

Follow the submission guideline to be awarded points for this Assignment.

Task 1: Goal of this assignment is to create a custom BLE profile to transmit any sensor data to a generic BLE app in Android or iPhone or BTool. A recommended BLE app is LightBlue by PunchThrough or BTool. The video should clearly demonstrate the BLE connectivity, services advertised, and data update on the BLE app. You could use the CC1352R1LP or CC1352R1STK for this assignment. To accomplish this the student are required to complete the following sections under Bluetooth 5 folder in resource explorer (SimpleLink CC13xx CC26xx SDK (5.30.01.01) & SimpleLink Academy for CC13xx CC26xx (5.30.01.00)).

1. Bluetooth Low Energy Fundamentals
2. Bluetooth Low Energy Scanning and Advertising
3. Bluetooth low energy Custom Profile

Task 2: This task builds on top of Task 1. The goal of this task is to interface an actual analog sensor (joystick). To start import, compile and execute the multi_sensor example under the Bluetooth 5 folder in resource explorer. You should use CC1352R1STK for this task. Some sensors will fail to initialize for SDK version 5.30.01, this is a known bug in the library. Remove the following services Temperature Service, Humidity Service, Light Service, Battery Service, and Accelerometer Service. Modify the Hall Service (uses ADC) to transmit the joystick ADC value to the host system. Verify your result.

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Submit the following for all Labs:

1. In the document, for each task submit the modified or included code (only) with highlights and justifications of the modifications. Also include the comments.
2. Create a private Github repository with a random name (no CPE/403, Lastname, Firstname). Place all labs under the root folder CC1352, sub-folder named Assignment5, with one document and one video link file for each lab, place modified c files named as cc1352_main.c, cc1352_tirtos.c, cc1352_tirtos.cfg, and cc1352_tirtos.syscfg.
3. If multiple c files or other libraries are used, create a folder assng5_t01 and place these files inside the folder.
4. The folder should have a) Word document (see template), b) source code file(s) with startup_ccs.c and other include files, c) text file with youtube video links (see template).
5. Submit the doc file in canvas before the due date. The root folder of the github assignment directory should have the documentation and the text file with youtube video links.
6. Organize your youtube videos as playlist under the name “cpe403”. The playlist should have the video sequence arranged as submission or due dates.