USB Android Screen Manager Documentation and Instructions

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Description

This application is able to control an android's screen remotly over a usb connection to a configured desktop with no android UI.

USB Android Screen Manager was created to implement the new testbed concept of an android phone replacing a laser as a light source for testing a EM-CCD camera in photon counting mode. It is required that pixels go completely dark when their values were set to zero, meaning that only phones with the new Organic Light Emitting Diodes(OLED) pixels should be utilized for this application. We reccomend using the samsung galaxy s7 or s8 because of their high pixel density.

Theses are the base requirments that this application is able to fullfil.

1. Control the android device without a user interface(UI)
2. To have no stray lights or internal LEDs that would disturb the EMCCD.
3. Accept an RGB array as input for phone pixel values
4. Accept a flat field as input for phones pixel values
5. Accept the length of visible time as an input
6. Accept periodic spot matrices as input for phones pixel values
7. Allow the user to control the intensity of individual pixels

1 Enviroment Configuration

1.1 Android Studio Download

Android Studio is required in order to communicate with the phone remotely over USB. Android Studio is a Free application produced by Google that is an IDE specific to Android Devlopement. When I have time, I will try to programaticly inteface with android studio so that using it is not nessesary, but untill then it is required.

1. Go to the following link and press the DOWNLOAD button: `https://developer.android.com/studio/index.html`
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7. Allow the user to control the intensity of individual pixels