

# Epiphan SDI2USB 3.0



Release 3.30.7.8  
June 21, 2019

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## Product feedback

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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

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Go to the SDI2USB 3.0 product page on the Epiphan website to get the most recent product specifications and additional information about SDI2USB 3.0.

## Warranty

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

## Technical support

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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 <https://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)
- Product LED lights

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# SDI2USB 3.0 Release notes

Firmware update 3.30.7.8 for SDI2USB 3.0 is a maintenance release that contains stability and performance enhancements. Update your device to take advantage of the improvements offered in this latest firmware update.

**IMPORTANT NOTE:** This firmware update 3.30.7.8 is the final update to include a windows 32-bit driver version for SDI2USB 3.0.

## Removed the Web broadcasting demo feature

The Web broadcasting demo feature has been removed from the Epiphan Capture Tool and the icon no longer appears in the tool bar.

## Recommended video codec (March 2019)

An update was made in this user guide to replace the ffdshow video codec recommended in the Quick start to the x264vfw codec in the K-Lite (Mega) video codec pack.

## FCC compliance statement updated in user guide (April 2020)

Compliance statement was added in this user guide for ICES-003 of the ISED rules for Innovation, Science and Economic Development Canada; as well as an added FCC caution statement.

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# Start here

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Use the topics in this section of the user guide to get started quickly with your SDI2USB 3.0.

Review [What's in the box?](#), get a system overview in [What is SDI2USB 3.0?](#), ensure your system meets the [System requirements](#) and get your video grabber installed and working right away using the [Quick start](#)

## What is SDI2USB 3.0?

SDI2USB 3.0™ is Epiphan's professional-series external SDI (3G-SDI, HD-SDI and SD-SDI) video grabber. It captures images and video from SDI video sources and digitizes them on your laptop or workstation via connection to a USB 3.0 port.



The video capture workstation can record and/or stream the resulting uncompressed diagnostic-quality images and videos. On Windows, both audio and video capture is supported for SDI sources. Thanks to Epiphan Video capture technology, this small, portable product connects directly to your computer's USB 3.0 port - no need for a large workstation with a free peripheral component interface (PCI) slot.

SDI2USB 3.0 captures video and audio from any 3G-SDI, HD-SDI or SD-SDI source. Meeting greater demands for transferring larger files at faster speeds, this external video grabber supports USB 3.0 technology, capable of transferring uncompressed data with speeds of up to 5.0 (Gbits/s) - about ten times faster than USB 2.0.



In practice transfer speeds are dependent on factors such as USB load and hardware configuration.

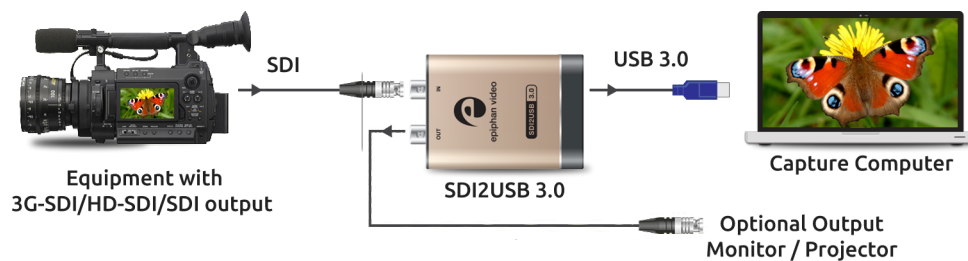
SDI2USB 3.0 is versatile and can be used with multiple workstation configurations. It is backward compatible with USB 2.0 connections, however it transfers video at a reduced frame rate when using USB 2.0.



Using the included Epiphan Capture Tool, SDI2USB 3.0 captures full 1080p HD in RGB-24-bit color at 30 frames per seconds and supports resolutions up to 1920×1080. When working with third-party software, such as Windows Media Encoder with YUV 4:2:0 chroma sub-sampling, 1080p video is captured and recorded 60 frames per second. Note in all cases the SDI video signal is captured in RGB 24-bit color and in the case of YUV 4:2:0 chroma sub-sampling, it is converted to this new color space.

For more information about maximizing the frame rate when capturing, recording and streaming video using third-party applications, refer to the [How to Record Video using Window Media Encoder](#) tutorial on Epiphan's website.

In addition to an input port, the SDI2USB 3.0 offers an SDI output port that can be used for confidence monitoring. In the example below, a monitor connected to the output port allows you to monitor the input signal and make quick adjustments if required.



The SDI2USB 3.0 video grabber is fully compatible with DirectShow in Windows. This means you can use it with a number of different third party applications for capturing, recording and streaming video.



SDI2USB 3.0 is part of Epiphan's complete line of video and audio signal capture products. For more information about all Epiphan's video signal capture products, refer to the [USB Video Grabbers](#) page on the Epiphan Video website.

# What's in the box?

The SDI2USB 3.0 package includes the following

1. SDI2USB 3.0 video grabber (read more, [Physical attributes](#))
2. One 3G compliant SDI cable
3. One USB 3.0 cable

**Table 1** Description of included cables (images for identification only, color and appearance may vary)

Image	Name	Description
	SDI cable	Connects SDI sources the video grabber.
	USB 3.0 cable	High speed transfer cable that connects the video grabber to your capture workstation or laptop computer.

## Physical attributes

The SDI2USB 3.0 device measures 90mm x 60mm x 23mm (3.54" x 2.36" x 0.91"). It features a single SDI (BNC type)connector, an SDI passthrough port, a USB 3.0 connector and an LED indicator. This small, portable product easily fits in the palm of your hand.



**Table 2** Connectors and indicators

Number	Interface	Description
1	SDI Input	Connect an input source with an SD-SDI, HD-SDI or a 3G-SDI signal.
2	SDI Output	Connect an SDI output source, such as a monitor, to the SDI2USB 3.0 device. Note: the SDI output port is ONLY active if the SDI2USB 3.0 is connected to a video capture workstation providing power and running the SDI2USB 3.0 driver.
3	USB 3.0 Output	Connects the video grabber to the capture workstation and enables data transfer from the video source to the workstation.  The video grabber works best when connected to a USB 3.0 port on the capture workstation, but is also backward compatible with USB 2.0.

Number	Interface	Description
4	LED	LED indicator light indicates the current status of the video grabber. See <a href="#">Indicator LED details</a> for the meaning of different light colors.



Epiphan always recommends using a USB 3.0 port for best performance. If a USB 2.0 port is used instead, SDI2USB 3.0 transfers video at a lower frame rate and is unable to capture embedded audio.

# System requirements

System requirements are the technical essentials your computer needs to work with your Epiphan video grabber. System requirements to use SDI2USB 3.0 are:

<b>Video source</b>	Any 3G-SDI, HD-SDI or SD-SDI source. (SDI2USB 3.0 cannot capture from HDCP encrypted sources)
<b>Video capture workstation</b>	A computer (laptop/desktop/other format) with: <ul style="list-style-type: none"> <li>• a compatible USB 3.0 host controller for SuperSpeed operation (recommended Intel® USB 3.0 eXtensible Host Controller); or,</li> <li>• a USB 2.0 controller</li> </ul>
<b>Video capture workstation operating system</b>	Windows 10
<b>RAM</b>	Minimum recommended value: 4 GB
<b>Available hard disk space</b>	16 GB (32-bit OS) or 20 GB (64-bit OS)



Contact support if you need to use earlier Windows platforms with your capture card. Epiphan drivers for SDI2USB 3.0 from release 3.30.2 onwards use SHA-2 signing, which is not supported on Windows XP or Windows Vista.

# Quick start

Use this quick start to get up and running quickly with your SDI2USB 3.0 on Windows capture workstations. You can also use these procedures to install firmware updates.

Before you get started:

- Have all required cables, components, and adapters (if needed), see [What's in the box?](#).
- Ensure your capture workstation meets the [System requirements](#).
- Have a video source, such as a camera, computer, tablet, or phone and ensure that the content isn't HDCP protected. For Windows systems, ensure there's audio and video on the same source cable.
- Internet access to download drivers from the Epiphan website.
- Administrator privileges for your capture workstation.

## Install the video grabber drivers

This step must be completed before connecting the video grabber to your video capture workstation.

1. (Optional) Disconnect the video grabber from your capture workstation if it is currently connected.
2. Log into your capture workstation using an account with administrator privileges. If you're workstation is on a domain, ensure that you log into the local administrator account on the workstation and not an account on the domain.
3. Using a web browser on your capture workstation, go to your video grabber's [Support page under Software](#) and download the appropriate driver for your system's operating system.



For Windows 10 operating systems, choose either the 64-bit or 32-bit driver as required for your particular operating system. If you don't know which driver version you need, see this Microsoft knowledge base article for help <https://support.microsoft.com/en-us/kb/827218>.

4. When the download is complete, open the download destination folder.
5. (Optional) Close any unnecessary windows and shut down programs that are running on the workstation. Note that overly restrictive security software can block the installation of device drivers. In that case, consult your system administrator for the procedures to allow the driver update on the capture workstation.
6. Extract all driver files and install the drivers and the Epiphan Capture Tool on your Windows workstation.

- a. Right-click on the .zip file and **Extract All**.
- b. From the extracted files folder, right-click on **setup.exe** and select **Run as administrator**.
- c. Click **Install** and follow the prompts to install the drivers. The Epiphan Capture Tool is installed at the same time as the drivers.



Installation may fail for computers inheriting security permissions from a Windows domain, even when the installer is run as administrator. In that case, contact your local IT team for assistance with installation.

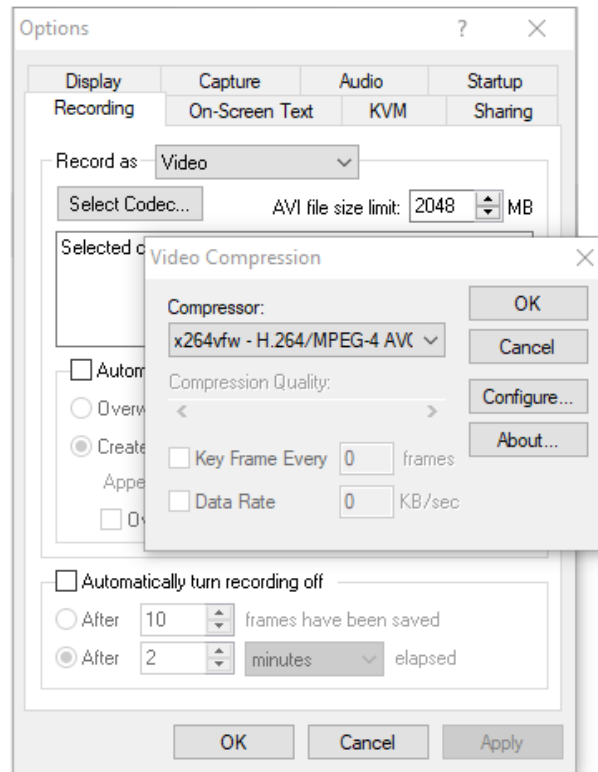
7. Restart the capture workstation after the installation completes and reconnect the video grabber.

## Install the video codec for Windows and set video compression options

For Windows operating systems, we recommend installing the K-Lite (Mega) video codec pack. This codec pack adds video compression options for recording video using the Epiphan Capture Tool. Recording video without compression consumes a large amount of disk space, especially when recording at higher resolutions and isn't recommended. We've tested and found that codec x264vfw in this codec pack is the better choice for use with your video grabber.

To install the K-Lite (Mega) video codec pack on your Windows capture workstation:

1. Log into your capture workstation using an account with administrator privileges and launch the Epiphan Capture Tool.
2. From the **Tools** menu, select **Options...** and ensure that **Display format** on the Display tab is set to **RGB 24 bits per pixel** (default).
3. Using a web browser on your capture workstation, download the K-Lite (Mega version) video codec pack (32-bit and 64-bit versions are included):
  - [K-Lite \(Mega\) video codec pack](#)
4. Locate the executable file that was downloaded, then double-click the file and follow the prompts to install the K-Lite (Mega) codec pack for your Window's version. Use the **Normal** installation mode and accept the default options. Click **Finish** when the codec pack has finished installing.
5. From the **Tools** menu in the Epiphan Capture Tool, select **Options...** and click the **Recording tab**.
6. From the **Recording tab**, set the **Record as** field to **Video** and click **Select Codec**.
7. In the Compressor drop down, select **x264vfw - H.264/MPEG-4 AVC compression** and click **OK**.



For most common installations, use the default settings for the video compression codec. You are not required to configure the video compression parameters.

8. Click **Apply** to save your changes. Click **OK** until you've exited all the configuration menus.

## Connect the video grabber and the video source

Now that the drivers and video codec are installed, you're ready to begin capturing! Although the steps below ask you to connect the video source to the grabber, then the grabber to the workstation, you can connect the video source and video grabber in any order.

1. Connect the video source to the SDI **IN** port on the video grabber. (If necessary, use an adapter or appropriate converter cable.)





2. Connect the provided USB 3.0 cable to the bottom of the video grabber.



3. Connect the other end of the USB cable to an available USB port on your video capture workstation (use a USB 3.0 port for best performance).
4. Optionally connect an SDI monitor to the **SDI OUT** port using another SDI cable (not included). Note the monitor will only work when the video grabber is connected to the workstation.



If using a splitter cable for your video source, use a high-quality SDI splitter to split the signal between an other devices and the video grabber. The SDI out port is a practical way to simultaneously display the video to a remote monitor while it is captured, recorded and streamed.

