INT0BLNK PAGE 1

1 ;======================================================================

2 ;

3 ; Author : ADI - Apps

4 ;

5 ; Date : Sept. '99

6 ;

7 ; Filename : INT0blnk.asm

8 ;

9 ; Hardware : ADuC816

10 ;

11 ; Description : Blinks LED continuously.

12 ; 200mSec period @ 50% duty cycle.

13 ; Pressing Int0 delays LED toggle rate by 200mSec

14 ;

15 ;======================================================================

16 ;

17 $MOD816 ; Use ADuC816 predefined Symbols

18

00B4 19 LED EQU P3.4 ; P3.4 is red LED on eval board

0000 20 FLAG BIT 00H ; define Flag variable

21

---- 22 CSEG ; Defines the following as a segment of code

23

0000 24 ORG 0000H ; Load Code at '00H'

25

0000 020011 26 JMP MAIN ; Jump to MAIN

27

28 ;======================================================================

29

0003 30 ORG 0003h ; (INT0 ISR)

0003 04 31 INC A ; Increment Acc

0004 32 32 RETI ; Return from Interrupt

33

34 ;======================================================================

35

36 ; Subroutines

37 ;------------------------------------------------------------------

38

0005 39 DELAY: ; Delays by 100ms \* A

40 ; 100mSec based on 1.5728MHZ

41 ; Core Clock

42 ; i.e. default ADuC824 Clock

43

0005 F8 44 MOV R0,A ; Acc holds delay variable

0006 7919 45 DLY0: MOV R1,#019h ; Set up delay loop0

0008 7AFE 46 DLY1: MOV R2,#0FEh ; Set up delay loop1

000A DAFE 47 DJNZ R2,$ ; Dec R2 & Jump here until R2 is 0

000C D9FA 48 DJNZ R1,DLY1 ; Dec R1 & Jump DLY1 until R1 is 0

000E D8F6 49 DJNZ R0,DLY0 ; Dec R0 & Jump DLY0 until R0 is 0

0010 22 50 RET ; Return from subroutine

51

52 ;======================================================================

53

0011 54 MAIN: ; (main program)

55

0011 D288 56 SETB IT0 ; INT0 edge triggered

0013 D2AF 57 SETB EA ; enable inturrupts

0015 D2A8 58 SETB EX0 ; enable INT0

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59

0017 C200 60 CLR FLAG ; Clear Bit defined as FLAG

61

0019 7401 62 MOV A,#01H ; Initialize A -> 1

001B B2B4 63 BLINK: CPL LED ; blink LED using compliment instruction

001D 1105 64 CALL DELAY ; Jump to subroutine DELAY

001F 3000F9 65 JNB FLAG,BLINK ; If FLAG is still cleared the jump to Blink

66

67 END

68

69

70

VERSION 1.2h ASSEMBLY COMPLETE, 0 ERRORS FOUND

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BLINK. . . . . . . . . . . . . . C ADDR 001BH

DELAY. . . . . . . . . . . . . . C ADDR 0005H

DLY0 . . . . . . . . . . . . . . C ADDR 0006H

DLY1 . . . . . . . . . . . . . . C ADDR 0008H

EA . . . . . . . . . . . . . . . B ADDR 00AFH PREDEFINED

EX0. . . . . . . . . . . . . . . B ADDR 00A8H PREDEFINED

FLAG . . . . . . . . . . . . . . B ADDR 0000H

IT0. . . . . . . . . . . . . . . B ADDR 0088H PREDEFINED

LED. . . . . . . . . . . . . . . NUMB 00B4H

MAIN . . . . . . . . . . . . . . C ADDR 0011H

P3 . . . . . . . . . . . . . . . D ADDR 00B0H PREDEFINED