Hyperyon Dual Stream

Command Line Application User Manual

e-con Systems

Your Product Development Partner

Version 1.1

e-con Systems

7/16/2020

Disclaimer

The specifications of HyperyonCam command line application and instructions on how to run this with our e-con Systems camera are provided as reference only and e-con Systems reserves the right to edit/modify this document without any prior intimation of whatsoever.

Contents

Introduction to Sample Application

e-con Systems provides a sample console application for Hyperyon to demonstrate the e-con Systems Hyperyon Dual Stream camera.

This document explains in detail about how to execute the HyperyonCam sample console application from command prompt on Windows and terminal on Linux platform.

Prerequisites

You must install OpenCV on a PC. Please refer to the *Installation Manual (https://github.com/econsystems/Hyperyon/tree/master/documents)* for more detailed installation steps and images.

Supported OpenCV version

Sample application supports for both OpenCV version 3.3.1 and 3.4.1

Description

Using OpenCV application, you can perform the features as follows:

- Selecting the camera devices.
- Configuring camera formats or resolutions.
- Setting preview formats.
- Configuring UVC settings.
- Capturing still images.
- Record video
- Configuring Extension settings.

Launching the Application

This section describes how to launch and use the sample console application.

Launching Windows Sample Application

To launch the Windows sample application, you must **run** the **<application>.exe** file. Select the application.exe file from the application root folder as shown below.

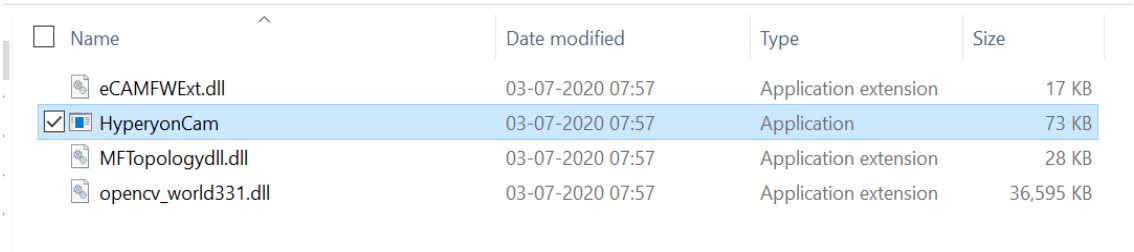


Figure 1: Windows Application Launch

Launching Linux Sample Application

Run the following command from the sample application folder using terminal.

1. Keep the libopencv_world.so, libopencv_world.so.<OpenCV_Version 3.3 or 3.4>, libopencv_world.so.3. <OpenCV_Version 3.3.1 or 3.4.1> in the root directory with the executable file and run this command.

```
$ sudo LD_LIBRARY_PATH=. ./OpenCVCam
```

The screen appears as shown below.

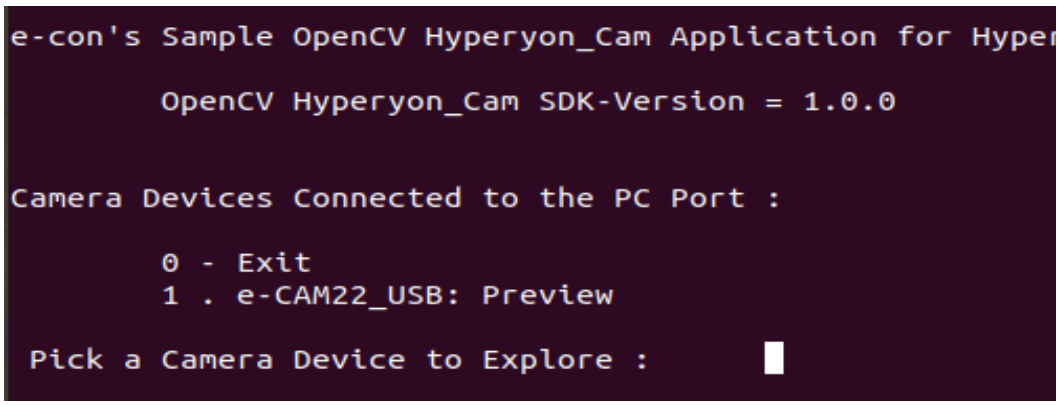


Figure 2: Linux Application Launch

This version of OpenCV sample is used to communicate with certain functionality of e-con Systems Hyperyon Dual Stream camera such as camera video formats,

resolution, UVC controls, capturing still images, Recording video and Extension Controls. Initially, it will list the number of cameras connected to the pc.

