

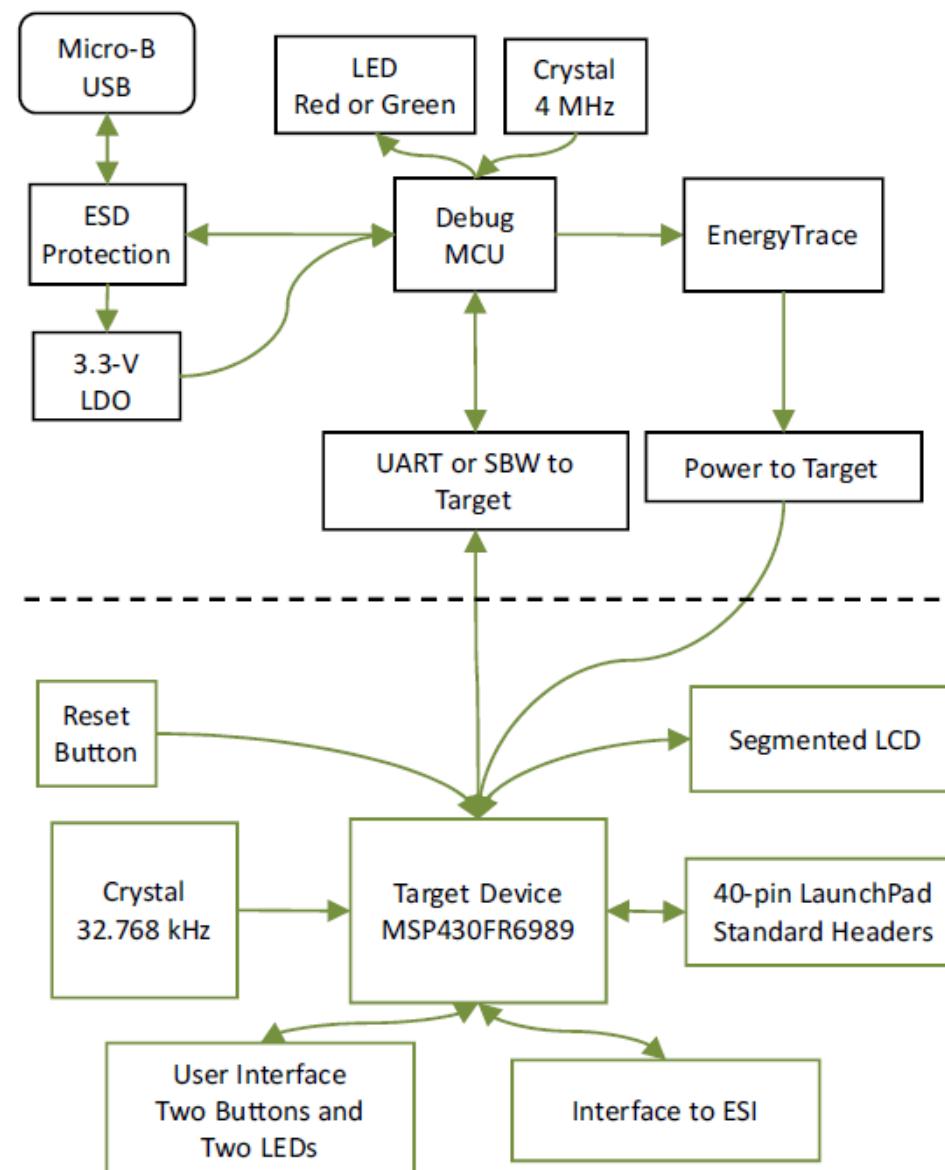
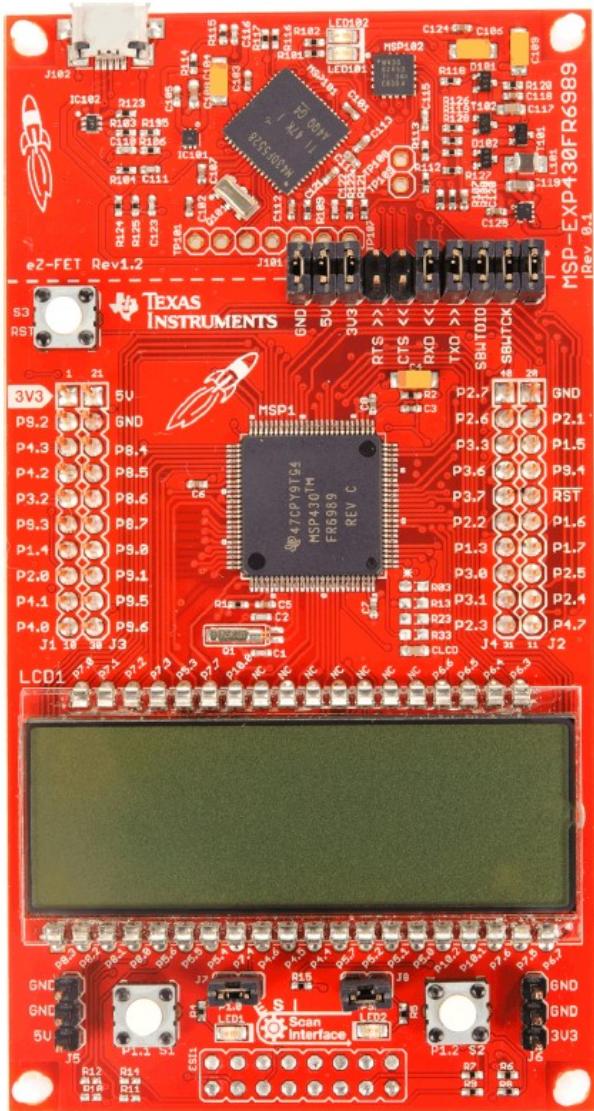
ПРАКТИКУМ ПО ПРОГРАМИРАНЕ НА МИКРОКОНТРОЛЕРИ

