China Daheng Group, Inc. Beijing Image Vision Technology Branch

How to use Daheng Mercury U3 camera under ARM

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1. Introduction

An embedded system is a computer system with a dedicated function within a larger mechanical or electrical system, often with real-time computing. It is embedded as part of a complete device often including hardware and mechanical parts. Embedded systems control many devices in common use. Today Ninety-eight percent of all microprocessors are manufactured as components of embedded systems

For ARM embedded, our company developed U3 driver to connect Mercury cameras, and provide a component solution for embedded machine vision.

This document provides instructions for using Mercury U3 camera under ARM.

2. The Supported Embedded Hardware Platfroms

The following embedded architectures are supported:

ARM AArch64: 64-bit ARMv8

ARM hard float : 32-bit ARMv7

System Requirements:

Linux OS

3. The Tested arm embedded device

NVIDIA Jetson TX1/TX2

NVIDIA Tegra TK1

Toradex Apalis TK1 on Ixora Carrier Board

Raspbeery Pi 3B,incl.support of the camera module

4. Quick start

4.1 The structure of installation package

1. Installation

Extract the EmbGxIAPI_SDK_2017093001.tar.gz file .

For example:

Tar –zxf EmbGxIAPI_SDK_2017093001.tar.gz

The directories of the Armv7 installation package：

EmbGxIAPI_SDK_2017093001

Lib

Libgxiapi.so

Sample

GxContinuousAcquire

GxTriggerExternalAcquire

GxTriggerSoftwareAcquire

Embedded API invocation process.docx

2. The directories of the Armv8 installation package

Embedded_TX_ARMv8_SDK_20180224

Lib

Libgxiapi.so

Sample

GxContinuousAcquire8

GxContinuousAcquire16

GxTriggerExternalAcquire

GxTriggerSoftwareAcquire

Embedded API invocation process.docx

4.2 Use the camera SDK.

1. To use the Mercury camera for linux , start by copying the dynamic library named “libgxapi.so” to the /usr/lib directory.

For example:

$ sudo cp libgixapi.so /usr/lib

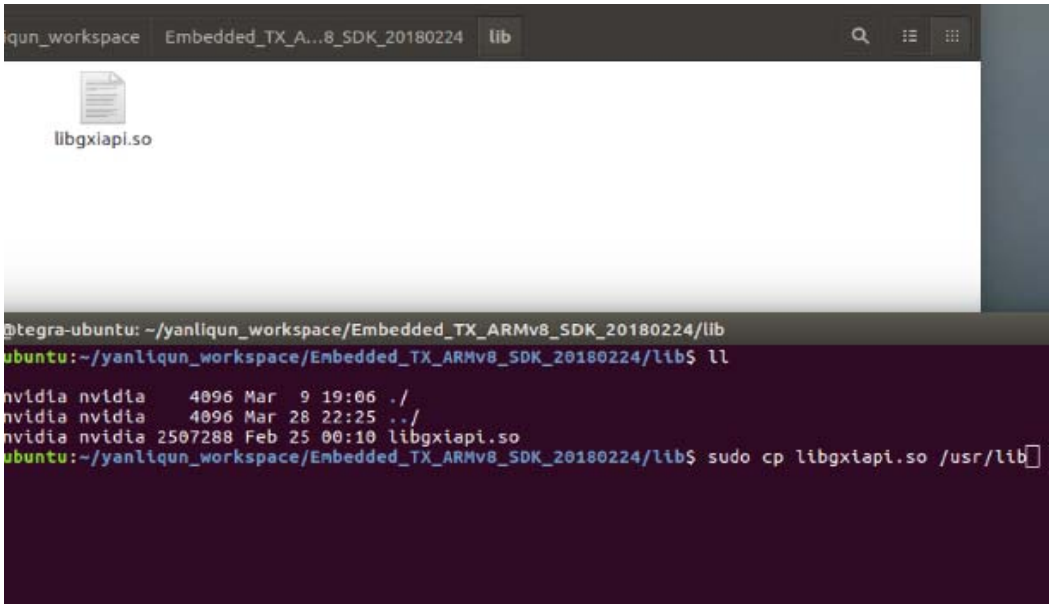

Figure 1 Copy camera dynamic library to /usr/lib

2. Example Programs.

Example programs are located in the following directory:

EmbGxIAPI_SDK_2017093001/Sample

The example programs are categorized by the basic functionality they demonstrate,and there is a document which introduce the SDK function named "Embedded API invocation process.docx" . Each example program directory includes a makefile to compile the example .Examples must be compiled before using by running the make command in the example directory. For example , in Ubuntu:.

