

Hawkeye 2-exposure HDR

Required Support Software

Download:

<https://www.theimagingsource.com/support/downloads-for-windows/software-development-kits-sdks/icimagingcontrolcsharp/>

Once downloaded, run the .exe file for install the TIS components.

Download Hawkeye HDR app:

<https://github.com/vintagefilmography/hdr>

HDR Windows software for Hawkeye

Note: Hawkeye board V12 or higher and MSP FW mod are required for proper HDR operation to provide two camera triggers for a single external trigger.

This is the windows software that runs hdr on the Wolverine scanner that has the Hawkeye mod. The software is written in Visual Basic and it connects to the camera and waits for the image ready event. After the event is received the sw stores the first image and lowers the camera exposure for the second image. When the second event is received it stores the second image. The process then repeats. The hawkeye MSP430 firmware has a mod to trigger the camera twice for each external trigger.

To run the sw go to the .../bin/Release dir and run the hdr1.exe file.

If you run into DLL issues, make sure that the TIS setup has been run as instructed above.

Ypua Iso may want to install the Visual Studio 2019 community free version just to make sure that there are no DLL incompatibilities.

The Device Settings window will pop up.

Device Settings

Video Capture Device

Device Name: DFM 37UX226-ML

Serial Number: 0x6020232

Properties...

Device Settings

Video Norm: n/a

Video Format: RGB64 (2560x1920)

Customize...

