

## LAB 3

### 1 Target:

Using video output and input on the embedded system.

### 2 Demonstration:

2.1 Show camera stream on the embedded screen. (10%)

2.2 Meet **Note 3.3** requirement. (20%)

2.3 Finish advance. (70%)

2.4 Upload your source code to E3.

### 3 Notes:

3.1 There are no instructions in this lab, you should be able to do this by modifying the work you have done.

3.2 We will provide a non-completed source code on 11/02.

3.3 The video should not be stretched. **You must leave blanks on two sides.**  
(4:3 can do the job)

### 4 Hints:

4.1 If you are going to use OpenCV, the compilation command would be almost the same as the instructions in the last lab.

### 5 Advance:

5.1 While reading the video input stream, capture and save the video frame to the SD card when pressing “c” (without “enter” ↵). It should capture and save multiple images after pressing multiples times “c”, saved images should not be overwritten. The image format is not restricted.

- Your screenshot will work. (10%)

- Screenshot should be saved in a directory name “screenshot” in SD card. (10%)

- Performance: You will get full points if your video has no delay when taking screenshots. (20%)

5.2 After bootup, start to recording the input stream to a video file automatically. The video format is not restricted and save it to directory “screenshot” in SD card.

- Start recording after log in. (15%)
- Start recording before log in. (15%)
  - **Note:** You should make sure you can shutdown your program and log in normally, or you may need to reinstall your OS.