Макети

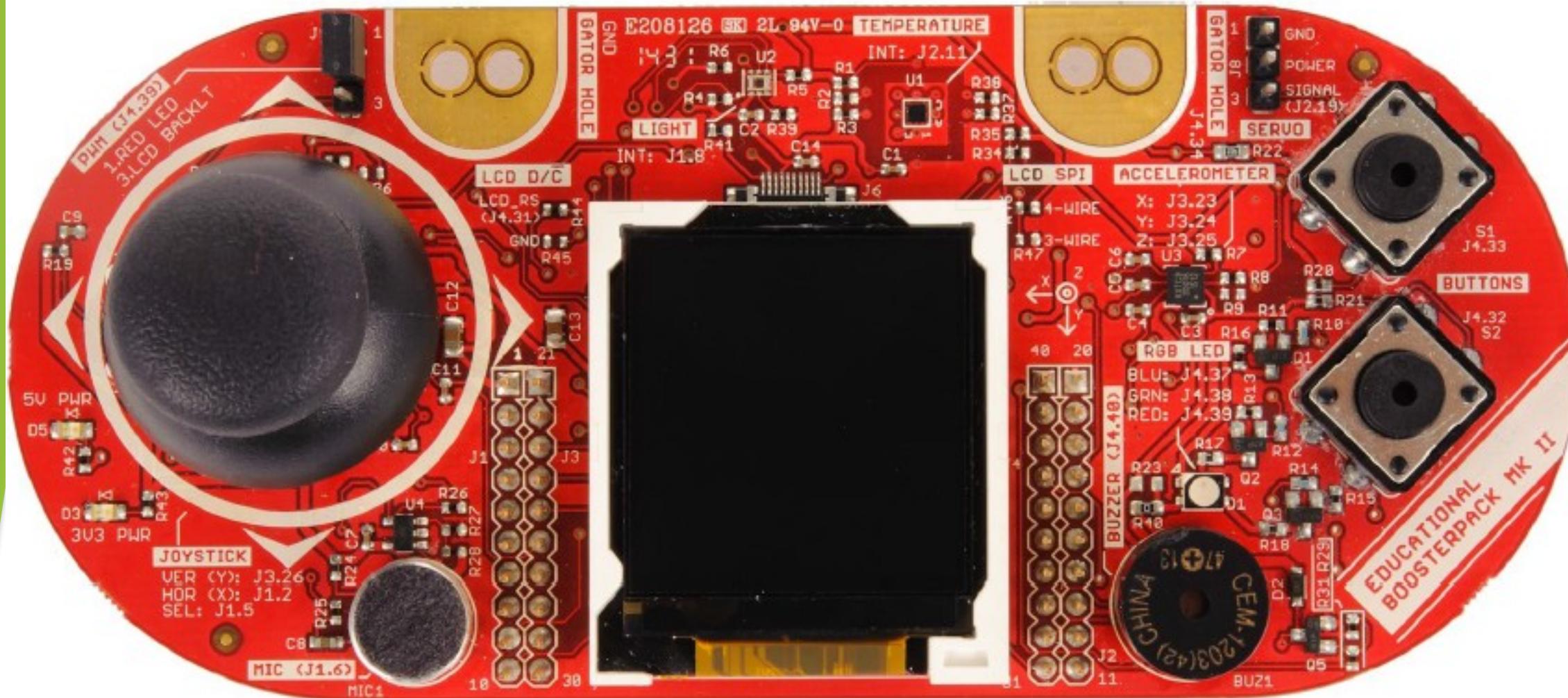
- Микроконтролер
MSP430FR6989 с FRAM

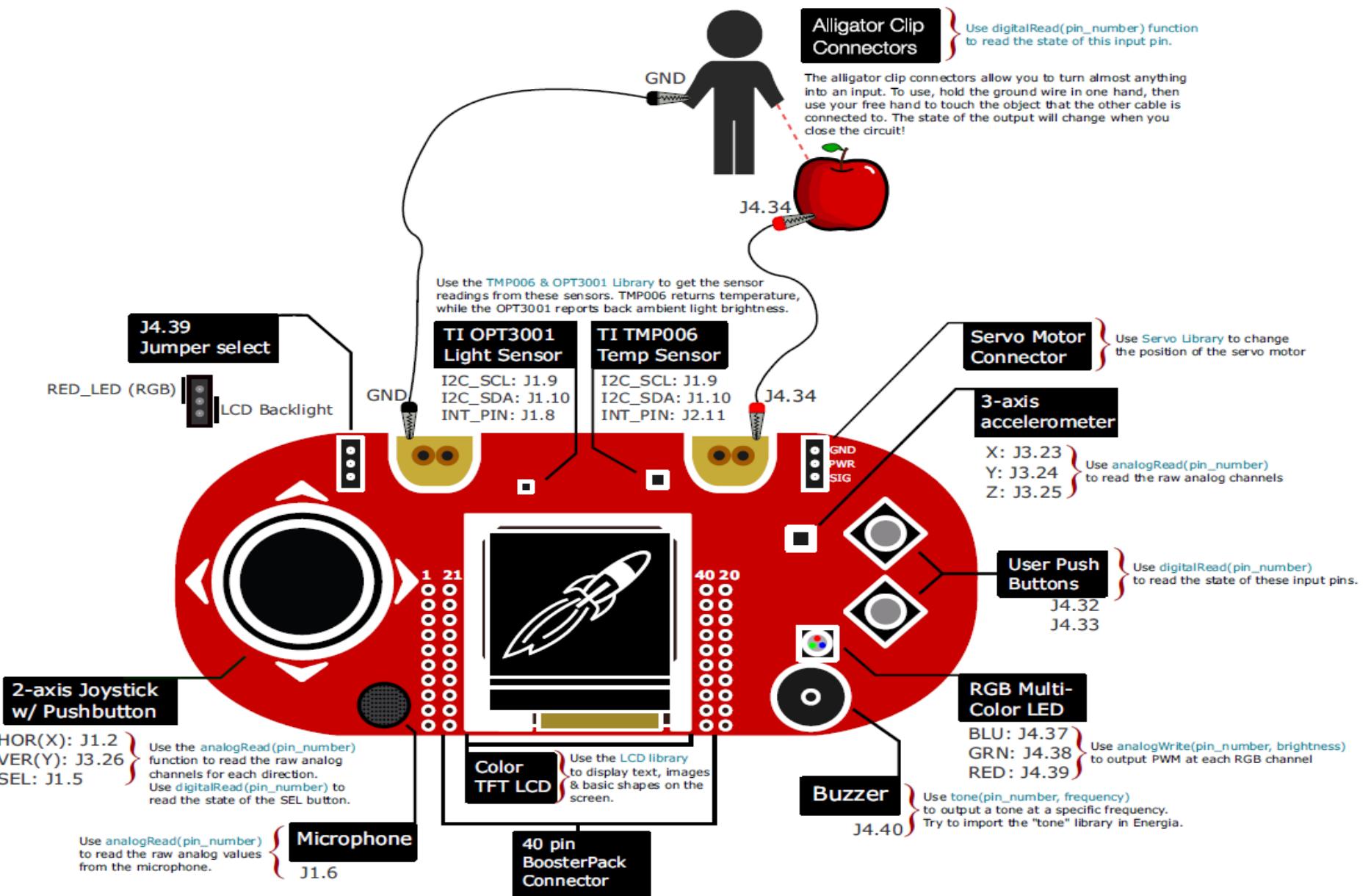
- Приставка за обучение
BOOSTXL-EDUMKII

Макет MSP- EXP4



Maket BOOSTXI - EDUIMKII

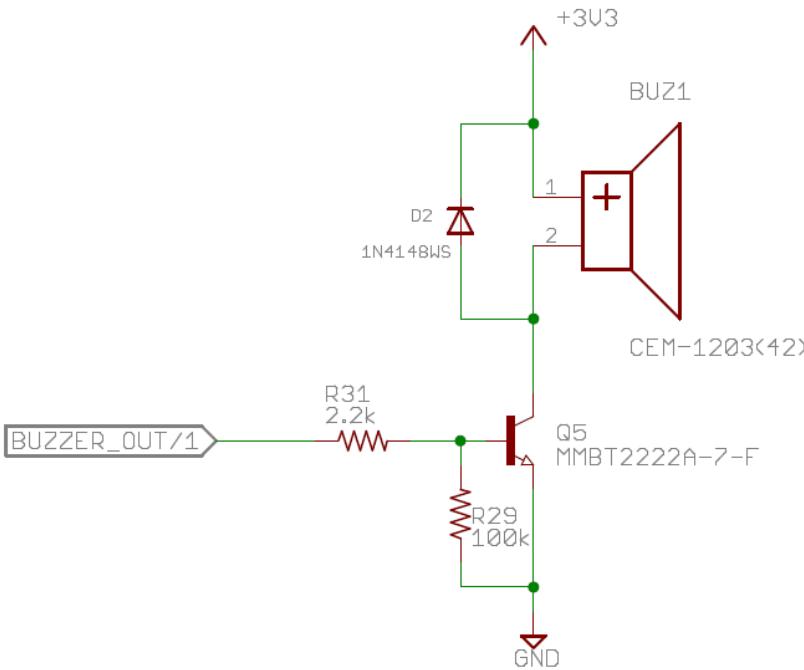




Ограничения

- Извод P2.7 трябва да е винаги в логическа нула
- На извод P2.7 може да се пускат правоъгълни импулси
- Причината е показана на следващия слайд

Ограничения