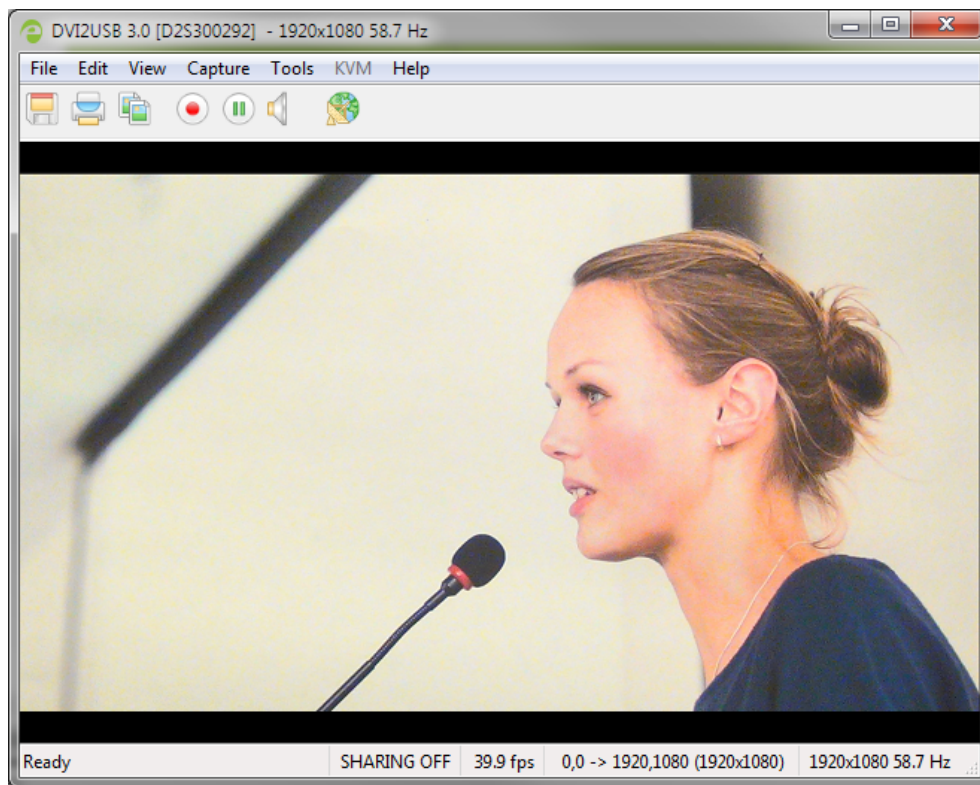
## Capture video using the Epiphan Capture Tool

If needed, read [Epiphan Capture Tool](#) for information on how to launch the capture tool.

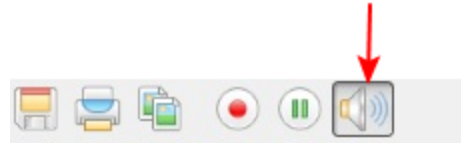


You can also use third-party capture applications to capture video from SDI2USB 3.0. Consult the documentation that came with the third-party capture application to select the device.

1. Start the Epiphan Capture Tool; your video source is immediately detected (if you see a No Signal message, disconnect and reconnect the cables to make sure they are all seated correctly).



2. If you want to capture audio from the video grabber, click the Enable Audio button in the toolbar; it's style changes to show audio is enabled. (If your source doesn't have audio or if you want to use a different audio input method, select **Capture » Audio Input Device** to select your audio source.)



3. Use the red record button to start recording. The **Save** dialog box opens. Specify the filename and folder to save your file.



4. When you are done capturing, use the pause or stop buttons to pause or stop recording.



5. Use your operating system's file browser to find your saved capture file.



If you're having trouble capturing embedded audio, make sure you have the video grabber connected to a USB 3.0 port. Because of the extra volume of data that needs to be captured, embedded audio capture is only supported when connected via USB 3.0.

## What's next?

Now that you have done a basic recording, you might like to know more about the following topics:

- [Configure your device](#)
- [DirectShow video adjustments](#)
- [Epiphan Capture Tool](#)

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

## Indicator LED details

The color and action of the indicator LED depends on whether you are connected by USB 3.0 or USB 2.0. For maximum performance, always use a USB 3.0 port and the included USB 3.0 cable. Note that frame capture rate will be reduced when connected via USB 2.0.

If you're not sure if your controller is USB 3.0 or USB 2.0, plug SDI2USB 3.0 into the capture computer and look at the indicator LED (note that test this assumes there is no video source plugged into the video grabber):



A flashing blue LED means USB 3.0



A flashing green LED means USB 2.0

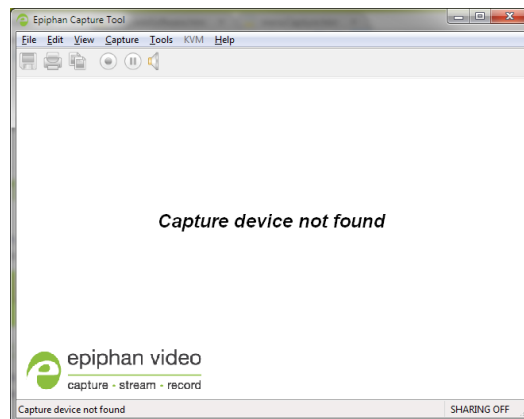
LED color	USB 3.0 connection	USB 2.0 connection
Solid red	The video grabber is powered on but is not functional. The driver is not installed or failed to load. If you installed the Epiphan Capture Tool and drivers, disconnect and reconnect the USB cable.	
Blinking red	The video grabber's security validation has failed. Contact Epiphan support with the product serial number and details of your system.	
Solid yellow	Image/video capture or data transfer is in progress.	
Flashing blue	The firmware is loaded successfully, the device is idle.	-
Flashing green	Video mode detection is in progress.	The firmware is loaded successfully, the device is idle.
Solid green	-	Video mode detection is in progress.

# Troubleshoot

If you're experiencing problems with your SDI2USB 3.0, use the following tips to attempt to rectify the problem.

## Capture device not found

If the Epiphan Capture Tool does not find the video grabber, the message **Capture device not found** is displayed in the capture application.

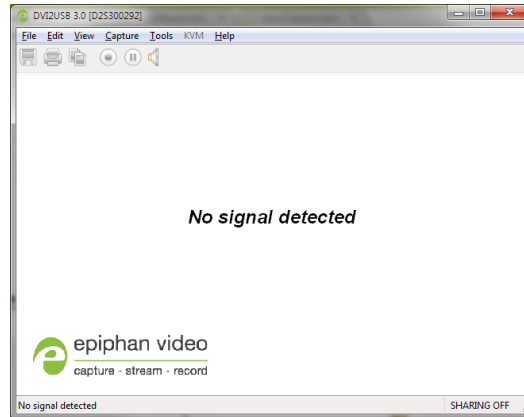


Try the following troubleshooting tips:

- Confirm that the video grabber is connected to the capture workstation's USB port. The device's LED is lit when it is connected.
- Disconnect and reconnect the video grabber from the USB port. This allows the operating system to load drivers for the video grabber, if they haven't already been loaded.
- Check the indicator LED colors and compare to the list described in [Indicator LED details](#).
- On Windows, check the Windows Device Manager to verify that you can see the video grabber in the list of devices.
- If trying the above suggestions does not resolve the issue, close all applications and restart your video capture workstation.

## No signal detected

If the Epiphan Capture Tool finds the video grabber but does not see a connected video source, the message **No signal detected** is displayed in the capture application.



Try the following troubleshooting tips:

- Confirm that the video grabber used by the application is the correct one. Compare the serial number in the window frame (300292 in the example above) with the serial number sticker on the back of your device. If they do not match, use the **Capture » Select device...** (Windows) item to select a different video grabber.
- Confirm that your video source is on and is outputting data to the video cable connected to the video grabber (this may be a hardware or software setting in your video source).
- Disconnect and reconnect the video source from the video grabber.
- Check the indicator LED colors and compare to the list described in [Indicator LED details](#).

## No button to apply configuration changes

On Windows, if you don't see the button to apply your configuration changes in the Epiphan Capture Tool, the application was opened without administrative privileges. Close the application and then re-open with administrative privileges.

## When I power on my Windows workstation, the connected video grabber isn't detected

Try disabling the Fastboot settings on your workstation. You can disable fast start up from **Control Panel > Power Options > Choose what the power buttons do** and deselect **Turn on fast startup** under **Change settings that are currently unavailable**.

## If the problem on your Windows capture workstation persists...

Try modifying the power settings. From **Control Panel > Power Options > Change plan settings**, ensure that the power options are set to **High performance**. If you're workstation is a laptop, ensure that the AC adapter is plugged in.

Also under **Change plan settings**, modify these advanced power settings:

- **USB settings:** Change the USB selective suspend setting to **Disabled**.
- **PCI Express:** Set the Link State Power Management setting to **Off**.

While you're at it, open the **Device Manager** and under **Universal Serial Bus controllers**, ensure that any USB 3.0 Hubs that are listed here have the **Allow the computer to turn off this device to save power** setting **Disabled** under **Properties > Power Management**.

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# Configure your device

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Epiphan lets you fine tune image adjustments and control how your video grabber works with DirectShow-compatible applications.

To access the configuration screen, do one of the following:

1. From the Epiphan Capture, choose **Capture » Configure Device...** or
2. Open the **Windows Control Panel**.
  - a. Click the Epiphan Frame Grabbers applet; the Epiphan Frame Grabber Configuration window appears.
  - b. Select the grabber you wish to configure.
  - c. Click **Edit Configuration**; the edit configuration window opens.

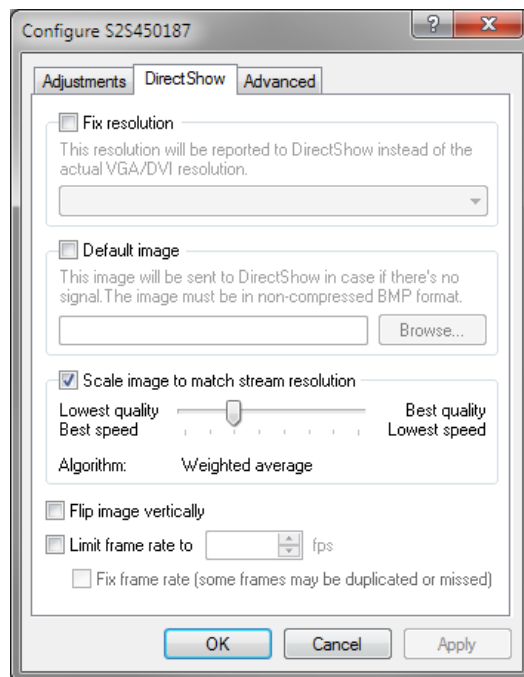


# DirectShow video adjustments

In the **Epiphan Capture Tool**, the **Capture » Configure Device » DirectShow** page lets you configure how the device interacts with DirectShow compatible applications. From the resolution to whether or not the image is flipped, there are a variety of options available. See the table below for an explanation of each option.

You can also access this screen using the Epiphan applet in the Control Panel by selecting the video grabber you'd like to configure and clicking **Configure Device** or **Default Configuration**.

The adjustments made here are stored in the device driver and are used until you change them again. Once applied, you do not need to keep the Epiphan Capture Tool open to use the values you set. Be aware that third party DirectShow compatible applications can also have settings that may make it appear your settings are not being honored. If you're having difficulty seeing your changes, check the third party application's advanced settings.



Item	Description
Fix resolution	<p>Use this checkbox to force the resolution your video grabber reports to DirectShow compatible applications. When checked, the drop down box has a list of resolutions from which you pick your desired resolution.</p> <p>If you choose a resolution that is smaller or larger than the source</p>

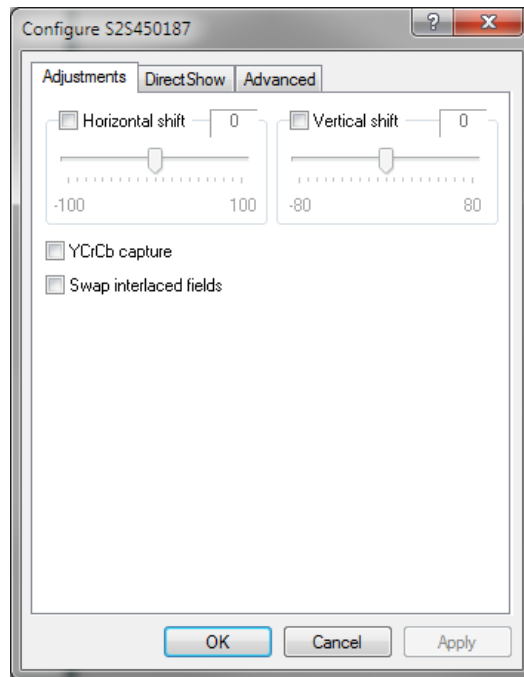
Item	Description
	video, the Epiphan drivers will scale the image for you (unless you uncheck <b>Scale image to match stream resolution</b> , in which case the image will be cropped to match your chosen resolution).
Default image	Select an image to display when there is no signal captured from your video grabber. The uncompressed BMP image must be located on your video capture workstation.
Scale image to match stream resolution	<p>If you are using a fixed resolution and choose not to scale the image, the captured image will appear cropped to your specified resolution when capturing with a DirectShow compatible utility. Generally the cropping happens at the top left corner of the video, but test first to be sure you see the same results.</p> <p>Normally, when choosing to use a fixed resolution with DirectShow, you'll want the Epiphan drivers to scale the image for you. Use the slider to determine the type of scaling you'd like. Scaling performance is a tradeoff between quality and CPU cycles on the capture computer. Lower quality (left side of the slider) is faster and takes fewer CPU cycles, where higher quality (right side of the slider) is slower and takes more CPU time. Try different values out to find the one that works for your specific use case.</p>
Flip image vertically	Use this check box to flip your captured image vertically when sending over DirectShow.
Limit frame rate to	<p>Use this to limit (or fix) the frame rate for the data you send to DirectShow.</p> <p>For example, if you're using a DirectShow-compatible application like WebEx and you're sharing something relatively static (like a PowerPoint presentation), you could limit the frame rate to 5 fps, which would be plenty for people watching at the other end, and would avoid filling your data pipe with identical images.</p>

# Visual video adjustments

The **Adjustments** page lets you configure the device to manage slight shifts in the data and the color mode you're capturing from.

