

TivaC Lab 6 – Low Power

CPE 403

Checklist for Lab 6

- ☑ *A text/word document of the initial code with comments*
- ☑ *In the document, for each task submit the modified or included code (only) with highlights and justifications of the modifications. Also include the comments.*
- ☑ *Provide a permanent link to all main and dependent source code files only (name them as LabXX-TYY, XX-Lab# and YY-task#)Screenshots of debugging process along with pictures of actual circuit*
- ☑ *Video link of demonstration.*

Code for Experiment

Task 1:

```
#include <stdint.h>
#include <stdbool.h>
#include "inc/hw_types.h"
#include "inc/hw_memmap.h"
#include "driverlib/sysctl.h"
#include "driverlib/pin_map.h"
#include "driverlib/debug.h"
#include "driverlib/hibernate.h" // used for hibernation
#include "driverlib/gpio.h"

#ifdef DEBUG
void __error__(char *pcFilename, uint32_t ui32Line)
{
}
#endif

int main() {
    // Use 40 MHz clock
    SysCtlClockSet(
        SYSCTL_SYSDIV_5 | SYSCTL_USE_PLL | SYSCTL_XTAL_16MHZ
        | SYSCTL_OSC_MAIN);

    // Enable LEDs
    SysCtlPeripheralEnable(SYSCTL_PERIPH_GPIOF);
    GPIOPinTypeGPIOOutput(GPIO_PORTF_BASE,
        GPIO_PIN_1 | GPIO_PIN_2 | GPIO_PIN_3);
    GPIOPinWrite(GPIO_PORTF_BASE, GPIO_PIN_1 | GPIO_PIN_2 | GPIO_PIN_3, 0x08);

    // Enable hibernation
    SysCtlPeripheralEnable(SYSCTL_PERIPH_HIBERNATE);
    // Define frequency for clock for hibernation module
    HibernateEnableExpClk(SysCtlClockGet());
    HibernateGPIORetentionEnable(); // continue GPIO state during hibernation
    SysCtlDelay(64000000); // delay to allow user to observe the LED.

    HibernateWakeSet(HIBERNATE_WAKE_PIN); // set wake mode to wake_pin

    HibernateRequest(); // request hibernation
    while (1)
        ;e
}
```

Task 2:

Mode	Workbook Step	Reading1	Reading2
Run	17	20 mA	21 mA
VDD3ON (no RTC)	18	4.4 μ A	4.9 μ A
VDD3ON (RTC)	28	4.8 μ A	5 .1 μ A

Video Link to Demo

NONE