Using Sample Application

This section describes the features supported in HyperyonCam application.

Selecting the Camera Devices

Initially, the command line application displays the number of Hyperyon dual stream cameras connected to the PC.

Note: Hyperyon dual stream camera has two nodes:

1. Preview (UYVY / MJPG).
2. Record (H264)

For preview application will choose the UYVY / MJPG formats node, and for Video recording H264 node.

You must select the Camera Device to explore their features using this command line application and the preview will be displayed parallelly as shown below.

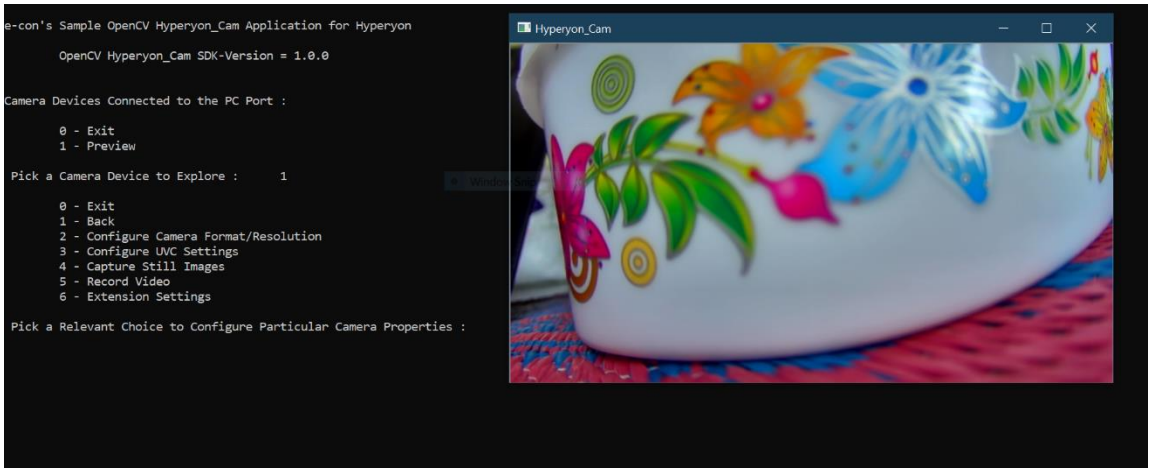


Figure 3: Camera Device Configuration

Setting Preview Format

You can set the preview format using the following options:

- Option **0** to exit from the application.
- Option **1** to go back to the previous menu.
- Option **2** to configure camera format or resolution.
- Option **3** to configure UVC settings.
- Option **4** to capture still images.
- Option **5** to Record Video.

- Option **6** to go to Extension Settings.

Enter **1** in **Pick a choice to set Particular Preview Format** to set preview format as shown below.

