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; Filename : bdelay.asm

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; Hardware : ADuC814

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; Description : Blinks LED continuously.

; 200mSec period @ 50% duty cycle.

; Pressing Int0 delays LED toggle rate by 200mSec

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$MOD814 ; Use ADuC814 predefined Symbols

LED EQU P3.3 ; P3.3 is red LED on eval board

FLAG BIT 00H ; define Flag variable

CSEG ; Defines the following as a segment of code

ORG 0000H ; Load Code at '00H'

JMP MAIN ; Jump to MAIN

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ORG 0003h ; (INT0 ISR)

INC A ; Increment Acc

RETI ; Return from Interrupt

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; Subroutines

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DELAY: ; Delays by 100ms \* A

; 100mSec based on 2.097152MHZ

; Core Clock

; i.e. default ADuC814 Clock

MOV R1,A ; Acc holds delay variable

DLY0: MOV R2,#022h ; Set up delay loop0

DLY1: MOV R3,#0FFh ; Set up delay loop1

DJNZ R3,$ ; Dec R3 & Jump here until R3 is 0

DJNZ R2,DLY1 ; Dec R2 & Jump DLY1 until R2 is 0

DJNZ R1,DLY0 ; Dec R1 & Jump DLY0 until R1 is 0

RET ; Return from subroutine

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MAIN: ; (main program)

MOV SP,#02Fh ; Initialize SP

SETB IT0 ; INT0 edge triggered

SETB EA ; enable inturrupts

SETB EX0 ; enable INT0

CLR FLAG ; Clear Bit defined as FLAG

MOV A,#01H ; Initialize A -> 1

BLINK: CPL LED ; blink LED using compliment instruction

CALL DELAY ; Jump to subroutine DELAY

JNB FLAG,BLINK ; If FLAG is still cleared the jump to Blink

END