CC32xx Camera Application

Objective

This application demonstrates Camera Application on a CC3200 LaunchPad setup. This application captures VGA image in JPEG format and displays in a web browser.



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Prerequisites

Hardware

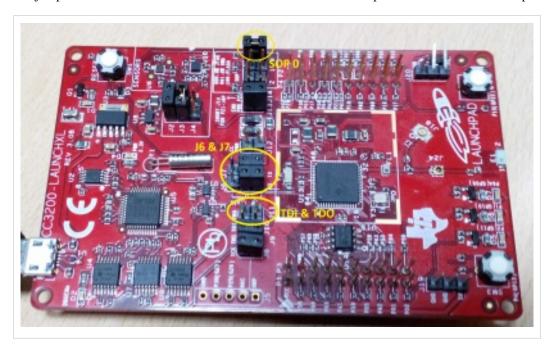
- CC3200 LaunchPad Rev 3.0 onwards
- CC3200 Camera Booster Pack Rev 3.0 onwards
- MT9D111 Camera Module

Software

- CC3200 Camera Application
- SDK v0.5 Firmware Package

Configuring the target device

- 1. Ensure SOP 0 is mounted on the CC3200 launchpad. Make sure to remove the same and mount SOP 2 while flashing the binary application. Since, TDI and TDO are used for I2C interface, the JTAG is operational in SWD mode.
- 2. Since SWD mode is used, make sure to un-mount J10 and J11 jumpers so that TDI and TDO lines are not being used.
- 3. Mount the jumpers J6 and J7 in the RX/TX mode. This enables the launchpad interface to the booster pack.



3. Mount the Camera Booster pack on the launchpad as shown below. Make sure the VCC on P1 connector mates with VCC indication on the booster pack. Similarly, the GND on P2 connector should align with GND indication on the camera booster pack.



4. Please note that only one sensor has to be interfaced to the camera booster pack.

Application details

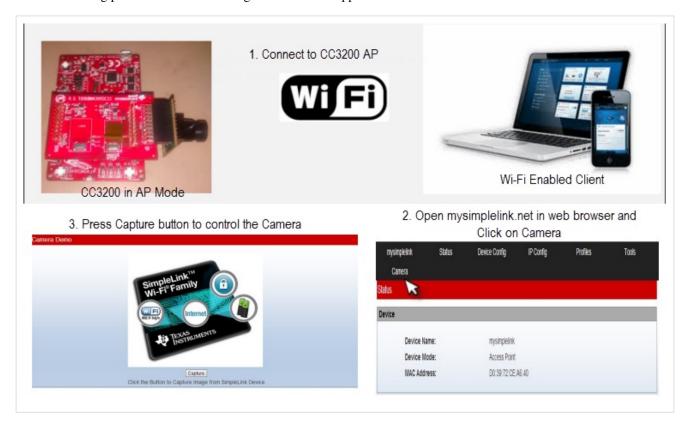
In this application, Simplelink device comes up in AP Mode.

User needs to connect the Wi-Fi enabled device PC/Smartphone to the device AP (Default SSID: mysimplelink-MACAddr)

Using a web browser, access mysimplelink.net, the static pages stored on SFLASH will be displayed.

Send Capture command to device using token in HTML page. The captured image will be written to SFLASH and displayed in the web browser.

The following picture illustrates the usage of the camera application:



Source Files briefly explained

- main.c System Initialization, Spawns the Camera Service Task. HTTP server callback request to handle token from HTML page.
- gpio_if.c Handles GPIO related operations
- pinmux.c Generated by Pinmux utility pin to configure Camera Data and I2C
- camera_app.c Handles DMA Configuration, Camera Capture and NVMEM File operations
- MT9D111.c MT9D111 sensor related functions are implemented
- startup_*.c Implements tools specific interrupt vector table

Usage

- Flash Example Content(html,image,Application binary)on serial flash by following below steps.
 - Open <cc3200-sdk>\examples\camera_application\html\camera_application.ucf session file in Uniflash.
 - Flash the files to the device. Detailed instructions at Uniflash User Guide.
- Run the reference application
 - 1. Run From IDE (IAR/CCS)
 - Open the Project as mentioned in the <cc3200-sdk>\docs\CC3200-Getting Started Guide.pdf
 - Build and download the application to the board
 - 2. Run Flashed Binary file

Remove SOP-2 Jumper on Board and Press Reset. Refer <cc3200-sdk>\docs\CC3200-Getting Started Guide.pdf for detailed Information.

- Device started in AP mode, Connect your PC/SmartPhone to 'mysimplelink-<macAddress>'.
- Open 'mysimplelink.net/main.html' in browser of PC/MAC/Smartphone, goto 'Camera' tab and Control Camera Capture in the CC3200 device.

Limitations/Known Issues

• If downloading html files gives error then try erasing older files from sFlash using Uniflash.

Article Sources and Contributors

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