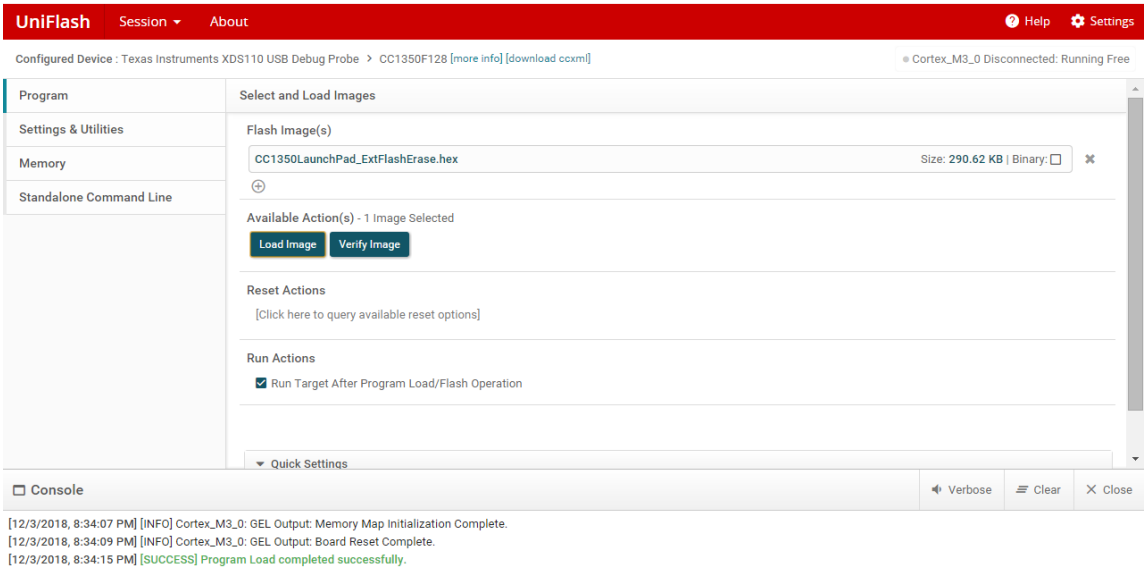
Name: Enrique Saldana
Partner: Damian Cisneros
Github root directory: https://github.com/enri10

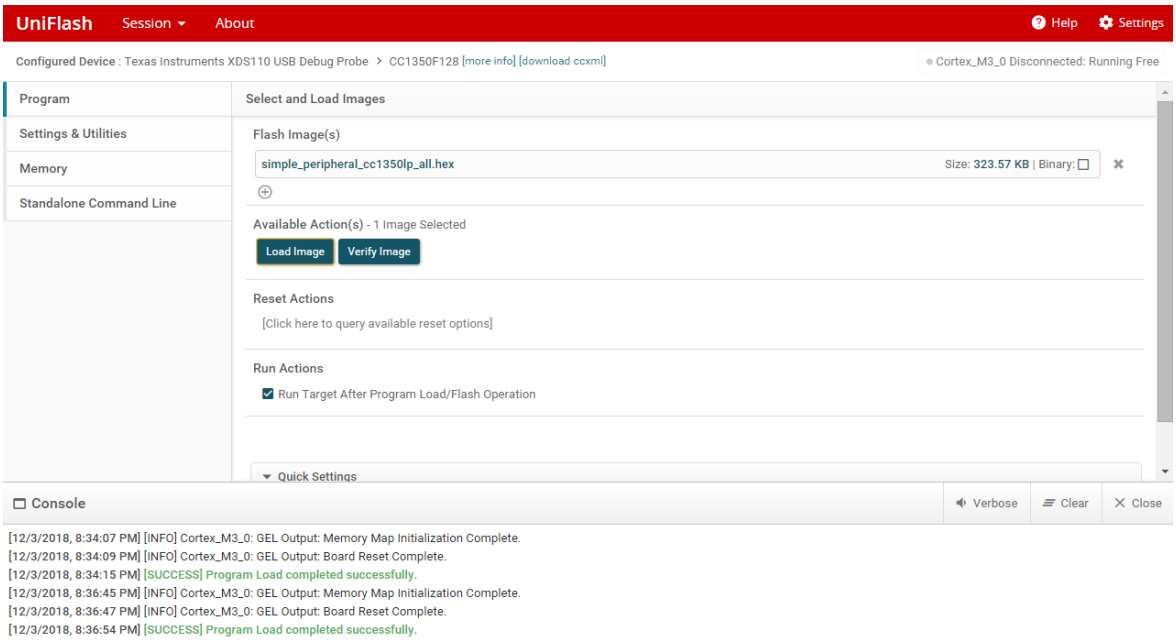
Date Submitted: **11-25-2018**

Unable to complete first Task01-Task04 with the flashing and using BLE due to Android app not having functions from iOS app as shown in the PDF instructions. Android support does not seem active and we do not have an iPhone.