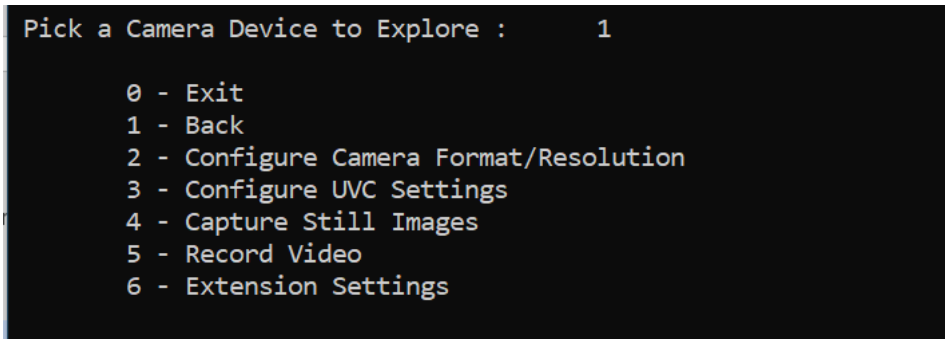


Figure 4: Setting Preview Format

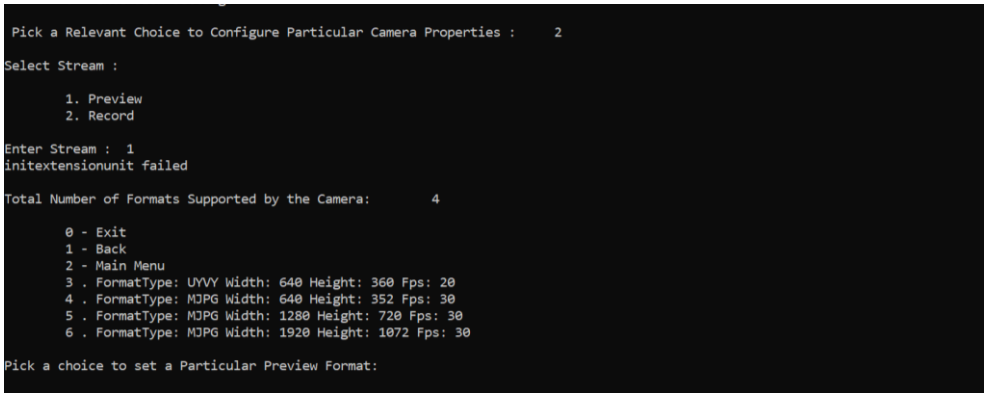
NOTE: Before choosing every menu setting (except Record video and Capture Still Images) you should select the Stream (Node 1 or Node 2).

Configuring Camera Formats or Resolutions

The steps to explore camera format or resolution are as follows:

1. Enter **2** in **Pick a Relevant Choice to Configure Particular Camera Properties** to configure camera format or resolution. The format or resolution supported by the camera will be listed as shown below.

   Node-1:



   Node-2:

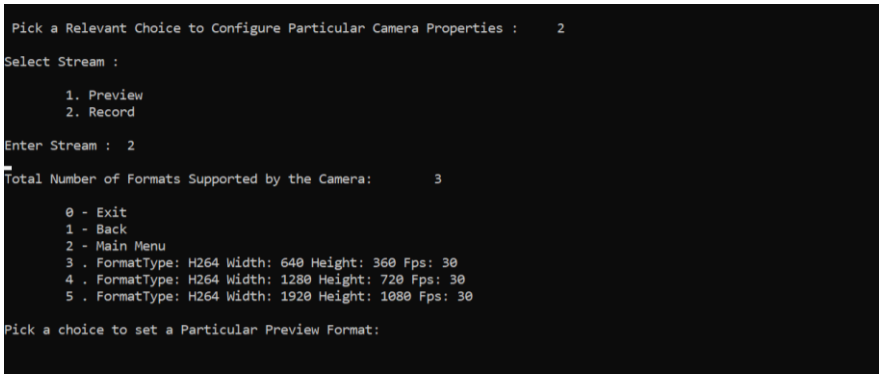


Figure 5(a, b): Camera Formats or Resolution

2. Select the format or resolution type and the preview will be changed for Node 1. Node 2 settings will be effect on Video recording.

Configuring UVC Settings

The steps to configure UVC settings are as follows:

1. Enter **3** in **Pick a Relevant Choice to Configure Particular Camera Properties** to configure UVC Settings. And need to select the stream, Then the supported UVC Settings will be displayed as shown below.

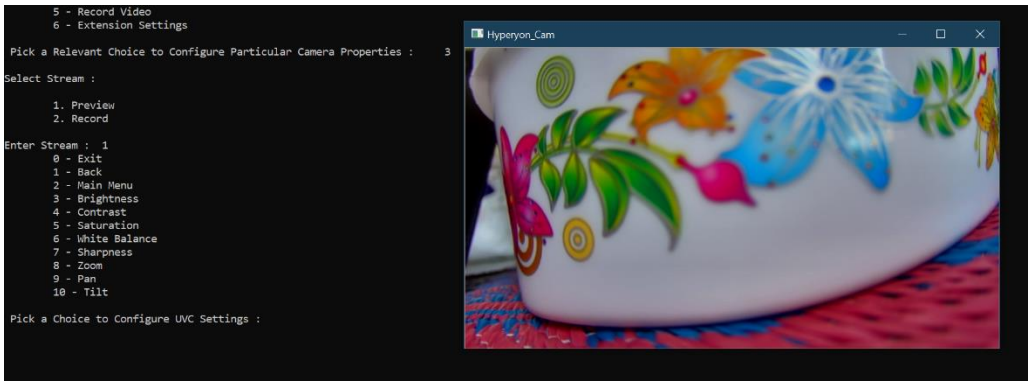


Figure 6: Configuring UVC Settings

2. Select a UVC Settings to modify the camera UVC property. For White Balance, you must enter **6** in **Pick a Choice to Configure UVC Settings**. The modes supported in camera are as follows:

    - If the camera supports manual mode, it will display minimum value, maximum value, stepping delta, current value, default value, current mode as manual and supported mode as manual.
    - If the camera supports Auto mode, it will display supported mode as Auto and current mode as Auto.
    - If the camera supports both auto and manual mode, it will display minimum value, maximum value, current value, default value,

stepping delta, current mode and supported mode as Auto or Manual as shown below.

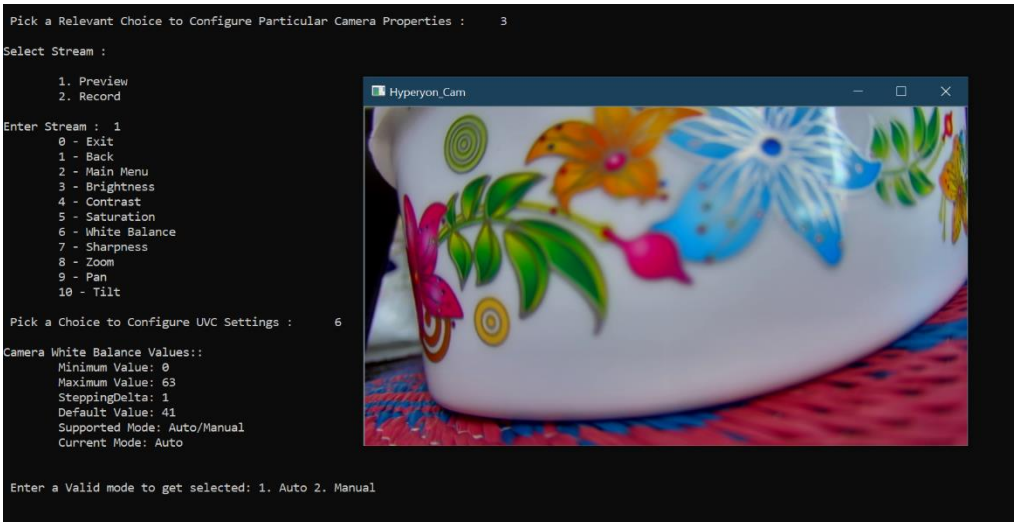


Figure 7: Setting Camera White Balance Values

To set White Balance, the value should satisfy the following conditions.

- Value must be greater than or equal to minimum value.
- Value must be lesser than or equal to maximum value.
- Value must be divided by the stepping delta, (i.e) the stepping delta value must be equal to 0.

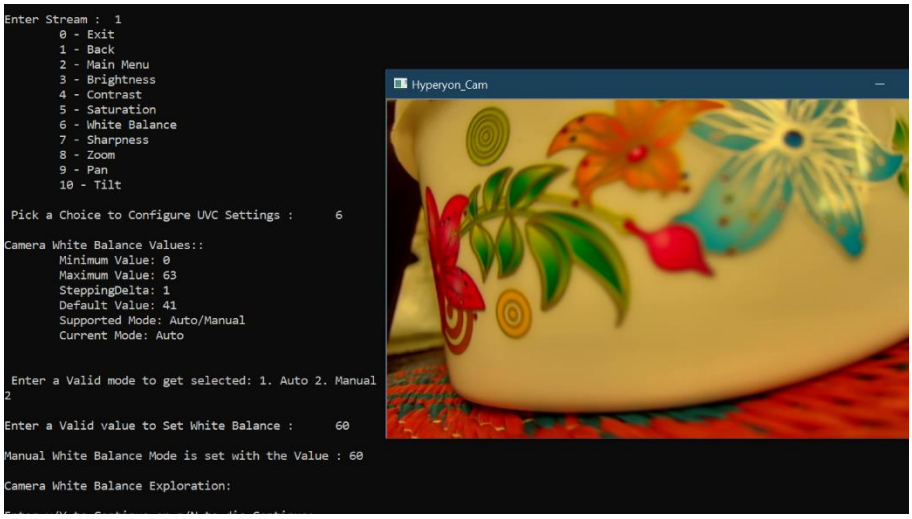


Figure 8: White Balance Configuration

3. You can enter **y/Y** to continue with changing the same property or **n** to go back to display the UVC settings supported by the camera node and can change other camera UVC Properties as shown below.