MAGNETIC BUZZER

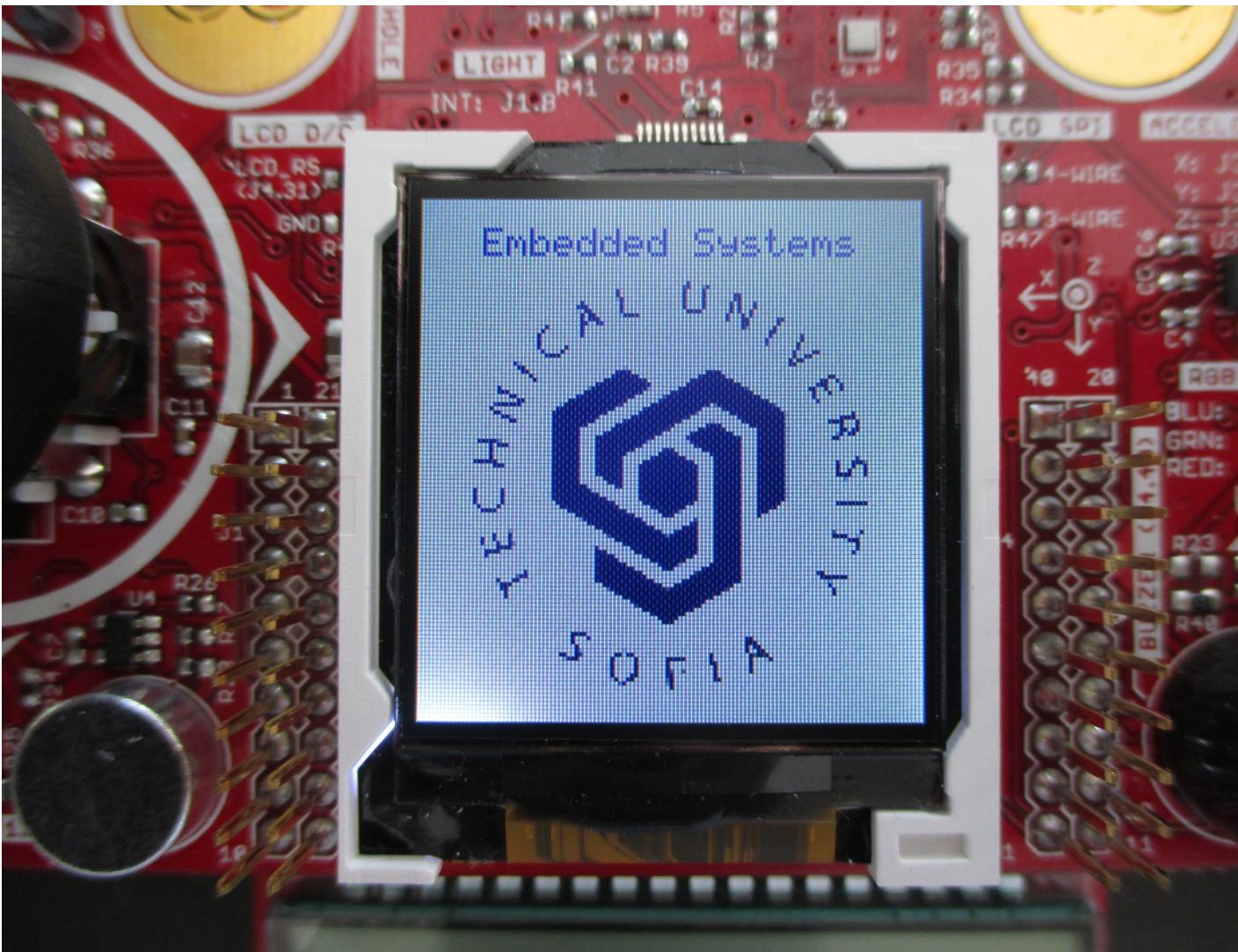
Specifications

Rated voltage	3.5 V _{o-p}
Operating voltage	3.0 - 5.0 V _{o-p}
Mean current	35 mA max.
Coil resistance	42 ±6.3 Ω
Sound output	Min. 85 (Typical 95) dBA
Rated frequency	2,048 Hz
Operating temperature	-20 ~ +60° C
Storage temperature	-30 ~ +70° C
Dimensions	ø12.0 x H8.5 mm
Weight	1.4 g
Material	PPO (Black)
Terminal	Pin type (AU Plating)
RoHS	yes

