

# VGADVI Recorder Pro

(also covering VGADVI Broadcaster Pro)



Release 3.14.4  
April 24, 2015

# Terms and Conditions

This document, the Epiphan web site, and the information contained therein, including but not limited to the text, videos and images as well as Epiphan System Inc.'s trademarks, trade names and logos are the property of Epiphan Systems Inc. and its affiliates and licensors, and are protected from unauthorized copying and dissemination by Canadian copyright law, United States copyright law, trademark law, international conventions and other intellectual property laws.

Epiphan, Epiphan Systems, Epiphan Systems Inc., and Epiphan logos are trademarks or registered trademarks of Epiphan Systems Inc., in certain countries. All Epiphan product names and logos are trademarks or registered trademarks of Epiphan. All other company and product names and logos may be trademarks or registered trademarks of their respective owners in certain countries.

Copyright © 2014 Epiphan Systems Inc. All Rights Reserved.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET OR PRODUCT INSTALLATION SOFTWARE PACKAGE THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSES OR LIMITED WARRANTY, CONTACT YOUR EPIPHAN REPRESENTATIVE FOR A COPY.

PRODUCT DESCRIPTIONS AND SPECIFICATIONS REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. EPIPHAN PERIODICALLY ADDS OR UPDATES THE INFORMATION AND DOCUMENTS ON ITS WEB SITE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION AND RECOMMENDATIONS ARE BELIEVED TO BE ACCURATE AT TIME OF WRITING BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

## LIMITATION OF LIABILITY

UNDER NO CIRCUMSTANCES SHALL EPIPHAN BE LIABLE FOR ANY INCIDENTAL, SPECIAL, CONSEQUENTIAL, EXEMPLARY OR OTHER INDIRECT DAMAGES THAT RESULT FROM THE USE OF, OR THE INABILITY TO USE, THIS PRODUCT OR THE INFORMATION CONTAINED IN THIS DOCUMENT OR PROVIDED ON EPIPHAN'S WEB SITE, EVEN IF EPIPHAN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL EPIPHAN'S TOTAL LIABILITY TO YOU FOR ALL DAMAGES, LOSSES, AND CAUSES OF ACTION RESULTING FROM YOUR USE OF THIS PRODUCT, WHETHER IN CONTRACT, TORT (INCLUDING, BUT NOT LIMITED TO, NEGLIGENCE) OR OTHERWISE, EXCEED THE AMOUNTS YOU PAID TO EPIPHAN DURING THE MOST RECENT THREE-MONTH PERIOD IN CONNECTION WITH AMOUNTS WHICH YOU PAID FOR USING THIS PRODUCT.

INFORMATION AND DOCUMENTS, INCLUDING PRODUCT SPECIFICATIONS, PROVIDED IN THIS DOCUMENT OR THE EPIPHAN WEB SITE ARE PROVIDED "AS IS". SPECIFICALLY, BUT NOT WITHOUT LIMITATION, EPIPHAN DOES NOT WARRANT THAT: (i) THE INFORMATION IS CORRECT, ACCURATE, RELIABLE OR COMPLETE; (ii) THE FUNCTIONS CONTAINED ON THE EPIPHAN WEB SITE WILL BE UNINTERRUPTED OR ERROR-FREE; (iii) DEFECTS WILL BE CORRECTED, OR (iv) THIS WEB SITE OR THE SERVER(S) THAT MAKES IT AVAILABLE ARE FREE OF VIRUSES OR OTHER HARMFUL COMPONENTS. EPIPHAN SPECIFICALLY DISCLAIMS ALL REPRESENTATIONS, WARRANTIES, AND CONDITIONS, EITHER EXPRESS, IMPLIED, STATUTORY, BY USAGE OF TRADE OR OTHERWISE INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, TITLE, SATISFACTORY QUALITY OR FITNESS FOR A PARTICULAR PURPOSE.

For additional terms and conditions, please refer to additional sections in this document.

# Thank You for Choosing Epiphan!

At Epiphan Systems Inc. ("Epiphan"), product function and quality are our top priority. We make every effort to make sure that our products exceed your expectations.

## Product Feedback

---

Your feedback is important! We regularly contact our customers to ensure our products meet your performance and reliability requirements. We strive to continually enhance our products to accommodate your needs. Please let us know how you think we can improve our products by emailing your suggestions to [info@epiphan.com](mailto:info@epiphan.com).

## Specifications

---

Go to the Professional Recording and Streaming Systems page of the Epiphan website to get the most recent product specifications and additional information about Epiphan's VGADVI Recorder Pro.

## Warranty

---

All Epiphan Systems products are provided with a 100% return to depot warranty for one year from the date of purchase.

## Technical Support

---

Epiphan's products are backed by our professional support team. If you are having issues with your product, please gather details about your system and contact our team by:

- Emailing [support@epiphan.com](mailto:support@epiphan.com)
- Live chat via the link on our support site <http://www.epiphan.com/support/>
- Phone toll free at 1-877-599-6581 or call +1-613-599-6581

Be sure to include as much information about your problem as possible. Including:

- Problem description
- Details of the video or audio source (type, connection, resolution, refresh rate, etc.)
- Product serial number
- Product firmware version (if applicable, from web admin interface)

Copyright © 2014 Epiphan Systems Inc. All Rights Reserved.

# What's New in Release 3.14.4?

Release 3.14.4 brings additional streaming functionality through Wowza Cloud to VGADVI Recorder Pro.

## New Streaming Functionality

### Live Streaming via Wowza Cloud

Using a simple connection code, the power of VGADVI Recorder Pro can easily be combined with the flexibility and worldwide accessibility of the Wowza Streaming Cloud to universally stream from any live video source. See [Stream your video](#).

## Resolved issues

---

Along with many smaller bugs fixed in release 3.14.4, the following issues have been resolved:

- A blue line appearing on the right side of the captured image when capturing from an SDI source at 720p
- Inconsistent/inaccurate status results shown when attempting to extract a subset of a large, multi-track file

## Limitations and known issues

---

This section includes known issues or limitations that affect functionality or usability and ways that you can work around these limitations.

### Affecting encoding

- Encoding with MPEG-4 sometimes results in poor quality.  
**Workaround:** From the channel's stream setup, increase the video bitrate to improve picture quality.
- Video bitrate for MJPEG streams are approximately one and a half to two times the configured value.  
**Workaround:** Verify the actual bitrate on the channel's channel status page and adjust until the correct value is achieved.
- In multiple source channel layouts, sources cannot overrun the top or left edges of the screen.  
**Workaround:** Avoid using negative values for x and y axis coordinates.
- Encoding is unavailable if a branding logo is placed outside the frame size. (i.e. if the frame is 1024x768 and the logo is placed with an x-axis margin of 1200.)  
**Workaround:** Always keep the branding logo within the frame.
- For VGA sources only, some wide-mode resolutions are not correctly identified and result in a slightly squished image (e.g. for a 1360x768 source, the detected resolution may be 1024x768).  
**Workaround:** This issue is related to the video output hardware. Test your source to see if it exhibits the



issue. If possible, avoid using wide-mode for VGA displays that exhibit this issue.

- When changing a channel's source from a local encoder source to an external encoder source, it's possible to have an AAC audio encoding bitrate that is higher than the VGA Grid HD Encoder supports. The resulting stream or recording may be unplayable and you may encounter a warning about variable audio bitrate.

**Workaround:** When changing from local to external sources, delete the channel rather than changing the source(s). Or, if re-using channels, ensure audio encoding bitrate for VGA Grid HD Encoders is set to no more than 160 kbps.

- Recordings made with encoded streams from VGA Grid HD Encoders, using AAC audio and AVI file format are not playable via VLC.

**Workaround:** Use another media player, such as Windows Media Player; choose a different audio codec; or save recordings as .MP4 or .MOV files.

- Some cameras are sensitive to EDIDs and are not captured at optimal settings. When capturing from these cameras, the HD signal may be down-sampled by the camera to an SD signal because the Epiphan system doesn't share the EDID the camera expects for its HD signal.

**Workaround:** Contact Epiphan customer support for a custom EDID to resolve this issue.

- **Limitation:** When audio is enabled on an SDI source where video is already being captured, it takes up to 15 seconds for the system to detect the audio. Once detected, the audio is properly synchronized with the video.

**Workaround:** Start the SDI signal with audio enabled, or check to ensure audio is detected before streaming or recording.

## Affecting streaming

- You may see video artifacts when creating multiple source layouts where sources are partially overlapped.

**Workaround:** Avoid overlapping sources in multiple source channels or disable the Keep Aspect Ratio parameter.

## Affecting recording

- You may see video artifacts when creating multiple source layouts where sources are partially overlapped.

**Workaround:** Avoid overlapping sources in multiple source channels or disable the Keep Aspect Ratio parameter.

## Affecting the web interface

- It is possible to name two or more channels with the same value. Use of automatic file transfer and UPnP is unpredictable if this occurs.

**Workaround:** Ensure each channel has a unique name.

- The automatic file upload (AFU) file queue shows a maximum of 15 files, Newer 15 and Top of the list buttons do not work. All files are transferred, even though they are not lists.

**Workaround:** Wait for the queue to have fewer files in the list.

## Affecting other areas

- **Limitation:** Pearl fails to restart after improper shutdown (power cable removed or rapid power cycle). LED and touch screen blink.  
**Workaround:** Restart Pearl by removing the power cable for 20 seconds, then reattaching the cable and powering the system back on.

# Table Of Contents

Thank You for Choosing Epiphan! .....	ii
<b>Product Feedback</b> .....	ii
<b>Specifications</b> .....	ii
<b>Warranty</b> .....	ii
<b>Technical Support</b> .....	ii
<b>Resolved issues</b> .....	iii
<b>Limitations and known issues</b> .....	iii
Welcome .....	1
<b>About this Guide</b> .....	2
VGADVI Recorder Pro Overview .....	3
What's in the Box? .....	4
<b>Front and back panel view</b> .....	5
Quick Start .....	8
<b>Step 1: Physical Setup and Power On</b> .....	8
<b>Step 2: Admin Discovery and Login</b> .....	9
<b>Step 3: Setup the Video Source</b> .....	10
<b>Step 4: Configure the Channel</b> .....	12
<b>Step 5: Testing the Stream</b> .....	13
<b>Step 6: Recording the Stream</b> .....	14
<b>What's Next?</b> .....	14
PART 1: Setup .....	15
1-1 Connect to the Admin Interface .....	16
<b>Connect via DNS-based Service Discovery</b> .....	16
<b>Connect via the Epiphan Discovery Utility</b> .....	17
<b>Connect via Persistent Static IP Address</b> .....	19
1-2 User Administration .....	20
<b>Understanding User Privileges</b> .....	20
<b>Setting and Changing User Passwords</b> .....	23
<b>Removing User Passwords</b> .....	24
<b>Overcoming Lost Passwords</b> .....	25
<b>Configure LDAP</b> .....	25
<b>Changing the logged-in user</b> .....	28
1-2 View system information .....	29
1-3 Configure Network Settings .....	30
<b>Verify IP Address and MAC address</b> .....	30
<b>Configure a Static IP Address</b> .....	31
<b>Configure DHCP</b> .....	33

Tether to a Mobile Network .....	34
Perform Network Diagnostics .....	35
1-3 Configuration presets .....	37
Configuration presets overview .....	37
Configuration groups .....	40
Create a configuration preset .....	40
Apply a configuration preset .....	42
Apply the Factory default configuration preset .....	43
Update a configuration preset .....	44
Delete a configuration preset .....	45
Configuration preset considerations .....	46
1-4 Configure Date and Time .....	50
Verify Date and Time Settings .....	50
Change the Time Zone .....	51
Configure Synchronized Time (NTP, PTP v1, and RDATE) .....	51
Configure a Local NTP Server .....	53
Manually Configure the Date and Time .....	53
1-5 Restrict Viewers by IP Address .....	54
Examples .....	55
PART 2: Sources .....	58
2-1 Identify sources .....	59
Connecting sources .....	59
Previewing captured stream from sources .....	60
2-2 Configure a video source .....	61
Configure the video source's frame grabber parameters .....	61
Change a source name .....	65
2-3 Configure an audio source .....	67
Add an audio source to a channel .....	67
Configure audio encoding settings .....	68
Set audio volume .....	69
2-4 Fine-tune source configuration .....	71
Video is not centered on the screen (VGA sources only) .....	71
Video is too bright, too dark or washed out (VGA sources only) .....	72
Video looks squished (VGA sources only) .....	73
Remove the combing effect on images .....	75
Force the capture card to use a specific EDID .....	75
PART 3: Channels .....	79
3-1 Create and configure channels .....	80
Create a single source channel .....	80

Create a multi-source layout .....	83
Delete a channel .....	87
Rename a channel .....	88
3-2 Identify a channel .....	89
3-3 Fine-tune channel configuration .....	90
Choose a codec to maximize your stream quality .....	90
Codec and file format compatibility .....	93
Adjust video quality .....	94
Upscale or downscale your video image .....	95
Control the matte (black bars) in the video output .....	96
Unstretch the output video .....	99
Limit the frame rate .....	100
Adjust key frame interval .....	101
3-4 Customize your channel .....	102
Add your logo and company information to your channel .....	102
Add a time stamp or text overlay to your channel .....	108
Select the background color for your channel .....	109
Add a customized background to a multiple source channel .....	110
3-5 Preview a channel .....	114
Preview a channel from the Info page .....	114
Preview a channel from the Status page .....	115
Preview all channels at once .....	115
PART 4: Stream .....	117
4-1 Stream your video .....	118
View available video formats .....	118
Choose a streaming option .....	119
Disable (and enable) streams for viewers .....	122
Restrict access to streams for viewers .....	123
Stream content using HTTP or RTSP .....	125
Configure streaming ports .....	126
Stream content using HTTP Live Streaming (HLS) .....	127
Stream content using UPnP .....	128
Stream content using a Content Distribution Network .....	134
Stream content using multicast streaming .....	145
4-2 Samples of stream settings .....	150
Streaming video content .....	150
Streaming slide content .....	151
PART 5: Record .....	152
5-1 Recorders .....	153
Add a recorder .....	153
Rename a recorder .....	154

Change the channels recorded by a recorder .....	155
Delete a recorder .....	156
5-2 Create Recordings .....	157
Recording basics .....	157
Record a channel via the web interface .....	158
Record with a recorder via the web interface .....	160
Configure the type and length of recording files .....	162
Close the current recording file while recording .....	164
Control recording with a mouse .....	165
Control recording with the big red button .....	165
5-3 File Maintenance .....	166
View the List of Stored Files .....	166
Rename Stored Files .....	167
Download Files Manually .....	168
Delete Files Manually .....	169
Pick Specific Tracks from a Multi-track Recorder File .....	170
5-4 File and recording transfer .....	172
Automatic file upload (AFU) overview .....	172
Configure the files included in AFU (part 1 of 3) .....	173
Enable and configure the frequency of AFU (part 2 of 3) .....	174
Configure AFU to an FTP server (part 2 of 3) .....	177
Configure AFU using RSync (part 2 of 3) .....	178
Configure AFU using CIFS (part 2 of 3) .....	179
Configure AFU to a secure FTP server (part 2 of 3) .....	181
Configure AFU using SCP (part 2 of 3) .....	183
Upload to an external USB drive .....	184
View the file upload log .....	191
5-5 Use the Local FTP Server .....	192
Configure the Local FTP Server .....	192
Downloading Files from the Local FTP Server .....	193
PART 6: View .....	196
6-1 View your video .....	197
View the live broadcast and retrieve stream URLs .....	197
Viewing with a web browser .....	200
Viewing with a media player .....	202
Viewing with UPnP .....	202
Viewing with Session Announcement Protocol (SAP) .....	204
PART 7: Maintenance .....	206
7-1 Mobile / Tablet Operator Interface .....	207
Connect to the tablet interface .....	207
Confidence monitoring using the tablet interface .....	209

Verify disk space via the tablet interface .....	211
Control recording via the tablet interface .....	211
Switch to the full admin interface .....	212
7-2 Power Down and System Restart .....	213
Restarting the Device via the Web Interface .....	213
Shutting down the Device via the Web Interface .....	214
Shutting down the Device Manually .....	214
7-3 Save and Restore Device Configuration .....	216
Save device configuration .....	216
Load a saved device configuration .....	217
7-4 Perform Factory Reset .....	219
Restore Factory Configuration via the Web Interface .....	219
7-5 Firmware Upgrade .....	221
Check for Firmware Updates .....	221
Install firmware .....	222
7-6 Support .....	225
Download logs and "allinfo" .....	225
Configure Remote Support .....	227
Disable Remote Support .....	228
7-7 Storage Disk Maintenance .....	230
Check disk storage space .....	230
Schedule disk check .....	231
Perform disk check .....	231
Rebuild or replace storage disks .....	232
Verify RAID storage .....	236
Read data from removed storage disks .....	237
7-8 Control with RS-232 / Serial Port .....	240
Connect and configure the RS-232 cable .....	240
Control the VGADVI Recorder Pro with RS-232 .....	241
RS-232 / Serial port command examples .....	244
7-9 Control with HTTP Commands .....	246
HTTP command syntax .....	246
HTTP command examples .....	248
7-10 Configuration Keys for Third Party APIs .....	250
System-level Settings Keys(Read-only) .....	251
System-level Settings Key (Read/Write) .....	251
Recording Configuration Keys .....	252
HTTP Server Configuration Keys .....	252
IP-Based Access Control Configuration Keys .....	253
UPnP Configuration Keys .....	253

<b>SAP Configuration Keys</b> .....	254
<b>Frame Grabber Configuration Keys</b> .....	254
<b>Broadcast Configuration Keys</b> .....	255
<b>Channel Encoder Configuration Keys</b> .....	255
<b>Channel Logo Configuration Keys</b> .....	257
<b>Audio Configuration Keys</b> .....	258
<b>Stream Publishing Configuration Keys</b> .....	259
<b>RTSP Announce Configuration Keys (Publish Type 2)</b> .....	259
<b>RTP/UDP Configuration Keys (Publish Type 3)</b> .....	260
<b>MPEG-TS Configuration Keys (Publish Types 4 and 5)</b> .....	261
<b>RTMP Push Configuration Keys (Publish Type 6)</b> .....	261
<b>Content Metadata Configuration Keys</b> .....	261
<b>7-11 Troubleshooting</b> .....	263
<b>PART 8: Releases and Features</b> .....	266
<b>Release 3.14.3 Features</b> .....	266
<b>Release 3.14.1 Features</b> .....	266
<b>Release 3.12 Features</b> .....	268
<b>Release 3.11 Features</b> .....	269
<b>Software and Documentation License</b> .....	273
<b>Environmental Information</b> .....	277
<b>FCC &amp; CE Compliance Statement</b> .....	277
<b>Other Jurisdictional Issues</b> .....	278
<b>Submissions to Epiphan and Affiliated Servers</b> .....	278
<b>Third Parties and Links to Third-Party Web Sites</b> .....	278
<b>Miscellaneous</b> .....	278
<b>Enforcement of Terms and Conditions</b> .....	279

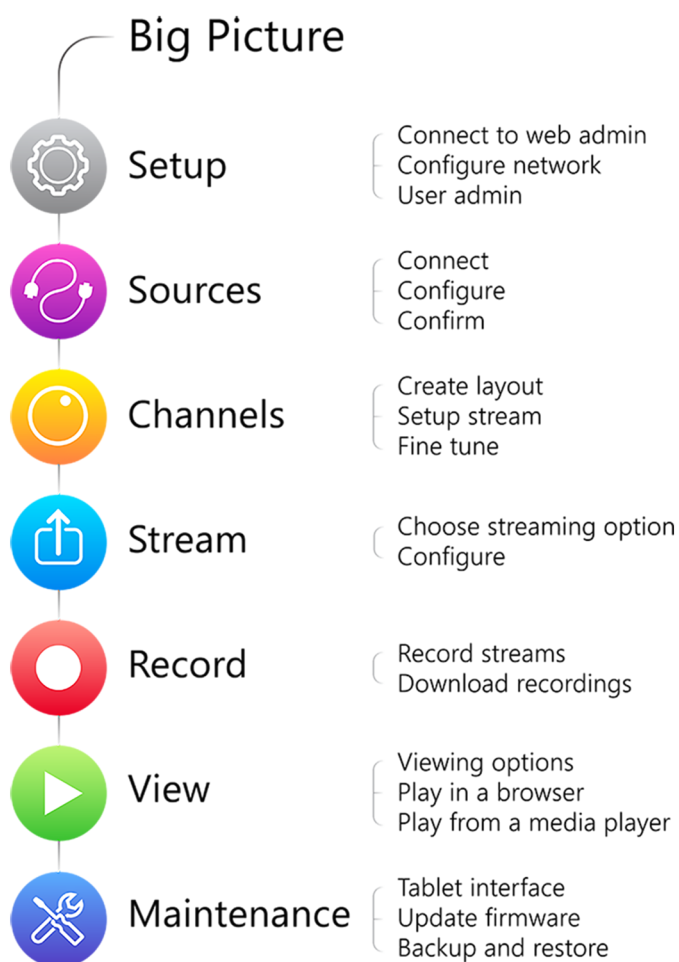


# Welcome

Welcome, and thank you for buying Epiphan's VGADVI Recorder Pro™. This guide will help you configure your new system.

To get started, review the [VGADVI Recorder Pro Overview](#) and [What's in the Box?](#) sections. Next, a [Quick Start](#) guide walks you through the basic steps to get a single video (and optional audio) source configured as a streamable, recordable output from the VGADVI Recorder Pro.

Following the quick start section, a set of task-based procedures help you to tweak the system exactly how you want it. These procedures are broken into seven categories: [Setup](#), [Sources](#), [Channels](#), [Stream](#), [Record](#), [View](#), and [Maintenance](#).



## About this Guide

---

Warnings are depicted as follows.



This is a warning.

Tips and Notes are depicted as follows.

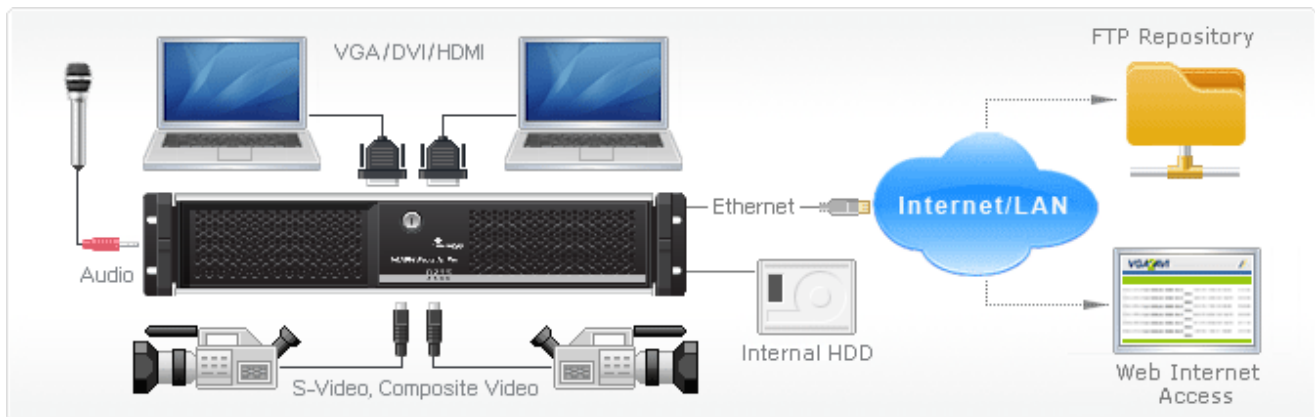


This is a tip.

Throughout this guide there are situations where more than one solution will complete a task. In those cases the guide describes the simplest or most common variation first.

# VGADVI Recorder Pro Overview

VGADVI Recorder Pro is a professional audio/video streaming system that captures, synchronizes and records up to four HD video sources, two SD video sources and up to three audio sources. Epiphan's VGADVI Recorder Pro captures video signals at resolutions up to 2048×2048 (DL model) with rates of up to 80 frames per second.



This versatile system has a variety of options enabling you to create and configure any number of streaming channels. You can choose to stream (or record) a single channel at once or a configuration of synchronized channels with picture-in-picture or picture-with-picture multiplexing selections.

# What's in the Box?

The VGADVI Recorder Pro is a 2U rackmount server.

## Latest Hardware Revision:

VGADVI Recorder Pro can now capture more HD content than ever before. The newest VGADVI Recorder Pros comes with four HD inputs. Half the inputs are for capturing from DVI/HDMI/VGA sources while the other half are for SDI sources. As before there are also two S-Video ports.

With this combination of available input ports and applicable DVI, SDI or S-Video adapters/converters you can bring in signals from nearly any source. This hardware upgrade also provides audio capture support for HDMI and SDI in addition to pre-existing support for 3.5 mm analog audio input ports.

## Previous Hardware Revisions

Previous versions of VGADVI Recorder Pros came with two HD inputs. Many, although not all, previous rackmount hardware revisions can support the latest software release. Compact versions do not support the firmware upgrade due to hardware limitations. Use the [Firmware Upgrade](#) feature to see if your device is upgradeable. Note previous hardware revisions do not support HDMI audio capture.

## Unpacking the box

The following list applies only to new devices with the latest hardware revision.

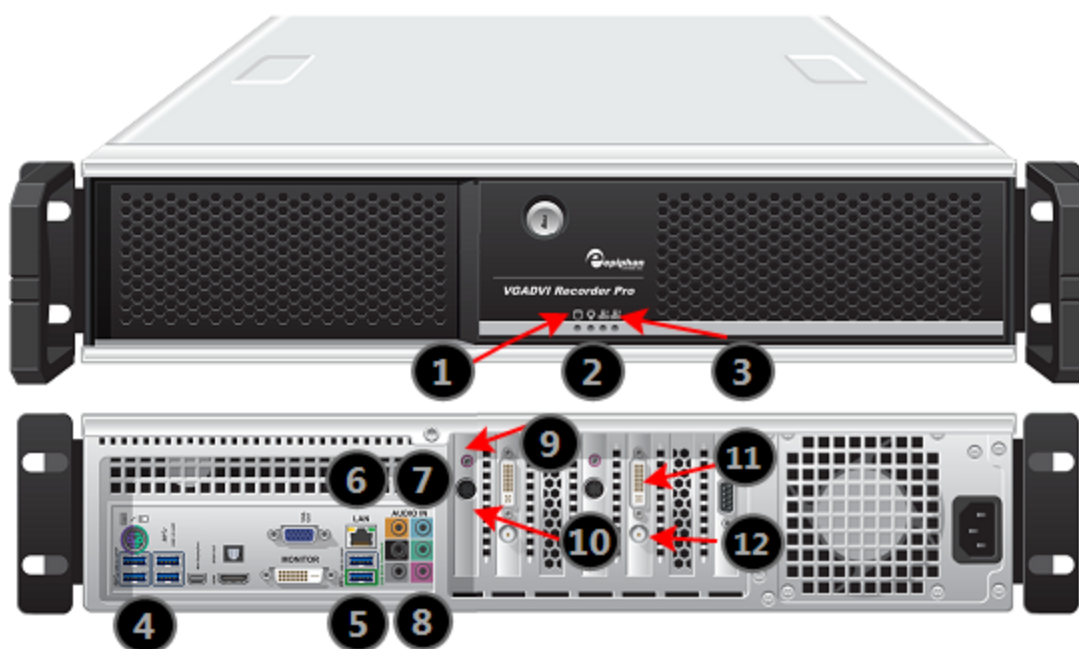
1. One "Big Red Button"
2. Two VGA to DVI-I cables
3. Two HDMI to DVI-I adapters
4. Two DVI-I to DVI-I cables
5. Two composite to S-Video cables
6. Two SDI cables
7. One Ethernet cable
8. Power cable

Image	Name	Description
	VGA to DVI cable	Connects a VGA source to the system's DVI port(s).

Image	Name	Description
	HDMI to DVI adapter	Connects an HDMI source to the system's DVI port(s).
	DVI-I Single Link cable	Connects a DVI source to the encoder's DVI port(s).
	Composite to S-Video cable	Connects a composite output from an analog sources to the system's S-Video port(s).
	SDI Cable	Connects an SDI source to the system via BNC connectors.
	RJ-45 Ethernet cable	Connects the system to your network.

## Front and back panel view

The front of the VGADVI Recorder Pro rackmount server has a set of LED indicators and power buttons while the back of the 2U rack unit has array of familiar computer connections.



**Table 1** VGADVI Recorder Pro Front and Back Panel Descriptions

Label	Name	Description
<b>1</b>	Hard Drive LED	Blinks when the system is recording or accessing the hard drive.
<b>2</b>	Power LED	Indicates the system is powered on.
<b>3</b>	Network LEDs	Blinks when network activity occurs.
<b>4</b>	USB Ports	For connection of external hard drives, flash drives or control interfaces.
<b>5</b>	USB Ports	For connection of external hard drives, flash drives, or control interfaces.
<b>6</b>	RJ-45 Ethernet	Auto-sensing gigabit Ethernet 10/100/1000 Base-T network port.
<b>7</b>	Audio In (blue)	Connect amplified line in audio sources to the system. (Use either line in or microphone in. Both cannot be used at the same time.)
<b>8</b>	Audio In (pink)	Connect unamplified microphone audio sources to the system. (Use either line in or microphone in. Both cannot be used at the same time.)

Label	Name	Description
9	Audio In (2)	An Audio In port is located on each card. Connect audio sources to the system.
10	S-Video ports (2)	Connect analog video sources (S-Video, composite, etc) to the system.
11	DVI-I Dual Link (2)	Connect analog or HD video sources to the system. (Dual link support with VGADVI Recorder Pro DL only).
12	SDI ports (2)	Connect SDI sources to the system.

# Quick Start

This section helps you get up and running quickly with your VGADVI Recorder Pro.

- [Step 1: Physical Setup and Power On](#)
- [Step 2: Admin Discovery and Login](#)
- [Step 3: Setup the Video Source](#)
- [Step 4: Configure the Channel](#)
- [Step 5: Testing the Stream](#)
- [Step 6: Recording the Stream](#)

Before you get started, make sure you have:

- an HD source (i.e. a computer, a tablet, or a phone)
- the appropriate cables or adapters to convert the output to DVI or SDI (if needed)
- ideally, a network with Dynamic Host Configuration Protocol (DHCP)
- a computer with a web browser connected to the same network (this is referred to as the “admin” computer in the steps below)
- optionally, an audio source such as a microphone or the headphone jack from a laptop . Note that audio signals sent over HDMI and SDI are supported in the latest hardware revision(s). If you have SDI ports, your system supports HDMI and SDI audio.



These instructions include steps for setting up and configuring audio. Skip these optional steps if you do not want to configure an audio source at this time.

## Step 1: Physical Setup and Power On

Complete the following steps to prepare and power on the system. Refer to the Front and Back Panel View section for your system to locate the appropriate input ports.

1. Turn on your HD source and connect the output cable to a DVI-I or SDI port on the back of the system.
2. (optional) Attach a 3.5 mm audio cable from your audio source to the system’s motherboard audio input port(blue port on the back of the system).
3. Connect the Ethernet cable to the VGADVI Recorder Pro. Connect the Ethernet cable to your network.
4. Attach the power cable to the system and plug it into a power source.
5. Unlock the front panel and press the power button to turn on the system.



- Wait for the VGADVI Recorder Pro to complete the power up sequence. The power LED illuminates and the hard drive LED flashes during start up.

## Step 2: Admin Discovery and Login

The VGADVI Recorder Pro is managed from a web interface. This interface acts as a configuration utility and system monitor. The first time you access the web interface you will not know the IP address of the system.

The steps below use DNS-based service discovery (a type of zero-configuration networking) to access the system. Depending on the operating system on your admin computer you may need to install some software before you can use DNS-based discovery.



This quick start is meant for systems that support DHCP and DNS, however if your system does not support these mechanisms, refer to **Connect to the Admin Interface** and **Connect via the Epiphan Discovery Utility** for alternative discovery mechanisms. Return to step 3 below you have completed setting a static IP address for the VGADVI Recorder Pro.

**Table 2** Installing Bonjour Print Services

System	Action Needed
Microsoft Windows	You must install Bonjour Print Services: <ol style="list-style-type: none"><li>Use the following URL - <a href="http://support.apple.com/kb/DL999">http://support.apple.com/kb/DL999</a></li><li>Click Download.</li><li>Follow the system prompts to download and install the application.</li></ol>
Mac OS X	The Bonjour software used for service discovery is built in to the Mac OS. No special actions needed.
Linux	The Avahi implementation used for DNS-based discovery is shipped with most Linux distributions. If necessary, check with your administrator to ensure you have the Avahi package installed.

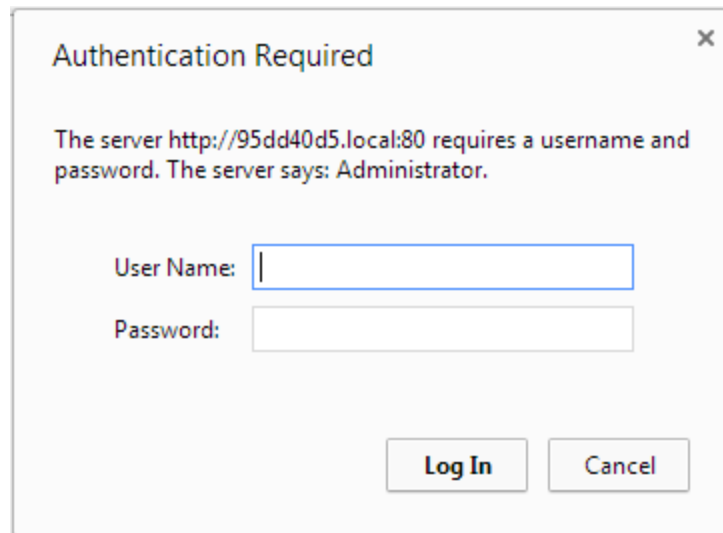
You are able to access the system web interface on the local network by specifying its serial number in a web browser on your admin computer.

- Find the system's serial number. It is printed on a sticker on the back of the unit.
- Type the following string into the address bar of your web browser on your admin computer (where <serial> is the serial number of your VGADVI Recorder Pro):

`http://<serial>.local/admin`

**For example:** `http://95dd40d5.local/admin`

3. Enter the user name and password then click **OK**. The administrative user is 'admin'. Initially no password is set. To set a password follow the procedure outlined in [Setting and Changing User Passwords](#).

A screenshot of a web browser dialog box titled "Authentication Required" with a close button (X) in the top right corner. The text inside the dialog reads: "The server http://95dd40d5.local:80 requires a username and password. The server says: Administrator." Below this text are two input fields: "User Name:" followed by a text box containing a cursor, and "Password:" followed by a text box. At the bottom of the dialog are two buttons: "Log In" and "Cancel".

4. Optionally, navigate to the **Network** link under the Configuration heading and note the **IP address** of the system.

## Step 3: Setup the Video Source

The web interface has a pre-configured list of the frame grabbers in the **Sources** section. Each video input card on the back of the system is a *frame grabber*. Each frame grabber has one DVI port, one SDI port, one S-Video port and one 3.5 mm audio port. The sources are listed by their frame grabber serial number.

DVI ports are listed with the suffix *.vga*, SDI ports are listed with the suffix *.sdi*, S-Video inputs listed with the suffix *.video*, and analog audio inputs are listed with the suffix *\_analog* or, for the audio port on the motherboard: *Analog*. Digital audio inputs (for systems with SDI ports) are listed with the suffix *.hdmi-audio* or *.sdi-audio*, depending on their source.



The serial numbers for your system will not be the same as the examples shown below.

1. From the web interface, scroll to the **Sources** section. (You will see more sources than shown below.)



2. Find the DVI (or SDI) source that you have connected by selecting each DVI (or SDI) source (named .vga or .sdi as the suffix) and verifying if the preview on the right side of the screen reflects your source material.
3. Make note of the name of the source, or optionally, change the source name to reflect the data it is capturing.

To rename the input source:

- a. Click on the source name at the top of the source configuration window. The name text becomes red.
  - b. Edit the name. The following characters are supported: a-z; A-Z; 0-9; + (plus); - (hyphen); \_ (underscore); , (comma); . (period); ~ (tilde); # (hash); [ ]; ( ). Although spaces are also supported, it is suggested you use underscores to separate words.
  - c. Press Enter on the keyboard. The name is updated at the top of the screen and in the list of sources at the left side.
4. Optionally, configure the audio source (if connected):
    - a. Scroll to the **Sources** section again and select the motherboard audio source. It is prefixed by the word audio and suffixed Analog (i.e. audio ALC892 Analog). The audio configuration page appears.
    - b. From the **Input source** drop-down list, select **Line** for the blue port at the back of the system.
    - c. Click **Apply**.

Source setup is complete. The system automatically detected and adjusted the image capture settings at start up and will continue to adjust every 60 seconds during operation (interval is configurable). The system's goal is to produce the best quality captured image given the source equipment used. Generally no further configuration tweaks are needed.

## Step 4: Configure the Channel

---

Now that you have confirmed the system sees your source it is time to add and configure a channel for output of your source. Channels expose your sources to your streaming users and prepare the sources for recording.

By default, when you add a channel, the system names it the same name as its source. If you changed the source name in previous steps, your new channel's name will reflect the new name.

To add a channel for your source:

1. In the web interface, click **Add channel** from the **Channels** section; a new channel is created and the channel configuration page opens.
2. From the **Use video source** drop-down list, select your source.
3. Click **Apply**.

To review and configure the channel:

1. From the web interface, scroll to the **Channels** section
2. Click the link for your channel; the channel expands.
3. Click **Encoding** for your channel
4. No need to change anything right now. Review some of the default settings. The four most useful settings to know about are codec, frame size, frame rate and bitrate.
  - a. The codec is set to H.264 by default.
  - b. The frame size should reflect the resolution provided by your source. You can set it to something different by typing in the fields or selecting an option from the different sizes shown. Scaling the image (making it larger, smaller, or different aspect ratio) takes some processing power, so it's always best to leave this at the value detected by the system unless you know it is wrong or know you need to scale the size.
  - c. The frame rate limit is set to 30. This means the system won't spend extra computing time to attempt to receive more than 30 frames per second. For perspective, NTSC TV signals use 24 frames per second and most hand-drawn animations show only 12 unique frames per second.
  - d. The bitrate is set to automatic, and the system will determine the best value.
5. Click **Status** for your channel.
6. Notice the **Stream Info** section has an item named Video that reflects the four settings reviewed in prior steps (the frame rate is specified as <resolution size>@30 for 30 frames per second). It also provides an indication of the current actual frame rate.



You may now optionally add audio to your channel:

7. Click **Sources** for your channel; the media source page is displayed.
8. Select the audio source to which you connected your 3.5mm audio cable. If you connected to the blue line-in on the back of the system, the audio source is the audio source without a frame grabber serial number.
9. Click **Apply**.
10. Click **Encoding** for your channel; the Encoding page is displayed.
11. Scroll to the bottom of the Encoding and click the **Enable audio** checkbox.
12. Leave the default AAC format and audio bitrate.
13. Click **Apply**.

## Step 5: Testing the Stream

The Status page contains a link to the live broadcast stream for your channel.

To preview the channel in a browser:

1. From the web interface, scroll to the **Channels** section.
2. Click the link for your channel.
3. Click the **Status** link for your channel.
4. Right-click on the **Live broadcast** link for your channel and select **Open in a new tab** or **Open in a new window**.
5. The new tab or window opens with the stream displayed.
  - a. If the signal is not detected, reseal the DVI cable connections and try again.

Your stream setup is complete. Since most of the steps are pre-configured; you are up and running with a stream very quickly. You can share the live broadcast link with your users.

## Step 6: Recording the Stream

---

The stream is set up, you can begin to record the stream.

To record the stream:

1. From the web interface, scroll to the **Channels** section.
2. Click **Recording** for your channel; the Recording page is displayed.
3. Click the red **Start** button; the text at the top of the screen changes to indicate the recording is starting, then indicates the length of time since the recording started.
4. Click the black **Stop** button; the recorder stops.
5. Refresh the page by clicking **Recording** again; the page reloads and a file list appears that shows your newly recorded stream snippet.
6. Click the file name to download and view your recording.

## What's Next?

---

Now that you have a source setup and ready to stream, you can fine-tune the system to your exact requirements. You can look at topics such as:

- [Create a multi-source layout](#)
- [Stream your video](#)
- [File and recording transfer](#)
- [User Administration](#)

When you have completed system tuning, make sure to back up the system configuration using the procedure described in:

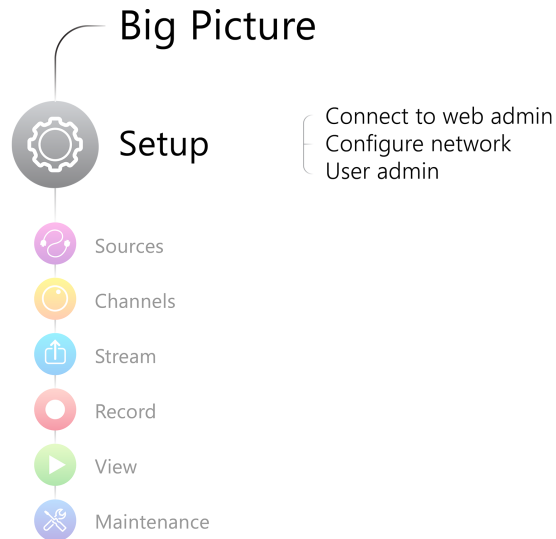
- [Save and Restore Device Configuration](#)

Refer to the table of contents for a complete list of the topics covered.



# PART 1: Setup

If you followed through the quick start guide, you already have a basic configuration and possibly a recording of an input. Before you tweak the channel or configure more, this part of the manual helps you to get your VGADVI Recorder Pro properly configured for your network.



Topics covered:

- [Connect to the Admin Interface](#)
- [User Administration](#)
- [View system information](#)
- [Configure Network Settings](#)
- [Configure Date and Time](#)
- [Configuration presets](#)
- [Restrict Viewers by IP Address](#)



# 1-1 Connect to the Admin Interface

The VGADVI Recorder Pro is managed from a web interface. If you know the IP address of the system you may type it into the address bar of your web browser.

`http://<IP Address of the VGADVI Recorder Pro>/admin`

This section covers two system discovery methods that work with networks that support Dynamic Host Configuration Protocol (DHCP) and a method that works for networks that do not support DHCP.

For networks with DHCP use one of the following procedures:

- [Connect via DNS-based Service Discovery](#)
- [Connect via the Epiphan Discovery Utility](#)

For networks without DHCP, use the following procedure:

- [Connect via Persistent Static IP Address](#)



You can also connect to a reduced Operator tablet interface. See **Connect to the tablet interface**

## Connect via DNS-based Service Discovery

The VGADVI Recorder Pro uses DNS-based messages to advertise details about itself, including its domain name. With a compatible utility installed on your computer, you can access the system simply by typing its serial number and the suffix ".local" into the address bar of your browser.

To ensure you have compatible software, refer to the following table.

**Table 3** *Installing Bonjour Print Services*

System	Action Needed
Microsoft Windows	You must install Bonjour Print Services: <ol style="list-style-type: none"><li>1. Use the following URL - <a href="http://support.apple.com/kb/DL999">http://support.apple.com/kb/DL999</a></li><li>2. Click Download.</li><li>3. Follow the system prompts to download and install the application.</li></ol>
Mac OS X	The Bonjour software used for service discovery is built into the Mac OS. No special actions are needed.





System	Action Needed
Linux	The Avahi implementation used for DNS-based discovery is shipped with most Linux distributions. If necessary, check with your administrator to ensure you have the Avahi package installed.

To access the VGADVI Recorder Pro's web interface via DNS service discovery:

1. Find the system's serial number. It is printed on a sticker on the back of the system.
2. Type the following string into the address bar of your web browser on your admin computer (where <serial> is the serial number of your VGADVI Recorder Pro):

`http://<serial>.local/admin`

**For example:** `http://95dd40d5.local/admin`

3. Enter the user name and password then click **OK**. The administrative user is 'admin'. Initially no password is set. To set a password follow the procedure outlined in [Setting and Changing User Passwords](#).

Authentication Required

The server `http://95dd40d5.local:80` requires a username and password. The server says: Administrator.

User Name:

Password:

Log In Cancel

4. Optionally, navigate to the **Network** link under the Configuration heading and note the **IP address** of the system.

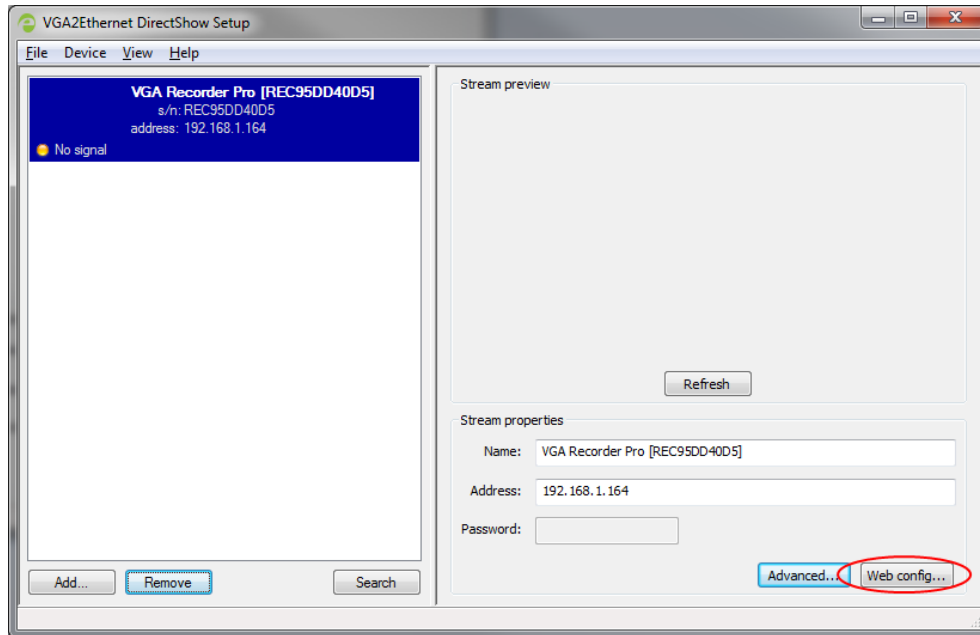
## Connect via the Epiphan Discovery Utility

Epiphan provides a utility for discovering Epiphan systems on your network. The Epiphan network discovery utility is a 32-bit Windows executable that works on most 32-bit and 64-bit Windows operating systems. Download and install the utility via this link: <http://www.epiphan.com/downloads/NetworkDiscovery.exe>.

To access the VGADVI Recorder Pro's web interface via the Epiphan discovery utility:



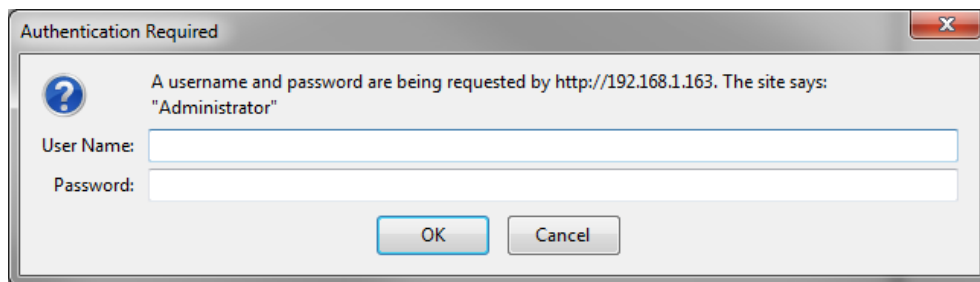
1. Launch the discovery utility.
2. Click **Search** to find all the Epiphan systems on the network; a list similar to the following appears.



3. If more than one system appears, select the one you wish to configure by matching the serial number listed with the serial number marked on the back of the system.
4. Optionally, note the **IP Address** shown in the stream properties. Use this for quicker access to the system on future configuration sessions.
5. Click the **Web config** button; your browser will open and point to the web interface page.

<http://<IP Address for VGADVI Recorder Pro>/admin>

6. Enter the user name and password then click **OK**. The administrative user is 'admin'. Initially no password is set. To set a password follow the procedure outlined in [User Administration](#).





## Connect via Persistent Static IP Address

---

This section discusses how to directly connect to the VGADVI Recorder Pro using the factory default persistent network settings. Use this method if your network does not have a DHCP server or if you prefer to connect directly to the system for initial configuration.

To perform this procedure you will need a workstation computer for which you are able to modify network settings.

The VGADVI Recorder Pro is pre-configured with the following static address defaults:

- IP Address: 192.168.255.250
- Netmask: 255.255.255.252
- User Name: admin
- Password: your admin password (by default set to no password)

To access the VGADVI Recorder Pro's web interface via the persistent static IP address:

1. Establish an Ethernet connection between the VGADVI Recorder Pro and the workstation by one of the following methods:
  - a. Connect the system to a local Ethernet network shared with the workstation.
  - b. Connect the system directly to the workstation's Ethernet port using either a regular or a crossover Ethernet cable.
2. Record the network settings of the workstation being used to connect to the VGADVI Recorder Pro so that they can be restored later.
3. Temporarily change the network configuration on the workstation to the following:
  - a. Use Static IP assignment
  - b. IP address: 192.168.255.249
  - c. Subnet mask: 255.255.255.252
4. Start a web browser on the workstation and browse to: **http://192.168.255.250/admin/**
5. Log in as the administrator user with the user name admin and the admin password (by default there is no password); the web interface page opens.
6. Click the **Networking** link in the Configuration menu.
7. Select the radio button to **use a static address** and configure the system with a static IP address and network settings relevant to the network being used. For specific details about the settings presented, see [Configure Network Settings](#).
8. Restore the previously saved network configurations on the workstation.



# 1-2 User Administration

The VGADVI Recorder Pro has three configured users:

- admin
- operator
- viewer

By default, none of these users have passwords. For security purposes you should add passwords to the admin and operator accounts.

This section describes the following user administration topics:

- [Understanding User Privileges](#)
- [Setting and Changing User Passwords](#)
- [Removing User Passwords](#)
- [Overcoming Lost Passwords](#)
- [Configure LDAP](#)
- [Changing the logged-in user](#)

## Understanding User Privileges

VGADVI Recorder Pro's three user accounts are admin, operator and viewer. The user account names cannot be changed and the accounts cannot be disabled. By default, none of the accounts have passwords.

### Admin

The admin account is the main operator used for all system configuration. This user has access to all options in the web interface.

### Operator

The operator account is a subclass of the admin account. The operator can log in and view all configuration items but may only make changes to a small number of options. This account is intended for an operator to start and stop recordings, download recordings, or perform network diagnostics.

### Viewer

The viewer account is for all end-users who are permitted to view the streamed channels. By default, when there is no password, users are not prompted for a username and password when viewing a channel. The



viewer username and password prompt appears only when there is a viewer password set.

In addition to the global viewer account, each channel can set a viewer password that overrides the global value. See [Restrict access to streams for viewers](#).

## Current User

When logged in to the web interface, the current username is displayed at the top right corner of the screen.



## User Privileges

The following table outlines the privileges for each user:

**Table 4** User Privileges in the Web Interface

Action or Menu Option	viewer	operator	admin
View channel output	✓	✓	✓
Channel Operations			
View Channel Configuration		✓	✓
Rename a Channel			✓
Configure Stream Channel			✓
Configure Stream Sources			✓
Publish a Stream			✓
Configure Branding for a Channel			✓
Start the Stream Recorder		✓	✓
Stop the Stream Recorder		✓	✓
View Recorded Files List		✓	✓
Download Recorded Files		✓	✓
Delete Recorded Files		✓	✓
Source Operations			



Action or Menu Option	viewer	operator	admin
View Source Configuration		✓	✓
Rename Source			✓
Configure Source		✓	✓
View Source Snapshot		✓	✓
System Configuration Operations			
View System Configuration		✓	✓
Configure Automatic File Upload			✓
Select External USB Drive Behavior			✓
Configure FTP Server			✓
Configure UPnP Sharing			✓
Configure Network Address			✓
Configure USB Tethering			✓
Perform Network Diagnostics		✓	✓
Configure Date and Time preferences			✓
Set or Change User Passwords			✓
Configure the Touch Screen			✓
Configure Serial Port Flow Control			✓
Upload Branding Images			✓
Upload Branding Templates			✓
Select Branding Template			✓
Enable Remote Support			✓
Backup Device Configuration			✓
Restore Device Configuration			✓
Restore Factory Configuration			✓
Reboot Device (via Web Interface)			✓



Action or Menu Option	viewer	operator	admin
Shutdown Device (via Web Interface)			✓
Configure Time Until Next Disk Check			✓
Perform Disk Check			✓
View Disk Information		✓	✓
Rebuild/Clean Storage Disks			✓
Upgrade Firmware			✓
View System Information		✓	✓

## Setting and Changing User Passwords

By default, admin, operator and viewer have no assigned passwords. Both the admin and the operator user have access to the web admin interface, so you should always set a password for both admin and operator accounts. Refer to your system administrator for your organization's specific password requirements.

In addition to setting global passwords for viewers, you can also set access passwords and IP restrictions on a per-channel basis from the channel's **Streaming** page. See [Restrict access to streams for viewers](#) [Restrict Viewers by IP Address](#).

Passwords are case sensitive and can use all alpha-numeric keys in the ASCII range. Your password can be up to 255 characters long, but should not include any spaces.



Setting a user's password causes the user to be logged out. Be ready to log back in with the new admin password or have operators and viewers log in with the appropriate new password. Viewers may need to refresh their browser window or press play in their media player.

If you lose the admin password, refer to the section [Overcoming Lost Passwords](#).

To set a user password:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Access passwords** link in the Configuration menu; the password configuration page opens.
4. Highlight and delete the **current password** for your selected user (the password is currently masked as dots).



For security reasons, the current password appears as eight dots regardless of password length, and even if there is no password set.

5. Highlight and delete the **confirmation password** for the selected user.
6. Select the user's **password** field and type a new password for the user.



The new password must have between 1-255 alpha-numeric characters or special characters with no spaces. Passwords are case sensitive.

7. Select the user's **password confirmation** field and confirm the new password.
8. Click **Apply**.
9. If you were logged in as the user whose password you just changed, you are logged out and must log back in with the new password. If you added or changed the viewer's password, all viewer's stream will pause until they log in with the new password.

If desired, you may specify multiple account passwords on the same page before clicking Apply.

## Removing User Passwords

If you want to remove passwords for one or more user accounts, you may do so via the web interface. If you don't remember the admin password, refer to the section Overcoming Lost Passwords.

Note that viewer passwords can be set on a per-channel basis.



Clearing a user's password will cause that user to be logged out. Be ready to log back in with the new admin password. If viewers are watching the broadcast when the viewer password is cleared they will be logged out. Viewers may need to refresh their browser window or press play in their media player to trigger the login prompt.

To clear a user's password:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Access passwords** link in the Configuration menu; the password configuration page opens.
4. Highlight and delete the current password for your selected user (the password is currently masked as dots).





For security purposes, the current password appears as eight dots regardless of password length, and even if there is no password set.

5. Highlight and delete the **confirmation password** for the selected user.
6. Click **Apply**.
7. If you were logged in as the user whose password you just cleared, you are logged out and must log back in without a password. If you cleared the viewer's password, all viewers' stream will pause until they log in without a password.

To clear a user's password on a specific channel:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Click the **Streaming** link for the channel; the channel's Streaming configuration page opens.
4. From the Access control section do one of the two following things:
  - a. clear the **viewer password** field; or
  - b. select **Use global settings** from the access control drop down.
5. Click **Apply**.

## Overcoming Lost Passwords

If you have lost the password for the operator or viewer account, you can log in to the web interface as admin and reset the password using the procedure described in [Setting and Changing User Passwords](#).

If you have lost the admin password and you have remote support enabled on the system, you can contact Epiphan support to request a remote password change. See [Support](#). If remote support is disabled, you will need to return the system to Epiphan for password recovery. Contact Epiphan support to discuss this option.

## Configure LDAP

You can use the Lightweight Directory Access Protocol (LDAP) for authentication into the system. Specify user roles by using group DN's for users who log in as the administrator, operator, or as a viewer.



The system has only **one** admin user and **one** operator: LDAP users log in as either the admin or operator, they do not have their own private profiles.



When enabled, LDAP authentication is an **alternative** to the regular system usernames and passwords. You may still login as **admin**, **operator** or **viewer** using the passwords for those accounts. Furthermore, any LDAP users with the name admin, operator or viewer are ignored. The local accounts are used instead.

For security reasons, you should configure passwords for the local accounts. See **Setting and Changing User Passwords**.

These instructions assume you have a pre-configured LDAP server. The server must support anonymous binding or have a special bind account with search access privileges. (Note that Active Directory does not support anonymous binding.)



LDAP referrals, restrictions and failovers are not supported.

To configure LDAP authentication for your VGADVI Recorder Pro:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Access passwords** link in the Configuration menu; the password configuration page opens.
4. Scroll to the **LDAP authentication** section.

