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; Filename : INT0blnk.asm

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; Hardware : ADuC816

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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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$MOD816 ; Use ADuC816 predefined Symbols

LED EQU P3.4 ; P3.4 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 1.5728MHZ

; Core Clock

; i.e. default ADuC824 Clock

MOV R0,A ; Acc holds delay variable

DLY0: MOV R1,#019h ; Set up delay loop0

DLY1: MOV R2,#0FEh ; Set up delay loop1

DJNZ R2,$ ; Dec R2 & Jump here until R2 is 0

DJNZ R1,DLY1 ; Dec R1 & Jump DLY1 until R1 is 0

DJNZ R0,DLY0 ; Dec R0 & Jump DLY0 until R0 is 0

RET ; Return from subroutine

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MAIN: ; (main program)

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