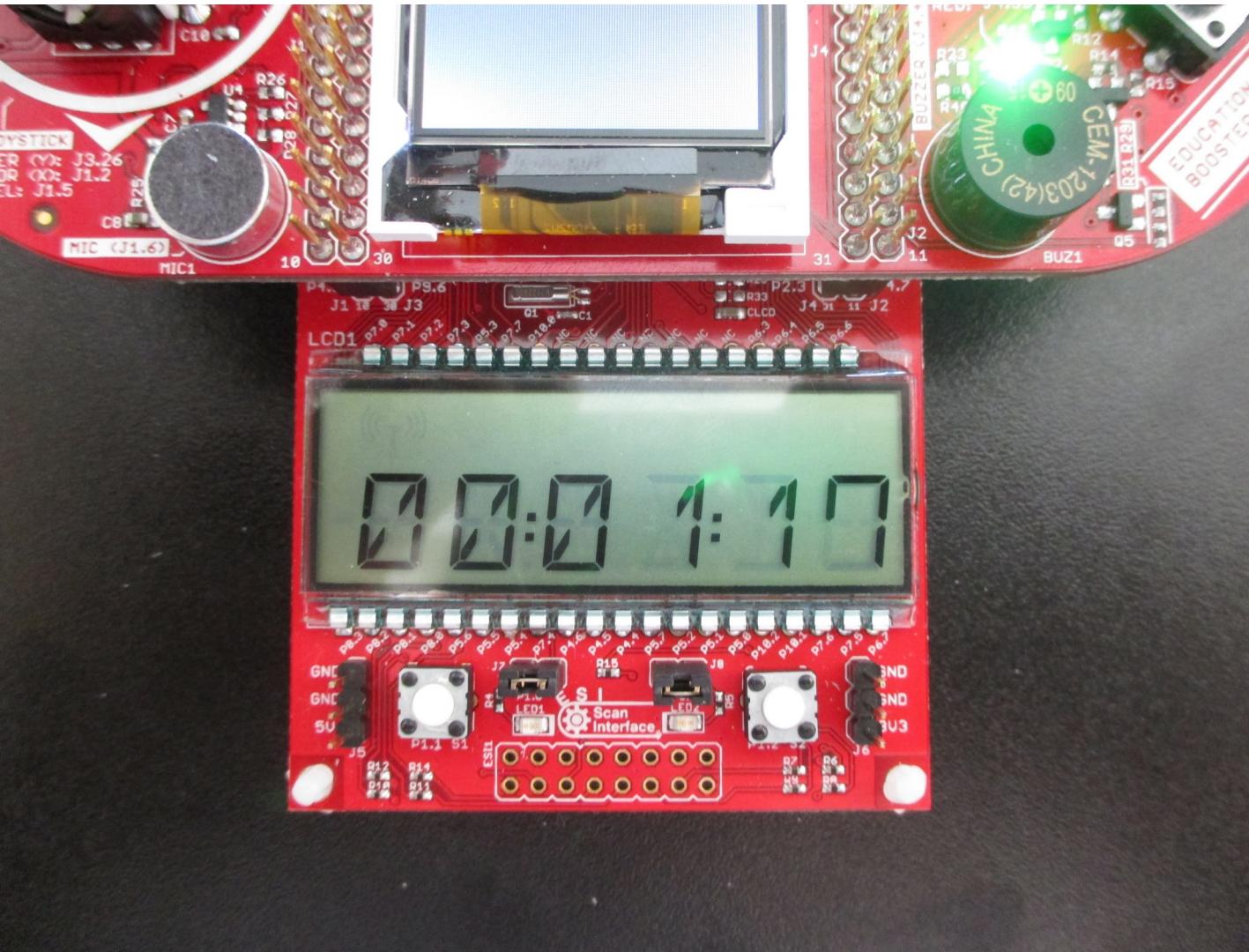
Ограничения

- Претоварва се захранването на дебъгера
- !!! Използвайте само !!!
hal_7segm_LCD.c драйвера,
предоставен от ръководителя

