

Using 2 channels of Timer_A

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// Code to test the Timer_A channels

// Red LED toggled by Channel 0 each 0.75 seconds (9000 cycles @ 12 KHz)
// Green LED toggled by Channel 1 each 0.3 seconds (3600 cycles @ 12 KHz)

#include <msp430g2553.h>
#define redLED 0x01
#define greenLED 0x40

int main(void) {
    WDTCTL = WDTPW | WDTHOLD;

    // Source ACLK from VLO
    BCSCCTL1 &= ~XTS;           // XTS=0
    BCSCCTL3 &= ~LFXT1S_3;      // Clear LFXT1S
    BCSCCTL3 |= LFXT1S_2;       // LFXT1S = 2 (VLO)

    P1DIR |= (redLED|greenLED);
    P1OUT &= ~(redLED|greenLED);

    // (Continuous mode) (ACLK)
    TACTL = MC_2 | TASSEL_1 | ID_0 | TACLR;

    TACCR0 = (9000-1);
    TACCTL0 &= ~CCIFG;
    TACCTL0 |= CCIE;

    TACCR1 = (3600-1);
    TACCTL1 &= ~CCIFG;
    TACCTL1 |= CCIE;

    _low_power_mode_3();        // Also enables global interrupts
}

#pragma vector = TIMER0_A0_VECTOR
__interrupt void TA0_ISR() {
    P1OUT ^= redLED;
    TACCR0 += 9000;
    // Flag cleared automatically
}

#pragma vector = TIMER0_A1_VECTOR
__interrupt void TA1_ISR() {
    // Channel 1
    if((TACCTL1 & CCIFG) != 0) {
        P1OUT ^= greenLED;
        TACCR1 += 3600;
        TACCTL1 &= ~CCIFG;
    }
}
```