Frame Rate (FPS): 20.45002

Input Channel: n/a

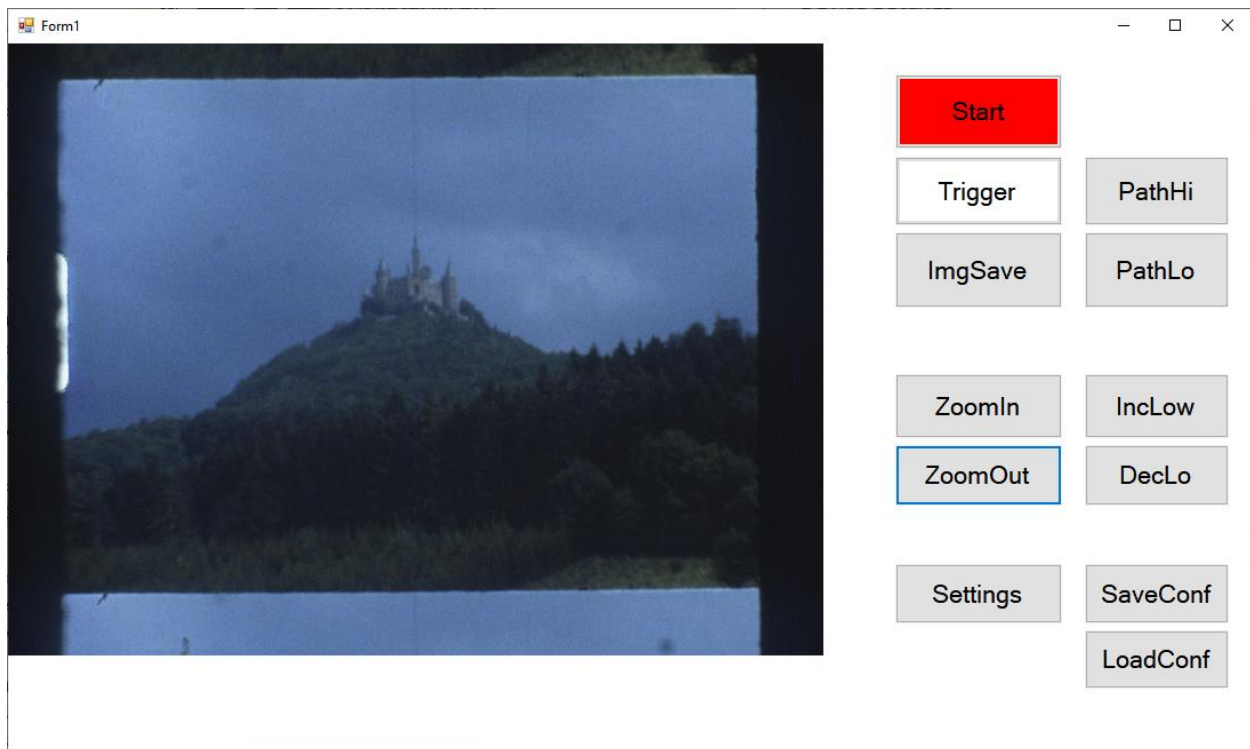
Flip Video Horizontal: ☐

Flip Video Vertical: ☐

Update OK Cancel

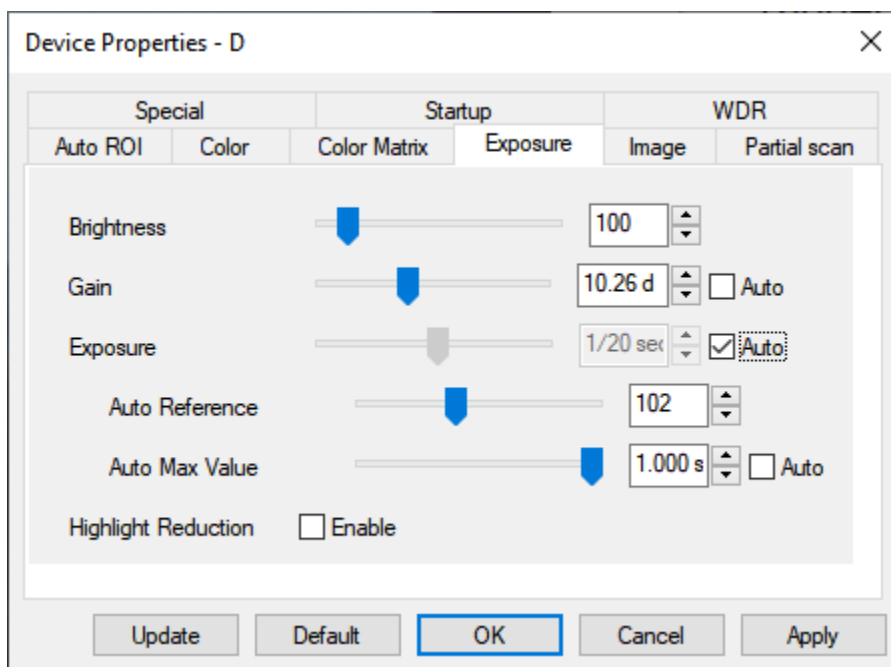
Make sure to set the highest FPS possible.

Click OK. A new window will open.



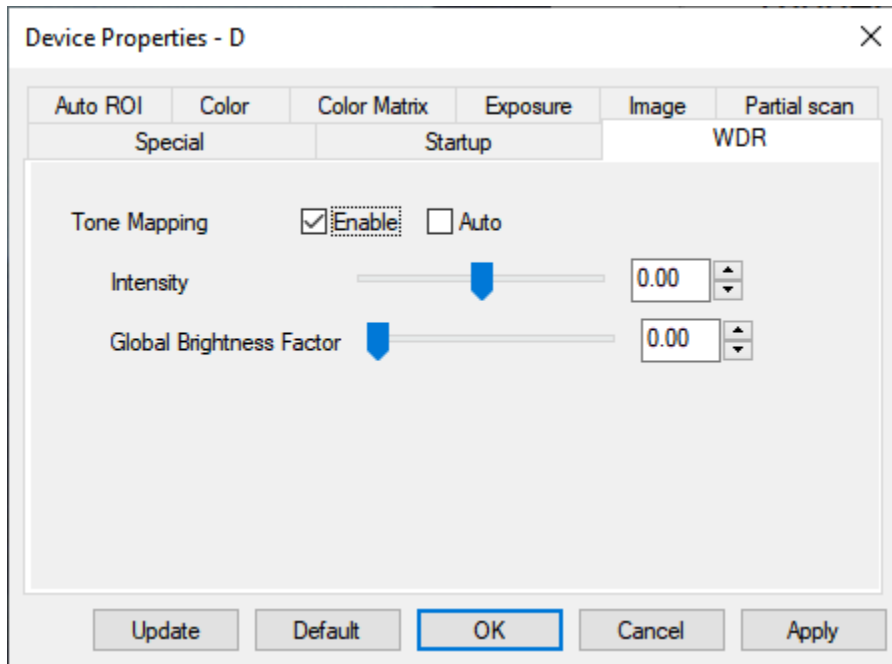
Toggle the Trigger button to make sure the trigger is not on and then click the Start button. The camera preview preview should get displayed. Click on ZoomOut to be able to see the whole frame.

Click on the settings button.



Shown above are recommended settings but ultimately you will want to tweak them to best fit your scan.