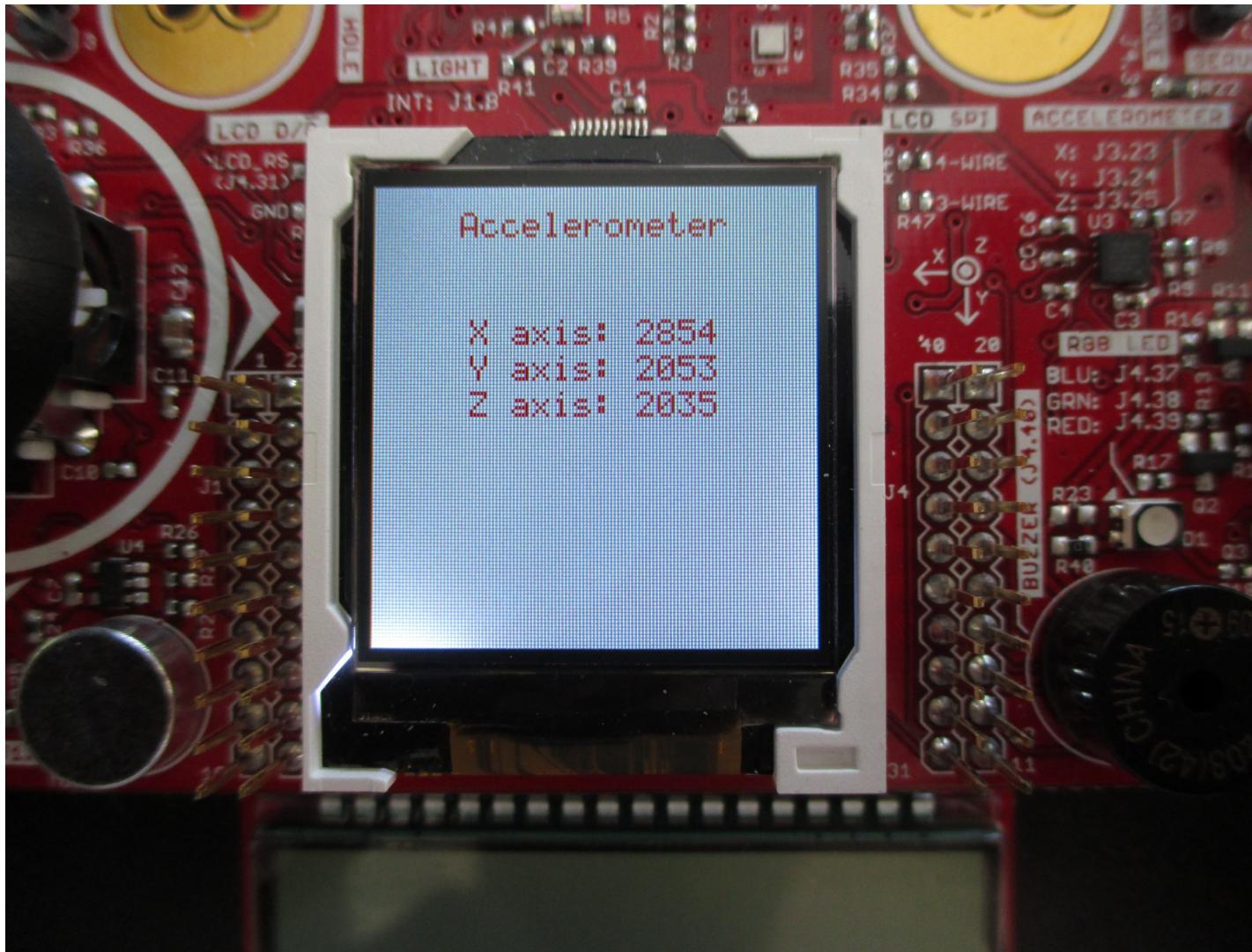
Приимерни проекти



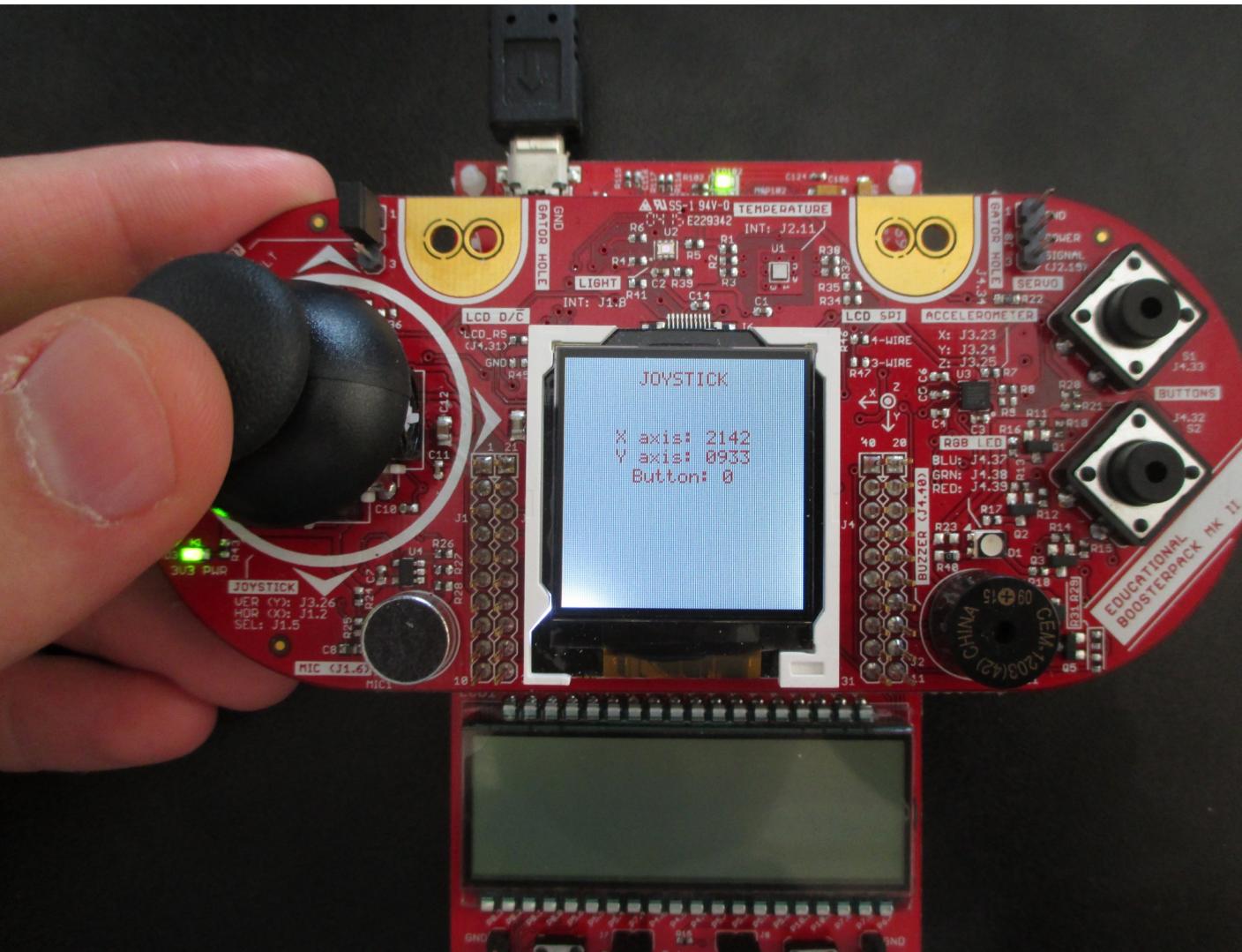
Примерни проекти