You can access this screen by selecting **Capture » Configure Device » Adjustments** or using the Epiphan applet in the Control Panel by selecting the video grabber you'd like to configure and clicking **Configure Device** or **Default Configuration**.

The main adjustments screen has the following appearance.



Item	Description
Horizontal shift	<p>Configure horizontal shift to offset the captured image position. For example, a captured image shifted slightly to the right (horizontally) can be corrected with minor adjustments to the horizontal shift settings.</p> <p>Increasing the value entered in the Horizontal Shift field shifts the image to the right, decreasing it shifts the images to the left.</p>
Vertical shift	<p>Configure vertical shift to offset the captured image position. For example, a captured image shifted slightly downward (vertically) can be corrected with minor adjustments to the vertical shift settings.</p>

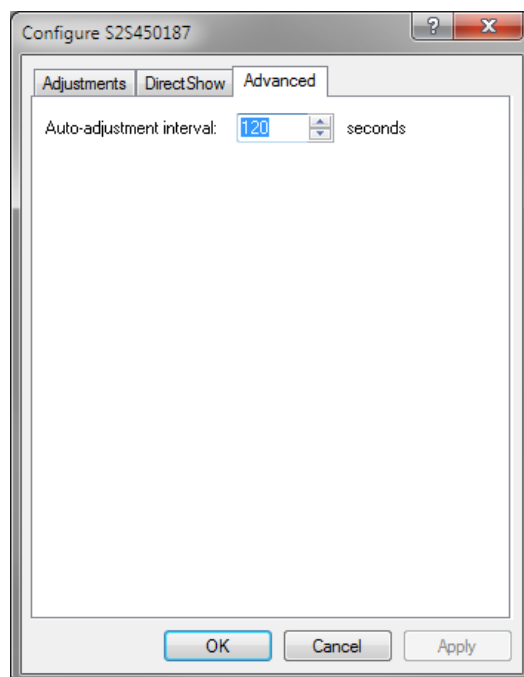
Item	Description
	Increasing the value entered in the Vertical Shift field shifts the image up, decreasing it shifts the images down.
YCrCb capture	Generally your SDI2USB 3.0 auto-detects input type, but in case of an issue where the input type isn't detected, you can select this checkbox to capture analog component video with YCrCb encoding.
Swap interlaced fields	When capturing from some sources, the video grabber cannot correctly determine the order to place interlaced lines. Use this checkbox to resolve the issue.

## Advanced adjustments

The **Advanced** page lets you configure the device's auto-adjustment.

You can access this screen by selecting **Capture » Configure Device » Advanced** or using the Epiphan applet in the Control Panel by selecting the video grabber you'd like to configure and clicking **Configure Device** or **Default Configuration**.

The advanced adjustment dialog looks like this:



Item	Description
Auto-adjustment interval	Specify an interval, in seconds that the video grabber should use between auto-adjustments. There is generally no need to change this value, however if you will be changing your source frequently during capture, you may want to reduce the interval.
On-board compression	This option only appears when connected to a USB 2.0 port. Select this option to enable on-board compression of the incoming signal when connected to a USB 2.0 port.



The SDI2USB 3.0 auto-detects the input type; however, if the input type isn't detected, you can manually select to capture analog component video using the YCrCb encoding from the main Adjustments tab. You can also swap interlaced fields from the main Adjustments tab if the video grabber can't correctly determine the order to place interlaced lines.

# Epiphan Capture Tool

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The Epiphan Capture Tool is a free software application available for Windows. You can use this tool for capturing and recording video or images from your source, and you can also use it to configure your video grabber for use with third party DirectShow-compatible applications.

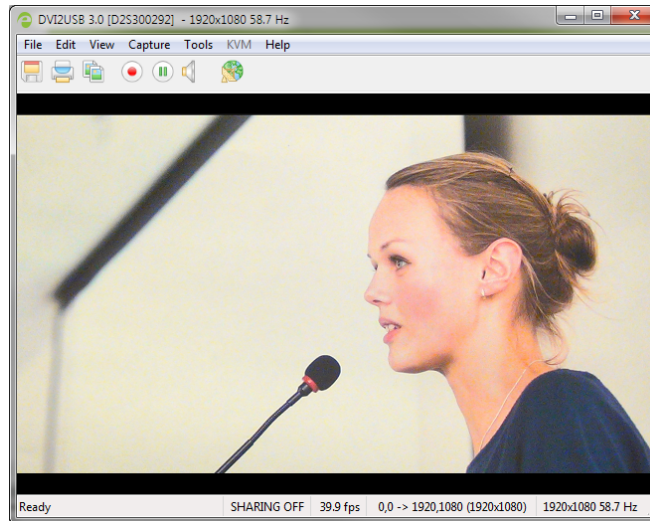
The same Epiphan Capture Tool is used by all Epiphan video grabber models that use Epiphan-supplied drivers (e.g. [DVI2USB 3.0](#), [SDI2USB 3.0](#), [VGA2USB](#), [DVI2PCIe Duo](#) and more) as well as Epiphan's portable USB-based KVM, [KVM2USB](#). As a result, some of the functionality in the software isn't applicable to your SDI2USB 3.0 video grabber. This guide outlines which functions are relevant and explains how to use each one.

# Epiphan Capture Tool

To start the application, from the **Windows Start menu** select **Start » Epiphan Capture Tool**, or double-click on the installed desktop icon.

The application starts up and looks for the SDI2USB 3.0 video grabber connected to your PC.

If the video grabber is connected and operating, the capture application finds it and the image being captured appears on the application display.



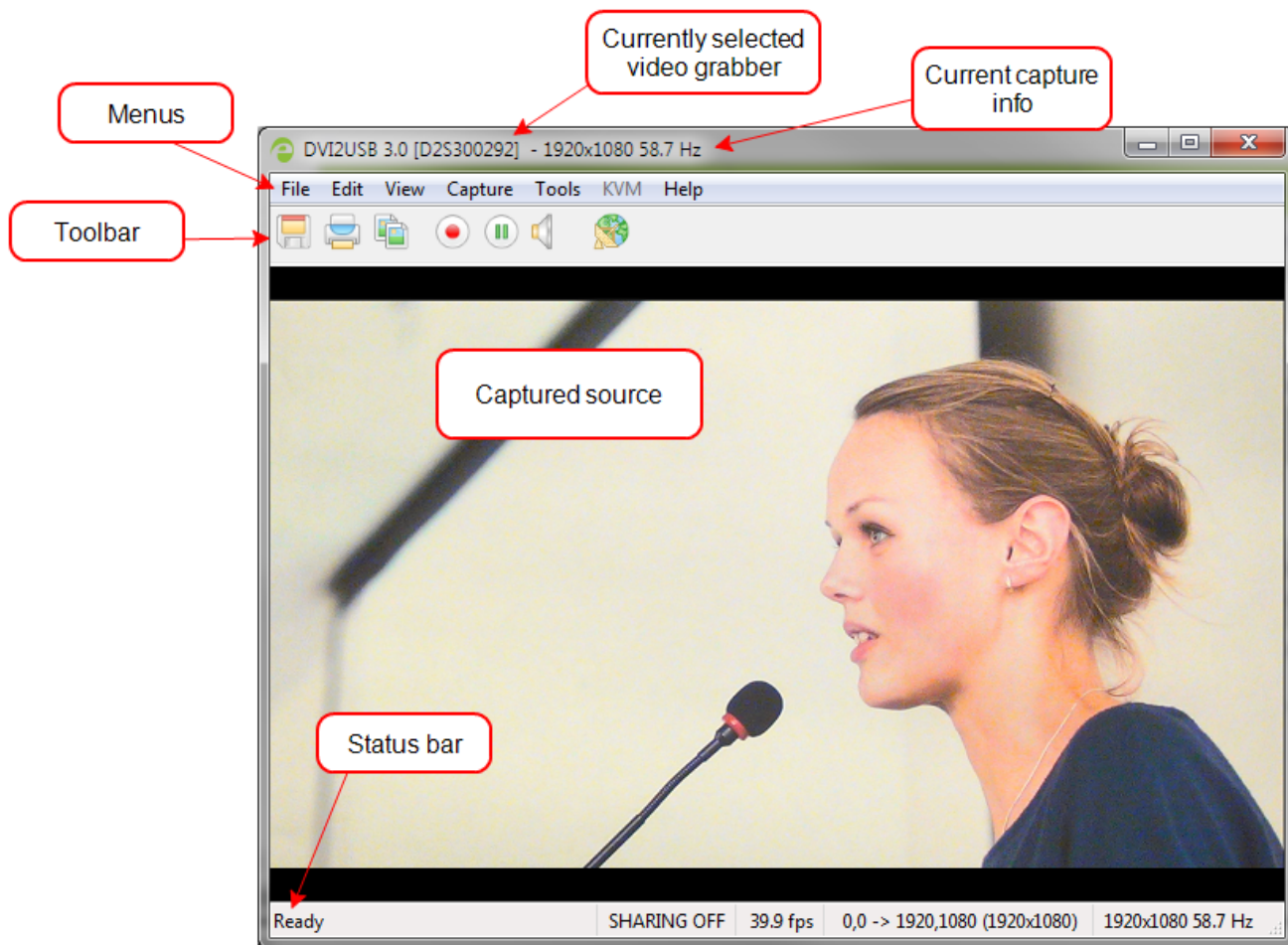
As the application starts, the following messages may appear:

- **Capture device not found** as the application attempts to connect with the video grabber.
- **Detecting Video Mode** as the application connects to a device and then determines the video mode of the device.
- **Tuning Capture Parameters** as the application synchronizes and tunes capture settings and image adjustments.
- **No Signal Detected** if the application connects to a video grabber that is not connected to an active video source.

If the video grabber device is not capturing images when you have a video source connected, follow the troubleshooting tips here: [Troubleshoot](#).

The capture tool has the following sections:

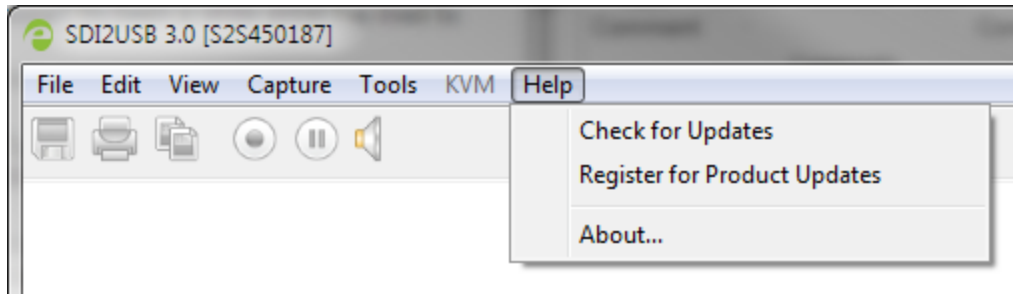




Read more about the menus in these topics: [File menu](#), [Edit menu \(Windows\)](#), [View menu](#), [Capture menu](#), [Tools menu](#) [Help menu](#). You can also read more about the [Toolbar](#) and [Status bar](#).

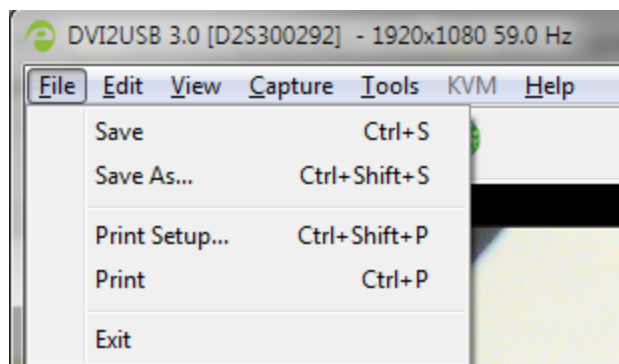
# Menus

These topics cover the menus found in the Epiphan Capture Tool.



## File menu

The following is a breakdown of the **File** menu in the Epiphan Capture Tool.



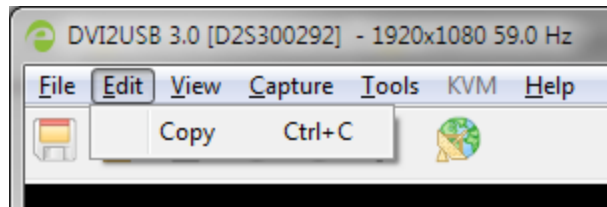
The **File** menu has these options:

Menu item	Shortcut	Description
Save	Ctrl+S	Save a snapshot of the current image to a file on the video capture workstation. See <a href="#">To save a snapshot</a> .
Save As...	Ctrl+Shift+S	Save a snapshot of the current image to a file, using a new name or format. See <a href="#">To save a snapshot</a> .
Print Setup...	Ctrl+Shift+P	Opens the printer configuration dialog, allowing you to select a printer or set printer options.
Print	Ctrl+P	Prints a snapshot of the current image. See <a href="#">To print a snapshot</a> .
Exit		Closes the application, terminating all capture and recording done

Menu item	Shortcut	Description
		through this instance of the Epiphan Capture Tool.