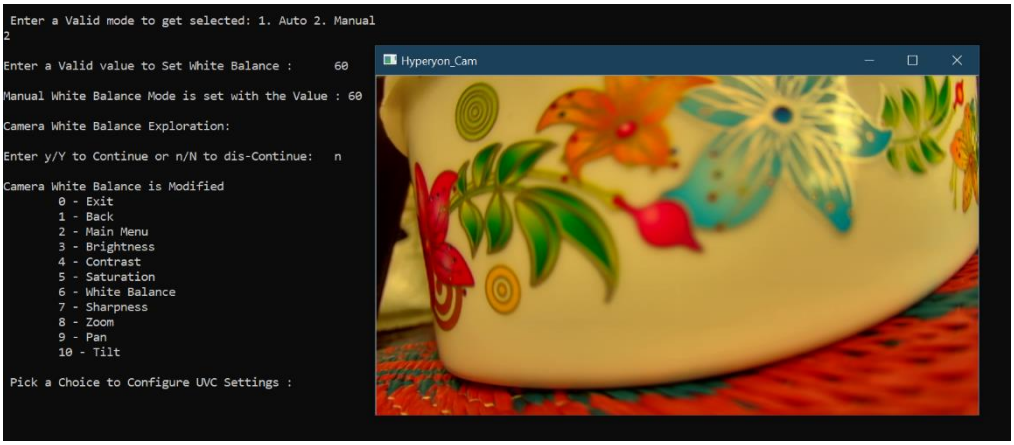


Figure 9: UVC Settings Menu Selection

Capturing Still Image

To capture the still image, you must enter **4** in **Pick a Relevant Choice to Configure Particular Camera Properties**.

You can capture still image as raw data or RGB format for the following formats **UYVY.** If the preview is in these formats the following options will come.

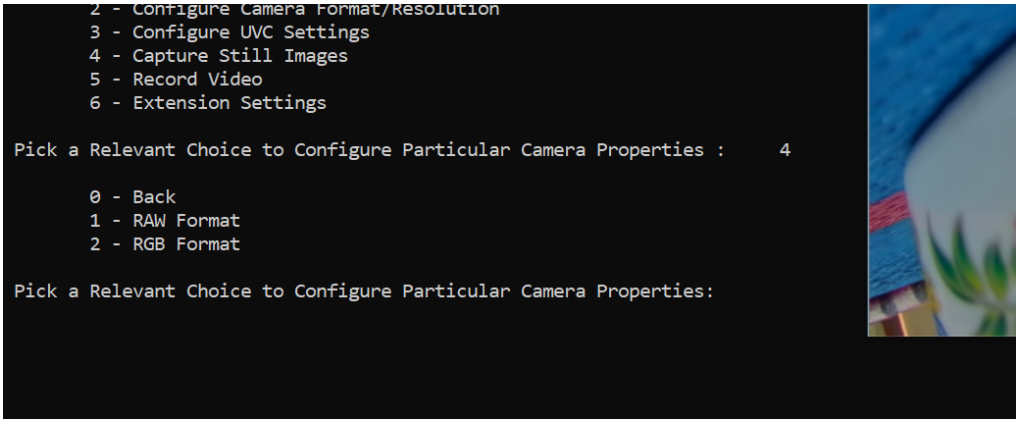


Figure 10: Capture Still Selection

The image will be saved in the application root folder with the application name, system current date and time extensions as shown below.