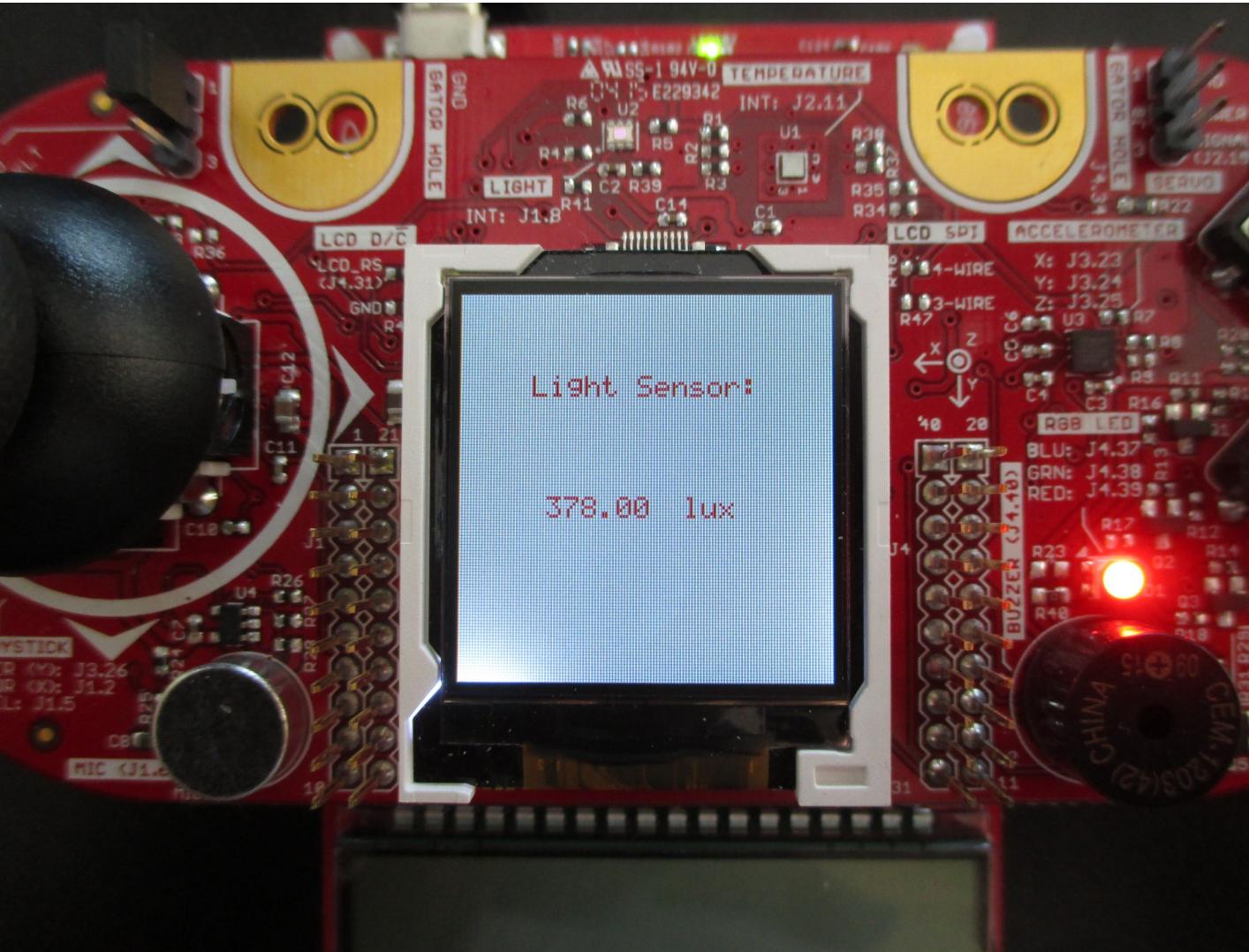
Примерни проекти



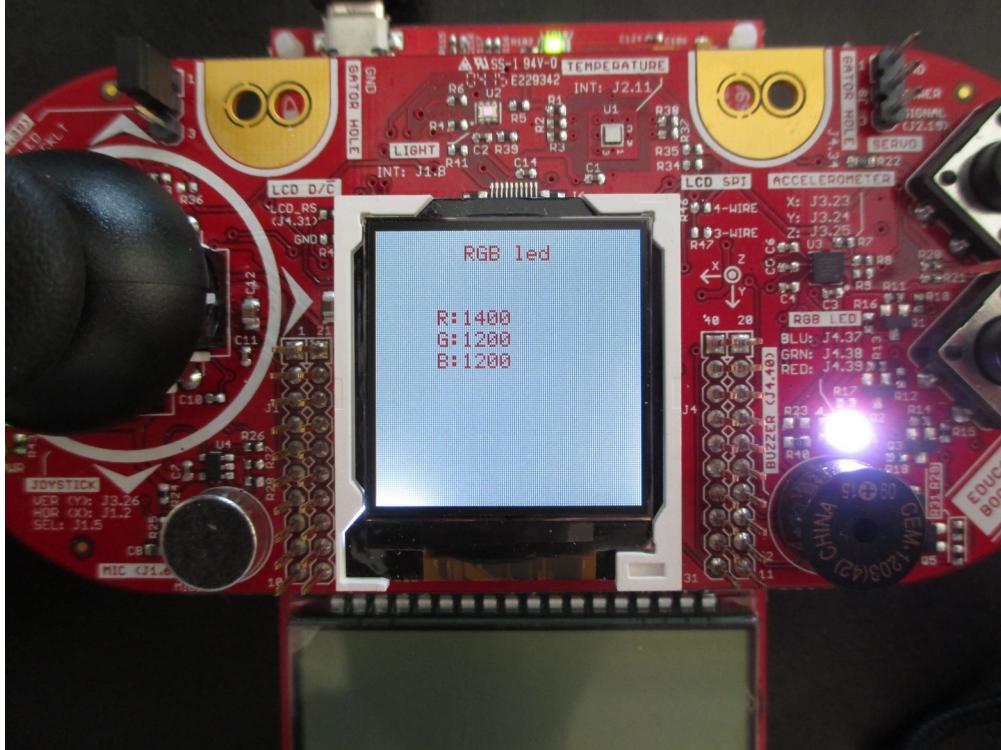