## Edit menu (Windows)

The following is a breakdown of the **Edit** menu in the Epiphan Capture Tool.

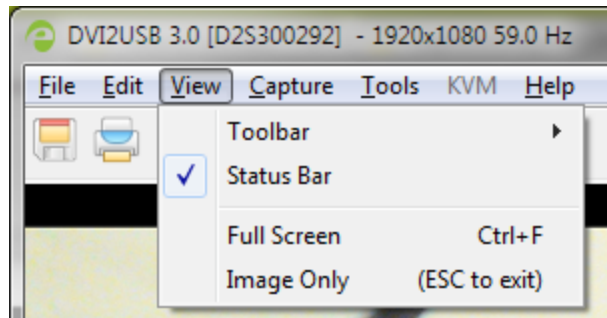


The **Edit** menu has these options:

Menu item	Shortcut	Description
Copy	Ctrl+C	Copy a snapshot of the current image to the clipboard. See <a href="#">To copy a snapshot</a> .

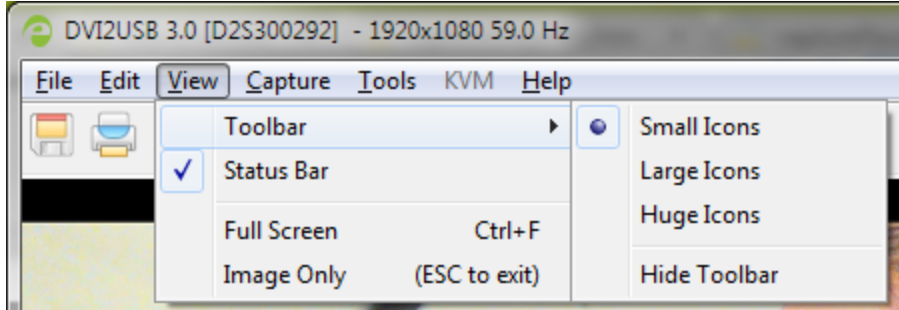
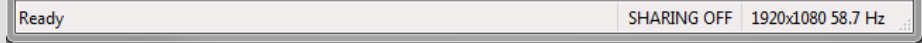
## View menu

The following is a breakdown of the **View** menu in the Epiphan Capture Tool.



The **View** menu has these options:

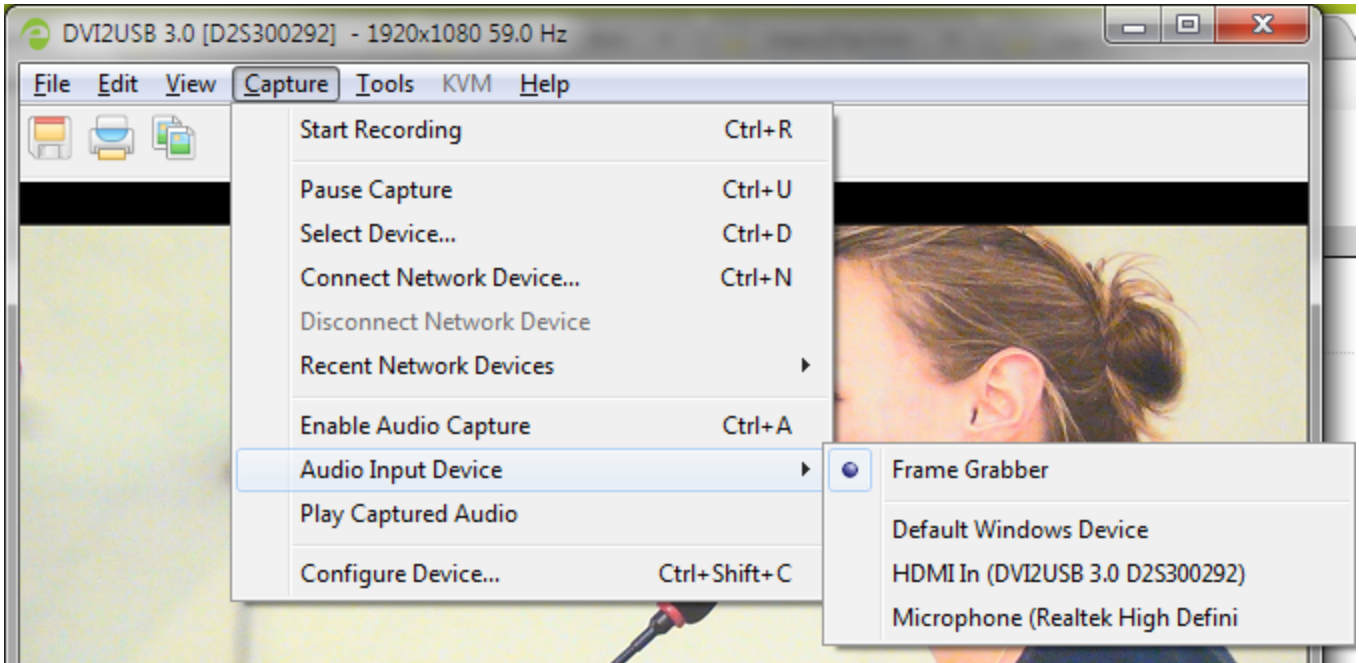
Menu item	Shortcut	Description
Toolbar		Change the size of the toolbar icons or hide/show the toolbar. (When the toolbar is hidden, choose a size to restore it.)

Menu item	Shortcut	Description
		
Status Bar		View or hide the status bar at the bottom of the application window. 
Full Screen	Ctrl+F	Enable full screen mode. Press ESC (the escape key) to return to window mode.
Image Only	(ESC to exit)	Put the Epiphan Capture Tool into a mode where the window borders, toolbar, status bar and menu bar are not displayed (scroll bars may still be displayed). The image only mode can be useful for integrating the Epiphan Capture Tool into a custom system UI. You can still use the existing shortcut keys. Press ESC (the escape key) to return to the normal operating mode.

## Capture menu

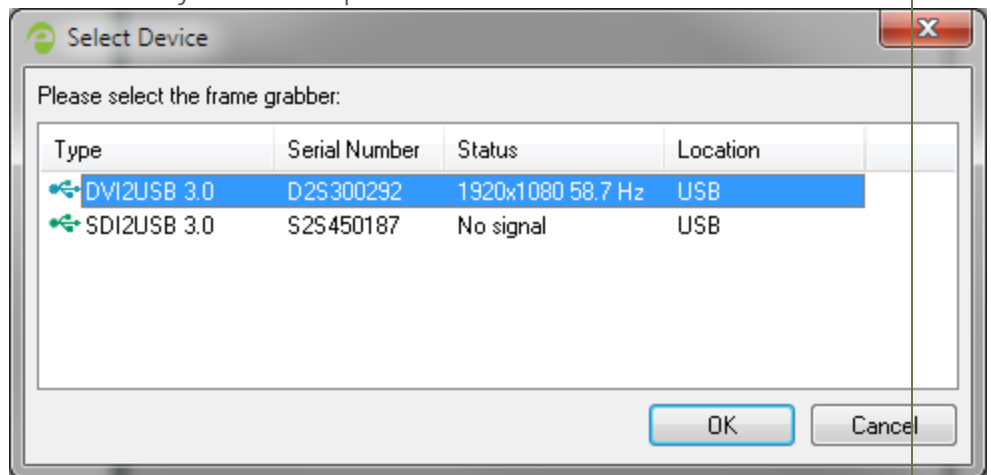
The following is a breakdown of the **Capture** menu in the Epiphan Capture Tool.

The Capture menu lets you start, stop and pause capturing/recording. It also lets you select the SDI2USB 3.0 device that this instance of the application works with, when you have more than one Epiphan video grabber attached to your video capture workstation.



The **Capture** menu has these options:

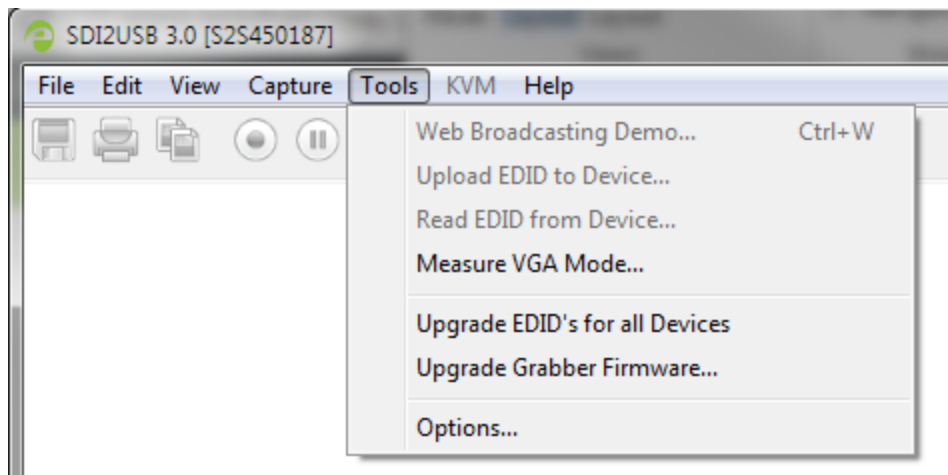
Menu item	Shortcut	Description
Start Recording <i>(Stop Recording)</i>	Ctrl+R	Start or stop recording your captured stream as a video or a series of captured images. See <a href="#">Record a video</a> and <a href="#">Record as a series of images</a> .
Pause Capture <i>(Resume Capture)</i>	Ctrl+U	Pause or unpauses capture and recording (the last frame will stay visible on the screen). See <a href="#">Pause video capture</a> .
Select Device...	Ctrl+N	Use when you have more than one Epiphan Pro Series Video Grabber connected to your video capture workstation.



Menu item	Shortcut	Description
		Choose the device you want to use in this instance of the Epiphan Capture Tool and click <b>OK</b> .
Connect Network Device...		Used with Epiphan's legacy VGA2Ethernet device, outside the scope of this product documentation.
Disconnect Network Device		
Recent Network Devices		
Enable Audio Capture (Disable Audio Capture)	Ctrl+A	When enabled, audio captured by the device, or by the configured external audio source is included in the recording. See <a href="#">Configure audio</a> .
Audio Input Device		Opens a sub-menu to let you choose the input device used for audio capture. See <a href="#">Configure audio</a> for more details.
Play Captured Audio		When enabled, captured audio is played on the video capture workstation (e.g. through the workstation's speakers or attached headphones). Use as a confidence monitor to check the audio you're recording, or to share the audio you're capturing with local viewers.  Enable Audio Capture must be enabled for the Play Captured Audio settings to work.
Configure Device...	Ctrl+Shift+C	Opens a dialog to let you configure specific capture adjustments for the video grabber. See <a href="#">Configure your device</a> .

## Tools menu

The Tools menu in the Epiphan Capture Tool lets you upload custom EDIDs and set application options.



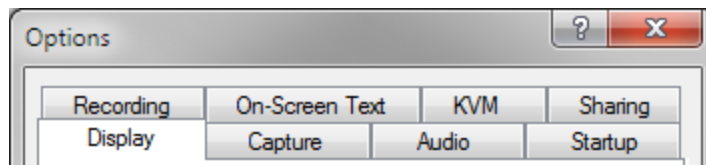
The **Tools** menu has these options:

Menu item	Shortcut	Description
Upload EDID to Device...		This feature is not applicable for SDI2USB 3.0.
Read EDID from Device...		This feature is not applicable for SDI2USB 3.0.
Measure VGA Mode...		When requested by Epiphan technical support, you can use this command to display low-level information they can use to help diagnose problems. Copy this information into an email or chat with Epiphan technical support.
Upgrade EDIDs for all Devices		From time to time, Epiphan releases updated general-purpose EDIDs for video grabbers. Use this tool to check for updates and apply them.
Options		Lets you configure a number of options related to capturing video, recording video and more. See <a href="#">Application options</a> for a detailed explanation of the available options.

## Application options

The Epiphan Capture Tool has a number of available configuration options, accessible from the **Tools » Options** menu.

The following categories of options are available: Recording, On-Screen Text, KVM, Sharing, Display, Capture, Audio and Startup.



The **Options** dialog has these tabs:

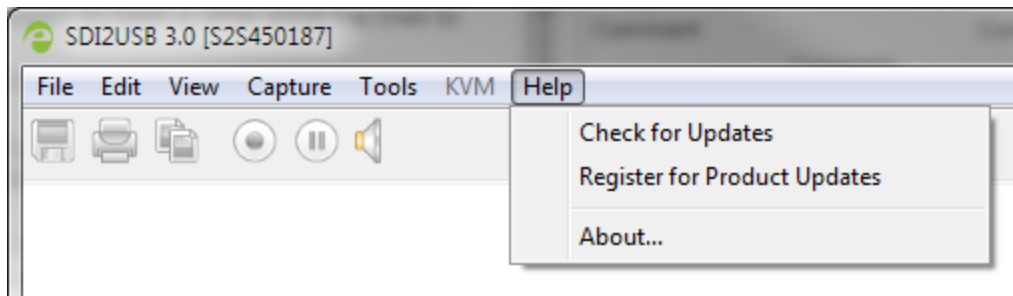
Menu item	Description
Display	Lets you control how the capture tool displays the captured images and what information is displayed in the status bar. See <a href="#">Configure display options</a> for more information on the display format and <a href="#">Status bar</a> for a description and examples of the optional status bar indicators.
Capture	<p>Allows you to configure cropping (to capture only a specific part of the video frame). See <a href="#">Crop the captured image</a> for details.</p> <p>From this tab you can also change the interval between <b>video mode detection</b> attempts. Making the number smaller means the grabber will check more often for a different video mode, but it also means the grabber will work harder and could reduce frame rate.</p> <p>Lastly, from this tab you can also <b>limit the frame</b> rate of your capture. This could be necessary if you are streaming (or recording) and know you have a small amount of bandwidth (or disk space) and don't want to overwhelm it with too much data.</p>
Audio	Lets you configure the audio format for the recording, the audio source used, and whether or not the Epiphan Capture Tool should play the captured audio on the capture workstation's audio output device (i.e. local speakers or headphones, which are useful for monitoring the audio captured). See <a href="#">Configure audio</a> for information on configuring audio capture.
Startup	<p>Allows you to choose whether or not the Epiphan Capture Tool should start up in full screen mode.</p> <p>The other option on this tab is used for legacy Epiphan products (network-attached video grabbers like VGA2Ethernet).</p>
Recording	Lets you configure the capture application's record feature to save either as video or as images. See <a href="#">Record a video</a> , <a href="#">Configure optional recording settings</a> <a href="#">Record as a series of images</a> for more details.