**LDAP authentication:**

Enable LDAP authentication ☐

Server address[:port]

Connection encryption No encryption ▼

Bind DN

Bind password

Base DN

Search attribute

Administrators (group DN)

Operators (group DN)

Viewers (group DN)

5. Click the **Enable LDAP authentication** checkbox to enable LDAP authentication (or uncheck to disable).
6. Specify the server IP address and (optional) port for your LDAP server (i.e. 192.168.1.101:389) in the **Server address[:port]** field.
7. Use the **Connection encryption** drop-down to specify the type of encryption, if any used by your LDAP server.



Connection encryption	Description/Default port used
No Encryption	No encryption is used to connect to the LDAP server. The default port is 389.
SSL	SSL encryption is used to connect to the LDAP server. The default port is 636.
TLS/STARTTLS	The connection is initially unencrypted then upgraded to TLS encryption is used. The default port is 389.

8. Specify the fully qualified DN and password for LDAP bind in the **Bind DN** and **Bind password** fields. (The password masked as dots on the screen.) These fields are only needed if your LDAP server does not support anonymous binding.
9. In **Base DN**, specify the baseObject in which to search for entries. The system will search this object and the whole subtree starting at the base DN.
10. By default the search attribute is *uid*, which is suitable for a unix environment. Specify a different value in the **Search attribute** field, if needed. For Active Directory environments, specify *userPrincipalName*. The value of this attribute must be unique in the Base DN.
11. In the **Administrators (group DN)** field, specify the distinguished name of the group users must be part of to be logged in as the administrator. Users must have the *member* or *uniqueMember* attribute for the specified group to be granted Administrator access.  
If left blank, LDAP is not supported for Administrators (but can still be used for Operators and Viewers).
12. In the **Operators (group DN)** field, specify the distinguished name of the group users must be part of to be logged in as the operator. Users must have the *member* or *uniqueMember* attribute for the specified group to be granted Operator access.  
If left blank, LDAP is not supported for Operators (but can still be used for Administrators and Viewers).
13. In the **Viewers (group DN)** field, specify the distinguished name of the group users must be part of to be logged in as a viewer. Users must have the *member* or *uniqueMember* attribute for the specified group to be granted Viewer access.  
If left blank, LDAP is not supported for Viewers (but can still be used for Administrators and Operators).
14. Click **Apply**.

When a user of the LDAP server visits next visits the admin or viewer page for the system, the system prompts for use the username and password. For ActiveDirectory servers, the user needs to enter his the fully qualified username (i.e. username@domainname) in addition to his LDAP password.



Users are required to authenticate once to the system and one time per channel they view. Therefore users see a prompt to log in to the system (the system name is shown) and a second time to log in to the channel (the channel name is shown).



In one case, LDAP replaces the local **viewer** account instead of working side-by-side with it.

When LDAP is enabled and the viewer account has no password (either there is no global viewer password or the channel overrides the global password with a blank password), the viewer must authentication with LDAP, he may **not** alternatively use the **viewer** account with a blank password.

## Changing the logged-in user

---

When you log in to the web interface as admin or operator, your browser remembers this configuration and automatically logs you in as the same user when you go back to the site.

Sometimes you need to change from operator to admin, or vice versa.

To change the logged-in user:

1. Exit your browser completely, open an incognito/private window in your browser, or open a different browser (i.e. Internet Explorer, Chrome, and Safari are different browsers).
2. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
3. You are prompted for a username and password.



# 1-2 View system information

The system information page provides a great deal of useful information about your VGADVI Recorder Pro. Use the Info link from the Configuration menu to view your current firmware level, system hardware version (if available) and currently configured channels.

To view system information:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, scroll to the Configuration menu option.
4. Click **Info**; the system information page opens.

## Firmware

Version: 3.14.1d  
Revision: 28574\_1733  
Date: 2014-11-04

## Hardware

CPU board: Z97-WS (Rev 1.xx)

## Channels

#	Channel name	Status	Video source	Audio source	Stream	Bitrate	Actual bitrate	Frame size	FPS / Actual FPS	Port
3	<a href="#">D2P260050.sdi</a>	ok	<a href="#">D2P260050.sdi</a>	<a href="#">D2P260064.sdi-audio</a>	H.264+AAC	auto	3471 kbps	1280x720	30 / 32.0	8002 <a href="#">View</a>
4	<a href="#">D2P260064.sdi</a>	no signal	<a href="#">D2P260064.sdi</a>	<a href="#">D2P260064.sdi-audio</a>	H.264+AAC	auto	1740 kbps	1280x720	30 / 16.0	8000 <a href="#">View</a>
5	<a href="#">D2P180099.vga</a>	no signal	<a href="#">D2P180099.vga</a>	<a href="#">D2P260064.hdmi-audio</a>	H.264+AAC	auto	3336 kbps	1920x1080	30 / 16.0	8001 <a href="#">View</a>
6	<a href="#">D2P260050.video</a>	ok	<a href="#">D2P260050.video</a>	<a href="#">D2P260050.analog</a>	H.264+AAC	auto	2038 kbps	720x480	30 / 32.0	8003 <a href="#">View</a>
7	<a href="#">Channel 7</a>	ok	<a href="#">S_S9URCE8</a>	none	H.264+AAC	auto	6404 kbps	1920x1080	30 / 32.0	8004 <a href="#">View</a>

Overall system load: 9%

3. Use the information displayed to get an overview of your system, troubleshoot problems or view streams for configured channels.



# 1-3 Configure Network Settings

By default the VGADVI Recorder Pro uses DHCP to obtain an IP Address via an Ethernet-based network. If you want to change the network settings, or if you're having network-related issues, this section covers the following related topics:

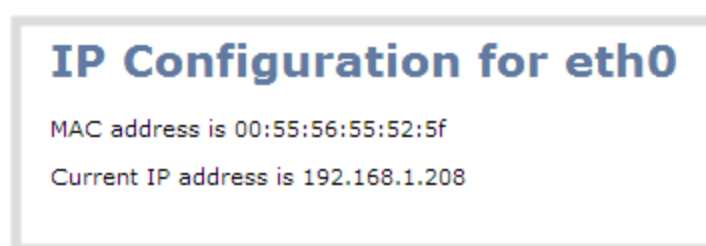
- [Verify IP Address and MAC address](#)
- [Configure a Static IP Address](#)
- [Configure DHCP](#)
- [Tether to a Mobile Network](#)
- [Perform Network Diagnostics](#)

## Verify IP Address and MAC address

The web interface shows you the system's MAC address and current IP Address via the Network configuration page.

To view settings on network configuration page:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Network** link in the Configuration menu; the network configuration page opens.
4. Note the **MAC address** and **Current IP address** listed at the top of the page.



**Table 5** Network Information Fields

Label	Description/Options
MAC Address	A media access control address (MAC address) is a unique identifier for the network interface. The value is read-only and cannot be changed. You may need to share this value with your system administrator.



Label	Description/Options
Current IP Address	Reflects the current internet protocol address (IP address) of the system. This value is either obtained from the DHCP server (if using DHCP) or is the configured static IP address. The VGADVI Recorder Pro supports IPv4 addresses. It does not support IPv6 addresses.

## Configure a Static IP Address

Your network administrator may require you to use a static IP address for your VGADVI Recorder Pro.

To configure a static IP address:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Network** link in the Configuration menu; the network configuration page opens.

The screenshot shows a network configuration window. At the top, there are two radio buttons: 'Use DHCP' and 'Use static address'. The 'Use static address' radio button is selected and highlighted with a red circle. Below these are several input fields: 'IP Address' with the value '192.168.10.1', 'Network Mask' with '255.255.255.0', 'Default Gateway' (empty), and 'DNS Server' (empty). At the bottom, there is an 'MTU Size' field with the value '1500' and an 'Apply' button.

4. Select the radio button **use static address**, if not already selected.
5. Enter the desired **IP Address** and **Network Mask**.



Only IPv4 addresses are supported.

6. Enter the **Default Gateway** address. If you do not have a default gateway for your network, enter the same static IP address as in the previous step.



The default gateway cannot be left blank. If no default gateway is specified, unexpected behavior occurs.

7. Enter the **DNS Server** address. If you do not have a DNS server, enter the new static IP address of the system.
8. Change the **MTU Size** value only if needed. See the table below for information on maximum transmission unit (MTU) values.
9. Click **Apply** to save the changes; the changes are saved and a message appears asking you to reboot.

Network configuration settings updated.  
New settings will be applied after reboot.

10. Select the **Maintenance** link under the Configuration menu; the maintenance page appears.
11. Click the **Reboot Now** button near the bottom of the page.
12. Wait for the system to reboot.
13. Open the Web interface using the new IP address.
14. Log as admin and reload the **Networking** page to verify all changes were applied.

The following table describes applicable fields when setting a static IP address.

**Table 6** Static IP Address Fields

Label	Description/Options
Use DHCP	Select this radio button to dynamically obtain an IP address at boot up.
Use static address	Select this radio button to use the configured static IP address.
IP Address	The internet protocol address (IP Address) to assign. This value is may be obtained from your system administrator. The VGADVI Recorder Pro supports IPv4 addresses. It does not support IPv6 addresses.
Network Mask	Also called the subnet mask, this value denotes a range of IP addresses. This value may be obtained from your system administrator, determined from another computer on the same subnet, or calculated using an online subnet calculator.
Default Gateway	The network node that serves as an access point to the rest of the network. This value cannot be blank unless you are using DHCP. Specify the system's IP address if you don't have a default gateway on your network.





Label	Description/Options
DNS Server	The domain name system server (DNS server) translates human-readable hostnames into corresponding IP addresses. Specify the system's IP address if you don't have a DNS server on your network. This value cannot be blank unless you are using DHCP.
MTU Size	The maximum transmission unit (MTU) specifies the maximum packet size for transfer on the network. The default value is 1500, which is the largest value allowed by Ethernet at the network layer. It's best if all nodes in your network use the same value, so only change this value if you know other nodes use a different value.

## Configure DHCP

Occasionally, such as when moving your system to a new network, your VGADVI Recorder Pro must switch from static IP address allocation to dynamic allocation via DHCP. You can accomplish this three ways:

- Restore factory settings, clearing all your custom settings. See [Perform Factory Reset](#).
- Load a configuration file that uses DHCP networking. See [Load a saved device configuration](#).
- Apply a configuration preset that uses DHCP networking. See [Apply a configuration preset](#).
- Change the network settings. See the procedure below.

To configure use of DHCP for networking:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Network** link in the Configuration menu; the network configuration page opens.
4. Select the radio button **use DHCP**, if not already selected.
5. Change the **MTU Size** value only if needed. See the table below for information on maximum transmission unit (MTU) values.
6. Click **Apply** to save the changes; the changes are saved and a message appears asking you to reboot.

Network configuration settings updated.  
New settings will be applied after reboot.

7. Select the **Maintenance** link under the Configuration menu; the maintenance page appears.
8. Click the **Reboot Now** button near the bottom of the page.



9. Wait for the system to reboot.
10. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
11. Log as admin and reload the Networking page to verify all changes were applied.

The following table describes the fields applicable when configuring DHCP on the VGADVI Recorder Pro.

**Table 7** DHCP Fields

Label	Description/Options
Use DHCP	Select this radio button to dynamically obtain an IP address at boot up.
Use static address	Use static address Select this radio button to use the configured static IP address.
MTU Size	The maximum transmission unit (MTU) specifies the maximum packet size for transfer on the network. The default value is 1500, which is the largest value allowed by Ethernet at the network layer. It's best if all nodes in your network use the same value, so only change this value if you know other nodes use a different value.

## Tether to a Mobile Network

The VGADVI Recorder Pro supports tethering to a mobile device via USB. Tethered networking can work side-by-side with Ethernet routing and either networking system can be a back-up for the other.



When the system falls over to the backup network type (i.e. from Ethernet to mobile, or vice versa) all streaming sessions with clients or servers directly connected to the system are closed and the clients will need to reconnect. You may need to provide a new stream URL (containing the new IP address) to your viewers. See the channel information page to get the new stream URL.

By contrast, actively published streams are closed and reconnected via the secondary network (mobile or Ethernet) automatically, permitted the required publishing server is accessible from the new network.

To configure tethering to a mobile network:

1. Configure the mobile device to allow tethering via USB.
2. Connect the mobile device to the VGADVI Recorder Pro with a USB cable.
3. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
4. Login as admin.



5. Select the **Network** link in the Configuration menu; the network configuration page opens.
6. Click the drop-down box next to **Use phone/tablet connection** in the USB phone/tablet section; the following choices appear:

**Table 8** Mobile Tethering Options

Label	Description/Options
Disabled	Specifies that no USB tethering is permitted.
No tethering	Specifies that USB tethering is available for connecting a mobile device as a configuration utility (i.e. using the web browser), but no mobile data is used.
Prefer ethernet	When chosen, the system tries to use the Ethernet network first. It switches to use the mobile network (tethering) when the Ethernet network is no longer available. To prevent viewer interruptions, mobile data will continue to be used until the mobile network is down or publishing is restarted.
Prefer tethering	When chosen, the system tries to use the mobile network (tethering) first. It switches to use Ethernet (hard-wired) when the mobile network is no longer available. To prevent viewer interruptions, Ethernet data will continue to be used until the Ethernet network is down or publishing is restarted.  Select this setting if you only have a mobile network.

7. Select your choice based on the table above.
8. Click **Apply**.

## Perform Network Diagnostics

If your VGADVI Recorder Pro has network trouble, you can perform basic network troubleshooting tasks from the Network configuration page. In addition to providing the system's IP address and MAC address to your network administrator (See [Verify IP Address and MAC address](#)), you can also ping an IP address or use traceroute to determine the path taken to an address.



**Note:** Not all networks support ping and traceroute.

To ping or traceroute an IP address:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Network** link in the Configuration menu; the network configuration page opens.



## Network Diagnostics

Address:

- Click **ping** or **tracert**; an animation appears to the left of the address to indicate processing is underway.
- Upon completion of the command, read the results from the console-like display is shown below the Network Diagnostics setting.

## Network Diagnostics

Address:

```
# ping -w 10 -c 4 '192.168.1.104'
PING 192.168.1.104 (192.168.1.104): 56 data bytes=

64 bytes from 192.168.1.104: seq=0 ttl=128 time=1.006 ms=

64 bytes from 192.168.1.104: seq=1 ttl=128 time=0.621 ms=

64 bytes from 192.168.1.104: seq=2 ttl=128 time=0.709 ms=

64 bytes from 192.168.1.104: seq=3 ttl=128 time=0.656 ms=

=

--- 192.168.1.104 ping statistics ---

4 packets transmitted, 4 packets received, 0% packet loss=

round-trip min/avg/max = 0.621/0.748/1.006 ms=
```



# 1-3 Configuration presets

In situations where you have changing configuration requirements for your VGADVI Recorder Pro, you can use configuration presets to quickly and easily apply sets of pre-configured settings.

For an overview of configuration presets, see:

- [Configuration presets overview](#)

This section also covers the following related topics:

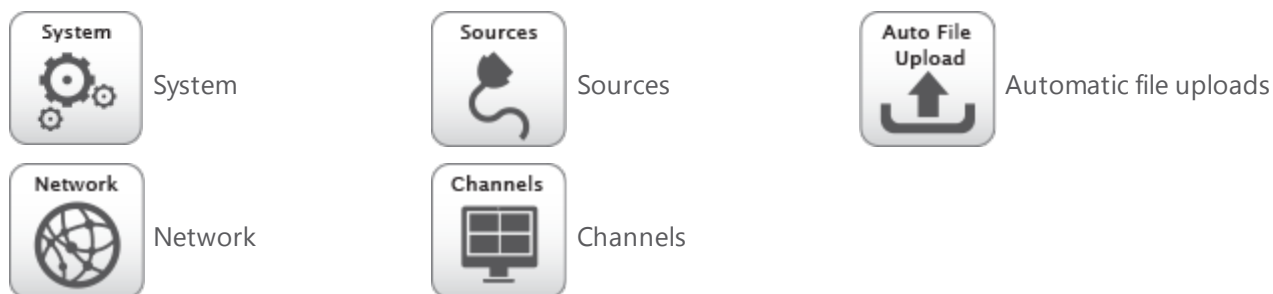
- [Configuration groups](#)
- [Create a configuration preset](#)
- [Apply a configuration preset](#)
- [Apply the Factory default configuration preset](#)
- [Update a configuration preset](#)
- [Delete a configuration preset](#)

There are also some very important configuration preset considerations to review:

- [Configuration preset considerations](#)

## Configuration presets overview

Configuration presets make it easy to use your VGADVI Recorder Pro in a variety of situations without needing to reconfigure it. Configuration presets divide the system's settings into the following configuration groups. (For a complete list of what is included in each group see [Configuration groups](#).)



Using the **Configuration presets** section of the **Maintenance** page, you can create configuration presets using any number and combination of the configuration groups. Mix and match the settings groups saved together to create sets of configuration settings needed for each situation. You also always have a special **Factory default** configuration preset (which cannot be erased) to help you return to factory configuration without destructively erasing files saved to the system hard drive. (See [Apply the Factory default configuration preset](#)



It's important to note that configuration presets are *applied over* existing settings. They affect only the settings groups included in the preset, all other settings are unaffected. Read the [Configuration preset considerations](#) section carefully to understand caveats around using configuration presets.

## Example of configuration presets in action

A recording and streaming company brings VGADVI Recorder Pro to a conference as part of a portable rack. Each conference session needs to be streamed and recorded with a picture in picture layout that includes identifying information about the presenter in the metadata and the background image for the stream. Automatic file upload is needed to make sure the files are uploaded right after each session is complete.

The company could bring VGADVI Recorder Pro in a factory configured state and get it ready between each session, but this requires a trained operator and doesn't allow much time to get multiple operations completed.

Instead, the company could connect the system to their own corporate network before the show, upload the required backgrounds, and create channel configuration presets for each conference track. They can also create network and automatic file upload (AFU) presets for each of the home and remote locations. Once at the conference, the only changes necessary are to apply the network and AFU preset upon arrival, and the channel configuration presets between sessions.

Note: channel configuration presets include links to background files used, but do not include the files themselves see [Branding content](#)

### Internal network and AFU preset

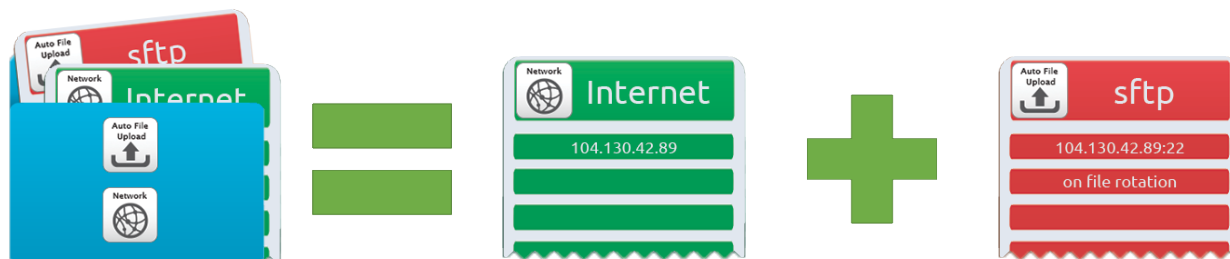
The company uses this preset when configuring and testing from their corporate network. It uses a static IP address on their corporate network and AFU that uses ftp to upload to a local ftp server.



### Conference network and AFU preset

The company applies this preset to the VGADVI Recorder Pro when they arrive at the conference. It changes only the network and AFU settings (using a conference-specific IP address and secure file transfer to an ftp server).

When applying this configuration preset, all other information including passwords, date/time, channels and source configurations, remains the same.



### Conference session 1 preset

The company applies this preset from the corporate office when testing and at the conference prior to conference session 1 starting. All other preset groups remain unchanged, this preset only affects the channel (s) and their configuration. This preset includes a channel with a link to the correct background filename (the background file was uploaded during pre-show configuration at the corporate office) and has metadata specifying the speaker's name.



### Conference session 2 preset

The company applies this preset from the corporate office when testing and at the conference prior to conference session 2 starting. After applying this preset the files recorded from session 1 remain present on the system and continue to upload via sftp (if not yet complete), but the channels reflect the session 2 background file name and presenter name.










Configuration presets are a versatile tool to help you use VGADVI Recorder Pro in a variety of changing conditions. Try it yourself and see!

## Configuration groups

The following table describes what settings are saved with each configuration group.

**Table 9** Configuration group definitions

Group Name	Symbol	Settings included in the configuration group
System		Date and time settings, serial port settings, remote support settings, custom disk check schedule, access passwords, deny/allow lists and LDAP configuration settings
Network		Network settings and tethering configuration.
Sources		All audio and video source configuration settings.
Channels		All channel configuration data and current recording state, all recorder configuration data and current recording state, individual and global UPnP settings.
AFU		Automatic file upload type and parameters.



Note that **branding content**, **recorded files** and SFTP/SCP **private keys** are not included in any configuration preset.

Uploaded **EDID** configurations are applied immediately to the system and remain the norm for the source until a new EDID is uploaded. Configuration presets do not affect EDIDs.

## Create a configuration preset

You can create as many configuration presets as you need. The system keeps track of which configuration groups are part of the preset and you provide a name that lets you know the significance of the preset.





Note that configuration presets that include **network** or **system** settings require a system reboot when applied.

To create a configuration preset:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Maintenance** link in the Configuration menu; the maintenance page opens.
4. Scroll to the **Configuration presets** section.

**Configuration presets**

[Factory default](#)   [all](#)   [Apply](#)

**Create a configuration preset**

**Name**

*Sections*

<b>System</b>	<input checked="" type="checkbox"/>
<b>Network</b>	<input checked="" type="checkbox"/>
<b>Sources</b>	<input checked="" type="checkbox"/>
<b>Channels</b>	<input checked="" type="checkbox"/>
<b>Automatic File Upload</b>	<input checked="" type="checkbox"/>
<b>Touch screen</b>	<input checked="" type="checkbox"/>

5. Type a description for your preset in the **Name** field.
6. Ensure only the desired configuration groups are selected from the **Sections** group.
7. Click **Save**; your configuration preset appears in the list.



## Apply a configuration preset

When you apply a configuration preset, the system settings for all included configuration groups are updated. Other settings on the system are not affected. For example if you apply a preset that includes the configuration groups **channels** and **automatic file upload**, your network settings, passwords, time server, source configurations, etc are not modified. Similarly if you apply a configuration preset that has only **network** settings included, only the network settings change.

If you apply a preset that has the **network** or **system** configuration group, a reboot is required.

You can verify which configuration groups are included in a preset by looking at the list to the right of the configuration preset name. The term 'all' means all groups are included. Otherwise groups are listed individually.



You may apply multiple presets one after another. If you apply two (or more) configuration presets that include a particular configuration group, the settings (for that group) from the last applied preset are the active settings. In short, last in wins.

To apply a configuration preset:

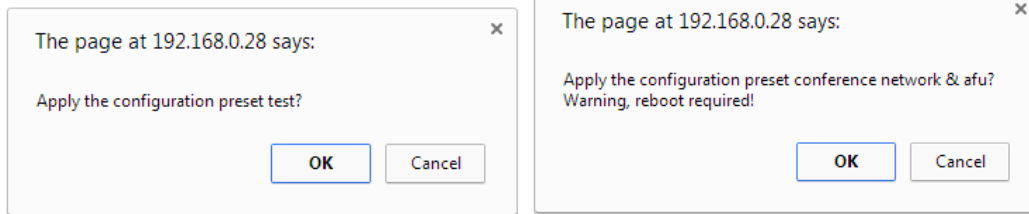
1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Maintenance** link in the Configuration menu; the maintenance page opens.
4. Scroll to the **Configuration presets** section.
5. Click **Apply** next to the configuration preset you wish to apply.

Configuration presets		
Factory default	all	<a href="#">Apply</a>
conference network	network, afu	<a href="#">Apply</a> 
internal network	network, afu	<a href="#">Apply</a> 
session 1	channels	<a href="#">Apply</a> 
session 2	channels	<a href="#">Apply</a> 
test	sources, channels, afu, frontscreen	<a href="#">Apply</a> 

6. The system asks for confirmation before proceeding.



If the configuration preset includes the **network** or **system** configuration groups, a reboot is necessary.



7. Click **OK** to apply the configuration preset; the configuration preset is applied.
8. The system reboots if needed.

## Apply the **Factory default** configuration preset

Your VGADVI Recorder Pro comes with a special factory default configuration preset. This configuration preset cannot be erased and is always presented at the top of the configuration presets list. It contains all possible configuration settings groups.

Using the Factory default configuration setting is similar to using the Factory reset method (see [Perform Factory Reset](#) with a few important differences.

In short, the **Factory default** configuration preset is less destructive than **Factory reset**. This table describes the exact differences.

**Table 10** *Factory default configuration preset vs Factory reset*

	Factory default configuration preset	Factory reset function
Deletes all created channels	✓	✓
Deletes all recorded files in channels		✓
Deletes all created recorders	✓	✓
Deletes all recorded files in recorders		✓
Resets network configuration	✓	✓
Resets touch screen configuration	✓	✓
Resets user passwords	✓	✓
Deletes all created configuration presets		✓



	Factory default configuration preset	Factory reset function
Deletes all branding files		✓
Resets all Source settings	✓	✓
Deletes all Automatic file upload settings	✓	✓

To apply the factory default configuration preset, follow the instructions in [Apply a configuration preset](#) and select the **Factory default** preset. A reboot is required.

## Update a configuration preset

If you need to update a configuration preset to include different configuration groups, or simply new settings for the same groups, you can do so easily via the web interface.

To update a configuration preset:

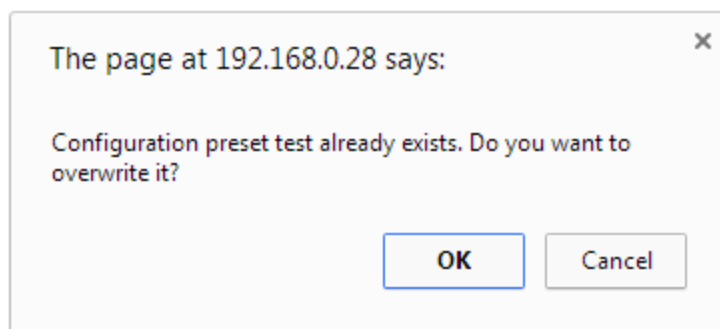
1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Maintenance** link in the Configuration menu; the maintenance page opens.
4. Scroll to the **Configuration presets** section.



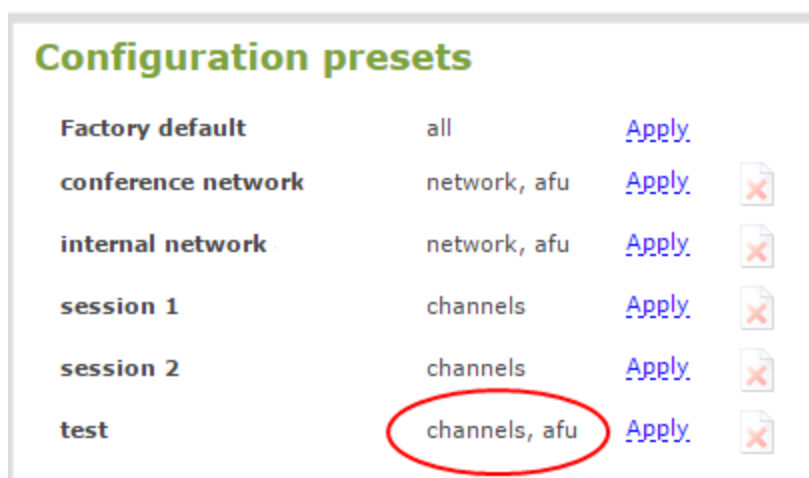
5. Find the preset you wish to change from the presets list.
6. Copy the name of the preset into the **Name** field.



7. Selected the desired configuration group(s) from the **Sections** group.
8. Click **Save**; a confirmation dialog asks you to confirm you want to overwrite the configuration preset.



9. Click OK; your configuration preset is updated in the list.



## Delete a configuration preset

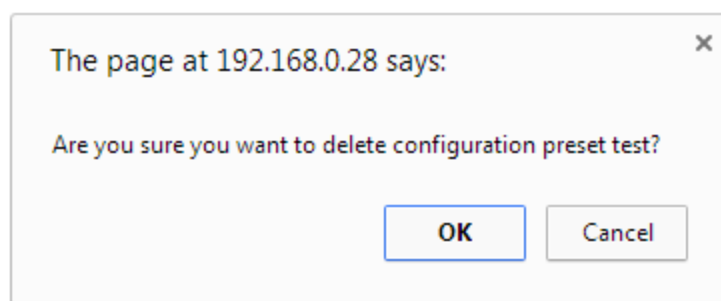
You may want to trim the list of configuration presets to only those that are needed for your ongoing needs. You can delete all configuration presets at once by doing a factory reset, or you can delete individual configuration presets from the **Maintenance** page.

To delete a configuration preset:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Maintenance** link in the Configuration menu; the maintenance page opens.
4. Scroll to the **Configuration presets** section.



5. Click delete (x) next to Apply for the configuration preset; a confirmation message appears.



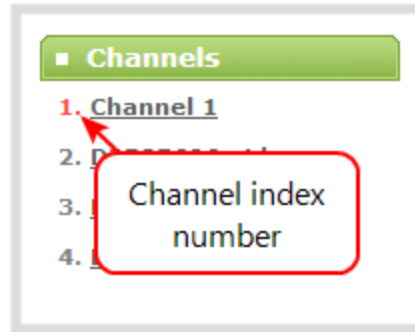
6. Click **OK** to confirm you want to delete the preset; the preset is deleted.

## Configuration preset considerations

Configuration presets are groups of settings applied to the system, leaving other settings intact. The following considerations will help you get the most from your configuration presets.

### Channel and recorder index number behavior

Each channel and recorder has an index number. The first channel created on a system is channel 1, subsequently channel 2, 3, 4, etc. Recorders are also created starting at index 1 with numbers incrementing as new recorders are created. The channel (or recorder) index number is found to the left of the channel or recorder name in the web interface:



Configuration presets that contain the **channels** configuration group specify the channels in the preset by their index number. This means if you have channels 1, 2, 3 and 4 when you save your preset, applying that preset will overwrite the configuration of your current channels with indexes 1, 2, 3 and 4. If prior to applying that preset you also had channels with indexes 5 and 6, the configuration settings for those two channels are when the preset is applied (because the preset only has 4 channels).

There are three areas where channel (and recorder) index numbers affect what happens when applying configuration presets. Read [Recording State](#), [Recorded files \(in channels and recorders\)](#) and [Deleting channels](#) for more information.

## Recording State

The [Configuration groups](#) section of this chapter shows that each channel and recorder's recording state is included in the **channels** configuration group. This means that if a channel (or recorder) is recording at the time you create a configuration preset, it will immediately start recording when you apply that preset. Similarly, if a configuration preset is saved when channels or recorders are not recording, those channels and recorders will not be recording when the preset is applied (this means a channel or recorder may stop recording as a result of applying the preset).

For example, when applying a preset with channel 3 set to record:

- If channel 3 exists prior to applying the preset and is already recording, the file will continue recording uninterrupted unless the recording file type is different in the preset (in which case a new file is started).
- If channel 3 exists prior to applying the preset and is not already recording, it immediately begins recording.
- If no channel with index 3 exists prior to applying the preset, the channel is created and it immediately begins recording.

## Recorded files (in channels and recorders)

Channels and recorders keep a list of files recorded in their **Recordings** section of the web interface. These files remain on the system even if the channel or recorder configuration is changed or removed as a result of applying a configuration preset.



For example, prior to applying your configuration preset, you have channels with indexes 1, 2 and 3; each of these has five recording files. When you apply a configuration preset that has channels with index 1 and 2 only, you'll notice those channels each still have the same 5 recording files. **Channel** with index 3 is no longer present, but the files are not lost!

Overwritten channel files are still available. To access and download/delete these recorded files, enter the following into the address bar: `http://<deviceIP>/admin/channelN/archive` or `http://<deviceIP>/admin/recorderN/archive`, where N is the index of the removed channel/recorder.

For example, if a **Channel** with index 3 is no longer present, its corresponding files can be accessed by entering the following into the address bar:

- `http://192.168.0.183/admin/channel3/archive`

If you now create a new channel with index 3 (or load a preset that contains a channel with index 3), you'll find it starts with five recorded files in the **Recordings** section. These are the same recorded files that existed at the start of this example.

Furthermore, if you delete any of the recordings, you are deleting the *only* instance of those files. Using our previous example, if you delete one of the five recordings from channel index 1, you'll find that even after applying different presets channel 1 will have only four recorded files.

## Deleting channels

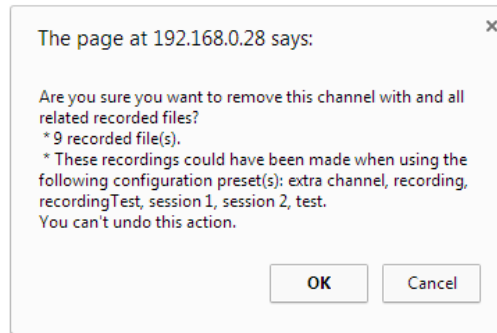
Recorded files are stored on the system based on their channel or recorder number. All files saved for channel index 1 are in one folder, and all files for recorder index 2 are in another. When you **delete** a channel (or recorder), you permanently delete all recordings for that channel (or recorder) even if those recordings were made while a different preset is applied.



Note applying a configuration preset with a different set of channels or recorders is **not** the same as deleting a channel.

When deleting a channel or recorder that has recorded files, the web interface warns you of other configuration presets that use the same channel or recorder index numbers. When you see this prompt, we recommend you take a moment to look through the **Recordings** list to make sure you're OK to proceed with permanently deleting all the recorded files.





## Branding content

The **channels** configuration group includes the filenames for logos and backgrounds used in the currently configured channels. It does *not* include the image files. Therefore it is important to make sure that between uses of different channel-related configuration presets you do not delete or replace files listed in the **Branding Content** section of the web interface. There is currently no configuration group that includes the Branding Content files.

## EDIDs

EDIDs are uploaded and immediately applied to a specific source. This change remains in place until the user uploads a new EDID or requests the factory EDID is applied by using the **Restore default EDID** button (see [Force the capture card to use a specific EDID](#))

If you apply a preset that needs a special EDID, be sure to remember to upload that EDID after applying the configuration preset.

## Configuration presets are not user profiles

Configuration presets should not be confused with the concept of user profiles. Specifically, the following issues arise from trying to use configuration presets as user profiles:

- recorded files are not removed between application of configuration presets (*users could see each other's files*)
- configuration presets can be overwritten and deleted with no password (*users could affect each other's presets*)
- branding and recorded files can be deleted, affecting more than just the currently applied configuration presets (*users could erase branding or recordings belonging to other users*)
- applying a configuration presets does not clear the settings from groups not part of the preset (*user information is not private*)



# 1-4 Configure Date and Time

The VGADVI Recorder Pro uses the current date and time in naming recorded files and when synchronizing and timestamping inputs from multiple sources (i.e. when synchronizing an audio and a video source). The admin interface lets you specify date and time settings to ensure they are correctly configured for your time zone and your network. This section covers the following date and time-related topics:

- [Verify Date and Time Settings](#)
- [Change the Time Zone](#)
- [Configure Synchronized Time \(NTP, PTP v1, and RDATE\)](#)
- [Configure a Local NTP Server](#)
- [Manually Configure the Date and Time](#)

## Verify Date and Time Settings

The current date, time, time zone, and synchronized time protocol settings are shown when the Date and Time configuration page is loaded in the VGADVI Recorder Pro web interface.

To view settings on the date and time configuration page:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Date and Time** link in the Configuration menu; the date and time configuration page opens and the following information is displayed:

The screenshot shows the VGADVI Recorder Pro web interface. On the left is a 'Configuration' menu with several options: Automatic File Upload, External USB drive, FTP Server, UPnP, Network, and Date and Time. The 'Date and Time' option is circled in red. A red arrow points from this option to the 'Date and Time' configuration page on the right. The configuration page has a title 'Date and Time' and several settings:

- Time Zone:** A dropdown menu showing 'Canada/Eastern'.
- Enable local NTP server:** A checkbox that is currently unchecked.
- Enable time synchronization:** A radio button that is currently selected.
- Protocol:** A dropdown menu showing 'NTP'.
- Server IP Address:** A text input field containing 'time.nrc.ca'.
- Set time manually:** A radio button that is currently unselected.
- Date (yyyy-mm-dd):** A text input field containing '2014-02-21'.
- Time (hh:mm:ss):** A text input field containing '15:17:43'.

The date and time configuration page also indicates whether the system is currently using synchronized or manually set time, and whether or not a local network time protocol (ntp) server is running.

The following table describes the date and time configuration fields.

**Table 11** Date and Time Options

Label	Description/Options
Time Zone	The currently selected time zone.
Enable time synchronization	Whether or not a time synchronization protocol is being used for setting time. (If not selected, time is set manually.)
Protocol	The time synchronization protocol.
Service IP Address	The time synchronization server address.
Set time manually	Whether or not time is set manually. (If time is not being set manually, a time synchronization protocol is used.)
Date	The current date. (This is the current date even if the radio button Set time manually is not selected.)
Time	The current time. (This is the current time even if the radio button Set time manually is not selected.)

## Change the Time Zone

By default the system has the Canada/Eastern time zone set. Configuration of the time zone is necessary to ensure synchronized time servers provide the correct time to the system.

To select another time zone:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Date and Time** link in the Configuration menu; the date and time configuration page opens.
4. Select the new time zone from the **Time Zone** drop down box.
5. Click **Apply**.

## Configure Synchronized Time (NTP, PTP v1, and RDATE)

By default the VGADVI Recorder Pro uses the network time protocol server (NTP server) protocol and a time server from National Research Council Canada. You can continue to use this time server or configure a new server that is more appropriate for your network and location. Your system administrator can provide the correct time synchronization server settings.

To set the time synchronization method:



1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Date and Time** link in the Configuration menu; the date and time configuration page opens.
4. Click the **Enable time synchronization** radio button if it is not already selected.
5. Choose one of the following choices from the **Protocols** drop down:

**Table 12** Synchronized Time Options

Label	Description/Options
NTP	Network Time Protocol (NTP) is used for clock synchronization over the internet. There are many publicly available NTP servers you can use, or your company may have its own NTP server. For more information about NTP and to find NTP servers, refer to <a href="http://support.ntp.org/bin/view/Servers/WebHome">http://support.ntp.org/bin/view/Servers/WebHome</a> .
RDATE	RDATE is a tool for querying the current time from the network. It is generally considered obsolete and has been replaced by NTP. It's offered here for backwards compatibility with older timekeeping systems.
PTP v1	The Precision Time Protocol (PTP) is used for clock synchronization over the internet. It has clock accuracy in the sub-microsecond range, making it more granular than NTP.

6. Tailor the synchronization protocol with the required parameters as described below.
7. If **NTP** is selected:
  - a. Enter the IP address or server name for the NTP server in the **Server IP Address** field.



NTP uses UDP packets and port 123. If the system is behind a firewall and accessing an external NTP server, UDP packets must be permitted on port 123.

8. If **RDATE** is selected:
  - a. Enter the IP address or server name for the RDATE server in the **Server IP Address** field.
  - b. Select an update interval from the drop down box.
9. If **PTP v1** is selected:
  - a. Select the multicast address of PTP v1 server from the **PTP domain** drop-down.

PTP Domain	Description
Default	PTP at multicast address 224.0.1.129



PTP Domain	Description
Alternative 1	PTP at multicast address 224.0.1.130
Alternative 2	PTP at multicast address 224.0.1.131
Alternative 3	PTP at multicast address 224.0.1.132



PTP uses UDP packets and ports 319 and 320 . If the system is behind a firewall and accessing an external PTP server, UDP packets must be permitted on ports 319 and 320.

10. Click **Apply**.

## Configure a Local NTP Server

The VGADVI Recorder Pro can run a local NTP server.

To configure a local NTP server:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Date and Time** link in the Configuration menu; the date and time configuration page opens.
4. Select the check box Enable local NTP server.

## Manually Configure the Date and Time

By default the VGADVI Recorder Pro uses NTP for time synchronization. If your system does not have access to a time synchronization server, or if you do not wish to use one, you can choose to manually set the date and time.

To manually set the date and time:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Date and Time** link in the Configuration menu; the date and time configuration page opens.
4. Type the desired date in the **Date** field. Use the format yyyy-mm-dd.
5. Type the desired time in the **Time** field. Use the format hh:mm:ss.
6. Click **Apply**.



# 1-5 Restrict Viewers by IP Address

The VGADVI Recorder Pro permits you to restrict which computers can access broadcasts by building a list of allowed and/or denied IP addresses. You can do this at a global level for the system and can also override these settings on a per-channel basis. Both global and per-channel configuration procedures are described below.



IP address restriction is valid for the viewer only and does not affect the web admin interface or the mobile configuration interface.

If your viewer account has a password, your viewers must connect to the system from a computer (or gateway) with a permitted IP address and must also supply the username (viewer) and password before they can view the broadcast.



IP Address restriction is not configurable per channel. Restrictions affect all broadcasts / streams from the system.

To restrict access by IP address you need to know the IP addresses, or range of addresses for your viewers. By default all IP addresses are allowed to connect to the broadcast.

If you're not familiar with creating allow/deny lists, refer to the examples below this procedure for assistance with crafting your lists.

To restrict viewers by IP address:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Access passwords** link in the Configuration menu; the password configuration page opens.
4. Type allowed IP addresses or address ranges in the **Allow IP's** field. Separate addresses with a comma.
5. Type denied IP addresses or address ranges in the **Deny IP's** field. Separate addresses with a comma.
6. Click **Apply**.

To restrict viewers of a specific channel by IP address:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.



3. Select the **Streaming** link for the desired channel; the streaming configuration page opens.
4. From the **Access Control** drop-down, select **Use these Settings**; local password and Allow/Deny IP lists are enabled.
5. If desired, type a password for the viewer in the **Viewer Password** field.
6. Type allowed IP addresses or address ranges in the **Allow IP's** field. Separate addresses with a comma.
7. Type denied IP addresses or address ranges in the **Deny IP's** field. Separate addresses with a comma.
8. Click **Apply**.

If a user attempts to connect to the stream from a disallowed IP address, access is denied. If connecting by internet browser, the message "IP address rejected." is displayed.

The following table describes the applicable fields.

**Table 13** IP Based Restriction Fields

Label	Description/Options
Allow IP's	<p>Enter individual IP Addresses or IP Address ranges, separated by commas. To specify a range, use a hyphen (-). Optional spaces improve readability.</p> <p>Users connecting from addresses in this list are permitted to view broadcasts from the system, provided their IP address is not in the Deny IP's list.</p> <p>To allow all (except IP addresses in the deny list, if any), leave the field blank.</p> <p>You can use the Allow list by itself, or in conjunction with the Deny IP's list as an exception to a rule in the allow list.</p>
Deny IP's	<p>Enter individual IP Addresses or IP Address ranges, separated by commas. To specify a range, use a hyphen (-). Optional spaces improve readability.</p> <p>Users connecting from addresses in this list are not allowed to view broadcasts from the system, unless their IP address is in the Allow IP's list. If a specific IP address is in both lists, access to the stream is denied.</p> <p>You can use the Deny list by itself, or in conjunction with the Allow IP's list as an exception to a rule in the allow list.</p>

## Examples

### Allow List with Distinct IP Addresses

The simplest allow/deny list is to use the list of known IP addresses to craft a list of allowed IP addresses. All other addresses are denied access to the broadcast.



For example if your system is accessible on your local area network (LAN) and you want to make sure only the CEO's specific desktop, laptop and tablet computers (with IP Addresses 192.168.1.50, 192.168.1.51, and 192.165.1.75, respectively) can connect to the broadcast, construct the following allow list:

Allow: 192.168.1.50, 192.168.1.51, 192.168.1.75

## Allow List with a Range of IP Addresses

Sometimes you'll want a range of computer IP addresses to connect to your system. This may happen when you have one range of IP addresses assigned to desktop computers (i.e. in the range 192.168.1.1 to 192.168.1.100) and another range assigned to boardroom computers (i.e. the range 192.168.1.200 to 192.168.1.250). If you only want the boardroom computers to connect to broadcasts from the system you can specify the range of boardroom IP addresses rather than needing to type in each individual address. The allow list looks as follows:

Allow: 192.168.1.200-192.168.1.250

Note that we could have specified two of the IP addresses in the previous example as a range.

## Allow List with a Range of IP Addresses and One or More Specific IP Addresses

Putting the first two examples together, we want to permit access to IP addresses in the range of boardroom computers (192.168.1.200-192.168.1.250) and also want to add the desktop, laptop and tablet computers of the CEO (IP addresses 192.168.1.50, 192.168.1.51, and 192.168.1.75, respectively). Note the first two IP addresses are consecutive, so they can be added as a second range. Add these IP addresses to the list as follows:

Allow: 192.168.1.200-192.168.1.250, 192.168.1.50-192.168.1.51, 192.168.1.75

Your list can have multiple ranges and multiple distinct IP addresses, provided they are separated by commas.

## Deny List with Distinct IP Addresses

Another simple allow/deny list is to use the list of known IP addresses to list specific denied IP addresses. All other addresses are allowed access to the broadcast.

For example imagine your system is accessible on your local area network (LAN) and you want to allow any computer on the LAN can access the stream except your publicly-accessible boardroom (with IP address 192.168.1.211). You can use the following deny list (leave the allow list empty) to permit all computers except the boardroom computer:





Deny: 192.168.1.211

As with Allow lists, your deny list can specify a range of IP addresses, and can specify multiple ranges or distinct IP addresses in a comma-separated list.

## Allow List with a Range of IP Addresses, Distinct IP Addresses, and an Exception

Building on the previous examples, consider the situation where you want the CEO's computers (192.168.1.50, 192.168.1.51, 192.168.1.75) and all boardroom computers (192.168.1.200-192.168.1.250) to access the broadcast, with the exception of the public boardroom computer (192.168.1.211). Use both allow and deny lists to create the rule as follows:

Allow: 192.168.1.200-192.168.1.250, 192.168.1.50-192.168.1.51, 192.168.1.75

Deny: 192.168.1.211

Both lists can have multiple ranges and multiple distinct IP addresses, provided they are separated by commas.

## Deny List with a Range of IP Addresses

Converse to the previous examples, consider the situation where you want every computer on the network to access the broadcast, with the exception of the CEO's desktop, laptop, and tablet computers. Additionally, boardroom computers should not be permitted with the exception of the cafeteria computer (IP address 192.168.1.222).

The deny list is an "exception" list for the allow list. So to craft the rule described above we need to allow all the computers in the local subnet, then deny specific sub-ranges including two groups of boardroom computers ensuring the cafeteria computer's IP address is not in the deny list:

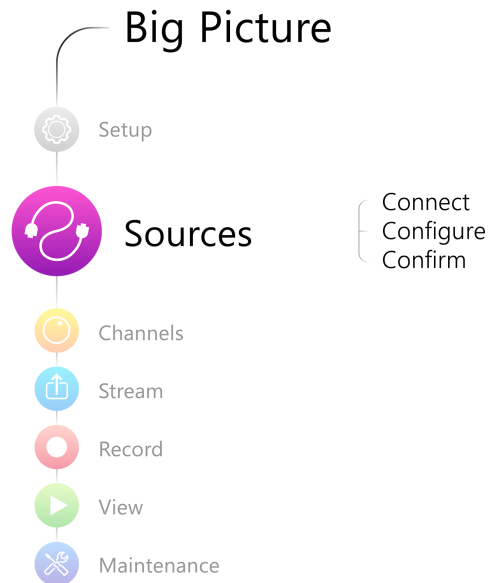
Allow: 192.168.1.1-192.168.1.250

Deny: 192.168.1.200-192.168.1.221, 192.168.1.223-192.168.1.250, 192.168.1.50-192.168.1.51, 192.168.1.75



# PART 2: Sources

Now that you know how to connect to the admin interface, you are ready to configure your input sources. The following sections provide an overview of the types of sources you can connect to your VGADVI Recorder Pro and how to configure each source.



The following topics are covered:

- [Identify sources](#)
- [Configure a video source](#)
- [Configure an audio source](#)
- [Fine-tune source configuration](#)



## 2-1 Identify sources

A source can be an image, video, or audio from a camera, a computer screen or any device that provides a VGA, S-Video, SDI, DVI or HDMI video signal and audio signal output.

This chapter covers the following sections:

- [Connecting sources](#)
- [Previewing captured stream from sources](#)

### Connecting sources

You can connect sources to the VGADVI Recorder Pro at any time, either before or after the system is powered on. Similarly you can disconnect a source from a port and even connect a different source at any time.



Changing the source connected to a port that is being streamed or recorded can result in the recording stopping or the stream frame size changing depending on how your channel is configured.

If the frame size changes, viewers may be disconnected and need to re-connect to the stream.

Connect the input sources to the following input ports on the system:

**Table 14** Cable and port connections

Cable	Input Port
VGA, HDMI or DVI	DVI port
SDI	SDI port
composite or S-video source	S-Video port
audio	Audio Input port

The web interface automatically discovers all input source ports and displays them in the **Sources** section of the web admin interface.

Each video input on the back of the system is a frame grabber. Input sources are identified by their frame grabber serial number. Each frame grabber has one DVI port, one SDI port, one S-Video port, and one audio port. DVI ports are listed with the suffix .vga, SDI ports with the suffix .sdi, S-Video inputs are listed with the suffix .video, and audio inputs are identified by the word audio. Video sources include a preview of the images



they are capturing. It is a good practice to view the images from each source to confirm what is captured. See below.

When a source is connected, the system automatically detects and adjusts the image capture settings at start up and continues to adjust every 60 seconds during operation (interval is configurable). The system's goal is to produce the best quality captured image given the source equipment used. Generally no further configuration is needed.

## Previewing captured stream from sources

---

You can preview the images captured from your sources in the web admin interface. No extra configuration is needed.

To preview the captured stream/images:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Ensure a source is connected to the input port, see Table [Cable and port connections](#).
4. Scroll to the bottom of the source configuration page to see the **preview**.



## 2-2 Configure a video source

This section covers the following video source configuration topics:

- [Configure the video source's frame grabber parameters](#)
- [Change a source name](#)

For topics related to fine tuning for specific problems or for uploading a custom EDID, see [Fine-tune channel configuration](#).

### Configure the video source's frame grabber parameters

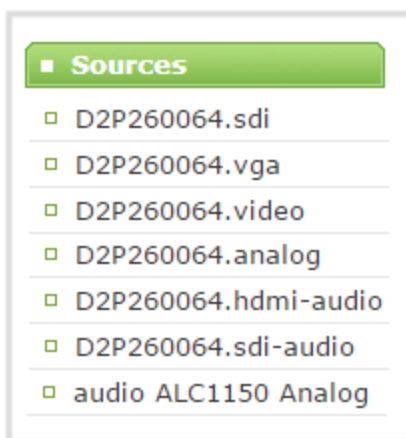
Generally the captured stream doesn't require any additional configuration, but if needed, you can log into the web interface to make configuration changes.

To configure a source:



The following adjustments cannot be made for S-Video sources.

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Ensure a source is connected to the input port, see Table [Configure a video source](#).
4. From the web interface, scroll to the Sources menu option.



5. Click the .vga, .sdi or ,video source link; the source configuration page opens.
6. If desired, scroll to the bottom of the source configuration page to see the video **Snapshot**.



7. Make note of the name of the source, or optionally, change the source name to reflect the data it is capturing. You'll need to know this name to add the source to a channel. See [Create a single source channel](#).
8. In most cases the video is ready to add to a channel and broadcast. If fine adjustments are required, refer to the table below to make minor configuration changes.

## DVI and HDMI Signals

Although many options can be listed on the .vga (DVI) source configuration page, only certain ones are applicable to DVI or HDMI signals. When you have a digital source connected, the page indicates that most changes are not configurable.

### Local framegrabber D2P260050.vga

The source is NOT used in any channels!

Input signal: 1280 x 1600 @ 40300 mHz

**Measure video mode:**

```

34 03 1E 01 00 3D
00 05 40 06 6C 9D 00 00 02 00 00 00
7F 01 53 01 5D 06 0E 00 1C 00 40 01 40 06 53 01 53 01 1C 00 01 00 00 00 10 02 40 26 21 78 88 2A 7F

```

Temperature: 85.1 °C

no adjustments available for digital signal

### Frame grabber settings

Autoadjustments interval:  , seconds from 0 to 9999, 0 — disable

Rotate: no rotation ▼

☐ Enable deinterlacing

The following values are configurable for digital sources connected to the DVI port:

Value	Description
Autoadjustments interval (sec)	When a source is setup, the system automatically detects and adjusts the image capture settings at start up and continues to adjust every 60 seconds during operation. To change the number of seconds between update, enter a value, or 0 to disable the feature, otherwise the default of 60 seconds is set.



Value	Description
Rotate	This feature is useful when a source captures video that is rotated 90° or is displayed upside down. Choose one of the following values to change the video orientation while streaming: <ul style="list-style-type: none"><li>• No rotation</li><li>• 90° clockwise</li><li>• 90° counter clockwise</li><li>• 180°</li></ul>
Enable deinterlacing	Enable this feature to convert an interlaced source signal to a non-interlaced signal.

## VGA Signals (coming in via DVI port)

The following values are configurable for VGA signals coming in via a DVI port.

Value	Description
Use signal from	Specify the native color space of the signal source, either RGB or YUV. The following values are available: <ul style="list-style-type: none"><li>• VGA/DVI signal (RGB) (this is the default setting)</li><li>• Component signal (YCrCb)</li></ul> Configurable for VGA sources only.
Autoadjustments interval (sec)	When a source is setup, the system automatically detects and adjusts the image capture settings at start up and continues to adjust every 60 seconds during operation. To change the number of seconds between update, enter a value, or 0 to disable the feature, otherwise the default of 60 seconds is set.
Vertical shift	When an image is not aligned in the window, use this feature to move an image up or down on the screen. The values range from 20 (moves the image up) to -20 (moves the image down).
Horizontal shift	When an image is not aligned in the window, use this feature to move an image left or right on the screen. The values range from -999 (moves the image to the left) to 999 (moves the image to the right).
Phase	Specifies phase adjustments for VGA signals. Generally not used unless value is provided by Epiphan support. Configurable for VGA sources only.



Value	Description
PLL adjustment	<p>Changing the value adjusts the horizontal resolution of the image. Adjust the value using small increments until the image is sharper. The value ranges from 0-999 to 999.</p> <p>Configurable for VGA sources only.</p>
Offset	<p>The Offset and Gain parameters function as contrast control for an image. The Offset controls the darker parts of the image and the gain controls the bright parts of the image. Adjust both values to optimize image quality. Adjust the values using small increments until the image is sharper. If you set Offset to a high value, set a high value for the gain to balance the two.</p> <p>Configurable for VGA sources only.</p>
Gain	<p>The Gain and Offset parameters function as contrast control for an image. The Gain controls the bright parts of the image and Offset controls the darker parts of the image. Adjust both values to optimize image quality. Adjust the values using small increments until the image is sharper. If you set Offset to a high value, set a high value for the Gain to balance the two.</p> <p>Configurable for VGA sources only.</p>
Aspect Ratio	<p>Sets the aspect ratio of the captured image. The default is 4:3. Set the value to Wide mode when capturing images that have a wide aspect ratio. Using the incorrect setting causes the image to be distorted or stretched.</p> <p>Configurable for VGA sources only.</p>
HSync threshold	<p>Adjust horizontal sync detection.</p> <p>Configurable for VGA sources only.</p>
VSyn threshold	<p>Adjust vertical sync detection.</p> <p>Configurable for VGA sources only.</p>
Rotate	<p>This feature is useful when a source captures video that is rotated 90° or is displayed upside down. Choose one of the following values to change the video orientation while streaming:</p> <ul style="list-style-type: none"><li>• No rotation</li><li>• 90° clockwise</li><li>• 90° counter clockwise</li><li>• 180°</li></ul>





Value	Description
Enable deinterlacing	Enable this feature to convert an interlaced source signal to a non-interlaced signal.

## S-Video Signals

The following options are available for S-Video signals via S-Video ports.

Signal type	Specify the video source connected to the S-Video input source. The options are Default, Composite, S-Video.
-------------	--

## SDI Signals

The following options are available for signals via the SDI port.

Value	Description
Rotate	This feature is useful when a source captures video that is rotated 90° or is displayed upside down. Choose one of the following values to change the video orientation while streaming: <ul style="list-style-type: none"><li>• No rotation</li><li>• 90° clockwise</li><li>• 90° counter clockwise</li><li>• 180°</li></ul>
Enable deinterlacing	Enable this feature to convert an interlaced source signal to a non-interlaced signal.