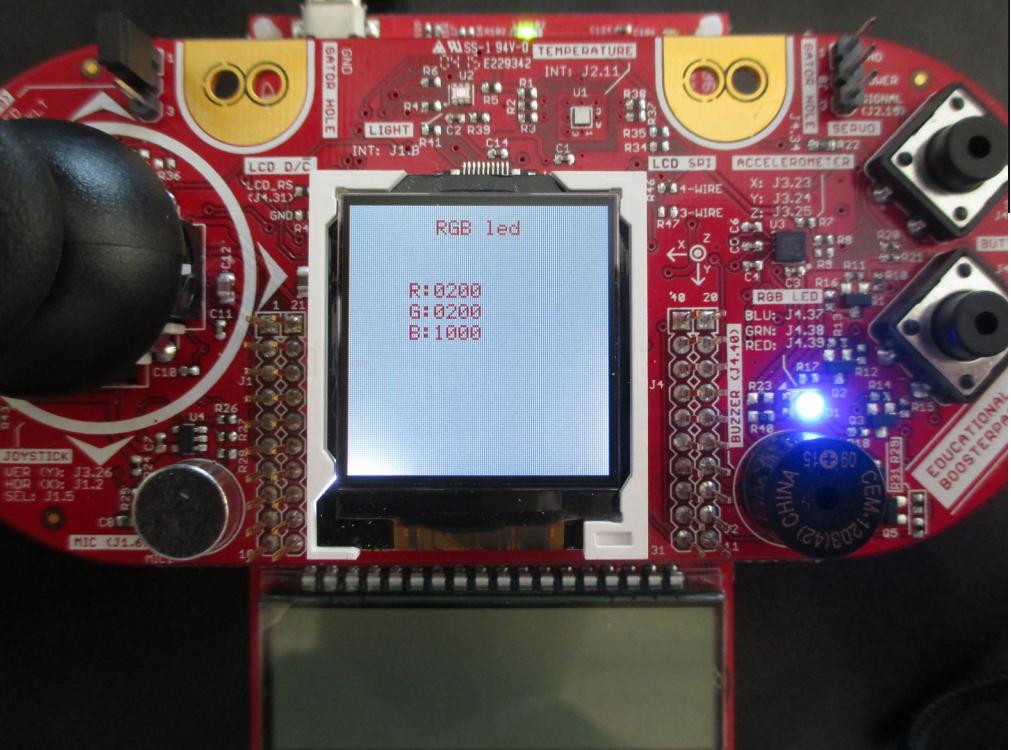
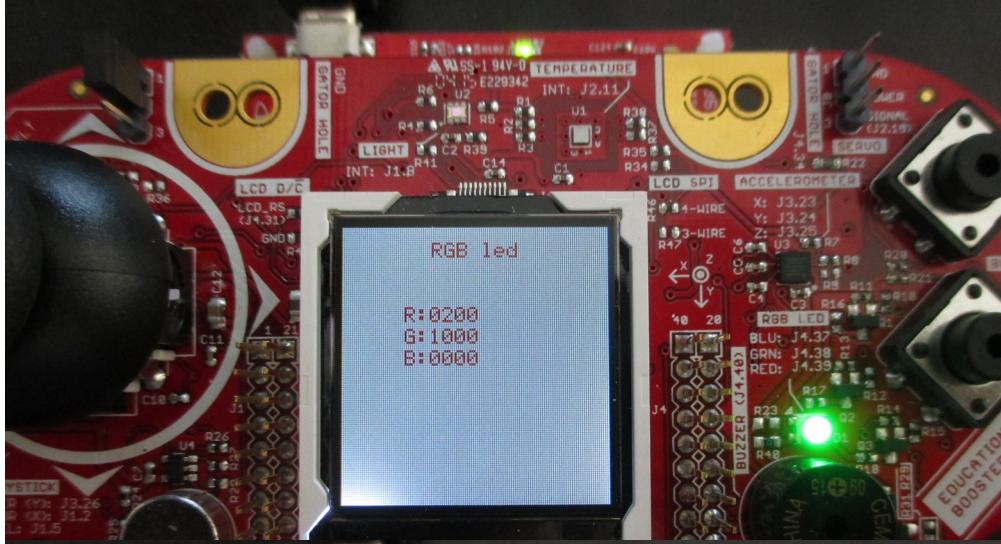
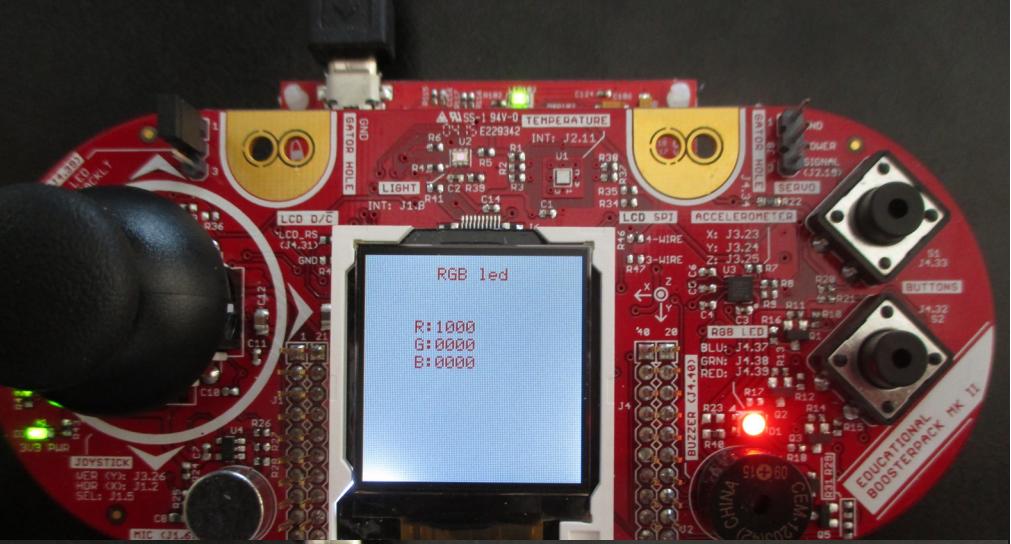
Примерни проекти