Menu item	Description
On-Screen Text	Using the Epiphan Capture Tool you can add a watermark to your captured frames; this tab lets you configure that watermark. See <a href="#">Add a watermark</a> .
KVM	This feature is not used by SDI2USB 3.0. It is for Epiphan's <a href="#">KVM2USB</a> .
Sharing	The Epiphan Capture Tool comes with a sample sharing application, VGA2Web, a <b>demo</b> . See <a href="#">Sharing / streaming demo tool</a> . This Options tab allows you to override the default compression settings used with that application.

## Help menu

The **Help** menu in the Epiphan Capture Tool lets you check for software updates, register your product, and see information about your current software installation.



Use the **Help » Check for Updates** menu to check for updates to the Epiphan Capture Tool and drivers. Note that sometimes there can be an updated version of the software, but it doesn't add any new features or have any updates for the model of video grabber you are using. In those cases the software update check will not recommend an update, however you can still update your software using the method described in [Upgrade your drivers and software](#).

# Toolbar

The Epiphan Capture Tool toolbar provides a set of quick-access buttons for actions that are used frequently such as starting, stopping and pausing capture and saving snapshots.







Toolbar:



You can change the size of icons on the toolbar using the menu command **View » Toolbar » (size) Icons**.

You can hide the toolbar using **View » Toolbar » Hide Toolbar**. To show the toolbar again when it is hidden, select any of the toolbar icon sizes.

The toolbar items:

Icon (Windows)	Description
	Saves a snapshot of the currently captured frame. You may wish to pause capture first. See <a href="#">Copy, save, or print a snapshot</a> for more details.
	Prints the currently captured frame. You may wish to pause capture first. See <a href="#">Copy, save, or print a snapshot</a> for more details.
	Copies the currently captured frame to the clipboard. You may wish to pause capture first. See <a href="#">Copy, save, or print a snapshot</a> for more details.
	Starts (or stops) recording of the captured frames (in image or video format). See <a href="#">Record a video</a> and <a href="#">Record as a series of images</a> .
	Pauses capture and recording, if applicable. (Also closes out the recording file.)
	Enables or disables audio capture. See <a href="#">Configure audio</a> for more details on configuring audio capture.

# Copy, save, or print a snapshot

You can also use the Epiphan Capture Tool to copy, save, or print a snapshot from the stream.

## To save a snapshot

Save a .bmp, .jpg, or .png of the stream you are capturing using any of the following methods. You can optionally [Pause video capture](#) prior to saving the image.

- Select **File » Save**
- Press **Ctrl+S**
- Use the Save icon on the toolbar



The first time you save a snapshot, the **Save As** dialog will open to ask for a file location and file type. Subsequent images will **automatically overwrite** this file unless you use **File » Save As...** or **Ctrl+Shift+S**.

## To print a snapshot

You can directly print a snapshot from the stream using any of the following methods. You can optionally [Pause video capture](#) prior to saving the image.

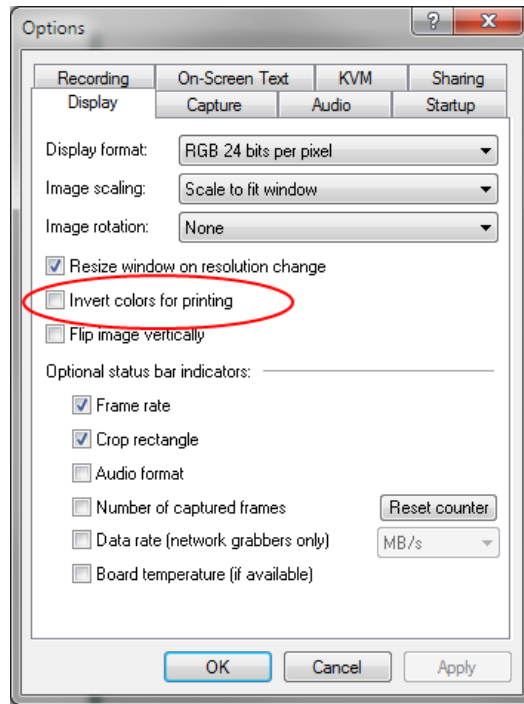
- Select **File » Print**
- Press **Ctrl+P**
- Use the Print icon on the toolbar



Use the menu option **File » Print Setup...** or the keyboard shortcut **Ctrl+Shift+P** to select the printer and configure printer settings.

Optionally, you can choose to have colors inverted for printing (black will appear as white, yellow as blue, red as cyan, etc). To invert the colors for printing:

1. Select **Tools » Options**; the options dialog appears.
2. Select the **Display** tab.
3. Check the **Invert colors for printing** checkbox.



4. Click **OK**.

## To copy a snapshot

You can easily copy a snapshot of your stream to the clipboard using any of the following methods. You can optionally **Pause video capture** prior to copying the image.

- Select **Edit » Copy**
- Press **Ctrl+C**
- Use the Copy icon on the toolbar



(Windows)

Open another application on your workstation and use clipboard paste methods (like **Edit » Paste** or **Ctrl+V**) to paste the copied image.

# Record a video

The Epiphan Capture Tool can record the images captured from your SDI2USB 3.0 as a video.

You can choose to capture audio (see [Configure audio](#)) and can also alternatively choose to save individual image files instead of a video, see [Record as a series of images](#).

To record a video of your captured video source:

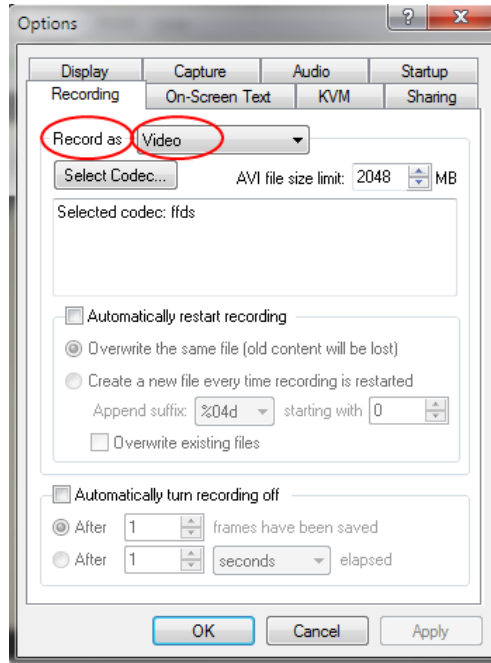
## Step 1: Set the codec

Take this opportunity to select your encoding codec. Codecs are the software that take the uncompressed video frames from the SDI2USB 3.0 and combine/compress these into a digital video file that you can view with a player, share with a colleague or upload to a video sharing site, like YouTube.

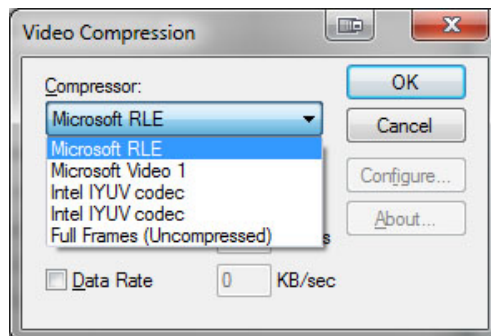
By default, your operating system comes with some default codecs installed, no additional codecs come with the Epiphan Capture Tool. You can choose to install third party codecs such as x264. Picking the best codec for your use case is beyond the scope of this document, but you can find many resources (and debates) about this topic on the Internet.

To configure the codec:

1. Connect your video source to the video grabber.
2. Connect the video grabber to a USB port on your capture workstation (use USB 3.0 for best performance or if you plan to capture embedded audio).
3. Launch the Epiphan Capture Tool using the installed desktop shortcut. See or [Epiphan Capture Tool](#).
4. Select the **Tools » Options** menu item; a dialog box opens.
  - a. Select the **Recording** tab.



- b. Ensure the **Record as** drop down has **Video** selected.
- c. Use the **Select Codec...** button to open the **Video Compression** dialog. Choose from codecs installed on your system and click **OK** to close the Video Compression dialog.



- d. If desired, modify the **AVI file size limit**. Recording will automatically be stopped when this limit is reached.
- e. From this page you can also [Configure optional recording settings](#) such as file names and recording period.
- f. Click OK to save your **Recording** settings.

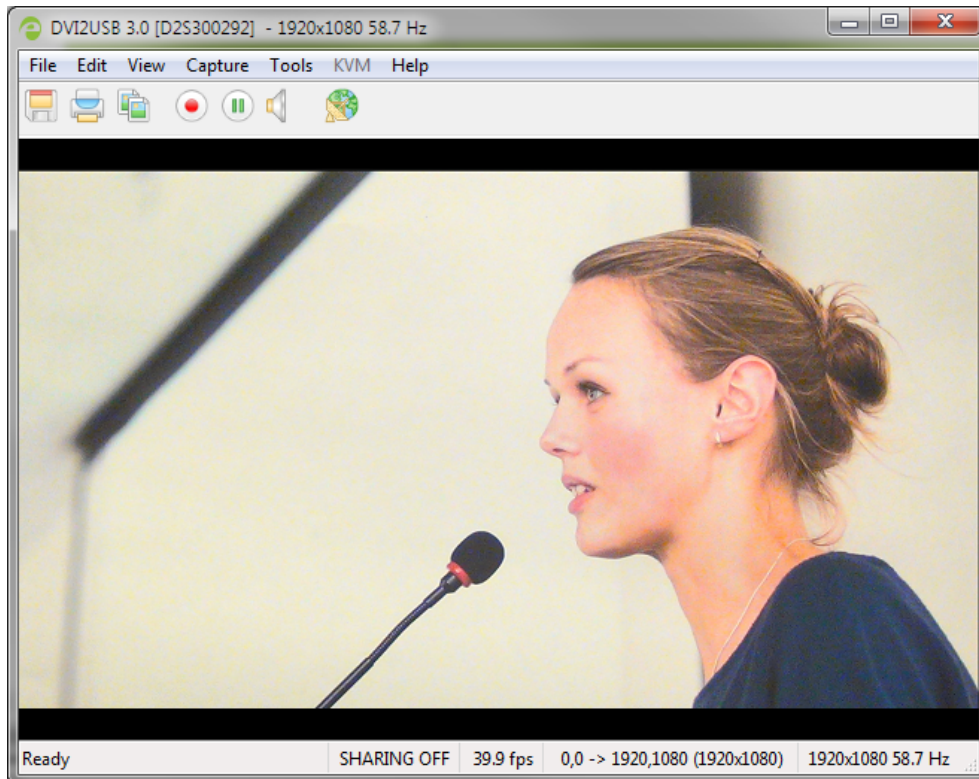
## Step 2: Record

With the Epiphan Capture Tool properly configured, all there is to do is record your video!

As images/frames are captured by the video grabber they are recorded to the video file. The status bar displays the name and location of the video file, the elapsed recording time and the number of frames (or images) recorded.

To record your video:

1. The Epiphan Capture Tool should already be capturing and previewing your video source (if you see a No Signal message, disconnect and reconnect the cables to make sure they are all seated correctly).



2. Optionally, configure audio capture and enable audio capture. See [Configure audio](#).



3. Select **Capture » Start Recording**, use the red record button or keyboard shortcut **Ctrl-R** to start recording; a Save dialog opens.



(Windows)

4. Specify the filename and folder to save your file. (See [Configure optional recording settings](#) for pre-configuring recording file names.)
5. When you are done capturing, use the **pause** or **stop** buttons to pause or stop recording. (You can also use the keyboard shortcut Ctrl-U for pause and can use the menu items **Capture » Pause** or **Capture » Stop Recording** to control recording.)



6. Use your operating system's file browser (Windows Explorer or Finder) to find your saved capture file. If the status bar is visible, the filename and path of the last saved file is found in the status bar at the bottom of the Epiphan Capture Tool.



If you're having trouble capturing embedded audio, make sure you have the video grabber connected to a USB 3.0 port. Due to the extra volume of data that needs to be captured, embedded audio capture is only supported when connected via USB 3.0.

When the video file reaches the AVI file size limit, one of the following occurs based on recording configuration settings:

- recording stops;
- recording continues and a new video file is created; or
- recording continues and the original video file is overwritten.