## Change a source name

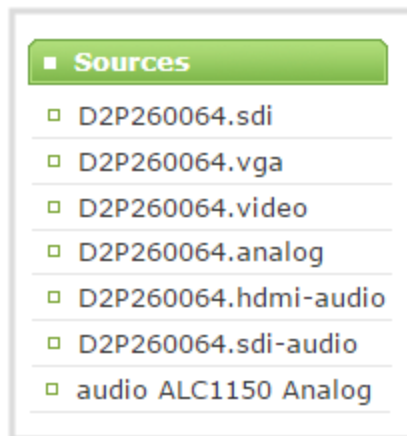
Source names are used when adding sources to channels, therefore it is important that you know the name of the source you wish to use. If a channel has only one source, it's name will automatically be the same as its source. Sometimes it's helpful to configure the source name to match the data it's capturing so it's clear what the channel is capturing too. Alternately you can change the channel's name. See [Rename a channel](#).

To change a source name:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.



3. From the web interface, scroll to the Sources menu option.



4. Click the .vga or ,video source link; the source configuration page opens.
5. Click the **source name** at the top of the page; the name turns red.
6. Highlight and delete the existing **source name**.
7. Type a new source name.
8. Press **Enter** (on your keyboard) to save the new name.



You must press Enter to save the new name. The **Apply** button will not save the source name change.



## 2-3 Configure an audio source

VGADVI Recorder Pro's web interface automatically discovers all input source ports and displays them in the Sources section of the web interface. Audio sources are identified by the word audio in the source name. Audio input devices such as a microphone and portable music players can send audio signals to the VGADVI Recorder Pro using the audio input port. Audio is also supported via HDMI and SDI.



All available video formats support audio except Motion JPEG.

Use the following sections to configure the audio settings that control the audio input:

[Add an audio source to a channel](#)

[Configure audio encoding settings](#)

[Set audio volume](#)

[Configure an audio source](#)

### Add an audio source to a channel

To add an audio source to a channel:

1. Ensure an audio input source is connected to the system.
2. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
3. Login as admin.
4. From the web interface, scroll to the channel section and click the channel to which you want to add an audio source; the menu expands.
5. Click **Sources**; the channel's Sources page opens.
6. Scroll to Audio Sources. A list of audio sources connected to the system is displayed.



**Audio sources**

☒ D2P85615:analog

☐ D2P85617:analog

☐ D2P85606:analog

☐ D2P85611:analog

☐ ALC898 Analog

**Apply**

7. Select an audio source.
8. Click **Apply**.

## Configure audio encoding settings

To configure audio encoding settings:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, scroll to the channel section and click the channel for which you want to configure audio settings; the menu expands.
4. Click Encoding; the Encoding configuration page opens.
5. Scroll to Audio settings.

**Audio settings**

☒ Enable audio

Audio format: AAC 44 kHz ▼

Audio channels: Stereo ▼

Audio bitrate: 320 kbps ▼

**Apply**



6. Check **Enable audio** check box.
7. If the default audio format AAC 44KHz, stereo, 320 Kbps is not desired, click the **Audio format** drop-down menu to select an audio codec. See [Fine-tune channel configuration](#) for help choosing one of the supported audio codecs.



If desired, you can choose **Mono** to have left and right stereo channels combined and streamed together (i.e. when listening to the streamed audio, the same blended sound will come through both the left and right channels).

8. Click the **Audio channels** drop-down menu to choose mono (1 channel) or stereo (2 channels).
9. Click the **Audio bitrate** drop-down menu to choose the audio transmission speed. Increasing this value produces better sound quality but uses more system bandwidth to transmit the audio signal.



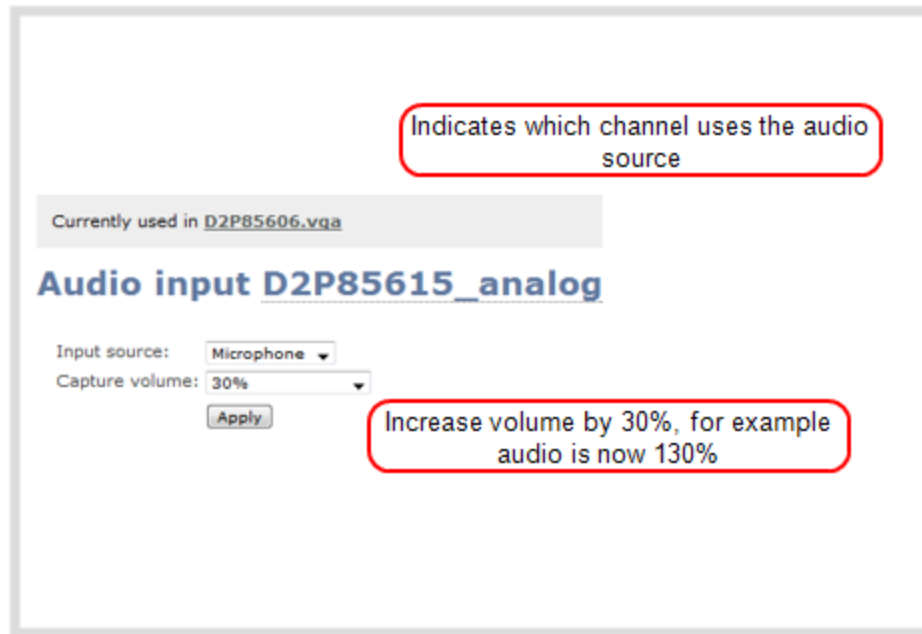
For **stereo** audio, we recommend 256 kbps or 320 kbps.

10. Click **Apply**.

## Set audio volume

To set audio volume:

1. Ensure an audio input source is connected to an audio input port.
2. Connect to the admin interface using your preferred connection method. See [Connect to the Admin Interface](#).
3. Login as admin.
4. From the web interface, scroll the **Sources** section.
5. Select an audio source; the audio configuration page opens.



6. Select the Input source from the drop-down menu. Choose **Line** (default setting), to capture system audio, or choose **Front Mic** or **Rear Mic** to capture audio from a microphone connected to the audio input port.
7. Click the **Capture volume** drop-down menu. A list of percentages is displayed. Choose to amplify the volume by a percentage of the original volume. The default setting is 30%. Decrease the percentage if the output volume is too loud. Increase the percentage if the output volume is not loud enough.



Adjusting the **Capture volume** adjusts the recorded and streamed output audio.

8. Click **Apply**.



## 2-4 Fine-tune source configuration

In addition to fine tuning channel settings such as frame rate, resolution and bit rate to ensure optimal use of resources while streaming a quality video, there may be circumstance when you must fine tune the video input source.



Changing how source images are displayed may cause undesired results, for example experimenting with the PLL setting may result in the image not being displayed properly. It is a good practice to backup your configuration settings so that you can revert back to a good configuration if the changes that you made are not desirable. See [Save and Restore Device Configuration](#).

This section covers the following fine tuning topics:

- Video is not centered on the screen (VGA sources only)
- Video is too bright, too dark or washed out (VGA sources only)
- Video looks squished (VGA sources only)
- Remove the combing effect on images
- Force the capture card to use a specific EDID

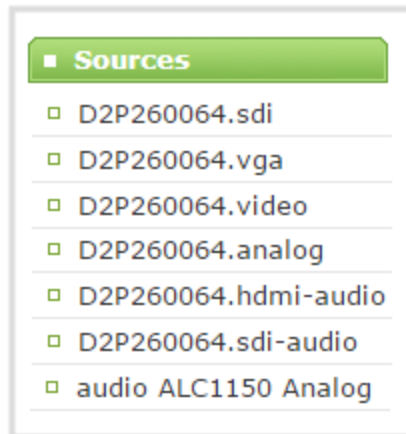
### Video is not centered on the screen (VGA sources only)

The image from the source is displayed too high or low, or too far to the left or right.

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.



3. From the web interface, scroll to the Sources menu option.



4. Click the desired video source ; the source configuration page opens.
5. To move the video horizontally to the left or right, scroll to **Horizontal shift** .
6. Enter incremental values to shift the video image to the left (use a negative value) or right (use a positive value).

Vertical shift:	<input type="text" value="-10"/>	, from -20 (down) to +20 (up)
Horizontal shift:	<input type="text" value="0"/>	, from -999 (left) to +999 (right)

7. Click **Apply**. View the output in the Snapshot preview below . You may need to make further adjustments to move the video left or right.
8. Make further adjustments and click **Apply** after each change to confirm the results.
9. To move the video up or down, scroll to **Vertical shift** .
10. Enter incremental values to shift the video image down (use a negative value) or up (use a positive value).
11. Click **Apply**. View the output in the Snapshot preview below. You may need to make further adjustments to move the video up or down.

## Video is too bright, too dark or washed out (VGA sources only)

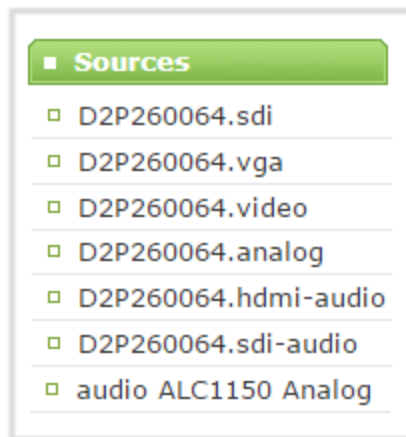
If the video from the source is too light, too dark or washed out, use the offset and gain controls together to optimize image quality. Increasing the gain amplifies weak signals but also increases noise, you must balance offset and gain values to achieve the best quality image.





Adjust these settings by the smallest values possible; compensate for a large change to one by making a large change to the other. Setting both offset and gain to high values can result in poor video quality.

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, scroll to the Sources menu option.



4. Click the desired video source; the source configuration page opens.
5. Scroll to **Gain**.
6. Enter a small value, for example 1 to 25 in the field to brighten the image.
7. Scroll to **Offset**.
8. Enter a small value, for example 1 to 15 , to balance the gain setting . The Offset value behaves as a contrast to the Gain value.
9. Click **Apply**. View the output in the Snapshot preview below. You may need to make further adjustments to fine tune the brightness and contrast.

## Video looks squished (VGA sources only)

The image is squeezed horizontally on the screen. This distortion occurs when there's a mismatch between the aspect ratio the VGADVI Recorder Pro detects and the aspect ratio that is sent from the source signal. To compare the two signal values, you must know the aspect ratio that the source is sending.

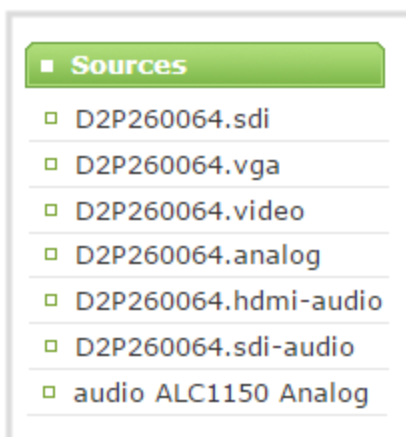
1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click **Info**; the info window opens with a list of all configured channels.



#	Channel name	Status	Video source	Audio source	Stream	Bitrate	Actual bitrate	Frame size	FPS / Actual FPS	Port
5	<a href="#">EncoderA</a>	ok	external: 192.168.1.186		H.264+mp3	600 kbps	847 kbps	1152x864	5 / —	8001 <a href="#">View</a>
6	<a href="#">External [192.168.1.203]</a>	ok	external: 192.168.1.203		H.264	600 kbps	688 kbps	1024x768	5 / —	8000 <a href="#">View</a>
7	<a href="#">D2P85606.vga</a>	ok	<a href="#">D2P85606.vga</a>	disabled	H.264	600 kbps	626 kbps	1024x768	5 / 4.9	8002 <a href="#">View</a>

Overall system load: 2%

4. Compare the aspect ratio from the source with the aspect ratio from the VGADVI Recorder Pro info window. Confirm if there is a mismatch.
5. If there is a mismatch, go to the Encoding page for the channel and change the frame size to match the frame size that is sent from the source. See [Create and configure channels](#).
6. If the video is still squeezed horizontally on the screen, follow the steps below.
7. From the web interface, scroll to the Sources menu option.



8. Click on the source for which you want to change the aspect ratio; the source configuration page opens.
9. Scroll to the Aspect ratio setting.
10. Select **Wide mode** from the drop-down menu, when the source is wider than what is being displayed in the preview or Live View.
11. Click **Apply**. View the output in the Snapshot preview below.

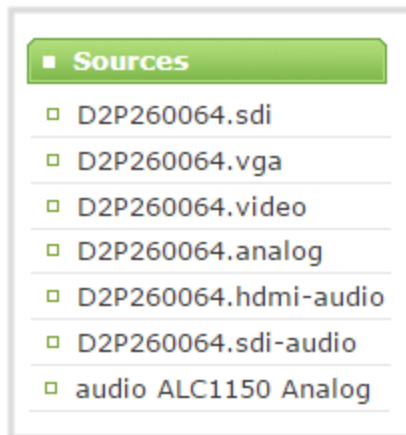


## Remove the combing effect on images

When frames are interlaced, artifacts from one frame may appear on the next frame. This occurs when a fast motion video is interlaced. Since each frame is captured from a different point in time, the action captured in one frame is carried over to the next frame. The result is a blurred image and horizontal lines running across the video.

To convert an interlaced source signal to a non-interlaced signal.

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, scroll to the Sources menu option.



4. Click on the desired video source ; the source configuration page opens.
5. Enable the **Enable deinterlace** setting.
6. Click **Apply**. View the output in the Snapshot preview below.

## Force the capture card to use a specific EDID

Extended display identification data (EDID) is data provided by a video display device (usually a monitor) to describe its capabilities to a video source (usually a graphics or video output card in a PC or another device). The video source uses the EDID to determine the capabilities of the monitor to determine the resolution, color depth and other settings that the monitor can support.



EDID is crucial for DVI sources but mostly ignored by VGA sources.



Like monitors, each video capture card in the VGADVI Recorder Pro contains an EDID. When you connect a VGA or DVI video source (such as a laptop or video camera), this source sees the VGADVI Recorder Pro's capture card as a monitor and uses its EDID to negotiate which video signal to send.

Generally the capture card's DVI input correctly emulates a monitor that supports your video source. However sometimes, particularly if your source uses a custom set of display properties, you need to help VGADVI Recorder Pro by uploading a custom EDID to force the capture card to report that it emulates a resolution, color depth, etc needed by your laptop, camera or other video source.

## Upload a new EDID

In most circumstances the factory installed default EDID, is sufficient. However, there may be some cases where a video source uses resolutions that you do not want to use. In that case you can choose an EDID that forces the VGADVI Recorder Pro's capture card to use a specific set of attributes.

The uploaded EDID is permanently installed on your system and this capture card (a "Source" in the web interface) will always share the uploaded EDID with the connected video input source.



EDID changes are permanent until you replace them with another EDID or specifically choose to restore the factory EDID for a given source. Not even a system-level factory reset removes the configured EDIDs.

1. To download a new EDID file, go to the [Epiphan support](#) web page. The support page opens.
2. Select the support page for VGADVI Recorder Pro.
3. Scroll to the **EDID** section.
4. Click on an EDID from the list. The file is saved to your downloads folder on your hard drive.
5. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
6. Login as admin.
7. From the web interface, Scroll to the **Sources** section.
8. Click the name of the DVI capture card (source) for which you want to upload an EDID; the Source Configuration page opens.
9. Scroll to the **EDID upload** section.

**EDID**

Upload EDID file:  No file chosen

Restore default EDID:



10. Click **Choose File**; a file browser opens.
11. Browse to the location where the custom EDID file was saved and select the file.
12. Click **open**; the EDID filename is displayed on the screen.

The screenshot shows a web interface titled "EDID" in green. Below the title, there are two sections. The first section is "Upload EDID file:" and contains a "Choose File" button, the filename "edid\_1280x1024.edid", and an "upload" button. The second section is "Restore default EDID:" and contains a "restore" button.

13. Click **upload**, the EDID upload begins; the screen shows a progress indicator.

The screenshot shows the same "EDID" interface as before, but now the "upload" button is disabled and replaced by a "Stand by..." indicator, which consists of a circular arrow icon and the text "Stand by...". The "Choose File" button and the filename "edid\_1280x1024.edid" remain visible.

14. When the upload is complete the page changes to reflect success or failure.

The screenshot shows the "EDID" interface with the "upload" button now enabled and the word "Success" displayed next to it. The "Choose File" button and the filename "edid\_1280x1024.edid" are still present.

## Restore factory default EDID

When you have finished with a custom EDID, you can restore the capture card (in the Sources list) to the default EDID. Currently there is no way to tell if your capture card is using a custom EDID. If you are unsure, restoring to factory default is the best approach.

To restore the default EDID:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.



3. From the web interface, scroll to the **Sources** section.
4. Click the capture card (source) for which you wish to restore the EDID; the source configuration page opens.
5. Scroll to the **EDID** section.
6. Click the restore button.

**EDID**

Upload EDID file:  No file chosen

Restore default EDID:

7. The screen updates with a status indicator.

**EDID**

Upload EDID file:  No file chosen

Restore default EDID:  ⌚ Stand by...

8. When the EDID restoration is complete, the page updates to reflect the action is completed.

**EDID**

Upload EDID file:  No file chosen

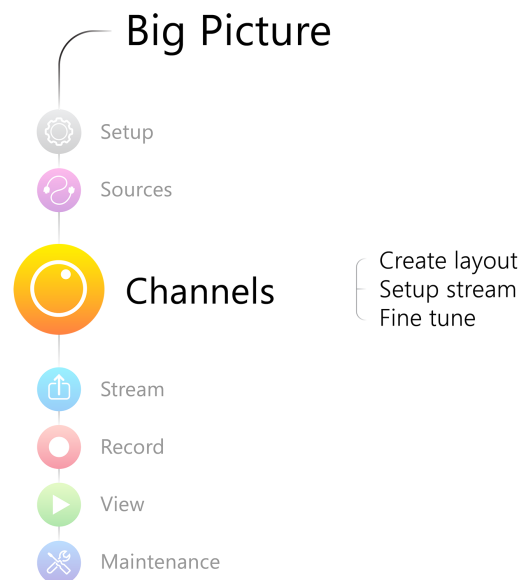
Restore default EDID:  Success



# PART 3: Channels

Channels organize and display content captured from DVI, VGA, HDMI, SDI, camera input sources and audio. A channel can be set up to display the content from one input source, or may capture, stream and record content from multiple input sources. You can identify your channel by adding a corporate logo, company information, corporate color and time stamps.

Through channel configuration and fine tuning you can maximize your stream quality, minimize your processing requirements and bandwidth and specify how the video is presented and streamed to a sharing destination/viewer.



This section discusses the following topics related to channel configuration:

- Create and configure channels
- Identify a channel
- Preview a channel
- Fine-tune channel configuration
- Customize your channel



## 3-1 Create and configure channels

Channels make your sources available for viewing and recording. You choose how you want to configure your sources to make channels.

VGADVI Recorder Pro gives you a lot of control over how your sources are streamed. You are not limited to creating a **Channel** list that is a one-to-one reflection of your **Sources** list.

You can add the same source to multiple single-source or multi-source layout channels.

For example, you could use the same source in all three of these situations, concurrently:

- as the only source in Channel 1 at 1080p, 30fps, 10,000 kbps;
- as the only source in Channel 2 at 720p, 15 fps, 2,000 kbps;
- and added to Channel 3 as part of a multi-source layout with picture in picture.

All channels, even if they re-use a source, can be streamed and recorded simultaneously. Using the example above, you could record any combination of those three channels, and stream one, two, or all three of them using any available streaming methods.

This section covers the following topics for creating channels:

- [Create a single source channel](#)
- [Create a multi-source layout](#)
- [Delete a channel](#)
- [Rename a channel](#)

While configuring channels, consider opening a live preview of the channel in another tab or browser window so you can see the changes as they are applied, refer to [Preview a channel](#).

### Create a single source channel

A single source channel displays the output from one source in one viewing screen. By default, channels are automatically configured with the same name as their source. If you change the name of a source, the channel name will reflect the new source name. Best practice is to rename the sources as required and leave the channels to reflect the name. If you wish to change a channel's name directly, see [Rename a channel](#).

In this section you can choose settings that maximize your stream quality, while minimizing your processing requirements and bandwidth by adjusting frame rate, resolution and bit rate.

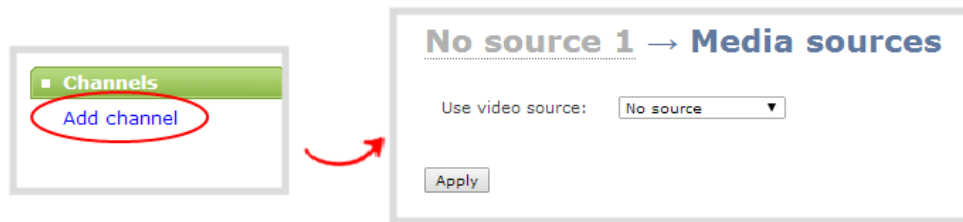
Procedures to select a codec for compression, add a time stamp to the stream, and select a layout when two or more sources are configured are described in separate procedures.



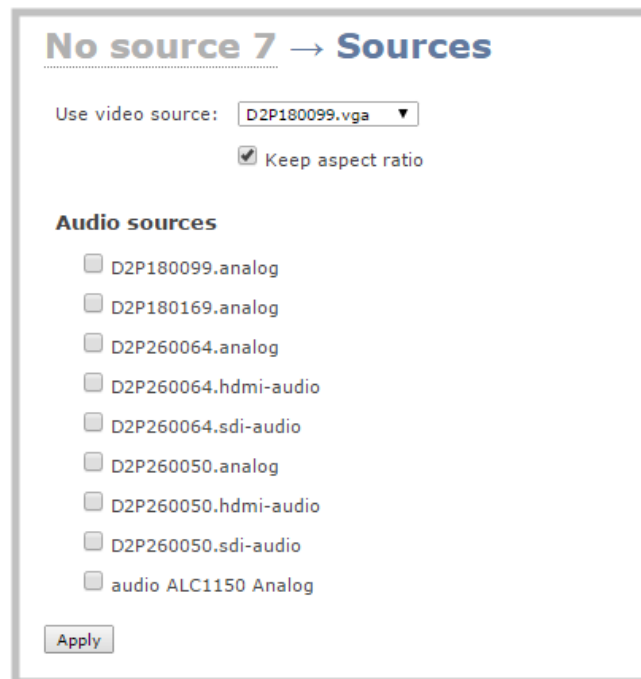


To add a single source channel:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Ensure a DVI, HDMI, VGA or SDI input source is connected to the device.
4. From the web interface, scroll to the **Channels** menu option. A list of existing channels, if any is displayed.
5. Click **Add channel** located at the bottom of the list; the Sources page opens.



6. Click the **Use video source** drop-down menu; a list of available sources appears.
7. Choose a video source from the list; the name of the source is displayed.



8. Choose an audio source from the displayed list, if required.
9. Click **Apply**. The channel name is updated to display the source's name.
10. Click the **Encoding** link for your channel; the stream configuration page opens.



**D2P180099.vga → Encoding**

**Video settings**

Codec:

Video encoding preset:

Video encoding profile:

☒ Use current signal resolution as frame size

Frame size:  x  ← current video signal resolution

☒ Keep aspect ratio

Key frame interval:

Limit frame rate:

Bitrate:

Show time label:  [Show substitutions](#)

11. If you're not sure what **Codec** to pick, keep the default, H.264. For help selecting a codec, refer to [Fine-tune channel configuration](#).
12. Keep the default **video encoding preset** and **video encoding profile** for help selecting these values, refer to [Fine-tune channel configuration](#).
13. Perform one of the following steps:
  - a. Check the **Use current signal resolution as the frame size** check box. Typically you want to broadcast at the same frame size as the source.



Enabling this feature greys out the fields to change the frame size. Changing the input signal resolution may lead to interrupted streaming and recording. Enabling this feature may not be suitable for systems where input resolution is changed frequently.

- b. Change the frame size, follow the steps below.
14. Set the **Frame size** to reflect the same dimensions as your source or as sharing destination. Default values cover popular resolutions of cameras and display devices such as monitors or choose one of the following:
  - a. Type a frame size in the field; or
  - b. Select an option from the sizes shown, the dimensions will appear in the frame size field.



Making the dimensions larger, smaller, or a different aspect ratio than the source takes some processing power, so it's always best to leave at the value detected by the system unless you want to specify a particular size.

15. Click the **Key frame interval** drop-down box to choose how often a key frame (a frame that contains all the pixels) is used when streaming the video. The longer the key frame interval the smaller the video file size, and vice versa. The higher the value the faster a user moves through the frames of the video when using the search function of their media player. For more information on adjusting this feature to reduce bandwidth and system resources, see [Fine-tune channel configuration](#).
16. If desired, change the **Limit frame rate**. The default should be adequate in most applications. While decreasing the limit may improve system performance, you may need to test different values to balance video smoothness and processing power.
17. Increase or decrease image quality by increasing or decreasing the target **Bitrate** value when H.264 and MPEG4 codecs are used. Video with a high level of motion and high resolution, such as a sporting event, requires a high bitrate.



Raising this value uses more system processing power and bandwidth.

18. To configure the **Show time label**, see Creating a time stamp in the [Customize your channel](#)
19. Use the **Background color** drop down to select a background color for bars that appear at the top/bottom or left/right side of the frame if the source doesn't fill the frame.
20. If your channel has audio, check the **Enable audio** check box and select an **audio codec** and **audio bitrate** from the drop down boxes. For digital audio sources (HDMI or SDI), 48 kHz is often the best value to select. For more information on audio configuration, see [Configure audio encoding settings](#). For information on selecting audio codecs, see [Choose a codec to maximize your stream quality](#).
21. If you've selected Motion JPEG as the channel codec, you can configure the Page refresh time. Specify a time in seconds.
22. Click **Apply**.

## Create a multi-source layout

A multi-source layout channel displays the output from multiple sources in one viewing screen. When a channel displays multiple sources you can specify how video streams are positioned on the screen. You can display each source side by side, or position one over the other in a more traditional picture in picture layout.

To create a multi-source layout:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).

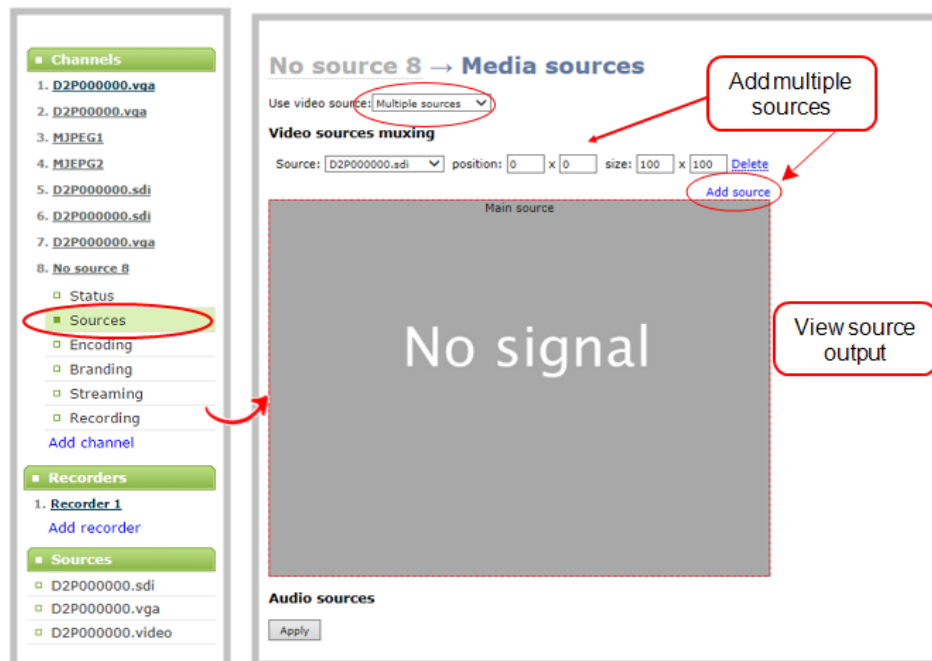


2. Login as admin.
3. Ensure at least two video input sources are connected to the system.
4. From the web interface, scroll to the **Channels** menu option.
5. Click **Add channel** located at the bottom of the list; a new channel is created and its Sources page opens.



A multiple source channel is named Channel 1, Channel 2, etc. by default; you must specify a name during configuration. Refer to **Rename a channel**

6. Click the **Use video source** drop-down menu; a list of available sources appears.
7. Select **Multiple sources**; a source drop-down menu and source preview window appears.



8. Unless you want to stretch your sources, make sure the **Keep aspect ratio** check box is selected. This will ensure your sources always maintain their correct aspect ratio in this multi-source layout.
9. Do the following for each source:
  - a. If needed (e.g. for all but the first source), click **Add source** to add a source to the layout.
  - b. Click the **Source** drop-down menu for the source you're arranging. A list of configured sources appears.
  - c. Choose a source from the drop-down menu.



- d. Enter the position coordinates. Position coordinates are based on where the source's image will appear. Each axis represents 100 percent. The first value is the image's position along the x axis (horizontal axis). The second value is the image's position along the y axis (vertical axis).



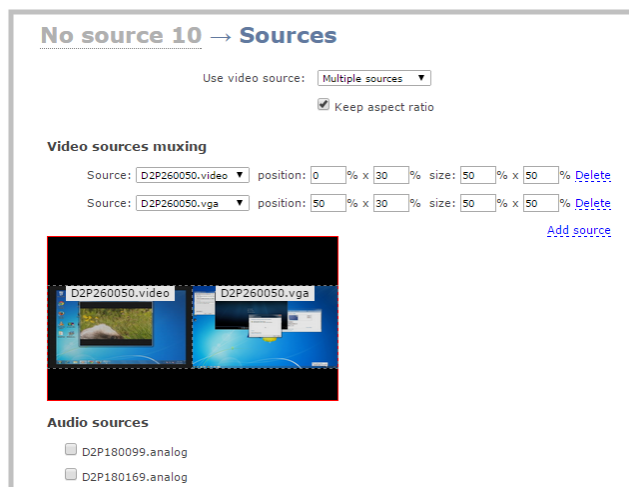
Coordinate 0,0 is the top left corner of the stream. The x axis continues along the top to the right side. The y axis continues down to the bottom. The right side is 100 % on the x axis and the bottom is 100 % on the y axis.

See the examples below to learn how to create side by side and picture in picture layouts.

10. When you have added and positioned all your sources, click **Apply**.

## Example: Side by side sources

You can arrange the sources so they each occupy a part of the screen, but none overlap. Using this option, the background matte (image or color) will be visible if the sources don't occupy the full size of the frame.



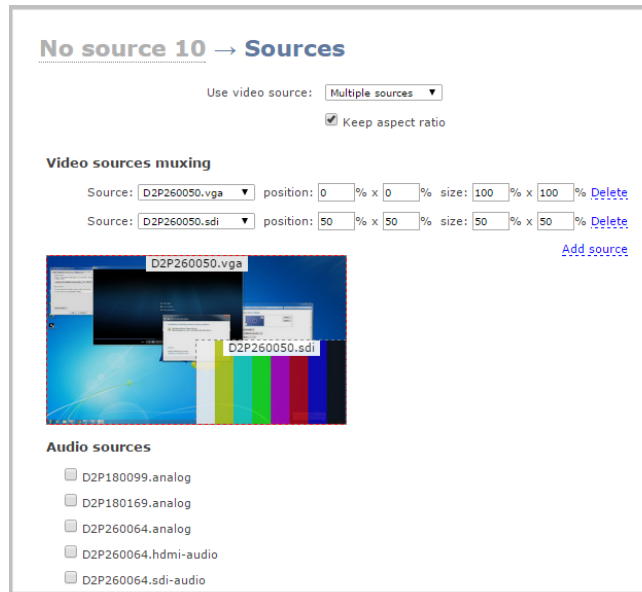
To place sources side by side:

1. Add the source by clicking **Add Source**, then selecting the source from the drop down list.
2. Enter the size of the image based on the percent of the x and y axis the image will span.  
In the example above the left image is positioned at the 0 on the x-axis (left side of the frame) and 30 on the y-axis (starting approximately one third of the way down the frame). It spans 50% of the x axis and 50% of the y axis.  
The right image is positioned at 50 on the x-axis (half way into the frame) and 30 on the y-axis (about one third of the way down the frame). It also occupies 50% of the x axis and 50% of the y axis. The black background matte is visible where the sources don't occupy the full frame.
3. Click **Apply**.



## Example: Picture in picture

The multi-source layout provides flexibility for you to position the sources in any way you like, including a more traditional picture in picture layout where one source is displayed over the other.



To create a picture in picture layout:

1. Configure the following for the main source:
  - a. Click the **Source** drop-down menu. A list of configured sources appears.
  - b. Choose a source from the drop-down menu. The source's image appears in the window.
  - c. Enter the position coordinates. In the example above, the main source is D2P260050.vga. It's positioned at 0,0 so the top left corner of the image is at the top left corner of the screen.
  - d. Enter the image size. For the example, the image spans the entire screen, the values used are 100% x 100%.
2. For the second image, configure the following:
  - a. Click **Add source** to add a source to the list of sources.
  - b. Click the **Source** drop-down menu. A list of configured sources appears.
  - c. Choose a source from the drop-down menu. The source's image appears in the window.
  - d. Enter the position coordinates. In the example above, the secondary image spans only part of the screen. It starts at 50% on the x axis and y-axis (e.g. half the way in, from both directions) and spans 50% of both axis.



Images can be located anywhere on the screen, for example if you want the second image to appear near the top right corner of the screen, choose the position  $x=60$ ,  $y=5$  and adjust the sizes so it fits in the corner (for example, 35% for  $x$  and  $y$ -axis size).

3. Click **Apply**.

## Delete a channel

From time to time you may want to clean up the list of channels, and remove channels that are no longer used. The following steps describe how to delete a channel. Deleting a channel does not delete the input source configuration, however it deletes any recorded files for the channel.

To delete a channel, follow the steps below.

1. From the web interface, scroll to the Channels menu option.
2. Click the channel you want to delete; the menu expands.
3. Click **Status**; the Status page opens displaying the service state and stream info for the channel.

The screenshot shows two parts of the web interface. On the left, the 'Channels' menu is expanded, showing a list of channels: 3. D2P260050.sdi, 4. D2P260064.sdi, 5. D2P180099.vga, 6. D2P260050.video, and 7. Channel 7. The 'Status' option under 'Channel 7' is highlighted with a red circle and a red arrow points to it. On the right, the 'Channel 7 → Status' page is shown. The 'Delete this channel' button is circled in red. Below it, the 'Services state' section shows: Encoder: up 53:51, Broadcaster: up 53:52, HTTP Live Streamer: disabled, Recorder: disabled. The 'Stream info' section shows: Live broadcast: <http://192.168.0.24/preview.cgi?channel=7>, Video: H.264 1920x1080@30, 6.47 Mbps, Actual framerate: 30, Audio: AAC 44kHz mono 160 kbps, Total: 6.63 Mbps, RTSP stream: <rtsp://192.168.0.24:558/stream.sdp>, MPEG-TS stream: <http://192.168.0.24:8004/stream.ts>, ASF stream: <http://192.168.0.24:8004/stream.asf>, Flash stream: <http://192.168.0.24:8004/stream.flv>. The 'Connections' section shows: No active connections.

4. Click **Delete this channel**; a confirmation dialog box appears to remind you that all recorded files for this channel will be removed.



You cannot undo this command.



5. Click **OK** to continue or **Cancel** to stop. If you proceed, a message indicating that the channel was successfully deleted appears at the top of the page.

## Rename a channel

By default, channels are automatically configured with the same name as their source, however there may be circumstances when you want to create a distinct name for the channel to reflect the source(s) it contains. Channels that contain multiple sources are not automatically named to reflect the source and can be named during configuration.

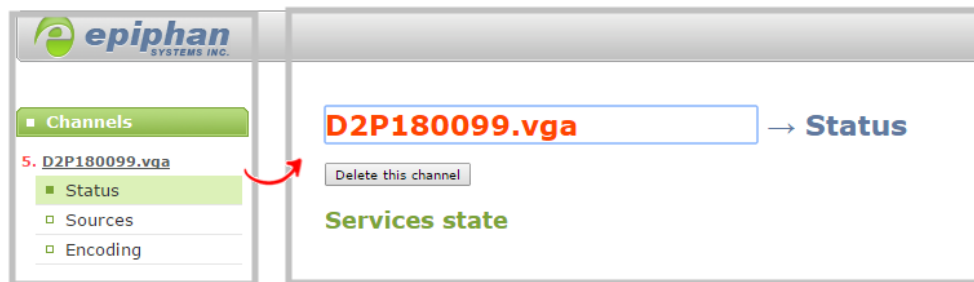
To rename a channel:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, scroll to the Channels menu option.
4. Click on the channel you want to rename; the menu expands.
5. Click any link for the channel; the corresponding channel status or configuration page opens.



You can change a channel's name from any of it's configuration pages.

3. Click the channel name at the top of the channel configuration page; the name text becomes red to indicate that it is editable.



4. Highlight the old name and press backspace or delete on the keyboard.
5. Type the new name, using alphanumeric characters. It's recommended (but not mandatory) that you use underscores to separate words, if needed.
6. Press Enter on the keyboard. The name is updated at the top of the screen and in the list of Channels in the navigation menu.



You must press the Enter key on the keyboard for the change to take effect.

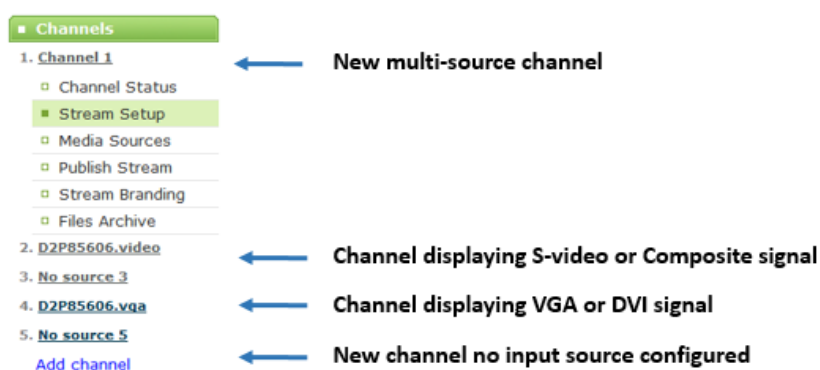




## 3-2 Identify a channel

The VGADVI Recorder Pro captures video and audio signals from input sources. Sources are configured into channels with one or more video and audio sources.

If not changed by the administrator, channels are labeled according to the input source type configured for the channel. Multi-source layout channels are named simply by their channel number (e.g. Channel 3 or Channel 7) until you rename them.





## 3-3 Fine-tune channel configuration

In addition to adjusting typical features such as frame rate, resolution and bit rate to reduce bandwidth and system resource usage, choose the following settings to maximize your stream quality, while minimizing your processing requirements and bandwidth:

- Choose a codec to maximize your stream quality
- Codec and file format compatibility
- Adjust video quality
- Upscale or downscale your video image
- Control the matte (black bars) in the video output
- Unstretch the output video
- Limit the frame rate
- Adjust key frame interval

### Choose a codec to maximize your stream quality

Before you begin recording and streaming content from a channel, you must select the codec that will be used to compress the channel's video and audio content. Deciding on which codec to use depends on how you prioritize the following criteria:

- Compatibility with streaming formats and file playback options
- Size of the compressed file
- Compression speed
- Image quality
- Number of simultaneous channels recorded and/or streamed

For example, if you require a high quality image, the trade-off might be a larger file size, or slower compression speed. If you require live streaming and therefore cannot tolerate slow compression, the trade-off might be a lower resolution.

The table **Select a video codec**, below, highlights the advantages and disadvantages of supported codecs.

Once you select video and audio codecs a list of available video format and standards specific to the selected codec is generated and displayed. You can provide the URLs and files to participants to view the broadcast, see [Stream your video](#).



## Select a video codec

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click a Channel; the menu expands.
4. Click **Encoding**; the Encoding page opens.
5. Click the **Codec** drop-down menu to change the size and speed of the compression and decompression and the quality of the image. Choose one of the following options from the **Codec** drop-down menu.



Value	Description
H.264	H.264 is the default value and provides high quality video while using low bandwidth. This is the preferred codec for the system. We always recommend you use the hardware encoding profile. However for times when you need to have the exact same encoding mode as previous versions of Epiphan streaming systems, we also provide a software encoding option.
Motion JPEG	This is suitable for live streaming and video, however may have low quality images while using high bandwidth. Motion JPEG does not support audio.
MPEG-4	This may be suitable for presentations. Provides good image quality, while using moderate bandwidth.

6. Click **Apply**.

## Select an audio codec

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click a Channel; the menu expands.
4. Click **Encoding**; the Encoding page opens.
5. Click on the drop-down menu next to **Audio format**.
6. Choose one of the following codec options from the **Audio format** drop-down menu.



Value	Description
MP3	<p>MP3 provides a common audio format for audio storage.</p> <p>Supported values are 22 kHz, 44 kHz and 48 kHz. Most digital signals (HDMI or SDI sources) use 48 kHz audio. Matching the encoded level with the source level provides the best sound quality by avoiding audio resampling. For analog signals, 44 kHz provides higher sampling.</p> <div> Flash (FLV) doesn't support 48 kHz MP3 audio. When selecting this value you'll need to use a media player (or install ASF browser plugins) to preview your channel.</div>
PCM	<p>Pulse Code Modulation (PCM) is a standard for digital audio in computer and other devices such as, digital telephone systems.</p> <p>Most digital signals (HDMI or SDI sources) use 48 kHz audio. Matching the encoded level with the source level provides the best sound quality by avoiding audio resampling. For analog signals, 44 kHz provides higher sampling.</p> <div> Flash (FLV) doesn't support 48 kHz PCM audio. When selecting this value you'll need to use a media player (or install ASF browser plugins) to preview your channel.</div>
AAC	<p>AAC is the default audio codec.</p> <p>This codec is comparable with MP3, and may have better sound quality with a similar bit rate. Supported values are 16, 22, 44 and 48K kHz. Most digital signals (HDMI or SDI sources) use 48 kHz audio.</p> <p>Matching the encoded level with the source level provides the best sound quality by avoiding audio resampling. For analog signals, 44 kHz provides higher sampling.</p> <p>The maximum bitrate for mono encoding of a 44 kHz signal is 264 kbps. For stereo, 320 kbps is supported.</p>



## Codec and file format compatibility

The following table displays the compatibility between the video/audio codecs and formats supported for streaming.

Video Codec selected	Audio Codec selected	RTSP	FLV	ASF	MPEG-TS	MJPEG
H.264	No audio codec	✓	✓	✓	✓	
H.264	LPCM	✓	✓	✓		
H.264	MP3	✓	✓	✓	✓	
H.264	AAC	✓	✓	✓	✓	
MPEG-4	No audio codec			✓		
MPEG-4	LPCM			✓		
MPEG-4	MP3			✓		
MPEG-4	AAC			✓		
MJPEG	No audio codec					✓

The following table displays the compatibility between the video/audio codecs and formats supported for recording.

Video Codec selected	Audio Codec selected	MP4	AVI	MOV	MPEG-TS
H.264	No audio codec	✓	✓	✓	✓
H.264	PCM	✓	✓	✓	
H.264	MP3	✓	✓	✓	✓
H.264	AAC	✓	✓	✓	✓
MPEG-4	No audio codec	✓	✓	✓	
MPEG-4	LPCM	✓	✓	✓	
MPEG-4	MP3	✓	✓	✓	
MPEG-4	AAC	✓	✓	✓	
MJPEG	No audio codec	✓	✓	✓	✓



## Adjust video quality

After sources are connected and channels are created, adjustments can be made to address the different bandwidth and devices used by the sharing destinations. Ideally you want to choose formats that will reach the majority of your participants.



Default values have been carefully selected to provide maximum performance in most environments. In most cases it is not necessary to change the encoding settings.

To encode your video stream:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, select a channel; the menu expands.
4. Click **Encoding** ; the Encoding page opens.
5. If the selected codec is H.264, click **Video encoding preset** to define how a video stream is encoded. Choose one of the following:

Value	Description
Hardware Accelerated	This is the default H.264 encoding preset. Choose this setting for best performance.
Software	This matches the default from previous generations of Epiphan products. Choose this only if you need software encoding or X.264 encoding to match results created with previous generations of Epiphan products or firmware.

6. If the selected codec is H.264, click **Video encoding profile** to limit or include video formats that are supported. Choose one of the following:

Value	Description
Baseline	Choose this option when streaming to an application that requires robustness and cannot tolerate data loss, for example video-conferencing.
Main	Choose this option for standard-definition broadcasts. This is the default.
High	Choose this option when video is viewed for broadcast and disk storage applications, particularly for high definition television application such as Blu-ray disk storage format and HDTV broadcast service.



Video encoding profile and preset can be set only when the H.264 codec is selected.

7. Click **Apply**.

## Upscale or downscale your video image

If your source input is larger than your desired output frame size or if you want to stream a less bandwidth-hungry version of the content, you can downscale the source by specifying a frame size that uses the same aspect ratio. By contrast you can also enlarge the image by selecting a value that is larger than the source resolution.



It is less resource-intensive to upscale or downscale your video at the source (i.e. at computer, camera, etc). If that isn't feasible, or if you are scaling for multiencoding, follow the steps below to scale your video.

The VGADVI Recorder Pro conveniently provides a list of common aspect ratios and different frame sizes at each ratio on the Encoding page.

Frame size:  x  pixels

4:3 → [640x480](#) [1024x768](#) [1152x864](#) [1280x960](#) [1360x1024](#) [1600x1200](#)

16:9 → [1280x720](#) [1360x768](#) [1920x1080](#)

16:10 → [1280x800](#) [1440x900](#) [1920x1200](#)

Standards: → [PAL](#) [PAL wide](#) [NTSC](#) [NTSC wide](#)

For example:

- input signal resolution is 1920×1080 (a 16:9 aspect ratio)
- select another 16:9 frame size such as 1280×720

The smaller frame size will downscale the image and use less bandwidth to transmit.

If you select a frame size that is not the same aspect ratio as your source, the result is one of having a matte (bars) appear around the image, or the image is stretched. See [Control the matte \(black bars\) in the video output](#) for details.



Resizing a video can be more resource intensive than leaving the video at the native resolution. Although you can change the resolution output by the VGADVI Recorder Pro, it is less of a burden on your system resources if you change the resolution incoming from the source.

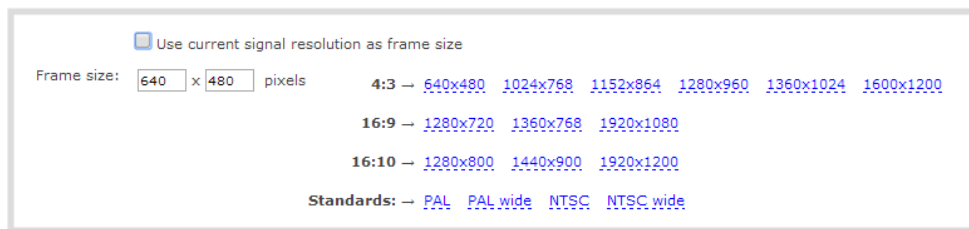


To change the frame size of your video, follow the steps below.

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select a channel; the menu expands.
4. Click **Encoding** ; the Encoding page opens.
5. Scroll to the frame size parameter.
6. Deselect **Use current signal resolution** as frame size, if it is selected; the **Frame size** text entry boxes become editable.



7. Choose a resolution from the links on the right, or type a frame size into the **Frame size** fields.



8. Click **Apply**.

## Control the matte (black bars) in the video output

By default, the VGADVI Recorder Pro makes sure that the aspect ratio of input signals is preserved when the output is streamed. If an input video signal doesn't match the encoded frame aspect ratio, bars are added to the sides or top and bottom of the encoded stream when the output is streamed and recorded. The color of the bars is defined by the Background color selected on the **Encoding** page. See [Select the background color for your channel](#).

For example:

- Input signal resolution is 720×480 (a 3:2 aspect ratio)
- encoded resolution is 640×480 (a 4:3 aspect ratio that is narrower than the input resolution)





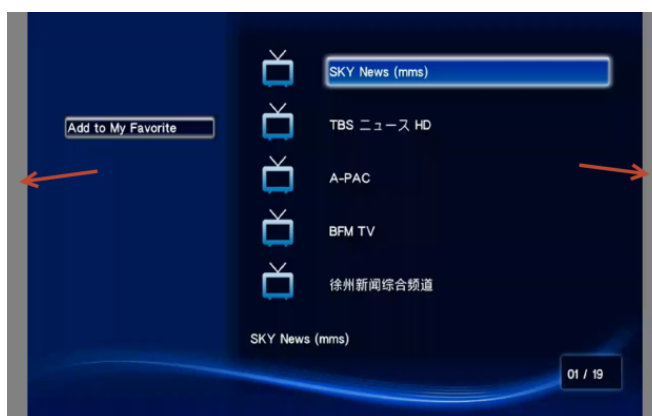
Borders are added to the top and bottom of the image to preserve the wider ratio of the input.



For example:

- Input signal resolution is 720×480 (a 3:2 aspect ratio)
- encoded resolution is 1280×800 (a 16:10 aspect ratio that is wider than the input resolution)

Borders are added to the left and right of the image to preserve the narrower ratio of the input.



If you are seeing bars on your image but would rather have the image fill the whole screen you have two options:

1. Change the output frame size to match the aspect ratio of the input.
2. Stretch the image to fit the output frame size aspect ratio.

These two options are described below.



## Match the output frame size to the aspect ratio of the source signal

To change the output frame size to match the aspect ratio of the source:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select a channel; the menu expands.
4. Click **Sources**; the Sources page opens.
5. Find the name of the media source used for the channel.
6. Click this source under the **Sources** menu.



7. Make note of the input signal resolution.
8. Click the channel's **Encoding** ; the Encoding page opens.
9. Scroll to the frame size parameter.
10. The simplest option is to select **Use current signal resolution** as frame size and click **Apply**. You can alternatively select it briefly to note the current video signal resolution, then deselect it and follow the steps below.



11. Look for the source aspect ratio in the list of aspect ratios provided.





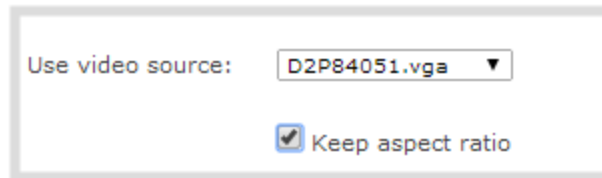
- a. If the source resolution is on the list, choose another resolution on the same line (i.e. with the same aspect ratio).
- b. If the source resolution is not on the list, use a calculator to get a factor of the source resolution and enter it in the **Frame size** fields.

12. Click **Apply**.

## Stretch the image

To remove the matte (black bars) by stretching the image to fit your output frame size:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select a channel; the channel menu expands.
4. Click **Sources**; the Sources page opens.
5. Deselect **Keep aspect ratio**.



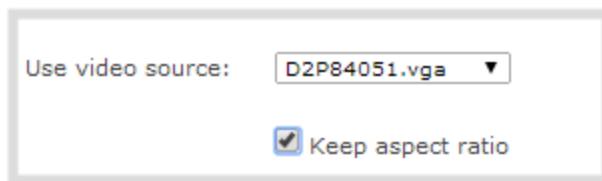
6. Click **Apply**.

## Unstretch the output video

By default, the VGADVI Recorder Pro makes sure that the aspect ratio of input signals is preserved when the output is streamed. If this default was overridden or if the channel was created in a version of the software earlier than 3.11.0, the image is stretched to match the output frame size. The effect may be subtle and may not be problematic for you, but if you want to resolve this it is very simple to do.

To preserve the source aspect ratio:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Click **Sources**; the Sources page opens.
4. Select **Keep aspect ratio**.



Use video source: D2P84051.vga ▼

☒ Keep aspect ratio

5. Click **Apply**.



Unstretching the image causes a matte (black bars) to appear on the sides or top and bottom of the output. To remove these see **Control the matte (black bars) in the video output**.

## Limit the frame rate

Limiting the frame rate sets a frame rate value that is lower than the maximum frame rate at which the device can encode images. Reducing the frame rate reduces the number of images captured by the device and reduces bandwidth usage.

The device's ability to maintain a set frame rate is based on several factors, for example:

- overall system load affects the ability for the device to process pixels;
- available bandwidth;
- the resolution value;
- the type of motion that is captured; and
- number of users accessing the stream.

When adjusting the frame rate, you may need to try different values to achieve the best outcome. The following table provides the performance expectations when typical settings are used.

To change the frame rate:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, select a channel; the menu expands.
4. Click **Encoding**; the Encoding page opens.
5. Enter a value in the Limit frame rate field.
6. Click **Apply**.



## Adjust key frame interval

---

The key frame interval feature specifies how often a key frame (a frame that contains all the pixels) is used when streaming the video. This setting also impacts how quickly a video moves through the frames when a viewer uses the search function of their media player.

Increasing the number of seconds between key frames can significantly reduce your bandwidth and system resource usage with minor impact to your video quality. A good rule of thumb is to keep the interval between 2 to 3 seconds and decrease the key frame interval as the motion increases. Try different settings and note changes in the video quality. If your video quality is poor and jittery you may need to decrease the interval between key frames. If you have unlimited bandwidth and system resources you can choose an option to stream key frames only.

To adjust the key frame interval:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, select a channel; the menu expands.
4. Click **Encoding**; the Encoding page opens.
5. Scroll to the **Key frame interval** drop-down menu. Choose the number of seconds before the system streams a key frame.



Choosing Key frames only option increases bandwidth and system resource usage.



## 3-4 Customize your channel

Adding a corporate logo, company information, corporate color and time stamps are easy ways to identify your broadcast. This section describes the following topics for customizing your channel:

- Add your logo and company information to your channel
- Add a time stamp or text overlay to your channel
- Select the background color for your channel
- Add a customized background to a multiple source channel

### Add your logo and company information to your channel

This section describes the following topics for uploading the logo file, applying the file to a channel and adding presentation and company related information:

To upload a logo or image

To apply company information and logo to a channel

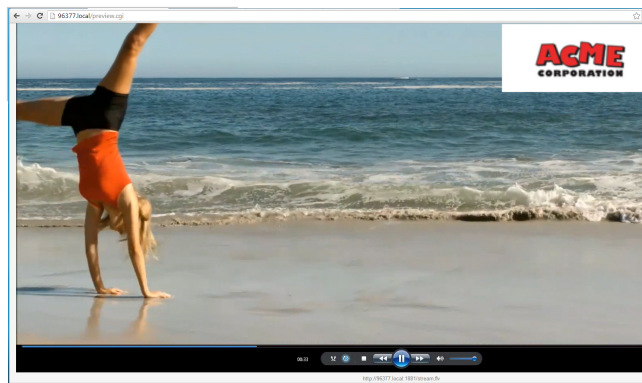
To add a no signal image to a channel

To delete a logo or no signal image from the system

To remove metadata from a channel

#### To upload a logo or image

You can customize your broadcast and display information to your viewers with either a logo or a custom no signal image.

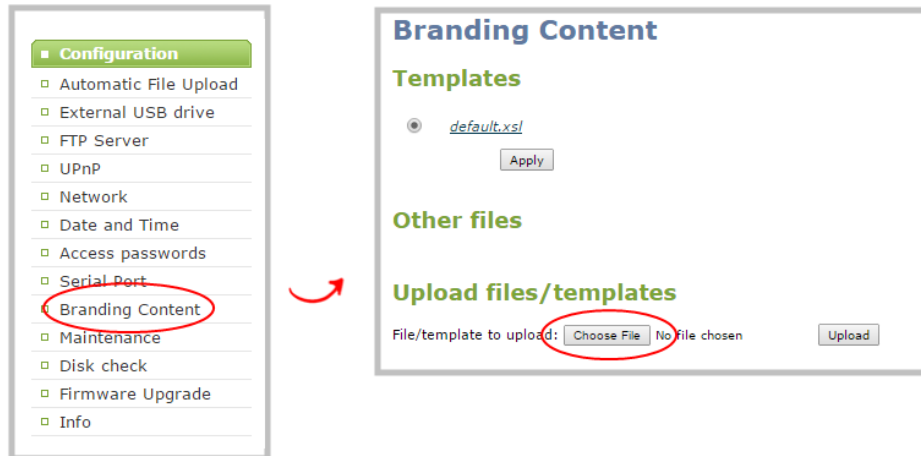


Transparency is not supported for logo and no signal images.



To upload an image for use as a logo or no signal image on a channel:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Click **Branding Content** under the Configuration menu; the configuration page opens.

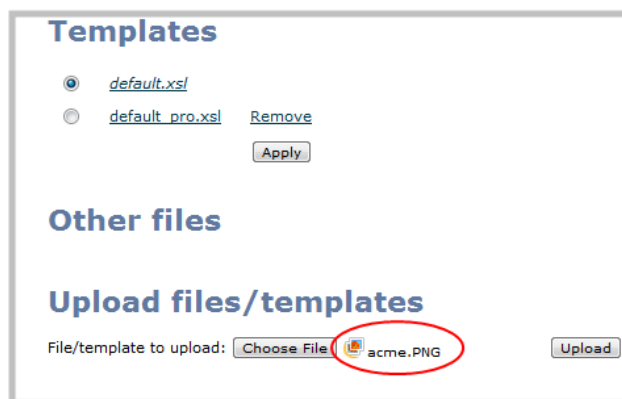


4. Click **Choose File**; a browser page opens.
5. Navigate to the folder on your admin computer that contains the logo.
6. Select the file, the following file formats are supported: PNG and JPEG.