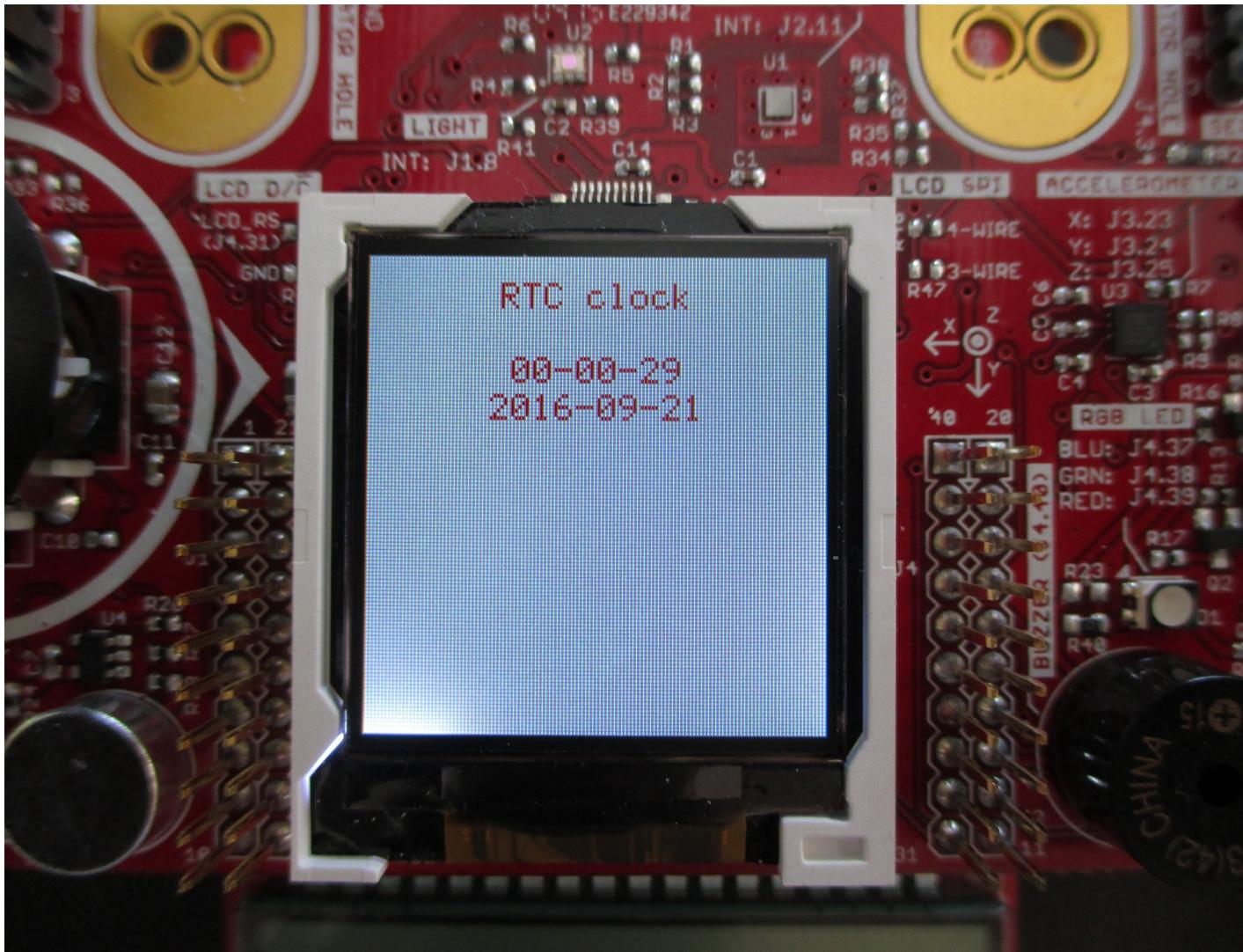
Примерни проекти



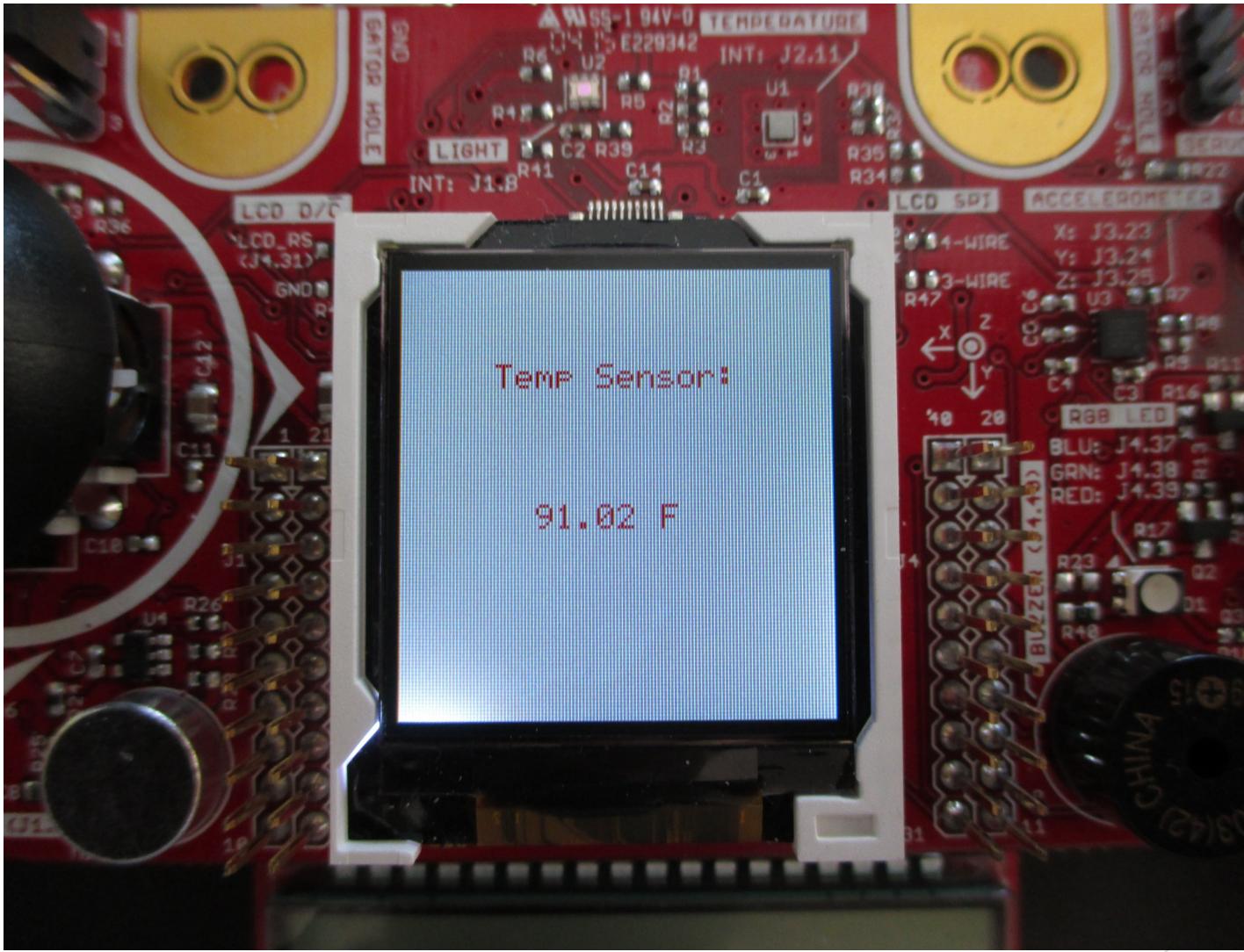
Приимерни проекти



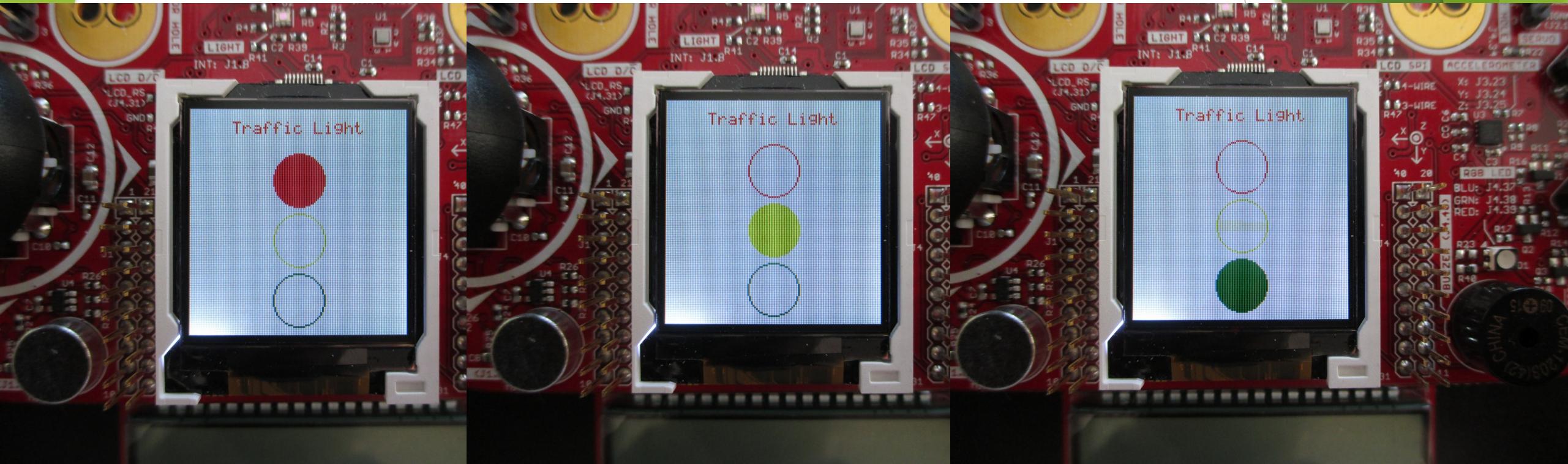
Примерни проекти



Примерни проекти



Примерни проекти



Примерни проекти

1. Четене на данните от акселерометър (AXL, LCD)
2. Електронен термостат (t sensor, LCD, buzzer)
3. Контрол на LED осветление (joystick, RGB LED)
4. Контрол на осветеността на дисплей - Ambient Light Control (light sensor, LCD подсветка)
5. Автоматичен контрол на осветеността в помещение (light sensor, RGB LED, бутон ON/OFF)
6. Часовник с календар (RTC, LCD, бутона)
7. Часовник с календар (RTC, 7segm. LCD, бутона)
8. Таймер за готовне (RTC/Таймер, LCD, бутона, buzzer)
9. Електронна фоторамка (LCD, bitmap изображения, 2 бутона)
10. Управление за светофар (LCD, графични примитиви - кръгчета, Таймер)

Благодаря за вниманието!

доц. д-р инж. Л. Богданов