$make

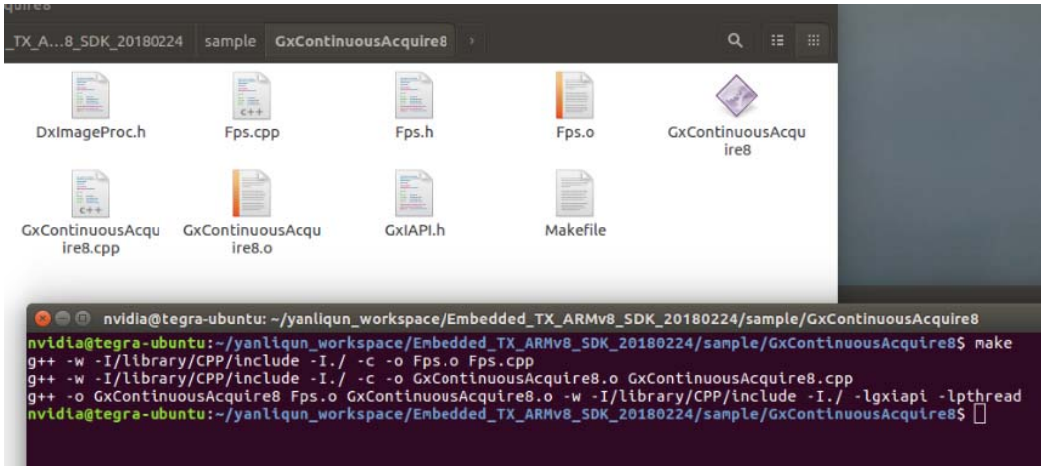

Figure 2 examples

3. Execute program

Call the program name to run program . For example , in Ubuntu , to run the program in the current directory , precede the program name with “./”,We need superuser permission to execute program .

For example:

$ sudo ./GxContinuousAcquire8

If the camera is connected , the program run successfully .

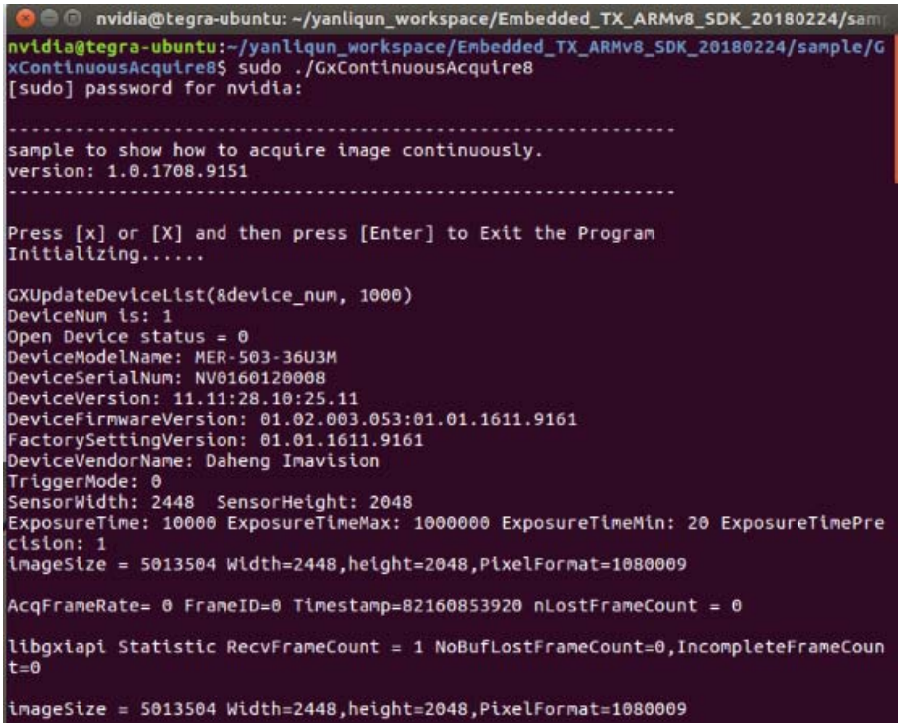

Figure 3 execute program

5. Revision History

No.	Version	Changes	Data
1	V1.0.0	Initial release	2018-0413