices
USB Interface Functionality	Powered USB 2.0 host port

NETWORK

Ethernet	10/100/1000 BASE-T
Wireless	WiFi: Dual Band MIMO 802.11ax WiFi 6 Internal Antennas: Internal 0dBi antennas
USB	USB type A (host) for 3G/4G/5G modem support
WiFi Channel Selection	Auto with 3 modes: 2.4 or 5 GHz, Auto (2.4 GHz only), Auto (5 GHz only) Manual: Configurable to specific channels
Bonding	Simultaneous bonding over up to 3 networks: Ethernet, Wi-Fi, USB cellular modem
Cloud Services	Sharelink
Network Protocols	TCP/IP, UDP, HTTP, DHCP, NTP, SSL, IGMP
Video Transport Protocols	RTMP, RTMPS, AirMix, Sharelink bonding, RTSP
Integrated Platforms	Custom RTMP/S, YouTube Live, Facebook, Vimeo Livestream, and AirMix

POWER

Power Input	Powered USB-C host port
Power Consumption	Nominal: 7W Max: 12W

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 Vidiu X is 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>