DepthVista

DepthVista IMU Application Build Manual

Version 1.0

e-con Systems

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e-con Systems

Think Camera. Think e-con.

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Contents

Introduction to DepthVista

This document describes how to build the DepthVista console application step by step on the host PC (Linux).

Prerequisites

The prerequisites are as follows:

- DepthVista console application source code.
- CMake (version 3.5 and above).
- DepthVistaSDK.

Description

DepthVista has USB interface controller with USB Type-C connector to interface with the host PC. It is a ready-to-manufacture camera board with all the necessary firmware built-in and is compatible with the UVC version 1.0 standard. You can integrate this camera into the products, and this helps to cut short the time-to-market.

DepthVista is a UVC compatible and will work with the standard drivers available with Windows and Linux OS. There is no need for any additional driver installation. So, video streaming through UVC is possible without any special drivers on OSes that have built-in support for UVC standards.

Table 1: DepthVista supported Format, Resolutions, and Frame Rates

S.No	Format	Camera Mode	Resolution	Frame Rate (fps) USB 3.2 Gen 1
1	UYVY	RGB Mode	2.3MP (1920 x 1200)	30
			FHD (1920 x 1080)	30
			HD (1280 x 720)	60
			VGA (640 x 480)	60
2	Y16 (RAW 12-bit)	TOF Mode	Depth (640 x 480)	30
			IR (640 x 480)	30
			Depth + IR (640 x 960)	30

3		RGB-D Mode	1280 x 600 (RGB-D)	30
			1443 X 960 (RGB-D)	30

TOF camera in DepthVista can be used in two depth modes as follows:

- **Far Mode**: Effective depth range is between 1000 mm to 6500 mm.
- **Near Mode**: Effective depth range is between 200 mm to 1200 mm.

The TOF camera controls of DepthVista are as follows:

- TOF Data Mode
- TOF Depth Range
- TOF Mask
- TOF Gain

The RGB camera controls of DepthVista are as follows:

- Brightness
- Contrast
- Saturation
- Gamma
- Gain
- Sharpness
- White Balance
- Exposure
- Power line frequency

Installing OpenCV

This section describes the installation of OpenCV.

Run the following command to install OpenCV.

```
sudo apt-get install libopencv-dev
```

Installing DepthVistaSDK

This section describes the installation of DepthVistaSDK which is essential for building DepthVista Application.

- Extract the **package** file using the following command.

```
unzip <packageName.zip>
```

- **<Extracted Directory>\linux\Bin\Ubuntu18.04\x64\SDK\DepthVistaSDKInstaller** will have a install.sh file.

  (Note: For Ubuntu 20.04 the install.sh file will be present in **<Extracted Directory>\linux\Bin\Ubuntu20.04\x64\SDK\DepthVistaSDKInstaller**)

- Open the folder containing install.sh in terminal

- Run the following command to give executable permission for install.sh file

```
chmod +x install.sh
```

- Install the DepthVistaSDK with the following command

```
sudo ./install.sh
```

- Once installation is success, you will get "**Installation DepthVistaSDK success**".

- Create a DepthVista.conf file and add the directory containing the **libopencv_world.so** and **libDepthVistaSDK.so**, to that file.

- Move the DepthVista.conf file to **/etc/ld.so.conf.d** directory.

- Run the following command

```
sudo ldconfig -v
```

Building DepthVista Console Application

This section will discuss about building DepthVista console application.

1. **<Extracted Directory>\linux\Source\CPP\DepthVistaIMU** will have the DepthVistaIMU source code along with CMakeLists.txt file. Open that folder in terminal.

2. Run the following commands.

```
mkdir build && cd build
```

The above command creates a build directory and changes the terminal to build directory on successful creation of build directory.

```
sudo cmake ..
```

The above command creates make file from CMakeLists.txt.

```
sudo make
```

The above command generates DepthVistaIMU executable file using the make file.

Once the make is completed successfully, DepthVistaIMU executable will be generated.

3. Running DepthVistaIMU application

```
sudo ./DepthVistaIMU
```

4. Follow the *DepthVista_IMU_Application_User_Manual_Rev_1_0.pdf* provided in the package.

Troubleshooting

1. **Error : libopencv_world.so needed by libDepthVistaSDK.so is missing.**

    - Create an opencv.conf file and add the directory containing the libopencv_world.so to that file.
    - Move the opencv.conf file to **/etc/ld.so.conf.d** directory.
    - Run the following command

```
sudo ldconfig -v
```

Support

Contact Us

If you need any support on DepthVista product, 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-November-2022	Initial Draft	Camera Products