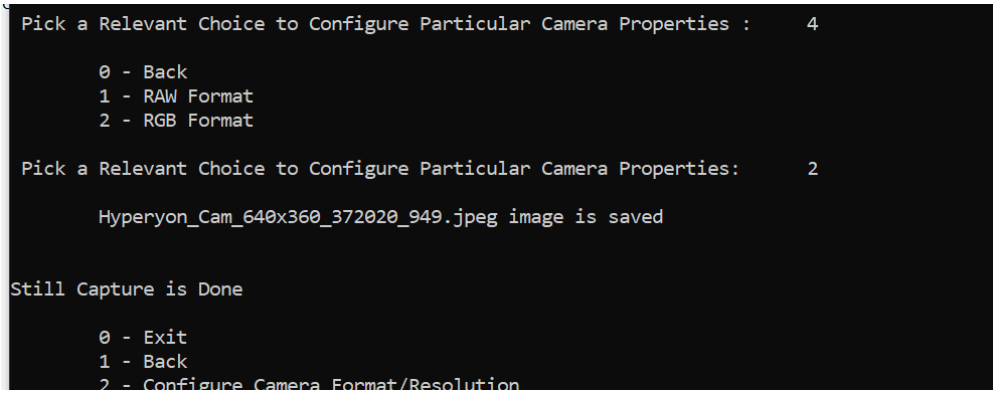


Figure 11: Capturing Still Image

Recording Video

To Record a video, you must enter **5**.

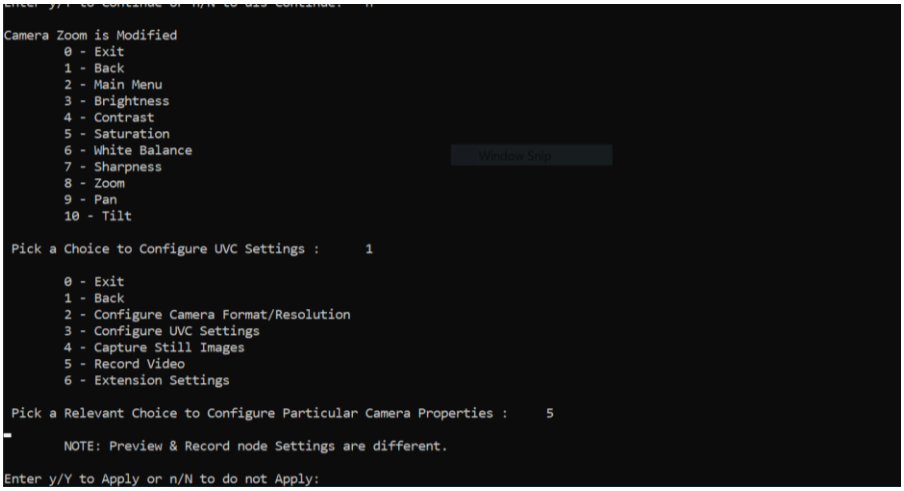


Figure 12: Video Recording

If the Zoom, Tilt or Pan values are different for two nodes (node1 and node2) then you need to choose y/Y or n/N to apply for preview values (node 1) to recording (node2) video. Otherwise video recording will start directly.