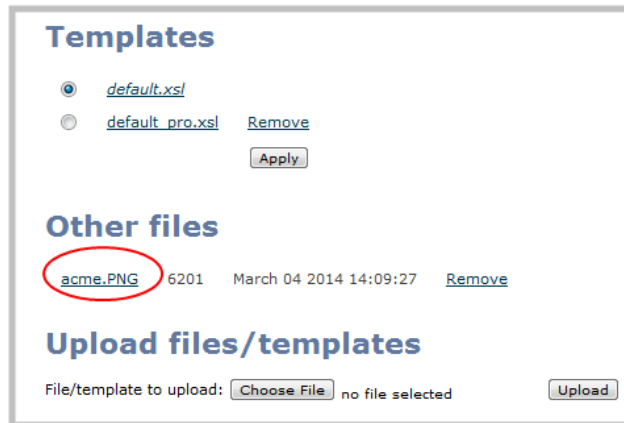
The maximum supported file size is 3840×2160. No warning or error message is displayed if your image is too large. Files that exceed the maximum size do not appear in the drop-down list when selecting an image.

7. Click **Open**; the file is added to the File/template to upload field.





- Click **Upload**; the file is uploaded and displayed in the Other files section.



- See below to learn how to apply the logo or no signal image to a channel as well as how to add metadata information such as presentation title, presenter's name, and other corporate information.

## To apply company information and logo to a channel

Using the Branding feature, you can apply a logo to your channel and specify the following meta data that the media player displays for your viewers:

- title of the presentation;
- company logo;
- company website;
- presenter's name;
- copyright date or other labels such as proprietary information, preliminary etc; and
- additional information about the broadcast, such as time of the broadcast, or change to the schedule.

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, select a channel; the menu expands.
4. Click the **Branding** link for your channel; the Branding configuration page opens.





**auto → Stream Branding**

**Content metadata**

Title:

Author:

Copyright:

Comments:

**Logo**

Image:

Position:

Left/Right margin:

Top/Bottom margin:

**"No signal" image**

Image:

**Background**

Image:

Use [Branding](#) page to upload or delete images

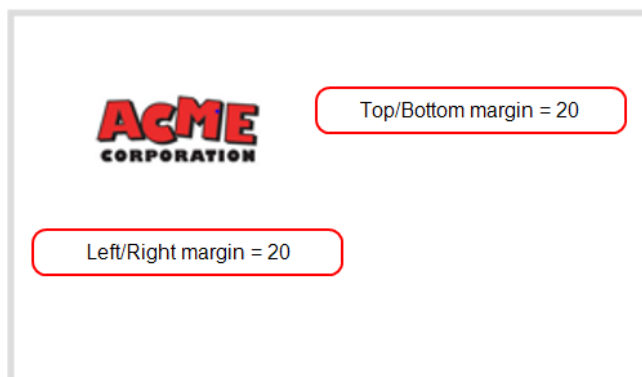
Metadata is not displayed as part of the stream. Viewers access metadata via the media player .

5. Enter metadata such as: presentation title, presenter name(s), any copyright dates and additional information about the broadcast that you want the viewer to know.



How metadata is displayed depends on the media player. For example VLC stores the metadata in a media information file, while other media players scroll the text horizontally from right to left along the bottom of the media player window, similar to a ticker message bar.

6. Click the **Image** drop-down menu; a list of files appears. These are the files that you uploaded earlier in an earlier procedure.
7. Choose a file. A sample of the image appears in the page.
8. Select where the image appears on the broadcast page using Position and Margin values.
  - a. Choose a corner of the broadcast page where the image is placed:
    - **left top** or **right top** for logo placement at the top of the screen; or
    - **left bottom** or **right bottom** for placement at the bottom
  - b. Set margins to specify how far you want the image from the edges of the screen. For example if you chose the starting position of left top and you want the image closer to the center of the broadcast page, enter margin values to move the image.



If location settings are incorrect and cause the image to be cropped, the system overrides the incorrect settings and reduces the margins so the whole image is displayed, if possible.

9. Click **Apply**.

## To add a no signal image to a channel

This image is displayed for the channel when a signal is not detected. Setting this feature lets you communicate broadcast information to your viewers. For example if a viewer logs in early, or if you are experiencing delays.

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Follow the instructions above ([To upload a logo to a channel](#)) to upload an image via the **Branding** page.
4. From the web interface, select a channel; the menu expands.
5. Click the **Branding** link for your channel; the Branding configuration page opens.
6. Choose a "No signal" image. This image is displayed for the channel when a signal is not detected. (If your uploaded image does not appear in the list, ensure it doesn't exceed the maximum file size of 3840×2160.)



7. Click **Apply**. Go to the live broadcast page to confirm the message location on the broadcast page.

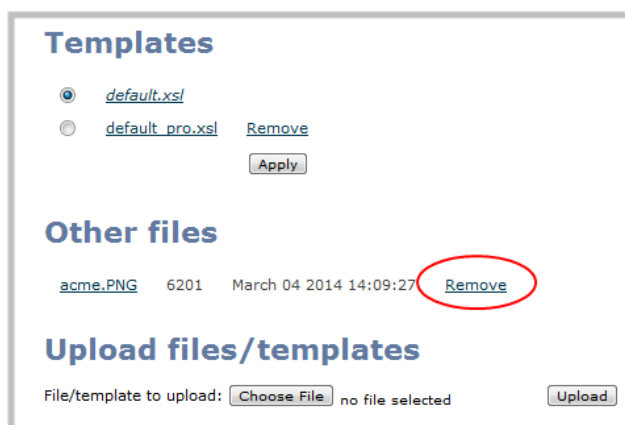
## To delete a logo or no signal image from the system

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.



If the image is used as part of the Branding configuration for any channel, select a different image or no image by using the drop-down list under the appropriate section on the channel's **Branding** page before deleting the file using the steps below.

3. Click **Branding Content** under the Configuration menu; the configuration page opens.



4. Click **Remove**; a confirmation dialog box opens.
5. Click **OK**; the dialog box closes and the image file is removed from the configuration page.



## To remove metadata from a channel

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, select a channel; the menu expands.
4. Click the **Branding** menu option; the Branding configuration page opens.
5. Scroll to the Content metadata section.
6. Click the Author, Copyright or Comments field.
7. Highlight the text and press delete on the keyboard. The field is empty.
8. Click **Apply**.

## Add a time stamp or text overlay to your channel

Adding the date and time, channel name or custom text as an overlay on your video is an easy way to customize your stream.

To add a text label or timestamp your video:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, select a channel; the menu expands.
4. Click **Encoding**; the channel's Encoding page opens.
5. Scroll to **Text overlay label**.
6. Choose one of the following (or both):
  - a. Type text in the field; and/or
  - b. Click **Show substitutions**; a list of options appears. From the list choose the elements you want to add or intersperse with your text. The table below this procedure describes the values.

**For example:** Use this string:

```
%A %B %d, %G. Live streaming channel %c.
```

to obtain these results (**Thursday February 26, 2015. Live streaming channel Auto A.**):

```
Thursday February 26, 2015. Live streaming channel Auto A.
```



8. Select a screen position from the **Overlay label position** drop-down box. Your choices are bottom right, bottom left, top right or top left.
9. If desired, check the **Large-sized font** checkbox to double the size of the text in the overlay.
10. Click **Apply**.

**Table 15** Time Format options

Field	Value	Example
date	%F	2012-01-26
year	%G	2012
month (01)	%m	01
month (Jan)	%b	Jan
month (January)	%B	January
day of the month	%d	26
weekday (Thu)	%a	Thu
weekday (Thursday)	%A	Thursday
time	%T	08:40:45
hour	%k	08
minute	%M	40
second	%S	45
millisecond	%#m	378
channel name	%c	Camera Feed 1

## Select the background color for your channel

When you choose a multiple source layout, you can select the background color to fill the unused space. For example you can add a color from your corporate color scheme.

To add a background color:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.



3. From the web interface, scroll to the channel where you want to add a background color.
4. Click the channel; the menu expands.
5. Choose **Encoding** for the channel; the Encoding configuration page opens.
6. Scroll to **Common settings**.
7. Choose a color from the **Background color** drop-down menu.
8. Click **Apply**; color is added to the unused space.
9. To confirm the color, click **Sources** for the channel. In the example below, purple was selected.



The background color is ignored on mutli-source layout channels that have a background image configured via the channel's branding page.



## Add a customized background to a multiple source channel

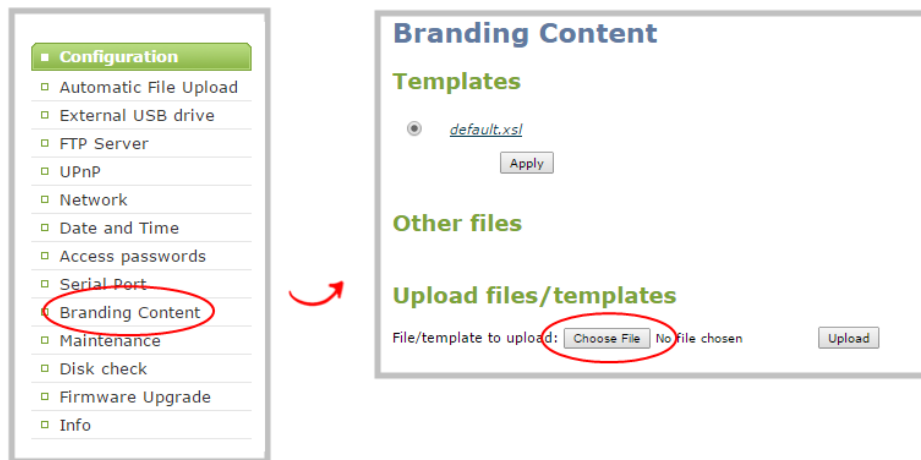
The background feature on the Branding page allows you to apply a customized background for your multiple source channel. You can create a background that is consistent with your corporate branding or provide additional information to your viewer such as presenter's name, company name etc. You can apply any PNG, TIFF, JPEG file as a background.

To add a customized background:



Before you can upload and apply a customized background, save a PNG, TIFF, JPEG file to a location to which you can browse. For best results, the background image size should match the frame size of your multi-source layout (frame size is set in the **Encoding** configuration page).

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Click the **Branding Content** link in the Configuration menu; the configuration page opens.

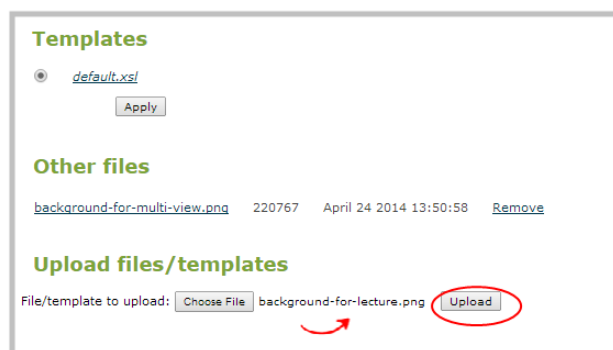


3. Click **Choose File** from the Upload files/templates heading. A browser dialog box opens.
4. Navigate to the folder on your admin computer that contains the PNG or JPEG file.



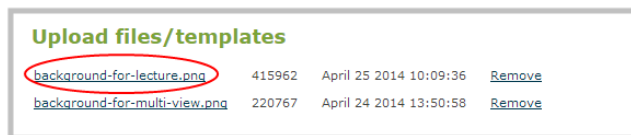
The maximum supported file size is 3840×2160. No warning or error message is displayed if your image is too large. Files that exceed the maximum size do not appear in the drop-down list when selecting an image.

3. Click **Open**. The file is added to the File/template to upload field.

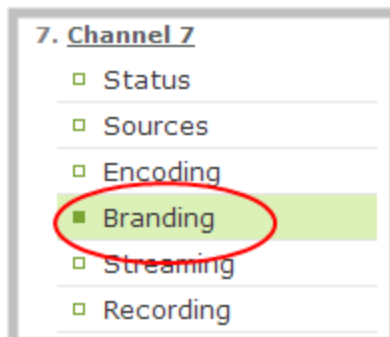




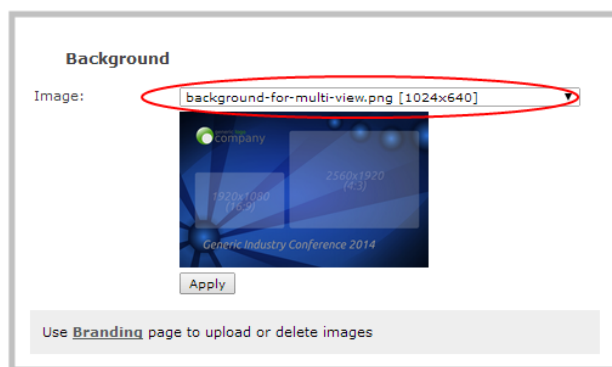
- Click **Upload**. The file is added to the list of files under the Other files heading. Now you can apply the background to a multiple source channel.



- Click the multiple source channel where you want to apply the customized background; the menu expands.



- Choose **Branding**; the Branding configuration page for the channel opens.
- Scroll to the Background heading.
- From the **Image** drop-down menu, select the file that you saved in the previous steps. The background image is displayed in the window. (If your uploaded image does not appear in the list, ensure it doesn't exceed the maximum file size of 3840×2160.)



- Click **Apply**.
- Click the **Sources** menu option. The Sources window opens with the background displayed. In the example below one source captures the lecturer; the second captures the presentation. Both sources are displayed on a customized background.





8. You may need to adjust the position and size for each source to fit within your customized background, refer to [Merge multiple videos into a single channel](#).



Your background image will appear squeezed, stretched or grainy if its size and aspect ratio do not match the size and aspect ratio of the channel.



Background images are applied to multisource channels only. To display a background as a matte around a single source, create a multi-source channel and select just one source for it. Offset the source so it isn't at the top left corner of the screen and set the size so it doesn't take the full x and y axis.



## 3-5 Preview a channel

While configuring a channel, you may want to open a live preview of the channel in another tab or browser window so you can see the changes as they are applied. Choose one of the following options to preview your channel:

- [Preview a channel from the Info page](#)
- [Preview a channel from the Status page](#)
- [Preview all channels at once](#)

### Preview a channel from the Info page

The system's Info page displays links for previewing your channel(s). This fast and simple method allows you to see link for all the streams in a single location.

To preview a channel from the Info page:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click **Info** from the Configuration menu option; the system information window opens .

**Configuration**

- Automatic File Upload
- External USB drive
- FTP Server
- UPnP
- Network
- Date and Time
- Access passwords
- Front Screen
- Serial Port
- Branding
- Maintenance
- Disk check
- Firmware Upgrade
- Info**

**Firmware**

Version: 3.14.0a  
 Revision: exported\_1726  
 Date: 2014-09-05  
 Boot: neptune 3.8.0-19-generic

**Channels**

#	Channel name	Status	Video source	Audio source	Stream	Bitrate	Actual bitrate	Frame size	FPS / Actual FPS	Port	
1	HDMI-A	ok	HDMI-A	<a href="#">2,899/00%</a>	H.264+mp3	2000 kbps	2145 kbps	1024x768	30 / 30.0	8000	<a href="#">View</a>
2	VGA-B	no signal	VGA-B	<a href="#">2,899/00%</a>	H.264+mp3	10000 kbps	349 kbps	1920x1200	30 / 15.0	8001	<a href="#">View</a>
3	Channel 3	ok	<a href="#">2,899/00%</a>	disabled	H.264	600 kbps	627 kbps	1024x768	5 / 4.9	8002	<a href="#">View</a>
4	SDI-A	no signal	SDI-A	disabled	H.264	600 kbps	305 kbps	1024x768	5 / 2.4	8003	<a href="#">View</a>

Overall system load: 11%

4. Scroll to the channel you want to preview.
5. Click **View**; the corresponding channel is displayed in the window.

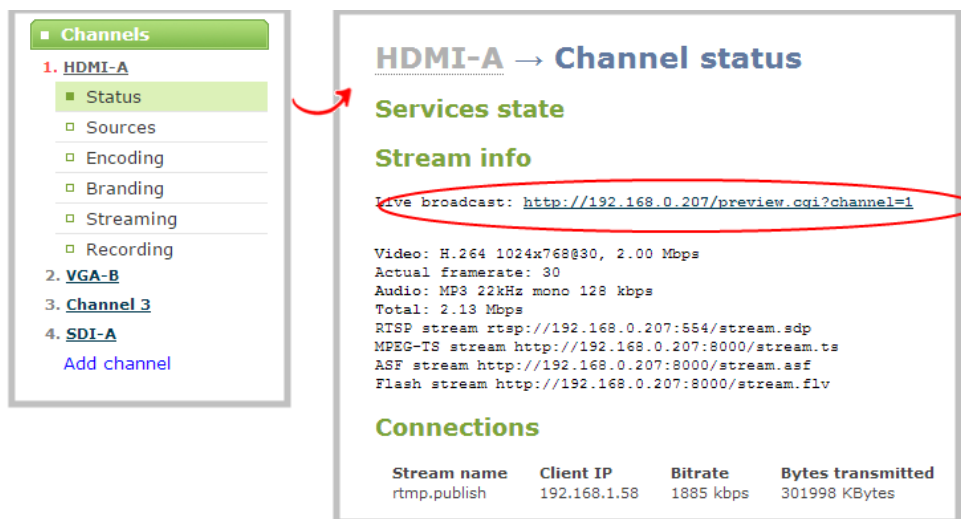


## Preview a channel from the Status page

The channel's status page gives a wealth of information about the channel, including bit rate, frame size, and links to preview the channel.

To preview a channel from the Status page:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Click the link for Channel you want to preview, the menu expands.
4. Click **Status**; the channel's Status page opens.



5. Right-click the Live Broadcast link and select **Open in a new Tab** or **Open in a new Window**; a tab or window opens displaying a preview of the channel.

## Preview all channels at once

VGADVI Recorder Pro has a special preview mode that lets you see all configured channels at once.



The resulting web page can be very large. You may wish to be aware of your web browser's zoom hot keys. Many browsers will zoom out with Ctrl-- (control minus) and zoom in with Ctrl+= (control equals).

To preview all channels at the same time:



1. Open a new browser window.
2. Type the following string into the address bar of your web browser on your admin computer (ipaddress is the IP address of your VGADVI Recorder Pro).

`http://<ip address of VGADVI Recorder Pro>/preview.cgi`

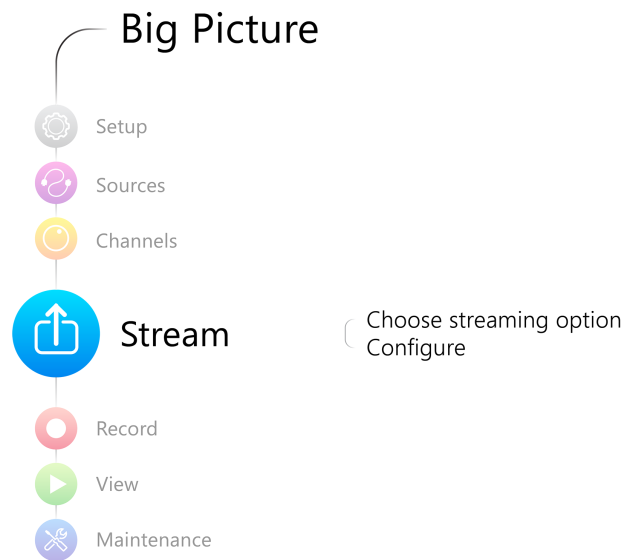
**For example:** `http://172.20.1.33/preview.cgi`

3. Press **Enter**, the preview web page appears displaying the content of all active channels.



# PART 4: Stream

Streaming provides powerful and flexible approaches to delivering to your users. Offering an easy to use interface, users can stream video using multiple formats to multiple users and devices such as web browsers, media players, set-top-boxes, Smart TVs and Content Distribution Networks. The tool's flexibility is further enhanced by its ability to support standard codecs used by most sharing destinations and media players.



This section discusses the following topics related to publishing your content:

- [Stream your video](#)
- [Samples of stream settings](#)



## 4-1 Stream your video

After you have configured your media and channels, decided on the content and layout of your broadcast, it's time to share your broadcast. The following sections provide a description of the available streaming options, insight into why you would choose each option, and procedures to stream your content using each option.

- [View available video formats](#)
- [Choose a streaming option](#)

Streams for viewers:

- [Disable \(and enable\) streams for viewers](#)
- [Restrict access to streams for viewers](#)
- [Stream content using HTTP or RTSP](#)
- [Configure streaming ports](#)
- [Stream content using HTTP Live Streaming \(HLS\)](#)
- [Stream content using UPnP](#)

Stream to a server:

- [Stream content using a Content Distribution Network](#)
- [Stream content using multicast streaming](#)

### View available video formats

When you select video and audio codecs for streaming, the system generates and displays a list of available video formats and standards specific to the selected codec.

To view the video formats and standards specific to your selected codec:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click a **Channel**; the menu expands.
4. Click **Status**: the following page opens displaying the stream protocol that is supported based on the selected codecs.



**Stream info**

Live broadcast: <http://2b97e0eb.local/preview.cgi?channel=2>

Video: H.264 1024x768@5, 600 kbps  
 Actual framerate: 5  
 RTSP stream <rtsp://2b97e0eb.local:555/stream.sdp>  
 MPEG-TS stream <http://2b97e0eb.local:8001/stream.ts>  
 ASF stream <http://2b97e0eb.local:8001/stream.asf>  
 Flash stream <http://2b97e0eb.local:8001/stream.flv>

Copy, paste and share files and addresses with viewers.

## Choose a streaming option

Each method of streaming media has strengths and weaknesses depending on your audience location, hardware resources and bandwidth. To help you decide how to publish your content, you must first identify the number of viewers and how viewers will access your content. Are you streaming live video, or recorded video. Do you need to stream the content to one client (peer-to-peer), deliver a single stream to multiple clients (multicast), or provide web-based streaming where multiple clients can access the broadcast (Content Distribution Network).

Your VGADVI Recorder Pro can stream to individual viewers through HTTP, HTTP Live Streaming, UPnP and RTSP and can also simultaneously stream to a server such as a multicast server or CDN.

The following tables provide a brief outline of the distribution options. A procedure to configure each distribution option follows the tables.

### Streaming for viewers

Streaming for viewers allows viewers to connect to your VGADVI Recorder Pro and view the live stream.

You can configure whether or not streaming is enabled for viewers. See [Disable \(and enable\) streams for viewers](#).

Publishing Options	Use this option to...
HTTP	Quickly stream content to viewers simultaneously. No set up is required. The VGADVI Recorder Pro is ready to stream content as soon as it is has power and a configured channel. No other settings are required. Your audience need only access the URL of the broadcast and they are instantly connected. This viewing method is ideal for a small number of viewers since streaming uses your system resources and bandwidth. However a small amount of overhead is used for each viewer. For more information about using a HTTP streaming, refer to <a href="#">Stream content using HTTP or RTSP</a> .



Publishing Options	Use this option to...
RTSP	Quickly stream content to viewers. No set up is required. The VGADVI Recorder Pro is ready to stream content as soon as it has power and a configured channel. No other settings are required. Your audience need only copy and paste the URL of the stream into a media player. For more information about using a RTSP and HTTP streaming, refer to <a href="#">Stream content using HTTP or RTSP</a> .
HTTP Live Streaming (HLS)	Stream live over the standard HTTP port 80, making it possible to cross firewalls and proxies that are normally accessible to other HTTP traffic and facilitates content delivery to CDNs.  There is approximately a 30 second delay when streaming using HLS.

## Stream to a server

Your VGADVI Recorder Pro streams to a server when you want to use a CDN or Multicast. By default, this is not configured. See [Stream content using a Content Distribution Network](#) and [Stream content using multicast streaming](#) for details on configuring one of these two options.





Publishing Options	Use this option to...
Content Distribution Network	<p>Stream web content to many viewers simultaneously to any geographical location. A viewer accesses the broadcast from a website using a user name and password, if required. Using a CDN to host your broadcast is highly scalable and makes financial sense to website owners since you do not pay for additional server hardware or routing should your network traffic increase or decrease.</p> <p>Using a CDN to stream live content allows you to reach a large geographically diverse audience and because CDNs perform format conversion, the stream is platform independent.</p> <p>For more information about streaming to a CDN, see <a href="#">Stream content using a Content Distribution Network</a>.</p> <p>The following options are available to stream video to a CDN:</p> <p><b>Epiphan TV</b> - test your video stream using Epiphan's portal</p> <p><b>using RTSP announce</b> - stream live video to a content delivery network</p> <p><b>using RTMP push</b> - stream live video to a content delivery network</p> <p>RTSP and RTMP streaming provides the following advantages:</p> <ul style="list-style-type: none"><li>• viewers can watch the action as it unfolds;</li><li>• video quality automatically changes to adjust to changes in bandwidth;</li><li>• reduced bandwidth usage since the player maintains a smaller buffer; and</li><li>• viewers can scroll back through later sections of the video while the video is streaming.</li></ul>



Publishing Options	Use this option to...
Multicast Streaming	<p>Stream content to a multicast IP address where it can be shared with multiple viewers within the same LAN. All viewers receive the same stream at the same time. Similar to turning on a radio station, all listeners hear the same music at the same time.</p> <p>This delivery method relies on network equipment that supports multicasting and is usually used in high bandwidth corporate LANs and not on Internet-based architectures.</p> <p>This delivery method is useful for training sessions, when there is a specific timeframe when the audience will view the content. For more information about using multicasting for streaming your content, see: <a href="#">Stream content using multicast streaming</a></p> <ul style="list-style-type: none"> <li>• RTP/UDP transport standard is used to stream H.264 video when unicast or multicast streaming is used. Each viewer retrieves an SDP file. SDP files can be stored on a streaming server, or opened by a media player. For multicast, the destination address is where the broadcast can be viewed.</li> <li>• MPEG-TS UDP transport standard is used to stream MPEG-4 video when unicast or multicast streaming is used. Each viewer retrieves a UDP address to add to their media player.</li> <li>• MPEG-TS RTP/UDP transport standard is used to stream video when a single port is used to stream video and audio via unicast or multicast. Each viewer retrieves a RTP address to add to their media player.</li> </ul> <p>This option can be used to stream video and audio to an IP TV or set top box playlist.</p>



To stream video outside of your LAN, use a CDN or configure port forwarding on your router. Refer to your Network Administrator; network configuration is beyond the scope of this guide.



The Streaming feature, used for CDNs and multicast streaming, is available only when the H.264 codec is selected.

## Disable (and enable) streams for viewers

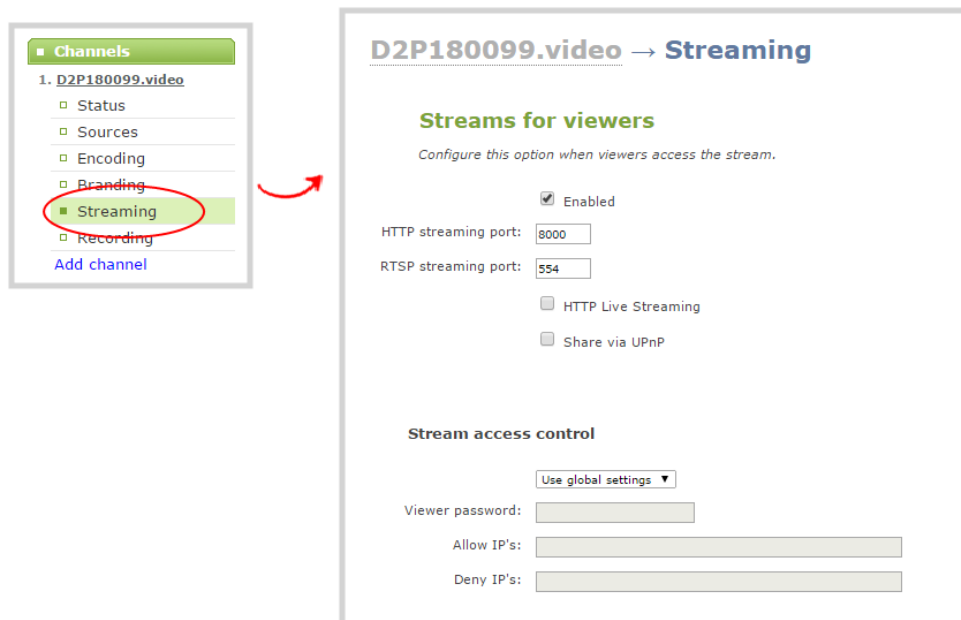
When you create a channel it's available by default for viewing by stream viewers who have the stream URL. You can choose to disable streaming to viewers through the channel's streaming configuration.



Disabling streams for viewers disables all viewer formats including HTTP, RTSP, HLS and UPnP.

To disable (or enable) streams for viewers:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click **Streaming** for the desired channel; the streaming page opens.



3. Uncheck **Enabled** to disable streaming to viewers (or check to enable).
4. Click **Apply** at the bottom of the page.

## Restrict access to streams for viewers

VGADVI Recorder Pro can restrict access to all viewer streams using global viewer passwords and IP allow/deny lists. See [Setting and Changing User Passwords](#) and [Restrict Viewers by IP Address](#)

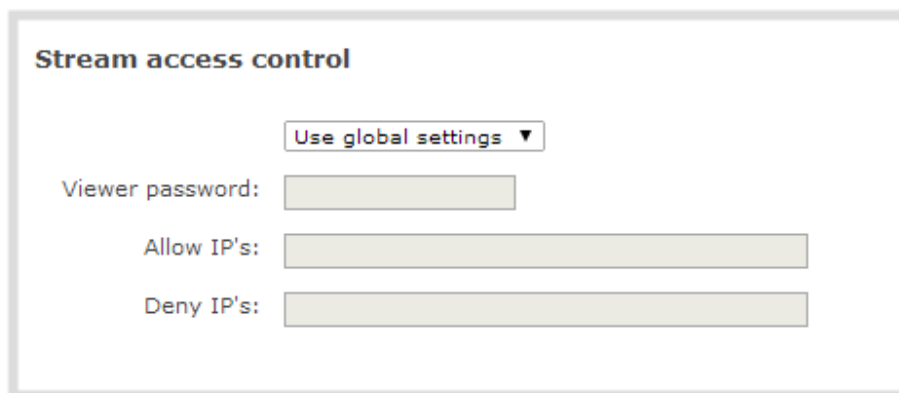


If LDAP is configured for viewer authentication, the viewer must pass global authentication using LDAP credentials (or the viewer global password, if there is one) and must meet the local channel settings (come from an allowed IP address). See **Configure LDAP** for more information on LDAP configuration.

To restrict viewers for a channel:



1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click **Streaming** for the desired channel; the streaming page opens.
4. Scroll to the **Stream access control** section of the page.



3. Select **Use these settings** from the drop down list; the configuration fields are enabled.



Global LDAP settings are always enforced. Any local settings are in addition to LDAP sign on.

3. If desired, specify a password for viewers of this channel; the password appears masked as you type it.



If you have global allow/deny lists or a global user password, you can override the global settings and remove all access control for a channel by selecting **Use these settings** and leaving all the fields blank.

3. If desired, specify allow and deny IPs for viewers of this channel. See [Restrict Viewers by IP Address](#) for more information about allow and deny lists.
4. Click **Apply** at the bottom of the page.

To return a channel to the default (global) access control settings:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click **Streaming** for the desired channel; the streaming page opens.
4. Scroll to the **Stream access control** section of the page.



5. Select **Use global settings** from the drop down list; the configuration fields are disabled (any changes to the configuration fields are not saved).
6. Click **Apply** at the bottom of the page.

## Stream content using HTTP or RTSP

The quickest and simplest way to deliver your content is to send the broadcast's URL to your viewers. You can provide separate URLs for each channel being streamed.

The format of the URL provided to you by the admin interface depends on the method you used to access the system, either through network discovery using the serial number or IP address.



The system must be accessible on the viewer's LAN for the viewer to use access by serial discovery.



If your system is behind a firewall and you wish to share with remote viewers, you will need to set up port forwarding on your network. See your IT administrator.

**Table 16** URL options

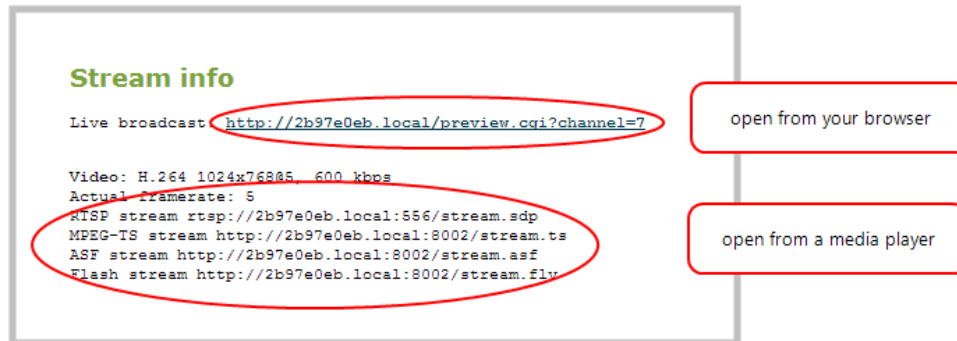
Access Method	URL Format
serial discovery	<pre>http://&lt;serial&gt;.local/preview.cgi?channel=&lt;channel number&gt;</pre> <pre>rtsp://&lt;serial&gt;.local:&lt;port&gt;/stream.sdp</pre> <p>Where serial is the serial number of the system and channel number is the provided from the GUI (see below).</p>
IP address	<pre>http://&lt;IP Address of VGADVI Recorder Pro&gt;/preview.cgi?channel=2</pre> <pre>rtsp://&lt;IP Address of VGADVI Recorder Pro&gt;:&lt;port&gt;/stream.sdp</pre> <p>Where the IP address is the IP address of the system and the port and channel number information is provided on the channel's status page.</p>

To retrieve the stream URL for your viewers:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).



2. Login as admin.
3. From the web interface, click a **Channel**; the menu expands.
4. Click **Status**; the following page opens displaying the stream protocol that is supported based on the selected codecs.



5. Jot down the either the **Live Broadcast** , **RTSP stream** or other web streaming address. This is the address you can send to viewers or to create a link to your broadcast.



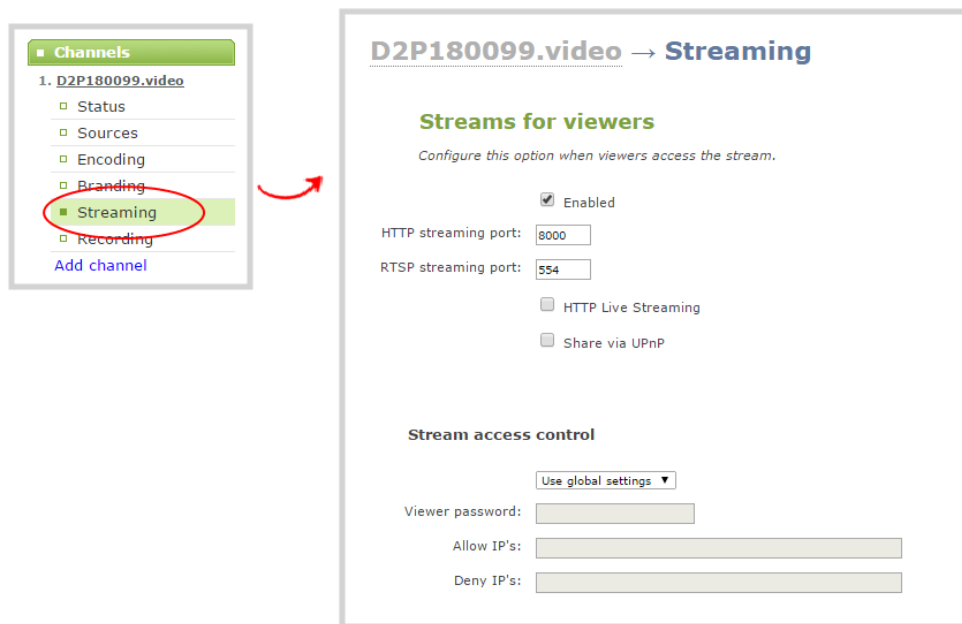
Users must install Bonjour Print Services on their Windows or Mac computer to access the live Preview using the serial number. Log into the admin interface by IP address to see the URL with the IP address instead of the serial number.

## Configure streaming ports

For RTSP streaming the only information required to view the broadcast is the URL and the port number used to stream the broadcast. Port numbers are also used for HTTP streaming methods such as FLV, ASF and MPEG-TS. By default, each channel has a unique HTTP and RTSP port number. If needed, you can modify these port numbers. Be sure to always use unique numbers for each channel.

To set the HTTP and RTSP streaming ports, follow the steps below.

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click a **Channel**; the menu expands.
4. Click **Streaming**; the channel's Streaming page opens.



5. Set the HTTP Streaming port to specify the port used to stream the HTTP broadcast. This value along with the URL is used by viewers to access the FLV, ASF and MPEG-TS streams.



The port number must be higher than 500 for HTTP. In the case of RTSP streaming this value is ignored.

6. Set the RTSP Streaming port to specify which port to use when you are streaming live video via RTSP. This value along with the URL is used by viewers to access the broadcast. The default for channel one is 554.
7. Click **Apply**.

## Stream content using HTTP Live Streaming (HLS)

Stream live over the standard HTTP port 80, making it possible to cross firewalls and proxies that are normally accessible to other HTTP traffic .



HLS is supported with the H.264 codec and MP3 or AAC audio encoding. When streaming using HLS there is approximately a 30 second delay.

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.



3. From the web interface, select the channel containing video you want to stream; the menu expands.
4. Click **Streaming**; the channel's Streaming configuration page opens.
5. Enable HTTP Live Streaming by selecting the **HTTP Live Streaming** checkbox.

HTTP streaming port: 8000

RTSP streaming port: 554

☒ HTTP Live Streaming

☒ UPnP

6. Click **Apply**.
7. Click **Status** for the channel. The status page opens.

**Services state**

Encoder: up 9 seconds  
Broadcaster: up 11 seconds  
HTTP Live Streamer: up 11 seconds  
Recorder: disabled

**Stream info**

Live broadcast: <http://192.168.1.57/preview.cgi?channel=1>  
HTTP Live Streaming: <http://192.168.1.57/hls/channel1>

Video: H.264 1024x768@30, 6.00 Mbps  
Actual framerate: 30  
Audio: MP3 22kHz mono 128 kbps  
Total: 6.13 Mbps  
RTSP stream rtsp://192.168.1.57:554/stream.sdp  
MPEG-TS stream http://192.168.1.57:8000/stream.ts  
ASF stream http://192.168.1.57:8000/stream.asf  
Flash stream http://192.168.1.57:8000/stream.flv  
HLS stream http://192.168.1.57/hls/channel1/stream.m3u8

Open from your iOS device or in a browser

Open the link from a media player

8. Provide the HLS stream link to your viewers.

## Stream content using UPnP

Using the Universal Plug and Play (UPnP) networking protocol, your VGADVI Recorder Pro can be discovered and can stream to software and hardware media players, set-top-boxes and Smart TVs with ease. If UPnP is enabled, the system automatically establishes communication with media players on the network.

UPnP uses MPEG-TS over HTTP with the H.264 codec and MP3 or AAC audio encoding (or no audio). You can only access live streams or recordings that meet these requirements.



For security reasons the default behavior prevents UPnP access to live streams and recorded files.





This section covers the following topics:

- [Enable UPnP](#)
- [Disable UPnP](#)
- [Stream your video](#)
- [Auto-restart playback to a UPnP device](#)
- [Change UPnP device name](#)



Some players will not be able to access the stream or saved recordings if a view password is set. If needed, see **Removing User Passwords** to clear the viewer password.

The topics in this chapter include how to enable and disable UPnP and how to control media players from the VGADVI Recorder Pro. To choose recordings or live streams from your media player, see [Viewing with UPnP](#).

## Enable UPnP

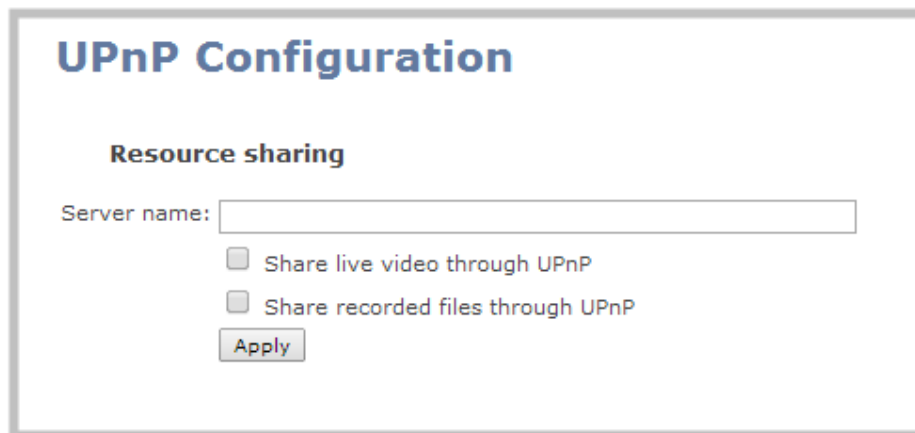
Enable UPnP to allow digital media players on the network to browse for media or live streams from your system. There are two steps required to enable UPnP, enabling UPnP for the system (including setting a share name) and enabling UPnP per channel or recorder. By default, UPnP is disabled at the system level and for each channel.



Streams and MPEG-TS recorded files must use the supported codecs: H.264 with MP3 or AAC audio. Having a viewer password could prevent the ability to use UPnP.

To enable UPnP:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Click the **UPnP** link in the Configuration section; the UPnP configuration page opens.



**UPnP Configuration**

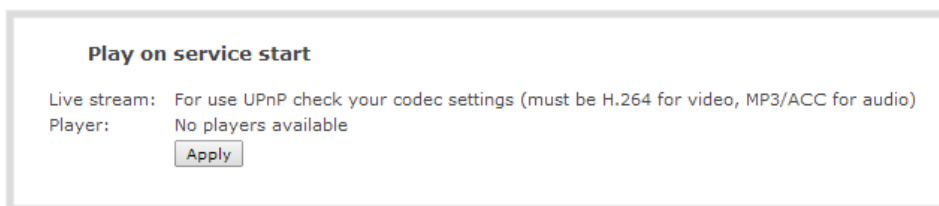
**Resource sharing**

Server name:

☐ Share live video through UPnP

☐ Share recorded files through UPnP

4. Enter a name in the **Server name** field. If no name is provided the server name will be the system's serial number.
5. Select whether you want to share live video and recorded files.
6. Click **Apply**.
7. If no live stream is available that meets the criteria for UPnP, a message is displayed in the **Play on service start** section of the page.

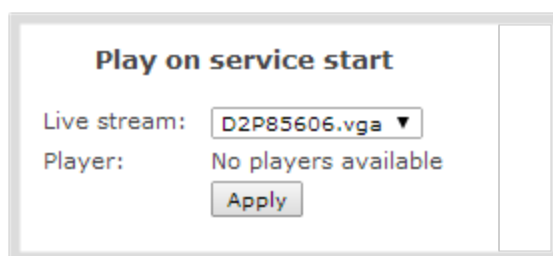


**Play on service start**

Live stream: For use UPnP check your codec settings (must be H.264 for video, MP3/ACC for audio)

Player: No players available

8. Otherwise, the Play on service start section shows a drop-down list of what can be streamed.



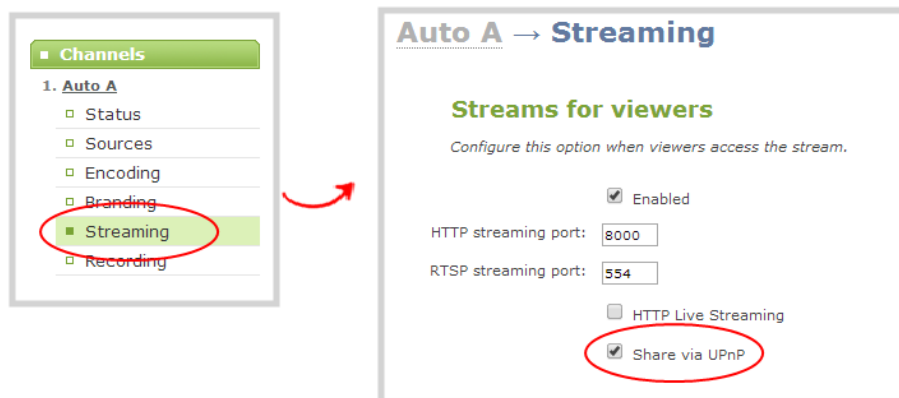
**Play on service start**

Live stream:

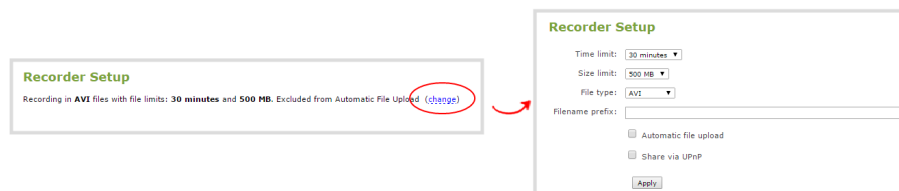
Player: No players available

Enable UPnP sharing for the channels or recorders you want to share:

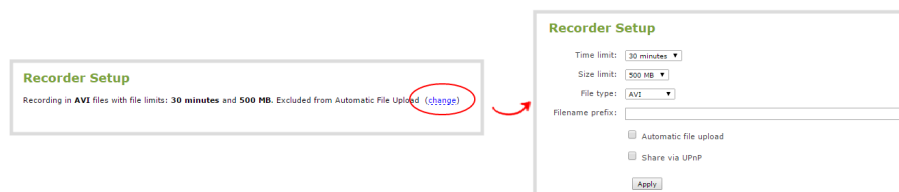
1. For channels (live streaming):
  - a. Click the **Streaming** link for the desired channel; the Streaming page opens.



- a. Click the **Share via UPnP** check box (if not checked).
- b. Click **Apply**
2. For channels (recorded files):
  - a. Click **Recording** for the desired channel; the channel's recording page opens.
  - b. Click the word **change** next to the list of what is being recorded; the recording options expand.



- c. Click the **Share via UPnP** check box (if not checked).
- d. Click **Apply**.
3. For recorders:
  - a. Click the link for the recorder from the Recorders menu; the recorder's configuration page opens.
  - b. Click the word **change** next to the list of what is being recorded; the recording options expand.



- c. Click the **Share via UPnP** check box (if not checked).
- d. Click **Apply**.

You can now browse for your server from your digital media player. See below.

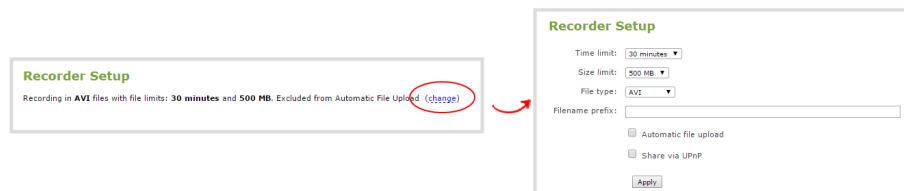


## Disable UPnP

By default, UPnP sharing is enabled for the device, but sharing is disabled for each channels and recorder. If you enabled UPnP sharing it for a particular broadcast, you may want to disable UPnP sharing after the broadcast is complete. You can choose to disable access to live streams, recorded files, or to the whole system.

To disable UPnP for a channel or recorder:

1. For channels:
  - a. Click the **Streaming** link for the desired channel; the Streaming page opens.
  - b. Deselect the **Share via UPnP** check box (if checked).
  - c. Click **Apply**
2. For recorders:
  - a. Click the link for the recorder from the Recorders menu.
  - b. Click the word **change** next to the list of what is being recorded; the recording options expand.



- a. Deselect the **Share via UPnP** check box (if not checked).
- b. Click **Apply**.

To disable UPnP globally (for the whole system):

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Click the **UPnP** link in the Configuration section; the UPnP configuration page opens.
4. Deselect **Share live video through UPnP** to stop sharing live video.
5. Deselect **Share recorded files through UPnP** to stop sharing recorded files.
6. Click **Apply**; UPnP sharing is disabled.

## Play directly to a media player

If your digital media player is UPnP enabled, the VGADVI Recorder Pro can play direct the media player to play recorded files, without browsing through menus in the player.



Recorded files must be in MPEG-TS format and use the supported codecs: H.264 with MP3 or AAC audio. Having a viewer password could prevent the ability to use UPnP.

To play directly to a media player:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Ensure **Share recorded files through UPnP** is enabled on your VGADVI Recorder Pro and for the channel or recorder you wish to share. (See [Enable UPnP](#).)
4. Go to the recorded files list for the desired channel or recorder. (See [View the List of Stored Files](#).)
5. From the list of files, select the file you want to play and click on the **Play To** icon for the file; a list of visible digital media players is displayed.
6. Select a media player; the recording plays on the screen(s) connected to the media player.

## Auto-restart playback to a UPnP device

In unmanned situations such as industrial applications and digital signs, it is useful to automatically have a stream played to a digital media player, even if the VGADVI Recorder Pro restarts.

To configure auto-restart of a stream to a media player:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Click the **UPnP** link in the Configuration section; the UPnP configuration page opens.
4. Scroll to the Play on service start section.
5. Select a stream to use from the **Live stream** drop-down list.
6. Select a digital media player from the **Player** drop-down list. (Digital media players on your network that support UPnP playback will automatically appear in the drop-down list.)
7. Click **Apply**.



Only a single stream and player combination can be configured for auto play. The channel's UPnP configuration must be enabled for it to appear.

## Change UPnP device name

You can configure the UPnP server name that appears for your VGADVI Recorder Pro. By default, if you left the server name field blank when enabling UPnP, the server name is the system's serial number.

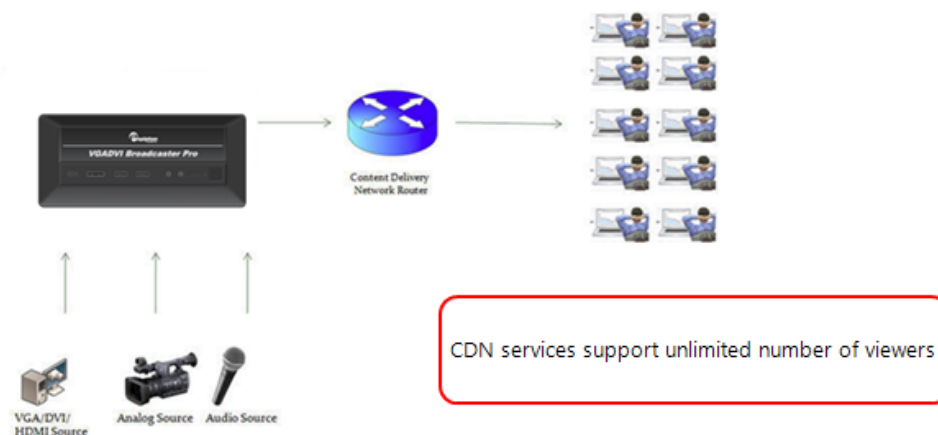


To change the UPnP server name:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Click the **UPnP** link in the Configuration section; the UPnP configuration page opens.
4. Highlight and delete the text in the **Server name** field, if any.
5. Type a new server name. Use characters A-Z, a-z, 0-9, \_, ., @, ^, #, -, {, }, [, ].
6. Click **Apply**; the name changes.

## Stream content using a Content Distribution Network

A Content Delivery Network relies on geo-diverse CDN servers to receive and disperse web content to the CDN server closest to the user. The closer the server is to the user the faster the content is delivered. Streaming your content through a CDN allows you to stream any time, anywhere, regardless of the viewing device.



You can test how your content is streamed by sending your content to Epiphan's CDN or choose one of Epiphan's preferred CDN providers <http://epiphan.tv/cdn-partners.php>.

### Stream content to a CDN provider

Publish to any CDN provider that supports incoming streams sent via RTSP announce or RTMP push. Both RTSP and RTMP can be used for live streaming, however not all CDNs or media servers support both formats. Choose the streaming format that your CDN or media server supports. Epiphan has tested with the CDN providers listed here: <http://epiphan.tv/cdn-partners.php>. Contact your CDN for a list of supported audio codecs and ensure your configuration uses one of the supported codecs.

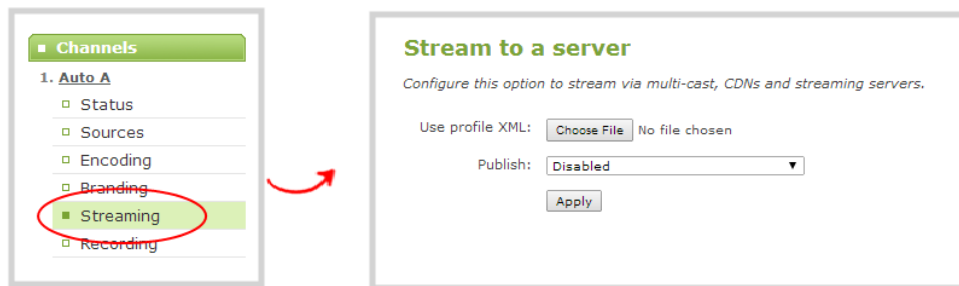
To publish content to a CDN provider ensure you have:



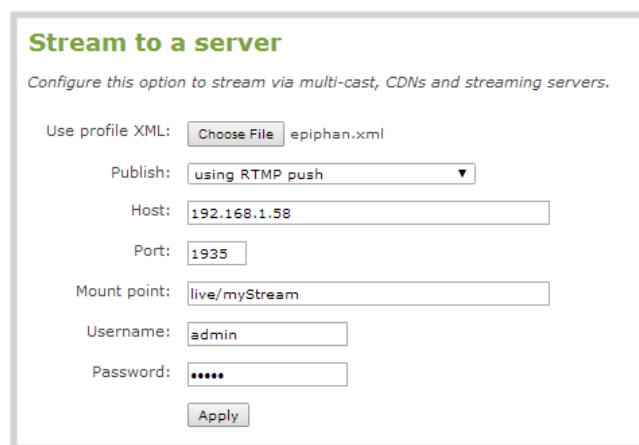
- a path to the mount point or an XML configuration file (provided by the CDN provider);
- verify which transport protocols your CDN supports;
- a current flash player; and
- select the H.264 codec from the channel's Encoding page.

## To stream content to a CDN using an XML profile

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click a **Channel**; the menu expands.
4. Click **Streaming**; the channel's Streaming page opens.



3. Click the **Choose File** button next to **use profile XML**; a file browser window opens.
4. Select the XML profile supplied by your CDN and click **OK**; the configuration is read from the XML file and applied.



3. Click **Apply**.



## To stream content to a CDN using RTSP announce

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click a **Channel**; the menu expands.
4. Click **Streaming**; the channel's Streaming page opens.
5. Scroll to the **Stream to a server** section of the page.
3. Click the **Publish** drop-down menu.
4. Choose **using RTSP announce** from the drop-down menu.

**Stream to a server**  
*Configure this option to stream via multi-cast, CDNs and streaming servers.*

Use profile XML:  No file chosen

Publish:

Host:

Port:

Mount point:

☐ Use TCP for RTP stream

Username:

Password:

5. Enter the host name or IP address of the CDN or media server.
6. Enter the server's RTSP port number. Usually for RTSP streaming the value is 554.
7. Enter a value in the **Mount Point** field. This is the full path to the location of the live steam or the media server. The path starts with the application name. The path is provided by the CDN provider.
8. Check the **Use TCP for RTP stream** checkbox. Verify which transport protocols your CDN provider supports.
9. Enter a user name and password.



The CDN provider assigns a user name and password to authenticate the publisher. Contact the CDN provider for your log in credentials.

11. Click **Apply**.





## To stream content to a CDN using RTMP push

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click a **Channel**; the menu expands.
4. Click **Streaming**; the channel's Streaming page opens.
3. Click the **Publish** drop-down menu.
4. Choose **using RTMP push** from the drop-down menu.

**Stream to a server**

Configure this option to stream via multi-cast, CDNs and streaming servers.

Use profile XML:  No file chosen

Publish: using RTMP push ▼

Host:

Port:

Mount point:

Username:

Password:

3. Enter the host name or IP address of the media server or CDN.
4. Enter the port number which is used for streaming to the media server or CDN. Usually for RTMP streaming the value is 1935.
5. Enter a value in the **Mount Point** field. This is the full path to the location of the live steam or the media server. The path starts with the application name. The path is provided by the CDN provider. The RTMP publish stream is displayed as rtmp.publish in the Connections window.

Connections			
Stream name	Client IP	Bitrate	Bytes transmitted
rtmp.publish	74.125.142.150	837 kbps	739998 KBytes

3. Enter a user name and password.



The CDN provider assigns a user name and password to authenticate the publisher. Contact the CDN provider for your log in credentials.