Task 01: Update CC1350 LaunchPad firmware



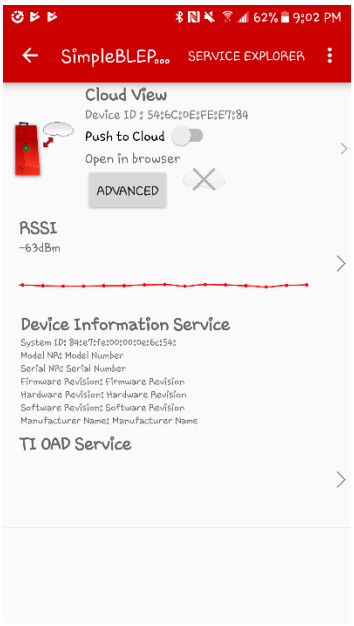
Successfully loading cc1350launchpad_extflasherase.hex



Successfully loading simple_peripheral_cc1350lp_all.hex

Grading scheme: 30% Coding, 30% Documentation, 40% Execution/Video.

Name: Enrique Saldana
Partner: Damian Cisneros
Github root directory: https://github.com/enri10



Able to connect to it but no capability of sending firmware like shown on iOS app.

Youtube Link: No video required.

Modified Code: No coding requried

WSN Concentrator and WSN Node Part

Task 01: **Importing the WSN Examples**

WSN Concentrator waiting for nodes. Node is not connected at this point.

Youtube Link: No video required for this par.

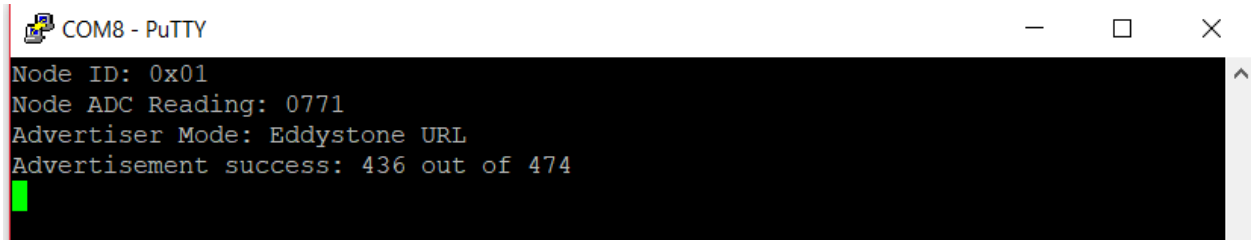
Modified Code: Same imported WSN Concentrator/Node project

Task 02: **Putting it all to work**

Grading scheme: 30% Coding, 30% Documentation, 40% Execution/Video.

Name: Enrique Saldana
Partner: Damian Cisneros
Github root directory: https://github.com/enri10

Concentrator receiving values.



Node sending values.

Youtube Link: https://youtu.be/IeDKvveIXQQ

Modified Code: No code was modified from initial project import.

Task 03: **Change RF Channel**

```
/* If you wich to use a frequency other than the default use
 * the below API
 * EasyLink_setFrequency(868000000);
 */
EasyLink_setFrequency(868000000);
```

Modified frequency in ConcentratorRadioTask.c (highlighted). Operation is the same as Task02.

Modified Code: Highlighted portion above was modified in ConcentratorRadioTask.c

Task 04: **Switch from 2-GFSK 50 kbps to Long Range Mode (LRM)**

```
39 #define RADIO_CONCENTRATOR_ADDRESS      0x00
40 #define RADIO_EASYLINK_MODULATION       EasyLink_Phy_5kbpsSlLr
```

Switched to long range mode on Radioprotocol.h (highlighted in blue)

Modified Code: Highlighted portion above was modified in Radioprotocol.h

Task 06: **Modify Code Running on the Sensor Controller**

Grading scheme: 30% Coding, 30% Documentation, 40% Execution/Video.

Name: Enrique Saldana
Partner: Damian Cisneros
Github root directory: https://github.com/enri10

ADC Sample - Execution Code

```
// Enable the ADC
adcEnableSync(ADC_REF_FIXED, ADC_SAMPLE_TIME_2P7_US, ADC_TRIGGER_MANUAL);

// Sample the ADC
S16 adcValue;
adcGenManualTrigger();
adcReadFifo(adcValue);
output.adcValue = adcValue;

// Disable the ADC
adcDisable();

// Alert the driver if outside of change mask
U16 adcMaskedBits = adcValue & cfg.changeMask;
if (adcMaskedBits != state.oldAdcMaskedBits) {
    fwGenAlertInterrupt();
    state.samplesSinceLastReport = 0;
} else {
    state.samplesSinceLastReport = state.samplesSinceLastReport + 1;
}

//Alert driver if minimum report interval has expired
if(cfg.minReportInterval != 0) {
    if(state.samplesSinceLastReport >= cfg.minReportInterval) {
        fwGenAlertInterrupt();
        state.samplesSinceLastReport = 0;
    }
}

// Save old masked ADC value
state.oldAdcMaskedBits = adcValue & cfg.changeMask;

// Schedule the next execution
fwScheduleTask(2);
```

ADC Sample modified to read every 2s instead of 1s.

Grading scheme: 30% Coding, 30% Documentation, 40% Execution/Video.