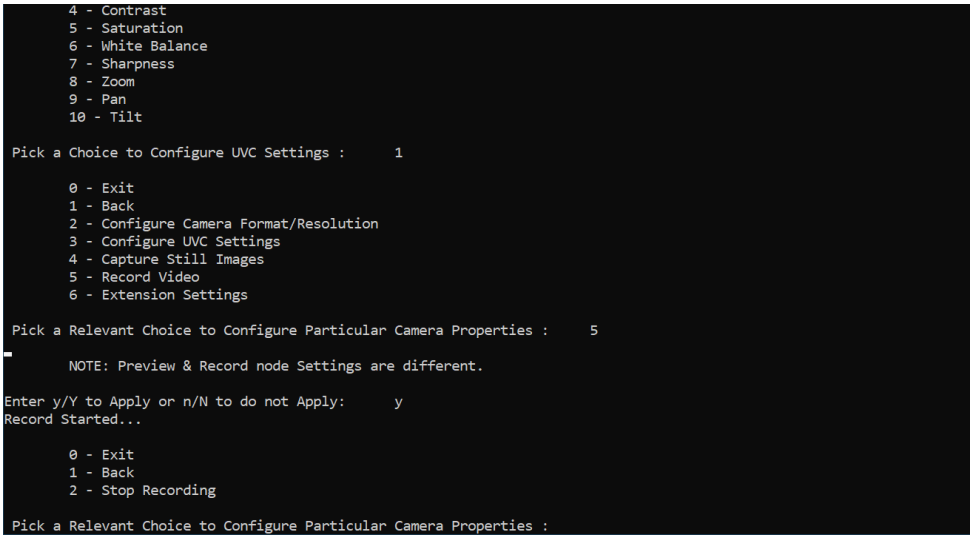


Figure 13: Recording Started

- If You choose **0** Recording will stop and close the application.
- If You choose **1** Recording will stop and go to the device enumeration.
- If You choose **2** Recording will stop and go to previous menu.

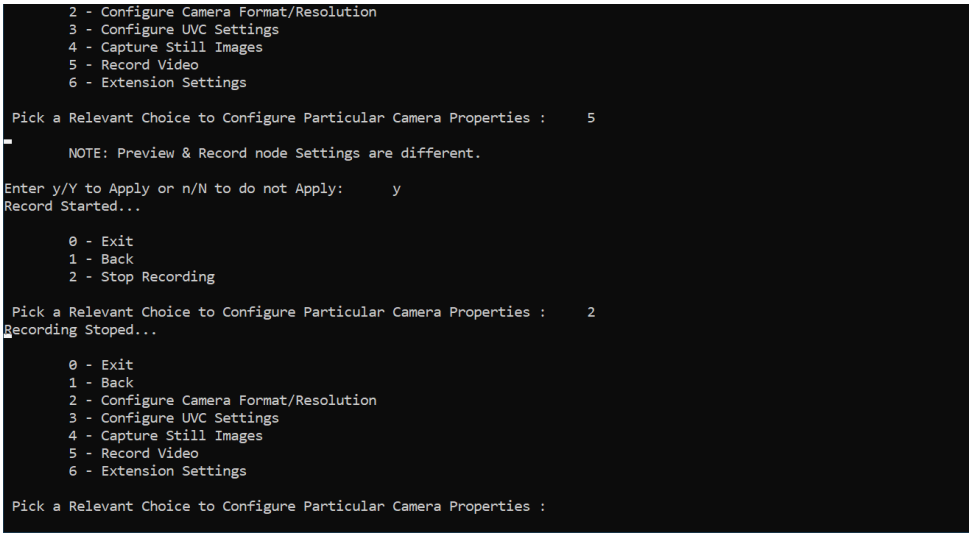


Figure 13: Recording Stopped

The Recorded video will be saved in the application root folder with the application name, system current date and time extensions.

Configuring Extension Settings

The steps to configure Extension settings are as follows:

1. Enter **6** in **Pick a Relevant Choice to Configure Particular Camera Properties** to configure Extension Settings. And need to select the stream, Then the supported Extension Settings will be displayed as shown below.

For Node 1:

For Node 2:

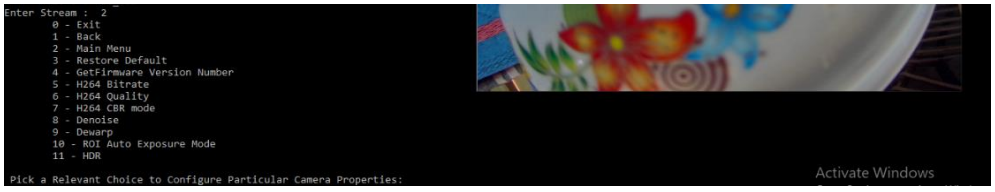


Figure 14(a, b): Configuring Extension Settings

2. Select Extension Settings to modify the camera Extension property. For White Balance, you must enter **6** in **Pick a Choice to Configure** Extension **Settings**. The modes supported in camera are as follows:

    - If the camera node supports ON, OFF mode, it will display ON and OFF, or other supported mode will be displayed
    - If the camera node supports manual mode, it will display minimum value, maximum value, stepping delta, current value.