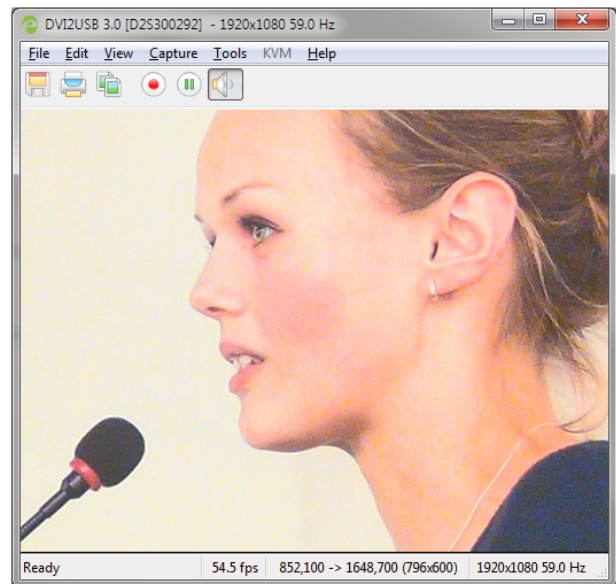
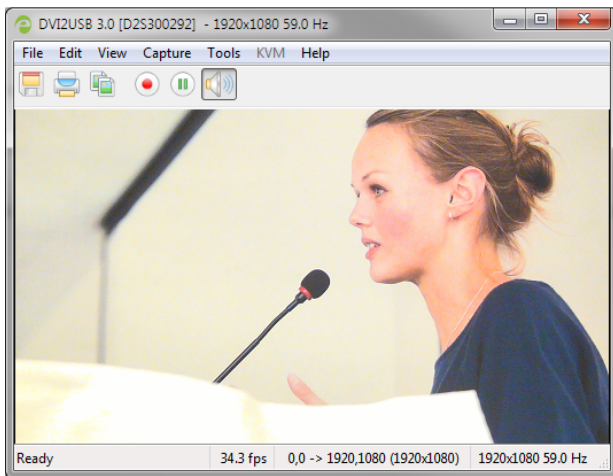
To set recording options refer to [Configure optional recording settings](#).



# Crop the captured image

In most video capture situations, you'd like to record everything that is captured by the SDI2USB 3.0. Sometimes, however, there's a need to remove some information (e.g. confidential or personal information) or to crop out black bars or unwanted areas of a scene. For these purposes, the Epiphan Capture Tool lets you crop the captured source prior to recording.

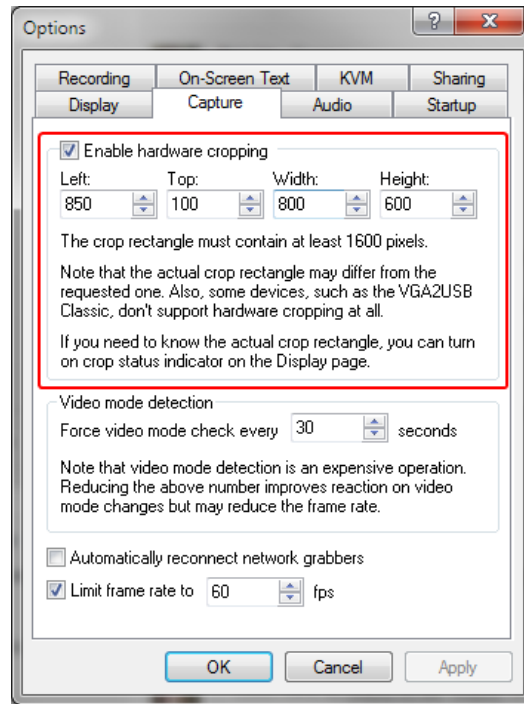
For example, using cropping you can change your capture from what you see on the left side, below, to the cropped image on the right. The status bar displays the cropped coordinates.



To set capture cropping, start by [Record a video](#)

To specify your cropping parameters:

1. From the **Tools » Options** dialog, select the **Capture** tab.
2. Check the **Enable hardware cropping** checkbox.



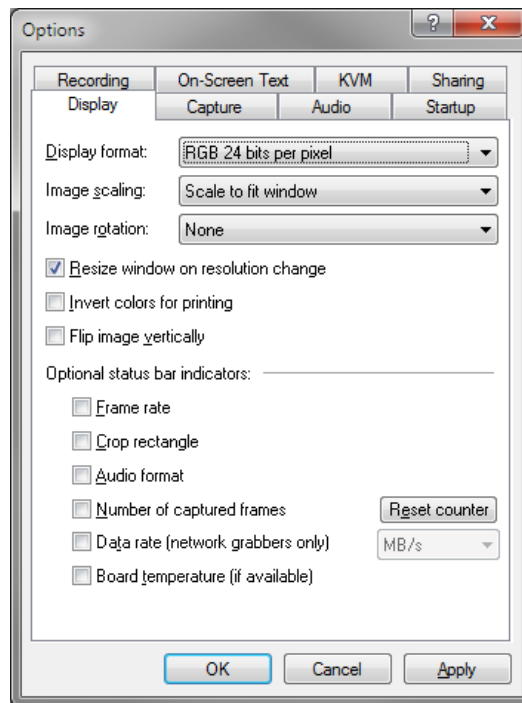
3. In the **Width** and **Height** fields, specify in pixels the size of the cropped area that you want to capture.
4. Using the **Left** and **Top** fields, specify in pixels the top left corner where to start capturing. As you change these values, you can see the visible portion of the image change in the cropped area.
5. Click **Apply** to see the changes immediately and keep fine-tuning, or click **OK** to save your changes.

# Configure display options

The Epiphan Capture Tools gives you the ability to configure some aspects of how your captured frames are displayed. For example, you can choose whether or not the image is scaled if the window is made larger or smaller, or whether or not it is rotated on the screen.

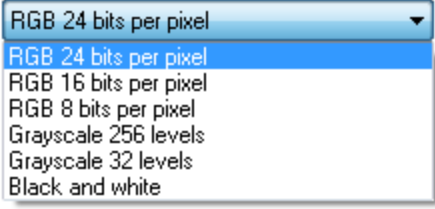

## Display options

To access these options, select **Tools » Options** from the Epiphan Capture Tool's menu, then select the **Display** tab.



The available display configuration items are described below. Note the Optional status bar indicator options from this tab are described separately, see [Status bar](#).

Menu item	Description
Display format	<p>You can change the color space used for capture. Color space affects the appearance of your captured video and the maximum frame rate at which data can be captured. <b>Changes in color space affect what you see on the screen and what is saved in your recordings via the Epiphan Capture Tool.</b></p> <p>The Epiphan Capture Tool supports a variety of RGB and grayscale color formats, but your SDI2USB 3.0 can also capture in the YUV 4:2:0</p>

Menu item	Description
	<p>color space, if using a third party tool that supports this color space.</p> <p>Display format: </p> <div style="border: 1px solid #ccc; background-color: #e6f2e6; padding: 5px; margin-top: 10px;">  For 1080p video capture at 60 fps, you need to use a third party capture application that supports YUV 4:2:0.         </div>
Image scaling	<p>Use this option to choose whether you'd like to have the captured image automatically downscaled to the size of your capture window. If deselected, scroll bars appear when the image is larger than the application window.</p> <p>This setting is for display only and the recorded image or video frame size is not affected.</p>
Image rotation	<p>If needed, the Epiphan Capture tool lets you rotate your captured source. For example, if your camera or source needs to be flipped 90 degrees to the left or right, or 180 degrees for proper viewing. Select the desired rotation from the dropdown list and click <b>Apply</b> or <b>OK</b> to see the results.</p> <p><b>This setting affects both the display and recorded images/video.</b></p>
Resize window on resolution change	<p>Check this checkbox if you'd like the application window to resize when the source's resolution changes.</p>
Invert colors for printing	<p>Lets you choose to have colors inverted for printing. Black appears as white, yellow as blue, red as cyan, etc.</p>
Flip image vertically	<p>Select this checkbox to have your image flipped vertically. The effect is as though a mirror is placed along the top edge of the captured frame.</p> <p>To flip the image horizontally, select both this option and add a 180 degree image rotation.</p> <p><b>This setting affects both the display and recorded images/video.</b></p>

# Additional features

This section describes additional features that help you get the most of out of capture experience.

## Status bar

The Epiphan Capture Tool has a status bar that displays information about your SDI2USB 3.0 or the currently selected video grabber. See below for a review of different things added to the status bar depending on configuration settings and your current actions with the utility.

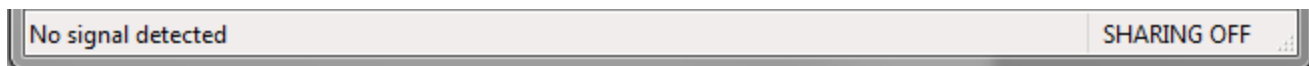
### No grabbers

If the software doesn't detect any attached video grabbers, the status bar indicates there are no capture devices found:



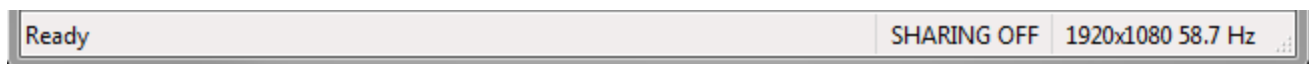
### No signal on selected grabber

If there is no signal to the currently selected video grabber, the status bar indicates this with a no signal message:



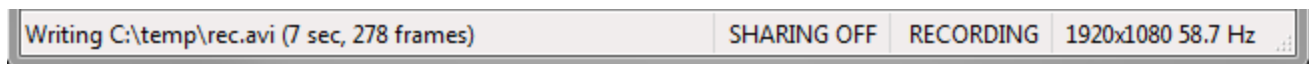
### Ready but not recording

Otherwise, the status bar shows a wealth of information. When not actively recording, the status bar indicates that it is Ready to start recording, and shows the VGA Mode of the source signal at the right side of the bar.



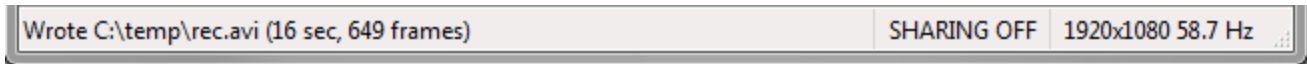
### Recording a video

In the default configuration, when actively recording a video, it looks like this (RECORDING tag, file location, duration and frame count are added to the status):



## Video recording complete

When video recording is complete, the status bar updates to show the final file location and duration. This stays in the status bar until the application is closed or recording is restarted.



## Recording images

When recording your source as a series of images, the status bar shows the RECORDING tag and name of the current file.



## Recording images complete

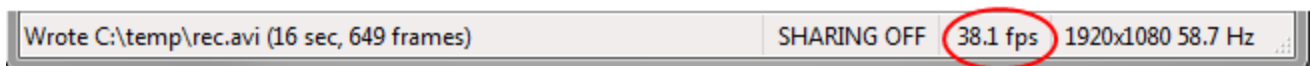
When image recording is complete, the status bar indicates the number of image frames that were saved.



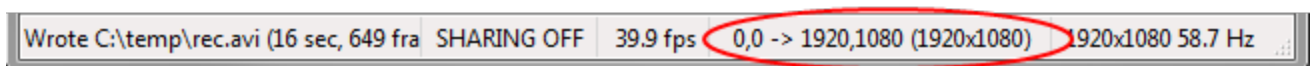
## Optional information

Other information can be displayed on the status bar, depending on the configuration items set in the **Tools » Options » Display** menu. They are shown (mostly) separately below, but you can turn any number of these optional status bar items on at the same time - you may simply need to make sure your capture window is wide enough to see all the data!

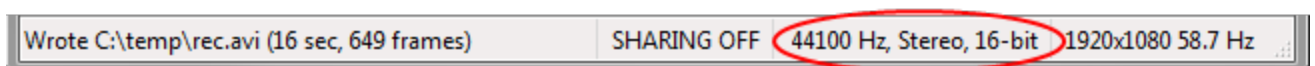
- The current capture frame rate.



- The crop rectangle showing the top left corner (0,0 in the example), the bottom right corner and the resulting frame size.



- Audio encoding information.



- The number of frames or images the video grabber has captured since the application started.



## Pause video capture

You can use the pause button on the toolbar, access pause from the capture menu or use the keyboard shortcut Ctrl-U to pause capture. When you pause capture, the following things happen:

- The last captured frame remains open in the Epiphan Capture Tool (no new frames are grabbed). This image can be saved, copied or printed. See [Copy, save, or print a snapshot](#).
- If you are recording video:
  - Your current video recording (if applicable) is closed.
  - If Automatically restart capture (from the **Tools » Options** dialog) is unchecked, video capture is stopped and the video file finalized.
  - If Automatically restart capture is checked, pressing pause again or selecting **Capture » Resume Capture** will unpause and will either overwrite the existing video file or start a new one, depending on the configuration you set. See [Configure optional recording settings](#).
- If you are recording images:
  - No further images (if applicable) are saved.
  - When you press pause again, image capture starts again immediately

Pausing capture is particularly useful when you're also streaming live - this way you can prepare something different or type in a password without having sensitive information captured.

## Record as a series of images

There are two ways you can record using the Epiphan capture tool and your SDI2USB 3.0: capturing individual images or capturing video. To learn how to capture video, see [Record a video](#).



It is not possible to capture audio when recording your source as a series of images.

