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;KEYER.ASM
; KEYER 1.1
;Morse code keyer. RC timed for manual speed adjust
;Use 5.1K(fixed)+ 10K pot with .01uF pin 2 for 20-45 WPM
;10K(fixed)+25K pot is about 12 to 25 WPM
;43 bytes
;By Don Cantrell,ND6T 3/4/2011
;
;*****
list      P=12F675      ; list directive to define processor
#include  <P12F675.inc> ; processor specific variable definitions
errorlevel -302        ; suppress message 302 from list file
errorlevel -305        ; suppress message 305 from list file

;Configuration Word
_CONFIG _CPD_OFF & _CP_OFF & _BODEN_OFF & _MCLRE_OFF & _PWRTE_ON & _WDT_OFF & _EXTRC_OSC_NOCLKOUT
;*****
;Definitions
#define   BANK0   banksel 0h      ;Select Bank0
#define   BANK1   banksel 80h     ;Select Bank1
#define   OUT     GPIO,GP0        ;Pin 7
#define   SPKR    GPIO,GP1        ;Pin 6
#define   DIT     GPIO,GP2        ;Pin 5
#define   DAH     GPIO,GP4        ;Pin 3
#define   COUNT   20h            ;Delay constant register
;*****
ORG      0                      ;RESET VECTOR
;*****
INITIALIZE
    CLRF   COUNT
    CLRF   GPIO
    MOVLW  b'00000111'
    MOVWF  CMCON                ;Turn off comparator
    BANK1
    CLRF   OPTION_REG
    MOVLW  b'00010100'          ;Enable WPU for dah and dit inputs
    MOVWF  WPU
    CLRF   VRCON                ;Disable int. volt ref
    CLRF   ANSEL
    MOVLW  b'00111100'          ;Configure OUT & SPKR as outputs
    MOVWF  TRISIO               ;All others as inputs
    BANK0
;*****
MAIN
    BTFSS  DAH                  ;Is the dash pin low?
    CALL   DASH                  ;Yes, go form a dah
    BTFSS  DIT                  ;Is the dot pin low?
    CALL   DOT                   ;Yes, go form a dit
    GOTO   MAIN                  ;Nothing? Then look again for input
;*****
DOT
    BSF    OUT                  ;Begin sending a dot
    MOVLW  .30                  ;Delay constant for a dot
    MOVWF  COUNT                ;Load dot delay
    CALL   ELSND                ;Send the element
    RETURN
;*****
DASH
    BSF    OUT                  ;Begin sending a dash
    MOVLW  .90                  ;Delay constant for a dash
    MOVWF  COUNT                ;Load dash delay
    CALL   ELSND                ;Send the element
    RETURN
;*****
ELSND
                                ;Send the element
    BSF    SPKR                  ;Bang on the speaker
    BCF    SPKR                  ;for the appropriate time
    DECFSZ COUNT
    GOTO   ELSND
    BCF    OUT                  ;Stop sending the element
    CALL   PAUSE                 ;Element pause
    RETURN
;*****
PAUSE
                                ;That refreshing pause between elements
    MOVLW  .50                  ;Load constant for delay
    MOVWF  COUNT
AGN
    DECFSZ COUNT                ;Sit & spin for the appropriate time
    GOTO   AGN
    RETURN
END

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