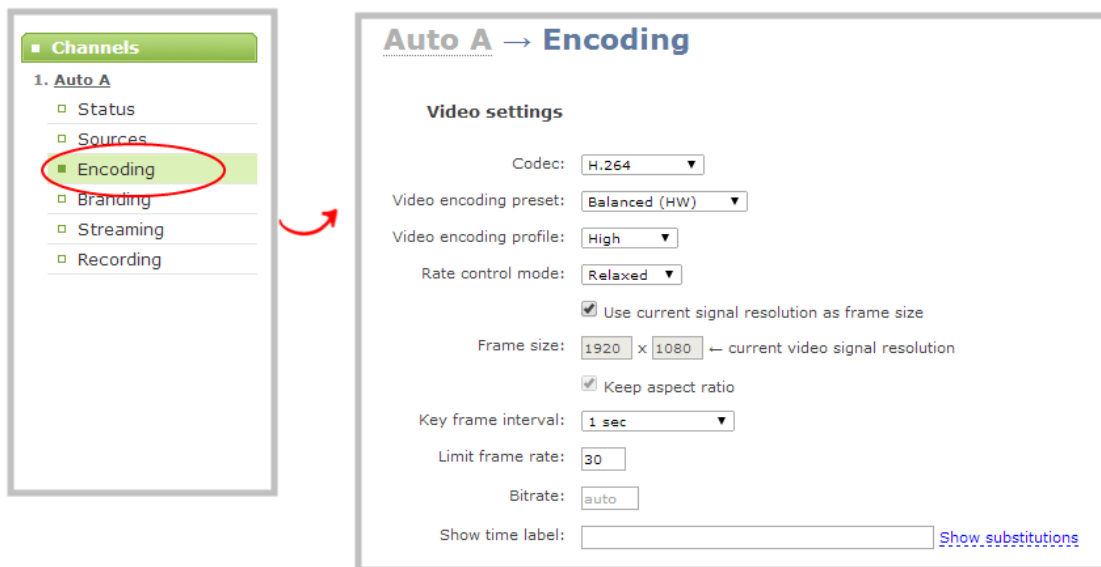
4. Click **Apply**.

## To stream content using Wowza Streaming Cloud

To set up streaming via Wowza Cloud, sign in to the Wowza Streaming Cloud web site and create a new Live Stream. Retain the connection code that is provided upon applying the configuration settings; this code is required to complete the streaming set-up process.

To set up streaming via Wowza Streaming Cloud

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click the link for your desired **Channel**; the menu expands.
4. Click **Encoding**; the channel's Encoding page opens.



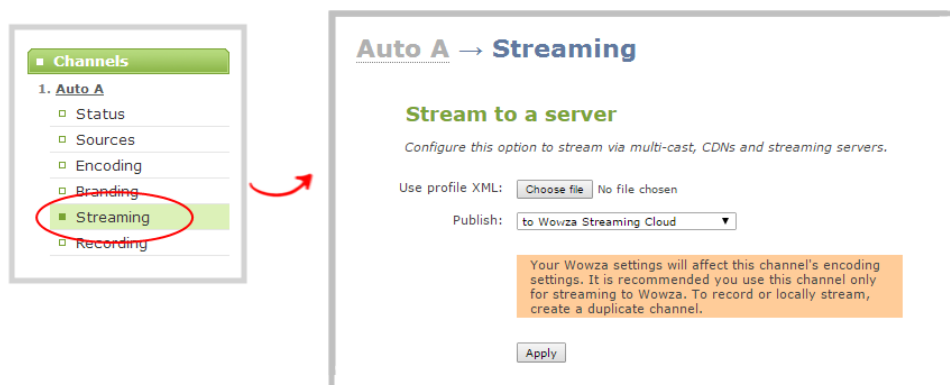
5. Configure Encoding settings accordingly, ensuring the selected **Codec** is H.264.



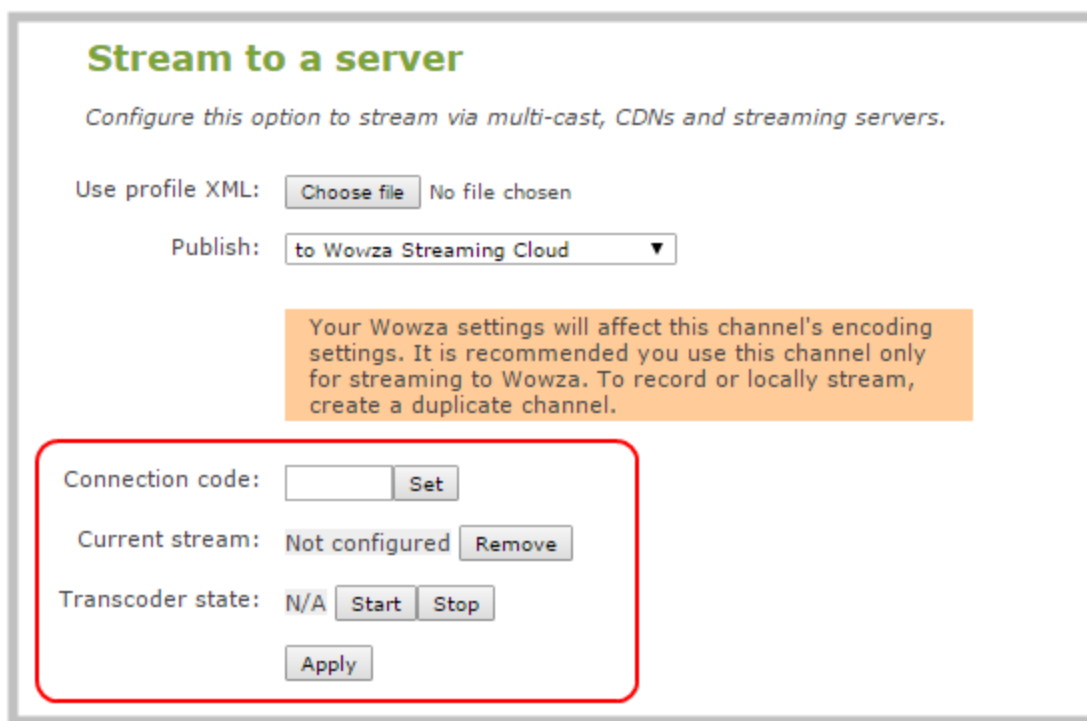
Configuring audio is optional. Supported formats are limited to MP3 and AAC. Due to RTMP restrictions, MP3 48 kHz is not supported.



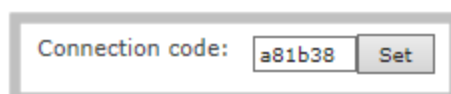
6. Click **Apply**.
7. Under the selected channel, click **Streaming**; the channel's Streaming page opens.



8. Click the **Publish** drop-down menu.
9. Select **to Wowza Cloud** from the drop-down list.
10. Click **Apply**; three new fields appear.



11. In the **Connection code** field, enter the connection code obtained from the Wowza Streaming Cloud.





12. Click **Set** to pair the channel on Epiphan's encoder with the live stream on Wowza Streaming Cloud.



Each individual connection code is intended for pairing with a single channel only. If you wish to pair a second channel, you need to create a new Wowza live stream and generate a different connection code.

13. Press **Start** to commence your live stream and begin streaming to Wowza Streaming Cloud.



When you start the live stream, you may be accruing charges, as per your usage agreement with the Wowza Streaming Cloud service. Make sure you're ready to broadcast your video before clicking **Start**. Always ensure the stream is stopped upon completion. For details on stopping the stream, see **To stop streaming content from Wowza Streaming Cloud**.



After clicking **Start**, there may be a short 2-3 minute delay before the live stream is displayed.

14. Click the channel's **Status** page to display the Wowza Streaming Cloud live stream connection details.

Connections			
Stream name	Client IP	Bitrate	Bytes transmitted
Publish	Wowza Streaming Cloud	3264 kbps	745 KBytes

In normal operation, VGADVI Recorder Pro continues to stream to Wowza Streaming Cloud until it is stopped through either the local web interface or remotely from the Wowza Streaming Cloud service.

**Table 17** Stream status during normal operation

VGADVI Recorder Pro web UI state	Wowza Streaming Cloud web UI state	User action	Result
Streaming (Started)	Streaming (Started)	Press stop from Wowza UI	Stream stops
Streaming (Started)	Streaming (Started)	Press stop from VGADVI Recorder Pro web UI	Stream stops
Stopped	Stopped	Press start from the Wowza UI	Stream starts
Stopped	Stopped	Press start from VGADVI Recorder Pro web UI	Stream starts



VGADVI Recorder Pro's Wowza Streaming Cloud integration is designed for maximum uptime. If a network or power interruption VGADVI Recorder Pro temporarily prevents the system from communicating with the Wowza Streaming Cloud service, every attempt is made to reconnect after the power or network is restored.

Refer to the following chart for specific details of what to expect when there is a network or power failure. Note that Wowza Streaming Cloud stops a live stream if it fails to receive data (i.e. idle stream) for a period longer than your configured **Idle Timeout**. You can configure the **Idle Timeout** value is specified in the **Transcoder** setup section of Wowza Streaming Cloud.

**Table 18** Stream status after power or network failure (all cases assume Wowza Streaming Cloud is properly configured at both ends and was previously able to stream)

VGADVI Recorder Pro web UI state before incident	State of Wowza Streaming Cloud before incident	Incident duration	Expectation
Streaming (Started)	Streaming (Started)	less than the idle timeout value	After power or network is restored, the system queries the Wowza cloud and sees it wants to stream. Therefore VGADVI Recorder Pro restarts the stream.
Streaming (Started)	Streaming (Started)	greater than the idle timeout value	The stream is deactivated by Wowza after the idle timeout period expires. When VGADVI Recorder Pro queries Wowza it finds no need to start the stream so the stream is not restarted.
Streaming (Started)	Not Streaming (Stopped)	any duration	When VGADVI Recorder Pro queries Wowza it finds no need to start the stream so the stream is not started.
Not streaming (Stopped)	Streaming (Started)	less than the idle timeout value	After power or network is restored, the system queries the Wowza cloud and sees it wants to stream. Therefore VGADVI Recorder Pro restarts the stream.
Not streaming (Stopped)	Streaming (Started)	greater than the idle timeout value	The stream is deactivated by Wowza after the idle timeout period expires. When VGADVI Recorder Pro queries Wowza it finds no need to start the stream so the stream is not started.

## To stop streaming content from Wowza Streaming Cloud

It is possible to terminate a connection to Wowza Streaming Cloud using a few different methods.



To stop streaming using the Wowza web UI:

1. Access your account through the Wowza Streaming Cloud web site and manually stop your live stream.

To stop streaming using VGADVI Recorder Pro's web UI **Stop** button:

1. Click the **Streaming** link for your selected channel on the left side of the page.
2. Scroll down to locate the **Stream to a server** heading.
3. Click the **Stop** button in the **Transcoder state** field.

To stop streaming using VGADVI Recorder Pro's web UI **Unpublish**:

1. Click the **Streaming** link for your selected channel on the left side of the page.
2. Scroll down to locate the **Stream to a server** heading.
3. Select **Disabled** from the drop-down list next to the **Publish** field.
4. Click **Apply**.



Always stop your stream when you have finished your event. If the stream is not stopped, network and Wowza Streaming Cloud charges may continue to accrue, as per your user agreements.

## Test content distribution using Epiphan CDN



Epiphan.tv is a service provided by Epiphan to help our customers to experiment with content distribution networks, bandwidth, performance limits and viewer limits are applied. To upgrade to a full service, select one of Epiphan's preferred CDN provider at <http://epiphan.tv/cdn-partners.php>.



To hear audio content from Epiphan TV ensure audio is set to MP3 in Encoding configuration.

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click a **Channel**; the menu expands.
4. Click **Streaming**; the channel's Streaming page opens.
5. Scroll to the **Stream to a server** section of the page.
6. Click the **Publish** drop-down menu.
7. Choose **to <serial>. Epiphan.tv**. Where <serial> is the serial number of the system.



### Stream to a server

*Configure this option to stream via multi-cast, CDNs and streaming servers.*

Use profile XML:  No file chosen

Publish:

Stream from this device will be available on [6bfe1776\\_channel7.epiphan.tv](https://6bfe1776_channel7.epiphan.tv)

8. Click **Apply**; a connection through the media tunnel is established. The system streams to the Epiphan's portal – epiphan.net.



You must set audio format to MP3 when streaming through epiphan.net, see **Select an audio codec**.

## View content from Epiphan TV

Before viewing content from Epiphan TV ensure you have:

- a current browser;
- a current flash player;
- select the H.264 codec from the channel's Encoding page; and
- set the stream bitrate lower than 500 kbits/s in the channel's Encoding setup.

To view content:

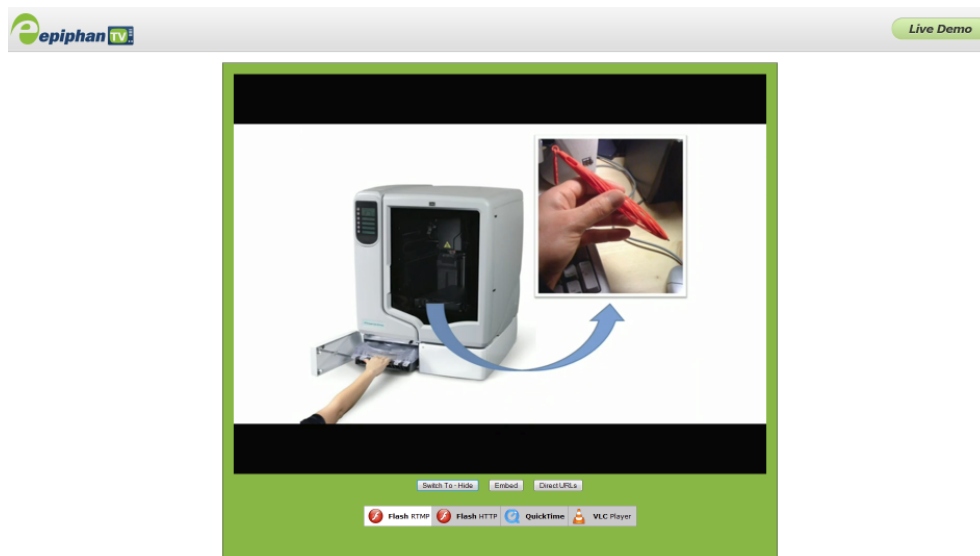
1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click a **Channel**; the menu expands.
4. Click **Streaming**; the channel's Streaming page opens.
3. Click the link to view the broadcast.



Click the link to view content streamed to Epiphan TV

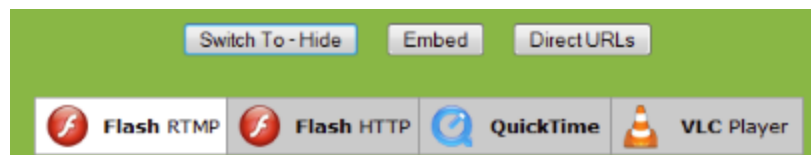


4. A web page opens displaying the broadcast.



## Specify a multimedia player to view your Epiphan TV broadcast

1. From the Epiphan TV portal, click **Switch To** on the bottom of the screen; the following options appear.



2. Choose a plug-in from the list, the stream is displayed using the selected multimedia player.

## Add a link to your website to stream your Epiphan TV broadcast

Follow the steps below to embed code for the broadcast in a web page.

1. Go to the Epiphan TV portal.
2. Click **Embed** on the bottom of the screen; a dialog box opens displaying the code.

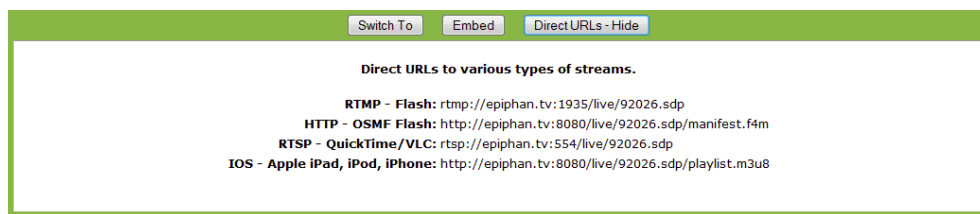




3. Highlight and right-click on the code in the dialog box. A drop-down menu appears.
4. Choose **Copy**.
5. Paste the content into the HTML code for your website. A link to your broadcast on Epiphan TV is added to your web page.

### Retrieve a list of addresses based on video stream encapsulation

1. Go to the Epiphan TV portal.
2. Click **Direct URLs** on the bottom of the screen; a dialog box opens displaying a list of URLs for different types of streams.



3. Use the copy and paste function to provide viewers with the URL to view the stream.

## Stream content using multicast streaming

A multicast stream consists of one stream distributed to many viewers via a multicast-capable network. VGADVI Recorder Pro supports the following multicast streaming options:

- Using RTP/UDP push
- Using MPEG-TS UDP push
- Using MPEG-TS RTP/UDP push

VGADVI Recorder Pro supports multicast streaming content to an IP TV or a set-top box playlist when the stream format is MPEG-TS. The following procedures outline the steps to distribute your content using multicast streaming.



## Multicast streaming using RTP/UDP

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click a **Channel**; the menu expands.
4. Click **Streaming**; the channel's Streaming page opens.
3. Click the **Publish** drop-down menu.
4. Choose **using RTP/UDP push**.

**Stream to a server**

*Configure this option to stream via multi-cast, CDNs and streaming servers.*

Use profile XML:  No file chosen

Publish:

Destination IP:

Audio port:

Video port:

5. Enter the destination multicast IP address.
6. Enter the port number through which the audio will stream.
7. Enter the port number through which the video will stream.



Audio and video use nearby port numbers (<port number> and <port number+2>). The minimum distance between audio and video ports must be 2.

8. Click **Apply**; an SDP file is generated and available from the Status page of the web interface.
9. Select a name and location for the SDP file and save it.
10. Share the link to the file with viewers.

## Multicast streaming for MPEG-TS streams using UDP push

To configure the MPEG-TS stream, ensure the following codecs are configured:



- Video – H.264
  - Audio – MP3 or AAC, if audio is configured.
1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
  2. Login as admin.
  3. From the web interface, click a **Channel**; the menu expands.
  4. Click **Streaming**; the channel's Streaming page opens.
  5. Click the **Publish** drop-down menu.
  6. Choose **using MPEG-TS UDP push**.

**Stream to a server**

*Configure this option to stream via multi-cast, CDNs and streaming servers.*

Use profile XML:  No file chosen

Publish:

Destination IP:

Destination port:

☐ SAP announcement

SAP announcement IP:

Channel number:

Group name:

7. Enter the destination multicast IP address where the broadcast can be viewed.



A IPv4 multicast address range is an address between 224.0.0.0 to 239.255.255.255. Contact your System Administrator for the specific address to use.

8. Enter the destination port number through which the media will stream.
9. Perform one of the following:
  - a. If you do not want to advertise your stream to a media player over a local network, go to the last step of this procedure; or
  - b. To advertise your stream to a media player over a local network, follow the steps below.



10. Enable the **SAP announcement** checkbox to advertise your stream over a local network. When the checkbox is enabled and a multicast IP address is configured, your stream is displayed in the playlist of local media players.
11. Enter a multicast IP address in the **SAP announcement IP** field. If your media player is configured to receive multicast streams from an IP address that is different from the default address 224.2.127.254, you may need to contact your system administrator for a specific multicast IP address.
12. Enter a channel number in the **Channel number** field to identify your stream in the media player. By default the Channel number is the channel identifier.



When a channel number value is not specified, viewers cannot select a channel from the set-top box or Smart TV .

13. Enter a name for a group of streams in the text box next to **Group name**. Since media players simply present a list of available streams, you can organize your streams into multiple folders or in cases where folders are not displayed, use dot separator hierarchy to help your viewers filter out unwanted streams by category.
14. Click **Apply**. To view the stream, open the URL in a media player, for example:

`udp://@ip:port`

**For example:** `udp://@226.10.24.32:7000`

To view the stream when SAP announce has been set and the stream is advertised from a media player, set-top-box or Smart TV, refer to [Viewing with SAP Announce](#).

## Multicast streaming for MPEG-TS streams using RTP/UDP push

To configure the MPEG-TS stream, ensure the following codecs are configured:

- Video – H.264
- Audio – MP3 or AAC, if audio is configured.

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click a **Channel**; the menu expands.
4. Click **Streaming**; the channel's Streaming page opens.
5. Click the **Publish** drop-down menu.
6. Choose **using MPEG-TS RTP/UDP push**.
7. Enter the destination multicast IP address where the broadcast can be viewed.



A IPv4 multicast address range is an address between 224.0.0.0 to 239.255.255.255. Contact your System Administrator for the specific address to use.

8. Enter the destination port number through which the media will stream.
9. Perform one of the following:
  - a. If you do not want to advertise your stream to a media player over a local network, go to the last step of this procedure; or
  - b. To advertise your stream to a media player over a local network, follow the steps below.
10. Enable the **SAP announcement** checkbox to advertise your stream over a local network. When the checkbox is enabled and a multicast IP address is configured, your stream is displayed in the playlist of local media player.
11. Enter a multicast IP address in the **SAP announcement IP** field. If your media player is configured to receive multicast streams from an IP address that is different from the default address 224.2.127.254, you may need to contact your system administrator for a specific multicast IP address.
12. Enter a channel number in the **Channel number** field to identify your stream in the media player. By default the Channel number is the channel identifier.



When a channel number value is not specified, viewers cannot select a channel from the set-top box or Smart TV .

13. Enter a name for a group of streams in the text box next to **Group name**. Since media players simply present a list of available streams, you can organize your streams into multiple folders or in cases where folders are not displayed, use dot separator hierarchy to help your viewers filter out unwanted streams by category.
14. Click **Apply**.
15. Click the **Info** menu option of the web interface. An Info page opens displaying stream information.

To view the stream from a media player, open the URL in a media player, for example:

rtp://@ip:port or in the case of the sample configuration in the figure shown above:  
rtp://@226.10.24.32:7000

To view the stream when SAP announce has been set and the stream is advertised on a media player, set-top-box or Smart TV, refer to [Viewing with Session Announcement Protocol \(SAP\)](#).



## 4-2 Samples of stream settings

When choosing your stream settings it is important to consider the stream content. When streaming fast moving video it's best to choose a higher bitrate and frame rate versus streaming a slide presentation where you can save on bandwidth and system processing by lower the bitrate and frame rate. Stream setup is a matter of balancing quality and system resource usage.

To help you to achieve this balance the following tables list the recommended settings when streaming video and slide content from a PC, Mac or tablet.

### Streaming video content

The table below provides suggested settings to maximize your video quality while minimizing system resource usage when streaming video content from a PC, Mac or tablet.

Setting	PC and Mac	Tablet
Codec	H.264	Motion JPEG
Video encoding preset	High Speed	
Video encoding profile	Main	
Enhanced compatibility mode (h.264 slicing for RTP)	Disable for PC Enable for Mac	
Key frame interval	2 sec	
Limit frame rate	30	30
Bitrate	2000 Kbits for HD 3000 Kbits for Full HD 3000 kbits for ~ HD; 4000 kbits for ~ Full HD (Mac)	auto
Rate control mode	Balanced	
Audio format	PCM 22 KHz	



## Streaming slide content

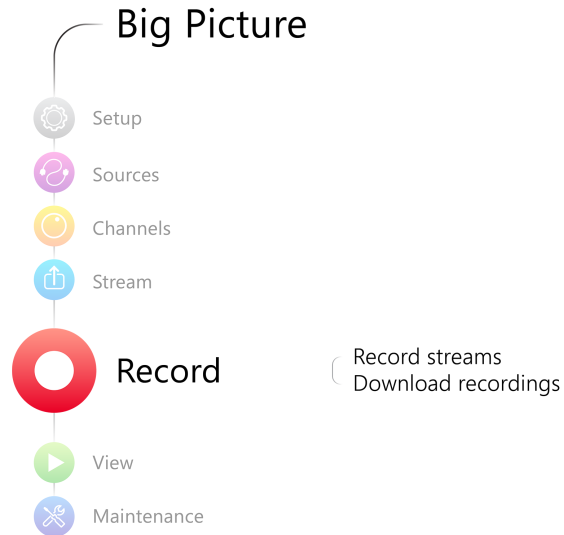
The table below provides suggested settings to maximize your stream quality while minimizing system resource usage when streaming slide content from a PC, Mac or tablet.

Setting	PC and Mac	Tablet
Codec	H.264	Motion JPEG
Video encoding preset	High Quality	
Video encoding profile	High	
Enhanced compatibility mode (h.264 slicing for RTP)	Disable for PC Enable for Mac	
Key frame interval	2 sec	
Limit frame rate	15	15
Bitrate	3000 kbits for ~ HD; 4000 kbits for ~ Full HD	auto
Rate control mode	Balanced	
Audio format	PCM 44 KHz	



# PART 5: Record

Your VGADVI Recorder Pro encodes the video and audio it captures. If you choose to record the resulting streams, it stores the recorded files on the system and provides a variety of automatic or manual mechanisms to download the files.



This section discusses the following topics related to recording:

- [Recorders](#)
- [Create Recordings](#)
- [File Maintenance](#)
- [File and recording transfer](#)
- [Use the Local FTP Server](#)





## 5-1 Recorders

Your VGADVI Recorder Pro can record the output from each channel and can also record multiple channels together in a single multi-track file.



You only need to create recorders for multi-track recordings. For single channel recordings, see **Create Recordings**

This section describes the following topics for creating and managing multi-channel recorders.

- [Add a recorder](#)
- [Rename a recorder](#)
- [Change the channels recorded by a recorder](#)
- [Delete a recorder](#)

See [Create Recordings](#) to learn how to create recordings and configure recording file sizes.



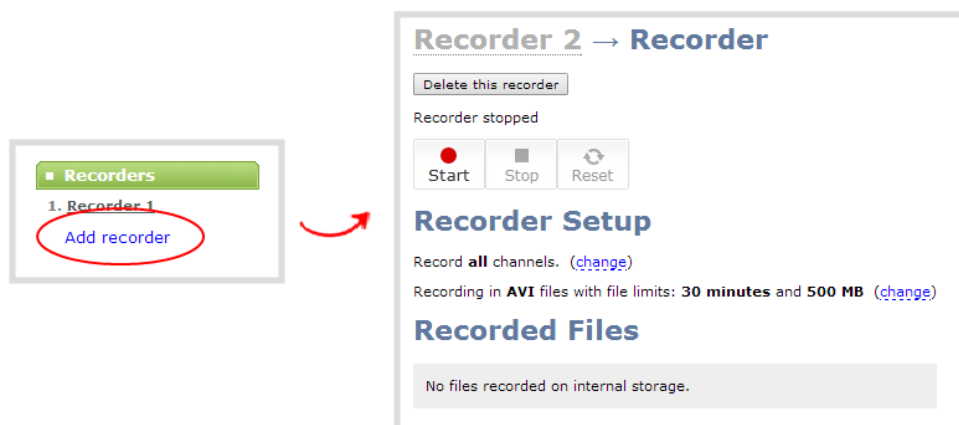
If you upgraded from a previous firmware release that included an all-in-one recorder, your all-in-one recorder is now listed under the **Recorders** section of the web interface. Your recordings are preserved and any URLs used to access the all-in-one recorder previously through the HTTP API correctly map to the new location.

### Add a recorder

Each channel has its own built-in recorder that is accessible from the Recording link. If you want to record several channels simultaneously to a multi-track file, create a new recorder.

To add a new recorder:

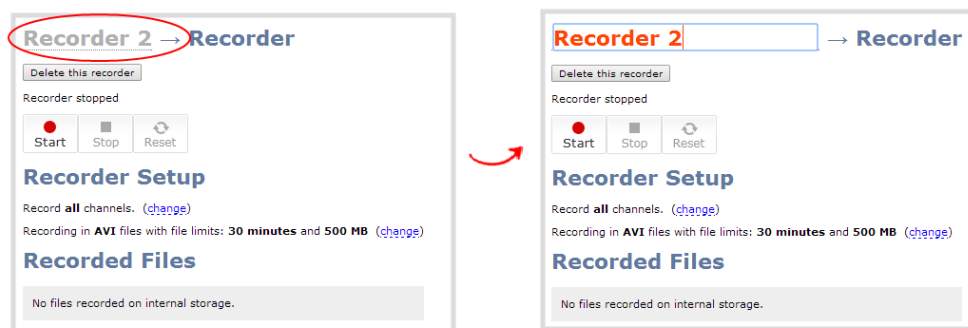
1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Click the **Add recorder** link from the Recorders section; a new recorder is created and the recorder configuration page opens. By default this recorder uses the next available number and records all channels.



## Rename a recorder

To rename a recorder:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the desired recorder link from the Recorders section; the recorder configuration page opens.
4. Click the recorder name to make it editable.



5. Highlight the old name and press backspace or delete to delete it.
6. Type the new name for the channel.
7. Press Enter to save the change; the new name is reflected in the web interface.



You must press Enter to save the recorder name change.



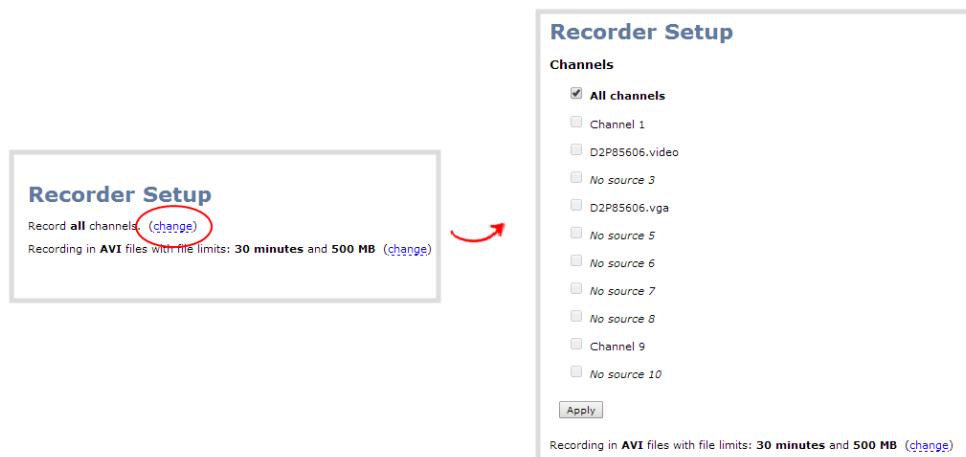
## Change the channels recorded by a recorder

By default when you create a new recorder, it records all the channels configured on the system. If new channels are added, they are automatically added to the recorder.

If you wish to record a subset of channels to a single multi-track file, you can edit the channels recorded by a recorder.

To change the channels recorded by a recorder:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the desired recorder link from the Recorders section; the recorder configuration page opens.
4. Click **change** next to the list of what is currently being recorded.

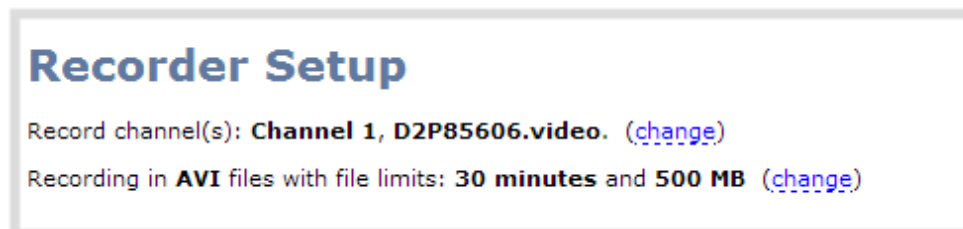


5. If the all channels box is selected, click it to deselect it; the other check boxes are enabled.
6. Click the check boxes for the desired channels.



Channels with no active video source are displayed in italics. You can include these channels in your channel selections for the recorder.

7. Click Apply; the changes are reflected in the recorder configuration page.





## Delete a recorder

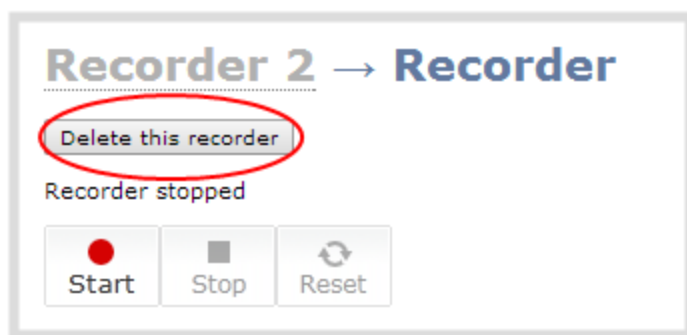
When you no longer need a recorder, you can delete it.



Deleting a recorder deletes all the recorded files for the recorder. Be sure you have a copy of any important recorded files.

To delete a recorder:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the desired recorder link from the Recorders section; the recorder configuration page opens.



4. Click the **Delete this recorder** button at the top of the page; a confirmation dialog reminds you that deleting the recorder will delete all recorded files.
5. Click **OK** on the confirmation dialog; the recorder is removed from the list and all its related files are deleted from the system.



## 5-2 Create Recordings

Your VGADVI Recorder Pro can record the output from each channel. (See [Recorders](#) for information on creating multi-track recorders using multiple channels.) Recordings are very robust and crafted so that even in the case of accidental system shutdown, recording files are closed off and playable.

This section describes the following topics for creating and configuring recordings via the web interface.

- [Record a channel via the web interface](#)
- [Record with a recorder via the web interface](#)
- [Configure the type and length of recording files](#)
- [Close the current recording file while recording](#)
- [Control recording with a mouse](#)
- [Control recording with the big red button](#)

See [Control with HTTP Commands](#) and [Control with RS-232 / Serial Port](#) for information on controlling recordings with third party tools. See [File Maintenance](#) to learn how to download the recorded files.



Recording can also be controlled via the tablet interface. See **Control recording via the tablet interface**.

### Recording basics

While recording a channel or recorder, a new file is created each time the maximum time or size limit is met. Additionally, when recording a multi-channel recorder or a multi-source layout channel, a new file is created if an additional source is added to the recorder.

Physically removing the source (e.g. unplugging it) or otherwise interrupting the signal to the source does not affect recording, and the recording will include the configured No Signal image. Recording is stopped if the channel, or all channels in a recorder, are made inactive by changing the channel configuration to "no source" via the admin interface.

Each channel that has a source present uses some CPU power to encode the stream. You can avoid CPU overload by setting up channels you intend to use but setting the source to "No Source" in the admin interface. When you are ready to use the channel again, simply set the source and all your other configuration is already set. This doesn't apply for multi-source layout channels which always need at least one source to keep their configuration settings.

You can choose to create AVI, MP4, MOV or MPEG-TS recordings. See [Configure the type and length of recording files](#) to learn how to change the recorded file type.



The MOV file type created by VGADVI Recorder Pro requires a relatively newer player for playback. Epiphan has tested with the following players.

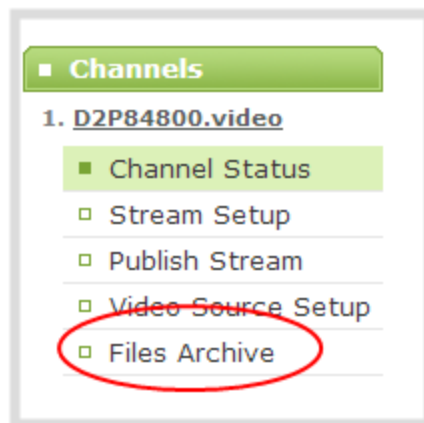
Operating System	Tested Players
Mac OS	<ul style="list-style-type: none"><li>• QuickTime 10.3 (for 1080p streams)</li><li>• QuickTime 10.3 (for streams less than 1080p)</li><li>• VLC 1.0.0+ (for all streams)</li></ul>
Windows	<ul style="list-style-type: none"><li>• QuickTime 7.6.6+</li><li>• VLC 2.1.5+</li><li>• Windows Media player 12+ (except MOV files)</li></ul>
Linux	<ul style="list-style-type: none"><li>• MPlayer</li><li>• VLC 2.0.8+</li></ul>
Android	<ul style="list-style-type: none"><li>• DICE 2.0.21</li><li>• VLC 0.9.9+ (works only with MOV files that have no audio)</li></ul>
HTML 5 Browsers (Windows)	<ul style="list-style-type: none"><li>• Google Chrome 37+ (works with MOV and MP4 files using H.264 codec)</li></ul>

## Record a channel via the web interface

Each channel has a configuration page that allows you to start, stop and configure recordings.

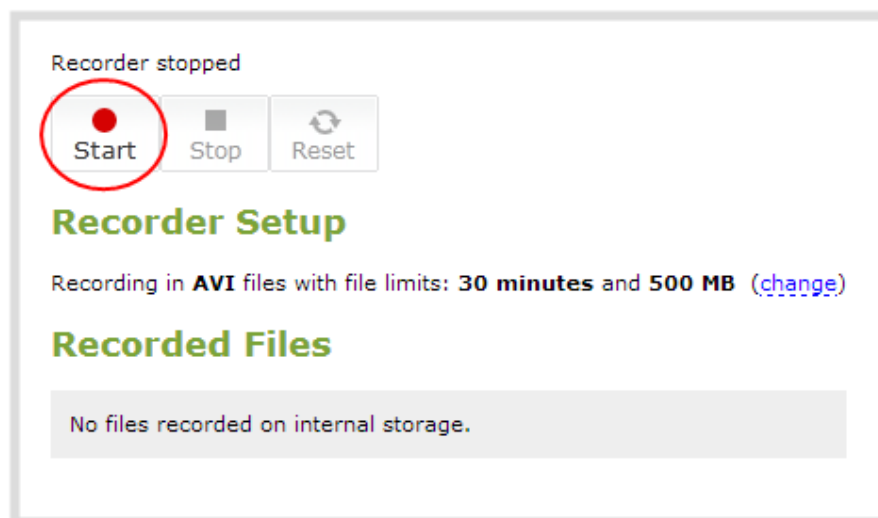
To start and stop channel recording:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin or operator.
3. Click the name of the desired channel; the channel menu expands.



4. Click the **Recording** link for the channel; the Recording page appears.

5. To Start Recording:



a. Click the **Start** button; the recording starts and a timer indicates how long it has been recording.



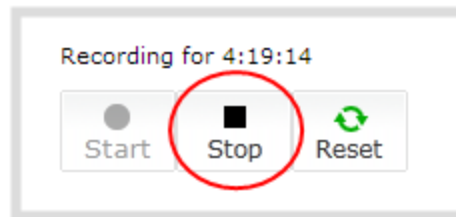
If the start button is not active, there are no active sources for this channel or recorder. Check your inputs to ensure signals are working as expected.

b. You may browse away from the page without affecting the recording. When the page refreshes, the channel number is displayed in red to indicate recording is underway.



- c. The system continues to record this channel (and any concurrent recordings) until it is stopped. If the system runs out of storage space, the oldest recorded file is deleted to make room for the new recording. The recording is broken into multiple files as defined by the channel configuration. See [Configure the type and length of recording files](#).

6. To Stop Recording:



- a. Click the **Stop** button on the given channel's Recording page. The channel number changes to black next time the web interface is refreshed (by clicking a link or refreshing the page).

## Record with a recorder via the web interface

Recorders are stopped and started via their configuration page. Multiple recorders and channel recordings can occur concurrently.

A new recording file is generated each time a configured source in the recorder comes online. For example if the recorder has two configured sources but when the recording starts and only one source is active, it will start a single-track recording. When a second source starts sending signal, the first recording file is closed and a new multi-track file is opened. If a source that is being recorded becomes inactive, the recorder continues to record the source with the no signal image.

The number of active sources is displayed above the recording stop/start buttons during recording.

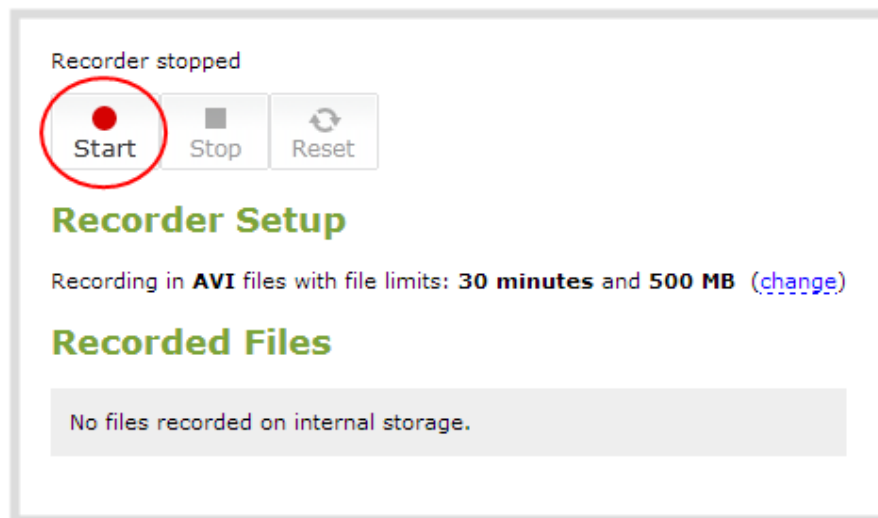
To start and stop recorder:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).

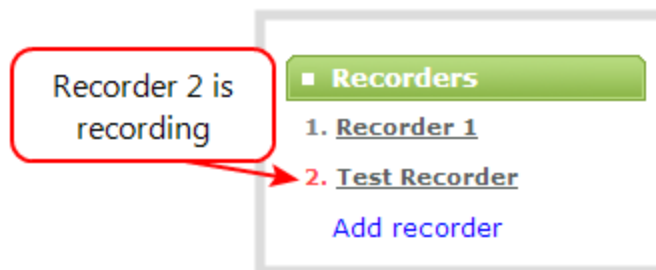




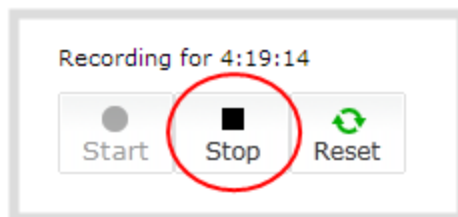
2. Login as admin or operator.
3. Click the name of the desired recorder; the recorder configuration page appears.
4. To Start Recording:



- a. Click the **Start** button; the recording starts and a timer indicates how long it has been recording.
- b. You may browse away from the page without affecting the recording. When the page refreshes, the recorder number is displayed in red to indicate recording is underway.



- c. The system continues to record this recorder (and any concurrent recordings) until it is stopped. If the system runs out of storage space, the oldest recorded file is deleted to make room for the new recording. The recording is broken into multiple files as defined by the recorder configuration. See [Configure the type and length of recording files](#).
5. To Stop Recording:



- a. Click the **Stop** button on the given recorder's configuration page. The recorder number changes to black next time the web interface is refreshed (by clicking a link or refreshing the page).

## Configure the type and length of recording files

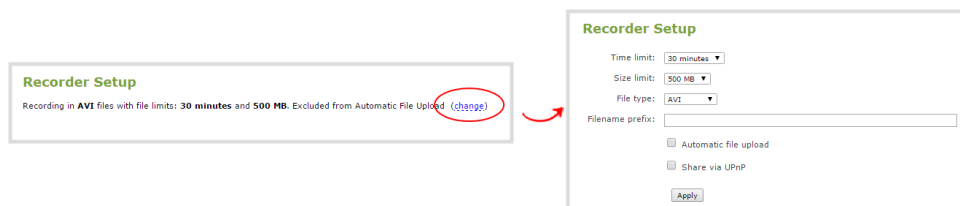
By default, recorders and channels record to AVI files. When the recording reaches 30 minutes in length or a file size of 500 MB (whichever occurs first), the system closes the current recording file and opens a new one. This is done seamlessly with no loss in recorded data.

You may find it useful to have recordings divided this way for ease of download, but you may also want to change the recording limits to be larger or smaller to meet your individual situation.

Additionally you can configure the prefix for all recordings (the suffix is the date and time of the recording) and you can exclude a channel or recorder's recordings from automatic upload.

To change the recording configuration:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. For a channel recording:
  - a. Click the desired channel; the channel menu expands.
  - b. Click the **Recording** link for the channel; the Recording page opens.
4. For a recorder:
  - a. Click the desired recorder link from the Recorders section; the recorder configuration page opens.
5. Click the **change** link under Recorder Setup; the recorder setup section expands. (The setup page looks slightly different for Recorders, but the options are the same.)





6. Select a time limit for the recording from the **Time limit** drop down.
7. Select a file size limit from the **Size limit** drop down.



Tip: If you don't know what size to select, do some test recordings to get an idea of the file sizes you can expect. If you want to guarantee the recording lasts to a given time limit, select a file size that is far larger than you saw in your tests.

8. Select a file type from the **File type** drop down.
9. If desired, enter a prefix for the recordings. All new recording files for this channel or recorder will be prefixed with the text you enter.



Tip: It's best to avoid spaces in file names. Use underscores or hyphens to separate words.


10. If desired, click the check box to exclude this channel or recorder from automatic file uploads. (See [File and recording transfer](#) for information on automatic uploads.)
11. Click **Apply**; the changes are saved and the recorder setup displays the new configuration.

#### Recorder Setup

Recording in **MOV** files with file limits: **45 minutes** and **100 MB**. Filename prefix is **recording-from-room-a** ([change](#))

The table below describes the options available for recording file configuration.

**Table 19** Recording File Configuration Fields

Label	Description / Options
Time limit	Specifies the length of time the system waits before the recording file is saved and a new one is started (assuming the size limit has not yet been reached). Values range from 5 minutes to six hours.
Size limit	Specifies the file size a recording can become before it is saved and a new one is started (assuming the time limit has not yet been reached). Values range from 50 MB to 64 GB.
File type	Specifies the recording file type. Select from AVI, MP4, MPEG-TS, or MOV. Choose MPEG-TS for UPnP playback. <div>  <p>Notes: MP4 and MOV are fragmented formats with fixed 10 s intervals. MPEG-TS does not support PCM audio encoding.</p> </div>



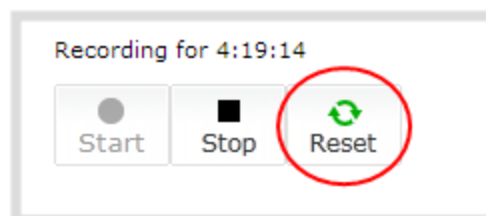
Label	Description / Options
Filename prefix	Specifies how the recordings are named. Recording files start with the given prefix followed by the date and time. The channel or recorder name is used if no prefix is given. Allowed characters: A-Z, a-z, 0-9, _, , #, -, [], ().
Automatic file upload	Select this if you want this channel or recorder to be part of any scheduled automatic uploads. (See <a href="#">File and recording transfer</a> for information on automatic uploads.)
Share via UPnP	Select this if you want this channel or recorder to be available via UPnP. If global UPnP is not enabled when you select this checkbox, a link appears to let you to fix it. Click the link and click <b>Apply</b> to make the global UPnP change save your recording configuration changes.

## Close the current recording file while recording

Recording files are automatically saved and new ones opened for writing when they reach the configured time or size limit, when the channel or recorder name is changed, or when changes are made to the stream. You cannot download files from the system while they are being recorded, so from time to time you may need to close the current recording to facilitate file downloads. The system supports this through the recording reset option, which closes the current recording file and opens a new one without missing any frames.

To close the current recording and start a new file:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. For a channel recording:
  - a. Click the desired channel; the channel menu expands.
  - b. Click the **Recording** link for the channel; the Recording page opens.
4. For a recorder:
  - a. Click the desired recorder link from the Recorders section; the recorder configuration page opens.





5. Click the **Reset** button next to the stop button; the current file is stopped and a new one begins.
6. Refresh the page to see the new recorded files list.

## Control recording with a mouse

---

You can physically control recording start/stop by connecting a USB mouse to your VGADVI Recorder Pro.

To control recordings with a mouse:

1. Power on the system.
2. Connect a USB mouse to a USB port on the system.
3. Click the left mouse button once to start recording; recording starts (on all channels and recorders). If desired, check the web interface to see that recording is started.
4. Click the left mouse button again to stop recording. If desired, check the web interface to see that recording is stopped. See [View the List of Stored Files](#)

## Control recording with the big red button

---

Your product came packaged with a red button you can use to control recordings. You can connect this to the VGADVI Recorder Pro and have a simple way to start and stop recordings, with visual confirmation of recording.



To control recordings with the red button:

1. Power on the system.
2. Attach sources and configure the system.
3. Connect the red button to a USB port on the system.
4. Press the button once to start recording; recording starts (on all channels and recorders) and the button lights red.
5. Press the button again to stop recording; recording stops and the red button light turns off.



## 5-3 File Maintenance

The VGADVI Recorder Pro has a finite amount of storage. Though this storage space holds a lot of recordings, it will eventually run out of space if recordings are added but never removed. When this happens, the system deletes the oldest recorded files to make room for new recordings.

You can use a variety of methods to automatically transfer files from the system to local network storage. Alternatively you can manually select individual recordings to transfer or delete. This section discusses the following manual file management topics.

- [View the List of Stored Files](#)
- [Rename Stored Files](#)
- [Download Files Manually](#)
- [Delete Files Manually](#)
- [Pick Specific Tracks from a Multi-track Recorder File](#)

For information on automatic file transfers, see [File and recording transfer](#).

### View the List of Stored Files

Recordings for VGADVI Recorder Pro are stored for each channel and each recorder separately. To view all the recordings stored, follow the procedures below for all channels and all recorders you have configured.

To view the recordings for a channels or recorders:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin or operator.
3. To view files recorded for a channel:
  - a. Select a channel from the Channels section; the channel menu expands.
  - b. Select the **Recording** link for your channel; the Recording page appears.
4. To view files recoded for a recorder:
  - a. Select the recorder from the Recorders section; the recorder page appears.
5. If there are no files:
  - a. A message indicates there are no recorded files (for this channel).



### Recorded Files

No files recorded on internal storage.

6. Otherwise:

- a. All files for this channel are listed, sorted by date.

Files that are part of the same recording session are listed one after another. Three dots appear between files of different recording sessions. The file currently being recorded (if applicable) is shown at the top of the list. It cannot be modified or downloaded until it has finished recording.

The screenshot shows the 'Recorded Files' interface. At the top, a message states 'No files recorded on internal storage.' Below this is a table titled 'Internal Storage' with columns: File Name, Start, End, Duration, and File Size. The table lists several files, with the first one highlighted in green and labeled 'File currently being recorded.' by a red arrow. The first file is 'All-Channel-Recorder\_Feb14\_14-19-12.avi' with a duration of 3 seconds and a size of 0.74 MB. Below it are several other files, with a red arrow pointing to a group of files labeled 'Files from the same recording.' by a red box. The files are sorted by date, with the most recent at the top. The interface also includes a 'Download Selected' button and a 'Delete All' button.

File Name	Start	End	Duration	File Size
All-Channel-Recorder_Feb14_14-19-12.avi	14:19:12	14:19:15	3 seconds	0.74 MB
...	...	...	...	...
All-Channel-Recorder_Feb14_14-11-06.avi	14:11:06			
...	...	...	...	...
All-Channel-Recorder_Feb14_13-43-28.avi	13:43:28	13:43:39	11 seconds	2.30 MB
...	...	...	...	...
All-Channel-Recorder_Feb14_11-31-50.avi	11:31:50	11:31:59	9 seconds	0.66 MB
All-Channel-Recorder_Feb14_11-31-36.avi	11:31:36	11:31:50	14 seconds	2.66 MB
...	...	...	...	...
All-Channel-Recorder_Feb14_11-31-08.avi	11:31:08	11:31:14	6 seconds	1.88 MB

## Rename Stored Files

Recording files are named based on the filename prefix specified during configuration. See [Configure the type and length of recording files](#) for more details about setting prefixes.

To rename recordings:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Find the recordings by channel or by recorder. See [View the List of Stored Files](#).
4. Select the pencil and paper icon next to the filename you wish to change.



Channel\_1\_Feb12\_15-11-20.avi



5. Type the new file name and press enter when finished.



The web interface keeps track of the filename extension (i.e. .avi) so you do not need to include it when renaming the file.

## Download Files Manually

Recordings can be manually downloaded from the web interface. You should consider deleting them from internal storage after you complete the download. See [Delete Files Manually](#), below.

This procedure explains how to download files to your admin computer. See [File and recording transfer](#) for information on transferring files to a USB drive connected to the system.

To download recordings to your admin computer:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin or operator.
3. Find the recordings by channel or by recorder. See [View the List of Stored Files](#).

**Recorded Files**

Internal Storage					
	File Name	Start	End	Duration	File Size
Feb 14	All-Channel-Recorder_Feb14_14-19-12.avi	14:19:12	14:19:15	3 seconds	0.74 MB
	<input type="checkbox"/> All-Channel-Recorder_Feb14_14-19-12.avi			3 seconds	8.98 MB
	<input type="checkbox"/> All-Channel-Recorder_Feb14_13-43-28.avi	13:43:28	13:43:39	11 seconds	2.30 MB
	<input type="checkbox"/> All-Channel-Recorder_Feb14_11-31-50.avi	11:31:50	11:31:59	9 seconds	0.66 MB
	<input type="checkbox"/> All-Channel-Recorder_Feb14_11-31-36.avi	11:31:36	11:31:50	14 seconds	2.66 MB
	<input type="checkbox"/> All-Channel-Recorder_Feb14_11-31-14.avi	11:31:14	11:31:20	6 seconds	1.88 MB

To download one file, click the file name.

To download several files, select them and click "Download Selected".

Download Selected    Delete Selected    Delete All

4. To download an individual file:
  - a. Click the name of a recording file to download it.





5. To download multiple files:

- Select the check box next to the recordings you wish to download from this channel or recorder.
- Click **Download Selected** to download a zip file containing the selected recordings.

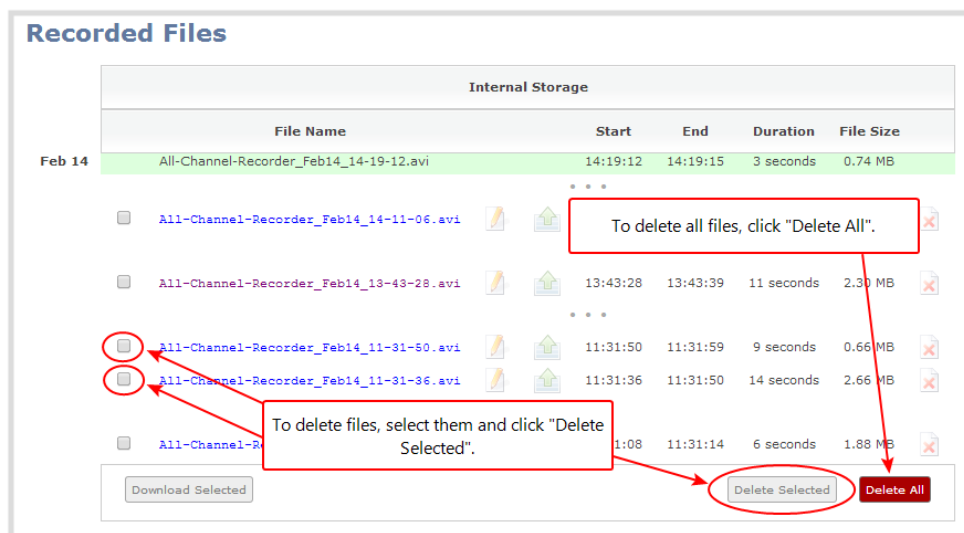
## Delete Files Manually

Recordings can be manually deleted via the web interface. You can delete one file at a time, select multiple files for a given recorder or channel and delete those, or you can delete all recordings for a channel or recorder.

If you want to delete all the files on the system, follow this procedure for each channel and recorder listed in the web interface.

To delete recordings:

- Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
- Login as admin or operator.
- Find the recordings by channel or by recorder. See [View the List of Stored Files](#).



4. To delete an individual file:

- Click the X icon to the right of a file entry to request deletion; a confirmation dialog appears.
- Click OK on the confirmation dialog.

5. To delete multiple files for the current channel or recorder:

- Select the check box next to the recordings you wish to delete from this channel or recorder.
- Click **Delete Selected**; a confirmation dialog appears.



- c. Click **OK** on the confirmation dialog.



The list may not update immediately. You can refresh the list by reloading the Recording page (for channels) or the recorder settings page (for recorders).

6. To delete all files for the current channel or recorder:
  - a. Click **Delete All**; a confirmation dialog appears.
  - b. Click **OK** on the confirmation dialog.



The list may not update immediately. You can refresh the list by reloading the Recording page (for channels) or the recorder settings page (for recorders).

## Pick Specific Tracks from a Multi-track Recorder File

Recorders combine multiple channels and audio sources together in a single multi-track file. If desired, you can create a copy of a recording with only select tracks. This feature is supported for .AVI, .MP4 and .MOV recordings only.



Specific track versions of recorded files are not included in any automatic file transfers. See **Download Files Manually**

To create a duplicate recording file with only select tracks:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin or operator.
3. Select the recorder from the Recorders section; the recorder page appears.
4. Find the file you want to duplicate and click the up arrow icon next to it; a list of tracks appears.