Make sure WDR is on:



White balance on manual:

Device Properties - D

Special		Startup		WDR	
Auto ROI	Color	Color Matrix	Exposure	Image	Partial scan

Hue

Saturation

WhiteBalance ☐ Auto

WhiteBalance Mode

Auto Preset

Temperature Preset

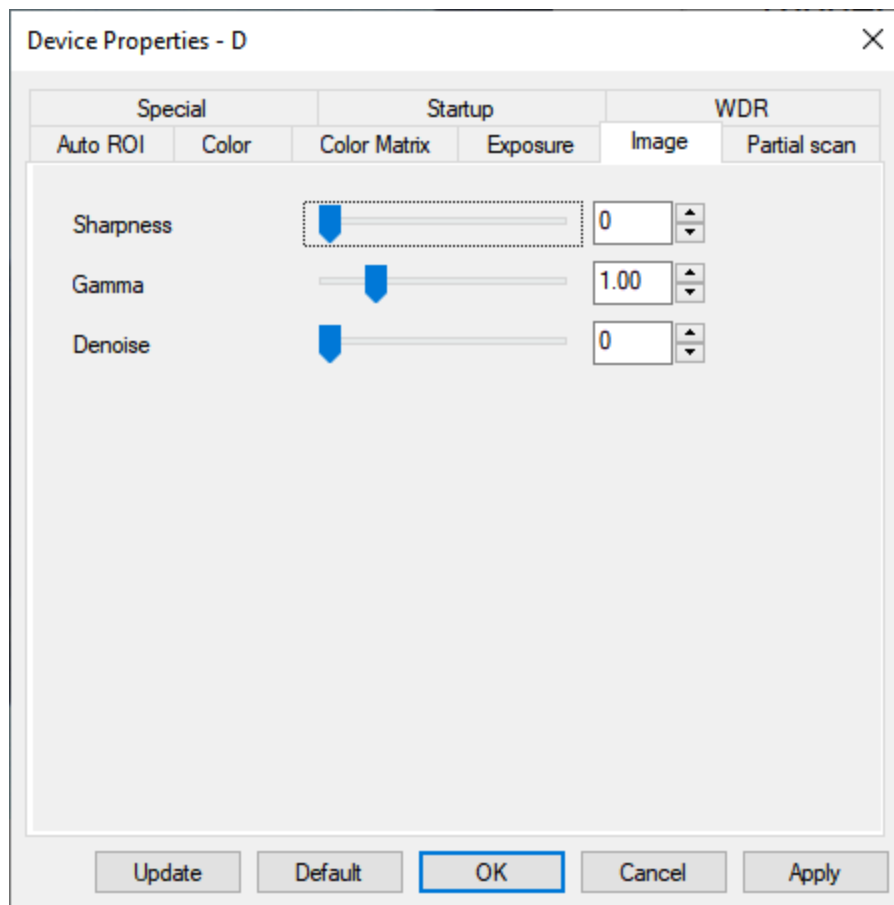
Temperature

White Balance Red

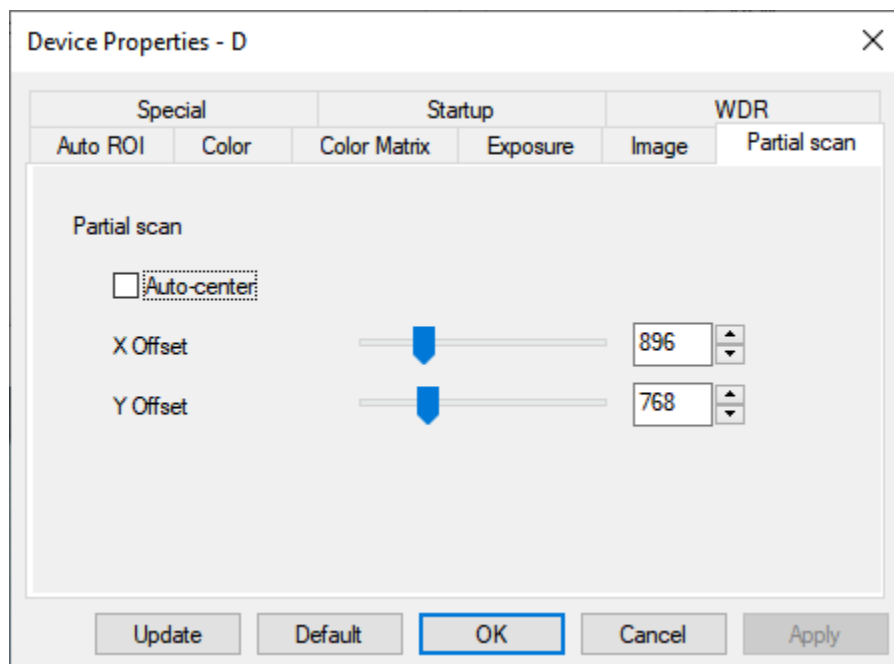
White Balance Green

