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See3camguvcview

Build & Installation Guide

**Revision 1.7
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Contents

1 Revision History

Rev No	Date	Major Changes	Edited By
1.0	June 17, 2013	Initial Draft	Camera Dev. Team
1.1	August 19, 2013	Modified for See3CAM_80	Camera Dev. Team
1.2	October 07, 2013	Document modified to support all the See3CAM family cameras	Camera Dev. & QA Team
1.3	January 10, 2014	Updated document to reflect dependencies of latest source code	Camera Dev. Team
1.4	June 27, 2014	Document updated to include See3CAM_CU50	Camera Dev. Team
1.5	August 13, 2014	Document updated to include See3CAM_CU51	Camera Dev. Team
1.6	September 16, 2014	Document updated to include See3CAM_CX3RDK	Camera Dev. Team
1.7	October 3, 2014	Document updated to include See3CAM_AR0130	Camera Dev. Team

2 Introduction

e-con Systems is a leading embedded Product Design Services company which specializes in advanced camera solutions and See3CAM is a new family of USB3.0 SuperSpeed camera products launched by e-con. The See3CAM cameras are UVC-compliant and it does not require any additional drivers to be installed on the PC. The native UVC drivers of Windows and Linux Operating Systems shall be compatible with these cameras. The See3CAM_10CUG_M, See3CAM_10CUG_C, See3CAM_11CUG, See3CAM_CU50, See3CAM_CU51, See3CAM_80, See3CAM_AR0130 and See3CAM_CX3RDK with its supported accessory boards are the members of this family.

e-con also provides the sample application (see3camguvcview) that demonstrates some of the features of these cameras. However, these cameras can be utilized by any V4L2 application such as cheese, Skype etc.

3 Scope

The see3camguvcview application is based on luvcview, but all controls are done with GTK+, allowing for a more user friendly GUI. See3camguvcview is a V4L2 video viewer and capture software for the linux UVC driver, but customized to demonstrate some of the features of See3CAM cameras.

This document explains how to install pre-built binaries from the delivery package and also describes how to build and install the see3camguvcview application from the source. This application forms the basic testing tool for all e-con's See3CAM family of USB cameras.

4 Description

The **See3CAM guvcviewer** or **see3camguvcview** is a simple GTK+ interface for capturing and viewing video from the devices supported by the Linux UVC driver. This tool also supports extension unit control of e-con's See3CAM usb 3.0 camera products. The features provided in the application are as follows:

  a) Enumerating and listing all USB video and audio devices connected.
  b) Properties of audio capture devices (if any audio device is available).
  c) Properties of video renderer.
  d) Changing resolution and color space/compression for video stream(if different resolution are supported by the device)
  e) Currently configured values of preview which is being shown.
  f) User can capture still images and set the path where still images will be saved.
  g) Configure HID Extension Control (if supported by device)
  h) Displaying the average frame rate.

All the above listed properties can be configured by attractive and easy to use Graphical User Interface. The application will run in Ubuntu [>=12.04 (LTS)] 32-bit and 64-bit Linux Distributions.

5 Pre-Requisites

There are some libraries (like gtk, glib, libavcodec etc.) essential to build See3CAM guvcviewer software package. We tested this package in **Ubuntu 12.04(LTS) 32-bit and 64-bit and Ubuntu 14.04(LTS) 32-bit and 64-bit**. The dependencies may vary for ubuntu's distribution. Make sure that the test pc's should meet the requirements.

Package requirements

  1. gtk+-3.0 >= 3.0.0
  2. glib-2.0 >= 2.10.0
  3. sdl >= 1.2.10
  4. portaudio-2.0

5. libpng
6. libavcodec
7. libavutil
8. libv4l2
9. libudev
10. libusb-1.0
11. intltool

5.1 Install gtk package

The gtk+-3.0 package can be installed by running the command

sudo apt-get install libgtk-3-dev

Note:
This will also install other dependency packages like glib-2.0, gdk-2.0, libpng.

5.2 Install sdl package

The sdl package can be installed by running the command

sudo apt-get install libsdl1.2-dev

5.3 Install portaudio package

The portaudio package can be installed by running the command

sudo apt-get install portaudio19-dev

5.4 Install libavcodec package

The libavcodec package can be installed by running the command

sudo apt-get install libavcodec-dev

5.5 Install libv4l2 package

The libv4l2 package can be installed by running the command

sudo apt-get install libv4l-dev

5.6 Install libudev package

The libudev package can be installed by running the command

sudo apt-get install libudev-dev

5.7 Install libusb-1.0 package

The libusb-1.0 package can be installed by running the command

sudo apt-get install libusb-1.0-0-dev

5.8 Install intltool package

The intltool package can be installed by running the command

sudo apt-get install intltool

6   Identifying the Deliverables

The release package See3CAM_LINUX_REL_Package_xxxx.tar.gz is a compressed (i.e. tar.gz) archive file which will provide the see3camguvcview XU control application binary, src and user manual document etc.

Use the command 'tar' for uncompressing this release package

tar -xvzf <path to tar file>/See3CAM_LINUX_REL_Package_xxxx.tar.gz

After uncompressing this package a directory is created in the name 'See3CAM_LINUX_REL_Package_xxxx'.

7   Build and install see3camguvcview from the Source

1. The above step will extract the source in to See3CAM_guvcview-src-1.7.2 folder. Enter in to the source directory by the command

   cd See3CAM_LINUX_REL_Package_xxxx/src/See3CAM_guvcview-src-1.7.2/

2. Run the command **'./configure'** to configure the see3camguvcview source as follows . This configuration is required to check the presence of the dependent packages and creating the makefiles. To create a static application, pass the given LDFLAGS as argument to configure. If user wants to change the binary installation directory (default /usr/local/bin) add **--prefix = <path_to_install>**

   For more information try **./configure --help**.

   ./configure --prefix=/usr/local/see3cam

   Note:
   If configuration is failed, then contact the ubuntu's webpage to know how to install any required packages.

3. After the successful configuration, run the command 'make' to build the see3camguvcview application from the source.

   make

4. To install the built application, run the command 'make install'. This will install the application in the location **'/usr/local/see3cam/bin'**.

   sudo make install

Note:
   Follow the same procedure (steps 5, 6, 7) to build and install see3camguvcview for both Ubuntu 12.04 LTS 32-bit and 64-bit and Ubuntu 14.04 32-bit and 64-bit Linux distributions.

8   Install Pre-built Binaries

To install the pre-built binaries, refer README in the delivery package.

9   Known Issues and Limitation

1. This see3camguvcview XU Control Application is tested in Ubuntu 12.04(32-bit and 64-bit) and Ubuntu 14.04(32-bit and 64-bit) Linux Distribution only.

2. If we unplug and plug the See3CAM USB camera while it is running, the application will be crashed and this situation is not handled.

3. In Ubuntu 12.04(32-bit and 64-bit) the kernel version tested is up to 3.2.0-63-generic-pae. In kernel versions higher than this, switching resolutions of the camera in USB3.0 mode does not work.

10 Support

Please contact sales@e-consystems.com for further support.

11 Conclusion

This document provides detailed information on how to build and install see3camguvcview provided by e-con systems.