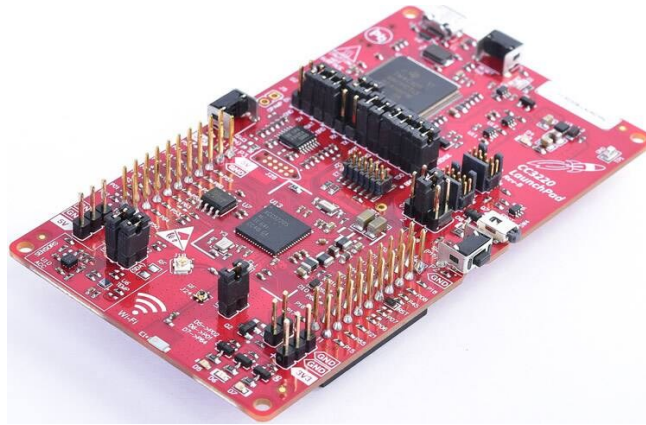


## Internet of Things – laboratory classes



### Exercise 2. Reading data from the temperature sensor.

The goal of the exercise is to understand how tasks work in FreeRTOS operating system and to implement communication with the temperature sensor.

1. Launch Code Composer Studio. Choose the folder which will be used as your workspace. Remember that it has to be a folder where you have writing permission.
2. Import the project shared by the instructor and try to compile it. Why does it not compile? With the help of the instructor, make changes to project configuration so that the compilation runs without errors.
3. Open PuTTY program and open new serial connection with the following parameters: 115200 baud rate, 8-bit data, parity: none, stop: 1-bit, flow control: none. The number of the COM port will be given by the instructor during classes. Save the configuration (with any name you want), so that you can easily use this configuration in the future.
4. Inside the mainThread() function display a string of your choice and observe the result on the terminal.
5. Change the code of the program so that the string is displayed every second. Then add to the displayed string the number of seconds which elapsed since reset.
6. Import the project "out\_of\_box\_CC3220SF\_LAUNCHXL\_freertos\_ccs". Search for the information how the board's temperature sensor is initialized/serviced. Then use the functions you found in your own project, so that the temperature given by the sensor (in degrees Celsius) is displayed every second on the terminal. A sample result of the program is shown below.

```
Time=3152
Temperature=23.669361
Time=3153
Temperature=23.622860
Time=3154
Temperature=23.529791
Time=3155
Temperature=23.086527
Time=3156
Temperature=22.852444
Time=3157
Temperature=23.063143
Time=3158
Temperature=23.692606
```