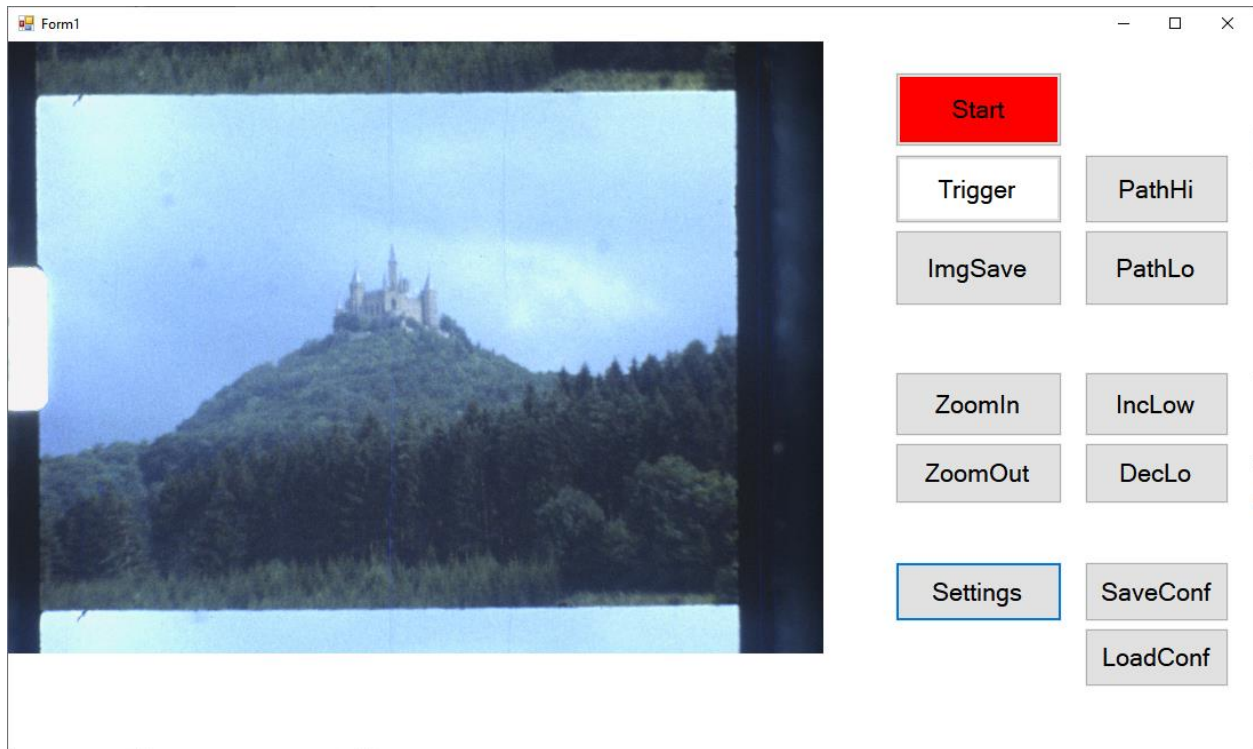
White Balance Blue

No gamma:



Adjust Partial Scan for best image fit:





Now, click on PathHi and PathLo to set the paths for your hi and low exposure images.

Click on IncLo a few times so that it is set to 2 or 3. That means that the lo exposure will be 2 or 3 stops below the hi. You can always go the other way by hitting the DecLo button.

Turn the Start Button Off.