**Recorded Files**

Internal Storage					
	File Name	Start	End	Duration	File Size
Feb 14	All-Channel-Recorder_Feb14_14-19-12.avi	14:19:12	14:31:14	12m 2s	135.90 MB
	...				
	All-Channel-Recorder_Feb14_14-11-06.avi	14:11:06	14:11:55	49 seconds	8.98 MB
	...				
	All-Channel-Recorder_Feb14_13-43-28.avi	13:43:28	13:43:39	11 seconds	2.30 MB
	...				
	All-Channel-Recorder_Feb14_11-31-50.avi	11:31:59	11:31:59	9 seconds	0.66 MB
	All-Channel-Recorder_Feb14_11-31-36.avi	11:31:50	11:31:50	14 seconds	2.66 MB
	...				
	All-Channel-Recorder_Feb14_11-31-08.avi	11:31:14	11:31:14	6 seconds	1.88 MB

Download Selected

Extract tracks

Cancel

Delete Selected

Delete All

1: Channel 1:video  
2: D2P85606.video:video  
3: D2P85606.vga:video  
4: Channel 9:audio  
5: Channel 9:video

5. Select the track(s) you want to extract.



Tip: To deselect all tracks, click the check box for the top track, then hold SHIFT and click the check box for the bottom track.

6. Click **Extract tracks**; a duplicate of the recording is made with only the selected tracks.

**Recorded Files**

Internal Storage					
	File Name	Start	End	Duration	File Size
Feb 14	All-Channel-Recorder_Feb14_15-19-14.avi	15:19:14	15:34:33	15m 19s	170.93 MB
	All-Channel-Recorder_Feb14_14-49-14.avi	14:49:14	15:19:14	30m 0s	338.78 MB
	All-Channel-Recorder_Feb14_14-19-12.avi	14:19:12	14:49:14	30m 2s	337.45 MB
	...				
	All-Channel-Recorder_Feb14_14-11-06.avi	14:11:06	14:11:55	49 seconds	8.98 MB
	...				
	All-Channel-Recorder_Feb14_13-43-28.avi	13:43:28	13:43:39	11 seconds	2.30 MB
	All-Channel-Recorder_Feb14_13-43-28.avi				0.37 MB
	...				
	All-Channel-Recorder_Feb14_11-31-50.avi	11:31:50	11:31:59	9 seconds	0.66 MB
	All-Channel-Recorder_Feb14_11-31-36.avi	11:31:36	11:31:50	14 seconds	2.66 MB
	...				
	All-Channel-Recorder_Feb14_11-31-08.avi	11:31:08	11:31:14	6 seconds	1.88 MB

Download Selected

Delete Selected

Delete All

Duplicate Track



Only one duplicate recording is saved per recording file. If you create a second duplicate recording, it will overwrite the previous copy.



## 5-4 File and recording transfer

Your VGADVI Recorder Pro can be configured to automatically upload recordings from local storage to a network storage location or an attached USB drive.

This section discusses the following generic automatic upload topics:

- [Automatic file upload \(AFU\) overview](#)
- [Configure the files included in AFU \(part 1 of 3\)](#)
- [Enable and configure the frequency of AFU \(part 2 of 3\)](#)

And the following specific configurations based on the location of upload:

- [Configure AFU to an FTP server \(part 2 of 3\)](#)
- [Configure AFU using RSync \(part 2 of 3\)](#)
- [Configure AFU using CIFS \(part 2 of 3\)](#)
- [Configure AFU to a secure FTP server \(part 2 of 3\)](#)
- [Configure AFU using SCP \(part 2 of 3\)](#)
- [Upload to an external USB drive](#)
  - Automatically (part 2 of 2)
  - As a one-time copy
  - Manually

Lastly, this section describes how to view file upload logs:

- [View the file upload log](#)

### Automatic file upload (AFU) overview

VGADVI Recorder Pro can automatically upload files to an accessible off-system storage location.

The following types of off-system storage are supported: **FTP**, **CIFS**, **RSync**, **SFTP**, **SCP** and **USB Drive**.



Only **one** type of AFU can be used at once.

Files are uploaded once (i.e. are automatically not re-uploaded during future sessions) and a log is kept showing the file transfers (see below for details on viewing the log). The first transfer occurs after the configured amount of time expires, or after the current file completes recording. If connection is lost during the transfer, the transfer is automatically restarted when the connection is reestablished.



By default, channels and recorders are not configured to support automatic file upload for their recorded files. You must enable this feature for each channel or recorder you wish to include in your automatic file transfers.

If recorded files are selected for upload while the AFU is at maximum upload capacity or when the AFU is unavailable, they are added to an upload queue. Files and their relevant information are displayed in a list format, and each file will be uploaded when upload capacity becomes available.

## Configure the files included in AFU (part 1 of 3)

When configuring automatic file upload (AFU) you need to tell the system which channels and recorders you want to be included in the upload schedule.

When you log into the system and attempt to configure your desired type of AFU you see the following warning in the Automatic File Upload configuration page if no channels or recorders are configured to be part of AFU.

**Automatic File Upload**

Automatic file upload is not currently configured for any channel or recorder.

☒ Enable Automatic File Upload

Protocol: External USB drive ▼

How often: every 6 hours ▼

Remote path:

☐ Remove after upload

☐ Mark file as downloaded

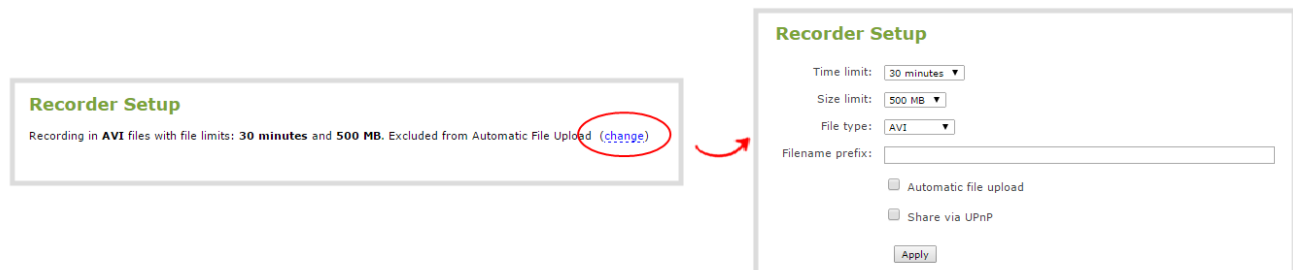
[Show log of automatic file upload](#)

For each channel or recorder you want to add to your AFU schedule:

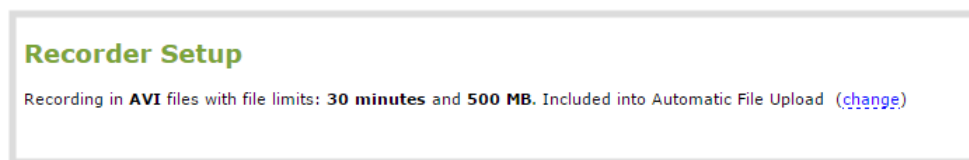
1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.



3. For a channel recording:
  - a. Click the desired channel; the channel menu expands.
  - b. Select the **Recording** link for the channel; the Recording page opens.
4. For a recorder:
  - a. Click the desired recorder link from the Recorders section; the recorder configuration page opens.
5. Select the **change** link under Recorder Setup; the recorder setup section expands. (The setup page looks slightly different for Recorders, but the options are the same.)



6. Check the **Automatic file upload** check box.
7. Click Apply; the Recording page is refreshed and the new settings are reflected.



## Enable and configure the frequency of AFU (part 2 of 3)

After configuring the channels and recorders to include in your AFU schedule, you must enable AFU and configure the frequency of transfers.



Files saved before you complete automatic file upload configuration are not part of the automatic upload. Manual file transfer is required for these files. See [File Maintenance](#).

To enable and configure frequency automatic uploads:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.



3. Select **Automatic File Upload** from the Configuration section; the Automatic File Upload configuration page opens.

**Automatic File Upload**

Enabled for: HDMI-A

☒ Enable Automatic File Upload

Protocol: External USB drive ▼

How often: every 6 hours ▼

Remote path:

☐ Remove after upload

☐ Mark file as downloaded

[Show log of automatic file upload](#)



If your screen does not indicate that AFU is enabled for at least one channel or recorder, return to **Configure the files included in AFU (part 1 of 3)**

4. Select the **Enable Automatic File Upload** checkbox.
5. Specify how often automatic updates should happen.

The first transfer occurs after the specified amount of time expires, or after the current file completes recording. I.e. if the value is set to every hour and five videos are saved the first hour, those five videos are uploaded after the first hour, and one hour later the videos saved in the second hour are uploaded.

The following table describes the available options.

**Table 20** Automatic File Upload Interval Options

Name	Description
On file rotation	The system uploads each file after it stops recording it. You can control file size and length to determine when files are done recording. You can also use the reset button to close the current file and open a new one. See <a href="#">Create Recordings</a> .
Every hour	The system uploads completed recordings every hour.



Name	Description
Every 6 hours	The system uploads completed recordings every six hours.
Every 12 hours	The system uploads completed recordings every 12 hours.
Every 24 hours	The system uploads completed recordings every 24 hours.

6. Indicate the remote path, if desired. If no path is specified, the files are copied to the root folder of the destination file system.



If the remote path does not exist on the remote server or USB drive, the file transfer fails.

7. If desired, check **Remove after upload** to have the files deleted from local storage when upload completes.
8. If desired, check **Mark file as downloaded** to have the color of the file link in the recording list change to show the files are downloaded. This only applies if the files are not deleted after upload is complete.
9. Select the protocol or destination for upload. The following table describes the options.

**Table 21** Automatic File Upload Interval Options

Name	Description
FTP Client	The system uploads to an FTP server.
RSync Client	The system uploads to a network location using RSync to copy the file.
CIFS Client	The system uploads to a network location using CIFS (also known as SMB or samba) such as a shared folder on a Windows machine.
SFTP Client	The system uploads to a secure FTP server. Authentication is done either by password or uploaded SSH key.
SCP Client	The system performs secure copy (SCP) to a remote server. Authentication is done either by password or uploaded SSH key.
External USB Drive	The system uploads to a USB drive connected directly to the system.

10. Follow one of the procedures below to configure your selected protocol or transfer type.
- [Configure AFU to an FTP server \(part 2 of 3\)](#)
  - [Configure AFU using RSync \(part 2 of 3\)](#)
  - [Configure AFU using CIFS \(part 2 of 3\)](#)
  - [Configure AFU to a secure FTP server \(part 2 of 3\)](#)





- [Configure AFU using SCP \(part 2 of 3\)](#)
- [Upload to an external USB drive](#)

## Configure AFU to an FTP server (part 2 of 3)

This procedure assumes you have completed the steps in [Enable and configure the frequency of AFU \(part 2 of 3\)](#) and wish to continue with configuration of upload to an FTP Server.

To configure upload to an FTP server:

1. Select **FTP Client** from the protocol drop down list in the Automatic File Upload configuration page; the lower half of the page reflects the selection.

The screenshot shows a window titled "FTP Upload". It contains four text input fields labeled "Server address:", "Server port:", "Login:", and "Password:". Below these fields is a checkbox labeled "Use temp file". At the bottom of the window is an "Apply" button.

2. Specify the target **Server address**. If your system is configured with DHCP or has a valid DNS configuration (see [Configure Network Settings](#)), you can use the server's fully qualified domain name instead of the IP address.
3. Specify the **Server Port** used for the target FTP server. The standard port is 21.
4. Enter the FTP account username in the **Login** field.
5. Enter the FTP account password in the **Password** field; the characters are masked with dots.
6. Select **Use temp file** to name files with a temporary filename extension (.part) on the server until upload is complete.
7. Click **Apply**; if there are any problems the system notifies you with a message: One or more parameter values are not valid and those were not applied!

The following table describes the options applicable to configuring upload to an FTP server.

**Table 22** FTP Automatic Upload Configuration Options

Name	Description / Options
Server address	The IP address (or fully qualified domain name) of the FTP server.
Server port	The port used by the target FTP server. Standard port is 21.
Login	Username for the FTP server.
Password	Password for the FTP user.
Use temp file	Causes files to be named with .part extension on the server during active upload. When the upload completes, the file is renamed to the appropriate extension (.mov, .mp4 or .avi).

## Configure AFU using RSync (part 2 of 3)

This procedure assumes you have completed the steps in [Enable and configure the frequency of AFU \(part 2 of 3\)](#) and wish to continue with configuration of upload using RSync.

To configure upload using RSync:

1. Select **RSync Client** from the protocol drop down list in the Automatic File Upload configuration page; the lower half of the page reflects the selection.

The screenshot shows a configuration window titled "RSync". It contains four text input fields: "Server address:", "Server module:", "Login:", and "Password:". Below these fields is a checkbox labeled "Checksum". At the bottom of the form is an "Apply" button.

2. Specify the target **Server address**. If your system is configured with DHCP or has a valid DNS configuration (see [Configure Network Settings](#)), you can use the server's fully qualified domain name instead of the IP address.
3. Specify the **Server module**. This is the name of the shared folder on the server. If needed, request this value from your network administrator.



4. Specify a username for the RSync Server in the **Login** field. The user must have write permissions for the module.
5. Specify the password for the user in the **Password** field; the value is masked by dots.
6. If desired, select the **Checksum** check box to add a checksum validation to the transfer between the system and the recipient server.
7. Click **Apply**; if there are any problems the system notifies you with a message: One or more parameter values are not valid and those were not applied!

The following table describes the options applicable to configuring upload to an RSync server.

**Table 23** RSync Automatic File Upload Configuration Options

Name	Description / Options
Server address	The IP address (or fully qualified domain name) of the RSync server.
Server module	The name of the shared folder on the RSync server.
Login	Username for the RSync server.
Password	Password for the RSync user.
Checksum	Select to enable checksum checking during file transfer. This increases the time taken to transfer, but also increases reliability of the transfer.

## Configure AFU using CIFS (part 2 of 3)

This procedure assumes you have completed the steps in [Enable and configure the frequency of AFU \(part 2 of 3\)](#) and wish to continue with configuration of upload using CIFS (also known as SMB or samba).

To configure upload using CIFS:

1. Select **CIFS Client** from the protocol drop down list in the Automatic File Upload configuration page; the lower half of the page reflects the selection.



**CIFS Upload**

Server port:

Server address:

Server share:

Domain:

Login:

Password:

☐ Use temp file

**Apply**

2. Specify the target **Server address**. If your system is configured with DHCP or has a valid DNS configuration (see [Configure Network Settings](#)), you can use the server's fully qualified domain name instead of the IP address.
3. Enter the target **Server port**, if you have configured the server to use something non-standard. Leave this value blank to use the default port.
4. Specify the **Server share**. This is the CIFS share name or the name of the shared folder on the server. If needed, request this value from the network administrator.
5. If the system is in a different domain than the server or if it is part of Active Directory, enter the **Domain name** of the CIFS server.
6. Specify a username for the CIFS Server in the **Login** field. The user must have write permissions for the share folder.
7. Specify the password for the user in the **Password** field; the value is masked by dots.
8. Select **Use temp file** to name files with a temporary filename extension (.part) on the server until upload is complete.
9. Click **Apply**; if there are any problems the system notifies you with a message: One or more parameter values are not valid and those were not applied!

The following table describes the options applicable to configuring upload to a CIFS server.

**Table 24** CIFS Automatic File Upload Configuration Options

Name	Description / Options
Server Port	The CIFS server port. Leave blank to use the default port, or enter the port used for your CIFS server.
Server address	The IP address (or fully qualified domain name) of the CIFS server.



Name	Description / Options
Server share	The name of the shared folder on the CIFS server.
Domain	The CIFS server's Windows domain or Work Group name . Needed if the server is part of Active Directory or a Domain Controller.
Login	Username for the CIFS server.
Password	Password for the CIFS user.
Use temp file	Causes files to be named with .part extension on the server during active upload. When the upload completes, the file is renamed to the appropriate extension (.mov, .mp4, .ts or .avi).

## Configure AFU to a **secure** FTP server (part 2 of 3)

This procedure assumes you have completed the steps in [Enable and configure the frequency of AFU \(part 2 of 3\)](#) and wish to continue with configuration of upload to a secure FTP Server (SFTP).

To configure upload to a secure FTP (SFTP) server:

1. Select **SFTP Client** from the protocol drop down list in the Automatic File Upload configuration page; the lower half of the page reflects the selection.

**SFTP Upload**

Server address:

Server port:

Login:

Password:

☐ Use temp file

2. Specify the target **Server address**. If your system is configured with DHCP or has a valid DNS configuration (see [Configure Network Settings](#)), you can use the server's fully qualified domain name instead of the IP address.
3. Specify the **Server Port** used for the target SFTP server. The standard port is 22.
4. Enter the SFTP account username in the **Login** field.



5. Enter the SFTP account password in the **Password** field; the characters are masked with dots. (Alternatively you can choose to use a private key instead of a password for authentication.)
6. Select **Use temp file** to name files with a temporary filename extension (.part) on the server until upload is complete.



For secure file transfer you can upload an SSH identity for your VGADVI Recorder Pro. This key must be trusted by the destination server. Details for generating the key and setting up this trust are beyond the scope of this document.

7. If desired, scroll down to the section labelled **SSH identity for SCP and SFTP clients**.
  1. If no identity is uploaded, or to upload a new identity (overwrites the old identity):
    - a. Click **Choose File**; a file selection dialog opens.
    - b. Select the private key file from your hard drive and click **Open**.



The system accepts RSA keys for SSH-1; DSA, ECDSA, EC25519 and RSA for SSH-2. Keys must be in **OpenSSH** format.

- c. Click **Upload** to upload the file.
  2. Use the **Test your key** field to test your uploaded key against the secure server, if desired.
8. Click **Apply**; if there are any problems the system notifies you with a message: One or more parameter values are not valid and those were not applied!

The following table describes the options applicable to configuring upload to a SFTP server.

**Table 25** SFTP Automatic Upload Configuration Options

Name	Description / Options
Server address	The IP address (or fully qualified domain name) of the SFTP server.
Server port	The port used by the target SFTP server. Standard port is 22.
Login	Username for the SFTP server.
Password	Password for the SFTP user.
Use temp file	Causes files to be named with .part extension on the server during active upload. When the upload completes, the file is renamed to the appropriate extension (.mov, .mp4 or .avi).



## Configure AFU using SCP (part 2 of 3)

This procedure assumes you have completed the steps in [Enable and configure the frequency of AFU \(part 2 of 3\)](#) and wish to continue with configuration of upload via secure copy (SCP).

To configure upload via SCP:

1. Select **SCP Client** from the protocol drop down list in the Automatic File Upload configuration page; the lower half of the page reflects the selection.

The screenshot shows a form titled "SCP Upload" with four input fields: "Server address:", "Server port:", "Login:", and "Password:". Each field has a corresponding text box. Below the fields is an "Apply" button.

2. Specify the target **Server address**. If your system is configured with DHCP or has a valid DNS configuration (see [Configure Network Settings](#)), you can use the server's fully qualified domain name instead of the IP address.
3. Specify the **Server Port** used for the destination SCP server. The standard port is 22.
4. Enter the SCP account username in the **Login** field.
5. Enter the SCP account password in the **Password** field; the characters are masked with dots. (Alternatively you can choose to use a private key instead of a password for authentication.)



For secure copy you can upload an SSH identity for your VGADVI Recorder Pro. This key must be trusted by the destination server. Details for generating the key and setting up this trust are beyond the scope of this document.

6. If desired, scroll down to the section labelled **SSH identity for SCP and SFTP clients**.
  1. If no identity is uploaded, or to upload a new identity (overwrites the old identity):
    - a. Click **Choose File**; a file selection dialog opens.
    - b. Select the private key file from your hard drive and click **Open**.



The system accepts RSA keys for SSH-1; DSA, ECDSA, EC25519 and RSA for SSH-2. Keys must be in **OpenSSH** format.

- c. Click **Upload** to upload the file.
2. Use the **Test your key** field to test your uploaded key against the secure server, if desired.
7. Click **Apply**; if there are any problems the system notifies you with a message: One or more parameter values are not valid and those were not applied!

The following table describes the options applicable to configuring upload using SCP.

**Table 26** SCP Automatic Upload Configuration Options

Name	Description / Options
Server address	The IP address (or fully qualified domain name) of the destination server.
Server port	The SCP port used by the target server. Standard port is 22.
Login	Username for the SFTP server.
Password	Password for the SFTP user.

## Upload to an external USB drive

The system is equipped with USB ports that can be used to copy files from internal storage to external USB flash drives or hard drives. An example use of this feature is to provide speakers with a copy of their presentation before they leave the presentation venue.

The external drive must be formatted with one of the following file systems:

- FAT16
- FAT32
- XFS
- EXT2
- EXT3
- EXT4



Only the first attached USB drive is used for automatic file upload. If more than one USB drive is attached before system power up, behavior is unpredictable.

File transfer to a USB drive occurs in one of the following ways. This section describes the procedures.

- [AFU to a USB drive \(part 2 of 3\)](#)
- [One-time copy/move of all recorded files to USB drive](#)
- [Manually copy recorded files to USB drive](#)





- View available USB storage space
- Safely eject the USB drive



Only one copy or move to USB operation is permitted at a time, even though the UI may appear to let you start a second one. Please wait until the first is complete before starting a new operation.

## AFU to a USB drive (part 2 of 3)

This procedure assumes you have completed the steps in [Enable and configure the frequency of AFU \(part 2 of 3\)](#) and wish to continue with configuration of upload to a USB drive.

To configure automatic upload to a USB drive:

1. Insert the properly formatted USB drive into one of the system's USB ports.
2. Select **External USB Drive** from the protocol drop down list in the Automatic File Upload configuration page; the lower half of the page reflects the selection.

**External USB drive**

☐ Create a subfolder for each channel

Apply

3. If your Automatic File Upload setting conflicts with your new USB drive setting, a message is displayed.

**External USB drive**

External USB storage is: used to automatically move/copy recorded files (via Automatic File Upload) ▼

⚠ Automatic File Upload is not enabled [to fix it, click here](#)

Apply

4. Click the fix link.

**External USB drive**

External USB storage is: used to automatically move/copy recorded files (via Automatic File Upload) ▼

⚠ Automatic File Upload is not enabled — will be fixed

Apply



Using the fix link disables any other type of automatic file upload you have configured. When you are done with USB uploads, return to the **Automatic File Upload** configuration page and re-configure FTP, RSYNC, or CIFS.

5. Select **Create a subfolder for each channel** to have recordings organized by channel.
6. Click **Apply**; the changes are saved.

## One-time copy/move of all recorded files to USB drive

When configured to make a one-time copy of files, the system will automatically begin to copy files to an inserted USB drive, starting with the newest recording. Files will continue to copy until all are copied, the specified maximum number of files is copied, or the target drive runs out of storage space.



The file currently being recorded (if any) cannot be transferred until recording is completed.

This procedure is separate from automatic file upload and does not need any pre-configuration in the automatic file upload page.



Ideally only USB drives with visible activity indicators should be used.

To configure a one-time copy of all recorded files to a USB drive:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **External USB Drive** link in the Configuration section; the External USB Drive configuration page is displayed.
4. Select **used for one-time move/copy of the recorded files (upon insertion)** from the drop down list.

**External USB drive**

External USB storage is: used for one-time move/copy of the recorded files (upon insertion) ▼

Maximum number of files to transfer:

☐ create subfolder with serial number (2B97E0EB)

☐ create subfolder for each channel

☐ remove after copying

☐ mark file as downloaded

☐ ignore already downloaded files



5. Select the appropriate check boxes based on the descriptions provided in the following table. If your USB drive does not have activity indicators it is suggested you select either remove after copying or mark file as downloaded so you know when the transfer is complete.

**Table 27** One-Time Transfer/Copy to External USB Drive Options

Name	Description
create subfolder with serial number (<serial>)	If checked, the transfer process creates a sub-folder with the system's serial number on the USB drive. This is useful if you are using the same drive to collect recordings from multiple systems and want to know which system they came from.
create subfolder for each channel	If checked, the transfer process creates a sub-folder for each channel and recorder (within the subfolder for the serial number, if that option is also selected). Files are copied to their respective folders.
remove after copying	If checked, the file(s) are removed after being copied to the USB drive. Checking this box makes the transfer a move instead of a copy.
mark file as downloaded	If checked, the files that are downloaded are marked with a downloaded icon when viewing file lists. This has no effect if remove after copying is checked.
ignore already downloaded files	If checked, files that were previously downloaded or marked as downloaded are not included in subsequent downloads.

6. Click **Apply**; the changes are saved.



If a conflict is reported regarding the Automatic file upload, go to the Automatic File Upload configuration page and disable automatic file upload or switch it to a non-USB based upload type. Repeat the steps above.

7. Insert the properly formatted USB drive into one of the system's USB ports; the drive is recognized and the transfer begins. If the drive has an activity indicator light, it flashes during the transfer.
8. When the activity light stops flashing, remove the USB drive.
9. If your USB drive does not have activity indicators:
  - a. Check the **Recording** list for each channel and the **Recorded Files** list for each recorder to verify if there are files that have yet to be copied.
  - b. **Safely eject the USB drive** when you are satisfied all files have been copied, or if you see the USB drive is out of storage space (**View available USB storage space**).



## Manually copy recorded files to USB drive

You can manually copy recorder files to a USB drive connected to the VGADVI Recorder Pro.

This procedure is separate from automatic file upload and does not need any pre-configuration in the automatic file upload page.

To manually copy recorded files to a USB drive:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **External USB Drive** link in the Configuration section; the External USB Drive configuration page is displayed.
4. Select **used to manually move/copy selected files via web interface** from the drop down list.

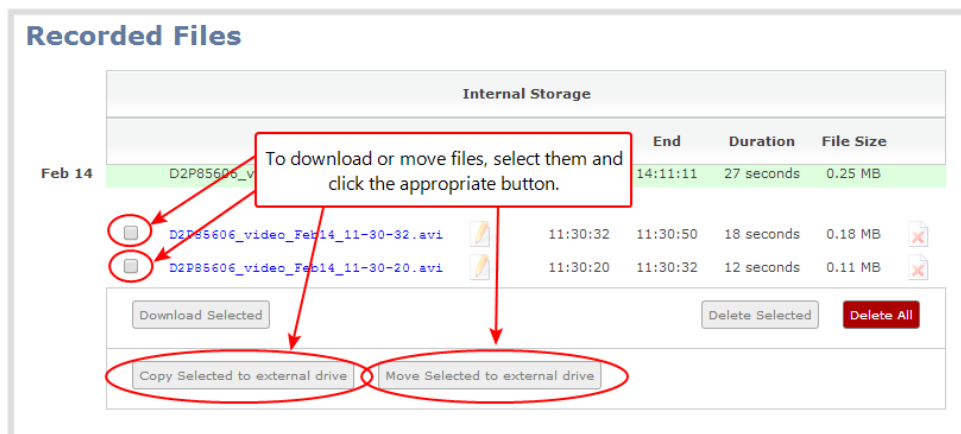


5. Click **Apply**; the changes are saved.



If a conflict is reported regarding the Automatic file upload, go to the Automatic File Upload configuration page and disable automatic file upload or switch it to a non-USB based upload type. Repeat the steps above.

6. Insert your USB drive in an available USB port on the system. (It is recommended you only use one USB drive at a time.)
7. To download files for a specific channel:
  - a. Select the desired channel from the Channels list
  - b. Click the **Files Archive** link for the selected Channel
8. To download files for a recorder:
  - a. Select the desired recorder from the Recorders list
9. Select the check box next to the files you wish to download. In the example below the topmost file is still recording and cannot be downloaded.



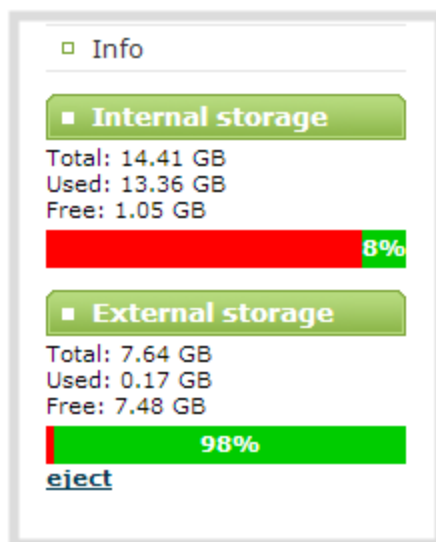
10. To copy the files to the USB drive:
  - a. Click **Copy Selected to external drive**
11. To move the files to the USB drive (i.e. erase the files after the copy)
  - a. Click **Move Selected to external drive**
12. Repeat the steps to select a channel or recorder and copy or move files to the external drive until you have copied all the files you wish.
13. Follow the steps to [Safely eject the USB drive](#).

## View available USB storage space

When you insert a USB drive in an available port of the VGADVI Recorder Pro and select an **External USB Drive** action other than **ignored** (i.e. manual copy, automatic copy, etc), the total and free space are calculated and displayed in the Web Interface.

To see the available USB storage space:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Insert your USB drive in an available USB port on the system. (It is recommended you only use one USB drive at a time.)
4. Scroll to the bottom of the Web Interface page; external USB storage is displayed under internal storage space.

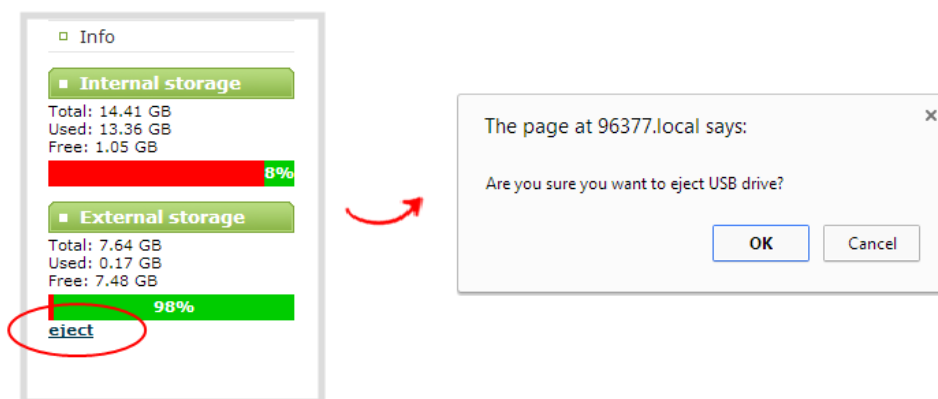


## Safely eject the USB drive

When you have completed work with the USB drive you can safely eject it by using the link at the bottom of the Web Interface page.

To safely eject the USB drive:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Scroll to the bottom of the Web Interface page; click the eject link below external storage space.



4. When prompted, click OK to confirm that you want to eject the USB drive.
5. Disconnect the USB drive from the system.

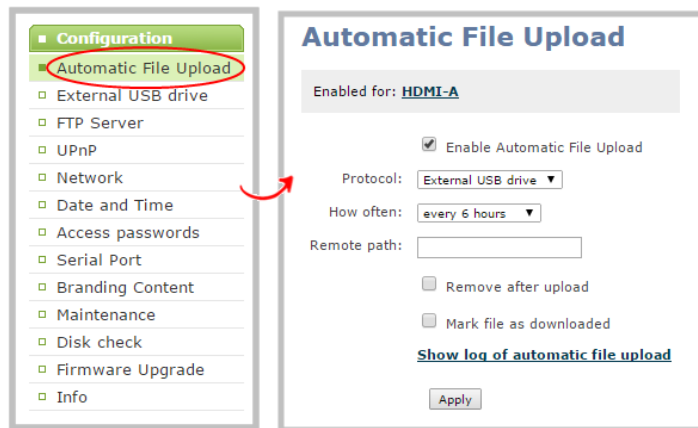


## View the file upload log

A log is kept of automatic file uploads.

To view the log:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select **Automatic File Upload** from the Configuration section; the Automatic File Upload configuration page opens.



4. Click the **Show log of automatic file upload** link; the log page opens. Note the page will be blank if there are no logs present.
5. Click the browser's back button when you are done.



## 5-5 Use the Local FTP Server

VGADVI Recorder Pro can act as an FTP server, allowing you to manually or automatically connect to the system and download recordings. Depending on configuration of the FTP server, you may also be able to remotely delete files after download, maximizing available system storage.

This section discusses the following FTP Server topics.

- [Configure the Local FTP Server](#)
- [Downloading Files from the Local FTP Server](#)

### Configure the Local FTP Server

To configure the FTP server:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **FTP Server** link in the Configuration menu; the FTP Server configuration page opens.

**FTP Access Configuration**

**Enable FTP access** ☐

**FTP user name** admin ▼

**Enable FTP DELETE command** ☐

4. To enable the FTP server:
  - a. Select the **Enable FTP access** check box.
  - b. Select a user from the **FTP user name** drop down.



The ftp password is the regular access password for the selected user. See **User Administration** for details on user names and passwords.





- c. Click **Apply**.
5. To allow the FTP user to delete files:
  - a. Select the **Enable FTP DELETE command** check box.
  - b. Click **Apply**.



Any currently logged in ftp users must log out and back in again to have access to the command.

6. To disable the FTP server:
  - a. De-select the **Enable FTP access** check box.
  - b. Click **Apply**.
7. To disable file deletion by FTP:
  - a. De-select the **Enable FTP DELETE command** check box.
  - b. Click **Apply**.



Any currently logged in users will continue to have access to the delete command until they log out and log in again.

The following table summarizes the options for configuring the local FTP server.

**Table 28** FTP Server Configuration Options

Name	Description / Options
Enable FTP access	The check box controls whether or not the system acts as an FTP server. By default this is disabled.
FTP user name	Select one of the system users: admin, operator, or viewer. The ftp password will be the access password for the selected user. By default the admin user is selected.
Enable FTP DELETE command	Controls whether or not FTP users can delete files. By default file deletion is not permitted.

## Downloading Files from the Local FTP Server

Once you have configured a local FTP server, you can use the tool of your choice to download files from the system.

The system stores files in a folder structure with a folder for each channel and a folder for each recorder. Channel folders are labeled video<channel number> (i.e. video3 for channel 3). Recorder folders are labeled



videom<recorder number> (i.e. videom1 for the first recorder). Channel and recorder numbers are discoverable via the URL of the channel and recorder configuration page. See [Create and configure channels](#) and [Recorders](#).

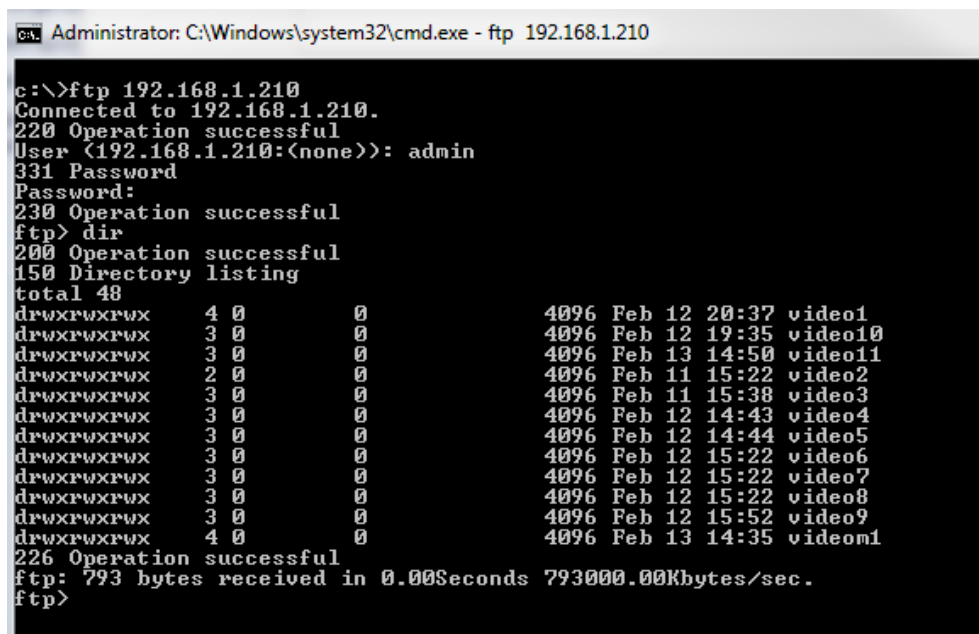
To get started you will need:

- The IP address of your system (found in the **Network** configuration menu)
- An FTP tool
- The username and password for your FTP user (See [Configure the Local FTP Server](#))

In the example below, the IP address of the VGADVI Recorder Pro is 192.168.1.210, the username is admin, there is no password, and the Windows command line ftp utility is used.

To connect to the FTP server:

1. Open a command window on Windows (alternatively open a terminal window on Linux/Mac, or open your FTP utility of choice).
2. Establish an ftp connection using the command: ftp 192.168.1.210
3. Provide the username: admin (provide the username of your FTP user)
4. Provide the password: (provide the correct password for your FTP user); the connection is opened.
5. Use the dir command to see the file structure.



```
Administrator: C:\Windows\system32\cmd.exe - ftp 192.168.1.210

c:\>ftp 192.168.1.210
Connected to 192.168.1.210.
220 Operation successful
User (192.168.1.210:(none)): admin
331 Password
Password:
230 Operation successful
ftp> dir
200 Operation successful
150 Directory listing
total 48
drwxrwxrwx  4 0      0      4096 Feb 12 20:37 video1
drwxrwxrwx  3 0      0      4096 Feb 12 19:35 video10
drwxrwxrwx  3 0      0      4096 Feb 13 14:50 video11
drwxrwxrwx  2 0      0      4096 Feb 11 15:22 video2
drwxrwxrwx  3 0      0      4096 Feb 11 15:38 video3
drwxrwxrwx  3 0      0      4096 Feb 12 14:43 video4
drwxrwxrwx  3 0      0      4096 Feb 12 14:44 video5
drwxrwxrwx  3 0      0      4096 Feb 12 15:22 video6
drwxrwxrwx  3 0      0      4096 Feb 12 15:22 video7
drwxrwxrwx  3 0      0      4096 Feb 12 15:22 video8
drwxrwxrwx  3 0      0      4096 Feb 12 15:52 video9
drwxrwxrwx  4 0      0      4096 Feb 13 14:35 videom1
226 Operation successful
ftp: 793 bytes received in 0.00Seconds 793000.00Kbytes/sec.
ftp>
```

6. Use dir or your tool's GUI to look in each folder for recordings.
7. Use get or your tool's transfer mechanism to transfer files to your computer.



```
ftp> dir videom1
200 Operation successful
150 Directory listing
total 920
-rw-r--r--  1 0      0      934130 Feb 13 14:35 UGA.1392302138.Recorder_1.avi
drwxrwxrwx  2 99    99    4096 Feb 12 20:44 trash
226 Operation successful
ftp: 163 bytes received in 0.00Seconds 163.00Kbytes/sec.
ftp> get videom1/UGA.1392302138.Recorder_1.avi
200 Operation successful
150 Opening BINARY connection for videom1/UGA.1392302138.Recorder_1.avi (934130 bytes)
226 Operation successful
ftp: 934130 bytes received in 0.08Seconds 12131.56Kbytes/sec.
ftp>
```

8. If enabled in the FTP configuration page, delete the file after downloading it by issuing the delete command, or using your tool's delete mechanism.

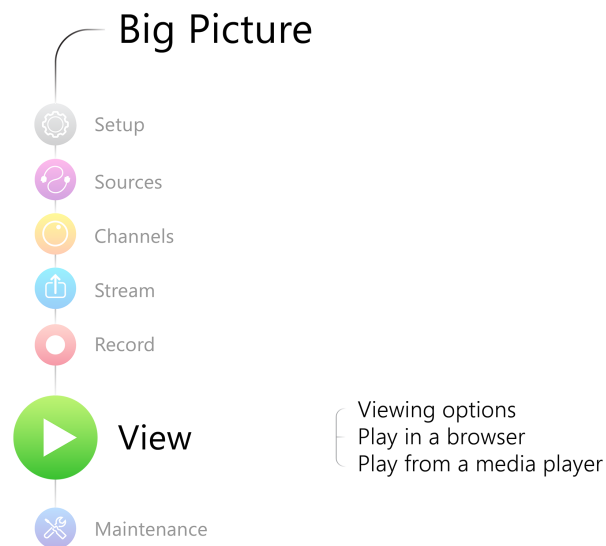


If the delete command is not enabled, attempting to delete a file will result in an Unknown Command error.



# PART 6: View

Now that you have perfected your stream, identified the medium to publish your stream, it's time to view the video stream from a media player or a web browser.



This section discusses the following topic related to viewing your content:

- [View your video](#)



## 6-1 View your video

This chapter describes factors to consider when choosing a streaming URL and steps to view the video stream from a media player or a web browser. Refer to the following sections:

- [View the live broadcast and retrieve stream URLs](#)
- [Viewing with a web browser](#)
- [Viewing with a media player](#)
- [Viewing with UPnP](#)
- [Viewing with Session Announcement Protocol \(SAP\)](#)

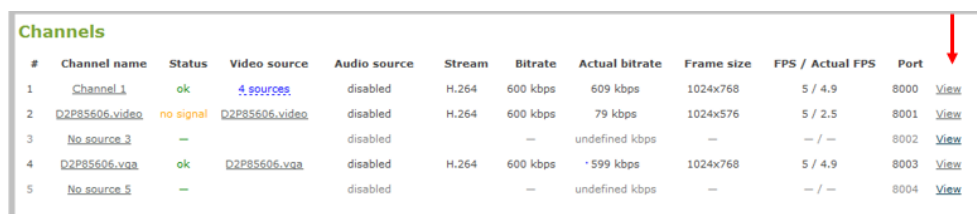
### View the live broadcast and retrieve stream URLs

There are two methods to view the current broadcast and to retrieve the stream URLs:

- Live broadcast link on the channel's status page.
- Info page from the configuration menu

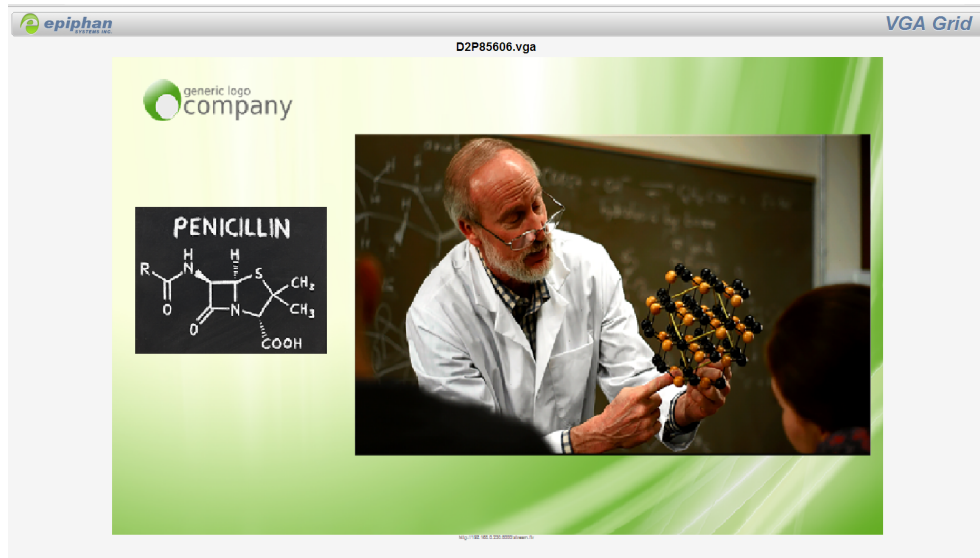
### View your broadcast using the View link on the Info menu

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin or operator.
3. From the web interface, click **Info** menu option; the info window opens with a list of all configured channels.



#	Channel name	Status	Video source	Audio source	Stream	Bitrate	Actual bitrate	Frame size	FPS / Actual FPS	Port	
1	Channel_1	ok	<a href="#">4 sources</a>	disabled	H.264	600 kbps	609 kbps	1024x768	5 / 4.9	8000	<a href="#">View</a>
2	D2P85606.video	no signal	D2P85606.video	disabled	H.264	600 kbps	79 kbps	1024x576	5 / 2.5	8001	<a href="#">View</a>
3	No_source_3	—	—	disabled	—	—	undefined kbps	—	— / —	8002	<a href="#">View</a>
4	D2P85606.vga	ok	D2P85606.vga	disabled	H.264	600 kbps	599 kbps	1024x768	5 / 4.9	8003	<a href="#">View</a>
5	No_source_5	—	—	disabled	—	—	undefined kbps	—	— / —	8004	<a href="#">View</a>

4. Click on the channel you want to preview. A page opens displaying the live broadcast and broadcast URL.



5. Copy the URL and provide to viewers. Based on their media player, viewers can access the broadcast using a URL specific to their media player.

## View your broadcast using the Live broadcast link on the Status page

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin or operator.
3. From the web interface, click the channel that you want to view; the menu expands.
4. Click **Status**; the status page opens displaying the live broadcast and stream URL.





- When HTTP live streaming for the channel is enabled the status page also shows the **HTTP Live Streaming** link. See, [Fine-tune channel configuration](#)



When HLS is enabled and with no viewer password set, viewers can access the stream using a tablet or smart phone device.

### Services state

Encoder: up 9 seconds  
 Broadcaster: up 11 seconds  
 HTTP Live Streamer: up 11 seconds  
 Recorder: disabled

### Stream info

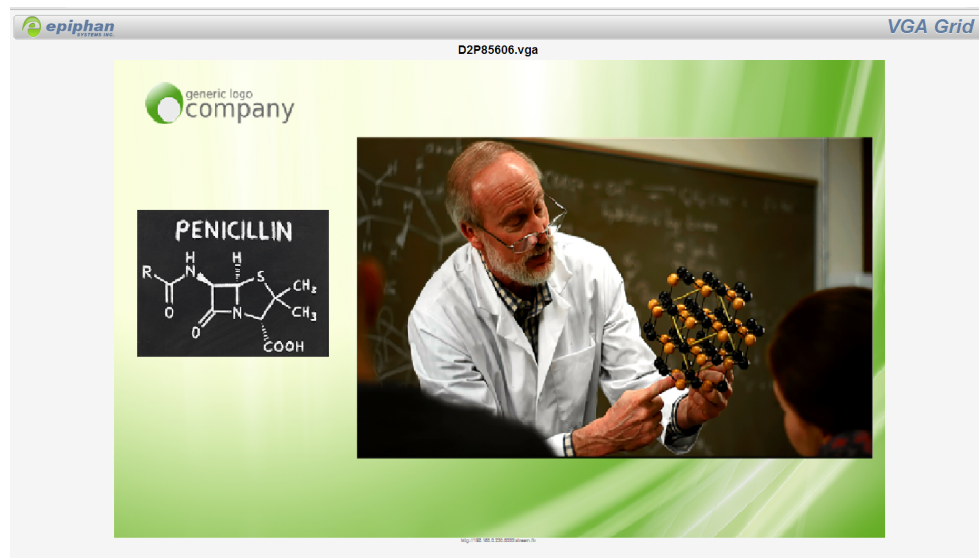
Live broadcast: <http://192.168.1.57/preview.cgi?channel=1>  
 HTTP Live Streaming: <http://192.168.1.57/hls/channel1>

Video: H.264 1024x768@30, 6.00 Mbps  
 Actual framerate: 30  
 Audio: MP3 22kHz mono 128 kbps  
 Total: 6.13 Mbps  
 RTSP stream rtsp://192.168.1.57:554/stream.sdp  
 MPEG-TS stream http://192.168.1.57:8000/stream.ts  
 ASF stream http://192.168.1.57:8000/stream.asf  
 Flash stream http://192.168.1.57:8000/stream.flv  
 HLS stream http://192.168.1.57/hls/channel1/stream.m3u8

Open from your iOS device or in a browser

Open the link from a media player

- Click on the Live broadcast or HTTP Live Stream link, if it configured. The window opens displaying the live broadcast and broadcast URL.



- Copy the URL and provide to viewers. Based on their media player, viewers can access the broadcast using a URL specific to their media player.

## Sending stream URLs to viewers

For participants to log in and view a stream, you must provide a stream URL. The URL that you send depends on the device the participant uses to view the stream. You can provide separate URLs for the stream coming from each channel, or one URL that includes all the streams for the channel.



1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. From the web interface, click the channel that you want to view; the menu expands.
4. Click **Status**; the Status page opens displaying the stream protocols supported based on the selected codecs. For more information on compatibility between codec and file formats, see [View your video](#).

**MPEG-TS:** Used in broadcast systems such as DVB, ATSC and IPTV. It is supported by media players such as MPlayer, VLC and KMPlayer.

**RTSP:** Supported by most media players including QuickTime, MPlayer and VLC. Supports H.264 and MPEG4 standards and analog audio from an external source.

### Stream info

Live broadcast: <http://192.168.0.174/preview.cgi?channel=1>

Video: H.264 1920x1080@30, 6.47 Mbps

Actual framerate: 15

Audio: AAC 44kHz stereo 320 kbps

Total: 6.79 Mbps

RTSP stream <rtsp://192.168.0.174:554/stream.sdp>

MPEG-TS stream <http://192.168.0.174:8000/stream.ts>

ASF stream <http://192.168.0.174:8000/stream.asf>

Flash stream <http://192.168.0.174:8000/stream.flv>

**ASF:** Supported on Windows Media Player. Additional codecs may be needed to view ASF streams. Supports H.264 and MPEG4 standards. Supports analog audio from an external source.

**FLV:** Supported on most web browsers and media players. Supports the H.264 standard and analog audio from an external source.

5. Copy the URL and provide to viewers. Based on their media player, viewers can access the broadcast using a URL specific to their media player.

## Viewing with a web browser

If a viewer password is configured, provide participants with the password to log in, along with the IP address or the URL to be used by the participant's browser.





If your channel is configured with 48 kHz audio, flash streaming (which is used for browser viewing) may not work. In this case, we recommend you view the channel with a media player instead. (See below.)

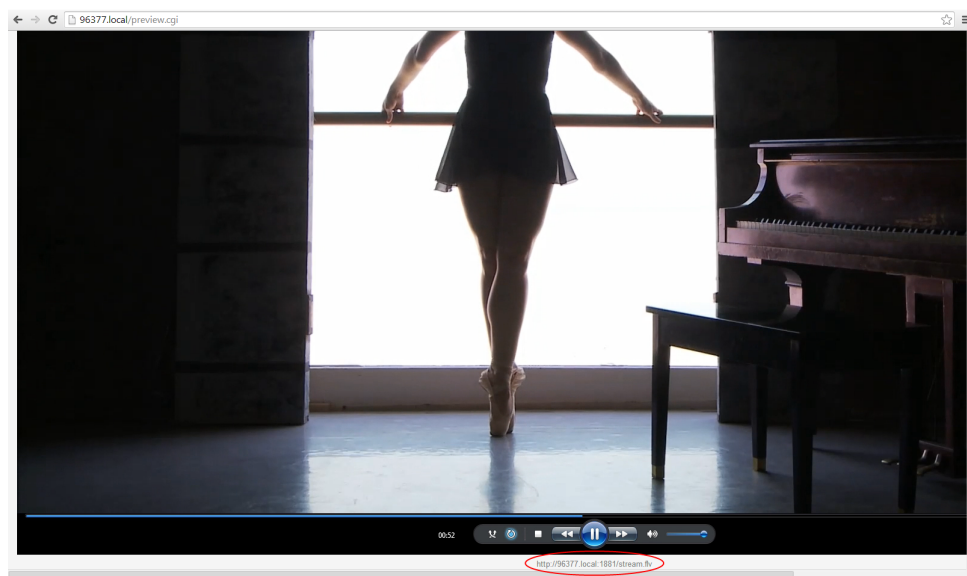
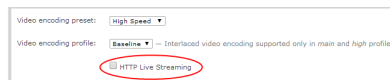
1. Open a web browser.
2. Enter the IP address of the broadcast stream, refer to the example below. To locate the IP address for the broadcast, refer to [View the live broadcast and retrieve stream URLs](#) [View your video](#)

If the IP address of the broadcast is 172.20.1.33, then browse to:  
`http:// 172.20.1.33/preview.cgi?channel=<channel number>`

3. Enter the user name and password at the prompt:

User Name: viewer  
Password: (enter the viewer password)

4. Press Enter. The stream is played in the browser window.



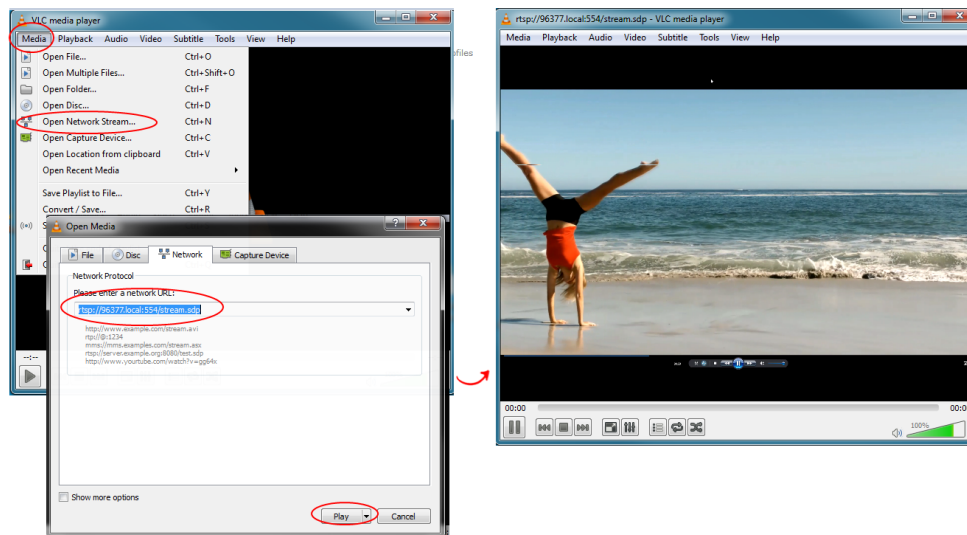


## Viewing with a media player

If a viewer password is configured, provide participants with the password to log in, along with the IP address or the URL to be copied to the media player. For example purposes the following procedure describes the steps using a VLC media player.

1. Launch a media player.
2. Click the **Media** tab, a drop-down menu opens.
3. Choose Open Network Stream; a dialog box opens.
4. Enter the stream URL .

`rtsp://49E7B8E4.local:554/stream.sdp`



5. Press Play. The stream is played in the media player window.

## Viewing with UPnP

Using a software or hardware media player, you can browse for files or streams with Universal Plug and Play (UPnP). UPnP uses MPEG-TS over HTTP with the H.264 codec and MP3 or AAC audio encoding (or no audio). You can only access live streams or recordings that meet these requirements.



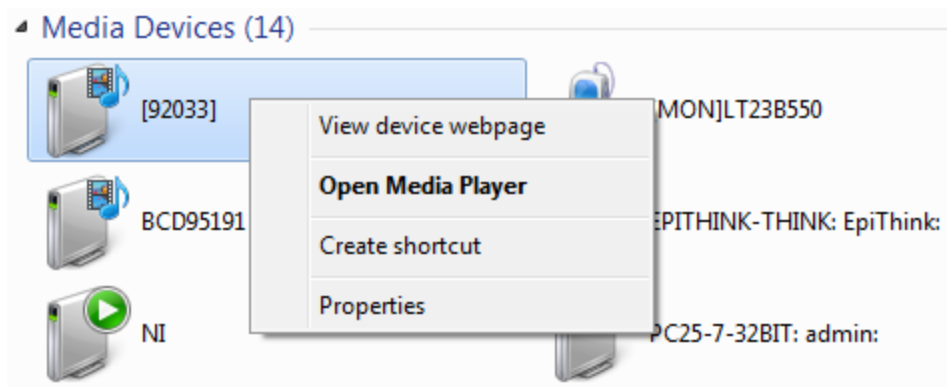
For security reasons the default behavior prevents UPnP access to live streams and recorded files. To enable UPnP, see **Stream content using UPnP**



Some players cannot access the stream or saved recordings if a viewer password is set. If needed, see **Removing User Passwords** to clear the viewer password.

When browsing via UPnP your VGADVI Recorder Pro is displayed by the server name you set, or its product serial number.

For example, when browsing from a Windows computer, you will see a list of media devices that includes the VGADVI Recorder Pro:



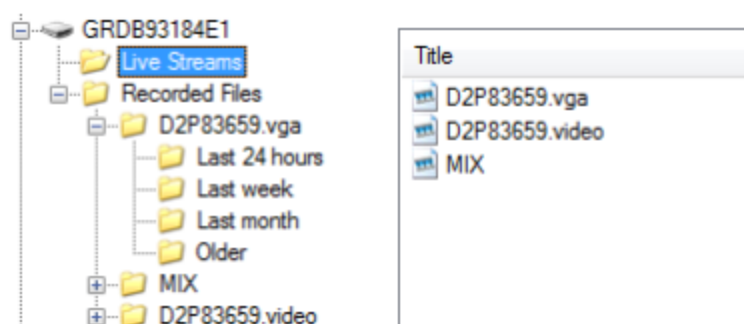
## Live Streams

When you open the device from Windows Media Player, you'll see a list of the available channels you can stream under the Videos tab. The channel names are the same as they are in the admin interface. From other digital media players, the channel list can be under a **Live Streams** folder.