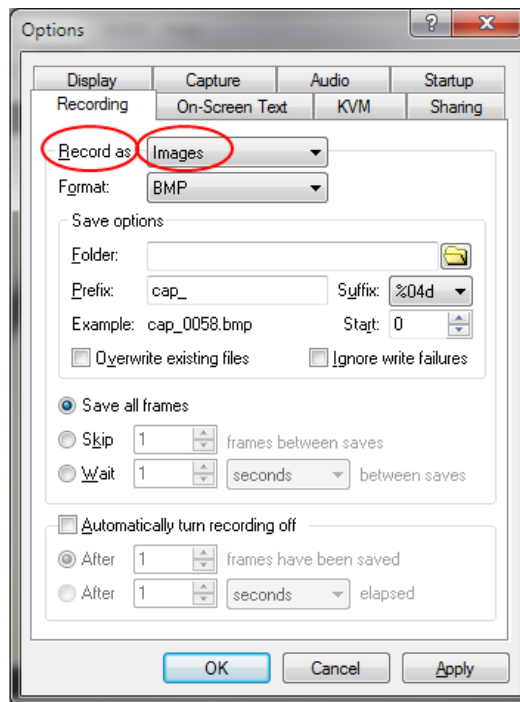
To capture your video source as a series of images:

## Step 1: Set the capture mode, file format and capture frequency

By default, the Epiphan Capture Tool captures in video format, so it's important to change the mode before starting your recording.

To configure the image capture mode and file format:

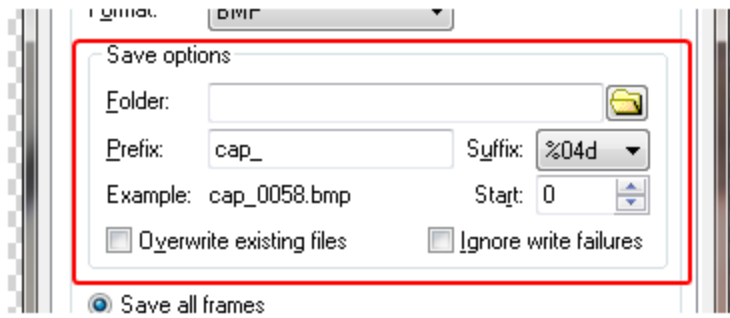
1. Connect your video source to the video grabber.
2. Connect the video grabber to a USB port on your capture workstation (use USB 3.0 for best performance).
3. Launch the Epiphan Capture Tool.
4. Select the **Tools » Options** menu item; a dialog box opens.
5. Select the **Recording** tab.



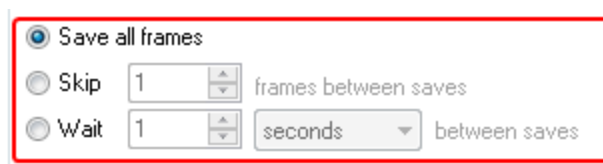
6. Ensure the **Record as** drop down has **Images** selected.
7. Use the **Format** drop down to select from BMP, PNG or JPEG (JPG).



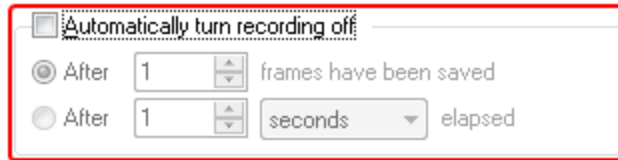
8. In the **Save options** section:



- Specify a folder for saving the files. If you don't specify a folder, your images will be saved in the same folder as the Epiphan Capture Tool.
  - If desired, specify a custom **Prefix** for each file.
  - Use the **Suffix** drop down to determine whether you're using decimal (d) or hexadecimal (X) characters for the suffix, and the number of leading zeros in the filename (e.g. %04d means a decimal suffix with 4 digits, the first few will have three leading zeros (cap\_0001.bmp)).
  - Set the **Start** value to the first number you want to use in your file name.
  - Use the **Example** section to see the result of your file name edits.
  - Check the **Overwrite existing files** checkbox if you want new images to overwrite old ones.
  - Check the **Ignore write failures** checkbox if you want to proceed regardless of whether or not the images are still being saved. (e.g. with this box checked, you will not be warned when you run out of disk space or if there is a permissions issue preventing file writing).
9. Determine how often you want to save images. Saving all frames will save up to 30 images per second, which can quickly take a lot of space on your hard drive!



- Select **Save all frames** to save each frame as an image.
- Select **Skip** and set a value to save an image every X frames (e.g. set Skip to 10 and you'll save an image every 10 frames).
- Select **Wait** and set a time interval between image saves. Use this to collect a frame every few seconds or minutes (choose from milliseconds, seconds, minutes and hours).
- Lastly, decide if you want to save only a certain number of images or if you want to continue saving images until request the application to stop recording.



14. To use the record button/control to stop saving images, leave **Automatically turn recording off** unchecked; otherwise, check the checkbox and specify your limit in frames or seconds.
15. Click OK to save your **Recording** settings.

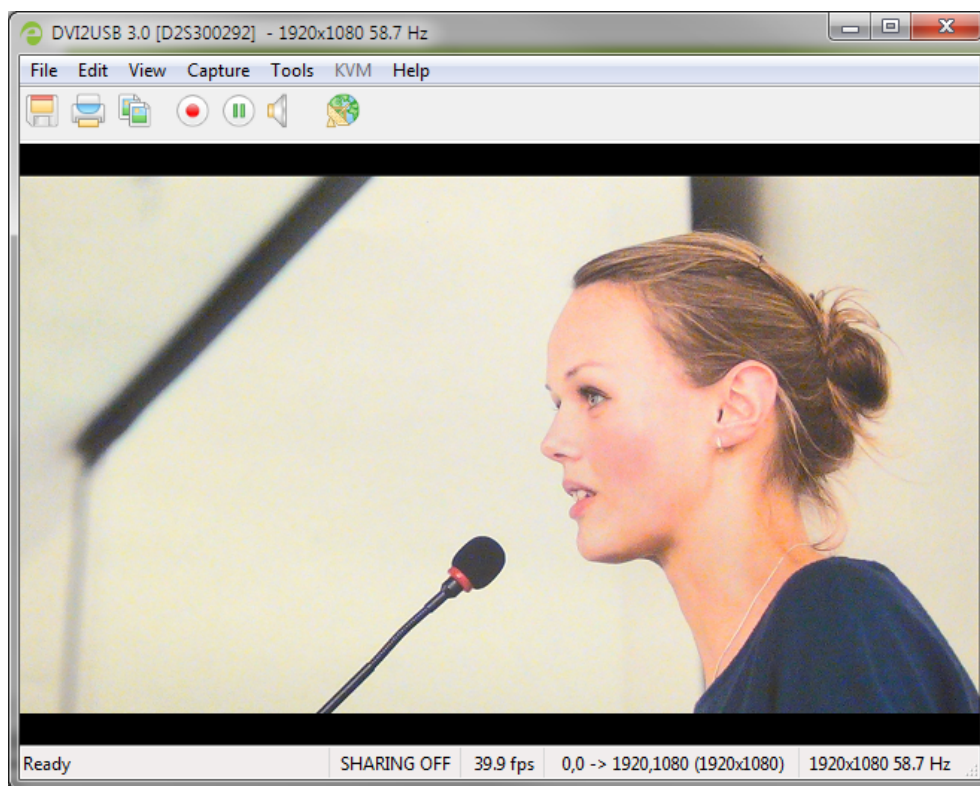
## Step 2: Record

With the Epiphan Capture Tool properly configured, all there is to do is record your series of images!

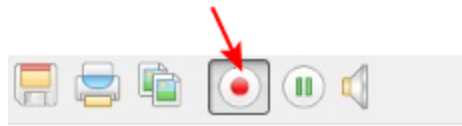
As images/frames are captured by the video grabber they are saved as individual image files. While capturing, the status bar displays the name and location of the last saved image. The total number of images saved is displayed when recording stops.

To record your images:

1. The Epiphan Capture Tool should already be capturing and previewing your video source. If you see a No Signal message, disconnect and reconnect the cables to make sure they are all seated correctly.



2. Select **Capture » Start Recording**, use the red record button or keyboard shortcut **Ctrl-R** to start recording; the **Save** dialog opens.



3. When you are done capturing, use the pause or stop buttons to pause or stop recording. You can also use the keyboard shortcut Ctrl-U for pause and can use the menu items **Capture » Pause** or **Capture » Stop Recording** to control recording.



4. Use your operating system's file browser (Windows Explorer or Finder) to find your saved image file (s).

## Configure audio

Your SDI2USB 3.0 can capture audio directly from non-encrypted SDI sources. The Epiphan Capture Tool can also capture audio from other audio devices plugged into your capture workstation (e.g. embedded laptop microphone or external microphone plugged in via USB or audio in jack).

By default, the Epiphan Capture Tool doesn't capture audio, but configuring it is simple!

### Step 1: Select your audio source

Start by picking the audio source you want to capture. You can do this from either the **Tools » Options** menu, or directly from the **Capture** menu.

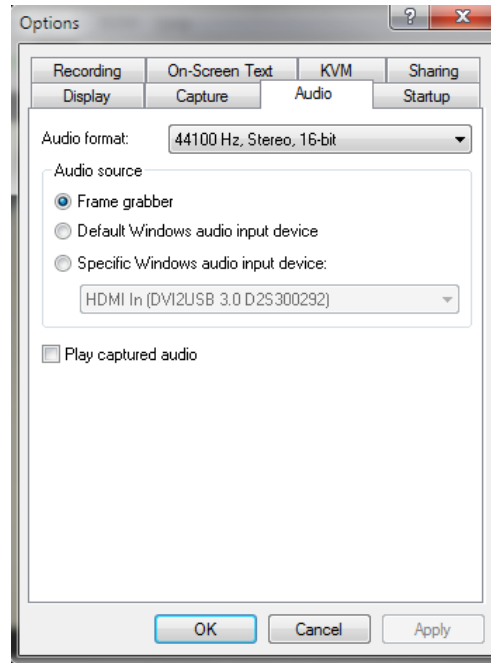
To select your audio source:

1. Configure your external audio source with your operating system (generally no configuration is needed for embedded microphones).
2. Or, connect your SDI source to the video grabber.
3. Connect the video grabber to a **USB 3.0** port on your capture workstation (you can use USB 2.0 if you're planning to use an external audio source instead of embedded audio).

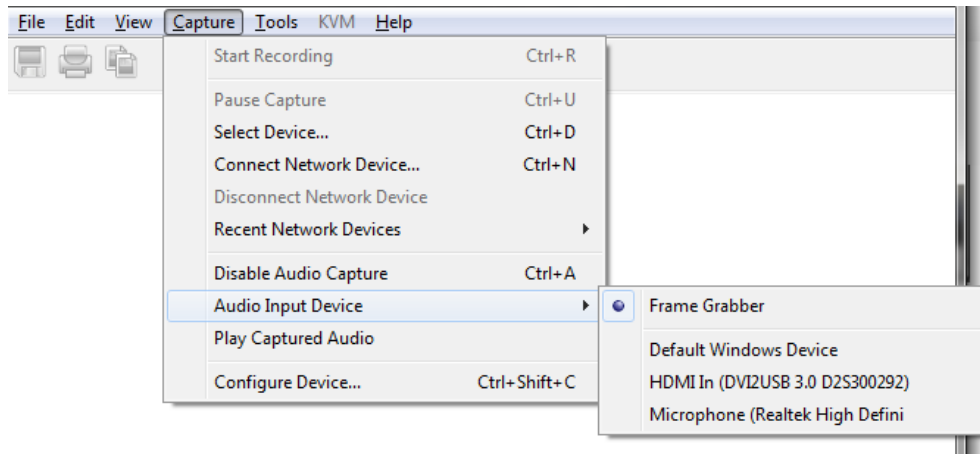


Due to the extra volume of data that needs to be captured, embedded audio capture is only supported when connected via USB 3.0.

4. Launch the Epiphan Capture Tool.
5. Select the **Tools » Options** menu item, the **Options** dialog appears.
  - a. Select the **Audio** tab.



- a. If capturing embedded SDI audio, select **Frame Grabber**.
  - b. If using an external audio source, click **Specific Windows audio input device** and select your audio device from the list.
  - c. If desired, use the **Audio format** drop down to specify the audio bit rate you want saved (or streamed), Stereo/mono and bit-depth. (If this value is different than the incoming audio bitrate, SDI2USB 3.0 resamples the audio to your specified bitrate.)
  - d. If desired, check the **Play captured audio** checkbox to have the audio played over the capture workstation's audio output device (e.g. speakers or headphones connected to the capture workstation).
  - e. Click **OK** or **Apply**.
6. Alternatively, select **Capture » Audio Input Device** and select your audio source from the list.



## Step 2: Enable audio capture

You can tell whether audio capture is enabled by looking at the toolbar. If the speaker icon is still (no sound waves depicted coming out from it), audio is not enabled. See the examples below.

Audio enabled



Audio disabled



To enable audio capture:

1. Launch the Epiphan Capture Tool.
2. Click the **Capture Audio** button (speaker icon) on the toolbar; when audio capture is enabled, the icon is animated with sound waves.

To disable audio capture:

1. Click the Capture Audio button; the icon has a static image.

## Step 3: Capture!

Use the record button on the toolbar to capture your audio/video stream!

## Configure optional recording settings

When recording your captured frames as a video, as described in [Record a video](#), you can set some optional configuration settings.

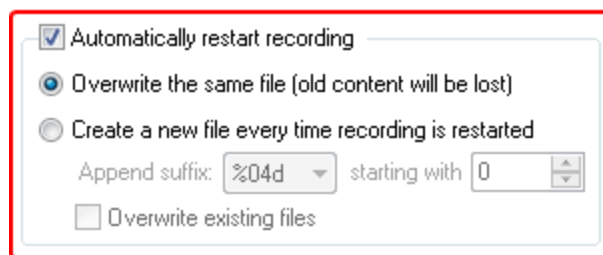
## Configure an automatic file name (Automatic restart)

You can avoid needing to enter a file name each time you want to record by using a combination of record and pause along with setting the Epiphan Capture Tool to either overwrite the previous file or create a file name suffix that is added to the base file name you specify the first time you start recording.