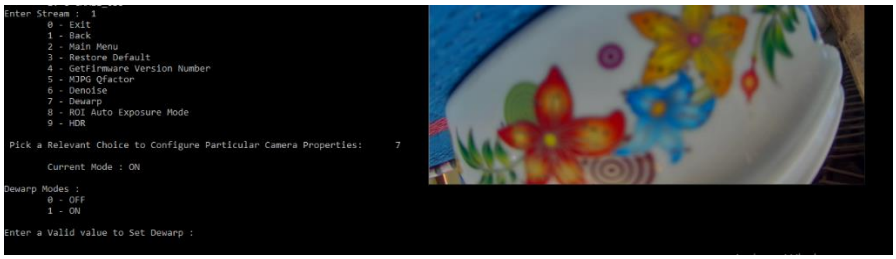


Figure 15: Setting Camera Dwarp Values

To set White Balance, the value should satisfy the following conditions.

- Value must be greater than or equal to minimum value.
- Value must be lesser than or equal to maximum value.
- Value must be divided by the stepping delta, (i.e) the stepping delta value must be equal to 0.

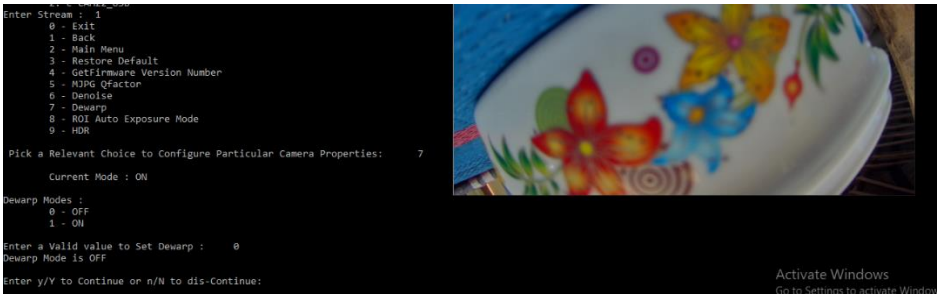


Figure 16: Dwarp Configuration

4. You can enter **y/Y** to continue with changing the same property or **n** to go back to display the Extension settings supported by the camera node and can change other camera Extension Properties.

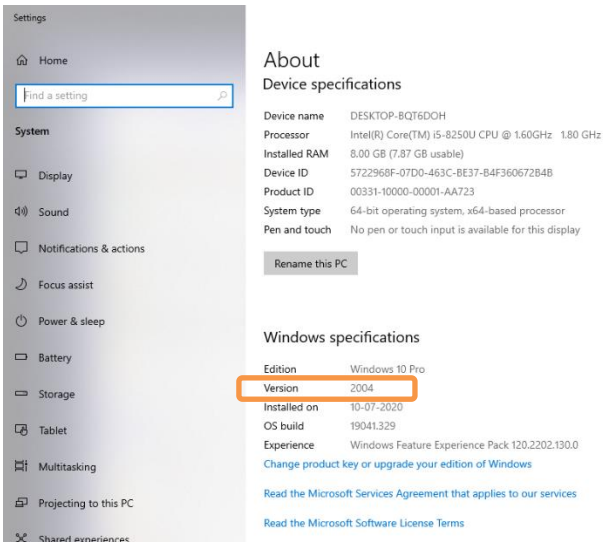
NOTE: For ROI Exposure setting, only ROI Window size and ROI Exposure mode can be set with this application. The ROI Region cannot be selected.

FAQ

In this section, you can view the list of commonly asked questions.

In Win 10, H264 video is not recording properly?

In win 10, if the **Windows specifications** version is 2004, then there is an issue with H264 recording. This issue wont be occur previous versions.



Support

Contact Us

If you need any support on OpenCV Sample application, please contact us using the Live Chat option available on our website - https://www.e-consystems.com/

Creating a Ticket

If you need to create a ticket for any type of issue, please visit the ticketing page on our website - https://www.e-consystems.com/create-ticket.asp

RMA

To know about our Return Material Authorization (RMA) policy, please visit the RMA Policy page on our website - https://www.e-consystems.com/RMA-Policy.asp

General Product Warranty Terms

To know about our General Product Warranty Terms, please visit the General Warranty Terms page on our website - https://www.e-consystems.com/warranty.asp

Revision History

Rev	Date	Description	Author
1.0	02-July-2020	Initial Draft	Murali Mohan M
1.1	16-July-2020	Replaced the images with latest device name (Preview and Record)	Murali Mohan M