



AN805

MicroBolt

Digital I/O on the MicroBolt

10/7/2005

Introduction:

This application notes demonstrates how to use digital inputs and outputs on the MicroBolt.

Background:

The MicroBolt has 19 I/O pins that are user configurable.

How it works:

This ImageCraft ICCARM demo project turns the MicroBolt LED on when the push button switch connected to P0.14 is pressed down (low level) and turns off the LED when the switch is released (high level). This demonstrates the digital input and output capability of the MicroBolt.

Note:

The P0.14 push button switch is labeled "ISP*" on the MicroBolt development board.

Program Listing:

```
/*
-----
File Name           : MicroBoltReadWriteDigitalIO.c
Author              : Micromint, Inc.
Copyright           : Copyright © 2005, Micromint, Inc.
Creation Date       : 4/2/05
Version             : 1.00
Spaces per tab      : 2
Description         : Main C file
Revision            : Initial
-----
*/

/*
-----
Includes
-----
*/

#include <ARM/philips/lpc210x.h>
#include <arm_macros.h>

#include "MicroBoltReadWriteDigitalIO.h"

/*
-----
Function           : main
Inputs             : None
Outputs            : None
Purpose            : Main function for system
Author             : Micromint, Inc.
-----
*/
```

```

void main(void)
{
    /*
    -----
    MicroBolt hardware setup
    -----
    */

    __DISABLE_INTERRUPT();                // Disable all interrupts

    SCB_PLLCFG |= 0x23;                   // Turn on PLL, set to 59 MHz (0x03 is multiply value of 4)
    SCB_PLLCON |= 0x03;
    SCB_PLLFEED = 0xAA;                   // Shadow register copy for PLL
    SCB_PLLFEED = 0x55;

    PCB_PINSEL0=0x00000000;               // JTAG is via secondary port
    PCB_PINSEL1=0x55400000;
    GPIO_IODIR=(0x00000000<<16)|
                0x00000000;

    GPIO_IOCLR=0xffffffff;
    GPIO_IOSET=(0x00000000<<16)|
                0x00000000;

    GPIO_IODIR |= MICROBOLT_LED;         // Setup MicroBolt LED as output

    /*
    -----
    Start of application
    -----
    */

    while(1)                              // Do this forever
    {
        if (GPIO_IOPIN & P0_14)           // P0.14 input line high?
        {
            GPIO_IOCLR = MICROBOLT_LED;   // MicroBolt LED Off
        }
        else
        {
            GPIO_IOSET = MICROBOLT_LED;   // MicroBolt LED On
        }
    }
}

```