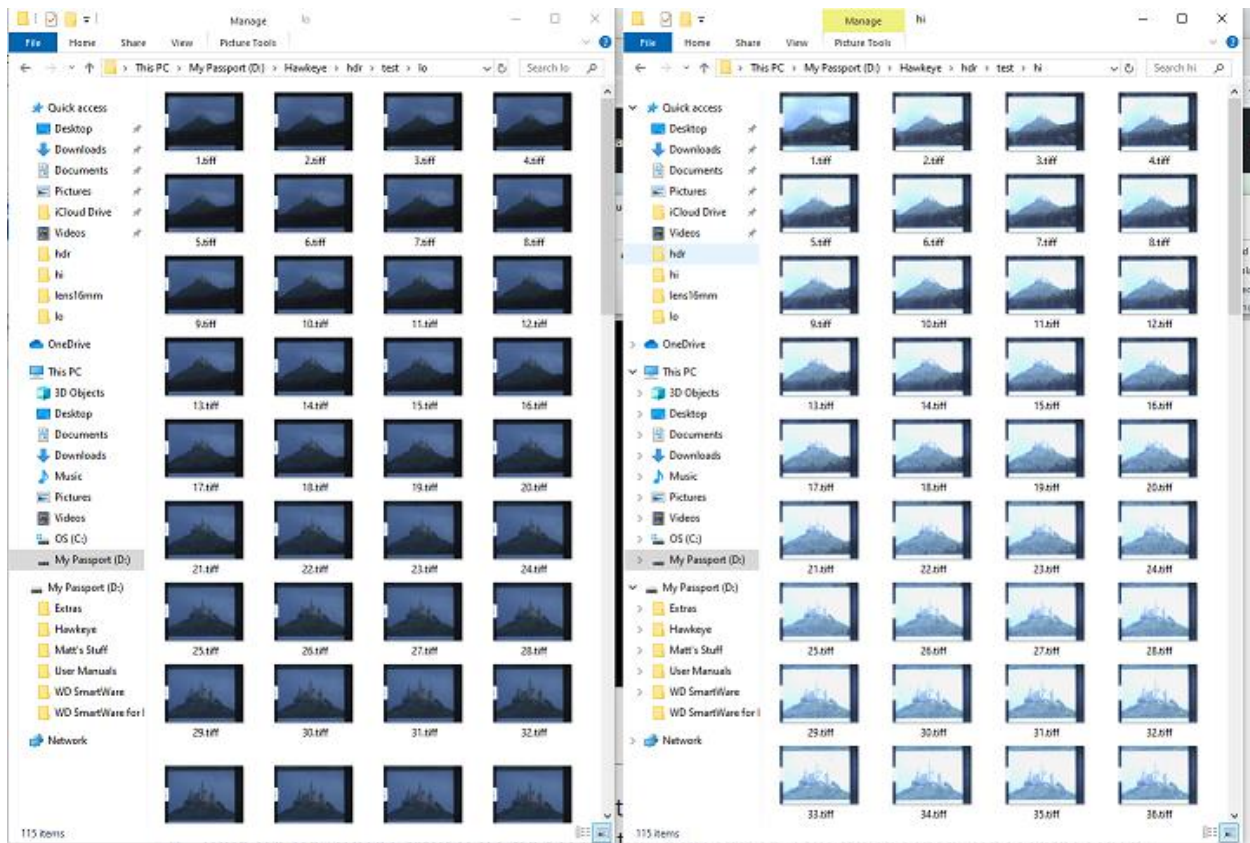
Turn on the Trigger button, Save button and Start button in that order.

The Image should go black.



Now you are ready to do the scan. Set the Hawkeye to slow speed to turn on HDR. You may try the turbo switch to speed up the scan but be careful because this could cause missed frames and the HDR exposures to go out of sequence.

Once done, you should have two directories with a bunch of images



Download enblend/enfuse from:

http://enblend.sourceforge.net/enfuse.doc/enfuse_4.2.xhtml/enfuse.html

Copy it from your download dir to your hdr work dir.

Create the following dos script and name it hdr.bat or enfuse.bat or something similar.

```
SET Input_PATCH1=D:\Hawkeye\hdr\hi

SET Input_PATCH2=D:\hawkeye\hdr\lo

SET OUTPUT_PATCH=D:\hawkeye\hdr\out

SET start=1

SET end=1000

FOR /L %%i IN (%start%,1,%end%) DO (CALL :loopbody %%i)

GOTO :eof

:loopbody

enfuse.exe --soft-mask --exposure-weight=1.0 --saturation-weight=0.2 --contrast-weight=0.0 --entropy-weight=0.0 --exposure-
optimum=0.4 --exposure-width=0.2 -v -o "%OUTPUT_PATCH%\%1.tiff" "%Input_PATCH1%\%1.tiff" "%Input_PATCH2%\%1.tiff"
GOTO :eof
```

Edit the script path names as required. The combined files will be in the out dir.

Before you run the bat file make sure that enfuse.exe and vcomp140.dll are copied over from the enfuse bin directory to the directory where the batch file is located. And that should be it. Run the bat file.

The images on the out dir will be an HDR blend of high and low exposure providing details for the bright and dark areas.