With Windows Media Player, double click to open any channel and press Play to start the stream. Using your digital media player, select a live stream and press play.

## Recorded Files

Recorded files are shown in the Recorded Files folder. Files are organized by the channel or recorder from which they were recorded. Windows Media Player shows the recorder files side by side with the channels and other digital media players show the recorded files in a file tree format, see below.





UPnP can also be used to directly play a recording to the digital media player, or to set a media player to automatically play a particular live stream after reboot of the VGADVI Recorder Pro. See [Stream content using UPnP](#) and [Auto-restart playback to a UPnP device](#).

## Viewing with Session Announcement Protocol (SAP)

When SAP Announce is configured for a stream that uses UDP streaming, the stream is advertised over the local network. Local viewers can view the stream using a software or hardware media player. Viewers are presented with a list of available channels, similar to a television menu. Viewers need only click on a stream and the video is streamed to their desktop, mobile or tablet. To configure SAP announce, go to [Stream content using multicast streaming](#).

Your stream is advertised by the metadata title, if one was configured under Branding, otherwise it is identified by its channel identifier. For a description of how to set the metadata, refer to [Add your logo and company information to your channel](#).

When browsing from a VLC media player, streams are advertised by their channel identifier and are organized by the group name. When browsing from an XBMC media player, streams are advertised by the stream's metadata title, if configured, otherwise streams are advertised by their channel identifier.

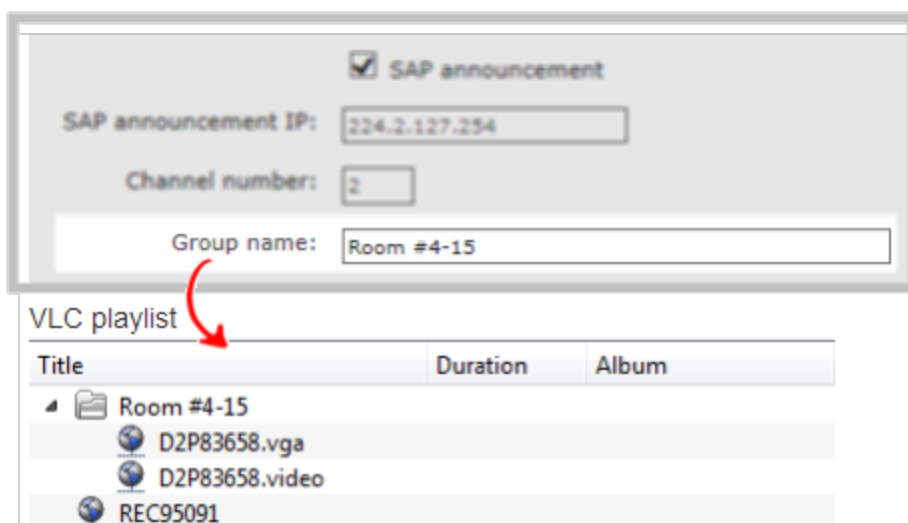
1. Ensure the stream has SAP announcement enabled, otherwise it is not advertised in the media player's playlist.
2. Ensure the SAP announcement IP is a multicast IP address.



Some media players, for example Exterity receivers, listen for SAP announcements on a specific multicast address 239.255.255.255. If your audience is using Exterity to view your stream, you must change the SAP announcement IP address to 239.255.255.255.

4. Launch a media player. The following steps are based on a VLC media player and may be different for other media players.
5. Click **View** from the menu; a drop-down menu opens.
6. Select **Playlist**. A Playlist window opens. The right-hand panel indicates the playlist is empty.
7. From the side menu, click **Network streams (SAP)**. The playlist is populated with all streams in your network that are SAP announcement enabled. If you specified a Group Name when you configured the publish stream the stream will be listed in folder identified by the group name.

In the example below, two streams D2P83658.vga and D2P83658.video are organized in a folder by their group name.

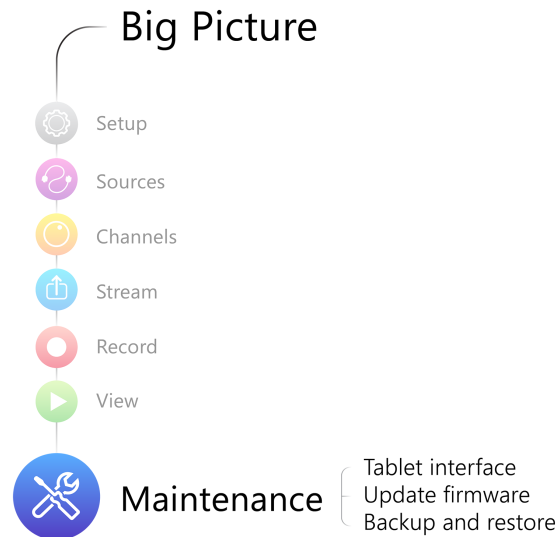


8. Click on a live stream; the stream plays in the media player window.



# PART 7: Maintenance

This section covers topics that will keep your VGADVI Recorder Pro running smoothly. It also covers a new tablet operator interface and ways to configure and operate your system using third party tools via HTTP or RS-232.



Specific topics covered are:

- Mobile / Tablet Operator Interface
- Power Down and System Restart
- Save and Restore Device Configuration
- Perform Factory Reset
- Firmware Upgrade
- Support
- Storage Disk Maintenance
- Control with RS-232 / Serial Port
- Control with HTTP Commands
- Configuration Keys for Third Party APIs



# 7-1 Mobile / Tablet Operator Interface

Epiphan's tablet interface is designed for touch-screen devices. Use your tablet or mobile device to perform confidence checks and basic operator tasks such as verifying disk space or starting and stopping recording.

This section describes procedures for the following topics:

- [Connect to the tablet interface](#)
- [Confidence monitoring using the tablet interface](#)
- [Verify disk space via the tablet interface](#)
- [Control recording via the tablet interface](#)
- [Switch to the full admin interface](#)

## Connect to the tablet interface

To get started with the tablet interface you can connect to it in one of the following ways.



The device connecting to the tablet interface must be on the same network as the VGADVI Recorder Pro or must be physically connected to it via USB.

- [Use the browser over Ethernet](#)
- [Use tethering on your device](#)
- [Use the mobile version of Epiphan Connect](#)

## Use the browser over Ethernet

You can connect to the tablet interface with a browser on your admin computer, tablet, or touch-screen device.

To connect to the tablet interface:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin or operator.
3. Modify the URL in the browser to have /m after the existing text and press Enter; the tablet interface opens. (If you forget the /m, the system will direct you to the mobile or standard interface, depending on information sent by your device's browser).



```
http://<ip address of system>/admin/m  
or  
http://<serial number of device>.local/admin/m
```

**For example:** `http://192.168. 1.163/admin/m` or `http://95dd40d5.local/admin/m`

In the future you can go directly to the IP address above and login from the mobile interface without ever seeing the usual admin interface.

## Use tethering on your device

You can use tethering on your mobile device or tablet to connect to the tablet interface. This option requires some configuration through the full admin interface.

To configure use of tethering (perform this once):

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Network** link in the Configuration menu; the network configuration page opens.
4. Select **No tethering** or any option except **Disabled** from the **Use phone/tablet connection**. See [Tether to a Mobile Network](#) for descriptions of the options.
5. Click Apply.

To use your mobile device or tablet via tethering:

1. Turn on tethering on your device. (See device user manual for instructions.)
2. Connect the device to your VGADVI Recorder Pro via USB.
3. Use the EpiphanConnect utility (from the Google Play or Apple App store) to find the system and open the tablet admin interface.

## Use the mobile version of Epiphan Connect

Epiphan has iOS and Android versions of the Epiphan Connect discovery utility. The mobile versions of the discovery utility automatically open the tablet interface when connecting to the VGADVI Recorder Pro for administration.

See instructions below for installing the application. The iOS version is available from the Apple App Store and the Android version is available from the Google Play store.

To install the application on your iOS or Android device (perform this once):





1. Open the App Store (for Apple devices) or Google Play store (for Android devices).
2. Search for **EpiphanConnect** (all one word).
3. Download and install the free Epiphan Connect application.

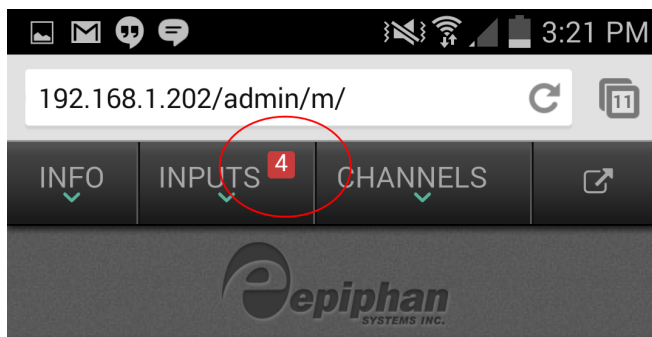
To connect to the device:

1. Once Epiphan Connect is installed, connect to the wifi network where you can access your VGADVI Recorder Pro.
2. Launch Epiphan Connect; the application searches your network and shows you a list of available Epiphan systems.
3. Find your system in the list. If you have several Epiphan systems, look for the serial number of the one to which you'd like to connect.
4. Select the system by touching the system name; a login prompt is presented.
5. Login as admin or operator; the tablet interface appears.

## Confidence monitoring using the tablet interface

When connected to the tablet interface, you can use the **INPUTS** section to monitor the inputs to your system. An auto-updating snapshot of video inputs and an audio level meter is provided for each source.

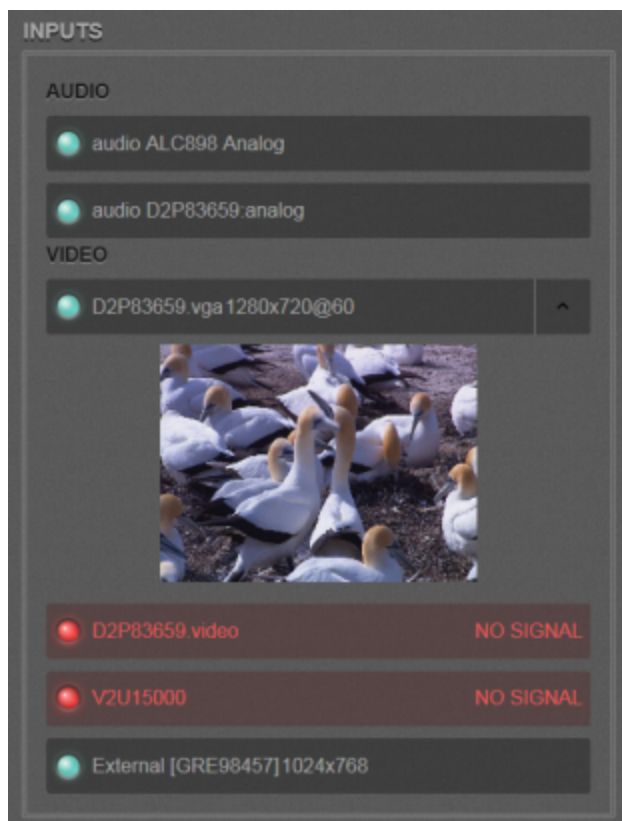
The top of the tablet interface gives you a warning if there are video inputs with no signal. In the example below, 4 video inputs have no signal.



For more detailed information, you can look at each input individually.

To monitor each input:

1. Connect to the tablet interface. See [Connect to the tablet interface](#).
2. Login as admin or operator.
3. Scroll to the **INPUTS** section.



4. For audio inputs without signal, nothing appears in the audio input bars.
5. For audio inputs with signal, the level is shown next to the source name in the audio input bar.

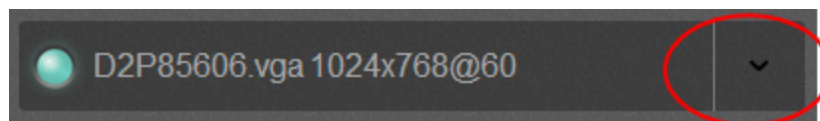


6. If a video source has no signal, the name appears red and a note next to the name says NO SIGNAL.





7. If the source has a signal, it's frame size and frame rate are displayed beside the source name.
8. View a preview of the source by clicking the down arrow in the row for source. (The names of the sources match the names set in the main admin interface.)

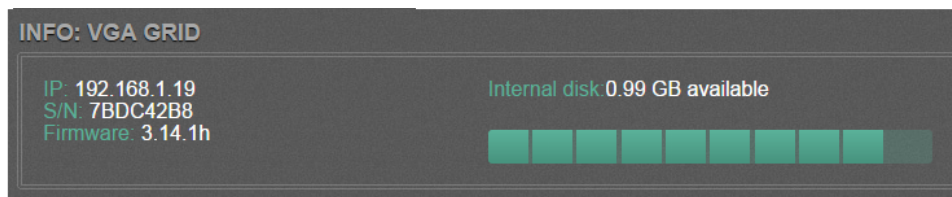


## Verify disk space via the tablet interface

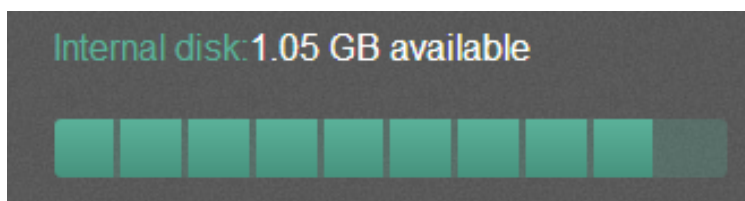
The **INFO** section of the tablet interface lets you know the firmware version, serial number and IP Address of your system. It also shows you the currently available disk space.

To monitor inputs:

1. Connect to the tablet interface. See [Connect to the tablet interface](#).
2. Login as admin or operator.
3. Scroll to the **INFO** section; the currently available disk space is shown.



4. If disk space is low, the green bar will be nearly full.



## Control recording via the tablet interface

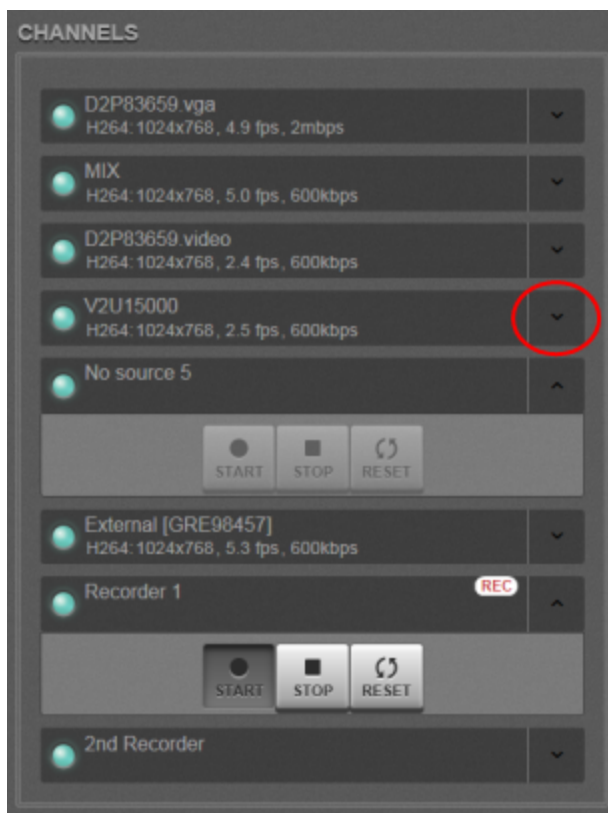
The tablet interface provides a simple way to control recording for your VGADVI Recorder Pro. You can control recordings for both channels and recorders from the same interface.

To control recording from the tablet interface:

1. Connect to the tablet interface. See [Connect to the tablet interface](#).
2. Login as admin or operator.



3. Scroll to the **CHANNELS** section.

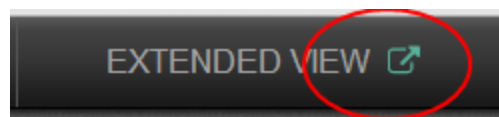
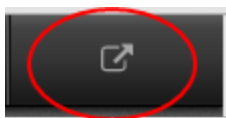


4. Find the channel or recorder from the list under CHANNELS. (The names of the channels and recorders match the names set in the full admin interface.)
5. Click the down arrow in the row for the desired channel or recorder
6. Use the **START**, **STOP**, and **RESET** buttons to control recording.

## Switch to the full admin interface

To switch from the tablet interface to the full admin interface:

1. Connect to the tablet interface. See [Connect to the tablet interface](#).
2. Login as admin or operator.
3. Click the arrow button at the top right of the screen. Depending on the width of the screen, the button may say extended view.





## 7-2 Power Down and System Restart

This section covers the following topics:

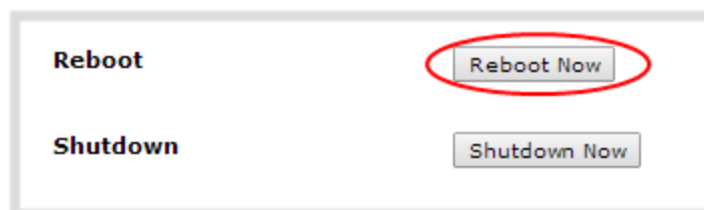
- [Restarting the Device via the Web Interface](#)
- [Shutting down the Device via the Web Interface](#)
- [Shutting down the Device Manually](#)

### Restarting the Device via the Web Interface

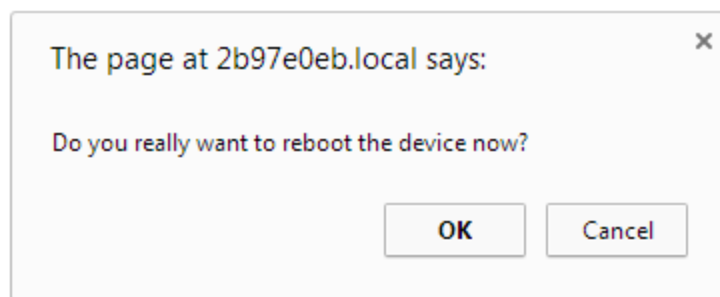
VGADVI Recorder Pro's web interface allows you to reboot the system.

To restart the system:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Maintenance** link in the Configuration menu; the maintenance page opens.



4. Click the **Reboot Now** button; a confirmation dialog appears.



5. Click **OK**.



## Shutting down the Device via the Web Interface

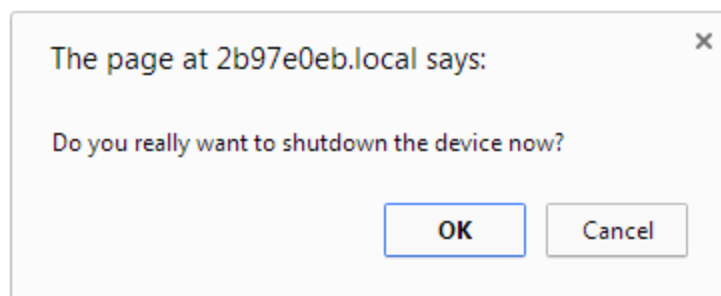
The VGADVI Recorder Pro web interface allows you to shut down the system.

To shut down the system:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Maintenance** link in the Configuration menu; the maintenance page opens.



4. Click the **Shutdown Now** button; a confirmation dialog appears.



5. Click OK.

## Shutting down the Device Manually

You can manually shut down the VGADVI Recorder Pro via the button physically located on the system.

To shut down the system manually:

1. Unlock the front panel.
2. Press and release the power button on the system to initiate a safe power down; the system shuts down.



If the system is unresponsive, press and hold the power button for 4 seconds to force an immediate power down.



## 7-3 Save and Restore Device Configuration

After completing configuration of your VGADVI Recorder Pro, it is good practice to save the system configuration so you may restore it at a later date (i.e. after a change that wasn't wanted, or after a factory reset) or so you may load it onto another system to provision it with the same configuration.

This section covers the following topics:

- [Save device configuration](#)
- [Load a saved device configuration](#)

### Save device configuration

VGADVI Recorder Pro's web interface allows you to save the current system configuration to your admin computer's hard drive. It's good practice to do this before making any major changes to a working configuration and before doing a firmware update.



The resulting backup file includes all non-default configuration settings for the system, except the user passwords which are reset when a configuration is restored.

To save the current system configuration:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Maintenance** link in the Configuration menu; the maintenance page opens.
4. Click the **Backup** button next to Backup Current Configuration; the system performs a backup and depending on your browser the file is either automatically downloaded or you are asked to save the file.

The screenshot shows a web interface with two main sections: 'Backup Current Configuration' and 'Restore Configuration From File'. In the 'Backup Current Configuration' section, there is a 'Backup' button which is circled in red. In the 'Restore Configuration From File' section, there is a 'Choose File' button followed by the text 'No file chosen', and a 'Restore' button below it. At the bottom of the interface, a note states 'Config file MUST be in plain text format.'





5. Save the file in a secure location.
6. Rename your saved configuration file to indicate the specifics of the configuration, if desired.

## Load a saved device configuration

After making changes to the system configuration, you may find that the results are not what you expected or that they serve a different need and you wish to return to a previous configuration. Via VGADVI Recorder Pro's web interface you can load a previously saved configuration file.

Configuration files are by default named <serial number>.cfg. You may have more than one configuration file saved from the system. Select the correct configuration file and know where it is accessible from your local computer before starting this procedure.



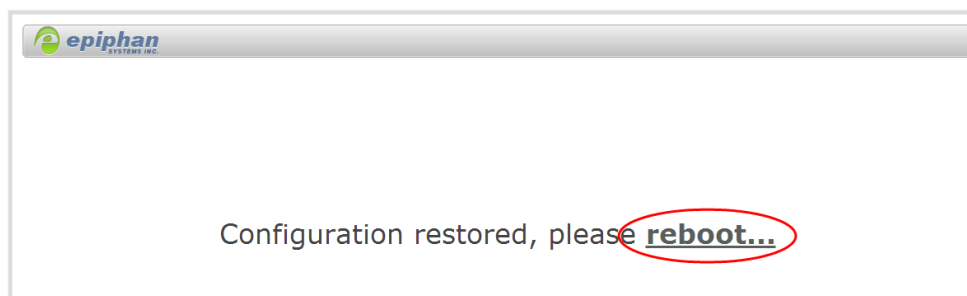
Backup files include all non-default configuration settings for the system, except the user passwords. All passwords are reset to blank after the configuration is loaded.

To load a saved system configuration:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Maintenance** link in the Configuration menu; the maintenance page opens.
4. Click the **Choose File** button beside Restore Configuration from File; you are prompted to choose the configuration file.
5. Select the desired configuration file from storage on your local computer and click **Open**.

The screenshot shows a web interface with three main sections: 'Backup Current Configuration' with a 'Backup' button, 'Restore Configuration From File' with a 'Choose File' button and a file name '96377.cfg', and a 'Restore' button which is circled in red. Below these sections is a warning: 'Config file MUST be in plain text format.'

6. Click the **Restore** button; the system configuration is restored and a new page appears asking you to reboot the system.



7. Reboot the system by clicking the link in the message on the web page, or by using the power button on the system; when the system comes back up the restoration is complete.
8. Login as admin (with no password).
9. Reset your user passwords. See [Setting and Changing User Passwords](#).



## 7-4 Perform Factory Reset

If you've been testing with your VGADVI Recorder Pro and are ready to reset it back to factory settings, you can do this through the web interface.

This section covers the following topics:

- [Restore Factory Configuration via the Web Interface](#)

### Restore Factory Configuration via the Web Interface

The web interface allows you to restore the factory configuration to return your VGADVI Recorder Pro back to the original settings it had when you purchased it.



Restoring the factory settings erases everything on the system. This includes all your source settings, channels, configuration presets, network settings, and all saved files.

Consider using the factory default configuration preset if you want to preserve files. See **Apply the Factory default configuration preset**.



EDIDs are **not** restored to factory settings with the factory resets. Re-apply factory EDIDs manually using the Source's configuration page.

Only proceed if you know this is what you want to do.

To restore the factory configuration via the web interface:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Maintenance** link in the Configuration menu; the maintenance page opens.

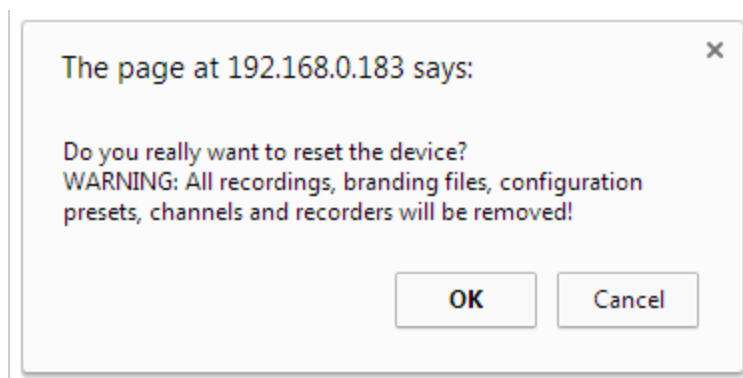
#### Factory reset

Factory reset

Reset

**WARNING: All recordings, branding files, configuration presets, channels and recorders will be removed!**

4. Click the **Reset** button next to **Factory Reset**; a warning dialog appears asking you to confirm this destructive action.



5. Click **OK** on the warning dialog; the system resets to factory defaults and reboots.
6. Wait for the system to reboot and begin re-configuration.



## 7-5 Firmware Upgrade

Epiphan will from time to time issue an updated firmware revision to bring new features to your VGADVI Recorder Pro. To take advantage of these new features, you will need to install the new firmware on the system.

This section covers:

- [Check for Firmware Updates](#)
- [Install firmware](#)

### Check for Firmware Updates

When you register your product with Epiphan you are given a choice to be notified by email of firmware updates for your system. If you selected this choice, you will be notified of updates applicable to the VGADVI Recorder Pro.

If your VGADVI Recorder Pro has internet access, you can check for updates directly by following the procedure below.

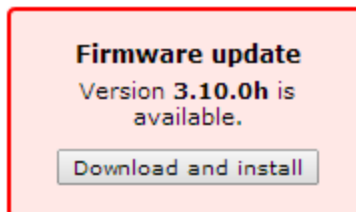
The system will also automatically check for firmware updates if the **Maintenance** page option **Enable connection to maintenance server** is checked.



This is the preferred method of checking for firmware updates. The built-in firmware update mechanism checks for updates that match your specific product and hardware revision.

To check for new firmware:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Firmware Upgrade** link in the Configuration menu; the firmware upgrade page opens.
4. Click the check for updates link next to your current firmware version; the system connects to Epiphan servers to look for updates.
5. If an update is found a red box appears in the top left side of the web interface with a link to download and install the firmware.



6. Follow the steps below to download and install the firmware.

## Install firmware

When you've received a new firmware file from Epiphan's support team, schedule a time where you can update the firmware without negatively impacting viewers or file recordings.



Installing new firmware takes a few minutes. Broadcasting and recording is not available until the upgrade is complete.

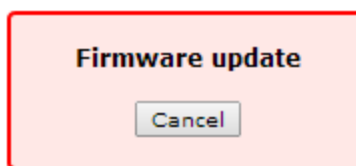
There are two ways to install new firmware: from a the download link via the web interface, or from a file provided by Epiphan.

### Install Firmware Directly from the Web Interface:

If your VGADVI Recorder Pro has internet access, the easiest method of installing new firmware is to use the download link provided when you check for new firmware.

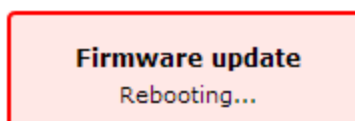
To download new firmware directly:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Save a copy of the current system configuration, if desired. See [Save and Restore Device Configuration](#).
4. Select the **Firmware Upgrade** link in the Configuration menu; the firmware upgrade page opens.
5. Click the check for updates link next to your current firmware version; the system connects to Epiphan servers to look for updates.
6. Click **download** from the red box that appears at the top left of the admin interface; the firmware is downloaded and immediately starts to install and the firmware update box changes to have a cancel button.



Do not interrupt power to the system during the firmware upgrade.

7. When the firmware update is complete, the message lets you know it is going to reboot.



8. Wait for the system to restart. Depending on the upgrade, a disk rebuild may be required, causing the restart process to take much longer than usual.
9. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
10. Login as admin.
11. Select the **Firmware Upgrade** link in the Configuration menu; the firmware upgrade page opens.
12. Verify that the firmware version is the expected new version.

Although unexpected, it is possible the firmware update fails. In this case, collect system information such as device serial number and, if known, the previous firmware version along with the new firmware version and contact [info@epiphan.com](mailto:info@epiphan.com)

## Install Firmware from a file

Before getting started, ensure you have the firmware file accessible from your admin computer.

To install new firmware from a file:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Save a copy of the current system configuration, if desired. See [Save and Restore Device Configuration](#).
4. Select the **Firmware Upgrade** link in the Configuration menu; the firmware upgrade page opens.
5. Note the current firmware version listed.
6. Click the **Choose File** button next to Select firmware upgrade file; a file selection box opens.



7. Select the firmware upgrade file from your local computer.
8. Click **Apply**; the file is uploaded. The system unpacks and verifies the file. If the file is valid, the upgrade begins.



Do not interrupt power to the system during the firmware upgrade.

9. Wait for the system to restart.
10. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
11. Login as admin.
12. Select the **Firmware Upgrade** link in the Configuration menu; the firmware upgrade page opens.
13. Verify that the firmware version is the expected new version.

Although unexpected, it is possible the firmware update fails. In this case, collect system information such as device serial number and, if known, the previous firmware version along with the new firmware version and contact [info@epiphan.com](mailto:info@epiphan.com)





## 7-6 Support

Epiphan provides a complimentary one-year support plan with your purchase (starting one year from the original product shipment date) as well as two extended support plans, ServicePlan and ServicePlan+. Both plans add two more years to extend the support to three years from original product shipment date.



To contact Epiphan support:

- **Email:** [support@epiphan.com](mailto:support@epiphan.com)
- **Online chat:** [www.epiphan.com/support](http://www.epiphan.com/support) (Monday to Friday between 9am and 5pm Eastern)
- **Call:** 1-877-599-6581 / 613-599-6581

From time to time, Epiphan support may ask you for logs from your system. Follow the instructions in this section to download the log files for support.

- [Download logs and "allinfo"](#)

VGADVI Recorder Pro also supports remote troubleshooting by Epiphan's support team. This service is only available to systems covered by ServicePlan+.

Remote support allows Epiphan to assist in troubleshooting issues you experience with the system and can also assist with resetting lost admin passwords. No private information is sent to the Epiphan maintenance server.

By default, all systems are setup with remote support configuration enabled.

This section describes procedures for the following topics:

- [Configure Remote Support](#)
- [Disable Remote Support](#)



Remote support is only provided for systems covered by SupportPlan+. For more information about our service plans, see [www.epiphan.com/supportplan](http://www.epiphan.com/supportplan).

## Download logs and "allinfo"

If requested by Epiphan support, you can download the logs files and/or "allinfo" data from your system. These files help our support team troubleshoot problems.

To download the logs and allinfo file:



1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Maintenance** link in the Configuration menu; the maintenance page opens.

**Maintenance**

Enable remote support ☒

Enable connection to maintenance server ☒

*Maintenance server*

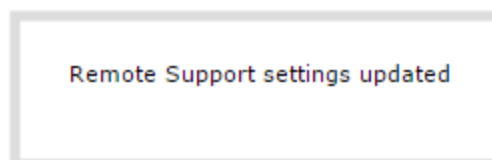
Server Address

Server Port

Permanent Logs ☐

**Apply**

4. Select the **Permanent Logs** check box.
5. Click **Apply**; the page updates to let you know the changes were applied.



6. Select the **Maintenance** link again; the maintenance page opens.

**Maintenance**

Enable remote support ☒

Enable connection to maintenance server ☒

*Maintenance server*

Server Address

Server Port

Permanent Logs ☒

[Download permanent logs](#)

**Apply**

7. Click **Download permanent logs**; a zip file containing system logs begins to download.
8. From your browser, run the allinfo script; a file is saved to your computer



`http://<ip address of your system>/admin/allinfo.cgi`

9. Share the log files and allinfo results with Epiphan support.

## Configure Remote Support

Remote support is configured by default to connect to the Epiphan maintenance server with the domain name epiphany.epiphan.com. The system must be able to resolve this domain name to connect to the server and permit remote support. Remote support uses port 30, therefore this port must be available for communication. If your system is protected from the Internet by a firewall, speak to your network administrator to configure the firewall appropriately.



Remote support is available from Epiphan only if your device is covered by ServicePlan or ServicePlan+.

To configure remote support:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Maintenance** link in the Configuration menu; the maintenance page opens.

The screenshot shows the 'Maintenance' configuration page. It has a title 'Maintenance' in large blue font. Below it are two checked checkboxes: 'Enable remote support' and 'Enable connection to maintenance server'. Under the heading 'Maintenance server', there are three fields: 'Server Address' with the value 'epiphany.epiphan.co', 'Server Port' with the value '30', and 'Permanent Logs' which is unchecked. An 'Apply' button is at the bottom right of the form area.



4. Click **Enable remote support** if the check box is not selected. This setting controls incoming links from Epiphan.
5. Click **Enable connection to maintenance server** if the check box is not selected. This setting configures outgoing links to Epiphan.
6. Ensure the **server address** is epiphany.epiphan.com, unless Epiphan support directs you to change it.
7. Ensure the **port** is 30, unless Epiphan support directs you to change it.
8. Click **Apply**.
9. Test that the system can access the maintenance server:
  - a. Select the **Network** link under Configuration.
  - b. Type epiphany.epiphan.com **Network Diagnostics** box.
  - c. Click **ping**.
  - d. Ensure the result shows an IP address for epiphany.epiphan.com and report any packet loss to Epiphan support.
10. If the system cannot reach the maintenance server, check the network settings (see [Configure Network Settings](#)) to ensure DHCP is selected or a DNS server is listed and try again. Consult with your network administrator if problems persist.
11. If the system reaches the maintenance server, ensure your firewall, if you have one, has port 30 open for the system.
12. Confirm with Epiphan support that they are able to access your VGADVI Recorder Pro for remote troubleshooting.

## Disable Remote Support

By default, remote support is on. If you want to turn it off, you may use the following procedure.



Disabling remote support for the VGADVI Recorder Pro removes the ability for Epiphan to reset a lost admin password. If you forget the admin password and remote support feature is off, you will need to return the system to Epiphan for reprogramming.

To disable remote support:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Maintenance** link in the Configuration menu; the maintenance page opens.
4. Click **Enable remote support** check box to deselect it. This prevents incoming links from Epiphan.



5. Click **Enable connection to maintenance server** to deselect it. This prevents outgoing links to Epiphan.
6. Click **Apply**.



## 7-7 Storage Disk Maintenance

Your VGADVI Recorder Pro is equipped with one or more hard drives for storage of recordings. Occasionally, maintenance is required for these disks. This section describes procedures for the following topics:

- Check disk storage space
- Schedule disk check
- Perform disk check
- Rebuild or replace storage disks
- Verify RAID storage
- Read data from removed storage disks

### Check disk storage space

VGADVI Recorder Pro has a finite amount of storage. This storage space holds a lot of recordings, but it can get full. It's a good idea to monitor your current disk usage.

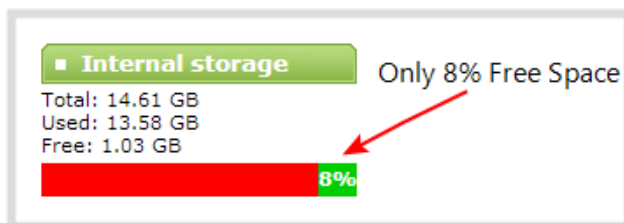
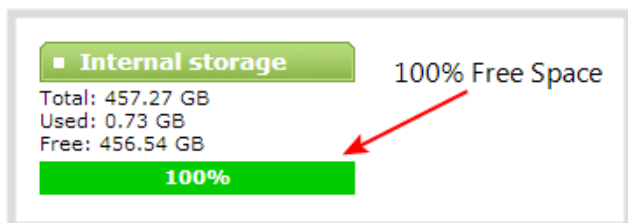
If available storage is low, consider removing some unneeded recordings or setting up an automatic file transfer with deletion after transfer. See [File Maintenance](#) and [File and recording transfer](#).



Disk space can also be checked via the tablet interface. See **Verify disk space via the tablet interface**.

To check disk storage space:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin or operator.
3. Check the **Internal Storage** section at the bottom of the menu column. The bar will be mostly green if there is lots of space left, or mostly red if storage space is nearly full.





4. If available storage is low, take action to remove files as discussed in [File Maintenance](#) and [File and recording transfer](#).

## Schedule disk check

A disk maintenance schedule is used to check the system storage drives for errors. Two values are supplied, one to specify the number of system restarts that should occur before disk check, and the second to specify the number of months before performing a disk check. The disk check happens based on whichever event occurs first.

For example, the restart setting is set to 50 and the months setting is set to 6. If six months pass and less than 50 restarts happened, a disk check will occur on the next restart. However if you do 50 restarts in one month, the disk check will happen after the fiftieth restart.



Disk check occurs during start up and can cause a lengthy delay in starting up the system.

To set the disk check schedule:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Disk Check** link in the Configuration menu; the disk maintenance page opens.
4. Set the **number of restarts to occur before the next check**. Set to 0 if you don't want to force a disk check after a specific number of restarts.
5. Set the **number of months to pass before the next check**. Set to 0 if you don't want to force a disk check after a specific number of months.
6. Click **Save**.

## Perform disk check

A disk maintenance schedule is used to periodically check the system storage drives for errors. If you prefer, you can run the disk check manually at a time that is convenient for you.

Running the disk check manually resets the timers for the scheduled disk check (i.e. next check won't happen automatically until either the number of restarts or months passes).



If the system is recording when you start a disk check, it will stop recording and resume after the check is complete. Frames presented during the disk check are not part of any recording.

To start a manual disk check:



1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Disk Check** link in the Configuration menu; the disk maintenance page opens.
4. Click the **Check Now** button; a new page opens showing you the progress of the disk check.



Do not interrupt power to the system during the disk check.

← → ↺ 192.168.1.164/admin/fsck.cgi

### Disk check in progress

**DO NOT** navigate away from this page, interrupt or power down until the disk check is completed.

```
Started disk check id 31500 on Mon Feb 3 15:52:20 EST 2014
e2fsck 1.41.4 (27-Jan-2009)
Pass 1: Checking inodes, blocks, and sizes
|=====| 96.0%
```

5. When the disk check is complete, the main page returns and a summary is shown.

The screenshot shows the Epiphan Systems Inc. admin interface. On the left, there are navigation tabs: Channels, Sources, and Configuration. The 'Channels' tab is selected, showing a list of channels: 1. Channel 1, 2. D2P84800.video, and an 'Add channel' button. The 'Sources' tab shows a list of sources: D2P84800.vga, D2P84800.video, Local channel #2, D2P84800\_analog, and audio ALC892 Analog. The 'Configuration' tab shows an 'Automatic File Upload' option. The main content area displays the 'Disk check completed' status. It shows the start time (Mon Feb 3 15:52:20 EST 2014) and the e2fsck version (1.41.4). The progress of the disk check is shown as five passes, all completed at 100%: Pass 1: Checking inodes, blocks, and sizes; Pass 2: Checking directory structure; Pass 3: Checking directory connectivity; Pass 4: Checking reference counts; Pass 5: Checking group summary information. The final summary shows the disk check finished with status 0 on Mon Feb 3 15:55:44 EST 2014, with 25/30449664 files (4.0% non-contiguous) and 2101189/121780724 blocks.

6. If any unrecoverable errors are detected, contact Epiphan support.

## Rebuild or replace storage disks

The rackmount VGADVI Recorder Pro can be optionally configured with storage configured in a RAID array. Periodically you may wish to clean the RAID array to start from scratch, or you may want to introduce new disks in place of the old ones.

When working with RAID arrays it is important to keep the disks in sets that contain the same data so the RAID will continue to perform. For that reason you should name your disk sets, i.e. set A, set B, etc.





When purchasing a new disk set, ensure that the drives in the new set are identical (brand, size, and type).

To change the disk set:

1. Power down the VGADVI Recorder Pro.
2. Open the front panel of the system (the panel key may be required).
3. Remove the old drives, starting with the second drive from the left, moving to the right.



Do not remove the left-most drive. This is the system drive and is not swappable.

4. Seat the replacement drive set into the drive bays.
5. Power on the system
6. Follow the steps below to rebuild the storage disks.

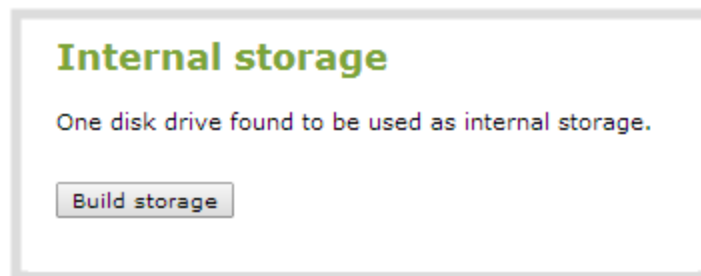
See [Read data from removed storage disks](#) for information on reading data from the removed drives.



Rebuilding the storage disk set is a destructive process that erases everything from the disks. Proceed with caution.

To rebuild the storage disks (erasing all data):

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Disk Check** link in the Configuration menu; the disk maintenance page opens.
4. Scroll to the bottom of the page to the Internal Storage section:
  - a. If no RAID drives are detected, you do not have a storage RAID, but you can rebuild the current drive, deleting all saved recordings.



- b. If two or more drives are detected, you are prompted to select a type of **RAID array**.



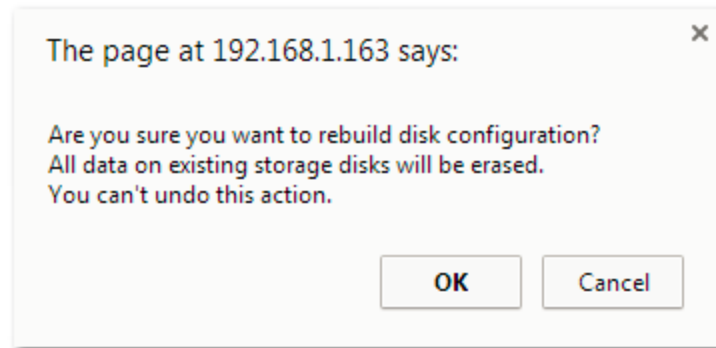
**Table 29** RAID Array Types

Label	Description	Diagram
RAID 0	Block level striping writes data across multiple disks in parallel. This configuration divides the storage between multiple drives; provides read/write performance improvements but does not provide fault tolerance.  This configuration supports systems that have two, three or four disks.	<p>RAID 0</p> <p>Disk 0    Disk 1</p>
RAID 1	Mirroring copies all data to a secondary disk. This configuration provides fault tolerance (data is available from one drive when the other drive fails) but has normal read/write speeds. There is less total storage space since two complete copies of the data is stored.  This configuration supports systems that have two disks.	<p>RAID 1</p> <p>Disk 0    Disk 1</p>
RAID 1+0 (RAID 10)	Mirroring and striping configuration creates a striped set in a mirrored set. This option uses four disks to combine improved read/write performance with redundancy.  This configuration supports systems that have four disks.	<p>RAID 10</p> <p>RAID 0</p> <p>RAID 1    RAID 1</p> <p>Disk 0    Disk 1    Disk 2    Disk 3</p>

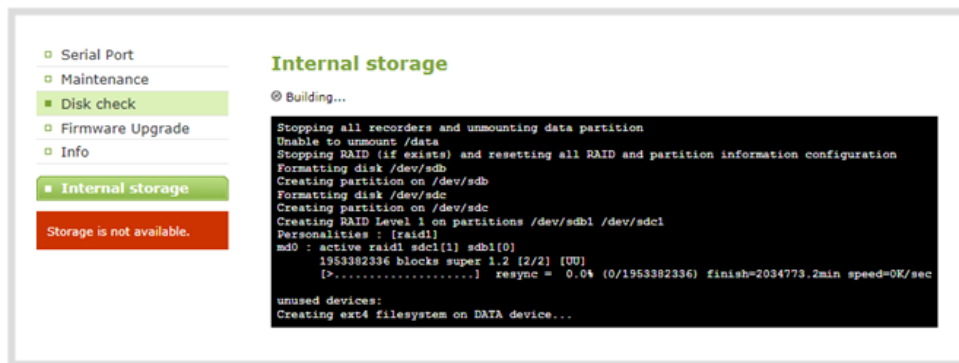
- b. Select your desired **RAID** array type.



- Click **Build Storage**; you are asked to confirm that you want to erase the storage drives and rebuild.

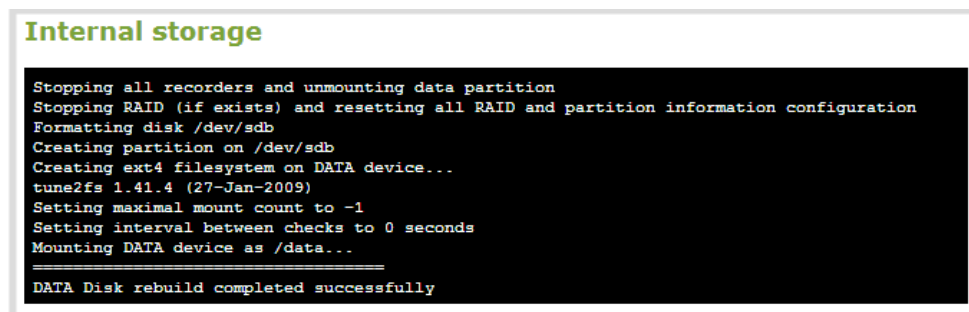


- Click **OK** on the confirmation dialog; a message appears indicating the rebuild is underway. Internal storage is not available during rebuild. You are unable to save any recordings.



The rebuild takes less than 5 minutes, the page automatically refreshes to provide the current status.

- When the rebuild is complete, the message box indicates whether or not it was successful.



- In the unlikely event that the rebuild was not successful, you may try it again, and if still not successful, contact Epiphan support.



## Verify RAID storage

The rackmount VGADVI Recorder Pro can be optionally configured with storage configured in a RAID array. Use the strategies described here to determine if you are using a RAID array and if it is in good health.

To check if the disks are configured for RAID:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Disk Check** link in the Configuration menu; the disk maintenance page opens.
4. Scroll to the Disk information section of the page.
5. If RAID is configured, the disk information contains a line item for /dev/md0. The RAID configuration level is shown next in the /dev/md0 statistics.

```

Disk information

/dev/sda:
Model=WDC WD1600AAJS-00PSA0      , FwRev=05.06H05, SerialNo=    WD-WMAF92187839
/dev/sdb:
Model=TOSHIBA DT01ACA200          , FwRev=MX4OABB0, SerialNo=    13THNPDGS
/dev/sdc:
Model=TOSHIBA DT01ACA200          , FwRev=MX4OABB0, SerialNo=    13THNUEGS
/dev/md0:
  Version : 1.2
  Creation Time : Mon Apr 28 06:24:12 2014
  Raid Level : raid0
  Array Size : 3507026944 (3726.03 GiB 4000.80 GB)
  Raid Devices : 2
  Total Devices : 2
  Persistence : Superblock is persistent

  Update Time : Mon Apr 28 06:24:12 2014
  State : clean
  Active Devices : 2
  Working Devices : 2
  Failed Devices : 0
  Spare Devices : 0

  Chunk Size : 512K

        Name : GRDB93184E1:0 (local to host GRDB93184E1)
        UUID : 784d4d20:db50cd0:04c5fd25:88de4393
        Events : 0

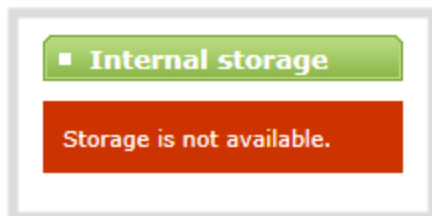
  Number   Major   Minor   RaidDevice State
  -----
    0         8       17         0   active sync  /dev/sdb1
    1         8       33         1   active sync  /dev/sdc1
  
```

To check RAID integrity:

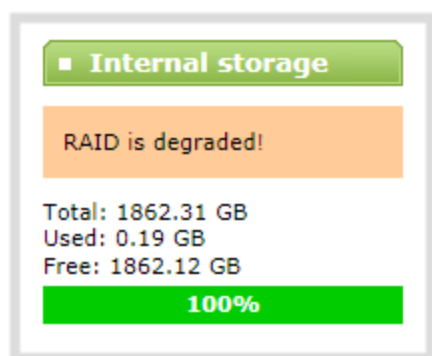
1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Scroll to the Internal Storage section at the bottom of the menus on the left side of the page.
4. If the RAID configuration is sound, the internal storage section reports statistics for the storage, but shows no errors.



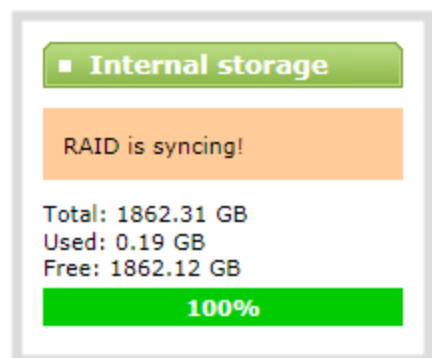
5. If using RAID 0 and one of the disks is down, the following error is displayed. Rebuild or replace the disks to recover.



6. If using RAID 1 and one of the disks is down, the following warning is displayed. Consider replacing the disk pair at your earliest convenience.



7. If using RAID 1 and a disk has recently been replaced, the system lets you know it is synchronizing data to the new disk.



## Read data from removed storage disks

The latest hardware refresh for VGADVI Recorder Pro includes removable disk drives. VGADVI Recorder Pro storage drives use an ext4 file system and can only be read with a computer running Linux.

These steps describe how to read the recorded files from the removable storage drives using Ubuntu.



Depending on your exact version of Linux, the steps you follow may differ slightly from the steps below.

To read the recorded files:

1. Install Linux on a workstation where the drives will be installed (Ubuntu or Debian are recommended. RedHat/CentOS/Fedora are also supported).
2. Confirm mdadm tool is installed, if not, install it. For Ubuntu/Debian use apt-get, for RH/CentOS use yum.
3. Turn off the workstation and connect the storage drives (if using RAID 1 you can attach just one drive).
4. Start the workstation.
5. If only one drive of a RAID 1 set is connected:

- a. Open a terminal window and enter the following in the command line to determine the name of the disk:

```
sudo fdisk -l
```

- b. Issue this command to build the disk:  
(In the example, the disk name is /dev/sdb1. Your disk name may be different.)

```
sudo mdadm --assemble /dev/md0 /dev/sdb1
```

- c. The following message appears:

```
mdadm: /dev/md0 has been started with 1 drive (out of 2).
```

6. Verify that RAID is started. At the command line, enter:

```
sudo mdadm -D /dev/md0
```

7. Verify that the output is similar to this, with the disk in a clean state and the correct RAID level indicated:  
(Only one disk is used in the example. If you are using multiple disks, the output will be a bit different.)

```
/dev/md0:
Version : 1.2
Creation Time : Thu Jan 16 12:55:36 2014
Raid Level : raid1
Array Size : 499975360 (476.81 GiB 511.97 GB)
Used Dev Size : 499975360 (476.81 GiB 511.97 GB)
Raid Devices : 2
```



```
Total Devices : 1
Persistence : Superblock is persistent
Update Time : Thu Jan 23 12:03:03 2014
State : clean, degraded
Active Devices : 1
Working Devices : 1
Failed Devices : 0
Spare Devices : 0
Name : BFR0B8CBCD3:0
UUID : 556b7f41:e0c45623:923eda4b:1242121f
Events : 19
Number Major Minor RaidDevice State
0 8 49 0 active sync /dev/sdd1
1 0 0 1 removed
```

8. The new drive is generally automatically mounted. If the drive does not auto mount, enter the following in the command line, substituting the name of your device instead of /dev/md0, if needed:

```
sudo mkdir /mnt/raid; sudo mount /dev/md0 /mnt/raid
```

9. If using a graphical interface in Linux, browse to the location of the drive in File Manager. Otherwise, use a terminal window to change directories (cd) into the drive.
10. Browse to the /mnt/raid folder (or the appropriate folder name) in File Manager.
11. All recordings are kept in a folder hierarchy matching the channels and recorders you created via the web interface. Channels are listed by their channel number as video<channel number> (i.e. video1 for channel 1) and recorders are listed by their recorder number with the videom prefix (i.e. videom2 for recorder 2).



## 7-8 Control with RS-232 / Serial Port

VGADVI Recorder Pro presents an RS-232 / serial port control interface for integration with existing control room and board room equipment. This section covers the following topics:

- [Connect and configure the RS-232 cable](#)
- [Control the VGADVI Recorder Pro with RS-232](#)
- [RS-232 / Serial port command examples](#)

### Connect and configure the RS-232 cable

To connect your control equipment to the VGADVI Recorder Pro you will need a standard RS-232 null-modem cable and a USB to RS-232 serial adapter cable. Adapter cables are not included with the VGADVI Recorder Pro. Only certain adapter chipsets are supported, Epiphan recommends this [adapter cable](#) from Startech.

To connect the serial port cable:

1. Attach the null modem cable to the control interface.
2. Connect the null modem cable to the serial port on the back of the system.

The only configuration available for the serial port is flow control. Flow control changes the rate of data transfer over the cable. Some communication settings are static and cannot be changed. The static settings are:

- Baud rate set at 19200
- Parity set to none
- Stop bits set to one

To configure serial port flow control:

1. Connect to the admin interface using your preferred connection mechanism. See [Connect to the Admin Interface](#).
2. Login as admin.
3. Select the **Serial Port** link in the Configuration menu; the serial port configuration page opens.
4. Select **Hardware**, **Software**, or **None** from the drop-down menu. Refer to the table below for a description of the options.



**Table 30** Serial Port Flow Control Options

Label	Description / Options
Hardware	A hardware handshake mechanism is used for flow control. This is also called RTS / CTS flow control. Select this when your control terminal requires it (see control terminal manual).
Software	A software handshake that uses XON/XOFF characters to control the flow of data. Select this when your control terminal requires it (see control terminal manual).
None	No flow control is used. Only select this if your control terminal requires it (see control terminal manual).

5. Click **Apply**.

## Control the VGADVI Recorder Pro with RS-232

You can use the null-modem cable and your control terminal software to issue commands to the VGADVI Recorder Pro such as when to start or stop recording, or to retrieve or set the value for various settings.



Each command sent to the VGADVI Recorder Pro via RS 232 must be terminated with a line feed (LF) character (ASCII code 10). Your software may need to be configured to add the line feed to each command.

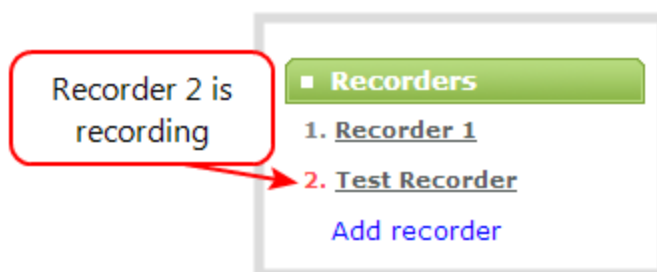
Some commands require a *channel* or *recorder* name as an argument. In those commands, the channel or recorder name is separated from the command name by a period, as shown in the table. The channel name value can be either the name or the index of the recorder or channel. Use of the index is recommended.

A channel's index is found by looking at the Channels list in the web interface. In the screen capture below, the channel with index 1 is currently recording (it's index number is red). To address this channel via RS-232 commands, use the index 1.





For commands requiring a recorder index, determine your recorder's index by combining the recorder's number with the prefix m. In the example below, the second recorder's index is 2. To access this recorder via RS232 commands, use the index m2.



The table describes the RS-232 commands supported by the VGADVI Recorder Pro.

**Table 31** Supported RS-232 Commands

Command Name	Description
Recording Commands	
START.<channel> START.<recorder>	Starts recording for the provided channel or recorder. This can alternatively be accomplished with the following set commands:  SET.<channel>.rec_enabled=on SAVECFG  If the channel is already recording, the current recording file is closed and a new file is started.
START	Starts recording for all channels and recorders. For channels already recording, the current recording file is closed and a new file is started.
STOP.<channel> STOP.<recorder>	Stops recording for the provided channel or recorder. This can alternatively be accomplished with the following set commands:  SET.<channel>.rec_enabled="" SAVECFG
STOP	Stops recording for all channels and recorders.
SNAPSHOT.<channel>	Takes a snapshot image of the current channel (supported only if the channel is configured to use the Motion JPEG codec). Snapshots are saved with recording files on the system.



