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; Date : May 2002

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; File : PSMon.asm

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; Hardware : ADuC831

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; Description : Demonstrates use of on-chip power supply monitor.

; In normal operation, this code flashes the LED at

; approximately 5Hz. When Vdd drops below the user

; specified trip-point (here 4.63V) the PSM interrupt

; is executed. once inside this interrupt service

; routine, this code waits until the PSM interrupt

; bit becomes zero again, indicating that the power

; supply is again above the trip point and has been

; there for at least 256ms. at this point, a RETI

; instruction is executed, and normal code execution

; is resumed, indicated by the flashing LED.

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$MOD831 ; Use 8052&ADuC831 predefined symbols

LED EQU P3.4 ; P3.4 drives red LED on eval board

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; BEGINNING OF CODE

CSEG

ORG 0000h

JMP MAIN ; jump to main program

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; INTERRUPT VECTOR SPACE

ORG 0043h ; (PSM ISR)

SETB LED ; turn off the LED to indicate fault

; most often, a routine would here be called to store critical values

; in user Flash/EE space and wait in a "safe" state of code execution

; until the PSM interrupt bit becomes zero indicating that adequate

; power supply voltage has returned.

CHECK: MOV A,PSMCON ; PSMCON.5 is the PSM interrupt bit..

JB ACC.5,CHECK ; ..it is cleared only when Vdd has

; remained above the trip point for

; 256ms or more.

CLR LED

RETI ; return only when "all's well"

;====================================================================

; MAIN PROGRAM

ORG 0060h ; start program above interrupts

MAIN:

MOV PSMCON, #0C1H ; enable PSM with

; AVdd 4.63V threshold

; DVdd 4.63V threshold

MOV IEIP2, #22H ; enable PSM interrupt

; high priority for PSM interrupt

SETB EA ; enable interrupts

FLASH: ; Main Routine would go here

CPL LED ; blink LED indicating norm operation

CALL DELAY ; delay 100ms

JMP FLASH ; loop

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; SUBROUTINE

DELAY: ; delay 100ms

MOV R7,#200 ; 200 \* 500us = 100ms

DLY1: MOV R6,#229 ; 229 \* 2.17us = 500us

DJNZ R6,$ ; sit here for 500us

DJNZ R7,DLY1 ; repeat 200 times (100ms delay)

RET

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END