Start by connecting your video grabber to the capture workstation and your source to the video grabber. Launch the capture tool and configure it for recording video following the instructions in [Record a video](#), if needed.

To overwrite the same file each time you record:

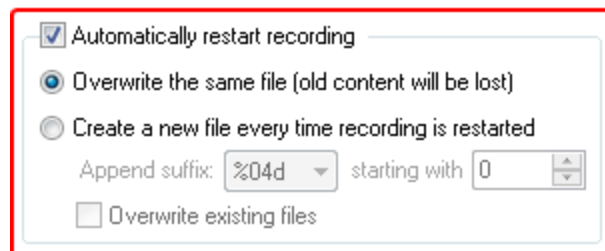
1. From the **Tools » Options » Recording** tab, check the **Automatically restart recording** checkbox.



2. Click the **Overwrite the same file (old content will be lost)** radio button.
3. Click **OK**.
4. Start recording and provide location and name for your video file.
5. Use the **pause** button on the toolbar (keyboard shortcut Ctrl+U or **Capture » Pause** ) between recordings and click either pause again to restart, automatically overwriting the previous file name.

To record a sequence of video files (each with a different suffix):

1. From the **Tools » Options » Recording** tab, check the **Automatically restart recording** checkbox.



2. Click the **Create a new file every time recording is restarted** radio button.

3. Use the **Suffix** drop down to determine whether you're using decimal (d) or hexadecimal (X) characters for the suffix, and the number of leading zeros in the filename (e.g. %04d means a decimal suffix with 4 digits, the first few will have three leading zeros (cap\_0001.bmp)).
4. Optionally, choose a starting digit for your sequence.
5. Optionally, check the **Overwrite existing files** checkbox if you'd like to automatically overwrite files if you already have files with the same name.
6. Click **OK**.
7. Start recording and specify a location and root name for your video files.
8. When recording, use the **pause** button on the toolbar (keyboard shortcut Ctrl+U or **Capture » Pause** ) between recordings and click either pause again to restart, automatically creating a new video file with the name in the sequence.

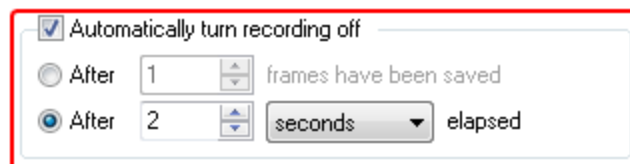
## Configure recording period

If desired, you can configure the Epiphan Capture Tool to stop recording after a specified time period has elapsed or a specified number of frames have been saved. For example, if you know you always need a 1 minute video when capturing from an ultrasound.

Start by connecting your video grabber to the capture workstation and your source to the video grabber. Launch the capture tool and configure it for recording video following the instructions in [Record a video](#), if needed.

To overwrite the same file each time you record:

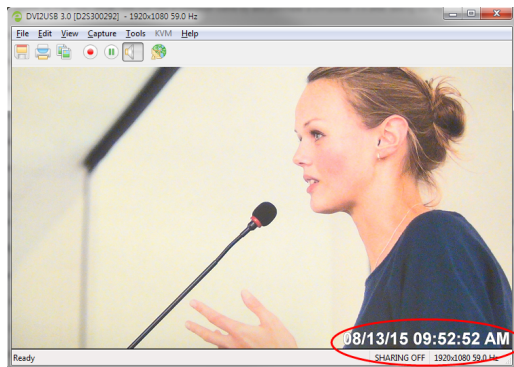
1. From the **Tools » Options » Recording** tab, check the **Automatically turn recording off** checkbox.



2. Select the appropriate radio button to specify stopping after a **number of frames have been saved** or after a specified amount of time has **elapsed**.
3. Enter your limit: number of frames or time in milliseconds, seconds, minutes or hours.
4. Click **OK**.
5. Start recording as usual, the recording will automatically stop when the stop criteria is met.

## Add a watermark

Using the Epiphan Capture Tool, you can add a watermark in the form of a time-stamp or other static on-screen text to your captured video or images.



### Add a timestamp

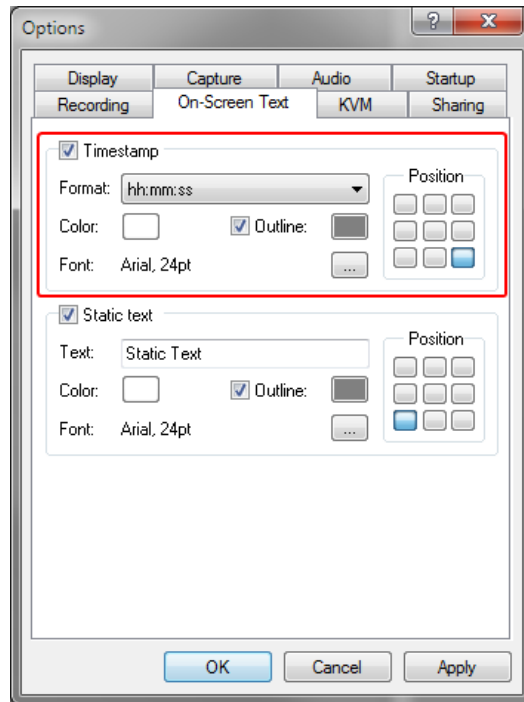
You can add a timestamp to your captured video by choosing from one of the pre-created formats and selecting the font, size, location and color.

Start by connecting your video grabber to the capture workstation and your source to the video grabber. Launch the capture tool and configure it for recording video following the instructions in [Record a video](#), if needed.

To configure a timestamp watermark:

1. From the **Tools » Options** dialog, select the **On-Screen Text** tab.
2. Check the **Timestamp** checkbox.





3. Choose a timestamp format from the **Format** drop down box.
4. If desired, change the **color** and **outline** color from the default white and gray values.
5. Click on a location in the Position grid to specify the location of the timestamp.
6. Change the Font type and size by clicking the **ellipsis (...)** next to the Font description; a font selection dialog opens.
7. When you are done configuring, click **Apply** to see the changes while keeping the dialog open for further tweaks, or click **OK** to apply your changes and close the dialog.

Note that you can include both a timestamp and a static text watermark.

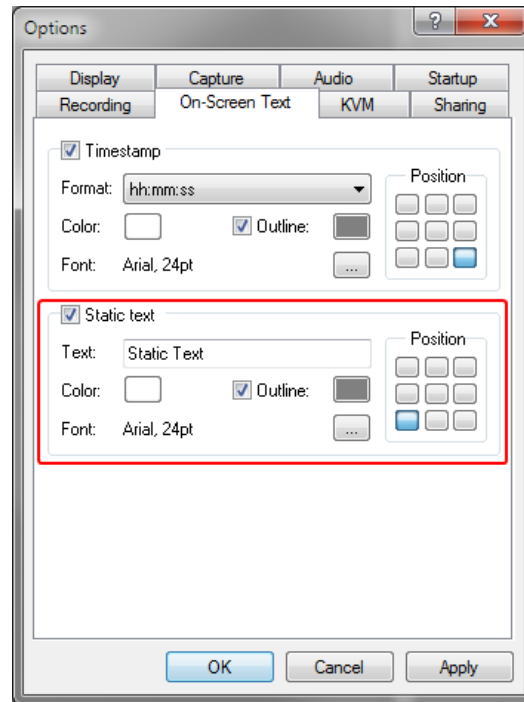
### Add a static text watermark

You can add static text to your captured video by adding your text and selecting the font, size, location and color.

Start by connecting your video grabber to the capture workstation and your source to the video grabber. Launch the capture tool and configure it for recording video following the instructions in [Record a video](#), if needed.

To configure a static text watermark:

1. From the **Tools » Options** dialog, select the **On-Screen Text** tab.
2. Check the **Static text** checkbox.



3. In the **Text** field, enter your text string.
4. If desired, change the **color** and **outline** color from the default white and gray values.
5. Click on a location in the Position grid to specify the location of your static text watermark.
6. Change the Font type and size by clicking the **elipsis (...)** next to the Font description; a font selection dialog opens.
7. When you are done configuring, click **Apply** to see the changes while keeping the dialog open for further tweaks, or click **OK** to apply your changes and close the dialog.

You can have both a text watermark and a timestamp mark on your captured video or images. Give them both a try to see what you like best.

**Tip:** You can use a custom font generator to generate a font that has a monotone version of your company logo or other graphic to overlay as "text" on the image. Using this trick, it will appear like you have a graphical watermark.

## Command line options

You can use command line options to control how the Epiphan Capture Tool starts up. Add as many command line options as needed, in any order. Each command line option starts with two dashes and is separated from other options with a space.

The following command line options are supported:

Option	Description
--borderless	Start the capture application in image only mode. Press the Escape key to exit from image only mode.
--sn <serial number>	Specify which video grabber to use (when more than one is connected to the video capture workstation). <serial number> is the serial number of the desired video grabber.
--hs <value>	Set the horizontal shift value.*
--vs <value>	Set the vertical shift value.*
--phase <value>	Set the sampling phase value.* Range is 0 to 31.
--pll	Set the PLL adjustment.*
--offset <value>	Set the offset (brightness).* Range is 0 to 63.
--gain <value>	Set the gain (contrast).* Range is 0 to 63.
--topmost	Keep the capture application window as the topmost window on your screen.
--fullscreen	Start the Epiphan Capture Tool in full-screen mode.
"*" - Refer to the <a href="#">Configure your device</a> section for more details	

## Example

You can create a desktop shortcut that includes one or more command line options. For the purposes of this example, the Epiphan Capture Tool's executable file name is v2ugui2.exe and is installed in C:\Program Files\Epiphan\Framer Grabber Software.

1. Open Windows Explorer and navigate the following path: C:\Program Files\Epiphan\Framer Grabber Software
2. Right click on the file **v2ugui2.exe** and select **Create Shortcut**; Windows creates a shortcut file that, depending on your Windows settings, may be named "Shortcut to v2ugui2.exe.lnk". The ".lnk" may not appear if Windows does not display file extensions.
3. If desired, change the name of this file and copy it to another location if required. Don't change the file extension.
4. Right click the shortcut file and select **Properties**.
5. Edit the **Target** field and add command line options after the closing quote.

For example, to add the `--topmost` command line option, change the Target line to:  
`"C:\Program Files\Epiphan\Fram Grabber Software\v2ugui2.exe" --topmost`

Or to add `--topmost`, `--borderless`, set the horizontal shift to `-67`, and the vertical shift to `10`:  
`"C:\Program Files\Epiphan\Fram Grabber Software\v2ugui2.exe" --topmost --borderless --hs -67 --vs 10`

6. Select **OK** to save your changes to the shortcut.
7. Double-click the shortcut to start the video capture application with your specified command line options.

# Appendices

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- Upgrade your drivers and software
- Limitations and Known Issues
- Software license

## Upgrade your drivers and software

The drivers and the latest version of the Epiphan Capture Tool are bundled together in a single package, which you can download from the Epiphan Video support website for your product. If you register your SDI2USB 3.0, you can choose to be notified when driver updates are available.

Typically, you can download and install the new Epiphan Capture Tool and drivers without uninstalling older versions. Simply follow the driver installation instructions in the [Quick start](#) to update your device drivers and install the latest Epiphan Capture Tool.



Be sure to update the drivers and Epiphan software on each capture workstation where you use your SDI2USB 3.0. The device reloads the firmware from the capture computer time each time you connect the device.

## Limitations and Known Issues

This section includes known issues or limitations that affect functionality or usability for the current release and offers workarounds these them.

- Opening the video signal in multiple applications at the same time on your video workstation affects signal performance. For the best performance during live streaming and recording, we recommend that you close any unnecessary applications that access the video signal. For example, if you aren't using the Epiphan Capture Tool for live streaming or to record, close the tool after you finish configuring the video grabber.

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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.

### **Important Safety Warnings**

**WARNING:** This product has no user-serviceable parts and the battery used in this device is not replaceable. Do not attempt to disassemble. Return the device for service.

**CAUTION, RISK OF ELECTRIC SHOCK:** This device may have multiple AC power cords installed. All power sources shall be disconnected before servicing to avoid shock hazard.

**ATTENTION:** Cet appareil ne contient aucun composant pouvant être entretenu ou réparé par l'utilisateur. En cas de panne, retourner l'appareil pour réparation.

**ATTENTION, RISQUE DE CHOC ÉLECTRIQUE:** Cet appareil peut être équipé de multiples cordons d'alimentation en courant alternatif. Pour placer cet appareil hors tension, débrancher tous les cordons d'alimentation sans exception.

### **FCC Compliance Statement**

47 CFR Section 2.1077 Compliance Information

Unique identifier: AV.io family

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.

Responsible party (US contact):

Epiphan Video  
459 Hamilton Avenue, Suite 301  
Palo Alto, CA  
94301, USA  
  
www.Epiphan.com

### **FCC CAUTION**

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

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

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

### **Innovation, Science and Economic Development Canada:**

This device complies with ICES-003 of the ISED rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme à la norme ISED NBM-003 pour les appareils radio agréés. Son fonctionnement est sujet aux deux conditions suivantes:

- (1) le dispositif ne doit pas produire de brouillage préjudiciable, et
- (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

### **CE Compliance Statement**

Marking by the symbol **CE** indicates compliance of this device with the applicable directives of the European Community and meets or exceeds the following technical standards:

Directive 2014/30/EU - Electromagnetic Compatibility

Directive 2011/65/EU - RoHS, restriction of the use of certain hazardous substances in electrical and electronic equipment



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