Command Name	Description
SNAPSHOT	Takes a snapshot image of all channels (supported only for channels configured to use the Motion JPEG codec). Snapshots are saved with recording files on the system.
Configuration Commands (see <a href="#">Configuration Keys for Third Party APIs</a> for available keys)	
GET.<channel>.<key> GET.<recorder>.<key>	Gets the saved value of a given parameter for the specified channel or recorder.
SET.<channel>.<key> SET.<recorder>.<key>	Sets the value of a given parameter for the specified channel or recorder. The value is not saved until the SAVECFG command is sent.
SAVECFG	Saves the parameters modified by the SET command.
Status Commands	
STATUS.<channel> STATUS.<recorder>	Reports the recording status of the specified channel or recorder. Status is one of: <ul style="list-style-type: none"> <li>• RUNNING</li> <li>• STOPPED</li> <li>• UNINITIALIZED</li> </ul>
STATUS	Reports the recording status of each channel and recorder. Status is one of: <ul style="list-style-type: none"> <li>• RUNNING</li> <li>• STOPPED</li> <li>• UNINITIALIZED</li> </ul>
FREESPACE	Reports the free storage space, in bytes.
RECTIME.<channel> RECTIME.<recorder>	Reports the elapsed recording time for the current file on the specified channel or recorder.
RECTIME	Reports the elapsed recording time for the current file on each channel.

Additionally, the system automatically reports its status changes back along the RS-232 connection using the following automatic messages:

**Table 32** RS-232 Status Changed Messages

Command Name	Description
STATUS.<channel> <status>	<p>Provides the status of the recording service for the channel's as one of:</p> <ul style="list-style-type: none"><li>• Running</li><li>• Stopped</li><li>• Uninitialized</li></ul> <p>The Uninitialized status is sent when there is an internal error. Check the system for more details.</p>

## RS-232 / Serial port command examples

The following examples demonstrate how to use some of the RS-232 commands supported by the system. The list of supported SET and GET parameters are found in [Configuration Keys for Third Party APIs](#).



Each command sent to the VGADVI Recorder Pro via RS 232 must be terminated with a line feed (LF) character (ASCII code 10). Your software may need to be configured to add the line feed to each command.

For values with spaces, enclose the value in quotation marks. For empty values, use empty quotation marks with nothing between.

1. To start recording on channel 2:

```
START.2
```

2. To stop recording on channel 2:

```
STOP.2
```

3. To start recording on all channels and recorders:

```
START
```

4. To get the value of the frame size (resolution) for channel 2:

```
GET.2.framesize
```

5. To set the frame size (resolution) on channel 2, enclose the parameter in quotes to preserve the spaces:



```
SET.2.framesize="640 x 480"  
SAVECFG
```

6. To enable broadcasting audio on channel 2:

```
SET.2.audio=on  
SAVECFG
```

7. To disable broadcasting audio on channel 2:

```
SET.2.audio=""  
SAVECFG
```



## 7-9 Control with HTTP Commands

VGADVI Recorder Pro has an HTTP API interface for configuration and control by a third party application or with a script that sends commands to the system as a series of URLs. This section covers the following topics:

- [HTTP command syntax](#)
- [HTTP command examples](#)

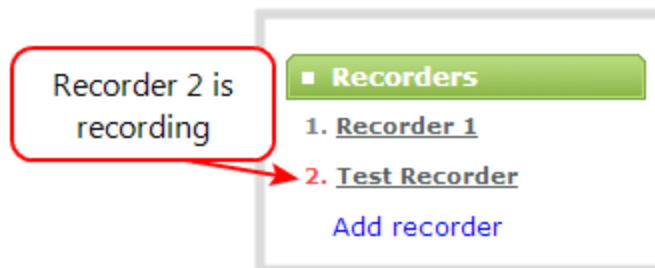
### HTTP command syntax

Control of the VGADVI Recorder Pro by HTTP is done by sending commands to one of two URLs and specifying the target configuration item. Syntax for the get and set commands follows.

Many commands require a *channel* or *recorder* index as an argument. A channel's index is found by looking at the Channels list in the web interface. In the screen capture below, the channel with index 1 is currently recording (it's index number is red). To address this channel via http commands, use the index channel1.



For commands requiring a recorder index, determine your recorder's index by combining the recorder's number with the prefix *channelm*. In the example below, the second recorder's index is 2. To access this recorder via http commands, use the index channelm2.



To Get configuration settings:



```
http://<address>/admin/channel<N>/get_params.cgi?key
```

(or for recorders, add 'm' before the recorder number, i.e. channelm1 for recorder 1)

```
http://<address>/admin/channelm<N>/get_params.cgi?key
```

To Set configuration settings:

```
http://<address>/admin/channel<N>/set_params.cgi?key=value
```

(or for recorders, add 'm' before the recorder number, i.e. channelm1 for recorder 1)

```
http://<address>/admin/channelm<N>/get_params.cgi?key
```

Where <address> is the IP address of the system, channel<N> is the channel number (i.e. channel2 for channel number two), channelm2 for recorder two, key is the key for the configuration item being checked or changed (see the list in [Configuration Keys for Third Party APIs](#)), and value is the value to set for the configuration item.

## Multiple Requests at Once

You can include multiple key/value pairs in a single command by separating the statements with &.

For example, the key for product name is product\_name and the key for firmware version is firmware\_version. To send a request for both the product name and the firmware version, use the following command:

```
http://<address>/admin/channel1/get_params.cgi?product_name&firmware_version
```

Or, to turnoff publishing (set to 0) and set the bitrate (vbitrate) to 256,000:

```
http://<address>/admin/channel1/set_params.cgi?publish_type=0&vbitrate=256K
```

## Third party applications like wget

If you're using a third party application like wget to send commands to the system, always include the admin username and password when viewing or setting configuration items.

The syntax for wget commands is shown below. Specify your system's IP address, password and the key(s) or value(s) you wish to query. Note your system may require use of single quotes around the password to handle special characters such as exclamation marks.

```
get_param using wget:
```



```
wget --http-user=admin --http-passwd=<password> http://<address>/admin/channel<N>/get_params.cgi?<key>[&<key>]
```

set\_param using wget:

```
wget --http-user=admin --http-passwd=<password> http://<address>/admin/channel<N>/set_params.cgi?<key>=<value>[&<key>=<value>]
```

## HTTP command examples

Some configuration of the VGADVI Recorder Pro can be done by non-interactive http commands. The following examples demonstrate how to use wget to exercise some of the HTTP commands supported by the system.



For values with spaces, encode space as %20. i.e.: set\_params.cgi?framesize=640%20x%20480

The examples assume a system IP address of 192.30.23.45 and admin password pass123.

1. To get the type of stream being published and frame size for channel 1:

```
wget --http-user=admin --http-passwd=pass123 http://192.30.23.45/admin/channel1/get_params.cgi?publish_type&framesize
```

2. To set the publish stream type to RTMP Push (6) and at the title "System Stream" for channel 2:

```
wget --http-user=admin --http-passwd=pass123 http://192.30.23.45/admin/channel2/set_params.cgi?publish_type=6&title=System%20Stream
```

3. To start recording on channel 2:

```
wget --http-user=admin --http-passwd=pass123 http://192.30.23.45/admin/channel2/set_params.cgi?rec_enabled=on
```

4. To stop recording on channel 2:

```
wget --http-user=admin --http-passwd=pass123 http://192.30.23.45/admin/channel2/set_params.cgi?rec_enabled=""
```

5. To start recording on recorder 2:





```
wget --http-user=admin --http-passwd=pass123 http://192.30.23.45/admin/channelm2/set_params.cgi?rec_enabled=on
```



## 7-10 Configuration Keys for Third Party APIs

Using HTTP or RS-232, you can send commands to the system to query or configure the system. For the RS-232 and HTTP syntax see [Control with RS-232 / Serial Port](#) and [Control with HTTP Commands](#).

When setting keys to values with spaces use the following syntax.

For RS-232:

Enclose in quotes: SET.2.framesize="640 x 480"

For HTTP:

Encode each space as %20: set\_params.cgi?framesize=640%20x%20480

The following sections describe the API keys supported by the system in each of these categories:

- [System-level Settings Keys\(Read-only\)](#)
- [System-level Settings Key \(Read/Write\)](#)
- [Recording Configuration Keys](#)
- [HTTP Server Configuration Keys](#)
- [IP-Based Access Control Configuration Keys](#)
- [UPnP Configuration Keys](#)
- [SAP Configuration Keys](#)
- [Frame Grabber Configuration Keys](#)
- [Broadcast Configuration Keys](#)
- [Channel Encoder Configuration Keys](#)
- [Channel Logo Configuration Keys](#)
- [Configuration Keys for Third Party APIs](#)
- [Audio Configuration Keys](#)
- [Stream Publishing Configuration Keys](#)
- [RTSP Announce Configuration Keys \(Publish Type 2\)](#)
- [RTP/UDP Configuration Keys \(Publish Type 3\)](#)
- [MPEG-TS Configuration Keys \(Publish Types 4 and 5\)](#)



- RTMP Push Configuration Keys (Publish Type 6)
- Content Metadata Configuration Keys

The list of supported keys is also available for viewing from your system. Browse to the following URL (where <address> is the IP address of the system):

```
http://<address>/admin/http_api.cgi
```

## System-level Settings Keys(Read-only)

The following read-only system-level setting keys are supported. The channel number can be omitted from the command when requesting the value for these keys.

**Table 33** Supported Read-Only System-level Settings Configuration Keys

Key	Values	Description
firmware_version	String, including the text FIRMWARE_VERSION=.	The system's firmware version. The value is read-only.
mac_address	String	The system's mac address. Useful for debugging. The value is read-only.
product_name	String	The product's name. Useful to confirm you are communicating with the right product or for debugging purposes. The value is read-only.
vendor	Epiphan Systems Inc.	Name of the vendor. The value is always "Epiphan Systems Inc." The value is read-only.

## System-level Settings Key (Read/Write)

The following read/write system-level setting keys are supported. The channel number can be omitted from the command when requesting the value for these keys.

**Table 34** Supported Read/Write System-level Settings Configuration Keys

Key	Values	Description
frmcheck_enabled	on empty string ("")	Enables or disables automatic firmware update checking. To enable firmware update checking, set to on. To disable firmware update checking, set to an empty string ("").
description	string	To give this system a name in the Epiphan discovery utility, specify a description string.

## Recording Configuration Keys

The following recording settings are supported.

**Table 35** Supported Recording Configuration Keys

Key	Values	Description
rec_enabled	on empty string ("")	Enables or disables recording. To enable recording, set to on. To disable recording, set to an empty string ("").
rec_format	avi mov mp4 ts	Specifies the format of the saved file.
rec_prefix	string	Specifies a prefix for the recorded filenames.
rec_sizelimit	integer	Specifies the file size limit, in kilobytes (kB).
rec_timelimit	integer	Specifies the time limit, in seconds, before a new recording file is created.

## HTTP Server Configuration Keys

The following settings are supported for configuration of the HTTP server run by the system.

**Table 36** Supported HTTP Server Configuration Keys

Key	Values	Description
http_port	integer	Specifies the HTTP server port.



Key	Values	Description
http_sport	integer	Specifies the HTTP server SSL port (HTTPS port).
http_usessl	on empty string ("" )	Enables or disables HTTPS (SSL Server) To enable SSL, set to on. To disable SSL, set to an empty string ("" ).

## IP-Based Access Control Configuration Keys

The following settings are supported for configuring allowed and denied IP addresses for the system ONLY, not for individual channels. See [Configure Network Settings](#) for more information on Allow and Deny lists.

**Table 37** Supported IP-Based Access Configuration Keys

Key	Values	Description
allowips	string: comma-separated list of IP addresses and/or ranges. empty string ("" )	Specifies the IP addresses to permit access. To restrict access, provide a list of permitted IP addresses. To clear allowed IP restriction, set to an empty string ("" ).
denyips	string: comma-separated list of IP addresses and/or ranges. empty string ("" )	Specifies the IP addresses to deny access. To restrict access, provide a list of denied IP addresses. To clear denied IP restriction, set to an empty string ("" ).

## UPnP Configuration Keys

The following settings are supported for UPnP streaming.

**Table 38** Supported UPnP Streaming Configuration Keys

Key	Values	Description
share_archive	on empty string ("" )	Enables sharing of recorded files via UPnP. To enable sharing files over UPnP, set to on. To disable sharing files over UPnP, set to an empty string ("" ).
share_livestreams	on empty string ("" )	Enables sharing of the live stream via UPnP. To enable stream sharing over UPnP, set to on. To disable stream sharing over UPnP, set to an empty string ("" ).



Key	Values	Description
server_name	string	Specifies the UPnP server name. To use the system name, set to an empty string ("").

## SAP Configuration Keys

The following settings are supported for SAP sharing.

**Table 39** Supported SAP Configuration Keys

Key	Values	Description
sap	on empty string ("")	Enables sharing of recorded files via SAP. To enable sharing files over SAP, set to on. To disable sharing files over SAP, set to an empty string ("").
sap_channel_no	integer	Specifies the SAP channel number.
sap_group	string	Specifies the SAP group name.
sap_ip	string	Specify the SAP announcement IP.

## Frame Grabber Configuration Keys

The following configuration settings are supported by the system. See [Configure a video source](#) for more information on each variable.

**Table 40** Supported Frame Grabber Configuration Keys

Key	Values	Description
gain	0...255	Specifies ADC gain adjustments. 0 is brightest, 255 is darkest.
hshift	-999...999	Specifies horizontal shift. For shifts to the left, use positive values. For shifts to the right, use negative values.
offset	0...63	Specifies ADC offset. 0 is brightest, 63 is darkest.
phase	0...31	Specifies phase adjustments for VGA signals. Generally not used unless value is provided by Epiphan support.



Key	Values	Description
pll	-999...999	Specifies PLL adjustment. Changes the number of pixels in the line.
tune_interval	0...9999	Specifies the number of seconds between auto-adjustments. To disable auto-adjustments, set to 0.
vshift	-20...20	Specifies vertical shift. For shifts up, use positive values. For shifts down, use negative values.

## Broadcast Configuration Keys

The following broadcast configuration settings are supported.

**Table 41** Supported Broadcast Configuration Keys

Key	Values	Description
bcast_disabled	on empty string ("")	Enables or disables the broadcast. To disable broadcast, set to on. To enable broadcast, set to empty string ("").
rtsp_port	1000...65535, but not 5557	Specifies the port for RTSP streaming. Note port 5557 is used for network discovery and cannot be used for streaming.
streamport	1000...65535, but not 5557	Specifies the port used for streaming. Note port 5557 is used for network discovery and cannot be used for streaming.

## Channel Encoder Configuration Keys

The following channel encoder configuration settings are supported. For more information on individual items listed, see [Create and configure channels](#).

**Table 42** Supported Channel Encoder Configuration Keys

Key	Values	Description
autoframesize	on empty string ("")	Enables or disables use of the current signal's resolution as the frame size. Is switched to off if a frame size is manually specified. To use current signal's frame size, set to on. To specify frame size directly, set to empty string ("").



Key	Values	Description
codec	h.264 mpeg4 mjpeg	Specifies the stream codec.
fpslimit	1-60	Specifies the frame per second limit. Set to your desired limit.
framesize	640 x 480 720 x 400 720 x 480 720 x 576 768 x 576 1024 x 768 1152 x 864 1280 x 720 1280 x 768 1280 x 960 1280 x 1024 1360 x 768 1360 x 1024 1600 x 1200 1920 x 1200 2048 x 2048 2560 x 1600	Specifies the frame size in pixels.  Set to desired size, refer to description above on handling white space in the value.
keep_aspect_ratio	on empty string	Enables or disables the keep aspect ratio configuration for this channel. Specify on to use the source's aspect ration To use/preserve the source's aspect ratio, specify on. To use a custom aspect ratio, set to empty string.
nosignal	default filename empty string ("")	Enables or disables the "No Signal" message if no signal is found. To use the default no signal message, set to default. To use a custom no signal message, specify the filename (file must already be uploaded to the system ). To disable the no signal message, set to empty string ("")





Key	Values	Description
timelabel	none (no date) date (date alone) hms (time alone) date_hms (date and time) hms_ms (time to ms) date_hms_ms (date and time to ms)	Specifies the time label on the stream. To have no time label, set to 'none'.
slicemode	on empty string ("")	Enables or disables h.264 slicing for RTP. To enable slicing, set to on. To disable slicing, set to empty string ("").
vbitrate	Integer integerK (i.e. 64K) integerM (i.e. 1M)	Gets or changes the video bit rate in kbit/s. Short forms such as 64K or 1M can be used.
vbufmode	1 (low delay) 2 (storage)	Specifies the broadcast compression level. For low delay when streaming, specify 1. For best results or recording, set to 2.
vencpreset	0 (Software) 5 (Hardware Accelerated)	Specifies a video encoding preset. For software, set to 0. For hardware acceleration (recommended), set to 5
videosource	string	Video source string for multi-channel systems.
vkeyframeinterval	integer	Interval time in seconds between key frames in the encoded stream.
vprofile	66 77 100	Specifies the h.264 video profiles. For Baseline profile, select 66. For Main profile, select 77. For High profile, select 100.
qvalue	0...100	Specifies quality for M-JPEG videos.

## Channel Logo Configuration Keys

The following options are supported for querying or modifying channel logo settings.

**Table 43** Supported Channel Logo Configuration Keys

Key	Values	Description
logo_margin_x	0...frame width	Specifies the horizontal offset in pixels from the position in logo_position. To offset 10 pixels from the left (when using a top-left logo position), set to 10.
logo_margin_y	0...frame height	Specifies the vertical offset in pixels from the position in logo_position. To offset 20 pixels from the top (when using a top-left logo position), set to 20.
logo_position	lt lb rt rb	Specifies the logo position on the screen (prior to tweaks from margins x and y). To have the logo at the left-top, set to lt. To have the logo at the left-bottom, set to lb. To have the logo at the right-top, set to rt. To have the logo at the right-bottom, set to rb.
logo_src	string	Specifies the logo source file name. The file must already be uploaded to the system.

## Audio Configuration Keys

The following audio configuration keys are supported. For more information on individual items listed, see [Create and configure channels](#).

**Table 44** Supported Audio Configuration Keys

Key	Values	Description
audio	on empty string ("")	Enables or disables audio for the stream. To enable audio, set to on. To disable audio, set to an empty string ("").
audiochannels	1 (mono) 2 (stereo)	Specifies the number of audio channels. For mono, set to 1. For stereo, set to 2.



Key	Values	Description
audiopreset	CODECS: pcm_s16le (PCM) libmp3lame (MP3) libfacc (AAC)  RATES: 32 64 96 112 128 160 192	Specifies an audio code preset in the format CODEC;RATE.  i.e. libfaac;128

## Stream Publishing Configuration Keys

The system supports the following stream publishing settings. For more information on publishing the stream, see [Stream your video](#).

**Table 45** Supported Stream Publishing Configuration Keys

Key	Values	Description
publish_type	0 (do not publish) 1 (via Epiphan.tv) 2 (RTSP Announce) 3 (multicast RTP/UDP) 4 (multicast MPEG-TS over UDP) 5 (multicast MPEG-TS over RTP/UDP) 6 (RTMP push)	Specifies the type of stream publishing, if any.

## RTSP Announce Configuration Keys (Publish Type 2)

The following settings are supported when the publish type is set to RTSP Announce. For more information on RTSP and these settings, see [Stream your video](#).

**Table 46** Supported RTSP Announce Configuration Keys

Key	Values	Description
announce_by_tcp	on empty string ("")	Enables or disable RTSP over TCP. To enable TCP transport, set to on. Otherwise, set to empty string ("").
announce_host	string	Specifies the RTSP server address. Set to the appropriate IP address.
announce_name	string	Specifies the RTSP resource name. (This field is named Mount Point in the web interface.)
announce_password	string	Specifies the password for the RTSP server's user.
announce_port	1000...65535, but not 5557	Specifies the RTSP server port to connect to for streaming. Note port 5557 is used for network discovery and cannot be used for streaming.
announce_username	string	Specifies the username for the RTSP server. Value is provided by the RTSP server.

## RTP/UDP Configuration Keys (Publish Type 3)

The following settings are supported when the publish type is set to RTP/UDP. For more information on RTP/UDP and these settings, see [Stream your video](#).

**Table 47** Supported RTP/UDP Configuration Keys

Key	Values	Description
unicast_address	string (IP address)	Specifies the unicast/multicast address.
unicast_apt	1000...65535, but not 5557	Specifies the UDP port for RTP/UDP audio streaming. Note port 5557 is used for network discovery and cannot be used for streaming.
unicast_vport	1000...65535, but not 5557	Specifies the UDP port for RTP/UDP video streaming. Note port 5557 is used for network discovery and cannot be used for streaming.



## MPEG-TS Configuration Keys (Publish Types 4 and 5)

The following settings are supported when the publish type is set to MPEG-TS. For more information on MPEG-TS and these settings, see [Stream your video](#).

**Table 48** Supported MPEG-TS Configuration Keys

Key	Values	Description
unicast_address	string (IP address)	Specifies the unicast/multicast address.
unicast_mport	1000...65535, but not 5557	Specifies the UDP port for MPEG-TS streaming. Note port 5557 is used for network discovery and cannot be used for streaming.

## RTMP Push Configuration Keys (Publish Type 6)

The following settings are supported when the publish type is set to RTMP Push. For more information on RTMP and these settings, see [Stream your video](#).

**Table 49** Supported RTMP Announce Configuration Keys

Key	Values	Description
announce_host	string	Specifies the RTMP server address. Set to the appropriate IP address.
announce_name	string	Specifies the RTMP resource name. (This field is named Mount Point in the web interface.)
announce_password	string	Specifies the password for the RTMP server's user.
announce_port	1000...65535, but not 5557	Specifies the RTMP server port to connect to for streaming. Note port 5557 is used for network discovery and cannot be used for streaming.
announce_username	string	Specifies the username for the RTMP server. Value is provided by the RTMP server.

## Content Metadata Configuration Keys

The following keys are available for configuration of the content's metadata.

**Table 50** Supported Content Metadata Configuration Keys

Key	Values	Description
author	string	Specifies the name of the author for the stream/recording. Refer to description above on handling white space (spaces) in the string.
comment	string	Specifies a comment for the stream/recording. Refer to description above on handling white space (spaces) in the string.
copyright	string	Specifies the copyright for the streaming/recording. Refer to description above on handling white space (spaces) in the string.
title	string	Specifies the title for the stream/recording. Refer to description above on handling white space (spaces) in the string. (This string can be displayed by certain viewing applications by looking at the stream's metadata information.)



## 7-11 Troubleshooting

Use the follow table for help if you are experiencing problems or unexpected behavior from your VGADVI Recorder Pro.

Problem	Action(s) to Resolve
Not sure if the connected video inputs are being captured.	Check each source's input from the source preview in the Web Interface. See <a href="#">Configure a video source</a> .
No sound is coming from an audio source.	Verify that you are using the correct audio input by following the steps in <a href="#">Configure an audio source</a> .  OR  Check the audio meter from the tablet UI (accessible from any web browser). See <a href="#">Mobile / Tablet Operator Interface</a> .
Too much noise is present in the audio output.	Modify the <b>Input Amplifier Volume</b> parameter in the Audio menu. Start with setting it to 40% and reduce until the noise is no longer present. See <a href="#">Set audio volume</a> for details on this setting.
Image quality is poor or insufficient.	The following tips can help improve image quality: <ol style="list-style-type: none"><li>1. Ensure the source resolution is used as the output or recorded resolution. Up-scaling and down-scaling can affect picture quality. See <a href="#">Upscale or downscale your video image</a>.</li><li>2. Increase the <b>Bitrate</b> value and/or decrease the <b>Limit frame rate</b> value in the Encoding menu. See <a href="#">Adjust video quality</a>.</li></ol>



Problem	Action(s) to Resolve
Frames per second are lower than expected.	<p>The following tips can help improve frames per second (fps):</p> <ol style="list-style-type: none"> <li>1. Increase the <b>Limit frame rate</b> value and/or decrease the <b>Bitrate</b> value in the Encoding menu. See <a href="#">Adjust video quality</a>.</li> <li>2. Reduce the number of actions happening simultaneously on the system (i.e. if streaming, recording, and copying files, consider waiting to copy files until after streaming and recording are complete).</li> <li>3. Enter a low negative value (i.e. -5) in the Frame Grabber's Vertical Shift field.</li> <li>4. Reduce the number of channels encoding data.</li> <li>5. Ensure the hardware-accelerated H.264 encoding preset is chosen for all channels.</li> </ol>
Stream won't play in my media player or browser.	<p>Verify that the Stream Type matches with the media player used and that you have the correct url or SDP file for the player. See <a href="#">Viewing with a web browser</a> and <a href="#">Viewing with a media player</a>.</p> <p>If you still cannot see the stream, try disabling your local computer firewall.</p> <p>If the issue is still not resolved, contact Epiphan Support at <a href="mailto:support@epiphan.com">support@epiphan.com</a>.</p>
The stream interrupts or the image breaks up.	<p>The following tips can help diagnose image problems:</p> <ol style="list-style-type: none"> <li>1. Ensure the source resolution is used as the output or recorded resolution. Up-scaling and down-scaling can affect picture quality. See <a href="#">Upscale or downscale your video image</a>.</li> <li>2. Increase the <b>Bitrate</b> value and/or decrease the <b>Limit frame rate</b> value in the Encoding menu. See <a href="#">Adjust video quality</a>.</li> <li>3. Check network settings including filters, routers and application settings. Packet loss can result in stream failure.</li> </ol>
Recording issues.	<p>If recording will not start, check the Disk Status Information to see if the system is out of disk space. See <a href="#">Check disk storage space</a> and <a href="#">File Maintenance</a>.</p>





Problem	Action(s) to Resolve
Firmware upgrade fails.	Reboot the system and try again. If the problem persists, contact Epiphan support at <a href="mailto:support@epiphan.com">support@epiphan.com</a> .

# PART 8: Releases and Features

---

This section outlines the features introduced with previous product release.

## Release 3.14.3 Features

---

### Streamlined setup and configuration

#### Configuration presets

Configuration presets let you save and apply groups of configuration settings. Create presets for different network settings, channel configurations and more. See [Configuration presets](#).

### New encoding features

#### Stereo audio encoding

Audio captured in stereo can now be encoded in either stereo or mono. . See [Configure audio encoding settings](#).

#### Support for 256 kbps and 320 kbps audio sampling

To support stereo audio encoding, we've added higher bitrate audio sampling.

### Other features

#### LDAP support

LDAP servers, including Active Directory servers, can now provide authentication for users logging in to administrative roles or viewing streams. See [Configure LDAP](#).

#### SCP and SFTP file transfer

Automatic file transfer now supports secure ftp servers (SFTP) and secure copy (SCP). Supply a username and password for authentication, or upload a trusted private key in place of the password. See [File and recording transfer](#).

## Release 3.14.1 Features

---

### Hardware Refresh

#### SDI source support

Our newest line of VGADVI Recorder Pro systems now capture, encode, stream and record even more HD content! In addition to the DVI-I ports and S-Video ports found on previous models, VGADVI Recorder Pro now has SDI ports. The new SDI ports support capture of SDI video and audio.

## HDMI audio support

Release 3.14.1 adds the ability to capture audio from non-HDCP protected HDMI sources on new systems built with updated hardware. Simply add the HDMI source to your configured channel to include audio. (Older models cannot capture HDMI audio. If your system has SDI ports, it supports HDMI audio.)

## New Encoding / Streaming Features

### 48 kHz audio support

For greater flexibility and improved audio quality from digital sources, VGADVI Recorder Pro now supports 48 kHz audio sampling.

### Hardware acceleration for H.264 encoding

VGADVI Recorder Pro is capable of capturing and encoding up to 300 frames per second of HD video thanks to the addition of hardware accelerated H.264 encoding. H.264 with hardware encoding is the default for new all channels, but you may still use software encoding if needed for compatibility reasons.

### Simplified H.264 video encoding presets

To make channel configuration even easier, H.264 encoding now has only two presets: hardware accelerated or software encoding. These selections offer the best video capture possible while maintaining excellent performance throughput.

### Configurable EDID

Some situations require you to configure your VGADVI Recorder Pro so that it describes its extended display identification data (EDID) a particular way for maximum compatibility with your source. Starting with release 3.14.1, you can upload custom EDIDs for VGA and DVI/HDMI sources, making VGADVI Recorder Pro report its video capabilities exactly as you need.

## New Recording Features

### MP4 support

Recording your AV stream is even more flexible with the addition of MP4 recording support. Select from MOV, AVI, MP4 or MPEG-TS recording.

## Other Changes

### Improved channel configuration menu

Improvements to the channel configuration menu mean it's easier than ever to configure your channel. Sections have been renamed and ordered in a logical sequence for channel setup. Start by selecting Sources, then configure Encoding and Branding. Lastly setup Streaming and Recording.

# Release 3.12 Features

---

## New Streaming Features

### RTMP live streaming

Your VGADVI Recorder Pro can now stream live video to a content delivery network using Real Time Messaging Protocol (RTMP). In addition to providing high performance streaming of audio and video, when you stream your content using RTMP, you reduce system resource usage as well as enhance your viewer's experience.

When setting your CDN, you now have a choice between streaming with RTSP announcement or RTMP push. Both RTSP and RTMP can be used for live streaming, however not all CDNs or media servers support both formats.

See [Stream your video](#).

### SAP Announce

Your VGADVI Recorder Pro allows you to advertise your stream over a local network using SAP Announce. To use this feature, your stream must be setup to use UDP streaming. Local viewers can view the stream using a software or hardware media player. Viewers are presented with a list of available channels, similar to a television listing. Viewers need only click on a stream or channel and the video is streamed to their desktop, mobile or tablet.

See [Stream content using multicast streaming](#).

## Layout and Branding Improvements

### Enhanced layout for multiple source channels

You can customize your output stream by adding a customized background image to your multiple source channel. You can create a background that is consistent with your corporate branding and easily apply the background to your video stream.

See [Add a customized background to a multiple source channel](#)

## Data Redundancy and Fault Tolerance Improvements

### RAID 10 support

For systems configured with at least 4 storage disks, RAID 10 is now supported.

### Enhanced Internal Storage Diagnostics

You can now check if storage disks are configured for RAID, the RAID configuration level, and RAID array status.

# Release 3.11 Features

---

## Recording Features

### Multiple multi-track, multi-channel recorders

Save time in post-processing by specifying exactly which channels are included in a recording or choose to create an all-in-one recorder to include all channels in a single multi-track file. Include the same channel in multiple recordings wherever needed. Record all-in-one videos simultaneously with other needed recordings.

See [Recorders](#).

### Multiple audio sources

The VGADVI Recorder Pro now supports one audio input per DVI input in addition to the system's main line-in or microphone. No need to pre-mix audio before routing it to the device for recording.

To support this change, the **Audio** menu tab has been removed and audio sources are now listed under the **Sources** section. Audio inputs are named according to the capture card on which they reside. I.e. the audio input next to the DVI input D2P83659.vga is called D2P83659\_analog. Audio inputs from the server's main board have no product serial number and are prefixed by **audio**.

### Audio source mixing

Recorders and channels can contain multiple audio sources, resulting in any number of configurations of single source or combined audio output. Incoming audio signals are mixed in software and levels are reduced proportionally to avoid audio clipping.

The new mobile interface displays an overall audio input meter.

### Precision time protocol (PTP) synchronization

Ensuring multiple sources are synchronized and time-stamped precisely is easier than ever. with support for PTP time synchronization.

See [Configure Date and Time](#).

### Custom recording file names

Starting with release 3.11.0, you can customize the prefix used for recorded files. Use this to identify files being auto-uploaded from various rooms at a conference, or to keep track of which source is being recorded.

See [Configure the type and length of recording files](#)

## Streaming Features

### AAC audio codec

AAC is now supported for audio encoding. The system uses simplest and most commonly used AAC audio codec profile: Low Complexity (LC). Mono audio only.

## MPEG-TS streaming for IPTV

VGADVI Recorder Pro now supports MPEG-TS streaming over RTP/UDP and UDP for easy integration with IPTVs. Simply provide the IPTV's or IPTV gateway's IP address in the channel's publishing configuration menu to enable transmission of the MPEG-TS stream.

See [Choose a codec to maximize your stream quality](#).

## Universal plug and play (UPnP) support for streaming media players

Your system can now be discovered and streamed through software and hardware media players, set-top-boxes and Smart TVs with ease. UPnP uses MPEG-TS over HTTP with the H.264 codec and MP3 or AAC audio encoding.

See [Stream content using UPnP](#).

## Layout and Branding Improvements

### Visual stream feedback and simplified picture-in-picture layout

Video source previews are now available for each input. The preview function takes a single frame from the source every three seconds and is visible from the **Frame Grabber** configuration pages.

If a given input has no signal a No Signal message is displayed. Previews are also visible via the new tablet interface. See [Configure a video source](#) and [Mobile / Tablet Operator Interface](#) for details.

Creating multi-source layouts has never been easier! The new layout configuration screen shows you a live preview of your configuration. Each added source can be clicked and dragged to a new location.

See [Create a multi-source layout](#).

### Stream branding and custom no signal image

You can customize output streams by adding your company logo or other overlay image to the encoded stream and by providing a custom image to display prior to broadcast or other times when a source has no signal. Images in JPEG and PNG format are accepted. Image transparency is not currently supported.

### Preservation of source aspect ratio

A new feature, enabled by default, makes sure that the aspect ratio of input signals is preserved when encoded and streamed. If an input video signal doesn't match the encoding ratio, a matte is applied and bars are visible at the sides or top and bottom of the encoded stream. The color of the matte is customizable.

### Customizable stream background color (matte)

You can select the matte color displayed when a layout results in pillarbox or letterbox effect due to input aspect ratio preservation or when a multi-view layout has areas with no video.

### Personalized stream metadata

Each channel has its own content metadata that you can configure to ensure proper attribution, content description and copyright information is sent with your audio/video stream.

## Mobile and Tablet Features

### Introducing the mobile / tablet operator interface

Use your mobile device or tablet for confidence monitoring of channels, streams and audio levels. You can now start and stop recordings from an interface designed for a touch-screen device. Point your smartphone or tablet to `http://<system IP address>/admin/m`.

See [Mobile / Tablet Operator Interface](#).

### Discovery of Epiphan devices

Use the new Epiphan Connect application on Android and iOS as an alternative to the desktop based discovery utility. The application has built-in support for opening the tablet operator interface and can be configured to automatically open the tablet interface if connected to the VGADVI Recorder Pro by USB.

### Mobile tethering

Release 3.11.0 introduces the option to use mobile tethering for recording control, confidence monitoring and mobile network file transfers. Configure mobile data tethering and turn on automatic file uploads to automatically transfer files to a remote site using the public mobile network. Alternatively, choose to tether for confidence monitoring and recording control only.

Configure the VGADVI Recorder Pro to use no mobile data, to use Ethernet normally and switch to mobile data if the Ethernet becomes unavailable, or to mobile data as the preferred transmission method.

## Other Improvements:

- Based on the video encoder type, source resolution and stream frame size, the device now automatically calculates a suggested bitrate that provides the best performance and quality trade off.

Examples for H.264:

- 640×480, 15 fps, - 1.4 Mbps
- 1280×720, 20 fps - 2.6Mbps
- 1920×1080, 30 fps - 6.5 Mbps
- When using auto-file upload, you can **choose to exclude specific channels from upload**. This is useful if you have one channel used for lower-quality streaming and another for higher-quality recording. Save space on your network server by not uploading the lower-quality recordings automatically.
- You can now **select what happens when you insert a USB drive**: nothing; a one-time copy or transfer to the drive; a manual copy or transfer to the drive; or automatic continuous copy or transfer of recorded files to the drive.
- As of 3.11.0, you can configure the system to **automatically upload recorded files to an attached USB drive**. Choose to either have it work the same way as uploading via FTP, CIFS, or RSYNC; or as a one-time download of all the recordings on the system. Auto-file upload to USB drives supports storing recordings from each channel in its own subfolder. See [Upload to an external USB drive](#)
- Each audio and video input now indicates which channel(s) are using it, or if the input is not used. This can help you **determine if you have any inputs that are not being streamed** or to assess which channels would be affected by downtime for a given input.

- The **HTTP Live Streaming (HLS) link is now displayed on the Channel Status page**. HLS allows access to live streams over the standard HTTP port 80, making able to traverse firewalls and proxies that are able access the internet for other HTTP traffic.
- **MPEG-TS format recording**. This robust encoding mechanism has no index or trailer structures making it the most fault tolerant format supported by the VGADVI Recorder Pro. MPEG-TS files are ready for streaming over HTTP, RTP and UDP.
- Enjoy the new live stream resume feature to **ensure a digital media player automatically gets the stream when it becomes available** after the VGADVI Recorder Pro restarts. Simply choose a stream and the UPnP-enabled media player to control. See [Stream content using UPnP](#).
- **Direct your digital media player to play a recorded MPEG-TS files from the system**. Browse to the Files Archive and press the play button to choose from accessible uPnP media players. See [Stream content using UPnP](#)
- Fast encoding has been removed and replaced with video encoding presets. New values are Default, High Quality, and High Speed.
- H.263 (an older Flash implementation) is replaced with MPEG-4. As of Flash Player 9, update 3 (in December 2007), Flash supports H.264 encoding. If H.264 does not suit your needs, you can still support older players with the MPEG-4 codec. The exact codec supported is Microsoft MPEG-4 version 2.



# Software and Documentation License

ATTENTION: THE SOFTWARE AND DOCUMENTATION PROVIDED UNDER THIS AGREEMENT ARE BEING LICENSED TO YOU BY EPIPHAN SYSTEMS INC. ("LICENSOR") AND ARE NOT BEING SOLD. THIS AGREEMENT CONTAINS LIMITATIONS ON REPRESENTATIONS, WARRANTIES, CONDITIONS, REMEDIES, AND LIABILITIES THAT ARE APPLICABLE TO THE SOFTWARE AND DOCUMENTATION.

## Epiphan Systems Inc. Software License

IMPORTANT: BEFORE DOWNLOADING, INSTALLING, OR USING THE SOFTWARE AND DOCUMENTATION, PLEASE CAREFULLY READ THIS AGREEMENT WHICH CONTAINS THE TERMS AND CONDITIONS UNDER WHICH YOU ARE ACQUIRING A LICENSE TO USE THE SOFTWARE AND DOCUMENTATION. IF YOU DO NOT ACCEPT THE TERMS AND CONDITIONS OF THIS AGREEMENT PLEASE DO NOT DOWNLOAD, INSTALL, OR USE THE SOFTWARE AND DOCUMENTATION AND PROMPTLY RETURN OR DESTROY THE SOFTWARE AND DOCUMENTATION. IF YOU DOWNLOAD, INSTALL, OR USE THE SOFTWARE AND/OR DOCUMENTATION, YOU WILL HAVE ACCEPTED AND AGREED TO THESE TERMS AND CONDITIONS. THE SOFTWARE AND DOCUMENTATION ARE ALSO PROTECTED BY COPYRIGHT LAWS AND INTERNATIONAL COPYRIGHT TREATIES, AS WELL AS OTHER INTELLECTUAL PROPERTY LAWS. IF YOU ARE AN AGENT OR EMPLOYEE OF AN ENTITY, YOU REPRESENT AND WARRANT THAT (I) THE INDIVIDUAL ACCEPTING THIS AGREEMENT IS DULY AUTHORIZED TO ACCEPT THIS AGREEMENT ON SUCH ENTITY'S BEHALF AND TO BIND SUCH ENTITY, AND (II) SUCH ENTITY HAS FULL POWER, CORPORATE OR OTHERWISE, TO ENTER INTO THIS AGREEMENT AND PERFORM ITS OBLIGATIONS UNDER THIS AGREEMENT.

**1. Definitions:** In this Agreement:

**"Agreement"** means this Epiphan Software License;

**"Documentation"** means the technical publications delivered to You with the Software relating to the installation and operation of the Software, such as reference, user, installation and technical guides and release notes;

**"Epiphan"** means Epiphan Systems Inc.;

**"Software"** means the Licensor binary and/or bytecode software programs that (i) are made available to You for download after acceptance of this Agreement, (ii) are packaged with this Agreement, or (iii) pre-installed on Epiphan products, or (iv) embed this Agreement in their installer(s) and which are installed after acceptance of this Agreement, and which binary and/or bytecode software programs include any Documentation; and

**"You" or "Your"** means the individual acquiring the Software license or any entity on whose behalf such individual is acting. In the case of an entity, "You" includes any entity that by majority voting interest controls, is controlled by, or is under common control with You.

**2. Grant of Software License:** Subject to the terms and conditions of this Agreement, Licensor grants You a non-exclusive, non-transferable, non-sublicensable, internal license to use a reasonable number of copies of the Software. All copies of the Software made by You shall include all trademarks, copyright notices, restricted rights legends, proprietary markings and the like exactly as they appear on the copy of the Software originally provided to You. No other rights in the Software or Documentation are granted to You.

**3. Open Source Software:** Binary, bytecode and source code versions of certain open source software packages may be embedded in or distributed with the Software ("Open Source Software"). If a separate license

agreement for an item of open source software is: delivered to You with the Software; included in the download package for the Software; referenced in any material (including the Documentation) that is included in the download or distribution package for the Software; or listed at [www.epiphan.com/opensource](http://www.epiphan.com/opensource), then such open source software shall be Open Source Software and such separate license agreement shall govern Your use of that item or version of such open source software. The Open Source Software may include free software (i.e. software licensed under the GNU Lesser General Public License or other free software licenses) for which the applicable free software license may also require that the source code for such free software be made available to those receiving only executable versions of such free software. If the source code for any free software distributed with the Software is not provided with the Software, then upon request, within a three (3) year period from the original receipt of such Open Source Software from Licensor, for a fee that shall not exceed Licensor's costs associated with the shipping of the source code for such free software, Licensor will provide a copy of the source code for such free software to You.

**4. Restrictions:** The terms set forth in this Section 4 shall constitute conditions to the licenses granted in Section 2. You shall not reverse engineer, disassemble, reverse translate, decompile or in any other manner decode the Software except to the extent the Software is distributed with any Open Source Software that prohibits the imposition of such a restriction or to the extent the foregoing restriction is expressly prohibited by applicable law notwithstanding a contractual obligation to the contrary. You acknowledge and agree that no rights in respect to the source code of the Software are granted to You. You acknowledge and agree that the rights in respect to use of the Software and Documentation are granted only for use in conjunction with Epiphan hardware. You shall not distribute, lease, rent, grant a security interest in, assign, or otherwise transfer the Software except as expressly provided in this Agreement. You shall not modify or create any derivatives works of the Software or merge all or any part of the Software with another program. You shall not use the Software or make the Software available to any third parties as part of any service bureau, time sharing service, application service provider offering, software-as-a-service offering or any other managed service offering. You shall not disclose any performance, benchmarking, or feature-related information about the Software. You further agree not to disclose, transfer or otherwise provide to any third party any portion of the Software, except as expressly permitted herein.

**5. Disclaimer of Warranties:** Licensor does not make any representations or provide any warranties or conditions in respect to the Software. EXCEPT FOR ANY WARRANTIES THAT MAY BE PROVIDED IN ANY COMMERCIAL AGREEMENT BETWEEN YOU AND LICENSOR, THE SOFTWARE AND DOCUMENTATION ARE PROVIDED "AS IS", WITHOUT ANY REPRESENTATIONS, CONDITIONS, OR WARRANTIES OF ANY KIND. WITHOUT LIMITATION, LICENSOR AND ITS LICENSORS, SUPPLIERS, SUBCONTRACTORS AND DISTRIBUTORS DISCLAIM ANY EXPRESS OR IMPLIED REPRESENTATIONS, CONDITIONS, AND/OR WARRANTIES OF MERCHANTABILITY, MERCHANTABLE QUALITY, NON-INFRINGEMENT, DURABILITY, TITLE, SATISFACTORY QUALITY, OR FITNESS FOR A PARTICULAR PURPOSE WHETHER ARISING BY STATUTE, COURSE OF DEALING, USAGE OF TRADE, OR OTHERWISE. EXCEPT AS OTHERWISE EXPRESSLY PROVIDED IN ANY COMMERCIAL AGREEMENT, THE ENTIRE RISK OF THE USE OF THE SOFTWARE AND DOCUMENTATION SHALL BE BORNE BY YOU. EXCEPT AS OTHERWISE EXPRESSLY PROVIDED IN ANY COMMERCIAL AGREEMENT, NEITHER LICENSOR NOR ANY OF ITS LICENSORS, SUPPLIERS, SUBCONTRACTORS AND/OR DISTRIBUTORS MAKE ANY REPRESENTATIONS OR PROVIDE ANY CONDITIONS AND/OR WARRANTIES ABOUT THE SUITABILITY OF THE SOFTWARE AND/OR DOCUMENTATION OR ABOUT ANY INFORMATION AND/OR DATA THAT MAY BE PROCESSED BY OR MADE AVAILABLE USING THE SOFTWARE.

**6. LIMITATION OF LIABILITY:** NEITHER LICENSOR NOR ANY OF ITS LICENSORS, SUPPLIERS, SUBCONTRACTORS AND/OR DISTRIBUTORS SHALL HAVE ANY LIABILITY TO YOU OR ANY OTHER

PERSON OR ENTITY FOR ANY DAMAGES ARISING FROM THIS AGREEMENT, RELATING TO THE SOFTWARE OR DOCUMENTATION, OR RELATING TO ANY SERVICES PROVIDED TO YOU BY LICENSOR (INCLUDING ITS LICENSORS, SUPPLIERS, SUBCONTRACTORS AND/OR DISTRIBUTORS) IN RELATION TO THE SOFTWARE AND/OR DOCUMENTATION FOR ANY INDIRECT, RELIANCE, INCIDENTAL, SPECIAL, PUNITIVE, EXEMPLARY OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOSS OF REVENUE OR PROFIT, LOSS OF OR DAMAGE TO DATA, BUSINESS INTERRUPTION, LOSS OF DATA, REPLACEMENT OR RECOVERY COSTS, OR OTHER COMMERCIAL OR ECONOMIC LOSS, WHETHER ARISING FROM CONTRACT, EQUITY, TORT (INCLUDING NEGLIGENCE OR STRICT LIABILITY) OR ANY OTHER THEORY OF LIABILITY, EVEN IF LICENSOR (INCLUDING ITS LICENSORS, SUPPLIERS, SUBCONTRACTORS AND DISTRIBUTORS) HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR THEY ARE FORESEEABLE. THE LIMITATIONS IN THIS SECTION SHALL APPLY WHETHER OR NOT THE ALLEGED BREACH OR DEFAULT IS A BREACH OF A FUNDAMENTAL CONDITION OR TERM OR FUNDAMENTAL BREACH. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, SO THESE LIMITATIONS MAY NOT APPLY TO YOU. IN NO EVENT SHALL THE TOTAL CUMULATIVE LIABILITY OF LICENSOR (INCLUDING ITS LICENSORS, SUPPLIERS, SUBCONTRACTORS AND DISTRIBUTORS) TO YOU OR ANY OTHER PERSON OR ENTITY FOR ANY DAMAGES ARISING FROM THIS AGREEMENT, RELATING TO THE SOFTWARE, DOCUMENTATION AND/OR RELATING TO ANY SERVICES PROVIDED TO YOU BY LICENSOR (INCLUDING ITS LICENSORS, SUPPLIERS, SUBCONTRACTORS AND DISTRIBUTORS) IN RELATION TO THE SOFTWARE AND/OR DOCUMENTATION, EXCEED THE LICENSE FEES PAID BY YOU FOR THE SOFTWARE.

THE DISCLAIMER OF REPRESENTATIONS, WARRANTIES AND CONDITIONS AND LIMITATION OF LIABILITY CONSTITUTE AN ESSENTIAL PART OF THIS AGREEMENT. YOU ACKNOWLEDGE THAT BUT FOR THE DISCLAIMER OF REPRESENTATIONS, WARRANTIES AND CONDITIONS AND LIMITATION OF LIABILITY, NEITHER LICENSOR NOR ANY OF ITS LICENSORS OR SUPPLIERS WOULD GRANT THE RIGHTS GRANTED IN THIS AGREEMENT.

**7. Term and Termination:** This Agreement shall continue for as long as You use the Software, however, it may be terminated sooner as provided in this Section 7. You may terminate this Agreement by destroying all copies of the Software and Documentation under Your control and providing certification of such destruction to Licensor or by returning the Software to Licensor. Licensor may terminate this Agreement immediately by providing You with written notice if: (a) You are in material breach of any provision of this Agreement, which breach, if capable of being cured, is not cured within thirty (30) days after Licensor gives You written notice thereof; or (b) You have committed a non-curable material breach of this Agreement. Upon termination You shall destroy all copies of the Software. In addition to this Section, the Sections entitled Definitions, Disclaimer of Warranties, Limitation of Liability, Title, High-Risk Activities, Intellectual Property, and General shall continue in force even after any termination of this Agreement. No termination of this Agreement will entitle You to a refund of any amounts paid by You to Licensor or affect any obligations You may have to pay any outstanding amounts owing to Licensor. Upon any termination by Licensor, You shall destroy all copies of the Software and Documentation under Your control and certify such destruction to Licensor.

**8. Support and Updates:** This Agreement does not grant You the right to any updates or enhancements of the Software or the right to receive any technical support for the Software. Such updates and other technical support services, if available, may be purchased separately from Licensor. Use of any updates or enhancements to the Software provided pursuant to any technical support You may procure from Licensor shall be governed by the terms and conditions of this Agreement. Licensor reserves the right at any time not to release or to

discontinue the release of any Software and to alter prices, features, specifications, capabilities, functions, licensing terms, release dates, general availability or other characteristics of the Software.

**9. Title:** All right, title, and interest (including all intellectual property rights) in, to, and under the Software (including all copies thereof) shall remain with Licensor and its licensors.

**10. High-Risk Activities:** The Software is not fault-tolerant and is not designed, manufactured or intended for use in or in conjunction with on-line control equipment in hazardous environments requiring fail-safe performance, such as in the operation of nuclear facilities, aircraft navigation systems, air traffic control, or direct life support machines. Licensor, its licensors, suppliers, subcontractors and distributors specifically disclaim any express or implied representations, warranties and/or conditions for such uses.

**11. U.S. Government End-Users:** The Software and Documentation are each a "commercial item" as that term is defined at FAR 2.101, consisting of "commercial computer software" and "commercial computer software documentation" as such terms are defined in FAR 12.212, and are provided to the U.S. Government only as commercial end items. Government end users acquire the rights set out in this Agreement for the Software and Documentation consistent with: (i) for acquisition by or on behalf of civilian agencies, the terms set forth in FAR 12.212; or (ii) for acquisition by or on behalf of units of the Department of Defense, the terms set forth in DFARS 227.7202. Use of the Software and Documentation is further restricted by the terms and conditions of this Agreement. For the purposes of any applicable government use, the Software and Documentation were developed exclusively at private expense, and are trade secrets of Epiphan Systems Inc. for the purpose of any Freedom of Information legislation or any other disclosure statute, regulation or provision.

**12. Export Restrictions:** The Software, Documentation and related information are subject to export and import restrictions. By downloading, installing, or using the Software, Documentation and/or related information, You are representing and warranting that You are not located in, are not under the control of, and are not a national or resident of any country to which the export of the Software, Documentation and/or related information would be prohibited by the laws and/or regulations of Canada or the United States. You are also representing and warranting that You are not an individual to whom the export of the Software, Documentation or related information would be prohibited by the laws and/or regulations of Canada or the United States. You shall comply with the export laws and regulations of Canada and the United States that are applicable to the Software, Documentation and related information and You shall also comply with any local laws and/or regulations in Your jurisdiction that may impact Your right to export, import, or use the Software, Documentation or related information, and You represent and warrant that You have complied with any such applicable laws and/or regulations. The Software, Documentation and related information shall not be used for any purposes prohibited by export laws and/or regulations, including, without limitation, nuclear, chemical, or biological weapons proliferation. You shall be responsible for procuring all required permissions for any subsequent export, import, or use of the Software, Documentation or related information.

**13. Intellectual Property:** Epiphan is a trademark or a registered trademark of Epiphan Systems Inc. in certain countries. All Licensor product names and logos are trademarks or registered trademarks of Epiphan Systems Inc. in certain countries. All other company and product names and logos are trademarks or registered trademarks of their respective owners in certain countries. You shall not disclose, transfer or otherwise provide to any third party any portion of the Software, except as expressly permitted in this Agreement.

**14. General:** This Agreement is the entire agreement between You and Licensor in respect to the Software, superseding any other agreements or discussions, oral or written. The terms and conditions of this Agreement shall prevail over any pre-printed terms on any quotes, orders, purchase orders, or purchase order acknowledgements, and shall prevail over any other communications between the parties in relation to the

Software. You may not assign this Agreement whether voluntarily, by operation of law, or otherwise without Licensor's prior written consent. Licensor may assign this Agreement at any time without notice. The failure of a party to claim a breach of any term of this Agreement shall not constitute a waiver of such breach or the right of such party to enforce any subsequent breach of such term. If any provision of this Agreement is held to be unenforceable or illegal, such decision shall not affect the validity or enforceability of such provisions under other circumstances or the remaining provisions of this Agreement and such remaining provisions shall be reformed only to the extent necessary to make them enforceable under such circumstances. This Agreement shall be governed by the laws of the Province of Ontario and the laws of Canada applicable therein. No choice or conflict of laws rules of any jurisdiction shall apply to this Agreement. You shall only be entitled to bring any action or proceeding arising out of or relating to this Agreement, the Software, Documentation or any services provided in respect to the Software and/or Documentation in a court in Ottawa, Ontario, Canada, and You consent to the jurisdiction of such courts for any such action or proceeding. You waive all rights that You may have or that may hereafter arise to contest the jurisdiction of such courts for any action or proceeding brought by You. You hereby waive any right. You may have to request a jury trial with respect to any action brought by You in connection with this Agreement, the Software or any services provided in respect to the Software. The application of the United Nations Convention on Contracts for the International Sale of Goods to this Agreement is expressly excluded.

March 28, 2014

## Environmental Information

---

The equipment that you bought has required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment. In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems. Those systems will reuse or recycle most of the materials of your end life equipment in a sound way. The crossed-out wheeled bin symbol invites you to use those systems. If you need more information about collection, reuse and recycling systems, please contact your local or regional waste administration. You can also contact us for more information on the environmental performance of our products.

## FCC & CE Compliance Statement

---

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference
2. This device must accept any interference received, including interference that may cause undesired operation.

Marking by the symbol **CE** indicates compliance of this device with EMC directive of the European Community and meets or exceeds the following technical standard.

EN 55022 - Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment.



## Other Jurisdictional Issues

---

Epiphan makes no representation that its products or information in this document or its web site is appropriate or available for use in your jurisdiction. Those who choose to access the Epiphan web site or use Epiphan products do so on their own initiative and are responsible for compliance with local laws, if and to the extent local laws are applicable

## Submissions to Epiphan and Affiliated Servers

---

Any information, including but not limited to remarks, suggestions, ideas, graphics, or other submissions, communicated to Epiphan through their Epiphan web site is the exclusive property of Epiphan. Epiphan is entitled to use any information submitted for any purpose, without restriction (except as stated in Epiphan's Privacy Statement) or compensation to the person sending the submission. The user acknowledges the originality of any submission communicated to Epiphan and accepts responsibility for its accuracy, appropriateness, and legality.

## Third Parties and Links to Third-Party Web Sites

---

Mention of non-Epiphan Systems Inc. products or services on their website, or this document site is for informational purposes and does not constitute an endorsement or recommendation.

This document may contain links to non-Epiphan web sites. These links are provided to you as a convenience, and Epiphan is not responsible for the content of any linked web site. Any outside web site accessed from the Epiphan web site is independent from Epiphan, and Epiphan has no control over the content of that web site. In addition, a link to any non-Epiphan web site does not imply that Epiphan endorses or accepts any responsibility for the content or use of such a web site.

In no event shall any reference to any third party or third party product or service be construed as an approval or endorsement by Epiphan of that third party or of any product or service provided by a third party.

## Miscellaneous

---

It is the user's responsibility to ascertain whether any information downloaded from the Epiphan web site or other websites is free of viruses, worms, trojan horses, or other items of a potentially destructive nature.

## Enforcement of Terms and Conditions

---

These Terms and Conditions for use of this document and the associated Epiphan Product are governed and interpreted pursuant to the laws of the province of Ontario, Canada, notwithstanding any principles of conflicts of law.

All disputes arising out of or relating to these Terms and Conditions shall be finally resolved by arbitration conducted in the English language in Ottawa, Ontario, Canada under the commercial arbitration rules of the Canada. The parties shall appoint as sole arbitrator a retired judge who presided in the province of Ontario. The parties shall bear equally the cost of the arbitration (except that the prevailing party shall be entitled to an award of reasonable attorneys' fees incurred in connection with the arbitration in such an amount as may be determined by the arbitrator). All decisions of the arbitrator shall be final and binding on both parties and enforceable in any court of competent jurisdiction. Notwithstanding this, application may be made to any court for a judicial acceptance of the award or order of enforcement. Notwithstanding the foregoing, Epiphan shall be entitled to seek injunctive relief, security, or other equitable remedies from any court of competent jurisdiction.

If any part of these terms is unlawful, void, or unenforceable, that part will be deemed severable and will not affect the validity and enforceability of the remaining provisions. Epiphan may, at its sole discretion and without notice, revise these terms at any time by updating this posting.

Copyright © 2014 Epiphan Systems Inc.

All Rights Reserved.